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Remarks
ON
CANCER OF THE PROSTATE AND THE SELECTION OF CASES FOR SUPRAPUBIC PROSTATECTOMY.

Delivered at the Medical Graduates' College and Polyclinic. June 3rd, 1903.

By REGINALD HARRISON, F.R.C.S.,
Surgeon to St. Peter's Hospital, London.

I PROPOSE offering you a few remarks on the subject of prostatectomy, and will commence by introducing a case which may be regarded as a typical one. I showed this patient at the Polyclinic a short time after the operation. Sixteen months have now elapsed, during which period he has been actively employed earning his living. Thus you may judge as to the permanent results which we may hope to obtain in well-selected cases after this operation which my colleague, Mr. Freyer, has done so much to promote:

The patient at the time of operation was 67 years of age. He has been under my notice since 1899, when I performed vasectomy for him for enlargement of the prostate. At this time the enlargement had made considerable advance, he was entirely dependent on the catheter, and had been so for some time, and this greatly interfered with his work as a compositor and seriously injured his health by preventing him obtaining sufficient continuous sleep and rest. The case proved too far advanced for vasectomy, and the relief he obtained from this operation was insufficient.

On February 5th, 1902, after examining his prostate and bladder with the cystoscope, I performed suprapubic cystotomy for him and enucleated with my finger the two large lateral masses with the prostatic urethra between them which I am now showing you. The total weight was 5 oz. The patient made an uninterrupted recovery, the function of the bladder has been completely restored, and the use of the catheter discarded since the day the operation was performed.

If the conditions could always be secured as they existed in this instance the operation of prostatectomy would be attended with very little risk, whilst the results would be uniformly good. In the study of the various forms and structures the enlarged prostate presents will be found the key to the application of operative surgery to this part.

The first question I would raise is relative to malignant disease of the prostate—is it common or not, and what should be our attitude to it? My belief is that carcinoma of the prostate is far more common than we have been led to believe. In performing over 100 vasectomies on different persons for enlargement of the prostate, the operation failed to benefit the patient in several instances for the reason that the growth proved to be carcinomatous.

And this leads me to consider how we are to recognize this state and thus to avoid attempting useless prostatectomies. In the early stage there is considerable difficulty in doing this. Carcinoma of the prostate is not infrequently met with in younger persons than in the ordinary forms of prostatic enlargement or adenoma. Cancer of the prostate may occur at or about the age of 50, and in this respect corresponds with carcinoma of the female breast. It is usually associated with considerable lumbar and sciatic pains. Later on it involves more or less of the chain of glands in the groin, including the femoral, which it indurates. Examination by the rectum not only finds the gland of stony hardness but of marked fixidity on pressure. Slight haemorrhages are occasional, but serious alterations in the character of the urine and obstruction to catheterism are often delayed. Loss of flesh is usually noted. These are the ordinary symptoms of carcinoma of the prostate.

In several instances I have seen, where the diagnosis was verified by microscopical examination, the disease was marked by slow progress and the slightness of the local symptoms that were present throughout. It appeared to prove fatal by the general decay that was induced rather than by any interference it occasioned with the function of micturition, thus contrasting with advancing forms of ordinary prostatic hypertrophy.

On the other hand the adenomatous prostate, which often assumes very considerable dimensions, and is best suited for treatment by prostatectomy, presents very different local conditions. When examined by the finger in the rectum there is a feeling of less fixidity about it relative to the pelvis. The bowel is freely movable over it. Though firm and bossy to the touch it is wanting in that feeling of stony hardness which is so characteristic of the carcinomatous prostate.

Where an operation is contemplated no examination for the purpose of diagnosis can be considered complete without the use of the electric cystoscope. Upon this often turns whether a prostatectomy should be undertaken at all, or whether the case permits of the substitution of a more limited proceeding, as will be illustrated later on. As viewed by the cystoscope the differences between hypertrophy and carcinoma may thus be stated.

Carcinoma of the prostate in by far the greater proportion of cases is of a hard and slow-growing nature, closely resembling scirrhus of the breast both microscopically and to the naked eye. As a rule there is not very much intravesical projection of the prostate in these cases, and what there is is of an uneven and irregular outline. On the other hand the large soft adenomatous prostate presents as a rule a considerable enlargement into the bladder cavity with a smooth rounded surface. The most general arrangement of these adenomatous masses are these:

1. As a collar-like general enlargement of the prostatic ring encircling the prostatic portion of the urethra.
2. As an enlargement of the two lateral lobes, thus squeezing and flattening the urethra from side to side, the greatest diameter of that passage thus becoming vertical.
3. An enlargement of the posterior or middle lobe, either as a sessile, rounded swelling under the mucous membrane of the apex of the trigone, or with a thick pedicle, thus closely resembling a fibro-papilloma in appearance.
4. Or there may be a combination of any or all of the preceding varieties.

It is thus obvious that the cystoscopic appearance of the adenomatous prostate varies very much according to the direction of the growth. Usually the contour can be made out fairly accurately, and the observer can say that he has to deal with a lateral lobe enlargement, a collar-like enlargement with projecting middle lobe, or an enlargement mainly of a pedunculated nature. The importance of this is obvious, for in the last-mentioned case a simple twisting-off of the pedunculated middle lobe would be sufficient to relieve all symptoms, as I shall presently show, and is a much less serious proceeding than removing the whole of the enlarged gland. It should also be noted that the mucous membrane covering the very large adenomatous masses is often of a peculiarly glistening character, and sometimes presents little cyst-like swellings which, when viewed in profile, are semi-translucent. I have not observed this appearance in cases which eventually turned out to be carcinoma.

I am laying considerable stress on the importance of recognizing carcinoma or cancer of the prostate when it is the cause of the enlargement, and distinguishing it from ordinary

hypertrophy or adenoma for the reason that it may be little short of a calamity to submit a person to a prostatectomy should the enlargement eventually turn out to be of a malignant nature without knowing it. Formerly it was not a matter of so much importance when the catheter and the irrigating syringe represented the mechanisms commonly employed in the treatment of prostatic obstruction, for to this extent malignant and non-malignant growths might be treated on almost identical lines. At the present time these conditions are changed, and now that the prostate is approached operatively much on the same principle as the breast and other organs of the body, it is of the first importance that we should recognize beforehand the precise nature of the enlargement we have to deal with.

I have within the last two years performed prostatectomy in two cases which speedily proved to be carcinomatous. I think such cases should not be allowed to pass without notice in relation to the subject I am now dealing with, and I will therefore briefly give some particulars and show what was removed.

Case I.—The first case was that of a patient, aged 64, whom I saw in 1901. He complained of frequency of micturition both by day and night, and occasionally involuntary dribbling. A catheter had been passed before I saw him, but there was no residual urine. It was therefore clear in this instance that the frequency of micturition was not due to retained urine but to some other cause of irritation. The patient's history pointed to previous attacks of renal colic, for which he had been under treatment at Carlsbad. The last attack of renal colic had been 2½ years before I saw him. He had passed uric acid gravel in the urine, but not stone. Examination by rectum showed the prostate to be extremely hard, particularly at one point, where it gave the sensation as if a stone was impacted there. Further, the patient complained of dull aching about the buttocks and thighs. The muscles were flabby and the patient was losing flesh. He complained much of the frequency of micturition, which disturbed his rest and greatly distressed him both by day and night. As there was no residual urine to draw off the catheter was useless so far as this symptom was concerned.

Later on some difficulty arising out of the increasing size and hardness of the prostate occurred, and the use of the catheter then became necessary. Occasionally a few drops of blood were passed. I was not able at that time to detect any enlarged glands either in the groins or femoral regions. The patient became very anxious about his condition, and having heard of cases where the prostate had been successfully removed he was desirous, other measures failing, of submitting to this operation. I gave it as my opinion that the case was not a favourable one for prostatectomy, as it was not unlikely the growth would recur, and that there could be no guarantee that the whole of the disease was removed at the time of the operation, as is the case with adenomas involving the part. On the other hand, the patient urged the pain and frequency which attended the introduction of the catheter, and the uselessness of all the means that had hitherto been employed to relieve him. I could not absolutely deny the possibility of the growth proving to be one of those densely fibrous prostates which are occasionally met with. But in my judgement the weight of evidence was against this.

However, at the request of the patient an attempt was made to extirpate the gland by the suprapubic route. I felt to some extent justified in doing this for the reason that it was evident no long time could elapse before it would be necessary at all events to open the bladder for the purpose of allowing the urine to escape. The prostatic urethra was rapidly becoming blocked up by the invading growth and catheterism would soon be impossible. Prostatectomy was therefore performed in February, 1902, four months after the patient had been under my observation. The prostatic mass could not be enucleated with the finger, and had to be removed in several portions in this way.

The progress of the case was disappointing. Though the patient received immediate relief by the freedom with which the urine escaped by the open wound and got rid of the distress connected with catheterism practised under great difficulty, the growth within three or four weeks of the operation returned in the original site. It became necessary to fit a permanent drain pipe in the suprapubic opening, which enabled the patient to pass urine painlessly during the remainder of his life. The prostatectomy, however, proved useless, and the patient died from the recurrence of cancer in the part four months after the operation which had been undertaken for its removal. Secondary growth manifested itself in the spine about the ninth and tenth dorsal vertebrae. On microscopical examination the growth proved to be of a mixed character. The periphery of the mass was adenomatous, whilst the centre was carcinomatous. The growth cut like scirrhus of the breast, and yielded typical "cancer juice" on scraping. Mr. Watson Cheyne saw the patient in consultation with me.

Case II.—The second case was that of a professional man, aged 61, who consulted me in April, 1901, for frequency of micturition. As in the preceding case the use of a catheter indicated that there was no residual urine in the bladder to account for this symptom, and that some other cause for it was to be sought. The prostate was examined per rectum, and it was found to be large and hard. It was noted, however, that the rectum was freely movable over it, and that the growth was not unduly fixed within the pelvis. I did not see the patient again till January, 1902, when the symptoms had become more urgent. The frequency of micturition had greatly increased, and with this a necessity for the use of the catheter.

These symptoms were so urgent that on January 5th suprapubic prostatectomy was performed. What was apparently a fibro-adenoma of the prostate was enucleated with some difficulty in two pieces by the finger. The bladder had evidently for some time been immensely distended. The mouths of the ureteral orifices were so large that they would each admit the tip of the forefinger. The naked-eye appearance of the growth was that of an adenoma which the first microscopical examination confirmed. A further examination, which included a complete section of the mass removed, unmistakably indicated its carcinomatous nature as in the previous case.

Early in April, 1892, this patient sailed for the Cape in a professional capacity, apparently in excellent health, and passing urine quite naturally. About four months after operation he had one or two slight attacks of haematuria, which were evidently connected with recurrence at the original site. He was able, however, to complete two more voyages out and home, when he returned to this country with the abdominal cicatrix and contiguous glands largely involved in carcinoma, and with the scrotum and legs much oedematous. This had all taken place within the course of sixteen months.

During the last few months my attention has been called to several instances of prostatic enlargement which should be included with those I have just mentioned. They are not cases which should be submitted to prostatectomy. At all events, the prospect of recurrence should have full consideration.

But though a deliberate prostatectomy may not be advisable in cases of this kind, there can be no doubt that carcinoma of the prostate often sooner or later leads to conditions where operative interference is called for; I refer more particularly to the effects of obstruction so caused upon the contents of the bladder. A suprapubic opening may give immense relief to the patient whose bladder is distended with clots or foul urine. This is a substitute for a catheter which may be advantageously utilized.

I would like to say a few words in reference to some modern developments relative to the treatment of certain inoperable forms of prostatic obstruction. I refer to those instances where the enlargement is presumably of a cancerous nature. It is a painful thing for a surgeon to say to a patient "I cannot advise the removal of your enlarged prostate for the reason that it is probably malignant." "Is there nothing you can offer?" is probably the rejoinder to this. Within the last few months my attention has been directed to the use of the Roentgen rays and high-frequency currents in some of these inoperable cases of prostatic carcinoma to which I am referring. This is ground upon which I would tread with much caution. My interest was first drawn to this subject by some admirable papers on the use of the *x* rays and the Finsen light in connexion with the treatment of lupus and other semi-malignant forms of ulceration. At the present time I have two cases of malignant disease of the prostate, or what I take to be such, under daily treatment by means of these agencies. In alleviating pain, and in apparently favourably influencing the further development of these growths as judged by the patient's sensations, physical condition, and examination of the part with the finger, I am favourably impressed by what I have seen. The process is a painless one, and will be continued on the ground that it appears to have contributed to the comfort of the patients. It seems impossible that so powerful an agency can be brought in contact, even momentarily with living tissues without influencing their nutrition. Whether for good or evil, or for neither, in instances such as these has yet to be determined. I think, however, from what I have seen it is worth a trial; and this it is having.

To revert. I opened these remarks by illustrating what may be regarded as the total enucleation of the contents of the prostatic capsule. I will now consider some cases where partial prostatectomy may be substituted.

If we study a number of specimens of enlarged prostates, we shall find in a certain proportion that the obstruction is occasioned by a limited portion of the gland which has become hypertrophied or excessive. The most common form of this variety is where the floor of the gland becomes pendulous, and by blocking micturition renders the natural escape of urine as impossible as if the orifice of the bladder were commanded by what is known in mechanics as a ball valve. In all other respects these prostates are naturally disposed. Let me illustrate what I mean by a case.

Case III.—In April, 1899, I saw at the request of Sir Douglas Powell, a gentleman, aged 55, who was suffering from stone in the bladder. I performed litholapaxy upon him, and removed a stone composed of oxalates and phosphates weighing over ½ oz. I should mention that he had been using his catheter for twelve months, and had been absolutely dependent upon it for three weeks before the operation. The patient made a rapid recovery from the operation, though he was never able to dispense with the use of the catheter afterwards.

In August of the same year the operation of litholapaxy had to be repeated, as in this short interval another stone had formed, which was also successfully removed in the same way. On this occasion the stone was formed of phosphates, which is the usual kind in the case of recurrences. Again, he made a speedy recovery so far as the removal of the stone was concerned. The patient, however, still remained dependent on the use of the catheter. By September, 1000, he had formed other stones, which were removed in a like manner. He still remained dependent on the use of the catheter. For the fourth time, in February, 1901, he again applied to me with symptoms of stone. Feeling sure that this rapid recurrence of stone was not due to any fault in the operation or to any want of care on the part of the patient or his medical attendant, before proceeding to remove the stones I examined the patient with the cystoscope. The view thus obtained of the interior of the bladder was extremely interesting. There was no enlargement of the lateral lobes of the prostate, but the third or middle lobe was prolonged, and took the form of a pendulous mass which projected upwards into the bladder, and evidently played the part of a ball valve. Thus the urine was mechanically prevented escaping from the bladder, except when the catheter was used, and being allowed to decompose, the formation of phosphatic stones necessarily followed. I should add that under cover of the projecting lobe of prostate a portion of two calculi were seen by the cystoscope. This condition at once explained how these stones were formed, and I decided upon removing that portion of the prostate which was hypertrophied, as well as the stones it partially concealed. It seemed to me quite unnecessary to remove the entire prostate, and I therefore advised the minor operation.

This was done by opening the membranous portion of the urethra on a grooved staff as if for median lithotomy; this enabled me to pass a pair of forceps into the bladder, with which I seized and twisted off the polypoid excrescence of prostate as you see in the specimen. Subsequently I withdrew two calculi and introduced a temporary perineal drainage tube into the bladder. In a few days the latter was withdrawn, when the wound rapidly closed.

It is now over two years since this operation was done, the patient has had no further recurrence of stone, and what is also of great importance, he has never had occasion to use the catheter since, though he had been dependent upon this instrument for so many years previously.

It was quite clear in this case that the partial enlargement of the prostate which I have described was the direct cause of the recurrence of stone from which this patient suffered for so many years. Further, this case illustrates the great assistance the cystoscope affords in all cases of this kind. It clearly showed how limited the prostatic enlargement was, and how this could be removed by a very simple and safe operation. The days are now passed when the cystoscope was regarded as a toy. Every one who desires to obtain a practical knowledge of the disorders affecting the urinary tract must make himself acquainted with it if he desires to diagnose and treat correctly the disorders of this part.

Partial operations on the prostate must be limited to such conditions as I have just illustrated. They are not to be recommended when the entire organ is more or less involved in a hypertrophy. Two instances have recently come under my attention where no permanent good followed suprapubic cystotomy and the removal of some portions of the enlargement. In one the suprapubic opening never closed, as the urine failed to escape by the natural channel, whilst in the other, though the suprapubic wound healed by the aid of a retained catheter, the patient could never dispense with the latter instrument. In the latter case I advised that an attempt should be made later on to rectify this by a more complete enucleation of the balance of prostate than remained. This I heard was followed by a most satisfactory result, the patient within a month after the revised operation obtaining full voluntary power over the act of micturition, besides other advantages.

There is another point to which I should like to refer in connexion with the subject of entire enucleation of the prostate as now practised.

There can be no doubt that in the large majority of these cases the prostatic urethra is more or less damaged if not entirely removed. This is evident from the examination of specimens after removal. The question has been raised, Is there not some liability to what amounts to a urethral stricture after a wound of this kind? I have met with an instance where there is some evidence of this being the case. The prostate was removed from a gentleman 67 years of age in February, 1902. The urethra was somwhat freely separated on the anterior aspect of the prostate in front of the junction with the membranous portion. The whole canal was no doubt much toughened by the very long dependence on the catheter, and by no less than eight crushing operations for stone which had preceded the prostatectomy. Since the latter operation this patient has had some trouble in passing urine. Sometimes a good stream passed, at others no urine could be voided until after the introduction of a bougie. A good stream then immediately followed. Apparently there was an obstruction of a valvular nature which thus caused the difficulty in urinating. It could not be called a stricture as after the hitch was overcome just at the entrance to the bladder a No. 14 metal bougie, English gauge, passed easily. Three months after the prostatectomy I passed a urethrotome and divided what seemed to be a fibrous band or bend at the point where the hitch occurred. This completely freed the urethra for all purposes and the patient has since had no further trouble in urinating naturally with a large stream.

A Clinical Lecture

ON A SIXTH SERIES OF CASES OF

TOTAL EXTIRPATION OF THE PROSTATE FOR RADICAL CURE OF ENLARGEMENT OF THAT ORGAN.

Delivered at the Medical Graduates' College and Polyclinic.

By P. J. FREYER, M.A., M.D., M.Ch.,
Surgeon to St. Peter's Hospital, London.

It will be within the recollection of many of you that I first called attention to my new operation in a lecture delivered in this College on June 26th, 1901, and published in the British Medical Journal of July 20th, 1901. In that and subsequent lectures delivered in this College, and published in that Journal,[1] I have placed before the profession at large full details of my first 31 cases of this operation, which carried my work on this subject down to the end of 1902. I propose today placing before you details of a further series of 14 cases of the operation performed in the present year, the first of which unfortunately died from pneumonia, the remaining 13 being one and all completely successful. Let me in the first instance, however, once more describe the anatomical and pathological features on which my operation is based, as well as the method of carrying it out. (These details have already been published in the British Medical Journal, and need not be repeated here.)

Case xxxii.

A gentleman, aged 65, seen September 3rd, 1902, with Dr. Kildare Dobbs, of Tutbury, for prostatic symptoms of ten years' standing, and latterly those of stone in the bladder superadded. Catheter employed for four years; complete catheter life for two years. Had had frequent attacks of cystitis, with high fever and great difficulty in passing the catheter at times. Large stone detected on sounding. Prostate greatly enlarged per rectum, bilobed, tense, soft, elastic, and movable. The case was regarded as a suitable one for removal of the prostate, but the patient was in such an extremely feeble condition, with his kidneys probably much affected, that I determined in the first instance to remove the stone, and, if possible, to get him into better health before undertaking this operation.

On September 15th I removed the stone by litholapaxy, a hard urate stone weighing 622 gr. Convalescence was slow and attended by several rises of temperature; but the patient was able to travel home on October 9th. He continued to improve gradually in health, but the difficulty in passing the catheter remained, and he had a severe attack of cystitis early in December.

On January 12th, 1903, Dr. Dobbs considering him sufficiently strong to undergo the operation, he returned to London, and on January 14th I removed the prostate entire in its capsule, the lobes opening out along their superior commissure and the urethra being left intact. There was some venous bleeding from the suprapubic wound in the bladder necessitating the application of a ligature.

The patient did well for the first three days, but on January 17th lobar pneumonia, involving the lower two-thirds of the right lung, declared itself, and though the wound was quite healthy, he succumbed to this on January 21st. Whether the pneumonia was contracted during the journey to London or was incident to the operation, it is impossible to say.

It was with great diffidence that I undertook the operation in this case, owing to the enfeebled condition of the patient and the diseased state of his kidneys; but his sufferings were so great, particularly owing to the difficulty in introducing the catheter, that I felt bound to give him the only prospect of recovery. The prostate, which weighs 5¼ oz., is a fine specimen of symmetrical enlargement of that organ.

Case xxxiii.

Colonel P., aged 66, consulted me January 8th, 1903, on the advice of Surgeon-General Spencer, C.B. Prostatic symptoms for ten years, gradually getting worse. Catheter employed for 3½ years on the advice of London urinary specialist. I passed a *coudée* (No. 8), and drew off 6 oz of residual urine, of fishy odour, containing some pus and albumen. Sounded; no stone present. Prostate moderately enlarged per rectum,

tense, elastic, and movable. Cystoscopy on January 13th revealed moderate enlargement of both lobes, particularly the left, in the bladder. I advised delay in operating till the enlargement of the prostate should become more pronounced, thus rendering the enucleation of the organ more easy, unless the symptoms should become more unbearable, so he returned to the country.

Severe cystitis set in in the end of January, for which the patient was treated by Dr. Maberley, Eversley. The symptoms were so distressing that the patient returned to London for operation, and on February 9th, Surgeon-General Spencer being present, I removed the prostate, weighing 1¼ oz. Uneventful recovery, some urine passing naturally February 18th, but the wound not finally closing till March 11th. Patient went home March 18th. On March 27th he wrote me that he was perfectly well, and could retain and pass his urine "better than ever before," and he has since remained perfectly well.

CASE XXXIV.

Colonel M., aged 61, consulted me on January 9th, 1903, on the advice of Dr. Guthrie Caley, Ealing. Prostatic symptoms for eleven years. Retention of urine in 1892; relieved by catheter by Dr. Simpson of Weymouth. Catheter employed continuously since then; urine passed entirely by catheter for last eight years. Frequent attacks of cystitis; passing blood since September, 1902. Vasectomy performed in 1897 by a provincial surgeon; no improvement whatever therefrom. Prostate much enlarged per rectum, bilobed, soft, elastic, movable. Cystoscopy on January 14th revealed an enormous outgrowth of the right lobe, resembling a large tomato, in the bladder, and slight outgrowth of the left lobe. Patient went home and contracted influenza some days after, which left him very feeble.

He returned to London and entered a surgical home on January 28th, but was so feeble that I deferred operation. On February 11th, Mr. C. Braine, anaesthetist, Sir William Collins and Dr. A. Crombie being present, I removed the prostate easily and rapidly, entire in its capsule, leaving the urethra behind uninjured. Some urine passed naturally February 25th; wound closed March 3rd. Temperature normal throughout. Patient left for home in good health March 14th, retaining and passing his urine as well as he ever did.

The prostate (Fig. 1), which weighs 3¾ oz., is a remarkable

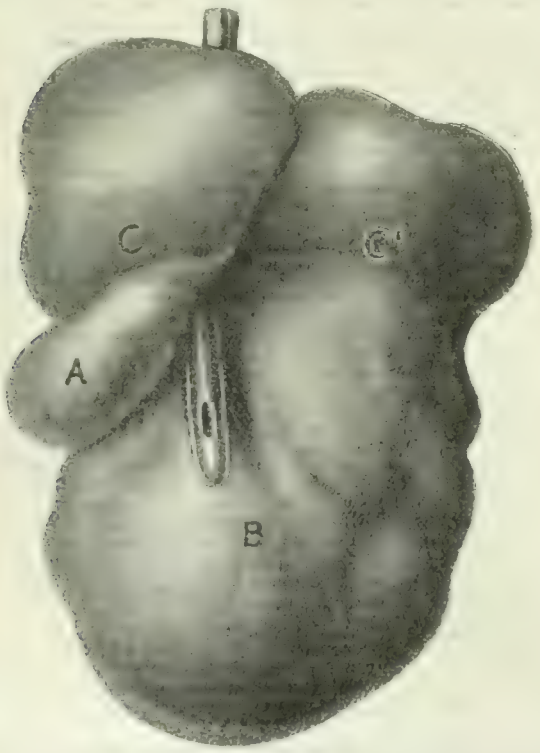


Fig. 1.—Prostate weighing 3¾ oz. removed from patient, aged 61. B, enormous outgrowth of right lobe in bladder; A, smaller growth of left; C C', circular groove, caused by constriction of recto-vesical fascia at neck of bladder.

specimen of unsymmetrical growth. Three-fourths of its bulk lay in the bladder, the right lobe being enormously enlarged in this direction, and the left only slightly so.

CASE XXXV.

A gentleman, aged 65, seen December 10th, 1901, on the advice of Dr. McManus, of Clapham Junction, for prostatic symptoms of six years' standing. Residual urine, 7 oz. Employment of the catheter twice daily advised. The symptoms growing worse gradually, and attacks of cystitis occurring, he was sent to me again February 26th, 1903. I found that the residual urine had increased to 18 oz. and that the patient was in great distress from frequency of micturition and pain. Prostate not much enlarged per rectum, but tense, rather hard, bilobed, smooth and movable.

On February 10th I made a cystoscopic examination and saw that there was a teat-like growth projecting from the left lobe of the prostate into the bladder. Suprapubic cystotomy was at once performed, and conditions found as seen by cystoscope. I enucleated the prostate entire in its capsule, leaving the urethra untouched. Uninterrupted recovery. Some urine passed naturally March 2nd and the wound closed March 11th. Went home perfectly well March 19th, retaining and passing urine naturally.

The prostate, which weighs only ¾ oz., is the smallest removed by me entire in its capsule. I had not imagined hitherto that a prostate of this limited enlargement could be enucleated whole in its capsule. The case is a good illustration of what one finds in practice—that, as a rule, the symptoms attending enlargement of the prostate do not depend on its size, but on other conditions, such as its density and the manner in which it is bound down by the surrounding tissues. A prostate of several ounces in weight, if soft and loosely bound down by the recto-vesical fascia, may cause little or no trouble; whereas, one of less than an ounce in weight, if hard and bound down, may cause unbearable symptoms.

CASE XXXVI.

Sir J. D., a distinguished member of the medical profession, aged 71, seen at Putney in consultation with Mr. E. White on February 28th, 1903. Three years previously had painless haematuria for fourteen days without apparent cause. Remained quite well since then till January 21st, 1903, when bleeding again set in, at first intermittent, but latterly continuous, which necessitated his remaining in bed for the last three weeks. At times the bleeding was very profuse, almost pure blood passing. The only other symptoms were great frequency of micturition since taking to bed, not before; some pain at the neck of bladder; and uneasiness in the loins, particularly the left. The catheter had latterly been passed twice daily and the bladder washed out by Mr. White. Rapid loss of flesh with anaemia during last few weeks. The patient had been seen several times by Dr. Allchin and Mr. Makins, by whose advice I was called in consultation.

I drew off 15 oz. residual urine containing much blood. Sounded, but no stone detected. Prostate somewhat enlarged per rectum, but not at all prominent. Bimanually some fullness felt in the bladder, of an indefinite nature. The cause of the haemorrhage was thus very obscure, and grave apprehensions were entertained by the medical gentlemen mentioned and myself that its source was a growth either of the bladder or kidney.

The patient was conveyed to London by ambulance, March 2nd, and kept in bed in a surgical home, under the observation of Mr. Makins and myself. Rest and astringents for a week had little or no effect in reducing the bleeding, and the latter rendered diagnosis by the cystoscope impossible. Examination of the kidneys by the *x* rays negative. Eventually we came to the conclusion that the haemorrhage was due either to a growth in the bladder or an outgrowth of the prostate, so we determined to open the bladder suprapubically for diagnosis and such measures as might be found advisable.

On March 9th, Mr. White giving the anaesthetic, and Mr. Makins kindly assisting in consultation, cystoscopic examination revealed an irregular mass in the bladder, but the view became so rapidly obscured from the bleeding that no definite opinion as to its nature could be formed. Suprapubic cystotomy was forthwith performed, and on introducing my finger I found, happily, that the growth consisted of a very decided outgrowth from both lobes of the prostate, united below, and forming a U-shaped, or cart-horse-collar, projection in the bladder. The lower lip of this projected 1½ inch beyond the neck of the bladder. The prostate was easily and rapidly enucleated entire in its capsule, the urethra being left behind. There was very little bleeding or shock. The patient made a most satisfactory recovery, passing some urine naturally March 29th, and the wound being quite dry April 1st. On April 8th he left for home in good health, retaining and passing urine quite naturally. Since the operation there has been no trace of haemorrhage.

The prostate, which weighs 2½ oz., is an excellent specimen of symmetrical adenomatous enlargement of the organ. The case is a remarkable one from many points of view, but particularly in regard to the masked character of the prostatic symptoms. There were really no external signs or symptoms to indicate prostatic mischief, as, though there was a large quantity of residual urine, this did not give rise to the usual symptoms of frequency of micturition till the patient took to bed. It has to be noted that there was profuse haemorrhage from the prostate long before a catheter was employed, due, no doubt, to a varicose condition of its veins.

CASE XXXVII.

Gentleman, aged 79, consulted me March 16th, 1903, on the advice of Dr. J. F. Tuohy, of Hove. Five years ago had haematuria for two days after a game of tennis. Consulted two London surgeons, one of whom sounded him and washed out his bladder in a home for several days. Scalding and increased frequency of micturition ever since. Three weeks previously haemorrhage set in again, when he saw Dr. Tuohy, who found he had a large quantity of residual urine, the result of a very much enlarged prostate, and advised him to have the prostate removed. Catheter

employed twice daily. I drew off 8 oz. residual urine, which was turbid from muco-pus. Prostate greatly enlarged per rectum, markedly bilobed, soft, tense, smooth, movable; felt bimanually like a large orange.

On March 18th, Mr. C. Braine, anaethetist, and Dr. Tuohy assisting, I removed the prostate entire in its capsule, the urethra being left behind. Both lobes were very prominent in the bladder—almost pedunculated outgrowths. The enucleation was easy and rapid, only ten minutes elapsing from commencing the suprapubic incision till the prostate was delivered from the bladder. Scarcely any bleeding or shock. The patient made an uninterrupted recovery, the temperature remaining practically normal throughout. Urine began to pass naturally April 14th and the wound was quite closed April 19th. Went home to Brighton April 23rd in good health, able to retain and pass his urine as well as he ever did.

The prostate (Fig. 2) is a fine specimen of the symmetrically enlarged type, weighing 5½ oz.

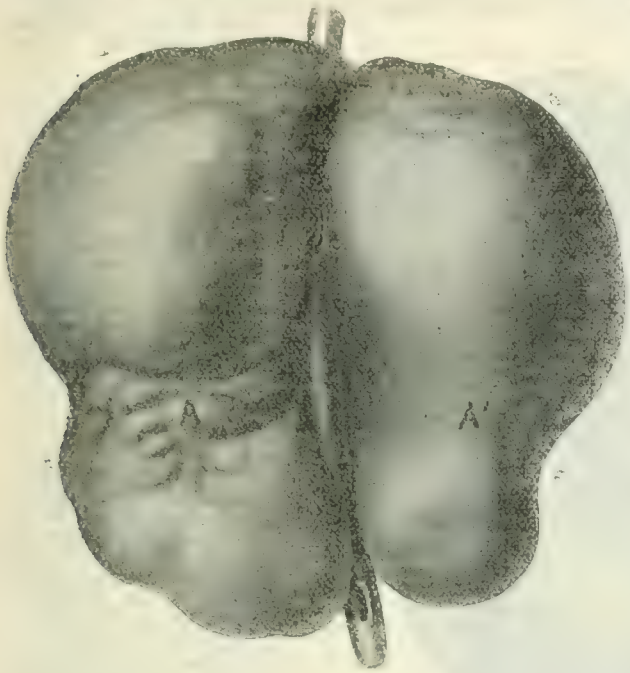


Fig. 2.—Prostate weighing 5½ oz. removed from patient, aged 71. The constriction at A A' is the boundary between the intravesical and extravesical portions of the gland.

CASE XXXVIII.

H. D., aged 57, admitted to St. Peter's Hospital, March 10th, 1903. Had retention of urine six years previously, and the usual prostatic symptoms since then, gradually increasing. Habitual use of catheter for two years; urine entirely passed in this way for twelve months; difficulty in passing catheter. Prostate much enlarged per rectum, bilobed, soft, tense, movable; felt greatly enlarged bimanually.

On March 18th I removed the prostate (Fig. 3) entire. The capsule was adherent to the sheath, and in the enucleation a thin band of the latter (C) was removed with the prostate, as well as a portion of the prostatic urethra. The patient made an excellent recovery; began to pass urine naturally March 30th; and the wound was dry April 6th. Discharged April 18th. I have now the pleasure of showing you the patient in perfect health, able to retain and pass his urine quite naturally.

The prostate (Fig. 3), which weighs 6½ oz., is a fine specimen of the non-symmetrically enlarged organ, the right lobe (A, A) being enormously enlarged in the bladder, and forming a pistol-shaped valve (A) to the urethral orifice. This is the youngest patient on whom I have performed this operation. The great size of the prostate is remarkable in a man of his age.

CASE XXXIX.

G. B., aged 72, admitted to St. Peter's Hospital, March 20th, 1903, with prostatic symptoms for six years. Totally dependent on catheter for eighteen months. Urine contained much pus. Prostate considerably enlarged per rectum, bilobed, soft, elastic, and movable. Patient very feeble and anaemic.

Prostate removed entire March 25th, urethra being left uninjured. The wound was rather slow in healing, and reopened twice, but finally closed April 29th. Discharged cured May 13th, able to pass and retain urine as well as he ever did.

The prostate, which weighs 3¾ oz., is symmetrically enlarged.

CASE XL.

Gentleman, aged 61, seen with Dr. Horace Duncan, London, March 28th, 1903. Prostatic symptoms for ten years. Retention in August, 1901, relieved by catheter by Dr. F. E. Nichol, of Margate. Catheter life since then, a pint of urine being drawn off morning and evening. Has had frequent attacks of cystitis, double orchitis, and latterly severe haemorrhage. Symptoms very distressing; patient greatly reduced in strength; asthmatic. I drew off 19 oz. urine containing much pus and blood. Prostate felt much enlarged per rectum; bilobed, tense, soft, and movable easily felt bimanually.

On March 29th, Mr. Thomson Walker and Dr. Duncan assisting, I removed the prostate easily and rapidly, eight minutes only elapsing from commencing the operation till the prostate was delivered from the bladder. Uninterrupted recovery, the temperature remaining normal throughout. Urine passed naturally April 11th; wound dry April 16th. Is now in excellent health, able to retain and pass urine as well as he ever did.

The prostate weighs 2¾ oz., and is encircled by a thin band of the sheath or recto-vesical fascia, so that a portion of the prostatic urethra was removed with the gland.

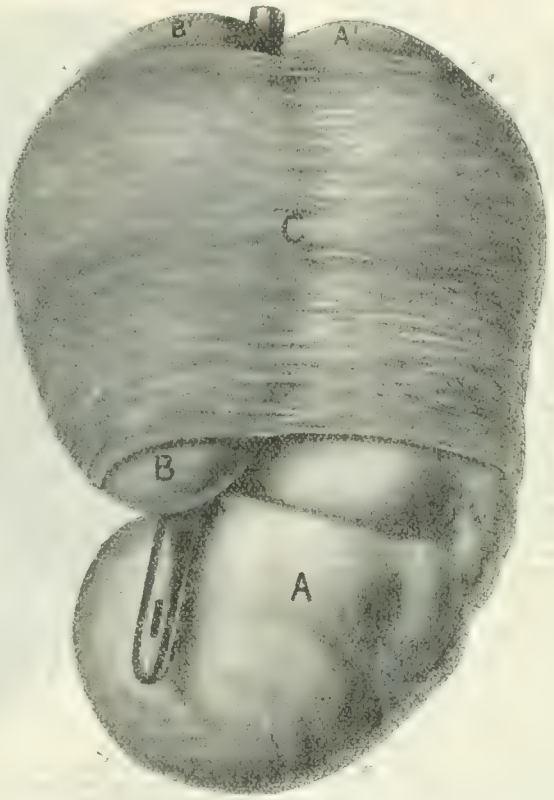


Fig. 3.—Prostate weighing 6½ oz., removed from a patient, aged 57. A A', enormously enlarged right lobe terminating in pistol-shaped projection (A) in the bladder. B B' left lobe. C, thin band of sheath or recto-vesical fascia removed with prostate.

CASE XLI.

Gentleman, aged 62, seen with Dr. Inglis Mason, of Sudbury, March 20th, 1903. Prostatic symptoms for one year only; much pain in micturition; dribbling of urine, wets the bed. I had much difficulty in introducing a *coudée* catheter; drew off 26 oz. residual urine. Prostate enlarged per rectum and rather hard, but movable. Cystoscopy on March 26th revealed a teat-like outgrowth of both lobes in the bladder. Patient very stout.

Prostate enucleated March 30th, Mr. Wylie and Dr. Mason assisting, both lobes coming away separately. Recovery somewhat slow. Began to pass urine naturally April 22nd, wound dry April 28th. Is now in perfect health, untroubled by any urinary symptom.

The prostate, which weighs 1¼ oz., is much harder than usual, but fibro-adenomatous microscopically.

CASE XLII.

Gentleman, aged 62, sent to me from Florence for operation by Drs. Coldstream and Gordon of that place, on the advice of Dr. W. Playfair. Prostatic symptoms for ten years, during which time he had consulted many urinary specialists in London and elsewhere. Catheter employed since 1898; cystitis with fever from time to time. The pain and constant irritation of the bladder caused sleeplessness, for which narcotics were taken. Straining to micturate caused involuntary action of the bowels, great frequency of micturition, hourly by day and half-hourly by night. Nervous system utterly broken down; very excitable and irritable; intermittency and irregularity of pulse. I drew off 10 oz. of residual urine containing much pus and mucus. Prostate much enlarged per rectum, round, soft, smooth, movable; felt bimanually.

On March 31st, 1903, Mr. C. Braine anaesthetist, I enucleated the prostate entire in its capsule easily, the urethra being left intact. Nine minutes only elapsed from commencing the suprapubic incision till the prostate was removed from the bladder. Though there was scarcely any bleeding during the operation, owing to the restlessness of the patient there was for several days some oozing, giving rise to clots which caused irritation of the bladder and necessitated removal of the sutures, so that the suprapubic wound gaped and was slow in healing. Small quantities of urine passed naturally almost daily, but not in quantity till May 10th. A sharp attack of rheumatism retarded his recovery, but the patient went home on May 23rd in fairly good health, passing and retaining his urine naturally.

The prostate, which is symmetrically enlarged, with small nodulated outgrowths from each lateral lobe in the bladder, weighs $2\frac{1}{2}$ oz.

Case xliii.

A gentleman, aged 71, consulted me March 28th, 1903, for prostatic troubles. Catheter employed for twenty years, not a drop of urine passed naturally for last eighteen years. Calculi removed by crushing on three occasions by London specialist: double castration by another London surgeon for cure of prostatic troubles in 1897, but without any amelioration of his symptoms. Slight paralytic stroke in January, 1903, from which he completely recovered, but has had a nurse ever since. Extremely feeble and hysterical; breaks down and weeps without apparent cause. Patient's condition most pitiable. Haematuria from time to time. Urine contains much pus and blood, and is most offensive; bladder can contain only small quantity; hence catheter used half-hourly day and night. Enormous enlargement of prostate per rectum, soft, smooth, bilobed, movable. Cystoscopy on March 30th revealed an enormous outgrowth of prostate in the bladder.

On April 1st, Mr. Wylie assisting, I enucleated the prostate entire in its capsule, leaving the urethra behind. The prostate projected into the bladder in the form of a cone, the urethral orifice being shaped like the crater of a volcano. Considerable force had to be employed to separate the capsule from the sheath. After delivery of the prostate as a whole into the bladder, owing to its large size, the lobes had to be separated to facilitate its removal, though it was very soft and spongy. Only eleven minutes elapsed from commencing the operation till the prostate was delivered from the bladder. There was scarcely any bleeding or shock. The patient made an uneventful recovery. Urine passed naturally April 26th, and the wound was dry May 5th. He was quite overcome with joy at passing urine naturally again after eighteen years of complete catheter life. Went home May 11th, and is now in excellent health, able to retain and pass his urine as well as he ever did.

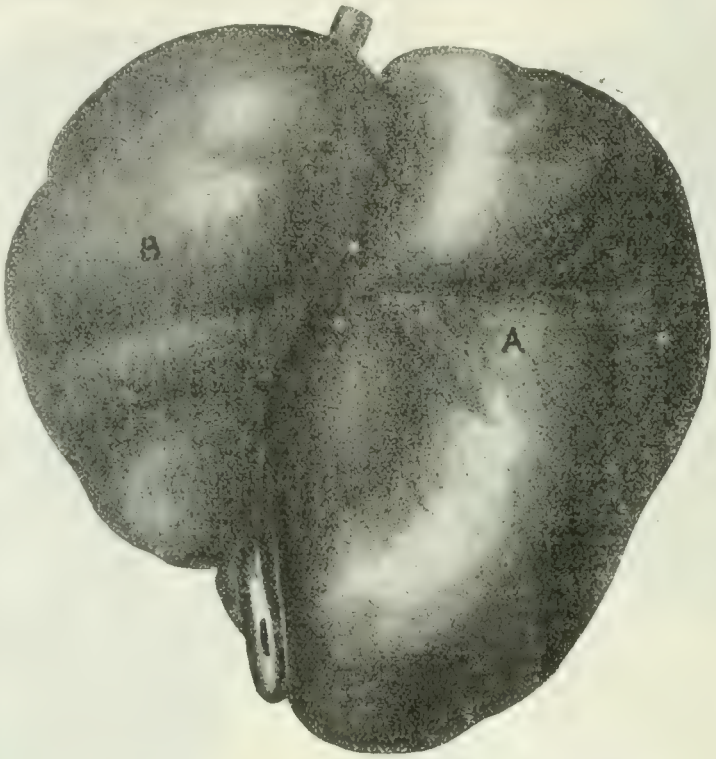


Fig. 4.—Enormous prostate weighing $8\frac{1}{4}$ oz. removed from patient, aged 71. A, right lobe; B, left lobe. The transverse groove indicates the boundary between the intravesical and extravesical portions.

The prostate (Fig. 4), which weighs $8\frac{1}{4}$ oz., is a very large one, the second largest I have removed. The right lobe (A) is enormously enlarged, the left lobe (B) less so. The case is, indeed, a remarkable one, showing what wonderful results may be accomplished by this operation even when the patient is almost moribund.

Case xliv.

General X., aged 63, had consulted me on and off for seven years for urinary trouble, due first to stricture, and latterly to enlarged prostate. Internal urethrotomy ten years ago; since then steel sounds passed periodically. Decided prostatic symptoms for last three years; frequent attacks of cystitis; catheter employed and bladder washed out; for last four months symptoms very distressing. Cystoscopy on March 24th, 1903, revealed considerable outgrowth of both prostatic lobes in the bladder, which latter was sacculated from the backward pressure due to the stricture and prostatic enlargement.

On April 1st (Dr. Dudley Buxton, anaesthetist) I opened the bladder suprapubically, and removed the prostate, both lobes coming away separately, the urethra being left intact; scarcely any bleeding or shock. Uninterrupted recovery, some urine passing naturally April 5th, and wholly in this way April 21st. The patient went home May 1st, retaining and passing urine naturally, and in better health than for many years.

The prostate weighed $1\frac{1}{4}$ oz., and was rather hard.

Case xlv.

A member of the medical profession, aged 61, with prostatic symptoms for four years. Retention two and a-half years ago, relieved by catheter by Dr. Beaver, Sturminster Newton. Had double vasectomy performed by a well-known provincial surgeon; no relief therefrom. Practically the whole of the urine by catheter for eighteen months; several attacks of cystitis. Prostate decidedly enlarged per rectum, rounded, soft, tense, smooth, and movable. Cystoscopy on March 4th revealed well-marked outgrowths of both prostatic lobes in the bladder, particularly of the left.

On April 6th, 1903, I removed the prostate entire in its capsule, the lobes opening out along their superior commissure, leaving the urethra uninjured. The patient was only twenty-three minutes on the operating table, and only seven minutes elapsed from commencing the suprapubic wound till the prostate was delivered from the bladder. Scarcely any bleeding or shock. Several ounces of urine were passed naturally during the first few days; then all the urine by the suprapubic wound for several days. The latter finally closed May 3rd. During the first ten days the wound was covered by much phosphatic grit, which required removal twice daily, and some grit was also passed per urethram with the urine. The patient left for the country May 5th, and is now in excellent health, able to retain and pass his urine naturally. I understand that he has recently read a paper on his own case at a Branch meeting of the British Medical Association.

The prostate is an excellent specimen of non-symmetrical enlargement, the left lobe being much more bulky than the right. It weighed $1\frac{3}{4}$ oz.

References.

1 British Medical Journal, February 1st, July 26th, and November 8th, 1902; April 18th, 1903.

SOME POINTS IN THE PATHOLOGY AND TREATMENT OF PROSTATIC OBSTRUCTION,

WITH AN ACCOUNT OF THIRTY-THREE OPERATIONS FOR ITS REMOVAL.

By W. BRUCE CLARKE, M.B., F.R.C.S.,

Surgeon to St. Bartholomew's Hospital; late Surgeon to St. Peter's Hospital for Stone. Examiner in Surgery, University of Oxford, etc.

Those who have read the critical remarks of Sir William Thomson on the removal of prostatic adenomata in the British Medical Journal of May 31st, 1902, will, I am sure, agree with me that his views are in the main correct and much to the point, but it appears to me that he has only touched one side of the disease to which we apply the term prostatic obstruction. To my mind, it is of some importance that in clinical descriptions of this condition we should employ the term prostatic obstruction, and avoid the term which is in more general use—namely, "prostatic enlargement;" and for this reason: that in many of the cases in which the patient finds it quite impossible to empty his bladder, there is no prostatic enlargement.

One of the main points to which attention is called in this paper, to which I just referred, is the question of how much of the prostate is removed by those who have performed prostatectomy; in other words, Is prostatectomy really a removal of the whole gland, or is it not? Amongst others, I am referred to as having stated that I have removed the "whole prostate;" and it may perhaps tend to clear up our ideas on this subject if I state briefly how it was that I arrived at the notion that I had removed the whole of the organ. It was because after I had shelled out an enlarged mass from the prostate by the suprapubic route I found that I could get my finger down as far as the triangular ligament, and no trace of prostate could be detected, and further when the patient was restored to health, a digital examination of

the rectum by myself and others failed to discover any indication of prostatic remains.

Such a test may be sufficient for clinical purposes, and, coupled with the patient's condition, may be regarded as ample proof that his enlarged prostate has disappeared, but it does not prove that no remnant of the gland remains behind. This is difficult enough to ascertain after a necropsy has been performed and microscopic sections have been carefully prepared and it cannot be proved without it. Sir William Thomson evidently believes that such a remnant of prostatic tissue was left behind in his case, for he says, "I removed two adenomatous tumours, leaving behind, I believe, a layer of prostatic tissue representing the gland proper, but squeezed out of recognition by the pressure of the pathological growth."

Granting that this is the condition of things that exists when prostatic growths are shelled out, is it certain that all cases of prostatic obstruction are caused by adenomatous tumours in various stages of growth? To this query I would make the emphatic reply, "No," and my reasons for this statement are as follows. There is a certain class of prostatic obstruction, in which the prostate is not greatly enlarged, perhaps not enlarged at all, and if an operation is attempted, the prostate will be found to be hard and fibrous, impossible to enucleate and difficult to remove, but when it is removed, if the term removal can be properly applied to what is but a partial excision, the results are very successful. If the excised portions are submitted to microscopic examination they will be seen to consist of partially atrophied glandular elements and fibrous tissue in varying proportions with but little of the original muscular tissue of the prostate.

These hardened prostates have been spoken of by some authors as if they were merely one stage in the life-history of an adenoma, but to my mind it is difficult to understand how this can be the case. I would rather regard them as depending on an entirely different pathological process. Their appearance indicates that they have been caused by a chronic inflammatory process which has gone on to sclerosis and destruction by strangulation of the prostatic gland elements, and hence the view of the French school, headed by Guyon, that prostatic enlargement is part of a general senile change.

An excellent summary of what is to be said on behalf of this view is put forward by Casper,[1] who attacks Guyon's theory as published by his pupil Launois, that prostatic hypertrophy is always accompanied by arterio-sclerosis, and is, indeed, a result of that disease. According to this theory, not only in the prostate itself, but throughout the whole urinary tract, there is well-marked degeneration of the arterial coats, and as a consequence of this condition a hypertrophic condition of the prostate and bladder walls supervenes. This latter condition is assumed to be due to a neoplastic growth, and not to mere muscular hypertrophy, which is rendered necessary by the mechanical resistance that is offered by the prostatic hypertrophy.

In refutation of this theory Casper gives the results of his examination of 24 cases of prostatic hypertrophy, and states that in only 8 cases out of the 24 did he find arterio-sclerosis of the renal vessels, and in only 5 of these 8 were the prostatic vessels involved as well.

In only 2 cases was there simultaneous disease of the renal, vesical, and prostatic vessels. On the other hand he found 4 cases of arterio-sclerosis of the kidney in which the prostate was not involved at all. Every one of the 24 cases of enlarged prostate were above 50 years of age, a fact which gives additional weight against Guyon's theory, for arterial disease is so common after this period of life that the small number of cases in which it occurred is more readily explicable as a mere coincidence than as an indication of any causal relationship between these two pathological conditions. Casper makes a further and even more significant remark upon the subject when he points out that the results of arterio-sclerosis elsewhere in the body are degeneration and not hypertrophy, and it is extremely improbable that the prostate should prove an exception to this rule. My own observations of a considerable number of the prostates of elderly men fully bears out Casper's views. But more than this, there is a very close analogy between the changes that occur in the prostate as age advances and those which are seen in other organs. If the female breast is examined in early adult life—for example, 21—there is far more fibrous tissue than glandular, but the glandular tissue is well formed and regular in outline. If an ordinary fibro-adenoma of the breast is submitted to microscopic examination the first thing that strikes one is the enormous proportion of glandular tissue as compared with that which exists in a similar area of healthy breast tissue, but it is ill-formed, and a precisely similar condition occurs in a prostatic adenoma. If we examine a case of chronic mammary induration, which is often spoken of as chronic mastitis, it seems to bear some general resemblance to the harder prostatic growths; and the appearances of the parenchymatous and fibrous goitres present an almost analogous series of changes, and when we recall the fact that the prostate is enveloped by a firm capsule which is reinforced on one side by the firmly-resisting triangular ligament, it is not surprising that its natural appearance should be altered by its adenomatous overgrowth and make the changes which it has undergone difficult to follow.

No doubt prostatic adenomata may and do often occur in the same individual who is the subject of prostatic sclerosis, but the two processes are essentially different and depend on different causes; the one is essentially a tumour formation, the other possibly the result of inflammation or at least of some form of irritation.

If further evidence be needed to prove the fact that prostatic obstruction does not depend on one form of growth, we can turn to the writings of many authors. One will be sufficient for our present purpose. Albarran and Hallé[2] describe the enlarged prostate as follows: In it can be seen soft glandular hypertrophy, hard glandular hypertrophy, hard fibrous hypertrophy, circumscribed neoplasms, fibromata, myomata, adeno-fibro-myomata. "We are entirely ignorant of the true nature of these lesions from a pathological point of view, and we find only hypotheses badly supported by facts."

Before passing on to the consideration of the treatment of these conditions, each of which should, I contend, be treated by appropriate means, and not necessarily by the same procedure, there is another change in the prostate which is not infrequently met with in advanced life, and which may be briefly alluded to, namely, the presence of a considerable number of enlarged veins in connexion with this organ.

The prostatic plexus of veins is described in works on anatomy as surrounding the prostate, and so undoubtedly it does, but the surgeon is familiar with the prostate which bleeds only too readily when an instrument is passed into the bladder, or when an attempt is made to attack it by operation on its bladder aspect, and in no inconsiderable number of such cases the veins of the trigone and those which surround the vesical orifice of the urethra are actually varicose, and may cause death from haemorrhage into the bladder.

There is, I am fully aware, nothing which is specially novel in this description which I have just given of the prostate in advanced life, but what I am anxious to insist upon is the fact that there are at least three conditions of prostatic obstruction that are quite independent one of the other, and though often associated together they really depend on separate pathological conditions. Because they are often associated together in the same individual, they have been regarded as merely incidents in the life-history of an enlarged prostate, instead of separate diseases of the prostate, which occur in advanced life.

Superadded to these three conditions when cystitis supervenes upon prostatic obstruction there is a fourth condition, namely, inflammation and congestion of the mucous membrane surrounding the urethral orifice. All these features must be carefully taken into account if our operative treatment is to be placed on a rational basis, and it is for that reason that I have divided the cases which I am placing before you this evening into separate series (See Tables p. 8).

In the series of cases which is here presented, I have included all the cases of prostatic obstruction in which I have removed any portion of growth from the prostate for the relief of that condition, and they are divided into six series: (1) Prostatectomy—McGill's operation; (2) the removal of pedunculated middle lobes; (3) prostatectomy in two stages; (4) shelling out of adenometa; (5) partial removals of fibrous prostate; (6) operations on vascular prostates. I will briefly allude to certain important features of each of these groups:

1. I have included together my earlier operations on the prostate which I began after I had seen McGill's cases, and heard his paper at Leeds in 1889 under the title of McGill's operation. These operations—seven in number—differ from my subsequent ones inasmuch as an attempt was made to remove what was deemed to be the obstructing portion of the prostate, whether it was hard and fibrous or adenomatous in character, and with more or less success; and the results were, as will be seen by the accompanying tables, by no

I.—*McGill's Operation.*

No.	Name and Age.	Where Performed.	Date.	Immediate Result.	Ultimate Result.
1	J. B., 69	West London Hospital	Oct., 1889	Healed in just over month; no residual urine	Well six months later.
2	G. P., 65	.. ..	..	Healed in six weeks; no residual urine	Well eight months later.
3	J. J., 62	St. Bartholomew's Hospital	May, 1893	Stone crushed; symptoms continued; bladder opened; piece of prostate removed	Four months later no residual urine.
4	P. P., 66	.. ..	June, 1893	Bladder irritable; stones removed and piece of prostate improved	A year later fairly well, but urine sometimes foul.
5	J. M., 69	.. ..	Sept., 1893	Died; pyonephrosis three weeks after operation	—
6	J. S., 69	.. ..	June, 1895	Stone removed at same time; died; pyonephrosis	—
7	E. R., 72	.. ..	Jan., 1896	A large piece removed; less irritation; some residual urine	Lost sight of.

II.—*Removal of Pedunculated Middle Lobe.*

No.	Name and Age.	Where Performed.	Date.	Immediate Result.	Ultimate Result.
8	A. S., 57	St. Bartholomew's Hospital	Nov., 1892	Stone in bladder and middle lobe removed subcutaneously	No residual urine five months later.
9	R. E., 61	.. ..	May, 1896	Prostatic obstruction; removal middle lobe; recovery	No residual urine two months after discharge.
10	J. M., 65	[illegible]	May, 1899	Old stricture; foul urine; septicæmia; death	—

III.—*Prostatectomy in Two Stages.*

[illegible] five, all recovered from operation (*vide* BRITISH MEDICAL JOURNAL, 1900, vol. ii, p. 1182).

IV.—*Shelling Out Adenomata.*

No.	Name and Age.	Where Performed.	Date.	Immediate Result.	Ultimate Result.
18	H. N., 67	St. Bartholomew's Hospital	Aug., 1894	Sessile middle lobe containing adenoma; bladder cauterized	A month later no residual urine; a little blood in water sometimes.
19	G. E., 62	.. ..	Jan., 1900	Residual urine about 12 oz.; adenomata shelled out	Long convalescence; two months after leaving hospital no residual urine.
20	J. G., 73	.. ..	May, 1900	Residual urine 8 oz.; some cystitis; fibromyo-adenoma	Five months later no residual urine.
21	E. B., 61	From New Zealand; Mr. Willett gave anæsthetic	April, 1901	Cystitis and great frequency of micturition; large adenoma	Wrote a year later saying he felt quite well.
22	J. C., 57	From Dr. Ilott, Bromley	Aug., 1901	Three years' trouble; frequency of micturition; large adenoma removed	Seen end of 1902; well except for occasional attack of cystitis; holds water when sitting or lying, but it occasionally dribbles away when he walks about.

V.—*Partial Removal of Fibrous Prostate.*

No.	Name and Age.	Where Performed.	Date.	Immediate Result.	Ultimate Result.
23	H. O., 60	From Dr. Edwards, late of Bedford	Nov., 1901	Five years' catheterism; residual urine 8 oz.	Well; no residual; six weeks after wound closed.
24	D. T., 55	From Dr. Blackwell, Tunbridge Wells	Mar., 1902	Slight trouble four years; considerable frequency and catheter one year	Made an excellent recovery in less than a month; seen well several times since.
25	E. L., 57	From Surgeon-Major Dilke, who was present	April, 1902	Two years' catheter; no cystitis; 6 oz. residual	Well in five weeks; seen well in December, 1902
[illegible]	[illegible]	St. Bartholomew's Hospital	Nov., 1901	One year and a half's frequency; occasional catheter; residual 7 oz.	Well in February, 1902; no residual
[illegible]	[illegible]	.. ..	May, 1903	Under treatment	

VI.—*Vascular Prostate and Trigone.*

[illegible]	[illegible]	[illegible]	Date.	Immediate Result.	Ultimate Result.
28	W. D., 75	St. Bartholomew's Hospital	Mar., 1890	Cystitis, prostate slightly enlarged; large veins; cautery	Was seen well a few months later.
29	J. P., 58	.. ..	Aug., 1891	Bottini cautery	Seen in 1899; said he had no urinary trouble and was quite well.
[illegible]	[illegible]	[illegible]	Nov., 1891	Severe bleeding; veins large near urethral orifice; cautery	Made a good recovery and was well a few months later.
31	S. C., 50	.. ..	Oct., 1893	Very gouty; hæmaturia; mucous membrane; base of bladder cauterized	Improved; seen in 1900; says he is fairly well; no catheter.
32	M. H., 50	.. ..	April, 1899	Cystitis; large veins near urethral orifice, cauterized	Left hospital improved; said to have died a few weeks later; cause?
[illegible]	[illegible]	Sydney Beauchamp	June, 1901	Catheter two years; vesical irritation; large veins and loose mucous membrane cauterized	Six months later well and comfortable; no residual.

means uniformly successful. Three of these cases were quite successful, and enabled the patients to empty their bladders completely without recourse to catheter. Two were moderately successful, that is to say, the condition was improved, but some residual urine was almost always present, and a catheter had to be employed from time to time, and two cases died from pyonephrosis and suppression. McGill, in his original paper, which was read at the Leeds meeting of the British Medical Association in 1889, began by stating that in his opinion the obstruction was caused by the intravesical portion of the prostate, and in reference to this question uses the following words: "We have seen that the cause of the mischief is the intravesical prostatic outgrowth, and this outgrowth must consequently be removed."

When other surgeons began to test McGill's procedure, it soon became evident that his conception of the offending part of the prostate was too limited, and he himself, as his experience increased, was inclined to more complete removal than he at first advocated. All my early operations were undertaken under the notion that there was but one form of prostatic enlargement, which, though it might vary in dimensions, did not do so in its structure, and it is only since I have made a careful examination of a large number of prostates, and especially turned my attention to their microscopic appearances, hardness, vascularity, etc., that I have come to think otherwise, and have by degrees been brought to feel that prostatic obstruction is determined sometimes by one pathological condition and sometimes by another, and that these varieties demand separate treatment. It is only by the careful consideration of these conditions that we can guarantee the success of any operation that is undertaken for the relief of prostatic obstruction.

II. In one sense the removal of pedunculated middle lobes may be included in those cases I have just spoken of, but they form such a distinct set of cases by themselves that I have thought it best to consider them separately. Their removal has been practised and recorded by surgeons from time to time, and is, I believe, an excellent method of treating what is undoubtedly a rare condition. In two of the cases here recorded (one of which by the way was associated with calculus) the result was excellent and the natural power of micturition was regained. In the third case the patient had suffered from a stricture for twenty years and had generally neglected it. His urine was exceedingly foul, alkaline, specific gravity 1015, and as the necropsy proved his kidneys were diseased. The middle lobe was removed, and all went well for some days, but septicaemia supervened, and deposits of pus were found after death in various parts of his body. It is also interesting to note that two fibromyomata about the size of peas were found bulging into his urethra and obstructing it, so that in all probability had he recovered there would still have been a further source of obstruction to remove later. I now most carefully examine the prostatic urethra in all cases as well as the rest of the prostate in order to be quite certain that everything which is likely to cause an obstruction is removed.

III. After castration and vasectomy had been proved to be no universal panacea for prostatic disease, one's attention was again turned to the prostate as the source of obstruction with a view to seeing if some more certain method or methods could not be devised both for the removal of the source of obstruction and the avoidance of the evil effects of sepsis, and my later series of operations was undertaken. In the British Medical Journal, 1900, vol. ii, p. 1182, I published an account of seven operations, all of which were successful, undertaken for the relief of septic prostatic cases under the title of "Prostatectomy in Two Stages," and since that time have performed another operation of the same kind also with success, as will be seen by the table. I need not allude further to these cases except to state that I never suggested or wished to suggest that this operation was generally applicable to cases of prostatic trouble, but have only employed it order to evade the effects of sepsis. To judge from the letters I have received on this subject, there seems to be an impression that I have proposed this plan for dealing with all cases of prostatic obstruction.

IV. My remaining 16 cases are divided into three heads (see Tables IV, V, VI). They all recovered from the operation. The method of shelling out adenomata (Table IV) which I have adopted is the usual one; the mucous membrane and capsule of the adenoma is divided either by scissors or knife, and the growth itself enucleated with the index finger of the right hand, whilst the prostate and neighbouring parts are steadied by the left hand in the perineum. Most of these tumours are thus easily removed, sometimes entire and sometimes piecemeal. The extent to which the prostatic urethra is injured will depend on the exact situation of the adenoma. In Case 22 the growths were very difficult to enucleate; and fearing that there might be some difficulty in getting the wound to drain properly, I made an incision at the termination of the operation in the perineum. It was possibly to this cause that his subsequent occasional urinary incontinence is due.

V. The hard fibrous prostate calls for a different method of treatment. The very fact of its hardness renders it exceedingly difficult to enucleate. Its boundaries are difficult to define, and it is not so easy to reach as is the large adenoma which bulges into and encroaches on the trigone. It is in this variety that the so-called prostatic collar is usually found. The plan which I have adopted in all these five cases is the same, and it has proved uniformly successful. It was suggested to me by the difficulties which I encountered in Case 23. After having opened the bladder and divided the mucous membrane so as to get at the prostate, I worked away at the process of enucleation for nearly half an hour, until my fingers were getting quite numb, and yet I had separated only about one half of it. At this juncture the patient became very faint, and much to my regret at the time I was forced to abandon any further proceedure that day. The patient was a good deal collapsed after the operation, and for a week or ten days his temperature rose several degrees. At the end of that time several small pieces of prostatic sloughs came away, and he made a good recovery and was able to empty his bladder perfectly. I have seen him once since and he remains well. In all the subsequent cases of this nature I have contented myself with removing only one half of the prostate, and with complete success. The last case is at present under my care. This operation was performed a week since and I feel no anxiety about him.

VI. The last six cases came into a different category. The obstruction in these cases was due not so much to overgrowth as to vascular change. In the first case when I opened the bladder, the mucous membrane of the trigone, which is usually firmly adherent to it, had prolapsed just like a prolapsed pile into the urethral orifice, and was blocking it. He had suffered a good deal from haemorrhage before the operation, and it was very questionable whether he might not be the subject of a malignant tumour, but the exploration demonstrated the condition of affairs that I have just related. The cautery was applied freely to the prolapsed mass and a catheter tied into the urethra for several days so as to keep the mass up, and a good recovery resulted.

The next case was one of those that I treated by the Bottini method nearly twelve years ago, and I mention it here because I am confident it belongs to this class of case. The result was a remarkably successful one. I have seen him and examined him on several occasions since, and never found any residual urine. As the actual floor of the bladder and prostate were never inspected by the suprapubic route, it is of course open to doubt whether my inference as to the condition from which he suffered is a correct one. My impression is that some of the successful cases which have been recorded by Bottini and others who have employed his method are due to the fact that it is this class of case which has been successfully treated. Personally I have now quite abandoned this method owing to the uncertainty of the results.

Case 31 was originally under the late Sir W. Savory, and was a very gouty individual. How far his subsequent vesical irritability is due to his gout I am unable to say; he has at any rate had no bleeding to speak of since the operation.

Case 32 is stated to have died a few weeks after leaving the hospital; he was certainly improved when I last saw him, and I have not been able to find out the cause of his death.

I have not entered into the question of the diagnosis of these various conditions of the prostate, though I am sure it is often possible to come to a conclusion beforehand which variety one has to treat. Practically, when the patient's condition is such as to warrant operative interference, it matters not until the suprapubic opening is made which variety may be present. It is then easy to differentiate the varieties by the sense of touch and sight.

There are two main propositions to which I am anxious to direct attention. The first of these is to the pathological question of the varieties of prostatic obstruction; and the second to the indications to be laid down for operative interference. If we can reduce the mortality, as I believe we can, there is no reason why the operation should not become more general. Of the 33 cases which I have here

related I have lost but 3 from the operation, and these were all amongst my earlier operations. This gives a mortality of just over 9 per cent. I feel sure that, with growing experience, we shall be able to reduce that mortality still further. If so, there is no reason what that condition known as catheter life should not in the main disappear. To some, it is true, it proves a matter of but slight inconvenience, but there are few who would not gladly resume their more youthful habits of micturition, even at the risk of an operation, if they realized to the full the dangers they are incurring from sepsis, quite apart from the weakness and lack of energy which is brought on by frequently rising at night to empty their bladders. If the best results are to be obtained, the operation must be performed before the bladder becomes septic.

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[1] *Archiv f. Pathologie*, CXXVI, 139. [2] *Annales des Maladies des Organes Genito-Urinaires*, 1898, vol. xvi, p. 797. Hypertrophies et Neoplasies Epitheliales de la Prostate.

THE LIFE-SPAN OF FILARIA MEDINENSIS.

BY SIR PATRICK MANSON, M.D., K.C.M.G., F.R.S.,
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OPPORTUNITIES for ascertaining with approximate accuracy the duration of the life-span of the guinea-worm are rare. The annual recurrence of a guinea-worm season in some of the endemic districts affected by that parasite suggests that at least one year, less the three to six weeks necessary for the preparatory metamorphosis in cyclops, must elapse between the date of infection of the human host and the appearance of the mature, embryo-emitting worm at the surface of the body; and, further, that the season of infection is correlated to an annual recurrence of certain hydraulic and thermic conditions favourable to cyclops and to the evolution of the parasite in that crustacean. But it is hard to prove this incontrovertibly from observation in the endemic regions, seeing that it is generally impossible in these localities to exclude the possibility of the infection having taken place at some date prior to or subsequent to the commencement of the postulated year.

As the following cases avoid this source of fallacy they are worth recording.

CASE I.—On May 9th, 1903, I saw, with Dr. Jollye, of Alresford, a gentleman who had just returned from India. He was the subject of multiple guinea-worm infection. His story was that he had been shooting in the Deccan from February to March, that a guinea-worm had presented in the latter month in his left leg and had caused so much suffering from abscess and sloughing that he had been obliged to stop shooting and had come home. He arrived in England a few days before I saw him. Meanwhile two more guinea-worms had made their appearance, one in each thigh. At the date of my visit both worms were alive and readily emitted their young on the skin in their neighbourhood being douched with cold water. This gentleman believed that he had acquired the parasites in India, but on my pointing out to him the improbability that animals which might be 3 ft. in length could attain that size in the course of two or three months he informed me that he had been travelling in Uganda and on the Upper Nile in the spring of the previous year.

CASE II.—Four days after I saw this patient Dr. J. A. Mansell Moullin brought to me a gentleman from whose right axilla a guinea-worm was protruding. The parasite had been partly extracted by rolling out; the foot or so of worm still in the tissues was easily withdrawn. It contained, as shown by microscopic examination, living embryos. I asked the patient where he had been travelling the previous year. He replied that he had been in Uganda and on the Upper Nile in the spring of 1902, and had not been in the tropics since. "Strange," I said, "only four days ago I saw a patient with guinea-worm who had also been travelling at that time in Uganda and on the Upper Nile." "Was his name ———?" "Yes," I replied. "Why," said the patient, "he was my companion from Entebbe to Khartoum."

Manifestly these gentlemen had become infected in the same place and about the same time—that is, approximately, a year before their worms presented at the surface of their bodies.

Subsequently one of the patients was good enough to supply me from his diary with the following particulars about dates and route:

We were in East Africa in 1902, mostly in the neighbourhood of Lake Navaisha, from February 10th to March 10th, and on the road between Entebbe and Gondokorro (where the water was very bad in many places), from March 17th till May 25th, and on a Nile boat between Gondokorro and Khartoum from May 25th till June 10th.

THE Organizing Committee of the Universal Exhibition to be held at St. Louis has announced that it will refuse admission to all articles actually or potentially hurtful or dangerous. In this class are included patent medicines the formula of which is kept secret.

The FitzPatrick Lectures
ON THE
HISTORY OF MEDICINE.

Delivered in the Royal College of Physicians.

BY JOSEPH FRANK PAYNE, M.D.,
Fellow and Harveian Librarian.

LECTURE II.

[ABSTRACT.]

BESIDES their native herbal medicines and the more scientific therapeutics and pathology which they had borrowed from the Greeks, the Anglo-Saxons made a large use of charms and what are called magical rites in the treatment of disease. It would be a mistake to suppose, as is sometimes thought, that this was their only or chief method of treatment, or that it was in any way peculiar to the Anglo-Saxons. A great deal of it was taken from the later Greek and Latin medical writers, who show a credulity and superstition quite equal to that of our ancestors.

Again, the magical and superstitious medicine lasted much longer than the Anglo-Saxon period. It went on all through the Middle Ages up till recent times, and is not extinct even at the present day. But it is by no means characteristic of our own country. Indeed, the numerous collections of "folk lore," or what is called "folk medicine," from the peasantry of Continental countries, especially Germany, show that ancient superstitious beliefs of this kind are more prevalent and more inveterate among them than they are among our own people. What is most remarkable is not only that the same general beliefs have survived, but that the very same forms of words have in many cases been preserved for centuries, and may be even now recited in certain places. There is distinct evidence that formulae like those here considered were used by people calling themselves doctors at the end of the eighteenth century, and probably even later.

It is very difficult to define precisely what is meant by magical medicine or what by charms. But broadly, they imply a belief in some supernatural efficacy belonging to verbal formulae recited or written under special circumstances or with reference to special objects. Originally, it would seem that this belief implied also the belief in spirits, demons, or some supernatural beings, who could be either conciliated or coerced by the use of certain words. The belief in supernatural personages gradually waned; and in the case we are now considering heathen or mystical conjurations were to a large extent replaced by Christian prayers and benedictions, while the occult rites of unknown origin were superseded by the services of the Church. But the belief in the supernatural power of certain words in curing disease remained.

Without pretending to a complete classification, the various magical processes and charms may be brought under the following heads:

I. Prayers or invocations addressed to medicinal herbs, or to supernatural beings supposed to have power over them.

II. Special verbal formulae or observances employed in collecting the medicinal herbs or other natural remedies.

III. Prayers and mystical words repeated over the patient or written and applied to some part of his body, with or without ordinary remedies. Such words are very often in a foreign tongue unknown to those who use them, such as Latin among the barbarous or uneducated, Greek or Hebrew among the Latins, and so on; sometimes in a quite unknown language, which have been called Ephesian charms. But they may also be in the vernacular.

IV. Direct conjurations or exorcisms addressed to diseases as if they were evil spirits.

V. Narrative charms—that is, trivial stories relating to sacred or legendary persons who suffered or did something analogous to what the patient is suffering from.

VI. Material magic—that is, the attribution of magical power to certain objects, such as plants or parts of animals, stones, or engraved gems, called amulets, these objects being not used medicinally, but applied in some way to the patient's body.

VII. Transference of disease by a magical formula or ceremony to some animal or material object, or in some way to the outside world.

Examples of all these can be found in older medical literature,

as well as in the Anglo-Saxon books, and also throughout succeeding centuries.

The actual origin of these beliefs and practices is extremely obscure, and cannot here be considered. Doubtless there was an element of traditional popular belief in each particular country; and also as regards European medicine, an introduction of Oriental superstitions. But they formed no part of the regular classical medicine of the Greeks and Romans till the period of its decline. Hippocrates, Galen, Aretæus, Celsus, are entirely free from such superstitions. The first Greek medical writer of any repute who introduced the incantations into the practice of medicine was Alexander Trallianus, who has already been referred to as having been a great authority with the Anglo-Saxon leeches. Alexander has been blamed, and justly, for thus lowering the character of Greek medicine. He was, however, followed in this by later Greek physicians and by those late Latin writers to whom the Anglo-Saxons were much indebted. The Latin work of Marcellus Empiricus, older than Alexander, which appears to be partly founded on Roman popular medicine or folk lore, was the great repertory of superstitious rites and formulae.

On examining the Anglo-Saxon charms a considerable number are found to be directly taken from or founded on passages in the late Latin writers; a few are suggestive of passages in the Greek physicians.

From all these sources it is easy to find examples of the various kinds of magical medicine above spoken of:

1. The invocation of herbs is found in Alexander Trallianus. For instance, he recommends as a remedy for gout that the sacred herb hyoscyamus or henbane should be dug up with certain precautions and addressed as follows:

> Sacred Herb! I summon thee to the house (of my patient) to stop the rheum of his feet, etc.
> I conjure thee by the great name Jaoth Sabaoth.

The Anglo-Saxons did not use prayers addressed to the herbs themselves; but benedictions and prayers to God or the saints were often substituted. But there are instances of certain formulae of conjuration. For instance, the herb mugwort (artemisia) had the reputation of preventing a man who carried it with him from getting tired on a journey. But it was to be gathered before sunrise with these words, "*Tollam te, Artemisia, ne lassus sim in via.*"

2. Special words and mysterious rites were often made use of in gathering medicinal herbs to give them special virtue. The formulae used by the Greeks and Romans being generally heathenish, the Anglo-Saxons often substituted Christian prayers. For instance, for gathering celandine the directions are: "Delve round the root and take it up with thy two hands turned upwards, and sing over it nine paternosters, and in the ninth, at the words 'Deliver us from evil,' snap it up, etc."

There are also some very remarkable Anglo-Saxon "lays," that is, poems celebrating the virtues of herbs. In one of them Wodan is referred to, showing that it must have originated in heathen times.

In many of the directions for gathering herbs, the essential thing was to name the sick man and his father. This was a popular belief among the Romans, as quoted by Pliny, and is found in Marcellus Empiricus. For the old ceremonies the Anglo-Saxons often substituted prayers and litanies. Thus, before gathering certain herbs, litanies of the saints and the paternoster were to be sung in church. Then the clergy or choir were to go three times round the herbs intended to be gathered singing the same. The herbs were to be brought into the church with the same song, and twelve masses sung over them in honour of the twelve apostles; then they could be used.

3. The most important part of magical medicine consisted in mystical formulae, conjurations and prayers, either pronounced over the patient, or else written out and in some way applied to his body. Originally, perhaps, most of them were intended to be sung, as shown by such words as *carmen* and *incantamentum*. These were well known among the Greeks, and many instances might be quoted from the poets, from Homer downwards, of wounds being healed by the use of magical words. Alexander Trallianus recommends for the gout that a certain verse of Homer (*Iliad*, ii, 95) should be written on a gold leaf, while the moon was in the sign of Libra, wrapped up and applied presumably to the patient's joints. Why this particular verse was chosen does not appear; it would not seem specially appropriate.

The Anglo-Saxon charms were mostly in Latin, sometimes with corrupted Greek or possibly Hebrew words. One charm is described in the book itself as Scottish, but according to the editor the words belong to no known language. On the other hand, in another case, the apparently unintelligible words turn out to be corrupt Irish. In some instances the words seem to be without doubt mere rhyming or jingling nonsense, as for instance, "Gonomil, orgomil, marbumil, etc," words which were to be sung into the right ear of a man, but the left ear of a woman, in case he or she had swallowed a worm in drinking water. The use of such charms was often combined with the use of drugs. In one prescription a drink made of twelve herbs, over which seven masses had been sung, was to be drunk out of a church bell with the accompaniment of singing certain psalms; also the mass priest was to sing a formula of benediction over the patient. This was for a "fiend-sick" man—that is a demoniac or lunatic. Sometimes charms were written on the "holy dish" or sacramental paten, and washed off with holy water, which was to be drunk.

4. Exorcisms addressed to diseases as evil spirits are not not common. An example is a charm for a "strange swelling" (what was meant by this is hard to say). The sufferer was to sing a paternoster, draw a line round the sore, and say *Fuge diabolus! Christus te sequitur*. There is an elaborate charm against agues and fevers, in which they are adjured in the name of Christ to depart. A form of words against "poccas," that is, small-pox, is remarkable because this word is taken as the equivalent of variola, since it has been doubted whether the old English writers used the word "pox" in this sense. Many charms of this kind are found in late Latin writers, and also in Alexander Trallianus. In some the demon of disease was threatened with the wrath of Solomon.

5. *Narrative Charms.*—This class of charms was used by the late Romans: for instance, by Marcellus Empiricus, and probably in still earlier times. In the Anglo-Saxon books they are always Scriptural stories or else Christian legends. One of the most extraordinary, or most absurd, is against toothache. It relates how, when Christ was sitting with his disciples, Peter looked sad, and when our Lord inquired the cause he complained of toothache; whereupon Christ uttered a long adjuration addressed to migraine or any other pains not to harm the servant of God. This was, of course, to be repeated. The story of Longinus, the traditional name of the centurion who pierced the side of Christ upon the cross, was told in order to take away a stitch in the side. To hasten childbirth the story of the raising of Lazarus with the solemn words "Lazarus come forth!" was thought efficacious. All these three narratives and others like them were used not only by the Anglo-Saxons, but frequently in the Middle Ages, as shown in the various medical MSS; and some are found in Gilbertus Anglicus.

6. *Amulets Derived from Natural Objects.*—As a preservative from fits a fox was to be caught, its canine tooth knocked out while it was alive, and the animal then set free. The tooth was to be wrapped in a fawn skin and carried on the body. The eyes of a crab removed from the living animal were good for eye affections, if hung round the neck. In all cases the animal was to be kept alive. For headache certain herbs were to be bound on the head with a red fillet. There are many similar prescriptions in Alexander Trallianus and Marcellus Empiricus.

7. *Transference of Disease.*—It is a common belief in many parts of the world that disease is something which can be got out of the sick man, and transferred to something outside. The Anglo-Saxons had mysterious rites, sometimes combined with forms of words, for this purpose. Often the disease was transferred to running water. Thus, for a certain skin disease it is ordered to score or scarify the neck after the setting of the sun; to pour the blood silently into running water, to spit three times, and say, "Have thou this evil and depart away with it." Or, again, a hazel or elder stick was to be taken, a name written upon it and stained with blood. Then it was to be thrown over the shoulder or between the thighs into running water. In another case an oaken stick was to be stained with blood, then four strokes made with it towards the four quarters of heaven. Then it was to be thrown away and a certain charm recited. This was a charm against "flying venom," or, in modern phrase, airborne contagion, meaning, apparently, epidemic diseases.

Later Books of Anglo-Saxon Medicine.

One book contained in the three volumes of *Leechdoms* differs a good deal from the rest. It is that which bears a Greek title, περι Διδάξεων, interpreted as meaning "Of Schools of Medicine." This title, however, only refers to the first

chapter of the work. The rest consists of a collection of medical receipts, differing from those in the other books of the Anglo-Saxon library. It is entirely free from charms and superstitions, and the prescriptions are for the most part simpler than those of the Anglo-Saxon leeches. This treatise has been shown by a German philologist, Dr. Max Löweneck, to be based upon a Latin work belonging to the first period of the school of Salerno—namely the Practica of Petroncellus or Petronius, a work written probably about A.D. 1035, and printed in the *Collectio Salernitana*. One fragment has been traced to the writings of another Salernitan teacher, Gariopontus, of the same period. But these identifications do not account for the whole of the Anglo-Saxon text, and it does not seem that this was translated directly from the Latin. The actual origin of the work is therefore still somewhat obscure.

The date of this manuscript is the first half of the twelfth century, probably before 1150. It shows that the Anglo-Saxons were beginning to profit by the teaching of the school of Salerno before that school was influenced by the Arabian medicine. It also shows that the Anglo-Saxon medicine, like the other early English written literature went on for some time after the Norman Conquest.

To this same period belongs another MS., which contains a version of the Herbarium of Apuleius later than that previously spoken of. This is not included in Mr. Cockayne's *Leechdoms*, but has been published in Germany, as edited by Herr Berberich. This MS. is referred to the middle of the twelfth century, about 1150. It therefore touches on the extreme limit of Anglo-Saxon written literature—and, indeed, is described by Herr Berberich as "early middle English"—but, like the last-mentioned work, shows the long continuance of Anglo-Saxon medicine after the Conquest.

This work closes the early English medical library, and, as the celebrated Anglo-Saxon Chronicle came to an end in 1155, the general literature and medical literature of our early ancestors reached their limit about the same time.

The Croonian Lectures

ON

MUSCULAR MOVEMENTS AND THEIR REPRESENTATION IN THE CENTRAL NERVOUS SYSTEM.

Delivered before the Royal College of Physicians of London.

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LECTURE IV.

[ABSTRACT.]

ASSOCIATION OF MUSCLES IN ACTION.

THE fixation action of muscles was described by John Hunter in his Croonian Lectures on Muscular Motion, delivered before the Royal Society in 1777,[1] where he stated that

there is in every animal, therefore, a fixed point from which the parts of the body take their principal motions. In the human body this fixed point seems to be in the joints of the thigh bones, which point being in the middle of the body must be common to the extremities.....Besides this there are many fixed points, so that the body is to be looked upon as a chain of joints whose general centre of motion is in the joints of the thighs.

This centre of motion corresponds to the point of centre of gravity described by subsequent observers. The position of the fixed point depends on the attitude of the person and the place where his body comes in contact with the ground and where it gets a firm foundation. We have to distinguish in any movement between the muscles which take part directly in that movement and the muscles which are used to fix the joints which lie between the joint which is actively engaged and the fixed point or base on which the structure works. Again these fixing muscles have to be separated into those which always take part in the strong movements irrespective of the posture of the person, which we may call essential, and those which depend on the position of the person and where his fixed point or base is, which we may call postural. I should therefore describe the muscles taking part in any one movement as:

(A) Prime movers.
(B) Synergic muscles.
(C) Fixation muscles: (1) Indispensable or essential, (2) postural.
(D) Antagonist muscles in occasional movements.

The principal or prime movers are the muscles which directly produce the action required, and are called by some authors the "agonists": the synergics are the muscles which, as I have previously stated, are brought into the combination when a prime mover has, by passing over two or more joints, two or more actions of which only one is required: the synergics neutralize these undesired actions. The fixation muscles, as I have already described them, are: (1) Those which are essential to the movement in all postures, and which are not influenced by the position of the person; and (2) those which only act to prevent the equilibrium of the trunk being disturbed by the movement, and which I have therefore called "postural." The antagonists produce the movement which is diametrically opposed to that of the prime movers.

[Dr. Beevor described and criticized the classifications of Winslow and Duchenne, and proceeded as follows:]

John Hunter[2] stated in his Croonian lectures that there is no one known muscle in the body that we can throw into action separately and independently of the collateral effects of others. Duchenne[3] has expressed the opinion that partial muscular contractions do not exist in Nature, that they are only produced artificially by means of faradization, and Dr. Hughlings Jackson has laid down the dictum that "nervous centres know nothing of muscles, they only know of movements." This in other words means that the ordinary individual has no power to make any one muscle contract by itself, he can on requiring to attain a certain object order a certain movement, but the mechanism by which that movement is produced and the muscles which are required to perform that movement, and the order in which they act is not known to the brain. Having illustrated this point by reference to the movements of extension of the wrist by means of the extensors of the fingers against resistance when the muscles came into action in a definite order, which apparently cannot be altered, and to the intimate association between the principal movers and the synergic muscles in the extension of the thumb, Dr. Beevor expressed the opinion that an individual has no power voluntarily to leave a muscle out of a combination to which it belongs.

Another question, he said, is, Is it possible to voluntarily add to the list of muscles which are told for a certain movement, or to supplement when one is paralysed? It has been said that the anterior portion of the deltoid can replace part of the functions of the pectoralis major, but it must be remembered that the only function to which this could refer would be the action of advancing or adducting the humerus, but the deltoid is naturally associated with the clavicular part of the pectoralis major in this movement, and if the pectoralis were paralysed by a peripheral lesion, the deltoid would continue to act exactly as before, the movement being imperfectly carried out; one muscle would not replace the other. On the other hand, when the muscles proper to the movement are paralysed, the difficulty may be overcome by a series of other movements. I remember seeing a case with paralysis of the flexors of the elbow in a man, who managed to produce flexion of the elbow by advancing the humerus, rotating it out, and by this means letting the forearm be flexed by gravity, but here the muscles were not supplemented by other muscles, but an entirely different group was thrown into action by which the desired change of position was obtained. I think, therefore, that although by exercise and training it may be possible to alter the arrangement of the muscles taking part in any movement, the inability of a patient with lead paralysis to induce the extensores carpi to act out of their proper order is against this possibility. By mechanical means, such as transplantation of tendons, first recommended by Nicaladoni[4] in 1882, it is possible to take a muscle out of one group and put it into another, and I have had the opportunity of seeing the results of some of these cases under the care of Mr. Muirhead Little[5] and Mr. Tubby[6] at the National Orthopaedic Hospital.

From a consideration of the above statements I think that one is justified in saying that for every voluntary movement there is a definite number of muscles, usually two or more, which come into action in a definite order which cannot be altered, and the individual members of which cannot be omitted, and cannot be supplemented except perhaps by long training and exercise or by operative procedure. In every voluntary movement there is a minimal number of muscles

which I would call the ultimate or the minimal components of a movement. Such ultimate components of the movement of extending the metacarpal bone of the thumb are the extensor ossis metacarpi pollicis, extensor carpi ulnaris, and, further on in the movement the flexor carpi ulnaris; and in the movement of extending the first phalanges of the fingers the extensores digitorum and flexores carpi.

Central Nervous Representation.

There are three places in the central nervous system where these ultimate components of a movement may be represented, in the spinal cord corresponding to Dr. Jackson's lowest level, in the cerebral excitable cortex or so-called motor area (Dr. Jackson's middle level) or in the centres postulated to preside over the so-called motor area (Dr. Jackson's highest level). With regard to the last place I have no evidence to offer at present.

Representation in the spinal cord of the different muscles of the limbs has been studied both experimentally and clinically, and the first question that has to be answered is whether the grouping of the cells of the anterior horns of the spinal cord is of a morphological or a physiological type. In other words, whether in the brachial enlargement the cells which supply the muscles forming the ultimate components of any one movement, as that of extending the thumb (such as the extensors of the thumb and the ulnar flexor and extensor of the carpus) are aggregated together so that a lesion in that particular place would cause paralysis of this movement only.

I do not propose, and I have not the time, to describe all the numerous observations which have been made, but experimentally the chief have been done on the roots entering into the brachial and lumbo-sacral plexuses by Müller, Van Deen, Panizza, on frogs; by Peyer, Krause, on the rabbit; by Risien Russell on the dog; and by Ferrier and Yeo, Forgues and Sherrington, on the monkey. Anatomically the question has been worked out by Herringham and Paterson by dissection, and clinically by Erb, Thorburn, and many others. I also myself read a paper before the Royal Medical and Chirurgical Society in 1885, on cases illustrating localization in the spinal cord, where I showed cases of infantile paralysis with affection of the lower half of the pectoralis major, the triceps and the latissimus dorsi only, and other cases on brachial plexus paralysis.

The view that the cells in the anterior horns and also of the cords of the brachial plexus are arranged in a physiological order is supported by a condition already referred to—the paralysis of the pectoralis major (clavicular fibres)—for one class of movements, but not for another. In lesions of the anterior horns and of the brachial plexus, especially of the fifth cervical root, the deltoid is paralysed, and in passively advancing the humerus it will be seen that, along with paralysis of the deltoid, the clavicular fibres of the pectoralis major do not make any attempt to contract when the patient makes an effort to keep the humerus advanced. On the other hand, if the patient be directed to adduct horizontally, the clavicular fibres will contract in combination with the sternal fibres of the pectoralis major. The paralysis of a muscle from a lesion of a particular part of the anterior horns of the cord when it is associated with one set of muscles, and not of the same muscle when it is associated with another set in a different movement, would show that the anterior cornual cells had the power of grouping muscles together for a functional purpose. Against the view that each root of the plexus—and therefore presumably the segment of the cord from which it comes—when stimulated produces a well co-ordinated movement by groups of muscles acting synergically is the statement of Herringham[7] that, although both pronators must act together in one movement, the pronator quadratus is supplied by one root, and the pronator teres by a different root. Moreover, the cells supplying a single muscle in the limbs extend over two or more segments. Also no segmental grouping of any of the cell columns of the spinal cord has been detected,[8] and this condition stands in harmony with the results of the examination of the relation of the reflex movements to spinal segments.

On the whole, although the evidence is against the cells of the anterior cornua being arranged physiologically for a functional purpose, it does not follow that there is no power of co-ordination in the spinal cord. This is proved by the various complicated reflex actions which are performed when the spinal cord is cut off from the cerebral influence, reflex actions which, as in the plantar reflex, are made up of contractions of several joints in the limb. It has been found by Page May[9] and by Sherrington[10] that electrical stimulation of each posterior root produces a definite movement which acts reflexly through the anterior cornual cells. Sherrington also states that the group of cells discharged by spinal reflex action innervate synergic and not antagonistic muscles. May's observations were also made by direct excitation of the spinal cord along its postero-external column.

The movements resulting from excitation of a segment of the spinal cord in the lumbo-sacral region and those from excitation of the corresponding posterior root are similar but are never quite identical. In each case flexion is the predominating effect, but in the former case (spinal cord) the resulting movements are always stronger than in the latter (posterior root) and frequently movements in other parts (tail, perineum, etc.,) are added.

The stimulation of one posterior root causes impulses to pass out along many anterior roots, and while stimulation of the posterior roots always produced flexion, that of the anterior roots produced extension. Sherrington gives a list of the movements obtained by stimulation of all the posterior roots in the monkey. The movements resulting from stimulating a posterior root are synergic and not antagonistic, which, as Sherrington remarks, is against the theory of the action of the antagonists which we have already discussed. Sherrington[11] in his observations on the isolated length of the brachial enlargement on stimulating the skin of the palm of the hand obtained the following reflex movements:

Thumb.—Flexion, adduction.
Shoulder.—Retraction, later protraction.
Wrist.—Extension.
Elbow.—Flexion.
Fingers.—Flexion.

The mechanism by which such highly co-ordinated movements are affected is by the afferent fibres of the posterior root, which either sends branches forwards in the grey matter of the spinal cord to the neighbourhood of the cells of the anterior horns or the cells of the posterior cornua are interposed between the posterior root fibres and the anterior cornual cells. Whether for the purposes of producing such co-ordinated movements as those obtained by stimulating the palmar surface the two-cell system is sufficient, it is difficult to say, but it has been suggested[12] that the two cells are probably connected by the help of a mediate system of cells. The time at my disposal will not permit me to go into this question, but there is evidently in the cord itself a nervous organization which can produce co-ordinated movements reflexly on stimulating the skin or the posterior spinal roots, but whether the co-ordination is the same as that occurring in voluntary movements it is difficult to say. I should mention that Professor Gad was the first to ascribe to the posterior cornual ganglion cells in the frog the function of connecting together the cells for the flexors of the ankle, knee, and hip.[13]

Representation of Movements in the Excitable Area of the Cortex Cerebri.

Time will not permit me to enumerate the various observers from the pioneers, Hitzig and Ferrier, to the present day; nor is it my intention to discuss the much-vexed question whether the so-called motor or, as it is better to call them, the excitable areas of the cortex are motor, sensori-motor, or sensory, but that they depend on sensory impressions for the power of exciting movements is shown by the remarkable observations of Mott and Sherrington,[14] who found that after dividing all the posterior spinal roots of the brachial enlargement of the cord the voluntary movement of grasping by the hand was permanently lost, while movements of the limb could be elicited with apparently normal facility by electrical stimulation of the part of the cortex where the movements of the upper limb are represented.

I wish particularly to refer to the results obtained by Sir Victor Horsley and myself on stimulation of the excitable cortex in the monkey[15] and the orang.[16] In the monkey we examined every two square millimetres of the excitable cortex, and we found in certain squares where the upper limb was represented that the co-ordinated movements of flexion of the fingers and thumb, extension of the wrist, and flexion of the elbow was obtained, and though flexion of the fingers and flexion of the wrist were also obtained in other parts of the cortex, flexion of the thumb and fingers, and extension of the wrist were much more frequently the rule. Another co-ordinated movement which was obtained was that of opening the eyes and simultaneous turning of the head and eyes to the opposite side, a combination described previously by Ferrier.

The movements obtained from stimulating the excitable area of the cortex are always co-ordinated movements and

never those of single muscles unless a movement was performed by a single muscle only. The association of the extensors of the wrist with the flexors of the fingers was sufficiently frequent to warrant the opinion that a synergic association existed between those two sets of muscles.

The results which Sir Victor Horsley and myself obtained from our experiment of stimulating experimentally the cortex in the orang thirteen years ago have been in the main confirmed by the more extensive researches of Sherrington and Grünbaum,[17] who have added to the number of movements which we had found to be represented in the excitable cortex. In the one case which we examined, the representation of movements was found chiefly in the ascending frontal convolution, but we also obtained movements of the index finger, of the thumb, of the orbicularis oris, of elevation of the upper lip, and of pouting of both lips from stimulation of the ascending parietal convolution. Sherrington and Grünbaum, however, failed to get any evidence that any movement was represented in the ascending parietal convolution. In the orang the movements that we obtained were nearly always single movements, such as flexion of the elbow, flexion or extension of the thumb, and they differed from those obtained in the monkey in that the sequence of movements occurring from stimulating one spot, which Dr. Hughlings Jackson has termed the "march," was rarely obtained. The best example of this sequence of movements which we obtained in the orang was the movement of opening the eyes, followed by that of turning the eyes to the opposite side, and ending with the movement of turning the head to that side. Professor Sherrington has been good enough to inform me that they did obtain in their experiments sequence of movements, including the combination of flexion of the fingers and thumb with extension of the wrist, and though they agree with us that the representation of the movements in the excitable cortex of the anthropoid apes is much more differentiated than in that of the monkey, they did obtain evidence of the representation there of such co-ordinated movements as that of grasping.

The co-ordinated representation of muscles for a definite movement which was found to exist in the excitable cortex of the monkey is also found in the internal capsule, according to the investigations by Sir Victor Horsley and myself.[18]

In these experiments the internal capsule was cut across horizontally, and every square millimetre of its fibres was stimulated electrically. In almost every one of the experiments—which were forty-five in number—the movements were obtained of flexion of the thumb and fingers and extension of the wrist, and frequently flexion of the elbow and adduction of the shoulder.

The association between the flexion of the thumb and fingers and the extension of the wrist was most marked and occurred so often that the association must be for a synergic purpose.

The association between the flexors of the fingers and the extensors of the wrist has been well shown by some interesting experiments by Hering,[19] who stimulated electrically the cortex in the monkey about 1 mm. above the angle of the precentral sulcus, where Ferrier, and Horsley and Schäfer had produced the movements of closing the hand into a fist, and where Sir Victor Horsley and myself[20] had found flexion of the fingers and extension of the wrist. Hering first stimulated this part and produced the characteristic closure of the fist. He then cut through the tendons of the extensores carpi radialis longus et brevis, and he then obtained not only flexion of the fingers but also flexion of the wrist, owing to the absence of the synergic action of the extensores carpi radiales. Also when in place of dividing the tendons of the extensors of the wrist he divided those of the flexors of the fingers, the wrist was extended, but the fingers were not flexed, when the same part of the cortex was stimulated. Hering also performed the same experiment and got the same results by stimulation on the horizontally cut surface of the internal capsule, the fibres which we had found to give flexion of the fingers and thumb and extension of the wrist. These experiments are very strong evidence that co-ordination of synergic movements takes place in the excitable area of the cortex.

The Relation between the Spinal Cord and the Excitable Cortex.

We have seen that there is in the grey matter of the spinal cord a mechanism by which on stimulation of the posterior root fibres a series of co-ordinated movements are produced, and that it is also possible in the excitable cortex to produce co-ordinated synergic movements.

The questions before us are—Does the co-ordination of the simple voluntary movements take place in the spinal cord, or in the excitable cerebral cortex only; if in the cord, is there a mechanism there which is put into action by an impulse from the excitable cortex travelling down the pyramidal tract; if there be a mechanism in the cord for receiving cortical impulses, is it identical with that for receiving reflex impulses from the skin, for the production of reflex actions; lastly, if all the co-ordination of simple movements takes place in the excitable cortex, between which and the muscles there is no intermediate co-ordinating station, then is the mechanism in the spinal cord used solely for reflex actions?

In speaking of the relation between the representation of the simple movements in the cord and in the cortex, I would ask:—Can all the reflex movements which may be elicited by stimulation of the posterior roots or of the skin, be reproduced voluntarily? It is well known that certain reflexes, such as coughing, can be performed voluntarily, and can be inhibited and prevented from taking place, while others, like sneezing, cannot be voluntarily performed and cannot be inhibited; but, with regard to the skin reflexes, I do not know that the question has been raised, and it occurred to me to try and reproduce them voluntarily. The plantar reflex can, I think, be reproduced voluntarily, though I am not sure that the order in which the muscles contract can be exactly imitated. The cremasteric cannot be reproduced voluntarily. The abdominal and epigastric reflexes in which the middle line with the umbilicus is drawn to one side reflexly by scratching with a quill pen along the side of the abdomen cannot, I was surprised to find, be reproduced voluntarily.

My time is too short to go into the question whether some of these superficial reflexes are spinal or cerebral[21] in origin, and why they are frequently lost in hemiplegia; but assuming that they are spinal, we have co-ordinated movements produced reflexly by stimulating the skin, and which cannot ordinarily be reproduced by voluntary effort. The fact that an ordinary individual is not able to reproduce voluntarily the particular co-ordination which can be elicited as a cutaneous reflex would mean either that this particular co-ordination is represented in the cord but is not represented also in the excitable cortex, or that, if the movements obtained by exciting the cortex are also represented in the spinal cord, the mechanism by which these movements are co-ordinated is not the same as that by which the cutaneous reflexes are brought about.

At present I do not think that we are in the position to answer the question whether these reflexes are of cerebral or spinal origin; and in view of the inability to reproduce voluntarily all the cutaneous reflexes, the question will have to be worked out, supposing that the movements obtained by stimulating the cortex are also co-ordinated in the spinal cord, whether the mechanism in the cord used for cortical impulses is identical with that used for co-ordinating the movements obtained reflexly by irritating the skin.

The Relation of the Excitable Cortex with the Co-ordination of Simple Movements.

As some authors have raised the question whether single muscles can be put into action by a cortical pyramidal cell, I may say at once that the results obtained by stimulation experiments and also by clinical observation of epileptic attacks and of hemiplegia due to lesions of the cortex or of the internal capsule are all in favour of the view that movements and not single muscles are represented in the arrangement of the cortical cells and of the fibres forming the internal capsule. This is the doctrine taught by Dr. Hughlings Jackson. As I therefore consider that only co-ordinated movements are represented in the excitable cortex, I will give in illustration of this view a case which I have lately seen at the Marylebone Infirmary through the kindness of Mr. Lunn. It was that of a man with recent hemiplegia—and here in passing I would remark that I do not think much can be learnt with regard to co-ordination from old cases of hemiplegia who have recovered one or two movements, but in whom there are probably secondary changes in the spinal cord. In describing this case I would recall what I said in the last lecture that in strong movements of grasping, the prime movers are the flexors of the thumb and fingers, the synergic muscles are the extensors of the carpus, and the fixation muscles are the triceps followed by the biceps.

The patient was suffering from hemiplegia, in whom, contrary to the

usual course, the return of power had commenced in the hand, and he could perform the movement of grasping, but he had no power to extend the wrist or to flex or extend the elbow. On getting this patient to grasp with his full strength, I noted that, in addition to the contraction of the flexors of the thumb and fingers, there was a contraction of the synergic muscles extending the carpus and of the fixation muscle, the triceps, and that the triceps was not felt to contract till a certain strength of grasp was reached. The important point is that the patient had not the slightest power to contract the extensors of the carpus when he was told to perform the movement of extending the wrist, or of the triceps when he was told to extend the elbow. In this case, where the lesion was probably in the internal capsule, the only fibres which were available for impulses emanating from the "arm-centre" of the cortex were those coming from that part where the movements of grasping were co-ordinated, whereas the fibres conducting impulses emanating from the part of the cortex where extension of the wrist and extension of the elbow were represented were unable to pass. In other words, the patient could put into action the extensores carpi and the triceps when they formed part of the movement of grasping, but he could not make either of them contract as prime movers in extension of the wrist or elbow.

The next point is, Is the link between these three sets of muscles in the cord or in the cortex? If it be in the cortex, it would mean that there must be three sets of cells which would be co-ordinated to act together for this purpose; it would also mean that there must be separate cells for the movements of the extensors of the wrist and the elbow for their action as prime movers, and separate cells for all the different combinations. Though the cortex might be large enough to contain all these cells, it would be impossible to find room in the internal capsule, and much less in the pyramidal tract, for all the fibres that would be required. If, on the other hand, these three sets of muscles are joined together under the guidance of cells in the posterior cornu, the combination would be thrown into action by an impulse from one set of cells in the cortex.

The question is best approached by examining what takes place in the movement of lateral deviation of the eyes. If the cortex in the angle of the precentral sulcus of—let us say—the left side be simulated, both eyes move conjugately to the right; and if the corresponding fibres of the left internal capsule be stimulated, the same effect is produced; conversely, if the left cortex or the capsule be paralysed, the eyes deviate to the left. These fibres, passing through the left internal capsule and the crus cerebri, cross to the opposite side to the nucleus of the right sixth nerve, whence fibres pass over to the part of the left third nucleus, or third nerve, which presides over the left internal rectus muscle. In this case the link between the right external rectus and the left internal rectus takes place in the medulla in the sixth nucleus, as suggested by Foville. The proof of this is that, in lesions of the right sixth nucleus, without involving the third nuclei or the pyramidal tract, the same conjugate paralysis of the eyes, with deviation to the left, is produced as from a lesion of the left cortex.

Now, although these two muscles, the external and internal recti, are on opposite sides of the body this conjugate movement of the eyes is as much a unilateral movement[22] as that of closing the fist, for the reason that on stimulation of the left cortex the eyes turn to the right and not to the left. I think, therefore, that we are justified in inferring that the principle which underlies the simple movement of turning the eyes to the right can also be applied to the simple movement of closing the fist, and that the link between the three sets of muscles, the flexors of the fingers and thumb, the extensors of the carpus, and the triceps takes place somewhere below the level of the internal capsule, and by analogy in the spinal cord.

It has been shown by von Monakow[23] and by Schäfer[24] that the ending of the fibres of the pyramidal tract is in the neighbourhood of the posterior horns and not in the anterior horns as was formerly thought to be the case; von Monakow also thinks that there are intermediate cells between the anterior cornual cell and the ending of the pyramidal fibre, and that this cell has the power to bring out associated movements.

It therefore seems probable that the co-ordination or the link between the muscles entering into a simple movement takes place in the cells of the posterior cornua, which are put into action by impulses coming down the pyramidal tract from the excitable cortex where these movements are also represented. Whether the same co-ordinating mechanism in the spinal cord is used alike for reflex actions and for cortical impulses, or whether there is a separate mechanism for each, I do not think, as I said before, that we can say. Now as the most complicated and intricate muscular performances are only an arrangement of simple movements in some particular order, it is probable that in learning some new combination of movements, such as playing the violin, fencing, or golfing, the simple movements represented in the excitable cortex are in response to visual or auditory impressions brought into action in their proper combination and sequence. Later on the combination learnt with difficulty becomes by frequent practice automatic. But as these learnt combinations or even such an elementary combination as walking become automatic, there does not seem to me to be sufficient evidence that their seat of co-ordination is transferred from the brain to the spinal cord, for the reason that if there ensue a lesion of the cortex or of the internal capsule, all these so-called automatic movements are lost.

Time will not permit me to consider the part taken by the cerebellum in the co-ordination of movements.

Representation of Movements on the Same Side as the Cortex Stimulated.

I do not propose to go into the question of the representation in one hemisphere of such bilateral movements as pouting of the lips, mastication, and adduction of the vocal cords. Sir V. Horsley and myself discussed this question in our paper on the internal capsule,[25] and the matter has been exhaustively dealt with by Sir V. Horsley and Professor Gotch in their Croonian Lecture before the Royal Society.[26] The question is rather to find out what movements, if any, are produced on the same side as the cortex stimulated, and the strength of current which is required to evoke these movements. Hitzig,[27] in his first memoir, remarked that if the currents were feeble, their action was localized on the muscles of the opposite side of the body; but, if stronger, the muscles on the same side of the body were put into action. François-Franck,[28] experimenting on cats and dogs, found that weak currents produced movements of the opposite anterior limb, and, if the current be stronger, movements of the anterior limb of the same side are produced but after those of the opposite side. He also found that the movements persisted on the two sides in spite of removal of the opposite cerebral cortex, of section of the white matter of the centrum ovale, of division of the corpus callosum, of median section of the bulb or after section of one half of the cord on the same side as the cortex stimulated. He therefore considered that the movements were not caused by impulses conveyed from one hemisphere to the other, and he came to the conclusion that the association between the two sides could only take place in the spinal cord by the transverse commissures.

According to Unverricht,[29] when the motor cortex of one side—let us say the left—was stimulated in dogs, epilepsy was produced on the right and also on the left side. He also obtained convulsions on both sides when unilateral cortical extirpation or hemisection of the cord was performed, and this was, he considered, a proof that the convulsions on the same side only arise by centrifugal excitation in the spinal cord itself; but after double-sided cortical extirpation it was not possible to produce clonic contractions.

As I believe that no observations of this nature have been made on monkeys, I have made some researches with Sir Victor Horsley, who was good enough to perform the operation of stimulating electrically under ether the motor cortex in monkeys. Four experiments in all were done, and the general results obtained were as follows:

1. On stimulating the cortical "arm centre" by faradising with the bipolar method when there was 16 or 8 cm. distance between the coils, the first movement was in the arm of the opposite side.

2. On increasing the current by diminishing the distance between the coils to about 6 cm., movement was obtained in the arm on the same side as that stimulated.

3. The character of the movement on the same side was usually identical with that evoked on the opposite side, but in one case, where the movement began with extension of the fingers, it was followed on the same side by adduction of the shoulder.

4. When the cortical "leg centre" was stimulated, the movements on the same side appeared rather sooner than in the case of the arm, and in some cases as weak a current as with the coils at 12 cm. apart produced movements in the leg of the same side.

5. Epilepsy was obtained in all the cases in the arm of the opposite side; in 3 cases it was not obtained on the arm of the same side even to the coil at 4 cm., and in 2 out of the 3 cases that it was looked for in the lower limb epilepsy occurred on the same side. The first movement of the epilepsy on the same side was the same as that obtained on the opposite side.

6. On removing the excitable cortex from one hemisphere and stimulating the cortex of the other side, in two of the cases no movements were obtained on the same side as that of the cortex stimulated. In one experiment, where movements of interosseal flexion of the fingers, flexion of wrist and pronation were obtained on the opposite side, the most frequent movement on the same side was slow flexion of the fingers under deep narcosis, but under slighter narcosis the movements were the same as on the opposite side. In another experiment the only movement obtained on the same side was slow flexion of the elbow, whether the stimulation was applied to the "arm centre" or to the "leg centre." Also in this animal, when the internal capsule was exposed and stimulated, very slow flexion of the elbow was obtained on the same side when extension of the wrist and flexion of the fingers were obtained on the side opposite to the stimulated capsule; also very slight extension of the hip and knee were obtained on the same side when marked extension of the toes and flexion of the thigh and knee were obtained on the opposite side.

7. No epilepsy was obtained on the same side as the cortex stimulated, when the opposite cortex was removed.

The above experiments are hardly sufficient in number to prove for certain whether the movements occurring on the same side of the body as the cortex stimulated are evoked from the opposite cortex by means of the corpus callosum or from the endings of the pyramidal tract through the commissural fibres of the spinal cord. In two of the cases, after removing the left motor cortex, there was no movement at all in the right arm on stimulating the right cortex, although there was marked movement in the whole of the left side, and even in one case epilepsy. In another case the same movement—slow flexion of the elbow—was produced on the same side irrespective of the place stimulated, and in only one case was there any correspondence of movement between the two sides.

On the whole the experiments, as far as they go, are in favour of the theory that in the monkey the movements obtained on the same side as the cortex stimulated are produced from the opposite cortex through the corpus callosum rather than through the commissural fibres of the spinal cord, and that epilepsy is not obtained in the same side of the body as the cortex stimulated if the opposite cortex be removed.

I cannot conclude without expressing the hope that all students of anatomy may some day be taught on the living person and not on the cadaver the movements in which muscles take part.

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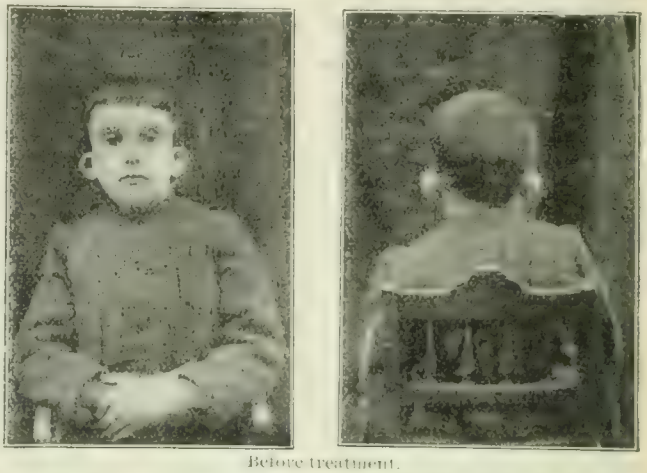
PROTRUDING AURICLES TREATED BY OPERATION.

By T. G. OUSTON, F.R.C.S.,

Surgeon, Throat and Ear Hospital; and Assistant Surgeon, Hospital for Sick Children, Newcastle-upon-Tyne.

A. B., aged about 11, was brought with the request that the appearance of his ears should be improved. The condition was stated to be congenital. The margins of the pinnae curled forward considerably anterior to a vertical transverse plane taken through the centres of the external meati, and their posterior surfaces were smooth convexities instead of presenting the normal depressions. They had a large amount of spring when pressed forcibly backwards, the cartilages not even allowing of a temporary moulding into a normal shape. Under ether the following methods were adopted, each ear being operated upon on a separate occasion:

A D-shaped piece of skin ⅜ in. by ½ in., was dissected up and removed over the most prominent convexity of the posterior surface, separating easily except where the small transversus and obliquus intrinsic muscles were attached; these latter appeared to be fibrous tissue rather than muscle. The corresponding underlying piece of cartilage was cut round vertically to its surface, and the separation of its anterior surface from the front skin effected by a small periosteal separator and knife, the attachment being more intimate than on the posterior side, and the avoidance of



Before treatment.



After treatment.

button-holing the skin difficult. The pinna was now flaccid, and on pressing it backwards on to the skin over the mastoid process an accurate impression of the rawed surface was mapped out in blood; this area of skin was removed, and the posterior edges of the two raw areas united by fine sutures. In the case of the left ear the above removal of one piece of skin and cartilage proved sufficient; in that of the right sickle-shaped strips of skin and cartilage had subsequently to be removed from the still overhanging upper margin.

In a severe case anything less than free removal to the extent of taking all spring out of the auricle will result in failure.

NOTE ON THE OPERATION FOR CLEFT PALATE.

By CHARLES P. CHILDE, B.A., F.R.C.S.,

Assistant Surgeon, Royal Portsmouth Hospital.

So many complicated and ingenious methods of passing the sutures in the operation for cleft palate have been described that I may be pardoned if I draw attention to a method which is simple, easy, and requires no special instruments.

The patient is placed in the horizontal position, with the head steadied over a firm pillow at the end of the table, the surgeon standing behind. An electric hand-light, or, better still, an electric forehead light, is requisite. The objection urged to this position is that it causes more bleeding than the

propped-up position in front of a good light. I do not think this objection need be seriously considered, and it is outweighed by the far more easy access to the parts. The secret of avoiding troublesome haemorrhage is found in separating the muco-periosteal flaps rapidly, an assistant meanwhile deftly sponging the blood out of the pharynx. When the flaps are separated the haemorrhage soon ceases with the aid of a little pressure. The flaps having been separated freely and pared, all that is necessary for passing the sutures is a small Hagedorn's needle-holder and a very small semicircular needle. Fishing gut—of the fineness of horsehair for the uvula and stouter for the palate—answers admirably for the sutures, and is passed in the following way: The tip of the right half of the uvula is lightly held in a pair of long forceps, and a small semicircular needle in a small Hagedorn's needle-holder, threaded with the finest silkworm gut, is passed from before backwards through its base and brought out in the cleft; the needle is released from the holder and drawn through; it is then readjusted in the holder, the tip of the left half of the uvula is similarly held on the stretch with forceps, the needle is passed again into the cleft and brought out from behind forwards, transfixing the base of the left half of the uvula. This suture and the next passed in similar fashion serve to steady and stretch the flaps and to bring them together, while the rest are introduced from behind forward. After two or three sutures have been passed in this way, the lips of the flaps, if sufficiently separated—a *sine qua non* to success in this operation—can be held so close together by drawing gently on them that the remaining sutures can be passed right across both flaps, as in stitching any other wound with an interrupted suture, and without bringing the needle out in the cleft. The needle must be very small, semicircular, and very sharp.

The method is easy, requires no special instruments, and there is no rough handling of the flaps whatever. I have adopted this method recently in two cases with perfect success. Both my patients were between 3 and 4 years of age, and the clefts involved both hard and soft palates.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

PARAFFIN NOSE.

A. W., aged 42, female was about ten years ago kicked by a cow on the nose, and as a result there was a marked depression. The scar was not adherent to the subjacent tissues, and so the case appeared suitable for the paraffin method. *B.P.* paraffin was used and the melting point brought down to 104° by mixing with it with paroleine. A serum syringe with a platino-iridium pointed needle was used for the injection



and this was heated by means of a spirit lamp. About ℥iij in all of the preparation was injected. The mass was then moulded into shape. For a short time afterwards the nose remained inflamed and angry looking, but this gradually disappeared and now the skin is of the normal colour, and the appearance of the woman greatly improved.

L. HERSCHEL HARRIS, M.B., Ch.M.Syd.,
Honorary Assistant Surgeon, Sydney Hospital.

CHOREA (?) GRAVIDARUM.

MRS. P., aged 28, consulted me because of continuous and involuntary movements of the left leg and arm, which she said had come on quite suddenly about a fortnight previously, and were rapidly becoming intolerable, interfering as they did with eating and entirely preventing sleep. She was looking ill and "worn-out," and was herself convinced that her complaint had some connexion with a small tender swelling situated in the "front passage," which had for some months caused her great agony, especially on micturition, whilst her husband thought it to be the result of a bad fright she had had about two months previously, which, to use his own words, "put her all of a shake" for some hours afterwards.

It was perfectly evident that the woman was suffering from a severe though unilateral attack of chorea. On making an examination I found her also three months pregnant, and there was to be seen a small vascular caruncle the size of a pea, exquisitely tender to the touch, situated at the edge of the meatus urinarius. Here then were three possible factors in the causation of the disease. She had never previously during childhood had any symptoms of chorea, nor had she ever suffered from rheumatism, unless it be that a sharp attack of tonsillitis for which I had attended her some months before, and which had yielded rapidly to small doses of sodium salicylate, but during which no articular symptoms manifested themselves, was really of rheumatic origin. There were no physical signs of endocarditis.

I ordered the patient to bed to have a light diet and absolute quietude, and prescribed a mixture of potassium bromide and liquor arsenicalis, preferring the exhibition of the bromides to that of chloral on account of her pregnant condition. A few days later, after anaesthetising the parts with 10 per solution of cocaine, I removed the caruncle, cauterizing the stump with nitric acid. She obtained a great and immediate relief to her symptoms after the operation, and the jactitatory movements a fortnight after first seeing her were practically quiescent, and only set up on the occasion of any little excitement, such as the arrival of a visitor, or a screaming fit on the part of one of her two children. The interest of this case lies chiefly in the immediate improvement brought about by the removal of the painful caruncle, which had been causing her great mental as well as physical suffering. The improvement, indeed, was so sudden that one was strongly tempted to regard the caruncle as the principal factor in determining the attack. On the other hand, if her condition is to be attributed to the pregnancy, it is interesting to note that the symptoms did not supervene until she was three months gone in her third pregnancy, whereas Dr. Risien Russell in Clifford Allbutt's *System of Medicine* refers to such an event as most improbable, "no properly authenticated case being on record of chorea in a third pregnancy." Under the circumstances it is an interesting problem as to whether this was really a case of chorea gravidarum or whether her present attack should be attributed to one of its supposed more ordinary causes, and the pregnancy regarded as a mere accidental complication.

Cowes, Isle of Wight. A. H. COPEMAN, M.A., M.D.

CASE OF CONGENITAL SINGLE KIDNEY.

A. S., female, aged 50, single, was admitted on June 26th, 1901, suffering from chronic mania. She was very restless and incoherent, with delusions of a religious nature and hallucinations of sight. Her bodily health was good, and, except for an unimportant indisposition at the end of November, 1901, it continued so until shortly before her death. On the night of May 4th, 1903, she was noticed to be very weak. Cavernous breathing was heard at the left apex, but, owing to her mental state, a satisfactory examination was impossible. She was removed to hospital, but gradually got worse and died at 6 a.m. on May 6th. She never complained of feeling unwell. A necropsy was made on May 8th, at 4 p.m. Rigor mortis had passed off in the upper extremities but was present in the lower. The brain weighed 49¾ oz.; the meninges and brain substance appeared healthy. The heart weighed 9 oz., and was normal. The right lung was very emphysematous, but otherwise fairly healthy; the left lung showed great congestion of the base, and the upper lobe was broken down, being practically one large cavity. The liver weighed 42 oz. and the spleen 3½ oz.; both were normal. On searching the usual site for the kidneys, they could not be found, but lying on the vertebrae immediately below the pancreas was one large kidney, fully 9 in. long and horseshoe-shaped. There were two distinct sets of vessels, with separate connexions at the aorta and the inferior vena cava respectively;

also two ureters, which, after running separately for about 3 in., joined and formed one common duct, which ran down through the left iliac region and entered the bladder. Each set of vessels and a ureter were connected with a separate hilum. All the other abdominal organs appeared to be healthy.

J. C. MARTIN, L.R.C.P.,
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Donegal District Lunatic Asylum, Letterkenny.

SMALL-POX AND REVACCINATION.

THE following particulars are interesting in showing that revaccination may be successful in a person developing small-pox, and also that it is necessary to keep contacts under observation for at least fifteen days.

A. T., aged about 66 years, was last in contact with a case of small-pox on May 26th. She was successfully revaccinated on that date, but on June 9th, that is, on the fifteenth day, including both dates, I found her to be suffering from a small-pox rash in the early stage.

J. M., last in contact with small-pox on May 8th, successfully revaccinated on that date, first seen on May 22nd with commencing small-pox rash, that is, on the fifteenth day.

The first case was a discrete case; the second case commenced severe, but the rash quickly dried up and rapidly scaled off.

JOHN MARSAHLL DAY, M.D.,
Cork Street Hospital, Dublin.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ST. BARTHOLOMEW'S HOSPITAL, LONDON.

LARGE NAEVOID TUMOUR REMOVED FROM THE LIVER.

(Under the care of HARRISON CRIPPS, F.R.C.S., Surgeon to the Hospital.)

A FEW cases of naevoid growths in the liver have been described as found in necropsies, but I am not aware of any published case of such a growth which has been successfully removed during life; at any rate, such cases must be rare, therefore I think the following will be of sufficient interest to publish. For the following note I am indebted to my house-surgeon, Mr. Connor.

H. B., aged 60, in January of this year complaining of a swelling on the right side of the abdomen, was admitted into St. Bartholomew's Hospital. He gave the following history:—In November, 1892, after lifting a heavy garden seat, he suddenly felt a severe pain in the abdomen. The acute pain passed off in a few hours but he remained in bed for two days. Since that time he has resumed his work. On admission into the hospital the patient was a strong, healthy-looking man of a florid complexion. On inspection the abdomen was seen to move well, and on expiration a distinct rounded swelling was obvious, occupying the right hypochondriac and the lumbar regions. The swelling was as large as a child's head, dull on percussion, fluctuating, freely movable laterally, and apparently connected with the surface of the liver. It could be moved readily to the middle line and pressed backward into the lumbar region, and there was no evidence of present or past jaundice; urine was natural. The swelling palpably increased during the week after admission, and the patient had some general pain, but the swelling was not tender, and temperature normal. The patient was shown at consultations, and there was some difference of opinion as to the diagnosis, and whether its source was the kidney, the gall bladder, or liver.

An exploration was decided upon, and the operation was performed by Mr. Harrison Cripps. An incision was made 5 in. long through the right rectus muscle. The parietal peritoneum was slightly adherent over the surface of the swelling. On separating this a small opening was made into it, and a stream of fairly bright blood issued with some force, and after about a pint had come away the opening was temporarily closed with forceps. On examining the swelling, which was about the size of a child's head, it was found to be in the substance of the liver, partly protruding from the under surface, and partly covered by a thin layer of liver substance. The gall bladder was not involved, and the rest of the abdominal cavity was healthy. The peritoneal cavity being protected by pads, an incision was made into the swelling, and about 50 to 60 oz. of fluid blood escaped. The hand was then introduced into the now partly emptied cyst, and a tumour the size of a cricket ball with a broad base was felt protruding into it. The surface of the tumour had an extraordinary feel, like that of a hedgehog's skin, being covered with sharp bone-like spiculae. Partly by dissecting, and partly by a Volkmann's spoon the entire tumour was enucleated. The superfluous part of the cyst wall was cut away, the cut edges being united to each other by fine silk sutures. The bleeding, which was sharp at first, was easily controlled by sponge pressure. The abdominal walls were closed without drainage and the patient made a good recovery. At the time of removal Mr. Cripps believed the tumour to be an ossifying sarcoma. The following, however, was the pathological report.

Sections were made of the cyst wall and of the contents after decalcification. These showed distinct evidence of naevoid tissue, the opinion arrived at being that the blood cyst was the result of a breaking-down angioma of the liver.

REPORTS OF SOCIETIES.

OBSTETRICAL SOCIETY OF LONDON.

EDWARD MALINS, M.D., President, in the Chair.

Tuesday, June 16th, 1903.

CHORION-EPITHELIOMA.

THE discussion on this subject was resumed by Dr. GALABIN, who said he had from the first been a believer in the view that the so-called deciduoma malignum was the result of pregnancy, and that it was a fetal epithelioma implanted upon the mother. He had listened, therefore, with great satisfaction to the convincing demonstration, which Dr. Teacher had given of both these propositions. He had been himself convinced by the relation, not so much to pregnancy as to vesicular mole. While pregnancy was common, the pregnancy of vesicular mole was estimated as only about 1 in 2,000 pregnancies. Not more, therefore, than about one woman in every 20,000 at the most would have had at any given time a vesicular mole within a year. But in deciduoma malignum, vesicular mole was the antecedent in something like half the cases, and this proportion had been maintained from the earliest record up to the present. It was possible on this basis to calculate by the mathematical theory of probabilities what was the chance against the vesicular mole having occurred within a year before half of the cases of deciduoma malignum if there was no causal relation between them. The result was that the probability increased very rapidly as the number of cases increased. Within eight or ten cases, a probability of a million to one was reached; and when the cases amounted to forty or fifty, the probability was an unimaginable number of billions of billions to one. He contended that there was already, at the time of the discussion in the Society in 1896, ample demonstration that there was a causal relation between vesicular mole and deciduoma malignum, since out of 40 cases then recorded vesicular mole had preceded in 18. When the number recorded had reached 90, the number preceded by vesicular mole was 49. The relation to pregnancy in general would hardly be denied if that to vesicular mole were admitted, especially since the disease more often followed an abortion than a full-term pregnancy. He was surprised, therefore, that at the former debate Dr. Spencer was the only speaker who argued decidedly in favour of the connexion. The existence of a similar structure in some cases of sarcoma of the testis was then quoted as an objection to deciduoma malignum being a result of pregnancy. But if such a structure were found only in tumours classed as embryomata, from their resemblance to the imperfect development of an ovum, he thought that this was not an objection but an argumen in favour of deciduoma malignum in the uterus being derived from a fertilized ovum. He did not consider that embryomata were derived from an included ovum, the brother or sister of the individual who bore it. Such a brother ovum was generally attached on the surface, and there was no reason why it should be in the testis or ovary rather than elsewhere. He thought that they were instances of imperfect parthenogenesis, or attempt at development of germ plasm without union of the sexes.

The germ plasm was supposed to be nominally concentrated in the testis and ovary, and therefore such tumours generally occurred there, but it was conceivable that there might be some aberrant fragment of it in such a situation as the mediastinum. Even if a structure resembling deciduoma malignum were found in other parts of the body this would be no argument against its specificity in the uterus, or its being the result of pregnancy there, unless it could be shown that in the uterus deciduoma malignum occurred quite outside the age of possible pregnancy. Since malignant disease of the body of the uterus was much commoner after the menopause than before, deciduoma malignum, if it were an ordinary tumour, should be found long after the menopause. But, on the contrary, the average age for it was 31, just the middle of the period of fertility. Although cases had been recorded up to the age of 55, and as much as two years after the menopause, this was obviously no proof that they were not the result of pregnancy, since the disease might be latent for a time. It was a further step to show that the tumour was a chorion-epithelioma. The chief proofs were: The continued vitality of villi after death of the embryo, as shown at the last meeting by a section of ovum retained five months *in utero*; the identity of appearance of the syncytium and the cell masses of deciduoma malignum, with the syncytium and cell masses seen in early pregnancy, and especially in vesicular mole: the continuity of the syncytium with the syncytium of the villi, when villi were present in the tumour: and the few cases recorded in which actual villi were present, not only on the primary growth, but in metastases. He had shown at the last meeting a section of vesicular mole, with cell masses as well as syncytium, resembling those of deciduoma malignum. The same was shown still better in the beautifully stained sections exhibited by Dr. Stevens, one from Dr. Galabin's case of deciduoma malignum. The size and appearance of the cells, their nuclei, and the karyokinetic figures in them were identical. He did not, however, think it advisable to change the name, since, if a name were in general use, it did not matter much that its derivation was erroneous. No one wanted to change the names of decidua reflexa or decidua serotina. In the term of deciduoma malignum had been comprised a definite clinical group of tumours, characterized not only by their causation, but by their high malignancy and tendency to form metastases, both in the neighbourhood and in the viscera, and to lead to extensive necrosis and formation of blood spaces. Some few of these showed only cells and no syncytium, and had the appearance of sarcoma. They were therefore, certainly not syncytioma, and it was difficult to show them to be chorion-epithelioma, although he believed that they might be such in their origin. He did not think that Dr. Teacher's figures showed so conclusively that the cell masses of the tumour were directly derived from Langhans's layer of the villi. The point could best be studied in vesicular mole, which showed similar cell masses. If these were so derived the first step ought to be the formation of a cluster of cells, covered in a cap of syncytium. He had occasionally seen this, but more often the cell masses appeared to be separated from the villus by the syncytium. If syncytium and Langhans's layer were both modifications of the fetal epiblast, it seemed probable that one might be converted into the other and that syncytium might become differentiated into cells. Intermediate appearances might be seen, both in vesicular mole and in deciduoma malignum. He thought that the form of deciduoma malignum, in which only cells and no syncytium were seen, and which resembled sarcoma, might be an ultimate development of the more common form. It seemed chiefly to be found in advanced cases, in which the patient died from the disease without operation. This was so in a case mentioned at the last meeting, and in the case which was at first under his care, a section from which was shown by Dr. Horrocks. Dr. Teacher had pointed out that neither cell masses nor syncytium showed any intercellular substance or vessels. But in the infecting border of the growth very small groups of cells could be seen springing up in the midst of the stroma, and small fragments of syncytium, and these might be reduced to single cells, so that the general appearance resembled sarcoma. Thus if necrosis occurred, of the original cell masses and syncytium, only a sarcomatous looking structure might be left. It would be of interest to know if from those who had worked at cancer parasites, whether the bodies regarded as parasites were found or not in deciduoma malignum. It was presumed that the only parasitism in the disease was that of the fetal structures upon the mother; but it was not impossible that microbic parasites might infect the placenta. The elucidation of this point would be of value in the investigation of the origin of cancer in general.

Dr. HERBERT SPENCER thought Dr. Teacher had scarcely done justice to the London gynaecologists. It was in London, at University College Hospital, that the first case of deciduoma in this country had been observed (in 1889), and it was at the Obstetrical Society of London that the first case was published (in 1895). It was also the discussion on that case and two others at the Obstetrical Society in 1896 that first aroused general interest in this remarkable disease in the United Kingdom. Dr. Teacher would find that many cases of the disease had been observed in London during the last few years, though they had not all been published, and when published not always under the same name. A great deal too much attention had been devoted to the name. For his own part he preferred the name given by Karg to Sänger's case—deciduoma malignum. The object of a name was to act as a label and not as a definition, and deciduoma malignum served the purpose of a distinctive label sufficiently well. He thought there was some inconsistency in Dr. Teacher's deprecating the inclusion of the disease in the classes of sarcoma or carcinoma, and then calling it "chorion-epithelioma." Dr. Spencer thought the chief merit for the discovery of this disease belonged to Chiari rather than to Sänger. It was in any case owing to Chiari's publication (1877) and the report of his cases in Ruge and Veit's *Der Krebs der Gebärmutter* that his own attention had been drawn to the remarkable occurrence of "cancer" of the body of the uterus after labour in young women of 23 and 24 years of age, and that he had been led to investigate the case alluded to above. With regard to the pathogeny of the disease, he thought it was absolutely established that it arose from the epithelial covering of the chorionic villi. In the discussion at the Society in 1896[1] he had opposed the view of Drs. Kanthack and Eden, and had given evidence that the disease originated in the products of conception, and in the *Quarterly Medical Journal* for July, 1896, he had written a paper giving the principal facts of 40 cases of deciduoma malignum, and regretted that these facts had not been allowed to prevail against the theories of the critics. He had on those occasions drawn attention, amongst other points, to the striking fact that in at least 45 per cent. of cases the disease followed a hydatidiform mole, which itself showed overgrowth of its epithelial covering, and had alluded to Apfelstedt and Aschoff's case as proving, if the evidence were corroborated, the origin of the growth from chorionic villi. The corroboration had been forthcoming in several cases published since that date, which, in his opinion, clearly proved that these growths arose from the epithelial covering of the chorionic villi. The excellent demonstration given by Dr. Teacher would help to promulgate that view. There was one difficulty which he did not think the demonstration met satisfactorily - namely, the difficulty of distinguishing between an ordinary sarcoma and a deciduoma malignum in cases which contained no syncytium. With regard to the structures resembling "chorion-epithelioma" met with in teratomata, he had not seen a specimen, and would prefer to wait before expressing an opinion. It did, however, appear strange that chorionic villi or the epithelium of the villi, or only structures which developed into chorionic villi, should be "included" in the body of a fetus.

Dr. EDEN had observed that several of the preceding speakers had taken occasion to deprecate the trend of the 1896 discussion upon deciduoma malignum, and to dissociate themselves from the decision which had been reached, he would not say by the Society, but by the special committee appointed to investigate the cases laid before the Society upon that occasion. For his own part, he avowed himself an unrepentant sinner in so far as that discussion and report were concerned, and he reminded Dr. Spencer that, although he (Dr. Spencer) had just told them that he had always believed in the fetal theory of deciduoma malignum, yet he had signed the report of the committee, which stated that the cases were sarcomata. After reading once more the reports of the discussion and the papers laid before the Society in 1896, he really believed that in view of the facts then before them, the decision of the special committee was a sure one, and under the same circumstances he would be prepared again to take up the same position. (It must be remembered that at that time the position of this great question was very different from to-day). He might briefly indicate the then position as follows: (1) There was no doubt that in their broad general characters the cases recorded at that time

[1] *Obst. Trans.*, 1896, p. 181.

bore a close resemblance to sarcomata—namely, in their age-incidence, in their dissemination by venous channels, in the total absence of lymphatic invasion, and microscopically in the absence of connective-tissue stroma, and the presence of masses of multinucleated protoplasm resembling giant cells. (2) The clinical evidence of connexion with pregnancy was in a considerable proportion of the then recorded cases unsatisfactory. (3) The theory of Marchand as to the identity in microscopic character of the tumour elements with those of the chorionic epithelium was new and unsupported by independent evidence. (4) The actual demonstration of the development of the tumour from chorionic villi had not been forthcoming; indeed, it was open to doubt whether villi had then been proved to occur in these tumours at all; and, lastly, syncytial elements, then believed to be the essential elements of the tumour, were shown to occur in the male subject, where origin from chorionic epithelium was out of the question. Under these circumstances he considered that the committee could have come to no other conclusion, and had nothing to regret with regard to the 1896 discussion. Having said that, however, he was quite prepared to admit that the course of events had shown that the decision then arrived at was wrong. In the short paper he had read to the Society in 1896 he had indicated that in his opinion the theory of Marchand could only be satisfactorily proved by demonstrating the actual development of the tumour from structures definitely recognizable from placental relics. The condition, he admitted, had been amply met by a number of cases since, and the importance of this point could not be too much emphasized, for all other considerations were subordinate to it. The new growth having been definitely traced back to the normal tissues from which it arose, its origin must be regarded as settled. But the position since 1896 had changed in other respects, all of which lent support to this view. A large body of expert pathological opinion had grown up in support of the theory of Marchand, which Fellows of that Society, most of whom were not pathological experts, could not question. Again, the puzzling class of cases in which the primary disease occurred in the vagina, the uterus being free from disease—cases which had been a serious stumbling block to them in 1896, had now received adequate explanation. Schmorl and Veit had shown that normal villi and fragments of chorionic epithelium could be deported by the blood stream to distant parts, and these either became absorbed or possibly underwent malignant changes, resulting in the development of disease in remote organs. This interesting class of cases was now a large one, and instances had been reported where primary chorion-epithelioma had occurred in the vagina, labium majus, tube and ovary, lungs and brain, the uterus in each case being free from disease. It was therefore evident that the difficulties present in 1896 had now been removed. It was worth while for the Fellows to remember that although the decision of the 1896 committee had been erroneous, yet in regard to two important matters, suggestions made in that discussion had actually now received general acceptance. In the short paper which he (Dr. Eden) had then read, he had expressed the opinion that the syncytial and cellular elements in deciduoma malignum had the same origin, the syncytial masses being formed by degeneration and fusion of the cellular elements. This view was now accepted. And not only so, but Peters had shown that in the human ovum the physiological prototype of these elements bore precisely the same relation to one another; the chorionic epithelium was at first entirely cellular, but on the cells coming in contact with the maternal blood, degeneration and fusion of cells occurred, producing what he called the plasmodial or syncytial layer. In yet another respect the 1896 discussion had made an important contribution to the subject, and that was in pointing out the fact that syncytial masses, similar to those found in deciduoma malignum, occurred in malignant testicular growths, whose origin from placental relics was out of the question. This fact had recently been rediscovered by Schlegenhaufer, and had caused a great deal of perturbation in the minds of their German colleagues. Schlegenhaufer's case was clearly a teratoma, while Kanthack had regarded the specimen shown to the Society in 1896 as a sarcoma. It was a mystery to him why this observation of Schlegenhaufer's should be regarded as in any way affecting the validity of Marchand's theory of chorion-epithelioma; that theory rested upon actual demonstration of the histogenetic origin of the growth, and no such observations as Schlagenhaufer's could upset it. Yet this latter authority had proposed that they should regard as teratomatous—that was, as due to the "inclusion" of an ovum—a large proportion of the accepted cases of chorion-epithelioma in the uterus and elsewhere. This appeared to him (Dr. Eden) to throw the subject into needless confusion, for the "inclusion" theory was not required to account for chorion-epithelioma unless cases should ever be proved to occur under circumstances in which pregnancy could be scientifically excluded. In conclusion, he said that it appeared to him that the pathogenesis of this growth having been satisfactorily settled, the only questions remaining were clinical questions. For instance, we were quite unable to explain why these growths varied so greatly in malignity, why those cases in which villi were found in the tumour should be less malignant than others, why cases where the primary growth was in the vagina, were less malignant than the uterine cases, why metastases should disappear after removal of the primary growth alone; and, lastly, why in one remarkable case recorded by Herschmann, partial removal of the primary growth should be followed by disappearance of the remainder and complete recovery. Attention should be directed to these points in future.

Dr. MCCANN said he ventured to join in the discussion because he had had three cases of "deciduoma malignum" under his care during a comparatively short space of time.

The first was a woman, aged 35 years, who was admitted to the Samaritan Hospital in July, 1901, suffering from continuous haemorrhage from the vagina for three and a-half months. This haemorrhage was alleged to date from a miscarriage, but the history of the passage of ovuline structures was indefinite. She was extremely anaemic. Under anaesthesia on July 17th the uterine cavity was dilated and a distinct bulging was felt at the upper and back part. This was covered by smooth mucous membrane. On attempting to separate the lower portion of the tumour, the finger could be passed into the uterine wall, and the surrounding softened tissue suggested a malignant growth. The uterus was therefore removed by vaginal hysterectomy. The patient had remained in good health since the operation without any evidence of recurrence. The second was a woman, aged 46 years, who had had six children, the youngest being aged 9 years. Her menstrual periods were regular, scanty, lasting two days. In August, 1901, she had an attack of bleeding clots, fluid blood being passed per vaginam. This bleeding ceased and did not recur until the end of December, 1901. After this date there was daily loss of blood from the vagina. She was admitted to hospital on March 19th, 1902. On examination, she was found to be extremely anaemic. The uterus was enlarged, mobile and painless. The fundus could be felt to have reached to the midpoint between the umbilicus and the symphysis pubis. She was anaesthetised, and on introducing the finger into the uterine cavity, the wall was found to be lined by a series of irregular nodules undergoing necrosis on the surface. A bluish flattened nodule, about the size of a sixpence was seen in the anterior vaginal wall As this was evidently a secondary growth, no operation was attempted. The uterine cavity was swabbed out and the patient returned to bed. For a time her general condition improved, but later increasing weakness accompanied by dyspnoea, supervened. The physical signs in the lungs indicated secondary deposits. She died on May 23rd, 1902. A necropsy demonstrated the existence of secondary nodules in both lungs. The third patient was aged 53 years, and had ceased menstruating for eighteen months. This case had been already fully reported in the *Journal of Obstetrics and Gynaecology of the British Empire* for March, 1903. The uterus was removed by vaginal hysterectomy, and its cavity was found to be completely filled with blood and clot. Her last pregnancy terminated nine years previously at the third month. She was admitted to the Samaritan Hospital in March, 1902.

These three cases demonstrated three distinct clinical types of uterine new growth. In the first case the growth was polypoid and circumscribed; in the second, it was diffused throughout the uterine mucosa, and in the third the uterine cavity was entirely occupied by blood clots. The last type has been described under the terms angio-sarcoma, cavernous sarcoma, and sarcoma teleangiectodes. Dr. McCann thought that in the future such cases would be shown to be of the nature of "deciduoma malignum." They seemed, moreover, to be of comparative rarity. The description of specimens where the disease had been actually shown to originate from the coverings of the chorionic villi had completely revolutionized ideas as to the etiology. For those cases where the occurrence of a previous pregnancy was difficult to prove, the theory that "fetal relics" had persisted *in utero* seemed to be a fitting explanation. The rarity of the disease appeared to have been exaggerated, for no less than six cases had been observed at the Samaritan Hospital during a comparatively short period. The degree of malignancy appeared also to vary in different cases. Although it was true that some types were especially malignant, there were others in which this character was not so well marked. In all probability the polypoid or circumscribed type was the least malignant, thus resembling polypoid sarcoma of the uterine mucosa. If it were proved that the secondary growths did disappear, then they were justified in dealing surgically with cases in which secondary nodules

existed in the vagina, unless the general condition of the patient contraindicated any operative interference. Dr. McCann did not think that an adequate explanation had been found for all the cases grouped under the title of "deciduoma malignum," but in attempting to solve the question he advocated careful and accurate records of cases without having in view the support of a particular theory as to the causation of the disease.

Dr. LOCKYER said it was no small satisfaction to him to find that his own interpretation of the nature of the growth which had passed under the name of "deciduoma malignum" coincided with Dr. Teacher's views. In January, 1902, Dr. Lockyer read a paper before this Society on a case of chorio-epithelioma with pulmonary metastases, and by a series of lantern slides he traced the origin of the syncytial masses and Langhans's cells back to the walls of the chorionic villi, and endeavoured to point out that if they accepted the fetal trophoblast as the precursor of Langhans's layer of the syncytium the term "deciduoma" was a misnomer for a growth containing these elements in its composition. For such growths a name should be chosen which would indicate their true origin; and after careful study of eight specimens of this disease Dr. Lockyer chose the term of "chorio-epithelioma" for his two published cases as being the most fitting nomenclature for this purpose. Dr. Teacher had gone further than Dr. Lockyer was formerly prepared to go by concluding that every so-called deciduoma malignum was a chorio-epithelioma. Dr. Lockyer had stated that his experience led him to the conclusion that there were cases in which the histological features differed in essential details from chorio-epithelioma. The specimens which led Dr. Lockyer to this conclusion were prepared by Mr. Corrie Keep, who kindly allowed Dr. Lockyer to make drawings from them, which were shown at the demonstration in January, 1902. Dr. Lockyer had again examined these specimens, and with his now larger experience in the study of these growths, obtained from the examination of five more specimens since his paper was written, he had no hesitation in saying that although syncytium was not well represented, the cells described by him as "modified connective-tissue cells like those found in normal decidual membrane" were in reality derivatives of Langhans's layer. In accord with this conviction, these growths fell into the category of chorio-epithelioma in spite of the fact that no definite syncytium was present. In other words, syncytium was not the leading feature of these tumours. Sänger's original sarcoma deciduo-cellulare had been shown at the Society by Dr. Teacher. It was a typical chorio-epithelioma, as proved by the presence of both syncytial masses and Langhans's cells. The only distinction which Dr. Lockyer was at the present time prepared to insist on as existing between these growths was that some contained syncytial derivates and Langhans's cells, whereas others contained Langhans's cells, while the presence of syncitium was difficult or impossible to prove. His previously-expressed opinion that some of these growths could be referred to the maternal decidua he now regarded as a point which still required demonstration, but which might for the present be left an open question. In the discussion on Dr. Lockyer's paper Dr. Horrocks asked the question: "Could Dr. Lockyer say that in all cases of this malignant growth which had followed vesicular mole there had been syncytial elements?" As far as his experience went Dr. Lockyer answered this question in the affirmative. Four of the eight cases known to Dr. Lockyer and in which he found syncytium followed vesicular disease of the chorion. Dr. Horrocks's own specimen proved this point. Dr. Lockyer had examined it carefully and found abundant evidence of the syncytium being represented, so that his statement that "the malignant sequela of a vesicular mole is invariably a syncytioma" needed no alteration. Dr. Lockyer wished, however, again to emphasize the fact that syncytium was not the essential feature of a chorio-epithelioma as Dr. Horrocks seemed to think. Whilst leaving Dr. Teacher to discuss the adverse criticism on his paper, Dr. Lockyer felt it was incumbent upon him to mention that he had himself made a drawing of Dr. Haultain's specimen some two years ago, and was prepared to vouch for the faithfulness of the picture drawn from the same specimen by Dr. Teacher's German artist. A short abstract of the case shown by Dr. Lockyer at this meeting of the Society was as follows:

Mrs. V., aged 28, twice pregnant. The first pregnancy ended in the expulsion of a hydatidiform mole; the second ended in the birth of a healthy child at term. One month after the child was born the mother developed a swelling in the right labium majus and another in the inguinal glands; subsequently another deposit was found in the vagina. The external growths were opened under the impression that they were pyaemic, but only blood clot and necrosed tissue came away. Death occurred eleven weeks after confinement. The symptoms and course of the disease during the patient's stay of seven weeks in the Hospital for Women at Brighton were mainly those of septicaemia; signs of pulmonary consolidation supervened only a fortnight before death. The primary growth was confined to the body of the uterus; the uterine walls were not perforated, the adnexa were healthy, there was no infiltration of the parametrium such as was found in uterine sarcomata. There were secondary growths in the lungs, pancreas, kidney, and vagina. The primary tumour and all the secondary deposits showed syncytial derivatives and Langhans's cells, the syncytium being most abundant in the pancreatic metastases. The clinical notes of this case were kindly supplied by Mr. H. H. P. Johnson, House-Surgeon to the Hospital for Women, Brighton. The case was under the care of Dr. Robert Sanderson. Dr. Holthouse made the necropsy. Drawings of the uterine tumour and secondary growths were prepared by Dr. Lockyer.

Dr. H. RUSSELL ANDREWS showed two specimens of chorion-epithelioma. The first was an old specimen which had been in the museum of the London Hospital for many years, labelled "cancer of the uterus." Microscopic examination proved it to be a chorion-epithelioma. The second was shown before the Society in 1886 by Dr. Lewers as a specimen of circumscribed sarcoma of the uterus with secondary deposits in the vagina and lungs. Dr. Lewers had kindly allowed Dr. Andrews to redescribe it. Sections showed typical chorion-epitheliomatous structure. He commented on the fact mentioned by Dr. Haultain that in some cases the growth seemed to be killed by coagulation of the blood round it, and said that in the majority of cases, the extreme malignancy and rapid development of metastases were due to the fact that although the growth always occurred in blood vessels it did not cause thrombosis. This was probably to be explained by the presence of syncytium, which seemed to have, with endothelium, the property of not coagulating blood with which it was in contact. Although in some sarcomata, especially in those which were sometimes called peritheliomata, cells were often seen which resembled syncytium, yet the vacuolation which was so characteristic of chorion-epithelioma was not seen in these. The complete absence of vessels in chorion-epithelioma was also an important point in distinguishing these tumours from sarcomata, in which vessels, although often ill-formed, could always be found.

Dr. HEBB said that in the one case which had passed through his hands, while the general aspect was that of a polycellular sarcoma, there were appearances reminiscent of epithelial cancers. The micro-sections exhibited certain histological features, which had not been alluded to by previous speakers; these were attempts, sometimes apparently successful, at the formation of new blood vessels, the existence of irregular mitoses, and the presence of cell inclusions or "cancer bodies," the last two being of common occurrence in carcinomata. He thought it would be eventually demonstrated that the maternal and fetal structures participated as to the site of origin of these growths, sometimes the one, sometimes the other location having the greater share.

Dr. TEACHER, in reply, said the results of the discussion were very pleasing to him, inasmuch as the views which he had set before the Society appeared to have met with very general approval. He felt himself bound to express his approval of the "unrepentant sinner" attitude of Dr. Eden in defending the "decision" of the Society in 1896. Dr. Teacher's criticism of that discussion had been written without knowledge of the facts stated by Dr. Eden, that only the preliminary notice of the case of Apfelstedt and Aschoff was before the meeting of 1896. At the same time, even admitting that, Dr. Teacher adhered to his opinions that the Society had hardly appreciated the strength of the case, which Marchand had worked up from the histological resemblances of the tumour and the pathology of hydatidiform mole, and that it was a pity it had delayed the consideration of the new evidence for so long. But there had been one advantage in that delay. The case which had been brought before the Society by the late Professor Kanthack was at that time absolutely inexplicable, and he did not wonder at the influence which it had exercised over the minds of the members of the Pathological Committee. He had always felt a doubt as to the right of Professor Kanthack to describe such a curious tumour offhand as a sarcoma; but, owing to the early death of Professor Kanthack, the materials for a criticism of his view were wanting until the rediscovery of this kind of tumour by Schlagenhaufer. Doubtless, the members of the

Society would say that there was not yet a satisfactory explanation of the tumour of the testis, but he thought they must grant that it was no longer justifiable to call it sarcoma; and also that it could not be held, in the face of the other evidence now possessed, to affect the specificity of the ordinary chorion-epitheliomata. He briefly reviewed the various interpretations which were now being offered of those embryomata (or whatever they might be called), the relative merits of which he felt must be left for future consideration. In reply to the question whether placenta had ever been found in an undoubted teratoma, he quoted the case of Maydl. Laparotomy in an anaemic but well-developed man of 19 years revealed a tumour lying between two folds of the root of the mesentery. It consisted of a well-formed trunk and limbs without a head, but in place of it a long tuft of hair. This imperfect fetus was enclosed in an amniotic sac; a thickening of the amnion connected with the superior mesenteric artery showed the histological structure of placenta. There was also a case in a sheep described by Rathke in 1830, in which a female fetus was attached to the head of a male fetus by an umbilical cord, which passed into the skull, and ended in a well-formed placenta growing on the dura mater. Turning to certain points raised, Dr. Teacher admitted that limitations of time had caused his opening statement to contain more of assertions than of proof; but, on the other hand, the critics who had raised that objection seemed to have failed to follow the demonstration of the relationship of the normal placenta and chorion-epithlioma through the simple hydatidiform mole and malignant mole, the series of slides comprising which could hardly have been made more complete. He also protested against the questioning by two of his critics of the value of evidence simply and solely because it had been "made in Germany." His experience of their German colleagues was that they were a most kind, courteous lot of gentlemen, and as keen and conscientious seekers after truth as any men. In his inquiries he had encroached freely upon their time, and they had given it to him ungrudgingly. The race doubtless was no more free than any other from inaccurate and unreliable members, but his own observations had led him to the opinion that the latter got their deserts as surely and swiftly in Germany as anywhere else. The assertions that the view of Veit remained purely hypothetical was based upon the fact that Dr. Teacher in December, 1902, asked Professor Veit if a case had yet been found which demonstrated the sequence of events which it supposed. He understood Professor Veit's reply to be negative. On the other hand, in the 188 cases summarized the presence of villi was noted in 33. A number of these were old malignant moles, not examined microscopically, but there remained a large number of cases in which the origin of the tumour from the chorionic epithelium had been directly demonstrated; 28 of the cases (including the malignant moles, 11 in number) followed molar pregnancy, 4 abortion, and 1 (Langhans's No. 2) delivery at term. That the cases in which villi were found (excluding malignant moles), showed a relatively low degree of malignancy was a fact; he could not explain it. The matter was considered in the paper. Dr. Fothergill spoke of many cases in which the connexion with pregnancy appeared to be absent. Excluding the tubal cases, there remained 181 which Dr. Teacher had synopsized. In 16 of these the occurrence of a preceding pregnancy was not clear from the history. In 2 of these villi were present; in 4 cases no history was obtained, either because they were cerebral cases, the nature of which was discovered only at the necropsy, or for other valid reason. Of the 10 remaining cases, 9 occurred in women between 24 and 44. Was it possible to exclude pregnancy in those cases? In many cases the disease was continuous with the pregnancy; this fact should explain the absence of a distinct preceding pregnancy in most of those 9 cases. The most probable explanation to Dr. Teacher's mind of McCann's case was renewed pregnancy. There were several cases in women of nearly the same age who had not been pregnant for many years and then developed tumour. In 8 out of 9 cases over the age of 50 the preceding pregnancy was molar. As an example might be taken the case of Gunther (recently reported by Marchand, a photograph from which was included in Dr. Teacher's demonstration). The patient was 53½ years old; her last child was born in her 39th year, and then after thirteen years she had a hydatidiform mole, which passed on into chorion-epithelioma. An apparent menopause was recorded in two clear cases besides that of McCann. An explanation, which might apply to all these long-interval cases, had been offered by Marchand: It was well known that portions of epidermis included in the closure of some of the embryonic clefts might lie latent ten or twenty years or even longer, and then develop into tumours. In view of that he thought there was nothing strange about portions of trophoblast lying latent three or four years and then springing into renewed activity. The hypothesis that those cases might be really of teratomatous nature, Dr. Teacher regarded as quite unnecessary. Cases of chorion-epithelioma without syncytium had been mentioned. There were three cases in which the typical sprawling masses were absent, but none of these could really be said to contain no syncytium, as they all showed syncytial derivatives, like the syncytial wandering cells. These cases and the "pure syncytial" cases, all of which actually contained individual cells, although not typical Langhans's layer cells, Dr. Teacher would regard as varieties of no great importance in view of the relationship which existed between the two layers of the chorionic epithelium. In all of his tumours the relative amount of the different elements varied considerably in different parts of the growth. With regard to the question of nomenclature, Dr. Teacher said that "syncytioma" was a bad name, because the syncytium was not the characteristic element of chorionic epithelioma. The Langhans's layer cells and large individual cells of intermediate type were equally characteristic. Almost any feature of the growth taken by itself could be paralleled from other tumours, but not the combination of features. Lastly, the most characteristic thing was the physiological prototype. He preferred a name which informed one of the source of the tumour, and he thought that the members of the Society need not be afraid of committing themselves to a particular view. He was pleased to find that in this he had the support of Dr. Eden. The most appropriate name, therefore, was chorion-epithelioma, or, if they preferred it, chorio-epithelioma. He was also in favour of allowing the historic deciduoma malignum as a clinical term, it was so well known and so generally used. Moreover, the view implied in it was so completely abandoned that the term might be said to have ceased to be misleading. If there were a real "deciduoma" it had not yet been demonstrated; but when so experienced a pathologist as Chiari was inclined to reserve his opinion, Dr. Teacher thought they need not dogmatize—but neither need they "hedge."

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

Rickard W. Lloyd, M.R.C.S., L.R.C.P., President, in the Chair.

Friday, June 26th, 1903.

Cavendish Lecture.

The Cavendish lecture was delivered by Dr. Clifford Allbutt, F.R.S., Regius Professor of Physic, in the University of Cambridge, who took as his subject, Atheroma of the Ascending Aorta. He confined himself to disease of the ascending arch, without aneurysm, without notable cardiac disease, and without regard to general arterial sclerosis. The lecturer said that disease of the aorta had not only a certain independence of disease of the heart, but also of the aortic valves, and observed that acute aortitis was not always the perilous disease they were disposed to assume it to be. It was apt to arise in the course of infectious diseases, even in the course of the milder exanthems, and physicians in charge of small-pox cases might detect the lesion not infrequently. In measles the intercurrence of acute aortitis of a mild and transient kind was by no means rare. In scarlet fever its occurrence was noted, and acute rheumatism might attack the aortic area and the aorta itself. In extension of rheumatic inflammation to the aorta new and strange symptoms were apt to spring up with a fierce activity. In the more maliguant forms of cardiac inflammation the aorta was found to be by no means outside the sphere of the virus. Suppurative aortitis seemed to be rare. It was apt to be overlooked after death as it did not break into the channel of the vessel. "Inner aortitis," of the kind which occupied their attention that evening, was not uncommon in septic maladies, and an instance of aortitis in a case of erysipelas had been recorded which had been verified by bacteriological tests. Aortitis in typhoid fever might occur during the later weeks of the fever, or even during early convalescence when it was very likely to escape observation. The supervention of aortitis in the course of influenza had been described, and of aortitis following diphtheria many instances were on record. After a passing allusion to the aortitis which might arise in pneumonia, the lecturer went on to point out that malarious aortitis was not

always benignant nor transitory, but was apt to linger for years. Tuberculosis of the aorta had been studied, but its presence was rather more curious than important. Syphilitic aortitis was the most important of all, and in some cases its course was rapid and grievous damage done before the later phases of extensive chronic disease and dilatation were established. Of acute aortitis as a result of lead or other mineral or vegetable poisons the lecturer had no notes, and said he would not discuss obscure cases in which muscular stress might have set up a primary aortitis in a vessel otherwise sound. On the experimental side of the subject definite results were difficult to attain, but some instructive work had been done. Disease of the ascending aorta, as distinguished from diffuse atheroma or arterio-sclerosis, received less attention than was due to it. It often occurred alone, or nearly alone, and was quite capable of causing the patient's death, so that they would do well to suspect it. The name "atheroma" might be conveniently restricted to the necrotic phases of inflammatory or reparative processes. When inflammation was predominant he would speak of the process as aortitis; when degeneration prevailed he would describe the case as atheroma. Of the symptoms, some were equivocal, and of these were headache, vertigo, and dyspnoea of a kind. In regard to the cause of the vertigo—an early symptom which was often notable and even alarming—they must be content with the vague surmise of a reflex mechanism. He could only offer the same surmise concerning the dyspnoea. Pressure symptoms were more common in mere dilatation of the arch than was usually supposed. In Hodgson's disease—for so they might conveniently call the characteristic dilatation of the arch described by him—pressure symptoms were in some cases predominant, and spasmodic closure of the glottis might even call for tracheotomy. He could do no more than allude to acute pulmonary oedema, which for some reason was prone to occur in disease of the aorta. The lecturer remarked by the way that emphysema of the lungs was a well-known accompaniment of atheroma of the aorta, and might even take some place among its diagnostic symptoms. Aortitis of the ascending arch, even when acute, was often unattended with pain. In the aortitis of influenza, of rheumatism, and of syphilis pain occurred but probably in a small minority of cases. In atheroma of the aorta again pain occurred in a small minority of the cases. Pain having peculiar and even appalling features arose in disease of the root of the aorta. Its origin was under the sternum at the junction of the first and second thirds of the bone; there was a sense of constriction or compression; and there was a tendency for the pain to radiate from the mid-sternal origin into sections of the brachial plexus, in the first instance of the left side, but occasionally of the right also, very rarely, however, of the right alone. When a chronic aortitis, pursuing for the greater part a painless course, was broken by terms of acuter activity, angina pectoris might come and go with such vicissitude. He had seen many such cases in which the angina had disappeared. In acute aortitis its departure was perhaps the rule. Of physical signs in aortitis there was no great lack if they would but look for them. Unfortunately they were for the most part signs of the fully-established disease of chronic aortitis and atheroma. The earliest stage of that disease was rarely diagnosed; never, perhaps, with certainty, except in its acutest forms. In chronic aortitis signs of premature senility were prone to occur. The hand laid upon the upper chest might perceive a thrill, and the arch was often to be felt by the finger tip in the suprasternal notch. If the patient were made to depress the point of the right shoulder, the right subclavian might be palpable, but the sign was of positive and not of negative value. Trustworthy evidence of elongation of the ascending aorta might be afforded by the mobility of the apex of the heart. Under the head of inspection he included radioscopy; by its means dilatation of the aorta could be seen, but only in its larger degrees. Percussion was the most valuable single method they had of detecting dilatation of the aorta. According to the degree of dilatation a dull area might be delineated occupying an area including the manubrium sterni, and extending thence towards the second space and the third cartilage on the right. As the upper part of this dull area extended from the base of the breast bone in a segment of a circle, to the right it had been likened to the crest of a fireman's helmet. The signs of auscultation were inconstant and equivocal. A certain quality in the second sound might be of cardinal value; unfortunately it was often far from constant. It was a clang aptly compared to the tap of the *tabaurka*—a drum made of a skin tightly stretched upon an earthen pot. He considered that the chating sound of a dry basic pericarditis was of great importance; the pericarditis was frequently attended by angina pectoris, and the angina was independent of coronary disease. He added that this pericardial angina could be treated by cupping, poultices, and later by blisters. Ice was better avoided, and so also was phenacetin and its congeners.

REVIEWS.

PUBLIC HEALTH.

MR. THOMAS'S *Ventilation, Heating, and Management of Churches and Public Buildings*[1] is an excellent book. The first chapter deals with the physical laws bearing on the subject. The excellent practical rule is given that a good thermometer must be provided outside the building in addition to the thermometer inside, as it is only by having regard to both these indications that action consistent with comfort and efficient ventilation is practicable. In the next chapter the action of wind upon ventilation is considered. The main practical lesson here is that the value of the aspirating powers of the wind in inducing ventilation in public buildings has been much overrated. The reasons given for this are: (1) That in towns the action of winds is much diminished by neighbouring buildings; (2) that wind aspirates powerfully on inlets as well as outlets; hence "the so-called pneumatic or air-pump ventilator is a self-acting down-draught producer"; (3) the elastic properties of the air "render the aspiration of the wind not only valueless under existing conditions, but absolutely unmanageable." The author is of opinion that aspiration occurs whatever kind of ventilator or open tube is used upon the roof. In the third chapter the effects of moist air upon ventilation, and in the fourth chapter the provision of air inlets and outlets receive attention. Inlets at the floor level are recommended, with warming of the incoming air, and a provision of 750 cubic feet per head per hour. The remarks on the size of inlet ventilators well deserve study. Mr. Thomas shows that if 30 square inches of inlet be necessary for each person (the usual textbook requirement) a church 100 ft. long and seating 600 persons would require, with closed windows and doors, Tobin's tubes touching each other throughout the whole length of both sides of the building, and in addition 80 ft. run of Tobin's shafts at the ends. The remarks of the author on the official requirements of the Board of Education as to the ventilation of schools are very judicious. The fifth chapter contains a series of illustrations of the defective heating and ventilation of public buildings. The main moral from these excellent illustrations is that the most common defect in the ventilation of public buildings is the defective provision of low-level inlets, with the result that the outlet tubes pour a stream of cold air down on the occupants. In the next chapter the methods by which the ventilation of buildings already erected can be improved are considered. The main plan advocated is the provision of low-level ventilators, admitting warmed air, the entry of air being regulated by a valve or cover connected with which is an indicating board showing how far the valve is to be opened according to the temperature outside the building. Chapter VII deals with mechanical and heat-aided ventilation. There is no doubt, as is pointed out, that the ventilation of new buildings will in the near future be revolutionized by electric ventilating fans. Chapter VIII gives the author's methods of ventilating new buildings, and the last chapter contains admirable practical instructions for caretakers and others. This book can be strongly recommended, for it is both scientific and practical.

MR. W. THOMPSON'S *Housing Handbook*[2] is a valuable compendium of information on the supremely important question of housing. It deals with the experience of the past in various localities, giving plans and diagrams of typical working-class dwellings, exact statements as to cost, the text of the principal Housing Acts, and a large amount of miscellaneous information, which will be most valuable to the social reformer. In the first chapter the "house famine" is considered. Next follow chapters in which what may be done by individuals and under the Public Health and other

[1] *The Ventilation, Heating, and Management of Churches and Public Buildings.* By J. W. Thomas, F.I.C. London: Longmans, Green, and and Co. 1903. (Cr. 8vo. pp. 148. 2s. 6d.)

[2] *The Housing Handbook.* By W. Thompson. London: National Housing Reform Council. 1903. (Demy 8vo. pp. 404. 2s. 6d.)

Acts is discussed. Next the clearance of slums by improvement schemes, and the provision of workmen's dwellings by local authorities, are considered, and in subsequent chapters details of the work accomplished by the London County Council, by Liverpool, Manchester, Birmingham, Richmond, and by rural authorities are given. The next section contains financial and other practical information on municipal housing schemes, on small holdings and garden cities, on modern villages, on the relation of cheap dwellings to building by-laws, on the adaptation of existing dwellings, and on means of transit in relation to housing. The remarks as to modification of by-laws relating to the use of cheaper materials for partition walls, for outbuildings, and in the case of detached houses for the entire house, are worthy of careful attention. A corporation building houses for the working classes usually provides for the repayment of the capital expended within forty years out of the rents paid by the tenants. Mr. Thompson evidently favours the more speculative policy of Stafford and one or two other local authorities, which have so fixed the rents as to provide for the four items of interest—repairs, management, and rates and taxes—but not for contributions to the sinking fund, which are paid by the whole community; the reason given for this is that the community will at the end of forty years own the houses without any interest charges. A table given on page 162 is of interest in connexion with the agitation that the Local Government Board should grant loans for houses on longer terms than the forty years now allowed. Reckoning interest at 3 per cent., then if a loan be given for £100 on condition that instalments are annually repaid, the total payments on a fifty years' basis would be £175 13s. 4d., on an eighty years' basis £221 10s. From an economical standpoint there is much to be said against too prolonged periods of repayment.

Colonial and Camp Sanitation[3] consists of extracts from Dr. POORE'S larger works, calculated "to meet the wants of persons living in remote parts in the Colonies and elsewhere, by furnishing them with correct principles of sanitation." The first chapter deals with the sanitation of camps and the disposal of solid refuse: the second with the collection of rain-water, the disposal of slop-water, dry urinals, etc. The principles laid down in these pages are thoroughly sound, and if carried out in their entirety would save many a small community from expensive and often inefficient systems of drainage. The main principle is the immediate superficial burial of decomposable material. The great difficulty is to ensure that this shall actually be carried out. Dr. Poore draws attention to the importance of flies in carrying infection, and to the prevention of oviposition, which can be secured by superficial burial of refuse. The mere dumping of refuse in mixed heaps must be abandoned and immediate superficial burial substituted. "The presence of flies" he regards as "a reproach to us for not putting organic refuse to its proper use." Flies, moreover, are uneconomical, as the larvae eat the dung and leave the straw. Water, according to Dr. Poore, unless it be boiling hot and used with abundance of soap and a scrubbing-brush, is entirely out of place in cowhouses, dairies, and butchers' shops. The reason given is that putrefaction is favoured by wetness. Those reading this book will, if intelligent and careful in their application of its principles, find advice which will be of great service in houses remote from civilization.

The new edition of Dr. ALLAN'S *Aids to Sanitary Science*,[4] edited by Dr. R. A. FARRAR, will be found a most useful book if employed within the limits which the authors have set for themselves—that is to say, by candidates for public health examinations, as a summary of practical work and of more extensive reading of larger textbooks and special treatises. It is concise and accurate, and gives an excellent summary of nearly all subjects that are mentioned. There is a good index, which increases the facility of reference. Here and there are misprints: thus *specific, febrile*, the comma being superfluous; and *Boobyer* for Boobbyer. The book is not illustrated, and this has allowed a much larger amount of information to be compressed into its pages than would otherwise have been possible.

[3] *Colonial and Camp Sanitation.* By G. Vivian Poore, M.D., F.R.C.P. London: Longmans Green and Co. 1903. (Cr. 8vo, pp. 43, 11 illustrations. 2s.)

[4] *Aids to Sanitary Science.* By F. J. Allan, M.D., D.P.H. Second edition, revised and edited by R. A. Farrar, M.A., M.D. London: Baillière, Tindall, and Cox. 1903. (Fcap. 8vo, pp. 272. 4s. 6d.)

NOTES ON BOOKS.

Everybody's Street Guide to London[5] is a useful little book, and will be found invaluable by foreigners, and even by Londoners who are not clever at finding the best means of getting about. Each page is divided into three columns. The first gives the name of street and postal district, the second the nearest main thoroughfare, and the third the nearest railway station. We wish this little handbook all the popularity it deserves.

To English and American medical men who, finding themselves in Paris, desire to see something of its hospitals, Dr. A. A. Warden's *English Handbook to the Paris Medical School*[6] will prove of utility. Besides a list of the hospitals and directions how to get to them, it contains a useful diary which shows at a glance what can be seen and done each day of the week. Some of the institutions of which details are given should have been omitted altogether. Their inclusion lends a dignity to them which they do not really possess.

REPORTS AND ANALYSES
AND
DESCRIPTIONS OF NEW INVENTIONS
IN MEDICINE, SURGERY, DIETETICS, AND THE ALLIED SCIENCES.

MEDICAL AND SURGICAL APPLIANCES.

A Combined Clinical Thermometer and Fountain Pen.—Messrs. Stephen Smith and Co. (Limited), Malmesbury Road, Bow, London, have called our attention to a fountain pen the body of which serves as a case for a clinical thermometer. The pen is somewhat more bulky than the ordinary fountain pen, but by many who like a firm hold this will not be considered a disadvantage. The idea is ingenious and well carried out, so that the contrivance is likely to be found useful by practitioners. The pen is well made, with a gold nib, and the thermometer, which is made by Mr. J. Hicks, is stated to be standardized, so that the price (5s.) is extremely low.

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

COUNCIL ELECTION.

THIS election took place on Thursday and the result was—

	Votes.
Mr. BUTLIN	**424**
Mr. MAKINS	**407**
Mr. CLINTON DENT	**352**
Mr. EVE	335

Mr. Butlin was therefore declared duly re-elected, and Messrs. Makins and Dent duly elected members of Council.

SUMMER POST-GRADUATE COURSE IN LIVERPOOL.—A post-graduate course in recent scientific methods of medical investigation and diagnosis has been arranged to be held in the Thompson-Yates and Johnston Laboratories of the Liverpool University College during the month of August. The classes, which will be essentially practical, will begin on August 11th and conclude on August 20th, lasting each day from 10 a.m., to 1 p.m., and from 3.30 p.m. till 6 p.m. They will be carried on under the superintendence of Professor B. Moore, Dr. E. E. Glynn, Dr. J. W. W. Stephens, and Dr. W. B. Warrington, and will deal with the practical study of haematology, bacteriology, parasitology, biochemistry, pathology and medical electricity. Further particulars can be obtained from Professor R. Boyce, University College, Liverpool.

[5] *Everybody's Street Guide to London.* London: John Dicks. (Fcap. 8vo, pp. 129. 1d.)

[6] *An English Handbook to the Paris Medical School.* By A. A. Warden, M.D., with prefatory letters by Lord Lister and Professor W. W. Keen. London: J. and A. Churchill. 1903. (Fcap. 8vo, pp. 74. 2s.)

THE NEW ROYAL VICTORIA HOSPITAL, BELFAST.

[*From our Belfast Correspondent.*]

THE new Royal Victoria Hospital, Belfast, is now on the eve of completion, and towards the end of this month work therein will be in full progress. Seven years have elapsed since the project was first mooted, and much thought and energy have been expended in bringing it to a successful issue.

HISTORY OF THE INSTITUTION.

Before describing the new buildings a glance at the past history of the institution will be interesting and instructive. Its Royal Charter says that a public charitable institution or society was formed in Belfast, in the County of Antrim, in April, 1792, under the name of the "General Dispensary," which was changed five years later to the "Belfast General Dispensary and Fever Hospital," and again two years later, or in 1799, to the "Belfast Hospital and Dispensary."



Royal Victoria Hospital, Belfast; southern aspect of wards at south-east corner, showing balconies, large casement windows, sanitary turrets; residential quarters behind.

In 1840 the charity was divided into two departments, the "Fever Hospital," and the "Medical and Surgical Hospital," but was reunited five years later as the "Belfast General Hospital." This was altered in 1875 to the "Belfast Royal Hospital," and in commemoration of the Diamond Jubilee the name will in future be the "Royal Victoria Hospital, Belfast." The central block of the old building bears the date 1817, and still has the original structure at its back in the shape of two long low stories. The Mulholland wing was erected in 1862, the Charters wing three years later, and about the same time the Sinclair ward, while minor additions have been made from time to time. In 1874 the charity received a valuable gift of land—the "Throne Lands," about three miles from Belfast—from the late Mr. John Martin, of co. Down, for a Convalescent Home and Children's Hospital, to which a "Consumptive" department was added later on.

The original number of beds provided by the charity was apparently 6, while the present hospital has 180, and the new one will contain 300. In 1849 the medical and surgical staff consisted of 8 members. It now numbers 17, all the special departments being represented, and there being also an auxiliary staff, the members of which hold office for two years only. At the same date, 1849, the number of in-patients for the year was 498, while in 1902 in-patients numbered 2,160, and out-patients 25,918.

INCEPTION OF THE NEW SCHEME.

Towards the end of 1896 overcrowding had become so marked that it was felt that the desire to do honour to the Diamond Jubilee of Her late Majesty Queen Victoria could not take a better form or one more pleasing to the illustrious Sovereign herself than that of a new hospital.

The Lord Mayor (Mr. Pirrie) threw himself vigorously into the scheme, and Mrs. Pirrie began the onerous task of collecting funds. In about six months £100,000 was promised, and has since been paid nearly in full.

For a site the City Corporation made a grant of six acres in the old asylum grounds, with a promise of a similar grant when the asylum is removed. The situation is not quite so central as the old one, but it is on rising ground, and has excellent approaches. Being faced by Dunville Park on the north, and the old asylum buildings on the south, it is certain that no buildings will ever approach it on one side, and almost equally certain as regards the other.

The persons responsible for the plans adopted are the Construction Committee, the architects (Messrs. Henman and Cooper, Birmingham), and the medical and surgical staff. The latter had every opportunity of expressing its views, and practically every important point put forward by it was ultimately adopted. It was also well represented on the general committees. The scheme of working out the plans proved so harmoniously successful as to be worth noting. Draft plans were first sent to the Construction Committee, passed on by it to the medical and surgical staff, annotated by the latter and returned: the process being repeated until final adoption by the Construction Committee. The general aim of the plans was to secure economy of time and energy; and money and precedents were allowed only so much weight as proved

suitability and reason gave them. The idea underlying the plans was that advocated by Mr. Henman in the *Builder* in August, 1896. Hospitals, he thought, should be treated as "health manufactories," and ease and dispatch in working them secured by avoidance of long distances, vertical and horizontal: conditions which he considered perfectly feasible if wards were all placed on one story, lighted by "lanterns," and ventilated on the plenum system. The idea seemed good, so in 1898 his firm was commissioned to prepare plans for a hospital in which it should be carried out.

The New Building.

The leading features of the new building are: (1) That all the wards are on one level, and built side by side on the south of one long main corridor. (2) The lighting of the wards and corridors is by "lanterns" or continuous roof windows. (3) The wards with their accessories are on the "unit" system, each physician and surgeon having a unit or small hospital to himself. The building is of fine redsand stock brick with dressings of Giffnock stone. But little was allowed by the Construction Committee for outside effect, but the most has been made of it architecturally, and the completed building has a handsome effect and one pleasing to the eye.

The Interior.

The main corridor, 460 ft. long and 10 ft. wide, has a tarazzo floor, the lower part of the walls being painted flesh grey and varnished with duresco, while the upper part, like the ceiling, is white. From this main corridor 17 wide branches lead due south to the 17 wards, which, lying at the ends of these branch corridors, are separated from one another only by the breadth of their intervening walls. At the southern end of each ward is a large window with French casements leading into a room flanked on each side by sanitary turrets. They are lighted by continuous nearly vertical "lantern" lights, which avoid too strong a shadow and give 180 sq. ft. of glass or 1 sq. ft. to 7.9 sq. ft. of flooring. They give excellent light as compared with that from the 147 sq. ft. of six ordinary windows, the lower sashes of which would give very poor and insignificant illumination. Any possible feeling of being sunk in a well is taken away by the presence of the large window at the end from which patients can look out on the recreation ground and trees.

The floors are of teak and double-tongued, with tiled skirting; the walls being painted flesh grey with duresco varnish and the ceilings white. In the sanitary turrets at the end of the ward Betterment closets have been adopted, and owing to the currents of air always being from the ward to the closet, connecting lobbies have been dispensed with. The bath rooms are to the right or left of the entrance from the branch corridor, with tarazzo floors, delft bath and wall tiled for 6 ft. There are six openings, three on either side of the ward, for the entrance of air. They are 7 ft. from the floor and situated between the beds. The fourteen exits for air are at floor level, one under each bed, and smaller than the entrances. The same ventilating arrangements exist throughout all the wards and rooms south of the main corridor, in the corridor itself, and in the out-patient department.

The space on each side of the branch corridors is filled by several rooms, which are ingeniously dovetailed into each other, and so afford much accommodation. A kitchen is placed symmetrically between two branch corridors at the end of each two wards (marked C). In medical units there is behind this a small clinical laboratory (marked G), and two small two-bedded rooms for women and men respectively. In addition there are on the medical side two lecture or class rooms capable of seating fifty students. On the surgical side the small clinical laboratories and lecture rooms of each unit have been converted into four operating theatres. All these rooms are heated and lighted on the same principle as the large wards.

One can now understand with ease the "unit" system: each physician has his male and female large wards side by side, the kitchen, the little clinical laboratory, and two private or two-bedded wards, all compact; he will have charge of thirty-two beds, and have his own nursing sister and her staff, his resident medical officer, and his students; and each surgeon, in the surgical end, his own operating theatre. The patients on one balcony cannot even see the patients on that adjoining; and a patient from one ward would have to go down the branch corridor, along the main corridor, and down the other branch corridor to get to the adjoining ward, unless he went through the kitchen or laboratory. The seventeenth ward is for gynaecological patients. It is self-contained and independent, its operating theatre being lighted by a broad bow window. The two wards at each end of the building have side windows and a large balcony outside running the whole length of the ward.

The operating theatres are floored in tarazzo, and the walls tiled for 6 ft. They are lighted on the same system as the wards, but the lights are 3 ft. 6 in. in height, instead of 2 ft. 6 in., and so give a proportion of 1 sq. ft. of glass to 2.6 sq. ft. of flooring. There are steam sterilizers and a full supply of filtered and steam-heated water.

The ophthalmic ward is the only one to the north of the main corridor; it differs somewhat in construction from the general wards. There is a central branch corridor, into which open the operating theatre, two private wards, and the kitchen. At the end of this branch corridor is a small central hall, dome-lighted, and opening out of it are the two six-bedded wards, one on each side, with ordinary windows. The operating theatre resembles that in the gynaecological department.

The Out-patient Department.

Parallel to the ophthalmic ward, and between it and the administrative buildings, is the out-patient department, which can be entered from the main corridor but has its main entrance at the opposite end. It consists of a large central waiting hall, 90 feet by 38, tarazzo-floored, and tiled walls. Around it are eighteen rooms of various sizes for use as medical, surgical, ophthalmic, gynaecological consulting rooms, with an emergency room and operating theatre, lavatories, and a doctor's and nurses' sitting room. These rooms have been quite lately rearranged, so that they are not in the exact order as marked in the plan. Facing south, over the entrance into the main corridor, is Sir William Whitla's stained glass window of the Good Samaritan, with the coats of arms of the old Queen's University, the College, the Royal University, and the hospital. When this window catches the light of the midday or afternoon sun, the beautiful rich colouring stands out in striking contrast to white ceiling and faint tints allowed for ornamentation round the hall. Sir William presented the window to the old hospital in 1887. When the new building was in progress he had it taken down and re-burnt, and it is now one of the most beautiful and richest pieces of such art.

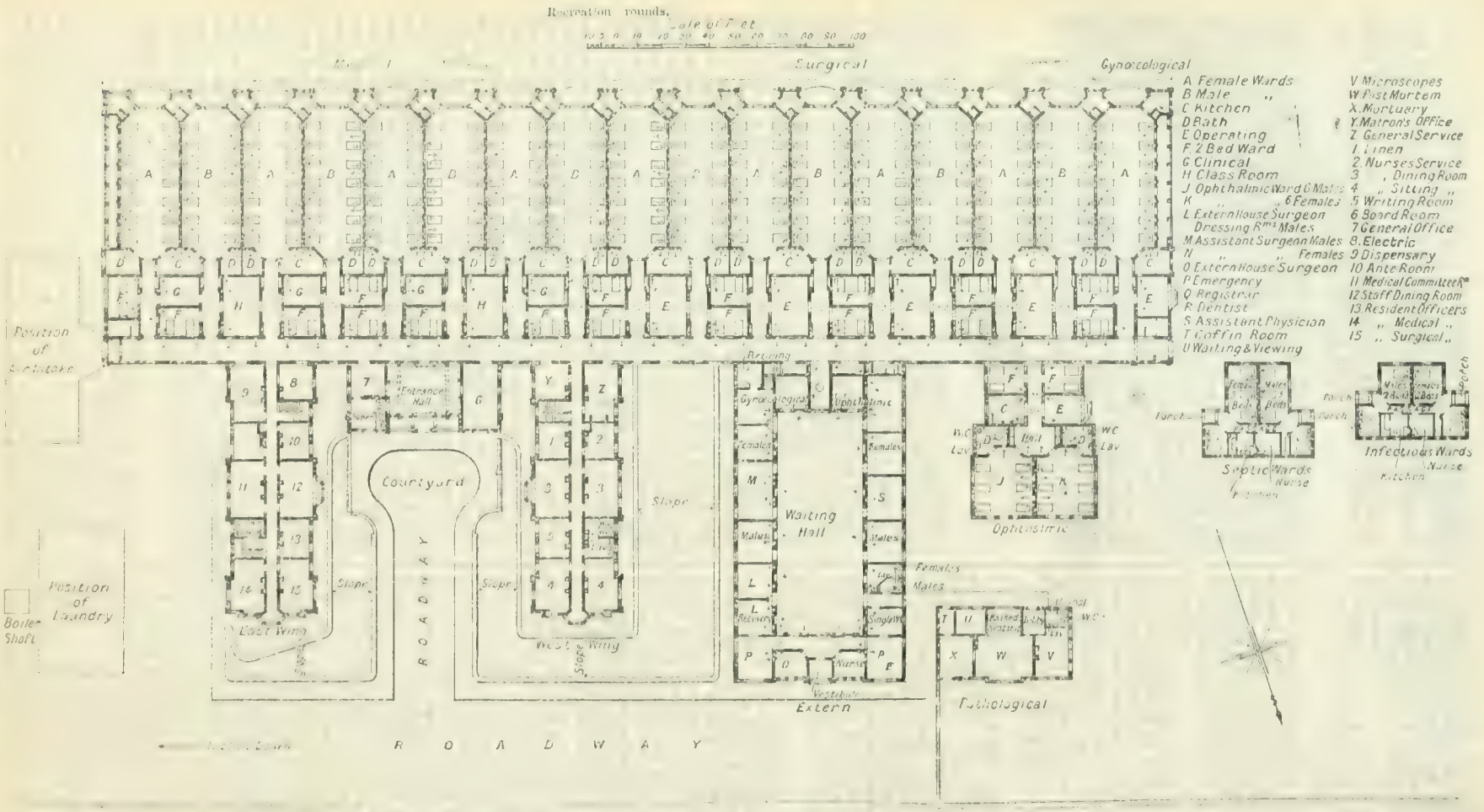
Below the out-patient department are large and ample cloak-room and lavatory accommodation for both male and female students. From these the students ascend by special staircase to the main corridor.

Administrative Block.

The administrative buildings are at right angles to the main building on its north side, and consist of a low central block, with entrance hall and offices and two residential wings. The latter have each four stories and a basement, and their rooms are built round a corridor which runs the full length of the building on each floor, that on the lower floor joining the corridor of the main building at right angles. In the western wing are the kitchens and other domestic offices and the matron's and nurses' quarters. The rooms for the latter vary from 12½ ft. by 9 ft. to 12½ ft. by 12 ft. In the east wing the basement consists of storerooms, while on the ground floor is an "electrical" room, the dispensary, and various day rooms for the resident medical staff, as well as a small "dark" room for photography, etc. On the first floor are bedrooms, with further accommodation on the upper floors for the domestic and nursing staff, to which access is attained by a separate staircase. At the east end of the building is a laundry, fitted up with all the latest appliances for economizing labour.

Ventilation.

The subject of ventilation, being of general interest, requires a little fuller notice. The air intake lies at the east end of the main corridor; the great air duct runs below this corridor, not only for its whole length, but beyond it, in order to supply two small isolation buildings; at the entrance it is 20 ft. high and 9 ft. broad, gradually diminishing toward the west; at the other end it is still 9 ft. broad, but only a few feet high. The duct divides into a Y-shape towards the east, each arm of the Y ending in a circular aperture just a little larger than the rotating fan fixed in each aperture. These fans are 10 ft. 4 in. in diameter, six-bladed, and each is capable of driving 10,000,000 cubic feet of air per hour. The machinery lies in the space between the arms of the Y, and engines and propellers are in duplicate; one fan only is used at a time, but the other can be put into use in a few



General plan of Hospital on ground floor.

seconds. A large room is built around each fan, with openings looking like rather narrow windows, and arranged in rows vertically in it are innumerable steam-pipes. The air, washed by passing through wet curtains of coir matting and heated by the pipes, is, when thus warmed and purified, driven up the air-duct. From the main air-duct branch ducts run under the branch corridors; and when this branch air-duct reaches the entrance to the ward it divides into two and feeds the air entrances on each wall. The exit channels from the wards and corridors end in the sanitary turrets, where the air escapes through flapping louvre windows.

At the entrances of the branch air-ducts from the main air-duct more steam-heated pipes are placed. The quantity of steam entering these secondary pipes can be regulated so that, for instance, one ward may be kept at 70° F. and the adjoining one at 60° F. In hot summer weather, of course, no steam is passed through the pipes. A change of air seven times an hour in winter and ten times in summer has been allowed for the whole building. The consulting mechanical engineer, Mr. Henry Lea, says that by the use of the exhaust steam from the engines for hot-water supply of the building, a large deduction may reasonably be made from the cost attributable to the employment of mechanical means of ventilation.

In the administrative and residential quarters gas fire-places, radiators, and ordinary window ventilation have been adopted. Every precaution has been taken against fire, the staircases and corridors of the residential quarters being of stone and concrete.

On the west of the hospital is a mortuary with a view room for jurymen, a *post-mortem* theatre which will hold about 70 students, and a small laboratory and museum. The artificial lighting throughout is electrical, and in the various clinical rooms, operating theatres, and electric room suitable plugs are placed to supply electricity for cautery, Roentgen rays, light treatment, etc.

Cost.

The hospital will cost little more than £300 per bed, certainly under £350; the cost of upkeep is doubtful;

the plenum system of ventilation and heating, compactness, facilities for administration, the healthy rivalry between the units not only in efficiency and ward care, but also in economy, the ease with which carelessness or extravagance can be traced to the door of the offender, will all make for a judicious and restricted expenditure. Besides the 300 beds for patients, there are 12 resident medical officers, 76 nurses, and 32 servants estimated for; which makes a total of 420 persons.

General Considerations.

Much care has been devoted to the important question of furnishing. The nurses' sitting rooms are comfortably and handsomely furnished, their bedrooms having serviceable and tasteful suites of white polished ash with dark-green linoleum on the floor with a warm rug alongside the iron bed.

The clinical laboratories in each unit are provided with good presses, writing tables, and sectional bookcases for the bound volumes of notes, as well as the usual necessities for every-day clinical examination. In the wards the beds are iron, enamelled white, with combined bed rest; a neat and useful patient's locker has also been devised. The little ward kitchens are of special interest, for to combine neatness, compactness, and serviceableness, each has been fitted up by Mr. Pirrie on the fashion of the White Star liners.

It is impossible to mention by name all those who have joined in the work of erecting and fitting the new hospital: no record, however, could be made which did not refer to the Chairman of the Construction Committee, the Right Honourable W. J. Pirrie; the Vice-Chairman, Mr. R. H. Reade, D.L.; and the Chairman of the present Board of Management, Mr. William Crawford, J.P., and the late Professor James Cuming, M.D. It would be difficult to overestimate the value of Mr. Pirrie's efforts. Not only have they been characterized by a liberal use of his cheque-book, but the ripe experience of the shipbuilder has been unstintingly devoted to bringing matters to as near perfection as possible where origination, adaptability, and technical knowledge were required. This is apparent not only in the construction of the building, but also in the furnishing of the wards. As an instance, there are few questions about operating tables, or the principles of sterilization, in which Mr. Pirrie could not more than hold his own with most surgeons. To Mrs. Pirrie also a heavy debt of gratitude is due; in addition to having collected or aided in collecting the original £100,000, Mrs. Pirrie has since been instrumental in raising an endowment fund of nearly £50,000. By these references one does not detract in the least from the labours worthy of all praise of the many who have worked so hard for the last six years.

His Majesty has graciously signified his intention of visiting and formally opening the hospital on July 27th; it will be open for public inspection on July 2nd, 3rd, and 4th, and the Construction Committee has kindly arranged for a day of special inspection by the Ulster Branch of the British Medical Association on July 10th.

THE REFORM OF CONTRACT PRACTICE.

(Continued from vol. i, p. 1160.)

The following accounts of action that has been taken in various places to amend the conditions of club and contract practice are in continuation of the series commenced on June 6th. In that number the considerations which have led to the publication of the series were stated, and the steps taken at Durham and Gateshead were detailed. The subsequent issues of June 13th and 20th contained corresponding accounts of action at Rotherham, Chatteris, Walsall, Bournemouth, East Retford, Lincoln, and Dolgelly. Details of the decisions taken upon certain points common to all action with allied objects in view are given in each account, and the experience gained from them will be useful to those who in other places are desirous of doing something to mitigate the disadvantages under which men in club practice suffer, and which indirectly affect the position of the whole profession:

X.—Southampton.

The information upon which the following account is partly founded was kindly supplied by Dr. A. A. Mackeith, Southampton.

1. A new organization was formed for the purpose of dealing with the conditions of certain divisions of club practice.

2. A local medical society of an ordinary character previously existed, and was the instrument through which the special organization was brought into being. After successfully initiating the movement, however, it ceased to take part in it as a society.

3. The parent society to which reference has been made issued invitation to all medical men in Southampton to take part in the movement, irrespective of whether they were members of the society or whether they were not.

4. Every one was invited, and all but three practitioners expressed their readiness to take part.

5. No steps were taken against the three gentlemen referred to, because, although they would not sign the memorandum of association, they were in no wise opposed to its objects so far as those objects went. Since then other medical men have commenced practice in Southampton, and the manner in which they are to be treated is now under consideration. They have started practice under such circumstances as to make them *de facto* opponents of the association. They will probably be gazetted for formal quarantine.

6. There were in Southampton at the time the organization was formed six classes of clubs: (1) Registered Friendly Society Clubs for men, women, and children respectively; (2) a kind of offshoot of the above, which were not regular clubs, but a system which arranged for young children to join the Friendly Society clubs for medical purposes only, and also one by which adult women were allowed to figure as juveniles so as to cheapen the rate; (3) two dispensaries with "provident" annexes: (4) Medical Aid Societies, which collected from door to door: (5) a number of "private clubs," the payments in connexion with which were made at the surgeries of the doctors who ran them; (6) a very large number of annual benefit clubs worked in connexion with publichouses, places of worship, etc., and known under such terms as "slate club," "cock and hen club," "shell-out club." Their primary object was not medical aid, but it was provided for by a small additional payment if desired. It was decided to take no action whatever against the first three classes, that is, the two dispensaries and those in connexion with the Friendly Societies, so the terms need not be discussed. The rates paid by the other three classes were generally 4s. 4d. a head per annum, of which 15 to 20 per cent. went to the collector. A very few clubs belonging to these classes paid more, that is, 1½d. a week, or 6s. 6d. a year, while a few children's clubs paid only 2s. 2d.

7. Identical notices were sent by agreement to each club in the above three classes by the medical men connected with them.

8. The views of the medical men thus made known were that from a given date no clubs would be accepted at less than 1½d. a week per member. The clubs thus notified, it should be understood, were only those belonging to the classes specified not already paying that rate.

9. The number of persons affected by these notices was approximately 8,000, divided up among a very large number of different clubs. Some of the latter accepted the new rate, and some did not. The latter got in four new medical men who are paid at the old rate. Out of the 8,000 members, however, about 5,600 belong to clubs which accepted the higher scale.

10. The clubs of the Friendly Society class continue as before, since this question has hitherto not been touched. As far as the other classes are concerned, the doctors are doing less work, but at such an improved rate that they get not less, but rather more, aggregate pay than before. Midwifery, vaccination, and anything more than minor surgery has to be paid for separately. Attendance except for an extra fee can also be refused if it is found that a patient has joined a club when already ill, or if his illness is due to his own misconduct.

11. The results are considered by the association to be satisfactory, and further work, and especially increased organization and union, would effect a great deal more. One definite result of the movement is that as far as Southampton is concerned the operations of the National Medical Aid Society are seriously scotched, if not absolutely extinguished.

XI.—Whitby.

We are indebted to Dr. A. J. Sharp, of Whitby, for the information which has been used in compilation of the following account:

1. At Whitby no medical society of any sort existed prior to October, 1899, but about that date one was formed chiefly with a view to enabling medical men in the town to deal unitedly with questions of club and contract practice.

2. As the society was quite new, there were no difficulties

as to who should be invited to join in the movement which it was intended to institute.

3. With perhaps two or three exceptions, all medical men in Whitby accept club practice. The first steps were taken by men in such practice, the conditions of it having long given rise to general dissatisfaction. As a first step a good many men were privately sounded as to their views on what might be gained by union. These being encouraging, invitations were sent out to all practitioners to come to a general meeting, the specific object of the meeting being to hear an address on the subject of organization from a medical man in the North, who had had much experience in the matter. At this meeting two resolutions were proposed and accepted. One of these was a resolution to form a Medical Society for Whitby, and it was carried out on the spot, a president, honorary secretary, and treasurer being elected at once. It has been kept up since, meetings being held two or three times a year, and discussions taking place on such subjects as women and children's clubs, midwifery fees, and other questions connected with the business aspects of a medical career. The other resolution was as follows: "We, the undersigned, hereby undertake not to attend any clubs after January 1st, 1900, at a lower rate than 3s. a head per annum."

4. Invitations to attend the first meeting were sent to practically every man in the town and district, and of those who came practically all signed the resolution at once or subsequently did so, and also joined the Society. Those who did not attend the meetings were subsequently called on or written to. This course was adopted both when the movement first began and at all subsequent meetings. Practically the active or moral support was obtained of every practitioner in the town or district except that of one man who for certain reasons has dropped out of all intercourse with the profession.

5. There was no occasion to consider what attitude should be adopted towards those who would not join in the movement because there were practically no dissentients. In a few cases men would take no active part nor join the Society; but this, though a mistaken course, was because they were either not interested in club practice, or thought the objects of the Society were not sufficiently radical.

6. At the time the movement began the condition of club practice was as follows. There were no private clubs, and no women's clubs, though several attempts to start the latter had been made. Of juvenile clubs there was only one, but none of the medical men who took part actively or passively in the movement were interested in it in any way. The clubs, therefore, were practically all male adult clubs, and the prices paid ranged from 2s. to 3s. a head a year. The rate was no higher even for clubs with head-quarters outside the town, though some of these, in villages three miles or more away, paid 3s. 6d. What between ordinary clubs and benefit clubs, such as the Hearts of Oak, etc., it has been calculated that every male in Whitby over 16 belongs to at least one club, while a good many must belong to several. This is the case right through Whitby and its district. The sick benefit clubs used to elect their doctor annually and discard their old one or retain him just as fancy took them. They usually paid 2s., and had neither wage limit nor examination before admission to the medical division of the sick club. The payments from these clubs were often in arrear.

7. The views of the medical men were brought to the notice of the clubs as follows: A letter for use by all medical men was drawn up, as many copies of it as required supplied to each medical man, and one was signed and sent to each club by the medical man connected with it.

8. There were no proposals exactly made to the clubs, as the letter to which reference has been made simply conveyed the information that at a meeting of the medical men of Whitby and the district it had been resolved that no club should pay less than 3s. a head after January 1st, 1900.

9. The result was that the clubs grumbled a good deal, and have been grumbling ever since. They talked of combining and bringing in an outsider to do all the work, but they have never done so, and meantime all clubs having their head quarters in Whitby have paid the 3s. rate.

10. The present position is that the clubs in Whitby or which have their head-quarters there, are paying the 3s. rate, but this includes medicine, and often bottles, splints, surgical dressings, setting fractures, extracting teeth, in fact everything except midwifery and illness directly caused by drunkenness or immorality. A popular doctor often has to sign three or four certificates for a patient for clubs of which he is not the surgeon. Many tradesmen, master builders and other well-to-do persons belong to these clubs. Possibly the doctor makes something out of the wives and families of such patients, but they do not scruple about utilizing his services themselves.

11. This organization has not yet effected as much as might have been expected of it, but there are very special difficulties in the way. Whitby is an old-fashioned town with very old deep-rooted traditions and interests, a good many medical men, and much competition. The standard of life is very low, owing to the decay of local industries. The employment of large numbers of the people is very intermittent, so that large numbers are constantly only a short distance from the workhouse. Under these circumstances, an immense amount of work has to be done for nothing quite inevitably, and to many medical men at Whitby it has seemed better to do the work, even for a certain 3s., than chance having to do it for nothing. Such further reforms as are possible under the circumstances can only be effected slowly, and will require that the organization of the medical men should be more closely knit, and that a truer conception should be arrived at by them of what is desirable both in the interests of the people and of the profession. Nevertheless, the improvement already effected is not by any means to be despised.

XII.—SOUTHPORT.

Dr. R. M. Littler, Honorary Secretary of the Southport Medical Society, was good enough to furnish details which have assisted the following compilation:

1. The question of club practice was taken in hand by the Southport Medical Society last year. The immediate cause of its doing so was the treatment received by one of its members from the local "Tent of the Independent Order of Rechabites." The member in question had had application made to him for attendance as a club patient by a person in good social position. He remonstrated with him, and the result was that the medical man concerned received a letter from the local secretary, curtly telling him to resign his appointment or to cease complaints. The matter was referred to a subcommittee, who subsequently called a general meeting to consider the whole question of club practice.

2. To this special meeting of the Southport Medical Society every medical man in the town was invited, whether he was a member of the Society or whether he was not.

3. As before stated, the movement was originated by the Medical Society at the request of a member who was engaged in club practice.

4. Invitations to the meeting were, as before mentioned, sent to all medical men without exception who were in practice in Southport and Birkdale. The invitation contained a printed slip which embodied the general object of the meeting. Many men who were unable to attend personally signified their adherence to the movement by signing and returning it. There were actually present at the meeting a number of men who were not members of the Society, and they took part in the proceedings. The result of this meeting was that the following resolution was passed unanimously:

> That this meeting of the medical profession in Southport and Birkdale, having discussed the whole question of club practice, desires to place on record its firm conviction that the present rate of remuneration is inadequate, and considers that no medical man in the district ought to accept less than 5s. an adult male per annum.

At a subsequent subcommittee meeting the following agreement was drafted: (1) That the minimum payment accepted from clubs be 5s. per annum for every adult male; (2) that a charge of 1s. be made for examination of all new members; (3) that women and children be not eligible for medical attendance at club rates; (4) that no medical man should accept the position of medical officer to any club or tontine society. This agreement was subsequently sent to every medical man, and signed by every medical man.

5. There was no occasion to consider what attitude should be adopted towards those who stood out from the movement because every medical man in practice in the district signed the agreement embodying the above four points, including one or two medical men who practise homoeopathy.

6. At the time the movement commenced Tontine and benefit societies paid 3s. for each member per annum, but had no women or children among them. The Oddfellows, Rechabites, and Foresters clubs also paid 3s. for every adult male member, but only 2s. for women and children. There were no "private medical clubs."

7. The views of the medical men were brought to the notice

of the clubs by sending a printed circular to the secretary of each club or society.

8. The proposals thus laid before the clubs, etc., for their consideration were that the rates for adult males should be 5s. a head per annum, and that all women and juvenile clubs should be abolished after January 1st following; and also that there should be a special fee of 1s. for examination of any candidate for the admission to a club.

9. The result was that there was a meeting between representatives of the medical men and of some of the Tontine societies, Rechabites, and Foresters, at which the various points were discussed. The Tontine societies were willing to pay the 1s. for examination before entry, but refused to increase the annual subscription from 3s. to 5s. The foregoing had no women or children's clubs affiliated to them. The Rechabites refused absolutely all three points, including that concerning women and children. These results were laid before a further general meeting of the whole of the medical men in Southport and Birkdale, when it was decided by an overwhelming majority to adhere to the terms of the agreement without any modification. The clubs, etc., were duly informed of this further decision, and met it in different ways. A few clubs, especially those connected in some way with church organizations, gave way and accepted the 5s. rate. Of the others, the Rechabites and Oddfellows asked for a year's grace "in order if possible to alter their constitution." It was decided that this should be granted them, and that their old doctors should be at liberty to attend them during this period. The Tontine societies, on the other hand, at once set to work to try and get an outsider to come into the town and do their work and that of the Foresters. They failed at first, but at length got one. This gentleman is Mr. James Morrison Orr, M.D.

10. Mr. James Morrison Orr, M.D., arrived at the beginning of this year, 1903, and is still at work, but is "in quarantine."

11. The profession in Southport and Birkdale, except for this gentleman, is very united, and the eventual upshot remains to be seen.

THE BIRTHDAY HONOURS.

Among the honours given in connexion with the King's birthday, none has been earned by better services to science, to the practice of medicine, and to the State than the Knight Commandership of the Order of St. Michael and St. George conferred on Sir Patrick Manson. Not only has he, by his researches into the pathology of filarial disease and of malaria, and especially into their dissemination by mosquitos, made most important contributions to medicine, but by his enthusiasm and generous recognition of the work of others he has founded a school of workers who are constantly extending our knowledge of the causation of tropical diseases which is the only sure foundation for preventive measures. He became Medical Adviser to the Colonial Office in 1897, and in recognition of his services was nominated C.M.G. in 1900.

The King has also announced his intention of conferring the honour of knighthood on Mr. Fripp and Drs. Stephen Mackenzie, E. C. Perry, and P. Heron Watson.

Sir Stephen Mackenzie, who was President of the Metropolitan Counties Branch of the British Medical Association in 1901-2, was a student of the London Hospital, to which he is now Senior Physician. He is also physician in charge of the skin department there, and in that capacity has taken a large share in the establishment of the special light department. The honour he now receives will be generally appreciated by the profession as a recognition of the good work he has done, not only as a teacher of clinical medicine and dermatology, but also as a pioneer in the application of the ophthalmoscope to general medicine.

Sir Cooper Perry and Sir Alfred Fripp were both members of the Committee on the Reorganization of the Army Medical Services which reported in 1901, and both are now members of the Army Medical Advisory Board. Sir E. C. Perry, who is Physician to Guy's Hospital and Medical Superintendent, was recently appointed Chairman of the Military Hospitals Committee. Sir Alfred Fripp, who is Assistant Surgeon to Guy's Hospital, received the honour of C.B. in recognition of his services as Senior Surgeon and chief civilian medical officer of the Imperial Yeomanry Hospital, South Africa.

Sir Patrick Heron Watson, who graduated M.D. in 1853, served as a Staff Assistant Surgeon during the Crimean war, and was invalided home. He settled in Edinburgh, began to lecture on surgery, and became Assistant Surgeon, and later Surgeon, to the Royal Infirmary. He is an Honorary Surgeon to the King in Scotland, and represents the Royal College of Surgeons of Edinburgh on the General Medical Council. He has been an enthusiastic volunteer since the formation of that force, has the rank of Brigade-Surgeon-Lieutenant-Colonel, and possesses the Volunteer Decoration. He has been President of the Royal College of Surgeons of Edinburgh, of the Edinburgh Medico-Chirurgical Society, and of the Harveian Society, and is at present Surgeon to Chalmers' Hospital.

Surgeon-General Colvin Colvin-Smith, C.B., who is advanced to K.C.B., entered the Indian Medical Service in 1851. He served in the second Burmese war with the Madras Artillery, through the Indian Mutiny with Madras regiments, and as P.M.O. of the Indian contingent in the Egyptian campaign of 1882, was present at Tel-el-Kebir and Zagazig.

Surgeon Major-General John By Cole Reade, C.B., who receives the same honour, was born in Canada and entered the Army Medical Service in 1854. He served with the second battalion of the Rifle Brigade in the Crimea, and was present at Alma, Inkermann, and Sebastopol. During the Indian Mutiny he served in Cawnpore, at the capture of Lucknow, and throughout the Oudh campaign, and he was with Sir Donald Stewart in the Afghan war of 1878-80. He afterwards spent five years as Professional Assistant to the Director-General A.M.S., and retired in 1893.

Surgeon-General Evatt, who is nominated C.B., entered the Army Medical Service in 1865, and is now P.M.O. of the Second Army Corps (Salisbury). He has seen service in the Perak expedition (1876), the Afghan War (1878-80), the Bazar Valley expedition, and with Sir Charles Gough's brigade during the advance to Gundamuck and Cabul. He served also in the Soudan expedition of 1885, and the Zhob Valley expedition in 1890. In India he passed through eleven cholera epidemics, and was thanked by the Government of India for special services in 1879. Throughout the whole of his service he has displayed a great interest in all movements which have for their object the moral and physical welfare of the soldier. He was one of the earliest advocates of the unification of the Army Medical Service, took a large part in raising the R.A.M.C. Volunteers, and early urged the formation of an Army Nursing Service Reserve.

Surgeon-General Scott Reid, who receives the same honour, entered the Indian Medical Service in 1872 and is now P.M.O. of the Punjab Command. He served in the Afghan War of 1879-80, with the Chin Lushai Expeditionary Force in 1889-90, and with Sir William Lockhart in the campaign on the North-West Frontier in 1897-98.

The honour of C.M.G. is conferred on Mr. Allen Hastings Hanley, F.R.C.S.I., Senior Medical Officer of the Protectorate of Southern Nigeria.

CENTRAL MIDWIVES BOARD.

We have received the following communication from Mr. G. W. Duncan, Secretary of the Central Midwives Board:

"A meeting of the Central Midwives Board was held at the Privy Council Office, Whitehall, on Thursday, June 25th, Dr. Champneys in the chair, when the following business was transacted:

"1. A letter was read from Dr. Kaye, County Medical Officer for the West Riding, on behalf of a conference of county medical officers lately held, suggesting that the Board should receive a deputation from the conference to hear the suggestions of the latter with regard to the administration of the Act in county areas. The proposal was favourably received by the Board, and the Secretary was instructed to arrange a meeting in London at an early date.

"2. The Chairman reported on the question of office accommodation, and further instructions were given to the Secretary on the subject.

"3. The draft form of the Midwives Roll as submitted by the Secretary was considered, approved, and adopted.

"4. Alternative draft forms of the certificate required by the Act having been submitted by the Secretary, the Board decided that the certificate should in each case show on the face of it the qualification in respect of which it was granted. The approximate forms were approved and adopted."

The Russian Minister of Public Works has under consideration the establishment of a regular service of medical officers for trains which have to travel long distances.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1903.

SUBSCRIPTIONS to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, JULY 4TH, 1903.

"CHARLOTTENBURG" AND AFTER.

THE great scheme for the foundation of a college of applied science for teaching and research in the higher realms of technology, launched by the letter addressed by Lord Rosebery to the Chairman of the London County Council, has been on the stocks for the last two years or more. The conception, though grandiose, ought to appeal to the practical commercial instincts of the country; and we are glad to know that the appeal has, in fact, met with so much success that the contributions already promised so nearly approach the sum of £300,000, the minimum suggested as the capital expenditure, that the Chancellor of the University of London has felt himself justified in applying to the London County Council to provide £20,000 per annum for the maintenance of the institution. Lord Rosebery's letter was considered by the London County Council at its meeting on June 30th, and referred to the General Purposes Committee in conjunction with the Technical Education Board.

Details of the organization of the proposed institute are to be settled in consultation with the Senate of the University and other bodies concerned, but it is intended that, while working in close co-operation with the Royal College of Science, the Central Technical College, and other branches of the University, the new institute shall be organized as a distinct school of the University to supplement provision for teaching and research now existing in London by taking up subjects as yet dealt with inadequately, or not at all. Only advanced students able to profit by the instruction and facilities for original research which the institution is to provide will be admitted. The subjects which the Chancellor of the University enumerates as those to be embraced in the Institute are chemical technology, mining and metallurgy, electro-chemistry, electric traction, optical technology, bacteriology, railway and marine engineering, hydraulics and naval architecture. As the London County Council has already recognized the existence of the need for greater facilities for education and research in London in these subjects, there is reason to anticipate that the proposal to make an annual grant for maintenance will be sympathetically received, and that a London "Charlottenburg" may come into existence in a not distant future.

The scheme has little direct bearing on biology or medicine, but indirectly it may have an important influence on the development of teaching and research in these subjects in London. In the first place, it may be hoped that the example set by Messrs. Wernher, Beit, and Co., who have placed a large sum of money in the hands of trustees to be applied towards defraying the cost of building and equipping the new Institute of Technology, may be followed by other men of wealth, and that thus the habit of giving to the University of London may be created. In the second place, the fact that the arguments in favour of the establishment of such a college in London were being brought to the notice of wealthy men, and that an appeal was about to be made to complete the capital sum required, has tended to deter members of the Senate and Faculties of the University, interested in other branches of learning, from launching proposals which must be carried out if the University is to be worthy of the capital of the Empire.

The theory that a teaching institution which prepares students for a profession or handicraft must be altogether or to a very large extent self-supporting—a theory evolved, we believe, by Chancellors of the Exchequer—is now disappearing, but it has had a deterrent influence on men who might have made large gifts or bequests to institutions engaged in higher education. We hope it is not too sanguine to believe that, when the case is properly put before the public, contributions may be obtained in sufficient amount to warrant the establishment of a great medical institute in connexion with the University. The Chancellor has announced that the Royal Commissioners of the 1851 Exhibition will probably be willing to place a suitable site for the erection of the Institute of Technology at the disposal of the trustees, on condition that funds sufficient for building and equipment are raised, and that adequate provision is made for maintenance. The site extends to about 4 acres, adjacent to the present University buildings at South Kensington, and close to the Royal College of Science now approaching completion, and the Central Technical College of the City and Guilds of London Institute. Some two acres will still remain in the hands of the Royal Commissioners, and there are grounds for hoping that they may be willing to hand over these acres for the erection of an Institute of Medical Sciences upon similar conditions as to the raising of funds for building and maintenance. For the reasons mentioned no serious effort has yet been made to raise the money which will be required; but such an effort must be made before long, and we trust that it may have the success which it deserves.

THE FROUDE-CARLYLE CONTROVERSY.

REFERENCE has already been made in the BRITISH MEDICAL JOURNAL to the unedifying controversy which has been rekindled by the publication of a book entitled, *New Letters and Memorials of Jane Welsh Carlyle*, with an introduction by Sir James Crichton-Browne. Sir James, in the ardour of his championship of Carlyle, cursed the memory of Froude with a vigour and a wealth of vocabulary which Ernulphus might have envied. Mr. Ashley Froude and Miss Margaret Froude retorted by publishing a private record by Froude himself of his relations with Carlyle not intended by him to see the light.[1] They cannot fairly be blamed for seeking to vindicate the character of their father; it is deplorable, however, that the publication of such a document should have been judged to be necessary. It consists of notes written by Froude in pencil, unrevised, and never seen by any one till after his death. These notes show how keenly he felt the storm of criticism which broke over his head after the publication of his *Life of Carlyle*. The special interest of the book from our point of view lies in the fact that it contains a

[1] *My Relations with Carlyle*. By James Anthony Froude, together with a letter from the late Sir James Stephen, Bart., K.C.S.I., dated December, 1886. London: Longmans, Green and Co. (Demy 8vo. pp. 80. 2s.)

statement in plain terms of what is obscurely hinted at in the biography—namely, that the secret of Carlyle's life was that "he was one of those persons who ought never to have married." In the last issue of the BRITISH MEDICAL JOURNAL Sir James Crichton-Browne came forward in defence of Carlyle against this "cruel imputation." He swings his controversial Excalibur with such might that he speedily reduces an adversary to the "doleful dumps" of the hero in the ballad. Had Mr. Froude been still alive he might perhaps have "fought upon his stumps," but being dead he has not a leg to stand upon.

We do not propose to go into the details of the question at issue. Sir James Crichton-Browne says that Froude "trusted entirely to rumour," and he certainly shows that the witness on whose testimony he appears mainly to have relied was quite untrustworthy. The evidence of Sir Richard Quain is not so entirely convincing to us as it is to Sir James Crichton-Browne; but we are heartily glad that the discreditable story as to the examination of Mrs. Carlyle's body after death in St. George's Hospital is now shown to be utterly false.

If Froude trusted entirely to rumour, it is only fair to say that Sir James Crichton-Browne seems to trust largely to gossip—some of which, as for instance the remarks attributed to the late Dr. Maclagan, seems irrelevant. On both sides it is a case of "what the soldier said," and that, as we know from the pronouncement of Mr. Justice Stareleigh, is not evidence. Sir James complains that Froude did not test Miss Jewsbury's statement, and points out that "many medical men who had attended Mrs. Carlyle were accessible." This strikes us as a somewhat remarkable suggestion from a writer who a little further on makes a fine display of indignation at the mere thought of Sir Richard Quain having committed an act infamous in a professional respect by divulging a secret confided to him by a patient. We take this opportunity of making a strong protest against the notion that seems to exist in the public mind that medical advisers are at liberty to tell everything they know about a patient who happens to be a man or woman of genius. One satisfactory feature in this wretched business is that the rumours and tattlings about the Carlyle *ménage* cannot be traced to the medical men who at various times attended the distinguished couple.

The fact is, there is no conclusive evidence either way as to Carlyle's physical condition. Sir James Crichton-Browne says that Froude has done his best to "brand Carlyle as a Narses." With all respect we submit that Froude did no such thing. Narses was a eunuch, and we have seen no suggestion that Carlyle presented any physical deficiency or anomaly. The evidence of trussmakers, etc., is really nothing to the purpose. There is a psychical as well as a physical impotence, and it is precisely men absorbed in brain-work, as Carlyle was, who are most likely to be the victims of the spell expressed in the old French phrase *nouer l'aiguillette*. Many a strong man has been bewitched in this way; some never recover from the mental effects of an initial failure. It has been hinted that this is just what happened to Carlyle, but no one can now know the truth about the matter; nor is it of the slightest importance to mankind or to the memory of the dead that it should be known.

Of Froude's statement we may say as the lisping French philosopher said of the existence of a deity: *Zolie hypothèse! Ça explique bien des choses.* We would point out, however, that this pretty hypothesis in no way touches the moral character or intellectual greatness of Carlyle. Therefore, to speak of the allegation as a "vile imputation," a "foul falsehood," etc., as if impotence were a heinous crime, shows a want of the sense of humour which Carlyle himself displayed in regard to this very matter. Who that has read it can have forgotten his account of the squire of dames who was wounded in a duel and lived many years afterwards, doubtless breaking many commandments but keeping *one* with inflexible rigour?

We earnestly hope that this unseemly controversy will now be allowed to come to an end. By us, at any rate, the matter will not be again referred to, nor can we allow it to be discussed further in these columns.

DECIDUOMA MALIGNUM OR CHORION-EPITHELIOMA.

THE paper read by Dr. John Teacher, of Glasgow, at the Obstetrical Society of London, on June 3rd, on chorion-epithelioma and the occurrence of chorion-epitheliomatous and hydatidiform mole-like structures in teratomata, was followed by an excellent epidiascopic demonstration of drawings and photographs of microscopic preparations illustrating the nature and origin of chorion-epithelioma and its relation to the placenta, hydatidiform mole, and certain tumours which are not related to a pregnancy, but which show the same histological character.

Dr. Teacher, in his introductory remarks, assumed that the attitude of the Obstetrical Society towards the question of the placental origin of deciduoma malignum was the same to-day as it was in 1896, when it will be remembered that a special committee consisting of Messrs. Kanthack, Bland-Sutton, Targett, Spencer, Doran, Eden, and Griffith expressed the opinion that "there is nothing in the histological characters of these specimens to justify the supposition that they are of decidual origin, and the term deciduoma malignum is therefore an inappropriate one." Dr. Teacher asserted that this was the last word spoken at the Society on the question; that, as far as the Society was concerned, the matter was brought to a standstill by this report.

Dr. Horrocks, who opened the discussion on June 3rd, pointed out that a paper had been read before the Obstetrical Society in January, 1902,[1] on a case of chorio-epithelioma with pulmonary metastases, and that Dr. Teacher's demonstration only elaborated and exemplified the demonstration given by Dr. Cuthbert Lockyer in that paper, so that in justice to the Obstetrical Society of London it must be stated that the view of Marchand, which regards the so-called deciduoma malignum as a tumour arising in connexion with pregnancy and originating from the chorionic epithelium (or its forerunner the trophoblast) had already received acceptance by some at least of the Fellows of the Society.

It was pointed out by one of the representatives of the Committee of 1896 that the Society has no reason to regret the conclusions then arrived at on the evidence then at its disposal. At that time twenty-eight cases had been recorded, mostly under the name of deciduoma malignum. Several of these were ordinary forms of uterine cancer; of the rest, the most important were those of Sänger, Marchand, Gottschalk, and Whitridge Williams. Sänger's case, published in 1889, he himself regarded as a sarcoma of decidual origin. Gottschalk took his case to be a sarcoma of the stroma of the chorionic

[1] BRITISH MEDICAL JOURNAL, 1902, vol. i. p. 82.

villi. Marchand's case and that recorded by Whitridge Williams closely resembled one another. No villi were found in either of them. They contained cells which Marchand regarded as derivatives of the fetal ectoderm, by this he meant that they were derived from the cells which are now known as Langhans's layer, for at the time these growths were described Marchand and Williams regarded the syncytium as of maternal origin, a view which left the deep cellular layer of the villus wall as the sole representative of the fetal epiblast. But, as was pointed out in a criticism published in the *Obstetrical Transactions* for 1896, neither of these observers had been able to demonstrate the transition from placental villi to the structures composing these tumours, and what the Committee of 1896 asked was that this important link in the evidence should be forthcoming before Marchand's view was accepted. Not being able to supply this evidence, Marchand and Whitridge Williams relied entirely upon the nature and arrangement of the plasmodial structures for support of the theory, but this did not convince the Pathological Committee, inasmuch as similar structures had been demonstrated in growths of the testis and elsewhere.

Since 1896, however, the missing link has been supplied. In fact, it came later in the same year, in a case recorded by Apfelstedt and Aschoff,[2] where from underneath the intact vaginal mucosa a tumour was removed containing definite villi in a state of vesicular degeneration; there were growths also in the uterus, lungs, and spleen. These authors both regarded the syncytium and Langhans's layer of the villus as of fetal epiblastic origin and rejected the older view that the syncytium was maternal, they therefore considered the tumour to be fetal in origin. In 1897 Neumann, clinical assistant in Schauta's clinic, recorded a case in which vaginal metastasis appeared eight days after the expulsion of a vesicular mole.[3] On microscopical examination this growth, together with the uterine wall, was found to contain syncytium, and as Neumann was doubtful about the presence of Langhans's cells, he referred to the tumour as a syncytioma or carcinoma syncytiale. Since 1897 further work on the subject by Marchand, Martin, Pfannenstiel, Poten, Vassmer, and others too numerous to mention, has all helped to throw light on the true source of tumours containing syncytium and Langhans's cells.

Dr. Teacher evidently expected to find himself in the position of a sower scattering seed on soil rendered barren by what our German colleagues are pleased to term "insular prejudice," but we think he must have been agreeably surprised at the tenor of the discussion, especially at the adjourned meeting on June 16th, which proved that the views of Marchand were fully accepted by those Fellows of the Society most competent to speak on the subject.

As to nomenclature, a diversity of views was expressed even by those who were convinced of the fetal nature of the tumour in question. Deciduoma malignum, the term considered inappropriate in 1896, appeared to have more adherents than any other; and although the author thought his own choice of chorion-epithelioma, or the term chorio-epithelioma,[4] both suitable as indicating the origin of the growth, he admitted that, since the name deciduoma was so hopelessly wrong it could mislead no one, he saw no objection to its being retained. The ovular hypothesis as to the nature of those teratomata containing elements similar in structure to chorion-epithelioma and vesicular moles was left very much *sub judice*.

[2] *Archiv f. Gynäk.*, Bd. l, Heft 3, pp. 516.
[3] *Monatschrift für Geburts. u. Gynäk.*, B. vi, p. 17.
[4] Found in the *Transactions of the Obstetrical Society*, vol. xliv, pp. 34.

SUPERFLUOUS LEGISLATION.

THE Burgh Police (Scotland) Bill was introduced last year as the Burgh Police and Health Bill. To disarm objections which were raised to the introduction of an amendment of the Public Health Act by a side-wind, the words "and Health" have this year been omitted from the title of the Bill, but the public health provisions remain.

The promoters of the measure have adopted the unfortunate precedent of the Burgh Police and Health Bill of 1892 in attempting to weave into a Police Bill a series of public health clauses. The Bill of 1892 met with strenuous opposition on grounds of public policy, and the opposition was supported by the British Medical Association. The immediate result was that the promoters of the Bill first dropped the words "and Health" from its title, and, later, allowed the public health clauses to go by the board. The more remote result—the result which the opposition had in contemplation—was that in 1896 a well-considered Public Health Bill for Scotland was introduced, which became the Public Health (Scotland) Act of 1897. This statute in many respects marks a great advance on the English Act of 1875. Its more especial merit, from the point of view of the opposition to the Bill of 1892, is that it provides a uniform and harmonious sanitary code for the whole of Scotland, burghal and rural. It may be hoped that the opposition on this occasion may be equally successful, that the public health clauses will be withdrawn, and that an amending Public Health Bill, applicable to all Scotland, and embodying a few well-considered clauses, will follow.

The public health clauses of the Bill are not numerous, but individually they appear open to serious objection. Thus one clause, 60, provides, *inter alia*, for the appointment of deputy medical officers of health and sanitary inspectors. This is already provided for in its proper context in the Public Health Act, and nothing but confusion can arise from the duplication, with verbal variations, of existing clauses.

Another clause, 71, is of a more positively objectionable character. It provides that on a certificate from the medical officer of health, sanitary inspector, and burgh surveyor, the town council may close a house alleged to be unfit for habitation. Incidentally one is inclined to ask what qualifications a burgh surveyor may be supposed to have for determining questions of health. But the other objections to such a clause are obvious. The Housing of the Working Classes Act already provides machinery for dealing with such cases in a less dubious way; it places the primary responsibility for dealing with uninhabitable houses upon one pair of shoulders—those of the medical officer of health. Under the imperial statute the case is heard in open court; in Scotland, before the Sheriff; under the Bill, such cases may be disposed of by the town council, sitting in private. Procedure of such a character is obviously open to grave abuse. Having regard to the fact that the Government has undertaken shortly to introduce a Bill amending the Housing of the Working Classes Act, the production of such a clause at the present time is singularly inopportune.

Clauses 86 to 94 are what are known in England as the "model tuberculosis clauses." It is objected to them in Scotland that—while they follow the English precedent of the Infectious Diseases (Prevention) Act, which empowers a medical officer of health who is of opinion that infectious disease is being spread in his district by milk from a dairy in another district, to enter that district and examine the dairy, etc.—they are contrary to the precedent set in the Scottish Public Health Act, which provides, in the like case, for the prompt and conjoint action of the medical officers of both districts.

The Bill has been referred to the Grand Committee on Law, where it is to be hoped it will be lightened by the relegation of the public health clauses to a more suitable context.

THE KHEDIVE AND HYGIENE IN EGYPT.

Our readers and visitors to Egypt last December will remember the active and generous support which His Highness the Khedive gave to the first Egyptian Medical Congress. His Highness not only acted as Patron of the Congress, but came to its inaugural meeting at the Cairo Opera House, where he made an inspiriting and able speech. Later, he gave two or three large receptions to the congressists at his Palace of Abdeen, and in many other ways showed the keen interest he took in the success of the undertaking. Without his generous help the Congress could not have attained the success and results it did. It may be remembered also that Mr. Reginald Harrison, the delegate of the Royal College of Surgeons to the Congress, executed his difficult task so tactfully and skilfully that he received the special thanks and congratulations of the Khedive. In view of the Khedive's visit to England some of the congressists and delegates expressed a strong wish that the British Committee formed on behalf of the first Egyptian Medical Congress should in some way endeavour to show honour to His Highness and express the indebtedness they all felt. As a result, certain members of the Committee were graciously received by His Highness last Sunday. The deputation, headed by Sir Frederick Treves (the President), consisted of Sir William Church (President of the Royal College of Physicians), Sir Douglas Powell, Sir Thomas Smith, Mr. Watson Cheyne, Mr. Reginald Harrison, and Dr. Page May. Sir Frederick Treves expressed the deep thanks and gratitude of the medical profession for His Highness's invaluable assistance during the recent Congress and for his enlightened help and guidance to everything medical in Egypt. His Highness assured the deputation of his intense interest in all medical and hygienic measures concerning the welfare of his people; also his great appreciation of the work done by British medical men in stamping out plague and cholera in Egypt, a country which stands not only geographically, but medically, between East and West. The Khedive also stated that the Egyptians are rapidly learning and adopting modern hygienic methods, and anxious to profit by recent advances in science, the value of which they are beginning to realize. His Highness graciously conversed with the members of the deputation, and has consented to accept an illuminated address expressing the profound indebtedness of the congressists to His Highness's support.

HIGHER EDUCATION, OLD AND NEW.

Sir William Anson, Parliamentary Secretary to the Board of Education, distributed the prizes to the successful students at King's College, London, on July 1st, and afterwards delivered an address, in which he said that what impressed him most in the education of the present day was its novelty. Educationally they lived in an age of discovery, knowledge was advancing by leaps and bounds, and educational methods were changing. The old classical studies were almost neglected in their ancient literary form and nearly lost in the pursuit of classical archaeology. Education was now mainly regarded from the point of practical utility, and in Germany they saw how the State devoted itself to considering how scientific studies could be applied to practical purposes. When in this country the endeavour to apply this new principle to the old practice had led to a conflict between the old and the new schools, which Sir William Anson said he recognized as acute in his own University of Oxford, the old school said that the new studies were very expensive, and they did not really stimulate the mind or enlarge the mental vision, and that they could not be regarded as an education in the true sense of the word. The new school replied that the old was engaged with merely literary elegances, that such education was a mere drawing-room pastime, and that though they called themselves humanists and educators they taught nothing of any value to men for the life they had to lead. Sir W. Anson considered that both schools were wrong, for all acquisition of knowledge must be educational inasmuch as it enlarged the mental horizon. It only failed to be an education if they closed their eyes to everything beyond their own studies and became mere tabulating machines for acquiring facts. If the scientific man shut his eyes to the humanizing influence of other studies he injured his own work, for the arrangement of acquired knowledge and of the ideas arising from new studies was a work of art, and there was no science which was not susceptible of artistic treatment. It was a great advantage to have all courses of study carried on under one roof as at King's College; it reminded the students that there was a fellowship among all forms of study, for though the field of knowledge was vast yet every genuine worker in that field, however remote his work might be from others, was nevertheless a comrade in the advancement of knowledge. A great impulse was to be given to technical study in London by the proposal to form a great technicological institute, and now far reaching that offer might be it was impossible to say, but it did seem to suggest very large and very fortunate results for the practical studies of this country. The practical work at King's College was in a singularly happy way to be combined with scientific study, and these practical scientific studies in London would do much for education, and would be an important factor in the education of the whole country.

EPSOM COLLEGE.

Our attention has been drawn to a slight error in the report of the speech of Lord Rosebery at the Epsom College dinner which appeared in the British Medical Journal of June 13th. The error, as we have said, was slight, but by spoiling an antithesis the report failed to convey Lord Rosebery's view on a matter of considerable importance. What Lord Rosebery said was: "I have lived for some years as President of the Royal Medical Benevolent College of Epsom, and if I can die president of Epsom College I shall be content." Epsom College itself is a public school with a medical foundation, and other schools possessing similar connexions with other professions exist, but those who founded the Royal Medical Benevolent College of Epsom provided also for giving pensions to members of the profession who had fallen into poverty. The retention of the term "Benevolent" in the title may lead those who are not acquainted with the circumstances to suppose that Epsom College itself is of the nature of a charity school, whereas, as we have said, it is a public school with a medical foundation. In order to remove any misapprehension on this head it is the desire of the governing body of Epsom College to place the purely eleemosynary part of the work on a secure footing, so that in future the school may bear the simple name of Epsom College. We take it that it was Lord Rosebery's intention, in the phrase which we have now correctly given above, to express his sympathy with this desire.

THE NEW HOSPITAL AT BELFAST.

We publish elsewhere a plan and full description of the new buildings of the Royal Victoria Hospital, Belfast,

which are to be opened by the King on the occasion of his visit to Ireland toward the end of this month. The plans as they stand are worthy of close study, as the conception of them is in some ways unique. The leading "note" is that a hospital should be regarded as a "health manufactory," and that in building it economy of the time and labour of those who have to work in it should be aimed at not less carefully than it would be in designing a modern factory for any other purpose. With this idea the whole of the 17 wards are placed literally side by side, only their intervening walls separating them, adequate lighting being provided by a large casement window and continuous roof "lanterns." For ventilation the "plenum" system has been adopted throughout, and it is intended that the temperature of each ward should be regulated according to the wishes of the medical officer in charge of it. The number of hospitals in which this system has been completely adopted is comparatively few, and for this reason alone its working in Belfast will be watched with interest. With the object, among other advantages, of securing better control over expenditure, the "unit" system has been adopted in its entirety. Each physician and surgeon has a small independent hospital, complete in every way, practically to himself. Perhaps, however, the most striking point of all is the estimated cost of the building. It is estimated to be, at the outside, not more than £350 for each of the 300 beds provided. As this includes elaborate out-patient departments, lecture rooms, administrative and residential quarters, x-ray and photographic rooms, separate pathological rooms, and an isolation building, it is a remarkably low sum, and should not be forgotten by those who are called on to consider tenders for hospital construction.

THE LONDON COUNTY COUNCIL.

THE London County Council resumed its session after the Whitsuntide recess last week, and was confronted by an agenda paper of eighty-six pages. A vote of sympathy with the family of the late Sir John Hutton, a former Chairman, was carried. The Council, upon the report of the Public Health Committee, approved of certain proposals for legislation in the year 1904, with a view to enabling sanitary authorities to require the cleansing or destruction of articles of clothing in a filthy or unwholesome condition, also to deal with verminous premises, to secure the removal of fixed receptacles for dust when movable ones had been provided, to secure the removal or reconstruction of offensive urinals, and to require the flooring of stables with impervious material: also to enable sanitary authorities to examine premises in which food is prepared for sale, and to prohibit hand-picking and sorting of refuse in London. The Main Drainage Committee reported some astounding figures as to the amount of pumping carried on on June 13th, 14th, and 15th during the recent deluge, with a view to prevent the flooding of basements, etc., in low-lying districts. Thus at the Abbey Mills Station, where the normal amount pumped is 75.12 million gallons a day, on June 13th the quantity amounted to 117.2 million gallons (rainfall 1.16 in.), on June 14th 162.5 million gallons (rainfall 1.42 in.), and on June 15th 177.9 million gallons (rainfall 0.68 in.). Indeed on June 13th, between 2 and 3 p.m., the water rose to a height of 22 ft. above its normal level, and the quantity pumped on June 15th is the highest on record. No breakdown of either pumps or engines occurred at any of the pumping stations.

STATE CHILDREN'S ASSOCIATION.

THE annual meeting of this Association was held by kind permission of Sir Edwin Derning-Lawrence, Bart., M.P., and Lady Durning-Lawrence, at 13, Carlton House Terrace, S.W., on June 23rd, and there was a large attendance. The Earl of Crewe, Chairman of the Association, who presided, gave an account of the objects and work of the Association. State children are Poor-law children who have to be provided for out of the rates. The objects of the Association are to abolish the large barrack schools, and to extend the system of boarding out these children or to provide scattered homes for them. Under this last system each home contains from eight to twelve children under the care of a foster-moster. They enjoy the advantages of family life and mix with the ordinary child population, sharing in their interests, sorrows, and pleasures. The Association also encourages emigration to Canada, because it takes these children away from the influence of undesirable relatives or friends and from pauper surroundings, and gives them a fresh start in life. Allusion was made to a printed report by Dr. Priestley, Medical Officer of Health to the Borough of Lambeth, on an outbreak of measles at Lambeth Schools, Norwood. According to this report there had been five deaths from measles, three from whooping-cough, and eleven deaths from non-infectious diseases in these schools. The stamina of the children, previous to their contracting measles, Dr. Priestley said, was poor, and the state of their constitution was such as to render any illness that they might contract dangerous to life. The Association contended that by removal of these children from barrack schools to scattered homes this loss of life might have been prevented. The Rev. Canon Scott Holland, Lady Frances Balfour, and Miss Margaret Baines also advocated the claims of the society, and Mrs. Barnett, Honorary Secretary, read a report of the work which the Association had done during the past year. The average cost of each child in barrack schools is about £30 per annum, but in scattered homes it is from 6s. 6d. to 9s. 6d. a week, or from £16 18s. to £24 10s. per annum. The cost of boarding out children is even less, amounting only to £13 6s. 8d. per annum.

MEASLES AT THE LAMBETH POOR-LAW SCHOOLS.

DR. PRIESTLEY, the Medical Officer of Health for Lambeth, has recently been investigating the prevalence of measles at the Lambeth Poor-law Schools in Elder Road, West Norwood, which accommodate 600 children. He finds that during 1902, 5 deaths were registered as from measles among children in these schools, and the total mortality-rate was 31.7 per 1,000, as compared with 17.7 for the Borough of Lambeth. During January and February, 1903, 8 more deaths from measles were registered, making a total of 11 including the two months of November and December. Since October, 1902, and up to the end of February, 1903, there were 68 cases of the disease with 11 deaths, giving a case mortality of 16.2 per cent.; 60 cases and all 11 deaths were amongst children under 5 years of age. Dr. Priestley's inquiry was in particular devoted to (*a*) the nature of the nursing and attention given, (*b*) the state of health of patients before attack, and (*c*) conditions under which the patients lived before death. The result of the inquiry under (*a*) proved entirely satisfactory. But various facts elicited seem to show a low standard of health and constitution in the children previous to their attack of measles. Under all the circumstances this is not surprising. The immediate cause of death in all 11 cases was disease of the lungs, 2 cases being tuberculous. Inquiry as to the sanitary conditions under which the children existed reveal a state of things open to grave criticism. The drainage system is defective, old, and obsolete. Broken drain-pipes, defective joints, and ill-ventilated drains appear to be present. Open traps were found at the foot of the soil pipes near to the entrance doors of the dormitories in the playground, foul trough closets coated with filth, and water-closets opening direct and ventilating into the dormitories are certainly very grave conditions to be obtaining in a large institution for the guardianship of children. It appears that measles was introduced to the schools, not from Norwood, but from the inner wards of the borough of Lambeth, whence children are drafted to the schools. From the schools the disease has now spread into the Norwood district. Further, whilst the schools have been planned in a suitable manner for preventing the spread of infectious disease, the actual arrangements of mixing the children from the probation wards with those from the general building in school hours has stultified the advantageous use of the premises. Dr. Priestley finds, then, that measles was introduced from Lambeth Borough in the ordinary course of events: but the infection, instead of being checked at the Poor-law

schools, has been increased by mixing the children and housing them under insanitary conditions. He makes a number of practical suggestions, and it is to be hoped the Lambeth guardians will at once apply the suggestions, and will also consider the advisability of making other arrangements for children under 5 years of age.

THE RÔLE OF ANTIFERMENTS IN THE PROTECTION OF INTESTINAL PARASITIC WORMS.

WHEN alchemists were seeking for the universal solvent, a cynic asked, Where is the vessel that will hold it? In the digestive tract we have ferments capable of dissolving, transforming, analysing, and modifying our various foods, and there are also, as are well known, many parasites that live in and thrive in our digestive juices. These juices, although they attack our foods, leave intact the "vessels" or viscera that contain them. The parasitic worms that live in the stomach and intestine, and even in the duct of the pancreas, and which belong chiefly to nematodes, trematodes, cestodes, and acanthocephela, are themselves not attacked by the digestive juices. Cysticerci, the larvae of taenia, in order to reach the intestine to develop into proglottides, have to pass the stomach, and must therefore be proof against the digestive action of the acid gastric juice. It would appear, however, that only the head and neck resist the digestive action of the gastric juice. Thus, not the whole animal, but only a limited part of it, is "protected." Moreover, it is remarkable that it is protected, as a whole, from the action of proteolytic ferments when it is in the tissues of its original host—for example, the sheep. This resistance is all the more remarkable, as some of these parasites—notably those without a digestive apparatus—have a very delicate outer covering through which the nutrient fluids can pass. Even in nematodes with thick coverings this covering cannot be the protective mantle, for the digestive ferments are taken into the intestines of these worms. The question is closely associated with another—namely, why the stomach and intestine are not digested by their own proteolytic ferments. The various theories—for example, that put forth by Bernard in 1856 as to the protective influence of the epithelium; of Pavy in 1863, as to the protective influence of the alkalinity of the blood—are not satisfactory. Notably so is this the case in the intestine where the ferment is active in an alkaline medium. In connexion with intestinal parasites, the recent researches of Ernst Weinland deal with their relations to the tryptic ferment. We have got a little further than the theory of the "living principle" of John Hunter, set forth in his famous paper in the *Philosophical Transactions* in 1772, although something very akin to it was again suggested by Matthes in 1893 and by Fermi in 1894. J. Frenzel in 1891, in dealing with the digestion of living tissues and intestinal parasites, suggested that the protection was perhaps to be sought in the presence of antiferments. When an appeal is made to experiment and an artificial digest—peptic or tryptic—is made with fibrin and to the mixture is added a few cubic centimetres of the juice expressed from ascaris or taenia and the whole kept at 37° C. under toluol, even after eight days' digestion, the fibrin is practically unaffected. In a control test without ascaris juice the fibrin was completely dissolved in an hour. This shows clearly that the protective influence has nothing to do with tissues as living tissues, or to the organism as a whole; as the clear expressed juice of the animal is protective for fibrin against the proteolytic ferments in a digest. This extract may prevent digestion of the fibrin for more than fourteen days; the expressed juice, if treated with 1 to 2 per cent. of sodium fluoride was found to be active after eight months. A second extract, to which a little common salt and disodium phosphate were added, was even more effective than the first. If the "juice" is boiled, its protective action is destroyed. Heating for ten minutes to 60° C. does not materially affect its activity, but when heated to 80° C. for ten minutes there is a very great diminution in its protective power. Thus the substance, whatever it is, has a relatively high resistance to heat. The protective action seems to be due to substances which have a greater or less effect in inhibiting the action of ferments, and they have been called "antiferments." If the extract be kept warm a precipitate forms. This contains none of the active substance. The latter is contained in the clear filtrate. From this a substance can be precipitated by alcohol which possesses the antifermentative action of extract of ascaris, and this applies both to tryptic and peptic digestion. Most probably there are two substances, one antipeptic and the other antitryptic in its action. It would seem that ferment and antiferment may exist side by side in a mixture for a long time, and that the latter does not destroy the former, but only inhibits its action. The substances, whatever they are, are probably pretty closely and intimately connected with the cells, but with which of the cellular constituents is not proved. Fibrin impregnated with the expressed juice behaves like "living" tissue in resisting the action of proteolytic ferments. The net outcome of these experiments seems to be to show that the parasitic worms living in the stomach, intestine, peritoneal tissue, liver, etc., are protected from proteolytic action by the presence of specific "antiferments," and that these substances can be precipitated by alcohol without losing their protective influence. This is a very material advance in our knowledge, for it shows us that the explanation of some of the most difficult problems is to be sought along the lines of chemical research.

GIANT INFANTS.

OLD reports of infants of great size and weight are not to be trusted, but recent researches into the records of contemporary institutions show that the newborn child may be of proportions which without accurate record the obstetrician would think incredible. Mario Vecchi has recently reported in an Italian medical paper[1] a case of a true giant fetus, free from pathological changes and developmental anomalies. The mother was 28 years old, and had borne four children. At the fifth month in the next pregnancy the abdomen began to attain an unusual size, the patient suffering at the same time from a voracious appetite. At the labour the head presented with the occiput anterior and to the right, and was delivered spontaneously. The shoulders gave great trouble, and could not be delivered under half an hour. The placenta was nearly 8 in. broad; it was very thick and heavy. The child, apparently dead at birth, had to be abandoned by the midwife, as the mother was in jeopardy from flooding when the placenta was expelled. It measured 53 cm., or over 20½ in., in length; the girth of the abdomen a little above the umbilicus was 41 cm., or 16 in. The occipito-frontal diameter was 11 cm., or over 4½ in.; the bis-acromial diameter 15.5 cm., or over 6 in. The child weighed 9.184 kilogrammes, or nearly 20¼ lb. Of other giant infants we may refer to some recently quoted by Whitridge Williams in his *Obstetrics*; according to him and to Dubois, who collected in 1897 28 cases in which the child weighed over 12 lb., the heaviest children on record were reported by Ortega (24 lb. 3 oz.), Rachel and Neumer (24 lb. 2 oz.), and Beech (23 lb. 12 oz.). The length of the child was 28 in. in Ortega's case, and 30 in. in Beech's. Thus, the three infants noted by Whitridge Williams and Dubois all exceeded Vecchi's both in weight and probably in length, although the length is not given in Rachel and Neumer's case. The above-mentioned authorities record an instance of fetal giantism specially interesting to the obstetrician, namely, Ludwig's case, where after craniotomy and amputation of the extremities he was obliged to perform Caesarean section in order to deliver a child weighing 16½ lb. It is well known that the child destined to be an adult giant is not by any means necessarily a giant at birth. But since the fate of the giant infant is almost invariably death as it is delivered into the world, we cannot determine whether—if it could have been saved by Caesarean section—it would have maintained its giantism till it reached maturity.

[1] *L'Arte Ostetrica*, quoted in *L'Obstétrique*, May, 1903.

QUACKERY IN GERMANY.

Though there is probably no country in Europe where more elaborate laws exist for the control of quackery than Germany, it is a significant commentary upon the manner in which they are enforced that quacks abound and thrive. The increase in their numbers has of late been such that public sentiment has been aroused, and is loudly clamouring for more stringent measures to suppress practices that are rapidly becoming a danger to the public health and a disgrace to common decency. A man called Nardenkoetter has lately fanned the flame of public indignation by booming a "prayer cure" which seems to have awakened the authorities to the necessity of doing something in the interest of public order for the diminution of the increasing barefacedness of quackery and its methods. They have appealed to the Medical Council, but, according to the *Koelnische Zeitung*, which in a recent issue published a strong article on the subject, that body seems as impotent as its analogue in this country to bring about or even to facilitate the reform which is so imperatively required. The law as it at present stands in Germany, despite its elaborate technicalities, seems incapable of dealing adequately with the rapid increase of faith cures and secret remedies. Dr. Fluegge, President of the Senate of the State Insurance Committee, has recently put forward proposals which are worthy of serious consideration. He is in favour of inserting into the Trade Laws a regulation prohibiting persons suspected of business methods which depend for their success upon advertisement and the abuse of public credulity from attending patients professionally. He would compel every practitioner to keep a book containing records of the persons treated, the illnesses from which they suffered, the prescriptions given for their relief, and the duration of his attendance. Such measures, if energetically carried out, would undoubtedly go far to minimize the evils of quackery under which the Fatherland is groaning, but, although they are approved by several of the German medical journals, they surely lay an unnecessary burden upon the great body of the regular profession, which carries on its daily work legitimately and within the limits of honesty and fair dealing. Such a law might reasonably be applied to non-qualified practitioners, but it would add intolerably to the restrictions, already stringent enough, under which the legitimate practitioner lives and earns his daily bread. In Germany, as in our own country, the power and influence of the quack will continue a menace to the successful practice of medicine and a danger to public health until the arm of the law can be made sufficiently powerful to suppress him summarily, and deal with him as a social excrescence which must be removed by the ordinary methods of fine or imprisonment.

THE POISON OF SEA SNAKES.

In a communication read at a recent meeting of the Royal Society on May 7th, Dr. Leonard Rogers describes his investigations into the physiological action of the poison of the *Hydrophidae*, or sea snakes, which occur in large numbers on the coasts of India, and have been specially studied at Puri, on the east coast, in Orissa. At this spot Dr. Rogers obtained his specimens. He collected their venom by making them bite on a watch glass covered with a thin layer of gutta-percha tissue stretched lightly across it, the poison being injected into the glass as clear drops free from all saliva. When dried the venom forms white scales, freely soluble in water, and differs from the cobra poison by the absence of any yellow tinge. The average quantity of dried material obtained from a single bite was slightly less than 1 centigramme, or about one twenty-fifth of the amount usually obtained from a cobra. The poison is readily destroyed by boiling for a short time, but merely bringing it to the boiling point does not materially affect its strength. The resistance of cobra poison to heat is slightly greater. The clinical symptoms produced by the two classes of poison are identical—drowsiness, muscular weakness, increased depth and frequency of respiration, progressive paralysis affecting all the muscles of the body, respiratory failure, and convulsions. In white rats, rabbits, and birds the poison of the *Enhydrina*, one of the most dangerous of the sea snakes, is from five to twenty times as potent as that of the cobra; and for fishes fifty times as deadly. The power of dissolving the red corpuscles of the blood and reducing its coagulability, which is a very marked property of cobra venom, is not nearly so conspicuous in the poison of the *Hydrophidae*. Ordinary fatal doses of the venom of the *Enhydrina* have no appreciable haemolytic effect. As regards coagulation, Dr. Rogers finds that whereas a 1 in 200 solution of cobra venom completely abolishes coagulability, a similar solution of *Enhydrina* venom has only a very slight preventive power, the blood still clotting in five minutes. He therefore holds that the toxic properties of the latter venom cannot be attributed, even in a partial degree, to its action on the blood; and, in view of the striking similarity of the clinical symptoms produced by cobra and *Enhydrina* toxin, he regards absence of action on the blood in the case of the latter as an argument against the opinion maintained by Cunningham that cobra venom kills by its action on the blood, and in favour of the view of Lauder Brunton and Fayrer that its action is essentially through the nervous system. Owing to its marked similarity to the nerve poisons, Dr. Rogers was led to repeat with *Enhydrina* venom some of the experiments with tetanus toxin of Wassermann, who found that small amounts of tetanus toxin can be fixed by fresh nerve matter in a test tube, and so rendered inert when subsequently injected into a susceptible animal. Dr. Rogers used an emulsion of pigeons' brains, added dilute solutions of *Enhydrina* venom, and found that pigeons injected with these mixtures always lived longer than the controls, while they sometimes recovered from double, and in one instance from quadruple, minimal lethal doses. When the emulsion was made from the cerebrum the inhibitory effect was more marked than when it was made from the cerebellum or medulla. Although it is now recognized that Calmette's antivenene is not, as he claimed, a specific against all kinds of snake venom, it is undoubtedly of great value in counteracting the poison of the cobra, but, as tested on white rats, it proved not to be of the slightest use; although the animals were given enormous doses of the antivenene, they died in about the same time as the controls. The serum and bile of the *Enhydrina* itself were also tested for antidotal properties, but found to possess none. Dr. Rogers has now commenced, but has not yet had time to complete, a series of experiments with a view to immunizing animals against the *Enhydrina* poison.

ORAL TEACHING OF THE DEAF.

The annual general meeting of the Society for Training Teachers of the Deaf and for the Diffusion of the "German" system was, by the kindness of the Bishop of London, held in the beautiful grounds of Fulham Palace on July 1st. The chair was taken by Dr. E. Symes-Thompson, Chairman of the Committee, who was supported by a large and representative gathering of the friends of the Society. The work of the Society, which is supported largely by voluntary contributions, is much hampered by lack of funds. A resolution was proposed by the Rev. L. Coxhead, and seconded by Dr. Dodsworth, urging on the Legislature the importance of the education of deaf children, and with a view to the promotion of this object the desirability of a grant from the National funds met with general approval, and was carried unanimously. Miss Champion (Natal) gave a short account of the provision made in that colony for the instruction of deaf children, and stated that the Government there came to the assistance of private enterprise in this matter. Miss Hewett, the headmistress of the Ealing Training College, then gave a most instructive demonstration of the methods adopted for teaching lip reading and speech production. Several children were given a specimen lesson, and the remarkable results which have been obtained in a comparatively short time in their case must have brought home to all who were present the great value of the system. The prizes to the successful teachers and pupils were distributed by Viscountess Melville.

THE DANIELS ETHNOGRAPHICAL EXPEDITION TO NEW GUINEA.

WE learn with satisfaction that an expedition is to start for New Guinea in August for the purpose partly of ethnographical investigation, but also with the important object of collecting data in regard to the distribution and etiology of cancer; the latter portion of the work has been officially recognized by the Cancer Commission. A grant has been made by the Royal Society towards the expenses of the expedition and the Royal Geographical Society has undertaken to lend the greater part of the instruments for the geographical investigations which are to be carried out. The expedition, which has been organized in London by Major W. Cooke Daniels, will be unusually well equipped, and a schooner with auxiliary steam power will serve as a moveable base. There will be also a sea-going launch. The members of the expedition comprise Major Daniels, Dr. C. G. Seligmann, Dr. W. Mersh Strong, and Mr. A. H. Dunning. Major Daniels, who has had much tropical experience, will devote himself mainly to ethnology, in which the other members will also take part; for the experimental psychology Major Daniels has also made himself responsible. Dr. Seligmann, until recently the Superintendent of the Clinical Laboratory, St. Thomas's Hospital, is the representative of the Cancer Commission on the expedition, of which he is in general medical charge. With Dr. Strong, he will pay attention to pathological questions of a more general character. As a member of the Cambridge Anthropological Expedition organized by Dr. Haddon in 1898, Dr. Seligmann has already visited Torres Straits and New Guinea. Dr. Strong will be responsible further for the geographical and geological observations which it is part of the purpose of the expedition to carry out. The photographic work, which will include the use of the latest form of cinematograph for recording native dances and ceremonies, will be undertaken by Mr. Dunning, who will thus assist Major Daniels in his general ethnographical researches. Since practically the whole of New Guinea is still in the Stone Age, the expedition should have valuable opportunities of comparing the pathological conditions encountered with those occurring among civilized peoples.

THE ST. PETERSBURG WOMEN'S MEDICAL COLLEGE.

THE students of the Women's Medical College, St. Petersburg, appear to have risen in rebellion against the constituted authorities by way of protest against some proposed changes in the examinations. They held an indignation meeting in the Anatomy Theatre at which some 600 ladies were present. Notwithstanding the attempted intervention of the professors and the Rector a resolution was passed in the style of the Honourable Elijah Pogram defying the world and refusing to yield to anything but force. For several days lectures were discontinued. Finally 354 of the "revolting daughters" were summoned before the academic court which invited 28 of them to consider themselves expelled from the school. The students of the University showed their sympathy with the fair rebels by making hostile demonstrations against things in general, with the result that 16 have been expelled and 68 punished in various ways. The Government has closed a restaurant patronized by the students which is described in the official journal as "a focus of revolutionary agitation."

A NEW MONUMENT TO PASTEUR.

A MONUMENT to Pasteur was unveiled at Chartres on June 7th. It is especially intended as a memorial of his researches on anthrax, which have been of the greatest service to the Beauce district. The monument has this further feature of special interest that it is from the chisel of Dr. Paul Richer, Member of the Académie de Médecine, physician, anatomist and artist. Dr. Richer is a native of Chartres. At the ceremony M. Henri Roujon, Director of the Fine Art Department, represented the Government; Drs. Duclaux and Roux, the Pasteur Institute; Professor Proust, the Académie de Médecine; Professors Blanchard and Chantemesse, the Medical Faculty; M. Nocard, the Minister of Agriculture. MM. Proust, Chantemesse and Chauveau gave an account of Pasteur's work on anthrax and its practical results. The monument, which was exhibited at the Salon des Artistes Français last year, is generally considered very successful. It consists essentially of a large bas-relief representing one of the most important experiments in the research amid the surroundings in which it was actually performed. Dr. Chamberland, to whom Pasteur entrusted the performance of those experiments, is represented with one knee on the ground getting ready to inoculate anthrax blood in a sheep brought to him by a farm labourer. Behind are shown M. Maunoury, a landowner at St. Germain-le-Gaillard, and M. Boutet, veterinary surgeon, formerly Mayor of Chartres, at whose instigation Pasteur made his research in that region. On the left Dr. Roux is making a *post-mortem* examination of a diseased sheep which had supplied the blood used in the experiment. A little further off, on the right, is seen the shepherd with his dog, and behind him his flock scattered over a plain. The scene is taken from the Saint Germain estate, and on the horizon are indicated the village of Poisvilliers, the trees along the road to Chartres, and far in the background, the great cathedral. Above the bas-relief, which is in bronze, is a bust in white marble of Pasteur encircled by symbolic oak and laurel leaves. The monument is 4 metres in height by 7 in width.

THE governing body of the Jenner Institute of Preventive Medicine have appointed Dr. J. C. Martin, F.R.S., Professor of Physiology in the University of Melbourne, Victoria, to be Director of the Institute.

AT a meeting held at the house of Dr. F. T. Roberts, 102, Harley Street, W., on Monday, June 29th, Dr. G. V. Poore, F.R.C.P., was presented with a piece of plate and a testimonial from his colleagues of the Faculty of Medicine and Medical Committee, in recognition of his valuable services as Professor of Medicine at University College and as Physician to University College Hospital.

MEDICAL NOTES IN PARLIAMENT.

[FROM OUR LOBBY CORRESPONDENT.]

EXPERIMENTS ON ANIMALS.

THE Home Office vote afforded the opportunity of raising the question of experiments made under the Act of 1876.

Mr. JOHN ELLIS began the debate in a moderate speech, and laid down the three principles: (1) That the experiments made should be for a definite object; (2) that it should be conducted by a duly-qualified person; and (3) that it should be performed on approved and licensed premises. He asked for adequate and proper inspection by a reasonable man with a fairly-balanced mind, without any strongly preconceived notions for or against vivisection, and by means of surprise visits.

Sir F. BANBURY, who is in charge of the amending Bill, said he was not one of those who thought vivisection should not be practised at all, but he required great safeguards for its proper performance.

Mr. MACNEILL, who followed, spoke very strongly against vivisection, which he would abolish in every shape and form. He demanded more inspection, and said that there had been 3,261 more experiments last year than in the year before; and "an experiment" did not mean one operation, but a series of researches, often performed by persons who had no more skill than the children who broke up a watch. He wanted to impress on the British public that the Act of 1876 was a sham, and in the course of his speech he quoted many of the strong adjectives used by the antivivisectionists in their publications.

Sir MICHAEL FOSTER said he sympathized with the impulses of those who opposed vivisection, because he recognized in them the conviction that real humanity was not humanity to man only, but to all the things around us. At the same time, he resented, he thought he might say justly, the terms which were applied to the profession to which he belonged, such as "devilish," "hellish," "fiendish," "torture den," and "vivisection den." Did the Committee for a

moment think the medical profession consisted of devils? If they did, let them follow the advice of the hon. member for Donegal and abolish vivisection altogether. What would they do if they abolished vivisection altogether? Vivisection experiments were not carried on with the clear certainty that the result obtained would immediately suggest a cure for any particular evil belonging to mankind. The result was a contribution to the general knowledge of mankind and an enlargement of the power of mankind. The increase of medical power that occurred year by year was due to the increase of medical science. Medical science from the time of Galen to the present time had been based in part on vivisection. It was based on many things—on observations on men, on observations on dead men, on observations on dead animals, and on experiments on living animals. Those elements were all interwoven, so that we could not pick out any part of the advance of knowledge as belonging to this head or that; and if we withdrew experiments on living matter the whole would fall together as a confused heap. The results which had been obtained in regard to malaria, as a consequence of which West Africa had become an entirely different place from what it used to be for the white man to live in, were not due to seeking a particular cure, but to the advance of general science. So it was with cancer. If the efforts of scientific men were not trammelled by unnecessary restrictions, they would in time be able to make out the natural history of the nature of cancer, and when they had done that the cure would come at once. For the general advance of medical science they demanded that experiments on living animals should be continued. Physiologists had accepted the Act, and had loyally observed it, and he appealed to successive Home Secretaries to say if they had not done so. The persons who were licensed to carry out the experiments could be trusted; there was the safeguard of inspection by inspectors, who loyally did their duty, who made surprise visits, and who at once reported any abuse of the Vivisection Act. Could not the licensed persons be trusted in their efforts to arrive at the truth, which they desired for the benefit of mankind? Could they not be trusted with such safeguards? If they could not be trusted, then let that be said, and vivisection be discontinued. The descriptions heard of experiments were not true descriptions. The great object of the physiologist for the sake of the results was that pain should be abolished altogether, and a very large amount of the progress in recent years was due to the fact that the operations could be carried on without pain. It was only when in a few rare cases pain was part of the study that anaesthetics were not used. Experiments on animals had led to experiments on men, he admitted, and he quoted a case in illustration. When the nerve was divided there was loss of movement and loss of sensation, and after a while the nerve united, and there was return of movement and sensation. In experiments on animals they could judge of the return of movement, but it was difficult to judge of the return of sensation. A friend of his had a nerve in his arm divided, in order that he might study the return of sensation. He found it caused him little pain and only inconvenience for a short time; the loss of movement and sensation was brief. That was an ordinary experiment such as was carried on in laboratories, and gave valuable results. The Home Secretary, through his inspectors, who, though they belonged to the medical profession, were able to thoroughly carry out their duties, had adequate means of preventing any abuse of the Act; and an even surer safeguard was in the fact that physiologists had no desire to abuse the Act, and simply wished to carry on their researches for the benefit of mankind.

Dr. HUTCHINSON followed, and strongly repudiated the epithets applied to his profession.

Mr. MACNEILL said he had only repeated language used by others.

Sir MICHAEL FOSTER said he strongly resented the words used, and especially the words "young devils" as applied to medical students.

Mr. MACNEILL referred to his quotation and said he himself did not think medical students were "young devils."

This excited much laughter, and then Dr. Hutchinson concluded his speech by saying that he was satisfied with the retraction.

The HOME SECRETARY commended the tone in which the debate was opened, and especially the speech of the member for London University. They had been told what an ideal inspector ought to be—that he should be a reasonable man, and so forth. He entirely agreed, but those were exactly the qualities possessed by the present chief inspector, Dr. Thane. He was quite certain that the country could not have in this respect a better man than Dr. Thane, and, indeed, he might say the same with regard to his assistant. The hon. member for Donegal sought to prohibit all experiments, thus leading to the repeal of the Act. Well, all he had to do was to administer the law as he found it, but he could assure the Committee that he had taken the greatest precautions in that administration, and that he thoroughly appreciated the responsibility which devolved upon him. He then described at length the practice of the Home Office as regards the administration of the Act. As an additional security no experiments were allowed in private places. Nearly always they were allowed only in great medical schools and in the laboratories of pathological institutions. Last year 319 persons were licensed, of whom 112 did not perform any experiment. It was true that there was an increase of 62, but that increase was due to an alteration in the termination of the year during which the statistics were taken. Hitherto the statistics had been taken from December 31st to December 31st, but the last report dated from December 31st, 1901, to February 28th, 1903. There were 26 towns in the United Kingdom in which registered places were situated, and in those only could experiments be performed. Of the 62 registered places in those towns 17 were in London. Every registered place was visited by the inspector every year, and sometimes many times a year, and the inspector was in constant communication with the licensees all over the country. Successive Secretaries of State had inclined to the view that the appointment of additional inspectors was not necessary. If it could be proved to him that there was immediate necessity for the appointment of additional inspectors, he should certainly see that they were appointed. Successive Home Secretaries had been among the severest critics of vivisection. His own control was exercised with the greatest care and full appreciation of his responsibilty. He was always open to criticism, and when any bona fide case was submitted to him he would see that it was probed to the bottom. It would be almost impossible to improve upon the administration of the Acts unless, as might be possible, they were to increase the number of inspectors. He doubted whether the ability of the inspectors was sufficiently recognized and whether they were adequately remunerated considering their ability and the amount of work they did.

After a few words from Mr. ELLIS and Mr. T. P. O'CONNOR the discussion closed.

The Home Secretary stated last week, in reply to a question put by Dr. Shipman, that during 1902 eleven experiments, under licence alone, were witnessed by the inspector, and one under Certificate B. In the case of one (under licence) the whole experiment was witnessed; and with regard to the others, the inspector usually remained a considerable time, and on some occasions made more than one visit during the progress of the experiment. In the case of the one under Certificate B the inspector also visited the animal next day. Inasmuch as the inspector habitually visited without notice he could not be sure of arriving at the beginning of an experiment so as to be able to see the whole of it, nor even of finding any experiment in progress. The inspector at his visits always saw any animals on which experiments had been made, and carefully noted their condition.

Sir John Rolleston asked the Secretary of State for the Home Department whether, in view of the increase in the number of experiments performed on living animals since the passing of the Cruelty to Animals Act, he would state if he had received any report of the results of these experiments, as the Act provided; and, if so, whether he would cause such report to be issued. Mr. Akers-Douglas answered that the Secretary of State received numerous reports of the results of experiments in pursuance of the requirements which the Act referred to enabled him to make. Many of these reports became accessible to the public in printed form, but he did not think it practicable to publish them officially.

On Tuesday last the Home Secretary stated, in reply to Sir John Rolleston, that there was no doubt a real increase in the number of experiments and the number of licensed vivisectors, but the figures as to the number of licensees were swollen by the fact that, as explained in the second paragraph of the report which prefaced the return in question, a change had been made in the date at which licences expire—namely, February 28th had been substituted for December 31st. The table for 1902 contained therefore, in addition to the normal

number, the names of 34 licensees whose licences expired on February 28th in that year and were not renewed. Apart from this, the increase was due to the natural growth and development of the important subjects of physiology, pathology, and hygiene; and the increase in the number of experiments was almost entirely in the class of experiments included in Table III (b)—namely, inoculations and the like—and more particularly in the experiments performed for the preparation of remedies and on behalf of various public authorities. The increase (81) in the number of experiments included in Table III (a) was almost entirely accounted for by injections for the diagnosis of rabies, having been 70 more in 1902 than in 1901.

The Employment of Children Bill came in for consideration on report for a few hours at the evening sitting one day last week, and an interesting discussion ensued mainly on the employment of children in theatres. The Home Secretary moved a new clause adapting the clause of the Cruelty to Children Act, 1894, to the present Bill, but fixing the age limit at 9 years. Sir John Gorst opposed the clause in the interests of the children, and in the course of the debate Dr. Hutchinson strongly condemned the employment of children in theatres as tending to the development of neurotic conditions and to physical deterioration. The Home Secretary's new clause was carried eventually by the narrow majority of 23, and on the motion of Mr. Broadhurst the age for employment was raised to 10 years. The Bill did not make much progress and the report stage will occupy another sitting.

Lead Poisoning. When the Home Office vote was considered on Thursday in last week Sir Charles Dilke raised the question of lead poisoning in the Potteries. He contended that little or no advance had been made in the last year in reducing the number of cases. The formidable fact was that the incidence fell mainly upon women, and he urged that this indicated that new rules should be adopted as to the amount of lead in the glaze and a woman inspector appointed for the Potteries. Mr. Coghill deprecated the discussion at this particular time as an arbitration decision in connexion with the matter was to be pronounced in a few days. He argued that among the 47,000 people employed in the potting industry lead poisoning was not nearly so prevalent as it was years ago. Mr. Tennant, Mr. Collings, and others spoke, and then Mr. Asquith pointed out that the protection of health in small industries as well as large was necessary in the public interest. He referred to brushmaking as a trade which required control in consequence of the danger of anthrax, and the inspectors of the Home Office were in all trades well qualified to make inquiries. The principles of factory legislation were now practically settled, and therefore year by year the debate turned more and more on matters of detail. He defended the work of the inspectors, and said the results of women inspectors' work justified the extension of the system. The Home Secretary, in his reply, said that with regard to lead poisoning, there was, generally speaking, reason to be satisfied. In 1899, there were 1,258 cases; in 1900, 1,058; in 1901, 863; in 1902, 629. The effect of the special rules had been most marked since their revision in 1898. The subject could hardly be thoroughly discussed, as Lord James's arbitration would be resumed next week, and so the case was, so to speak, *sub judice*. The position was not yet satisfactory; further progress must be made, and he would spare no effort to combat the evil of lead poisoning. He also promised attention to the sanitary condition of the fish-curing and jam-making industries, and to the ventilation of factories. As regards the appointment of a female inspector for the potteries, he could not see his way to place one there permanently.

Phthisis in Workhouse Wards.—In reply to Mr. Mansfield, the President of the Local Government Board said that the ordinary reports made by the inspectors would not necessarily specify the number of cases of phthisis in the infirmary wards of the workhouses, but in particular instances the reports referred to the manner in which these cases were dealt with by the guardians. Where it appeared that patients suffering from this disease were in wards with other patients he urged the guardians to take steps to secure their isolation. The number of workhouses where special provision was made by the guardians for phthisical patients was steadily increasing, and he did not propose at present to issue regulations on the subject.

Parish Medical Officers in Scotland.—Mr. John Dewar asked the Lord Advocate last week whether, in view of the inconvenience which arises in parishes in the congested districts of Scotland from the difficulty of obtaining suitable accommodation for parish medical officers, he would take steps to amend the Local Government (Scotland) Act so as to permit parish councils to provide suitable accommodation, and to give them powers to borrow money for this purpose. Mr. Graham Murray replied that the Secretary for Scotland could give no undertaking as to the introduction of a Bill to amend the Local Government (Scotland) Act in the sense desired by the honourable member, but the matter referred to by him would receive due consideration.

Ophthalmia in Elementary Schools.—On Monday last Mr. Crooks asked the Secretary to the Board of Education whether his department would cause a medical examination to be undertaken of the children attending elementary schools in the metropolis with a view to a report showing how many children were working in the schools suffering from ophthalmia, and what means might be adopted to prevent this disease spreading to other children. Sir William Anson replied that the Board of Education were not, as at the present advised, prepared to undertake the inquiry suggested. A circular was issued in October, 1901, to managers and teachers of urban elementary schools on the subject of the children's eyesight. In this circular attention was particularly called to the symptoms of ophthalmia, to the necessity for immediate and continuous treatment, and to the importance of excluding the children affected from school until medical certificates of their fitness for readmission had been obtained.

Irish Dispensary Doctors.—Mr. Delany on Monday last called the attention of the Chief Secretary to the resolution of the Irish Medical Association declaring that no qualified practitioner should apply for or accept a dispensary appointment vacated by a doctor who had not received suitable superannuation, or at a lesser salary than £200 per annum, and declining to do duty for or meet in consultation any colleague who contravened the proposals contained in the resolution. And in a second question he asked whether, in case the salaries were raised, the Treasury recoupment would be proportionally increased. Mr. Wyndham said he was aware that such a resolution had been adopted, but the subject could not be discussed within the limits of a reply to a question. With reference to the second question, he said it was hypothetical, and that no definite reply could be given. The limits within which recoupment could be made were defined by Section LVIII of the Local Government Act, 1898, and Section VI of the amending Act of last year.

Experiments on Drowning.—Mr. Secretary Akers-Douglas informed Colonel Lockwood on Monday last that the certificates obtained by Professor Schäfer for the purpose of testing the best means of effecting resuscitation in cases of apparent drowning were limited to ten experiments. It was not stated whether the experiments should be on ten separate dogs, or whether the same dog would be used for more than one experiment; but he had ascertained that Professor Schäfer did not propose to submerse any unanaesthetized animal more than once.

Glycerinated Calf Lymph for Scotland.—In answer to Mr. Weir, who asked why glycerinated calf lymph prepared at the laboratory of the Local Government Board was not supplied free to Scotland, Mr. Long said that under an arrangement of a provisional character made in 1899, with the consent of the Treasury, the Local Government Board for Scotland paid Dr. Blaxall £105 per annum for a certain quantity of lymph. The lymph was prepared at the laboratory at Chelsea, but, as he had previously stated, the cost of its production and preparation was borne by Dr. Blaxall. He was not required to devote his whole time to his duties under the department, and as the arrangement above referred to did not interfere with those duties and was desired by the Local Government Board for Scotland, no objection was offered to it. In reply to a further question by Mr. Weir, the Lord Advocate stated that Dr. Cadell, as superintendent of vaccination at the New Town Dispensary, Edinburgh, collected vaccine lymph from the arms of children vaccinated by him, and hitherto had had no difficulty in supplying all the lymph required by the Central Vaccine Institution for Scotland. There were a few parochial vaccinators who preferred humanized vaccine lymph, and they were supplied with it accordingly.

Scotland.

Annual Report of the Registrar-General.

The forty-eighth annual report of the Registrar-General for Scotland on the births, deaths, and marriages in the year 1902, and the thirty-eighth annual report on vaccination (of children born during 1901) has been issued, and shows the estimated population of Scotland in the middle of the year 1902 to be 4,531,299, of which males numbered 2,204,503 and females 2,326,796. The births numbered 132,250, the deaths 77,946. The births exceeded the deaths by 54,304. Hence for every 100 of the population there were 2.92 births and 1.72 deaths. The birth-rate was highest in the large town districts, followed in order by that in the principal town districts, small town districts, mainland rural districts, and insular rural districts; 6.2 per cent. of the total were illegitimate, the lowest ever recorded in these reports. Births were most numerous in April, and least so in November. The death-rate of 1.72 per cent. of the estimated population was the lowest which had occurred since 1896. The average number of deaths was greatest in February and least in August.

Eight Principal Towns.

As fully 36 per cent. of the whole population of Scotland was resident within eight of the principal towns (Glasgow, Edinburgh, Dundee, Aberdeen, Paisley, Leith, Greenock, and Perth), it was believed that the conditions observed in them gave a fairly accurate indication of those prevailing in the neighbouring districts.

Births in the Eight Towns.

The birth-rate was 297 for every 10,000 of population. The highest rate occurred in Glasgow, with 319 for every 10,000 persons, and the lowest in Edinburgh, with 251. Illegitimacy was highest in Dundee with 8.4 per cent., and lowest in Greenock with 3.5 per cent. of the births.

Deaths in the Eight Towns.

The death-rate was 190 for every 10,000 of the population as estimated. The highest rate of mortality occurred in Glasgow, where 200 in every 10,000 of the computed inhabitants died during the year; the lowest in Edinburgh with 178 and Leith with 153. The death-rate is below the mean proportion for the decennium 1892-1901 in all these towns except Greenock, the rate for which is slightly above that for the ten-years period.

The total number of deaths of children under 5 was 10,416, and the estimated population at the same age was 193,197; the death-rate was therefore 54 per 1,000. The rate was highest in Glasgow with 59 per 1,000, and the lowest in Edinburgh with 46, in Perth with 42, and in Leith with 41. When the proportion of deaths under 5 years to the total deaths at all ages is calculated, it is found that 35.0 per cent. of the deaths in Glasgow were of children of this age, in Edinburgh 25.9, and in Perth 23.5.

Percentage of Deaths from Various Diseases in the Towns.

In the eight towns collectively the mortality was at the rate of 1.918 per cent. of the inhabitants as estimated, The death-rate for the year was highest in Glasgow (2.037 per cent.), and lowest in Leith (1.538 per cent.). The principal infective diseases—namely, small-pox, measles, scarlet fever, influenza, whooping-cough, diphtheria, and fevers—caused a mortality at the rate of 0.153 per cent. of the population, and accounted for 8.06 per cent. of the total deaths. The highest death-rate from these diseases occurred in Greenock, where 0.225 of the inhabitants succumbed thereto; the lowest in Leith with 0.087. The percentage of deaths from these diseases to the total mortality was highest in Perth with 11.83, and lowest in Leith with 5.65. The mortality from diarrhoea and epidemic enteritis was at the rate of 0.029 in every 100 of the population, and constituted 1.52 per cent. of the total deaths. In Glasgow, in every 100 deaths, 3.07 were due to whooping-cough, 1.72 to measles, 0.58 to influenza; in Edinburgh, 2.15 to measles, 2.02 to influenza, 1.83 to whooping-cough; in Dundee, 3.19 to diarrhoea, 2.64 to measles, 0.75 to influenza; in Aberdeen, 4.60 to whooping-cough, 1.69 to influenza, 1.69 to diarrhoea; in Paisley, 3.56 to measles, 2.71 to whooping-cough, 2.07 to influenza; in Leith, 2.91 to whooping-cough, 1.58 to influenza; in Greenock, 4.29 to scarlet fever, 2.59 to measles; in Perth, 3.83 to measles, 3.00 to whooping-cough. In these eight towns taken together whooping-cough heads the mortality with 2.73 per cent of the total, or 5.2 in every 10,000 of the inhabitants. Measles comes second with 1.91 per cent. of the deaths, and of 3.6 for each 10,000 of the inhabitants. Diarrhoea and epidemic enteritis give 1.52 per cent., and of 2.9 to each 10,000. Influenza gives the corresponding figures of 1.09 and 2.1.

Tuberculous diseases gave a death-rate of 13.08 per cent. of the total deaths, of which 8.78 was due to pulmonary tuberculosis. Rheumatic affections caused 208 deaths, and malignant tumours 1,523 deaths, equivalent to 4.83 per cent. of the total. The deaths from the latter group were most marked in Edinburgh and Dundee. Syphilis caused 113 deaths, puerperal septicæmia and fever 109, erysipelas 121, chronic alcoholism and delirium tremens 118. Diseases of the nervous system caused 6.25 per cent. of the total mortality, circulatory diseases 14.46 per cent., respiratory diseases 21.58 per cent., diseases of the organs of digestion 6.29 per cent., of the urinary system 2.90 per cent.

The number of deaths attributed to atrophy or debility was 897, to dropsy 33, and to old age 1,144. The cause of death was omitted in 339 cases, including 67 defined only as sudden. The violent deaths amounted to 1,320, or 4.18 per cent. of the total. The suicides numbered 68. The oldest death was that of a female, aged 102; 3 other females were over 100, and 2 over 99; altogether 113 died aged over 90 years 28 males, and 85 females.

Open-air Treatment of Consumption in Leith Poorhouse.

In his report on the Leith Poorhouses, Mr. R. B. Barclay, C.B., the Local Government Board's visiting superintendent, commenting on the open-air treatment of phthisis at the North House, stated his belief that it was the first poorhouse hospital in Scotland where modern treatment had been systematically introduced.

Edinburgh Medico-Chirurgical Society.

A clinical meeting of the Edinburgh Medico-Chirurgical Society was held in the Royal Hospital for Sick Children on June 17th, at 4 p.m., when patients were shown by Drs. Burn Murdoch, Melville Dunlop, John Thomson, Charles Kennedy, Stewart Fowler, Harry Rainy, J. W. Simpson, and by Messrs. H. J. Stiles and George Chiene. Card specimens were shown by Messrs. H. J. Stiles, George Chiene, and by Drs. Melville Dunlop, Harry Rainy, John Thomson, and Stuart McDonald.

Edinburgh Meeting of the Neurological Society.

The Neurological Society of the United Kingdom met in Edinburgh on Saturday, June 27th, at 10 a.m., in the Physiological Laboratory of the University, Dr. Langley, F.R.S., the President, in the chair. Specimens, microscopic specimens, photographs, drawings, etc., were shown by Drs. Wakelin Barratt, Byrom Bramwell, Edwin Bramwell, Alexander Bruce, Robert A. Fleming, George A. Gibson, P. T. Herring, Harvey Littlejohn, W. Page May, Harry Rainy, Ford Robertson, Theodore Shennan, A. H. H. Sinclair, David Waterston, David Hepburn, Edwin Matthew, Chalmers Watson, G. R. Wilson; by Professors Greenfield and Schäfer; and by Messrs. Stiles, A. A. Scot Skirving, and Alexis Thomson. Professor Sherrington demonstrated two spinal reflexes in a dog; Dr. A. H. H. Sinclair demonstrated Bjerrum's perimeter; and a lantern demonstration was given by Drs. Ford Robinson, Alexander Bruce, Robert A. Fleming, and David Waterston. The second part of the meeting, from 12 to 1.30, consisted of a clinical demonstration in the Royal Infirmary, when cases were shown and commented on by Drs. Clouston, Byrom Bramwell, George A. Gibson, John Thomson, Alexander Bruce, R. A. Lundie, R. A. Fleming, and Professor W. G. Greenfield. At 7 p.m. Sir John Batty Tuke, M.P., LL.D., took the chair at a dinner in the Balmoral Hotel. The toast of "The Neurological Society" was given from the Chair, and the President in a witty speech replied. Dr. Clouston proposed "Our Guests," and Mr. Herbert Page replied.

Small-pox in America.—According to *American Medicine* the number of cases of small-pox officially reported in the United States from December 27th, 1902, to June 5th, 1903, was 22,522, with 593 deaths, as against 35,480 cases, with 1,132 deaths, during the corresponding period in the previous year.

Dr. Constance Ellis, the first lady doctor in Australia to receive the M.D. degree, was entertained at a dinner on April 21st by a representative gathering of Melbourne lady doctors and university students in honour of her achievement.

Ireland.

THE DISPENSARY DOCTORS' GRIEVANCES.

MR. WALTER KAVANAGH, D.L., of Borris, has written to a morning paper urging that the Local Government Board ought, "in the interests of the community at large, to take some official notice of the resolutions passed at the meeting of the Irish Medical Association." He points out that in many cases vacancies remain unfilled for want of candidates and that the guardians have had to pay as much as £10 10s. a week for a *locum tenens*. He suggests that it is the duty of the Local Government Board to "put an end to an embarrassing and discreditable situation." "Let the Board hold an inquiry into the matter, and try to arrive at some conclusion as to the rights and wrongs of the whole question. I think the public have a right to demand such action on their part." He is in sympathy with the grievances, where the salary is less than £150; but he "strongly resents the method which the medical profession have adopted of enforcing their demands." This is satisfactory so far as it goes, but Mr. Kavanagh seems to be unaware of the history of the question when he objects to present methods. If he were, he would know that the claims have been urged since before he was born; that practically nothing has been done to remove the grievances; that in most cases guardians have remained stolid, heartless, and hostile; that the Local Government Board has taken no strong initiative at any time to help in the removal of wrongs: and that Chief Secretaries have been only plausible and indifferent. The authorities have created the present position and there is only one way out.

DR. THOMPSON, M.P.

At the Omagh Quarter Sessions, Dr. Edward Thompson sued the guardians for £12 12s. for services rendered when asked by Dr. Fleming, the medical officer, to act for him while he was invalided by an accident. He complained that after four days his services were dispensed with, and a young member of the profession was appointed, no reason being assigned. The judge gave a decree for £6 6s., but the guardians have since agreed, by a majority of one, to appeal against the decision.

ULSTER MEDICAL SOCIETY.

The annual meeting of this Society was held on June 25th, Dr. John Campbell, President, in the chair. After the minutes of the last annual meeting, the Honorary Secretary (Dr. Houston) read the report of Council, showing 158 Fellows and 42 members. The Treasurer (Dr. M'Quitty) showed a balance in hand which would cover expenses to the end of the financial year. The Librarian (Dr. Leathem) gave a favourable report of the library, showing that nearly £100 had been promised to enable the Council to institute a lending library. The election of officers then took place:—*President:* Dr. John Campbell. *Vice-Presidents:* Dr. Robb and Dr. Donnan. *Honorary Treasurer:* Dr. M'Quitty. *Honorary Secretary:* Dr. Thos. Houston. *Pathological Secretary:* Dr. Lorrain Smith. *Honorary Librarian:* Dr. Leathem. *Council:* Dr. J. S. Morrow, Dr. J. B. Moore, Dr. J. W. Byers, Dr. Jas. Colville, Dr. W. M. Killen, and Dr. David P. Gaussen.

CONTRACT MEDICAL PRACTICE.

CAPETOWN.

THE Government of Cape Colony has recently approved of some regulations for the formation of a sick fund for the benefit of the very large number of persons who are employed in and about the harbour and docks of Table Bay, South Africa. The scheme includes arrangements for:

1. Medical attendance, including midwifery, free consultations, free treatment in hospital, free nursing at home if required, and all medicines, etc., ordered by the medical officer.

2. Sick pay to those not in receipt of salaries unaffected by absence from duty on account of sickness. This ranges from 15s. to 40s. a week according to the weekly sums contributed. It may continue at the full rate for thirteen weeks, at half-rates for thirteen weeks more, but under no circumstances for any further period. Free artificial limbs and burials are also thoughtfully provided for.

All employés of any class will be obliged to contribute to the fund at the following rates: Those whose pay is 5s. a day or less will pay 4d. a week; from 5s. to 8s., 6d.; and from 8s. to 11s. a day, 9d. a week. The highest rate is 1s. a week, which will not be exceeded whatever the rate of pay may be.

A further voluntary payment by a contributor of 2d. a week for one person, 4d. for two, and 6d. for three or more, will secure for his family medicines at reduced rates from any chemist, with free medical attendance and all the other medical benefits mentioned.

The medical attendance will be given by a medical officer, who will attend daily at a special dock dispensary, and also at the houses of contributors when required, while other medical officers will be secured to attend on contributors in the more distant residential quarters of Capetown. Sixpence will be paid for a first "consultation" at the dock dispensary or at the consulting room of any medical officer; while for a first visit to the house of any contributor the payment varies from 1s. to 3s. No payment need be made for any but first visits or consultations, however numerous. For midwifery the payment is 2 guineas.

No clue is given as to what the medical officers to be employed will receive, and at this distance it is impossible to criticize the scheme. The only novel or obviously good point about it, is the charge for a first attendance. It will do something to stop contributors applying to the medical officer unnecessarily, but the fee is so small that it will not do much. For the rest it may be noted that at Capetown, where fees for medical attendance are as a rule higher than in England, a man in dock employ in receipt of £175 a year, and upwards without limit, will be able, for a payment of about £5 a year, to ensure, not only sick pay for himself, but medical attendance for himself and family, however large. A great number of men are believed to be employed at very much higher pay than £175 a year, so that the arrangement seems a comfortable one for dock employés, if not for the local profession.

THE ANNUAL MEETING AT SWANSEA.

THE PROPOSED CAMP.

THE camp will only be held provided that the cost of a minimum number of 100 tents be guaranteed.

Members wishing to join the camp are requested to write to the Honorary General Secretaries, Mr. W. F. Brook, F.R.C.S., Longlands House, Swansea, and Dr. F. G. Thomas, 2, Brunswick Place, Swansea, booking a tent, not later than Monday, July 13th. Each member will be provided with a tent fully furnished (that is, with usual kit as supplied to officers:

Bell tent, waterproof, 10ft. diameter.	Chair.
Spring bedstead.	Toilet glass.
Wool mattress.	Sponge bath.
Blankets.	Pole strap.
Rug or quilt.	Strip of carpet.
Sheets.	Candle lantern.
Bolster and pillow.	Water can.
Chest of drawers.	Set of enamelled toilet ware.

The cost of a furnished tent for the week will not exceed £2. Flooring (extra) will not be provided unless specially asked for. The soil is, however, very porous, and dries readily. A bicycle tent will be provided. Sufficient attendance will be provided at a small cost. Members bringing their own servants are requested to give notice. The catering arrangements are in the hands of Messrs. George, Limited, Cheltenham, who will supply breakfast at 2s. 6d. a head in a mess tent. Other meals will be arranged for at a similar scale of charges.

The proposed site is about three minutes' walk from the terminus of the Mumbles Steam Tramway. Trams run into Swansea every hour in thirty-five minutes.

There is bathing from the cove on either side of the camp.

In the event of the camp not taking place, from the number of names sent in being below the minimum, the secretaries undertake to find accommodation for all members who have provisionally booked tents.

ACADEMIC DRESS.

The President-elect hopes that members will as far as possible wear academic dress at the official gatherings.

Arrangements can be made to supply gowns, hoods, etc., at reasonable charges, for sale or hire.

CRICKET MATCH.

A cricket match will be played on the Swansea Cricket Club ground during the annual meeting of the British Medical Association between sides to be arranged. Dr. A. W. Cameron, Northampton House, Swansea, will be glad to receive the names of those who wish to take part. The match will be played on Wednesday, July 29th, but as the ground has been placed at the disposal of the Local Committee for the whole week a second day could be arranged if necessary. Tennis can also be had at this ground.

EPILEPTIC COLONY, EWELL, SURREY.

ON Wednesday, July 1st, the first rate-supported epileptic colony in this country, founded by the London County Council for the epileptic insane of the metropolis, was opened by H.R.H. the Duchess of Fife and the Duke of Fife, K.T., Lord Lieutenant of the County of London.

Situated on the north-eastern corner of the Horton Estate (facing the Epsom Downs), purchased in 1896 for asylum purposes, and on which the Manor Asylum (for 700 female lunatics) and the Horton Asylum (for 2,000 lunatics) have already been erected, it has a demesne of 112 acres, to be devoted to colony purposes, separated from the rest of the estate by a public road. The buildings, consisting of an administrative block and eight villas have been erected upon the most elevated part of the ground, some 200 feet above the sea level. A corridor leads from the administrative centre—wherein are offices for the medical superintendent, assistant medical officer, matron, clerk, etc., apartments for some of these officers, and quarters for the resident subordinate staff—to a group of buildings consisting of stores, main kitchen, and a hall for recreation and dining purposes. The boiler house, workshops, and water tower are situated between the stores and the female admission ward, the latter being a portion of the central block. On the other side of the corridor, immediately opposite the boiler house, a laundry will shortly be erected. The dining and recreation hall has seating accommodation for 326 persons, the number of colonists to be received. Here it is intended that all whose condition permits their being present shall assemble for dinner, the other meals being taken in the several wards. It is so arranged as also to serve as the chapel. At one end of the hall a platform has been provided for entertainments. The hall will be well lighted, and its heating (which is by means of steam-heated radiators) and ventilation are very completely arranged for.



A Colony Villa.

Within the 20 acres of land on the east side of the administrative block are dotted the eight villas (named after trees—Holly, Lime, Pine, Elm, Chestnut, Hawthorn, Walnut, Beech) in which all the colonists, with the exception of the 32 females to be accommodated in the admission ward at the administrative centre, will be housed. A photograph of one of the villas is reproduced here. Each villa is similarly arranged, and has a south-eastern aspect, and the roads giving access to them enclose a space to be laid out by the colonists, and used as a cricket and recreation ground. Each villa is arranged to accommodate 38 patients, and will be under the charge of a resident married couple. The interiors are designed to enable the individual patients to have the maximum amount of freedom under supervision. The verandahs and spreading porches to the villas are important features, enabling the colonists to be in the open in all weathers. The method of warming is by double fireplace stoves arranged in the centres of the rooms.

The ventilation is by means of fresh-air inlets at floor level and outlets through the ceilings into the roof space, the necessary upcast movement being obtained by the heat from the hot-water storage tank which is placed at the base of a shaft leading into the open air. Four of the villas are built in red brick with artificial stone dressings, as are also the administrative buildings. The stores and the remaining villas are faced with rough case. All the roofs are tiled. The lighting is by electricity throughout. Telephones connect all the buildings, and an electrical fire alarm places the villas and the centre in communication.

The estimated cost of the buildings, including fixtures, fittings, and equipment, is £98,000, which with its provision for 326 patients (60 females and 266 males) gives a total cost per bed (exclusive of the cost of land) of £300. The plans of the buildings were designed by the Asylums Committee's Engineer, Mr. William Charles Clifford Smith, M.I.C.E.

Dr. Charles Hubert Bond (D.Sc., M.D., Ch.M.Edin.), Senior Assistant Medical Officer at the Heath Asylum, Bexley, formerly Assistant Medical Officer at Banstead Asylum, and Clinical Assistant at the National Hospital for Epilepsy, and at the Wakefield and Morningside Asylums, has been appointed Medical Superintendent. For this officer a detached residence has been appointed conveniently near the administrative buildings.

DURHAM UNIVERSITY MEDICAL GRADUATES' ASSOCIATION.

THE annual meeting of this successful Association took place at the Café Royal, Regent Street, on June 25th, Dr. W. D. Arnison, of Newcastle-on-Tyne, presided, and there was a goodly muster of members. The chief point of interest in the proceedings was the proposal to take active and energetic steps to endeavour to procure Parliamentary representation for the University of Durham. The resolution, proposed by Dr. F. S. Palmer, seconded by Dr. T. Outterson Wood, and cordially supported by Sir George Hare Philipson, Dr. Diver, and Dr. Arnison (the President), was carried unanimously, and ordered to be forward to the Senate. The following were balloted for and duly elected as officers of the Association for the ensuing year:

President, *Frederick Spicer, M.D.; *Vice-Presidents*, J. W. Hembrough, M.D.; *H. T. Herring, M.B., B.S.; *Council*, Chas. Blair, M.D., T. Beattie, M.D., R. A. Bolam, M.D., Chas. W. Chapman, M.D., *J. W. Leech, M.D., W. M. Davson, M.D., E. W. Diver, M.D., J. Eyre, M.D., Percy Jakins, M.D., J. T. James, M.D., Henry Smith, M.D., *Nathan Raw, M.D.; Hon. Secretary for North, H. B. Angus, M.S.; for South, T. Outterson Wood, M.D. Hon. Treasurer, S. W. Plummer, M.D. *Auditors*, Couper Cripps, M.D., Wm. Martin, M.D., Wm. Turnbull, M.B. *Watch Committee*, W. C. Beatley, M.D., W. Mitchell Bird, M.D., H. T. Herring, M.B., S. W. Plummer, M.D. (An asterisk is prefixed to the names of those gentlemen who did not hold the same office the preceding year.)

In the evening the members and guests numbering 95 dined together at the Café Royal, Dr. Frederick Spicer, the newly-elected President, being in the chair. The loyal and patriotic toasts having been given by the President, Mr. T. Horrocks Openshaw, C.M.G., proposed "The Navy, the Army, and Reserve Forces," and Sir William Taylor replied.

Professor Robinson proposed "The University of Durham," and Sir George Hare Philipson replied.

Sir Hugh Beevor proposed "The University of Durham Medical Graduates' Association," and Mr. H. Brunton Angus, the Secretary for the North, replied.

Dr. F. S. Palmer proposed "The Visitors," and Sir Henry G. Howse replied.

Dr. T. Outterson Wood, the Secretary for the South, gave "The Health of the President," who, in a spirited reply, called upon the younger medical graduates of the University to come forward and help the Association in its successful career.

THE INDIAN MEDICAL SERVICE.

Promotion and Pensions.

One of the few remaining attractions of the Indian Medical Service is the higher rates of pension theoretically obtainable by long service in India as compared with those of the Royal Army Medical Corps. After twenty years' service the rate of pension is the same in each branch—namely, £365 a year; but after twenty-five years the Indian Medical Service officer is entitled to £500, and after 30 years to £700 a year. Further, if promoted to the administrative grade, and after serving five years in that grade, he is entitled to an extra £250 a year, making £950 in all—a highly attractive prospect.

In the palmy days of the service promotion was obtained to the administrative grade in about twenty-five years, so that after thirty years' service, or a little more, the full rate of pension could be counted on. Those days are long past, and at the present time no one entering the service over the age of 25 years—which includes nearly three-fourths of the entries of recent years—can count with any certainty on a pension of more than £500 a year on their compulsory retirement at the age of 55 years—that is, only a little more than half the full pension nominally attainable. Let us see how such a serious deterioration in the prospects of Indian Medical Service men has been brought about.

The primary cause of the change was the very large reduction in the number of administrative changes made in the early Eighties, when in Bengal alone the number of such appointments was reduced at a single blow from thirteen to six (including the post of Sanitary Commissioner). This last privilege was taken away later, so that now there remain only five administrative posts for the whole of the old Bengal Presidency out of the original thirteen. If the post subsequently created of Surgeon-General with the Punjab army be added, then the number still remains less than what it was. As a result of this measure and the increasing number of officers, the date of service at which promotion to administrative grade is now reached has steadily lengthened, until at the present time it is never reached until about thirty years' service, so that, to get the full pension, thirty-five years' service, instead of thirty, must be put in, an extra period which causes many to break down entirely. Nor is that all; for, owing to the hard-and-fast rule compelling retirement at the age of 55 years, if the administrative grade is not reached before that date, any man entering the service over the age of 25 is retired before he can put in thirty years' service, in which case he only gets the pension for twenty-five years' service—namely, £500 a year. Nor is this fate a fanciful one, for at the present time senior men are being retired in this way when just short of thirty years' service, owing to the slowness of promotion.

To give an instance, only last year a well-known officer of the Indian Medical Service, who had distinguished himself in more than one line, was selected to officiate in the administrative grade, and did so officiate for many months. Yet he had to retire when only a few days short of thirty years' service, on £500 a year plus a good service pension of an extra £100 a year, two such pensions being available among the whole of the Bengal list each year. Thus, for want of being able to put in a few days' more service before reaching 55 he lost £100 a year for the rest of his life, while for want of a few months he lost his promotion to the administrative grade carrying with it an extra pension of another £250 a year after five years' service. He was thus deprived of nearly half the full pension for want of a few months' service, owing entirely to the extremely slow rate of promotion brought about by the wholesale reduction of the number of administrative appointments made many years after he had entered the service, in one of the fits of economy which the ruling Civil Service of India periodically carry out at the expense of every service but their own.

Nor as far as can be foreseen has the worst of the block yet been reached; so it appears to be certain that in the very near future no officer will get his promotion until over thirty years' service, how much over it is impossible to say. During the last few years an extra number of men have been recruited in order to remedy an admitted undermanning of the service, so that men entering at the present time have a big block ahead of them, and it is practically certain that under the present conditions none of them can have any prospect of promotion to the administrative grade within thirty years' service, which means that no man now entering the service one day over the age of 25 years can get a higher pension than £500 a year, or, if lucky enough to get one of the very few good-service pensions, of £600. In fact, he would be better off as far as pensions are concerned in the Royal Army Medical Corps with only part of his service abroad, as promotion runs much quicker in that service now than in the Indian.

The seriousness of this position will be evident when we remember that few men qualify nowadays under the age of 22 or 23 years, while the class of men who gain commissions in the Indian Medical Service mostly have one or more of the higher qualifications and have held resident appointments; the great majority of them are over 25 years of age when they enter the service, and if such hold back when they become aware of the facts set forth above, the recruiting for the service will at once fall off very seriously. We have already pointed out on previous occasions that the emoluments of the service are but a shadow of what they once were, so that few can expect to save any capital sum sufficient to materially increase their pensions. This makes the above facts with regard to pension prospects of vital importance, and necessitates their careful consideration by any intending candidates.

In connexion with this subject a very serious grievance of men who have entered the service during the last ten years must be referred to. Up to ten years ago all Indian Medical Service officers dated their service from the time they entered on their course of four months' study at Netley, but those of the then Army Medical Service counted theirs only from the date of passing out, that is, four months later. The British service agitated to be allowed to count their four months at Netley towards service, with the result that they gained nothing, but the four months were taken away from the Indian Medical Service officers. Recently the four months have been granted to the British service, and within the last few months the privilege has also been restored to the men now entering the Indian Service. The men of the intermediate ten years of the Indian Service, therefore, have been deprived of four months' service which the officers both before and after them count, thanks to the agitation of the British service officers. This will mean that some of them will lose £200 a year pension owing to not being able to put in thirty years' service before reaching 55 years of age, or gaining the administrative grade—a very serious matter, which can be righted by a stroke of the pen, restoring the four months' service to these men.

One other note of warning must be sounded. On account of the frequency of movements at great expense during the first three or four years of officiating in charge of native regiments, and for two or three years more, if the civil branch is then entered, before a permanent post is obtained in that department, no man should think of entering the service if he is married or wishes to marry within the first six years or so of his service, unless he has private means. The amount of misery and unhappiness caused by want of knowledge and forethought in this matter is the cause of much discontent in the junior ranks of the service at the present time.

Rumours of increased pay have been circulating for a long time, but in addition improved pension prospects are an urgent necessity, by increasing the number of administrative appointments, and by making the pension of £700 a year available after twenty-eight years' service, as is the case with Staff Corps officers who have commanded a native regiment for the usual period.

Past experience (which is well illustrated by a series of articles on an old grievance of the service in the British Medical Journal from May 12th to August 25th, 1883) leads us to fear that no serious redress is likely to be carried out until recruitment for the service is stopped, as was done in the early Seventies with marked success; and we believe, when the facts as regards pension prospects set forth above are fully realized, in addition to the already well-known falling-off in the emoluments of the service, that then the Indian Government will be forced, through lack of candidates, to make substantial efforts to improve the prospects and restore the popularity of a grand old service.

The tenth Congress of Polish Medical Practitioners and Scientific Workers, which was to have been held at Lemberg in July of this year, has been postponed till July, 1904.

The next post-graduate holiday courses given by the *Docenten* of the University of Berlin will begin on September 28th and terminate on October 24th. Further particulars can be obtained from Herr Melzer, Ziegelstrasse, 10-11 (Langenbeck-Haus), Berlin.

FROUDE AND CARLYLE.

WE have received several letters relative to the article by Sir James Crichton-Browne on Froude and Carlyle which appeared in the BRITISH MEDICAL JOURNAL of June 27th. We have elsewhere expressed our own opinion on this unsavoury quarrel over dead men's graves, and thought it right to give Sir J. Crichton-Browne an opportunity of setting out the evidence in his possession; but we do not think the particular matter here in dispute of sufficient medical importance to justify the allotment of any further space to it in the JOURNAL. In order, however, to show the trend of opinion among our readers on the subject, we give abstracts of the more important letters received.

Sir WILLIAM THOMSON, C.B., Ex-President of the Royal College of Surgeons in Ireland, and Direct Representative for Ireland on the General Medical Council, writes:

In the course of the article which Sir James Crichton-Browne has contributed to the JOURNAL on the disgusting Froude-Carlyle controversy he says: "Sir Richard (then Dr.) Quain was professionally consulted by Mrs. Carlyle, treated her for a number of years and gave her death certificate, and was not, as Chairman of the General Medical Council, likely to commit an act infamous in a professional respect by divulging a secret confided to him by a patient in his professional capacity." Of course not: but in another part of the same article he makes the following extraordinary suggestion: "Nor did he (Froude) think fit to test Miss Jewsbury's statement in any way, although he regarded it as not a mere bit of idle talk, but as of vital importance, and made it the keynote of his whole biography. Carlyle was alive: *many medical men who had attended Mrs. Carlyle were accessible*: judicious friends of hers like Mrs Russell, of Thornhill, who had been in far more confidential relations with her than Miss Jewsbury, might have been appealed to: but no step did Froude take to apply the touchstones which lay ready at hand." I have put one of these clauses in italics because it should be read in the light of what the writer says regarding a possible offence by Sir Richard Quain. What does he mean by referring to the medical men who were "accessible"? Does he mean that Froude should have gone to these men, who knew her "professional secrets," have "applied the touchstones:" have invited them to divulge "a secret confided to (them) by a patient in (their) professional capacity"—"an act infamous in a professional respect?"

I cannot help saying that the whole of these discussions are an impudent intrusion into matters which do not concern any one of the living public. They are an outrage on the memory of a great man and a great woman. May one appeal to the noisy disputants to cease from furnishing us with the ugly details of the marital relations of the Carlyles, and all the unpleasant garnishing with which these details are served up?

Lieutenant-Colonel NATHANIEL ALCOCK, Army Medical Staff, writes in defence of Froude. He says:

Sir J. Crichton-Browne under his own hand proves himself to be in his present frenzied state not much less neurotic than the late Miss Jewsbury or Mrs. Carlyle herself, and consequently by no means a safe guide.

In reply to the opening words of Sir James Crichton-Browne's article ("Mr. J. A. Froude has fitly crowned the column of calumny, etc.") he quotes the preface to *My Relations with Carlyle*, in which Froude's children say, "In making facts public on which Mr. Froude had after long and anxious consideration *decided to be silent*, we are fully aware of the responsibility, etc.," and asks:

Is it not sad to see a heated controversialist thrusting words into the silent mouth of one long dead which he had determined never to utter and which were only found after his death written in pencil in a notebook and had been shown to no one?

In regard to the question of virility, Lieutenant-Colonel Alcock holds that had Froude made, as is suggested by Sir J. Crichton-Browne, an appeal to some of Mrs. Carlyle's lady friends, his conduct would have deserved to be characterized as "filthy," "scurrilous," etc. Finally Lieutenant-Colonel Alcock retorts on Sir James Crichton-Browne the charge which he brings against Froude of introducing into his books on Carlyle contentious matter that added largely to their piquancy and increased the sales.

Dr. G. N. W. THOMAS, of Cardiff, who treats the allegation of impotence as a "charge" against Carlyle, complains that Froude took no steps to corroborate Miss Jewsbury's statement:

In such a charge as this, surely Carlyle's medical attendant would have been one of the first to be consulted. (!)

While he holds that as medical men we must come to the conclusion that the statement that Carlyle was impotent is certainly "not proven," yet he thinks that Sir James Crichton-Browne "has not given us any proof that he was not impotent, though he has endeavoured to do so." Dr. Thomas continues:

Sir J. Crichton-Browne has, after much trouble, and with the conspicuous ability we should expect from him, done his best to clear Carlyle of the imputation; but, on the other hand, I do not consider he is at all justified in charging Mrs. Carlyle with sterility simply because she was born prematurely with a nervous temperament and delicate constitution.

Dr. T. PARRY WILSON expresses disapproval of the publication of such details as Sir James Crichton-Browne has gone into. He adds:

If it were the case that Sir Richard Quain imparted to Mrs. Venturi the communication he is stated to have done in the article in question, one can only think it was a peculiar and exceptional measure to take—using a third party, and that a lady, as the medium of a most private and personal matter. Should one not have rather expected him to have waited to see Carlyle himself, or have written him a private note on the subject? It seems still more curious, however, that Sir James Crichton-Browne should have thought fit to repeat it in public. In any case, it proves nothing either way.

PAX also protests against the public discussion of a question which is of no public or scientific interest, and only concerns the persons actually involved.

Had there arisen any question of the legitimacy of children then an entirely new aspect would have presented itself, but this does not arise.

He concludes:

Surely these two dead people are entitled to be left alone, and their personal and domestic characteristics forgotten in the beauty of their public work.

A lady correspondent who signs herself "MRS. CARLYLE'S SYMPATHIZER," thinks that "whether Carlyle had a genital defect or not cannot in any way take away from him being 'one of the noblest and best of his species.' ..... Carlyle was created for higher and nobler ends than the mere propagation of his kind." She goes on to ask:

Is there not a marriage on a higher plane where mind meets mind and soul meets soul, and are knit together by a bond stronger than any earthly bond? If Carlyle's pretty love letter to his young wife breathed only passion as Sir J. Crichton-Browne would have us believe, and not that diviner, purer love which Mrs. Carlyle's letters and life surely showed she craved for, would that not cause some clouds in their sky? The woman who had believed she was receiving from so grand a man a divine love, to find it but an earthly passion. What a fall from Heaven to earth!

For the following interesting communication we are indebted to Dr. D. A. ALEXANDER of Clifton:

Readers of Froude will remember in the present controversy another excursion by him into the secret history and morbid experiences of the great. It is the relations of a royal pair which he is discussing—Henry VIII and Anne Boleyn. Having vindicated the moral character of the King, and accepted the evidence of the charges upon which his consort suffered, he proceeds to remark: "Historians, to make their narrative coherent, assume an intimate acquaintance with the motives for each man's or woman's actions. Facts may be difficult to ascertain, but motives, which cannot be ascertained at all unless when acknowledged, they are able to discern by intuition. .....I pretend to no intuition myself..... In this instance I hazard a conjecture—a conjecture merely—which occurred to me long ago as an explanation of some of the disasters of Henry's marriages, and which the words, alleged to have been used by Anne..... tend, *pro tanto*, to confirm ('*Que le Roy n'estoit habille en cas de copuler avec femme, et qu'il n'avoit ni virtu ni puissance*'). Henry was already showing signs of the disorder which eventually killed him. Infirmities in his constitution made it doubtful, both to others and himself, whether healthy children, or any children at all, would in future be born to him. It is possible—I do not say more—that Anne, feeling that her own precarious position could only be made secure if she became the mother of a prince, had turned elsewhere 'for assistance.'" The passage is taken from the *Divorce of Catherine of Arragon*.

THE BALLACHULISH QUARRIERS AND THEIR MEDICAL OFFICER.

MANY of our readers doubtless remember the case of Dr. Lachlan Grant, who for a long time past has been fighting the Ballachulish State Quarries Company on an important question of principle. In August, 1900, Dr. Grant was engaged as medical officer to the company at a salary of £270. The company terminated the engagement in July, 1902, but at a meeting of the quarriers it was unanimously decided that Dr. Grant should be requested to remain in the district. The men underlook to pay his salary and in fact engaged him as their medical officer. The company, however, attempted to prevent his practising in the district on the ground that under the terms of his engagement he was debarred from exercising his profession there. The parties went to law and Lord Kyllachy gave judgement against Dr. Grant, who appealed on the ground that the company's authority to arrange for medical attendance had been withdrawn and that the restraining clause was against public policy. The case has now again been

decided in the company's favour. The Lord Justice Clerk in delivering judgement said that the volume of practice in the district in question was necessarily limited, and if the company desired to have a medical officer of their own selection to attend on their workers it might be of the greatest importance that there should not be competition in the district by one who had been in their service, but had ceased to be employed by them, as thereby the value of the appointment might be so much diminished that their choice of candidates might be limited to less eligible practitioners. He could see no ground in public policy for the doctor being allowed to break his contract. The restriction imposed upon them related only to a very limited area, and he might practise elsewhere without interference. Lord Young, who dissented, after reviewing the facts of the case, pointed out that they sufficiently showed that the clause of the contract on which the application was founded, as the company construed it and sought to enforce it, was in restraint of trade and professional employment. The 600 men working at the Ballachulish quarries desired the services of Dr. Grant as their medical attendant for themselves and families, and he desired to attend them. At a meeting held by these workmen, and, as Dr. Lachlan Grant averred, attended by the entire population, including landed proprietors, clergymen and other influential residenters, the doctor was unanimously requested to remain in the district. They had been informed that the district was not populous or important. It was, however, in his opinion, important that the 600 workmen who were most immediately concerned, and the other inhabitants of the district, though not numerous, should be free to employ Dr. Grant as their medical attendant so long as they pleased, and that the Court should not interpose to restrain them from doing so, unless the circumstances in which they were asked to interfere showed that the legitimate and reasonable interest of the applicants would be sacrificed or suffer seriously if the Court refused to interfere. The rule of law was that an undertaking in restraint of trade or freedom of professional employment would not be recognized and enforced by a court of law unless—and this was the only exception to the rule—it was a reasonable, proper, and useful term of the contract, the judicial enforcement of which was necessary to satisfy the interest of the party in whose favour it was given. His lordship was of opinion that this case did not come under any exception to the rule, and he would even be prepared to hold that, having regard to the terms and purposes of the contract, the clause in question was unreasonable, and quite unnecessary for the protection or satisfaction of any legitimate interest of the pursuers. He was therefore of opinion that Lord Kyllachy's decision should be reversed. The two other judges, however—Lord Trayner and Lord Moncreiff—agreed with the Lord Justice Clerk, and the appeal was therefore dismissed. We understand that Dr. Lachlan Grant is taking the case to the House of Lords, and we heartily wish him success in his brave fight against what we venture to call legalized injustice.

LITERARY NOTES.

To the April number of the *Medical Chronicle* (Manchester) Professor Clifford Allbutt contributes a very interesting article, entitled A Chair of Medicine in the Fifteenth Century. The chair in question was in the University of Pavia, and the incumbent thereof was Giamatteo Ferrari da Grado. Ferrari occupied his chair from 1432 to 1472. His life has been written by a descendant, Dr. Maxime Ferrari, who was fortunate enough to discover family papers of considerable importance in the archives of Pavia. From these and other documents he was able to reconstruct the life and atmosphere of an Italian University town of the fifteenth century; his work, which was in the first instance presented to the University of Paris as a thesis for the doctor's degree in 1899, is entitled *Une Chaire de Médecine au XVe. Siècle et un Professeur à l'Université de Pavia de 1432 à 1472*. Giamatteo (John Matthew) Ferrari was born at Milan at the end of the fourteenth century, and doubtless graduated at Pavia, for all lieges of the Duke of Milan were obliged to take their degrees at that seat of learning under penalty of a fine of 600 florins. It is, as Professor Clifford Allbutt points out, an interesting feature in the teaching of medicine at that time that Ferrari's professorial career began (in 1432) with his appointment to the Chair of Logic; and although he was made Professor of the Practice of Medicine in 1440, he continued to occupy the Chair of Logic to the end of his life. At that time the University of Pavia rejoiced in the possession of no fewer than 300 professors, of whom 72 taught medicine and surgery. The salaries were generally in arrear, and the University was often driven to borrow from the Jews, with the natural result that it was "in grievous straits." In Ferrari's time foreigners, especially from France and Germany, flocked to Pavia, and the number of medical students was about 300. Many of the students were miserably poor, and had, in the words of one of them, to quiet their barking stomachs with any scraps they could pick up. To relieve this wretchedness colleges were founded as in other mediaeval universities. The formula of Robert Sorbonne was applicable to all colleges: *Vivere socialiter, et collegialiter et moraliter et scholariter*. Professor Clifford Allbutt gives an amusing account of the process of graduation. Three degrees were conferred—bachelor, licentiate, and doctor. There was no examination for the bachelorship, which was rather a certificate of study than a degree. It was the degree of licentiate which carried with it the right to teach (*licentia docendi*), and this degree was not conferred without considerable precautions.

> The candidate would choose the doctor who should present him, and, accompanied by his "promoters"—that is to say, two professors under whom he had studied theory in the morning and practice in the evening—he would present himself to the Rector and the Bedell for their testimony to his manners, and for the arrangement of the day and hour of his public exercises. The Chancellor, on the recommendation of four of the doctors, fixed the day; and he published the titles of the texts upon which the examinations would take place, so that any one could study them beforehand and enter into argument with the candidate. The Act for M.D. consisted of a thesis, followed by discussion. What these discussions were—arguments based on corrupt texts, and on glosses of works roughly translated into the colloquial Latin of the period, we may readily imagine: of personal experience nothing, of observation nothing, for who dare pronounce an opinion against which a master had spoken? The Commentary of the schools was sufficient for all purposes, and the spirit of true criticism had ceased to exist. Dressed up for the occasion, and standing on their tiptoes, these young cocks, as Michelet says, put on heroic airs, and plunged into subtle and elaborate controversies to the stupefaction of their auditors and of themselves, pouring out their vain and prolix rhetoric until night only could arrest it; when judges and disputants alike withdrew, puffed up with empty admiration of themselves.

It is interesting to observe that the degree of doctor was not necessary for the practice of medicine; it was the completion of the scientific study of medicine—a distinction between academic training and technical instruction which, as Professor Allbutt says, is too often lost sight of at the present day.

The following advertisement by an English physician of the seventeenth century has been unearthed by the *New York Medical Journal* from the *Athenian Mercury* or *Gazette*, published in this country between 1690 and 1697. The advertisement appeared in the issue of August 29th, 1691:

> In Plow Yard in Gray's Inn Lane lives Dr. Thomas Kirleus, a Collegiate Physician, and Sworn Physician to Charles II until his death, who with a Drink and Pill (hindering no business) undertakes to cure any ulcers, sores, swellings in the nose, face, or other parts; scabs, itch, scurfs, leprosies, and venereal disease, expecting nothing until the cure be finished. Of the last he hath cured many hundreds in this city; many of them after Fluxing, which carries the Evil from the lower parts to the head and so destroys many. The Drink is 3s. the Quart, the Pill 1s. a Box, with directions, a better purger than which was never given, for they cleanse the body of all impurities, which are the causes of dropsies, gouts, scurvies, stone or gravel, pains in the head and other parts; with another Drink, at 1s. 6d. a Quart, he cures all fevers and hot distempers without bleeding, except in few bodies. He gives his opinion to all that writes or comes for nothing.

The methods of the quack seem to have been the same in all ages; but this is not surprising, as human stupidity and credulity are eternal. As Robert Macaire said, "*Tout passe, mais les badauds ne passeront jamais.*"

Dr. Gould, whose most interesting book on eyestrain was reviewed in the British Medical Journal of June 20th, is a man possessed by a theory: hence he has no difficulty in finding facts to support his theory. To the five men of genius whom he cited in illustration of his theory that eyestrain causes in the human organism as many ills as the wrath of Achilles brought on the Greeks, he has since the publication of his book added Mr. Herbert Spencer. In *American Medicine* of March 7th, 1903, he discusses the causes of Mr. Spencer's ill-health, and although the data are admitted by him to be of the vaguest and scantiest nature he declares that "it is at once evident that the symptoms and their causes are not essentially unlike those of the five already studied." It need hardly be said that he works out the parallel with great ingenuity, and concludes that at any time during Mr. Spencer's life lenses properly correcting

would have enabled him to avoid wasting his superb intellect in "boredom" and killing time, and given him a freedom from nervous troubles and an ability to work which would have been of enormous profit to the world. The only evidence apparently which Dr. Gould has been able to find of any ocular disability in Mr. Spencer is a picture in a magazine representing the philosopher as reading without glasses at the age of 81. On this Dr. Gould comments as follows:

That Mr. Spencer is able to read without spectacles at his advanced age is a perfect proof that he is, and has been, myopic. There is nothing in the fact to be proud of, but rather to be sorry for. Such patients, if they have not suffered thereby from nervous or digestive disorders, have at least denied themselves one of the greatest pleasures in life, that of seeing the world. They do not know how anything a few feet away looks to normal eyes. But the two myopic eyes of a person are not once in a thousand instances alike in their refraction, nor are they without astigmation. The symptoms from which Mr. Spencer had suffered, at least from early manhood, show that he has always had compound myopic astigmatism, probably anisometropic.

By the same line of argument we have little doubt that Dr. Gould could show that eyestrain was the cause of Johnson's scrofula and melancholy; of Scott's lameness; of Byron's club-foot; of Verlaine's alternations of erotic frenzy and maudlin mysticism; of Bismarck's phlebitis; of Beaconsfield's gout and asthma; of Emerson's aphasia; and of the manifold infirmities which made Pope as helpless as a child and drove Coleridge to opium.

The *Philadelphia Medical Journal* of June 13th contains an editorial announcement that it has been consolidated with the *New York Medical Journal*, and will henceforth be under the control of the editor of that periodical. The *Philadelphia Medical Journal* was founded and for some years conducted by Dr. G. M. Gould, now editor of *American Medicine*.

Dr. Giovanni Antonio Boerio, a Piedmontese physician of the eighteenth century, made a painstaking study of pellagra, and left behind him a work in MS. dealing with the disease as observed in the Canavese, and particularly in the commune of Mazzé, his native place. The work is said by those who have had the opportunity of reading it to be remarkable for the amount and accuracy of information—clinical, epidemiological, economic, and social—which it contains, and for the modernity of spirit with which the subject is treated. The work was recently printed under the editorship of Drs. Antonini and Eula, and the first edition has already been exhausted. Boerio was born in 1752 and died in 1808.

Dr. Howard A. Kelly, of Baltimore, has greatly delighted our French brethren by giving the credit of the first clear description of a case of appendicitis to a French surgeon. Speaking in French to the Société de Chirurgie, he said that in the *Journal de Médecine, de Chirurgie et de Pharmacie*, Mestivier in 1759 reported the following case: A man, aged 45, presented himself at the Saint André Hospital, Bordeaux, for treatment of a tumour situated near the umbilical region on the right side. The surgeon made an incision, giving issue to about a pint of pus of bad quality. The patient died. At the necropsy the caecum presented nothing extraordinary. The same could not be said as regards the vermicular appendix. There was found a large pin all crusted over and eroded. It may be inferred that this pin had been long imprisoned in the appendix, and had there set up the symptoms of the disease and caused death. Seven years later, in 1776, a medical student named Joubert Lamotte published a report of a necropsy in a person who had died of tympanites. The author, after describing the symptoms of the illness, states that he had found in the vermiform appendix a foreign body as it were petrified, and in the caecum entire cherries. The necropsy having been made in September the cherry season was long past. The cherries had therefore remained in the caecum, and the petrified body is the first example of faecal calculus. The first case in the nineteenth century was published by Jadelot in 1808. In 1812 a case was published in England, and in 1813 another in France by Wegeler. In 1824 appeared a paper by Louyer-Villermay, entitled Observations to Serve for the History of Inflammations of the Caecal Appendix. In this paper are related two typical cases, in each with a necropsy. It is unquestionable, therefore, says Dr. Kelly, that to Louyer-Villermay belongs the honour of having been the first to point out the importance of appendicular inflammation. Three years later, in 1827, Melier published a memoir on the subject, based on a case of his own, and on a study of the two others related by Louyer-Villermay, and on two new ones. He described the lesions in the appendix, and had even a notion of the possibility of surgical intervention. Melier had unfortunately no official position, and apparently little confidence in himself. His ideas did not find favour with Dupuytren, then the sovereign authority in French surgery; otherwise one of the most brilliant triumphs of modern surgery might have been achieved 70 years earlier than it was. This is one of the many examples of the disastrous influence of the superior person on the progress of science.

ASSOCIATION NOTICES.

COUNCIL.

NOTICE OF MEETING.

A MEETING of the Council will be held in the Council Room of the Association, at 429, Strand (corner of Agar Street), London, on Wednesday, the 8th day of July next, at 2 o'clock in the afternoon.

The following Committees will also meet:

Tuesday, July 7th, 1903.—2.0 p.m. Public Health Committee.—2.45 p.m. Colonial Committee.—3.30 p.m. Premises and Library Committee.—4.30 p.m. Royal Naval and Military Committee. *Wednesday, July 8th, 1903.*—10.0 a.m. Journal and Finance Committee.

June 30th, 1903. GUY ELLISTON, *General Secretary.*

ELECTION OF MEMBERS.

ANY candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are fitted up for the accommodation of the Members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 a.m. to 5 p.m. Members can have their letters addressed to them at the office.

GUY ELLISTON, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

NORTH WALES AND SHROPSHIRE BRANCH.—Nomination papers for the representative of this Branch on the Council of the Association should be sent by July 13th to W. JONES-MORRIS, Honorary Secretary, Portmadoc.

NORTH WALES BRANCH.—The last annual meeting of this Branch, before its amalgamation with Shropshire under the new Constitution, will be held at Barmouth on July 14th. Members having papers to read or cases to communicate will kindly intimate by July 6th to either W. JONES-MORRIS, Portmadoc; H. JONES-ROBERTS, Pen-y-groes, Honorary Secretaries.

MUNSTER BRANCH.—Election of Representatives of the Branch on the Central Council. Nomination of Representatives signed by three electors must be forwarded to me (in writing) on or before Saturday, July 11th.—PHILIP G. LEE, 25, Patrick Hill, Cork, Honorary Secretary.

ULSTER BRANCH.—The annual meeting of this Branch will be held on Friday, July 10th, in Belfast. Voting papers for the various officers have been sent out to each member, and are required to be returned on or before July 7th. If any member has not received the necessary forms, communication might be sent to the Honorary Secretary, WILLIAM CALWELL, M.D., 1, College Square North, Belfast.

SPECIAL CORRESPONDENCE.

MANCHESTER.

Canal Boat Children.—Camping Out for Civilians.—Small-pox Epidemic.—The Future of the Infirmary Site.—Coroners and Publicans.—Rainfall and Soot.

"CANAL Boat Children" was the subject of an important discussion at a recent meeting of the School Attendance Officers' Association. These children living on canal boats are greatly handicapped in obtaining any education. It appears that there are over a thousand canal boats registered under the Acts of 1877 and 1884 at Runcorn alone, that number being larger than at any other place in England. Mr. Bowyer in his address stated that in his opinion the Acts ought to be so amended as to enable the local authority of

the place where the boats happened to be to enforce the attendance at school of the children, instead of making the Runcorn authority responsible, because the boats were registered as belonging to that place. The method now adopted was to supply each of the children with a pocket register, so that wherever the boat might be, the child could attend any school, and ask the teacher to mark its attendance. Despite every kind of vigilance, the attendance secured was only 30 per cent. As long as the law allowed parents to take children of school age with them on boats, so long would their education be neglected. The life of the children was spent under insanitary conditions, and was far from elevating. Few teachers cared to have them in their schools, as it was almost impossible to teach them anything, owing to their irregular attendance. They seldom got above the first standard. A resolution was adopted asserting that it was desirable to render illegal the residence on canal boats of children under school age. The Acts dealing with the matter were stated to be a dead letter.

There are not wanting signs that culture of the physique of our civilians is making progress in our midst. We have walking tours, and now the advantages of life in the open are being strongly advocated. One of the new developments of the Manchester Physical Health Culture Society is a camping section, which has just opened a small camp in one of the most picturesque parts of Cheshire. The camp will be utilized each week-end during the present summer, and should the weather continue to favour out-door living the camp will be gradually enlarged. The proposal to establish a camp near the Mumbles at Swansea during the annual meeting of the British Medical Association will afford medical men an opportunity of testing its practical advantages.

There is evidence that the small-pox epidemic is still attracting the eager attention of the public in and around Manchester. Some time ago the Urban District Council erected a small-pox hospital in Gorton. In the daily press complaint is made that the Council allow cattle and horses to graze in the field, in the centre of which the small-pox hospital is situated. It is also stated that there are houses within about a couple of hundred yards of the hospital. It is possible that there may be further developments of the situation as between property owners and ratepayers on the one hand, and the Urban Council on the other. Salford has already recorded its one hundred and sixtieth case of small-pox. Since the alarming discovery on June 13th that a person suffering from small-pox had been in contact with the members of his family, and through them with a number of other people at Didsbury, 12 patients have been removed to the new isolation hospital erected near Baguley by the District Councils of Withington and Moss Side.

Now that the Corporation are apparently in a fair way to acquire the infirmary site, of course the question as to the best way to use it has become important. If the public is to pay the piper, it can call the tune. On May 26th Professor Dawkins submitted a scheme for the erection on the site of buildings for art gallery, library, and for a commercial museum. Utilitarian projects of a different order have been proposed. As the geographical centre of Manchester oscillates round the site of the present Royal Infirmary, it is meet that a discussion as to the future allocation of the site should have been submitted in the rooms of the "Geographical Society." One speaker, obviously with high ideals before him, and with extensive knowledge of foreign cities, objected to "concentration of commerce, art, science, and literature in one building, and was against raising such a structure on the Infirmary site. Manchester would never become a beautiful garden city, but it might easily become a city with a beautiful garden.....Lofty arcades, a pavilion for music, terraces, a winter garden, with statues here and there, a beautifully curved lake, with animal life and ornamental bridges, fountains, and cascades, modelled on the glorious proportions and principles of some of the Roman squares, and embodying features of the gardens of Versailles, would not only appeal to the refined mind, but also to the popular taste, and materially raise the ideal of civic life. Even our ugly warehouses around the square would soon feel the spell of Nature's beauty, and artistically decorate their façades." This is at once an indictment and an ideal.

The Coroner is all-powerful in his own Court, but it is not every coroner who has a tangible habitable court. The Coroner of Salford has no official court. At the next meeting of the Town Council of this Royal Borough, a motion will be brought forward that the Finance Committee be instructed to provide a court for the Coroner in a suitable and convenient building in the borough. It seems absurd that an officer of such importance and with such plenary powers should have to carry out his duties most frequently at an inn. Moreover, it is hardly fair to Boniface himself. The County Coroner at a recent inquest made some remarks as to the absence of a public mortuary at Hindley Green, near Wigan. An officer spoke to removing the body of a drowned person to the Spinners' Arms, where the landlord demurred to taking it in, because of its condition. The landlord said he was aware that the law did not compel him to take in a body. The body had to be placed in the stable, and he had complaints from the occupiers of the two cottages opposite of the horrible smell coming from it. Nevertheless, when he asked the sanitary inspector to disinfect the stable he refused. The Coroner advised the landlord to decline to take in any more bodies, and said that it was the duty of the District Council to provide a mortuary. The jury recommended that the District Council should provide a mortuary for the district. They thought the sanitary inspector had exceeded his duty in refusing to disinfect the stable.

Many people rail at the "weather of Manchester," and say hard things about its rainfall. The rainfall, however, is not altogether an evil. On the contrary, in a city where so much dust and soot pollute the atmosphere and settle on every object, animate and inanimate, the rain comes as a "blessing from above," or we may parody the words of Schiller applied in another connexion, "*Doch der Segen kommt von oben*"—Salvation comes from above. The purifying effect of rain on the air is of immense importance for Manchester. Some years ago, when the question of the removal of the Infirmary was still a subject of hot controversy, some observations were made as to the effects of the soot-laden atmosphere on vegetation. So far as the writer knows, there has not been any continuous record upon a series of years of the sootfall in Manchester. Perhaps the deposit is too obvious and the calculation too easy. It appears, however, that Modern Athens has been attending to this matter, and that observations on the fall of dust, soot, lime, etc., in George Square, Edinburgh, "have been taken for some time." In this square, in 1902, the rainfall was 16.2 in.; soot and dust, 867 gr., or 3.8 oz., per sq. ft. If this is the result in Edinburgh, what must the Manchester record be?

QUEENSLAND.

Principles of the Open-air Treatment of Consumption.—Bacteriological Diagnosis.—Plague in Queensland.

In a paper read before the Queensland Branch of the British Medical Association, Dr. A. Stewart, of the Dalby Sanatorium, has made a report on two years' experience of the open-air treatment of 124 discharged cases of pulmonary tuberculosis which is encouraging. He favours the addition of open-air shelters for tuberculous patients to all general hospitals in Australia, as already advocated by Drs. Hare and A. J. Turner in reports to the Queensland Government. He suggests that the medical profession is to some extent responsible for the fear in the lay mind of the "catching" of consumption, and thinks that the presence of such open-air shelters in the grounds of all hospitals would, when accompanied by the personal explanations of medical men to patients and their friends do more to dispel this fear than can ever be attained by "the issue of tons of tracts from the National Society for the Suppression of Tuberculosis." He supports the opinion that no special climate is necessary for the open-air treatment of pulmonary tuberculosis. The essential point is pure air, and plenty of it night and day. He finds that at Dalby, where the winter, though bright and sunny, is bitterly cold owing to cutting westerly winds, the patients do even better in winter than in summer. They sleep on the verandahs sheltered from the west winds when these prevail. He supports the view that the dangers of windy weather are greatly exaggerated, even by medical men. Dr. Stewart's paper was published in the *Australasian Medical Gazette* for March.

The profession in Brisbane has been somewhat concerned by the decision of the Government Health Department to discontinue to furnish free to medical men bacteriological reports upon all matters from possibly infectious cases. It will continue to report without charge upon specimens from possible cases of leprosy, plague, or small-pox, but a fee of 5s. will in future be charged for reports on other specimens. In the present state of the treasury this decision seems to be a fair one, if founded only on the score of expense. For practitioners not engaged in contract work it should be no hardship,

but the number of specimens sent for examination by the underpaid club doctor will be greatly diminished, and it is to be presumed that he as a rule requires more outside aid to diagnosis.

The following interesting statement regarding the plague in Queensland, has been kindly furnished to your correspondent by the Commissioner of Public Health, Dr. B. B. Ham: "Since the present outbreak — the fourth so far as Brisbane is concerned—there have been 13 cases of the disease, 8 having occurred within the City of Brisbane, 3 at Townsville, and 2 at Rockhampton. The number of deaths has been 7, or a mortality of nearly 54 per cent. During the past three months 3,274 rats were received for bacteriological examination, but only 25 of them were found to be plague infected; 2,769 rats were also destroyed without examination. An interesting fact is that three mice were found to be plague-infected. "Contacts" of bubonic plague are kept under supervision of the health officer for a period of six days. They are neither quarantined nor deprived of their liberty, and in no instance has any case of plague arisen among them. Some 120 men have been employed by the Health Department during the past month (March) in the work of rat destruction—laying poisoned baits, setting traps, digging out rat runs and burrows, removing carcasses, taking up rat-eaten floors, removing waste food material, and disinfecting the soil beneath floors where rats were found. Systematic and frequent inspection of the districts of the various local authorities with the view to the destruction and abatement of nuisances has also been insisted upon, and the occupiers of a number of dirty premises have been dealt with. Vessels in the plague-infected ports of Queensland have been required to fend 4 ft. off from the wharves, and to have rat guards of an approved pattern attached to all moorings. The holds of vessels continue to be fumigated at the port of departure and again on arrival at the terminal port. A large number of rats have been collected from various centres of Queensland where plague has existed, and from other places in the State, for the purpose of classification. The majority of the rats examined would appear to be a rufous tropical variety of the mus rattus. The fleas from infected and non-infected rats are under investigation, and a number of a *Pulex* (species undetermined) are included in a collection of *Pulicidae* embracing the *Pulex irritans* (Linn.) and *Typhlopsylla musculi* (Dugas), etc."

CORRESPONDENCE.

THE IMPERIAL VACCINATION LEAGUE.

SIR,—The Imperial Vaccination League has now been at work for a year. It has in view two objects; first to study the working of the Vaccination Act of 1898 in order to consider if in any way the Act or its administration can be improved; and secondly, to press upon the attention of all classes of the community the great value of vaccination and revaccination as a protection against epidemic small-pox. The League has so far mainly occupied itself with making a critical study of the Act of 1898. As a result of this study, it recommends the general obligatory revaccination of children before leaving school; the extension of the conscience clause to revaccination; the transference of the administration of the vaccination laws from the Poor Law to some other authority charged with public health functions; the giving to public vaccinators the same security of tenure as is now enjoyed by the vaccination officers; and the placing of all establishments in England for the preparation of calf lymph under Government inspection and control. The League does not approach the subject from the point of view of the special interests of the medical profession or of the public vaccinators. It inquires only what will best promote vaccination among those sections of society now most prejudiced against it. Should it appear on investigation that the cost of vaccination has recently been in some cases unreasonably great, the League would favour its being reduced. It considers it to be of the utmost importance that the medical profession should be moderate in its pecuniary demands, that nothing should be done to make martyrs of antivaccinists, and that vaccination and revaccination should be efficient as well as obligatory.

The League was formally constituted at a large meeting of its members, over which the Duke of Northumberland presided on December 12th, 1902.

On January 14th, 1903, a deputation representing merchants, bankers, shipowners, large employers of labour, municipal authorities, dockyard companies, heads of public schools and colleges, solicitors, insurance companies, sanitary authorities, the Royal Colleges of Physicians and Surgeons, wharfingers, traders, givers of concerts and various other influential persons, waited on the Right Hon. Walter Long, M.P., President of the Local Government Board, to urge upon him the importance of making revaccination obligatory before the legal age for employment, and of providing an adequate supply of glycerinated calf lymph available for all classes of the community. Many sheets of signatures in support of obligatory revaccination were handed to Mr. Long by members of the deputation.

The President, in reply, urged the League to extend its work into the country, and especially to assist candidates at parliamentary elections to meet the pressure put upon them by the opponents of vaccination. The League desires to act upon Mr. Long's advice. It has recently issued a paper, "Ten Answers to Questions on the Subject of Vaccination for the Use of Parliamentary Candidates," which can be had from the Secretary, I. V. L., 53, Berners Street, London, W. An Organizing Secretary (Dr. Rees Roberts) has been appointed whose duty it will be to attend parliamentary elections, and to form local committees in defence of vaccination. For this extension of the work of the League an additional sum of £500 a year will be needed for at least three years. The Executive Committee desires to find one hundred friends who will each promise five guineas a year for three years, or a larger number who will make up the amount in smaller sums. It is not probable that the effort to procure a Revaccination Act need last much more than three years. Such an Act can be passed within that time if the Government and the country desire it. If, on the other hand, people deliberately prefer frequent epidemics of small-pox to vaccination, they must have their way and take the consequences. Meantime, the League will do what is possible to convert people to other and more social views.—I am, etc.,

E. GARRETT ANDERSON,
Hon. Secretary, I. V. L.

Upper Berkeley Street, W., June 20th.

VACCINATION AND SMALL-POX IN NORTHAMPTON.

SIR,—An outbreak of small-pox has recently occurred in Northampton, and as there are a great number of unvaccinated children in this town the following facts may be of interest. It is to be noted that the "contacts" were kept away from work or school for 18 days after the removal of the last case from a house, and in the case of wage earners their wages were paid to them. Isolation of these contacts was not carried out in special buildings, but in their own homes, certain instructions being given to them as regards exercise which on the whole were faithfully carried out.

Total cases, 37; mortality, none; mild, 18; medium, 9; severe, 10.

Vaccination Facts.	Mild.	Medium.	Severe.
Vaccination before the date of infection ...	16	5	2*
Unvaccinated at the date of infection ...	2	4	8

* one, aged 70, no marks; the other, aged 42 intemperate.

Contacts.—Total contacts kept under supervision, 153. Small-pox occurred in 15 of these—equivalent to 9.8 per cent. Of these there were unvaccinated at the date of the notification of the case, 42; vaccinated, 111.

The 42 unvaccinated contacts furnished 7 cases = 16.6 per cent.; 11 vaccinated contacts furnished 8 cases = 7.2 per cent.

In no case did small-pox develop where vaccination was carried out within four days after the onset of the disease in the primary case. This was true of 12 contacts.

On the other hand, while the 30 remaining unvaccinated contacts furnished 7 cases, 23, although vaccinated at later dates (varying from 5 to 11 days after the onset of the disease in the primary case) escaped.

Classification of the contacts into three age periods—1 to 12, 13 to 20, and over 21:

		Per cent.
1 to 12	6 vaccinated contacts, no cases occurred	0.0
	36 unvaccinated, 7 cases occurred	19.4
13 to 20	28 vaccinated (in infancy) 1 case occurred ... ... (This case had 3 pocks altogether.)	3.5
	5 unvaccinated, no case occurred	0.0
	77 vaccinated (in infancy or early life) 7 cases occurred	9.0
21 and over.	1 unvaccinated (age 22, vaccinated 5 days after the onset of the disease in the primary case), no case occurred	0.0

—I am, etc.,

JAMES BEATTY, M.D., M.O.H.

Northampton, June 9th.

THE INFLUENCE OF ETHER ADMINISTRATION ON NITROGENOUS METABOLISM.[1]

SIR,—I am compelled to take exception to some of Dr. Pechell's methods, figures, and conclusions in the above paper; some of the methods are faulty; the tables of results

[1] BRITISH MEDICAL JOURNAL, June 20th, 1903.

are partially inaccurately framed, and Dr. Pechell's conclusions based on these faulty methods and inaccurate calculations suffer in consequence.

1. *Methods.*—Sufficient consideration does not appear to have been directed to the food taken during the investigation. Some of the cases appear to have been on full diet and others on beef-tea and milk. In endeavouring to estimate change in nitrogenous metabolism, no value can be attached to the amount of the excretory output unless the intake is accurately known. The quality of the urine being less affected than the quantity by variations in the food, Dr. Pechell's percentage amounts would have been of value had they been always accurate; as this is not the case, their value is diminished. The hypobromite method of estimating urea is not suited to scientific work, unless precautions are taken, all the ammonia, about a third of the uric acid and creatinin, and two-thirds of the creatin nitrogen being liberated as well as that of the urea. What Dr. Pechell estimates as urea is thus really a complex body; the percentage of error in his urea estimation varies from anything between 5 and 15 per cent. These errors account for such figures as 97 per cent. and 98 per cent. for the nitrogen of urea to total nitrogen. In a great number of estimations, I have never seen anything like these percentages. Dr. Pechell's method of estimating what he calls his xanthin bodies is scarcely more happy. Dr. Pechell's xanthin bodies consist of the two-thirds of the urates and the creatinin, or the third of the creatin, which the hypobromite has not affected, along with other less-known nitrogenous bodies.

Dr. Pechell's Table IV, giving the Average Totals and Percentages of his 13 Cases.

Days.	Average Total Nitrogen in Grams.	Average Total Urea.	Average Total Uric Acid.	Average Total Xanthins.	Average per Cent. of Urea Nitrogen to Total Nitrogen.	Average per Cent. of Uric Acid Nitrogen to Total Nitrogen.	Average per Cent. of Nitrogen of Xanthin Bodies to Total Nitrogen.
1	10.87	17.12	0.34	2.49	79.00	1.06	21.4
2	6.43	11.52	0.41	0.95	83.70	1.94	14.6
3	12.71	23.57	0.49	2.45	81.40	1.17	16.6
4	22.14	22.22	9.41*	3.29	70.91	0.91	37.0

* Printer's error.

The Above Table Corrected from Dr. Pechell's Figures for the 13 Cases. (13 Specimens Examined on First Three Days, 12 on the Fourth, one Specimen Lost).

1	10.90	18.67	0.34	2.08	79.90	1.01	19.10
2	6.43	11.52	0.43	0.92	83.50	2.22	14.31
3	13.64	23.55	0.48	2.49	80.60	1.20	18.26
4	13.80	24.08	0.39	2.43	81.40	0.94	17.61

Conclusions.—The marked fall observed in the total nitrogen and urea of the second day is probably caused by the diminished food taken on the day of and day after the anaesthetic causing a diminished output. Dr. Pechell's conclusion that the urine of Day 4 is profoundly changed, and some other statements in the paper are obviously incorrect in face of the corrected figures. The corrected table shows that, with the exception of the increased uric acid on the second day, the quality of the urine has not been markedly affected by the administration of the anaesthetic. The urea percentages on all the four days is lower than normal. I hope to go more fully into urea estimation in an early number of the Corps journal.—I am, etc.,

J. C. B. STATHAM,
Captain R.A.M.C.

June 23rd.

TRAUMATISM AS A FACTOR IN THE ETIOLOGY OF PULMONARY TUBERCULOSIS.

SIR,—In Dr. Weir's interesting article he advances a theory to account for the onset of that disease after pleurisy. His view is that the pleurisy is usually not tuberculous, but that by the chronic changes which it leaves it converts the subjacent lung into a part where expansion is poor, as at the apex, and consequently into a part where tubercle bacilli will find a suitable nidus for their growth. A consideration of certain pathological and clinical facts will, I think, show that as a rule, at any rate, this is not the case.

Inoculation into animals of serous fluid from cases of apparently simple pleurisy with effusion frequently causes tuberculosis. Netter succeeded in causing tuberculosis in eight cases out of twenty by injecting into guinea-pigs fluid from cases of apparently simple pleurisy. As a control experiment he injected into nine other guinea-pigs serous fluid from nine cases of pleural effusion complicating Bright's disease; all these latter gave a negative rusult.[1] A negative result does not prove that any case was not tuberculous, while a positive test is of certain value. We may therefore fairly infer that more than eight of the cases were tuberculous. Other observers have met with similar results.

The tuberculin test has been tried on patients suffering from pleurisy, apparently simple. Out of 15 cases, a positive reaction was obtained in 13 cases.[2]

Clinically we find arguments against Dr. Weir's theory. Although his case was one of basal disease following basal pleurisy, the common event is that basal pleurisy is followed by apical tuberculosis, the base remaining apparently free from disease. Indeed, it is not uncommon for the tuberculosis not to occur on the side which suffered from the pleurisy, but in the other lung alone.

Among 14 cases of pleurisy which ultimately developed tuberculosis which I had occasion to watch, 4 developed tuberculosis on the side opposite to that on which the pleurisy had occurred, while the latter side remained free from tuberculous disease.

The subject is one of great difficulty; but I trust that enough has been said to show that it does not seem to be due to local weakening of lung by local pleurisy that later tuberculosis is developed.—I am, etc.,

T. A. ROSS.

Ventnor, May 25th.

IS TEMPORARY RELIEF OF SYMPTOMS A JUSTIFICATION FOR GASTRO-JEJUNOSTOMY IN ADVANCED CARCINOMA OF THE STOMACH?

SIR,—I am tempted to ask this question in view of some remarks by Mr. Bilton Pollard in connexion with three cases of cancer of the stomach published in the BRITISH MEDICAL JOURNAL of June 13th; and also because of the increasing difficulty I have personally felt in regard to the right answer to give to it.

It must have fallen to the lot of most surgeons with any experience of gastric surgery to note how greatly beneficial have been the more or less immediate effects of a gastro-jejunostomy in advanced cases of gastric cancer; but not to so many possibly has the opportunity been afforded of observing the final results in these cases. It is, however, in these final issues rather than in the immediate effects that my own mind has been exercised, and which has led me to ask the above question.

The course of events in these cases may be briefly expressed somewhat as follows: The patient, through much suffering, reaches a stage of general emaciation, with the natural concomitant of much weakness, both physical and mental; in other words, a period of more or less passive endurance has been reached from which the patient slowly passes on to death from exhaustion. The surgeon steps in, and successfully performs a gastro-jejunostomy. The patient almost at once improves, quickly puts on pounds in weight, and very soon, owing to the general physical and mental exhilaration which ensues, doubts the diagnosis, and believes in a renewed lease of life. "Then vague but suggestive" symptoms insidiously reappear, the patient's fears begin to be aroused, anxieties increase, and the renewal of the old, or possibly fresh, symptoms leave little room for doubt that the disease is not only there, but advancing; and weeks, perhaps months, must elapse, of much suffering and depression, before that stage of passive endurance and almost indifference is again reached from which the operation had in a sense been a sort of means of rescue.

I could, were it necessary, give some very graphic and painful illustrations from my own cases of what I have tried to briefly depict here; but the sequence of events must be sufficiently well known not to need further amplification. The explanation is simple enough. The free outlet of the gastric contents into the jejunum gives the stomach rest, and so relief from pain; while in cases of pyloric obstruction the food is able to pass at once into the bowel. In either case the result is usually rapid improvement in nutrition of the body, and with that improvement in every other respect. But the growth is, in reality, slowly and surely advancing, invading

[1] *Bulletin des Hôpitaux*, 1891, p. 176.
[2] Whitney, *Twentieth Century Practice*, vol. vii, p. 11.

and obstructing in some cases the artificial orifice, in others extending into neighbouring parts such as the liver, pancreas, bowel, etc.

We are proud, and I think justly, of the immediate relief which it is possible for surgery to afford in these particular cases, but the real question is one which concerns the true welfare of the patient and not any particular brilliant achievements of our art. Is it, in other words, for the real benefit of our patient to rescue him from death, simply to die over again; to raise fallacious hopes when passive resignation has been reached? I admit that there are other considerations not without their import in attempting to answer this question. Thus, there is no doubt that life in many cases is prolonged; and it must be confessed also that the operation has been performed in cases where at the time no doubt was felt as to malignancy, and yet a perfect and permanent cure resulted. These cases, as we now know, are in almost every instance, chronic ulcers with great inflammatory thickening and adhesions. But disregarding these very exceptional instances of pseudo-malignancy, can it be said that a few weeks or months of life are a sufficient mitigation of the inevitable period of suffering which the patient must again pass through before released by death? If forced to express my own opinion and answer the question I must confess to a decided sense of reluctance to attempt to relieve by gastro-jejunostomy a patient who has reached that stage of reduced strength and general emaciation that is rapidly tending to produce dissolution by exhaustion.—I am, etc.,

Glasgow, June 17th. A. Ernest Maylard.

THE RED-LIGHT TREATMENT OF SMALL-POX.

Sir,—I have read in the British Medical Journal of June 6th the remarks of Professor Niels R. Finsen, M.D., on the red-light treatment of small-pox. The method, as has been pointed out, was employed by John of Gaddesden.

The question now arises, Why did the red-light method fall into disuse? The treatment was adopted in the highest place. If general success followed, it would have percolated to every strata of society, and would be well known to-day.

Professor Finsen seems very enthusiastic about the method, or he would not declare that the public health authorities will be guilty of great neglect if the method is not adopted.

May I suggest that he should in the first place put before the profession unquestionable statistics of the success of the red-light method before expecting the authorities to act on his suggestion? He truly says the avoidance of suppuration is of great importance, and that the suppurative stage is the most dangerous of the various stages of small-pox.

If he can furnish evidence in unvaccinated patients suffering from confluent small-pox that the vesicles do not pass into a pustular stage under the action of red light, he will, indeed, deserve well of the profession and of society generally.—I am, etc.,

Bournemouth, June 12th. A. Humphrey Davy, M.D.

THE ETIOLOGY OF NEW GROWTHS.

Sir,—There is a point in the etiology of new growths that, so far as I know, is not mentioned in Mr. Monsarrat's invaluable paper on this subject. It occurred to me in watching the behaviour of keloid. In a wound—from a burn or scald for instance—an infection occurs by certain microbes; these and their products, presumably, give rise to a new growth consisting of cells of somewhat aberrant type. After complete removal recurrence occurs, after an interval of time, in scar and even stitch-holes, though all are placed in apparently healthy skin and no infection occurs to account for the growth. This occurrence seems to me—though, of course, my interpretation of facts may be quite wrong—to show that the original new growth has produced some effect on the individual, centrally as well as locally. If this interpretation is correct it has a bearing on the whole question of recurrence and even malignancy. Keloid, by the way, illustrates the fact so well insisted on by Mr. Monsarrat, that there is no line to be drawn between innocent and malignant growth.

That a small new growth should exert a more or less permanent influence on the whole being of the individual in whom it occurs is, to my mind, in no way in contradiction with Mr. Monsarrat's contention that all cell activities must be regarded as purely bio-chemical processes. While fully recognizing this we must remember that not only is man descended from a unicellular organism, but that he begins his own separate existence as such. However highly differentiated some of his constituent cells may become in structure and function, they are still part of a well-defined individuality, citizens of a republic, as it were, where none can escape responsibility.—I am, etc.,

Redhill, June 22nd. S. W. MacIlwaine.

MEDICAL MISSIONARIES.

Sir,—The encouragement which you have been good enough to accord from time to time to the difficult work which is being carried on at Livingstone College has greatly strengthened our hands, and leads me to ask your permission to offer a few comments upon the views put forward in connexion with this subject in the British Medical Journal of June 20th.

Perhaps I can do this best by giving in the first place a short statement of the aims of Livingstone College. It may be best described as an advanced ambulance course, for whilst the ordinary first aid lectures teach what is to be done till the doctor comes, these must go one step further and advise what is to be done when there is no doctor to come. This is, in fact, the position of the large majority of our students who are in lonely places far from qualified medical aid. It is for these that Livingstone College has been founded, and it is intended to teach missionaries:

1. How to protect their own health and that of their families and fellow missionaries. To this end careful though elementary instruction is given (*a*) as to the functions of the human body in health, (*b*) as to the adoption of ordinary sanitary precautions, (*c*) as to protection from mosquitos, and other special preventive measures necessary in a tropical climate, (*d*) as to the best methods of dealing with haemorrhage, wounds, and common accidents, (*e*) as to the best methods of identifying and dealing with some common diseased conditions in the absence of qualified skill.

It is also intended to teach missionaries:

2. How to deal with the more simple diseases among the natives of the country in which they may be working.

That it would be best in all such cases to send forth "medical missionaries," by which is meant fully qualified men and women, goes absolutely without saying, but as yet the supply is hopelessly unequal to the demand. It is probably the case that roughly speaking about half the population of the world have never seen, and perhaps never will see, a qualified doctor. Millions of human beings are suffering fearful tortures simply owing to ignorance, and the most elementary knowledge, which any ordinary person of common sense in this country possesses, would avail to relieve a very large part of this suffering. Can any one suggest that it is wrong to do so, and that if missionaries are called upon to treat such cases they should not be given some instruction as to the best way of dealing with them? As a matter of fact, students who have passed through the Livingstone College course have been called upon to deal with such cases; some of them in the heart of Central Africa, or the lonely villages of India, in various parts of China, in the South Seas, and in lonely stations in the far North. They have treated cases where natives have been bitten by crocodiles, or gored by buffalos, or mauled by other wild animals. In none of these cases, so far as we know, was any qualified help at hand, and the patients would probably have died a horrible and lingering death. They have dealt with innumerable cases of ulcers of all kinds, with toes dropping off as a result of jiggers, with dental cases where the knowledge of simple extraction has relieved a great amount of suffering, and in these cases they have been particularly successful.

No one on purely humanitarian grounds could allow these cases to pass unheeded, and where a missionary must be cast among such surroundings we believe that you will agree that he should have some guidance as to what he should attempt and what he should leave alone, and this Livingstone College seeks to provide.—I am, etc.,

Livingstone College, Leyton, June 23rd. Charles F. Harford.

The University of Nancy now grants after a special course of study, followed by examination, a diploma of proficiency in colonial medicine.

International Congress of Dermatology.—The fifth meeting of the International Congress of Dermatology will be held in Berlin from September 12th to the 17th, 1904. The questions proposed for discussion are: (1) Syphilis of the Circulatory Apparatus; (2) Cutaneous Affections Connected with Disturbances of Nutrition: (3) Epitheliomata and their Treatment. The General Secretary of the Congress is Dr. Rosenthal.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

FLEET SURGEON B. C. E. F. GUNN is placed on the retired list, June 20th. He was appointed Surgeon February 26th, 1885, and Fleet Surgeon February 20th, 1903. As surgeon of the *Alexandra* he served with the Naval Brigade in 1884-5 in the expedition for the relief of General Gordon at Khartoum, receiving the medal with clasp and the Khedive's bronze star.

The following appointments have been made at the Admiralty:—DONALD T. HOSKYN, Fleet Surgeon to the *Mersey*, June 29th; SAMUEL KEAYS, Fleet Surgeon, to the *Albion*, June 29th.

TRANSPORT MEDAL.

P. B. B.—We are informed that the issue of the sea transport medal is at present confined to duly-qualified officers serving on board transports employed in the South African war, 1899-1902, and the China expedition, 1900-1901.

ROYAL ARMY MEDICAL CORPS: EXCHANGE.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 1s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

A FIELD OFFICER for foreign service this season wishes an exchange. Give full particulars. Address E. O., care of Holt and Co., 3, Whitehall Place.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT-COLONEL W. A. CHESTER, M.B., who is serving in the Bengal Command, is granted the temporary rank of Colonel while officiating as Principal Medical Officer of a District.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL W. R. BROWNE, M.D., Madras Establishment, is promoted to be Colonel from May 19th, and the tenure of his appointment will reckon from that date. He was appointed Assistant Surgeon, April 1st, 1873, and Brigade-Surgeon-Lieutenant-Colonel, March 1st, 1898. He served during the Rumpa rebellion in 1879-80.

The promotion of Majors A. O. EVANS, Madras Establishment, and M. A. T. COLLIE, M.B., and W. H. QUICKE, Bombay Establishment, to be Lieutenant-Colonels, which has already appeared in the BRITISH MEDICAL JOURNAL, has received the approval of the King.

The undermentioned Captains, whose first commissions date from January 31st, 1891, are promoted to be Majors from January 31st last: J. M. CRAWFORD, M.B.; BAWA JIWAN SINGH, C. H. JAMES, F. O'KINEALY, and A. W. T. BUIST, M.B., of the Bengal Establishment; and E. G. R. WHITCOMBE and BAMAN DAS BASU, of the Bombay Establishment.

The undermentioned Lieutenants, all of the Bombay Establishment, and whose first commissions bear date January 27th, 1900, are promoted to be Captains from January 27th last: A. C. MACGILCHRIST, M.B., J. W. D. MEGAW, M.B., E. O. THURSTON, M.B., G. BROWSE, C. M. GOODBODY, R. STEEN, M.B., F. F. ELWES, M.B., I. L. MACINNES, M.B., E. A. C. MATTHEWS, M.B., L. P. STEPHEN, M.B., L. GILBERT, M.B., T. G. N. STOKES, M.B., H. M. MACKENZIE, M.B., M. H. THORNELY, F. V. O'BEIL, M.B., W. O'S. MURPHY, M.B., M. CORRY, M.B., C. C. MURISON, H. A. WILLIAMS, M.B., D.S.O., W. C. LONG, G. C. BEAMISH.

The retirement from the service of Colonel T. H. HENDLEY, C.I.E., Bengal Establishment, which has been already recorded in the BRITISH MEDICAL JOURNAL, has received the Royal sanction.

Lieutenant-Colonel A. W. D. LEAHY, M.D., Bombay Establishment, has retired from the service from June 5th. His commission as Surgeon dates from September 30th, 1882; that of Lieutenant-Colonel, from September 30th, 1902. He has no war record in the Army Lists.

VOLUNTEER RIFLES.

THE undermentioned gentlemen are appointed Surgeon-Lieutenants in the corps respectively specified, dated June 27th:—WALTER P. SIMPSON, 8th Volunteer Battalion the Royal Scots' (Lothian) Regiment; HENRY STALLARD, 4th Nottinghamshire Volunteer Battalion the Sherwood Foresters (Nottinghamshire and Derbyshire Regiment); JAMES MCCLEW, 1st Volunteer Battalion the Prince of Wales's (North Staffordshire Regiment).

Captain F. E. A. WEBB, from the Harwich Volunteer Infantry Brigade Bearer Company, is retransferred as Surgeon-Captain 3rd (Cambridge-[illegible] Volunteer Battalion the Suffolk Regiment, June 27th.

The undermentioned Surgeon Lieutenants are promoted to be Surgeon-Captains, dated June 27th: J. S. MCKENDRICK, M.B., 4th Volunteer Battalion the Cameronians (Scottish Rifles); T. M. MORTON and W. H. F. [illegible] 4th Volunteer Battalion the East Surrey Regiment; O. T. [illegible] 4th Volunteer Battalion the Hampshire Regiment.

[illegible] and Volunteer Battalion the Hampshire Regiment.

Surgeon-Captain A. E. WADE, M.B., 3rd Volunteer Battalion the Hampshire Regiment, to be Surgeon-Major, June 27th.

[illegible] MACKAY, 6th (Fifeshire) Volunteer Battalion the [illegible] Highlanders), resigns his commission, June 27th.

[illegible] G. A. COHEN, M.B., 1st Volunteer Battalion the Duke of Cambridge's Own (Middlesex Regiment), also resigns his commission, June 27th.

The Volunteer Officers' Decoration has been conferred upon Surgeon-Lieutenant-Colonel F. J. WALKER, M.D., 3rd Volunteer Battalion the Leicestershire Regiment; Surgeon-Major W. CHALMERS-COWAN, 1st Forfarshire Royal Garrison Artillery (Volunteers); Surgeon-Major J. A. GRAY, 5th Volunteer Battalion the Royal Scots (Lothian Regiment); and Surgeon-Major A. H. ROBERTSON, 3rd Kent (Royal Arsenal) Royal Garrison Artillery (Volunteers).

COMPULSORY VACCINATION IN BELGIUM.—A Bill making vaccination and revaccination compulsory, which was recently introduced into the Belgian Chamber of Deputies by Dr. Trewagne, Socialist Member for Antwerp, has been passed by a majority of 2.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

Degrees.—On June 20th F. Whitaker (Trinity) was admitted a Bachelor of Surgery. On June 23rd the following degrees were conferred: *M.D.*: W. R. Pollock (Trinity). *M.B. and B.C.*: J. D. H. Freshwater and H. L. P. Hulbert (Trinity); F. B. Mauser (Peterhouse); L. E. H. R. Barker (Caius). *B.C.*: G. T. Birks (King's); P. K. Muspratt (Christ's); H. S. C. Woodward (Downing).

UNIVERSITY OF EDINBURGH.

THE following are the successful candidates for the Final Examination for Degrees in Medicine:

M.B., C.M. (Old Regulations).—Margaret Ida Balfour, W. H. Winstanley.

M.B., Ch.B. (New Regulations).—D. Allison, J. A. Anderson, F. L. Atkinson, C. M. Begg, W. F. Brayne, B.A., Edith Cochrane Brown, G. Ll. Brunton, G. M. Brunton, A. Buchanan, S. Burns, M.A., H. Caird, T. P. Caverhill, Katherine Jane Stark Clark, Elizabeth Lucy Colby, B.A., C. H. Craig, R.W. Craig, C. S. Crichton, D. M'K. Crooks, D. H. Croom, B.A., H. Curwen, J. M. Darling, H. S. Davidson (with distinction), J. Davidson, W. H. Davison, D. E. Derry, A. C. Devereux, J. R. Dobbin, J. Donaldson, M.A., C. E. Dumanoire, Alice Mary Ebden, G. J. Fairie (with distinction), J. Findlay, H. N. Fletcher, J. Fortune, C. R. Gibson, M.A., J. D. Giles, J. Girdwood, M.A. (with distinction), J. M. Glasse, W. Goodchild, R. G. Gordon, A. Gray, M.A., LL.B., J. A. Gray, M.A., Elizabeth Catherine Gunn, Annie Mabel Gurney, H. W. Gush, A. A. Hall, M.A., Frances Margaret Harper, G. W. Harty, G. Henderson, M.A., R. L. Henderson, A. E. Hodgson, R. B. Hole, A. O. Hooper, A. Hutley, I. Ivey, Bertha Jex-Blake, J. M. Johnston, R. W. Johnstone, M.A., J. H. Kay, J. W. Keay, I. C. Keir, J. M. Kirkness (with distinction), L. A. H. Lack (with distinction), W. S. Laidlaw, F. T. C. Linton, M.A., A. Lundi, B.Sc., F. W. Lundie, H. MacCormac, J. R. M'Gregor, G. S. Mackay, Marion Ellen Mackenzie, Clara Violet M'Laren, W. MacLaren, J. J. M'Millan, J. B. M'Neill, I. M. Macrae, H. C. Martin, A. S. Millard, B.Sc., G. H. S. Milln, C. R. P. Mitchell, A. M. Moll, W. C. Morton, M.A.; E. Muir, C. H. Muller, H. L. Munro (with distinction), D. M'K. Newton, W. H. Nutt, C. O'Flaherty, D. E. S. Park, D. D. Paton, M.A. (with distinction), T. Peebles, J. A. Pottinger, A. M. Pryce, Julia Letitia Pringle, W. L. Pritchard, W. Readman, Eva Anne Robertson, W. S. Robertson, Amy Robertson, L. C. Robinson, J. A. Ross, M.A. (with distinction), Mabel Ross, J. A. Roux, B.A., N. C. Rutherford, W. Sanderson, D. G. A. Scott, D. J. Scott, J. E. Scott, M.A., M. Sinclair, G. W. R. Skene, G. H. Skinner, J. H. Smith, S. W. Smith, Eva Maud Snowball, H. Speirs, F. H. Stirling, Amelia Sutcliffe, J. Tait, B.Sc., J. E. Taylor, J. P. du Toit, L. Turiansky, R. Veitch (with distinction), W. R. S. Watkins, G. J. Wentzel, D. H. Wessels, L. West, R. M. M. White, G. Wight, W. Y. Woodburn, W. D. Wright, G. W. Young.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

Barker Anatomical Prize for 1904.—A prize of £21 is offered for competition, and is open to any student whose name is on the anatomical class list of any school in the United Kingdom. The prize is offered for a dissection from behind of the pneumogastric nerves in the thorax. The preparation must be sent to the Curator of the Museums, Dr. A. H. White, Royal College of Surgeons, Dublin, from whom further particulars can be obtained.

SOCIETY OF APOTHECARIES OF LONDON.

PASS LIST, June, 1903.—The following candidates passed in:

Surgery.—C. E. Adams (Sections I and II), Guy's Hospital; W. E. Denniston (Sections I and II), St. Thomas's Hospital; H. B. Drake (Section II), St. George's Hospital; A. H. Falkner (Section I), Cambridge and St. Mary's Hospital; W. P. Jones (Section II), Sheffield and University College Hospital; W. Lovell (Sections I and II), St. Mary's Hospital; W. A. Sugden, St. Mary's Hospital; S. H. R. Welch (Section I), Charing Cross Hospital.

Medicine.—W. E. Denniston (Section II), St. Thomas's Hospital; H. B. Drake (Section II), St. George's Hospital; N. S. Finzi (Sections I and II), University College Hospital; W. P. Jones (Section II), Sheffield and University College Hospital; A. Wharton (Sections I and II), Manchester.

Forensic Medicine.—T. F. Amyot, Durham; W. M. Emmerson, Durham; N. S. Finzi, University College Hospital; W. P. Jones, Sheffield and University College Hospital; A. Wharton, Manchester.

Midwifery.—C. M. Asplen, King's College Hospital; J. M. S. Duncan, London Hospital; A. H. Falkner, Cambridge and St. Mary's Hospital; L. W. Roberts, Middlesex Hospital; A. Wharton, Manchester.

The diploma of the Society was granted to:

W. E. Denniston, H. B. Drake, W. M. Emmerson, N. S. Finzi, W. P. Jones, and W. A. Sugden.

INDIA AND THE COLONIES.

GIBRALTAR.

THE report of the Medical Officer of Health of Gibraltar (Major H. P. Elkington, D.P.H., R.A.M.C.) for the year 1902 shows that the population consisted of 20,355 persons, of whom 17,373 are classed as permanent civil residents, and the rest as resident aliens. The latter class consists chiefly of soldiers and sailors, and taking the former alone into consideration the death-rate for the year was 26.53 per 1,000, while the birth-rate was 29.06. The mortality of children under one year was 180.19 per 1,000 born, which seems very high, and is ascribed to the occurrence of measles in an epidemic form. Out of 11 cases of small-pox none were fatal, owing probably to vaccination being favourably regarded by the population of Gibraltar. Seventeen cases of diphtheria occurred, with a death-rate of [illegible] per cent. "Diarrhœa" and tuberculous diseases [illegible] to have been prevalent, the death-rate from the latter being as high as 2.7 per 1,000.

OBITUARY.

WILLIAM CADGE, F.R.C.S.,

Consulting Surgeon, Norfolk and Norwich Hospital.

IT is with the deepest regret that we have to announce the death of Mr. William Cadge, one of the most famous of the older generation of English surgeons. Although he spent the evening of his days in a retirement which for the great body of his professional brethren was almost oblivion, "Cadge of Norwich" was at one time recognized as one of the foremost authorities on stone in this country, and he has writ his name deep in the history of that department of surgery.

Mr. Cadge, who was in his 81st year, had been in failing health for some time. He passed away at Lowestoft on June 25th. He was a member of a well-known yeoman family in Norfolk, and commenced his medical education in the old way by serving an apprenticeship under Mr. Taylor, of Kingston-on-Thames. In due course he proceeded to University College, London, where he highly distinguished himself. Robert Liston was then in the fullness of his activity and at the height of his reputation as an operator. On being admitted a Member of the College of Surgeons of England in 1845, Mr. Cadge became private assistant to Liston, with whom he continued to be associated till the death of that great surgeon in 1847. Mr. Cadge contributed an account of Liston's last illness and of the necropsy to the *Lancet*. Becoming Demonstrator of Anatomy at University College, he assisted Morton in producing his *Surgical Anatomy*, to which he contributed an account of the surgical anatomy of the head, neck, and upper limb. In 1848 he became Fellow of the College of Surgeons by examination, and in 1850 he was appointed Assistant Surgeon to University College Hospital in succession to Mr. (afterwards Sir John) Erichsen, who had been promoted to the post of Surgeon. This appointment Mr. Cadge held for about two years, when he settled in Norwich. He was appointed Assistant Surgeon to the Norfolk and Norwich Hospital, becoming in due course Surgeon, and finally Consulting Surgeon, which office he held at his death. He was elected a Member of the Council of the College of Surgeons of England in 1880, and held office for sixteen years. He was Hunterian Professor of Surgery in the College in 1886, when he took for the subject of his lectures, lithotomy and lithotrity, operations on which he could speak with the authority of a master. These lectures which embodied the the result of his vast experience were afterwards published. He delivered the Address in Surgery at the annual meeting of the British Medical Association held at Norwich in 1874.

During the thirty-six years of Mr. Cadge's service at the Norfolk and Norwich Hospital he made both it and himself famous throughout the world. The prevalence of vesical calculus in East Anglia turned his attention to that disease, and he soon came to be recognized as one of the leading authorities on the subject. He gained so great a reputation as an operator that patients came to him from all parts of the kingdom and even from abroad. The Museum of the Norfolk and Norwich Hospital bears eloquent testimony to the amount and quality of his work. He was no mere specialist, however, but a man of large mind, ever open for new developments of knowledge. He was one of the first among provincial surgeons to adopt the antiseptic system.

Not only did Mr. Cadge shed glory on his hospital, but he gave to it of the fruits of his skill in another way by presenting it on two occasions with a princely gift of £10,000. He has continued his benefaction after his death by leaving the Hospital £5,000. It may be added here that he has left £1,000 to the British Medical Benevolent Fund.



WILLIAM CADGE, F.R.C.S.

When Mr. Cadge retired from the active staff he was elected Consulting Surgeon with the right, which he occasionally exercised, of occupying a few beds with his patients. On the occasion of his retirement his portrait by Herkomer was placed in the Board Room as a public recognition of the great benefits which the hospital had received at his hands.

Mr. Cadge, who was of a somewhat reserved disposition, took little part in the public life of Norwich. His fellow-citizens, however, insisted on honouring one of whom they had so much reason to be proud. He was a magistrate, and was elected sheriff in 1876. On January 21st, 1890, the freedom of the city was conferred upon him in recognition of the services which he had rendered the Norfolk and Norwich Hospital.

Mr. Cadge married a sister of the late Sir Richard Quain, but had no family. His wife predeceased him by many years. He was one of the few men who have enjoyed the privilege of reading an obituary notice of himself in the *Times*. At the end of 1899 he had a severe attack of influenza with pulmonary complications, and on a premature announcement of his death our contemporary published a laudatory account of his career. The perusal of the notice amused and pleased Mr. Cadge, but the joke began to pall when wreaths from sympathetic admirers poured in from all sides. He did not, like Mark Twain in similar circumstances, write to the papers to say that the report was greatly exaggerated, but we were able to give an authoritative contradiction, which turned the mourning of his friends into joy.

Mr. Cadge's funeral, which took place on June 29th, was attended by the Mayor and Sheriffs of Norwich and a large body of Councillors wearing their robes of office. Among those present were Dr. W. Elliston, Vice-President of the British Medical Association, Mr. Reginald Harrison, representing the Royal College of Surgeons of England, and a large number of medical practitioners and members of the general public.

The First Operation under an Anaesthetic in this Country.

Mr. Cadge when he was at University College Hospital had the good fortune to be present at the first operation performed under an anaesthetic in this country. When preparing a special number of the British Medical Journal on the occasion of the jubilee of the discovery of anaesthesia, we asked Mr. Cadge to contribute a short account of the interesting event at which he had been present, and he most kindly sent us the following note, which was published in the issue of October 17th, 1896, p. 1140: I have no written notes of what took place on that memorable occasion, and I must trust to my memory, which may betray me into mistakes as to some minor details, but as to the main incident of amputation of the thigh, the scene was too startling and dramatic ever to be erased from my recollection. Dr. Boot, of Gower Street, had reported to Mr. Liston the definite and authentic information of the effect of ether inhalation that he had received from Dr. Bigelow, of Boston, in December, 1846. Two days after this communication was the operating day at University College Hospital, and Liston resolved to put the matter to the test. In the interval Mr. Squire, the well-known chemist of Oxford Street, and Mr. (now Dr.) William Squire administered the ether. On December 21st, 1846, at 2 o'clock, the operating theatre was filled with students and spectators. Liston addressed a few words to them as to the nature of the experiment about to be tried, and it was manifest that he had but faint hopes of its success. The patient was a man rather below middle age, who, to the best of my recollection, had malignant disease of the skin and tissues of the calf of the leg, for which amputation of the thigh was deemed to be necessary. He was a man of courage and of intelligence above the average of hospital patients, and he expressed his willingness to try the inhalation of ether. The apparatus comprised a large bell-shaped glass reservoir containing ether, and a long tube and mouthpiece. Fortunately the vapour caused no bronchial irritation or nervous excitement; the patient passed easily into complete insensibility, and Liston removed the thigh as rapidly as possible; a gentleman present, watch in hand, declared that the cutting operation lasted thirty-two seconds only. It was done by the antero-posterior flap method; the femoral artery was controlled by finger pressure; only three or four vessels required a ligature; lint dipped in water was placed between the flaps, and the stump was folded in a towel and all signs of blood cleared away.*

In a few minutes the patient woke up completely, and could answer these questions: Did he feel able to undergo the pain of the operation? Yes, he would submit as best he could. Did he know that the limb was off? Then he remonstrated against trifling with his feelings at such a moment; but, when the towel was removed from the uplifted stump so that he could see it, he burst into tears and fell back on his pillow.

The scene at this moment was most impressive, for the success of the whole proceeding was as complete as could be witnessed at the present time. The great surgeon was almost as much affected as the patient; he saw at a glance what a blessing was in store for the human race, and what a boon for the surgeon, and he could scarcely command himself sufficiently to address even a few words to the spectators. The next case did not go off so smoothly. The patient was a rough fellow with an ingrowing toenail. He became boisterous and violent under the inhalation, he thrust the assistants on one side, jumped off the table, and, so far as I remember, escaped from the theatre. He must, however, have been restrained or brought back and rendered insensible, seeing that the necessary operation was done without pain. Liston for that day could think of nothing but this wonderful discovery. He wrote this short note to Dr. Boot:

> 5, Clifford Street,
> December 21st, 1846.
>
> Dear Sir,—I tried the ether inhalation to-day in a case of amputation of the thigh, and in another requiring evulsion of both sides of the great toenail, and with the most perfect and satisfactory results. It is a very great matter to be able thus to destroy sensibility to such an extent without apparently any bad result. It is a fine thing for operating surgeons, and I thank you most sincerely for the early information you were so kind as to give me of it.—Yours faithfully,
>
> Rob. Liston.

He also wrote a characteristic letter to his old friend and former assistant, Professor Miller, of Edinburgh. I think the letter found its way into a Scotch newspaper, but I can only remember that it began and ended with a quotation from St. Paul, "Rejoice, and again I say rejoice." That evening I dined with Mr. Liston (I was acting as his private assistant at the time). Two ladies were present, and after the cloth was removed nothing would content him short of my exhibiting the effects of ether by inhalation. When about half under its full effect I could just hear the elder lady say, "Liston, for God's sake stop; you will be the death of this poor young man." He did stop, but I felt the effect of his strong grip of the lobe of the ear for a day or two.

We are indebted to Mr. Reginald Harrison for the following appreciation:—By the death of Mr. Cadge it may be truly said that a prominent figure in the world of surgery has passed away. His span of upwards of eighty years embraces a life of great professional distinction and generous benevolence. It has been the privilege of the writer of this imperfect tribute to his memory to have known him with some intimacy for many years. To have witnessed his skill and judgement as an operator, to have admired his clearness and earnestness as a lecturer, or to have been struck with his

* This was Liston's usual method of amputation. It was the duty of the house-surgeon in the evening, after full reaction from shock, to remove the lint, tie any bleeding points if necessary, and close the flaps with a few points of suture and isinglass plaster.

perspicuity and force as a debater is merely to mention characteristics of the man which all who knew him will recognize. As an authority on all matters relating to stone and the surgery of the urinary organs especially, his name was best known. He was greatly impressed with Bigelow's work and followed his practice as far as he felt he legitimately could. On the other hand, he recognized the great value of suprapubic cystotomy in many cases where the stones were large or complications existed. So late as the annual meeting of the British Medical Association at Ipswich (1900) he made some admirable remarks on the value of this operation in a discussion that followed the reading of a paper by Dr. Barton. Whatever Mr. Cadge said on these occasions was invariably listened to with the greatest attention and respect as coming from a man of large experience of his subject and calm judgement, and who spoke no empty words. In his surgical address before the annual meeting of the British Medical Association at Norwich (1874), and in his Hunterian lectures on surgery and pathology before the Royal College of Surgeons, will be found a collection of facts, figures, and deductions of rare and permanent value relating to his subject. Cadge's specialism, however, was not that kind which, so to speak, was made to order. It proceeded from the application by a well trained and orderly mind of general surgical principles to states of disease associated with the locality he lived in, and would in no sense permit of any artificial limitation. Mr. Cadge was a charming letter writer. I have preserved a most interesting specimen of his style. When questions were asked of him, as I frequently did, his replies were couched in elegant and expressive language which often overflowed with practical information and examples relative to the case in point upon which he brought to bear an unique experience. Of his geniality as a host and his keenness as a sportsman I need hardly speak. His yachting excursions on the Broads with his friends were occasions of restful pleasure which will not easily fade away from the memory of those who were privileged to enjoy them. He will be greatly missed by the host of friends who gathered round his grave.

We have received the following from Mr. FREDERICK A. MILLS, B.A., M.B., B.C.Cantab., of Cookham, Berks: I desire to pay my tribute of admiration and respect to the memory of the late Mr. William Cadge, whom I have known all my life. When he settled in Norwich, in or about the year 1853, he entered into partnership with my grandfather, the late Frederick Anthony Mills, with whom he was associated for some years. He afterwards entered into a further partnership with Mr. Donald Dalrymple. His great surgical attainments are too well known to need any reference to them on my part. One of the first operations I ever witnessed was a lithotrity, to which he took me, quite early in my medical career. I have never since seen an operation in which greater skill and dexterity were displayed, nor shall I ever forget the impression produced upon me by his masterly manipulations. I was also present at his Hunterian lectures at the Royal College of Surgeons in 1886, when he gave a most admirable description of the surgery of vesical calculus at that day. He had a long, honourable, useful, and successful career; and his death will be greatly lamented by all who knew him. He married Mary Quain (a sister of the late Sir Richard), who predeceased him, after a long and happy union, some years ago, and in whose grave he was buried—*magnâ comitante caterva*—on Monday last, in the picturesque churchyard of Earlham, near Norwich. *Requiescat in pace!*

Other Appreciations.

Interesting appreciations of Mr. Cadge appear in the *Eastern Daily Press*. One of the writers, a hospital colleague of the departed surgeon, who hides his identity under the thin disguise of the initials "M.B.," says:

Mr. Cadge was a great surgeon, and, in his day, had few equals, and no superior, either in surgical diagnosis or operative skill. In the former, we who knew him best compared and associated him with Paget; and in the latter with his old master, Liston. As a consultant he commanded the absolute confidence of the entire profession in East Anglia. As a general practitioner (which for the greater part of his career he considered himself), Mr. Cadge was equally distinguished. I know of no medical man in whom his patients had such unqualified confidence and affectionate esteem..... In benevolent associations connected with the medical profession, Mr. Cadge was ever a large contributor, and many a needy medical man has had cause to bless his large-hearted and often anonymous liberality. William Cadge was steadfast in his friendships, his sound judgement, his deliberative, almost judicial, mind caused him to be frequently consulted by those in trouble or difficulty, and never in vain.

He adds that but for Mr. Cadge the new Norfolk and Norwich Hospital would probably not have been built. Having satisfied himself that the old centenarian hospital had lived beyond its natural life, and, from its insanitary condition was no longer safe for the treatment of surgical patients, Mr. Cadge did not hesitate, in spite of great opposition and innumerable obstacles, to declare himself in favour of an absolutely new and up-to-date hospital. It was uphill and arduous work, as all those who took part in the discussions, often heated and prolonged, will remember; but Mr. Cadge finally triumphed.

Professor SEDLEY TAYLOR of Cambridge, son of the practitioner under whom Mr. Cadge began the study of medicine, and a lifelong friend of the distinguished surgeon, writes:

Cadge was endowed with a masculine understanding of great power and versatility. Though before entering on the study of his profession he had received but a scanty general education, he subsequently acquired for himself the power of writing excellent, tersely-worded English, and of taking part in oral discussion on fully equal terms with men who had enjoyed far higher educational advantages than had fallen to his lot. ..... His dominant intellectual characteristic was, I think, the desire to arrive at truth; and whatever he had recognized as incompatible with it he promptly consigned to the mental wastepaper basket. At the same time he extended a wide liberality to men whose convictions were opposed to his own.....The liberal political creed which Cadge held with unfaltering conviction pointed straight to the welfare of the great mass of the people, for whom, had his energies been devoted to political life, he would have worked with the same faithful constancy which he devoted to the sick poor in the Norfolk and Norwich Hospital. Great, too, as was his operative skill.....it was largely the innate benevolence of his character which made him the conservative surgeon that he undoubtedly was.....To the last Cadge followed eagerly the advances made in surgery, with full and most generous recognition of what his successors are now doing. "These young men," I remember his saying, "terrify an old surgeon like me; they cut boldly into organs which we were taught it was death to touch; and the event justifies them, for no harm comes of it."

CARL GUSSENBAUER, M.D.,

Professor of Surgery in Vienna.

WE regret to have to record the death of Professor Carl Gussenbauer, Professor of Surgery and Director of the Surgical Clinic in Vienna. Gussenbauer was born on October 30th, 1842, and took his degree of Doctor of Medicine in 1867. He became the friend and assistant of Billroth, for whom in 1874 he reported the first successful case of complete excision of the larynx performed by that distinguished surgeon.

In 1875 Gussenbauer became Professor of Surgery in Liége, and in 1878 he was called to the German University in Prague, being succeeded in Liége by von Winiwarter. On the death of Billroth, in 1894, he returned to Vienna as Professor of Surgery in Vienna.

Gussenbauer made many contributions to anatomy, pathology, and surgery. Perhaps his best known anatomical work is that on the muscles of the auriculo-ventricular valves, and on the blood vessels of the external genital organs. He wrote extensively on various pathological degenerations, and on surgical pathology. Monographs and reports of cases dealing with nearly every branch of surgery flowed from his pen. He wrote on the surgery of the bones, resection of the stomach, resection of the colon, removal of basilar pharyngeal tumours, operative treatment of pancreatic cysts, nerve stretching, concussion of the brain, excision of the larynx, deep-seated traumatic brain abscess, resection of pelvic bones, cranial tumours, etc. In 1895 he became one of the editors of the well-known *Archiv f. klinische Chirurgie*.

WE regret to announce the death of Mr. ADOLPHUS WILLIAM WISDEN CAUDLE, which occurred at the residence of his sister at Southampton on June 1st from aneurysm of the aorta, which was discovered almost accidentally about twelve months ago. Mr. Caudle was born at Henfield, Sussex, on March 8th, 1840. He was educated at St. John's College, Hurstpierpoint, and afterwards studied medicine at St. Thomas's Hospital. After taking the diplomas of M.R.C.S. and L.S.A. in 1861, he joined his father in practice in his native town. He was unmarried. Courteous in manner, scrupulously honest and honourable, devoted to his profession, and always ready when summoned to attend a patient, generous and considerate (never taking fees from those he thought in straitened circumstances), Mr. Caudle was all that a medical man in a large agricultural district should be. Retiring in manner, and singularly diffident about his own powers and attainments, which were really far above the average, especially in midwifery and diseases of women and children, he was not much heard of out of his own district, in

which "he kept the noiseless tenour of his way;" but the gloom which seemed to hang over the town of Henfield, and the numbers who assembled when he was laid to rest in the old churchyard, bore ample testimony to the esteem and respect in which he was held by those amongst whom he had lived and worked for so many years.

Dr. CHARLES WILLIAM DOYLE, who died at his residence in Santa Cruz, California, on May 2nd, was the son of an officer of the British army killed during the Indian Mutiny. He was born at Simla in 1852, and the early portion of his life was spent in India. Dr. Doyle was educated in Scotland, and graduated with honours at Aberdeen in 1875. He practised in Great Britain until 1888, when he settled in California after making a tour of the world. While practising his profession till the end he contributed freely to the magazines. Of his works, *The Taming of the Jungle* was perhaps the most widely known, but *The Shadow of Quong Lung*, a story of Chinese life, had also an extensive circulation.

Mr. CHARLES HENRY COSENS, M.R.C.S., L.R.C.P., of Oxford Terrace, Hyde Park, died on June 28th, in his forty-fifth year. Mr. Cosens will be remembered in the profession as one of the first to perfect the photomicrography of pathological sections. Many samples of his skill in this department of scientific art will be found in the pages of Allbutt and Playfair's *System of Gynaecology*, Hubert Roberts's *Gynaecological Pathology*, and other publications.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are Dr. William S. Witwell, formerly editor of the *Pacific Medical Journal*, and a prominent neurologist in California; Dr. Joseph de Smeth, sometime Professor of Psychological Medicine in the University of Brussels, aged 77; Dr. Karl Heinzel, a well-known Ophthalmic Surgeon of Trieste, aged 47; Dr. Franz Saxer, Extraordinary Professor of Pathological Anatomy in the University of Leipzig, aged 40; Dr. A. Dubler, sometime Extraordinary Professor of Medicine in the University of Basle, aged 46; Dr. M. Huizinga, sometime Professor of Physiology in the University of Groningen, aged 63; Dr. Carl Gegenbaur, formerly Professor of Anatomy in the University of Heidelberg, aged 76; Professor Rudolf Jürgens, for many years assistant to Professor Virchow in the Pathological Institute, Berlin, aged 61; Dr. Gerard T. Joseph Marchant, Surgeon to the Boucicaut Hospital, Paris, author of the articles Thymus, Thyroid, in Jaccoud's *Dictionary*; Cheek, Lips, Face, in the *Encyclopédie Internationale de Chirurgie*; Nose and Accessory Sinuses in the *Surgery* of Duplay and Reclus; and of a treatise entitled Surgery of the Large Intestine (1902), aged 52; and Dr. Luigi Bufalini, editor of the *Morgagni*.

MEDICO-LEGAL AND MEDICO-ETHICAL.

PRACTICE BY A DISREGISTERED PERSON.

AN inquest was held at Surbiton on June 25th in reference to the death of Madame Gertrude Guillaume Schack, of Surbiton Hill, Theosophist, Socialist lecturer, temperance advocate, and a strict vegetarian.

It appeared from the evidence that the deceased lady, who was 59 years of age, fell over a tin box in her bedroom some twelve months ago and injured her breast. She consulted Mr. T. R. Allinson, of Spanish Place, Manchester Square.

Dr. Porter, of Surbiton, was called in shortly before the death, but said the deceased lady was too far gone for him to be of any service, and she died a few hours later.

The deceased's maid stated that her mistress all along led her to believe that the injury to the breast was only a cut, and remarked that when the body had cleansed itself the wound would heal up. In reply to the coroner (Dr. M. H. Taylor) she said that her mistress thought the body would cleanse itself by dieting. Her mistress knew that the name of Mr. Allinson had been erased from the *Register*, and added that the deceased lady had great faith in him.

Mr. Allinson deposed that he found her suffering from a small tumour in the right breast, which had been there before the accident, and he afterwards saw her at intervals until a few days before her death, which took place on June 20th. He had been consulted by Madame Schack, and repeatedly suggested that she should see a specialist with him, but she would not accede to the suggestion, adding, "She was a Theosophist, and seemed to trouble nothing about her complaint." She gradually became weaker, and on May 29th he told her it was then too late, and her life was only a matter of two or three months. In reply she said she was only too pleased. Death, she said, had no terrors for her; it was only a passing from one state to another. That, observed the witness, was the secret of her reticence all through. Asked by the Coroner whether he suggested anything in the way of local treatment, the witness answered that it was no use, as the lady had her own opinions and views on the matter, and would not have any interference with her body. Asked by the Coroner if he knew the lady was going to die what he proposed to do about a certificate, The witness replied, "My certificate is good. It is usually accepted by the registrars. I keep my surgeon's qualification still. Any person can give a certificate: only that issued by a qualified practitioner would be accepted. I was qualified before I was registered." The Coroner asked, "Do you give certificates in all your deaths?" Witness: I have very few deaths in my practice. The Coroner: You are lucky. Witness: Yes, I am more than lucky. My practice is as large and as successful as any in the kingdom.

After the witness had replied to a question by a juryman as to cancerous growths the Coroner inquired: Is that the view taken by the medical profession? Witness: I don't care about the medical profession, and I don't bother about any authorities. I am an authority in myself. The witness added: Everybody in this country has a right to die as he likes. When I come to die I shall not call in a doctor.

Dr. Porter, of Frascati, Surbiton, said that he had made a necropsy, and found that death was due to cancer in the breast, accelerated by want of proper surgical dressing and food.

In summing up, the Coroner said that although Mr. Allinson stated that his certificates were accepted in London and the country, the registrars in this district, he was glad to say, would not accept them. Mr. Allinson suggested certain lines of treatment to Madame Schack, but she would not adopt them, and attended to her own dressings. They might have whom they liked as their medical man, but if his name was not on the *Register* they need not pay him. If it was clearly shown that the patient was aware that the attendant was not a registered man, and if there was no neglect, the attendant could not be blamed.

After retiring for about half-an-hour, the jury returned a verdict of "Death from natural causes," and added that they were of opinion that the case did not have proper attention, as no steps whatever appeared to have been taken to deal with or dress the cancer.

OPTICIANS AS REFRACTIONISTS.

DR. ARTHUR J. WALLACE sends us an advertisement issued by Archer and Sons, of Liverpool, who style themselves "consulting refractionists," and complains of the pretensions of these opticians. We think we have already said all that can be usefully maintained upon this subject. The law does not forbid opticians to test eyesight and supply glasses, or to advertise and do their best to induce the public to believe that they possess sufficient skill to perform this work properly. In view of the very unsatisfactory state of the law relating to more serious questions of medical and surgical treatment, we can only express our sympathy with our correspondent's protests.

THE PUFFING OF MEDICAL MEN IN THE LAY PRESS.

UNDER the title of A Modern Sir Galahad there is a most absurdly fulsome puff of Dr. Thomas Fraser, of Aberdeen, in the number of *Saint Andrew* for June 11th, 1903. *Saint Andrew* is called "a journal of religious thought and social progress." We must again repeat that the frequency with which articles of this kind appear in the Scottish newspapers is a discredit to Scotland, and in our opinion calls for energetic measures on the part of the medical corporations and other bodies which undoubtedly possess the necessary influence to put a stop to these publications if they would bestir themselves.

POISON ACROSS THE COUNTER.

AN inquest was concluded on June 30th at the City Coroner's Court into into the death of Henry Harris, who was admitted into St. Bartholomew's Hospital on June 12th, but died an hour later.

According to the report in the *Morning Post*, evidence had previously been given that the deceased, a morphine drinker for twenty years, called at Messrs. Vines and Froom in Aldersgate Street for his usual dose. Very shortly afterwards he was taken ill, and told a companion that the assistant at the chemists had made a mistake about his draught. No assistant at the chemists had made a mistake about his draught. No evidence of morphine poisoning was found at the necropsy, but at the adjourned inquiry Dr. Frederick Womack deposed that on analysis of the stomach he had found $\frac{1}{2}$ gr. of strychnine. The quantity was sufficient to cause death, but its action might have been modified by a subsequent dose of morphine.

Mr. Froom stated that he sometimes served the deceased, but had not done so on the day in question. On that day his assistant told him he had served a customer accidentally with strychnine instead of morphine; he had served diluted; the customer sipped a little and was then given morphine as an antidote. His assistant was qualified and careful, and had been with him eighteen months.

The assistant deposed that he was dispenser, and did not usually serve at the counter. The deceased, whom he had served once before, asked for 3 ounces of morphine and 1 of water. He measured the quantity and gave it, but on replacing the bottle noted he had made a mistake, the morphine bottle having been placed in a different place to that which it usually occupied. Finding he had given strychnine, he gave morphine as an antidote, but the deceased, who was only in the shop a few seconds, left at once and he did not know his address. Unless told by witness he would have been unconscious of any error having been made.

Dr. Wale, recalled, ascribed the death to strychnine, and thought morphine was as good an antidote as any other. A verdict of death by misadventure was returned.

PURCHASE OF A PRACTICE.

MR. PERCIVAL TURNER (Adam Street, Adelphi, W.C.) writes to express the opinion that it is usual for a purchaser to complete payment at the termination of introduction, and that instalments are only accepted by special arrangement and at interest.

UNREGISTERED DENTISTS.

QUAESTOR.—In the main, the position of the unregistered dentist is the same as that of an unregistered person practising medicine. As in the case of medicine, if he makes use of titles or descriptions implying that he holds a qualification, he is amenable and may be fined. But the Dentists Act is in one particular a little stronger than the Medical Acts, for it contains a phrase under which on several occasions persons have been convicted and fined for using titles or descriptions implying that they are "specially qualified to practise dentistry," the word "qualified" in this particular connexion having been held to mean "competent or capable, and not to refer to the possession of any sort of

diploma. Such cases turn upon the view taken by the court as to the implication of the descriptions used by the defendant, and not upon the fact of his carrying on practice though unregistered and unregistrable.

HOME SANATORIA AND HEALTH REPORTS.

THE Honorary Secretary of the Association of Medical Men Receiving Resident Patients writes with reference to a review published in the BRITISH MEDICAL JOURNAL of June 20th of a book entitled, *Where shall I send my Patient?* issued by the Association to state that the incompleteness to which we called attention is due to the failure of managers of institutions and hotels to supply details, which were asked for, and which would have been inserted free of all charge. We think that the compilers of the book are entitled to this explanation, but we must adhere to the opinion that as the book is admittedly incomplete it cannot be looked upon as an efficient guide, since in a guide book or directory completeness is essential to efficiency.

FEE FOR INTRODUCTION OF *LOCUM TENENS*.

VEXATUS.—Many medical agents do not charge the principal for introducing a *locum tenens*. If however it was understood that the agent was to have a fee, he would be entitled to it, if he acted bona fide in sending the *locum tenens* in question, as he might have had no reason to expect misconduct.

PROFESSIONAL ETIQUETTE.

H. C.—Z. had to see a lady on non-medical business, but after the interview was asked to examine her arm. He declined on the ground that she was under the care of another practitioner; but on being assured that the attendance in question had ceased he saw the arm, but wrote to the former medical attendant to explain. He then learned that another practitioner was the contract medical attendant to the society of which the lady was a member. He asks whether he acted in any way unprofessionally in seeing her?

*** Z. did all in his power to act professionally. The members of a society or community who are entitled to the services of a salaried medical officer are not thereby precluded from seeking the advice of another practitioner, nor can it be a breach of medical etiquette to attend them. This rule of course applies to club patients also, and the procedure is governed by the general principles regulating a change of medical attendant.

MEDICAL ADVERTISING IN LAY NEWSPAPERS.

E. P. writes to ask what view the General Medical Council is likely to take of an advertisement in the lay newspapers for a resident patient in which neither his name nor address would be given?

*** We cannot say what view the General Medical Council would take, but we hold to the principle that medical men should not advertise for patients in lay newspapers.

INTRODUCING A PARTNER.

QUISQUAM has recently taken a new partner, his former partner having had to leave suddenly on account of ill health without being able to introduce his successor. "Quisquam" would like to know the proper way of introducing the new comer. The usual circulars have been sent out.

*** We think that "Quisquam" would certainly be entitled to take his new partner, as he suggests, to call upon the families of his late partner's patients, and there can be no objection to "Quisquam" attending at his partner's surgery to introduce him to patients as they call.

THE PAYMENT OF A *LOCUM TENENS*.

SUNDOWNER.—Where medical neighbours are able to reciprocate such assistance, it is very common for them to do one another's work during absence without payment, but it would be well to come to an understanding. The fair rate of remuneration, if any be made, is half fees.

FEES FOR MEDICAL EVIDENCE.

GUISE has been subpoenaed to give evidence in an action relating to the will of a deceased patient. He would like to know what fees he ought to charge in addition to expenses.

*** Our correspondent had better get an undertaking, if possible in writing, from the parties who require his evidence to pay him reasonable fees. If he does not do so, he will only be able to claim a guinea a day if he is resident where the trial is held, and from 2 to 3 guineas a day, inclusive of everything except railway expenses, if he resides at a distance.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

THE EPIDEMIC OF SMALL-POX.

DURING the last fortnight everything has pointed towards a continued slow decline in the number of cases of small-pox in most localities and in the number of affected towns and villages. The total decline is real, but in certain places there are marked exceptions, and it is difficult, for several reasons, to assess the extent of the decline or the precise position of affairs in other but limited areas. The type that the disease has assumed in nearly all places during this epidemic has been unusually light, and after some experience of it the name small-pox has lost much of its ancient terror for large numbers of the people. The epidemic, moreover, now has lasted so many months that the people have grown quite accustomed to hearing of cases in their midst, and at the same time have acquired entire confidence in the powers of their sanitary authorities to deal with things in an efficient manner, which for the average householder means any way that does not interfere with his individual business or personal comfort. In the face of this comparative indifference the local papers take less and less notice of the progress of events, and the efforts of medical officers finally to stamp out smouldering embers are hampered rather than assisted. For ourselves we find it more and more difficult to present a faithful picture of events, and this week will confine our account to broad outlines.

In the North Country Durham is not yet free, and there is reason to suppose that the disease is still smouldering in sundry parts of Northumberland and adjacent counties.

In Lancashire the general decline may be said still to continue, except perhaps at Didsbury and Salford, and St. Helens has considered itself justified in declaring itself entirely out of the wood, and celebrating the occasion by a not undue recognition of the hard work which has been done by the medical officer, Dr. Drew Harris, and his staff, a sum of £30 being distributed among the subordinates.

Yorkshire, Warwickshire, Cheshire, Stafford, Leicester, Derby, Worcestershire, and Shropshire are all still infected, but share in the general decline.

In Nottinghamshire the severe outbreak in the small village of Newstead has given much trouble, and led to the infection of a good many other villages in this county.

In Essex there appear to be other foci besides the small ones at Colchester.

In the London District the number of notifications during the fortnight ending June 27th was considerably under the average.

In Wales the only new centre is Cilfynydd, and at Cardiff it has been thought possible somewhat to relax precautions.

In Scotland things are quiet, but Monikie, in Forfarshire is a new centre of possible danger.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 9,062 births and 4,137 deaths were registered during the week ending Saturday last, June 27th. The annual rate of mortality in these towns, which had been 14.3, 13.9, and 14.3 per 1,000 in the three preceding weeks, was again 14.3 per 1,000 last week. The rates in the several towns ranged from 5.3 in Ipswich, 5.4 in Handsworth and in West Hartlepool, 5.7 in Tottenham, 6.6 in East Ham, 7.4 in Bournemouth, 7.9 in Hastings, 8.6 in Willesden, and 8.7 in Brighton, to 18.8 in Birkenhead, in Liverpool, and in Bury, 18.9 in Warrington, 19.1 in Sheffield and in Rotherham, 20.7 in Oldham, 22.1 in Rochdale, 24.4 in Coventry, and 27.2 in Great Yarmouth. In London the rate of mortality was 13.5 per 1,000, while it averaged 14.7 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.5 per 1,000 in the seventy-six large towns; in London this death-rate was equal to 1.4 per 1,000, while among the seventy-five other large towns the highest death-rates from the principal infectious diseases were 3.0 in Great Yarmouth and in Salford, 3.1 in Warrington, 3.6 in Rotherham, 4.3 in Coventry and in Sheffield, 4.4 in Middlesbrough, and 5.3 in Oldham. Measles caused a death-rate of 1.5 in Merthyr Tydfil, 1.6 in Stockport, 2.3 in Sheffield, 3.8 in Middlesbrough, and 4.3 in Coventry; scarlet fever of 1.8 in Rotherham; diphtheria of 2.0 in Great Yarmouth; whooping-cough of 1.8 in Rotherham and 2.3 in Oldham; and diarrhœa of 1.8 in Preston. The mortality from "fever" showed no marked excess in any of the large towns. Of the 13 fatal cases of smallpox registered in these towns last week, 3 belonged to Oldham, 3 to Bradford, 2 to Liverpool, 2 to Gateshead, 1 to London, 1 to Leicester, and 1 to Middlesbrough. The number of small-pox patients under treatment in the Metropolitan Asylums Hospitals, which had been 72, 64, and 70 at the end of the three preceding weeks, had declined again to 67 at the end of last week; 7 new cases were admitted during the week, against 24, 9, and 16 in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday last, June 27th, was 1,644, against 1,785, 1,710, and 1,649 on the three preceding Saturdays; 234 new cases were admitted during the week, against 210, 145, and 170 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, June 27th, 1,046 births and 627 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 18.2, 17.5, and 17.0 per 1,000 in the three preceding weeks, rose again to 19.1 per 1,000 last week, and was 4.8 per 1,000 above the mean rate during the same period in the seventy-six large English towns. The rates in the eight Scotch towns ranged from 12.0 in Aberdeen and 13.1 in Leith to 21.3 in Glasgow and 21.5 in Greenock. The death-rate from the principal infectious diseases averaged 2.0 per 1,000 in these towns, the highest rates being recorded in Paisley and Greenock. The 323 deaths registered in Glasgow included 9 which resulted from measles, 2 from diphtheria, 15 from whooping-cough, and 9 from diarrhœa. Two fatal cases of measles, 2 of diphtheria, and 6 of whooping-cough were recorded in Edinburgh. Three deaths from diarrhœa occurred in Dundee; 2 from measles and 1 from diarrhœa in Paisley; 5 from whooping-cough in Greenock; and 2 from diarrhœa in Aberdeen.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, June 27th, 530 births and 365 deaths were registered in six of the principal Irish towns. The mean annual

rate of mortality in these towns, which had been 16.2, 17.8, and 17.1 per 1,000 in the three preceding weeks, rose last week to 21.6 per 1,000, being 7.3 above the mean rate during the same period in the 76 English towns. The death-rates ranged in these Irish towns from 13.7 in Limerick and 18.5 in Belfast to 24.7 in Cork and 26.5 in Londonderry. Londonderry, it is to be noted, has jumped up from 12.6 to this number, while Waterford has gone up from 9.3 per 1,000 to 23.3. The death-rates in the six towns from the principal zymotic diseases averaged 1.7 per 1,000, the highest rate, 3.4, being reached in Cork, while Waterford again registered no deaths from these diseases for the third week in succession. The deaths registered in Dublin included 2 from small-pox, 4 from measles, 1 from simple diarrhoea, and 2 each from whooping-cough, diphtheria, and enteric. Belfast had 2 deaths from measles, 1 from scarlet fever, and 3 from enteric. Cork had 1 from simple continued fever, 1 from enteric, and 1 from whooping-cough.

FEVER CONTRACTED IN AN ISOLATION HOSPITAL.

The circumstances of the case described in "Dr. S.'s" letter are very exceptional. If he is certain of his facts, and his child acquired enteric fever in the isolation hospital, and this attack can clearly be traced to carelessness on the part of those in responsible charge of this hospital, "Dr. S." is clearly entitled to compensation. If the circumstances are at all doubtful he would be unwise to bring the case into court, in the event of the local authority denying that the enteric fever was caused by any neglect on the part of its officers. The question as to whether it would be "wise" as well as right to ask for compensation is one the answer to which would require further local knowledge. If it meant reflecting on a brother practitioner, it would probably be wise not to go further, unless the carelessness was gross.

WORKHOUSE NURSES.

A conference to discuss the Report of the Departmental Committee on Nursing, which was numerously attended by those interested in this question, was held at 10, Great George Street, by invitation of the Right Hon. J. G. Talbot, M.P., who presided. The conference was addressed by Mr. Bonham-Carter, Miss Brodie-Hall, Mr. J. Heywood Johnstone, M.P., Miss Louisa Twining, and Miss C. J. Wood. The point of the discussion was the "qualified nurse:" her want of training as tested by the standard set by Mr. Bonham-Carter, her unsatisfactoriness, and yet her necessity under the present circumstances, as maintained by Miss Brodie-Hall, speaking from the guardian's point of view; the misleading nature of her title and the want of progress in her training, spoken of by Mr. Heywood Johnstone, and the danger to the public, as enlarged on by Miss Wood. Miss Twining urged the necessity of appointing more women inspectors, and of creating a department for nursing in the Local Government Board, points she had been urging for the last forty years. The result of the conference was a resolution to the effect that it desired to lay before the President its judgement on some of the recommendations contained in the report of the Departmental Committee, and would ask that a deputation be received by the Board.

MARRIAGE OF POOR-LAW MEDICAL OFFICERS.

M.—We have never heard that the Local Government Board requires district medical officers engaged in Poor-law practice to be married.

RURAL HOUSING AND SANITARY ASSOCIATION.

A society of this name has recently been formed with the object of improving the condition of housing and sanitation in rural districts. The promoters desire to enlist the co-operation of those acquainted with county cottage homes and to arouse public opinion as to the need for reform. We gather that the policy of the Association will be to receive complaints as to insanitary conditions, overcrowding, etc., and after verification to submit them to the proper authorities and "watch each case until the evils are substantially remedied." It is hoped also to establish local committees, promote schemes for repairing cottages, and generally to raise the standard of rural sanitation. The list of the officers of the Association contains many well-known names, including several medical men. The Honorary Secretary is Miss Churton, 9, Southampton Street, W.C., from whom further particulars may be obtained. It may be that the time has come for an Association of this nature for rural sanitation similar to the Mansion House Council in London. If so, and if it can work in hearty co-operation with the local authorities, stimulating them rather than attempting to force their hands, much good may be done.

VACCINATION FEES.

A. S. D.—All vaccination contracts are with Boards of Guardians, not with district councils, although in rural districts the same representatives serve on both bodies. Any application, therefore, must be made to the guardians, and any proceedings would have to be taken against them. It would appear, however, that our correspondent has let the matter stand over until too late, as the guardians are not allowed to pay any amounts more than six months after they become due without the consent of the Local Government Board. It is not stated whether the claim is in respect of revaccinations only, or of revaccinations and primary vaccinations. We presume all the cases were done at patients' homes. We should advise that the matter should be laid before the Local Government Board, either by our correspondent directly, or, preferably, by the clerk to the guardians acting on his own initiative, or under instructions from the Vaccination Subcommittee.

ISOLATION HOSPITAL.

X. Y. Z. asks: (1) What is the most satisfactory way of remunerating the medical officer to an isolation hospital? (2) The committee of a certain isolation hospital suggest paying the medical officer so much a case. What should this be when the medical officer lives three miles away from the hospital—scarlet, typhoid, and diphtheria only admitted?

**** (1) Probably the most satisfactory method of remuneration under the circumstances mentioned by our correspondent is to arrange for an annual minimum salary, and then to charge a fixed amount for each visit. This is probably more satisfactory than a fixed amount for each patient, as the requirements vary so greatly in different diseases. Probably half a guinea a visit would be a satisfactory fee.

MEDICAL NEWS.

Dr. Urquhart has been elected Chairman of the Parish Council of Kinnoull, and a Justice of the Peace for the County of Perth.

Dr. Solomon Charles Smith, formerly of Halifax, has left estate to the amount of £52,121 7s. 10d. Dr. Smith occupied his time after retiring from practice by acting first as a Sub-editor of the British Medical Journal, and later as co-editor of the *Hospital*.

District Nursing.—H.R.H. Princess Louise presided on June 30th at a meeting of the South London District Nursing Association in the Town Hall of Battersea. This Association, formed in 1884, seeks to provide for the nursing needs of the sick poor in South-West London. It provided nursing last year for 1,600 patients in their own homes, and its nurses paid 40,000 visits. On the motion of Mr. Warrington Haward, seconded by Sir William Broadbent, a resolution was carried pledging the meeting to obtain further support for the work. Afterwards 80 little children presented purses to Her Royal Highness containing, it was understood, about £200 in all.

The Society of Medical Officers of Health.—The provincial meeting of the Incorporated Society of Medical Officers of Health will be held at the County Hall, Wakefield, on Saturday, July 11th, at 11.30 a.m. In addition to formal business, a short paper will be read on annual reports by Mr. Herbert Jones, M.O.H. Hereford Combined Sanitary Districts. The Mayor of Wakefield has invited members attending the meeting to luncheon at the Town Hall at 1 p.m. A visit will be paid to the West Riding Asylum, where extensive additions have recently been made and ventilation on the plenum system adopted; and later in the afternoon the public health laboratories in the Town Hall will be open for inspection.

The Sanitary Congress.—The Twenty-first Annual Congress of the Sanitary Institute begins next week, and will last from July 7th to the 11th, both days inclusive. The place of meeting is Bradford, and the number of public bodies which have expressed their intention of being represented by delegates is large. Thus 28 of the leading county councils are in the list, and 50 county boroughs, 9 metropolitan boroughs, 117 urban district or sanitary authorities, and 21 rural councils. Three port sanitary authorities, three school boards, and 38 learned societies are also to be present by deputy. The inaugural address will be delivered by the Earl of Stamford, while a lecture on architecture in its relation to hygiene will be delivered by Mr. J. Slater, F.R.I.B.A. The general proceedings are divided into three sections and eight conferences. The former comprise: (1) Sanitary science and preventive medicine; (2) engineering and architecture; (3) chemistry, physics, and biology. The conferences are of municipal representatives, engineers and surveyors, sanitary inspectors, school hygienists, and ladies. Tickets for those who are members of the Institute can be obtained either from the Local Secretary, Bradford, or at the offices of the Institute, 72, Margaret Street, W. In either case the price is 1 guinea. The Health Exhibition, it is to be noted, will be opened at Bradford on the same day as the Congress.

MEDICAL VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

ARGYLE AND BUTE ASYLUM, LOCHGILPHEAD.—Assistant Medical Officer, resident. Salary, £160 per annum.

BIRKENHEAD BOROUGH HOSPITAL.—Junior Male House-Surgeon, resident. Salary, £80 per annum.

CARLOW DISTRICT ASYLUM.—(1) Resident Medical Superintendent. Salary, £300 and allowances. (2) Assistant Medical Officer. Salary, £80 per annum and allowances.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Assistant House-Surgeon, resident. Salary at the rate of £50 per annum.

GUY'S HOSPITAL MEDICAL SCHOOL.—Gordon Lectureship in Experimental Pathology.

LIVERPOOL EYE AND EAR INFIRMARY.—House-Surgeon, resident. Salary, £80 per annum.

MANCHESTER: OWENS COLLEGE.—Junior Demonstrator in Physiology. Stipend, £100 per annum, rising to £150 per annum.

MANCHESTER: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—Qualified Medical Officer, resident. Salary, £65 per annum.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Assistant House-Surgeon, resident. Salary, £70 per annum.

SHEFFIELD: JESSOP HOSPITAL FOR WOMEN.—House-Surgeon, resident. Salary, £75 per annum.

STOCKPORT INFIRMARY.—Junior Assistant House-Surgeon, resident. Salary at the rate of £40 per annum.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Examiner in Dental Surgery.

STOCKPORT INFIRMARY.—Assistant House and Visiting Surgeon, resident. Salary, £80.

TOTTENHAM HOSPITAL.—(1) House Surgeon, £90 per annum. (2) House-Physician, £60 per annum. (3) Casualty Officer, £50 per annum. All resident.
TYNEMOUTH INFIRMARY.—Two House-Surgeons, resident. Salary, £50 per annum.
WITHINGTON URBAN DISTRICT COUNCIL.—Resident Medical Officer at the Baguley Sanatorium. Salary, £250 per annum.

MEDICAL APPOINTMENTS.

BRANGAN, John, L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glas., Coroner for North Meath.
CRERAR, W., M.B.Glas., District Medical Officer of the Rotherham Union.
DWYER, J. F., L.R.C.P., L.R.C.S.Edin., District Medical Officer of the Crickhowell Union.
GROVES, Ernest W. Hey, M.D., B.Sc.Lond., M.R.C.S., L.R.C.P., Assistant Surgeon to the Bristol General Hospital.
GUTHRIE, R. L., M.A., M.D., Barrister-at-Law, Deputy Coroner for the North-Eastern District of the County of London.
KYLE, H. G., B.A., M.B., B.Ch.Oxon., Surgeon to the Bristol General Hospital.
MENDES, Thomas A., L.R.C.P. & S.Edin., L.F.P. & S.Glas., Second Assistant Medical Officer to the County and City Asylum, Hereford.
MORGAN, T. W. S., M.R.C.S.Eng., L.S.A., District Medical Officer to the Clutton Union.
RICHARDSON, Catherine Mary, M.B., Ch.B.Edin., House-Surgeon to the Derbyshire Hospital for Sick Children, Derby.
ROBERTS, Charles, F.R.C.S., Surgical Registrar to the Manchester Royal Infirmary.
ROCHE, Professor Antony, M.R.C.P., L.R.C.S.Irel., Lecturer on Public Health to Maguorn College.
ROWELL, Thos., M.B., B.S.Durh., Second Assistant Medical Officer at the City Asylum, Newcastle-on-Tyne.
RUSSELL, T. O'D., M.R.C.P., F.R.C.S.Irel., District Medical Officer of the Hexham Union.
SAWYER, J. E. H., M.A., M.D.Oxon., Honorary Administrator of Anaesthetics to the Birmingham Dental Hospital.
SELBY, R. G., M.B., C.M.Edin., District Medical Officer of the Rotherham Union.
SERPELL, H. Hamilton, M.R.C.S., L.R.C.P., Assistant House-Surgeon to the South Devon and East Cornwall Hospital at Plymouth.
SHEPHERD, J. H., M.B., Ch.B., Second Assistant to Dundee Royal Lunatic Asylum.
SMELTON, C. W., M.R.C.S., L.R.C.P.Lond., District Medical Officer of the Malton Out-relief Union.
SUNDERLAND, Septimus, M.D., M.R.C.P., Obstetric Physician to the French Hospital, Shaftesbury Avenue.
TELFORD, E. D., F.R.C.S., Resident Surgical Officer to the Manchester Royal Infirmary.
WOODYATT, W. J., M.B., B.S.Vict., Assistant Medical Officer of the Whitechapel Union.

DIARY FOR NEXT WEEK.

WEDNESDAY.

Dermatological Society of London, 11, Chandos Street, Cavendish Square, W., 5.15 p.m.—Demonstration of Cases of Interest.

THURSDAY.

British Gynaecological Society, 20, Hanover Square, W., 8 p.m.—Dr. R. D. Purefoy (Master of the Rotunda Hospital, Dublin): Notes of Four Cases of Chronic Inversion of the Uterus. A Discussion on Lacerations of the Cervix Uteri, and their Consequences, will be opened by Professor John W. Taylor (Birmingham); the following, among others, are expected to take part: Dr. William Duncan, Mr. Edge, Dr. Bedford Fenwick, Dr. Heine, Dr. Jellett, Mr. Bowreman Jessett, Dr. George Keith, Mr. Skene Keith, Dr. Macnaughton-Jones, Dr. Mansell Moullin, Dr. Inglis Parsons, Dr. Purefoy.

Guy's Hospital Medical School, 4 p.m.—Dr. E. W. Ainley Walker: Recent work upon the Nature of Immunity (Gordon Lectures in Experimental Pathology).

POST-GRADUATE COURSES AND LECTURES.

Charing Cross Hospital, Thursday, 4 p.m.—Lecture on Medical Cases.
Hospital for Consumption and Diseases of the Chest, Brompton, S.W., Wednesday, 4 p.m.—Lecture on Diseases of the Aortic Valves.
Hospital for Sick Children, Great Ormond Street, W.C., Thursday, 4 p.m.—Lecture on The Treatment of Tuberculous Lymphatic Glands.
Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—Demonstrations will be given at 4 p.m. as follows: Monday, skin; Tuesday, medical; Wednesday, surgical; Thursday, surgical; Friday, throat. Lectures will also be given at 5.15 p.m. as follows: Monday, Intrathoracic Tumours; Tuesday, Eczema; Wednesday, Hare-lip and Cleft Palate; Thursday, Hysteria and its Diagnosis; Friday, Preparations, Methods, and After-treatment in Operation.
Mount Vernon Hospital for Consumption and Diseases of the Chest, 7, Fitzroy Square, W., Thursday, 4 p.m.—Lecture on the Surgical Treatment of Empyema.
National Hospital for the Paralysed and Epileptic, Queen Square, W.C., Tuesday, 3.30 p.m.—Lecture on Cerebral Circulation.
Post-Graduate College, West London Hospital, Hammersmith Road, W. Lectures will be delivered at 5 p.m. as follows:—Monday, Lantern Demonstration of the Fundus; Tuesday, Surgical Cases; Wednesday, Some Diseases of the Nervous System; Thursday, Some Common Diseases and Injuries of the Knee: Friday, Extraction, When and How.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 8s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

CLARKE.—On June 26th, at Penrhyn, Stourbridge, the wife of H. H. R. Clarke, M.R.C.S., L.R.C.P., of a son.
GOMEZ.—On June 25th, at The Cottage, South Petherton, Somerset, the wife of E. J. Gomez, M.R.C.S., L.R.C.P., of a daughter.
GROSVENOR.—On June 27th, at Arnside, Westmorland, the wife of Dr. W. Clayton Grosvenor, of a daughter.
GURNEY.—On June 16th, at 5, Gildredge Road, Eastbourne, the wife of Alexander C. Gurney, M.B., of a daughter.
PERKINS.—On June 22nd, at Trivandrum, the wife of H. Campbell Perkins, M.R.C.S., L.R.C.P., of a daughter.
SPINKS.—At Burgh House, Maryhill, Glasgow, on June 26th, the wife of Charles F. Spinks, L.R.C.P.Edin., etc., of a daughter.
WALLWORK.—At Crosshill Cottage, Lochgelly, on June 25th, the wife of James Wallwork, M.R.C.S., L.R.C.P., of a daughter.

MARRIAGES.

PETTY—TROUP.—On July 2nd, at St. Andrew's Church, Stoke Newington, by the Rev. Prebendary Bevan, Rector of Chelsea, David Petty, M.B., of Essex House, Stamford Hill, to Dora Lilian, youngest daughter of Frederick William Troup, Esq., of Wynmore House, Stamford Hill, N.
SEALE—MCFARLAND.—On June 24th, at St. Cyprian's, Kimberley, South Africa, by the Rev. Canon Hamilton, Edward Albert Seale, M.D.T.C.D., of Ceres, Cape Colony, to Janet Margaret, daughter of the late George McFarland, Kimberley.

DEATH.

WOODMAN.—On June 28th, at his residence, 2, Chichester Place, Southernhay, Exeter, John Woodman, M.D., F.R.C.S., in his 67th year.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429 Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and NOT at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Axiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

SCOTIA asks for advice as to the treatment and pathology of a case of hardening of the corpora cavernosa, with painful erection, in a patient aged 50.

ANGLO-CELT would be glad to know if there are any works in modern English dealing with the early history (Celtic) of medicine in Ireland, and where they are to be obtained.

DISPENSER would be glad of information as to what would be a reasonable weekly fee to be paid to a qualified chemist to come in to do his dispensing one hour morning and two hours afternoon daily.

TREATMENT OF URTICARIA.

FAIRFIELD asks for suggestions for the treatment of a case of typical urticarial eruption, occurring in an apparently healthy young man, which appears on the arms, legs, face, and extends over the trunk, the eruption only occurring when the patient exerts himself, such as cycling, dancing, cricketing, and at times during his work (he is a carpenter). The rash lasts a variable time, from an hour or less to three or four hours, and is accompanied by itching and pricking sensations. Careful dieting and the exhibition of stomachics, alkaline aperients, and ichthyol do not prevent the attacks. His underclothing is non-irritating and seems satisfactory. He has no threadworms, and his urine is healthy.

INCOME-TAX ABATEMENT.

CIVIL SURGEON writes: During my services as a civil surgeon in South Africa the income tax was always deducted from the pay given to me each month, so that I was paying the tax on my whole income. Am I entitled to any rebatement on this? I have heard I am entitled to recover the tax on £150 for each year. If this is so, to whom should I apply for the rebatement?

*** If our correspondent's total income during the period in question did not exceed £700 per annum he is entitled to recover tax on an "abatement" according to the scale set out on page 1445 of the BRITISH MEDICAL JOURNAL of June 20th. The surveyor of taxes for the district in which he resides will furnish him with the necessary forms on application. If he does not know the name and address of the surveyor he should apply to the local collector of taxes.

DIGNITY asks: Must I return receipts for sickness pay (Medical Sickness Assurance Society) for income tax?

*** We believe that this point has never been judicially decided, but we certainly do not think that sickness pay from an assurance society is assessable income within the meaning of the Income tax Acts.

ANSWERS.

INCUS.—An incubator (Auvard's) can be bought or hired from Arnold and Co., West Smithfield, E.C. A nurse who understands its management can be got from the London Hospital private nursing staff.

"HEEL LAMENESS."

G. writes in reply to "H.": The disease has been called "heel lameness." Its pathology is obscure, but it is probably rheumatic. I have had much success with applications of betul oil twice daily.

THYROGLANDIN.

DR. SEYMOUR TAYLOR (London, W.) writes: In answer to the inquiry of "T. A. L." in the BRITISH MEDICAL JOURNAL of June 27th, I have to say that it is better to keep a myxoedematous patient on a somewhat spare diet, especially restricting the nitrogenous elements of her food. This will help to reduce arterial tension and lessen the tendency to headache and giddiness which some patients experience when taking thyroid extract. Alcoholic stimulants should be forbidden or taken only under strict medical supervision. The thyroid gland itself has, I find, a quicker and surer action than any preparation made by druggists. It is easily given when minced and spread on bread to form a sandwich. I have no special experience of the treatment of obesity.

DR. THOMAS DUTTON (London, W.) writes: If "T. A. L." is well advised he will not give thyroglandin in the treatment of ordinary obesity. The therapeutical advantages are not commensurate with its dangers. A scientific diet with salines is far more effectual. Potassium iodide is more useful and safer than thyroglandin, but I seldom resort to it. More cases of obesity are complicated with myxoedema than are generally recognized: it is in these cases that thyroglandin does good. It should only be given under a special diet.

VACCINATION AFTER SMALL-POX.

DR. JOHN T. HARTILL (Willenhall) writes: With reference to "Vaccinator's" remarks and the editorial comments thereon in the BRITISH MEDICAL JOURNAL of June 27th, page 1526: (1) Three weeks since I vaccinated a gentleman who was deeply pitted by small-pox in infancy over sixty years ago. The result was four perfectly normal vaccination vesicles, absolutely indistinguishable from the vesicles of primary vaccination of a person who had not had small-pox. (2) About the same time I revaccinated a woman about 55, who many years ago had a mild attack of small-pox whilst nursing her baby with a severe attack. She bore isolated marks of the attack. She is caretaker of the small-pox isolation hospital here, and the result was the production of four modified vesicles, such as commonly appear in the majority of revaccinations in primarily well-vaccinated persons. (3) In the small-pox epidemic here in 1894, out of a total of 830 persons attacked with small-pox, 2 had been vaccinated once and also had a previous attack of small-pox, and 2 others were attacked who had had small-pox before but had never been vaccinated. (4) In an epidemic of small-pox near here in 1870-1, I vaccinated a large number of persons living in small houses where there was already a case of small-pox. In a few cases—I cannot remember the exact number, but think it was about three—small-pox attacked the persons vaccinated shortly after vaccination. The small-pox and the vaccination ran their course concurrently, but the latter much quicker than the former, and in each case the course of the small-pox was suddenly and powerfully arrested when the vaccination reached a certain stage in its progress.

DR. P. O'CONNELL, M.D. (Stillorgan Castle, Stillorgan, co. Dublin) writes: Probably the following, for which I vouch, may be such as "Vaccinator" requires. Vaccination was very satisfactorily done in infancy. Small-pox was contracted at the age of 12 to 13 years. The patient distinctly remembered being sick and the nature of the malady, as well as being isolated while sick. It left a characteristic "pit" just above the left eyebrow and another higher up on the forehead. There were four or five marks on the back which I also carefully inspected. At the age of 29 years I vaccinated this patient in two places. Both insertions took well and ran a normal course. This is the only case of the kind I have met in thirty-one years' practice.

DR. J. H. STACY (Public Vaccinator for the City of Norwich) writes: Last February twelvemonth I vaccinated a woman aged 48 who was terribly marked with the effects of small-pox. She had not been vaccinated previously, having contracted small-pox when she was 4 years old. The result was four perfectly-formed vesicles, as perfect as seen in primary infantile vaccination.

NOTES, LETTERS, Etc.

TREATMENT OF HAY FEVER.

MR. G. A. GARRY SIMPSON, M.R.C.S.Eng. (Senior Clinical Assistant Throat, Nose and Ear Department, West London Hospital, and Medical Officer of Health, Acton, W.) writes: I have found the treatment of hay fever by means of suprarenal extract so eminently satisfactory that I strongly advise those practitioners who have not so far given it a trial to do so. The patients are ever grateful for a safe remedy which brings them ease and comfort. I generally prescribe sol. adrenalin chloride 1 in 1,000 (Parke, Davis and Co.), this I dilute with equal parts of water (previously boiled). I instruct my patients to spray a little of this solution into each nostril by means of a miniature spray or atomizer when they feel the paroxysm is coming on. This treatment gives comfort for some hours when the dose is repeated. I find three or four applications in twenty-four hours is sufficient. In using cocaine there is the fear of the patient becoming an *habitué* to the use of the drug, but with suprarenal extract no such danger need be apprehended. A very suitable miniature spray with hypodermules of suprarenal gland solutions are sold by F. Rogers, 327, Oxford Street. These hypodermules have the advantage of being air-tight, which keeps the solution free from decomposing influences

A UNIQUE CASE OF GUNSHOT WOUND.

DR. T. F. MACDONALD (Geraldton, North Queensland, Australia) writes: Not long ago a Kanaka was brought to the hospital here suffering from a gunshot wound in the right loin, said to have been inflicted with murderous intent. Exploration revealed a hard, metallic substance firmly embedded in the right kidney. With much difficulty the foreign body was removed, and it turned out to be a soda water sparklet bomb. The difficulty of removal arose from the fact that a tendon of one of the muscles of the back was strangely wedged into a fissure in the sparklet, which by this means was snugly anchored somewhere about the centre of the wound. Some pellets of No. 3 shot were also removed from the wound, and a few days afterwards a single pellet was passed through the urethra, having evidently found its way through the kidney substance, down the ureter, into the bladder, etc. The patient made an uninterrupted recovery, and although the author of the mischief is unknown, hopes are entertained that, by means of the sparklet, the culprit may be found.

THE PRACTICE OF SURGERY AND THE CURRICULUM.

A CORRESPONDENT SURGEON writes: Why not lighten the curriculum by [illegible] subject of surgery? Consider the facts. At the present time [illegible] more thoroughly taught in the schools than surgery [illegible] the student when "qualified," is for the most part quite [illegible] to the practice of surgery. Yet, when in practice, [illegible] will throw every obstacle in his [illegible] He would be told that, in the best interests of patients, [illegible] to perform [illegible] operations at eminent fees, [illegible] a specialist [illegible] at the [illegible] to operate. He would be told that with three exceptions of [illegible] operation [illegible] disease he is to [illegible] For these [illegible] duties [illegible] would be ample. [illegible] and [illegible] to the [illegible] surgeon is growing [illegible] and [illegible] to the London [illegible] Twelve [illegible] of practice [illegible] almost every major [illegible] performed by [illegible] surgeons with percentage [illegible] those of [illegible] London hospitals.

THE BRITISH DENTAL ASSOCIATION.

ERRATUM.—In our notice of the annual meeting of the British Dental Association on June 27th, it should have been stated that the President-elect is Mr. W. H. Williamson, M.D., L.D.S., of Aberdeen, and that the meeting in 1904 will be held in that city.

ERRATA.—In the BRITISH MEDICAL JOURNAL for June 27th, p. 1490, col. 1, line 17 from bottom, for "tables" read *vegetables*, and on p. 1493, col. 2, line 9 from bottom, for "abscess" read *axis*.

LETTERS, COMMUNICATIONS, ETC., have been received from:
A Dr. B. Anningson, Cambridge; Messrs. Arnold and Sons, London; Mr. J. M. Atkinson, Hong Kong; Dr. A. J. Anderson, Newport, R.I.; Mr. N. Alcock, Ballybrack; Mr. H. C. Allinson, King's Lynn; D. A. Alexander, M.B., Clifton; A. B. C.; Mr. J. Aikman, Guernsey; Anglo-Celt. **B** Mr. F. W. Bailey, Liverpool; Mr. J. F. E. Bridger London; Dr. T. E. B. Brown, C.I.E., London; Mr. C. A. M. Bailey, London; Mr. J. Bell, Hong Kong; F. Beach, M.B., Kingston Hill; Dr. A. M. Buchanan, Glasgow; Dr. F. Bushnell, Plymouth; J. F. Bullar, M.B., Southampton; Dr. A. T. Brand, Driffield; Mr. W. Berry, Wigan; Mr. J. Brangan, Kells; Mr. E. T. Burton, Birmingham; Mr. L. A. Bidwell, London; Dr. F. W. Burton-Fanning, Norwich. **C** J. G. E. Colby, M.B., Malton; Mr. J. Clark, Clay Cross; Mr. R. P. C. Corfe, London; Mr. E. Cheshire, Liverpool; Mrs. Carlyle's Sympathiser; Messrs. T. Cook and Son, London. **D** Mr. W. F. Dearden, Manchester; Dispenser; Dr. T. Dutton, London; Mr. G. W. Duncan, London; Mr. R. W. Doyne, Oxford; Mr. C. C. Duncan, Worcester; J. W. Duncan, M.B., Birmingham; Dr. P. V. Dodd, Folkestone. **F** Dr. W. E. Fothergill, Manchester; F.R.C.S.I.; Fairfield; P. C. Fenwick, M.B., Wanganui; Dr. T. Fisher, Clifton. **G** Glasgow Obstetrical and Gynaecological Society, The Secretary of, Glasgow; Mr. T. W. H. Garstang, Altrincham; Mr. C. A. Griffiths, Cardiff; P. R. Griffiths, M.B., Cardiff; Dr. J. Galloway, London; T. B. Gornall, M.B., Clitheroe; G.; Dr. E. E. Goodbody, Great Bardfield. **H** Dr. G. Holmes, London; Mr. G. Hamilton, Glamis; J. B. Hartley, M.B., Darlington; Mr. J. T. Hartill, Willenhall; Dr. J. Haddon, Denholm; Dr. R. S. Hubbersty, Sunderland; H. R.; F. R. Hill, M.B., Carlisle. **I** Incus. **J** Dr. R. Jardine, Glasgow; Dr. R. Jones, Woodford Bridge. **K** Dr. F. Knight, Swansea; Dr. H. W. King, Chester. **L** Dr. T. Laffan, Cashel. **M** Mr. A. E. McCann, Mountmellick; Dr. W. H. Macdonald, Antigonish; F. T. Macdonald, M.B., Geraldton; Mr. S. W. Macilwaine, Redhill; Dr. W. M. Mackay, Brighton; Member; Mr. P. E. Middleton, Knottingley; Mirror; H. Munro, M.B., Bradford; Mr. A. J. Martineau, Hove; Dr. A. Macfadyen, London. **N** Dr. C. V. H. Nesbitt, Randalstown. **O** Mr. E. Owen, London; Obstetrical Society, The Secretary of, London; Sir I. Gwen, London; Dr. P. O'Connell, Stillorgan. **P** Policyholder; Perdus; Pearson's Antiseptic Company, The Secretary of, London; Dr. D. A. C. Pearce, Canterbury; Provincial Member; Persia; A. Primrose, M.B., Toronto; Pax; T. W. Parry, M.B., London. **Q** Quisquam. **R** Renine, Limited, The Secretary of, London; Dr. R. Row, Bombay; Dr. W. G. A. Robertson, Edinburgh; Mr. J. R. Rolston, Plymouth; Mr. C. A. K. Renshaw, Sale; Royal Dental Hospital, The Dean of, London; Dr. B. Robinson, New York. **S** Salubris; Dr. E. Symes-Thompson, London; Dr. J. E. Sandilands, London Mr. G. A. G. Simpson, London; Dr. F. O. Stedman, Hong Kong; Sardam; Selected Dr. L. E. Shaw, London; Mr. R. Stoney, Hythe; Dr. G. W. Steeves, Liverpool; Scotia Mr. J. H. Stacy, Norwich; J. E. H. Sawyer, M.B., Birmingham. **T** Mr. P. Turner, London; M. I. Taylor, M.B., Glasgow; G. N. W. Thomas, M.B., Cardiff; Dr. S. Taylor, London. **U** Dr. A. R. Urquhart, Perth. **V** Mr. T. J. Verrall, Brighton; Vexatus. **W** R. H. Woods, M.B., Dublin; Mr. E. Wheal, Oxford; Dr. F. Willcocks, London; Dr. W. H. Williamson, Aberdeen; Dr. L. Williams, London; Weardale; Mr. C. Williams, London; Mr. G. F. Webb, Moretonhampstead, etc.

BOOKS, ETC., RECEIVED.

Sir Henry Wentworth Acland, Bart., K.C.B., F.R.S., Regius Professor of Medicine in the University of Oxford. A Memoir. By J. B. Atlay. London: Smith, Elder, and Co. 1903. 14s.

Foods: Their Composition and Analysis. By Alexander Wynter Blyth, M.R.C.S., F.I.C., F.C.S., etc., and Meredith Wynter Blyth, B.A.Cantab., B.Sc.Lond., F.I.C., F.C.S., etc. Fifth edition. London: Charles Griffin and Co., Limited. 1903. 21s.

Tumours Innocent and Malignant. By J. Bland-Sutton. Third edition. London: Cassell and Co., Limited. 1903. 21s.

Traité de Biologie. Par Felix le Dantec. Paris: Felix Alcan. 1902. Pt. II.

Map of the Republic of Peru. Under the authority of Don Eugenio Larrabure y Unanue. Southampton: Eduardo Higginson. 1903.

Pregnancy, Labour, and Childbed with Ovarian Tumour. By R. G. McKerron, M.A., M.D. London: Rebman, Limited. 1903. 7s. 6d.

Therapeutical Society Transactions, 1902. First Session. London: Wertheimer, Lea, and Co.

University Correspondence College Matriculation Directory. No. xxxiv. June, 1903. London: University Tutorial Press. 1903. 1s.

Wheeler's Handbook of Medicine and Therapeutics. By William R. Jack, B.Sc., M.D., F.F.P.S.G. Second edition. Edinburgh: E. and S. Livingstone. 1903. 8s.

Mechanical Vibratory Stimulation. By Maurice F. Pilgrim, M.D. New York: The Metropolitan Publishing Co.

Das Geschlechtsleben in England. Band III. Der Einfluss absoluter Faktoren auf das Geschlechtsleben. Von Dr. Eugen Dühren. Berlin: M. Lilienthal. 1903. M. 10.

Entre Aveugles. Conseils à l'Usage des Personnes qui viennent de Perdre la Vue. Par le Dr. Emile Javal. Paris: Masson et Cie. 1903. Fr. 2.50.

New Conceptions in Science. By Carl Snyder. London and New York: Harper and Brothers. 1903. 7s. 6d.

Buxton: Its Waters, Baths, and Accessory Methods of Treatment. By William Armstrong, M.R.C.S., J.P., and J. E. Harburn, F.R.C.P., L.R.C.S.Edin. Bristol: John Wright and Co. 1903. 1s.

Aberystwyth. Edited by George W. May. London: The Health Resorts Association. 1903. Free on application.

Disease of the Pancreas: Its Cause and Nature. By Eugene L. Opie, M.D. Philadelphia and London: J. B. Lippincott Co. 1903. Dol. 3.

*** In forwarding books the publishers are requested to state the selling price.

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An Address
ON
THE SCOTTISH MEDICAL CORPORATIONS AND THE PUBLIC WEAL:
HOW THEY MIGHT DEVELOP A HEALTH CONSCIENCE.

Read before the Medico-Chirurgical Society of Edinburgh.

BY T. S. CLOUSTON, M.D.,
President of the Royal College of Physicians, Edinburgh.

WORK OF THE CORPORATION IN THE PAST.

THE three Scottish Medical Corporations—the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Faculty of Physicians and Surgeons of Glasgow—have each, by charter and by Acts of Parliament, acquired certain important privileges, and have many duties to the profession of medicine and to the public. The powers granted to the corporations related to the health of the people and the welfare of the State. "*Vita et Sanitas*" was their motto. They bound into corporate strength the units of the profession of medicine, they "elevated its character and its dignity," and they encouraged and advantaged medical science and learning. They originated and have continued to support the chief of the great schools of medicine of Scotland. Most of the leaders of surgery and medicine in Scotland in the past have belonged to those bodies, all this tending strongly towards the public good. A glance at their history shows that their conceptions of duty have widened as time went on; they have, in fact, undergone a process of development and evolution. At the present time they are well organized, energetic bodies, full of zeal for the advancement of the profession of medicine. They show no signs of senility. They have, on the whole, taken a wide view of their responsibilities, and have not written "finality" on their aims. No one can read their charters and try to get at their spirit without seeing that they admit of a wider and more beneficial construction than appears at first sight, and this larger outlook has generally been taken. No doubt in hundreds of years of existence there have been movements that seemed narrow and selfish, but these were shortlived.

WORK OF THE FUTURE.

The proposition I am to advance to-night is that now, at the beginning of the twentieth century, medicine and surgery and the sciences on which they are founded have made such advances, and have thereby acquired such capacities of ameliorating the lives and improving the health of men and women, that there is room for a forward movement on the part of these corporations for the public weal. New conditions affecting the physical and mental welfare of men for good and evil have arisen. New means of spreading health knowledge are in existence. New methods of influencing the masses of the population for good in regard to their food and drink, their modes of life, and environment are at the disposal of those who have the knowledge and authority to use them. The general press has become a power that reaches almost every one, but it is little used by medicine. The democratic idea that every citizen is entitled to the benefit of everything that will add to human health and happiness is growing fast. The public ignorance as to health and welfare conditions is great, but the craving to know them is widespread and pathetic. A professional authority to which appeal can be made is longed for. The conviction of health sin is general, and the prospects of conversion to a new healthy life are promising. Health and sanitation Acts by the Legislature, medical officers of health, sanitary inspectors, notification of infectious diseases, inspection of workshops, health lectures, health congresses, innumerable and energetic efforts by medical societies and by medical and lay preachers of physical righteousness have all, in addition to prolonging life and diminishing death, done incalculable service by rousing in the public mind the vague beginnings of a tremendously important mental process of a dissipation of the former fatalistic assumption that disease and deformity, weakness and unfitness are inevitable things, which God and the devil had arranged between them for the chastening of mankind and the punishment of their sins. Not only so, but there is visibly arising among the more intelligent of our people the beginnings of a new development of the moral sense, a feeling of personal responsibility for the existence of disease. In fact, there is arising an influence which may do as much for the physical and mental conditions of men as morals and religion have done for their conduct. A health conscience is being slowly created. Many people are keenly dissatisfied with the present health and welfare of the body politic, and self-reproachful about evils which they think should not exist, and which they individually should help to put an end to. Some of them go even further, and have in their minds the beginnings of a health ideal, a conception of communities of men and women, strong, handsome, fruitful, long-lived, intelligent, self-controlled, and free from disease. Such ideals are very stimulating to efforts for their attainment, and should by all means be encouraged. Things only get done when a sense of duty comes in and ideals are formed and in this direction corporations could work effectually.

A HEALTH APOSTOLATE.

No body of men knows or can know so well as the medical profession the state of the public mind in regard to health questions, or the extraordinary difficulties which must be encountered in dissipating the profound ignorance which on this matter besets it. We all feel that in this we should educate our masters, the public, in all that relates to its physical and mental condition. Most of us try to do so individually, but to leaven the mass of mankind with health knowledge will need more than sporadic individual effort.

As a profession, we have not as yet taken the position to which our knowledge of physiological laws and our sanitary and medical experience entitle us. The public at present does not use us and our knowledge as it might for its own benefit. The Legislature notoriously distrusts us, and does not call us in as it might do to its aid in framing its Acts which affect the health and welfare of the people. Few large conceptions of the value of modern physiological sanitary and medical knowledge to the State have been expressed by our parliamentarians and statesmen since Disraeli's famous *sanitas sanitatum* epigram. What do we hear of the physiology and psychology of brain development in the course of the torrents of discussion on education? We are by many influential laymen suspected of being professionally selfish, faddy, and incapable of taking large views that could be both practical and helpful to the statesman. As a matter of fact, it is doubtful if the professional ideal of the doctor is quite as altruistic and unselfish as that of the priest. In reading lately the journal of John Wesley, one could not but be struck with the fact that no man of our profession had ever been inspired with the physiological ideal of elevating and perfecting human life as he was with his spiritual ideal. None of us have gone to the people and devoted our lives to save them from disease, degeneracy, and death as he did to save them from hell fire. And yet there are possibilities for a medical apostle of health as fruitful for human good in the long run, looking to the future of our race, as were Wesley's labours of fifty years, his 300,000 miles of travel, and his 200,000 sermons and addresses. He was a great organizer, and founded a church to carry on and spread his work. We sadly need an organization for our propaganda, and some authoritative body with a continuous life to attend to the soundness of our people in body and mind.

Of course it will be at once objected that our doctrines are not yet always indisputable, that the laws of life are far from being yet fully elucidated, that our facts are yet too few to found universal health precepts on, that we might lead the people astray by premature generalizings, and that notoriously "doctors differ." Our answer is that we have definite knowledge enough even now to do enormous good to men's health, and that the public welfare would benefit greatly by the application of that knowledge.

FOODS AND DIETS.

Take, for example, the food question of our people—that primary of all physiological needs. Can any one say that the large and accurate chemical and physiological facts we possess about foods are generally known or utilized for the benefit of our people? Food—its constitution, its selection, cost, cooking, and use—concerns the health, mental and bodily, of every man, woman, and child; and knowledge about it is especially related to the health, comfort, and social well-being of our wage earners. The writing of this paper was partly suggested to me by the recent investigation on A Study of the Diet of the Labouring Classes in Edinburgh, by Drs. Noël Paton, Crauford Dunlop, and E. M. Inglis published last year. The scientific work of this paper having been carried on in the laboratory of the Royal College of Physicians, gave it a special interest to its Fellows and those of the College of Surgeons. It embodied most laborious and careful observations, it received help from the Town Council of Edinburgh, it was intensely practical, and its facts and conclusions would,

if digested and practised, have been of great benefit to every wage earner in Scotland. Life and health to many of them might depend on their knowledge of that paper. What systematic means were taken to spread its most important facts and conclusions in an effective way among the people it concerned? None whatever, except that part of it was published in the local newspapers. Every working man in Scotland might have got a copy for a halfpenny. Can any one say that in this instance, which I take almost at random, there is not room for an organized diffusion of such important health knowledge by our corporations? Our physiological, medical, sanitary, and dietetic knowledge of the most pressingly practical value is buried in our medical journals and books, and never reaches or benefits the people who need it and who often would be most willing to receive it. It is as if practical morals and religion were to be hidden in ethical and theological tomes while vice and irreligion were rampant among mankind.

Educate the Educator.

Then look for a moment at the insignificant place physiology and medicine hold in education. A Scotch professor of education in a recent address to teachers told them that educators were commonly ignorant of the very first principles of the physiology of the developing brain, and he was not contradicted. My experience entirely confirms that of Professor Edgar, and this is not the fault of the teachers. No one has taught them this knowledge or impressed them with the idea that it ought to be an essential part of their armamentarium. If a human brain has to be "educated" between the ages of 5 and 25, surely the educator should know something of it and its development between those ages. It is only quite recently that it ever seemed to occur to our legislators and great School Boards that medicine and physiology could help them to understand the relationship between the developing brain of a man and his mental and moral character—the most subtle and for humanity one of the most important things in Nature. Has medicine no responsibility for the ignorance and neglect on this matter? It seems a clear duty to assert its place for the benefit of future generations of mankind. If there is one period of life, and if there is any process affecting mankind in which medical and physiological experience come in, they are the developmental and educational period and the educational process. People talk with horror of a Godless education; they seem to have no sort of fear of an unhygienic education. To read most educational works the mind is everything; the brain, through which alone the mind can act, is seldom mentioned. Philosophy, religion, morals, mind, everything seems to come into education except physiological law and fact. The recent Scottish Royal Commission on physical training, admirable in its aims and its appointment a sign of better things, came nearest the medical idea of approaching the subject, but its basal idea was not quite the scientific one, and instead of one medical man among nine members, half the Commission might well have consisted of physiologists, sanitarians, and medical men. By far the most important parts of the report were not the opinions expressed by the educationalists and others, but the developmental and medical facts brought out in important original investigations by Drs. Warner, Leslie Mackenzie, and Hay. The members of the Commission as a whole seemed not to grasp the philosophical conception of the unity of the human organism and the essential connexion between body, mind, and brain. I believe a similar German Commission would have been differently constituted and would have taken a larger view of its functions. It seems as if it would take a century to eradicate the idea from this country that science is necessarily "unpractical," and that the "business man" and he only can be trusted to investigate and report on any subject whatever that concerns the people or the State.

The mind of the country is now wakening up to the idea that there is a process of degeneracy going on in our town populations. But there has been no really large and scientific treatment of this momentous subject, either to investigate the facts, or to inquire into the essential difference between urban and rural life and their physiological effect on mankind. Scientific men can alone do so, but at present it and we drift along in ignorance, with spasms of panic when such facts as that only one Manchester recruit out of five can be made to handle a rifle come out in a casual way.

There are many other matters of primary importance to the life and health of our people in regard to which they urgently need knowledge and a sense of duty. The great housing problem, the nurture of children problem, the heredity problem, the marriage of the weak and tainted problem, the alcohol problem, the mental disease and degeneracy problem are some of those. Looking at the last—the mental problem—"lunacy" is looked at far too much *per se* and without reference to its true and large physiological and psychological meaning, and to its relationship to hereditary weakness and to environment, to other forms of disease, to other degeneracies and brain "reversions." The public have first to be untaught much about mental disease as well as to receive healthful practical knowledge. Superstitions and prejudices about that and other health subjects die hard.

Even when large and admirable ideas and schemes relating to health and human conditions are started they are apt to lack scientific guidance. Witness the Garden City Association with its committee of 68 members; only two of them are members of the medical profession, and its council of 19 with not a doctor among them. Why, the very idea of such a city originated with Sir Benjamin Ward Richardson in his *Hygeia, or a Model City of Health*. If St. Margaret's Hope is to become such a model city as the Garden City Association urges, and as we all fervently hope this can only be done through the application of our sanitary and scientific knowledge, and by our active and practical help.

A Health Conscience.

I have purposely omitted to refer to the existing agencies and efforts for improving and maintaining the public health which have done such wonders, but rather have endeavoured to point out some of the unoccupied fields. The labours of the older sanitarians, the Public Health Acts, and the magnificent work of our medical officers of health, we all know to be the very sheet anchors of nearly all the improvements that have taken place of late years. My only regret is that these Acts are not wider in their scope. The medical officers of health in very many cases take a larger view of their duties than those prescribed by statute, and their annual reports are as yet the best Bibles of health we possess. Any means by which the most urgent and impressive of these facts and teachings could be brought into effective contact with every mind in every county of Scotland would in time do incalculable good, and this I believe our corporations could effect. I should like to see every medical officer of health a Fellow or a Member of our medical corporations for the mutual benefit and assistance of both.

If it is granted—and it cannot well be denied—that there are many unoccupied health fields, that the public weal urgently demands further efforts to improve the health and the organic welfare of the people, and that the recent advances in science and medicine enable such efforts to be successfully made, then the question arises, On whom does this duty chiefly fall? We are a small and compact country in Scotland, we are as advanced in regard to medical sciences as any other country, we are supposed to have average efficiency in administration, and we have three great medical bodies with prestige and organization, whose charters permit of their undertaking such work, if they do not, when interpreted in a large sense, directly point to it in the public health interests. Our people are, on the whole, well-educated and receptive, as well as being alive to their own interests. Our newspaper press is public-spirited and, when politics do not intervene, open to all who can interest and instruct their readers. We have scattered through the country, thousands of medical men, increasingly well-instructed, many of them being zealous and not too busy. We have in our corporations an increasing number of young Fellows and Members, with all kinds of scientific knowledge at command, eager for research and for work of every sort.

It seems to me, therefore, that we have ready to our hands the means, first, of setting up a health authority which would command respect and confidence; and, secondly, of instituting a health propaganda to educate, to persuade, and to form a "health conscience" among our people, the new health organization neither superseding nor interfering with any existing effort or work. On the contrary, it would stimulate and back up every such means of improving the physical and mental condition of our people. Such work should be entirely altruistic, scientific, and free from what might be called professional selfishness. No "professional interests" of any kind whatever should come into this work. Religion, morals, politics, and free education have all been pressed on every individual of our people, systematically and by many organized or legal authorities. Science alone has not taken its place as an all-pervading factor in the making of the

modern man and of modern society, and of all branches of science those relating to man's life and health should surely come first for the mass of a people. They concern him immediately from the cradle to the grave. The attempt to take up this work would, I believe, do our corporations and profession an enormous amount of good. It would give us a higher sense of public responsibility to our fellow-citizens, and a higher and more altruistic ideal of our duty. It would teach us to take larger views of disease, for we would more habitually think of its prevention and its predisposing rather than its exciting causes. It would give a special opportunity for the exercise of the talent of popular exposition of health subjects by pen and voice which some men specially possess. It cannot do any individual or any corporate body any harm to have "a mission" for race improvement and race health. We have hitherto had too little of this feeling among us, our individual patients being too exclusively considered, the community too little thought of. To our country brethren it should give more of a feeling of professional solidarity and less of individual isolation. This in every way would do them good. They would thus be in frequent communication with our corporations, and we would learn much from them. The public would gradually come to look on every doctor as being a public benefactor and an essential element of a well organized society. The healthier a community became, the more the doctor would be called on to avert the curse of disease.

As to the means by which a health propaganda might reach the masses of our population, they would have to be exceedingly varied. It goes without saying that to do much good and to establish the "Health Conscience," which should be the ultimate goal of our labours, continuous iteration of the commonest health axioms would be required. The repetitive principle of the weekly service and sermon of the church would have to be adopted. The parent, the teacher, the clergyman, the public man, the politician, and the newspaper editor would first have to be interested and instructed, and then enlisted in our cause. The press must, I am convinced, be our chief pulpit. Its use for this particular service of humanity has been most unaccountably neglected. All men do not now go to church, but every man reads the newspaper. The medical press, the medical societies, the original investigators, the reports of the medical officers of health, the medical books, the university lecture rooms would supply the pabulum. This would require continuous, judicious and laborious assortment and condensation. Why should the tract almost always be a religious tract, or the leaflet commonly a political instrument? I see that for a political propaganda in one city 300,000 "leaflets" are to be circulated. A suitable literature for systematic teaching would soon come into being if it were demanded and in constant use. Health primers could be easily and cheaply got up for the use of old and young. The country doctor, well educated as we now turn him out, would be a living voice for health, and would direct and use all these agencies as the clergyman uses his Bible, Prayer Book, and sermon, and as the schoolmaster uses his school books. He would also organize health workers, as the clergyman and the philanthropist do, in every parish. My contention is that our corporations could effectually assist and stimulate him in his work.

Let us imagine a community with a health conscience, a health ideal, and sufficient health knowledge. Pregnancy and parturition would become safer and be bereft of many of their gloomy forebodings. Lactation, child-feeding, and nurture would be based on scientific knowledge, new milk and pure milk only would be given to children, the mortality among children under 5 would fall 50 per cent. in our cities, the meaning and the use of play would be understood. Child sleep and clothing would follow Nature's law, the mental and bodily development of the child would be closely studied, and the risks and danger signals understood. Simple but accurate observations of child growth and progress would be taken. The doctor would be called in for advice as to defects and arrestments of development at early periods. The effects of good air and bad air breathed by children would be appreciated. Stock would be taken of every child by the doctor and the parent before the technical process of school education began. The teacher would have far more physiological knowledge of the human brain and human body than he has now. The distinctions between physiological and moral sins would be made at home and at school. All schools and each scholar would be under medical inspection. The brain as the organ of mind, and the body as the organ of the brain would during the developmental process be treated on sound physiological and psychological principles. School games, drill, and exercises would be systematized. Education would have a far fuller and more rational significance to the parent and teacher. The real meaning and the risks of puberty and adolescence would be far better understood. The sex question would be looked at more rationally. The choice of occupations and residences would be considered from the health side, and the idea of organic fitness introduced. Moral and religious training would go hand in hand with health training, and would be considered a part of it. Ideas of right and wrong would be made to apply to the body as well as the mind. To break Nature's laws as they affect any human being would be regarded as sin, and be followed by contrition and amendment. A health conscience would be established as an integral part of every man and woman's nature. Adverse heredity would be recognized and counteracted in every possible way. The all-important marriage question would have some science and reason as well as emotion come into it. The tremendous responsibilities of maternity and paternity would be better realized. Deliberately to choose to live in a crowded or unhealthy neighbourhood would be regarded as suicide is now. To use alcohol in excess, to indulge in sexual vice would be equivalent to losing self-respect and manliness. Health would be idealized and longed for as beauty is in woman. It would be taken for granted that all ordinary diseases may be prevented and that their existence is scandalous. To neglect any measures for the improvement of human health would in any Government be regarded as *ipso facto* a reason for its instant dismissal. A sense of organic well-being, the most certain of all proofs of health, would be aimed at for individuals and for society. The meaning and the proper treatment of old age would be understood. Disease and death would be more painless than they commonly are. Life would be far more efficient than it is now. The irritability and pessimism of men and women would lessen. Men, and especially women, would get far more out of life than most of them do at present. The efficiency of the worker would be greatly increased. The money value of a man would go up greatly through the improvement of his size and strength and nervous energy.

Suggestions for Action.

No doubt the criticism of such propositions as I have made will commonly be, We agree that all this is most desirable in theory, but how is it to take practical effect and become a working scheme? Why not rather strengthen and broaden the existing agencies? I must, therefore, in order to answer those most relevant questions, try to suggest the basis of a working project.

1. The three Medical Corporations would each separately first discuss the proposal in all its bearings, and then, if the general principle is approved, discuss it together.

2. If no insuperable initial difficulties present themselves to the Fellows, the corporations would appoint a large and representative Joint Health Committee, with powers of inquiry and suggestion.

3. This Joint Committee would put itself into communication with public health officers, with representative medical men all over the country, with public health organizations at home and abroad, with public bodies, clergymen, teachers, and with any other person who could give practical information and advice as to unoccupied health fields.

4. The Joint Committee would then report the result of these inquiries and deliberations, and formulate a working scheme to the corporations, who would finally discuss, amend, and authorize or decline it.

5. The cost of the working of any such scheme would be a most important element for consideration and arrangement by the corporations. It is possible that on account of its obvious importance to the people and the State and its philanthropic nature, the public would place funds at the disposal of the corporations for carrying it out, if it were suitably brought before wealthy and public-spirited citizens.

6. The scheme being essentially an educative not an administrative one, and its great aim being to reach the masses of our people, the most efficient means of such education would be the prime consideration, and the press and the other agencies mentioned in the paper are therefore obviously indicated as the chief of such means of education in health knowledge, resulting in health improvement and the creation of an efficient "Health Conscience."

AN ACCOUNT OF EIGHT CASES OF "PRESSURE-POUCH" OF THE OESOPHAGUS REMOVED BY OPERATION.

By HENRY T. BUTLIN, F.R.C.S., D.C.L.,
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In the year 1893, I described the first operation which was performed in this country for the removal of a "pressure-pouch" of the oesophagus.[1] I performed the operation on a gentleman, about 50 years of age, and followed the lines of the operation described by von Bergmann in the only case with which I was acquainted in which a pouch had been removed. A study of the literature of the subject and of the contents of the hospital museums of this town led me to confirm the general belief that the condition is one of the greatest rarity, and to the opinion that I was never likely to have the opportunity of again removing a pressure-pouch.

In 1894, however, I was consulted by a gentleman who was sent to me by Sir Anderson Critchett on account of very typical symptoms of pressure-pouch.

Again, in 1895, an old gentleman was sent to me by Dr. Ewart of Eastbourne, and in November of that year I removed his pouch. He made a good recovery, and remained well when last I heard of him some years later. The condition had not been diagnosed until I saw him, although the symptoms had been in existence for several years. Indeed, so little did the special symptoms of pressure-pouch attract the attention of those who had seen him, that a London specialist had shortened his uvula and applied the galvano-cautery to the back of his throat in order to afford him relief. I was so impressed with this that, when I published the operation in the columns of the British Medical Journal,[2] I drew pointed attention to the chief, really the essential, symptoms of pressure-pouch, with the following results, that, in addition to the cases, 6 in number, which I was sure I had seen up to that time, I have since then operated on 6 other cases, and have seen at least 8 other cases, in which there was really no doubt of the correctness of the diagnosis. And, in most of these cases, the diagnosis had been already made when the patient came to consult me, so simple was it when the attention of the medical attendant had been drawn to the very pointed symptoms of pressure-pouch. I will presently restate the symptoms, but first I will shortly tell the story of the operations.

Cases I and II are already fully published in the British Medical Journal and the *Transactions* of the Royal Medical and Chirurgical Society.[3]

Case III.

In April, 1898, Dr. John Hunter, of Wigtown, sent to me a man, 70 years of age, because he was suffering from symptoms resembling so closely those which I had described in the Journal of the previous January that he felt sure it must be a case of pressure-pouch of the oesophagus. The symptoms were at first stated to have existed only about four years, but, on closer consideration, the patient felt sure that he had had them to some degree for nine or ten years. He was a sturdy old man, and his health had not been notably affected by the difficulty in swallowing.

On April 19th, when Dr. Hunter and Dr. de Havilland Hall were present, I first attempted to pass an instrument into the stomach in order to be sure that there was no stricture of the oesophagus immediately below the pouch. I did not succeed; but feeling confident of the nature of the disease, I cut down on the left side of the neck in the usual manner, and discovered the pouch without difficulty. Again I tried to pass a bougie, but could not do so because it seemed to catch. The pouch was therefore opened, and a bougie was quite easily passed through it into the stomach. The pouch was then cut away; but when I came to close the opening there was great difficulty in closing it as satisfactorily as I had done in the two previous cases. In fact, the operation did not pass off with the same comfort and success as had attended the previous operations, and I was conscious of a sense of disappointment, with some anxiety regarding the future. During the manipulations more damage was done to the surrounding tissues than was desirable. In order to ensure a sufficient supply of food a tube was passed through the wound in the neck into the stomach, because I could not pass it from the mouth.

The patient never did well from the moment of the operation. There was septic inflammation of the deeper parts of the wound. He became acutely maniacal on April 21st and died of exhaustion on the 26th. I was very disappointed and distressed, for I was conscious that for some reason which I did not then understand I failed to carry the operation and management of the case through successfully. In fact, the whole proceeding appeared a blunder from the surgical point of view.

Case IV.

Rather more than a year elapsed before I again had the opportunity of operating for pressure-pouch. In May, 1899, a doctor in Ringwood, Hants, brought to me his sister, a maiden lady, aged 57, who for eighteen or nineteen years had suffered from difficulty of taking food. The nature of her symptoms had not been understood until the attention of her brother happened to be attracted by my paper in the British Medical Journal of the previous year (1898). Comparing Miss D.'s symptoms with those which were described, both the brother and sister felt certain that she must be suffering from a pressure-pouch. Fragments of undigested food were returned many hours, sometimes as long as two or three days, after the food had been taken, and they were quite easily recognized. Viscid fluid and gas frequently gurgled up from the back of the throat, and liquid and solid food could be easily pressed up into the mouth by pressure on the neck. On examination, a bougie was arrested about 9 in. from the teeth, just the distance at which the bougie is arrested in all the cases I have seen. The patient's health had suffered very little from the malady.

It was not until October of that year that the operation was performed in the operating theatre at St. Bartholomew's Hospital. The incision was made, as usual, on the left side of the neck. The pouch was found without difficulty, but neither before nor after finding it could a bougie be passed from the mouth into the stomach. Profiting by the experience of the last case, and examining carefully the anatomical conditions from the opening in the neck, I came to the conclusion that the inability to introduce a bougie depended on the thrusting of the oesophagus out of line by the pouch, which was of larger size than usual, and which probably always contained a considerable quantity of food and mucus. I therefore separated it in every part from the surrounding loose connective tissues quite up to its attachment to the oesophagus, and, drawing it as far upwards as I could, made another attempt to introduce a bougie into the stomach. I succeeded in doing so, but even then only with difficulty. The pouch was removed, and the opening into the oesophagus was satisfactorily closed by several fine silk sutures. No tube was introduced, either from the wound or from the mouth.

During the first two days little or no liquid came through the wound, which was drained by means of a soft indiarubber tube, and the patient seemed to be in a fair way of doing quite well. Then, as had happened in the first and second cases, the stitches gave way and some of the liquid food began to come out through the opening in the neck.

From this time the progress of the case was anything but satisfactory and caused me the greatest anxiety. The patient seemed to grow weaker, her temperature was generally much higher than it should have been, and although there was no appearance of spreading sepsis in the wound, there was no sign of healing. Yet Miss D. took a large quantity of liquid, and even beef jelly and very soft solids of similar consistency. I began to despair of her life, and I am sure it was saved by the sister of Paget Ward; for it happily occurred to her to measure not only the quantity of liquid which the patient swallowed, but that which came through the wound, when she found that the quantities corresponded so nearly that the poor creature was getting nothing down and was sinking from exhaustion. As soon as I learned this I made an attempt to pass a guide from the mouth into the stomach, which seemed to be very preferable to passing it from the wound in the neck, and to my great joy succeeded on the first trial. Over the guide a piece of soft rubber tubing was introduced and the patient was easily fed. Although her convalescence was slow and occupied several weeks, she ultimately made an excellent recovery, and remains quite well at the present time.

Case V.

In June, 1899, Dr. Milligan, of Manchester, sent to me a patient, 62 years of age, who for the last six or seven years had suffered from symptoms of a pressure-pouch. The diagnosis was already made by Dr. Milligan on the return, long after they had been taken, of small particles of food which were not digested, on gurgling in the throat produced by swallowing, and by pressure on the left side of the neck low down, and on the arrest of a bougie about 8½ in. from the teeth.

When this patient was placed under the influence of an anaesthetic I succeeded, with considerable difficulty and after repeated attempts, in passing a bougie into the stomach. At the same time I passed a long bent probe mounted on a handle into the pouch, and manipulating it could feel the blunt end of the probe in the lower part of the neck on the left side just behind the sterno-mastoid muscle.

Dr. Milligan and Mr. Lockwood were present at the operation, which was performed in a precisely similar manner to the previous operations. The after-progress of the case calls for no special notice. It was uneventful, and the wound was practically well by July 31st, sixteen days after the operation.

Case VI.

An account of this patient was published by Mr. Wright, of Manchester and Mr. Reginald Smith, of Warrington.[4] The patient was 45 years of age in December, 1897, and for ten years before that time had suffered difficulty in swallowing. He was a great oboe player, and attributed some at least of his difficulty to the practice of holding air in the throat to maintain a continuous blast. Messrs. Wright and Smith, who saw him in consultation, advised that he should wear a "sort of truss" to press upon and obliterate the sac, which they diagnosed to be a pressure-pouch. His symptoms were typical of the condition.

In 1900, Mr. Reginald Smith sent him to me, and on May 4th of that year I removed his pouch, in the presence of Mr. Smith, Sir Felix Semon, and Mr. Furnivall. Before doing so, a metal sound passed into the pouch from the mouth could be felt in the posterior triangle on the right side of the neck, and the incision was on that account made on the right side. We could not pass any instrument beyond the mouth of the sac into the stomach. The pouch was easily discovered and separated from the surrounding tissues. Its neck was not so well defined as

in most of the other cases, and it appeared to be larger than any I had previously removed, except in Case IV. I raised it up out of the wound, when Sir Felix Semon was able to pass a bougie from the mouth into the stomach, but only with difficulty, for the end of the bougie caught more than once in the margin of the mouth of the pouch. The wound in the back wall of the oesophagus was sewn up with silk as usual, and the wound was drained.

On May 8th food came for the first time through the opening in the neck, and within a few hours the whole of the food taken by the mouth passed out through the wound. A catgut guide was passed without difficulty from the mouth into the stomach, and a soft india-rubber tube was introduced over it, and kept in until May 14th, when the wound in the neck was reduced to the size of a small sinus. On May 24th he returned home.

CASE VII.

In November, 1900, a gentleman 60 years of age, was sent to me by Sir Felix Semon. He came from Jersey, and had been under the care of Dr. Andrew Dunlop. For five or six years he had noticed difficulty in swallowing, which was at first only of such a kind that he thought his "swallow was small." After a while he found occasional difficulty and choking when trying to swallow. And, when he attempted to wash the morsel down, the fluid would sometimes return suddenly through his nose. Later, fragments of recognizable food began to return, not immediately after they had been swallowed, but an hour or two afterwards. But the longest stay of food which he could recollect was only three or four hours. There was also frequent gurgling in the throat, with the spitting up of frothy fluid. He had recently begun to lose weight, and had fallen from 9 st. 12½ lb. to 9 st. 5 lb. in the last four months. The symptoms of pouch must have developed rapidly during the last twelve months, for Sir Felix Semon, who had seen several cases of pressure-pouch, and was perfectly familiar with the symptoms, could not make up his mind on the diagnosis in the year 1899, when he had been first consulted by the patient. Now, however, he had not the least doubt, nor had I, of the nature of the case, and he sent the patient to me for operation.

There was another element in the case which had led to difficulty in the diagnosis. Dr. Dunlop, who took the greatest interest in it, had frequently examined the returned contents of the pouch and had found them, whatever their nature might be, whether animal or vegetable, almost invariably acid in reaction. He thought, therefore, that the food had most probably reached the stomach and had lain there for sufficient period to acquire an acid reaction. When this was related to me, it so happened that I had a man with typical symptoms of pressure-pouch under my care in one of the wards of the hospital. The contents of his pouch were therefore frequently examined, and were found to be almost invariably acid. Dr. Dunlop also made some experiments by placing portions of a mixed meal, which had been carefully masticated and mixed with saliva, in watch-glasses under bell-jars, and exposing them for two or three hours to a temperature of just under 100° F. At the end of that time they exhibited a strong acid reaction.

On November 15th I removed this gentleman's pouch. The operation presented no difficulty or peculiar feature. It was performed on the same lines as previous operations, and in less than a month the patient was able to return to Jersey.

CASE VIII.

The chief interest in this case is that the diagnosis was made without seeing the patient by the sister of the ward in which Case IV had lain. A young woman, on whom I had performed an operation for removal of the appendix, wondered whether I could do anything for her mother. Sister (Paget) asked what was the matter with her mother, and, when she learned the symptoms, came to the just conclusion that they were like those from which Miss D. had suffered. She therefore suggested to the patient that her mother might have a pocket in the gullet, and told me that she thought she had found for me another case of pressure-pouch.

The symptoms had been in existence for about sixteen years, and seem to have commenced with "gurgling in the throat." Four years later, fragments of undigested food began to return; and she was particularly struck with the return, one morning, of a small raisin which she had eaten at lunch the day before. She had been getting much thinner during the last twelve months.

I removed the pouch in the usual manner in August of last year (1902) in the new theatre at St. Bartholomew's Hospital. It was large, and no instrument could be passed beyond it until it had been drawn upwards out of the wound in the neck. As I felt sure the bulk of food which was given to her would pass out through the neck, a soft india-rubber tube was introduced into the stomach from the mouth, and was kept there for about a fortnight. She recovered within three weeks of the operation.

Here, then, are eight cases, operated on in the course of ten years, of an affection of the oesophagus which was regarded, until ten years ago, as one of extreme rarity. And I have notes of eight other cases in which the symptoms were as typical as they were in the eight cases which have been related, and in which there is no reasonable doubt of the diagnosis. In every case, the symptoms were precisely similar to those to which pointed attention was directed in the BRITISH MEDICAL JOURNAL in 1898, and I venture to repeat them once again, since the diagnosis of this affection is so simple that no case ought to be overlooked.

1. Return of fragments of undigested food, not immediately after the food has been taken, but many hours or even a day or two afterwards.

2. Gurgling up of gas from the throat, particularly when pressure is made upon the left side of the neck low down. This symptom is peculiarly distressing to the patient. There may also be distinct bulging in this situation when food is taken, but this is not by any means a constant symptom.

3. A bougie is arrested about 9 in. from the teeth. And, if a curved metal instrument is used, the end can often be felt in the posterior triangle of the neck, almost always on the left side.

Other symptoms may be present in individual cases: wasting when the pouch has attained a large size; pressure-symptoms, such as cough; possibility of introducing a full-sized bougie into the stomach in the early stages of the disease. Acidity of the returned food does not in the least contraindicate the presence of a pouch.

With regard to the operation, there can be no doubt, from the cases which have been related, that it is not more dangerous to life than the cure of the disease will justify. Looking back on the cases, I do not believe that I should have lost Case IV had I then had the experience which I have since gained. I have in every instance performed the operation on the lines prescribed by Professor von Bergmann. They are described in the JOURNAL[5] of 1898; and, for the benefit of those who may be called on to operate in similar cases, I would make the following suggestions:

1. In order to be sure that there is no stricture of the oesophagus below the opening of the pouch, a bougie should be passed into the stomach from the mouth at the time of the operation. If this cannot be done before the wound is made in the neck, the pouch should be exposed, separated from the surrounding tissues, and drawn upwards out of the wound. With a little manipulation, a bougie can then be passed over its mouth.

2. If the pouch is of long standing, and if it is of large size, a soft tube should be passed from the mouth into the stomach and retained for so long as is necessary for feeding. If the patient cannot or will not permit this, or vomits up the tube, it must be be passed over a guide every time food is taken, otherwise almost the whole of the food will pass out through the wound in the neck. If this cannot be done, a tube should be introduced into the stomach through the wound in the neck and retained there until healing is nearly accomplished.

3. The less the tissues below the pouch are disturbed the better. If they are widely opened up there is liability to septic inflammation spreading down into the posterior mediastinum.

4. No attempt should be made to close the external wound, however carefully the opening of the neck of the pouch has been stitched up. It should be drained by means of a soft drainage tube. On the other hand, it is very desirable to close the opening into the oesophagus; for, although the stitches always give way at the end of three or four days, the surrounding tissues are by this time sufficiently recovered to render spreading septic inflammation behind and below the site of the pouch very much less probable.

The operation appears to result in a speedy, complete, and permanent cure of the disease. I have quite recently seen the patient on whom the first operation was performed in the year 1892, and have heard of most of the other patients from time to time. Two of them wrote me last Christmas, and told me of their well-being. There seems, therefore, no fear of recurrence, provided the pouch has been removed at its attachment to the oesophagus.

There are other questions into which I should like to enter, such as the cause of the affection, the course which it takes, deep-seated pouches, etc. But the consideration of the first of these alone would occupy far too much space of the JOURNAL. I shall therefore content myself with stating my belief that these pressure-pouches are due to a congenital predisposition, and that they are acquired upon that predisposition.

Some of the deep-seated pouches which have been recently described are, I feel sure, only pouch-like depressions in the lower part of the oesophagus immediately above the cardiac orifice in persons suffering from "primary" dilatation of the oesophagus. The specimen in St. Thomas's Museum, which is figured (Fig. 4) in Plate V of the 76th volume of the *Medico-Chirurgical Transactions*, is probably a pouch formed in connexion with an unclosed bronchial fissure, and does not belong to the class of true pressure-pouches.

Those persons who are interested in the subject of pressure-pouches will find it admirably and fully treated in the monograph of Dr. Hugo Starck, *Die Divertikel der Speiseröhre*, Leipzig, 1900.

Drawings of a pouch which has been removed, and of a pouch still attached to the junction of the pharynx with the oesophagus, the constant seat of this form of pouch, are contained in the paper in the journal to which allusion has been already made, so that they need not be repeated here.

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[1] *Med.-Chir. Trans.*, lxxvi, p. 269. [2] BRITISH MEDICAL JOURNAL, 1898, i, p. 8. [3] Loc. cit. [4] BRITISH MEDICAL JOURNAL, 1898, i, p. 944. [5] Loc. cit.

THE NATURE OF THE SYMPTOMS IN APPENDICITIS.

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In most of the medical journals at the present time articles on appendicitis are appearing. When the writers deal with the symptoms of this disease a great variety of opinion on the nature of certain signs is shown, and it is obvious there is much confusion of ideas regarding the nature of the symptoms. These contradictory views arise because the writers have not grasped the fact that the sense of localization is absent from the viscera, and that when pain arises from disease of the viscera the pain is referred not to the actual seat of disease, but to an area in the external body wall supplied by sensory nerves, which in the spinal cord have an intimate relationship with the sympathetic nerves from the viscus affected.

If a due appreciation of the manner in which sensory and other phenomena arise in visceral disease be obtained, then a whole series of symptoms can be explained in a satisfactory manner, and much help is afforded in unravelling the symptoms of the disease from those of other diseases that simulate it.

In this study the symptoms are drawn from that form of appendicitis where there have usually been recurrent attacks, and where there has been an accompanying localized peritonitis. In the cases that came to operation there have always been old adhesions between the appendix and caecum, and in a few cases there has been redness of the visceral and parietal peritoneum in the neighbourhood with numerous soft adhesions. The constitutional symptoms and the results of abscess formation are not included in this study.

The manner in which the symptoms arise in visceral disease may be explained by reference to the accompanying diagram (Fig. 1). From the viscus (V) to the spinal cord (S C) a continuous stream of energy passes by the sympathetic nerves (Sy N). In health this stream of energy flows unperceived. In disease of the viscus an increased amount of energy passes, so that when it reaches the spinal cord it affects neighbouring cells. On these cells this increased energy acts as a stimulus, and symptoms are thereby produced according to the function of the nerve cells so stimulated—sensory, motor, secretory, etc. In Fig. 1 the stimulus from the viscera is supposed to affect the spinal cord in the shaded area. Three sets of cells are represented in this shaded area, one connected with a sensory nerve (SN), one connected with a motor nerve (MN), and a third connected with some other viscus (Bl). When the stimulus from the diseased viscus reaches the cells connected with a sensory nerve, the pain is felt in the peripheral distribution of that nerve in the external body wall. When the stimulus affects a motor nerve, contraction of the muscles supplied by that nerve results (the viscero-muscular reflex). When the stimulus reaches the cells that supply other organs the functions of these organs are stimulated—if secretory, then an increased flow of the secretion; if a hollow muscular organ, then contraction of the organ, or a complicated series of movements may result, as in vomiting.

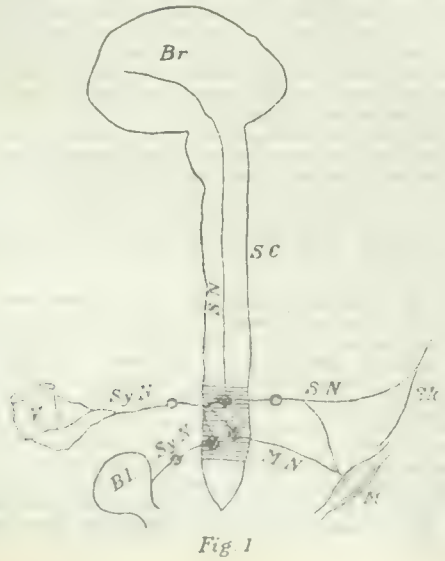


Fig 1

In appendicitis, the inflammatory condition affects not only the appendix itself, but extends to the peritoneal covering, and a peritonitis of a greater or less extent is set up. It is impossible to separate the symptoms of the one condition from those of the other. From a study of the symptoms of appendicitis, it seems fairly certain that the portion of the cord which is in connexion with the sympathetic nerves supplying the appendix and adjacent peritoneum includes the origins of the eleventh and twelfth dorsal, first and second lumbar nerves. When an attack of appendicitis is very violent, the symptoms may affect nerves higher than the eleventh dorsal, but as a rule the symptoms can be grouped within the field supplied by the eleventh and twelfth dorsal first and second lumbar nerves. The most important nerves that arise from this portion of the cord are the sensory nerves distributed to the abdomen and adjacent portions of the thigh, the motor nerves supplying certain of the muscles of the abdomen and of the thigh, and the motor nerves supplying the bladder.

The law regulating the distribution of pain in visceral disease is dependent on the fact that when stimulation reaches a sensory nerve (S N, Fig. 1) in any part of its course from the periphery to the brain (Br, Fig. 1), the resultant pain is always felt in the region of the peripheral distribution of the sensory nerve. In appendicitis the stimulation reaches the sensory nerves in the shaded area of the spinal cord represented in Fig. 1, which corresponds to the portion of the cord from which the eleventh and twelfth dorsal and first and second lumbar nerves arise.

The shaded area in Fig. 2 represents the field of distribu-



tion of the sensory nerves from the eleventh dorsal to the second lumbar roots. The pain may be felt in but a limited portion of the shaded area in Fig. 2. Thus it may be felt only in the lumbar region or in the iliac region, or below the crest of the ilium or in the thigh. At other times it may spread

vaguely over the whole area, and even cross over to the other side.

Hyperaesthesia.

Not only may the disturbance of these nerve cells be recognized by the presence of pain, but their excessive irritability can be demonstrated by the presence of hyperaesthesia in the tissues forming the external body wall. This hyperaesthesia may appear in an irregular patch of skin in some portion of the shaded area in Fig. 2. It is more readily demonstrated, however, in the erector spinae and muscles of the abdomen, and particularly in those over the right iliac fossa. The slightest pressure here is often felt as pain. One can readily demonstrate that the tenderness is not due to the inflamed peritoneum by slightly raising a portion of muscle away from the peritoneum before applying pressure, or, in cases where the pain and tenderness is widespread, by finding this tenderness in the muscles of the lumbar region, where pressure can be applied without the possibility of involving the peritoneum. The occurrence of this hyperaesthesia affords demonstrable evidence that the irritation has reached the sensory cells of the spinal cord, inasmuch as a stimulus applied to the skin (Sk, Fig. 1) or muscles (M, Fig. 1) which in health would give rise to the sense of touch or pressure, reaches these cells in their excitable condition by the sensory nerve (S N, Fig. 1), and gives rise in the brain to the sensation of pain. That the sensory symptoms are due to the central stimulation of nerve cells is evident from the fact that they are also present in parts remote from the seat of disease. This is evident when the pain radiates to the testicle and when that organ becomes tender to pressure, as happens in a number of cases of appendicitis. The tunica vaginalis is supplied by a branch of the first lumbar nerve, while the scrotum is supplied by the sacral nerves. The first lumbar nerve is distributed mainly over the lower part of the abdomen and upper part of the thigh, and the twig supplying the tunica vaginalis is separated widely from the rest of the distribution of this nerve. It is interesting to note also that the tunica vaginalis is the only serous membrane that is supplied by a sensory cerebro-spinal nerve, and the tunica vaginalis is the only serous membrane that is sensitive to ordinary stimulation.

In many cases of visceral disease, where there is hyperaesthesia of the skin or deeper structures of the external body wall certain spots are more tender to pressure. At these spots small sensory nerve trunks approach the surface and are readily accessible to pressure. In the case of appendicitis, small branches of the eleventh and twelfth dorsal nerves pierce the rectus muscle, and tenderness is elicited by pressure on these nerve twigs. One of them has received special attention, and is known as McBurney's point. As the sensory symptoms of appendicitis in the majority of cases are exhibited in the field of supply of the eleventh and twelfth dorsal nerves, light pressure on the small trunks elicits pain on account of the excitable state of the sensory cells in the spinal cord. When there is no tenderness over what is called McBurney's point in a case of appendicitis it will be found either that there is no hyperaesthesia of the muscles present, or that the symptoms are limited to the areas supplied by the first or second lumbar nerves.

The Viscero-muscular Reflex.

When the increased stimulus from the appendix affects the cells in the spinal centre of a motor nerve, contraction of the muscles supplied by that nerve appears—a form of reflex contraction that I have called the viscero-muscular reflex.

So long as the irritation about the diseased appendix lasts so long will the muscles remain contracted. The muscles supplied by the nerves that concern us more particularly in this study are the erector spinae, the muscles of the anterior abdominal wall (the obliqui transversalis abdominis and rectus), and the psoas and iliacus all on the right side.

The extent of the musular contractions varies very much. Usually it is limited to the muscles forming the wall of the right iliac fossa. As it is accompanied by more or less hyperaesthesia of the muscles, this muscular hardness is often mistaken for thickening and matting around the appendix, and surgeons sometimes express surprise at the absence of any thickening when they open the abdomen. This viscero-muscular reflex may be so extensive in appendicitis that it may affect not only all the muscles of the right side of the abdomen, but all the muscles of the abdominal wall. When this occurs, and when the muscles are also hyperaesthetic, the picture is then one of general peritonitis. It should be borne in mind that the extensive muscular hardness offers no criterion of the extent of the peritonitis in any affection of the viscera.

As the acute symptoms subside in an attack of appendicitis the contracted muscles gradually relax, until, when the patient is at rest, all the symptoms may disappear. When he begins to move about before all the inflammation has quite subsided the muscles begin again to contract, and give rise to a sensation of stiffness and it may be pain when they are stimulated to contract by the movements of the body. In such cases the whole of the right rectus abdominis muscle may become very tense and sore. In the same way the psoas and iliacus muscles and other muscles that act on the hip-joint may be tonically contracted, and the patient has a difficulty in movement at the hip-joint. When this occurs, with pain in the upper part of the thigh, the picture resembles a rheumatic affection of the hip-joint. In such an instance the symptoms are mostly limited to the distribution of the first lumbar nerve, and there may in consequence be an absence of such a characteristic sign as McBurney's point.

On the subsidence of an acute attack of appendicitis the muscles may relax, except a few strands of muscle fibres here and there. As one palpates the iliac fossa a strand of fibres may produce a peculiar resemblance to an elongated narrow body in the abdomen, and hence this is often mistaken for the appendix itself. I am fairly confident that in the vast majority of cases where the appendix is supposed to be felt by the examining surgeon it is this strand of contracted muscular fibres he is feeling. I do not deny that occasionally an enlarged and thickened appendix lying against the abdominal wall may be felt, but this is a rare circumstance. As a rule, the appendix lies several inches from the abdominal wall in such a position that even when the hand is in the abdominal cavity it is difficult to feel it. If surgeons would carefully note the position of the supposed appendix before operation, and compare it with the position in which the appendix is actually found, I think they will find that I am correct in my contention. The appearance of this resisting band of muscle fibres is due to a peculiarity in the mode of contraction of the flat muscles of the abdominal wall. I have found that, in addition to the contraction of the flat muscles, as a whole, small portions of the individual muscular fibres possessed the power of independent contraction. Thus a few fibres may contract in a small part of their extent in the middle of one of the sections of the rectus abdominis muscle. To the palpating hand these hardened fibres resemble an underlying tumour. Again, a series of these fibres may contract, and their contraction may be limited to one extremity of the muscle. When this happens to the transversalis abdominis at its termination in the broad aponeurosis over the iliac fossa we feel a band which resembles an elongated body lying in the abdomen. I have on several occasions seen this band mistaken by competent surgeons for an unduly big appendix. In talking over this mode of contraction of the flat abdominal muscles with Professor Sherrington he told me that he had demonstrated this peculiar property of the flat muscles some years ago. When stimulating motor roots as they emerged from the spinal cord he found that each muscle was supplied by roots issuing from more than one spinal segment. If he stimulated one root only of a long muscle like the tibialis, the muscle contracted in its entirety. When, however, he stimulated one root of a flat abdominal muscle the fibres contracted in only a limited portion of their extent. Thus, in stimulating the nerves going to one section of the rectus of abdominis muscle one root would cause the contraction of fibres limited to one end of the muscle, another root would cause contractions limited to the other end, while a third root would cause contraction of the fibres limited to a portion of their extent midway between the ends of the muscle. It might seem, therefore, that when the band of contracted fibres persists in appendicitis the stimulation was passing out of the cord by only one nerve root.

Bladder Symptoms.

Occasionally it happens that patients' complaints are at first or after the subsidence of more severe symptoms entirely confined to symptoms of bladder irritation. This is due to a stimulus reaching the bladder (Bl, Fig. 1) from the same section of the cord by way of the hypogastric plexus of the sympathetic. The symptoms are usually of two kinds, first, simple frequency of micturition and, secondly, a frequent desire to micturate with difficulty in relaxing the sphincter. In the first class of cases the stimulus passes from the inflamed appendix to the centre for the innervation of the bladder, and the viscus is thus stimulated to contract.

The patient is made aware of this by the usual mechanism, and voids the urine without difficulty. In the second class of cases there is also an irritation of the nerve supply of the sphincter vesicae, and this results in a tonic contraction of the muscle. The result is that the patient has a difficulty in relaxing the sphincter and the opposition offered to the contracting bladder is so great that the patient may suffer grievously from the violent efforts of the bladder to overcome the resistance of the sphincter.

Appendicular Colic and other Symptoms.

A patient suffering from chronic appendicitis may suffer at times from sudden attacks of pain of extreme violence. The pain is not always easy to locate, but is felt vaguely and indefinitely over a considerable area of the abdominal surface usually somewhere near the umbilicus and on the right side. I am not quite clear as to the cause of these attacks. In two cases where this symptom was well marked there was found stenosis of the appendix near its attachment to the caecum. In one case the portion beyond the stenosis was distended with fluid, so that on cutting it open its contents squirted out with considerable force. It is a matter of observation that when non striped muscle is stimulated to strong contraction violent pain results as in biliary and renal colic, when the bile ducts and ureter contain calculi, or when the bowel contracts behind an obstruction. Sherrington has demonstrated this experimentally by injecting fluid into the bile ducts. The contents of the appendix may stimulate its muscular coat to contract, and if the contents be not voided in consequence of the stenosis, violent spasm of the muscular wall ensues and severe pain may arise, that is, the stimulation passes by the sympathetic to the cord and then stimulates the cells of certain sensory nerves, with the result that the pain is felt over the peripheral distribution in the abdominal wall. In addition to the three centres represented in the shaded area of the cord in Fig. 1, there are doubtless other centres stimulated. The symptoms arising are as yet too obscure for me to elucidate. In one case of chronic appendicitis the patient had recurrent attacks of diarrhoea, and it is possible that this diarrhoea was a result of reflex stimulation of the intestinal glands.

Differential Diagnosis.

When only a few of the symptoms are present, appendicitis may simulate numerous other complaints. I have mistaken a commencing attack of appendicitis for lumbago because the pain and muscular tenderness were at first entirely limited to the lumbar region. I have seen another case where the medical man mistook the symptoms for a rheumatic affection of the hip-joint, because at first the symptoms were limited to a pain in the groin, with stiffness and pain on movement at the hip-joint.

It is also difficult to distinguish appendicitis from other visceral affections when the symptoms are imperfectly developed. The portion of the spinal cord affected by the sympathetic nerve supply of the appendix receives nerves also from other portions of the bowel and peritoneum, from the kidney, ureter, ovary, bladder, etc., and, in consequence, when only a few symptoms are present, appendicitis may simulate affections of these organs. I had treated one of my patients for some years for renal colic, and it was only on the supervention of other symptoms that I suspected appendicitis. On operation, only a stenosed appendix with a few old peritoneal adhesions could be found. Treves has recently written on the mimicry of gastric troubles by spinal disease. The resemblance in the symptoms of such diverse diseases is due to the fact that stimulation of the spinal cord gives rise to identical symptoms, from whatever source the stimulation proceeds, whether from visceral disease or local irritation. I have seen one case where an eminent neurologist diagnosed caries of the spine, and encased the patient in a plaster-of-paris jacket, because of the tender vertebrae and extensive hyperaesthesia and muscle tenderness, and in the necropsy there was found cancer of the stomach. It may happen, therefore, that a local affection of the cord may give rise to some symptoms resembling this complaint.

The War against Mosquitos in America.—The Brookline Board of Health has renewed the war of extermination against mosquitos successfully carried on during the preceding two summers. A systematic attempt is to be made this year to treat catch basins and stagnant pools with crude oil. The grant required for this purpose is estimated at about £200.

ON THE OCCURRENCE OF VOMITING DURING RECTAL ALIMENTATION.

BY

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St. George's Hospital.

In a number of patients with gastric ulcer treated by rectal enemata, we have been struck by the fact that several of them have vomited up material from the stomach other than blood, in spite of the fact that they were having absolutely nothing by the mouth at the time. With the object of determining the frequency of this event, and, if possible, of finding some explanation for its occurrence, we have collected and analysed 171 consecutive cases of gastric ulcer treated in St. George's Hospital during the past two and a half years, 154 of them occurring in women and 17 in men. Of these cases, 75 were fed from the first either by the mouth alone or by the mouth and rectum together, and may be dismissed from further consideration after mentioning the fact that vomiting occurred in 41, or 54.6 per cent. The remaining 96 cases were fed per rectum alone for periods varying from two to fourteen days, usually for rather less than a week, and 26, among whom there were 4 males, or 27 per cent. of these cases, vomited on one or more occasions, although they had received no food at all by the mouth for a period of thirty-six hours or more before the vomiting occurred. Of these 26 cases, however, 8 were given medicine—bismuth, an opiate, or hydrocyanic acid—by the mouth, with or without a mouth-wash, and 7 were having a mouth-wash alone; the remaining 11 received nothing of any kind by the mouth. It is clear that in the 8 patients who took medicine by the mouth, the subsequent vomiting may have been due to peristaltic contraction of the stomach set up by the introduction of fluid into that organ. It is possible that the 7 patients whose mouths were washed out with a solution of listerine may have swallowed some of that antiseptic lotion, and that vomiting was thus accounted for. The remaining 11 cases can have swallowed nothing but their own buccal secretions; oral sepsis may have been an important factor in causing some of the vomiting here, for in 6 of the 11 the teeth were "bad" or "very bad," and the patients doubtless swallowed with their saliva a quantity of offensive purulent material derived from the carious teeth and stumps. The fact that in 2 cases under our own care persistent vomiting only stopped after extraction of decayed teeth, points to oral sepsis as a definite causal factor in some cases. But the teeth were noted as "good" or "very fair" in the other 5 cases, so that in these some other reason for the vomiting must be sought. Two of the 11 cases were menstruating while vomiting continued, but both of these fall into the category of "bad teeth." As showing that the nervous perturbation associated with menstruation is not a cause of vomiting, it may be added that 4 out of 70 patients who did not vomit, while being fed by the rectum alone, were menstruating.

We have been unable to trace any connexion between the nature of the food given by the rectum and the occurrence of vomiting. In the 26 cases that did vomit, the nutrient enemata were variously composed of water alone or of mixtures of water, beef tea, peptonized milk, eggs, coffee, and nutrient suppositories with, in a few cases, small quantities of common salt, which has been shown experimentally to set up antiperistalsis; but identically constituted enemata were given in the 70 other cases that did not vomit while on rectal feeding. Still, there does seem to be a certain connexion between the administration of enemata and the occurrence of nausea or nausea and vomiting; no exact figures can be given, but retching is provoked by enemata in quite a fair proportion of rectally fed patients, and in a few of them goes on to actual vomiting.

Little information can be gathered by the examination of the vomited material: as a rule it is greenish or "bilious," mucous, and acid to litmus paper, and in some cases it contains free hydrochloric acid. The presence of bile shows that reversed peristalsis has occurred, and proves that relaxation of the pyloric sphincter can take place in spite of the gastric irritation which must result from the ulceration of the stomach wall. The explanation of this relaxation of the pyloric sphincter and of antiperistalsis is not clear; but it is not unreasonable to suppose that when an irritable stomach

is invaded by bile-containing matter from the duodenum, it hastens to relieve itself of such abnormal contents through the œsophagus. The fact that free hydrochloric acid may, as would be expected, be present in the stomach contents, makes it highly improbable that the vomiting is due to excessive microbic accumulation and activity in the stomach, such as might result from stagnation of mucus, etc., in a quiescent viscus.

To recapitulate:

1. A certain proportion (27 per cent.) of patients with gastric ulcer vomit while on exclusively rectal feeding.

2. In some instances this may be due to oral infection, while in others it may possibly be the reflex result of rectal injections.

A CASE OF HERNIA OF THE BLADDER ASSOCIATED WITH AN INGUINAL HERNIA,

WITH REFERENCE TO THREE OTHER RECENT CASES.

By H. J. CURTIS, B.S.Lond., F.R.C.S.Eng.,

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THE non-recognition of the complication which forms the subject of the following paper has not infrequently led to the most disastrous results. The danger is largely due to the possibility of such an association not being constantly borne in mind during the performance of a radical cure, whether of inguinal or femoral hernia. For this reason I am induced to publish these notes and illustrations.

During the period 1898-1900, a single case of hernia of the bladder associated with an oblique inguinal hernia, as usual on the right side, occurred at University College Hospital, London. It was successfully operated on by Mr. Bilton Pollard, whom I wish at once to thank for so readily permitting me to publish not only the notes I made as Surgical Registrar, but also the diagrams (Figs. 2-5) suggested by him to illustrate the mode of occurrence of many of these associated herniae. Fig. 1, which has been very cleverly drawn, from a rough sketch I made at the operation, by Mr. Shiells, of the firm of Messrs. Bale, Sons, and Danielsson, will serve to show the appearance presented when the hernial sac was opened, the protrusion of the bladder forming a prominence, spherical in shape, bulging into the back of the sac. The notes of the case are as follows:

Clinical History.—The patient was a fat, healthy-looking boy, aged 2½ years, admitted on January 10th, 1899, into University College Hospital, under Mr. Bilton Pollard's care, for radical cure of a good-sized inguinal hernia on the right side, said to descend to the bottom of the scrotum. After admission the hernia was, on one occasion only, noticed to have entered the scrotum. On the day of the operation (January 16th) there was no hernial protrusion evident. The right external abdominal ring was large enough to admit the tip of the little finger; nothing unusual was detected in the inguinal canal. The left external ring was not enlarged.

Operation.—Under chloroform, Mr. Pollard made the usual skin incision along the line of the inguinal canal, and after slitting up the aponeurosis of the external oblique muscle, a thin-walled hernial sac was fully exposed. The small vas deferens having been isolated the hernial sac was opened and found empty, but bulging into the back of it, over its lower half or two-thirds, was seen to be a globular swelling, about seven-eighths of an inch in diameter. The sac was carefully turned off this rounded prominence, and found to be cyst-like, of a faintly pink tint, and finely striated on its surface, the appearance of muscular fibres at once suggesting a protrusion of the bladder, devoid of peritoneal covering now that it had been freed from the hernial sac. Further examination showed it to be coming through the enlarged internal abdominal ring. The protrusion was found to lie internal to and partly behind the neck of the hernial sac, and then, escaping from the internal ring, to have invaginated itself as a finger-like process into the back of the sac, thus accounting for the spherical prominence bulging into the posterior wall when the sac was slit open.

Further confirmation of Mr. Pollard's diagnosis was obtained on passing a sound per urethram into the bladder, and so on readily into the protrusion. On removing the sound, this protrusion could be partly drawn out of the wound. As a point of some interest, perhaps, it may be noted that a fine white fibrous band (? part of the spermatic fascia) was seen to pass across the front of the sac, ending below in the tissue covering the testicle, but not into the testicle itself. Above, this band appeared to pass into the abdomen.

Completing the account of the operation, the sac was divided below the level of the bulging apex of the bladder protrusion. This is the stage depicted in Fig. 1, the muscular fibres only being visible, of course, when the sac was reflected off the protrusion. The edges of the sac were sutured. Then, holding aside the spermatic cord and carefully depressing the bladder, so as to avoid entanglement in the stitches, Bassini's operation was performed in the usual way, five silk stitches being used to unite the back of Poupart's ligament to the conjoined tendon of the internal oblique and transversalis muscles. The spermatic cord was laid upon the new bed thus formed, which also served to safely cover in the bladder.

The divided external oblique aponeurosis was sutured with silk, and the skin incision with horsehair. The cyanide gauze dressing used was changed, two days later, for gauze and collodion, the child having soiled the original dressing with urine. The patient was discharged, with the wound soundly healed, on the twenty-second day after the operation.

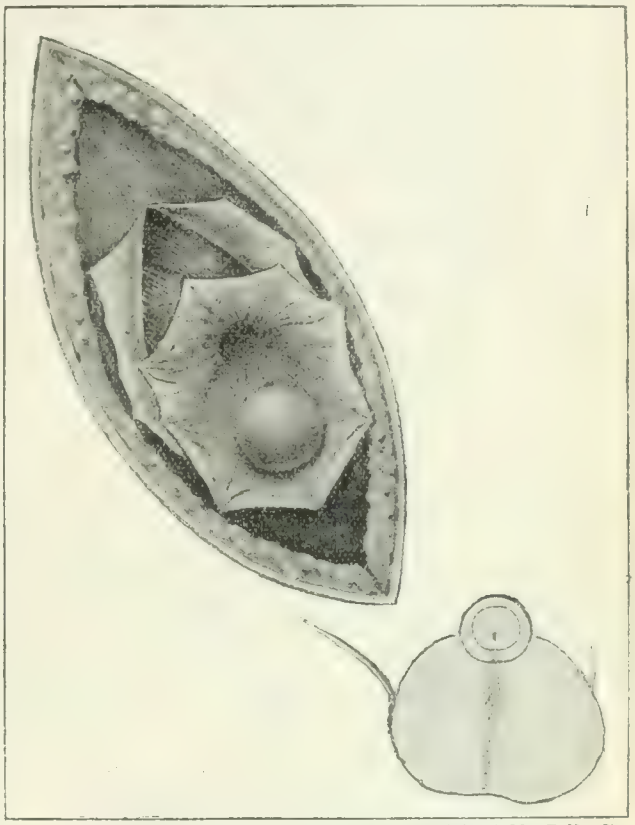


Fig. 1.—Semi-diagrammatic, prepared from a sketch at Mr. Pollard's operation for radical cure of a right inguinal hernia, into the back of the sac of which a protrusion of the bladder was found bulging. [H. J. Curtis.] For the sake of clearness, the spermatic cord and other unnecessary details have been omitted. Beneath the skin incision and fat are seen, successively, the slit up and reflected edges of the aponeurosis of the external oblique muscle, the internal oblique muscle, escaping from beneath which, through the enlarged internal abdominal ring, is the hernial sac here shown opened out after its lower extremity has been cut off. Bulging through the posterior wall of the sac is seen a rounded swelling. On reflecting the sac off this, it was found to be finely striated and evidently muscular on its surface, and to be a protrusion of bladder herniated through the internal ring, internal to and slightly beneath the true hernial sac, invaginating the posterior wall so as to produce the appearance here figured. The course of events is rendered still clearer by a reference to the series of diagrams (Figs. 2-5).

REMARKS.

Points of interest in connexion with this case are:

I. The mode of origin and the frequency of occurrence of such combined herniae.

II. The possibility of diagnosis of such an association prior to, or during, the operation for radical cure.

III. The right treatment of this condition.

IV. The result of treatment in four other cases, hitherto unrecorded.

I.—*The Mode of Origin.*

The explanation in some of these cases of associated herniae is illustrated by the diagrams (Fig. 2-5) suggested by Mr. Pollard, who has kindly allowed me to have them reproduced. In Fig. 2 the normal condition is seen, the peritoneum (*x y z*) passing off from the fundus and side of the bladder (B) on to the side of the pelvis, to cross the oval gap marked R, through which the future inguinal hernia will escape. In the case of an oblique inguinal hernia this gap (R) corresponds with the internal abdominal ring.

In Fig. 3 the escape of the hernial protrusion (*x y z*) through the internal ring is seen to have commenced.

Should the peritoneal covering of the bladder for any reason be more adherent than usual, say, at the spot (*z*), then with the descent of the inguinal hernia and deepening of the hernial pouch, there will result a dragging outward and downward of the part of the bladder to which the peritoneum is abnormally adherent. This bulging or protrusion of the bladder is seen at Fig. 4 to be just entering the internal abdominal ring. Further protrusion of the bladder, *pari passu* with the descent of the inguinal hernia, is shown in Fig. 5, the pouch of the bladder (*p*) passing through and distending the internal ring, and then invaginating the posterior wall of the hernial sac; it thus comes to appear as a prominence bulging into the hernial sac when the sac is opened from the front in performing a radical cure. Fig. 5 therefore diagramatically represents the condition found in Mr. Pollard's case, shown also in Fig. 1. The ligature (*l*), dotted in, illustrates the position in which the sac of the inguinal hernia is tied during the first part of the radical cure.

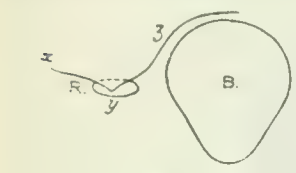


Fig. 3.

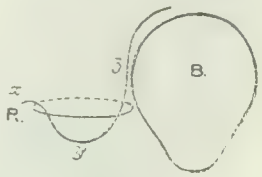


Fig. 4.

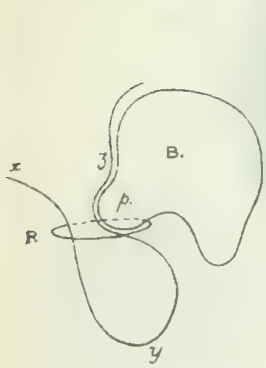
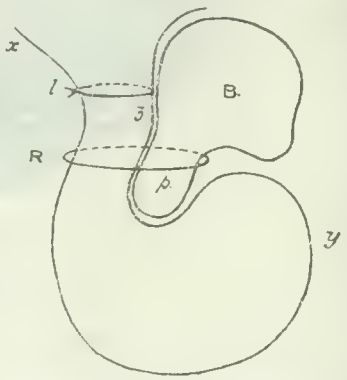


Fig. 5.



The diagrams (Figs. 2-5), suggested by Mr. Bilton Pollard, illustrate the mode of occurrence in many cases.

In addition to the above explanation, applicable both to men suffering from the various causes of chronic bladder distension and to otherwise healthy children, McAdam Eccles, in his valuable work on *Hernia*, suggests that there may be a peculiar factor at work. "The bladder is normally surrounded by, and its muscular wall often infiltrated with, fat. This perivesical fat is continuous with the adipose tissue which extends along the spermatic cord and with that which passes up into the region of the kidney. It would appear that in some examples of hernia of the bladder, there has been a drag upon the bladder wall by this fat as it lies in the inguinal canal, and so there has come to be formed a hernia of the lateral wall of the viscus in much the same way in which a ventral hernia is sometimes formed in the linea alba."

The same writer estimates that hernia of the bladder is associated with probably 1 per cent. of inguinal herniae, and attention will subsequently be called to a case in which the bladder was found in the sac of a femoral hernia.

In the case now recorded the form of protrusion is decidedly rare, the bladder being only covered with peritoneum derived from the sac of the inguinal hernia into which it protruded. The bladder has also been known to descend without a covering of peritoneum, and without bulging into the hernial sac. In the commonest variety, according to McAdam Eccles, the inner wall of the sac of a direct or an indirect inguinal hernia is partly represented by the peritoneum covering the postero-lateral aspect of the bladder, the viscus lying at the side of the sac, and not in reality forming part of its contents, as in Mr. Pollard's case.

II. *The Possibility of Diagnosis of this very Serious Complication of an Inguinal Hernia either before or during the Operation.*

In the majority of instances the diagnosis is only made at the operation undertaken for radical cure. In some cases, however, a cyst-like swelling, dull on percussion, and which can be emptied by steady pressure, sometimes causing a desire to micturate, has been observed in immediate relation with the inguinal hernia. In other cases, without such additional swelling, the attention of the surgeon may be drawn by the patient to the fact that some difficulty in micturition occurs only with the descent of the inguinal hernia, not if this is kept in position by a truss.

In the first of these rare conditions confirmation of the presence of a hernia of the bladder should be sought for by observing the effect of steady pressure in reducing the size of the cyst-like swelling; and whether such swelling be present or absent, a sound should be passed per urethram into the bladder, and so on into any protrusion. In such a case the end of the instrument can be felt immediately beneath the skin.

Diagnosis before operation by means of the sound thus passed was successful in Dr. Taylor's recently recorded case, to which a brief reference will presently be made.

III.—*The Proper Treatment of such Associated Herniae.*

(*a*) When the presence of the bladder is recognized, as in the case reported, after carefully isolating from it the sac of the inguinal hernia, a radical cure, for example, by Bassini's method, should be performed as usual, gently depressing and so protecting the protrusion of the bladder by means of a spatula, during the passage of the deep stitches used to unite the deep aspects of Poupart's ligament to the conjoined tendon of the internal oblique and transversalis.

In uniting the aponeurosis of the external oblique muscle, and in closing the external abdominal ring, great care must be taken not to dip the needle too deeply, as is sometimes done in order to take up a few fibres of the internal oblique muscle, and thus bind down the weakened aponeurosis to that muscle. In doing so, it would be quite possible for a stitch, passing deeper than was intended, to enter the bladder in its unusually superficial position (see Section IV).

(*b*) If the bladder is seen to be wounded at the operation the incision must be closed by Lembert's sutures, and the radical cure proceeded with as usual, allowing, however, for deep drainage for forty-eight hours, so as to run no risk of leakage and septic peritonitis.

(*c*) Evidence of the bladder having been wounded may not be present until some time after the patient has left the operating theatre—it may be an hour or two or a day or so. Any such evidence will necessitate the immediate opening up of the wound and treatment according to general surgical principles, to prevent the occurrence of septic peritonitis.

Lockwood[1] records the following instructive cases:

1. Michel's case,[2] in which the accident was recognized by the passage of blood with the urine. Thirty hours after the operation the wound and the abdomen were opened and the bladder successfully sutured.

2. Macready, in operating upon a femoral hernia, unwittingly ligatured a bit of the wall of the bladder. No leakage occurred at first, but afterwards some urine ran from the wound, but ceased of its own accord.

3. Johnson Smith, in detaching an unusually large piece of fat from the sac of a right inguinal hernia, made an aperture into a finger-like prolongation of the bladder. The aperture, admitting the little finger, was closed with two or three silk sutures. Some months later lithotrity was successfully performed by Lockwood, two small calculi having been seen through an endoscope. No traces of silk ligature were found in the detritus.

IV.—*The Result of Treatment in Four other Cases hitherto Unrecorded.*

The gravity of this condition of hernia of the bladder in association with an inguinal hernia, especially when unrecognized because of its possibility not being borne in mind, must be obvious, and will be emphasized by the following brief reference to four other cases, one of which was successfully operated on by Mr. Pollard some years ago at the North-Eastern Hospital for Children, Hackney Road, the other three being operated on within about the last two years elsewhere by other surgeons, and dying from septic peritonitis.

In one case the protrusion of the bladder was excised in mistake for the hernial sac.

In one case the protrusion of the bladder was excised.

In the fourth case stitches used to close the hernia wound were passed too deeply, and were found only at the necropsy to have caught up the bladder, which was recognized at the operation, but was concealed, rightly, during the passage of the sutures.

[After the present paper had been written the record of a very interesting successful case, by Dr. E. C. Taylor, appeared in the *Lancet* for June 6th, 1903.]

What has been said will serve to point the moral that unrelaxed vigilance must be observed in every case, and during every stage, of a radical cure of hernia, whether inguinal or femoral, the bladder, as already stated, being occasionally found in the sac of a femoral hernia.

REFERENCES.

[1] *The Radical Cure of Hernia*, etc., 1898. [2] *Med.-Chir. Trans.*, 1894, vol. lxxvii.

THE NECESSITY OF SHORTENING LARGE NERVES WHEN AMPUTATING.

By WALTER G. SPENCER.
Surgeon to the Westminster Hospital.

IT is usual after tying the vessels, to draw out the large nerves from the surface of the stump and cut off a piece. The following brief notes of cases which have been under me in the Westminster Hospital show that when this procedure has been omitted, there has been an indefinite delay to the patient's recovery. The patient has been hindered from wearing an artificial limb and from returning to work, has had continuous pain in the stump, and has had to submit to minor operations and finally to a resection of the affected nerves.

Amputation is done nowadays only as a last resource, and the patient's condition is generally bad. Therefore, haste is essential, yet the minute or two required for shortening large nerves is indispensable.

In some of the cases described below the flaps were doubtless in a bruised condition owing to the accident, or had beforehand been undermined by suppuration, so that healing by first intention could not be obtained. Nevertheless, all the cases at length definitely healed, and when seen, no case showed a pointed or ulcerated stump. The whole of the chronic trouble was connected with the nerves. Besides the primary amputation scar, all the cases presented several secondary scars, of which the patients could not give an entirely clear account. Some may have been the result of making counter openings, or for removing fragments of bone, or have followed ulceration and sloughing. But others, according to the patients, were made to relieve the pain, presumably attempts to dissect out the ends of the nerves. If so, these operations had failed from being too limited. In all the cases it was clearly necessary to expose the nerves well above the mass of scar tissue in which they were most intimately involved.

CASE I.—A man, aged 54, had had a Chopart's amputation done for a crushed foot two years before. Healing was delayed until two fragments of bone escaped. He had not been able to put the foot to the ground. The stump was extended on the leg, the main scar and several small scars were excessively tender. A Syme's amputation was done and the nerves well shortened. In the stump the posterior tibial nerve and its branches were enlarged and matted together in the scar tissue. Later on I saw the man walking well with an artificial foot.

CASE II.—A young man was playing football when he fractured his patella. The patella was wired, the knee-joint suppurated, and pus extended up into the thigh. The thigh was amputated about the middle, and subsequently the bone was resected. When first seen the man was highly excitable; attempts to handle the stump sent him off in painful convulsions. One could see the main and several secondary puckered scars. I resected the sciatic nerve at the lower border of the gluteus, and dissected its large bulbous end out of the scar. The man's nervous symptoms disappeared, the stump could be freely handled, and an artificial limb could be worn, although I am afraid that it was not of much assistance owing to the shortness of the stump.

CASE III.—A man was shot through the ham and developed a popliteal aneurysm, for which, about ten days after the injury, the popliteal artery was ligatured in the upper part of its course. Gangrene followed, and the thigh was amputated through the lower third. Very shortly after healing he was supplied with an artificial limb. Having been a very muscular man the stump wasted, so that on admission he was wearing full-length trousers doubled up and wrapped round the stump within the excessively large bucket of the artificial limb. This may have aided in the development of the nerve end-bulb, for the scar had become gradually painful, and the pain had spread up the sciatic nerve. About 4 in. of the sciatic nerve was resected; a large bulbous end was densely connected with the amputation scar. After waiting six months the man was refitted with an artificial limb which he could use well.

CASE IV.—A farm labourer, aged 64, had had an amputation through the middle of the right arm three years before. The knives of a chaff-cutter had sliced off the hand and forearm up to the elbow, and the rollers had bruised the arm. The bone was afterwards resected. The stump had been throughout painful, and latterly attacks of pain seemed to spread from the stump across the chest at the level of the second and third intercostal spaces. The stump presented secondary scars besides the main one, the soft parts were rather in excess and oedematous. The whole was very tender. There was no tenderness above the clavicle. An incision was made along the anterior axillary border, the axillary artery and vein well separated and ligatured, and then the three cords of the brachial plexus were resected just below the clavicle. Tracing them downwards, they ended in a mass of scar tissue, but were quite free from the bone, and all was removed by an oval incision. After healing the stump was painless, and there was no tenderness above the clavicle. But he continued to have paroxysms of pain in the chest, which were relieved by inhalations of nitrite of amyl. The patient had a high pulse tension, and his arteries were tortuous, but not specially so, not more than might be expected in a man of his age and class. There was nothing to be found abnormal in his heart. These attacks were regarded as angina pectoris. As to their connexion with reflex irritation from the stump or with ascending neuritis I remain doubtful.

CASE V.—A girl, aged 19, had injured her knee when about a year old, and eighteen months later an amputation through the upper third of the leg was done. Subsequently, she said, eight further operations were done, and there were numerous small scars on the stump, one in particular was over the course of the sciatic nerve in the lower third of the thigh. The stump had always remained painful, and she had got about on a kneeling pin. I made a Stephen Smith's amputation through the knee-joint, and followed up the sciatic nerve to the middle of the thigh, where it was resected. If the highest scar above mentioned was made in order to expose and divide the sciatic nerve, then the nerve had completely reunited, but was surrounded by fibrous tissue adherent to the scar. Following the nerve down, the external and internal popliteal nerves were traced into the scar tissue, the external popliteal ended in a large bulb about the level of the head of the fibula, and was closely adherent to the primary amputation scar, the internal popliteal nerve ran into a mass of scar tissue continuous with some of the secondary scars.

CASE VI.—A man, aged 20, had a Symes's amputation done for a foot crushed on the railroad about nine months ago. After some ulceration definite healing occurred at the end of fourteen weeks from the operation. The stump had remained painful, and it was impossible to bear weight on it. Besides the main scar, there was a bluish irregular scar from ulceration of the heel flap. Tenderness was felt in the course of the posterior tibial nerve as high as the middle of the leg and up the anterior tibial for 2 in. After amputating through the lower third of the leg by lateral flaps, I shortened the posterior tibial as high as the middle of the leg, and dragged out the anterior tibial for 2 in. In the part removed the much enlarged posterior tibial could be followed down into a mass of scar tissue attached to the scar at its inner end, where it formed a large bulb. On the anterior tibial was a small bulb, and this adhered both to the scar and to the lower edge of the tibia.

The result in Cases V and VI is good, in both a useful painless stump.

BRACHIAL NEURALGIA.

By ROBERT M. SIMON, M.D., F.R.C.P.,
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Up to within the last few years I have never seen or heard of a case of this description, but, since a personal experience, I have met with some half-dozen cases, though I have been unable to find in any book anything like an adequate description of the disease. Neuralgic pains affecting some of the branches of the brachial plexus are sufficiently common in aneurysm, cancerous growths in the thorax or axilla, and in aortic disease; but brachial neuralgia not symptomatic of these causes is a rare condition, and one of such extremely painful nature as to demand more than the very perfunctory attention it has received. It is questionable, however, if the term "neuralgia" is a proper one to employ, for the majority of these cases are not cases of neuralgia, but rather of perineuritis and secondary pain. The brachial plexus is derived from the four lower cervical and the greater part of the first dorsal nerves, and occupies a position amongst the muscles of the lower part of the neck and the upper part of the arm which renders it especially liable to suffer from injury to these muscles or to the fibrous tissue which surrounds them, and in all my cases, without exception, there has been history of some such injury. According to the textbooks, brachial neuralgia may occur in the course of ill-health, especially when associated with a rheumatic or gouty tendency; but I have been unable in my own experience or on inquiry from others to learn of such a case. It is quite possible that a depressed condition of health may predispose to its occurrence, but some violence is always necessary to its development.

CASE I.

An intimate friend of my own—a doctor—who had been much overworked and was in consequence in a bad state of health, became conscious, after playing rounders with some children, of a slight amount of pain near the bicipital groove of the humerus; the pain was not very

severe of its kind, though greatly increased by exertion, but he found an increasing difficulty in such actions as taking off his coat or lifting his arm to brush his hair. It was associated with marked tenderness over the acromion and some tingling down the arm extending along the course of the ulnar nerve to the fingers: the pain gradually became intolerable, and ultimately so exquisite that he could not bear the pressure of his clothes or any pressure such as that induced by movement in bed, and finally so great that he was unable to lie down, and for a fortnight had to get what sleep he could in an arm chair. For three weeks he was unable to lift up his arm or to put on a shirt; any attempt to lift a brush —even a toothbrush—was rendered impossible by the severe pain the movement occasioned. Despite the absence of fever, his health suffered greatly from the continued pain, and he became really ill. The muscles of the arm supplied by the affected nerves wasted rapidly. The pain was specially referred to the bicipital groove and to the acromial process, though a good deal was felt along the ulnar nerve. No treatment seemed to produce any effect, and relief was only obtained in a moderate degree by the use of antifebrin in 10-gr. doses, and by the local application of menthol and chloral dissolved in rectified spirits of wine. In about a month the pain gradually subsided, leaving the patient with a much-wasted arm, and in a state of general debility. During the period of acute pain, leeches and blisters and hypodermic injections of morphine had been used, but except for very transitory relief from the opium without effect.

This case is typical, though the worst of the kind I have seen. From the chronicity of the pain, from its obstinacy and the absence of intermittency, and from the great local tenderness, it would seem that we had to deal not with a neuralgic condition but with perineuritis and pressure on the nerve, either from the perineuritis or from some inflammatory condition of the sheath of the muscles adjacent to the nerve trunks. The recovery when the pain subsided was quick, and within a month the muscles had regained their volume and power.

Case II.

A woman, aged about 45, fell upon her back from a tramcar which started as she was stepping from it. She was partially stunned, but quickly recovered, and beyond slight pain in the back was unconscious of having sustained any injury. In about a week she began to suffer from pain in both arms, along the distribution of the brachial plexus, and some tenderness on pressure about both shoulders. This was followed by increasing pain and tenderness, especially on movement of the arms, and great loss of power in both hands and arms, and some wasting of muscles. It was thought that she had sustained some injury to the spinal cord, and as she made a claim for compensation against the tramway company I was asked to see her and report. As I was satisfied that there had been simply bruising of the muscles in the fall, and the nervous symptoms were due to secondary perineuritis and pressure upon the branches of the brachial plexus on both sides, I gave a good prognosis, which was justified by her rapid improvement under no other treatment than that of rest.

Case III.

About the same time I saw a lady who complained of similar unilateral symptoms due to a strain on the muscles of the arms and neck from lifting heavy weights. This case seems to me to be of precisely similar nature to the others I have recorded; and after a prolonged period of rest, during which no other treatment than that for the relief of pain was attempted, she completely recovered.

These cases cannot, I think, be said to justify the diagnosis of brachial neuralgia, but were clearly traumatic in their origin, and associated with definite pressure upon the branches of the brachial plexus. The other cases I have seen were similar in their origin and their symptomatology, and clearly not due to neuralgia dependent upon constitutional condition, but without exception due to pressure upon the nerves from muscular or nerve bruising.

It must be admitted from the report of these cases that the exclusion of neuralgia as a cause is only an assumption, and has not been demonstrated by positive observation; but in support of this theory may be adduced a variety of cases of sciatica.

Some years ago Sir J. Fayrer recorded a case of sciatica which had obstinately resisted all treatment until he punctured a swelling over the nerve and between it and its sheath; fluid was evacuated with immediate and complete removal of pain. I published in the *Birmingham Medical Review*, about ten years ago, a case of sciatica that had not been relieved by even heroic doses of morphine, but was speedily and effectually cured by free leeching over the most tender spot. I have treated many cases since in the same way, where I have thought the pain was due to pressure within the nerve sheath, and always with great benefit. One of these had been sent to me with the idea that it was a case of aneurysm of the brachial artery. The patient suffered from diabetes, and the tumour proved to be a collection of fluid in the sheath of the ulnar nerve. Its removal was followed by complete recovery from pain.

These cases are so analogous in their clinical feature to those so-called cases of brachial neuralgia that it has seemed a fair assumption to regard these latter as instances, not of neuralgia, but of pain produced by inflammatory changes either in the nerve sheaths or in the muscular tissue adjacent to them.

HISTORY OF A CASE OF CEREBRAL TUMOUR EIGHT AND A-HALF YEARS AFTER REMOVAL.

By THOMAS OLIVER, M.D., LL.D., F.R.C.P.,
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It is so very seldom there is afforded the opportunity of reporting on the health of a patient eight and a-half years after the removal of a cerebral tumour by surgical operation that, in justice to the memory of my deceased colleague, the late Mr. Williamson, who performed the operation, and, conjointly with myself, recorded the case in the British Medical Journal for November 20th, 1898, as well as in the interests of medicine and cerebral surgery, I gladly place before the profession a short statement of phenomena presented by the patient to-day. Mr. Williamson removed by the surgical methods usual in these cases an angioma from the motor areas of the left side of the brain on November 14th, 1894.

The patient, a female, aged 23, who was a domestic servant and unmarried was admitted into the Royal Infirmary under my care on account of complete paralysis of the right hand and arm, paresis of the lower half of right face, incomplete paralysis of the right leg, headache and sickness. These had developed after an epileptiform seizure which, along with such other symptoms as headache, etc., led me to diagnose a cerebral tumour of the left motor areas of the brain. For a few days after the operation just mentioned patient seemed drowsy and she took no interest in her surroundings. When she came to herself it was noticed that she had lost her power of speech. She could say "yes" and "no;" often, however, letting one of these two words slip out incorrectly, a mistake of which she was at once aware and did her best to rectify. Nine days after the operation she could move the right leg and lift the right arm to her face. By degrees the power of the right arm improved, but her stock of words was limited to "yes" and "no." Later on she could pick out with her left hand the letters of the alphabet properly and reproduce them when asked to do so, showing that there was neither word blindness nor word deafness. She understood everything that was said to her, but she could not repeat words. Eight weeks after the operation when under the influence of emotion and when singing was going on in the ward she joined in the hymn and continued to sing it along with the other patients. For three months after the operation several attempts were made to educate her into the use of a larger number of words but without any immediate result. It was in February, 1895, that she began to use the left hand regularly in the act of printing and writing letters. As she had quite recovered from the dangers incidental to the operation the patient now left the infirmary.

In the month of May, 1895, I casually saw her, and while I found that she had considerably improved in walking, she could still only utter the words "yes" and "no," and I was informed that she had had an epileptiform seizure on the occasion of a recent menstrual period.

When Mr. Williamson and I published the account of her case in the British Medical Journal four and a-half years ago, we made the remark that, apart from coexisting sarcoma, an angioma of the brain pure and simple was a rare form of cerebral growth, but the lapse of time—more than eight years—since the operation has quite justified that remark, and confirmed the microscopical diagnosis then made. Stress was also laid at that time upon the loss of speech or aphemia being entirely motor, and as being in all probability the consequence of the operation. Mr. Williamson was obliged on account of the ramifications of the tumour and the absence of a limiting membrane to remove a larger amount of healthy brain tissue than he otherwise would. It was thus that either the greater portion of the cortical centre for speech was in a sense accidentally removed, or that the communicating paths between it and the motor articulation centres in the bulb were divided. It may be that the motor speech centre was not entirely destroyed, as was shown by the readiness with which the patient could use the word "yes" and "no" shortly after the operation, although usually in a jerky manner, and often wrongly; or the use of these words may have been a consequence of overflow into the uneducated centre in the right side of the brain, and were the result of impulses escaping from them. I lost sight of this patient, as she had removed to the neighbourhood of Berwick-on-Tweed, until September 28th, 1901, when she came to see me at the Infirmary.*

* I saw the patient's sister in November, 1902, and was informed that the subject of these notes was in excellent health.

I found her in a remarkably good state of health generally; she was much stouter and very cheerful. When she left the infirmary in February, 1902, she could only use affirmatives and negatives. It was several months after this before she could utter the words "father" and "mother." When I saw her in September, 1901, she was then able to make use of a very large number of words. She could name any object that was presented to her, and she had no difficulty in the employment of proper names. She had an excellent memory and could repeat nearly all that was said to her. She read a good deal, read loudly correctly, and she wrote pretty well. Her difficulty with words was mostly observable when she attempted to carry on a conversation or tried to make up a sentence. She was like a child who was learning to speak; she could supply all the nouns and many adjectives, but could not put in the verbs. The sentences therefore had to be filled up by those with whom she was conversing. In talking of the work which she did in the house she would, in answer to my inquiries, use such words as "floor," "beds," "clothes," etc., meaning by these that she scrubbed the floors, made the beds, and washed the clothes, etc. She travelled by herself on the railway, as she could ask for a ticket for the particular station she was going to, which she named readily. In testing her with numerals she counted quickly up to twenty, and could have gone on further. Occasionally there was quite a noticeable delay in reply to questions. Counting backwards was impossible to her. When asked what numeral came after 6 she had to begin enumerating from 1 before she could answer. She wrote her name for me on paper with pen and ink. This she did with her left hand. The writing, I may say, compared most favourably with that executed by the right hand of other healthy women of her own age and in her own rank of life.

It is fully six years ago since she began to write with her left hand. There was just the slightest paresis of the lower half of the right face. She walked well, but dragged and swung the right foot. The fingers of the right hand were usually kept firmly flexed upon the palm. She could at will loosen them, but in sleep they relaxed of themselves. She could raise the arm to any ordinary height, and had no difficulty in undertaking common household duties. She could lift and carry by the right hand such things as a moderately full kettle, but she did not attempt to do work with this hand of such a risky nature as lifting a kettle off or on to the fire. For these she used the left hand. There was a well-marked knee-jerk, but ankle clonus was hardly obtainable. The limbs on the right side, in consequence of being less employed than formerly, and of having their spinal centres no longer so fully influenced by the higher or cortical centres, showed a very slight loss of flesh. The right arm measured 10½ in. in circumference, compared with the left 10⅝ in., and the right calf 14½ in., compared with the left 15 in. Her eyesight is good. On ophthalmoscopic examination the discs were seen to be very pale, and the borders well defined and even. When asked if she ever had headache she replied in the negative, but on tapping with the point of the finger tips the posterior part of the upper border of the wound in the cranium that was made at the time of the operation slight pain was experienced. She was never sick. Appetite was good. Menses had been regular for the last four years. It appeared that, with few exceptions, she did not menstruate for three years after the operation. Since her menstruation has become re-established, she had had no convulsive seizures. It was noticed, particularly when patient was sitting, that her head was kept gently drawn to the right, so that her eyes looked outwards over the right shoulder. The right half of the face was slightly flaccid; there was a little puckering of the left angle of the mouth, and the tongue was very distinctly protruded to the right. The urine was free from albumen and sugar, and her bowels were regular.

There is still a considerable loss of power in the right hand and forearm, especially of the smaller muscles concerned in finer movements. The fingers are firmly flexed upon the palm of the hand, but this, along with the well marked wrist and knee-jerk, was present before the operation, and is explained by the descending degeneration caused partly by the tumour itself, and subsequently by the operation having destroyed the cortical centres of the muscles.

Although the power of speech has not been quite regained, yet the extent to which it has been recovered is very considerable. This recovery may be due to improved nutrition of the remnants of the speech centre in the left side of the brain that escaped the stroke of the scalpel at the time of the operation, or it may be that the right cerebral hemisphere has undertaken the function of speech through education, an assumption to which patient by having cultivated the use of the left hand in writing may have contributed.

THE VALUE OF LUMBAR PUNCTURE IN GENERAL PRACTICE.

By HERBERT RHODES, M.B.Lond.,
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THE following cases are placed on record to emphasize the diagnostic and therapeutic value of lumbar puncture in cases of cerebro-spinal disease.

The diagnostic value has already a well-recognized position and these cases only confirm a more or less general opinion, but the therapeutic value of this operation has not yet gained a certain place for itself in the practice of the general practitioner. It will be shown that a simple operative procedure can yield valuable results in many forms of disease associated with an increase of intracranial pressure. Not only can an obscure case and the line of treatment to be adopted be made clear, but also the most alarming and distressing symptoms be relieved.

I will detail under a few simple headings what lumbar puncture may do (1) for the patient, (2) for the practitioner.

1. What can be done for the patient?

A. Relief of pain, headache, etc.

CASE I.—A girl, aged 21, with gliosarcoma of the optic thalamus had frequent vomiting and very severe pain in her head, which no drug more than partially relieved. After 2 oz. of spinal fluid had been removed, she slept easily, and awoke with the pain and discomfort much more tolerable.

B. Coma is diminished, and consciousness may return after coma has been established through the increase of intracerebral pressure.

CASE II.—A child suffering from post-basal meningitis, unconscious, and with head retracted, lips blue, breathing shallow, and of the Cheyne-Stokes type, was apparently dying. After half-an-ounce of spinal fluid had been withdrawn, the patient slept and breathed easily and regularly, presenting a much less repulsive appearance. This alone was most grateful to his friends.

CASE III.—A child dying of tuberculous meningitis suddenly stopped breathing. Her face was pallid and bluish. She remained quite two minutes without taking a breath, yet after a few minims of fluid were removed she breathed again easily. The child's life after this treatment was sufficiently prolonged for it to be seen by its parents before death, which occurred some hours later.

C. Lumbar puncture may indicate the necessity or otherwise for operation.

CASE IV.—A woman, 34 years of age, was admitted to the London Temperance Hospital with a history of aural discharge (no evidence of perforation or bulging of the tympanic membranes), severe headache, rigor, a high temperature, relatively slow pulse, vomiting, and congestion of the optic discs. The presence of a cerebral abscess was discussed, and a surgeon called in. He thought there was probably a collection of pus in the brain, and was prepared to operate. Lumbar puncture was performed and purulent fluid containing staphylococci drawn off. No further operation was considered necessary. The diagnosis of purulent meningitis then made was confirmed at the necropsy two days later.

D. It has been a definite aid towards recovery. In several cases of post-basal meningitis, a child, apparently dying, has tided over the frequently-recurring crises of dyspnoea, cyanosis, associated perhaps with convulsions, and ultimately recovered when lumbar puncture has been systematically employed to reduced the excessive intracranial pressure.

CASE V.—In one case a child, admitted to the Temperance Hospital last summer, whose tuberculous cervical glands had been scraped, developed signs of meningitis, retraction of the head, vomiting, and later intense optic neuritis, Kernig's sign, etc. It was put out in the sun all day, fed very carefully, and although on several occasions its condition appeared hopeless because the breathing and pulse-frequency became so irregular and vomiting incessant; yet, after the withdrawal of some spinal fluid the child rallied, was much better for a few days, and ultimately, after between two and three months, recovered, apparently entirely.

Some four months later the baby, now 17 months old, returned to the hospital with similar symptoms of meningitis (these were quite absent during the interval), and died after six weeks. The necropsy revealed old encapsulated and quiescent tubercles, as well as the more recent infection. I believe if this child's tissues had been a little more resistant to the tubercle bacillus he would have completely recovered.

2. What can lumbar puncture do for the general practitioner?

A. It may correct or confirm a diagnosis.

CASE VI.—A child, aged 4 years, was admitted to St. Bartholomew's Hospital suffering from symptoms of meningitis, vomiting, slow pulse, temperature about 102°, delirium, head retraction, etc., Widal reaction negative. A diagnosis of tuberculous meningitis was made. Lumbar puncture failed to tap spinal fluid, showing no excess. After three weeks of fever the temperature fell to subnormal, and Widal's reaction was reported positive though feeble. The child recovered completely. Evidently a case of infantile typhoid.

Case IV also shows the value of examining the spinal fluid in a doubtful case of intracranial disease.

CASE VII.—In one patient, in whose case ulcerative endocarditis was diagnosed, cerebral symptoms developed. Bacillus coli was cultivated from the spinal fluid, the patient ultimately dying from coli-septicaemia. The site of inoculation was probably an intestinal ulcer.

Often post-basal meningitis can be early diagnosed from other forms of meningitis by the presence of Still's intracellular diplococci in the spinal fluid.

B. By rendering less intense a coma from excessive intracranial pressure, it obviates the necessity of nasal feeding and other such tedious, and often dangerous, nursing pro-

cedures. On many occasions I have noticed that after a lumbar puncture and the withdrawal of a small amount of fluid the patient has been able to drink naturally or suck a bottle, although previously nourishment had to be introduced by a tube through the nose.

The operation is practically unattended with risk so long as it is carefully performed and rigid asepsis ensured. It is rarely at all painful. Almost always some good results. I do the operation with a boiled glass syringe and needle, and sterilize the spot of skin selected with a drop of pure carbolic acid. The barrel of the syringe should be detached as soon as the subarachnoid space has been tapped, and the fluid allowed to drip from the needle into a boiled test tube.

I have to acknowledge my indebtedness to the staff of the London Temperance Hospital for their kindness in permitting me to mention these cases.

A NEW METHOD OF COUNTING THE CORPUSCLES OF THE BLOOD.

BY

W. MERSH STRONG, M.A., M.D.Cantab., and C. G. SELIGMANN, M.B., M.R.C.P.Lond., Late Superintendent of the Clinical Laboratory, St. Thomas's Hospital.

THE following method of counting the white and red cells of the blood has been worked out primarily with a view to obtaining permanent preparations from which white and red cell counts can be made at any subsequent period. We also aimed at dispensing with the use of a ruled counting chamber, thus eliminating a considerable source of error due to variations in the depth of the cell.* We believe that our method will be of especial use in the tropics, where it may be necessary or advisable to examine the blood collected at the same time from a number of patients, and where skilled assistance is not available.

In principle our method consists in diluting a measured quantity of blood with a measured quantity of a fixing solution with which there is combined a suitable stain. After a few minutes, to allow of fixing and sufficient staining of the corpuscles, a measured drop of the mixture is allowed to evaporate to dryness on a slide, when a cover-glass is applied over the resultant film in the usual manner. We find balsam the best medium for mounting, and if the slides are to be kept for any length of time acid-free balsam dissolved in thiophene-free benzine should be used, as otherwise there is a tendency for the dye used for staining the white cells to become faint with age. A number of experiments were made in which various stains were tried. Many of these gave tolerable results, especially polychrome methylene blue and picronigrosin, but it was finally determined that the most satisfactory results were obtained by using solutions of methyl violet and eosin for the white and red cell counts respectively.

DETAILS OF METHOD.

The finger or lobe of the ear, cleaned in the usual manner, is pricked, and 5 c.cm. of blood sucked into a Hawksley pipette of the usual pattern. This is then blown out into a suitable vessel (we have found a small weighing bottle most convenient) containing 495 c.m. of the first diluting fluid consisting of:

Sodium chloride	0.75 gram.
Methyl violet	0.012 gr.
Formalin (commercial)	1.5 c.cm.
Distilled water to	100.0 c.cm.

This is the composition of the actual mixture used for counting the white cells, but as the practical value of our method would be greatly diminished were it frequently necessary to weigh out 0.012 gr. of methyl violet and an even smaller quantity of eosin, we proceeded to make a number of stock solutions which, when mixed in sample proportions, gave a solution of the same composition. These are the solutions of salt, formalin, and methyl violet mentioned below. As a matter of fact, we found that the actual fluids used for diluting the blood kept perfectly well for about three weeks, provided they were not exposed to light and contained neutral formalin.

The solution used as a staining diluent to count the white cells, and which corresponds in composition with the formula given above, consists of a mixture of 12.5 c.cm. of a 3 per cent. solution of NaCl, 12.5 of a 6 per cent. formalin (commercial), both in filtered distilled water, 495 c.m. of a 1.3 per cent. solution of methyl violet, the whole made up to 50 c.cm. with distilled water. A similar solution is used as a diluent for the red cell count, except that 495 c.m. of a 0.8 per cent. solution of eosin (Grübler w.g.) is substituted for the same quantity of methyl violet solution.

In practice we have given up using stock solutions, and now make use of tabloids † containing the requisite amount of dye and salt which, when dissolved in water, require only the addition of formalin. We take this opportunity of thanking Mr. Edmund White, Pharmacist to St. Thomas's Hospital for making these tabloids for us, each of which contains 0.25 gram pure sodium chloride combined with 0.004 gram methyl violet or 0.0025 gram of eosin. To make the diluent solutions all that is necessary is to dissolve one tabloid in 30 c.cm. of clean distilled water and add 0.5 c.cm. formalin, filtering the solutions so obtained through a not too large filter paper, so that the strength of the dye in solution may not be appreciably weakened by the absorbing power of the paper.

WHITE CELL COUNT.

The mixture of blood and methyl violet diluting fluid is well stirred and 5 c.mm. are drawn into a pipette and carefully blown on to a slide so as to form a drop some 10 mm. to 12 mm. in diameter. Care must be taken to avoid leaving an appreciable quantity of fluid at the end of the pipette. Another possibility is that bubbles of air may be forced into the drop while blowing it on to the slide. A little practice is all that is required to avoid this, but should it occur the slides need not be rejected unless the bubbles burst and scatter minute droplets of the mixture beyond the periphery of the main drop.



Fig. 1.—Film showing white cells deeply stained among unstained red cells. From a case with 20,640 leucocytes per c.mm. = 1,032 leucocytes in film.

Since the ordinary Hawksley 5 c.mm. pipettes are graduated to contain but not to deliver 5 c.mm., special pipettes must

* Two Zeiss slides which had been in use in the laboratory for about three years, and in which the ruled lines were everywhere perfectly clear and sharply defined, gave results which were fairly consistently 10 per cent. higher than those obtained by our method and by two new Zeiss slides. This would be accounted for if the depth had increased by only 0.01 mm.

† Messrs. Parke, Davis, and Co. have made a number of these tabloids for us which are in every way satisfactory. It is probably important that the sodium chloride used should be free from magnesium chloride on account of the hygroscopic properties of the latter. The formalin used must be neutral, and should before use have stood over $CaCO_3$ or MgO, and have been adequately filtered—that is, through two thicknesses of filter paper. Messrs. Griffin have put up for us a number of bulbs, each containing 0.5 c.cm. of formalin so prepared which have kept well. For preference the bulbs should be of non-actinic glass, and should contain but little air above the fluid. The small weighing bottles referred to above are stocked by Messrs. Allen and Hanburys.

‡ These are of the ordinary pattern, but graduated to deliver 5 c.mm. contained between a mark on the pipette's stem and its point. A pipette graduated so as to deliver 5 c.mm. when the meniscus of contained fluid passes from one mark on its stem to another seems to offer certain advantages, and we are experimenting in this direction.

be used or a correction applied. Special pipettes have been made for us by Mr. Hawksley, and these no doubt should be used for preference, but as the result of a large number of calibrations done by one of us (W.M.S.), we find that for all practical purposes it is sufficient if we made a delivery mark on the Hawksley 5 c.mm. pipette, such that the total new length of the graduated part of the tube becomes one-sixteenth greater than its length when graduated in the ordinary way to contain 5 c.mm. This increase in length probably varies a little with pipettes of different lengths; but in the case of a pipette of ordinary length of from 5 to 6 cm. from point to containing mark, one-sixteenth is an allowance quite accurate enough.

The actual count of the white cells is done with ⅛ in. objective. On examining the film consisting of a dried drop of the mixture of blood and diluent already described, red corpuscles are seen plentifully distributed all over the preparation. Among these the white cells form fairly conspicuous objects stained of a violet-blue colour and easily differentiated from the red cells among which they lie (Fig. 1).

Crystals of salt will be seen scattered throughout the preparation.§ At the edges of the drop the crystals are more numerous, and generally there is a slight deposit of dye producing a coloured edge. Here also the red corpuscles may be slightly stained.

A lightly stained red cell is to be distinguished from a white cell by its concentric staining and especially by its non-refractive appearance. Even if a red cell is deeply stained it differs in tint and appearance from a leucocyte, so that usually there is no difficulty in determining whether a given corpuscle is a stained red or white cell.

In a satisfactory slide there should be no, or at least no appreciable number of, stained red cells. If the mixed formalin and methyl violet stand for some time exposed to light the red cells readily begin to stain, doubtless owing to the formalin being partly oxidized to formic acid: and if the blood diluted with the methyl-violet solution be allowed to stand for some hours the red cells tend to stain. We have, however, obtained quite countable slides when the mixed blood and diluent have stood as much as two days before drying a drop of the mixture on a slide. At the other extreme as short a time as less than five minutes has been found to give a practicable stain.

For the actual count of the corpuscles an ordinary eyepiece with the usual circular diaphragm may be used, but an oblong field is more convenient. Best of all is an oblong diaphragm with two small notches cut in its opposite sides. (Fig. 2). The notches allow a doubtful corpuscle just on the edge of the field to be freely inspected. A field of this shape is readily procured by slipping a piece of paper cut to the right shape into the eyepiece of the microscope, or a blackened metal disc with a diaphragm of similar shape may be used.¶

The first thing to do is to adjust the eyepiece so that one screw of the mechanical stage moves the corpuscles parallel to the notched sides (Fig. 2, A B C and D) of the field. The



Fig 2.

slide is then moved until we see the apparent lower edge of the drop, as in Fig. 3, where A represents the first position of the field. By moving the horizontal screw of the mechanical stage the field moves to the position B, and all the (stained) white corpuscles seen are counted. This will be the most difficult line to count, since we shall be on an edge of the drop the whole time, and if the latter is not fairly circular in outline, the existence of bays in its periphery may give rise to some confusion. When the field arrives at the position B the vertical screw of the mechanical stage is turned until the field takes up the position C. By turning the horizontal

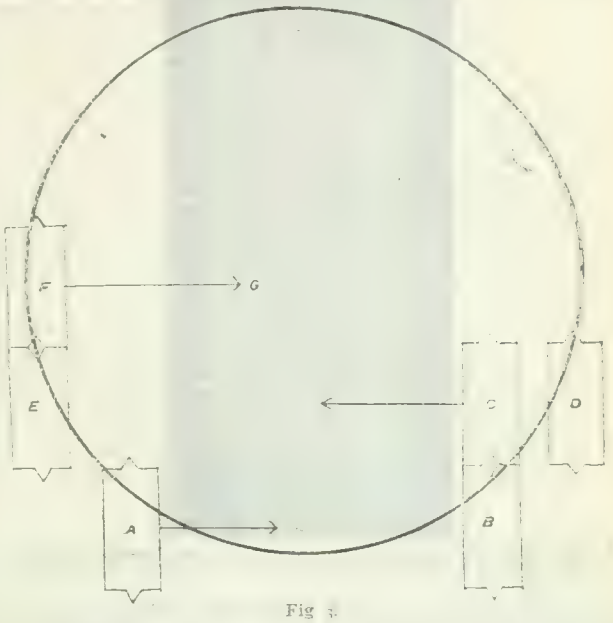


Fig 3.

screw again the field comes to the position D. During the passage of the field from B to D the corpuscles are not counted. The field is now moved from D to E across the drop and the cells seen are again counted, then from E to F without counting cells, then from F to G and so on while cells are counted. These movements are continued until the whole of the drop has been worked over. The general principle of the above manœuvre is very simple—namely, each part of the drop must be counted once and once only.

The time taken in counting a slide varies somewhat; we usually take about twenty to thirty minutes, beginners may take longer. A slide was counted satisfactorily in thirty-two minutes by a new observer although it was his first experience of this method.

In making the first dilution the blood is ordinarily diluted a hundredfold, and the total number of white cells in 5 c.mm. are counted; hence the number of white cells per c.mm. is $100 \div 5 = 20$ times the number of white cells counted. In a count of a specimen of blood containing 10,000 white cells per c.mm., we should therefore count 500 cells; and since a high degree of accuracy in blood counts is neither required nor attained by any method, a fair margin of error is permissible without introducing a really important inaccuracy in our result. For instance, if we were to leave out 50 cells in the above count, we should get as a result 9,000 white cells instead of 10,000. In actual practice the error of counting a slide is far smaller than this.

RED CELL COUNT

For this, the first (methyl violet) dilution of the blood is well stirred, and 5 c.mm. are sucked into an ordinary (containing) pipette, and blown into a weighing bottle containing 995 c.mm. of the eosin solution. The exact strength of the eosin solution is of no great importance, since within limits appreciably different strengths of eosin give equally satisfactory results: indeed, it is possible to count the red cells without any special staining at all by making the second dilution into the methyl violet solution. After a few minutes to allow the red corpuscles to stain, 5 c.mm. of this dilution of the blood are transferred to a slide with a delivery pipette in the same way and with the same precautions as in doing a white count. The drop is dried, and the film so obtained mounted under a cover-glass in Canada balsam.

When examined with a ⅛ in. objective, the drop will be found to be bounded by a ring of precipitated amorphous

§ If the dried up drop be mounted in oil of fennel with an index of refraction close to that of salt, the crystals of the latter become nearly invisible.

¶ Made for us by Messrs. Swift and Son

eosin. Salt crystals will also be seen, especially near the edges and scattered all over the drop stained red cells will be seen (Fig. 4). These are counted in the same way as the white cells.

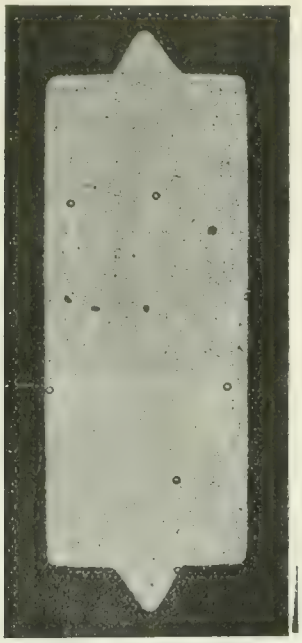


Fig. 4.—Film showing stained red cells and a salt crystal. From a case with 6,684,000 red corpuscles per c.mm. = 1,671 red corpuscles in film.

As already stated, the first (white cell) dilution made is ordinarily 1 in 100. For the second, a further dilution of 1 in 200 of this is made, so that the final dilution is 1 in 20,000. Since the total number of corpuscles in the drop, that is in 5 c.mm., are counted, the number of red cells per c.mm. is 20,000 ÷ 5 = 4,000 times the number counted on the slide. In the case of a normal red count of 5,000,000 per cm., 5,000,000 ÷ 4,000 = 1,250 red cells would be counted, and even were an error of 50 cells made, the result would be out by only 200,000 cells per c.mm. The error of counting with ordinary care is never so large as this.

During the red count violet-stained cells are at times seen which without doubt are leucocytes. But we believe that, as a rule, the latter are stained red and are usually counted in with the red cells. In an ordinary count this is of little importance, since the number of white cells is incomparably smaller than that of the red. In a leukaemic count this might not be so. In this case we should count the total number of cells, both red and white, when counting the second dilution. Multiplying this by 4,000, we should get the total cells, that is, both red and white, in the blood, and then we should subtract the number of white cells per c.mm. as previously found. The result would be the number of red cells per c.mm.

Applicability of the New Method to Very High and Very Low Blood Counts.

While a dilution of 1 in 100 is usually convenient for the white count, yet occasionally—as in leukaemic cases—it may be desirable to further dilute the blood. We have done this by means of a pipette graduated to contain 55 c.mm. Then, on mixing 55 c.mm. of the first solution (1 in 100) with 495 cm. of methyl violet solution, we obtain a total dilution of 1 in 1,000, which should enable the leucocytes of any blood to be counted, however numerous they were.

With the ordinary first dilution of 1 in 100 we have counted as few as 1,300 white cells per c.mm., with a total count on the slide of 65 cells, and at the other extreme as many as 22,240 white cells per c.mm., with 1,120 cells on the slide. A 40,000 count would give 2,000 cells per slide. For any number above this it would probably be convenient to further dilute the blood ten times as above suggested. It should then be possible to conveniently count any number from about 20,000 to 400,000 white cells per c.mm. In the first instance 100, in the second 2,000 cells would be counted in the film. With the ordinary red dilution of 1 in 20,000 we have counted as many as 7,306,000 red cells per c.mm., and as few as 840,000 cells per c.mm. In the first case 1,829 cells were counted per slide, in the second case 210. Hence the above dilution appears to be convenient for all red counts, though for low counts a second dilution of 1 in 50 (instead of 1 in 200) may lead to more accurate counting.

Comparison of Results obtained by the New Method and with the Zeiss Haemocytometer.

It remains for us to demonstrate the accuracy of the new method. With this end in view we cite a number of white cell counts made on the same specimen of diluted blood by three different methods.

Table I.

No.	Count by Square Field A.	Count of Total Number in 5 c.mm. on a Zeiss Slide B.	Count of Total Number in 5 c.mm. Dried on Ordinary Slide (New Method) C.	Comparison.		
				A—B.	A—C.	B—C.
1	5,800	6,000	5,560	−200	+240	+440
2	3,750	3,560	3,880	+190	−130	−320
3	1,710	1,540	1,480	+170	+230	+ 60
4	7,350	7,340	7,320	+ 10	+ 30	+ 20
5	6,930	6,540	6,400	+390	+530	+140

The numbers in Column A were obtained as follows: 5 c.mm. of a $\frac{1}{100}$ dilution of the blood was taken in a 5 c.mm. delivery pipette, and blown into the counting chamber of a Zeiss haemocytometer. The 5 c.mm. can just be contained in the chamber of this apparatus when the special cover-glass is pressed on. The cover-glass was applied in the usual way, and care taken to obtain good Newton's rings. Failing good rings, a fresh specimen was mounted. Ehrlich's adjustable square eyepiece was used, and the size of the field so adjusted as to contain sixteen of the small ruled squares on the Zeiss slide. This square field was moved over as much as possible of the whole slide, while the number of white cells in each field and the number of fields traversed were noted. Then, knowing the dilution of the blood, the area of a small square ($\frac{1}{400}$ square millimetre), the depth of the cell ($\frac{1}{10}$ mm.), the number of fields and the total number of white cells counted, the number of white cells per cubic millimetre in the blood is readily calculated. The numbers so obtained are given in Column A.

Next, the total number of white cells in the whole of the 5 c.mm. on the slide was counted by going over the whole of the Zeiss slide. Then since the dilution of the blood is 1 in 100, and the total number of white cells in 5 c.mm. of this dilution is known, the number of leucocytes per c.mm. is 100 ÷ 5 = 20 times the total number of white cells enumerated. The number of white cells per c.mm. obtained in this way is given in Column B.

Five cubic millimetre drops of the same dilution were taken in a delivery pipette, blown on to ordinary slides, dried, and mounted in Canada balsam. One slide was selected, and the total number white cells in it were then counted as previously described, and the number per cubic millimetre was calculated. The results so obtained are given in Column C.

We wish to lay stress on the fact that these, as well as the red cell counts given later, are consecutive not selected counts.

The general agreement of Column A and B may be taken to mean that the depth of the cell and graduation of the pipette are accurate, or, at least, that any errors present nearly balance each other. The general agreement of Columns B and C shows that appreciably the same number of corpuscles are counted in a 5 mm. drop, whether the drop is dried or not. If any appreciable numbers of white cells lost their stain on drying or became disintegrated, the numbers in Column C would be appreciably smaller than those in Column B. Considering numbers 1, 3, 4, and 5, it will be noticed that Column C is always less than Column B. On working it out this amount is, however, only 3 per cent. Taking the algebraical percentage value of B—C for all five lines, Column B works out only 1.4 per cent. less than Column C.

This, we consider, conclusively proves that no appreciable loss of corpuscles takes place on drying the slide. The average dried slide which we obtain now is moreover distinctly better than the slides counted here, since we now avoid the effect of light on the mixed methyl violet and formalin solution.

With a view to demonstrate the accuracy of the new method for the red cell count, we cite five consecutive counts of different specimens of blood.

Table II gives a comparison between counts by the new method and by the Zeiss haemocytometer method.

TABLE II.

No.	Count on Zeiss Slide.	Count of Dried Drop.	A–B.	Percentage of Error.
	A.	B.		
1	6,825,000	6,712,000	+113,000	+1.7
2	2,430,000	2,406,000	+ 24,000	+1.0
3	4,662,000	4,728,000	— 66,000	—1.4
4	3,737,000	3,584,000	+153,000	+4.9
5	4,450,000	4,324,000	+126,000	+2.9

In Column A are the number of red cells per c.mm. as found by counting in the ordinary way on a Zeiss slide. A dilution of 1 in 200 in the methyl violet diluting fluid was used for this purpose, eight large squares each consisting of sixteen small squares being counted.

For column B 5 c.mm. of the first dilution were taken and mixed with 495 c.mm. of the eosin solution. This gives a final dilution of 1 in 20,000. From this dilution drops were blown on to slides from one of the specially graduated 5 c.mm. pipettes. These were dried and mounted in Canada balsam. One slide was selected and counted. Since the dilution was 1 in 20,000 and the total red cells in 5 c.mm. were counted, the total count multiplied by $20,000 \div 5 = 4,000$ gives the number of red cells per c.mm. The numbers so obtained are given in column B.

It will be seen that Columns A and B are approximately the same. On working out the difference, Column B is found on the average to be 1.1 per cent. less than A. This may be taken as proving that few or no red cells are lost while the drop is drying.

THE IODOFORM TREATMENT OF TUBERCULOUS DISEASE.

BY MIDDLETON CONNON, M.B., C.M., D.P.H.,
Medical Officer of Health, Montrose.

THE two following cases of tuberculous joint disease, successfully treated by the injection of iodoform emulsion, are reported because such treatment is still upon its trial. The success in the cases reported has been encouraging, and such as invites further application of this method of treatment. It shows, moreover, that, even in cases of longstanding mischief, good results may be looked for.

Both cases were met in private practice. The preparation of iodoform emulsion used was according to Squire's formula and the method of injection was as follows: About a drachm of the emulsion was injected every alternate day into the joint affected, through the sinus, with an ordinary glass syringe. By keeping the nozzle of the syringe firmly against the sinus opening the emulsion was allowed to act on the joint for from three to five minutes. At first pain was complained of after the injection, but this was alleviated by the subsequent injection of very weak carbolic solution to wash out the iodoform. After a fortnight, however, this was unnecessary as the pain after injection disappeared. The sinus was subsequently covered with a pad of dry double cyanide gauze, and left untouched till the next injection, that is, two days later.

CASE I.—L. A., aged 17, message girl. Nine years ago resection of the right elbow-joint was performed for tuberculous disease, following a fall on the olecranon. The joint is now stiff, but she can make good use of hand and arm.

History.—Towards the end of summer, 1898, she sprained her left foot severely, but received no skilled treatment till the end of November, when, on account of the formation of an abscess at the joint, an incision had to be made. The ankle continued discharging a large amount of pus till May 1899, when part of the fibula was removed and the joint scraped. Further scraping was carried out on two occasions in June and July.

State on Examination.—The patient came under my notice in September 1899, when there appeared very marked wasting of the foot and leg, with distinct puffiness of the ankle. On the inner side of the joint a recent scar was visible, and on the outer side a large ulcerated surface, tuberculous-looking, with a sinus at its base, which allowed the passage of a probe for 1½ in., when necrosed bone was felt. Pain was acute on attempting to flex the joint, and tenderness was elicited all round the articulation. A large amount of pus was being discharged. The general health was poor.

Treatment.—The injection of iodoform emulsion in the manner noted above was commenced in October, 1899, a dry dressing being placed on the wound. This form of treatment was carried out for two months, when the sinus and ulcerated surface were quite healed. The foot and ankle were then encased in plaster-of-paris for six weeks, and the patient allowed to go about and out by means of crutches, a patten being placed on the sound foot. After the removal of the plaster a thick-soled boot was worn, and at the present time the patient is able to go about without the aid of either crutches or sticks. The joint is stiff and the patient has a decided limp, but is free from pain and her general health is all that could be desired.

CASE II.—J. B., aged 9, a schoolboy. His mother and uncle died of acute phthisis, but he enjoyed excellent health till he was three years old.

History.—The present illness began in 1896 with indefinite symptoms of pain in both legs; he always desired, after walking a short distance, to be carried. In February, 1897, pain was complained of in the left knee-joint, which was swollen. The knee was thought to have been strained, and an ointment said to contain tar was applied. A few weeks later pain was complained of in the left hip-joint, and symptoms of morbus coxæ became evident. The lower part of the abdomen and the left leg were encased in plaster-of-paris, the patient being permitted to get about on crutches with a paten on the sound foot. At the end of ten weeks this was removed, and a Thomas's splint was worn day and night for eleven months, when it was gradually done away with and the patient allowed to go about on crutches. No pain was at this time complained of.

State on Examination.—The patient first came under my notice in February, 1899, on account of a bulging in the left groin. This was distinctly fluctuating, and on incision a large amount of pus was evacuated. A probe passed into the joint detected a large area of necrosed bone. The discharge continued for several months. The general health was very indifferent.

Treatment.—In November, 1899, as no progress was noticeable, the iodoform emulsion was injected as noted above, and was repeated on alternate days till May, 1900, when the treatment was discontinued, as the wound was quite superficial and had no communication with the joint. For six months after the healing process was completed the boy was allowed to go about on crutches and a patten. Since then, by the aid of a stick, he can walk long distances, and is a most regular attender at school. He has a decided limp, but is in excellent health, free from pain, and shows no sign of any active disease whatever.

In both cases, immediately after commencing the injection, the discharge was materially and surprisingly lessened. Both patients, moreover, began to improve in general health and to gain weight from the time of its first use. Cod-liver oil and cream were administered, and these, no doubt, materially aided the recovery of the patients. The pain at first felt on injection of the iodoform was, in all probability, due to its irritative action on the diseased tissues, the subsequent washing out with weak carbolic solution getting rid of any excess of iodoform. The fact that the patients have remained quite well for fully eighteen months is an encouragement for further use of this method.

In conclusion, it may be mentioned that in two recent cases of tuberculous cervical glands with discharge lasting for from two to four months, the injection of the emulsion rapidly stopped the discharge with the subsequent complete healing of the sinuses. Both patients were young and followed outdoor employment.

SCIENTIFIC GRANTS COMMITTEE
OF THE
British Medical Association.

REPORT LXXVI.

THE CLINICAL DIAGNOSIS AND SURGICAL TREATMENT OF TUBERCULOSIS OF THE TEMPORAL BONE,

CONSIDERED WITH REFERENCE TO THE PATHOLOGY AND MORBID ANATOMY OF THE DISEASE.

BY W. JOBSON HORNE, M.D., B.C.CANTAB., M.R.C.P.,
Surgeon to the Metropolitan Ear, Nose, and Throat Hospital; Ernest Hart Research Scholar of the British Medical Association.

TUBERCULOSIS of the ear, I venture to think, has not received the attention it deserves. The subject is beset with doubts and difficulties, and these, I trust, the discussion this evening will help to clarify. The present paper, to economize time, is given in abstract form, and does not attempt to do more than draw attention to some of the doubtful points, and to put forward theories in explanation which may elicit discussion.

In the first place, it is a question whether tuberculosis of the ear should be regarded strictly as a form of middle-ear disease in precisely the same sense as any other form of suppurative otitis, or whether it should not more properly be grouped under tuberculous disease of bone. It will be noted from the title of the paper that the more comprehensive view of the disease is for the present tentatively held.

As regards the frequency of the disease, the statistics so far published are not sufficiently uniform to allow of an opinion

being based upon them, and they present discrepancies owing to the inequality of evidence upon which diagnosis has been allowed to rest. Some observers have required positive evidence, at times too difficult to obtain, even when the disease has far progressed; whilst other observers have contented themselves with a diagnosis based upon certain clinical phenomena, which may be briefly summarized as follows: (1) Absence of pain out of all proportion to the destructive character of the disease; (2) insidious onset; (3) marked loss of hearing power; (4) extensive destruction of bone, rapid extension to labyrinth, absence of headache and dizziness; (5) progressive and destructive character, leading perhaps to facial paralysis or even severe haemorrhage; (6) absence of intracranial complications; and (7) in a particular group of cases considerable involvement of adjacent glands. These signs collectively go to make up a very strong case in favour of tuberculosis of the ear, but they all have this in common—they are only relative.

First, the absence of pain. Speaking generally, pain seldom accompanies diseases of the ear. It is, however, met with in myringitis. Those who have been fortunate in observing tuberculous disease in its earliest stages speak of it as commencing as a deposition of tubercle in the membrana tympani, unattended by pain. This absence of pain is not to be accounted for by an absence of tension, but by the absence of ordinary inflammatory phenomena. Then, again, acute middle-ear suppuration, especially in children, is commonly associated with pain, and yet in the tuberculous variety it is absent. Caries of the temporal bone in the course of its progress is commonly attended with pain, and yet there is no form of ear disease with so much destruction of bone and with so little or no pain as tuberculous disease. In one case which I had the opportunity of investigating, not only was there extensive necrosis, but a subperiosteal abscess had formed over the necrosed area; and yet it was not pain, but facial paralysis that drew attention to the ear.

I think one is therefore justified in saying that the absence of pain is not only deserving of comment, but that it cannot be entirely accounted for by the absence of ordinary physical causes. To this point I shall presently revert.

The insidious nature of the onset and progress of the disease follows upon what has been said, and I need not dwell upon this feature.

The rapid extension to the labyrinth, the absence of headache and dizziness, and the marked loss of hearing are all features of diagnostic importance.

The progressive and destructive character, with, perhaps, facial paralysis or even severe haemorrhage, makes up an important feature in the clinical diagnosis, but asserts itself too late to be of any practical utility in the clinical diagnosis.

The presence or absence of intracranial complications and the enlargement of adjacent glands I shall deal with later in discussing the differential diagnosis of the primary and secondary forms of the disease.

Here I may refer to the frequency—of course, comparatively speaking—with which the disease is secondary to pulmonary phthisis; and when I say phthisis, let me add that, in my dead-house experience, it is usually secondary to cavity formation, and not to pure miliary tubercle of the lung. I am therefore led to assume that infection in such cases is by the sputum. Observers abroad have noted that the ear infection, when it occurs secondary to phthisis, takes place not uncommonly shortly before death. In this country, in our hospital practice, we seldom have the opportunity of observing the very last stages of phthisis, as such cases go to infirmaries. But I would suggest that the bedridden condition of the subject renders the sputum more liable to remain in the neighbourhood of the Eustachian tubes, and the ear more exposed to infection; and I would mention the danger of infecting with tubercle the ear of a phthisical patient by incautious catheterizing and inflating to relieve an intercurrent aural affection. But, admitting all this, the fact remains that the suppurative disease of the middle ear occurring in a tuberculous subject is not necessarily tuberculous in nature.

The only positive proof of the disease being tuberculous is the detection of the tubercle bacillus within the affected area. Negative evidence is of no value; failure to detect the bacillus tuberculosis does not prove the disease to be non-tuberculous, nor does it disprove the possibility of it being tuberculous.

At times there is considerable difficulty in finding the bacillus, notwithstanding the presence of clinical evidence which leaves little doubt in the mind of the aurist that the disease is tuberculous both in nature and in origin. By way of illustrating this difficulty, I would refer to a case at the necropsy of which the bacillus could not be detected in any of the numerous films made from the middle ear and accessory cavities. Animal experiment was resorted to and controlled, without evidence of tubercle being obtained. The bacillus was eventually found in the external fascia and tissues, superficial to the area of necrosed bone. I need scarcely add that such a detection of evidence does not come within the range of practical otology.

The difficulty in obtaining positive proof arises from the bacilli being broken up and disintegrated in the presence of other organisms or of leucocytes, and it is important here to discuss some points in connexion with the acid-fast property of the bacillus, a property upon which we depend for our microscopic diagnosis. At first it was held by Unna and Klebs that the acid-fast property depended upon the presence of a fat in the bacillus. Aronson, in 1898, showed that the body was not a fat, but was of the nature of a wax, and that tubercle bacilli, after being treated with alcohol and ether alone, retained their acid-fast properties: whereas, if the mixture were allowed to act in the presence of hydrochloric acid, the bacilli were no longer acid-fast. This work has been confirmed by Dr. Bulloch[1] and Mr. Macleod, and to these observers I am largely indebted. It is, therefore, proved that the acid-fast property is due to the presence of a wax in the bacillus and not to a fat. For the moment I stop at the wax stage of my argument and pass to another point.

Various bacilli are met with in the ear, and the question arises whether any of these, by their sojourn in the neighbourhood of ceruminous glands, can absorb wax and become "acid-fast," and by simulating tubercle bacilli vitiate a microscopic diagnosis. Even if that were possible—and I believe it may be—it would be undesirable to refer to them as acid-fast bacilli, or to confuse them with a well-defined group, the members of which have all been cultivated, and when injected produce pseudo-tubercle, which after all is purely a histological conception, and can be produced by other than acid-fat organisms. The presence of a member of this group in a film preparation from the ear would probably be due to faulty technique in obtaining the specimen. On the other hand, a bacillus which has acquired an acid-fast property by absorption of wax from the meatus could be differentiated by culture and animal experiments. But this is a point requiring further investigation.

Now, to return to the body of the nature of wax, one of the constituents of a tubercle bacillus, and the one which gives to the bacillus that acid-fast property that is lost when the wax is broken up. When a fat is decomposed a glycerine and an acid are produced, whereas in the case of a wax another member of the alcohol series other than glycerine is liberated. The precise nature and position in the series of this alcohol has not at present been ascertained, but it apparently represents the measure of the acid-fastness of the bacillus.

I would suggest that the difficulty in staining the bacilli and the absence of pain in tuberculosis of the ear are due to one and the same cause, namely, the disintegration of the bacillus and the decomposition of its wax-like constituent, with the resulting liberation of a product tentatively called an alcohol—which produces an anaesthetic effect. Such a theory would explain not only the causation of two important clinical phenomena of the disease, but also their correlation. This absence of pain is not peculiar to tuberculosis when it affects the ear. I might instance cold abscesses of a tuberculous nature. Then, again, it is within our experience to have witnessed necropsies revealing tuberculous peritonitis, which, owing to the absence of pain, notwithstanding a matting together of intestines by adhesions, has not been suspected during life. Possibly an investigation into the nature of cerumen of the ear with reference to the points I have mentioned might not be altogether void of interest and of value.

I now pass to a brief consideration of some points which may guide us in the differentiation of a primary from a secondary infection of the ear. Primary tuberculosis is more commonly met with in children, I might almost say, from my own limited experience, exclusively, and I believe it to be of more frequent occurrence than is generally stated. Tuberculous disease may be added to an existing infection of the ear in an adult, but then that is not tuberculosis *de novo*. What has always appeared to me to be a feature of primary

infection is the enlargement of the adjacent lymphatic glands: and here enters a great problem, the part played by the lymphatics in arresting tuberculosis. The enlargement of the glands, although in a sense evidence of disease, is at the same time the outcome of a battle fought to resist disease. The lymphatics form not only the lines of defence, but also, where inefficient, the paths of general invasion, and we have to consider this when we come to deal surgically with a case of primary infection.

In secondary infection of the ear with tubercle there is comparatively, if not entirely, an absence of enlargement of the adjacent lymphatics. Why they are not affected in the secondary form I must leave for a paper by itself.

A second point in differential diagnosis between primary and secondary infection is that in the latter there is evidence of tubercle elsewhere, commonly in the lungs, and, as I have already said, with cavity formation. The tonsils and adenoids, when they play a part in the infection, I regard rather in the light of half-way houses than as primary foci.

A third point is the presence or absence of intracranial complications. It is hardly correct, without a qualifying clause, to say that tuberculous suppuration leads much less often than other forms of middle-ear suppuration to intracranial complications. Intracranial complications seldom occur in the secondary form, but in the primary form the child is not uncommonly killed by a meningitis, as part of a general blood infection.

The practical bearing which discrimination between primary and secondary infection has upon the surgical treatment—and by that I mean an attempt to eradicate the bone disease—may be briefly stated as follows:

In the primary form, when the adjacent glands are involved, let these be removed, first attacking the more distal and least affected, the intention being to cut off the spread of infection, and so localize the focus of disease to be removed at a later date.

When the disease is secondary to advanced pulmonary tuberculosis, a mastoid operation is seldom required; on the contrary, a mastoid operation is more likely to be what a tracheotomy is to laryngeal tuberculosis—the beginning of the end.

I am desirous of expressing my indebtedness and thanks to the British Medical Association, under whose auspices the research, of which this is the record of a part, is being conducted.

REFERENCE.

[1] The Morphological and Physiological Variations of the Bacillus Tuberculosis and its Relations. By William Bulloch, M.D. *Transactions* of the British Congress on Tuberculosis, vol. iii, p. 494.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

ON THE POSSIBILITY OF THE OCCURRENCE OF TRYPANOSOMIASIS IN INDIA.

WITH regard to Major Leishman's contribution under the above head in the BRITISH MEDICAL JOURNAL of May 30th, I wish to state briefly that I have noted bodies similar to those described by him in smears taken *post mortem* from enlarged spleens of patients—natives of India—said to have died of chronic malaria. I obtained them in three consecutive cases on April 9th, 23rd, and 24th, 1903.

In the first instance, I thought I had discovered the long-sought-for resting-stage form of the malarial parasite in man, but could not compare them with any analogous stages in the sporozoa. However, on again procuring the same bodies in the two other cases, I changed my views, and considered they were probably *post-mortem* degenerations of the nuclei of the splenic pulp cells.

On reading Major Leishman's paper, I at once recognized the similarity of his so-called degenerations of the trypanosomata to those found by me in the spleens of the cadavers above mentioned.

Yesterday (June 17th) I had occasion to puncture *intra vitam* the spleen of a native boy, aged 12 years, suffering from irregular pyrexia, with no malarial parasite in his peripheral blood (careful examination of stained films on four several occasions), and found identical bodies in the blood from the spleen, thus removing any doubt there was as to the products being due to *post-mortem* changes.

It is unwise to theorize on the insufficient grounds at present in hand. I hope to contribute something more definite on the subject after further and more prolonged study of these organisms. My films were stained by the Maurer-Romanowsky method. I am familiar with the appearance of the trypanosomata T. evansi, T. lewisi, and a species doubtful occurring in the blood of the common Indian squirrel (Sciurus palmarum). There was nothing resembling trypanosomata in the peripheral blood of the boy in question.

C. DONOVAN, Captain I.M.S.,
Second Physician, Government General Hospital, Madras.

A CASE OF ASCITES MOST PROBABLY CAUSED BY INFECTIVE THROMBOSIS OF THE HEPATIC VEINS.

DURING 1902 I visited five times in consultation with her medical man a female patient, aged 47. She was well nourished, and of very healthy appearance. She was married, had had two children, the youngest aged 11 years, and two miscarriages since, the last one seven years ago. Her family history was good.

My first visit was March 3rd, 1902, when I was told that she had been in bed for two months before Christmas with cellulitis of one arm. This was dealt with by an operating surgeon, and 14 incisions were made, but no pus came out. The surgeon thought the cause was partly lymphangitis and partly thrombosis. The arm was completely restored. The patient said that she had had white leg at least once after a confinement.

At Christmas there was a sense of fullness in the abdomen. She had not menstruated since the middle of October, having been quite regular up till then. Ascites was recognized a week or so before my first visit, and was attended with pain and tenderness in both iliac regions. The ascites increased, and began to interfere with the breathing; there was also some slight swelling of the ankles. I could not feel the liver or spleen, and there were no superficial abdominal veins to be seen. By a process of exclusion I narrowed down my diagnosis to infective thrombosis of the hepatic veins. There was no likelihood at all of syphilis notwithstanding the miscarriages, although there had been a tendency to thrombosis of other veins in former illnesses. More than once we thought we must recommend paracentesis, but by rest and elaterium, which she stood well, and by inducing profuse diaphoresis and diuresis the patient after three or four months made a complete recovery. It is possible that the climacteric was intimately connected with the *fons et origo mali*.

HENRY WALDO, M.D., M.R.C.P.,
Physician to the Bristol Royal Infirmary.

CASE OF PROLAPSUS UTERI TREATED BY PARAFFIN INJECTIONS.

THE patient, aged 69, and too feeble for a radical operation, had for the last twelve years suffered from complete prolapsus uteri. The uterus was nearly always down, even when she was in bed, and was a source of much misery. The perineum was rather less than an inch in length. Pessaries had been tried but failed to keep the prolapse up.

Operation.—May 24th, 1903. The patient was anaesthetized and placed in the lithotomy position. The method followed was that suggested by Mr. Stephen Paget (*Lancet*, May 16th, 1903). Paraffin melting at about 46° C. (115° F.) was used, and injections of about 9 c.cm. (f. ʒ iiss) each were made in several places under the mucous membrane of the lateral and posterior vaginal walls. Two or three injections were also made about the cervix. About 95 c.cm. (f. ʒ iij ʒ iij) of paraffin were used in all. A finger was kept in the rectum to guide the posterior and lateral injections: and a probe was passed into the urethra while making the more anterior injections. An ordinary antitoxin syringe was found to act well. The operation lasted about one hour and a quarter, some time being lost by the paraffin setting in the needle of the syringe.

To speak of cure at present would be, perhaps, premature, but the result has been surprisingly satisfactory. The lumen of the vagina has been very much narrowed and its walls stiffened. The uterus is now completely held up during

walking, defaecation, and even hard straining. Indeed, it is difficult to see how the uterus could come down, the bulging masses of paraffin in the vaginal walls, making apparently such an absolutely efficient support. The patient states that she has literally no discomfort.

John J. Douglas, M.D., F.R.C.P.Ed., D.P.H.
William Gream Stone, M.A., M.D.Oxon., F.R.C.S.
London, S.E.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

VICTORIA COTTAGE HOSPITAL, GUERNSEY.

CASE OF CAESAREAN SECTION.

(By E. Laurie Robinson, M.R.C.S.Eng., etc.)

History.—Mrs. de la M., married, 2-para, aged 29, when first seen on February 25th, 1903, gave the following history: About a year ago was confined, with great difficulty, by means of craniotomy. Expects to be confined again on March 1st. She is 4 ft. 5 in. in height, and very much deformed by rickets. When the knees are together the feet are crossed over each other, and the tibiae bent forward in a sharp ridge, like the keel of a ship. The following pelvic measurements were made out:

Transverse between iliac crests	9 in.
Transverse between anterior superior spines ...	9 in.
External conjugate	6½ in.
Oblique conjugate	2¾ in.
True conjugate	2 in.

Position of fetus by abdominal palpation: Head below and to the right; back forwards; placenta probably behind. Under the circumstances Caesarean section was advised and readily accepted, especially when she was told of the great chance of having a living child, and, above all, of the fact that by sterilization she would be saved from any further pregnancies. She was admitted into the hospital on February 28th, and it was arranged that even if labour had not commenced the operation should take place the next day, March 1st. In order to diminish shock as much as possible, liq. strychninae was subcutaneously injected for a few days, and just before operation a pint of chloride of sodium solution was injected into the bowel. The day before the pelvis was shaved, and the abdomen prepared in the usual way, namely, first a scrubbing with soap and water, next with ether, and then with biniodide of mercury, and finally a dressing of cyanide gauze was applied, and left on until the commencement of the operation. The vagina was well douched out with a solution of boric acid, and carefully scrubbed, especially all round the cervix uteri, with hyd. perchlor. (1 in 2,000).

Operation.—The only anaesthetic used was chloroform. Although labour had not set in on March 1st, the operation was proceeded with as had been arranged. The lower part of the body was raised on a bedbath, so as to catch most of the amniotic fluid, and it proved most useful. I was most ably assisted at the operation by Drs. Collings (the Anaesthetist), Carey, and Wild. An incision was made through the abdominal wall about 6 in. in length, commencing about 2 in. above the pubes. The uterus was quickly exposed. An assistant now pressed very firmly on each side of the uterus so as to bring it forward as far as possible. All bleeding from the wound was arrested, and a long thick strip of cyanide gauze was placed all round the edges of the incision. Following Dr. Murdoch Cameron's suggestion, a sterilized vulcanite pessary was pressed firmly on the front of the uterus at the junction of the lower and middle thirds; this acted most successfully in diminishing haemorrhage. A small incision was carefully made through the uterine tissue with a scalpel until the membranes were seen, then two fingers were passed into the uterus as a guide and the incision of about 6 in. completed very quickly with a pair of blunt pointed scissors. The membranes now bulged forward, one hand was forced through them, and the child extracted without any difficulty by dragging on a knee. The position of the fetus was exactly as had been made out before the operation. The cord was clamped in two places by Spencer Wells forceps, and divided between them. The child, which cried lustily directly it was born, was handed over to a nurse. It weighed about 7½ lb. The placenta and membranes were now carefully removed, a long pair of polypus forceps were passed down through the os, so as to make sure of its being patent, and the uterus was well swabbed out with hyd. perchlor. (1 in 2,000). The uterus contracted firmly almost at once, and was now forced well out of the abdominal cavity, and a large flat sponge passed into the cavity just above and behind it, so as to keep back the bowels. Some eight deep stitches of sterilized silk were passed into the uterine tissue, just avoiding the mucous lining, and, when they were well secured, sixteen superficial sutures were passed, in Lembert fashion, through the peritoneal covering of the uterus, so as to completely hide the deep stitches. These were also of sterilized silk. Next the woman was sterilized by removing ½ in. of each Fallopian tube. The uterus and abdominal cavity were well cleaned, and the abdominal wound closed by sixteen stitches of silkworm gut. The dressing was now applied, and she was firmly bound up, and an injection of ergotine given. She stood the operation very well, but just at the end of it the pulse was 130, but as soon as she was bound up and the ergotine given it dropped to between 80 and 90.

Progress.—The after-progress of the case was practically uneventful, the pulse was never more than 92. The temperature rose on the fifth day to 101°, then gradually fell to normal. The wound was practically healed by the end of the first week, and the stitches were removed on the thirteenth day.

Remarks.—It is now known that Caesarean section done under favourable circumstances has a very low mortality. In the case just reported everything was favourable to success: a good hospital, able assistants, and excellent nursing, and the operation was done quietly at a prearranged hour. The idea that it is necessary to await the onset of labour, so as to get full contraction of the uterus, is now I believe quite exploded. There was nothing to cause shock to begin with, such as a prolonged labour, etc. The anaesthetic used throughout was chloroform. It is well recognized that chloroform is well borne by pregnant women. Moreover several cases of severe broncho-pneumonia, some fatal, have been reported due to the administration of ether.

REPORTS OF SOCIETIES.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

W. Lang, F.R.C.S., President in the Chair.

Friday, July 3rd, 1903.

Keratitis, with Special Reference to the Part Played by the Corneal Cells.

Dr. Leslie Buchanan gave a lantern demonstration of sections of the cornea, showing the changes following injury and disease. Proliferation of corneal corpuscles appeared to take a larger share in the production of new cells than exudation from the vessels of the limbus. Sections of the normal cornea showed a more liberal distribution of corneal corpuscles in the anterior layers than in those further back. In inflamed areas budding of nuclei could be demonstrated, and this in advanced cases amounted to complete fragmentation of the original nucleus, the new nuclei being traceable along channels between the corneal fibres, presumably in the course of lymph currents. In other instances fibrillation of the corneal fibres and separation of the elements by oedema was manifest.

Primary Papilloma of the Cornea.

Mr. C. W. Dean reported a case. After pointing out the extreme rarity of the condition, he stated that the patient was a fisherman, aged 53, who was first seen in August, 1901. There was a tumour growing from the inner side of the left cornea. It had existed for about four years, and had commenced as a minute speck on the "clear" part of the eye, and it had gradually grown, principally towards the pupil. On August 30th the growth was the size of a flattened pea, and whitish in appearance. It was situated at the lower and inner quadrant of the cornea, to which it was closely adherent. It slightly overlapped the conjunctiva. Some fine posterior synechiae were present. Left vision was J. 14. Mr. Bickerton removed the tumour, and the patient made a rapid recovery. In November the vision was ⅞ and J. 2. The examination of the tumour showed it to be a papilloma, with much heaping up of horny epidermis. The site of the tumour was now hardly visible.

PLEXIFORM NEUROMA (ELEPHANTIASIS NEUROMATOSIS) OF TEMPORAL REGION, ORBIT, EYELID, AND EYEBALL.

Mr. SIMEON SNELL (Sheffield) related three cases:

The first was a lady, aged 25, in which the deformity affected chiefly the right upper lid, but involved also the lower eyelid and the tissues of the temporal region. The condition was congenital, but had gradually increased. Considerable improvement in appearance was effected by removal of the much thickened tissue. Case II was a youth, aged 19. He had been first seen as a baby and again five years ago. The condition was congenital, and the deformity was very great and affected the left upper eyelid, the temporal region, and side of face and orbit. The mucous membrane of the left alveolus and left side of the palate was also implicated; the eyeball was shrunken and small. The orbit was greatly enlarged, and at its outer side was felt a thickened mass in the situation of the lachrymal gland. Two operations were performed for removal of the thickened tissues from the orbit, eyelids, and the integument of the temporo-facial region with considerable improvement in appearance. Case III was a boy, aged 7. The condition affected the left eyelids, the temporal region, and the orbit; the eye was buphthalmic. It was congenital, but had gradually increased, especially latterly. The globe was enucleated, and on two occasions large portions of the thickened tissues were excised. In all three cases the tissues were dense and contained numerous cells of thick threads. Bleeding was very free.

The histological examination of the second and third cases was presented by Mr. TREACHER COLLINS. He had found that the skin in both cases showed thickening of the corium but no inflammatory infiltration. In the subcutaneous tissue numerous sections of nerves were seen cut in various directions; there was marked thickening of the connective tissue elements both perineurium and endoneurium. Sections stained by Weigert's method showed the nerve fibres in the centre of these masses of thickened fibrous tissue. Examination of the buphthalmic eye from the third case showed enlargement and thickening of the fibrous tissue of the nerves, external to the sclerotic, and lying in the sclerotic. The nerves of the cornea and uveal tract were enlarged, and there was a congenital adhesion of the iris to the cornea, with a failure in development of the ligamentum pectinatum. This accounted for the increased tension and subsequent enlargement of the globe.

Mr. SNELL remarked that the literature of the cases was not very extensive. He referred to Alexis Thomson's monograph in which 58 cases of plexiform neuroma in different parts of the body were collected. Out of this number were 18 in which the eyelids, forehead, and temple were affected, but there was no reference to implication of the orbit.

CARD SPECIMENS.

The following were shown: Dr. LESLIE BUCHANAN: (1) A specimen of an eye which was quite healthy previous to an injury ten weeks before but which then suppurated, and on removal contained bone in the shrivelled stump; (2) a case of keratomycosis. Messrs. W. C. ROCKLIFFE and L. H. PARSONS: Plexiform neuroma.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—At a meeting held on June 24th, Dr. J. H. STOWERS, President, in the chair, Dr. JAMES GALLOWAY delivered his annual oration, taking as his subject erythemata as indicators of disease.—Dr. V. H. RUTHERFORD showed three cases: (1) Molluscum contagiosum; (2) multiple lipomata; (3) a case for diagnosis.—Dr. A. EDDOWES: A case of urticaria pigmentosa.—Mr. A. SHILLITOE: A case for diagnosis.—Dr. P. S. ABRAHAM: (1) An extensive nodular eruption; (2) a bullous dermatitis.—Dr. W. WARDE: (1) A generalized necrotizing affection in a tuberculous subject suffering from Raynaud's disease; (2) a case of chronic herpes.—Dr. G. LITTLE: (1) A case of acne scrofulosorum; (2) a case of acne varioliformis.—Dr. PORTER PARKINSON (introduced): A case of leucodermia with alopecia.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.—At a meeting held in Brighton on June 20th, Dr. WAYLAND CHAFFEY in the chair, Mr. A. H. TUBBY read a paper entitled, Is the Treatment of Surgical Tuberculosis in Urban Hospitals Justifiable? He argued from statistics that such cases ought to be treated in special institutions in the country or at the seaside. Mr. CLEMENT LUCAS thought the reason of the failure of cases treated in London hospitals was not so much the want of sufficiently pure air in such hospitals as the fact that soon after improvement or partial arrest of disease had been obtained the children had to return to their unhealthy homes. Dr. SANSOM also expressed his approval of Mr. Tubby's suggestion. Mr. Clinton Dent, Dr. Dawson Williams, Mr. Jaffray, Mr. Sydney Stephenson, and Mr. Tubby were appointed members of the Subcommittee.—Mr. CLEMENT LUCAS read a paper describing the removal of a tin mouth organ from the small intestine of a child aged 3 years. The situation of the metal body had been localized by skiagraphs, but the exact situation was not so easily determined as in another case previously brought by Mr. Lucas before the Society, where a large nail was in the second part of the duodenum. In this case the metal body was in the jejunum. Mr. CLINTON DENT referred to a case where a metal body almost precisely similar to that mentioned by Mr. Lucas had been swallowed. The movements of the body from place to place within the abdomen had been watched for some time by means of skiagraphs, and then when it was thought to have become fixed, laparotomy was performed. Curiously enough no foreign body was found, and it must have been passed per rectum, although nothing had been noticed in the stools.—Dr. EDMUND HOBHOUSE read a paper on the functions of children's hospitals. One of the most important part of the duties of a physician for children's diseases he thought to be the education of the mothers and of the public upon health questions affecting children.—Mr. R. H. PARRY read an account of an operation for the removal of tuberculous glands from the anterior and posterior triangles of the neck by means of an incision through the hairy scalp. Photographs of children before and after operation were shown. The operation, he said, was not nearly so difficult as might be thought probable, and drainage was perfect. Mr. MORGAN thought that cases must be seen early to be successful if treated by Mr. Parry's method. Mr. CLEMENT LUCAS also thought that, although useful in some cases, the operation could not be generally applied. Mr. TUBBY considered that the operation introduced an element of danger. Mr. PARRY, in reply, said that he did not consider the danger of the operation great. In 20 operations he had done nothing worse than cut the facial vein twice, but that was not serious, because the vein was easily ligatured.—Dr. GEORGE CARPENTER read a paper on syphilitic nephritis in an infant. Remarks were made by Dr. GEORGE SUTHERLAND and the CHAIRMAN.—Dr. GEORGE CARPENTER also read an analysis of several hundred cases of enlarged spleen in children. In only a small percentage could syphilis and rickets be excluded.—Other papers were by Dr. EDMUND CAUTLEY upon a case of primary pneumococcic meningitis in a child where diplococci had been obtained from cerebro-spinal fluid by lumbar puncture; by Dr. ALEXANDER MORISON on opium in the treatment of carditis in children; by Dr. THEODORE FISHER on dilatation of the bronchial tubes after measles; by Dr. ELDON PRATT on a case of cerebral tumour in which temporary recovery took place; and by Mr. SYDNEY STEPHENSON on a common appearance of the optic papilla likely to be mistaken for optic papillitis. Beautiful drawings of the condition were shown.

EAST ANGLIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION.—At the annual meeting, held on June 11th, Dr. EDGAR BARNES in the chair, Dr. J. C. CRESWELL (Billericay) showed a case of fracture of femur, and read notes on a case of strangulated hernia.—Dr. HERBERT H. BROWN (Ipswich) read notes of a case of intussusception of small intestine treated by intestinal drainage and subsequent resection.

The patient was a delicate-looking little boy, aged 5 years. He was taken ill on January 31st with febrile symptoms, which appeared to be due to influenza. On February 2nd, at 3 a.m., he was seized with a sudden severe pain in the abdomen. This was followed by vomiting, which, with the pain, was almost continuous till his admission to the Ipswich Hospital at 11 a.m. on January 4th. For the last twelve hours the vomiting had been stercoraceous. The bowels acted last on the morning of February 1st. On his admission he was profoundly collapsed, pulse almost imperceptible at the wrist; typical abdominal aspect. A sausage-shaped tumour could be felt under the margin of the liver, and the abdomen was moderately distended. His condition was so bad that any severe operation, such as resection of the bowel, was out of the question, and reduction of taxis would obviously be impossible. I decided to drain the bowel with a Paul's tube, with the hope that as a result of this he might improve to such an extent that a subsequent resection might become feasible. This was done at once. Chloroform was administered, an incision was made about 3 in. long to the right of the middle line, starting just below the costal margin. The intussusception was drawn out and examined; it was deeply congested, and situated about the junction of the ileum and jejunum. It was then replaced in the abdomen, and the loop of intestine, on its distal side was fixed in the wound, opened, and a Paul's tube tied in. An enema of saline was given immediately after the operation, and the child was fed with nutrient enemata, and with small quantities of meat-juice, beef-tea, and brandy by mouth (this was commenced within a very short time of the operation); there was no vomiting, the intestine emptied itself freely by the tube, and the patient very soon began to improve. On February 6th, two days after the operation, his condition was in every

respect noticeably better. The pulse was of good volume and slower, the extremities warm, the colour good, and the temperature had fallen to normal, and the abdominal aspect of the face had disappeared. I then decided to perform the second operation which took place at 2 p.m. under chloroform. The former incision was opened up, the part of the bowel which had been fixed in the wound together with the intussusception was excised in one piece, and the cut ends united with a Murphy's button. There was a great deal of shock during the operation and 30 oz. of saline solution were injected into a vein. There was no vomiting afterwards, the patient commenced to rally in a few hours, and eventually completely recovered, in spite of bronchitis which delayed the convalescence. Owing to the severe cough the wound burst open (the lower end had been left open for two or three days and a gauze drain introduced) seven days after the operation, but was at once resutured and healed satisfactorily. The Murphy button was passed on the tenth day and the child is now quite well. About 3 ft. of bowel in all were excised.

Mr. H. B. Walker called attention to the lateness of the appearance, in most cases, of the characteristic rectal discharge, and the danger of delay in waiting for such a symptom too long. Many cases were followed by an attack of pneumonia which was usually attended by very high temperatures, and was probably of a septic character. He instanced two such cases which were operated on and one which was not, and said that the cases were best treated by quinine in good doses. Mr. H. A. Ballance (Norwich) also made some observations on the case: and Dr. Brown replied.—Dr. H. C. Thomson, of the Middlesex Hospital, read a paper on some principles underlying the psychical treatment of epilepsy.

Oxford and Reading Branch of the British Medical Association.—At the annual meeting, held on July 3rd, the President gave an address dealing with the subject of the treatment of certain eye diseases with retinal extract. A discussion followed in which Dr. Collier and Mr. Walters joined.—Mr. J. H. Walters showed a specimen of double uterus, and read short notes of the case. Dr. C. W. Marriott read notes about a similar case.—Mr. Daly read notes of a case of uraemia treated with morphine. A free discussion followed.—Mr. H. P. Symonds read notes of three cases of tuberculous disease of the knee-joint treated with formalin (40 per cent.), and exhibited the patients.—Dr. Bossier showed a specimen of horseshoe kidney.—Mr. H. A. Whitelocke exhibited a boy who had undergone a partial excision of the tarsus. A most excellent result had been produced.

Border Counties Branch of the British Medical Association.—At the annual meeting held on June 26th, Dr. Maxwell Ross, President, in the chair, Dr. Maclaren read a paper on uterine myoma. He first dealt generally with the subject, describing shortly the frequency, varieties, symptoms, and diagnosis of uterine myomata. Attention was called to the fact that while the vast majority of them caused no symptoms or inconvenience, on the other hand a few caused serious local or general troubles, and that these could only be treated by operation. The operations for enucleation and for removal of the whole uterus were described. Preference was expressed for the former method of dealing with these growths whenever possible. The author then gave his experience of 8 consecutive cases. Of these 6 recovered, 1 died in about twenty-four hours, the other eight days after the operation from haemorrhage into the bowel apparently unconnected with the operation. One patient was pregnant; the operation was done in the third month. The tumour was placed behind and below the uterus, pressing it upwards and forwards so that the cervix rested on the symphysis pubis. The pelvis was so blocked by the growth that a child could not have passed. The myoma was enucleated. The pregnancy went on uninterruptedly to its full time, and she was then delivered of a living child; she has since had another. In 7 of the cases the growths were enucleated; in 1 the entire uterus was removed.

Southern Branch of the British Medical Association: Winchester Division.—At the annual meeting held on June 9th, Mr. Jollye showed a specimen, with remarks, of mesometric pregnancy. The patient died a few days after operation, haemorrhage was not easily restrained in this case. He also made remarks on guinea worm: showed a worm and microscopical slide of embryos.—Major Burnside read notes of an interesting and somewhat obscure case of cerebro-spinal meningitis. Some difficulty was experienced at the outset in arriving at a correct diagnosis. The patient, a young soldier, died after about three months' illness. The cerebral symptoms entirely disappeared on two occasions for a day or two. Various plans of treatment were tried without benefit. Kernig's sign was well marked towards the conclusion of the illness.

North Lancashire and South Westmorland Branch, of the British Medical Association.—At the annual meeting held on June 24th, the President, Dr. Wingate-Saul, in the chair, Dr. W. Hall (Lancaster) gave a demonstration of the Finsen lamp, the violet-ray apparatus, and the x rays.—Dr. Aitken (Lancaster) showed (*a*) a case of chronic chorea; (*b*) a man suffering from a very extensive secondary syphilitic rash; (*c*) a woman with motor aphasia of twelve years' standing.—Mr. A. S. Barling showed a man on whom he had performed enterectomy.—The following specimens were exhibited: Dr. C. W. Dean: (*a*) Ruptured uterus removed by abdominal hysterectomy; (*b*) stomach and intestine after gastro-enterostomy; (*c*) fracture-dislocation of spine.—Dr. Aitken: Hydatid mole.—Dr. Lamport: (*a*) Halfpenny removed from oesophagus after nine months, also radiograph of case; (*b*) ruptured aneurysm of ascending aorta; (*c*) epithelioma of larynx.—Dr. W. Croft-Helme: Extra-uterine fetation removed per vaginam.—Dr. P. F. Sturridge: Appendix showing perforation by faecal concretion.—Mr. A. S. Barling: (*a*) Myoma of uterus weighing 5 lb. removed by abdominal section; (*b*) cystic adenoma of thyroid; (*c*) par-ovarian cyst.—Dr. D. Blair demonstrated the following under the microscope: Malarial parasite (malignant crescent), plague bacillus, actinomycosis, gonococci, pneumococci, B. anthracis, B. typhosus.—Dr. T. S. Shepherd showed some ethyl bromide.—Dr. Bromley and Dr. Pringle showed a large collection of radiographs.—A number of members visited the Royal Albert Asylum, where the Medical Superintendent, Dr. A. R. Douglas, delivered an address on types of idiocy.—Messrs. Down Brothers showed instruments, and Messrs. Reynolds and Branson pharmaceutical preparations, some mounted pathological specimens, and a piece of radium.

Hong Kong and China Branch of the British Medical Association.—A meeting of this Branch was held on March 25th, the Hon. Dr. J. M. Atkinson, President, in the chair.—Dr. Laing demonstrated Ross's method of blood examination for the malarial plasmodium by dehaemoglobinized films. The method of taking the blood, fixing, removing the haemoglobin, and staining was then described step by step, and slides were shown demonstrating each stage of the process. Dr. Laing pointed out how useful this method was in finding malarial parasites in the blood when the infection was slight, and especially in malignant tertian showing crescents which, when few in number, were difficult to find by ordinary methods. Prepared slides of tertian, quartan, and malignant tertian infections by Ross's method were shown under microscopes.—Lieutenant-Colonel Lambkin, R.A.M.C., read a paper on the treatment of syphilis by the intramuscular method. He stated in opening that there were few diseases in the nomenclature of greater importance to the naval or military surgeon than syphilis. By its ravages it had rendered armies almost useless; and a few years ago, in India alone, a force amounting to a brigade of British troops was constantly put out of action through it. Touching on the history of mercury, Lieutenant-Colonel Lambkin described the various methods of using this drug and their drawbacks. He preferred treatment by the intramuscular method, which he had used since 1890. He had tried all the solutions of mercury, and preferred the following formula: mercury ℥j, lanolin ℥ij, parolin carbol. ℥iv, and of this he gave ♏v once a week, using a glass syringe with platino-iridium needle 1 in. long. The needle must be rendered aseptic, introduced with a rotatory motion, and driven deep into the muscle itself. This was absolutely necessary, but of 10,000 injections he had only one abscess. Lieutenant-Colonel Lambkin considered that this method of treating syphilis had many advantages, the chief of which were that the patient could continue treatment after leaving hospital, and while doing his ordinary work, also that the dose of mercury given could be more accurately determined than if administered by mouth. He referred to the favourable reports on this system of treatment in Egypt in the years 1899 to 1901, and also in India, where a larger official trial was to be made this year, and that he had no doubt the result would prove a huge success under the able administration of the present Surgeon-General. The President, Colonel Webb, R.A.M.C., Major Strickland, I.M.S., Staff Surgeon Matthew, R.N., Surgeon

CLAYTON, R.N., and Dr. LAING joined in the discussion of certain points in Lieutenant-Colonel LAMBKIN'S paper; and Lieutenant-Colonel LAMBKIN replied.

AT a meeting held on April 30th, Hon. J. M. ATKINSON (President) in the chair, Dr. LAING showed the following cases: 1. Case of infantile paralysis with congenital dislocation of the right hip-joint. Dr. ROBERT GIBSON was of the opinion that the dislocation of the joint was secondary to the paralysis. 2. Case of filaria nocturna, with lymph scrotum, which was extensively ulcerated when the patient was admitted to the Government Civil Hospital. It then looked like an epithelioma of the scrotum, and was treated to five exposures of the *x* rays, each of fifteen minutes' duration, given every second day. A marked change was noticed after the third exposure, the ulcers rapidly healed, scrotum diminished by a half, and sections from a snip of the tissue, and an examination of the blood showed the case to be filaria.—Dr. HUNTER read a paper on the "Septicaemic Nature of Typhoid Fever," and at its close the PRESIDENT characterized it as both interesting and instructive, throwing light on several cases of typhoid fever now under treatment in the Government Civil Hospital. One was suffering from crops of boils, and the other had cystitis. Dr. HUNTER replied.

CEYLON BRANCH OF THE BRITISH MEDICAL ASSOCIATION.—At an extraordinary meeting held in the Medical College, Colombo, on January 26th, 1903, Dr. T. F. GARVIN, president, in the chair, and sixty persons being present, Mr. JONATHAN HUTCHINSON delivered an address on Parangi. He divided his discourse into two divisions—(*a*) Is parangi syphilis? (*b*) Leprosy caused by eating bad fish. (*a*) *Is parangi syphilis?*—The disease called parangi in Ceylon was the same malady as that called yaws in the West Indies and thaku in Fiji. That which was true of any one of these was true also of the others. They were all identical with the epidemics which occurred in the British Isles and which were called sibbens in Scotland, button scurvy and morula in Ireland. The distinguishing feature of all was the occurrence after a sore on some part of the limbs or body of a framboesiform eruption which after a certain duration disappeared spontaneously. In all, children or young persons were the usual subjects of the malady. In all the places named it was more frequent in villages than in towns. The disease which had received those various names was village syphilis, or, in other words, syphilis contracted by the accidental infection of sores already existing on the skin. The explanation of the differences between framboesial syphilis and its more common types was to be found in part in race and climate, but chiefly in the fact that in the former the infection occurred on the skin and not on mucous membrane. The published statements as to the differences between parangi and the other had, however, been greatly exaggerated. Even in parangi districts well marked cases of the framboesial eruption were not common and in all they were soon merged in other forms. Parangi might be defined syphilis in bare-footed children. The reasons for regarding parangi, etc., as really syphilis were the following: Both had a primary sore, the incubation period of which was about one month. Both were attended by non-suppurating inflammation of the lymphatic glands. In both the secondary eruption followed from two to three months after the infection. In both, the secondary eruption was destined to disappear spontaneously after a variable duration of some months. In both, the secondary eruption underwent, whilst subsiding, various modifications in type. In both, during the later stages eruptions on the palms and soles were very common. In both, tertiary phenomena were not infrequent, and consisted in nodes on long bones, dactylitis, lupoid affections of the skin, and gummata. In both, one attack to a certain extent was protective. The following statements respecting parangi were based upon *defective observation*. *That the eruption was always and throughout framboesiform*. It was, in fact, often mixed from the beginning, and almost always so before it ended. *That the mucous membranes always escaped*. Sores on the tonsils sometimes occurred in the most typical cases. It was, besides, the fact that in sexually contracted syphilis the throat very often escaped. *That parangi sores did not leave scars*; as a rule they did not, but neither did ordinary syphilitic eruptions. He had seen in the Colombo Hospital, in cases of typical parangi, shilling-sized scars as definite as those left by rupia. *That the glands were not enlarged in parangi*. They were constantly so. *That tertiary sequelae did not occur in parangi*. They were common. *That there was no inheritance in parangi eruptions*. He had repeatedly observed them in children, and also dactytilitis, keratitis, and even syphilitic teeth. These latter had been repeatedly noted in Fiji, where syphilis had been reported to be unknown. The fact that parangi was a disease of childhood explained the comparative rarity of inheritance. *That the one disease did not protect from the other*. Very little evidence existed on this point, but in Fiji, where all had had parangi, it was believed that the natives were immune as regards syphilis. Charloni's experimental inoculation of syphilis and other observations were to be explained as relapses or second attacks. Both in syphilis and parangi relapses were very common, and second infections might occur even after short periods. *That parangi was a milder disease than syphilis*. In the West Indies it was credited with a large mortality, and in all countries it had at least as much as syphilis. In the times of slavery a slave who had had yaws was worth much more than one who had not. *That specifics were useless in parangi*. Opinions had differed much as to mercury; not many, and Sir William Kynsey amongst them, had strongly advocated its judicious employment. For the tertiary symptoms everybody gave iodide of potassium, and that salt was now for that purpose imported by the hundredweight by the natives of Fiji. *Finally, it might be urged that if parangi and syphilis were distinct specific diseases* existing independently of race and climate, and both very contagious and not mutually protective, it was incredible that the former should remain restricted to certain districts. Why should not parangi be as common in Colombo as at Kurunegalle, and why should Europeans be at present day exempt from it? The doctrine that parangi and syphilis were one and the same disease, differing only in the part infected, so far from diminishing zeal in segregation, ought to increase it, for it was very desirable to take measures for prevention of contagion under both hypotheses. (*b*) *Leprosy caused by eating bad fish*—The island of Minicoy most conclusively proved that leprosy was caused by eating bad fish, but Norway, South Africa, and Ceylon all showed the same thing. In India he proposed to investigate the case of the Brahmans who did not eat fish. Leprosy might be spread by contagion by a leper with sores on his hands giving food to persons, but the infection was always by the alimentary canal.—The President opened a discussion, in which Drs. GRIFFIN, ROCKWOOD, VAN DORT, H. M. FERNANDO, SINNETAMBY, and CHALMERS took part.

At a meeting held on February 21st, Dr. T. F. GARVIN, President, in the chair, Dr. H. M. FERNANDO read a paper on Widal's reaction and its value in diagnosis of enteric fever. This test in the diagnosis of enteric fever was now within the reach of all the practitioners of the island thanks to the establishment of the De Soysa Bacteriological Institute. It had been freely used in dealing with continued fevers in the General Hospital, Colombo, for nearly three years. Dr. Fernando dealt with the experience thus obtained. The test itself was applied in various ways by different bacteriologists. For purposes of diagnosis it was essential to have uniformity of procedure in carrying out the test. Purely scientific investigators advocated great dilutions. Their object was not to include even a single case, in a positive reaction, other than that of typhoid blood, but this procedure, on the other hand, would produce errors in the other direction, that was, several cases of undoubted enteric would be overlooked. For clinical purposes Dr. Fred Caiger who had had considerable experience of this test recommended a dilution of 1 in 20 and an exposure of half an hour. This was the method adopted in the Colombo Institute. The margin of error under these circumstances was found to be less than 2 per cent. In Colombo by the extended use of this test a considerable number of cases of continued fever, especially in children, gave the positive reaction where there were no special features suggestive of enteric. It was well known that enteric in children ran a mild course and presented very slight abdominal symptoms. Dr. Fernando felt sure that a large number of mild enteric cases amongst children were constantly overlooked and treated for teething, bronchopneumonia, malarial fever, etc. The danger in overlooking such cases was the spread of infection from such sources. A great number of the sporadic cases which continually cropped up in Colombo and elsewhere could only be accounted for by infection directly from such cases, which had been overlooked. The other great advantage of the test was the clearing up of the diagnosis in complicated and aberrant cases. Dr. Fernando gave several examples where the diagnosis was difficult and when the Widal reaction yielded great help.

A case of liver abscess admitted into the Seamen's Ward, gave positive reaction. In this case the abscess was opened, but the man succumbed. The necropsy disclosed several abscesses to the liver and typhoid ulcers to the intestine confirming the reaction, although the case was diagnosed during life as one of tropical abscess of the liver. In another case admitted late in the disease with marked abdominal symptoms no reaction was obtained. The patient died from enteric with peritonitis, and at the necropsy, pus was found in an isolated portion of the abdominal cavity. Here it was suggested that the pus organisms might have so modified the antibodies as to prevent the reaction against the specific enteric bacilli. In a third case, where two members of a family had enteric, a third child suffered from fever of a low type. No reaction was obtained although tried on three different occasions. The fever continued for over two months, when eventually symptoms pointing to abdominal tuberculosis presented.

Dr. Fernando stated that dealing with nearly 300 cases of fevers the error did not amount to 2 per cent. The paper gave rise to an animated discussion to which Dr. Fernando replied.—Dr. Paul demonstrated Widal's reaction. Dr. Chalmers showed specimens of a recent case of acute pancreatitis with fat-necrosis of the fat of the mesentery. The inflammation was due to the irritation of gall stones. The pancreas was acutely inflamed and had haemorrhages in places. The ferments had escaped and caused the fat-necrosis. The fat-splitting ferment of the pancreas liberating the fatty acids of the fat which then united with calcium to form the brown granular detritus or needles which occupied the cell instead of the fat globule.

At a clinical meeting held on March 21st, 1903, Dr. T. F. Garvin (President) in the chair, Dr. M. Sinne Tamby showed a case of Brown-Sequard's paralysis. The patient was a man aged 26. He had partial impairment of motion on the right half of the body, with loss of muscular sense on the same side, both in the sense of estimation of weights and appreciating position of his limbs. There was no loss of tactile, thermic, or pain sensation on this side of the body, the man being able to feel and localize stimuli on that side of the body. There was no impairment of motion on the left half of the body. Muscular sense on that side was unimpaired, but the thermic, tactile, and pain sensations were lost. The upper limit of the anaesthesia on the left side was on a level with the third rib. The lower limb on this side was affected in the same way. Temperature of the body taken at the axillae—Right side, 97°; left side, 96·8°. Perspiration was excessive on the right half of the body, but was absent on the opposite half. Hand grip was impaired on the right side, firm on the left. The patient could pick up a needle with ease, using his left hand; not so by the right. He could with ease take a tumbler of water to his lips with his left hand, but was unsteady when he attempted the same with his right. The gait was spastic on the right. There was no wasting of muscles, no trophic lesions. The plantar reflex was present on the right side, absent on the left. The gluteal reflex was not well marked on either side. The cremaster reflex was present on the left side, absent on the right. The abdominal reflex was present on the right, absent on the left. The epigastric reflex was well marked on the right, impaired on the left side. The scapular reflex was present on the right, absent on the left. The knee jerk phenomenon was greatly exaggerated on the right side and highly impaired on the left. The ankle jerk and adductor jerk were exaggerated on the right side, impaired on the left. The triceps or elbow jerk was not well marked. The supinator jerk was present on the right side. The wrist jerk was present on the right. The jaw jerk was not elicited. The ankle clonus was present on the right side; was elicited on the patient attempting to walk. The patient had no difficulty of swallowing, and no retention or incontinence of urine. The anal sphincter was not relaxed. Babinski's sign was present. The pupils were small, and reacted to light and convergence. The patient stated that he engaged in a fight one year and nine months previously, during the course of which he received several blows and knife stabs on the left side of the neck. Of these two scars were still perceptible on a level with first and fifth cervical vertebrae. The wounds were said to have been about an inch deep. Paralysis came on immediately after the injuries. The distribution of the paralysis was as follows: On the paralyzed side (right side) there was: 1. Upper segment paralysis (paralysis without trophic changes and with increased deep reflexes); 2, total absence of lower segment paralysis (wasting of muscles, etc.); 3, impairment of muscular sense; 4, exaggerated deep reflexes and development of clonus and Babinski's sign; 5, increased surface temperature; 6, increased perspiration. On the opposite side there was: 1. Loss of sense of touch, pain, and temperature; 2, loss of superficial reflexes except the cremasteric; 3, lowered temperature; 4, absence of marked perspiration. The explanation of the crossed distribution of the sensory phenomena could not be made satisfactorily. The only plausible explanation was that in man the sensory bundles, after entering the cord through Lissauer's tract, were distributed as follows: The muscular sense fibres passed along the posterior columns on the same side, and the fibres for touch, pain, and temperature crossed the middle line and passed over to the opposite side. There was also some evidence that the grey matter around the central canal conducted sense of pain and temperature, and the facts observed in the disease known as syringomyelia lent some support to this view, but the experiments of Mott on monkeys went to a certain extent to invalidate the views herein enunciated. The nature and localization of the lesion also called for some remarks. There was no doubt the lesion was a focal one, with subsequent descending degeneration of the pyramidal tract on the right side. The presence of upper segment paralysis on the right side, together with loss of muscular sense on the same side, absence of lower segment paralysis, and various other facts, inclined the author to the conclusion that the lesion involved the posterior columns, the pyramidal tract, and the posterior, two-thirds of the grey matter of the right half of the cord. In short, it was a hemi-lesion not involving the anterior horn of the cord. As to the segment of the cord that was involved, absence of the involvement of the phrenic pointed to the lesion being below the fourth cervical. The marked supinator longus reflex on the right side and absence of the scapular reflex on the left inclined the author to localize the lesion in the fifth segment. The distribution of the anaesthesia also lent some support to this view. As to the nature of the lesion, the stab wounds were too superficial to have produced it. The sudden appearance of the symptoms after severe blows pointed to the nature of the lesion being haemorrhage caused by concussion of the cord, with perhaps subsequent localized myelitis and descending degeneration of the pyramidal tracts. In short, the case was one of Brown-Sequard's paralysis.—Dr. W. H. de Silva exhibited ophthalmic cases, showing ocular manifestations in psilosis. He said that even from olden times the influences exerted by a pathological condition of the gastro-intestinal tract on the eye had not escaped attention. But owing to the limited means for a thorough examination of the ocular apparatus the subject was not carefully investigated. Now, with the improved methods at command, they were in a position to go more deeply into the subject. After the investigations of Bouchard, one could well explain the appearances of the visual disturbances of intestinal origin. The author felt certain that most of the phenomena observed in psilosis in Ceylon were due to a form of auto-infection. The bad digestion and the loss of the epithelium in the alimentary canal might help to convert the foods, which were generally indiscriminately used by the poorer natives of the island in the form especially of half-decomposed salted and dried fish, into toxic alkaloids, and give rise to various ferments, which, when absorbed, might carry their evil influences onward through the entire system, and give rise to a variety of neuropathic form of disease so often seen in patients, and of whose pathogeny they were generally ignorant. Though the number of cases in relation to the disturbances of vision and ocular manifestation were limited, the observations in cases of psilosis authorize one to divide the symptoms into three important divisions: 1. Reflex; 2, those determined by the special infection which produced psilosis, or by such secondary infection as originated in them; 3, local, due to a loss of epithelium of the lachrymal apparatus. In the first division one came across cases of papillitis, of atrophy of the optic nerve, and very largely floating opacities of the vitreous. In the second, conjunctivitis, keratitis, and iritis, due to the organisms (whatever they might be) or their products proceeding from the gastro-intestinal tract, through the circulation of the patient. In the third were cases of epiphora. Dr. W. H. de Silva also showed cases illustrating the result of Critchett's operation for anterior staphyloma. In none of the cases did suppuration occur.

The British Electro-Therapeutic Society.—The annual dinner of this Society was held on June 26th at the Café Monico, London. The President, Dr. Lewis Jones, who was in the chair, in proposing the toast of the Society, referred to the steady increase in membership, and to the high scientific standard of the papers and discussions. Mr. Chisholm Williams, Joint Honorary Secretary, replied.

REVIEWS.

SIR HENRY ACLAND.[1]

IT is much the custom of Oxford to hide her lights under bushels. Many a furtive little figure slinks through her shadows whose name is known wherever learning is venerated, but whose sole object in this life appears to be to escape recognition. Two forms, however, were exceptions to the rule. No bushel that ever was made would easily have concealed the late Regius Professor of Medicine, or his old tutor and lifelong friend the Hercules who ruled "the House." No figure was better known in Oxford than that of Professor Acland posting down the street, his grey locks and his black draperies tossed into maenad curves by the swing of his arm and the speed of his going. He was one of the most remarkable men of his day—remarkable in his circumstances, remarkable in his career, and still more remarkable in himself.

Born in a high position, and the son of one of the most extraordinary fathers in England—"the old Sir Thomas"—Acland found the choicest society open to him from his youth up, but his own enthusiastic and sympathetic nature was a better passport still. Seldom can there have been a man so loving and so loved: seldom one who saw so much both of the world of Nature and of the world of men. His friends were innumerable, and his love for them deep and lasting. Holy men see men like-minded with themselves—artists meet artists, politicians form their ties in politics, philosophers find in science common interests and common aims; but Acland knew them all, and in his boundless sympathy made friends beyond all these circles in every man he met. The poor and the rich, the young and the old, the Cabinet Minister and the undergraduate, the Don and the Red Indian, the manufacturer and the brigand—he learnt from all, and all from him; he showed kindness to all, and all loved him.

Beside his deep affection to his family and to his friends, the mainsprings of his life were a fervid piety, a passionate love of beauty, and devotion to science.

He came to Oxford in the early days of the Tractarian movement and, deeply religious himself, formed intimacies with Newman, Pusey, and Charles Marriott. His health obliged him to leave Oxford for two years, which he spent mostly in a man-of-war, visiting Greece, Constantinople, Asia Minor, and Rome. This was his introduction to Art, and in Rome he met Bunsen and George Richmond. Coming back to Oxford, he made friends with the young Ruskin just come up. Everywhere he went he sketched and measured diligently, and before he took his degree he wrote an account of the Troad, which was well received. He was almost immediately elected a Fellow of All Souls.

He then went at once to St. George's. The medical student of that day was hardly congenial, and Acland, seeing his temptations and his trials, wrote a pamphlet advocating the collegiate system for medical schools. The system was adopted a few years later at St. Bartholomew's, with Paget as the first Warden. Acland's medical work was desultory until he went to Edinburgh, but in London he saw much of his old friends and made many new. While studying at Edinburgh under Alison he was appointed to the Lee Readership in Anatomy at Christ Church, qualified, came to Oxford, and married at the age of 29.

From this time onward his life belonged to Oxford. He became in the first place her leading physician, and next her great sanitary reformer. The organization to meet the cholera epidemic of 1854 was his work, and he used the great influence he thereby gained to secure the reform of the drainage and water supply. He rose to be one of the first sanitary authorities in England. Meanwhile he was lecturing on anatomy, and gradually pushing the University to a due recognition of natural science. We can hardly now realize the attitude which the older learning adopted. It is not too much to say that Acland won his points by the trust which his own character inspired. The first examination in natural science was held in 1853. His next great work was the Museum. After a bitter and tenacious struggle of six years the building was begun in 1855. In 1857 he was appointed Regius Professor and Clinical Professor of Medicine. He taught no medicine, partly because there was no class, and partly because he thought that a small town like Oxford afforded an insufficient material, and an insufficient staff for good clinical teaching. But he made it his business to improve the relation of the University to medicine. There are two views of what this should be. Acland thought that a University degree should imply, first, a wide general education; and, secondly, a wide view of preliminary science. He therefore wished men to take the complete course of ordinary study, whether in arts or science, before beginning their special subjects. The second view is that a university should spread learning as widely as possible, should lay less stress on general subjects, and allow special subjects to be taken for a degree. This view, the graduation of the greatest number, now prevails, but it necessarily follows that the degree is spread rather thin. Acland wished to form a kind of aristocracy in medicine. He was attacked by the reformers of 1877 partly on his own ground, for it was said that the science-teaching at Oxford was inferior, and partly on the second line that the University was not fulfilling her duty to medicine so long as her students were so few. Whichever view prevails for the moment, there is no question that Acland had a high ideal before him, and that he lived up to it himself. Medical education is even now so unsatisfactory that we can hardly afford to criticize the arrangements of earlier days.

Besides the care of medical matters in Oxford, he had much to do with the formation of the General Medical Council. He became one of its most important members, and was President from 1874 to 1887. He was especially active in all steps taken to improve examinations and in promoting the teaching of Public Health. But there was not a single matter connected with medicine at which he did not labour, and his knowledge of and connexion with public men in both parties was of great value to the Council.

Acland was an artist himself and the friend of the leading artists of the day. His love of science was of the same character as his love of art. He saw Nature as the garment of God, and the beauty of its forms and of its order were Divine attributes. He did his best to spread tolerance amongst divines and men of science, at a time when neither party understood either its own or the other's position.

He travelled much. In 1858 he went with the Prince of Wales to Canada and the United States, and he visited the States twice afterwards. He was fond of the sea and a keen yachtsman. He was the most courteous host that ever made a guest welcome. Like many simple and noble men, he was no sportsman, and he did not easily see the ridiculous. He was not a discoverer and he was not a teacher; he was a man who put things in their places. He was a modern Christian and an ancient Greek in one. He lived a beautiful and harmonious life, and his work was to help others to live it, too.

That Mr. ATLAY has led us to devote the whole of this review to his subject and none to himself is the highest compliment that can be paid to any biographer. His is an excellent book.

[1] *Sir Henry Wentworth Acland, Bart., K.C.B., F.R.S.: A Memoir.* By J. B. Atlay. London: Smith, Elder, and Co. 1903. (Demy 8vo, pp. 515. 14s.).

HOSPITALS AND CHARITIES.

IN reviewing the current edition of Sir HENRY BURDETT'S *Hospitals and Charities for 1903*,[2] it is quite unnecessary for us to repeat our sense of its great importance to the cause of charity, and especially medical charity. We shall proceed to notice a few of its salient points, for the reader must bear in mind that each fresh edition is a new book, the statistical information regarding each institution being preceded by what is really a review of the whole field of charity, in which all the urgent questions of the hour are dealt with. Of all these questions none can be more urgent than that which the author thus treats in the opening words of his first chapter. "The outlook for British hospitals, and the prospects of the voluntary system under which they are maintained and administered, were never brighter" (p. 57). The first of all the problems of hospital administration is this. Shall our hospitals remain "voluntary" or be "municipalised?" (hideous word). As under the voluntary system they have done more splendid work than has ever been done in the world before—worked out, introduced, and completed a theory, and practice based on that theory, whereby surgery has been robbed of all its terrors, and of all dangers that are not inherent in the nature of things, we might have hoped that the question was answered at once and for ever; but if not, Sir Henry has gone a long way to settle it. Let the reader turn to p. 64, and mark our author's eloquent tribute to the virtues of that "difference

[2] *Burdett's Hospitals and Charities, 1903; being the Yearbook of Philanthropy and the Hospital Annual.* By Sir Henry Burdett, K.C.B., etc. London: The Scientific Press. (Crown 8vo, pp. 1018. 5s.)

of administration" which is so fruitful of good results when there is "the same spirit," the spirit of rivalry in the grand ambition of aiding suffering mankind and helping forward the great art of healing. Nothing could more surely quench that spirit than the deadening uniformity of public control. Our author, however, is not so blind a devotee of competition as to be insensible to the merits of united action. He sets out in strong terms the benefits which the King's Fund confers on the great hospitals of London considered as a whole (pp. 57, 58); and these benefits are doubtless great, and are assisted by the action of a body of visitors instructed in hospital management, who inspect and report upon the circumstances, merits, and defects of each institution. Sensible as we are of the good work of the Visiting Committee of the King's Fund, we are the more surprised at the strenuous opposition with which our author meets the proposal of a Central Hospital Board (pp. 63, 64), a Board which might, if properly constituted, perform the same functions, but with more system, better knowledge, and greater authority. The details of the scheme ventilated by the Charity Organization Society are of course open to criticism, but the essential idea is unaffected by such criticism. But the reason for this horror of a Central Board appears to be that he is a pure individualist, and as he would have each hospital an individual, he would have it under individual control—a pure monarchy. He writes:

> Much of the success of a large hospital each year depends largely in these days upon the calibre and efficiency of the treasurer or chairman (p. 70).

He speaks thus of the problem connected with the removal or re-creation of St. Bartholomew's:

> We are convinced that its wise solution can only be attained by the selection of the youngest and ablest man amongst the Governors, or from outside the Governors, to assume the office of its treasurer, and to give him the authority to appoint as his adviser and second in command the ablest member of the medical profession who can be found to occupy the post of Medical Superintendent (p. 72).

We confess that the experience of the old "City hospitals," as they were called, where the treasurer was omnipotent, or nearly so, renders us somewhat sceptical of the advantages of this "one-man power." Of course it will be said that in the old City days there was no selection of the "youngest and ablest," but that is just where our faith fails us, even in these days of enlightenment. Who is to select this benevolent despot? Is he to be paid or unpaid? If you like him, how can you get him to stay? If you do not like him, how can you get him to go? Such are a few of the questions that crop up on the first blush of such a proposal. It is true that one of our large hospitals has secured the services of a chairman to whom the above description would accurately apply if it was not drawn from him; and it is also true that many political philosophers hold that a benevolent despotism is the best of all governments if you can get it. Yet the political world tends more and more to democracy, and we believe the little world of charity will do the same. One suggestion of our author we must meet with a very decided protest: it is that hospitals, besides giving free medical relief to those out-patients only who are entitled to receive it, should "admit other out-patients of a higher class upon a basis of small payments," (p. 58). Nothing but harm, we hold, could come from such a system, which seems only likely to organize an admitted defect of the present out-patient departments, and make it permanent. Have not such persons, in clubs, provident dispensaries, etc., far more trustworthy resources in sickness than the casual charity of the out-patient room? We have dealt, in these few remarks, chiefly with the points on which we do not altogether agree with Sir H. Burdett, for the very satisfactory reason that, in the main, we agree with him so heartily. Long may our voluntary hospital system have the services of so well-informed, so vigorous and so eloquent a defender!

PELLAGRA.

IN a small compass Dr. G. ANTONINI's book, *La Pellagra*,[3] gives a good account of various aspects of the pellagra problem, which in Italy is one of great importance, as a glance at the two maps clearly shows. These are dated 1881 and 1899 respectively, and they bring out the fact that, while pellagra has been receding in some provinces, it has made progress in others. The number of pellagrous patients varies from 0.12 per 1,000 of the agricultural population in the least affected areas to 50 per 1,000 in others, such as Perugia, Cremona, Padua, etc. In his popular account, Dr. Antonini reviews the history of the disease, its etiology and symptoms, and then deals with its prophylaxis, both public and private. He has also made some researches into its etiology, and concludes in favour of the toxic theory put forth by Lombroso. It is to be hoped that both Italian politicians and people will read this unpretentious little book, and set to work to drive pellagra from amongst them.

[3] *La Pellagra* (Pellagra). Del Dott. G. Antonini. Milan: U. Hoepli. 1902. (Fcap. 8vo, pp. 166, 2 maps. L. 2.

The monograph on *Pellagra*,[4] by Dr. PROCOPIU, covers much the same ground as other works on the subject which have been dealt with at various times in these columns. In the chapter on etiology the author recalls the fact that at one time pellagra was looked upon as a variety of leprosy. Zambaco Pacha apparently is still of the opinion that pellagra is a degenerated form of leprosy. The author, who has observed some 900 cases, holds that alcoholism renders the organism more prone to suffer from pellagragenic poison; and, further, that alcohol distilled from damaged maize may give rise to pellagra, seeing that the toxin is soluble in alcohol. Among other points which may be alluded to are the changes found in nerve cells by Professor Marinesco, and the fact brought out by Dr. Procopiu in his charts concerning age-incidence that young children are affected by the disease to a much less extent than adults. He explains this by the occurrence of alcoholism and other chronic diseases in older patients.

[4] *La Pellagre* (Pellagra). Par le Dr. Georges Procopiu. Paris: A. Maloine. 1903. (Roy. 8vo, pp. 149; 11 figures; 1 plate. Fr.2.25.)

THE HEART MUSCLE.

"IN the treatment of cardiac disease we have at our disposal a large number of curative agencies of remarkable efficacy..... But we are sometimes disconcerted by the fact that the treatment which is effective in one case fails in another which is apparently similar. This difficulty, I take it, brings to a focus the sphere of future research." Most physicians will recognize the truth of these remarks of Dr. ALBRECHT, and and those who value efforts to apply physiological and pathological principles for the elucidation of clinical problems will read with interest the work he has contributed to this subject in his book on *The Cardiac Muscle*.[5] Dr. Albrecht begins with a detailed anatomical study of the cardiac walls, and endeavours to separate and sytematize the different muscular lamellae of which they are composed, on the general principle that when we find a group of muscle layers which by their juxtaposition and identity of direction constitute a morphological unit, there is underlying this anatomical unity a specialization of function. The movements of the cardiac muscles are next considered, and the positions of the fixed points which determine their range. Then follows a discussion of the vascular and lymph supply of the heart. The demonstration of the lymph channels is a difficult matter, and the usual method of injecting some coloured material is open to the objection that the channels so demonstrated may have been artificially produced by the pressure requisite for injection. To obviate this difficulty Dr. Albrecht injected Berlin blue into the heart's apex of his experimental animals whilst they were still alive but deeply anaesthetised; the cardiac contractions were thus utilized to propel the fluid some distance from the seat of inoculation; the animal was then killed, and the course taken by the Berlin blue in these more remote areas was, very reasonably, regarded as representing the natural lymph channels. The main conclusion which Dr. Albrecht draws from these investigations is that the muscle cells are in immediate contact with a network of lymph capillaries, and are never, even under pathological conditions, separated from the latter by connective tissue. Having established his anatomical and physiological principles, Dr. Albrecht proceeds to apply them to cardiac pathology. This histology of cardiac hypertrophy and various lesions of the myocardium are dealt with very fully, and in the last portion of the book an attempt is made to explain, on physiological and pathological grounds, clinical phenomena such as displacement of the apex beat, accelerated pulse, accidental murmurs, and arrhythmia. A strenuous effort is made to account for many morbid conditions by a local origin, consisting in a disturbance in function of particular muscle groups subservient to a particular purpose. The predominant idea running through the book is that there is a fundamental difference between cardiac and skeletal

[5] *Der Herzmuskel und seine Bedeutung fur Physiologie, Pathologie, und Klinik des Herzens.* Von Dr. Ehrenfried Albrecht. Berlin: Julius Springer. 1903. (Royal 8vo, pp. 590, 7 plates. M.14.)

muscle, and that therefore we must not attempt to interpret the action of the former after the analogy of the latter. We should regard the heart muscle, Dr. Albrecht holds, as constituting a "parenchymatous" organ, in the sense that it consists of cells the protoplasm of which interacts in a selective manner with their nutritive supply. Expansion and contraction are the external manifestations of the chemical and nutritive processes within the cell substance: consequently these motor phenomena vary with and are determined by variations and abnormalities in the food material conveyed to the cardiac cell. In support of these views, Dr. Albrecht draws largely upon Verworn's physiological theories and upon the embryological fact that cardiac muscle begins to contract spontaneously before it is invested with any nervous supply. Whilst recognizing the interest and ingenuity of Dr. Albrecht's attempt to explain on these lines the clinical problems of cardiac disease, we cannot admit that his endeavours are wholly successful. The heart with which the physician has to deal contains nerves as well as muscle cells, and he cannot afford to neglect the fact that disturbances of innervation are a very important factor in determining cardiac irregularities. At the same time, there undoubtedly are affections of the myocardium which are attributable to irregularities in the blood and lymph supply, and abnormalities in their contents, and as a painstaking and thoroughly scientific endeavour to elucidate this obscure and highly-important aspect of cardiac pathology, Dr. Albrecht's work deserves wide recognition.

NOTES ON BOOKS.

Ten Answers to Questions on the Subject of Vaccination for the Use of Parliamentary Candidates, issued by the Imperial Vaccination League, is a useful pamphlet. The sphere of work which the League has chosen for itself is not only legislation but education. The pamphlet very happily combines both purposes, being intended specially for legislators *in esse* or *in posse*, and furnishing them in very convenient form, with answers to questions likely to be put to them by anti-vaccinating hecklers. The subjects of the questions are well chosen and the replies are clear and effective, and not overburdened with statistics. The points dealt with include the abolition of the Vaccination Acts, the substitution of isolation and sanitation for vaccination, the so-called "Leicester System," the occurrence of small-pox amongst the vaccinated, the risks of vaccination, exemption certificates, and the prosecution of defaulters. As an example of the method followed in the pamphlet we may quote question 7 and part of its answer:

Question 7.—But we do not think there is any need for compulsory legislation: the people who believe in vaccination can be vaccinated and revaccinated as often as they like, and those who do not believe it can leave it alone and take their risk. Why should the law compel people to be vaccinated?

Answer.—The difference between a barbarian and a civilized community is mainly this—that in the latter regulations are made for the general good, and are enforced upon all sections of society equally. Is not protection given to factory hands for the good of the many and against the will of the few? Do all masters welcome the compulsory inspection of factories and workshops? Could we have a fair measure of health in towns if every one, however ignorant, could get his water where he liked and leave his filth at his doorway or bury it in his back yard? Could we have railways, improved streets and dwellings without compulsory buying powers? Could all children be educated without pressure being put upon careless parents by a compulsory law? Vaccination does not stand alone. The law meets us at every point, and declares what must and must not be done for the good of the whole community. If vaccination were given up there would be more compulsion instead of less. Every one who had been exposed to the risk of taking small-pox would be compelled to leave his work and live apart for a fortnight, and to bear his share in the cost of this attempt at isolation. A further reason for the compulsory law is that without it we should have to pay both for the provision of vaccination and for small-pox hospitals for those who had not been vaccinated. Both systems cost very large sums.

The pamphlet is obtainable at the offices of the League, 53, Berners Street, W., and we heartily recommend it to our readers.

In *Famishing London*[6] (a study of the unemployed and unemployables), Mr. MCKENZIE has given a realistic picture of the lives of many of the starving poor in London. A portion of the book appeared in the *Daily Mail*, and as a result of one chapter which was published in December last, the readers of that paper subscribed unasked, within a month, £2,000 to help the people. Mr. McKenzie remarks only too truly that a time is coming when the prosperous must do something more than give occasional subscriptions for charity. Subscriptions to charities have rarely reached a larger total, yet during the past winter there has been, it is said, more real want than for many years before. What is the remedy? For the cure of this great mass of permanent poverty there is no single remedy. Much can be done by providing clean, cheap food, much by education, much by personal influence. The best thing for the young people of the slums would be, Mr. McKenzie thinks, to allow them a chance of emigrating. The next means of improving the lot of the very poor is to increase the general prosperity of the metropolis; it is argued that reform of the port of London lies at the base of the cure of London poverty. A new era at the port would mean new life for the city. The rush of people from the country is the cause of much misery, while men are pacing the streets of London workless, farmers are crying for labour. Men say better starve in a London slum than exist as a typical Essex or Wiltshire labourer exists; but if they were given the chance in the country of building up independent homes for themselves they might change their minds. These are some of Mr. McKenzie's views, and we thoroughly agree with him that the slums of to-day are a menace to our safety, a disgrace to our civilization, and an insistent appeal to our pity.

The two volumes of *Saunders's Year-book of Medicine and Surgery*, compiled under the general editorship of Dr. GEORGE M. GOULD,[7] for the year 1903, maintains the well-deserved reputation for all-round excellence that has been recognized in the BRITISH MEDICAL JOURNAL for a number of years. The changes in the list of contributors are due to the death of Dr. Charles H. Burnett and the resignation of Dr. Ingals and Dr. Ohls. As a representation of current medical literature the volume on medicine seems to us better than its fellow. For the first hundred references to American and British work there are only twenty to foreign papers in general surgery, while to the first hundred references to medical papers in the English language there are a hundred and sixty-one references to foreign literature. This of course may be taken to indicate that the activity of English-speaking surgeons is comparatively much more than that of the physicians, but this we do not think represents the facts of the case. The year-book remains one of the best, and we have every confidence in recommending it.

The thirtieth volume of the *St. Thomas's Hospital Reports* for 1903[8] contains, in addition to the reports of the registrars and the reports from the special departments, three clinical papers—one on the operations for removal of the appendix during the quiet period, by Mr. W. H. Battle; another on the advisability of revising the classification and pathology of intussusceptions, with cases, by Mr. E. M. Corner; and one on cirrhotic ascites treated by operation, by Dr. H. P. Hawkins and Dr. W. S. Colman. The chief feature of the volume is, however, a group of three memorials of the life of Sir William Mac Cormac, and of William Anderson by Dr. J. F. Payne, and by Mr. W. W. Wagstaffe, who gives "A Personal Account of an Old Friend."

REPORTS AND ANALYSES
AND
DESCRIPTIONS OF NEW INVENTIONS
IN MEDICINE, SURGERY, DIETETICS, AND THE ALLIED SCIENCES.

MEDICAL AND SURGICAL APPLIANCES.

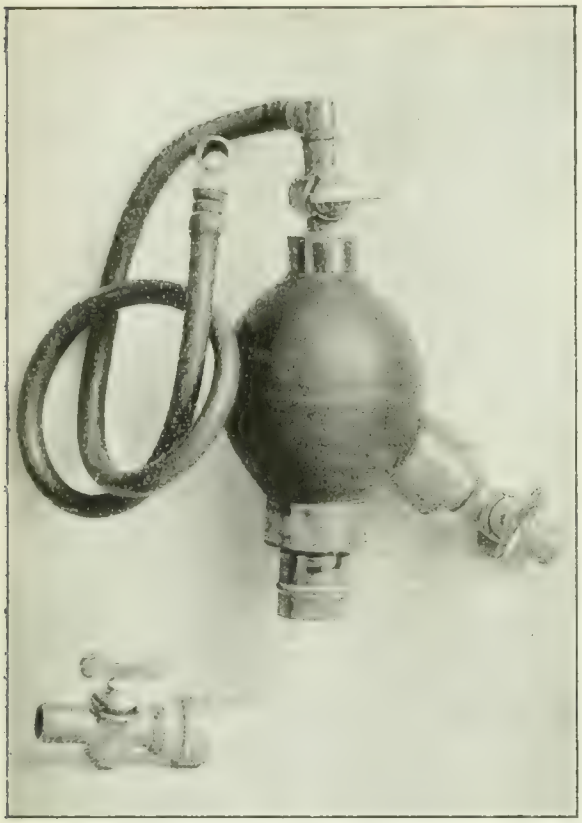
Evacuation Apparatus for Removing Stone from the Bladder.—Mr. THOMAS H. MORSE (Norwich) sends us the following description of an evacuation apparatus for removing stone from the bladder, made for him several years ago by Messrs. Down Bros., of London, with which he is so satisfied that he has now discarded other patterns in favour of that illustrated in the accompanying photograph. The advantage which he claims is the ease with which the apparatus can be emptied. The operator, without any assistance, and even without

[6] *Famishing London.* By F. A. McKenzie. London: Hodder and Stoughton. 1903. (Crown 8vo, pp. 88. 1s.)

[7] London, Philadelphia, and New York: W. B. Saunders and Co. 1903. (Demy 8vo, pp. 1,362. 26s.)

[8] London: J. and A. Churchill. 1903. (Demy 8vo, pp. 422. 8s. 6d.)

disconnecting any of the attachments, can empty and refill the instrument with scarcely any interruption to the operation.



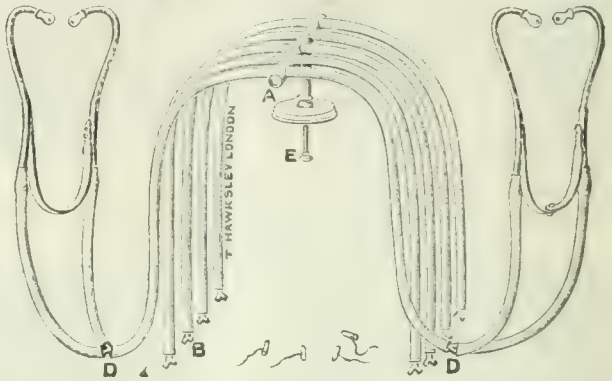
The instrument having been filled by the tube attached to the top, which is the same as that in Bigelow's apparatus, the tap A is turned off. The cannula then being attached, tap B is turned on. By squeezing the ball several times it is probable that the glass receiver will contain water that is turbid with blood and débris of the stone. Tap B is now turned off, and by turning on tap C and squeezing the bulb the whole of the contents of the glass receiver and of the bulb are run off into a basin. Tap C is then turned off and the instrument refilled from a jug through the tube attached at A as before. The operation can now be proceeded with and the same process repeated as often as necessary. Mr. Morse adds that he frequently uses the instrument with no skilled assistance.

An Inhaler for the Administration of Somnoform.—Mr. R. H. JOCELYN SWAN, M.S.Lond., F.R.C.S. (London, S.E.) writes: The accompanying illustration represents an apparatus which I have now used for some months for the administration of somnoform, consisting of a celluloid facepiece connected by means of a right-angled metal tube to a rubber bag. The facepiece is lined with lint, which is maintained in position by a special spring, horseshoe in shape, preventing collapse



of the lining during any deep inhalation by the patient. The lint can be thus readily changed and a clean piece substituted. In using this apparatus, the dose of somnoform required for a single administration, and producing an anaesthesia averaging from 90 to 120 seconds, is about 2½ c.m. —that is, half the dose of the drug marked on the bottles in which it is supplied for use with the handkerchief cone adopted by Dr. Rolland. The apparatus was made for me by, and can be obtained from, Messrs. Down Bros., 21, St. Thomas's Street, S.E.

A Multiple Stethoscope.—Dr. W. G. AITCHISON ROBERTSON has devised an instrument to overcome the difficulty which students experience in correctly auscultating and interpreting physical sounds. Hitherto the teacher had to listen first and then explain or imitate the sounds which he had heard. Each student then in turn listened and tried to hear what had been described. This was at best a slow process, and unless the chest piece was correctly placed the sounds might not be audible to each observer. The instrument which is



illustrated, does away with all such error. Teacher and students auscultate at the same moment, and all must hear exactly the same sounds. The instrument consists of a number of ear pieces attached by long thick-walled india-rubber tubes (B) to a tubular "disperser" (A) which in turn is affixed to a phonendoscope. The sounds are conveyed with even greater intensity than they are by the ordinary wooden or binaural stethoscope. Almost any number of observers may by such an instrument auscultate at the same moment. Twenty students have been enabled to hear simultaneously and with perfect distinctness the physical sounds produced in the heart or lungs. For convenience, however, perhaps ten is the best number, and even with a large class of students the time occupied in changing the ear pieces is very small. With a less number of auscultators the instrument still acts perfectly, the unused tubes being allowed merely to lie on the bed or being held together in the hand. The advantages which such a combination of stethoscopes offers are many and obvious, the first and most important being the ease which it affords to the teacher of illustrating typical physical sounds and of explaining their character, time relations, lines of propagation, respiratory accompaniments, vocal resonance, etc. Another advantage lies in the saving of time—a whole class may auscultate a patient in a few minutes, and so may be enabled to follow the progress of even an acute case from day to day. This economy of time tells also in the patient's favour, as frequently injurious results follow from the repeated auscultation of students. The instrument has proved of the utmost value in tutorial work, and it has already received high encomiums from those teachers of clinical medicine to whom it has been shown. Mr. Hawksley, of Oxford Street, London, has very carefully carried out Dr. Robertson's instructions as to the manufacture of the instrument.

A Schoolboy's Clip.—Mr. J. CLARK, F.R.G.S., Headmaster of the Clay Cross Board School, who tells us that he has had twenty years' experience of the ways of school children, has put it to a useful purpose. He has noted the indiscriminate way in which children use one another's writing and drawing materials, and rightly feels assured that this practice must do not a little to assist the spread of infectious and contagious disorders. He has, therefore, invented a little steel spring clip which will hold pen, pencil, indiarubber, and ruler, and upon which the child can put a card bearing its own name. It is a handy contrivance likely to take the fancy of children, and by encouraging them to adhere to their own pencils, etc. will help to stop the practice to which Mr. Clark has drawn attention. They are sold, we are informed, at 10s. 6d. a gross by the Central Education Company, Derby.

NOVA ET VETERA.

THE TREATMENT OF SPINAL CURVATURE 250 YEARS AGO.

CONCERNING deformities and their treatment not much has come down to us from the centuries before the nineteenth, and perhaps this is not surprising when we consider that regular practitioners concerned themselves little with the subject until after the beginning of that century. In non-medical memoirs and letters few references can be found, and these are for the most part vague and casual, but the *Memoirs of the Verney Family* are a striking exception to this rule, for in the third volume will be found a detailed account of the case of Edmund Verney and of his treatment in Holland and reputed cure. By the kindness of Lady Verney, the editor of the published *Memoirs*, I have been allowed to inspect the original letters written in the years 1653-7, in which the "crookednesse" of the patient is described and discussed.

Edmund Verney ("Mun" as he is generally called in the letters) was the eldest son of Sir Ralph Verney, who was member of Parliament for Bucks, and took the Parliamentary side during the Civil war, but as a moderate man refused to sign the Covenant, and found it advisable to quit the country for a time. In 1653 Mun Verney, then 16 years old, was sent to Utrecht, where the exiled Dr. Creighton (after the Restoration Bishop of Bath and Wells) became his tutor, and reported to Sir Ralph on the deformity of the lad's back:

(January 28th 1653)

"truly I wold never have thought he could have beene so crooked if I had not seene (it). The backbone in which all the fault lies is quyt awry and his right shoulder half a handfull lower at least than his left."

No doubt Mun suffered from rotary lateral curvature of the spine, or scoliosis, and in Utrecht he found the very man for his case, Mr. Skatt, who undertook the cure, but would name no sum as his fee, so that Dr. Creighton was unable to carry out Sir Ralph's instruction to make an agreement with Skatt.

Sir Ralph Verney to Dr. Creighton.

February 18, 1652(3).

I thanke you for your care of Muns crookednesse if you (upon conferring with others that have had experience of ye Mans practises) conceive hee can cure Mun, soe as to make him absolutely streight, I am content he should begin the cure as soone as you and hee thinke fit but I think it necessary that you should first know what hee expects for his reward least hee proove unreasonable afterwards; for tis usual with some of that profession, to make very imoderate demands, not only for theire paines and skill but also for such bathes, Oyntments, Irons, and such like matters as shall bee requisite for the worke. in my opinion tis best agreeing with him for altogeather in grosse. I pray informe me what you doe in this as soone as conveniently you can.

Dr. R. Creighton to Sir Ralph Verney.

February 18th, 1653.

Mr. Verney is very well god be praised, and this day hath enterd his harness; that rare man hath wrought a miracle upon my L. Gerard, and to him fr. all parts of Europe people flock in great abundance. He doubts nothing of Mr. V.

Dr. R. Creighton to Sir Ralph Verney.

February 4th, 1653 (old stile).

I could not agree with Mr. Skatt as you commanded in yor le^rs^, nor doth he bargayne (?) wth any man, it is not his custome, nor manner of proceeding: and in that poynt he is very superstitious: If he cannot cure, though he upon entreatie may trie and miss, yett he taks nothing, accounts his labo^r^ lost, and if he do cure, as he is so judicious that he hardlie undertaks any thing what he brings not to pass, then he taks so reasoneable (as I am enformed by all that know him, and in speciall by an English chirurgian who lives heere, and is a kynd of retayner to his house) that they who receive benefitt by him ar willing oftymes to give more then he is willing to take. He hath beene in harness two weeks, so fynely fitted for his crookedness as yett I never saw any thing: It is perfyt massive irone all along (excepting su^m^ holes heere and ther, wheer he pleaseth) back and breast, lyned wth quilted fustiane and all so light as is wonderfull: This I say he hath worne two weekes, and su^m^ dayes: At first when he putt them on, he fellt no payne, or pressure at all, but at (?) upon his haunchebone of his left syde, wher the arm^r^ to keepe him up towards the right syde, gav him a little twitch now and then upon that bone. Mr. V. wold fayne have had it cutt a little shorter, but Mr. Skatt wold in no wayes be brought unto it: in less then a weeke that payn went away, and then he fellt his harness su^m^ what loose upon him, wherupon we the second tyme went to him to lett him see, who streithned it, by pinning sum iron buttones closer, and drawing sum strings, but then Mr. V. fellt greate payne in his right shoulder then befor he hade fellt on his haunchebone, insomuch that all night he slept very ill, it lay so hard upon that shoulder, and yett I could not obtayne the relaxation of one hayre bredthe and now the payne is allmost quyte gone, he playes on the Lute, followes his other studies, goes abroade, to dinner, to the fields, enjoyes his health, God be praised, and is what he was befor, only that right arme he can scarcely raise to combe his heade, by reason of the straitnes of that harness towards the right shoulder: And Mr. Skatt doth not doubt but to make him as straight, as any in Christendom wth in these six Moneths and less, once he sayd nyne Moneths now he says six: and when you pay him you ar in the same condition wth My L. Ger: and thowsands more that flock to him from all parts of Germany and Denmark: For he never makes bargaynes and to do as others, as all men do, I hope you will not think it amiss: Mr. V. weares his harness under his doublett very patiently, more than I ever expected: and truly Sir, he is no ill conditioned youth: I have beene in his company now six Moneths full, and I know not any vice in the world to wch he is inclined: extreamly civill, and free fro all intemperance; eates his meate hartily, drinks very little wyne, grows tall apace, but will shoote out extremely, when his crookedness is gone, wch did not a little pinch and hold back his growth: One thing I must putt you in mynd off, you did ill forgett, that shute of cloath wch I so often wrott to you for, and wch you promised to send: and you must take heede what you promise to young men, who will daily call for a performance, his last cloth sute wch I made heere I gott the tailor to lett it out in the seames for his harness, and becaus he could weare no waistcoate wth that harness, and his armes were all bare but his shirt and doublett, I made him a payr of sleeves of scarlett bayes, to keep him warme, wch he weares night and day: For Mr. Skatt desired he should be kept fro cold, eate no badd meate no oysters, nor such things as might endanger his health, or hinder his purposes towards him. I have bought him su^m^ few books too: he hath redd Salust all over and over, and is now in Livy, wch I have bought him wth Ceaesar's Commentaries and Quintilian at an auctione of books, this last weeke, and he goeth on very well in his booke and lute, other exercises as yett we have undertoke none, by reason of his straightgirding as I have told you: wth in a moneth or so I beleeve we shall fence at the fenceing schoole, wch Mr. Skatt will allow him so soone as he is able to stirr his armes as he should, and that art requires, but he will not suffer him in any case to dance till he be perfytly cured and past his help or art:

The Mr. Skatt here mentioned (Schacht was probably his name, but it is written Skatt, Skate, Scatt, Schott, or Skott) seems to have been an artificer, probably an armourer, who made steel "bodies" or "harness" something like the breastplates and backpieces which were at that time still worn by soldiers.

Evidently he had a great reputation. Dr. Creighton writes "that rare man hath wrought a miracle upon my Lord Gerard," and further..... (of Mr. Skatt's patients he says): "If they be young the sooner are they cured, and he selldom undertakes old people, because inveterate ills, especially when they come by nature, are hardlir removed; yett hath he done some cures to wonder upon, some of 50 yeares and upwards, but selldomer from the craddle to the ages of 30 or 40 ar his patients, all sexes, ranks, qualities, and conditions, and young people have been brought to him from further than the utmost parts of Shettland or the Orcades, even from Swedland, Denmark, Holstyne, etc.; and this is his way: if when he looks upon the partie, he finds the disease curable, he undertaks it, and without bargayning, expects surely an honest reward, as the partie is or willing or able to bestow: and that I could neither learn or hear but that he was an exceeding honest conscientious man. If so your nature is defective, or so nearly collapsed that it is incurable, he will not undertake it: if he do and miss, as he selldom or never does, I have heard he takes nothing, but he misseth not one of a thousand."

Skatt did not rank as a professional man, but despite his skill and reputation, as a mere artificer, for Sir Ralph and Dr. Creighton both refer to him as "the man," a phrase which neither of them applied to physicians or surgeons when these were mentioned in other letters.

It seems probable that Skatt only charged for actual work done in making or altering instruments and thus kept "o the windy side o' the law" and avoided interference from the guilds, which would have been invited by any regular charge of fees for the treatment. Similar methods of money making are familiar to us in the twentieth century, and similar promises of "no pay, no cure!" savour of the quack who generally, however, gets paid without a cure.

In six months great improvement is reported, but the patient was restive, as well he might be, for as he piteously complained, the harness had eaten a hole in his flesh. He had spent much of his boyhood in France, wrote French better than English, and his letters to his father were generally in the former tongue.

Edmund Verney to Sir Ralph Verney.

Utrecht, 31 October, 1653.

J'avais quitté mon corselet, pour quelque peu de temps, a cause d'un mal qu'il m'avait fait avoir par l'esthomac, lequel estait de la chaire pourrie en telle sorte que cela m'avait mangé un trou dans ma chair, mais Dieu mercy cela est guary, et je porte encore ma curace.

Once a week the "corselet" or "curace," as Mun called the appliance, was removed so that he could change his shirt, which became offensive, "a cause qu'il put tant," but Skatt made a favour of allowing such frequent changes.

Edmund Verney to Sir R. Verney.

8 July, 1653.

..... J'irais volontiers deux fois la septmaine chez Mnsr. Skatt: mais c'est un homme qui est si plein d'affaires qu'il ne peut presque se tourner. Ayant pour le moins deux mile personnes qui vont chez luy pour ettre guaries tant homes que femmes, garçons que filles. S'il fallait qu'il les accommodast toutes les septmaines ou tous les mois il ne le pourrait pas faire; mais a moy il m'accommode toutes les septmaines par sa faveur, a cause que je n'ay point de serviteur pour m'accommoder quand quelque chose me manque. Car les autres ont des serviteurs pour ce faire cela.

The patient found the restraint of the "bodies" irksome, and notwithstanding his tutor's protests and Myne heer Skatt's advice, he went without them for days at a time. Then (July 22nd, 1653) we hear that he is nearly cured. "Je suis fort amendé et myne heer Skatt m'asseure que dans 2 mois je seray parfaittement guary: mais il faut que je porte pourtant mon corselet longtemps après je suis guery, de peur que cela ne retombe encore pire qu'auparavant."

After a year's treatment, the question of payment begins to be discussed. Sir Ralph's estate had suffered much and money was very scarce. Seventy-one guilders seems to have been the charge for instruments and fitting, etc., and a substantial gratuity was expected because "he (Skatt) is at great charges in maintayneing 16 or 17 servants daily and three sonnes very expert in his art, that do nothing but work in irone and steele, and brace and unbrace crooked limbs: They who have received benefitt by him, use to present him wth a good peece of plate, or perhapps a round summe of mo., over and above his accounts, wch they do cheerfullie and he receives, thankfullie, for he is noe unreasonable man: He hath done a notable cure on Mr. Verney but as yett it is not perfyt and therefor till that be, he will not permitt him to dance, by no meanes, yett I have seene him dance, girt in his arm^r^, and he dances well: it was in very goode company, and he was requested to it: Mr. Verney desired me to write to you, that you wold be pleased to bestow a servant on him, he waxes tall, and he wold have one to wayt upon him: and Myen Here Schott sayes, it wold much conduce to the perfyting his cure, for he wold instruct his servant to gird and ungird him, that whersoever he removes he shall neede no other help then his servant:

We next find that Sir Ralph is disquieted by reports that his son is not nearly so straight as he had supposed, whereupon Dr. Creighton reports the result of an inspection of his pupil's back, which appeared to be improved but not cured, yet he is rather urgent that Skatt should be liberally dealt with "according to your owne honour."

Dr. Robt. Creighton to Sir Ralph Verney.

June 2, 1654.

As concerning what you write of Skatts to me, and Mr. Verneve's cure, he may tell you what he please for his creditt, and his fathers, but I will not dissemble wth you, nor did I ever in anything: He is not perfytly cured, but infinitly betterd: At this tyme he weares his armes, and therfor I could not see him nakd as you comanded me in yr. l^er^ for he weares them night and day, and for so long a tyme: but the last weeke when his armes were a mending and off, he himself desired me to looke on him nakd, and I plainely see, that right shoulder, wch bunched out into a sharpe poynt befor is now flatted, blunted, or retunded (?) and putt in, yett swells still in that blunt poynt and is not lyk the other shoulder: this is playne to any man's view: and it appeares too when he is clothed and weares a cloake, and appeares less when he weares his armes yett wth all this I am persuaded he might have removed to any other place if he hade hade any servant attending on him, or any in his company who could gird and ungird him: wch is not so easie a thing to learne or do as you suppose. The old man doth all this to Mr. Verney himself, and useth him with a great civilitie as I have seene, and Mr. Verney hath informed me when I have not been there: And therfor if you think fitt that Mr. Verney stay heere till towards the spring or so, you may, for if in that tyme he be not cured, I am persuaded he never will be: and Mr. Verney is very desirous to be wholly perfyt, but I leave all to yor owne discretione: As for paying him the bill of 71 guilders, befor you gratifie him for goode and all, under yor correction I hold that nowise convenient first becaus that old bill is much encreased since, by divers mendings, braceings, and fidlings up and downe of the armes: And then it wolde breede in him a meane esteeme of yor worth, and make him think you hade a meane esteeme of him who thought him so poore you must pay him peecemeele, and not at one entyre payment: No man payes him so I assure you, nor is it his custome to expect any thing, after dischargeing of his bill: Therfor whensoev^r^ you intend to pay him, a new bill must be called for, and wch dischargeing that, his gratuitie superadded: I conceive this the fittest way, and shall so punctuallie give you satisfacione when I send you the residue of this quarters bill wch is now ended after a week or so, to this poynt of Skates, that you shall not need to doubt what to do.

This did not satisfy the careful father, who urged Dr. Creighton to make a "second and more serious searche ..... Nor did I think it a fit time to give anything till Mun be cured." This was also the patient's view "qu' on ne doit pas payer l'ouvrier auparavant que son oeuvre soit accomply."

After two years' treatment, Edmund Verney was about to leave Utrecht and "the man's" bill must be settled. Dr. Creighton suggested 300 gilders, the patient thought 500 at least would be proper: but, as the tutor says, he was "a young man and one that knows more how to spend than gett money." There is no record in the letters of how much was paid in the end, but no doubt Mr. Skatt was satisfied, for we find that two years later he came to London and supplied Edmund with a "paire of bodies" at a cost of £30, which would be a pretty stiff price nowadays for the most elaborate spinal support. Mun seems to have thought it too much for "une chose qui n'a puny suffisament," and evidently after four years' energetic treatment and at the age of 20 he was not cured, for the last we hear of the matter he is wearing the bodies, and meant to continue doing so despite the discomfort to which, as he sadly writes, "vous savez que j'y ay esté accoustumé toutte ma vie."

As it seemed to me that so important a man in his day must have left some record behind him in Utrecht, I asked my friend Professor Saltet of Amsterdam to make inquiries. He was kind enough to do so through Drs Peypers and Brondguet, and Dr. S. Muller, the archivist of Utrecht.

The latter wrote that after diligent search no trace of Skatt could be found. Probably, as Dr. Saltet says, "If he had had something to do with the magistrate, the difficulty of finding him would have been small. But perhaps he was a very brave and useful man, and so posterity forgot him, as in a great many other cases."

Yet it seems probable that one or other of his patients—and he had 2,000 at a time—may have left some record of Herr Skatt behind him, or some medical man may have thought it not beneath his dignity to study and describe his mode of treatment. Why did not the "English chirurgian," who was "a kynd of retayner to his house," leave on record some description of Skatt's doings? For it must be remembered that he treated deformities of the limbs as well as of the trunk, and some details of the methods of this anticipator of Sayre would have been, even if not instructive, of antiquarian interest, for nearly a century later even Andry, Dean of the Faculty of Medicine in Paris, and inventor of the word "orthopaedia," in his two volumes is provokingly chary of descending to details of treatment.

E. MUIRHEAD LITTLE.

MEDICAL MAGISTRATE.—Mr. J. Lynn Thomas, C.B., F.R.C.S., J.P. for Co. Cardigan, has been placed on the Commission of the Peace for County Glamorgan.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1903.

SUBSCRIPTIONS to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, JULY 11TH, 1903.

M. LOUBET'S VISIT TO ENGLAND.

M. LOUBET has been very happily described by the French press as the "ambassador of the French nation." The President of the French Republic, to whom the delicate mission of cementing the ties of friendship between the two nations has been entrusted, possesses those qualities so essential to a diplomatist—tact, dignity, and courtesy. M. Loubet has especially shown his wisdom and modesty in accepting his welcome as one extended to the whole French nation rather than to himself. For centuries our relations with France have been of the closest: we have fought against her, but we have also fought beside her, always feeling at heart that a strong bond of union existed between the two nations. Both have worked for the permanent advancement and welfare of their countries in the development of commerce and the internal and external government of their peoples, for the maintenance of peace, and for the advancement of science and art. Estrangements, which with careless handling might have developed into serious breaches, have existed, and did until lately exist, between France and England. Happily King Edward's visit to Paris and the warmness of his reception there, and now the welcome accorded to M. Loubet, have re-established the *entente cordiale* between two nations which have no serious cause for quarrelling, and a thousand reasons for remaining friends and safeguarding the civilization of Europe.

It is satisfactory to see that the tact of the King and President in paving the way for friendly relations between our country and France, has been fruitful in inspiring both nations with a strong desire to be reconciled thoroughly. The reception accorded to M. Loubet in London has lacked nothing which official ceremonial and the spontaneous welcome of the people could give to make it agreeable to him and to the great nation of which he is the first magistrate. The Lord Mayor of London is, in a sense, the mouthpiece of the commercial and industrial portion of the nation, and if the President had not been assured of the feelings of the nation by the joyful faces of the crowds lining the streets, the warmth of his greeting at the Guildhall, and the cordiality of the Lord Mayor's speech must have convinced him of the genuine nature of the welcome extended to him. "I join heartily," he said in his reply, "in the wishes you express for a cordial understanding (*entente cordiale*) between the two peoples, each of which holds a necessary place in the history of civilization. The feeling of their common interests should inspire them with that spirit of conciliation and of accommodation which will serve what you have justly called the 'cause of humanity.'" Most significant was the presence of M. Delcassé, Minister for Foreign affairs. M. Delcassé is above all things a patriot, and if war with Great Britain were to the advantage of his country, he would certainly not try to prevent it. M. Loubet referred to the assistance rendered to himself by M. Delcassé in seeking to bring about a good understanding. "The presence at my side," he said, "of the Minister for Foreign Affairs of the Republic is a pledge of the value attached by the French Government to developing between our two countries happy relations of friendship."

It is characteristic of M. Loubet's kindness of heart that he should have spared time out of the endless engagements he had to fulfil during his brief stay in England, to visit the French Hospital in Shaftesbury Avenue. This hospital which incorporates a dispensary with the same objects founded by Dr. A. Vintras, is open to all French-speaking foreigners, and the nursing staff consists of Sisters of the Sacred Heart. M. Loubet, accompanied by M. Cambon, the French Ambassador, and attended by Lord Howe, arrived at 9 o'clock on Tuesday morning. A short ceremony took place in the committee-room of the hospital, when the members of the Managing and Medical Committees had assembled. Noticeable on the walls of the room are marble tablets commemorating the founders and recording the visit of the Prince of Wales and the Duke of Edinburgh in 1879.

M. Loubet was received by Dr. Vintras, Senior Physician; Mr. Edmund Owen, Surgeon-in-Chief; M. Ernest Lazarus, Honorary Treasurer; M. Ernest Ruffer, Honorary Secretary; M. Arthur Beaume, M. Eugène Cocquerel, M. Vinant Benoist and others, some thirty in all. Dr. Vintras read an address of welcome expressing the pleasure and gratitude of the hospital at the President's visit. M. Loubet in a neat little speech, delivered very distinctly, expressed his approval of the good work carried on by the hospital. No one, he said, was more to be pitied than the exile suffering from sickness in a strange land. The success of the hospital was greatly due to the support accorded to it by English citizens, and he thanked them for assisting his countrymen in the hour of their need. A great work was being done most successfully. M. Loubet presented to Mr. Edmund Owen the decoration of Chevalier de la Légion d'Honneur, and afterwards inspected the wards. When he drove away, he left behind him a lasting impression of his sympathetic nature and kindliness of heart.

M. Loubet's visit to England has not been due to the caprice of a statesman wishing to see a neighbouring country: it is the outcome of much striving on the part of statesmen to bridge over a gap which, with less able and sympathetic handling, might have widened into a gulf too deep to be bridged over.

The debt which science owes to France is nowhere more heartily recognized than in this country. In physics, astronomy, chemistry, physiology, and pathology especially we know how the wide and brilliant generalizations, and the accurate and painstaking researches of French men of science have illumined many dark places, and how the acute logical genius of the French nation has often produced order out of chaos by systematizing knowledge.

The medical profession, at any rate in this country, will never forget the debt owed by physiology to Claude Bernard, by clinical medicine to Trousseau, and by pathology and hygiene to Pasteur, nor will it ever forget the welcome extended to our Lister at the Pasteur Jubilee in Paris. We venture to believe that the sincere respect which

has always existed between the men of science of the two nations has had a not unimportant influence in bringing about the present *rapprochement*.

PUBLIC HEALTH AND THE MEDICAL CORPORATIONS.

Dr. Clouston is always interesting; we may not always be able to agree with him, but at any rate he is read, he compels attention, for he has a pleasantly fresh way of looking at things. He is, we do not doubt, a respecter of persons and institutions but he is always asking them, What are you doing? What are you for? In the address published elsewhere he has put such questions to the Scottish Medical Corporations, not ironically or even reproachfully but merely in a stock-taking kind of way. We live in busy inquisitive times; the whole world with such exceptions, perhaps, as China and Central Africa is filled with curiosity to learn some new thing, and, half bewildered, strains its eyes and ears towards some brighter future, some new gospel which shall sweep away these evils which with pathetic, because ignorant, trust it dimly believes to be removable. Many of these evils, perhaps most, are physical matters upon which the medical profession may give light and leading. Dr. Clouston asks the Scottish Corporations if they are shedding this light on the public, if they are leading, and though his patriotism, and perhaps his modesty, prevent him from addressing his questions to all corporations they may be asked with equal urgency south of the Tweed.

Dr. Clouston took for his main illustrative instance the defects in physical training and development to which special attention has recently been directed by the recruiting returns. By a coincidence there was a debate on this same subject in the House of Lords on Monday evening. It was raised by the Earl of Meath, who drew attention to the statement in the report of the Inspector-General of Recruiting, that "the one subject which causes anxiety in the future as regards recruiting is the gradual deterioration of the physique of the working classes from which the bulk of the recruits must always be drawn." Lord Meath said, truly enough, that the chief things wanting were healthy towns, since the people are flocking into them, sanitary homes, and abundance of good food, pure air and water, exercise, and education.

From whatever direction we approach the consideration of questions affecting the health and physical development of the people, we come soon upon the housing question. Though much has been done and more is in contemplation to improve the house-accommodation of the poorer classes, it still remains a problem for which no complete solution has been found. Overcrowding in tenement houses means a deficiency of pure air and exercise; owing to high rents, it means also a deficiency of good food. The mother is under-nourished, and her infant is born with a congenital frailty of constitution, which is aggravated when, throughout its infancy, it is dieted on watered, manipulated, and often putrescent milk; its childhood is nurtured largely on tea, white bread, and margarine, and its adolescence on one does not quite know what curious compounds preserved in many ingenious ways.

According to the Duke of Devonshire, the Local Government Board in England does not accept the conclusion of the Inspector-General of Recruiting that the physique of the working classes is deteriorating; but he added that the Director-General of the Army Medical Department, in a minute which is shortly to be published, has stated that "the rejection of one out of every three men examined by the medical recruiting officer, points clearly to poorness of recruiting material." This, of course, does not represent the whole deficiency, since a large number of men who are obviously below the standard are not brought up by the recruiting sergeants for medical inspection at all. The minute further points out that the rising generation in all classes below the artizan class includes a large number of men of very low physique. The Duke of Devonshire admitted that the Royal Commission on Physical Training in Scotland had not arrived at any definite conclusions as to the deterioration or otherwise of any class of the population, although they found that there was "an undeniable degeneration of individuals of the classes where food and environment are defective."

The Government propose eventually to appoint a Royal Commission, but before doing so have invited an expression of opinion from the Royal Colleges of Physicians and Surgeons as to the causes of the physical deficiency which undoubtedly exists in some part of the population, as to the best means of remedying the deficiencies and as to the reference which should be made to a Royal Commission when and if it be appointed. We confess that we are not very much enamoured with the proposal. Satisfactory results would we venture to think, be far more likely to be reached were the reports which are to be made by the Royal Colleges to go the root of the matter, so that the Secretary of State for War, the Home Secretary, and the President of the Local Government Board, who are all considering the matter, might, when they had these reports before them, feel themselves in a position to make recommendations. In this way remedies might more speedily be put into effect than would be possible if it is thought necessary to wait till a report has been ground out by the cumbrous machinery of a Royal Commission. The questions lying at the base of any such inquiry are, as Dr. Clouston points out, of a physiological and medical character, and we therefore rather regret to observe that the Committee appointed by the Royal College of Physicians of London at its last meeting does not include any physiologist.

The case is a good example of the kind of subject upon which the public are in need of guidance from the medical profession. How is the medical profession to bring to the knowledge of the public the special information which it possesses? The profession is rightly sensitive with regard to direct appeals by individual members to the general public, and Dr. Clouston suggests that the three medical corporations in Scotland, after severally considering the matter in all its bearings, should discuss it together, and appoint a large representative joint health committee. This committee would be instructed to put itself into communication with medical men, including those engaged in the public health service all over Scotland, with public health organizations, and with public bodies, clergymen, and teachers. Having thus collected opinions, it would proceed to formulate a working scheme for the better education of the public on health questions. How far the plan may be feasible we cannot pretend to say, but since it is put forward by the President of the Royal College of Physicians of Edinburgh we presume that there can be no insuperable technical difficulties in the way. We would, however, point out that work of this kind has been done for many years by the British Medical Association, which has been successful on many occasions in influencing the course of public health legislation. The

Association will, we are sure, be glad to see the corporations entering the same field, even though a little late in the day.

INORGANIC SALTS IN RELATION TO NUTRITION.

So much attention is paid to complex organic bodies that the significance of the simpler inorganic salts taken in food is apt to be overlooked. The supply and nature of these salts must necessarily differ in infancy and adult life. The large percentage of lime in milk is a very striking feature. In fact 1 litre of cow's milk contains 1.7 gram of lime, while limewater itself contains 1.3 gram. The opposite extreme is reached in butcher meat, which contains only one-tenth of that present in human milk. Cow's milk contains a much larger amount of inorganic salts than human milk, and the calf we know grows much more quickly than the infant.

Of all the great choice of inorganic salts presented to us by Nature, common salt is the only one we add as such to our food. It is only herbivores amongst animals that seek additional salt, never carnivores. The domestic cat and dog leave untouched highly-salted food. The wild ruminants are attracted to salt-licks, and the hunter tempts them with salt. In its food a herbivore takes three or four times as much potash salts as a carnivore. Bunge explains the desire for common salt as due to the large consumption of potash salts. Potatoes, and other important foods such as the cereals and legumes, are very rich in potash. This is said to explain why vegetarians take far more salt than those who consume chiefly animal food.

Amongst the ancient Greeks and Romans the animal sacrifice was always offered without salt, while salt was presented with the fruits of the earth. The Jews also offered salt with their oblations. Tacitus tells us of the deadly strifes between the Germanic tribes for salt. The Roman soldier was partly paid in salt, hence our word salary. Mungo Park narrates that in the central parts of Africa salt is one of the greatest luxuries. The children "licked" salt when they could get it as our own children lick sugar. On the Sierra Leone coast the desire for salt amongst the negroes is so great that they will give all that is dear to them for it. Bunge regards the continued use of vegetable food as the cause of this great desire for common salt. Lapicque has shown that certain tribes of negroes, who cannot obtain common salt, add to their vegetable food wood ashes which contain much potash. Recently E. Abderhalden has analysed the substance which the inhabitants of Angoniland in British Central Africa use as a substitute for salt. It is prepared by burning together the excrement of goats and wood ashes. It is greyish in colour and contains some unconsumed carbon. They shake it from a woven basket, and extract it with warm water. It was found to contain about 21 per cent. of potassium chlorine and only 0.5 per cent. of sodium chlorine. This use of potash salts by vegetable feeders seems to be opposed to Bunge's theory. Bunge regards this as a "perverted instinct." In any case, since common salt became available, the aborigines no longer prepare or use a potash salt.

Exactly those vegetable foods in which the proportion of potash to soda is highest—potatoes, peas, beans, rye—are the staple food of the European proletariat. It is even contended that the amount of salts we consume is excessive. If we take it that these salts are excreted by the kidneys, a problem presents itself in regard to these organs—perhaps the best-abused organs with which humanity is endowed. Are our kidneys adapted for the elimination of a large amount of these salts? On a diet of meat and bread without the addition of common salt, the amount of salts of the alkalies excreted is not more than 6 to 8 grams a day. When a person lives largely on potatoes the amount excreted may reach 100 grams. Taking the other extreme, we find that on a diet of rice, the staple food of the majority of mankind—as represented by the Eastern nations—only 2 grams of alkaline salts are excreted in twenty-four hours. Perhaps there is here an indication that rice might be usefully employed in certain affections of the kidney.

The puppy grows more rapidly than the calf, the calf than the foal, and the foal than the infant. The infant doubles its "birth-weight" in 180 days, the foal in 60, the calf in 47, the kid in 22, the lamb in 15, the puppy in 14, a kitten in 9½, and a rabbit in 6.

It is obvious that a woman during gestation and lactation requires a larger amount of inorganic salts, and specially is this the case with the lime salts in the food. Suppose the infant to suck 1 litre of milk daily, where is the mother to get the necessary lime salts if she lives on meat and white bread, with perhaps some sugar or sweets thrown in? She must take the lime from her own bones and her teeth. It is a not uncommon saying among women—a tooth for every baby. The lime for the mother is best supplied by a liberal use of cow's milk as part of the dietary; but as this is poor in iron, the diet ought to be supplemented with food rich in iron.

The difference in composition of the milk of various mammals is well known. How is it to be explained, at least teleologically? The composition seems in part to depend on the rate of growth of the suckling. We should expect that these substances specially required for the growth of the suckling—proteids and inorganic salts—would be more abundant in those animals that rapidly grow, and this is found to hold true. The proteids, phosphates, and lime are specially abundant in these cases. The chlorides of the alkalines play a part in secretion which, perhaps, is not always evident. Renal cells could scarcely withstand the action of a solution of pure urea. The chlorides, perhaps, act protectively for these structures. It seems probable that the amount of fat and sugar in milk is largely regulated by climatic conditions. The milk of the dolphin globicephalus contains over 40 per cent. of fat.

When we compare the percentage composition of the ash of milk with that of the total ash of the suckling, we find a singular parity in results, in fact, the inorganic constituents exist in milk in the proportion in which they are required for growth. This is all the more remarkable when it is remembered that the distribution of these substances in the plasma of the blood is absolutely different. Nature has endowed the secretory cells of the mammary gland with the power of selecting those constituents in exactly the proportion best suited for the needs of the suckling, adjusting and adapting the relative proportions to its rate of growth.

There is one striking difference, however, in the relative composition. The amount of iron in the milk of the bitch is six times less than the ash of the new-born puppy. This is explained by the fact that the puppy at birth has a large amount of iron stored as a reserve in its liver which contains six times the amount in the milk. In the rabbit the iron in the liver gradually sinks until the

fourth week, when the animal begins to feed on green food which contains much iron, and then the amount rises. The infant or suckling can only have obtained its iron supply either through the placenta or the milk. Of course the parallel in composition obtains only in the case of animals whose young grow rapidly, for example, the dog or rabbit. The inorganic constituents of milk play a double part—they not only serve to build up the tissues, but have an important influence on the daily excretion of urine. A considerable amount of alkaline chlorides is excreted in the urine. A dilute solution of common salt is spoken of as a normal or indifferent fluid which has little or no action on histological structures provided it is isotonic with them. A salt-free urea solution would injuriously affect the renal epithelium.

There is one other substance present in milk, lecithin, which has considerable interest. Perhaps its chief use is in connexion with the growth of the central nervous system, or rather the brain. The brain contains most lecithin, indeed it contains eight times as much as muscle.[§] During the infantile period the brain grows steadily. The relative weight of the brain varies greatly in different animals. We would expect to find more lecithin in milk the higher the relative brain weight, and Burow by comparing the calf and dog with man found this to be the case.

THE ANNUAL MEETING AT SWANSEA.

We learn that the proposal to establish a camp at the Mumbles, near Swansea, for the convenience of members attending the annual meeting, has not met with much response, and that unless a considerable number of names are sent in within the next few days the project must be given up. Full particulars were published in the British Medical Journal last week (p. 42). The Secretaries, Mr. W. F. Brook, F.R.C.S., Longlands House, Swansea, and Dr. Frank G. Thomas, 2, Brunswick Place, Swansea, are still ready to receive names, but a final decision must be taken early next week. We are asked to state that several residents in Swansea and neighbourhood have kindly offered to receive members of the Association as guests during the week of the meeting. Dr. Edgar Reid, Swansea, the Secretary of the Reception Committee, will be glad to hear at the earliest possible moment from any one who would like to accept such hospitality. We are further asked to invite all golfers who are disposed to take part in an international match on the links of the Swansea Bay Golf Club during the week of the annual meeting to communicate with one of the following: Dr. Norman Walker, 7, Manor Place, Edinburgh (for Scotland); Dr. Nathan Raw, 66, Rodney Street, Liverpool (for England); or with Dr. Edgar Reid, Swansea. All members of the Association will be made temporary members of the Golf Club.

WHO TIME DOTH GALLOP WITHAL.

The unexpected collapse of the naval debate in the House of Commons on July 2nd found members napping, or inhaling such fresh air as the Terrace can supply, and in their absence fifteen votes on the Civil Service Estimates were passed without a word of criticism or comment. This was the more unfortunate because Sir John Tuke, Dr. Farquharson, and others were anxious to raise a debate on the lunacy vote, with special reference to the question of domestic treatment, and the strengthening of the medical *personnel* of the Lunacy Commission. A strong appeal would, we understand, have been made for the appointment of a Royal Commission to consider the tangled condition of our present Lunacy law and to suggest measures for its reform. But there is some consolation in thinking that Sir John Tuke and his friends may be able to take advantage of the report stage to bring these questions under the notice of the House.

Another illustration of the way in which business can go through with unexpected silence and rapidity in the House of Commons is afforded by the history of the Bill constituting the University of Liverpool. It is a curious fact that a measure which may affect the interest of other institutions, and which contains provisions which might have been considered to be of a contentious nature, can come before the House of Commons without any notice being given. It was stated in the British Medical Journal of June 20th that the Bill having passed through the House of Lords would come up for second reading in the House of Commons on Thursday, July 2nd. No notice of the Bill has ever appeared in the parliamentary papers issued to members at any rate until that day, it never appeared on the so-called "pink paper" (the demand form for sessional printed papers), and only those members interested in the Bill being passed appear to have known of its existence. It was only by an accident that the Bill was not read a second time on July 2nd. As is explained above, the House ran through a great deal of business in a few minutes, so that it was able to adjourn at 7 p.m.; as private Bills, among which the University of Liverpool Bill appears to be numbered, are taken at 9 p.m., the second reading had to be postponed. It would appear that the General Medical Council, had it desired to enter any objection to the Liverpool University Bill, has practically had no chance of doing so. We are informed that if it had been known that the Bill was before a Committee of the House of Lords, the General Medical Council would have appeared by counsel. Further, it is not improbable that some members of the House of Commons might have been glad to take an opportunity of expressing views as to the conditions which should govern the establishment of new universities, and as to the right of such universities to representation on the General Medical Council. The Vice-Chancellor of the Victoria University assured the graduates the other day that Liverpool would probably receive its charter before the end of this month. If this be so, all we can say is that the supervision which Parliament is supposed to exercise over such legislation appears to be of a most shadowy nature.

EVERY MAN HIS OWN PHYSICIAN.

That a little knowledge is a dangerous possession is a truism which is daily proved in a multitude of ways, but in no mundane experience is the wisdom of the adage more fully verified than in that which pertains to the alleviation of pain and the cure of disease. There are two outstanding reasons which may be advanced in explanation of the curious credulity of humanity in nostrums. The first is that every curative method which is loudly proclaimed from the housetops and credited with far-reaching possibilities, however extravagant, will always find an amazing number of blind believers; and the second, that the competitive enterprise of chemists is not unwilling to play up to the foibles of those upon whose faith it thrives and fattens. Elegance in drug administration has almost become a fine art, and while we are prepared to admit that there is much to commend the advance of pharmacy in the direction of minimizing the nauseous properties of many of our most useful remedies, we cannot shut our eyes to the fact that the popular demand for refinement in pharmaceutical methods carries with it a danger of which the public are not sufficiently cognizant. Capsules, tabloids, and cachets are excellent in their way, and may often be preferable to the older and more crude system of mixtures and draughts, but there is much to be said against their indiscriminate use. The fashionable lady swallows with childlike confidence the capsule which she is assured will preserve her figure, or the tabloid which will improve her complexion, or the cachet which cannot fail to relieve the aches and pains from which her tired-out nervous system suffers; but she is blissfully ignorant of the concurrent risks to which the remedies she takes subject her tissues, or of the penalties which are liable to follow a blind acceptance of the loudly-vaunted preventive and curative properties they are stated to possess. A cheap and "enterprising" press has much to

answer for. Through the medium of innumerable daily and weekly papers, the suffering man or woman is confidently assured of complete relief for his or her aches and pains by the simple expedient of a recourse to this, that, or the other "cure" which may be had from all chemists for an inconsiderable money payment, often no more than thirteenpence-halfpenny. The length to which these facilities for self-treatment have gone is strikingly exemplified by a correspondent who sends us a cryptic demand which was recently made upon a chemist in his neighbourhood by some one whose credulity was obviously greater than his wisdom. "Stavanthies Tablodts for the Hart," was the order which this chemist was called upon to execute. Strophanthus was evidently the remedy which was wanted, and the orthography no less evidently proclaimed that the would-be purchaser could probably advance no better reason for his demand than that of blind faith. One can conceive of some neighbour telling him of the wonderful effect which the drug had produced in his own case and advising him, whose symptoms were so similar, at once to get from the chemist, without the formality of a doctor's opinion, some of these magical tabloids, to which he was indebted for such satisfactory alleviation of his miseries. The hopeful friend loses no time in carrying out this suggestion and, in his own way, writes his own prescription. This occurrence is evidence of the fact that the craze for specific remedies is not confined to the educated classes any more than the willingness blindly to take on trust any drug recommended by a well-meaning but foolish friend or any "cure" puffed by a grasping and unscrupulous quack. Medical practitioners themselves are to some extent to blame for the present increasing tendency of the sick public to prescribe for themselves. The plan followed by so many of ordering the preparations and combinations of manufacturing chemists, brings within the scope of general knowledge a smattering of information of the virtues, supposed or real, of the remedies which they order in this convenient form to save the time and trouble of writing out a formula in detail. Such a prescribing method is to be regretted, and, for many and good reasons, should be discouraged. But we venture to think that stronger measures than the force of professional opinion ought to be brought to bear against chemists who supply potent drugs without the authority of a prescription, or without any better warrant than that of obvious illiterate ignorance. As the law at present stands there is no effective obstacle to the purchase by any one of a wide variety of drugs, many of which it is dangerous to use except under the circumstances to which they are suited, and all of which it is unwise to resort to without the sanction and supervision of a doctor.

THE PROCEDURE OF THE CORONERS' COURT.

A curious case of death due to self-administration of a corrosive acid, followed immediately by an accidental injury to the head, was recently the subject of an inquiry at Lambeth. The deceased, a woman, who was alleged to have led an unhappy married life, is believed to have first gulped down some hydrochloric acid to which she had access, and then to have rushed into the street. Running across the latter she was knocked down by a bicyclist, and in falling came into collision with a passing tramcar. When picked up she was insensible, and remained so until her death a fortnight later in St. Thomas's Hospital. We learn that on admission she was suffering from typical symptoms of cerebral concussion, which passed later on into those of cerebral irritation, and she finally died from what appeared to be hypostatic pneumonia. There was no history and no symptom of poisoning of any sort: but, *post mortem*, conditions were found in the pharynx, larynx, and stomach which pointed to a strong acid having been swallowed at some time considerably anterior to death. Dr. Freyberger, as well as the medical officer of the hospital, gave evidence to this effect. These were the somewhat complicated facts with which Mr. Troutbeck, the coroner, was so unfortunate as to have to deal, and he acquitted himself not more happily than he has on some other occasions. He was quite surprised that he did not know the cause of death before the medical evidence was given towards the close of the inquiry, and in his summing up grew eloquent on this point as well as on the strangeness of the fact that the hospital authorities did not find out about the acid before death. He, however, hazarded a belief that there might possibly be a medical explanation of this fact. There was, and it is sufficiently obvious. The coroner having summed up in this fashion, the jury attached to their verdict of suicide a rider condemning "the hospital authorities in neglecting their responsibilities while carrying on a public duty." They were not so rash as to endeavour to specify where the neglect came in, and on inquiry we learn that the rider has not been communicated to the hospital authorities. May we assume, therefore, that Mr. Troutbeck recognizes its injustice, and regrets by this time the effect of his injudicious eloquence? If not, it would appear to be his duty as a responsible official, to bring the matter to the notice of the authorities whose conduct has been impugned. It would be well if Mr. Troutbeck adopted the common procedure of other coroners, which is either to take the medical evidence as to the cause of death first, or to obtain before the inquiry a brief statement of what the medical evidence will be. He would then know in what direction the inquiry is likely to lead him, and the points on which particular evidence must be sought. Thereby amongst other things he will avoid wasting the energies of jurymen and witnesses.

MEDICINE AND SCHOOL LIFE.

Of late years much more attention than formerly has, we are glad to say, been devoted by educational authorities to the medical aspects of school life, both among rich and poor. A great deal of work has already been done, and the ground to some extent cleared, but infinitely more remains to be achieved. The problems involved are of a very intricate nature, requiring for their solution very long and patient investigations of a sort which require some modification in almost every locality at every school-age, and among every class. To be trustworthy, moreover, the deductions made must be derived from inquiries into the personal circumstances and individual life of immense numbers of children, and examination of the physical and educational results obtained in schools of different construction, purpose, and type. In effect, the subject divides itself into two main branches. The first aims at endeavouring to provide for all children in the public schools such individual care as their varying condition as regards sight, hearing, general physique, and freedom or otherwise from contagious diseases may demand. The other has for object the determination of the standards of health and physique which should be adopted, and an attempt to discover what are the conditions as regards school buildings, ventilation, heating, lighting, desks, hours of exercise and play, and various other factors which best make for the favourable physical and educational development of the young. Another point that awaits adequate investigation upon scientific lines is the true relation of school life to the spread of epidemic disease. Our knowledge upon this point is very inexact, and some existing views seem to be incorrect. In London all the problems are more complex than anywhere else, but London, as it should, promises to take a leading part in settling many questions of general bearing as well as those which are peculiar to the circumstances of the life of London children. The London School Board has now quite a large medical staff and since Dr. James Kerr took over the duties of its chief medical adviser about a year ago the programme of operations has been greatly extended. Many investigations of interest are in progress, the results of which should be extremely valuable. None of them, of course, are as yet complete, but in an early issue we hope to give a summary of what is going on derived from a copy we have received of the annual report.

MEDICINE AMONG THE AUSTRALIAN ABORIGINES.

A communication by Dr. John MacPherson to the Linnaean Society of New South Wales contains some interesting information on the medical and surgical customs, past and present, of the aboriginal tribes of Australia. Some of it is quoted by him from the works of other inquirers and searchers in the same field, but most of it is due to his own experiences while engaged in professional work in the New England district of New South Wales. Medicine as a profession among these tribes appears to be regarded seriously, but the preparations for it are brief. Education and examination take place at the Great Bora Initiation Ceremony, when two or three youths from each tribe are handed over to the old doctors. When admitted, however, the youthful medical man is not entirely out of leading strings, and has to conduct himself circumspectly. If his professional zeal is considered too great, he is liable to be reported by a kind of General Medical Council to the chief of his tribe, whereon he is "taken off the register" by being summarily put to death. The alleged object of this is to prevent any doctor submitting a patient against whom he may happen to harbour resentment to unnecessarily drastic processes. The interests of the public are further guarded by its being at liberty to summon to its leafy bedside as many rival practitioners in consultation as it pleases. A species of massage and blowing on whatever part is supposed to be the seat of disease are common practices, but the favourite of all is mouth suction. Often it is preceded by inserting a cigar-shaped needle into the flesh, and the operating surgeon, after sucking the wound thus formed, produces from his mouth the *materies morbi* in the shape of a pebble or some similar object. The milky sap of two species of *Excaecaria* is also used as a counter-irritant. It is a powerful acrid fluid, and capable of destroying sight if applied to the eye. The leaves of the *Eucalyptus Viminalis* are used for diarrhoea, and a decoction of its bark, which contains tannin, is employed as a lotion in ophthalmia. A good many other herbs are also in use for uncertain purposes, among them being one which yields duboisine. The fat of the carpet snake serves as an embrocation for rheumatism; while snakbite, from which it is said the natives rarely die, is treated by free scarification and suction. The poisoned darts which the natives formerly employed were prepared either by tipping them with the juice of a mountain shrub, or by leaving them for some weeks in the fat of a putrid human corpse. Dr. MacPherson was unable to obtain a specimen of the shrub employed. Fractures appear to be treated much as they are elsewhere, a comfortable splint being made from the bark of the tea tree. Midwifery is not undertaken by regular practitioners; each woman is attended by her own female relations and the male doctors hold aloof. The natives aver that before the coming of the white man they suffered little from disease of any kind, and that tumours were practically unknown. Under the influence of drunkenness and other evils which civilization has brought in its train, the aboriginal tribes are fast dying out, a fact which makes Dr. McPherson's notes all the more valuable.

MEDICAL OFFICER AND CLERICAL CRITIC.

In these days of enlightenment we are apt to be lulled into a sense of false security by a belief in the widespread existence of a forbearance which is unwilling to admit the possibility of evil until every alternative of good has been disposed of. More especially are we entitled to look for a manifestation of Christian charity in those who are the professed disciples of the great Master whose life was the most perfect exposition of its gifts and graces. And yet it is a curious anomaly that some of the most glaring instances of an uncharitable spirit which every now and again arrest attention and remind us that the self-sufficiency of the "unco guid" must still be reckoned with as a factor in human society, are met with in the ranks of those whose education should have taught them toleration and whose profession demands no less of them. A deplorable evidence of the persistence of this ancient and unworthy spirit was brought to light at a recent meeting of the Carlisle Board of Guardians. From the *Carlisle Journal* of June 30th, we learn that at a meeting of that Board held on the previous day, a letter was read from the Rev. J. Wilson, the Vicar of Dalston, reflecting seriously on the conduct of Dr. Doughty, who is medical officer to the Poor-law authority. In the course of this document the reverend gentleman called the attention of the guardians to the fact that on June 16th he called to see a farmer and his wife, both of whom were bedridden. At a glance his diagnostic intuition enabled him to see that the wife was dying, and that for days she had been painfully distressed by her husband's cough. Forthwith he called upon the district nurse to have the husband removed to an adjoining room. The old woman, as it happened, died shortly afterwards, and on this ground the clerical critic of the doctor's behaviour thought himself justified in formulating a formidable complaint and in expressing a confident opinion that "if not on medical or sanitary, at least on humanitarian grounds the old people should have had separate beds long before." The venom of the communication was reserved for the last sentence, which declared that "one instance of conspicuous neglect is worth many indefinite complaints." The facts of the case are (1) that both James Armstrong and his wife were seriously ill and did occupy the same bed; (2) that Dr. Doughty had repeatedly suggested that they should occupy separate beds, but that for various reasons this advice had been declined; (3) that during Mrs. Armstrong's last illness Dr. Doughty had seen her at least once a day, and for the last fortnight of her life seldom less than twice a day; (4) that the Vicar of Dalston, during the course of the old couple's illness, appears to have called once, and on that particular day Dr. Doughty's usual visit was delayed because of his detention at a confinement; and (5) that Mrs. Armstrong was not, so far as could be ascertained, appreciably worse when the Vicar saw her than she had been before, whilst her husband's cough had, on her own admission, lasted for twelve years without giving her serious annoyance. It is thus abundantly evident that the Rev. J. Wilson founded his conclusions on the experience of a single short visit, and wrote a letter reflecting seriously and, as the evidence shows, quite unjustifiably upon the conduct of a hard-working and conscientious official. The Board of Guardians is to be congratulated on the way in which it supported the conduct of its medical officer, and we are heartily in agreement with Mr. Savage—a member of the Board—in his opinion that "the bodily ailments of the Armstrongs had been attended to better than the spiritual." We would commend to the Rev. Mr. Wilson a more temperate judgement, and would refer him, for wisdom, to that epistle of Robert Burns in which the following verse occurs:

> They take religion in their mouth;
> They talk o' mercy, grace, an' truth,
> For what? to gi'e their malice skouth
> On some puir wight,
> An' hunt him down, o'er right an' ruth,
> To ruin straight."

PLAGUE AT HONG KONG.

As will be seen from a note printed elsewhere, the plague this season at Hong Kong is severe. The closeness of the voting at the meetings of the Sanitary Board would make it appear as if the presence of Chinese members on the Board did not altogether make for effective action, and the concealment of cases and "dumping" of the dead must add enormously to the difficulties. Besides this, the early diagnosis of plague is not always easy, even when the number of alternative diagnoses is very limited. In the East, where very many possible causes of pyrexia exist, difficulties in diagnosis must constantly beset the path even of those who are constantly on the outlook for plague. In this relation a communication from a correspondent in Hong Kong is interesting, since from his connexion with one or two native charities he is in close touch with both the people and the plague. This gentleman says: "As an example of our difficulties, I may

quote a case I had this week. A woman was admitted to one of our charitable institutions with a temperature of 102°, a dry tongue, and slight abdominal pain. Careful search was at once made for malarial parasites, but none were found. Irregular pyrexia persisted for a week, and suddenly, on the seventh day after admission, she complained of pain in the neck. A bubo in the submaxillary region rapidly developed, and she died twenty-four hours later. Her case might easily have been one of enteric or any other form of fever, and though plague was suspected and the woman on that account was isolated, there was nothing distinctive in her symptoms to indicate it until the occurrence of the cervical pain and swelling. Among Europeans the disease most likely to be confounded with plague is malaria with fever of a remittent type, and one is greatly handicapped because, before sending for a doctor, the patient has invariably dosed himself with 30 gr. of quinine, and of course the chances are ten to one that a blood examination fails to reveal the presence of the plasmodium if the case is malarial. I had two such cases yesterday, in one of which the man actually had an enlarged femoral gland which, however, I was able to trace to the irritation of a suppurative lesion in his foot. When a bubo is present and superficial, serum may be withdrawn from it, and, after suitable staining, the plague bacillus may be found, but generally by the time such a bubo develops hopes of recovery are fast vanishing. Blood examination for the bacillus of plague is unfortunately almost invariably negative. We never go out here without taking with us the few necessaries for making blood films, and we seldom return from the morning round of visits without two or three specimens. The daily plague returns at present number from 20 to 24 cases, but the actual number of cases is probably about four times this amount. The Chinese have the greatest horror of the thorough disinfection of their houses which is adopted by the sanitary authority, so that a Celestial no sooner gets fever than he packs up and takes the first boat to Canton, and if he does not die on the ship *en route*, he usually succumbs shortly after his arrival." These facts coming directly from one battling on the spot with this terrible scourge are highly instructive, and bear gratifying testimony to the care with which cases are investigated and the enthusiasm with which in Hong Kong the most recent and approved methods of research are adapted to the requirements of everyday practice.

THE VENTILATION COMMITTEE OF THE HOUSE OF COMMONS.

THE Ventilation Committee of the House of Commons, under the chairmanship of Sir Michael Foster, whose special knowledge has been of great value in guiding its deliberations along sound scientific lines, has had before it a rough draft report. It has been partially discussed, but it was felt that more information was needed on various points, such as the best flooring material, the possibility of raising and enlarging the inlets for air, and the best way of preventing the cotton-wool filter, the efficacy of which is admitted, from possibly, under certain conditions, contaminating the air which it is supposed to purify. The sufficiency and efficiency of the heating apparatus has also been considered. The Committee has decided to recommend that the various hygienic departments of the House should be combined under one jurisdiction, and that increased lavatory accommodation shall, as far as structural difficulties may admit, be provided for members and strangers.

CANCER IN WANDSWORTH.

IN his annual report on the health of Wandsworth in 1902 Dr. Caldwell Smith gives the result of some interesting inquiries which he has been making into the prevalence of cancer in Wandsworth. The total number of deaths from cancer and all forms of malignant disease in 1902 was 222, as compared with 202 in 1901. Of this total, 86 were males and 136 females. The return is 45 above the corrected average, and the rate is the highest that has been registered since 1885, the last year for which definite statistics could be obtained. Three of the deaths were of persons under 15 years of age; 126 were from 25 to 65 years of age; and 93 were over 65 years. Cancer of the uterus and breast occurred in 55 females; the males were in excess of the females, as 9 cases to 2, in cancer of the mouth, as 7 to 1 in cancer of the prostate and bladder, and as 26 to 16 in cancer of the stomach and oesophagus. Since 1885 the cancer-rate in Wandsworth has steadily increased from 47 per 100,000 (1885) to 90 per 100,000 (1902). In London as a whole it appears that the cancer-rate was 65 per 100,000 in 1885 and 95 per 100,000 in 1899-1900, falling to 89 in 1901. In 1852 for all London it was 38, so that in fifty years it more than doubled. It is not possible to say how much of this increase in Wandsworth or London is real and how much merely due to more correct certification. Dr. Caldwell Smith quotes the conclusions of de Bois with apparent approval, as published in our columns in 1892, namely (*a*) that cancer of the uterus and breast has declined; (*b*) that cancer of the rectum remains stationary; (*c*) that cancer of the mouth and upper digestive tract has greatly increased; and (*d*) that the most important element in the rise of the cancer death-rate is that from visceral cancer. In Wandsworth the statistics seem to support these views, showing considerable increase in the number of cases of visceral cancer.

PORTMOUTH MEDICAL UNION.

THE Portmouth Medical Union has recently completed the eighth year of its existence, during which Dr. J. T. Leon has become Honorary Secretary in place of Dr. H. J. Dalton, who has left the borough. The rules of the Society have been revised and the question of adopting a new name is under consideration. The matters that have been dealt with during the year were three in number: One was an allegation, proved to be inaccurate, that certain medical men were in the habit of administering anaesthetics for an unqualified dentist, and another an investigation into the procedure of the National Mutual Aid Society. It led to its being condemned on the same grounds as those which previously led to the condemnation of the National Deposit Friendly Society. Correspondence has also been begun and is proceeding between the Committee and the town clerk relative to the admission of private patients to the fever hospital under the care of their own medical attendants. This short list of questions dealt with is satisfactory proof of the value of the Society's work and influence during the eight years of its existence. It should be an encouragement to medical men elsewhere to associate together in order to deal more effectively with the business aspects of practice and to secure the due observance of those *leges non scriptae* which are essential to the wellbeing of the profession.

TRYPANOSOMIASIS IN GAMBIA AND SENEGAL.

DR. J. E. DUTTON AND DR. J. L. TODD, the leaders of the trypanosoma expedition sent out by the Liverpool School of Tropical Medicine, have returned to England from Senegal, and, as we learn from the newspapers, have given an account of their doings to a representative of Reuter's Agency. The expedition left Liverpool on August 21st, 1902, and proceeded to Bathurst in the Gambia. Hence they went into the Hinterland as far as McCarthy Island, and studied the conditions prevailing in the less-frequented parts of the Gambia. Next they preceeded to Senegal, and spent some time in the towns of Dakar and of St. Louis. The special object of their research was the determination of the frequency, incidence, and distribution of the human disease, "trypanosomiasis," in the territory of the Gambia and the adjoining French Colonies. They are reported to have said that the disease occurs frequently both in Europeans and in natives, and that it is distributed from the sea to the upper Gambia. The disease is caused by a trypanosome very similar to that which engenders "tsetse fly disease." Besides the human disease in the Gambia, there is a species of "tsetse fly disease," which is the chief cause of the great

mortality among horses in that country. This disease is very chronic in type, but is probably not caused by the same parasite as the real "tsetse fly disease." Dr. Dutton and Dr. Todd received valuable assistance from M. Roume, the successor of the late M. Binger as Governor-General of the French Colonies in West Africa. The French authorities placed every facility at their disposal, including their large and well-equipped laboratory attached to the hospital at St. Louis. M. Guy, the Governor of the Colony, and all his officials gave every possible assistance. They stated further that the Principal Medical Officer of the Gambia had officially announced that since Sir George Denton and his medical staff have organized mosquito destruction and other sanitary measures in Bathurst there has been a very marked reduction in malaria, both in Europeans and in natives. Dr. Dutton and Dr. Todd have brought home a great mass of material, and they are about to draw up the first of a series of reports on the subject of their expedition. They stated that by taking proper precautions they had both enjoyed the best of health throughout the whole of the time they were on the expedition.

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

We were only able to announce in our last issue the bare report of the result of the election of members of the Council of the Royal College of Surgeons of England. There were but 4 candidates for 3 vacancies, in striking contrast to last year, when there were 8 for 4. The most remarkable feature of this year's election was the small number of personal votes, no more than 10 in 665, whilst besides the 655 valid balloting papers, 3 arrived too late, so that but little over one sixty-sixth of the voters recorded their votes in person. We learn that, owing no doubt to the popularity of the new system which has induced the Fellows to study properly the brief and plain directions in the balloting papers, not one of those papers was invalidated. Mr. Butlin received 424 votes, including 16 plumpers, Mr. Makins 407, including 44 plumpers, and Mr. Dent 352, with 60 plumpers. Mr. Eve was but 17 below the third successful candidate, polling 335 votes, and receiving precisely the same number of plumpers—namely, 60. The two new members of Council are well known to the profession, and we may hope to see Mr. Eve elected on a future occasion. He happened to be junior in date of Membership, though not of Fellowship, to Mr. Makins, whilst both were junior to Mr. Dent. Some surprise was expressed at the sudden determination of Mr. Bowlby not to compete on that occasion, Fellows educated at St. Bartholomew's being, as a rule, very active in supporting their former comrades and teachers. The supineness of the provincial Fellows was even more remarkable. Last year one of their number made a good fight, though he polled 52 votes less than the next candidate, who was successful. On this occasion not a single provincial Fellow came forward. The personal voters have probably reduced themselves to their lowest terms, though the small attendance of voters on election day has reached a degree which is, perhaps, not entirely desirable. The annual show of additions to the museum of the College is held on that day and for a few days longer. Instituted by Sir W. Flower, and greatly extended by the present Conservator, it is always worth seeing. Not many years ago several hundred visitors inspected it on election day, for Members often resorted to the College on that occasion. It would be perhaps advisable if the museum authorities would call attention to the annual additions through the medical papers a week or so before the elections. The annual show is too good an institution to remain in the relative obscurity into which it has fallen.

RADIUM IN THE TREATMENT OF CANCER.

Reports, apparently authoritative, have been received from Vienna to the effect that at a recent meeting of the Medical Society of that city two cases were presented in which recurrent malignant growths had been healed by means of radium. The strongest preparation now in the market was used, namely, Brunswick radium bromide. One case was that of a man of 37, operated on eight years ago for a melano-sarcoma on the left arm. He returned to the clinic six months ago because of multiple recurrences. It was found impossible to remove with the knife the numerous nodules; they were therefore exposed to radium rays for five to twenty-five minutes. Those exposed for less than fifteen minutes did not diminish in size to any appreciable degree, but those exposed to radium light for more than a quarter of an hour became smaller, and totally disappeared in a month. The second case was that of a man aged 61, who was operated on for cancer of the mouth in 1888, and again in 1891 and 1897. Last autumn he again presented himself with inoperable cancer of the lips and palate. Radium was again tried with success. Disappearance of the growths and healing took place within five weeks of the beginning of the treatment. In twenty other cases tumours became perceptibly smaller in a fortnight and in from four to six weeks completely disappeared. The cases were treated in the clinic of the late Professor Gussenbauer. We give the reports for what they are worth, and await fuller details with interest.

THE PROPOSED AMALGAMATION OF THE ROYAL AND THE NATIONAL ORTHOPAEDIC HOSPITALS.

A special Court of the Governors of the Royal Orthopaedic Hospital was held on July 8th at the hospital building in Hanover Square to sanction the scheme of amalgamation under one management of the National Orthopaedic and the Royal Orthopaedic Hospitals. The leading newspapers in the metropolis had received notice of the meeting of the Special Court, but on their representatives attending at the hospital they were refused admittance on the grounds that financial matters of a private nature were to be discussed. Mr. H. A. Reeves, one of the surgeons to the hospital, contended that under the regulations of the institution the meeting could not be held in private, but his objection was overruled by the Chairman, Mr. H. H. Marks, and this decision was upheld by the President, Lord Denbigh, when he took the chair a few minutes later. We understand that the Governors gave their sanction to the scheme of amalgamation subject to the following conditions: (1) That their joint institutions shall consist of two establishments, namely, one central hospital and a convalescent home or outpost hospital in a suburb of London; (2) that the site of the National Orthopaedic Hospital in Great Portland Street, together with the extensions on an adjacent site, generously granted by Lord Howard de Walden at a nominal ground rent, shall be the site of the new hospital; (3) that all beds in the hospital shall be free; (4) that the first committee of the new hospital shall be the combined committees of the two existing hospitals, each hospital contributing an equal number of members; (5) that the medical staff of the new hospital shall be the combined medical staffs of the two existing hospitals; and (6) that, subject to the authority of the Courts, when necessary, the funds of the two institutions should be pooled. Before this sanction was formally given, Mr. Reeves discussed the scheme from a financial point of view, and quoted figures to show that the proposals made by the authorities concerned were unwise and inadequate. There seems to have been no serious discussion of these financial objections, and the following proposal made by Mr. Reeves was not accepted by the Governors: "That the whole case should be referred to a joint committee, representing all parties concerned, for further consideration."

THE JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

We have received a copy of the first number of the *Journal of the Royal Army Medical Corps*, which presents a handsome appearance, worthy of the distinguished service of which it is the organ. In an introductory article by the Director-

General it is pointed out that the necessity for such a periodical has long been recognized by the medical officers of the army. As long ago as 1864 a meeting was held at Netley to consider the question, and the establishment of a journal was resolved upon, and its scope, character, and form were decided upon down to the minutest detail. Soon, however, came the official frost which nipped the root of the project. Though many efforts have been made since then to revive the proposal, they have all failed. The final success of the scheme, which has taken bodily form in the periodical before us, is doubtless mainly due to the energy of Sir William Taylor, who may be congratulated on having found so competent an editor as Major R. H. Firth. The journal will comprise: (1) Original articles written by officers of the Royal Army Medical Corps and others; (2) bibliographical notes on articles of importance and interest to the military services; (3) reprints and translations from military, medical and other journals; (4) official gazettes and official information generally bearing upon the Army Medical Services. It is clearly the intention of the authorities that the *Journal* shall not be a "Grumblers' Gazette" for it is expressly stated that its pages will not be open to controversial correspondence; they will also be closed to "items of social or personal interest other than what is official." As on p. 71 there are announcements of births, marriages, and deaths, we gather that these "items" are regarded as in some way official. We can quite understand that deaths may have a greater or less measure of official importance, but births and marriages would seem to most people to be merely of social or personal interest. But perhaps as M. Anatole France's latest most lugubrious novel is called *Histoire Comique* because, as the author considerately explains, it relates to a comedian, so marriages and births are looked upon in the army as official because they are connected with officers. Another infinitesimal criticism which we may venture to make is in regard to the use of the word "L'Envoi" as a heading for the introductory discourse. It is the character of the "Envoi" to come last, like the bill at the end of the banquet. Possibly the military instincts of the distinguished writer made him conceive of a preface as of something in the nature of a challenge which he was sending to his readers. As far as we can form a judgement from a single number, we think the *Journal of the Royal Army Medical Corps* not only has, in the word of Dr. Johnson, vitality enough to preserve it from putrefaction, but has before it a future of usefulness to the medical officers of the army and to the progress of military medicine in its largest sense.

THE TREATMENT OF INEBRIETY IN AUSTRALIA.

THE Committee appointed by the Government of Victoria in December, 1901, to inquire into the subject of inebriety and the methods for its cure has, we learn from the *Australasian Medical Gazette*, furnished a report to the Chief Secretary. After detailing the work of investigation carried out by the Committee, the report closed with the following recommendations: "1. That provision be made for the registration, under conditions fixed by the Government, of all institutions for the treatment of inebriety. 2. That all such institutions must be placed under Government supervision and inspection. 3. That a special place of confinement and treatment must be provided for criminal inebriates, where the offence may be directly traced to inebriety, or where the ground of detention is habitual drunkenness itself. 4. That a Government institution under a Board of Control be established in some locality suitable for isolation and classification and the opportunity for employment, to which inebriates can be sent voluntarily or compulsorily, in which different methods of treatment may be adopted. 5. That a Bill be immediately introduced by the Government determining the conditions under which inebriates can be dealt with on the lines of the New South Wales measure of September, 1900, and making provision for the foregoing recommendations."

THE VICTORIA HOSPITAL, EDINBURGH.

THE three new pavilions of the Victoria Hospital for Consumption and Diseases of the Chest, Craigleith, Edinburgh, are complete, and are to be formally declared open by Lord Rosebery on Wednesday next. The present hospital has accommodation for 33 patients, but the additional pavilions will bring up the number of beds to 53. It is understood that 10 of the beds will be reserved for patients able to pay a guinea a week towards the expense of their treatment.

MR. JONATHAN HUTCHINSON.

A NUMBER of friends of Mr. Jonathan Hutchinson, F.R.S., have arranged to give him a complimentary dinner on Thursday, July 23rd, the 75th anniversary of his birthday. Those by whom this compliment is promoted, believe that many will be anxious to join in paying this tribute to Mr. Hutchinson as a philosophic thinker in surgical science, a lucid exponent of great principles, and a clinician. The dinner will be held at the Trocadero Restaurant, London, at 7 p.m., and the price of the ticket without wine will be 7s. 6d. Further particulars can be obtained from the Honorary Secretary, Dinner Committee, London and Counties Medical Protection Society, 31, Craven Street, W.C.

LORD LISTER was admitted to the honorary freedom of the Merchant Taylors' Company on July 1st. The honour was conferred in recognition of "his long and valuable service to the country, and particularly to surgery by the discovery and application of the antiseptic treatment."

THE General Medical Council has been summoned to meet in special session on Wednesday next, July 15th, at 2 p.m. The session, which may extend over the following day or days, will be devoted to the consideration of the Inspectors' and Visitors' reports on the examinations of the Universities of Oxford and London, and of the Conjoint Board in England, together with the reports of the Examination Committee on these reports and the report of the Education Committee.

MEDICAL NOTES IN PARLIAMENT.

[FROM OUR LOBBY CORRESPONDENT.]

The Physique of the People.—There was a very interesting discussion in the House of Lords on Monday upon the motion of Lord Meath to appoint a Royal Commission to inquire into the physique of urban populations. He based his request on the results contained in the report of the Commission on Physical Training in Scotland and the reports on recruiting for 1892. The Bishop of Ripon, who made an eloquent speech, called attention to the fact that the average stature of the people had gone up from 5 ft. 7½ in. to 5 ft. 8¼ in. in the last thirty years, and that the expectation of life had also increased by four years for males and six years for females. There was, however, grave reason for disquiet in the decrease of the birth-rate. He argued that the decreased birth-rate was due to artificial means, and that in this way some 26,000 births were prevented in London every year. He quoted figures to show that the Colonies shared in the lessened birth-rate, and went on to show that more were born with congenital defects, and that even of 49,000 recruits in 1901 from rural districts as many as 15,000 of these were rejected. He advocated medical inspection of schools and more open spaces in the towns in which now three-fourths of the population lived. The Duke of Devonshire quoted some figures supplied to him by the Local Government Board to show that in the last decade the population had increased by 12.2 per cent., as compared with 11.7 in the previous census. While admitting the decline in the birth-rate, there had been for last five years a tendency to an increase in the marriage-rate. There were no official statistics as to the number of children per family. He thought the two questions of lessened birth-rate and physical deterioration should be kept separate. The rejection of recruits was very common for bad teeth, flat feet, and inferior physique, but an opinion as to general

deterioration of the race must not be drawn from recruiting statistics. A better class of men did not enlist because civil employment was more lucrative. He quoted a report of the Director-General of the Medical Department of the Army, which he proposed to lay on the table, in which it was stated that one man in three was rejected as unfit by the medical recruiting officer. He admitted the importance of the subject, and said the Secretary of State for War and the Home Secretary proposed to consult the Royal Colleges of Physicians and Surgeons as to the appointment of a Commission, the nature of the reference and its composition. Lord Mansfield and Lord Leven and Melville also spoke, the latter referring to the deterioration of the race in the north of Scotland, and quoting a doctor's opinion as to the grave defects in the children's teeth, due to improper food and the substitution of white bread, jams, and tinned foods for the wholesome porridge and milk of former days. Lord Balfour said the Scottish Commission had done most excellent work, and would produce good results. The larger School Boards were conducting a medical inspection of the children on a scientific basis, and the department would encourage other School Boards to follow the example. The subject then dropped.

Vaccination Officers and Prosecutions.—Mr. Fuller asked the President of the Local Government Board last Monday whether he was aware that a medical inspector in his department had visited the Trowbridge and Melksham Union, and had threatened the vaccination officers of that union with dismissal if they did not institute legal proceedings against defaulters under the Vaccination Acts without the consent of the guardians; and, if so, would he state whether the inspector had taken this course in pursuance of instructions from the Local Government Board or of regulations as to his duties, and, if the latter, where such regulations were laid down? Mr. Long answered that a medical inspector of his department visited the union and reported that both the vaccination officers refused to take proceedings in cases of default under the Vaccination Acts. He was not aware that he threatened them with dismissal. On receipt of the report, he wrote to the vaccination officers pointing out that he could not permit of further delay in their performing their duties in this matter, and he requested to be informed definitely whether they were prepared in future to carry out their duties, including the prosecution of persons in default. The replies of the vaccination officers being unsatisfactory he had called upon them to resign.

Repeated Experiments on an Animal.—Mr. Weir asked the Secretary of State for the Home Department if there was any limit to the number of consecutive operations that might be performed on the same dog under the Act 39 and 40 Vic., c. 77, as administered by the Home Office. Mr. Secretary Akers-Douglas answered that the Act imposed no such limit, but it was within the power of the Secretary of State to impose one, if thought necessary, by conditions attached to the licence.

The University of London.—Mr. Corrie Grant asked the First Lord of the Treasury, on Tuesday, whether, as members of the Senate of the University of London had now been appointed to paid offices under the Senate as professors and examiners, although under the former charter no member of the Senate was eligible as an examiner, he would propose an amendment of the University of London Act, making members of the Senate ineligible for such positions of emolument. Mr. Balfour answered that the University of London as constituted under charter was merely an examining commission awarding diplomas and degrees to students trained in institutions having no organic connexion with the University or to students trained by private study; it was therefore very desirable that the Commission that awarded the honours and settled the schemes of examination should not appoint themselves to the office of examiner in receipt of a salary. The present University, on the other hand, as reconstituted by the Act of 1898, was a teaching University created with the purpose of giving the teachers a share in the work of the University whether by examination, by teaching or by research. The receipt of a salary from the University chest did not preclude a professor or internal examiner at Oxford or Cambridge from a share in the government of those Universities, and from a seat on a Syndicate or Delegacy or Council of the Senate, and any such restriction would cripple the power of the University to call to its aid its most distinguished teachers and examiners.

The Killashee Dispensary.—Some amusement was created in the House at question time on Monday by a question of Mr. Tully's as to Dr. O'Riordan, the medical officer of Killashee dispensary district not residing at Killashee in accordance with the terms of his appointment. Mr. Wyndham said that Dr. O'Riordan was anxious to take up his residence at Killashee, and was endeavouring to find a suitable house or lodging there. The matter would have the attention of the Local Government Board. Another Irish member asked if the Chief Secretary was aware that the guardians had remitted the requirement of residence by 16 votes to 2, and then another asked if Mr. Wyndham was aware that the whole agitation about the doctor's residence was got up by a local grazier. Mr. Wyndham gave no reply to these questions, and the matter dropped.

The Allowances to Medical Officers at the Military Medical College were on Monday last the subject of a question by Dr. Thompson, who asked the Secretary of State for War if he had been able to equalize the allowances of captains R.A.M.C. with lieutenants. Mr. Brodrick, in reply, said that the question of the grants of mess allowances to captains attending the Medical College had been thoroughly considered, and it had not been found possible to make the concession.

The Employment of Children Bill.—The consideration of this Bill was resumed on Friday in last week, the early days of the week having been occupied by the Irish Land Bill and and Naval Estimates. On Clause 1 the discussion was resumed on making it compulsory on local authorities to make by-laws regulating the employment of children. After considerable debate it was decided to make the Bill permissive, and an amendment by the Home Secretary to that effect was adopted. On the question of street trading by girls under 16 there was much difference of opinion. Dr. Farquharson strongly opposed the amendment of the Home Secretary to weaken the Bill in this respect. He contended that young girls who traded in the streets were exposed to great physical and moral danger, and he said he would rather raise the age to 17 or 18 than lower it. Mr. Tennant, Sir John Gorst, and Mr. Asquith supported this view, and after a long debate the Home Secretary's amendment, which left it to the local authorities to make regulations on the subject, was carried by 178 to 98. The subsection, which provided that children under obligation to attend school should not be allowed to work more than twenty-five hours a week, was also omitted on the motion of the Home Secretary. The clauses down to 9 were agreed to with some amendments, and further consideration was postponed at the end of the sitting.

Plague Serum Inoculation.—Mr. Weir asked the Secretary of State for India last week whether, in order to judge of the value of the plague serum inoculation, he would arrange for a return to be kept of all persons inoculated, and of those who subsequently succumbed to plague. Lord George Hamilton answered that returns of the kind referred to were already maintained in most provinces. He was in communication with the Viceroy with the object of securing in future returns such increased completeness and accuracy as the circumstances permitted.

County Infirmaries in Ireland.—Last week Dr. Thompson asked the Chief Secretary to the Lord Lieutenant of Ireland if he would grant a return showing the charges and liabilities affecting each county infirmary in Ireland. Mr. Wyndham replied that he did not know whether it would be practicable to give the return. He was making inquiry in the matter, however, and would communicate with the honourable member as soon as he was in a position to do so.

Phthisis in Workhouses. Mr. Mansfield asked the President of the Local Government Board whether he would give instructions to Poor-law inspectors to report as to the number of cases of phthisis in each workhouse visited by them; whether or not such cases were isolated; whether such cases were receiving special treatment, such as the open-air treatment, or in what way they were being treated as to diet, medicines and surroundings. Mr. Long said in reply that he proposed to give instructions to the effect that each Poor-law inspector should include in the report made by him after his ordinary inspection of a workhouse particulars as to the number of cases of phthisis there, and he was considering what further particulars on the subject should be added.

Ireland.

Presentation to Professor Byers.

At a meeting of the friends of Professor Byers held in the Town Hall, Belfast, on May 30th, the High Sheriff in the chair, the following resolution was unanimously adopted:

That in the opinion of this meeting the present is an appropriate time for showing the high esteem in which Professor Byers is held by his many friends in Belfast and the North of Ireland.

It was agreed that the presentation should take the form of a portrait to be hung in the Examination Hall of Queen's College, Belfast, and that a replica be presented to Mrs. Byers. Sir James Henderson, D.L., Oakley House, Belfast, Chairman of the Municipal Technical Institute, Belfast, was appointed Honorary Treasurer; and Thomas Andrews, D.L., Chairman of Down County Council; Professor W. Todd Martin, Chairman of Governors of Campbell College, Belfast; Professor Thos. Sinclair, F.R.C.S., President of the Ulster Branch of the British Medical Association; and Mr. J. Theodore Richardson, J.P., Lisburn, were appointed Secretaries. A large and representative meeting of the subscribers was held on July 3rd in the Council Chamber of the Town Hall, Belfast (the High Sheriff presiding), when it was announced that the movement was a great success, and it was decided that an executive committee with full powers to complete all the details of the presentation, appoint artist, etc., should be appointed, and that this committee should be constituted as follows: The Right Hon. the Lord Mayor of Belfast, P.C.; Sir D. Dixon, D.L.; Right Hon. Thomas Sinclair, D.L., P.C. (Hopefield, Belfast); Sir James Henderson, D.L.; the High Sheriff (Mr. Robert Anderson, J.P.); Thomas Andrews, D.L.; Rev. Professor W. Todd Martin, D.Lit.; Professor Thomas Sinclair, F.R.C.S.; Professor Peter Redfern, M.D., F.R.C.S.; W. Crawford, J.P. (Chairman, Board of Management of the Royal Victoria Hospital, Belfast); J. Theodore Richardson, J.P.; and the President of Queen's College, Belfast.

The New Royal Victoria Hospital.

The Chairman of the Construction Committee (the Right Hon. W. J. Pirrie) and Mrs. Pirrie held an afternoon reception on July 2nd, at the hospital, to afford the subscribers to the building fund an opportunity of inspecting the hospital. Over 1,500 invitations were issued, and the attendance, which was large, included visitors not only from Belfast but from all Ulster. The subscribers were more than pleased, and expressed great satisfaction with the brightness and freshness of the wards and corridors, and the evident facilities of administration. A similar reception was held on July 3rd, when an entrance fee was charged, the proceeds of which will be given to the endowment fund; and a third was held on Saturday afternoon, July 4th, when the building was inspected by over a thousand working men subscribers. Although at times the crowding was inconvenient, yet no stuffiness nor unpleasantness was experienced; the plenum system of ventilation was put to a test beyond what it ever will have to stand in future, and every one was convinced of its success.

The Belfast Branch of the Irish Medical Association.

On June 30th the second meeting of the new Belfast and District Branch of the Irish Medical Association was held in the Medical Institute, Belfast. The President (Professor Byers) occupied the chair, and the first business was to receive a report from the delegates to the annual meeting of the Association held in Enniskillen on June 17th. Professor Lindsay, Dr. S. B. Coates, and Dr. J. R. Davison (Ballymena) gave an interesting account of that very large assemblage of Irish doctors, and special attention was drawn to the fact that it was not an organization founded alone for the Poor-law medical officers, but that its aim was "to protect and to promote the interests of the medical profession" in all its departments; in other words, it was a defence association in the fullest sense of the term, and in order to further this object the subscription had been raised from half a guinea to one guinea last year, and at the annual meeting the President (Dr. L. Kidd) had started a guarantee fund. Professor Byers (President) said he had brought the case of the Poor-law medical officers before the Ulster Branch of the British Medical Association, and the report of the proceedings in the British Medical Journal of May 30th, with the very friendly editorial article, demonstrated that the British Medical Association had shown in the past, and would again in the future show, their entire sympathy with the Irish dispensary doctors in their heroic fight to improve their present unfortunate position. Rules were then submitted and passed for the conduct of the business of the Branch, and the Honorary Secretary (Dr. Gardiner Robb) was instructed to send circulars to all the members of the medical profession residing in Belfast and the surrounding districts included in the area of the Branch, urging them to become members, and pointing out specially the very great advantage of this Association as a medical defence body.

Health of Belfast.

The report of the Medical Superintendent Officer of Health, presented to the monthly meeting of the Belfast Corporation held on July 1st, stated that there had been 219 cases of zymotic diseases notified, of which 83 were cases of typhoid and 43 of simple continued fever; 557 deaths were registered, of which 84 were from phthisis; the annual death-rate from all causes was 20.2. Although typhoid has increased the type is mild; only 5 deaths were registered.

Down District Lunatic Asylum.

Dr. M. J. Nolan, the Medical Superintendent, has just issued the annual report of the Down District Lunatic Asylum. The number of inmates has increased from 579 to 641; 63 died, 59 were discharged, and 184 were admitted; the increase in the death-rate and the decrease in the recoveries are accounted for by the reception, under the new regulations, of 59 chronic and debilitated patients from workhouses. The ages of admissions varied from 15 to 88. As to cause, a history of physical factors was determined in 65 cases and of moral in 13. Dr. Nolan refers again to the destructive influence of the abuse of alcohol, as well as the far-reaching effect of parental alcoholic excesses. Of the 184 admissions, in 64 a hereditary predisposition was found, and on this Dr. Nolan remarks: "The patent fact, however, that a 'weak strain' degenerates under the stress of adverse circumstances must ever remain self-evident in the human family as it does in the animal and vegetable worlds." Dr. Nolan also refers to the connexion of consumption, dysentery, and other diseases with insanity; he regrets that the primary cause of dysentery has so far eluded the keenest research of scientists; it would be a great help if it could be identified. The management of the farm has been most satisfactory, and a profit of £880 14s. 6d. has been realized. The cost of maintenance is £22 15s. 1d. per head, which is £1 3s. 7d. less than the average cost for all Irish asylums.

Injunction against a Small-pox Hospital.

An important decision has been given in the High Court, Dublin, by the Vice-Chancellor in the case in which the Attorney-General at the instance of certain inhabitants of Clonskeagh, a suburb of Dublin, sought an injunction restraining the Urban District Councils of Rathmines and Pembroke, the two most populous suburbs of Dublin, from maintaining an isolation hospital at Vergemont, near the village of Clonskeagh, for the treatment of small-pox and other infectious diseases. Both sides were represented by eminent counsel. On behalf of the plaintiffs Dr. Thresh gave his experience with reference to the small-pox ships at Purfleet, and Sir John Moore and Professor McWeeney expressed their belief in the airborne theory of small-pox infection. It was proved that Clonskeagh was a favourite suburb of Dublin, and that there was a population of 750 persons within a quarter mile of the site, and of 2,682 within half a mile. For the defendants, Dr. Hope (Liverpool) and Dr. Marsden (Birkenhead) expressed their disbelief in the aërial theory of the conveyance of infection, and urged that the danger arising from the proximity of a well-managed small-pox hospital was trivial, if not non-existent.

The Vice-Chancellor, however, granted the injunction so far as small-pox was concerned, stating that, as the result of the evidence he was of opinion that there was considerable danger to the inhabitants of a small-pox hospital when patients were under treatment, whether the infection was spread by aërial convection or not. He had nothing before him to show that a suitable site could not have been obtained elsewhere. The selected site was in a populous neighbourhood, and abutted on public and private roads, and the tram-line. The evidence showed that there were strong and reasonable grounds for apprehending danger by the establishment of this hospital, and he was of opinion that the existence of such an institution would necessarily cause depreciation in the value of the property, including many

good class houses which had been and were being erected in the neighbourhood.

It was proved at the trial that the Irish Local Government Board did not insist upon the conditions laid down by the English Board with reference to sites for hospitals in which small-pox patients were to be received, and that the site in question had been approved by the Irish Board for use for all cases of infectious disease without any restriction. At the time of the trial there were several cases of small-pox in the farmhouse on the site, and a number of patients suffering from other infectious diseases in a temporary building not many yards away. In Ireland vaccination is still compulsory, and vaccination is more rigidly enforced than it ever was in this country, but until both vaccination and revaccination are compulsory, it cannot be considered safe to introduce small-pox hospitals into populous neighbourhoods.

Cork Medical and Surgical Society.

At a special general meeting of the Cork Medical and Surgical Society, held on June 25th, it was unanimously decided to present an address to His Majesty the King on the occasion of his visit to Cork.

Scotland.

Edinburgh Medico-Chirurgical Society.

At the meeting of the Society on July 1st, Sir Thomas Fraser, President, in the chair, Dr. T. S. Clouston, President of the Royal College of Physicians of Edinburgh, read a paper on the Scottish Medical Corporations and the Public Weal: how they might create a health conscience in Scotland, which appears at p. 61 of this issue. The paper was discussed by the President, Drs. Finlayson, Chalmers, and McVail, of Glasgow, Dr. Leslie Mackenzie, of the Local Government Board, Drs. Harvey Littlejohn, Noël Paton, and A. D. Webster. Dr. Clouston replied. Amongst those present were many members of the profession from Glasgow and the West of Scotland.

Government Vaccine Institution for Scotland.

At a meeting of the Public Health Committee of Edinburgh Town Council held on July 7th—Councillor Lang Todd, the Convener, presiding—to consider a letter from the Committee of Representatives of Medical Authorities in Scotland, it was resolved to recommend the appointment of the Convener, Sir Henry Littlejohn, to support the memorial in favour of the provision by His Majesty's Government of a vaccine establishment for Scotland.

Proposed Port Sanitary Authority for Glasgow and the Clyde.

The burghs of Partick and Govan, the two local authorities which, in addition to the city of Glasgow, are most interested in the Scottish Local Government Board's proposal to set up a port sanitary authority for the Customs Port of Glasgow, have both entered protests against the order of the Board. They protest against the Board's refusal to allow them to have a copy of Sheriff Jameson's report; and while objecting to the competency and legality of the Board's decisions on several points, they also protest against an arrangement which calls upon the different local authorities to contribute to the maintenance of a port sanitary authority on which they have no representatives.

LUNACY ACTS AMENDMENT (LONDON) BILL.

On July 7th Earl Carrington in the House of Lords moved the second reading of this Bill. We give the "Memorandum" on the Bill as it stands in the Parliamentary paper:

The object of the Bill is to enable the London County Council to establish houses at which persons alleged to be lunatics may be received for preliminary examination and treatment. In the existing practice in London under the Lunacy Acts persons supposed to be lunatics are, for the most part, taken to a workhouse in order to be examined before being sent to a lunatic asylum. Experience shows that this system is unsatisfactory, and leads occasionally, in individual cases, to harm which might be avoided. It is believed that the proper treatment of mental disease in its earlier stages, or of symptoms of incipient mental disease, will often obviate the necessity for sending to a county lunatic asylum persons who, under the present arrangements, cannot be otherwise dealt with. It is claimed for the system proposed that it will thus be not only beneficent but economical in its operation, by tending to lessen the number of persons detained as lunatics in the county asylums at the public expense, while it will be useful in assisting the classification of patients and the diagnosis and cure of mental disease in its earliest stages. It is proposed that the receiving houses should be available for the treatment of out-patients. The receiving houses will be under the supervision of the Commissioners in Lunacy, and conducted in accordance with the law regulating county asylums.

Lord Carrington said that in the first instance there would probably be two receiving houses, one for the north and one for the south of London. Each house would accommodate thirty patients and the necessary staff. He understood that the Lord Chancellor had told a deputation which waited upon him on this subject that he approved the proposals in principle. The Commissioners in Lunacy had also expressed their approval, the Local Government Board gave a general approval to the scheme, and it was approved by more than 50 per cent. of the Boards of Guardians in London.

The Lord Chancellor said he had told the deputation that he would be happy to consider the proposals, and assist in passing them if he could when he had seen what the Bill was. He could redeem that pledge now by saying that he thought what was proposed was an improvement which he should be glad to see made law. The present system was undoubtedly unsatisfactory, and he had received a great number of complaints with reference to the mingling of lunatics or alleged lunatics and paupers in the workhouses. One or two observations which had been sent to him would, he had no doubt, receive the consideration of the noble earl and the London County Council. One was to the effect that the Council was rather behindhand in the work it had already undertaken with regard to the provision to be made for lunatics. He did not think that a conclusive objection to the Bill, because the passing of the measure would relieve the pressure now complained of. It was also urged that enormous expense would be incurred. That might or might not be an objection on the part of the ratepayers; but they could urge it on the County Council, who ruled its own finance, and it did not concern him in respect of the jurisdiction of the Lunacy Commissioners. On the whole, he thought the Bill, if properly amended in one or two directions, which could be indicated in Committee, would be an advantageous addition to the statute book, and he would support the second reading.

The Bill was then read a second time.

It may be recalled that at a meeting of the Joint Committee of the British Medical Association and the Medico-Psychological Association, held on February 23rd, a report which had been drafted by a sub-committee was adopted. In that report attention was called to certain difficulties arising in the construction and application of the Lunacy Acts now in force, especially with regard to the reception of persons not certifiably of unsound mind, into private unlicensed houses for the purposes of board, lodging, and possible treatment. A decided opinion was expressed that in cases requiring detention there was no need for alteration of the existing law beyond that provided by the clause appearing in the Lunacy Bill last before Parliament, for the treatment of incipient and curable cases. The Committee further expressed a strong opinion that some relaxation of the law, in respect of non-detainable cases, was desirable, and that such relaxation would appropriately be afforded by the provision of a system of voluntary residence in unlicensed houses, under sufficient safeguards, parallel to that which now enables voluntary boarders to be received into registered hospitals and asylums. The condition of reception and residence would naturally be a knowledge on the part of the boarder that he had freedom to depart when he so wished.

No effect appears to be given in the Bill now before the House of Lords to the recommendations of the Committee on those subjects. It is not at all likely, however, that a Bill concerning a matter of such importance, as to which opinions are so much divided, and introduced at so late a period of the session, will be allowed to become law this year.

Pan-Hellenic Medical Congress.—The second meeting of the Pan-Hellenic Medical Congress was held at Athens from May 17th to the 23rd. The congressists numbered about 350, of whom 95 were foreigners; in addition to these, many high officials and persons of distinction in politics, science, and literature were present. The address of welcome was delivered by the Honorary President of the Congress, the Greek Minister of Public Instruction. Then Professor Hadjimichalis, President of the Congress, delivered an address on the struggle against infectious diseases.

CONGRESS OF THE SANITARY INSTITUTE.

THE twenty-first Congress of the Sanitary Institute was opened on Tuesday, July 7th, at Bradford, under the presidency of the EARL OF STAMFORD.

INAUGURAL ADDRESS.

The inaugural address was delivered by the PRESIDENT to a large audience. Lord Stamford said that the Sanitary Institute represented one of the largest voluntary efforts for advancing the knowledge of hygiene. Since its formation in 1876 it had kept pace with the enormous strides made by hygiene in the past quarter of a century, and from small beginnings had grown to a Society numbering 3,000 members and associates spread throughout the civilized world; and it had regular centres of organized work in the principal Colonies of the Empire. The object for which it was founded was the diffusion of sanitary knowledge, and the channels through which it sought to accomplish this work were many and various: lectures, discussions, experiments, examinations, exhibitions, congresses, and publications in every continent of the world; the meetings held under its auspices last year numbering nearly 500, and the total attendances at these meetings over 50,000. Immense as had, however, been the advancement of scientific knowledge during the past century, they were to-day only standing upon the threshold of those questions which affected the health of the individual; and immense too as had been the advance in the social amelioration of the masses, they had only recently entered the field of organized warfare against insanitary conditions—the hereditary foes of the human race. After a historical review of the evolution of sanitary science, the President passed to the consideration of

Hygiene in the Home.

The scientific study of matters affecting the public health, and the experience gained in enforcing the sanitary laws, had resulted in the accumulation of a mass of knowledge and information as to the effect of overcrowded and unhealthy dwellings on the national health. The penalties for disobedience to sanitary laws were usually enforced against owners or occupiers, and the subtenants or lodgers went scot free. But much of the ill-health and disease in slums was directly traceable, not to the neglect or default of the landlords, but to the personal defaults of the poor who dwelt in them. The only way to cope with personal neglect of matters affecting health would be by education of such people, or, if they were hopeless, by the education of their children, in the principles of hygiene, so as to make its practice by future generations instinctive or habitual. An inevitable result of the progress of sanitary legislation had been to bring administrators face to face with the question how best to deal with overcrowded and insanitary areas, and to create a widespread public interest in the subject of re-housing of the poorer classes under conditions which will benefit the public health, and conduce to the welfare of the persons rehoused. That interest had been manifested by the activity of many members of Parliament in introducing projects for remedial legislation, and by the creation of voluntary societies for the purpose of ameliorating the condition of congested districts. Of these he would name only the Mansion House Council on the Dwellings of the Poor, which had existed since 1884; the Housing Reform Council, which was active in collecting materials for amendment of the law; and the newly-formed Rural Housing Association, which sought to stimulate public interest in the improvement of labourers' dwellings in England, as to which the law was far behind that of Ireland, where already much had been done under the Labourers (Ireland) Acts through the erection of some 15,000 cottages. Passing next to hygiene in the school, the President said it was obvious that in the case of children the influences of even the most perfect hygienic home were necessarily more or less diminished, if not completely counteracted, by the insanitary conditions of school life. In this country the situation had been so far recognized by the large amount of careful attention paid to the sanitary construction of school buildings, the requisite proportions of light and air space, ventilation, heating and sanitary accommodation, and general equipment. But as yet they had not made any real attempt to inaugurate upon national lines a system of hygienic instruction. He could speak the more freely upon this question, since Bradford was situated in a district where so many advanced ideas of education had been worked out, not only in the elementary schools under the able supervision of Dr. Kerr, but also in the technical education schools provided by the West Riding County Council, the one local authority which, in conjunction with the Education Department and the Sanitary Institute, dispatched a Special Commission to investigate the provision made for hygienic instruction in the United States of America. In their determination to secure and promote the health and prosperity of the population the American people had recognized that a real educational system is the most important factor, and in attaining such a system they had further recognized that physical development is as essential as mental growth, and that the latter could not exist without the former. Unless training schools for teachers formed part of a co-ordinated system of national education, unless they were dominated by a university or other liberal institution, they would inevitably fall into the hands of persons who, with the best intentions, would try to make short cuts by ignoring the great broad highways of intellectual development. It was along the lines initiated by the American people, that in the opinion of educational experts here, England was destined to advance. The British Association had appointed a Special Committee to investigate this subject, but their investigation, so far, into the interest shown by school authorities and the knowledge possessed by teachers was a catalogue of indifference and incompetence with regard to children's health, physically, mentally, and morally. Although they were still far from a co-ordinated scheme of national education, it was encouraging to find that courses for the training of teachers in school hygiene were being provided by some technical education authorities. Three years ago the West Riding County Council established courses of such training for teachers under the guidance of Miss Alice Ravenhill, to whom the country was indebted for her valuable report on hygienic instruction in the United States. These courses, which were very comprehensive, had since been continued, and many of the teachers had put their training to the test by entering the examinations upon the hygienic requirements of school life provided by the Sanitary Institute.

Hygiene in the Factory and Workshop.

Hygienic regulations were no less indispensable in the factory or workshop than in home or school life. They were important not merely to the individual employé, but to the community at large. As Dr. Ferriar cynically observed, the "safety of the rich is intimately connected with the welfare of the poor." After a survey of legislation on the subject the President said the compulsory provisions of the Factory Act, 1895, marked a great advance in the activity of sanitary authorities but, with some notable exceptions, such as Liverpool, Manchester, Nottingham, Leeds, Bradford, and several of the borough councils in London, local authorities had signally failed to recognize their responsibilities. In spite of this failure the Factory and Workshop Consolidation Act, 1901, granted increased powers to local authorities. Some might be disposed to condemn this system of dual control which, speaking generally, has proved so inefficient. A little consideration, however, will show that its partial failure is due not to any inherent weakness in the system itself, but to imperfections in the law, the chief of which had been (1) the insufficient powers given to local authorities; (2) the overlapping of functions between factory and sanitary inspectors; and (3) the lack of any adequate control by which compulsion might be brought to bear upon defaulting local authorities. Owing to these imperfections, due in many cases to careless draughtsmanship and want of careful definition, the majority of the workshops are in very much the same condition as that of the cotton factories in the early part of the nineteenth century, when the law, from its indefiniteness and the absence of specific requirements, remained a dead letter. One of the noxious trades of special interest to Yorkshire was that of file-cutting; its death-rate was higher than that prevailing in any other handicraft, and yet hitherto it has been entirely unregulated. He had the gratification of being able to inform them that the Home Secretary had recently scheduled this trade as "dangerous" by virtue of Section LXXXII of the Factory and Workshops Consolidation Act, 1901, and that regulations for enforcing cleanliness and ventilation in the shops and sheds where this industry was carried on were now being framed.

Consumption.

After some remarks on the steps that had already been

taken in several towns, notably in London, Brighton, and Manchester, to effect voluntary notification to the authorities of consumptive cases, and by this means to ensure prompt treatment of such cases in their earlier stages, the President stated that in London a movement was now in progress which advocated that provision should be made by some central authority—preferably the Metropolitan Asylums Board—for the open-air treatment of consumptive persons chargeable to the rates in the metropolis, and, further, to enable the hospitals provided primarily for the treatment of small-pox cases to be utilized during the inter-epidemic periods for the reception and treatment of such consumptive persons. No doubt grave difficulties stood in the way of this latter reform, such as the possible recurrence of a virulent outbreak of small-pox, which might, however, be minimized by increased attention to vaccination, but it was at least possible that by this means, and by advantage being taken of other surplus accommodation, some systematic and thorough treatment of consumption among the poorer classes might be effected.

After discussing the sewage problem at some length Lord Stamford concluded with an emphatic expression of his strong sense of the value of combining voluntary and official effort in sanitary administration. His connexion for the last two years with the Metropolitan Asylums Board had proved to him that this combination could be made to work most smoothly and efficiently. He wished to impress upon them, the advocates of sanitary progress, that the first duty which lay before them was to advance the general intelligence of the nation to a just appreciation of the supreme value of its chief asset—public health.

Conference on Industrial Hygiene.

On July 8th, Dr. Thomas Oliver, President of the Conference, delivered an address in which he reviewed the course of factory legislation. He concluded with the following peroration:

What factory legislation has accomplished no tongue can adequately tell. The thousands of lives that must have been saved, and the number of fatal accidents averted we can scarcely even imagine. Each life that has been sacrificed at the altar to the Moloch of modern industry should be regarded as a vicarious sacrifice. The influence of such an event is not lost; the moral effects of such a catastrophe are far-reaching, and ought not only to stimulate inquiry, but be followed by the device of means whereby occupation can be rendered healthier. As a nation we are justly proud of our commercial success, however doubtful may be our ability to retain the admitted supremacy. We look back with satisfaction over the long list of inventions which the British people have given to the world at large, and while many of these inventions may be described as of the nature of labour-saving machinery, they have conferred untold benefits by having augmented and cheapened production and by giving employment to a larger number of people. Behind all this, however, lies concealed something that is not so cheering.

It is with industrial as in international warfare. Is it not when the battle is won and the shouts of victory ring in our ears, that for the moment we are apt to forget those comrades who have fallen in the fight? Beneath all visible signs of human activity, the sum total of which makes for industrial progress, there can be detected by the eye that chooses to penetrate the deeper recesses, a silent procession of men and women who have been worsted in the battle of life. It is for these working men and women, whose health has become undermined by occupation disease, or who have been injured while following their employment, and therefore no longer able to earn their living, that we specially plead, not so much in the belief that we can restore all of them to perfect health, or even to their own family, as that the lesson of their misfortune and suffering may be laid by us to heart, and the motto of all true sanitary reformers, "prevention better than cure," be full realized, so that each man's work shall not only be a source of income, but one of health and pleasure to him. If the deliberation of this Conference on Industrial Hygiene can in any way further these objects, this Congress will not only have justified its existence, it will have conferred an enormous boon upon a large section of the population by helping the working classes to rise to an appreciation of higher and better things.

THE CHANGE IN THE CONSTITUTION OF THE BRITISH MEDICAL ASSOCIATION.

The members of the present Council of the Association celebrated their penultimate meeting on Wednesday last by afterwards dining together at the Trocadero Restaurant. Mr. Andrew Clark, the Chairman of Council, presided, and about forty other members of the Council were present, together with Mr. Francis Fowke, Dr. Dawson Williams, and Mr. Guy Elliston.

The toast of the evening, "The Old Council," was proposed in felicitous terms by Dr. Henry Barnes (Carlisle), the oldest member of Council present, who had joined that body some 35 years ago. At that time (1868) there were, he said, but 3,000 members; and he was then, or soon afterwards, associated with Drs. Sibson, A. P. Stewart, and Chadwick, Mr. Husband, Dr. E. Waters, Mr. Southam and Mr. Wheelhouse, Sir G. H. Philipson, and Sir Walter Foster. In seven years, under their guidance, the number of members had grown to 6.000; whilst the pages of the weekly Journal, which were then 20, had now increased to 64. Two steps taken by them had conduced to the success which had been achieved; one was the appointment of Mr. Ernest Hart to the editorship of the Journal, the other was the discovery of Mr. Fowke. The old Committee of Council paved the way for a new constitution inaugurated at Liverpool some 20 years ago, when the Association numbered 10,000. There were predictions of failure, but the growing prosperity continued, and the members to-day exceeded 18,000 in number. Moreover, the funds had augmented, and with its surplus revenue the Association had purchased its new home in the Strand, had established a first-rate reference library, had appointed research scholars, had exercised considerable influence on legislation, and had done much to bring about direct representation, to promote and guide sanitary legislation and to reform the army medical service. These were all gains, and the cry was yet for more. Still a newer Constitution had been obtained, and he had every confidence in its future. At a time not far distant he believed it would be a reproach to any medical man if he were not a member of the Association; in fact, an era of still increased prosperity was coming. The objects of the Association were never more eloquently described than in a speech delivered by Mr. Gladstone at the annual meeting in London in 1873, when he said: "I believe this Society to be generally representative of the medical profession in its various branches. I believe it represents your tendencies to unity and your upward aspirations—aspirations upward, not in the sense of augmenting your well-earned and hardly-earned emoluments, but of augmenting your unity, augmenting your knowledge, augmenting your true dignity and your claims upon society." He thought the new constitution undoubtedly tended in that direction. He associated with the toast Mr. Andrew Clark, the Chairman of Council, and Dr. Roberts Thomson, the last President of Council, both of whom had done yeoman's work on behalf of the Association.

Mr. Andrew Clark, in the course of his reply, said that many members of the old Council had been elected as members of the new Council, but instead of the 98 members who constituted the old Council, there would be from 50 to 60 on the new Council. The representative meeting would take the place of the old general meetings of the Association, and that would, he believed, be a great gain. The resolutions of the general meetings were often passed by forty or fifty members only; but the representative meetings would be composed of elected members from all the districts of the Association.

Dr. Roberts Thomson, who also replied, said that as he had been the last President of the old Council and the first chairman of the present Council, John Bunyan might perhaps have called him "Mr. Facing-both-ways." He hoped the new Constitution would be productive of great prosperity to the Association, but he regretted that the great body of the profession took so little interest in medical affairs. Unless they threw aside this apathy the new Council could not achieve all the good which otherwise might be expected. He recognized the immense work which Mr. Fowke had done for the Association, and was delighted to welcome him back in improved health.

Mr. Jones Morris (Portmadoc), in proposing the toast of "The Vice-Presidents," said that as a member of the Council since 1879 he recognized the great services that the Vice-Presidents had rendered to the Association, and regretted personally that they would no longer be members of the Council. He mentioned several of the Vice-Presidents,

especially Dr. Roddick, of Montreal, under whose presidency in that city many of those present had enjoyed one of the most charming annual meetings ever held. He associated with the toast Sir Walter Foster and Mr. Butlin. The former had carried the renown which he had gained in his own profession to the House of Commons; and with regard to the latter, all of them felt sorry that his many and exacting offices at the Royal College of Surgeons and the University of London would cause the Association to lose his great services.

Sir WALTER FOSTER said, in reply, that the feelings of the Vice-Presidents were mixed. They felt pride at the position the Association had achieved with their help. But, *morituri te salutant*, they would pass from their sphere of activity in the Association with tender regret. In his early days there were great men amongst those who directed the affairs of the Association, many of whom Dr. Barnes had already mentioned; but the old Committee of Council, which was a kind of family party, was not the best method of conducting a great Association. Those who had brought about the former change of constitution had every reason to be proud of the present position achieved by the Association. They had now had their lives demanded of them; but they cheerfully rendered them up, feeling that the Association was about to better its already splendid position.

Mr. BUTLIN said that although the Vice-Presidents were about to pass from their former position they were satisfied with two points about the change. The revolution had been carried out without shedding of blood, and there were none of them who did not wish the greatest success to the new Constitution. He would in future be unable to take an active part in the affairs of the Association, because a man's time for public work was limited, and he could not refuse the work which opened before him for the University of London and the Royal College of Surgeons of England. But he believed the new Council would do great things for the Association, possibly greater things than those which the expiring Council had been able to achieve.

Dr. W. A. ELLISTON proposed the toast of "The Chairman," to which Mr. ANDREW CLARK responded; and the latter called upon those present to drink a toast to Mr. Eastes, who had acted as secretary to the Dinner Committee.

Mr. EASTES briefly replied.

THE PLAGUE.

PLAGUE AT HONG KONG.

THE total number of cases of bubonic plague from January 1st, 1903, to noon June 5th has been 1,028. During the last week the weather has changed, and the daily average temperature has varied from 80° F. to 88° F., and it appears from the returns of the last three weeks that the height of the epidemic has been reached.

Comparing the last three weeks, the figures are:

	Cases.	Deaths.
Week ending May 16th	117	99
,, ,, May 23rd	136	123
,, ,, May 30th	123	103

At its meeting on June 4th the Sanitary Board reaffirmed its resolution to recommend the closing of the Chinese theatres during the plague season, instead of adopting the counter-recommendation—that they should merely be disinfected and the audience obliged to wear feet coverings. This resolution was only carried by the casting vote of the President, the Hon. Dr. J. M. Atkinson, all the native members of the Board being opposed to it.

It was also resolved to appoint a sub-committee to go again into the methods of disinfection, etc., employed, and see if they could not be modified in some way so as to lessen the temptation to the people to "dump" their dead in the streets. The object of this "dumping" is to avoid the disinfection and cleansing of their houses, to which the Chinese population has the strongest objection, so that if deaths occur from plague in their homes they secretly deposit the bodies in the streets. The number of bodies so dumped has steadily increased in every plague season, and represents 37.5 per cent. of all known deaths this year.

A further decision was to recommend a Clayton sulphur dioxide apparatus for the disinfection of ships. This motion again was only carried by the casting vote of the President.

The latter also made a communication as to investigations that are being made as to the possibility of infection being conveyed by food, especially in connexion with fowls, some of which on sale in the market had been discovered to be plague infected. The Chinese, it was stated, prefer to eat fowls only half cooked, and use their entrails as a relish to rice. This inquiry is not yet complete.

The epidemic has been very severe, and the sanitary staff has worked well and on the whole effectively.

During the week ending June 27th, 54 fresh cases of plague were recorded in Hong Kong, and 35 deaths from the disease. Amongst the cases noted 2 were Europeans.

PREVALENCE OF THE DISEASE.

INDIA.

DURING the weeks ending June 4th and 11th there were 6,014 and 3,707 deaths from plague in India respectively. The marked decrease was chiefly owing to the mortality in the Punjab falling from 4,874 in the former week to 2,753 during the latter. The plague report from the Nilgiris for June 11th to June 17th show that 5 seizures and 1 death from plague occurred in the district; at Ootacamund a few cases of plague were found in the bazaar.

CAPE COLONY.

During the weeks ending June 6th and June 13th the plague reports in Cape Colony were as follows:—

Port Elizabeth.—Fresh cases, 9 and 3; deaths, 5 and 2; remaining in hospital, 12 and 12 respectively.

East London.—Fresh cases, 0 and 2; deaths, 0 and 2; remaining in hospital, 6 and 5.

King Williamstown.—Fresh cases, 5 and 0; deaths, 2 and 0; remaining in hospital, 12 and 12.

No cases of plague were reported at Graaff-Reinet, Burghersdorp, and Queenstown.

Plague-infected rats continue to be found at all the above-mentioned towns except Graaff-Reinet.

During the fourteen days ending June 13th the number of fresh cases in Cape Colony amounted to 19 and the deaths to 11. The total number of cases remaining under treatment on June 13th numbered 29. The quarantine station at Saldanha Bay, where two Asiatic males from the ss. *Nemesa* were discharged, and the plague hospital, were closed on June 6th.

CONTRACT MEDICAL PRACTICE.

CONTRACT PRACTICE AND "SWEATING."

FAIR PLAY writes: The reform of contract practice is a question which is receiving considerable attention from the profession at the present time, and perhaps a little light from a second point of view may be acceptable.

Some little time ago I was approached by a large miners' club, in a district where there had been a dispute some years previously as to the rates of payment, with a view to becoming the club doctor. At the time of the dispute, this particular club had declined to concede the increased rates, and had imported a medical man. The latter had now resigned, and the club having reconsidered its position had decided to give the increased rates. It, however, refused to reappoint the doctor who had the club previous to the dispute on the ground that he did not intend to do the work himself, but to employ an assistant (a young gentleman recently qualified, with absolutely no experience of private practice). I wrote to the doctor concerned, and received from him a reply admitting that such was the case, but defending his conduct by saying that he had done the same previous to the dispute; he also volunteered the statement that he had been in the habit of making the whole of the club work over to the assistant, only seeing a member himself occasionally when requested. When I say that the value of this appointment was between £500 and £600 a year, it will be readily seen what a profit the principal would make out of the transaction. The local medical union threatened to boycott any medical man accepting the post even at the increased rates.

On three occasions during the last winter I was offered assistantships by medical men who had recently obtained colliery appointments four or five miles away from their own houses, the work of which they were quite unable to do themselves. In each case the salary was very small in comparison to the income derived from the appointment.

In order to in some measure remedy this evil, I would suggest that, in every case where the local medical men combine to raise the fees for contract work, it should be made a condition of co-operation that the clubs should be thrown open to all the doctors practising in the district. That a rate of payment having been fixed, any such (or any starting practice at a future date) should be at liberty to give their names to the secretaries of the clubs as being willing to undertake contract work. Each club member should then at the beginning of each year choose the doctor whose attendance he prefers, and the various doctors of the club would receive payment according to the number of members placing themselves on their respective lists. This would destroy any monopoly of club practice.

A NATIVE SCHOOL OF MEDICINE IN COCHIN CHINA.—The Lieutenant-Governor of Cochin China has issued a decree dated April 27th establishing at Saigon a practical school of medicine for natives. The purpose of the school is to train vaccinators and midwives. A committee, consisting of the Principal Medical Officer of the Colony, the local midwife, a medical practitioner, the Mayor of Cholon, the Director of the Native Hospital at Choquan, and a native colonial councillor, has been appointed to consider the programme of study, the length of the curriculum, conditions of admission, and the equipment of the school.

LITERARY NOTES.

It is stated in the *Daily Chronicle* that Mr. John Lane is about to issue a book entitled *The Nemesis of Froude*, which is virtually a reply to J. A. Froude's posthumous pamphlet *My Relations with Carlyle*, to which reference was made in a leading article published in the British Medical Journal of July 4th. "Sir James Crichton-Browne and Mr. Alexander Carlyle," our contemporary is informed, "look to this volume to clear Thomas Carlyle's memory of the imputations retailed by Miss Jewsbury, and eagerly clutched at by his biographer." Readers are promised a portrait of Miss Jewsbury, so they may judge whether or not she was the "flimsy tatter of a creature" that Mr. Carlyle called her. The title of the book has doubtless been suggested by that of one of Froude's earliest works, *The Nemesis of Faith*.

The final volume of Mr. Charles Booth's great work, *The Life and Labour of the People of London*, which has recently been published by Messrs. Macmillan and Co., has a section dealing with hospitals, in which is outlined a scheme for fundamental changes in respect of the management and finances of these institutions. The object is to secure proper co-ordination of all arrangements made for the care of the sick and injured, together with a more assured financial position. Other matters dealt with are birth-rate and death-rate, marriage and morality, drink, public-houses and licensing, prostitution, and the organization of charity. The book will be fully reviewed later. In the meantime it need only be said that the volume, which is entitled Notes on Social Influence and Conclusions, is marked by the patience in the collection and the dispassionate judgement in the estimation of facts that characterize all the work of the author. A word may be said about the binding of the book, which is of so daintily ornamental a character as to suggest the first fruits of a young poet's muse rather than the grimly realistic truths set forth by Mr. Booth.

Dr. Pierre Boyer, whose name is already known to the novel-reading public of France as the author of the *Souvenirs d'une Doctoresse*, has recently produced another work with the sensational title of *Mémoires d'un Séquestré*. It is founded on the lunacy law of 1898, and is said by the French journals to "palpitate with actuality." The book purports to describe the experience of a person of sound mind incarcerated in a madhouse. The book is published by A. Joanin.

We have received the first number of the *British Journal of Inebriety* (an infelicitous title, which might possibly give rise to a painful misconception as to the character of the publication), a periodical which is to be published quarterly under the direction of the Society for the Study of Inebriety. The editor is Dr. T. N. Kelynack, Honorary Secretary of the Society. The Society was founded in 1884 "to investigate the various causes of inebriety, and to educate the professional and public mind to a recognition of the physical aspect of habitual intemperance." The late Dr. Norman Kerr was the first president. The *Proceedings* were issued quarterly until the session 1901-2, when the *Transactions* of the Society were published in one volume. In April, 1901, the Society published a special report of the Committee appointed to investigate the influence of heredity on inebriety. Early in the present year the Council decided to issue a *British Journal of Inebriety*, which has now made its first appearance on the journalistic stage.

The *Ophthalmoscope* is the title of a new "monthly review of current ophthalmology" founded, as an editorial foreword states, because "it has been felt that the technical literature of eye work is not represented in this country altogether as fully and adequately as it deserves;" and because it is thought that "by providing a complete bibliography, with English abstracts of all suitable communications, something more might be done to familiarize British ophthalmic surgeons with the work and literature of countries other than their own." The first number which is before us consists of original communications and abstracts of papers which have appeared in other journals, with some notes on current events. The *Ophthalmoscope* is published by Messrs. George Pulman and Sons, Limited, London; the editor is Mr. Sydney Stephenson, who has the advantage of the assistance of Mr. C. Devereux Marshall as sub-editor. Under such able management we venture to anticipate a very successful career for our new contemporary.

It was inevitable that forerunners of Finsen in the discovery of the therapeutic power of light should be discovered: the only wonder is that they have remained hidden so long. It would seem, however, as if the difficulty in finding them would be more than compensated for by the number at last unearthed to enjoy the pale glimpses of the moon of posthumous fame. *La France Médicale* has discovered no fewer than three—needless to say, all Frenchmen. It would appear that in 1774 there was published in the *Mémoires de l'Académie Royale de Chirurgie* a communication by Faure on the use of heat in the treatment of ulcers. The paper is said to contain notes of some cases of ulcer healed by sunlight, the temperature to which the parts were exposed being 41.25° C. Again, in 1776 La Peyre anticipated Finsen in respect of the properties of the chemical rays of the spectrum, though he knew nothing of their nature, and called them "heat at a distance." He exposed ulcers to the action of a lens by means of which he concentrated the rays of the sun. He did not allow the light to be applied long to one place in order to avoid the production of eschars. Lastly, in the same year Le Comte destroyed certain tumours by the application of concentrated light, but he saw in the action of the lens a mere effect of heat. The observations of La Peyre and Le Comte were published in the *Mémoires de la Société Royale de Médecine* in 1776.

At the International Medical Congress recently held at Madrid, an interesting paper on the history of medicine in Egypt was presented by Dr. Eid, of Cairo. He divided the history into five periods, as follows: (1) Ancient Egypt, extending from the most remote times; (2) the School of Alexandria, from the Macedonian to the Arabian Conquest; (3) the Arabian era, extending from the capture of Alexandria in A.D. 640 to the coming of the Mameluk Sultans, with a sketch of the history of medicine among the Ommiades and the Abassides before Islam and after Islam; (4) Mameluk period to the coming of Mohamet Ali: (5) period of Mohamet Ali to the present day. Dr. Eid gave in considerable detail the results of the most recent excavations and of a critical examination of papyri and of Arabic manuscripts and works. He also gave descriptions of curious customs existing throughout Egypt and the Soudan, and illustrated his paper with anecdotes and quaint legends. He traces the origin of specialism to the time of the Pharaohs. He finds in a formula contained in the Ebers Papyrus the origin of the use of pomegranate bark, that is to say, of pelletierine, as a remedy for tapeworm: in the same ancient record he finds a division of worms into "flat" and "round." He shows that castor oil and the yeast of beer were freely used as therapeutic agents, and that peppermint was employed in rheumatism. He finds, too, that the ancient Egyptians had some notions of pathology—for example, of autointoxication caused by food, and of the development of tumours. He states that a Christian, Hares Ibu-Kalda, was one of the physicians in whom the Prophet had the greatest confidence: he gives facts as to the great number of Christian and Jewish doctors employed by Mussulman Caliphs, and cites interesting passages from Arabic writers, notably from Ebu Radouan, as to the quality of the Nile water, and the necessity of filtering and boiling it before drinking.

The *Revue Française de Médecine et de Chirurgie* has recently published a transcript of the official report of the *post-mortem* examination of the body of Louis XIV. The documents, which are copied from the *Annales Medici*, MS. No. 340 of the Library of the Paris Medical Faculty, pp. 463, 464, consist of an invitation to the Dean and Doctor Regents of the Faculty to be present at the necropsy, followed by an account of the examination. The following is a translation of the documents:

To Messieurs, Messieurs the Dean and Doctor Regents of the Faculty of Medicine of Paris at the Schools of Medicine, rue de Bucherie.

When the King dies, it is the custom to invite the Dean and a senior member of the Faculty of Medicine to be present at the opening of his body. For that reason I have the honour to request you, gentlemen, to come hither to-morrow, the second of the month, at eight o'clock in the morning. The Marquis de Beringhen, First Equerry of the King, will provide a carriage for you, which will be to-morrow at six in the morning at the gate of the Schools of Medicine, where two sworn surgeons of Paris will be, who will come hither with you.—I am, gentlemen, your very humble and obedient servant, Desgranges. At Versailles, 1st 7ber, 1715.

The report of the necropsy begins with the following sentence in Latin:

Adfuit decanus M. Dole cum socio M. Guerin et duobus chirurgis Versalias, et Ludovici 14. Galliarum Regis, corpus adopertum fuit, cujus haec est relatio ex nostr. comm.:

The narrative proceeds in French to the following effect:

This day, 2. 7ber, 1715, we assembled at nine o'clock in the morning in the Castle of Versailles for the purpose of opening the body of the King, where we found what follows:

Externally, the whole of the left side seemed to us to be gangrenous

from the extremity of the foot to the top of the head, and the epidermis generally over all the body on both sides. The right side was gangrenous in several places, but much less than the right; and the belly appeared extremely swollen. On opening the belly, the intestines were found altered with some marks of inflammation, chiefly those that were situated on the left side, and the large gut was prodigiously dilated. The kidneys were in a natural enough condition; only there was found in the left one a small stone of the same size as those which he passed in the urine several times during his life without any feeling of pain.

The liver, the spleen, the stomach, the bladder were absolutely healthy, and in a normal state interiorly as well as exteriorly.

On opening the chest we found the lungs healthy, as well as the heart, the extremities of whose vessels and of some valves were becoming ossified, but all the muscles of the throat were gangrenous. On opening the head, the whole of the dura mater was found adherent to the skull, and the pia mater had two or three purulent stains along the falx. As regards the rest, the brain was in a natural state, both on the outside and interiorly.

The left thigh on the inner aspect was found gangrenous, as well as the muscles of the belly, and this gangrene extended up to the throat. The blood and lymph were an extreme dissolution universally in their vessels.

A supplement to the *University of Durham College of Medicine Gazette* has just been issued, which gives the full names and addresses of all medical graduates of Durham University.

Messrs. W. H. Beynon and Co., of Cheltenham, announce the forthcoming issue of a memorial picture of University College Hospital. The picture will include views of: (1) University College (Front); (2) Hospital from University Street; (3) Board Room; (4) "Goldsmid" Ward; (5) "Brundrett" Ward; (6) Library of University College; (7) No. 6 Ward; (8) Museum of Anatomy; (9) Sisters' Room; (10) No. 8 Ward. Portraits of the following physicians and surgeons whose names are associated with University College will also be included: William Sharpey, A. T. Thomson, W. H. Walshe, Sir William Jenner, Edmund A. Parkes, Charles J. Hare, Sir J. Russell Reynolds, Wilson Fox, Tilbury Fox, Grailly Hewitt, Samuel Cooper, Robert Liston, Richard Quain, John Marshall, Sir John Erichsen, Marcus Beck, and T. Wharton Jones. All the illustrations will be grouped on one sheet and enclosed in an artistic design. Some of the portraits will be copied from authentic originals at the hospital and University College and all the views will be from special photographs recently taken.

POOR-LAW MEDICAL OFFICERS' ASSOCIATION OF ENGLAND AND WALES.

THE annual general meeting of this Association took place at the Trocadero, Regent Street, W., on June 30th, at 6.30 p.m.

In the absence of the President, the Chairman of Council (Dr. Balding) presided. The balance-sheet for the last year was presented, and approved by the meeting. Dr. Farquharson was unanimously elected President for the ensuing year. The members of Council and other officers were also re-elected.

At 7.30 p.m. the members and their friends dined together, and spent a very agreeable evening. Among the guests were Sir Walter Foster, M.P., Sir Charles Cameron, Dr. Bateman (Secretary of the Medical Defence Union), Dr. Climson Greenwood (President of the Public Vaccinators' Association), Mr. Preston (President of the Metropolitan Division of the Poor-law Officers' Association), and Mr. Robert Clay (Clerk to the Shoreditch Board of Guardians).

Sir Walter Foster proposed the toast of "The Association," and pointed out the necessity of a firm union among Poor-law medical officers, that their cause was as much that of the public as their own. He drew attention to the struggle going on in Ireland, and hoped that this Association would do all it could to assist the sister society in redressing their grievances. It was very desirable that all Poor-law medical officers should pull together.

The Honorary Secretary, Dr. Major Greenwood, in responding, said that nothing was more true than that Poor-law medical officers should be treated with justice. If this were not done the service could not be efficient, and if inefficient, it would be sad indeed for the thousands of poor who relied on them for their medical necessities. Their sympathies were entirely with their Irish brethren, and they were ready to do all they could in assisting them in the present struggle for their rights. Last year Dr. Farquharson had promised to ask a question in the House of Commons pointing out certain serious grievances, namely, the want of provision for anaesthetists in cases where Poor-law medical officers were required to do operations in country districts, where removal to a hospital or infirmary was impossible; and to the inadequate scale of fees laid down by the Local Government Board Order in 1847 for special operations. Encouraged by the answer of the President of the Local Government Board the Council had sent to that Board a memorial pointing out how, in its opinion, the said Order might be amended. Beyond an official acknowledgement nothing further had been heard.

Sir Charles Cameron proposed the toast of "The Public Vaccinators' Association," and spoke of the administration of the Vaccination Acts in Ireland, where nearly all the Poor-law medical officers were also public vaccinators. He regretted that they did not receive better remuneration.

Dr. Climson Greenwood responded, and spoke of some of the difficulties which public vaccinators met with in the discharge of their duties.

Dr. Balding proposed "The Guests," and gave an interesting account of Poor-law grievances and the efforts that had been made to reform them.

Dr. Bateman and Mr. Preston made suitable replies.

ASSOCIATION NOTICES.

THE ANNUAL MEETING AT SWANSEA.

THE PROPOSED CAMP.

MEMBERS who may be thinking of joining the camp proposed to be established during the annual meeting at Swansea on a site near the Mumbles, at a distance of thirty-five minutes by tramway from Swansea, are requested to send in their names without delay to the Honorary Secretaries, Mr. W. F. Brook, F.R.C.S., Longlands House, Swansea; or Dr. F. G. Thomas, 2, Brunswick Place, Swansea. Full particulars will be found in the last number of the JOURNAL, p. 42.

ELECTION OF MEMBERS.

ANY candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are fitted up for the accommodation of the Members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 a.m. to 5 p.m. Members can have their letters addressed to them at the office.

GUY ELLISTON, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

NORTH WALES BRANCH.—The last annual meeting of this Branch, prior to its amalgamation with Shropshire, will be held at the Corsygedol Hotel, Barmouth, on Tuesday, July 14th, at 2 p.m. After formal Branch business, the President (Dr. Lloyd O. Williams, M.B., Llanberis) will deliver his address, and the following papers and communications will be read: T. E. Jones (Llanrwst): Taliesin's Poem of the Sixth Century on the Microbe. J. Elliott, M.D. (Chester): On the Use of Thyroid Extract. Price Morris: (1) Compound Fracture of Skull; (2) Ruptured Tubal Pregnancy. R. H. Mills Roberts, C.M.G.: Cerebral Cases. Rushton Parker, F.R.C.S.: (1) Chronic Inflammation of Knee-joint; (2) Compound Fracture of Thigh; (3) Case of Trephining. G. P. Newbolt, F.R.C.S.: Total Extirpation of the Prostate by Freyer's Method.—W. JONES MORRIS, Portmadoc; H. JONES ROBERTS, Pen-y-groes, Honorary Secretaries.

NORTH WALES AND SHROPSHIRE BRANCH.—Nomination papers for the representative of this Branch on the Council of the Association should be sent by July 13th to W. JONES-MORRIS, Honorary Secretary, Portmadoc.

SPECIAL CORRESPONDENCE.

CAPE COLONY.

The British Medical Association in South Africa.—Association of District Surgeons of Cape Colony.—The Salary of the Medical Officer of Health for Pretoria.

THE Cape of Good Hope Branch of the British Medical Association is resuming active work. It is increasing a pace in numbers and its meetings this session have not only been far better attended than has usually been the case, but have been very

interesting. Moreover, there is some appearance of a softening down of the party antagonisms which have so long operated badly both on the profession generally and on the local Branch. The Griqualand West Branch has been fairly resuscitated, under an excellent President, Dr. Watkins, who delivered a most interest address, replete with practical points, on Doubts and Difficulties in Practice. What is wanted in this country is a full utilization of the provisions for the formation of Divisions. With the enormous distances, a Branch meeting is apt to be a local affair, and membership, except for those who actually reside in the town of meeting, purely nominal. But in some parts of the country, notably in the Eastern Province of the Cape Colony, which has no one big town, but a number of small ones, the Division system would at once galvanize Association matters into active life.

An important event of the last few weeks has been the formation of an association of the district surgeons of the Cape Colony. These gentlemen, of whom there are over a hundred, perform the combined duties of police surgeons, health officers, and general medical advisers to the local authority. There is one to each "division," a division being the area under the jurisdiction of a civil commissioner and resident magistrate, and corresponding roughly to an English county. Of recent years also, in little centres of population away from the magisterial village, additional district surgeons have been appointed, having jurisdiction over subdivisions of the division. The district surgeons receive, except in the outlying districts, and in one or two larger towns, a uniform salary of £75 per annum, *plus* certain allowances, amounting to £25 to £50. In the native territories and two or three very sparsely populated parts they receive as much as £250, simply because there is little or no private practice. In most, or at least many, of the Transkeian districts, a man may think himself lucky if he makes £100 a year outside his official receipts. The extra allowances are ludicrously inadequate, being only 7s. 6d. an hour of six miles when travelling, reckoned outside an area of three miles from the seat of magistracy, 1 guinea for necropsies, 7s. 6d. an hour for evidence, and fees for major operations, of which 3 guineas is the highest for even an abdominal section. No payment is made for medicines, and in districts where the police is large, and much married, this item becomes a big one. As a result of the formation of this Association, a deputation waited upon the Colonial Secretary the other day, and laid a detailed list of grievances before him, pointing out that the scale of salaries and allowances had been fixed in the Thirties, and had been very little altered since, despite the enormous increase in work and in cost of living and horseflesh. Sir Pieter Faure was very courteous, but at once met the deputation with the extremely pertinent query as to how it was that, despite the grievances of the district surgeon being so many, everybody in the district and others beside always applied for a vacancy directly it was heard of. The deputation could only reply that it was due to the hopelessly overcrowded state of the profession on account of the influx from England, but I am afraid such a reply is hardly calculated to stimulate the official mind to generosity. Nevertheless Sir Pieter at once admitted that an allowance for medicines ought to be made, and promised consideration of the other points.

At Pretoria the Town Council decided to engage a medical officer of health without private practice, and, on the recommendation of its Health Committee, the chairman of which is a medical man, offered £600. Another medical member characterized this salary as starvation wages, and an insult in such an expensive place as Pretoria, but the medical chairman had to reply that although he admitted it was altogether insufficient for a man to live comfortably on, numbers of good local men were anxious to get the post at the salary offered, or less; and that, as he sat there as a representative of the public and not of the profession, he could not conscientiously advise the Council to offer more. £600 would be about equivalent to £250 in an average British town.

EAST ANGLIA.

East Suffolk and Ipswich Hospital.—Small-pox at Colchester.—New System of Sewage Disposal at Colchester.

THE half-yearly meeting of the Court of Governors of the East Suffolk and Ipswich Hospital was held at the Town Hall, Ipswich, on June 24th, and was very well attended. The sixty-seventh annual report of the Board of Management was read. During the past year 1,110 in-patients and 7,818 out-patients were treated. The average stay of each in-patient was 32.9 days, a rather lengthy period. The increase of out-patients was commented upon. The income from all sources was £6,038, and the expenditure £6,217. The interior of the Patteson Cobbold Memorial Wing was completely renovated at a cost of nearly 1,100 defrayed by Mr. Felix Cobbold (the President of the Court of Governors) and Mr. John Cobbold. The greater part of the time of the meeting was taken up by an animated discussion in regard to the out-patient department, and the generous offer made by Dr. Bartlet, a late member of the active staff and now honorary consulting physician, to provide a suitable building in the town for the attendance of the out-patients. On behalf of those in favour of accepting the proposal it was pointed out that fresh out-patient accommodation was urgently required; that, owing to the distance of the hospital from the town, much time was wasted by out-patients going to the institution, and that the extra cost of administration need not be very much. The opposition, while grateful to Dr. Bartlet for his offer, was of opinion that a separate out-patient hospital in the centre of the town and divorced from the in-patient department was not desirable, that it would entail a separate paid staff, and that the necessary expense would be considerable and a constant burden on the hospital. The seven members of the honorary medical staff had previously carefully considered the question, and their report was totally opposed to accepting the gift. The influence of the working men's organizations was strongly in favour of accepting the offer, and as they subscribe over £600 a year to the funds, their opinion carried considerable weight. After a lengthy discussion, the offer was accepted by 52 votes against 43. A special committee was then appointed to deal with the matter.

Dr. W. G. Savage reports that no case of small-pox has been notified in the town since June 9th, so that the outbreak which started May 1st, and gave rise to 23 cases may be considered to be at an end.

On June 24th the newly completed system of sewage disposal for the Borough of Colchester was officially opened. The new appliances consists of four large settling tanks with a capacity of 836,000 gallons which, with the old tanks still available gives a total tank capacity of 1,436,000 gallons, of six contact beds and of new sludge-treating machinery. The contact beds are made of coke breeze to a depth of about 4 ft. laid on concrete floors. They are sufficient to treat on emergency two million gallons a day. The present average sewage flow is about 900,000 gallons daily. The sludge is allowed to settle in the tanks and subsequently flows by gravity into a large chamber where it is mixed with lime and made into sludge cake which is sold to farmers at a very low price. The supernatant sewage then flows into the contact beds and after about six hours the effluent, which is said to be very satisfactory, passes into the Colne. The cost of the new works was £9,692.

CORRESPONDENCE.

MEDICAL DEFENCE.

SIR,—In the report of the Committee on Medical Defence appointed after the annual meeting of 1896, many of the questions, financial and otherwise, referred to in the recent correspondence in the BRITISH MEDICAL JOURNAL will be found to have been fully considered.

There were at that time three schemes before the Association, which are given in full in the appendix to the report: Scheme A. (the Council's scheme), which proposed that the subscription for medical defence should be voluntary, and should not exceed 10s. per annum; that a sum not exceeding £2,000 of the annual revenue of the Association should be appropriated to the purposes of medical defence; that there should be a standing committee of nine, to be appointed by the Council, each member of which should receive £3 3s. for his attendance in addition to his travelling expenses; and that the Secretary of the Association should be the Secretary of the Committee.

Scheme B. (Mr. Butlin's scheme) proposed that the Branches or a combination of them should undertake the duties of medical defence, assisted from the surplus revenues of the Association to the extent of 5s. per member of such Branches or combination of Branches, and that there should be no increase in the subscription to the Association (which was at that time £1 1s.).

Scheme C. (Dr. Welsford's and Mr. Horsley's scheme) proposed that the subscription should be obligatory on all

members residing in Great Britain and Ireland, that the annual subscription should be 5s., and if at any time increased, should not be more than 10s.; that a sum not exceeding £2,000 in any one year should, if required, be appropriated for the purpose from the funds of the Association; that a standing committee of nine, five of whom should be members of Council, should be appointed, and be paid, if resident in London one guinea, if resident outside a radius of twenty miles two guineas for each attendance, in addition to travelling expenses; and that a paid organizing secretary should be appointed who must be a member of the Association.

The scheme finally adopted by the 1896 Committee was practically that of Messrs. Welsford and Victor Horsley (Scheme C.), the only important alteration being the suggestion that each member of the standing committee should receive his travelling expenses, and if at some future time the medical defence funds permitted, the Council might sanction his payment for attendance also.

It may be gathered, I think, from this short abstract of the schemes, that it was agreed that the compulsory subscription required from members for medical defence need not exceed 5s. a year, and that the contribution from the general funds of the Association in any one year need not be more than £2,000. If we take the number of members in the United Kingdom as 15,000, a 5s. subscription would give £3,750, which, with the £2,000 contribution from the Association funds, would make £5,750, corresponding closely with Dr. Bateman's estimate of £6,000 as the minimum possible expenditure.

When we come, however, to analyse the actual expenditure of one of the existing medical defence societies for the year 1902, we shall, I believe, find some reason to think that the 5s. subscription would be amply sufficient without any contribution from the Association. This Society with a membership of 2,276 obtained from a 10s. subscription the sum of £1,138, out of which the net legal cost of defending its 2,276 members for one year was £145 10s. 7d., or at the average rate of 1s. 3d. per member. It is true that its secretarial expenses amounted to £273 (or say 2s. 5d. per member) being nearly double, and its office expenses to £326, or considerably more than double (2s. 10d. per member) the legal expenses, but the secretarial and office expenses are just those which might be expected to diminish in proportion if the two defence societies were united, and still more so if the work were taken over by the British Medical Association. Hence, if we could take the sum of 1s. 3d. per member as representing the average actual cost for legal expenses (I do not say we can), and allow three times that amount, or 3s. 9d. per member for secretarial and office expenses, we shall just reach the 5s. per head as suggested in the various schemes, while the £2,000 allotted from Association funds would be in the nature of a guarantee fund to be drawn upon if necessary.

Dr. Bateman's letter gives no indication that the absurd and wasteful system of having two societies to do the work of one, to which Mr. Edmund Owen has drawn attention, is likely to come to an end, or that the public scandal of these two societies appearing on opposite sides before the General Medical Council may not be repeated, and this adds another to the many reasons which have been repeatedly urged why the British Medical Association should itself take the matter up.—I am, etc.,

Dulwich, July 6th. H. NELSON HARDY.

THE EXAMINATION OF THE SPECTACLE MAKERS' COMPANY.

SIGHT TESTING BY OPTICIANS.

SIR,—For upwards of four years I have held the post of examiner to the Worshipful Company of Spectacle Makers in conjunction with Professor Silvanus P. Thompson F.R.S., the Rev. J. Henry Smith, B.A., late Principal of the College of God's Gift, Dulwich, and Mr. W. H. Thornthwaite. These examinations, each of which usually occupies three days, are held for the purpose of examining opticians in the knowledge necessary for their craft, and embrace an elementary knowledge of theoretical and applied optics, including the laws of refraction and reflection, the Gauss theory, the causes and means of correction of spherical and chromatic aberration, the course of axial and oblique rays through optical systems, and a thorough practical knowledge of the make and fitting of spectacles, and of the carrying out of oculists' prescriptions. Further, a knowledge of arithmetic, elementary algebra and plane trigometry, an elementary acquaintance of heat, pressure, and temperature and of instruments employed for their measurement. Also the principles underlying and the use of the camera, microscope, telescope, and other optical and scientific instruments. Although the examination includes the construction of the eye and its refraction, treated as an optical instrument, and from a purely theoretical point of view, practical sight-testing has always been excluded, as well as, of course, diseases of the eye, or the application of any of the instruments used by ophthalmic surgeons such as the ophthalmoscope and ophthalmometer.

Up to the present time, I have, owing to the attitude taken on the subject by the general body of ophthalmic surgeons, opposed the inclusion of sight-testing in the examination, but the desire, on the part of the trade, that this be done, has gradually become so pronounced that I feel my position has become strained to the point where I am compelled to publicly declare my views on the matter.

My reason for taking a share in the examination has been, from the first, to watch the interests of the medical profession as well as that of the public, confining the syllabus solely to a knowledge of pure optics, such as would necessarily be a part of the trained optician's education. In the performance of this obligation I have devoted an immense amount of time, labour, and energy, since I found the generality of dealers in optical goods deplorably wanting in scientific knowledge and I felt it a duty which I owed to the public to do all in my power to raise their standing, so that they may not only sell spectacles and optical instruments, but be also able, if not to make, at least to repair and adjust them with intelligence and precision. To some slight extent my hopes have been realized, and had opticians been able rigidly to adhere to this scheme, I doubt if any of my colleagues could have said a word against it. But Sir, the optician's trade is not, and indeed cannot be, confined within the present limits of the Spectacle Makers' Examination. From the time of Silvanus Amatus, the inventor of spectacles in the 13th century, until the present day, opticians have not only made spectacles, but have also tested the sight of their customers. They have done this as a body for upwards of five hundred years and it would be impossible for any one to stop it, seeing that the ophthalmic surgeons have done so for only some fifty.

The British Isles contain a population of about forty-two millions; of these the great majority require glasses during some period of their lives. Now the average medical man, although skilled in medicine and surgery, has not devoted his attention to the intricacies of sight-testing and optics, and is therefore more likely to err in fitting spectacles than any optician who has passed the Spectacle Makers' Company's examination, seeing that the latter is fortified by his optical training. We have only very few general practitioners and specialists in other branches who are, in addition to the ophthalmic surgeons, entirely competent to deal with the testing of sight.

Now I hold, Sir, that the 400 ophthalmic surgeons and the very restricted number of other medical men are absolutely unable, for physical reasons, to deal with the optical requirements of this country. What, then, is to be done? I see no possible solution except to recognize frankly the traditional right of the opticians to practise the art of sight-testing, aiming rather to restrict them to the correction of simple errors of refraction in healthy eyes, and to induce them to be bound over to refer to the ophthalmic surgeon every abnormal case, that is every person in whom vision cannot be corrected up to normal at once, also persons under 16, cases of spasm, of high myopia, and abnormal muscular conditions. Were the opticians trained and examined in their work, they would, it is true, dispose of the bulk of the simple cases requiring glasses, but would be able, without attempting to diagnose diseases, at least to know when an eye was normal or healthy, referring all cases not coming under this category to a higher authority. It is not desirable, and should be prohibited by law, for any optician to use any drug for sight-testing, or any medicament or treatment whatsoever; but since, as I have said, no one dare attempt to stop opticians selling glasses, surely we ophthalmic surgeons should endeavour to raise their standard so that they may aid and not oppose us, and that we may aid and not oppose them in taking care of the eyesight of the nation.

It may have been urged that if the opticians were trained so as to test sight properly, they would be depriving the ophthalmic surgeons of their patients and consequent emoluments, but all experience goes to show that the

contrary is the case. A trained optician who knows how to recognize a healthy and normal eye is far more likely to refer all the diseased and "abnormal" ones to a medical man than one who is not so trained.

There are, moreover, immense areas all over the kingdom where there are no oculists at all, or if there be, they are not accessible to the mass of the public. Are we to consider it part of our duty to try to deprive the inhabitants of these parts of such assistance to their sight as it is possible for them to obtain? It is evident that if we wish our countrymen to keep to the front in trades and manufactures, our artizans must be able to see the work on which they may be engaged, which means that they must have their sight efficiently corrected? If our medical men are unable to test more than a small fraction of these people others must be trained to do the work. If this be done thoroughly and sensibly I feel convinced that it will greatly benefit the public by calling attention to their optical defects, and the ophthalmic surgeons by the number of cases which such men will know it is their duty to urge to obtain professional advice.

I am convinced that only ill-results would accrue to the public and to the ophthalmic branch of the profession if we succeeded in blocking advancement of the optical trade to a higher status. For my part I am afraid lest the opposition of the profession to the adoption of sight-testing in the examination of the Spectacle Makers' Company may possibly have the effect of causing that Company to defer taking action in this direction. This will lead to the deplorable result of the trade obtaining certification of a kind from less responsible corporations, and without that restraining influence on the scope of the examination which it is now so easy for the profession to secure, if they take up a judicious and friendly attitude to the scheme under consideration.

Bearing in mind the fact that the optical needs of the public are out of all proportion to the possible attention to be obtained from oculists and other competent medical men, and that, therefore, persons with defective eyesight are compelled to resort to opticians for assistance, is it not time that the profession should approach this question in the same spirit in which they had been compelled to deal with the position of midwives? It will be remembered that by the Midwives Act, which came into force in April last, a Central Board has been established to examine and issue certificates to midwives which qualify them to practise. It seems to me that a similar Act might well obtain to regulate the practice of the optical craft, and the position of the optician would thus be placed upon a proper footing in relation to the profession. The alternative which we ophthalmic surgeons would undoubtedly prefer would be the institution in the medical curriculum of a special optical training compulsory in all medical men who undertake sight-testing and eye work.

But although I have long been convinced of the trend of affairs in the optical industry, and have recently had my attention drawn to the movement which is now taking place, I feel that the time has come when I must reconsider my position as examiner, a position which I only consented to hold so long as sight-testing was not a part of the examination. As I now see clearly that this limitation must, in the near future, be removed, I feel it my duty, following on the conclusion of the forthcoming examination, to withdraw and abstain, while these matters are still under consideration and unsettled, from taking active part in the scheme as examiner. I consider I should keep an open mind upon the subject until the details of the proposed new scheme of examination and certification have been settled in such a way that they do not in any way clash with the real interests of the public and of the medical profession.

Although I have been subjected for four years to the continual criticism of my medical colleagues, I have continued my work uninfluenced by it, since I felt I was only doing what I thought to be my duty to my *confrères*, to the Spectacle Makers' Company, to the public, and to my conscience. Whether I have done right in assisting to conduct these examinations, my mind is at rest; whether I have done wisely time will show.—I am, etc.,

GEO. LINDSAY JOHNSON, M.D., F.R.C.S.

South Hampstead, N.W., July 6th.

GLASSES FOR PRESBYOPIA.

SIR,—In the BRITISH MEDICAL JOURNAL of June 20th you have a review of a well known book, *Diseases and Injuries of the Eye*, by Mr. George Lawson, and you say "the full correction of hypermetropia is not recommended, and the weakest glass that will enable the patient to see to read is the one that should be ordered for presbyopes."

This advice is certainly not good; I might go further, and say it is distinctly bad. What is the state of affairs in a presbyope? A hard lens, which an overworked ciliary muscle is trying its best to render more convex to focus to near objects. If you give the weakest glass you still leave the muscle a certain amount of useless work to do. You want to entirely relieve this muscle, and to place the eye automatically in a proper focus; in this way you relieve all symptoms of strain. Many patients have I seen whose only disablity was too weak glasses for reading, and I venture to say every ophthalmologist has had the same experience.

With regard to hypermetropes it is otherwise, as nothing is of so much importance as training the ciliary muscle by commencing with the weakest, and gradually increasing—say, every three months—till the proper strength is reached. The constant fault of most "opticians" is the very thing you advise—namely, giving too weak glasses to presbyopes.—I am, etc.,

GEOFFRY C. HALL, F.R.C.S.,
Colonel I.M.S. (Retired).

Dieppe, July 4th.

WHAT IS "SUCCESSFUL" VACCINATION?

SIR,—The note in the BRITISH MEDICAL JOURNAL, July 4th, 1903, p. 17, by Dr. Marshall Day, on two cases illustrating the relations of small-pox and revaccination, though defective as to information on some points on which one would be glad to have it, is interesting as throwing doubt upon the generally-accepted belief in the power of vaccination to protect against the infection of small-pox if the system be brought under its influence at a sufficiently early date in the incubation of the disease. But my object is not to discuss this aspect of Dr. Day's note so much as to use it as a peg on which to hang a protest against the use of the word "successful" in connexion with vaccination, not only as he has done, but under any circumstances. It may seem rather late in the day to ask, What are we to understand by "successful" vaccination? It is evident that success cannot be predicated of vaccination which, as in Dr. Day's cases, is certainly not successful in protecting against attack of small-pox, however favourable its influence may be, as it appears to have been in these cases, in modifying the effects of the infection. There are only two unquestionable proofs of the success of vaccination: one is that the patient is insusceptible to revaccination immediately afterwards; the other would be that he was equally insusceptible to inoculation of variola. As one of these tests is illegal and the other is generally impracticable, the use of the term "successful" in connexion with vaccination is unjustifiable. For, if it be said that the "success" which is indicated is that of the operation itself, the answer is that there is no such absolute characterization of the results of vaccination as to enable us to lay down any definite and unquestionable criterion of what is successful and what is not.

But irrespective of the inconvenience, to say nothing more, of using words like this in an inconsistent and ambiguous way, there is another objection to doing so in this case, as it gives a handle to the opponents of vaccination of which they are not slow to avail themselves. For it is a rather telling form of *ad captandum* argument to say, "here are persons who are alleged by the doctors themselves to have been 'successfully' vaccinated, and for whose 'successful' vaccination they have in most cases been paid fees which they could not have claimed unless they had certified that the operation had been successful, but who have nevertheless taken small-pox. Where does the success come in?"

As the practice of vaccination by the medical profession generally is naturally influenced by that of the official public vaccinators, and as this in its turn is prescribed by the official instructions of the Local Government Board, it is to this body that we must look for a defence of this misuse of the word "successful." In Schedule 3 of the Vaccination Act of 1898 the public vaccinator is instructed that "in cases of successful primary vaccination he is to record the number of scarified areas, punctures, or groups of punctures made and the number of separate normal vaccine vesicles or groups of vesicles which have been produced," and that "in cases of revaccination he must register as 'successful' only those cases in which either vesicles, normal or modified, or papules surrounded by areolae, have resulted." So that in default of any further definition of "successful" vaccination by the Local Government Board, and I can find none, we must conclude that although the public vaccinator must "aim at producing four separate good sized vesicles or

groups of vesicles not less than ½ in. from one another," if his aim fails and he only produces a single vesicle the vaccination is "successful," provided the vesicle be only "good sized," whatever this may mean. Hence it is obvious that, so far as the instructions of the Local Government Board are concerned, the only justification for calling a vaccination "successful" is that the operator has obtained some result which his conscience will allow him to consider a "good-sized" vesicle.

As so little illumination can be obtained on this point from the instructions of the Local Government Board it may be thought that the word "successful," in its special connotation with vaccination, is defined by statute. But it is not so. The term was first introduced into the Vaccination Act of 1840, which provided that Boards of Guardians might contract with any legally-qualified medical practitioner for the vaccination of persons who, "not having been previously successfully vaccinated should be successfully vaccinated by the contracting medical officer or practitioner," but the Act gave no definition of what was to be considered "successful" vaccination. Power was given to the then Poor Law Commissioners to make regulations for carrying out the provisions of the Act, but whether they introduced into their regulations any definition of this obscure point, I have not been able to discover. Probably they were discreet enough not to do so. Now it is clear that so long as public vaccination continues to be administered on the basis of payment by fee for each operation performed there must be a prescription of some kind as to the character of the operation for which the payment is to be made. But whether it is desirable to indicate as "successful" an operation, the success of which cannot, as a rule, be practically tested and which, in such cases as Dr. Day quotes, is clearly not successful in achieving the primary object for which it is performed, is another matter.

I may be asked, if I object to the use of the word "successful" what alternative have I to suggest? This is a question more easily asked than answered. But some clue to an alternative is to be found in the regulations for vaccination in the Army. In the first draft of these regulations, issued in 1859, instruction was given that regimental surgeons should report "whether every man, woman and child belonging to the regiment bears unequivocal marks of either small-pox or cow-pox." In a further draft this formula is changed to "whether bearing satisfactory marks of vaccination;" but in a subsequent circular the prescription runs again, "every recruit without exception (whether he bears the marks of natural small-pox, of successful vaccination or otherwise) may be vaccinated."

Now it can hardly be denied that, although the word "satisfactory" is not altogether free from cavil, it is a much more justifiable term than "successful," for it does not predicate anything beyond the competence of the operator to determine what is "satisfactory," and that, after all, is what must be relied on in any case. I would, therefore, strongly urge that, unless any better word can be suggested to define the nature of the operation, for which payment is to be made, the word "successful" should be replaced by "satisfactory." But there is an alternative, and that is to use the formula "as by law prescribed," which predicates nothing beyond the definition of the kind of result for which payment is to be made, which the Local Government Board is empowered by statute to do. If, moreover, the vaccination certificate bore on its face, as it ought to do, a statement of the precise result which had been obtained, with an indication also of the standard of "satisfactory" vaccination laid down by the Local Government Board, there would be no need to use any word of ambiguous meaning; the facts would speak for themselves.—I am, etc.,

Gloucester, July 5th. FRANCIS T. BOND.

INSPECTION OF PREMISES AFTER "NOTIFICATION."

SIR,—On the notification of an infectious disease to a sanitary authority an inspector from the medical officer of health calls at the house where the patient resides, examines the premises, reports thereon, and, if necessary, compels the owner to rectify any insanitary conditions; such other matters, as proper isolation, removal to hospital, disinfection, etc., are also as a rule considered. In addition, however, there are two questions which I now wish to emphasize:

1. Does the sanitary authority, in all cases, inquire into the sanitary condition and health of the cows, of the dairy from which the milk is supplied? I am well aware that in many districts the dairies are inspected at more or less regular intervals, and I also know that the importance of the milk supply, in its relation to disease, has already been well considered, but my point is, that an examination of the dairy and all that pertains thereto is necessary at the time of the illness; certainly in every case of typhoid, scarlet fever, and diphtheria.

2. Though the home may be scrupulously examined and tested, there is usually no attempt whatever to inquire into the air, food, water supply, or drainage of the office or establishment where the patient has been living during his days of work. So much worse is it now, when so many young girls are employed in various shops and industries. Many of us no doubt have observed cases of typhoid and diphtheria occurring among those in the same office, and still the office has been the last place suspected, and indeed only accidentally has the cause been unearthed.

My chief object is to impress on medical officers of health and practitioners the importance of attacking the business premises, as well as the home, in attempting to trace the cause of infectious disease.—I am, etc.,

Liverpool, June 29th. G. WALTER STEEVES.

THE IRISH POOR-LAW MEDICAL SERVICE.

SIR,—At the Enniskillen meeting of the Irish Medical Association a resolution was passed asking for £200 a year for dispensary men, but only £120 for the hospital men. This was a very foolish resolution, and a very unjust one, as the hospital men not only have none of the collateral emoluments which the dispensary men have, but they are severely handicapped in the matter of practice; a like resolution was rejected at the Meath meeting. I invite workhouse men to make it plain to the Irish Medical Association that they must get rid of their hostility to us. I ask the Branches in Ireland of the British Medical Association to take up the whole matter.

Apropos of the new Medical Council Bill, is there any use in urging my English medical brethren to get their M.P.'s to oppose it? A more impudent proposal could not well be imagined than the one to tax the profession for the benefit of the joint stock company of corporation and university directors who constitute the General Medical Council. See how they hide away one another's iniquities? Look at how they hid out of sight the defective examinations of Trinity College, Dublin, and refused to pass a condemnatory resolution over the belated report which eventually saw light. I have over and over again protested against the total exclusion of the mass of the profession from all share in the training of their own young. Even when the General Medical Council is obliged to do something in that direction it deliberately does it in a way that renders the whole thing nugatory.—I am, etc.,

Cashel, June 30th. THOS. LAFFAN.

THE EARLY HISTORY OF CLINICAL THERMOMETRY.

SIR,—Your correspondents, Drs. Brydon and Willson, in discussing the early history of clinical thermometry in the BRITISH MEDICAL JOURNAL for May 16th, 1903, p. 1181, appear to be ignorant of the work done in this field previous to the beginning of the nineteenth century. I have made no attempt at any literary investigation of this subject, but one may infer from the manner in which both Cleghorn (*Diseases of Minorca*, London, 1762), and Lining (*A Description of the American Yellow Fever*, letter to Whyte, published in Edinburgh, May 7th, 1754), refer to their observations of the corporal temperature, the former in pneumonia, as early as 1745, and the latter in yellow fever, previous to December 4th, 1753, that such observations were, more than 150 years ago, not unknown.—I am, etc.,

Chicago, June 25th. EDWARD F. WELLS, M.D.

OBITUARY.

WILLIAM JONES, M.R.C.S., L.R.C.P.LOND., L.M.DUB.

IT is with sincere regret we record the death of Mr. WILLIAM JONES of Ruabon, which took place at his residence, Tynewyd, on July 2nd, at the age of 75.

He was born at Dolgelly, and served his apprenticeship with Dr. Evans of that town and on the completion of his term of five years he proceeded to the Ledwich School of Medicine, Dublin, where he remained for some time, taking before he left the Irish metropolis in 1853, the then much-coveted L.M. He subsequently attended at the London

Hospital and took the "College" and "Hall" in 1855, and in 1863 obtained the diploma of L.R.C.P.Lond.

For some time he served as a surgeon on board Government ships and life in those early days, compared with the ease and luxury of the Montreal trip, was very graphically described by him to those who accompanied him in the *Lake Ontario*. This love of travel never forsook him, his holiday being generally a sea voyage either across the Atlantic, north or south, or to the Mediterranean. About the year 1860 he settled down at Ruabon, where he practised till within three days of his death, having been a Poor-law medical officer for over forty-two years. He became a member of the North Wales Branch of the British Medical Association in 1864, and was its President in 1878. He was a very regular attendant at its meetings, his absence being always a source of great regret, as his geniality and good humour endeared him to the members. Rarely did he miss an annual meeting of the Association, that being generally the commencement of his annual holiday, and many will miss his striking presence with his flowing white beard.

He was one of the old-fashioned school of practitioners, and often bewailed the "progress" of the pathology, his aversion to the perpetual discovery of new germs being at times almost a source of regret to his friends. Very many will remember his diatribes in the smoking room of the *Lake Ontario* on the trip mentioned, when he occasionally turned the tables on bacteriological enthusiasts. His veneration for the former leaders of the profession was intense, Watson, Corrigan, Stokes, Syme, Astley Cooper being, in his opinion, far ahead of the modern leaders, although he would acknowledge that Lister was a genius.

He was an ardent lover of his native language and land, and any movement having for its object the furtherance of Wales and the Welsh found in him a strong champion. At the National Eistedfod he was a familiar figure, robed in the distinctive garb of a bard, being known in the bardic circle as Gwilym Veddyg (William the Physician).

He was buried on July 6th, a very large gathering from far and near being present to mark their respect for one who was much respected and loved during life. His coffin was borne by selected employés of the works he had been connected with for nearly half a century. The services at the house and the church were, at his own request, in the Welsh language.

CHARLES HENRY COSENS, M.R.C.S.Eng., L.R.C.P.Lond.

MR. C. H. COSENS, to whose untimely death a brief reference was made in the BRITISH MEDICAL JOURNAL of July 4th, was born at Clapham in 1859, the son of a wealthy merchant, in whose business he might have become a partner had not his love for science led him to take up the study of medicine. He received his early education at Brighton and at the Kensington Grammar School. On leaving school, not being very robust, he became a pupil at a farm near Stirling, and while there, when superintending the loading of some hay, he was accidentally thrown from the truck and suffered an injury to his leg. Apparently recovering from this, he went to Spain with a view of entering his father's business, but the trouble in his leg returned and necessitated his coming home, when an operation was successfully performed. During the enforced rest of eighteen months which followed the operation he decided to follow the medical profession. He entered as a student at St. Bartholomew's Hospital in 1883, worked most assiduously, took the Conjoint Diploma of the Colleges, and became house-surgeon at the hospital to Sir Thomas Smith in 1888.

He married, and went into private practice in Oxford Terrace, Hyde Park, in 1890, entering into partnership with Dr. Cripps Lawrence. He soon became a busy practitioner, his work being almost entirely amongst the wealthier classes in the West End. On the retirement of the senior partner the whole work of the practice fell upon his shoulders. For a year or two he worked on singlehanded, not realizing that he was overtaxing his energy until unmistakable signs of cardiac disease showed him only too clearly that his heart was not so strong as his will. Early in the present year, on the advice of his medical friends, he decided to dispose of his practice and retire to the country. On his retirement his friends and patients subscribed over £400 as a testimonial, their desire being that the money might be spent in whatever way would most add to his comfort and happiness. But he was not destined to realize their wish, or to enjoy any prolonged rest. On June 25th a severe cardiac attack caused him to take to his bed, and he died, at the comparatively early age of 44, on June 28th. He was buried on July 2nd at Boldre, near Brockenhurst.

Cosens was a man of remarkable appearance. He was several inches over six feet in height, though a slight stoop made him appear somewhat shorter. His fair complexion, handsome features, and bright blue, expressive eyes will not easily be forgotten by those who knew him. He had a wide and sound knowledge of his profession, his preference being for surgery rather than medicine. He was eminently practical, fond of anything mechanical, and very clever with his hands. He was a good carpenter, and was never happier than when turning his handiwork to professional use in the construction of a splint or similar mechanism. He bestowed an infinity of care and attention upon his patients, whether they were able to pay or not, and he was universally esteemed and beloved by them.

In private life he was a most charming companion, always kind, always genial and sympathetic. He was generous to a fault, ever ready to give to those in distress, always anxious to help his friends. He was a model husband and a devoted father.

His chief pastime was photography. He studied the science of it deeply, and was remarkably skilful in all branches of the art. He was one of the first to turn his attention to photomicrography, and devoted much time and money to the perfection of his apparatus. Not a few medical authors are indebted to Cosens for some of their best photographic illustrations. He loved to do this work and for no reward other than the satisfaction of doing good work and the pleasure of rendering service to his friends.

He leaves a wife and two children to mourn his loss, and their sorrow will be shared by many who feel that his death has taken from them their best and dearest friend.

Dr. CRIPPS LAWRENCE writes to us as follows: It was my privilege to be in partnership with Charles Cosens for the first seven years of his life in general practice, a period associated in my mind with many pleasurable reminiscences. Previous to deciding to study for the medical profession he had devoted his attention to scientific training and pursuits, and thus he brought to bear on his future profession the threefold capacity of logical acumen, manipulative skill, as well as a marked confidence, all more or less the outcome of study in exact science. These credentials served him in good stead not only during his hospital course, but also when he had to face the practical problems of everyday professional life.

Charles Cosens's individuality was a somewhat remarkable one. Of good presence and gentlemanly manner, he took a keen interest in all branches of professional knowledge, though those which were objective in character interested him more than subjective abstract questions. Practice rather than theory dominated his life. He had the courage of his convictions, and inspired much confidence in his patients. As an anaesthetist he was held in high esteem; while a well-balanced, discriminating judgement, combined with marked manipulative skill, enabled him to face surgical operations with confidence and success.

Some of the best professional photomicrographs of his day were taken and enlarged by him—a testimony to the interest and skill with which he identified himself with this advance in technical knowledge. As a colleague he was at once courteous, generous, and just; while uprightness, probity, and a conscientious regard for the best interests of all concerned won for him the esteem, respect, and regard of a large circle of patients and friends, who will assuredly mourn his loss. He thought and read much, but wrote and said little; in consequence, the profession loses information on many moot points which, had he been so disposed, Charles Cosens was well able materially to elucidate.

In vol. xxxiii (1897) of *St. Bartholomew's Hospital Reports* is a paper on Two Cases of Impaction of a Vegetable Foreign Body, etc., by Charles Cosens and T. Rudolph Smith, which will repay perusal.

JOHN WOODMAN, M.D., F.R.C.S.,

Medical Officer of Health of the City of Exeter.

WE regret to announce the death of Dr. JOHN WOODMAN at the age of 66. Dr. Woodman belonged to a very old Exeter family. His father practised in the city for many years. At the age of 15 he went to Australia, and has recorded his recollections of bush life in his *Chips by an Old Chum, or Australia in the Fifties*. Returning to England, he served with

the Turkish contingent in the Crimean war, and on the conclusion of peace entered as a medical student at Guy's Hospital. He qualified in 1860, and in 1870 was admitted F.R.C.S.Eng.; in 1882 he took the degree of M.D. at the University of St. Andrews.

For many years he was one of the honorary staff of the Exeter Dispensary, and Medical Officer of the Exeter Diocesan Training College. He had long held the appointment of Medical Officer of Health of the City of Exeter, and at the time of his death had only recently resigned that of medical officer to the workhouse. Dr. Woodman was one of the originators of the City Sanatorium, which has grown and flourished under his charge. He was a great believer in the septic tank method of dealing with sewage, and helped to secure its adoption for the city. He was formerly President of the South-Western Branch of the British Medical Association and published several papers in the medical journals. In medical circles and by his numerous friends he will be greatly missed.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

THE following have passed the Third Examination for Medical and Surgical Degrees in the subjects undermentioned:

Part II Medicine, Surgery, and Midwifery.—H. Ackroyd, B.A., Cai.; L. E. H. R. Barker, B.A., Cai.; J. R. Bentley, Emm.; G. T. Birks, B.A., King's; A. R. Brailey, M.A., Down; W. H. Brailey, M.A., Queens'; H. N. Burroughes, B.A., Trin.; W. B. Crowfoot, B.A., Emm.; H. A. Cutler, M.A., Cla.; W. F. L. Day, B.A., Cai.; R. S. Drew, B.A., Pemb.; E. A. Ellis, B.A., Down; J. E. Frere, B.A., Pemb.; J. D. H. Freshwater, M.A., Trin.; E. V. Gosthng, B.A., Cai.; F. W. Goyder, B.A., Joh.; G. W. Greene, B.A., Down; T. Guthrie, B.A., King's; W. L. Harnett, B.A., Joh.; W. Hill, B.A., Emm.; B. Hudson, B.A., Cla.; H. L. P. Hulbert, M.A., Trin.; F. S. Kidd, B.A., Trin.; P. W. Leathart, B.A., Cla.; H. B. McCaskie, B.A., Cai.; F. B. Manser, B.A., Pet.; G. W. Micklethwait, M.A., Trin.; P. K. Muspratt, B.A., Christ's; G. B. Norman, B.A., Joh.; P. N. Panton, B.A., Trin.; H. I. Pinches, B.A., Sid. Suss.; F. Richmond, B.A., Cla.; G. R. Rickett, B.A., King's; H. Robinson, B.A., Trin.; W. T. Scott, B.A., Cla.; R. D. Smedley, M.A., Pemb.; J. E. Spicer, B.A., Trin.; J. M. Stonhouse, B.A., Sid. Suss.; W. J. Sussmann, B.A., Cai.; B. N. Tebbs, M.A., Queens'; H. T. Thompson, M.A., Christ's; E. Weatherhead, Joh.; F. Whitaker, B.A., Trin.; L. E. Wigram, B.A., Trin.; H. L. Wilson, B.A., H. Selw.; H. C. S. Woodward, M.A., Down; G. A. Wright, Christ's.

UNIVERSITY OF LONDON.

GUY'S HOSPITAL MEDICAL COLLEGE.

THE unveiling of the South African Memorial, the opening of the Wills Library, a distribution of prizes, and a garden party drew a large company of visitors to the Borough Hospital on July 3rd. The memorial, subscribed for by Guy's men and their friends, is a drinking fountain in coloured and polished marbles, from the design of Mr. Frederick Wheeler, F.R.I.B.A., and has been erected in the colonnade of the hospital, immediately to the south of the doorway into Astley Cooper Ward. It bears the following inscriptions: "To the Guy's Men who Died in the South African War, 1899-1902": "Ante Diem Perierunt Sed Militantes Sed Pro Patria," and the names of those who have fallen, arranged in the order of the dates at which they entered the hospital as students. Those commemorated are: Thomas Jones, Superintendent of the Welsh Army Hospital; died at Springfontein. Quinten Reid Veitch, Major Cape Medical Staff Corps; died at Cape Town. Charles Pope Walker, Major Royal Army Medical Corps; died in Ladysmith during siege. Frederick Murray Russell, Captain New Zealand Contingent; killed in action at Rhenoster Kop. Hugh Arnold Bryant, Civil Surgeon; died at Bloemfontein. Francis Wellford, Surgeon-Captain 7th Imperial Yeomanry; killed at the Battle of Vlakfontein. Stanley Whicher, Civil Surgeon Natal Field Force; died at Mooi River. Richard Truman FitzHugh, Civil Surgeon attached to Imperial Yeomanry Hospital, Deelfontein; died there. Hugh Bernard-Onraet, Lieutenant Royal Army Medical Corps; killed at the Battle of Peter's Hill on the Relief of Ladysmith. Charles Bernard Sells, Surgical Assistant at the Imperial Yeomanry Hospital, Deelfontein, where he died. Lawson Jervis Hughes, Mounted Medical Orderly Imperial Yeomanry Field Hospital; killed in action at Kroonstad, on refusing to surrender. The cost of the memorial has been £250, and it was executed by the Coalbrookdale Company.

General Sir Richard Harrison, G.C.B., C.M.G., a governor of the hospital, unveiled the memorial, at the request of Dr. Frederick Taylor, and remarked that the memorial, which recorded for all time the gallant deeds in which those who had died were engaged up to the last, would at least console their surviving relatives; it would also remind those who passed by of the duties they were called upon to perform even up to death. Over 100 Guy's men gave their services to the country in the course of the war, and 10 per cent. had died from wounds or disease, which was a large proportion for any regiment to have lost in war. He requested the Treasurer and the Governors to accept the memorial and to keep it in the best preservation.

This the Treasurer (Mr. Cosmo Bonsor) promised, on behalf of the President and Governors, should be done; and he thanked General Harrison for coming to unveil the fountain.

All present were then invited to adjourn to the hospital chapel, where a short service was conducted by the chaplain of the hospital, assisted by a surpliced choir.

The Wills Library was next opened by Sir Frederick Wills, M.P., who had given at least £6,000 for the purpose. It is situated near the new physiological department. The bookcases and panelling are of carved oak, arranged in bays, and well lighted. The library, designed by the hospital architect, Mr. J. H. T. Wood, has room for 10,000 volumes, and forms a most valuable addition to the school buildings.

The distribution of prizes took place in the anatomical theatre, at which Mr. Cosmo Bonsor, the Treasurer, presided.

The Dean (Dr. J. Fawcett) read a report of the Medical and Dental Schools, which showed that they were progressing. The list of successes at the different examinations, especially at those of the University of London, was such that they might very cordially congratulate both the students and the teachers. He read the list, and then referred to the changes that had taken place in the staff of the hospital and school. Dr. A. L. Galabin had retired from his position on the active staff after a period of nearly thirty years' service, and had been appointed Consulting Obstetric Physician to the hospital. Mr. J. H. Targett had succeeded to the vacancy on the full staff thus created, and Mr. G. Bellingham Smith had been elected to the post of Assistant Obstetric Physician. Dr. G. H. Savage, after having been attached to the school as Lecturer on Mental Diseases since 1874, and as Physician to the hospital since 1896, had also retired, and had been appointed Consulting Physician for Mental Diseases. Dr. Maurice Craig had succeeded Dr. Savage both as Lecturer and as Physician for Mental Diseases. Mr. Tom Bird had relinquished the post of instructor in anaesthetics, which he had held since 1881, and had been appointed Consulting Anaesthetist to the hospital. Mr. Laidlaw Purves had been appointed Consulting Aural Surgeon. Mr. Higgens had resigned the post of Lecturer on Ophthalmology, and Mr. W. A. Brailey had been elected to succeed him. Dr. E. W. Ainley Walker, the Gordon Lecturer on Experimental Pathology, had been elected to an Official Fellowship at University College, Oxford. Dr. Henry Oldham (who had died at the age of 87 years) was appointed on the consulting staff of the hospital in 1869. The Wills Library, just opened, was a munificent gift, which had met with, and would continue to receive, keen appreciation from Guy's men, both past, present, and to come. Fifty more beds on the medical side of the hospital had been opened, and a small ward for diseases of children was shortly to be opened. The Dean offered to Dr. Pye-Smith, on behalf of the hospital and school, its most cordial congratulations on his election to the Vice-Chancellorship of the University of London. Still more recent honours received by members of the staff were the knighthoods conferred on Dr. E. Cooper Perry and Mr. A. D. Fripp in recognition of the very arduous and valuable work they had performed as members of the Advisory Board for the Army Medical Service. Probably but few knew of the invaluable work Sir E. Cooper Perry had performed, not only in connexion with the Army Medical Service, but in the construction of the scheme for the reorganization of the Hospital and Medical School at Cairo, which he drew up on the invitation of Lord Cromer some six years ago, and which it had not been necessary to alter since it was initiated. Previously it was with the greatest difficulty that students were obtained, even without payment, but since that scheme had been working the numbers had been rapidly increasing, and the fees now payable by students were £40 a year. At the University of London, again, Sir Cooper Perry had done yeoman service, both in the Senate and on the Academic Council. To both Sir Cooper Perry and to Sir Alfred D. Fripp the School offered its most hearty congratulations and its thanks for the work they had performed.

The Chairman said that the hospital was doing its duty towards the sick poor of London better than it had ever done it before. For four generations the family of General Sir R. Harrison had been connected with Guy's, one of them having held the office of Treasurer for fifty-one years. The list of subscribers to the South African Memorial was long, that of the sympathizers with its object was still longer. He next tendered to Sir Frederick Wills the thanks of the Governors and medical staff for his generous gift of the new library, and handed to him the gold key with which he had that day opened it, and he presented to Miss Wills a smaller copy of the same, in silver, for Lady Wills, who was unfortunately unable to be present.

The prizes gained during the past year were then distributed by Sir Frederick Wills, who afterwards addressed the company as to the necessity for the endowment of all medical schools. No good hospital could possibly exist without the help of a good medical school, and no good medical school could exist without a good hospital to back it up. It was impossible to carry on a school for the 500 students, the number now being trained at Guy's, without endowments. A new museum was required, in fact its foundations were already laid, but it would require £5,000 to build it, or much more in the future if it were not taken in hand at once. The hospital was greatly indebted to various gentlemen for munificent gifts, Mr. Raphael, Sir Cameron Gull, Mr. R. Gordon, and Mr. Beerbohm Tree, the last of whom had now been made a Governor.

General Sir R. Harrison also spoke, and referred to the relation of the medical profession to the army. When the country, in its late need, appealed to the great hospitals men from all of them went out to South Africa; and at the end of the war the medical organization of the army was infinitely better than it had been at the beginning. Light had now been let into army methods: and the army medical service would consequently be much better in the future. Those whose names were inscribed on the Guy's and other memorials had not shed their blood in vain.

A vote of thanks to Sir Frederick Wills, proposed by Dr. Frederick Taylor, and seconded by Mr. Clement Lucas, was carried by acclamation, and briefly acknowledged by Sir F. Wills.

A garden party, at which 2,000 guests were present and the Band of the 1st Life Guards played, was afterwards held.

VICTORIA UNIVERSITY.

PRESENTATION OF DEGREES.

THE ceremony of conferring medical and other degrees, which took place on July 4th in the Whitworth Hall at Owens College, marks an important epoch in the history of the federal system of universities as represented by the aggregate of the three Colleges of Manchester, Liverpool, and Leeds.

The Vice-Chancellor's Address.

The Vice-Chancellor, Principal Hopkinson, in addressing the graduates, said it was impossible to pass by in absolute silence the fact that this was probably the last public meeting of the Victoria University, at least the last annual ceremony for conferring degrees at which representatives of the Leeds and Liverpool Colleges would take part as constituent members of the University. There was every reason to believe that before the close of the present month the Liverpool University would have received its charter of incorporation, and that the Victoria University would have received a new charter altering its constitution and declaring that it was to be called and known in the future as the Victoria University of Manchester. Yorkshire College had also presented its petition to the Privy Council for the establishment of a

university, with its seat in Leeds. To Manchester it was a cause of great regret that they would less frequently have the advantage of the presence of their colleagues from Liverpool and Leeds, with whom their relations had been of the most pleasant character. The reasons which had led to these changes and their probable result had been a subject of misunderstanding by many who had not been intimately connected with the inner working of the University. The rights of no member of the Court of Governors of the old University would be prejudiced or affected. The right of every graduate would remain exactly the same as at present, and with regard to undergraduates special provision was made in the charter. The greatest care had been taken that no vested right and no vested interest should be interfered with. The causes that had led to the change had also been misunderstood. It had not been due to jealousy between the three constituent colleges or to friction between the three governing bodies. The general working of the University had been of a very cordial character, with a desire on the part of every member, from whatever college he might have come, to work fairly as regards the others, and not to push the interest of a particular college. What had been the real cause of the change was the strong local feeling which demanded for academic life in the large centres of population, a freedom of development, and a power of adaptation to the local needs which differed in different localities.

The degree of Doctor of Medicine was conferred on 13 graduates, 9 of whom had been students of Owens College, 3 of University College, Liverpool, and 1 of the Yorkshire College, Leeds.

The following candidates have passed the First Examination in the Faculty of Medicine in the subjects undernoted:

Part I. Chemistry and Physics.—T. T. Apsimon, Univ.; E. R. Armstrong, Univ.; J. W. Bride, Owens; C. H. Broomhead, Owens; G. W. Bury, Owens; D. I. Dakeyne, Owens; C. B. Davies, Owens; W. L. Dibb, Yorks.; T. E. Dickinson, Owens; J. F. Dow, Owens; A. K. Eatock, Owens; J. A. Fairer, Owens; M. L. Farmer, Univ.; W. D. Hamilton, Yorks.; C. H. H. Harold, Univ.; S. J. C. Holden, Univ.; R. Lakin, Owens; T. Martlew, Univ.; W. P. Moffet, Owens; P. Moran, Owens; J. L. Morrison, Univ.; J. A. Parkes, Owens; W. B. Pierce, Univ.; G. Rainford, Owens; J. H. Rawlinson, Univ.; S. Rawlinson, Owens; C. H. S. Redmond, Owens; G. S. Richardson, Yorks.; A. M. M. Roberts, Univ.; D. Rodger, Owens; Elsie M. Royle, Owens; F. K. Smethurst, Owens; R. R. Smith, Owens; V. Southwell, Owens; H. E. R. Stephens, Owens; J. V. Steward, Owens; R. S. Taylor, Univ.; J. Thompson, Owens; S. V. Tinsley, Univ.; T. W. Todd, Owens; F. D. Walker, Owens; W. B. Wamsley, Owens; H. Whitehead, Owens.

Part II. Biology.—T. T. Apsimon, Univ.; E. R. Armstrong, Univ.; J. M. C. Badgley, Owens; J. W. Bride, Owens; C. H. Broomhead, Owens; C. M. Brown, Owens; Elsie Brown, Owens; G. W. Bury, Owens; J. W. Cropper, Univ.; D. I. Dakeyne, Owens; W. L. Dibb, Yorks.; J. A. Fairer, Owens; W. D. Hamilton, Yorks.; C. H. H. Harold, Univ.; F. Hartley, Owens; S. J. C. Holden, Univ.; R. Lakin, Owens; T. Martlew, Univ.; J. L. Morrison, Univ.; Alice Oberdorfer, Owens; J. A. Parkes, Owens; W. R. Pierce, Univ.; G. Rainford, Owens; J. H. Rawlinson, Univ.; S. Rawlinson, Owens; A. M. M. Roberts, Univ.; R. Robertson, Owens; D. Rodger, Owens; Elsie M. Royle, Owens; R. R. Smith, Owens; V. Southwell, Owens; J. Thompson, Owens; S. V. Tinsley, Univ.; T. W. Todd, Owens; W. B. Wamsley, Owens; G. B. Warburton, Owens; H. Whitehead, Owens.

The analysis of the results of the Victoria examination shows the prominent place occupied by women in the competition for degrees. There were 8 women for the M.A. degree, as against 7 men. In physiology and botany the names of 2 ladies appear in the honour schools. There were 49 women for the B.A., as against 18 men. For the Bachelor of Science there were 55 men and 14 women. Out of a total of 79 women students who have passed their final examinations, 36 were from Owens College, the remainder from the other two Colleges.

UNIVERSITY OF DUBLIN.

AT the Later Summer Commencements of Trinity Term, held on Tuesday, June 30th, 1903, in the Theatre of Trinity College, the following degrees, among others, were conferred by the University Caput in the presence of the Senate:

Licentiatus in Medicina, in Chirurgia et in Arte Obstetricia.—J. H. Askins.

Baccalaurei in Medicina, in Chirurgia, et in Arte Obstetricia.—E. V. Collen, R. W. T. Clampett, R. J. Fleming, W. G. Harvey, J. M. Holmes, B. L. Middleton, W. R. P. M'Neight, H. O'H. H. May, J. T. M'Entire, A. H. Monks, J. F. Nicholson, A. L. Otway, S. S. Pringle, C. Fl. Rolleston, A. B. Tighe, D. B. Thomson, W. Wiley.

Doctores in Medicina.—O'D. H. D. Browne, E. V. Collen, J. R. Collins, R. S. Dobbin, W. A. de V. Forster, W. R. P. M'Neight, L. F. M'Dowell, H. O'H. H. May, M. O'Connor, J. T. Price, J. C. Scott, J. R. Welland.

UNIVERSITY OF BIRMINGHAM.

DEGREE DAY.

THE Degree Congregation of the Birmingham University was held in the Town Hall on July 4th, the Chancellor (Mr. Joseph Chamberlain) being present to confer the degrees and deliver his annual address. The fine Town Hall was again crowded to witness the ceremony, and the scene was altogether a brilliant one.

The Chancellor was attended by the Vice-Chancellor, Alderman C. G. Beale, the Pro-Vice-Chancellor, Alderman Clayton, the Lord Mayor of the City, the Principal of the University, Sir Oliver Lodge, the Vice-Principal, together with the various members of the Council and Senate of the University and the professorial staff. A procession was formed in the University buildings, and marched to the Town Hall, headed by Mace-bearer carrying the new mace of the University.

Degrees.

After declaring the Congregation open, the Chancellor proceeded to confer the degrees, commencing with the official degrees conferred upon certain members of the teaching staff of the University. These included an M.Sc. conferred upon Mr. W. E. Collinge, Lecturer in Zoology; and on Mr. W. Wright, Lecturer in Human Anatomy; the degree of M.D. on Mr. J. J. Evans, Demonstrator of Anatomy, and Mr. W. A. Potts, Assistant to the Chair of Therapeutics; and the degree of M.B. on Mr. J. C. Kneale, Lecturer in Materia Medica, and Mr. F. E. Greenwood, Demonstrator in Materia Medica.

The Dean of the Faculty of Medicine afterwards presented the candidates for the ordinary degrees in Medicine, Surgery, and Public Health as follows:

The following is a list of the successful candidates at the June Examinations in the Faculty of Medicine:

Degree of Doctor of Medicine.—*J. J. Evans, *W. A. Potts, †T. L. Webb, ‡J. R. Polson, ‡W. Sisam, ‡A. A. D. Townsend.

Degree of Master of Surgery.—*C. A. Leedham-Green.

Degrees of Bachelor of Medicine and Bachelor of Surgery.—*F. R. Greenwood, *J. C. Kneale, †A. S. Barnes, ‡J. F. Jordan, ‡S. H. Perry, †W. H. Wynn, ‡H. Baylis, ‡C. Bradford, ‡H. C. Brown, ‡E. F. W. Bywater, ‡J. R. Pooler.

* Official. † Associate. ‡ Past students of the Birmingham School.

Fourth Examination for the Degrees of M.B., Ch.B.—Class II. W. G. Aviss, W. Cook, L. G. J. Mackey (scholarship), G. E. V. Morris, F. N. Walsh.

Third Examination for the Degrees of M.B., Ch.B.—Class II. R. W. Aitken, R. H. Astbury, E. L. Bunting, F. R. D'A. Glissan, Helen Gertrude Greener, L. C. Hayes, W. C. Horton, W. C. Houghton, H. P. Pickerill, T. H. Ravenhill, N. J. L. Rollason.

Second Examination for the Degrees of M.B., Ch.B.—Class II. A. A. Sanders (Scholarship), F. B. Young. Part of the Examination.—Class I. G. P. Mills (Anatomy and Physiology). Class II. H. C. H. Bracey (Physiology and Comparative Anatomy), C. Johnson (Anatomy and Comparative Anatomy), W. R. S. Roberts (Physiology and Comparative Anatomy), A. J. Smith (Physiology and Comparative Anatomy), S. G. Walker (Anatomy and Physiology).

First Examination for the Degrees of M.B., Ch.B.—Class I. J. Dale (Scholarship). Class II. H. A. Evans, J. Fenton, G. K. Mallory, R. W. Thompson.

Degree of Bachelor of Dental Surgery.—* †A. H. Parrott, * †A. W. Wellings.

* † Past Students of the Birmingham Dental School.

Degree of B.Sc. in Public Health.—H. P. Motteram.

Diploma in Public Health.—Parts I and II. A. H. Bygott. Part I. J. R. Currie.

Address by the Chancellor.

The Chancellor of the University, the Right Hon. Joseph Chamberlain, then delivered an address. He commenced by reviewing the events which had occurred in the few years since the idea of a Midland university was first mooted. They had speedily found that much more than they had originally contemplated was wanted, and had greatly extended their ambitions. They now had appealed for a million of money, and had laid the plans for the great buildings which would at some time be the glory of the city. At the present time they had already received in donations an amount of £450,000, and of this amount they were spending at present £300,000 in the first buildings of the new university. They had also already done something towards the support of the institution. The City of Birmingham had already voted an annual sum of between £6,000 and £7,000 from the rates towards its support, while the county councils of both Worcestershire and Staffordshire had in like manner promised an annual sum of £500. The county council of Warwickshire had not up to the present promised any support; but he appealed to their patriotism to follow the example of Staffordshire and Worcestershire, especially as more than 10 per cent. of their students came from country districts of Warwickshire. Mr. Chamberlain went on to explain the various objects they had in view in the establishment and maintenance of their University, and alluded to the formation of a new Faculty in the University, namely, the Faculty of Commerce—in which they intended to specialize by paying special attention to such questions as economics, modern languages, accounting, commercial law, and commercial geography. Following their example the sister Colleges of Liverpool and Manchester, and also of Leeds, were now developing themselves on the technical side and applying, as he hoped with every prospect of success, for independent charters as separate Universities. And lastly, even the metropolis was moving, and was thinking of establishing a technical college with similar objects to those of their own University. Lord Rosebery seemed to be under the impression that he was inaugurating a new experiment. He seemed to have heard of and to have studied the facts connected with the great German College of Charlottenburg, but had not apparently cast his eyes upon the pioneers of his own country. He extended a hearty welcome to every new institution which had similar objects to their own. Each such institution must of necessity be specialized to suit the conditions of its own particular district. Might it not be, he asked, that in the future they should exchange ideas, and should even exchange students? In fact he added what he wanted, not in education alone, was a real free trade. He concluded by an appeal against any lowering of the high standard of the University, so that it should always be the proud boast of their University that the earning of its degree was really a passport wherever knowledge was appreciated and understood.

NEW REGULATIONS FOR DEGREES IN MEDICINE AND SURGERY.

The following new regulations will come into force next October:

Courses and Examinations for Degrees in Medicine and Surgery.

The courses for the first two years remain unchanged, and there is no alteration in the examinations at the end of each.

In the third year there will be no course of lectures in medicine as heretofore. At the end of this year there will be an examination in pathology and bacteriology. There will be no University examination in future in the subjects of materia medica and pharmacy, but students will have to show, before presenting themselves for the Fourth Examination, that they have attended the University courses in these subjects and passed the class examination in the same.

The course of lectures in therapeutics and pharmacology will no longer be given in the fourth year, in which the first course of lectures on medicine will be delivered. At the end of this year the Fourth Examination, comprising the subjects of forensic medicine, toxicology, and public health, will be held. The second course of lectures on medicine and the course in therapeutics and pharmacology will be delivered in the fifth year, and the last-named subjects will form part of the Final Examination.

Courses and Examinations in other Universities.

By a new ordinance the Senate has been given power to recognize attendance at another university as part of the attendance qualifying for the degrees of this University, and of recognizing examinations passed at such universities as exempting from the examinations in chemistry, physics, and comparative anatomy. In the case of such students at least three years must be spent in attendance upon classes at the University. The fifth year may be spent at any other school or schools of medicine recognized by the University.

Diploma in Public Health.

The following additional regulation has been adopted: Officers of the Royal Army Medical Corps who have studied chemistry and bacteriology at the Staff College, and pursued the further course of study approved by the General Medical Council in December, 1902, will be admitted to the examination for the diploma in public health, whether they have previously been students of the Birmingham School or not.

Fees.

The method of paying a composition fee in two instalments, heretofore in existence, will now come to an end, and the composition fee will be payable in four instalments at the commencement of each of the first four years. The incidental fees hitherto charged in connexion with the practical classes have been discontinued.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN extraordinary comitia was held on Thursday, July 2nd, the President, Sir W. S. Church, Bart., K.C.B., in the chair.

A by-law admitting Dr. George Francis Angelo Harris, elected a Fellow on April 30th, *in absentia*, he being resident in India, was enacted for the second time.

Dr. Barrs was nominated as the representative of the College at the meeting of the Sanitary Institute at Bradford.

Lectures.

The President announced that Dr. Robert Hutchison had been appointed Goulstonian Lecturer, Dr. F. Taylor Lumleian Lecturer, and Dr. Payne reappointed FitzPatrick Lecturer, all for the year 1904; that Dr. Starling had been appointed Croonian Lecturer for the year 1905, and Dr. Trevelyan, of Leeds, Croonian Lecturer for 1903.

Communications.

Communications were received from:

1. The Secretary of State for War, asking the advice of the College as to the practical safety and prophylactic value of inoculation with Dr. A. Wright's antityphoid fluid. A Committee was appointed, consisting of Drs. Gee, Tooth, Caiger, Bradford, and Simpson, to inquire into the matter and to report.

2. The Home Secretary, asking for observations by the College or a proposed inquiry in the causes which have led to the rejection in recent years of so many recruits for the army on the ground of physical disability and the possible measures by which this state of affairs may be remedied. A committee consisting of the President, Drs. Poore, Pringle, Longstaff, Tatham, and Newsholme, was appointed to deal with the question and to report to the College.

3. The Secretary of the College of Surgeons reporting certain proceedings of their Council on May 14th and June 11th.

4. The General Medical Council proposing certain alterations in the form of the annual returns of the results of examinations for professional examinations. The alterations were agreed to with the exception of one requiring details as to the previous failures of candidates, it being considered that this would entail largely increased clerical work with no obvious advantage to be gained.

5. Mr. Cornelius Hanbury, offering a medallion portrait of Dr. Lettsom, which was accepted, and a vote of thanks passed to Mr. Hanbury for his gift.

Reports.

The following reports were received and adopted:

1. From the Censors' Board, on the reply to be sent to the letter of the London County Council of March 17th (asking the College to nominate specially skilled pathologists to conduct *post-mortem* investigations in inquest cases of a special nature). The Censors' Board suggested that the following reply be sent to the communication received from the London County Council:

"The Royal College of Physicians of London is in accordance with the London County Council in thinking it desirable in the public interest that '*post-mortem* examinations in inquests of a special nature should be entrusted to specially skilled pathologists.' Without alterations in the existing Coroners Act the College is not in a position to suggest the names of specially skilled persons to the London County Council, nor does the arrangement proposed by the Council commend itself to the College as one likely to prove satisfactory. The proposed fee of two guineas is a wholly inadequate remuneration for work requiring such special knowledge and experience. In the opinion of the Royal College of Physicians, it would be advantageous in the public interest that a specially-skilled medical referee or assessor should be available for the coroner or coroners of a district, whose services might be called for when in the opinion of the coroner it was desirable; and that steps should be taken for simplifying the arrangements now existing in coroners' courts with regard to skilled medical evidence. The College is aware that in the present state of the law the appointment of such assessors or referees is not possible, and would urge the London County Council to use its influence in obtaining an amendment of the existing Acts relating to coroners."

2. From the Committee appointed to consider the date at which the Harveian Oration and dinner should in future take place. The present date, St. Luke's Day, October 18th, having proved inconvenient to many, especially the provincial Fellows, it was resolved that in future the date be June 26th.

From the Committee of Management dated June 5th recommending:

(*a*) That the Johns Hopkins University, Baltimore, United States, be added to the list of universities at which the curriculum of professional study required for the diplomas of the Royal Colleges may be pursued, and whose graduates may be admitted to the Final Examination of the Examining Board in England on production of the required certificate of study.

(*b*) That the Intermediate Examination in Science of the University of Wales in the department of chemistry, physics, botany, and zoology be recognized by the Examining Board in England, so that candidates who pass that examination may be exempted from the first examination of the Board, Parts I and III.

From the Laboratories Committee, dated June 5th, reporting:

(*a*) That Dr. Frank C. Lewis has been appointed Assistant Bacteriologist in the place of Dr. Emery, who has resigned.

(*b*) That during the last three months 5,925 doses of diphtheria antitoxin, each containing 3,000 units, have been supplied to the hospitals of the Metropolitan Asylums Board making a total of 17,775,000 units.

(*c*) That during the quarter further batches of antitoxin supplied by Messrs. Parke, Davis and Co., have been tested in the laboratory, and a certificate granted showing its strength, sterility, and freedom from excess of antiseptic.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

INDIAN MEDICAL SERVICE.

The Present Crisis.

IN connexion with our recent article on Promotion and Pensions in the Indian Medical Service, the following extracts from the *Pioneer* (the leading paper in India), which has come to hand since the article referred to was written, are of interest in supporting all that was then said. The *Pioneer* writes:

Military medicos as a class have been slightingly put down as "grievance-mongers," but it seems tolerably clear that the State contrives to furnish them from time to time with sufficient cause for complaint. Take, for example, the rates of pay in the Indian Medical Service. At the time the home authorities sanctioned enhanced rates of pay to officers of the Royal Army Medical Corps, it was stated that a corresponding increase would be made in the rates of pay of the Indian Medical Service. But that was fourteen months ago, and the new rates of pay are apparently still "under consideration." It might be supposed that at any rate the delay would prove merely a delay and not a loss, and that the increased rates of pay, when granted, would have retrospective effect for fourteen months during which the question has been in suspense. As against this hope, however, there is the discouraging fact that even in the case of the Army Medical Service the increased rates, which have but lately been announced by the Government of India, take effect only from November 24th last, whereas the rates were sanctioned by the home authorities with effect from March 24th, 1902, a difference of eight months. Although the saving to the Government on this account may amount to some lakhs of rupees, one would rather not believe that financial motives are responsible for the apparently grudging way in which a concession admittedly earned is thus surrendered. Yet if not economy, what other explanation suggests itself?

This extract perhaps indicates what may be expected in the way of concession from the Government of India. The promise of increased pay for the Indian Medical Service followed closely on the failure, for the first time for very many years, to fill the number of vacancies advertised. Since that a larger number of candidates have appeared for the examination, doubtless in expectation of the increased rates of pay which were expected to be notified every day. The number of vacancies being thus filled the Government of India, like Pharaoh of old, hardened its heart, and no relief is likely to be granted until recruiting is stopped. We may quote also the following paragraph from the same Indian daily paper:

Take, again, the question of promotion in the higher ranks of the Indian Medical Service. When a vacancy occurs among the colonels, the lieutenant-colonel next in succession gets the army rank at once, but his five years' tenure of the colonelcy does not begin to count until he actually takes over charge. He may be at home on leave at the time, and three months may elapse before he returns to take over charge. At the best, a fortnight's joining time is but a reasonable minimum to allow. That means that the promotion of some future successor is delayed by three months or a fortnight as the case may be. An isolated delay of this sort would be a mere trifle, but the accumulation of numerous such delays is a serious factor, retarding promotion in a marked way. Already the R.A.M.C. officers are getting ahead of their brothers in the I.M.S., especially in the Bengal Command, and this inequality in promotion will be intensified when the new regulations for the Royal Army Medical Corps come to have effect. To understand how heavily the hardship of the system may fall upon individual officers—and there are over 700 officers in the service—it has to be remembered that a lieutenant-colonel in the Indian Medical Service is obliged to retire at the age of 55, on a pension of £500 per annum for twenty-five years' service and £700 for thirty years' service. If, however, he is promoted to the rank of colonel before the age of obligatory retirement, he may put in another five years in the new appointment and so earn an additional pension of £250. Thus a lieutenant-colonel of twenty-five years' service who, owing to retardation of promotion in question, has reached the age of 55 without getting his colonelcy, is obliged to retire on a pension of £500 instead of what might otherwise be a pension of £950. He may happen to reach the age of 55 only a few weeks, indeed only a few days, before a vacancy occurs among the colonels, and may thus be compulsorily retired while an additional pension of £450 is, as it were, all but falling onto his hands. Only a short time ago a lieutenant-colonel with a distinguished record was obliged to retire under the 55 years' rule actually within forty-eight hours of impending promotion. Fortunately he had managed to put in thirty years' service, and so secured a pension of £700; but by losing the five years' tenure of the coming colonelcy he forfeited the additional pension of £250. This case in no way stands alone. Again and again one hears of deserving officers missing their well-earned pensions and promotion by cruelly narrow margins of time. It will hence be understood that much more than a technical point is involved in the contention of the Service that the five years' tenure of a colonelcy should date from the time of promotion and not from the time (which may be days, weeks, or months later) when the duties of the new appointment are taken over. Here, again, the savings to the Exchequer, due to retarded promotion and the consequent lower scale of pensions, may be considerable; but it must surely be apparent to Government that this is a case in which economy and policy hardly run together.

Comment on the above seems hardly necessary, for these and other facts to which we have recently called attention should be sufficient to prevent any candidates over the age of 25 years (who therefore cannot count on more than the

twenty-five years' pension) from competing for the Indian Medical Service, and the holding back of all such will speedily result in the Government of India yielding substantial concessions.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: CECIL H. ROCK, Surgeon, to the *Vindictive*, June 30th; PATRICK W. MACVEAN, M.B., Surgeon, to the *Wildfire* for the *Edinburgh*, June 30th; EDWARD P. MOURILYAN, M.B., Staff Surgeon, to the *President* for temporary service at the Admiralty, July 1st; RICHARD C. MUNDAY, Staff Surgeon, to the *Retribution*, July 1st; JOHN F. HALL, Staff Surgeon to the *Hermes*, July 1st; F. E. ANLEY, Surgeon, to the *Leviathan*, July 1st; ELIJAH R. L. THOMAS, Surgeon, to the *Duke of Wellington*, for the *St. Vincent* (lent), July 1st; FREDERICK J. A. DALTON, Surgeon, to the *St. Vincent*, for the *Iris*, July 23rd.

ARMY MEDICAL SERVICE.

SURGEON-GENERAL ARCHIBALD HENRY FRASER, Honorary Physician to the King, died at Slough on July 5th, aged 76. His commissions were dated as follow: Assistant-Surgeon, February 21st, 1851; Surgeon, January 26th, 1858; Surgeon-Major, February 21st, 1871; Deputy-Surgeon-General, September 18th, 1877; Surgeon-General, October 14th, 1884. He retired from the service, May 18th, 1887. He served in the Indian Mutiny campaign in 1857-8, and was in medical charge of the Murree Dépôt when the station was attacked on September 1st, 1857, and of the troops employed in the operations of the three following days (medal). He was also in the Afghan war in 1880, and for which he was mentioned in dispatches. He was appointed Honorary Physician to Queen Victoria, December 23rd, 1899.

ROYAL ARMY MEDICAL CORPS.

MEDICAL ARRANGEMENTS FOR PRESIDENT LOUBET'S VISIT.

ON the occasion of President Loubet's visit special arrangements were made by the army medical authorities on two days as follows:

On July 6th stretcher parties were drawn from the 18th Company R.A.M.C., and from the Cadet Battalion King's Royal Rifles (Volunteers), and posted along the route from Victoria Station to York House via Piccadilly. A medical officer with an ambulance was also stationed at each of the three following points: Victoria Station, Grosvenor Crescent, and Arlington Street.

On July 7th the arrangements were more extensive. Stretcher parties were drawn from the Aldershot and Woolwich detachments of the R.A.M.C., the Home Counties R.A.M.C. (Volunteers), the bearer companies of the 2nd and 4th Volunteer Infantry Brigades, and the Woolwich Company of the R.A.M.C. (Volunteers). They were stationed immediately behind the line of troops on either side of the route to the City and back from York House, standing in line behind their stretchers. A field hospital of twenty-five beds was pitched in Regent's Park on the previous Saturday under the command of Lieutenant-Colonel G. Trewman, R.A.M.C., and arrangements had been made with Charing Cross, King's College, Middlesex, St. Bartholomew's, and Westminster to reserve beds for use in the event of casualties of a severe nature occurring amongst the troops. A medical officer was in charge of each infantry brigade, and accompanied it to its position on the route. There were also eighteen ambulance wagons with stretchers stationed at sixteen convenient points, ten being in charge of the R.A.M.C. (Regulars), and the remainder in charge of the London and Woolwich Companies of the Volunteer R.A.M.C.

It was pointed out in orders that medical arrangements for the general public had been made by the police in conjunction with the St. John Ambulance Brigade, but that if for any reason prompt assistance in case of need could not be rendered by these bodies, temporary assistance should be given by the army stretcher parties.

ROYAL ARMY MEDICAL CORPS: EXCHANGE.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 3s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

A CAPTAIN, returned from full tour of foreign service in August, 1902, wishes an exchange to proceed to India by an early trooper. Apply to "Ajax," care of Messrs. Holt and Co., 3, Whitehall Place, S.W.

THE GUARDS.

SURGEON-MAJOR W. C. BEEVOR, M.B., C.M.G., Scots Guards, is appointed medical officer on the staff of Lord Northcote, Governor of Bombay.

ROYAL ARMY MEDICAL CORPS.

THE undermentioned Lieutenants, who joined the department June 21st, 1900, to be Captains from June 21st, 1903: P. H. HENDERSON, M.B., J. P. J. MURPHY, M.B., A. R. GREENWOOD, F. H. HARDY, W. M. H. SPILLER, M.B., A. D. JAMESON, W. BENNETT, M.B., B. B. BURKE, W. B. FRY, C. R. L. RONAYNE, M.B., G. BAILLIE, M.B., L. L. G. THORPE, W. S. CROSTHWAIT, P. C. DOUGLASS, R. F. ELLERY, R. L. POPHAM.

The seconding for service with the South African Constabulary of Captain C. J. O'GORMAN, D.S.O., bears date September 13th, 1902, and not as stated in the *Gazette* of December 23rd, 1902.

CAPTAIN L. J. C. HEARN is placed on temporary half-pay on account of ill-health, June 27th. He joined as Surgeon-Lieutenant July 28th, 1897, and was made Captain July 28th, 1900. He was in the Soudan campaign in 1898 (British and Khedive's medals), and in the operations in Sierra Leone in 1898-9 (medal with clasp).

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL D. P. MACDONALD, M.D., Bengal Establishment, is permitted to retire from the service from July 6th. He was appointed Assistant-Surgeon, April 1st, 1873, and became Brigade-Surgeon-Lieutenant-Colonel, May 19th, 1899. He was with the Jowaki Afridi Expedition in 1877-8 (medal with clasp); in the Afghan war in 1878-80 (medal); and with the Chin-Lushai Expedition in 1889-90 (clasp).

Colonel A. F. DOBSON, M.B., Madras Establishment, is appointed Principal Medical Officer, Bangalore and Southern Districts.

Colonel W. R. BROWNE, M.D., Madras Establishment, is confirmed as Principal Medical Officer, Madras District.

Lieutenant-Colonel L. A. WADDELL, M.B., C.I.E., Bengal Establishment, has been appointed Principal Medical Officer with the native troops in North China, in succession to Colonel P. F. O'Connor, M.D., C.B., Bengal Establishment.

Lieutenant-Colonel C. C. MANIFOLD, M.B., Bengal Establishment, has been awarded the MacGregor Memorial Silver Medal for 1903.

Lieutenant JOHN HEWETT FERRIS died at Poona on June 15th from enteric fever, at the age of 27. He was appointed Lieutenant July 26th, 1902.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

SURGEON-LIEUTENANT J. RATCLIFF GAYLARD, 1st Cornwall (Duke of Cornwall's), to be Surgeon-Captain, July 4th.

ROYAL ENGINEERS (VOLUNTEERS).

SURGEON-LIEUTENANT T. R. W. ARMOUR, M.B., 1st Cheshire, resigns his commission, July 4th.

Captain J. W. LLOYD, Submarine Miners (Mersey Division), resigns his commission, and is appointed Surgeon-Lieutenant, July 4th.

VOLUNTEER RIFLES.

SURGEON-LIEUTENANT G. A. DICKSON, M.B., 8th Volunteer Battalion the Royal Scots (Lothian Regiment) resigns his commission, July 4th.

The under-mentioned Surgeon-Lieutenants to be Surgeon-Captains, dated July 4th: G. P. CHAPPEL, M.D., 1st Volunteer Battalion the Duke of Cambridge's Own (Middlesex Regiment); S. F. BARBER, 1st (Hallamshire) Volunteer Battalion the York and Lancashire Regiment: D. MAVER, M.B., 4th (Downside Highland) Volunteer Battalion the Gordon Highlanders.

MEMORANDUM.

LIEUTENANT F. L. VAUX, Canadian Army Medical Service, is granted the local rank of Captain in the army while serving in South Africa, February 20th, 1900. On relinquishing his local rank he is granted the honorary rank of Captain in the army, December 5th, 1900.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS)

LIEUTENANT A. T. LAKIN, M.B., the Manchester Companies, to be Captain, July 4th.

VOLUNTEER INFANTRY BRIGADE.

SURGEON-LIEUTENANT R. DE LA P. BERESFORD, M.D., 2nd Volunteer Battalion the King's (Shropshire Light Infantry), to be Brigade-Surgeon-Lieutenant-Colonel the Welsh Border Brigade, July 4th.

THE ELECTRICAL ENGINEERS (VOLUNTEERS).

SURGEON-LIEUTENANT J. A. MASTERS, M.D., to be Surgeon-Captain, June 27th.

VOLUNTEER INFANTRY BRIGADE BEARER COMPANY.

THE undermentioned gentlemen are appointed Lieutenants in the Gordon Company, dated June 27th: JAMES SMART, JAMES D. NOBLE, JOHN W. MILNE.

MEDICO-LEGAL AND MEDICO-ETHICAL.

PROSECUTION UNDER THE SALE OF FOODS AND DRUGS ACT.

REMARKABLE DEFENCE.

ACCORDING to the *Eastbourne Gazette* of July 1st, a chemist, John Gale Rodwell, was prosecuted before the local magistrates on June 29th, for selling a mixture of drugs which was not in accordance with the demand of the purchaser. The prescription was written by Dr. Willoughby, medical officer of health, and ordered potassium iodide, infusion of quassia, and mercuric chloride, the latter being in doses of one-sixteenth of a grain. On analysis it was found to be deficient in mercuric chloride to the extent of 78 per cent. The remarkable feature of the case is that defendant is reported as having admitted dispensing less than the prescribed amount of mercuric chloride because the latter was the maximum official dose and he thought it would be safer to reduce the quantity. A fine of £2 and 16s. 6d. costs was imposed. It is obvious that in the above case the dispenser took an unwarrantable liberty. When an excessive dose of any drug is prescribed it is the dispenser's duty to communicate with the prescriber if possible, and only very exceptional circumstances would justify him in making any alteration. Nor should a dose greater than the maximum of the *British Pharmacopœia* be always regarded as excessive without consulting other works of reference.

We feel certain that the majority of pharmacists will condemn the action taken by one of their number, and it seems a pity that the Pharmaceutical Society possesses no powers for dealing with such occurrences.

QUESTIONS RELATIVE TO FEES.

T. B. G.—In reply to our correspondent's question, we can only, in the absence of full data and local knowledge, offer some general advice.

1. *Attendance on an Inspector of Police Seven Miles Distant.*—The charge of 7s. 6d. a visit and 2s. 6d. for medicine is very moderate, and would be a proper minimum charge. It would appear from the fact that the fee accepted in a former case was 6s. 6d. only that the constabulary have adopted the scale allowed to factory surgeons—namely, 3s. for three miles and under, and 6d. for every additional half-mile, and that the distance is considered to be six miles and a-half instead of seven miles. The contract price for attending the police is usually 10s. a head per annum, with extra payment for attendance on injuries received in the execution of duty and payment for fractures, etc., on the Poor-law scale of extras. It would be for the medical man to consider whether the present payment allowed would not be preferable to this. Half-a-crown for a bottle of medicine containing six or eight doses would be fairly remunerative, and there would be payment on the usual scale for pills, lotions, and liniments. Unfortunately public bodies still keep

to the old plan, and while they are prepared to pay the apothecary fairly well, object to pay for the medical man's time and skill alone, and offer a fee that would not pay his cab hire. The fact that the patient in this case is an inspector might justify the increased charge of 7s. 6d., but in contracts with the constabulary, superintendents, inspectors, and constables are, as a rule, paid for alike.

2. *Attendance on a Storekeeper Seven Miles Away.*—A moderate charge for a special visit to a well-to-do shopkeeper between the hours of 9 a.m. and 8 p.m. would be 10s. An early morning or late evening visit, 6 to 9 a.m. or 8 to 11 p.m., 15s., and a night journey £1. An ordinary visit on the daily round might be charged less according to circumstances, 7s. 6d. or 5s. A fee would be chargeable for passing a catheter of at least 2s. 6d., and medicines extra. These charges, although not very remunerative for the amount of time and trouble involved, would probably be found about the usual amount charged in general practice in the country.

PURCHASE BY INSTALMENTS.

A. B. C.—A. sells his practice to B., and gives him a three months' introduction. B. pays on entry half the purchase money, and the rest by two instalments at the end of six and twelve months. Is A. entitled by custom of the profession to take any, and if so what, share of the profits during the three months' introduction?

*** This is usually settled by agreement beforehand. According to the custom of the profession the profits are either: (1) Shared equally between vendor and purchaser; or (2) for the first half of the time the vendor takes all the receipts, and pays all expenses, and for the last half the purchaser; or (3) one of them takes all the profits, paying all the expenses, and makes an allowance to the other.

CHANGE OF MEDICAL ATTENDANT.

G. D. L.—Whenever a change of medical attendant takes place the superseded practitioner must feel a little hurt, but he should always remember that patients or their parents have a perfect right to make a change, and the incoming doctor must not be blamed. The former medical attendant should be informed that his services are no longer required; but, in the case put to us, as soon as he was called in Dr. L. saw that this was done, and it was not his fault that notice was not given before he came on the scene. We have read the statements of both parties to the case, and, in our opinion, Dr. L. acted with courtesy and consideration towards Dr. M., nor does there appear to be any justification for the reproaches levelled against him by Dr. M.

NOTES ON MODERN PRESCRIBING.

M.R.C.S. sends us a note upon the question of taking our therapeutics and formulae from wholesale druggists, which is on the same line as the annotation published in the BRITISH MEDICAL JOURNAL for June 6th, p. 1330. M.R.C.S. thinks that the practice of using such ready-made preparations is due to ignorance of prescribing and also to laziness, and he reproaches those who use such combinations with lowering themselves to the position of being merely distributing agents for wholesale druggists.

THE PUFFING OF MEDICAL MEN IN THE LAY PRESS.

DR. THOS. FRASER (Aberdeen) writes: I observe that you draw attention to a notice concerning me which appeared in *Saint Andrew* of June 11th. The facts of the case may serve to show how such paragraphs may come to be written about medical men without their knowledge and consent, and in this case at least causing great annoyance and disgust, for no one objects more than I do to such high-faluting nonsense appearing in the lay press. I have very good reason to believe that the paragraph in question was written by a patient of mine for the purpose, I fear, of causing me annoyance, because it appeared about a fortnight after I had declined further attendance on that person, for reasons which need not be stated. I at once wrote to the editor of *Saint Andrew* and put the matter into my solicitor's hands to make sure that no further communication concerning me would emanate from the same source. I also at once requested the local newspaper, as they frequently copy such paragraphs, usually about local clergymen, from the paper in question, to take no notice of the paragraph, and I am pleased to say they refrained from doing so. I hoped that the wretched article would escape notice in the BRITISH MEDICAL JOURNAL, otherwise I should have written you ere this time on the matter.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8,730 births and 4,169 deaths were registered during the week ending Saturday last, July 4th. The annual rate of mortality in these towns, which had been 13.9, 14.3, and 14.3 per 1,000 in the three preceding weeks, further rose last week to 14.4 per 1,000. The rates in the several towns ranged from 4.8 in Grimsby, 5.3 in Hornsey, 6.4 in Walthamstow, 6.8 in Leyton, 7.4 in Bournemouth, 7.5 in Walsall, 8.1 in Tottenham, and 8.5 in Croydon to 19.1 in Rotherham and in Swansea, 19.3 in Wigan, 20.3 in St. Helens, 20.6 in Sheffield, 21.1 in Great Yarmouth, 21.3 in Sunderland, 21.8 in Tynemouth, and 23.3 in Merthyr Tydfil. In London the rate of mortality was 13.9 per 1,000, while it averaged 14.6 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.5 per 1,000 in the seventy-six large towns: in London this death-rate was equal to 1.2 per 1,000, while it averaged 1.6 in the seventy-five other large towns, among which the highest death-rates from the principal infectious diseases were 2.9 in Coventry, 3.4 in Oldham, 4.0 in Great Yarmouth, 4.1 in Hanley, 4.4 in Merthyr Tydfil, 4.6 in Rotherham, and 5.1 in Sheffield. Measles caused a death rate of 1.6 in Stockport, 2.0 in Sheffield, 2.2 in Merthyr Tydfil, and 2.9 in Coventry; scarlet fever of 1.2 in Bolton; diphtheria of 1.3 in Portsmouth, 2.0 in Great Yarmouth and 2.5 in Hanley; whooping-cough of 1.4 in Sunderland, 1.5 in Oldham, 1.6 in Burnley, 2.2 in Sheffield, and 2.7 in Rotherham; "fever" of 1.8 in Barrow-in-Furness; and diarrhoea of 1.5 in Leyton. Two fatal cases of small-pox were registered in Hanley, 2 in Liverpool, 2 in Oldham, and 1 in Huddersfield, but not one in any other of the seventy-six large towns. The Metropolitan Asylums Hospitals contained 57 small-pox patients on Saturday last, the 4th inst., against 64, 70, and 67, on the three preceding Saturdays; 4 new cases were admitted during the week, against 9, 16, and 7 in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 1,710, 1,650, and 1,644 at the end of the three preceding weeks, had increased again to 1,646 at the end of last week; 241 new cases were admitted during the week, against 145, 170, and 234, in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, July 4th, 1,012 births and 533 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 17.5, 17.0, and 19.1 per 1,000 in the three preceding weeks, declined again last week to 16.3 per 1,000, but was 1.9 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 8.9 in Dundee and 12.4 in Leith to 20.1 in Perth and 20.8 in Paisley. The death-rate from the principal infectious diseases averaged 1.8 per 1,000 in these towns, the highest rates being recorded in Paisley and Greenock. The 255 deaths registered in Glasgow included 3 which were referred to measles, 3 to scarlet fever, 12 to whooping-cough, 2 to "fever," and 8 to diarrhoea. Three deaths from diphtheria, 2 from whooping-cough, 2 from "fever," and 3 from diarrhoea were recorded in Edinburgh; 2 from diarrhoea in Aberdeen; 2 from measles, 2 from scarlet fever, and 2 from diarrhoea in Paisley; and 4 from whooping-cough in Greenock.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday last, July 4th, 594 births and 323 deaths were registered in six of the principal Irish towns. The mean annual rate of mortality in these towns, which had been 17.8, 17.1, and 21.6 per 1,000 in the three preceding weeks, fell to 17.6 per 1,000, being only 3.4 above the mean rate during the same period in the seventy-six English towns, as against 7.6 over the same standard in the previous week. The death-rates ranged in these Irish towns from 12.6 in Londonderry and 17.5 in Dublin to 19.5 in Waterford and 20.1 in Belfast. Londonderry, it will be noted, has jumped down again to the same point at which it stood a fortnight ago. Belfast, with a population of some 20,000 less than that of the Dublin area, counts this week 68 more births. The death-rates in the six towns from the principal zymotic diseases averaged 0.6 per 1,000, as against 1.7 in the previous week. The highest rate, 1.7, was reached in Belfast, while Cork, Limerick, and Waterford registered no deaths from these diseases at all, this being the fourth week in succession that Waterford has been in this position. The deaths registered in Dublin included 1 from small-pox, 3 from measles, and 1 from diarrhoea. No other Irish town recorded any death from small-pox, and no town registered any death from scarlet fever, diphtheria, or enteric, with the exception of Belfast, which had 2 deaths from the former disease and 6 from the latter.

SMALL-POX IN CARDIFF.

DR. WALFORD, Medical Officer of Health for Cardiff, has just issued his report on small-pox in Cardiff during 1903. Up to the present 63 cases have been admitted to the hospital, of whom 4 died, 27 are still under treatment, and 34 have recovered. The cases have been divided into groups, and Dr. Walford says of one group of cases that it displays in a glaring manner the extreme ignorance and carelessness in connexion with the unrestrained movements of infected persons. Speaking of infection by tramps and destitute persons, he says that it is greatly to be regretted that vaccination and revaccination should not be made a condition of admission to workhouses and casual wards. Something more than an offer of vaccination is needed, but under present conditions vaccination officers and public vaccinators can do no more than make an offer. In practice it is found that this revaccination can best be effected under the directions and persuasive influence of the officers of the sanitary authority, to whom the administration of the Vaccination Acts should be transferred. Much good can be done, especially among the poor, by judicious persuasion, and, if necessary, indirect pressure applied through those employing labour, and in some cases by offering inducements. Two cases of small-pox were notified in the administrative county, at Cilfynydd, Pontypridd. The patients are a brother and sister, and have been removed to the isolation hospital.

PUBLIC VACCINATORS'

VEXATUS writes to complain about the way in which public vaccinators are advertised by large bills pasted on the walls of their districts announcing to the public the gratuitous vaccination to be had from them. He points out with justice that these announcements induce many well-to-do persons who could afford quite well to pay for vaccination to leave their own medical attendants and obtain protection against small-pox at the public expense. We imagine that the vaccination authorities do not desire to give gratuitous vaccination to people who can afford to pay for it, but it must be admitted that it is in the interest of the public health that all persons should be vaccinated. Parliament has, therefore, decided that expense shall not be a hindrance and has sanctioned a very considerable outlay of public money with the object of increasing the number of vaccinated persons. With this object the medical profession must sympathize, and we should not take up a selfish position or appear to imply that we would rather people were not vaccinated than that they should be vaccinated by other than their own medical attendants. At the same time we think there might be less advertisement and the public might be informed that gratuitous vaccination is not intended for those who can afford to pay for it.

MEDICAL NEWS.

THE annual Bolingbroke lecture before the South-West London Medical Society will be given on Tuesday, July 14th, at 8.30 p.m., at the Bolingbroke Hospital, Wandsworth Common, by Sir Victor Horsley, F.R.S., who has chosen for his subject "the cure of hernia, with special reference to a new operation for the cure of femoral hernia."

SERUM DEPARTMENT OF THE JENNER INSTITUTE.—On July 4th, about 100 gentlemen, on the invitation of Lord Lister and the governing body of the Jenner Institute, visited the new building of the serum department, which was fully described in the BRITISH MEDICAL JOURNAL of June 27th. The guests travelled by special train from St. Pancras, where they were met by Lord Lister, with whom were Lord Iveagh, Sir Michael Foster, Sir Henry Roscoe, and Mr. J. Luard Pattison, members of the governing body, and Dr. Macfadyen, chief bacteriologist. They were received at Elstree by the resident staff, consisting of Dr. George Dean and his assistants, Dr. Todd and Dr. Petrie. A minute examination of the premises was made, and the guests seemed particularly struck with the excellent arrangement of the building and the healthy appearance of the horses.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION.—The sixty-second annual meeting of the Medico-Psychological Association of Great Britain and Ireland will be held in the rooms of the Association, 11, Chandos Street, Cavendish Square, London, W., on Thursday and Friday, July 16th and 17th, under the presidency of Dr. Ernest W. White. The business will include the presentation of Dr. Chapman's report upon the report of the late Tuberculosis Committee. On Thursday afternoon the President will deliver his address, and thereafter Dr. A. R. Turnbull will introduce a discussion upon female nursing of the male insane. On Friday morning Dr. F. W. Mott will read a paper on tumours of the brain in asylum and hospital practice, illustrated by a lantern demonstration and photographs. The following papers will also be read at the meeting in the afternoon: Clinical and Experimental Observations on Hebephrenia and Katatonia, by Drs. L. C. Bruce and A. S. M. Peebles of the Perth District Asylum: A Case of Double Consciousness, by Dr. Albert Wilson: on Mongolian Imbecility, by Dr. C. H. Fennell. Dr. and Mrs. Corner will give an "At home" on Friday afternoon at Brook House, Southgate, and on Saturday Dr. Ernest White will give a luncheon at the City of London Asylum, Stone. The annual dinner of the Association will take place on July 16th at the Hotel Métropole.

MEDICAL VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BELFAST: MATER INFIRMORUM HOSPITAL.—Resident Surgeon. Salary at the rate of £50 per annum.

BIRMINGHAM GENERAL HOSPITAL.—House-Physician, resident. Salary at the rate of £50 per annum.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES.—Clinical Assistant. Honorarium at the rate of 52 guineas per annum.

BIRMINGHAM UNIVERSITY.—Walter Myers Travelling Studentship. Value, £150 for one year.

BURNLEY: VICTORIA HOSPITAL.—Male Resident Medical Officer. Commencing salary, £90 per annum.

CANTERBURY: KENT AND CANTERBURY HOSPITAL.—Second Honorary Physician.

CARDIFF UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE. Professor of Anatomy. Salary £350 per annum.

COLCHESTER: EASTERN COUNTIES ASYLUM FOR IDIOTS, Etc.—Resident Medical Attendant. Salary, £100 per annum.

DERBY: DERBYSHIRE ROYAL INFIRMARY.—Assistant House-Surgeon, resident.

[illegible] HOSPITAL.—Assistant House-Surgeon, resident.

[illegible] GENERAL HOSPITAL AND DISPENSARY.—

[illegible] ASYLUM, Hellingly.—Third Assistant Medical Officer, resi-

GUY'S [illegible] SCHOOL.—Gordon Lectureship in Experimental Pathology.

ISLE OF WIGHT COUNTY ASYLUM, Carisbrooke.—Locum Tenens for August and Sa[illegible], 4 guineas a week.

JARROW-ON-TYNE: PALMER MEMORIAL HOSPITAL FOR ACCIDENTS.—House-[illegible]

LISCARD: WALLASEY DISPENSARY AND VICTORIA CENTRAL HOSPITAL.—House-Surgeon, resident. Salary £100 per annum.

LIVERPOOL DISPENSARY.—Assistant Surgeon, resident, unmarried. Salary, £100 per annum.

MAN[illegible]: OWENS [illegible] E[illegible] Demonstrator in Physiology. Stipend, £[illegible] per annum.

METROPOLITAN EAR, NOSE, AND THROAT HOSPITAL, Grafton Street, W.—(1) Assistant Surgeon. (2) Anæsthetist. (3) Clinical Assistants.

NOTTINGHAM GENERAL DISPENSARY. Assistant Resident Surgeon. Salary, £100 per annum, increasing £10 yearly.

SHEFFIELD CITY.—Medical Officer of Health. Salary £700 per annum.

SHEFFIELD: ROYAL INFIRMARY.—Vacancy on Honorary Surgical Staff.

SOMERSET AND BATH ASYLUM, Cotford.—Assistant Medical Officer, resident. Salary £90, rising to £120 per annum.

SOUTHAMPTON: ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House-Surgeon, resident. Salary, £60 per annum.

STOCKPORT INFIRMARY.—Junior Assistant House-Surgeon, resident. Salary, at the rate of £40 per annum.

TYNEMOUTH INFIRMARY.—Two House-Surgeons, resident. Salary, £50 per annum.

VICTORIA HOSPITAL FOR CHILDREN, Tite Street, S.W.—(1) House-Physician, resident. Honorarium, £25 for six months. (2) Medical Radiographer. Honorarium, £31 10s. per annum.

WEST RIDING ASYLUM, Wadsley.—Fifth Assistant Medical Officer, resident. Salary, £140, rising to £160 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House-Surgeon, resident. Salary at the rate of £75 per annum.

MEDICAL APPOINTMENTS.

ABERWEIGHT, J. A., M.D., District Medical Officer of the Dover Union.

BLUMFELD, J., M.B.Camb., Honorary Anæsthetist to National Dental Hospital.

BOYES, Auguste, M.B., Ch.B.Glas., Resident Medical Officer at the East Poorhouse and Hospital, Dundee.

BRONOWSKI, G. H., M.B.Syd., Medical Officer Narrandera Hospital, N.S.W.

BUTLER, Frederick S., M.B.Melb., District Medical Officer at Beverley, West Australia.

CUNLIFFE, E. N., M.B., Ch.B.Vict., Assistant Medical Officer of the West Derby Union.

GORDON, John, M.D.Melb., F.R.C.S.Eng., Surgeon to Out-patients, Melbourne Hospital.

GRAY, Colin, M.B., Ch.B.Melb., Medical Officer to the Maldon Hospital and Benevolent Asylum, Victoria.

LAVERY, P. A., L.R.C.P. and S.Edin., Government Medical Officer and Vaccinator at Gosford, N.S.W., *vice* S. T. Knaggs, M.D.Aberd., F.R.C.S.I., resigned.

MCCLELLAND, Walter C., M.B., Ch.B.Syd., Honorary Medical Officer, Marrickville Cottage Hospital, N.S.W., *vice* Dr. Chenhall.

NEWMAN, E. L., M.B.Syd., House-Surgeon, Royal North Sydney Hospital, N.S.W.

PLAYFAIR, Hugh, M.D., F.R.C.S., Assistant Obstetric Physician to King's College Hospital.

SMITH, Ward, M.B., Ch.B.Edin., F.R.C.S.Eng., Honorary Assistant Medical Officer in charge of the Electrical Department of the Bradford Royal Infirmary.

SOMERVILLE, David, M.D., D.P.H., Senior Demonstrator in Public Health, King's College, London.

SPROULE, W., M.B., M.S., Medical Officer, Burrowa Hospital, N.S.W.

TAYLOR, Dudley C. P., M.R.C.S.Eng., L.R.C.P.Lond., Medical Officer and Public Vaccinator to the Sibsey District of the Boston (Lincs.) Union.

WATSON, C. Gordon, F.R.C.S., Junior Demonstrator of Anatomy at St. Bartholomew's Hospital.

WEBB, F. E. A., M.R.C.S., L.R.C.P.Lond., Certifying Factory Surgeon for the Cambridge District.

WILKINSON, J. P., M.D., Ch.B.Melb., Physician to Out-patients, Melbourne Hospital.

DIARY FOR NEXT WEEK.

TUESDAY.

South-West London Medical Society. Bolingbroke Hospital, Wandsworth Common, 8.30 p.m.—The annual Bolingbroke Lecture, by Sir Victor Horsley, F.R.S., on the Cure of Hernia, with special reference to a New Operation for the Cure of Femoral Hernia.

THURSDAY.

Guy's Hospital Medical School, 4 p.m.—Dr. E. W. Ainley Walker: Recent Work upon the Nature of Immunity (Gordon Lectures in Experimental Pathology).

POST-GRADUATE COURSES AND LECTURES.

Hospital for Consumption and Diseases of the Chest, Brompton, S.W., Wednesday, 4 p.m.—Lecture on Cases of Mitral Stenosis.

Hospital for Sick Children, Great Ormond Street, W.C., Thursday, 4 p.m.—Demonstration on Selected Cases.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C. Demonstrations will be given at 4 p.m. as follows: Monday, skin; Tuesday, medical; Wednesday, surgical; Thursday, surgical; Friday, eye. Lectures will also be given at 5.15 p.m. as follows: Monday, The Clinical Varieties of Pneumonia; Tuesday, Bronchitis and Emphysema; Wednesday and Thursday, Pulse Tracings and their Clinical Significance; Friday, Pleural Effusion, Causes and Treatment.

Mount Vernon Hospital for Consumption and Diseases of the Chest, 7, Fitzroy Square, W., Thursday, 4 p.m.—Lecture on Laryngeal Tuberculosis.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C., Tuesday, 3.30 p.m. Lecture on the Prognosis of Epilepsy.

Post-Graduate College, West London Hospital, Hammersmith Road W. Lectures will be delivered at 5 p.m. as follows:—Monday and Tuesday, Gas Administration; Wednesday, Some Diseases of the Nervous System; Thursday, Treatment of Some Injuries and Emergencies; Friday, Some Diseases of the Nervous System.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 8s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

CHEATLE.—On July 5th, at 117, Harley Street, W., the wife of George Lenthal Cheatle, Esq., C.B., of a son.

GENT.—On July 2nd, at 6, Hughenden Road, Clifton, the wife of William Conway Gent, L.R.C.P., L.R.C.S.Edin., of a son.

SENIOR.—On July 5th, at Noel Lodge, Thames Ditton, Surrey, the wife of Arthur Senior, M.B.Cantab., of a daughter.

SMITH.—On June 27th, at 31, London Road, St. Albans, the wife of James Johnston Smith, M.B., Ch.B., of a son. (Too late for papers please copy.)

WINTER.—On July 3rd, at St. Marychurch, Torquay, the wife of G. Mitchell Winter, L.R.C.P., M.R.C.S., D.P.H.Camb., of a daughter.

MARRIAGE.

ROBERTS—JONES.—On June 30th, at the Stanley Road Welsh Presbyterian Church, Bootle, by the Rev. Griffiths Ellis, M.A., assisted by the Rev. W. Elias Williams, Hugh Jones Roberts, M.R.C.S., J.P., of Gwyddfor, Penygroes, Carnarvonshire, to Edith Mary, second daughter of William Jones, Esq., J.P., of Monfa, Bootle, and Llwydiarth, Anglesey.

DEATH.

TAYLOR.—At 12, Melville Street, Edinburgh, on Friday, July 3rd, Jessie Burnett, wife of William Taylor, M.D. (No flowers, by request.) Friends will please accept this intimation.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aetiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

CLIO desires information as to the treatment of hypospadias, especially as regards operation; also for the literature of the subject.

VIATOR would be much obliged for any information concerning practice in South America. Does an Englishman have to possess any South American diploma, or have to be specially licensed in any way? He would also be glad to be told anything about the fees, cost of living, and climate.

DR. EDMUND E. GOODBODY (Great Bardfield, Braintree) wishes to learn of a charitable, or semi-charitable, institution where a boy, aged 8, could be taught to talk. The child was almost deaf during early childhood in consequence of adenoids, which were removed about two years ago. He can hear almost perfectly, and can articulate words, but does not make any effort to string them together into speech. In every other way the child is normal, well developed, and hardy.

*** Such a child would be received and taught to speak connectedly (presuming there is no mental defect) either at (1) the School of the Training College for Teachers of the Deaf, Castlebar Hill, Ealing, W. (Secretary and Superintendent, Mrs. Kinsey); or (2) 11, Fitzroy Square (Director, W. Van Praagh). Moderate terms at either establishment.

ANSWERS.

APPENDICITIS.

MR. H. CALTHROP ALLINSON (Senior Surgeon West Norfolk and Lynn Hospital, Medical Officer Port and Borough of King's Lynn) writes with reference to Mr. Kellett Smith's suggestion that the present food supply is a reason for the increase of appendicitis: It seems certain that the increase has occurred since the last invasion of influenza, and more certainly since its gastric or intestinal form so general and fatal in 1892-3. The gastric type has since that year always been present more or less, though it has lost its initial virulence, and is apparently on the wane. The intense congestion caused by influenza, which we know so well in the lungs and have reason to assume to be equally intense elsewhere, when occurring in the intestines would appear to be a reasonable cause for inflammation of the appendix so prone from its structure to impaired circulation. We do not often have opportunity of seeing the actual mischief caused by influenza, and the following three cases may be of interest:

1. In 1892, after an eight-hour passage from Hull on a coasting steamship, a sailor arrived in this port in a prostrate condition. I saw him at once about 9 p.m.; he died next day about 9 a.m. In usual health upon embarking he was taken with pain and diarrhoea. A careful *post-mortem* examination showed that the intestines were black, or nearly black, throughout their entirety, the lungs in a lesser degree. There were no *post-mortem* signs of typhoid fever, though they were carefully looked for. Besides, the history of the case and the mischief visible were neither consistent with typhoid fever nor with any known irritant poison.

2. A little later a man died in the West Norfolk and Lynn Hospital, cause and symptoms obscure; *post-mortem* examination revealed about 9 ft. of intestine gangrenous.

3. Performing a radical cure for strangulated hernia upon a boy, with nothing to indicate any complication—no symptoms noticed to be other than usual with acute strangulation of recent date—I found the intestine internal to the strangulation to be deep plum-coloured. I suspected the cause to be influenza. The boy made an uninterrupted recovery, and two days after operation his brother had a fairly smart attack of gastric influenza. This case occurred six or seven years ago. It seems to me that such congestion, if equally affecting the appendix, would necessarily be sufficient to induce appendicitis, either immediate or remote.

It will be interesting to observe if influenza, following its habit, gradually disappears, whether it will take with it the appendicitis enigma.

DR. JOHN HADDON (Denholm, Roxburghshire, Scotland) writes: Having regard to the way in which surgeons are removing the appendix when repeated attacks of what is now called "appendicitis" occur, taken in connexion with the fact that the removed appendix is very often found to be quite normal, it seems the duty of the physician to protest against such an operation being performed until he has had an opportunity of preventing the recurrence by attention to diet instead of asking the surgeon to interfere. There can be no doubt that by suitable diet and regimen such attacks can be prevented from recurring, and if such be the case, what excuse can be made for surgical interference before the physician has had a fair chance? Tonsillitis is as common as appendicitis, and tonsils are still freely removed; but attention to diet and regimen can prevent recurrent tonsillitis as well as appendicitis. We do not know the use of either of these glands, but they are likely to have some use, else they would not be there; and conservative surgery ought to preserve them intact so far as possible.

HEEL LAMENESS.

DR. G. F. EDWARDS (Bexley) writes in reply to H.'s query: Some years ago I was asked to see a lady who had suffered severely from "gout in the heel" for many years. She had been under treatment at very distinguished hands, and only wanted an "opiate or something" to make her sleep that night, as the pain was unusually severe. My request to be allowed to see the painful heel was reluctantly granted, as of course that was absolutely incurable. Whilst picking away the superficial layers of a large accumulation of epidermis over the heel, my attention was arrested by a black spot in the centre of the patch. Further investigation resulted in discovery of ¾ in. of rusty needle. This being removed, the gout of many years' standing vanished, much to the annoyance of the patient, whose chief occupation was now gone. Perhaps this contribution to the pathology of heel lameness in one of its phases may find application in more than the one case quoted.

THYROGLANDIN.

DR. N. E. YORKE-DAVIES (London) writes: Will you allow me to give my experience with regard to the frequency of myxoedema in obesity? I do not find that it occurs once in 500 cases of those who come under my care. Some years ago I gave in the BRITISH MEDICAL JOURNAL an epitome of a number of cases of obesity treated with thyroid gland. The results did not justify my continuing its use. My experience is that the only way to reduce obesity with safety is by means of diet. In this case reduction is absolutely safe at any age and means great advantage to the sufferer. The complication I find most frequent in obesity (to which I do not think the profession has given the attention it deserves) is an impeded action of the heart leading to oedema of the lower extremities, congestion of the whole system, a tendency to gout and a predisposition to rheumatism due to faulty elimination of waste. It is possible to reduce abnormal weight to proper weight with most absolute improvement in health and condition, and my experience teaches me that drugs in the treatment of obesity are worse than useless, more especially the iodide of potassium. This applies equally to purgatives and all quack remedies which are advertised for the purpose. I see the evil effects of their use constantly.

THE TREATMENT OF URTICARIA.

DR. PERCY NEWELL (Bexhill) writes: In answer to "Fairfield," I have seen three similar cases in a period of ten years. That the treatment is not wholly satisfactory in every case one has only to peruse an ordinary textbook on dermatology or an index of therapeutics to find the remedies, both internal and external, almost legion. The two remedies I found most useful were sodium phosphate in 3j doses three times daily, or the calcium chloride gr. x three times a day; externally as an adjunct ung. resinol relieves the pruritus. The late Mr. Startin recommended quinine with an alkali, and it is sometimes useful. The drug can be given in pill 1 gr., with an alkaline mixture—for example: R Magnes. sulph. 3iij, sodii bicarb. 3ij, tinct. gent. co. 3ij, aquae m. pip. 3ss q.s. ad 3vj. M. Signa 3ss ter in die, sumend. c pil. 1.

DR. NORMAN MEACHEN (London, W.) writes: In answer to "Fairfield," I would say that the troublesome eruption in the case he narrates may probably be due to impaired vasomotor control, so that when the intracapillary blood pressure is high, as during muscular exertion, the transudation and the rash appear. The internal administration of suprarenal extract, in 5-grain tabloids, three times a day, is often of service in this condition. Bearing in mind also the possibility of some absorption of a toxin from the gastro-intestinal tract, it is of the utmost importance to secure free daily evacuation of the bowels. For this purpose the use of an aperient water, such as Carlsbad or Hunyadi Janos, may be recommended.

NOTES, LETTERS, ETC.

A DISCLAIMER.

DR. HUGH WALSHAM (London) writes: My attention has been called to a paragraph in the *Morning Leader*. It is true that a representative of that paper called upon me at the hospital requesting some information on the subject of x-ray dermatitis, but perhaps I need hardly say that the erroneous statements were published without my knowledge or consent.

MOTOR CYCLING.

DR. P. RHYS GRIFFITHS (Cardiff), writes: The advantages of motor cycling as a means of locomotion for professional men are not sufficiently appreciated. During the last few months I have ridden many hundreds of miles on a small Werner cycle both in town and country, and it has occurred to me that my experiences might be of interest. I have been a cyclist for many years and I have from time to time employed the ordinary "push-bicycle" in my work. At the end of last March I decided to get a motor-cycle, and after careful consideration and consultation with some motor-cycling friends I decided that a 1¾ horse power Werner with a 22 in. frame was the most suitable for my work. I had no difficulty in familiarizing myself with the working of this machine, for its construction is simplicity itself. Needless to say there have been temporary troubles, such as occur to all cyclists—soiling of trembler, slipping of belt, misfiring from over-lubrication, fouling of sparking-plug, but I have experienced no serious mishap or breakage. At the end of March I was a fairly efficient rider and I was able to get about with comfort and ease. In the second week of April I was able to dispense with the services of one horse, and in the first week of June of a second. I do not care for cycling in wet weather, and I am therefore not able to do entirely without horse flesh. The cycling has

given me a great deal of pleasure, and I have been able to do my work in a much shorter time. My health is also much better, as I am now compelled to take more exercise. These facts are sufficient to indicate that motor-cycling may be not only pleasurable, but also profitable to the medical practitioner. The one drawback to motor-cycling is the vibration, but this I have reduced to a minimum by not inflating tightly the front tyre and by employing a large motor saddle. The vibration on my new 2 h.-p. Werner, 1903, has been very greatly reduced. With experience in riding, it is not necessary to put any great weight on the handle bar. On an open stretch of road with no obstacles my machine will steer itself without my touching the handle bar. My advice to those about starting motor-cycling is to get a low-framed machine—22 to 24 in. With this, if in difficulties from any cause, the feet of an average man can be put on the ground at once. Great speed is not necessary. A strong reliable machine 1¾ h.-p. or 2 h.-p., weighing from 100 to 125 lbs., furnished with good brakes, is all that is required.

This machine can be moved about with ease—it can be pedalled without difficulty with the belt off; it will negotiate most hills (all in my neighbourhood). It will be well to carry a spare belt and some spare parts, such as valve springs, etc., with the ordinary cyclist's outfit. There are other details which I might supply, but if any man with average mechanical dexterity will carefully study the construction and working of his motor cycle he will have no formidable difficulties to contend with.

FREEMASONRY.

We have received the following: An addition to the roll of Hospital Lodges was made on July 2nd by the consecration of the King's College Hospital Lodge No. 2973. The ceremony took place at the Trocadero Restaurant, the consecrating officer being Sir Edward Letchworth, who was assisted by Dr. Clement Godson Sir Alfred Cooper, Mr. Fitzroy Tower, and other Grand Officers. The principal officers of the new Lodge are Professor Ernest White, Dr. Ernest Sansom, Mr. R. J. Maitland Coffin, Mr. William Turner, Mr. R. T. H. Bodilly (Treasurer), Mr. Joseph Pollard, Dr. Silk (Secretary), and other well-known King's men. A considerable number of former students were proposed as joining members or initiates, and, judging from the success of this the first meeting, the Lodge bids fair to realize the expectations of the most sanguine of its founders. After the ceremony the Lodge entertained its Masonic friends at a banquet at which upwards of 80 sat down.

SINGLE KIDNEY.

LIEUTENANT-COLONEL E. M. WILSON, R.A.M.C. (London, S.W.), writes: The record of a case of congenital single kidney in the BRITISH MEDICAL JOURNAL of July 14th, p. 17, calls to my remembrance a similar case which came under my notice when house-surgeon to the West London Hospital in 1878. The patient was also a female, single, between 50 and 60 years of age, and, if not insane, as in the case recorded, at any rate exceedingly eccentric. I have forgotten the cause of her death, but I know at the examination I was much surprised to find only one kidney of great size and quite healthy, with, I believe, two ureters. My impression is that there was some malformation of the uterus, but at this distance of time I cannot be certain. I do not know whether this abnormality is of frequent occurrence or whether it is more often observed in the female sex.

THE LATE MR R. B. ANDERSON.

MAJOR-GENERAL G. F. J. GRAHAM (9, Oxford Row, Bath) writes: I intend publishing an account of the late Dr. R. B. Anderson of Tobago's fight against the Trinidad judges—Sir John Gorrie (C.J.) and J.J. Lumb and Cook—and of his treatment by some of our highest English judges. The subject is of the greatest possible interest to all medical men. The price of the book will be small—about 1s. each—and I shall be glad if your readers will communicate with me as to becoming subscribers. If any of them could send me a copy of the shorthand report of Dr. Anderson's appearance at the Court of Appeal before the Lord Chancellor, the Master of the Rolls (Lord Esher), and Lord Justices Lopes and Kay I should be very much obliged.

"CLINICAL OBSTETRICS."

DR. ROBERT JARDINE (Glasgow) writes: I am much gratified by the appreciative notice of my book on *Clinical Obstetrics* in the BRITISH MEDICAL JOURNAL of June 27th, p. 1498. While thanking the reviewer for his kindly criticism, I would like to point out one or two errors into which he has fallen. First, Ramsbotham's 25 cases of accidental haemorrhage were not of the concealed variety, and it is of this form I make the statement that rupturing the membranes is bad practice. In the ordinary variety I consider this is good treatment if uterine contractions are at all active. Secondly, bimanual compression of the uterus in the treatment of *post-partum* haemorrhage is said not to have been mentioned. On pages 218 and 219, after describing how to clear out the uterus, I there state "Knead the uterus down firmly on your closed hand, retained in the cavity, or compress the uterus firmly between one hand in the vagina and the other over the abdomen. This latter method is especially useful in cases following placenta praevia, as it firmly compresses the lower uterine segment, from which the bleeding is coming." If this is not bimanual compression of the uterus, what is it? Thirdly, failure of the plug to check *post-partum* haemorrhage is mentioned, and a case detailed. I might have given many more cases of eclampsia treated by saline infusions, but I thought twenty would be sufficient. If a second edition of the book should ever be called for, if space will permit, I can easily add a score or two more.

FOLK MEDICINE IN DEVONSHIRE.

DR. D'ARCY SUGDEN (Buckfastleigh, S. Devon) writes: Dr. Payne's interesting FitzPatrick lectures on the History of Medicine induce me to narrate that mediaeval medicine is still practised on Dartmoor and its borders. Should one have a patient with any inflammatory skin disease, the first question asked is, "Is it the arrysipelas?" Whatever the reply, if the patient or friends believe it is "arrysipelas," "a specialist" in the shape of an old woman is called in, who "strikes" it with raw cream, that is cream as distinguished from Devonshire cream. The full ceremony is the dipping a greasy lock of a black lamb in raw cream, and striking the affected part three times, at the same time saying "Arrysipelas come, arrysipelas go, in the name, etc." No one in Devonshire ever treats a wound by bathing with lotion, or sprain by rubbing with liniment; they always "strike" it with this or that.

TRYPANOSOMIASIS.

DR. W. HARIOT MAYNE (Warrenpoint, co. Down) writes: While up the Niger River I noticed that the natives were afraid of a large black fly, which would alight on the hand or any exposed place so lightly that one would not notice it unless one saw it. It was chiefly while in a small boat or canoe that they were a trouble, as the "boys" would not rest content until they had driven it away or killed it. They told me it would give a bite like the stab of a pin, which would suppurate with great swelling of the part, causing great pain. The fly is larger than a blue bottle, black, and a man who had been in South Africa told me it was very like a tsetse fly. It was the only insect the natives seemed to mind.

LETTERS, COMMUNICATIONS, ETC., have been received from:
A A. G. Allan, M.B., London; Mr. F. Addiscott, London; Mr. J. M. Atkinson, Hong Kong. **B** Dr. R. Bell, Glasgow; Messrs. J. W. Benson, Limited, London; Dr. J. W. Byers, Belfast; Boiler Heater Co., Manager of, London; Dr. F. T. Bond, Gloucester; E. A. Brown, M.B., Johannesburg; Dr. C. Buttar, London; Mr. T. W. S. Browne, Chatham; Mr. L. A. Bidwell, London; Mr. R. Batch, London; Dr. C. W. Buckley, Buxton. **C** Mr. F. Candy, London; Dr. W. A. Carline, Lincoln; Mr. M. Chantor, London; Cleo; Dr. J. Cautley, London; Dr. A. Castellani, London; Coral. **D** Dr. A. Duke, London; Dr. M. Dutzmann, Berlin; Mr. W. F. Dearden, Manchester; Messrs. Down Bros., London; Mr. J. C. S. Dunn, London. **E** Dr. G. F. Edwards, Bexley. **F** Mr. C. E. S. Flemming, Bradford-on-Avon; Dr. W. T. Freeman, Reading; T. Fraser, M.B., Aberdeen; Mr. J. B. Footner, Tunbridge Wells. **G** Mr. H. E. Girdlestone, Bournemouth; Dr. E. W. Goodall, London; Dr. W. Gordon, Exeter; Mr. G. J. F. Graham, Bath; Mr. J. D. Gimlette, Singapore. **H** D. J. Hamilton, M.B., Aberdeen; Mr. W. Hammond, Liskeard; Mr. T. Homer, Manchester; Dr. T. A. Helme, Manchester; Mr. T. L. Hall, Dilwyn; W. D. Harmer, M.B., London. **I** Interested Medical Student. **J** Jeyes Sanitary Compounds Co., Manager of, London; Dr. R. Jardine, Glasgow; Dr. G. L. Johnson, London; Dr. J. A. Jackson, Hexham; Mr. M. Jones, Pontycymmer. **K** Dr. J. Kerr, London. **L** S. M. Laurence, M.B., Trinidad; G. D. Logan, M.B., Ecclefechan; Dr. T. Laffan, Cashel; H. B. Lavies, M.B., London; Mr. J. R. Lunn, London; Dr. J. T. Leon, Southsea; N. Leys, M.B., Chinde. **M** Dr. W. P. May, London; F. A. Mills, M.B., Cookham; A. MacLennan, M.B., Glasgow; M.R.C.S.; Mr. S. A. O. Mackenzie, Midgham; Messrs. H. Muller and Co., London; G. N. Meachen, M.B., London; Mr. A. E. Muirhead, London; Mr. P. E. Middleton, Knottingley; Dr. J. McNamara, London; M.R.C.S.; Mr. T. Martin, Bristol; Dr. A. Macfadyen, London; Mr. W. B. Mayne, Swindon; J. MacKeith, M.B., Exeter. **N** Mr. E. Nettleship, Haslemere; Mr. P. Newell, Bexhill; N. N. S. **O** Dr. C. P. Oliver, Maidstone. **P** Dr. F. Putzeys, Brussels; Mr. C. H. W. Parkinson, Wimborne Minster; Dr. R. Purdon, Belfast; Mr. E. J. Pritchard, London. **R** Dr. A. Routh, London; Dr. W. G. A. Robertson, Edinburgh; Dr. J. Reid, London; D. Russell, M.B., Ruthwell; Dr. H. Rayner, London; Dr. H. A. Reeves, London; Dr. J. Ritchie, Oxford; Dr. W. Roper, Bridport. **S** Dr. E. M. Skerritt, Clifton; Dr. C. B. Savory, Leeds; Dr. W. Sykes, Exeter; C. H. Souter, M.B., Balaklava, South Australia; Dr. F. J. Smith, London; Mr. D'A. Sugden, Buckfastleigh; Dr. J. F. W. Silk, London; Dr. W. Sheen, Cardiff. **T** Mr. J. L. Thomas, C.B., Cardiff; Mr. J. M. Thorne, Retford; Dr. R. T. Turner, Nantwich; Dr. J. C. Thresh, Chelmsford. **V** Mr. T. J. Verrall, Brighton; Visanus Co., Manager of, Glasgow. **W** Mr. N. Waterfield, London; Dr. W. G. Willoughby, Eastbourne; Dr. W. B. Warde, Tunbridge Wells; E. T. Whitaker, M.B., Shrewsbury; Mr. G. L. Woolliams, London; Mr. H. Williams, London; Dr. A. D. Waller, London; Dr. E. F. Wells, Chicago; Dr. H. Woods, London; Dr. B. C. A. Windle, Birmingham; Messrs. J. Weiss and Son, London; Dr. H. Walsham, London; W. B. B. **X** X.

BOOKS, ETC., RECEIVED.

Die Pathologie und Therapie der Unfruchtbarkeit des Weibes. Von Dr. Ferdinand Schenk. Berlin: S. Karger; and London: Williams and Norgate. 1903. 28. 6d.

La Nature Syphilitique et la Curabilité du Tabes et de la Paralysie Générale. Par L.-E. Leredde. Paris: C. Naud. 1903. Frs. 3.50.

Pathologie Mentale des Rois de France. Louis XI et ses Ascendants. Une vie humaine étudiée à travers six siècles d'hérédité 852-1483. Par Auguste Brachet. Paris: Hachette et Cie. 1903. Frs. 15.

The Apothecaries' Hall Manual for Students Preparing for the Dispensers' Certificate. By Mabel Thomson. London and New York: Whittaker and Co. 1903. 2s.

Llandrindod Wells as a Health Resort. An Address by W. Bowen-Davies, L.R.C.P. Lond. London: The Health Resorts Bureau.

Dogs and Their Dissectors. Addresses on Vivisection. By Anthony George Shiell. Brighton: W. J. Smith. 1903. 8d.

La Méthode de Prokhorou dans le Traitement de la Syphilis. Par Francois L. Nario. Buenos Aires: Imprimerie Tenorio. 1902.

Harwich and Dovercourt. Edited by George W. May. London: The Health Resorts Association. 1903. Free on application.

Anleitende Vorlesungen für den Operations-Cursus an der Leiche. Von Professor E. von Bergmann und Dr. H. Rochs. II Theil. Operationen an dem Schädel der Wirbelsäule, der Brust und Bauchhöhle. Berlin: August Hirschwald. 1903. M. 4.

Hygiène des Etablissements Coloniaux. Par Gustave Renaud. Préface de M. A. Kermorgant. Paris: J. B. Baillière et Fils. 1903. Fr. 5.

Die Reform der Frauenkleidung auf gesundheitlicher Grundlage. Von Dr. Med O. Neustätter. München: Dr. Fr. P. Datter and Cie. M. 2.

The Edinburgh Medical Journal. Edited by G. A. Gibson, M.D., F.R.C.P. Edin., and Alexis Thomson, M.D., F.R.C.S. Edin. New Series, Vol. xiii. Edinburgh and London: Young J. Pentland. 1903.

Life and Labour of the People in London. By Charles Booth. Final volume: Notes on Social Influences, and Conclusion. London: Macmillan and Co., Limited. 1902. 5s.

*** In forwarding books the publishers are requested to state the selling price.

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An Address
ON
ERYTHEMATA AS INDICATORS OF DISEASE.

Delivered at the Annual Meeting of the Dermatological Society of Great Britain and Ireland.

BY JAMES GALLOWAY, M.D., F.R.C.P.,
Assistant-Physician, and Physician, Skin Department, Charing Cross Hospital.

PERHAPS the most satisfactory way for the present of considering this group of eruptions is by dividing them into a group of simple erythemata, the result of hyperaemia, transient in character as a rule, and causing no change of a permanent nature in the structure of the skin: and the exudative erythemata in which as the result of hyperaemia, transudation and exudation as well as of actual inflammation, changes in the structure of the skin occur, which are apt to be of some duration, or in certain cases permanent.

THE SIMPLE ERYTHEMATA: DIFFICULTY OF DEFINITION.

Of the simple erythemata, perhaps the most characteristic example is ordinary flushing. The action of the higher nerve centres appears to have the power in this condition of bringing about inhibition of the vasomotor supply of the cutaneous arterioles, with the consequence that the capillaries unguarded by muscular fibre are flooded. There are certain abnormal conditions in which a state of affairs analogous to this produces more serious results. For instance, the temporary inhibition of the vaso-constrictor mechanism exemplified in emotional states becomes very inconvenient in those persons whom we recognize as suffering from what is called feeble circulation. The cold, clammy, and congested extremities, due to depression of vasomotor control, of these persons are frequently observed and usually not regarded as a very important condition by the patient. But from time to time more serious disturbances are seen in such individuals, probably in the first instance of a functional character, affecting the whole of the vascular mechanism.

IMPORTANT ASSOCIATIONS OF THE SIMPLE ERYTHEMATA: VASCULAR DISTURBANCES.

Perhaps the most common condition is a certain degree of tachycardia, as may naturally be expected, if there is a considerable amount of diminution in the peripheral vascular tension. To produce such a result, however, the dilatation of the skin arterioles over a large area seems to be necessary: and it is not an unusual observation to find that the individual showing the congested extremities has even a less frequent heart-beat than is normal. When the congestion is marked the tissues must be ill-nourished, and are apt to be oedematous. Physical injuries produce abnormally severe results, and the resistance of the tissues to pathogenic parasites becomes less. It is very usual to find that these persons suffer severely from chilblain, the result not of vasodilatation of central nerve origin, but a paralytic distension produced by local injury of the nerve muscular mechanism of the arterioles by cold. A lesion in many respects resembling chilblain, but due to other causes, probably also physical and terminating in the destruction of the influences which regulate the expansion and contraction of arterioles has not unfrequently been observed. Many of these cases, I feel sure, have been described under the name "erythema induratum."

GRAVE DISTURBANCE OF NUTRITION.

I have recently had the opportunity of observing the most extreme case of simple erythema that I have ever seen or read of.

The patient, a young woman, suffered for twelve or fifteen years from a general and almost constant congestion of the whole cutaneous surface. At the same time there were numerous disorders of nutrition evidenced by the formation of an extraordinary amount of fat throughout the body and there was a high degree of tachycardia. The slightest injury produced nodules like erythema induratum on the shins, which necrosed and ulcerated in course of time. These lesions seemed in the later stages of her malady to occur spontaneously. Her case was so unusual that I have taken an opportunity of describing it in full.[1]

After several years of almost complete invalidism she died in March of this year, under unusual circumstances.

On Tuesday, March 17th, she suffered from severe pain in the left breast, which continued all through the night. On the afternoon of March 18th there was no pain, but the whole breast appeared gangrenous and was insensitive to touch. On March 19th the gangrene extended all round the breast, involving almost the whole of the left side of the trunk. She died on March 20th after four days illness.

After considerable difficulty I had the opportunity of making a necropsy. The body of the patient was of a deep purple colour, owing to the great congestion of the skin. So marked was the peculiarity that the staining produced by *post-mortem* lividity on the dependent part of the body was not greater than the cyanosis of the anterior part of the trunk, extremities, and of her face. Extraordinary accumulations of fat existed in the subcutaneous tissue, in the intermuscular septa, the omentum, the subperitoneal tissue, around the heart, and everywhere where fat could be deposited. The muscles were much atrophied and the organs in the body were also ill nourished, but no sign of gross organic disease could be observed in any of the viscera. A portion of the skin which was deeply congested, somewhat elevated above the skin area, and bordering on one of the old scars produced by the lesions resembling erythema induratum, was examined by my colleague, Dr. J. M. H. MacLeod. There was found atrophy, and intracellular and intercellular oedema of the epidermis, the granular layer was absent, the cornification imperfect. Here and there parakeratosis was pronounced, and between the moist horny cells there were layers of leucocytes: the basal layer of the epidermis was unbroken, but the interpapillary downgrowths were flattened out, so that the line between the epidermis and the corium was almost straight. The corium was also markedly oedematous, the lymphatic spaces between the fibrous bundles were widened, the actual fibres had become soft, and in places were split up and swollen. They stained faintly, and here and there had become completely disintegrated. The elastic fibres were also affected in less degree. The most noticeable feature in the corium was the state of the blood capillaries. These were dilated till in places they had become large cavities lined by several layers of endothelium. The dilatation was marked equally well, both towards the hypoderm and in the subpapillary layer. Associated with the dilated capillaries there was an inflammatory cellular infiltration, consisting of leucocytes, connective tissue, as well as a few mast cells. Inflammatory foci and cells were also present round the sweat coils. The subcutaneous tissue was thickened and less vascular than usual.

This case proves that the simple erythemata may develop nodular and necrosing lesions, and that these nodular lesions may arise quite apart from tuberculous causation. The serious nature and grave prognosis in the case of this young woman were evident to me from the time I first was consulted about her, not only from what I found on examination, but because I had in my experience the recollection of an important case long under the care of my friend and old teacher, Sir Stephen Mackenzie.

The patient was a young man who also suffered from unusual fatness and permanent congestion of the cutaneous circulation. In the course of three or four years from the commencement of his symptoms he lost flesh, became emaciated, developed a subacute exfoliating dermatitis, and died in much misery. I apprehended something of the same nature in the case of my patient, but the ending was different. After suffering ten or twelve years, while still abnormally fat, she had acute gangrene of the skin of half the trunk commencing in the deeply-congested skin of the left breast, and died in four days.

It is evident, therefore, that these severe cases of what we may call simple erythema must be taken as indications of serious disturbance of nutrition, and are of the gravest prognostic significance.

EXUDATIVE ERYTHEMATA.

The most simple of the forms of erythema may pass on to true exudative lesions, and in the case of symptomatic erythemata of contagious diseases, it becomes very difficult to decide whether they should be classified as belonging to the simple or the exudative form. The pigmentation, which they leave behind, and the desquamation which they are apt to cause, are proofs of a certain amount of exudation.

PROTOZOAL INFECTIONS—TRYPANOSOMIASIS.

It is interesting to note that protozoal infection is also characterized in addition to the general disorders by erythematous eruptions. Eruptions occurring in the various types of malarial fever have frequently been observed, and of these irregular forms of erythema are perhaps the most common. Though herpes, urticaria and petechial eruptions are frequently noted and even multiple gangrene may occur, no very characteristic form of erythema has yet been identified indicating malarial infection. I presume that it will be doubted by few that the cause of the erythemata in these cases is due directly or indirectly to the presence of haemamoeba in the blood and tissues.

More recently, another disease due to protozoal infection has attracted much attention, namely, the serious condition due to infection by species of trypanosoma. Various species of trypanosoma have been identified as the cause of fatal disease amongst animals by Lewis, Evans, Lingard, Bruce, and other observers, but it has been recognized only recently

that the protozoal organisms of this group may affect the human subject, and a few cases only of patients suffering from trypanosomiasis have been observed in this country. Fortunately, I have had the advantage of seeing with Sir P. Manson, and my colleagues at the School of Tropical Medicine, two of these cases. Of one of them a careful record is given in the British Medical Journal of March 30th by Dr. Manson and Mr. Daniels. In both these cases a very striking feature of the disease was the skin affection which the patients presented. Both cases showed a very similar eruption. The rash of the disease seems to be more pronounced during the period of invasion, but it appears to be of long duration. There is noticed a slight general oedema of the skin, which is partly subcutaneous, but clearly involves the cutis also, so that the patient presents a peculiarly plump aspect, even when a considerable degree of actual emaciation has occurred. On this oedematous skin there is seen a policyclical erythema, the diameters of the segments of the circles being from $\frac{1}{2}$ in. to many inches. The erythema in neither of the cases to which my attention was drawn was bright; but the peculiarly faint widely-spread circinate erythema on the oedematous skin leaving a certain amount of pigmentation presented an appearance which is quite unusual in other erythematous diseases. The eruption is general but appears to affect the back of the trunk and the face in a marked degree.

In these two cases of trypanosomiasis the eruption was so peculiar and distinct from the usual types of erythema multiforme as to warrant clearly the attribute of an indicator of the disease.

In view of the recent observations of Colonel Bruce and Dr. Castellani on "sleeping sickness" in tropical Africa, which point to the occurrence of a trypanosoma in the cerebro-spinal fluid and central nervous system as the cause of the disease, the peculiar irritable papulo-vesicular eruption which was noted in the cases of the Congo negroes who died of the disease in Charing Cross Hospital, acquires added importance. This eruption may have been the relic of a preceding erythema, and although faint erythematous eruptions on negroes are difficult to see, the possibility of their occurrence during sleeping sickness should be borne in mind by those who have to practise in the tropics.

Evidences of Visceral Disorder and of Alimentary Lesions.

Perhaps the most common cause of the forms of blood poisoning which gives rise to exudative lesions of the type of erythema multiforme are the toxins produced as the result of improper food, or of its imperfect digestion or elaboration in the tissues. The amount of clinical evidence at our disposal now, quite apart from the analogy of urticaria, is sufficient to draw particular attention to errors of digestion and metabolism in the causation of exudative erythema. I recollect the case of a girl who used to come to me, while I was at the Great Northern Hospital, year after year, suffering from a profuse eruption of exudative erythema with purpuric lesions. During each attack she also suffered from enterocolitis of severe degree and haematuria lasting for some weeks. It was interesting to observe, in addition to the purpuric type of the exudative lesions in the skin, that in the mucous discharge there were usually to be seen points and splashes of blood, giving some indication of what was going on in the bowel. The reason for this serious disturbance of health was that as the autumn came round the girl was taken to the country by her relatives, and as soon as she ate the first blackberries and nuts she suffered from the condition which I have described.

Dr. Osler, amongst others, emphasizes the close relationship between the erythema group and serious visceral affections; he quotes cases of severe gastro-intestinal disturbance with crises of pain of the nature of colic and dilatation of the stomach presenting eruptions of the type under consideration and going further afield points also to the occurrence of nephritis, attacks of hemiplegia, inflammatory and other complications affecting the lungs, and arthritis of various forms associated with the exudative group of erythemata.

It seems to be clear that the poisons may be absorbed directly from the intestinal tract, as the result of eating bad food or elaborated during disordered digestion, when symptoms of intestinal disturbance are almost certain to be present. But as the result of the absorption of certain substances from the bowel which have apparently undergone the ordinary digestive changes, eruptions of exactly similar type may be produced owing to failure of the tissues themselves to deal with them properly. Their further changes in the tissues themselves are disordered. Under the latter circumstances, there may be no sign of gastro-intestinal discomfort.

The lesions produced in all such cases are perhaps the most characteristic of the exudative type. They are circinate, even definitely circular, there is effusion of serum, of leucocytes, of red blood cells. They may be vesicular, bullous or haemorrhagic. But it is rarely possible to find that actual infiltration of anything like the granulomatous type occurs, and scar formation hardly ever happens. In the cases where scars do follow, the lesions must have been invaded by pus-forming organisms.

The indications afforded by attacks of exudative erythema, in various forms of poisoning, of the use of drugs, of the administration of the various immunizing or antitoxic serums, should be borne in mind, and are capable of much closer definition than they have yet received.

Renal Disease.

A few cases have been recorded of widespread and severe erythema multiforme occurring in connexion with Bright's disease, and in one recent case the combination of the two conditions produced rapidly fatal results. The probability of a close connexion between the disease of the kidney and a toxaemia producing the cutaneous lesions must be borne in mind. If the excretory functions of the kidneys become deficient, and severe affections inhibiting the excretory functions of the skin are also present, it is almost certain that serious results to the sufferer must occur.

In such cases the erythema is acute, symmetrical, widespread, tends to vesicate or become haemorrhagic, and involves the visible mucous membranes. In addition, the lesions are very liable to become purulent, and the possibility of a terminal pyaemia becomes great. In the case alluded to pyaemia occurred, which was nearly certainly a terminal infection due to the cutaneous lesions.

Relations of Lupus Erythematosus.

It has long been recognized that there is a peculiar form of erythema which produces atrophy of the skin and even scar formation without ulceration and without infection by pyogenetic influences, I mean the condition usually known as "lupus erythematosus."

Much difficulty has been encountered in the study of this disease, on account of the superficial position of the granuloma and the symmetrical distribution of the lesion in certain forms of tuberculosis, which closely simulate the localized and more chronic variety of lupus erythematosus. We are now, I think, in a position to clear this matter up.

1. The histological evidence from examination of lupus erythematosus lends no support whatever to the tuberculous theory of its origin. There is none of the arrangement characteristic of tuberculosis in the exuded or newly-formed cells, whereas in the most superficial of the lesions of tuberculosis, the structure of the specific granuloma can be made out.

2. Tubercle bacilli have never been seen in true lupus erythematosus, nor has the disease when inoculated into animals ever produced experimental tuberculosis, while in the superficial and erythematous forms of tuberculosis tubercle bacilli may be found, and experimental tuberculosis can be obtained. The use of tuberculin sharply discriminates between lupus erythematosus and tuberculous disease. The reaction is absent, or occurs apparently only in such cases as also suffer from tuberculosis.

3. A most important distinguishing element from the clinical point of view is the mode of onset of the acuter forms of lupus erythematosus. In these cases there is often widespread general erythema of a type which can be distinguished with difficulty from erythema multiforme, and the atrophy of the skin, which is the characteristic feature of lupus erythematosus, is developed only in small portions though much wider areas have shown erythema. The patches which do scar are those where the erythema remains in a chronic form, and especially where the circulation is terminal or carried on with difficulty.

4. The histological examination of the lesions in lupus erythematosus shows vascular dilatation, exudation of blood serum and corpuscles, as in cases of erythema multiforme. But there is in addition a peculiar chronic enlargement of the small vessels and lymph spaces, which is very characteristic; and, still more important, there occurs an infiltration of new cells, some of them, no doubt, being leucocytes, but others are new connective tissue cells, and some are the peculiar cuboidal cells, well known at the present day as plasma cells. This infiltration in the upper layer of the

cutis and the peculiar widening of the vessels are two of the more important distinctions between lupus erythematosus and erythema multiforme. Destruction of the connective tissue results, and atrophy of the cutis or an appreciable amount of scar formation are seen. The nature of the inflammatory process, therefore, must be different from that of exudative erythema, and yet it is possible that it may be a difference due to the virulence of the poison and the peculiar state of the attacked tissues—that is to say, a difference of quantity rather than of quality in the poison.

If an opportunity occurs of observing side by side an acute diffuse attack of lupus erythematosus and a severe diffuse erythema multiforme, the conditions are so much alike as in many cases to be almost indistinguishable. Two such cases have recently been under my observation. The case of erythema multiforme in a young woman was associated with nephritis, and was fatal in three or four months. The case of lupus erythematosus, occurring in a woman of about 35, was associated with cirrhosis of the liver and alcoholism, and proved fatal in three or four years.

The question arises, Can lupus erythematosus then be looked upon as the indication of disease? Or, in other words, Can its cause be suggested? As I have said, the evidence in favour of its being tuberculosis does not bear looking into. On the other hand, the evidence, as in cases of erythema exudativum, of its causation by some general process of blood poisoning, becomes greater. It will be recollected that when histological and experimental evidence proved that lupus erythematosus was not tuberculosis, the hypothesis was advanced and upheld with some success, that although the disease was not produced by the bacillus tuberculosis *in loco*, it was in all probability caused by the absorption of poisons from distant or latent foci of tuberculosis. It is not my concern at present to disprove this; these cases may possibly occur, but I think it is clear that they form certainly a small minority. What I am more concerned in stating is that lupus erythematosus is a peculiar form of exudative erythema characterized by special lesions of the nature of chronic oedema and by the appearance of cells in the exudation, which have a longer life-period and different functions than ordinary leucocytes. That large areas of the erythema in acute cases may disappear, leaving no visible trace. In the areas of chronic affection where these cells are especially found the process of healing is brought about by the production of new fibrous tissue.

The cause of lupus erythematosus I would therefore regard as a toxaemia, arising from various sources, just as in erythema multiforme. In the case of lupus erythematosus, however, there is a strong indication of a second factor besides the vasomotor disturbance produced by the toxin, namely, the tendency for easily-produced paralysis of the vasomotor mechanism. The sources of origin of these toxins require investigation, and more success is likely to follow our efforts if we throw overboard entirely the suggestion that tuberculosis has any special relationship to the disease.

A certain amount of evidence also tends to associate lupus erythematosus with chronic nephritic toxaemia, and from the observation of a few cases I think this point is well worth bearing in mind, especially in the case of middle-aged females, who not unfrequently develop the disease. This association of albuminuria with the acuter variety of lupus erythematosus has been recently specially emphasized by Drs. Sequeira and Balean. But these are not the only causes of lupus erythematosus, as the careful work of Dr. Wilfrid Warde on this subject distinctly foreshadows. Underlying the disease as its cause are in all probability many forms of blood poisoning in susceptible subjects, of which perhaps not the least uncommon is the absorption of the poisons produced by septic (pyogenic) micro-organisms.

REFERENCE.
1 *British Journal of Dermatology*, 1902, p. 199.

AN INSTITUTE OF FORENSIC MEDICINE IN PARIS.—Acting on the advice of the Council of the Medical Faculty and the Council of the University of Paris, the French Minister of Public Instruction has, by decree dated June 22nd, established an Institute of Forensic Medicine and Psychiatry in Paris. The Institute, which is intended to provide special training and to grant a special diploma to those who wish to practise as expert medical witnesses in the law courts, will be under the direction of the Dean of the Medical Faculty and the Professors of Forensic Medicine and of Psychological Medicine.

IMPRESSIONS OF THE EFFICIENCY OF PROFESSOR DUNBAR'S ANTITOXIN IN HAY FEVER.

BY SIR FELIX SEMON, C.V.O., M.D. F.R.C.P.,
Physician-Extraordinary to His Majesty the King.

Two causes have combined to retard the appearance of the following paper. In the first place, the weather has been so abnormally cold this year in and around London during the first part of the hay-fever season proper that the affection not only made its appearance a good deal later than in ordinary years, but also that the attacks when arising in very many cases were of an abortive nature, that is, that patients who had had the usual warnings of the approach of their enemy, such as itching and irritation of the eyes, sneezing fits, obstruction of the nose, wheezing and actual asthma on one day, and who fully expected that they were in for the annual attack, were pleasantly surprised to find next morning, that all the symptoms had gone. It is obvious that trying the antitoxin under such conditions would very likely have led one to form very erroneous conclusions, inasmuch as the effects which one might have attributed to the action of the remedy would in reality have been due to the abnormally wet and cold weather, which prevented the pollen from penetrating into the eyes and nose of those predisposed to hay fever.

Secondly, an even more powerful factor militated against the earlier appearance of this report, namely, the really enormous difficulty of arriving at reliable conclusions with regard to the effects of the new remedy. I do not exaggerate when I say that I have never in any scientific inquiry in which I have been engaged found such difficulties in satisfying my own mind concerning what I ought to report as in this question. After the results of the experiments with Professor Dunbar's toxin and antitoxin, which I published in the BRITISH MEDICAL JOURNAL of March 28th of this year, I was quite prepared to find that the effect of the new remedy would be variable in intensity in different hay-fever patients, but the differences which I have actually found are so great that it is a matter of extreme difficulty for a conscientious observer to briefly summarize the effects of the new remedy. Not only do different people react surprisingly differently, but also in one and the same person the effects of the remedy in some instances vary from day to day without a satisfactory explanation of these differences being forthcoming. This is, perhaps, not much to be wondered at, seeing the capricious nature of the disease itself and its ever-varying intensity not only in different cases, but in one and the same case according to external circumstances. All the same, it is not a satisfactory state of matters, and I have, therefore, preferred to speak in the title of my communication of "impressions" rather than of results obtained, because it is quite possible that further experiences may considerably modify in a more favourable or in the opposite sense, the views I have so far formed. Anyhow, I thought it right to state now what I think of the antitoxin treatment in order that it may be tried on a larger scale.

The following remarks are based upon observations on eight hay-fever patients whom I have personally treated, since the conditions of the weather have become normal enough to make it permissible to draw conclusions from the use of the remedy. In all these cases I have carried out the treatment personally, and not placed, until a few days ago, the remedy into the hands of the patients themselves for the following reason: Previous to the commencement of the season I inquired from Professor Dunbar and Dr. Prausnitz whether one ought not to try to ward off the attack altogether by subcutaneous injection of the antitoxin. Dr. Prausnitz dissuaded me from carrying this idea into effect by stating that this experiment had already been made in Hamburg with the result that in some people predisposed to hay fever, subcutaneous injection of the antitoxin had been followed by a swelling of the arm into which the injection had been made, lasting for several days, and accompanied by erythema and urticaria. This statement has quite recently been publicly corroborated by Professor Dunbar himself in a paper which he read before the Medical Society of Hamburg, and which has been published in the *Berliner klinische Wochenschrift*, of June 15th, 22nd, and 29th. In this paper he states verbatim on page 597:

> Although the hay-fever antitoxin when applied subcutaneously produces no symptoms whatever in normal individuals, so far as our present investigations go, it yields when hypodermically used in hay-fever

patients irritative phenomena which may have rather disagreeable effects. If for instance the antitoxin is injected into the forearm, a swelling arises starting from the spot where the injection was made, which may extend over the whole forearm, accompanied by a sensation of heat, redness of the skin, and disagreeable itching. These phenomena might last up to six days. It appears, however, as if a sort of immunity against these phenomena developed up to a certain degree when the serum has been applied hypodermically several times. It would also appear as if these phenomena did not arise in all hay-fever patients.

From Dr. Prausnitz's communication it was obvious to me that the antitoxin as at present used must still contain certain toxic or septic properties, which cause the disagreeable symptoms described when the remedy is injected under the skin. That Professor Dunbar himself shares this view appears from the following paragraph in the paper to which I have just referred:

It must by no means be concluded that we may not succeed later on in freeing the antitoxic serum from these properties which give rise to the production of the by-effects described. It could be shown tha whilst the power of the antitoxin increased, the by-effects not only did not rise proportionately, but rather diminished. From this I think I may conclude that the by-effects have no relationship to the specific antitoxic substance, and that by removing these bodies the efficiency of the serum will not be interfered with.

However that may be, it seems certain that at the present moment the antitoxic serum is not quite free from toxic properties, and it was only natural to deduce that, although resorption of these toxic substances would naturally take place more rapidly and intensely from hypodermic injection, similar, although less violent, effects might be produced if the remedy were frequently administered direct to the affected parts. Certain experiences made in hay fever with long-continued applications of cocaine lent weight to this view, and it seemed only right that the remedy ought not to be placed into the hands of laymen before sufficient experiences had been collected showing that no danger was to be apprehended from resorption of the antitoxin from mucous membranes. This was the reason why I protested in my "Disclaimer" of May 23rd against the premature sale of the remedy, and why up to the last few days I have made all applications of the antitoxin personally.

Having, however, so far met with no untoward by-effects of any kind in my limited experience I think that reasonable patients may be trusted with the self-administration of the antitoxin, provided always that they are warned against over-using the remedy, inasmuch as under such circumstances I even now consider it by no means impossible that ultimately disagreeable by-effects similar to those observed after subcutaneous injection of the remedy may develop. In my trials I have used partly preparations of the 1 in 500 antitoxin, with equal quantities of normal horse serum, which I mixed myself, the antitoxin and serum having been kindly sent to me by Professor Dunbar, partly with the ready-made preparation, to which the name of "pollantin" has been given. As sent out by the manufacturers, the remedy is put up in a small case containing two wooden boxes, one of which incloses a phial with the serum, and the other an empty glass provided with a drop pipette, with the following directions:

As the serum would soon be contaminated by frequent contact with the pipette, it is advisable to pour out one-third of the contents of the serum phial into the empty glass provided with a drop pipette. This glass is effectually closed by pressing the indiarubber cap of the pipette into it, but care should be taken to keep this glass upright so as to avoid the liquid flowing into the cap. Patients should not fail to carry a small quantity of serum in this glass about with them whenever they may expect a hay-fever attack. Immediately after noticing the first symptoms of irritation in nose or eye, a drop or two of the serum should be instilled upon the eye or into the nose affected.

The serum can be applied to the eye in the following manner: After sucking up a few drops into the pipette, exert a gentle pressure on the rubber cap until one drop just emerges from the opening of the pipette; then before a mirror carefully approach the pipette to the outer corner of the eyelid, when the drop is sucked up by the eyelashes, and spreads over the conjunctival membrane. By the aid of a pocket mirror the same manipulation can easily be carried out in the open air.

In order to instil the serum into the nasal cavity, fill the pipette with 3 or 4 drops of serum, and, bending your head backwards, insert the pipette about ½ in. into the nostril affected, and empty it by a short pressure on the rubber cap. A few sniffs suffice to spread the serum over the mucous membrane.

The phial containing the serum is closed by a cork, and I here wish to express an earnest hope that the manufacturers may see their way to provide better corks. As it is, I have found that in the majority of cases the cork, which usually is unnecessarily deeply rammed down into the phial, breaks off, however carefully one may attempt to remove it, and that endeavours to subsequently extract the remaining larger part of the cork often result in breakage of the upper part of the tube. Seeing the very high price of the remedy—the apparatus above described costs 10s.—it might surely be expected that only the best sort of cork, or, better still, rubber plugs, should be used, or that some more commodious and less fragile form of preserving the serum should be devised. Furthermore, the drop pipette is rather short when the rubber cap is applied for the sucking up every drop of the precious fluid, a quantity of which is thus apt to be lost each time the remedy is used. Again, the glass bottles not rarely stick fast in their wooden enclosures and cannot be removed. Altogether the technical question is far from having been solved in an ideal matter.

As to the application itself, I have in each case strictly followed the directions given in the printed slip enclosed in the box containing the remedy. In a number of cases the application was made once daily, in other twice, whilst in two cases it was used as often as three times a day.

I may summarize the impressions I have received by saying that, as one would have anticipated from the nature of the affection itself in which unfortunately during the critical time almost constant reinfection takes place, and from the results of the experiments described in my previous communication, that the remedy in its present form of application is not curative, that is, that one must not expect that a single application will ward off or cure the disease for any prolonged period. Whether with greater perfection of the serum and abolition of the unpleasant by-effects caused by hypodermic injection that great desideratum will ever be accomplished remains to be seen. Certain it is that at present the serum does not possess that power.

It would, however, certainly be a great enough gain if, by repeated application to the eyes and nostrils, the occurrence of an attack could with certainty be prevented for a limited period, and a fully-established attack be cut short or rendered less unpleasant. I may at once say that in several of my cases instillation of one drop of serum into each eye and two drops into each nostril appears, indeed, to have had the effect of warding off an attack, which otherwise, according to the considerable experience of these patients, would have almost certainly have occurred, for a period of several hours, four to five on the average. In two of my cases this effect was so marked that auto-suggestion seemed to be practically out of the question. Unfortunately, however, even in these cases, this happy effect did not invariably occur, the remedy failing, for some unexplained reason, on individual occasions. Whether in these instances the failure was due to the fact that, besides the pollen infection, the nervous temperament of those predisposed certainly plays a great rôle in the production of an attack, and that, for some reason or other on these particular occasions, the nervous element overwhelmed the effects of the antitoxin, I must leave an open question. The fact remains that in none of my cases could the effect of the application of the remedy be reckoned upon as a certainty. In other cases the effects were much less marked. In one or two itching of the eyes, sneezing fits, running of watery fluid from the nose, etc., recommenced very shortly after the application of the remedy, and in the one case amongst my eight patients in which asthma played a predominant and very disagreeable rôle this was not affected at all by repeated use of the remedy. The facts above stated will perhaps become more apparent from the reports of some of the patients which I append at the end of my paper.

With regard to the cutting short of fully-established attacks, I cannot say that I have observed any marked effects, with the exception that so far as the irritation of the eyes is concerned all my eight patients immediately after application of the remedy experienced a sense of relief, the duration of which was, however, very variable.

To sum up: I can unfortunately not say that the remedy has in any sense acted as a panacea in any of my cases. It has given relief in some, and appears to have acted beneficially certainly in postponing the occurrence of the attack in others of my patients. Possibly these effects might have been even more marked had the applications been made with even greater frequency. I ought also to say here that according to the spontaneous statements of at least two of my patients it appears to have had the effect of making the present hay-fever period altogether a good deal more tolerable than on previous occasions.

The main applicability of the serum would certainly seem to lie in the direction of its postponing for several hours the occurrence of the regular attack. If further experiences should show that prolonged and frequent application neither

diminishes its efficiency nor causes unpleasant by-effects, even the limited results above described will have not inconsiderably added to our therapeutic power of combating this troublesome affection; but whether this will be so I do not dare to say at present. I am quite willing to modify my impressions with further more extensive experience. The statements made in this paper, however, represent the impressions I have so far gained.

APPENDIX.

Dr. L. O.

June 29th, 1903.—11 a.m. Serum introduced into both nostrils, and a drop placed on both caruncular.

11.30 a.m. Secretion started from right nostril, and continued until

12.30 a.m., when the patient had a bad attack.

2 p.m. Attack had passed off, and patient was quite free until

5 p.m., when an acute attack started, and got gradually worse until 11 p.m., accompanied by acute conjunctivitis for the six hours.

The nostrils were very stuffy all night.

June 30th.—Much better in the early morning, and until 11.40 a.m.

11 a.m. Serum introduced.

11.40 a.m. Slight attack, after which patient was quite free until

5.30 p.m., when an attack came on.

7.30 p.m. Serum again introduced; quite free from attack until

11.30 p.m. Slight attack, again free until

July 1st, 3.45 a.m. Slight attack; nostrils seemed completely closed, as they always are at night during the hay-fever season, and usually slight asthma in addition.

10 a.m. Slight attack.

11 a.m. Serum again used.

4 p.m. Slight attack, which continued on and off until 7 p.m.

7 p.m. Used antitoxin with immediate relief. This is the first time that patient has found the antitoxin to be successful immediately.

July 2nd.—Three or four slight attacks during the day.

8.30 p.m. Antitoxin.

10 p.m. Slight attack.

11.15 p.m. Antitoxin. Much better night, and did not awake until early in the morning of July 3rd with the stuffy feeling in nostrils as usual after sleeping during hay-fever season.

7.45 a.m. Usual morning attack.

7.50 a.m. Antitoxin. Complete immediate relief from conjunctival irritation.

9.45 a.m. Attack severe, nasal discharge copious, conjunctival irritation very severe. Very little relief from antitoxin as had very little left to experiment with.

10.45 a.m. Attack still continuing. No antitoxin.

4.45 p.m. Another attack.

6 p.m. Attack very severe.

7 p.m. Worse.

11.45 p.m. Slight attack. No attack between 7.30 p.m. and

11.45 p.m. Good night. No attack took place until

July 4th.—8 a.m. Attack lasting for half an hour.

9.30 a.m. Another attack fairly severe.

10.30 a.m. Attack still continuing.

11 a.m. Nearly stopped, with the exception of slight nasal discharge from both nostrils.

This patient sums up the results in his case by saying that the antitoxin diminishes the frequency and duration of the attacks, and is most useful if one assists by staying in the house, and not venturing more than is quite necessary into the sun. He also emphasizes the fact that the attacks increased in severity when he had no more antitoxin.

B. H.

June 16th.—Antitoxin instilled into eyes in the afternoon. Immediate soothing, though not very pronounced, effect was experienced. Forty-five minutes later itching in nose and sneezing again occurred. Hay-fever symptoms all the evening quite as severe as usual.

June 17th.—Eyes and nose still considerably inflamed. On going out itching in eyes and nose and inclination to sneeze.

10.50 a.m. Antitoxin applied to eyes and nose. Immediate feeling of relief, cessation of itching, condition of eyes and nose improved for about an hour.

12.30 p.m. Slight return of symptoms growing gradually worse, as the patient travelled home into the country by train. Great discomfort, which subsided after three or four hours indoors. Patient felt much more perceptible feeling of relief after the application to-day than he had on the previous day.

June 20th.—6 p.m. Antitoxin applied to the eyes. Same feeling of relief as on previous occasions, and eyes steadily improved for two hours, not itching at all during the evening, which was, however, cool and damp.

June 23rd.—Antitoxin applied to eyes and nose. Relief felt, but only for about twenty-five minutes, when sneezing, etc., returned. Worse during the evening, with eyes and nose running freely, and a good deal of tightness on the chest.

After prophlyactic injection in the mornings of June 27th and 28th remained practically quite free from symptoms on both days although the patient is quite certain that he would otherwise have suffered very badly.

Miss C.

June 22nd.—1 p.m. Antitoxin dropped into both eyes and both nostrils. Right eye stopped irritating, but not much improvement otherwise.

4.15 p.m. Bad sneezing fit, partial obstruction of nose, headache.

7.15 p.m. Bad sneezing fit. Irritation in right eye, complete or partial obstruction of nose, etc., with sneezing fits continue all the evening. The left eye, which had been free during the day from irritation, starts intense irritation at 11 o'clock. Asthma during the night.

June 23rd.—7.30 a.m. Bad sneezing fit. Eyes irritating. Head aching.

11.30 a.m. One drop of antitoxin into both eyes and left nostril and two drops into right nostril. After twenty-five minutes no improvement whatever has resulted. The eyes are still irritating and itching, the right nostril is completely occluded. Patient has severe occipital headache. Feels during the rest of the day very ill with asthma, violent headache, varying obstruction of nostrils, coughing fit, etc., although both eyes stopped irritating from 12.30 to 7.30.

June 24th.—Antitoxin applied to eyes and nose during the forenoon. Shortly after the eyes cease irritating, right nostril becomes free, left remains obstructed. This continues till 6.30 p.m., when all the symptoms more or less return, and continue all the evening, except that the right nostril remains free whilst the left is the whole time obstructed. There is a good deal of asthma and sneezing.

June 25th.—12.30 p.m. Two drops of antitoxin into each eye, and two into right nostril; none in left.

1 p.m. Left eye ceases irritating. Right nostril still stopped up completely.

1.30. Right eye ceases irritating.

2 p.m. Right nostril free. Left, into which no antitoxin was introduced, stopped up. This continues so all afternoon.

7 p.m. Return of sneezing, eye irritation, nostrils remain the same. Sneezing, irritation, asthma through the evening, and early morning, when, however, at 8 a.m., June 26th, the left nostril is free and the right stopped up.

June 26th.—One drop of antitoxin into each eye and each nostril, but with the exception that the eyes are free from irritation for a short time not much relief is experienced on this day, there being sneezing fits every half-hour, perpetual eye irritation, asthma, etc., these symptoms being also present early next morning.

June 27th.—12 a.m. One drop of antitoxin into each eye and each nostril. No improvement till 3 p.m., after which the patient is quite free from symptoms until 7 p.m. From 7.10 p.m. the symptoms are again present with asthma superadded later on.

Sunday, June 28th.—No antitoxin. Symptoms present all day.

Miss R.

June 23rd, 1903.—3 p.m. General feeling of feverish discomfort. Stuffy and heavy feeling in head, but no acute irritation in eyes or nose. Sore throat and chest.

3.30 p.m. Injection of antitoxin into both eyes and both nostrils. No immediate results took place.

4 p.m. Sneezed three times.

4.20. Violent sneezing fit, lasting quite five minutes and sneezing the whole time. The heaviness and general discomfort did not abate at all during the evening, but the eyes remained free from irritation, and the soreness of throat and chest seemed to pass away. Constant watery discharge from the nostrils continued, with an occasional sneeze.

June 24th.—5.45 p.m. Instilled one drop of antitoxin into each nostril.

6 p.m. Sneezing. Gradually the nostrils became more comfortable, the discharge and sneezing stopped, and patient remained throughout the following day, the 25th, unusually free from symptoms in spite of being out a great deal in the sun and heat, and of its being a typical hay-fever day. No irritation in eyes experienced since application of antitoxin on the 23rd.

June 26th.—Extreme irritation in both nostrils, sneezing and discharge. General feverish wretched feeling.

10.45 a.m. One drop into each nostril. No effect for half an hour, then a gradual but very decided improvement took place both in local and general conditions.

June 27th.—3 p.m. Prophylactic instillation of two drops into each nostril before going out. Great discomfort all afternoon and evening, all the symptoms being more or less present and very marked.

June 28th.—Very uncomfortable day in spite of remaining indoors. No injection made till 6 p.m., previous to going out. Slight symptoms present all the evening.

June 29th.—8.30 a.m. Two drops into each nostril. Remained comparatively free all morning. Very bad afternoon.

June 30th.—Two drops into each nostril at 8.30 a.m., 3 p.m., and 7 p.m. respectively. Remained practically free all day from symptoms.

This patient sums up the results of the remedy in her case by saying that on the one day when the remedy was used three times considerable relief was obtained, there being almost complete absence of symptoms. On other days when the remedy was used less frequently the effect was variable, on one or two occasions relief being experienced, whilst on at least two occasions the remedy completely failed. The eyes were, however, always relieved.

Medical Graduation in France.—The degree of Doctor of Medicine was conferred by the seven universities of France on 1,130 persons in the academic year 1901-2, showing a diminution of 20 as compared with the previous year. The graduates were apportioned among the several universities as follows: Paris, 608; Bordeaux, 107; Lille, 53; Lyons, 182; Montpelier, 100; Nancy, 31; Toulouse, 49. According to a recent enumeration, the total number of medical practitioners at the present time is 18,735.

ON THE DESIRABILITY OF OPERATING FOR, AND THE MORTALITY FROM CHRONIC PANCREATITIS.

By W. HALE WHITE, M.D., F.R.C.P.

Physician to and Lecturer on Medicine at Guy's Hospital; Examiner in Medicine to the University of Cambridge.

DURING the last few years our knowledge of the physiology and pathology of the pancreas has increased considerably, and we have learnt much about chronic pancreatitis. Long-standing venous congestion leads to enlargement and induration of organs, such as we constantly see in a nutmeg liver or the large tough kidney associated with cardiac disease. If the term chronic pancreatitis may be applied to a like change in the pancreas this is probably the commonest form of chronic pancreatitis, although it is often overlooked by writers on pancreatic diseases. I find that at Guy's Hospital out of 6,708 consecutive necropsies, the pancreas has been described by the morbid anatomist as cirrhotic, congested, or hard in 26 instances; in one case it is described as like cartilage, and in those in which a microscopical examination was made an increase of fibrous tissue was found. These cases have been fully described elsewhere,[1] so it will suffice if I say that this condition of pancreas was often associated with other evidence (for example, nutmeg liver) of severe backward pressure, and in 23 out of 26 cases there was such disease as would have caused severe backward pressure. In 2 of the cases the patient suffered from cirrhosis of the liver, and although then it is tempting to assume that the chronic pancreatitis was directly the result of venous congestion due to the cirrhosis, yet we must remember that some authors are decidedly of opinion that alcoholic drinks can produce chronic interstitial pancreatitis quite apart from cirrhosis of the liver. Kippel and Lefas,[2] and Opie[3] quote cases in point.

Obstruction to the exit of the pancreatic secretion will produce chronic pancreatitis. Such obstruction may be due to pressure of growth or to a pancreatic calculus or a biliary calculus, and it is well known, as Riedel, Mayo Robson, and other operators have shown, such pancreatitis may lead to sufficient induration of the gland for the operator to suppose he is dealing with malignant disease of the pancreas. Chronic pancreatitis has also been associated with and ascribed to endarteritis. It has also been found in cases of tubercle, but here there is the possibility that it ought to be ascribed to backward pressure from pulmonary disease; syphilis is probably in very rare cases a cause of pancreatitis. There are also the cases ascribed to spreading of inflammatory processes up the duct, and direct infection from the duodenum, and those due to the typhoid bacillus.[4] Lastly, perhaps some would include the atrophied pancreas so frequently met with in diabetics under the heading of chronic pancreatitis.

But regarded from the clinical point of view, most of these varieties of chronic pancreatitis are so overshadowed by symptoms other than those which can be set down to the pancreatitis, that with our present knowledge they do not present themselves as cases of pancreatitis. For example, in the pancreatitis due to backward pressure, the disease of the pancreas cannot be diagnosed; we can only surmise that as the other symptoms of backward pressure are well marked, probably the pancreas will be found to be indurated. So in the induration due to the pressure of a growth, and if there is an alcoholic pancreatitis apart from cirrhosis of the liver we have no means of ascertaining this. The pancreatitis due to syphilis is very uncommon, cannot be diagnosed, and is usually found in infants that have died shortly after birth. Pancreatic calculi are excessively rare; their existence has only been diagnosed successfully once or twice, and even if the diagnosis were made we could not diagnose also the presence of pancreatitis, unless glycosuria were present, nor are we in a better position with regard to that due to vascular disease, even if such exists. The chronic inflammation of the pancreas associated with the presence of a gall stone in the opening of the bile duct cannot be found out until it is revealed at the operation undertaken for the removal of the gall stone. It is more easy to correctly suggest pancreatitis when there is sugar in the urine, but in all these cases including those of diabetes no treatment specially directed to the pancreatitis is possible.

Nevertheless, the clinical interest of chronic pancreatitis is by no means so slight as might appear from what has just been said, for thanks to Mr. Mayo Robson and other surgeons we have learnt that there is a form of chronic pancreatitis associated with jaundice, which may, perhaps, sometimes owe its existence to previous gall stones, yet, in fault of a better suggestion, may be otherwise due to spread of inflammation from the duodenum directly to the pancreas. Or, again, the symptoms may be in some part due to local peritonitis over the head of the pancreas, for operators have frequently found adhesions over it. The symptoms of this disease are given fully by Mayo Robson and Moynihan.[5] Briefly, they are deep jaundice, pain, tenderness, vomiting, and wasting. These authors say: "Chronic pancreatitis must be treated by abdominal section and drainage..... obtained by draining the gall bladder." These cases are usually thought to be examples of carcinoma obstructing the bile duct, and the brilliant success of some surgeons has emboldened others to operate in cases in which operation was probably hardly necessary—for example, I have read of patients with disease of the heart and jaundice who have been operated on, and inasmuch as serious harm may follow operation by unskilled operators, it is desirable to record a case which teaches that probably an operation and certainly draining the gall bladder are not always necessary, and, secondly, to show that chronic pancreatitis is rarely fatal. Mr. Edmund Owen operated upon my patient, and he briefly recorded[6] the case a year after operation, but as I have kept in touch with the patient and know that now, two years after operation, he is still well, the case seems worthy of being reported in full; it is as follows:

A man, aged 62, seen July 2nd, 1901, at Hampstead with Dr. James Andrews and Dr. Collingwood Andrews. The patient is deeply jaundiced, he looks very ill, and he is not strong enough to sit up. He tells us that a year ago he began to suffer from abdominal pain, and he has had it on and off ever since. It occurs in paroxysms at intervals of seven or ten days. Lately it has been very severe. For the last six months he has had jaundice the depth of which has varied from time to time. He is hardly ever sick; there have been no rigors and no rises of temperature. During his illness he has lost 2 st. in weight. A careful examination (including the rectum) of the whole of his body revealed nothing abnormal, but some tenderness over the head of the pancreas. We expressed the opinion that the patient was suffering from carcinoma of the head of the pancreas. The patient and his friends asked whether any operation could be performed which would relieve him; we urged strongly against operation, but the patient and his friends were determined that an exploratory operation should be performed to see if so serious a diagnosis was correct, accordingly we reluctantly gave consent, and Mr. Edmund Owen was asked to perform it. A week later he opened the abdomen, and found the head of the pancreas so large and hard that, as this was considered to indicate that the patient was suffering from carcinoma of the head of the organ, the abdomen was closed. The bile passages were not drained in any part. Four or five days after the operation the patient began to improve in general health, his pain began to leave him, and his jaundice to disappear. From this time he put on flesh. I saw him next on August 16th, 1901. He then looked quite well, he was not jaundiced, had gained much flesh; but I thought I could feel a distinct lump in the region of the head of the pancreas. I saw him next on September 6th, 1902. He then weighed 12 st. 1 lb.; he looked in excellent health, he was back at his work. Nothing abnormal could be felt in the abdomen. The urine contained neither albumen, bile, sugar, nor diacetic acid. I heard from him June 11th, 1903, and he reported, "I am as well as usual, and have been so since I came to see you about a year ago. I shall be 65 years of age in September.

This case teaches that it is not always essential for cure that the bile should be diverted from its normal track, and suggests that in some cases this has been done unnecessarily. We all know of cases in which after laparotomy for divers conditions benefit has followed although no operation has been performed upon the diseased organ. Such cases are always difficult to understand, and are always open to the interpretation—hard indeed sometimes to believe—that the patient would have got well if no operation had been performed. We have all probably met with rare cases of jaundice which certainly did not appear to be gall stones, and which were regarded as malignant disease, but after months the jaundice has disappeared, although no operation has been performed, and the patient has got well. It is of no use to record such cases as instances of chronic pancreatitis that have recovered, for some of them may have been examples of an impacted gall stone that has ulcerated its way into the intestine; but, on the other hand, some may have been instances of chronic pancreatitis (like my patient in whom no stone could be felt) that have got well apart from treatment.

The second point to be considered is whether chronic pancreatitis is often fatal. If fatal it is (unless successfully diagnosed) sure to be mistaken for malignant disease of the head of the pancreas. I have examined the *post-mortem* records of Guy's Hospital from 1861 to 1901, both inclusive (a period of forty-one years) during which time about 19,000

necropsies have been made, and I have examined the records of all the cases of malignant disease of the pancreas. In the following table I have included all the cases in which malignant disease was primary in the pancreas, and I have classified them into those in which secondary growths were present and those in which secondary growths were not present.

Table showing Number of Cases described as Primary Carcinoma of the Pancreas in the Post-mortem Theatre of Guy's Hospital from 1861 to 1901, both Inclusive, and Classified into those with and those without Secondary Deposits.

Year.	Number of Cases of Malignant Disease of Pancreas with Secondary Deposits.	Number of Cases of Malignant Disease of Pancreas without Secondary Deposits.	Year.	Number of Cases of Malignant Disease of Pancreas with Secondary Deposits.	Number of Cases of Malignant Disease of Pancreas without Secondary Deposits.
1901	3	2	1880	3	1
1900	4	0	1879	2	1
1899	3	1	1878	3	1
1898	1	0	1877	0	0
1897	1	0	1876	1	0
1896	8	0	1875	0	0
1895	3	[illegible]	1874	2	0
1894	2	0	1873	1	0
1893	2	[illegible]	1872	0	0
1892	3	1	1871	1	1
1891	1	[illegible]	1870	0	0
1890	1	0	1869	0	0
1889	2	0	1868	0	0
1888	1	0	1867	0	0
1887	2	1	1866		0
1886	2	1	1865	0	0
1885	0	0	1864	0	0
1884	1	0	1863	0	0
1883	0	0	1862	0	0
1882	[illegible]	0	1861	0	0
1881	4	0			

It is quite clear that the cases in which secondary deposits were present cannot be regarded as examples of chronic pancreatitis, but I have examined both the clinical and *post-mortem* reports of each case which is entered in the *post-mortem* records as malignant disease of the pancreas, but in which no secondary deposits were present. The first occurred in 1871. The account of the *post-mortem* says: "The duodenum was found to be puckered and contracted, its calibre just admitting the little finger. There was a growth situated posteriorly, and connected with the head of the pancreas." There was no histological examination, but from the description we probably have here an example of new growth. The case which occurred in 1878 showed an ulcerated fungating growth. Dr. Goodhart made a histological examination of the pancreas of the case which occurred in 1879, and pronounced it to be carcinoma. With regard to the case which presented itself in 1880 the head of the pancreas contained a hard scirrhus-like mass with a quantity of colloid material in it, so this can hardly have been an instance of chronic pancreatitis, a histological examination was made in this case. The necropsy made in 1886 showed that the head of the pancreas was surrounded, and involved in a soft fleshy-pink growth..... The common bile duct could not be traced into the duodenum; it appeared to end in the growth. This does not suggest pancreatitis. The description of the *post-mortem* of the case that died in 1887 reads more like pancreatitis than the others, for a large cubical mass of what appeared to be growth was found in the head of the pancreas, but the patient was never jaundiced, and it is doubtful if chronic pancreatitis could kill apart from jaundice. It is true that Opie[7] has recorded four cases of chronic interlobular pancreatitis associated with persistent vomiting, and the patient under consideration had persistent vomiting, but in Opie's cases something else serious enough to cause death was present, for the first died after an operation for premature labour and had pulmonary haemorrage, the second had carcinoma of the uterus, the third had mitral disease, and the fourth malignant disease. But at the necropsy on the woman who died at Guy's Hospital in 1887 nothing to explain death was found beyond the tumour of the pancreas, which had caused contraction of the duodenum. The case, however, that died in 1892 does read very much as though it was a case of chronic pancreatitis. Therefore I publish it in full by the kind permission of Dr. Frederick Taylor.

A. A. W., male, aged 42, a travelling accountant, was sent to the hospital by Dr. Bisshopp, of Tunbridge Wells, on account of jaundice. He was admitted under Dr. Frederick Taylor, April 21st, 1892. There was no evidence of alcoholism or syphilis. He first noticed jaundice with itching in November, 1891; soon his motions became quite white. He has not wasted.

On Admission.—He was deeply jaundiced, suffering much from itching His liver was uniformly enlarged, extending to 3 in. below the ribs. There was no pain. The urine was loaded with bile, but otherwise healthy. The motions were very white, and he had some diarrhoea.

May 2nd. He first complained of pain over the liver, which had remained the same size as since admission. May 12th. He had lost 7 lb. since admission. May 16th. Much diarrhoea, motions dark, liver thought to be smaller. May 23rd. Motions white again. May 31st. Vomiting had set in; stomach appeared dilated. Had lost 6 lb. more. The sickness continued; he had much abdominal pain, and gradually became weaker, and soon died. At the necropsy the body was deeply jaundiced. The head of the pancreas was hard and much enlarged, and the pancreatic ducts and bile ducts were much dilated. The gall bladder was normal. There were no gall stones or secondary deposits anywhere. Histologically the pancreas showed increase of embryonic connective tissue. An adjacent lymphatic gland was also examined histologically and found healthy.

The case which died in 1899 was examined histologically and found to be a columnar-celled scirrhus carcinoma and the two remaining cases, which occurred in 1901, were certainly not chronic pancreatitis for one was an example of suppuration in connexion with a growth and the other was proved histologically to be a carcinoma. If from these 10 cases described in the report of the necropsy as examples of carcinoma of the pancreas without secondary deposits we deduct those histologically examined (four in number), and the case in which there was a fungating ulcerating growth and the one in which there was suppuration in connexion with a growth and which cannot therefore have been an example of the kind of pancreatitis we are considering, we have six in all to deduct, leaving only 4 cases out of 19,000 necropsies which could by any possibility be chronic pancreatitis. One almost certainly was, but in each of the other three there was some evidence that they were not, so that it was very unlikely that they were all examples of chronic pancreatitis. Hence we see that chronic pancreatitis is excessively rarely a fatal disease, probably not being responsible for more than one or two out of nineteen thousand deaths and certainly not being responsible for more than four. Thus from this point of view also the question of the necessity, except very rarely, of operation is raised. Further experience alone can give us the correct answer. It will be noticed that no cases of carcinoma of the pancreas occurred in the decade from 1860-1870 that cannot be due to any error of observation for during that period the necropsies were being made by Sir Samuel Wilks and Dr. Moxon.

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THE PROBLEMS OF CANCER.

By E. F. BASHFORD, M.D.

General Superintendent Cancer Research Fund.

I.—*The Extent of the Field which has been Investigated in Regard to Cancer and its Relation to the Pessimistic Views Entertained in Regard to the Ultimate Results of the Investigation of Cancer.*

OUR knowledge of malignant new growths is all but limited to a recognition of the facts which present themselves for investigation in pathological laboratories, obtaining their material from the *post-mortem* or operating theatres of hospitals in the most civilized portions of the world. The material thus obtained has been extensively investigated, from the purely histological standpoint, to a great extent also in co-relation with clinical observations. It is, perhaps, generally conceded that further advances in these directions will not be easy of attainment, and that by these paths alone the problems of cancer will not be solved.

With the materials occurring in hospitals other lines of inquiry, especially biological, bio-chemical, the conditions of growth of cancerous tissue as distinct from the problem of the genesis of malignant new growths, have been hardly touched upon, except in a purely speculative fashion, and in the latter direction to a degree out of all proportion to the meagreness of the facts accumulated.

Speculation in regard to the nature and genesis of malignant new growths has roamed over the full field of biological

science and the actual facts constituting our definite knowledge of cancer have been drawn from what by comparison is a singularly limited field, namely, that accessible to the microscopical and other histological methods of the pathological anatomist, for clinical observations have hardly contributed much to the hypothetical discussions of the nature of cancer.

It would seem to be advisable to endeavour to interchange the disproportions existing between the fields from which the facts and the theories of cancer have been drawn, so that instead of speculations from many fields being founded, as at present, upon the few facts of cancer ascertained from its occurrence among the more educated of mankind, facts from a very extensive biological inquiry, embracing not only all races of men, but, so far as possible, the entire animal kingdom, will be focussed upon the condition which is of so much interest to us at present.

Probably in the disproportions of the fields from which the theories and the facts of cancer have been drawn is to be found the explanation of the standstill to which cancer investigation has come since Virchow's classical work has been followed to its logical results. In this disproportion we have possibly also the cause of the prominence obtained by views, which, had the facts of cancer been founded upon a wider basis, would never have had devoted to their attempted establishment the amount of labour which has been conferred upon them. On the other hand, the apparent hopelessness of endeavouring to elucidate the problems of malignant new growths would not have been magnified to such an extent had this disproportion not existed.

Obviously, it behoves those devoting attention to the problems of cancer to endeavour to adjust the inequality, which has been pointed out, in the hope that when the facts of cancer as a general and comparative biological problem, as distinct from a problem of human pathology only, have been placed upon a basis commensurate with the extent of its ramifications in man and animals, the pessimism now prevailing, not without justification, will, with the attainment of this adjustment, disappear.

In amplification of what is implied by endeavouring to regard cancer not merely as a problem of human pathological anatomy, but as a problem of much greater extent, some matters may be alluded to which, if of a speculative nature, seem to indicate the importance of regarding cancer from the standpoint of a comparative biological problem, even at this early stage.

The following aspects of some problems associated with the study of cancer are referred to in the hope that the attention of those having opportunity of making observations may be directed to them.

II. *The Theoretical Aspects of a Comparative Biological Study of the Nature of "Cancer."*

Biological investigations will probably ultimately form a very important aspect of any research into the nature of cancer, for the problems of malignant new growths are more likely to be elucidated by a general biological investigation, than by mere attention to the conditions obtaining in man, especially in view of the limitations to which investigations in human beings are subject.

At the outset it is necessary to be certain that the new growths occurring in a long series of domestic animals are absolutely identical in nature and consequences with the benign and malignant new growths of man. In regard to the occurrence of "cancer" among wild animals, we have less positive evidence, owing, possibly, to the difficulty of obtaining information of the kind required.

There can be no doubt that some, if not all, forms of malignant new growths occurring in man and animals are identical in nature. It is a matter of very far-reaching importance that the types of malignant and benign new growths are reproduced in very divergent species of animal with such marked similarity in the minute histological details characteristic of the type of new growth. The features characteristic of a type of new growth in man are reproduced in other mammalia with a degree of similarity not found in any other diseased condition to which man and animals are mutually subject.

The reaction of the tissues of different mammalia, due to the presence of any known identical parasitic organism is more or less characteristic for each species, and the uninitiated would scarcely fail to pronounce tissue reactions due to the action of the same parasite tubercle, diphtheria, etc., on different species of animal as entirely distinct conditions. The benign and malignant new growths of man and animals are not distinguished by any such characteristic difference, so that one has no hesitation when shown typical conditions presenting themselves, for example, in the liver of the frog, dog, horse, and man, in at once pronouncing them to be exactly analogous processes.

The exhaustive and comparative study of "cancer" in animals in all its features, clinical, pathological, biological, with particular regard to the distribution throughout the higher and lower animals, will probably lead to results of the greatest importance. Malignant new growths or certain types of them might be found to be limited to certain orders, or characteristic distinguishing features be discovered for the new growths of different orders, for example, mammals, birds, reptiles, etc.

The crucial problems of cancer can all be attacked by a study of the conditions in animals, some can alone be approached in animals, and only with them will it be possible to perform experiments bearing on the etiology, pathology, prevention, and attempted cure. In this connexion it may be mentioned that absolutely incontrovertible evidence for or against many prevalent conceptions of the nature and cause of cancer would be obtained, and the questions of parasites, heredity, diet, injury, influence of tobacco pipes, etc., would be definitely settled.

In statistical inquiries the importance of taking account of the age and sex-distribution of a population in determining the relative incidence of cancer has long been recognized. The possible importance of the study of age-incidence as a feature in a general biological inquiry has not hitherto had attention drawn to it.

In this connexion the ideal to be desired is a series of observations so extensive that the age at which the maximum incidence of cancer occurs for each species, and the liability to attack of the various organs can be ascertained. It might thus be possible to define the comparative incidence throughout the animal kingdom, and to ascertain whether or not the maximum incidence in each species, or perhaps in each organ, had a relation to a definite stage in the life cycle of each species. We are, however, only likely to accomplish the compilation of data for the mammalia represented by our common domestic animals. The attainment of even so much would be of the very greatest value.

The length of the human life cycle has been a great impediment to the solution of many problems which can easily be investigated in short-lived animals, for example, the study of heredity, and particularly with regard to the fulfilment of the requirements of Galton's law.

The length of the life cycle in the different species proved to suffer from cancer varies greatly. Cancer in animals occurs as in man, especially in the aged. Old age in the domestic animals is, however, attained at 14 to 20 years, or less. It is obvious, therefore, that identical manifestations first presenting themselves in any number in mankind after 40 years of age, and in the common domestic animals at 14 to 20 years, must pass through the latent non-manifest stages in a much shorter period in the latter. It may be that this latent period will be found to be in strict proportion to the life duration, and be different and definite for each species just as much so as the gestation period.

The fact that such pronounced variations occur in the periods within which identical processes manifest themselves in man and in different species of animals would indicate the important dependence of the development of malignant new growths on circumstances innate in each species of organism, and on the biological laws peculiar to and controlling the growth of each species of animal.

Domestic animals, with the exception perhaps of pet dogs and cats and horses, are not frequently allowed to attain old age; the vast majority are put to death at an early stage in life. The total number reaching the most favourable age for the development of cancer is small. It has of course been asserted that cancer in domestic animals is the result of contact with man. I am not at present concerned with the possibility of the transmission of cancer from one individual to another, but would only point out that man's responsibility in regard to domestic animals may, for all we know to the contrary, be limited to the provision of opportunities for reaching the cancer age. Among wild animals also, in the absence of artificial assistance for the maintenance of life in the struggle for existence, the same factor may enter, and, together with the difficulty of making observations, contribute to the rarity with which the condition is met with among them.

A comparative study of the age-incidence of cancer among

domestic and wild animals of varied species will certainly give comprehensive information on the relation of the incidence of cancer to the rapidity with which maturity is attained. Light may also be thrown on the reasons underlying the higher cancer-rate of later life.

For the same reason, exact observations on the age-incidence in the males and females of differing races of mankind among whom also maturity is arrived at, at varying ages, is desirable. A comparison of the age-incidence of cancer in men as contrasted with that in women who attain maturity more rapidly, might also be of value, for example, in India, where puberty is attained at an early age, and the child-bearing period stated to be over at, or about, the thirtieth year.

In the classification of "tumours" no marked advance has been made since Virchow, and on the basis of experience limited to mankind is not likely to be easy of attainment; but with the assistance of the extensive study of tumours in mammalia and other animals, it is reasonable to suppose that an advance would take place and a comparative natural classification be evolved.

Another specific problem—namely "deciduoma malignum," or "chorion-epithelioma"—seems to require consideration from the comparative biological standpoint, and to be more than a problem, merely of interest to obstetricians. It appears to be of great theoretical importance, and therefore it is much to be desired that those who have the opportunity will search for its possible occurrence, or for analogous processes in other mammalia among those with deciduate and non-deciduate placentae.

In cases where animals die after abortion or abnormal gestation, it would be very desirable if a necropsy could be made, and attention particularly directed to the uterus in order to discover, if possible, in other mammalia, anything analogous to the "deciduoma malignum" of mankind. If in any case an abnormal condition be detected, search should be made for secondary deposits in other organs.

It is only fair to point out that in indicating the extensive nature of the field of inquiry thus marked out, it has not been forgotten that the difficulties in attempting to carry it out will be very great indeed. It will involve the co-operation of workers in many professions, and in many trades and fields of scientific inquiry, and years of patient observation. A difficulty met with in mankind presents itself in animals in augmented form; cancer in animals is only likely to be recognized during life if it be situated on the visible, readily accessible, portions of the body; cancer of the internal organs is only likely to come rarely under observation at necropsies. Among aborigines it is probable that reliable data regarding cancer will be very difficult to obtain, except in those instances where there has been much contact with the white man.

A comparative study of the facts relating to the incidence of "cancer" in the animal kingdom would certainly enable us to orientate ourselves to an extent not likely to be attained through any other line of investigation. It is undesirable at present to speculate whether or not a common biological law applicable to the whole question, or a series of biological laws would be revealed.

Perhaps what has been stated may suffice to show that the prevailing pessimistic views as to the hopelessness of investigating cancer are unjustified in the face of what still remains to be done in this problem. Owing to the fact that cancer has hitherto been considered a subject which concerned only medical men, we are only at the very beginning of the work before us—surely the most inopportune occasion on which to regard it as hopelessly beyond our powers. For the accomplishment of the work to be done it is too much to require the mere medical man to do all in an investigation which extends far beyond the province of medicine into those of general biology, ethnology, zoology, and embryology. Is it too much to hope that workers in these fields will appreciate the importance of their share in attempts to ascertain the cause and nature of the malignant new growths of man and animals? What is most needed at present is a definition of the distribution of the various types of malignant new growths throughout the animal kingdom.

In conclusion, I should like to add that the ideas forming the basis of the above remarks have taken on a more definite form in consequence of much discussion with Dr. J. A. Murray.

THE second Congress of Italian Pathologists will be held at Florence on October 5th, 6th, and 7th.

AN EXPERIMENTAL EXAMINATION OF MESENTERIC GLANDS, TONSILS, AND ADENOIDS,

WITH REFERENCE TO THE PRESENCE OF VIRULENT TUBERCLE BACILLI.

BY

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THE experiments were primarily undertaken with a view to determine the presence or absence of virulent tubercle bacilli in the mesenteric glands of young children by an examination of suitable *post-mortem* material. The results, it was hoped, might furnish additional data with reference to the importance of the digestive tract as a channel for the entrance of tubercle bacilli into the system. The methods adopted were as follows:—The mesenteric glands on their removal at the necropsy were placed in a mixture of equal parts of glycerine and normal saline solution and conveyed to the laboratory. The material was tested in every instance by means of inoculation experiments. For this purpose a new method of procedure was adopted. The glands were freed as far as possible from the glycerine mixture, and were then disintegrated in a mechanical contrivance devised by Mr. Rowland for the purpose. It was considered that the method employed would facilitate the detection of the tubercle bacillus, and that it presented advantages over an ordinary emulsification, or a microscopic examination of the glands by the usual methods. If the organisms are sparse in number their physical presence may at times be overlooked. A thorough disintegration of the gland material will, on the other hand, tend to expose any organisms imbedded in recesses of the tissues and thus increase the chances of a successful inoculation experiment. In this respect the method appeared to us to approach more nearly to the conditions of an absolute test, and to be, therefore, the best adapted to the special purpose in view. The trituration of the glands was continued until the disintegration was so complete that a pulpy mass sufficiently fluid to be injected by means of a hypodermic syringe was obtained.

The disintegrating process lasted from half an hour to one hour, and every precaution was taken to carry it out under aseptic conditions, and to prevent any undue heating of the material. Of each gland thus treated, one half was injected subcutaneously, and the other half peritoneally into a guinea-pig. At the end of six to eight weeks any animals which had survived that period were killed and examined. The results were only considered positive in those cases in which tubercle bacilli were detected by microscopical examination of the lesions present in animals.

The *post-mortem* notes of the cases were furnished by the pathologist who had made the examination, and our thanks are due particularly to Dr. Cecil Bosanquet, to Dr. Fennell, and to Dr. Nabarro, whose aid rendered the investigation possible.

The *post-mortem* findings and the general results of the inoculation experiments are contained in the accompanying table. It only therefore, remains for us to give the inferences we have drawn from the results obtained. The total number of cases upon which the present paper is based is 28. We had hoped to increase the number, but unexpected difficulties arose in the way of procuring further material. The results, however, appear to be of sufficient interest to justify their being put on record.

The material examined was obtained as far as possible from cases of five years of age and under, as it is in such cases that a food infection would be most likely to occur. Only 2 cases were above 5—the one being about 6 and and the other about 8 years of age. As regards sex, 16 were males, 9 females, and in 3 the sex was unrecorded. The examination for virulent tubercle bacilli was made irrespective of disease.

In none of the pathological reports was mention made of the detection of intestinal lesions. In the 28 cases the *post-mortem* diagnosis was as follows: Acute miliary tuberculosis, 1; general tuberculosis, 4; tuberculous meningitis, 2; tuberculous broncho-pneumonia, 1; non-tuberculous or suffering from other diseases, 20. There was, therefore, existent tuberculous disease in 8 of the cases.

The animal inoculation experiments showed that virulent tubercle bacilli were present in the mesenteric glands in 10 of the 28 cases, 18 having given negative results. Of the

8 cases diagnosed as tuberculous, 5 gave a positive and 3 gave a negative result. The positive results estimated upon the total number of cases examined amounted to nearly 36 per cent. If the cases diagnosed as tuberculous are eliminated, it will be seen that 5 of the 20 non-tuberculous cases contained virulent tubercle bacilli in the mesenteric glands, and that in these cases the positive results were equal to 25 per cent.

As regards the other glands of the body examined, the following results were obtained: The bronchial glands gave a positive result in 1 out of 4 cases examined—namely, a case of general tuberculosis. The tubercle bacillus was found in the mesenteric glands, and likewise in the cervical glands of the same case.

As regards the 10 positive results obtained by inoculation experiments, the mesenteric glands were also examined microscopically in nine instances. Of the latter, in seven instances whilst the animal experiment was positive, the microscopic examination was negative.

Table.

No.	Sex.	Age.	*Post-mortem* Report.	Microscopical Examination of Glands.	Result of Inoculation.
1	F.	14 mths.	Old empyema; no obvious tuberculosis	Negative	Negative.
2	F.	4 yrs.	Tuberculous meningitis	Negative	Positive.
3	F.	7 mths.	Empyema; meningitis; gut normal	Negative	Negative.
4	M.	7 mths.	Acute diarrhoea; lobar pneumonia; no intestinal lesions	Negative	Negative.
5	F.	6 mths.	Pertussis; broncho-pneumonia	Negative	Positive.
6	M.	—	Broncho-pneumonia	Positive	Positive.
7	F.	9 mths.	Tuberculous meningitis; scattered grey tubercles in lung; caseous bronchial glands; no caseous glands round abdominal aorta	Negative	Positive.
8	M.	2¼ yrs.	Multiple skin abscesses yielding staphyloccus pyogenes aureus only; thrombosis of cerebral sinuses	Positive	Positive.
9	M.	1 yr.	Broncho-pneumonia; no intestinal lesions	Negative	Negative.
10	—	1 yr.	Died suddenly; no intestinal lesions; *nil* found *post mortem*	Negative	Negative.
11	M.	4½ yrs.	Acute miliary tuberculosis	Negative	Positive.
12	M.	1 yr.	Tuberculous broncho-pneumonia	Negative	Negative.
13	M.	1⅝ yrs.	Measles; broncho-pneumonia	Negative	Negative.
14	M.	1 yr.	Broncho-pneumonia; no tuberculous lesions	Negative	Negative.
15	M.	4 mths.	Broncho-pneumonia; no tuberculous lesions	Negative	Negative.
16	M.	2 yrs.	General tuberculosis; tuberculous meningitis	Negative	Negative.
17	M.	1½ yrs.	Broncho-pneumonia; no tuberculous lesions	Negative	Negative.
18	M.	15 dys.	Wasting; jaundice; no tuberculous lesions discoverable	—	Negative.
19	F.	6⅓ yrs.	General tuberculosis	—	—
			Mesenteric glands	Negative	Positive.
			Bronchial glands	Positive	Positive.
			Left cervical glands	Positive	Positive.
			Right cervical glands	Negative	Positive.
20	—	1 yr.	Purulent cerebral meningitis	—	—
			Enlarged mesenteric glands	—	Negative.
			Gland from bifurcation of trachea	—	Negative.
21	M.	5 yrs.	General tuberculosis	Negative	Positive.
22	F.	Stillborn	—	Negative	Positive.
23	—	—	Septic meningitis	—	—
			Mesenteric glands	—	Negative.
			Right bronchial glands	—	Negative.
			Left bronchial glands	—	Negative.
24	F.	8 yrs.	Mitral and aortic disease	—	—
			Adherent pericardium	—	—
			Mesenteric glands	—	Positive.
			Right bronchial glands	—	Negative.
			Left bronchial glands	—	Negative.
25	M.	5 mths.	Intussusception	—	—
			Peritonitis	—	Negative.
26	F.	1½ yrs.	Empyema; septic meningitis	—	Negative.
27	M.	2 yrs.	Meningitis	—	Negative.
28	M.	4 yrs.	General tuberculosis	—	Negative.

The experiments have shown that in the non-tuberculous cases virulent tubercle bacilli were present to the extent of 25 per cent. The tubercle bacilli, it appears from these experiments, are present much more frequently in the mesenteric glands than ordinary *post-mortem* examination would lead one to suppose.

One point of interest to which we should like to draw attention was the detection by us of the tubercle bacillus in the mesenteric glands of a stillborn child.

As regards the other glandular tissues examined—that is tonsils and adenoids—the material was obtained as the result of operations for the removal of the enlarged organs, and our thanks are due to Dr. Lambert Lack and the resident medical officer at the Throat Hospital, Golden Square, for the material. The ages of the patients varied from 2 to 21 years, all but 2 being under 17, and the majority under 11. The procedure adopted was the same as in the case of the mesenteric glands. Only those cases were counted in which the inoculated animals lived from one to two months. We were enabled to obtain results from 44 cases of adenoids and 34 cases of tonsils. As these tissues were diseased, it is a justifiable presumption that their power of resistance to the invasion of organisms was lowered, and that if virulent tubercle bacilli were not infrequently present in the throat, they would be found more particularly in situations such as those examined. The results, however, obtained have been entirely negative. In not a single case were there any naked-eye signs of tubercle, nor were tubercle bacilli found on microscopical examination of the organs of the experimental animals. We may therefore conclude that there are not usually present in the tonsils and adenoids tubercle bacilli capable of conveying the disease to that most susceptible animal, the guinea-pig. The virulent organisms found to be present in the tonsils and adenoids examined, belonged almost entirely to the group of the micrococci.

NOTE ON ANTIHAEMOLYTIC (HAEMOSOZIC) SERUM.

BY

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In a previous paper we showed that the serum of an animal (rabbit) which had received several injections of human urine became haemolytic for human red corpuscles. We next endeavoured to ascertain whether injections of bile would also produce haemolytic serum. For obvious reasons, we did not use human bile, but sterile ox bile, and tested the serum of the injected rabbit on the red corpuscles of the ox. All the experiments were conducted under conditions of absolute sterility.

Preliminary experiments confirmed the observation of others, namely, that the bile of the ox dissolved not only the red corpuscles of the ox, but those of other animals also—for example, the corpuscles of man, guinea-pig, rabbit, etc.—the haemolytic power, however, varying in different individuals. Similarly, the bile of rabbits is haemolytic for animals of other species as well as for the rabbit.

We now found that the serum of a normal animal possessed antihaemolytic properties against the bile of animals of the same species, and sometimes against the bile of other species. The washed red corpuscles of the ox, for instance, suspended in sterile salt solution are immediately dissolved on the addition of a sufficient quantity of ox bile, but are not dissolved if a certain quantity of ox serum be added at the same time. Similarly sheep's bile does not dissolve the red corpuscles of sheep suspended in sheep serum or in ox serum. Rabbit's serum has a very slight antihaemolytic effect against rabbit bile but none against ox bile.

The action produced by the same serum and bile differs according to the nature of the red corpuscles added to the mixture. Thus, a given mixture of ox bile and ox serum leaves the red corpuscles of the ox intact, whereas it dissolves the red corpuscles of the sheep and rabbit.

The subcutaneous injection of sterile ox bile (1 c.cm.) into rabbits is followed by local and general symptoms. The local symptoms often culminate in a more or less extensive patch of necrosis at the point of inoculation. The general symptoms are (1) a slight amount of fever and (2) temporary diminution of the red and white corpuscles of the blood. Should the quantity of injected bile be so large as to cause death, the *ante-mortem* temperature may fall several degrees below normal.

Intravenous injections of 1 or 2 c.cm. of sterile bile are not fatal, provided the bile be diluted with salt solution. The general symptoms produced by such intravenous injections resemble those following the subcutaneous introduction of bile.

The serum of a rabbit (weighing from 1 kg. 250 to 1 kg. 750)

injected intravenously or subcutaneously with ox bile (1 to 2 c.cm. at a time) does not as a rule haemolyse the red corpuscles of the rabbit or the ox. It differs therefore from the serum of animals which had been injected with urine.

If now a given quantity of bile be mixed with a given quantity of this serum, the appearance of the haemolytic properties of bile is delayed considerably. Haemolysis may take five or more hours to show itself, whereas in the control tube it occurs immediately. If the quantity of added serum be increased further, the haemolytic properties of bile may not show themselves at all; the red corpuscles sinking unchanged to the bottom of the tube. To such a serum we give the name of haemosozic serum, and the name of haemosozin to the substance protecting the red corpuscles.

If, to a quantity of bile exactly neutralized by haemosozic serum more bile be added, haemolysis again takes place even if the quantity of serum be increased correspondingly. It is probable therefore that the serum of animals injected with bile contains several new and complex bodies.

In some cases the serum of rabbits injected with bile is not haemosozic but haemolytic. As might be expected a mixture of bile and haemolytic serum is haemolytic, but, occasionally, the mixture of haemolytic serum and haemolytic bile is less haemolytic in a concentrated than in a dilute form.

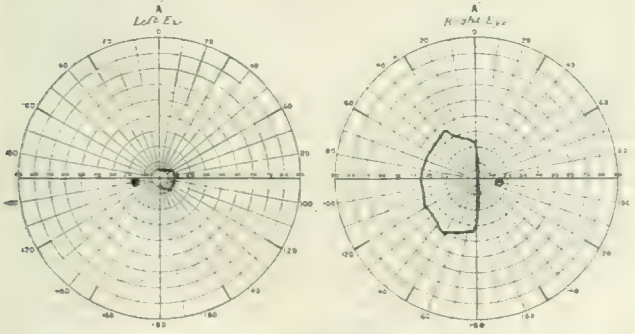
We consider these facts to be interesting enough to be put on record, though we offer no explanation for them at present.

A CASE OF ACROMEGALY.

By SIMEON SNELL, F.R.C.S.Ed.,

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MRS. L., aged 38, came to the Sheffield Royal Infirmary on September 19th, 1902, complaining of dimness of vision and pain over the eyes and on the top of the head. The dimness of sight was first noticed a month or more previously but had rapidly become worse. The pain was situated just above each eye and on the top of the head, being worst about the situation of the coronal suture. This pain had been present more or less since an attack of influenza five years before, but it had recently become worse and had been nearly continuous for the past six weeks. Vision in the right eye was found to be $\frac{6}{18}$; in the left, $\frac{6}{12}$; the pupils were somewhat dilated, the left more so than the right; right 7mm., left 8mm., in the shade; and right 4mm., left 5mm., in the light. The optic papillae were somewhat pale, but the ophthalmoscopic appearances may be regarded as unimportant. There was bi-temporal hemianopsia. The perimeter charts, Fig. 1 and Fig. 2, show marked contraction also in the remaining half of the field, especially in the left eye. The appearance of the patient was characteristic of acromegaly and the following notes of her condition were taken.



Family History.—No case of the disease in the family or among relations. Father alive, and has enjoyed good health; mother, found dead in her bed; one brother, healthy.

History.—The patient states she has never been well since her last confinement nine years ago. Since that time she has always felt tired and languid, being unable to attend to her household duties as well as formerly. She also suffered from amenorrhoea. Five years ago she noticed, after an attack of influenza, that her sight was becoming impaired. At that time, also, her ring became too tight, and her boots and shoes too small. She also suffered from severe headache over the eyes and on the top of her head; her lower lip and nose gradually increased in size, but the dimness of vision gradually improved. A year since her sight again became worse, and she came to the infirmary, as already stated, on September 19th, 1902, for this defect.



Fig. 1.—Photograph of patient at the age of 20.

Past Illnesses.—Anaemia for the past two years. Influenza five years ago. No injury to the head. The patient has had two children, the eldest being 12 years old, the younger 9. No miscarriages. Both children are healthy and normal in appearance. The patient is a fairly big woman, height about 5 ft. 9in.



Fig. 2.—Photograph showing face and hands.

On walking, her head is pushed forward and her back bent. Her face is long and oval, with a long and prominent nose, markedly thickened lower lip and pointed chin which stands out to some slight extent, but is not prognathous. The ears are not enlarged. Marked indentation over the post-fontanelle. Hands, these conform to Marie's "type enlargé." Feet, enlarged even more than the hands. The legs swell, especially at night, the left more than the right. At first she wore

boots, size 4, then 5, and now 7. Toes are big and square at the end. The following measurements were taken. length of foot, right, 10 in. ; left, 10 in. Breadth of foot, right, $4\frac{1}{4}$ in. ; left, 4 in. Circumference of big toe, right, $3\frac{1}{2}$ in. ; left, $3\frac{5}{8}$ in. Circumference of ankle, right, $9\frac{1}{2}$ in. ; left, $9\frac{3}{4}$ in. Length of hand from tip of middle finger to bend of wrist, right, $7\frac{1}{2}$ in. ; left, $7\frac{1}{2}$ in. Circumference of fist, right, 10 in. ; left, 10 in. Breadth of hand, right, $4\frac{1}{2}$ in. ; left, $4\frac{3}{4}$ in. Length of middle finger, right, $3\frac{1}{2}$ in. ; left, $3\frac{1}{2}$ in. Circumference at middle finger, at first interphalangeal joint, right, 3 in. ; left, $2\frac{7}{8}$ in. The sternum is prominent and the ribs and clavicle thickened. Dorsal kyphosis and lumbar lordosis are well marked.



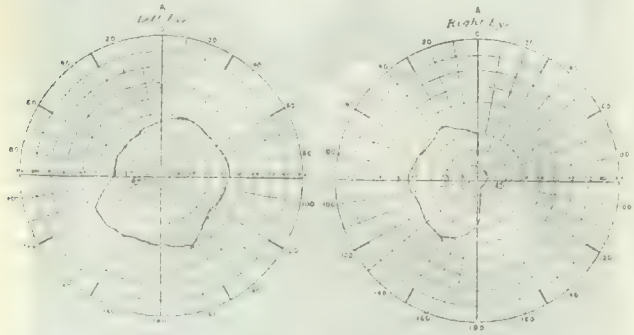
Fig. 3.—Photograph showing feet.

ALIMENTARY SYSTEM.—Tongue enlarged. Loss of appetite. Polydipsia at times. Constipation. The patient thinks her throat is becoming larger; at any rate she now swallows things she could not do before.

HAEMOPOIETIC.—Slight anaemia. Thyroid not enlarged.

CIRCULATORY.—Heart normal. Varicose veins in the legs, especially the left.

RESPIRATORY.—Short of breath on exertion. Cup-shaped dullness of Erb absent.



URINARY SYSTEM.—No glycosuria or albuminuria.

REPRODUCTIVE.—Has only menstruated three times in the last nine years, the last time seven months ago.

NERVOUS SYSTEM.—Headache very marked over the eyes and on the top of the head. At times she suffers from giddiness, and is apt to be somewhat somnolent and despondent. Her mental state seems to have undergone a change, as formerly she was a busy, active woman, fond of social intercourse, but now prefers to be alone. No paresthesiae. Patellar reflexes normal. Muscular strength, she says, is decreased.

INTEGUMENTARY SYSTEM.—Acne of face. The hair has got coarser, and is falling out. The patient states she can close her hand better than she could, suggesting that they were swollen at one time. The skin is coarse, but not oedematous save in the legs. Marked sweating and subjective feeling of heat. Recently there has been some deafness on the right side.

TREATMENT.—Five gr. of thyroid extract twice a day, and later increased to thrice daily. As a result the patient soon expressed herself as feeling better ; the pain in the head and eyes became less, and the lassitude and shortness of breath diminished. There was, generally speaking, increased activity.



Fig. 4.—Photograph showing the kyphosis.

On February 20th, 1903, her vision was as follows : R. $= \frac{6}{12}$; L. $\frac{6}{6}$, and the perimeter charts show that the hemianopsia still remained in the right, but there was a considerable enlargement of the field in the left eye.

The above is a typical case of acromegaly with temporal hemianopsia. The chief point of interest in the case is the improvement of vision under thyroid extract, a result noted by Frankle, Schlesinger, Koje, Wnikoff (Sternberg).

For the records of the above case I am indebted in part to my house-surgeon, Mr. C. W. Smith, and also to Dr. F. R. B. Atkinson, the translator of Sternberg's monograph on acromegaly for the Sydenham Society. To the latter I am also indebted for the summary of published cases, and for the preparation of an extensive bibliography.

Sternberg's monograph deals with 210 cases. Since that date 41 others have been published in sufficient detail for statistical purposes. Of these 251, 128 were men and 123 women. As regards age, in only 166 of these 251 cases was the age stated. In these 166 cases the disease occurred as follows :

12 %	of the men and 11 % of the women were	under 20.
44 %	" " " 47 % " "	between 21 and 30.
29 %	" " " 29 % " "	" 31 and 40.
14 %	" " " 17 % " "	upwards of 40.

A few days before correcting this proof another case, a man, aged 28, came under observation. The enlargement and appearance of face were typical, the enlargement of hands very marked, much more so than in the previous case, but the feet, whilst being enlarged, were less so. He thought but little of his general condition, and it is uncertain for how long the altered appearance had existed, apparently for many years. His only complaint was his failure of sight, and it was for this he came under treatment. His sight had been failing, particularly during the last twelve months. In the right eye V = a little more than P.L., and in the left V = $\frac{6}{60}$. The perimeter showed in the left eye the temporal field

entirely absent, and the nasal a good deal contracted. In the right, vision was so little that taking a satisfactory field was impossible. Apparently, however, it had been a case of bi-temporal hemianopsia.

A NOTE ON THE TREATMENT OF CHOREA BY ERGOT OF RYE.

By EUSTACE SMITH, M.D., F.R.C.P.,
Senior Physician to the East London Hospital for Children.

Ergot of rye has been little used in the treatment of disease in the young subject, although as a sedative in cases of nervous disease in children its value is great. I desire here to call attention to the usefulness of this drug in the treatment of chorea when given in adequate dose. How it operates in such cases whether it exerts a direct sedative action upon nerve tissue or controls it indirectly by its influence upon the blood supply of the spinal cord—I leave to others to decide. The fact, however, remains that under its use the disorderly movements soon begin to moderate and quickly come to an end.

With regard to any possible evil influence of the drug upon patients, I may say at once that I have never seen any. The symptoms described under the head of "ergotism," if attributed rightly to the ingestion of diseased rye flour, can only have been caused by the long-continued and excessive use of grain heavily ergotized; indeed, according to Trousseau, unless rye bread contains ergot in enormous proportion, its consumption is not followed by ill-effects, even when it forms the main food of a people for years together. When given in medicinal doses it seems to be quite harmless. I have given the liquid extract in doses of 1 drachm every three or four hours for many weeks together to children of 7 or 8 years old, and in doses of 20 drops or more for many months at a stretch, and have never seen any ill-consequences to arise from its use. If it has done no good, at any rate it has done no harm, and in the majority of cases the beneficial effects of the drug have been very decided. While taking ergot the pulse falls in frequency—perhaps as much as 15 or 20 beats—but I have not noticed dilatation of pupil or heard complaints of headache or nausea or abdominal pain. These symptoms have been referred to the action of ergot, but, given in such doses as I have described, the drug in my experience has not produced them.

Although useful in other varieties of nerve disorder, it is in cases of chorea that the value of ergot is shown most plainly. In this complaint the bromides, chloral, and other similar drugs are not very satisfactory in their action. To be of benefit they must be given in doses which tend to depress, and their influence too often is only temporary. Arsenic in doses of 10 minims or more of Fowler's solution three times a day is a remedy more to be relied upon, but it is often not well borne, and, if it agree, requires some considerable time to exercise its full influence, although improvement, when it occurs, is usually permanent. Ergot acts more quickly than arsenic; never, as far as I have seen, disagrees, and is successful when arsenic has been given in vain. I order to children of all ages 1 drachm of the liquid extract to be given diluted every three or four hours, and enforce complete rest in bed. Confinement to bed, I need not say, must form an essential part of all treatment for this complaint, for as long as a child is up and about no remedy is given a fair chance of success. In using ergot or any other sedative for chorea it is important as a first step to make sure that the emunctory organs of the body are in good working order, for the action of drugs in quieting the unbidden movements may be gravely hampered by the presence of some passing disturbance of function.

Case I.—Thus, a little girl of 6, who when awake was in constant movement, began on November 13th to take 1 drachm of the liquid extract of ergot every four hours. On November 18th, as the child had not improved, one drop of liquor strychninae was added to each dose of the remedy. On November 21st she was still no better, so the ergot was stopped, and 5 gr. of trional were given three times a day. On November 25th, as the movements were as violent as ever, a careful examination was again made of the child, and the liver was found to project two finger-breadths below the costal margin. The patient was given a mercurial purge, and was ordered to take an alkali with bitter infusion before each meal, all other treatment being stopped. On November 28th, the liver congestion having subsided, the ergot and strycnine were given, as before, every four hours. The patient now began at once to mend, and her progress was so rapid that at the end of eight days all unruly movement had ceased, and on the following day—the ninth—the girl left the hospital cured.

In this example recovery, no doubt, was exceptionally prompt, but the case illustrates well the speed with which the disease may be overcome in favourable cases by the united action of the two drugs. The case was a fairly bad one, and I know of no other remedies which would have brought the complaint to a successful issue in so short a time. The addition of a drop or two of the strychnine solution to each dose of the ergot seems to have a marked effect in quickening the activity of the latter. It is comparatively lately that I have made use of this combination in chorea, but I have no doubt whatever that improvement follows more speedily with it than with the ergot given alone.

It is sometimes necessary to push the dose of the remedy, for the quantity required to exercise a controlling influence over the movements varies according to the susceptibility of the patient, and perhaps according to the age. I think that boys require larger doses than girls.

Case II.—A boy, aged 8 years, began on December 23rd to take 1 drachm of the liquid extract of ergot with three drops of the strychnine solution every four hours. The movements at this time were fairly brisk, and the boy's control over his muscles was so impaired that he could not feed himself. He took the medicine every four hours for seventeen days without improvement and then every three hours for a week longer but still without benefit. Then, on January 16th, the dose of the liquid extract was increased to 1½ drachm (90 minims) given with the original dose of strychnine every three hours as before. On the very next day (January 17th) a striking change for the better was observed, and when I saw the boy on January 20th he lay quietly in his bed, declared that he felt perfectly well, and, beyond a certain abruptness in performing a voluntary act, seemed to have completely recovered from the attack. Even in this large dose the ergot gave rise to no untoward symptoms. There was no headache or nausea, or pain in the body or limbs, or falling off in the appetite. The remedy was continued for a week longer, and the patient then left the hospital cured.

Cases such as the above, which are two out of many, may be taken to show that the ergot of rye can be given to children in large doses without risk of harm; that as a sedative to the nervous system its value is great, and that if the quantity given at first prove insufficient, no fear need be entertained of increasing the dose of the drug until a definite impression is made upon the complaint. Thus, I have given the dose of 1½ drachm every two hours during the day and several times in the course of the night without exciting any unwelcome symptoms, and continued the remedy in the same dose and with the same frequency for days together until signs of improvement were seen. In all cases the ergot was pushed until it produced a beneficial effect, and it was always noticed that complete recovery followed quickly upon the first signs of amendment. The remedy ought not to be left off directly normal control over the muscles has been restored, but should be continued as long as any abruptness of voluntary movement remains. It is only when this has completely passed away that the ergot can be stopped without fear of a relapse.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

BILHARZIA HAEMATOBIA.

Some time ago I spent three years on the Zanzibar coast at a mission station. While there I met a great many natives suffering from bilharzia; it occurred amongst natives of both sexes and of all ages, but was more common amongst males than females. Probably fully a third of all the male natives there suffered from the disease in different degrees. In the male, if it had lasted a considerable time, it caused complete sexual impotence, and consequently there was a great demand for a cure. I may mention that it was the custom for all male natives to be circumcised, generally when young.

I tried every remedy that I could find recommended or that I thought likely to be of use, and so far as I know did not cure one single case if at all severe, though many improved under treatment.

Since then I have spent over fifteen years in Zululand, and during that period have met cases of the disease, though chiefly amongst white residents. One man I met told me that he had been cured of the disease by taking small doses of santonin every morning for some weeks, and since then I have often tried this remedy, and generally with success.

Against this, however, the fact must be placed that, at any rate in this part of South Africa, the disease tends towards spontaneous cure without any treatment at all. It often occurs amongst boys, rarely amongst girls, but generally disappears as the boy grows. One seldom finds an adult suffering from the disease, but many men will tell you that they were troubled by it when boys.

Melmoth, Zululand. James Petrie, M.B.

TREATMENT OF PLEURAL EFFUSION.

Since using a dressing soaked in a saturated solution of common salt as an application to joints affected with osteo-arthritis, and noticing that the fluid in the point soon disappeared, I was led to try a similar plan of treatment in pleurisy with the effusion of clear serum (as shown by hypodermic needle), and so far have been delighted with the results obtained. I deduced my conclusions after taking a cyrtometer tracing of the two sides of the chest and noticing the position of the cardiac impulse, and not altogether by the lessened dullness, which usually diminishes very gradually over some months. I consider aspiration a most unsatisfactory proceeding, as the fluid nearly always quickly reaccumulates and the patient is perhaps not so well off as before the operation.

It is quite likely that this simple means of promoting absorption may be recognized, but I have not seen it stated.

Bristol. Henry Waldo.

OPERATION FOR VARICOCELE: SLOUGHING OF THE TESTIS DURING CONVALESCENCE FROM ENTERIC FEVER.

Trooper M., S.A.C., was operated on in September last at one of the metropolitan hospitals for varicocele.

He was admitted to my hospital on February 17th for enteric fever. The attack was not very severe. About March 10th his left testis became inflamed. It soon adhered to the scrotum, and, being found to be absolutely disorganized on May 6th, it was removed. No distinct blood vessels could be identified in the cord, and it had the appearance of a thick mass of fibrous tissue.

I have seen a number of operations for varicocele, and have been in a great many instances struck by the fact that the operator has contented himself with isolating the vas deferens and tying everything else in the cord. An operation conducted in this manner must be fraught with great danger to the subsequent functional life of the gland. In the case I am reporting it would seem that a sufficient blood supply was not left, and that the testicle was unable to recover from the inflammation, which was evidently a sequela of the enteric fever.

Pretoria. F. J. W. Porter, Major S.A.C. (R.A.M.C. seconded).

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

BELFAST HOSPITAL FOR SICK CHILDREN.

PAROXYSMAL HAEMOGLOBINURIA IN A CHILD OF 5 YEARS AND 10 MONTHS.

(By John McCaw, M.D., Physician to the Hospital.)

History.—The patient was admitted to the hospital under my care December 13th, 1901. She had been suffering for two months from shivering fits, after which she passed very dark bloody-coloured urine. These attacks came on about once a week, and were preceded by pains in her sides. She is the second child of a family of three. The mother miscarried with her first pregnancy at seven months, the fetus being born dead. The third child is 3 years old, and quite healthy. The father is a delicate man, and suffers much from his stomach. The mother is quite healthy so far as she knows. She says the patient had snuffles when 2 months old, and a copper-coloured rash over the body about the same time. Later she had fissures at the sides of her mouth and nose, the remains of which are still apparent.

State on Examination.—On admission to hospital she was very blanched-looking, and the complexion was decidedly icteric. The first urine passed was about as dark as porter; on standing for an hour an abundant sediment formed, which on examination was found to consist of lithates, urates, and haemoglobin; no red corpuscles were detected. She passed similar urine on December 21st and 24th, and again on January 14th and 15th, 1902. She never complained of feeling cold or chilly, though her temperature fell before the attacks to 97° F. taken in the mouth, and rose in the following twenty-four hours to 100° F., but never higher than this. She had no return of the affection till her discharge on March 5th, 1902. Constipation was a marked feature throughout.

Treatment.—The treatment adopted was to keep her warm and in bed during the paroxysms and to restrict the diet to milk. In the intervals in view of the specific history 1 gr. of grey powder was given each night at bedtime. Dr. Houston very kindly examined her blood for me on January 5th, 1902, his report being as follows: Red cells, 2,660,000 per c.mm.; white cells, 5,500 per c.mm.; haemoglobin, 35 per cent.

Differential Count.—Adult polymorphonuclear leucocytes, 41 per cent.; young small lymphocytes, 55 per cent.; large lymphocytes, 2.8 per cent.; eosinophile leucocytes, 0.4 per cent. The large percentage of young cells, namely, the lymphocytes, is peculiar, being 55 per cent. instead of 25 per cent.

Remarks.

The most obvious cause of the attacks appears to be exposure to cold or chill, and therefore it is most frequently met with during the winter months, but it would seem from the observations of Barlow, Murri, Copeman, and others, that syphilis, either congenital or acquired, is a very constant factor in its etiology. Copeman[1] says: "In all my own cases syphilis, either primary or congenital, has been present." Other causes mentioned are over-exertion, nervous shock, gout, rheumatism or malaria. The affection is one of considerable rarity in young children.

HARTLEPOOLS HOSPITAL.

FRACTURE OF THE FIRST AND SECOND RIBS.

(By Oreste Eichholz, B.A., M.D., Ch.B.Oxon., late House-Surgeon to the Hospital.)

The observations of Lane and Marsh indicate that fracture of the first rib or its cartilage is not uncommon. Lane found four specimens in a series of 200 bodies in the dissecting room, and Marsh saw four cases in six months' hospital practice. According to Lane, this rib is easily broken by forcible depression of the shoulder acting by direct pressure of the clavicle.

Mr. S., an elderly man, was admitted to the Hartlepools Hospital in January, 1901, suffering from the effects of a fall. On examination, pain was elicited over the upper part of the sternum to the right of the middle line. There was no external evidence of injury, and no bruising or appreciable swelling. There was a distinct bruising of the skin over the scapula in the immediate neighbourhood of the right acromio-clavicular joint, the place where he had struck himself in falling. Pressure over the inner end of the clavicle and first rib elicited no evidence of fracture, but when the patient was asked to take a deep breath there was obvious grating audible over the costal portion of the first rib, having the character of bony crepitus. As the accident had occurred quite recently, and as pressure increased the pain, the possibility of the crepitus being pleuritic was set aside; moreover, the evidence was further substantiated by the appearance of callus at the end of two or three weeks at the site of the first costo-sternal articulation. There was no fracture of the clavicle.

There appears to be no doubt that the fracture was either due to the impact of the clavicle against the terminal portion of the first rib, or that the impact was first communicated to the sternum and then to the first costal cartilage, which, being calcified, yielded to the tension acting nearly in the direction of its length. The callus, which was easily detected after the lapse of two or three weeks, appeared to implicate the second costal cartilage also. This renders the second explanation the more probable; moreover, if the fracture had been due to direct impact from the sternal end of the clavicle, there would probably have been a dislocation of the sterno-clavicular articulation. This, however, was not the case; at the same time, it will be observed that the anatomical construction of the sterno-clavicular joint permits of a certain amount of mobility of the clavicle in a downward direction, while the interarticular meniscus acts as a cushion and lessens the shock of blows received upon the shoulder (Cunningham). Whichever of these two explanations is adopted in explanation of the fracture, there is no doubt that

[1] *System of Medicine* (Allbutt), vol. v, p. 633.

it was due to indirect violence, the force acting at the tip of the acromion and being transmitted along the clavicle to the first rib.

REPORTS OF SOCIETIES.

EDINBURGH OBSTETRICAL SOCIETY.

JAMES HAIG FERGUSON, M.D., F.R.C.P.E., Vice-President, in the Chair.

Wednesday, July 8th, 1903.

LACTATION AND PREGNANCY.

DR. H. M. CHURCH read a paper entitled Cases in my Private Practice which Illustrate some of the Risks of Allowing Lactation and Pregnancy to Overlap. After stating that in public institutions sufficient inquiry was not made regarding the question of the overlapping of pregnancy and lactation, he said that in his own practice he had about 30 cases in 1,000, though in large cities it would appear that overlapping was a canker at the root of our national vitality. Were closer inquiry made it would probably be found (1) that the suckling was, or became a delicate child; that he, at one or other stage of his development, suffered from some affection of the nervous system, and that he was often the mentally weak one of the family; (2) that during lactation the embryo was prematurely expelled from the uterus, or if it reached full time that it, in many cases, though not in all, did so with lowered vitality, and handicapped in some way or other for the race of life; and (3) that the mother's health was generally undermined for a longer or shorter time. Seldom would it appear that she had blood or strength enough for the welfare of the trio. In support of these points he gave in detail the cases selected from his private practice. Dr. Church emphasized the importance of the subject in regard to teething, and showed how the period of overlapping was often coincident with the formation of the dental groove in the fetus, and the evil consequences of this in the development of the teeth. He referred to the deleterious changes in the mother's milk during pregnancy and menstruation, and showed tables of analysis on this subject.

DRS. J. W. BALLANTYNE, MACVIE, WEBSTER, and HAIG FERGUSON discussed the paper; and DR. CHURCH replied.

TWIN MONSTERS.

DR. RICHARD J. A. BERRY read a paper entitled the Anatomical Variations Presented by Two Cases of Twin Monsters, with an Account of their Developmental Explanation. In both cases the monsters were females, and in the first the twins were united along the lateral abdominal walls; the variations present were a single liver, duodenum, jejunum, and pancreas common to both twins, and absence of the gall bladder. In the second case the fusion was more complete, and involved the thorax as well as the abdomen. The abdominal variations were almost identical with those of the first case, but the heart and great vessels presented some very remarkable abnormalities. Dr. Berry endeavoured to explain all the variations in both cases on the hypothesis of two primitive grooves in a single ovum without bilateral segmentation, and referred to Miss Duncan's paper in the Aberdeen *Journal of Anatomy and Physiology* as affording substantive proof of the truth of the hypothesis. He concluded by stating that in his opinion these cases proved the liver to be a mid-gut development, and that bilateral segmentation of a single ovum was unnecessary for twin development.

DRS. HAULTAIN, BALLANTYNE, and SCOTT CARMICHAEL made remarks; and DR. BERRY replied.

SPECIMENS.

Specimens were shown by Professor A. R. SIMPSON, DRS. HAULTAIN and HAIG FERGUSON.

OBSTETRICAL SOCIETY OF LONDON.

Wednesday, July 1st, 1903.

EDWARD MALINS, M.D., President, in the Chair.

OPHTHALMIA NEONATORUM, ITS ETIOLOGY AND PREVENTION.

MR. SYDNEY STEPHENSON, in opening a discussion on this subject, remarked that ophthalmia neonatorum was the cause of more blindness than any other local disease of the eyes, excepting atrophy of the optic nerve. Competent authorities estimated that it accounted for upwards of 10 per cent. of the cases of blindness. In the United Kingdom alone the individuals blinded by the disorder probably represented a yearly burden upon the commonwealth of upwards of one-third of a million pounds sterling. Yet ophthalmia neonatorum might be prevented by the adoption of a few simple precautions. Of 1,498 cases of ophthalmia neonatorum, gonococci were demonstrated in 60.17 per cent. Amongst the other micro-organisms sometimes associated with the disease were the following: Pneumococci, Koch-Weeks' bacilli, Morax's diplobacilli, bacterium coli, Klebs-Loeffler bacilli, pneumobacilli, pyococci, streptococci, and micrococci lutea. The author laid considerable stress upon the bacteriological examination of the pus from the conjunctiva, as the mere clinical diagnosis of the disease was open to serious fallacies, of which he quoted instances. It was pointed out that infection of the baby's eyes with gonococci might come about in three places: (1) In the maternal passages, either before or during the act of birth; (2) almost immediately after birth, or (3) one or several days after birth. Although the second was by far the commonest mode of infection, yet cases were quoted to show that rarely the eyes might get infected *in utero*. With regard to prevention, the author voiced the great advantages of Credé's method, the alleged drawbacks to which were severally examined and criticised. The only disadvantage of the method admitted by the author was the almost constant production of an insignificant conjunctival catarrh. An analysis of cases treated by different agents brought to light the fact that a 2 per cent. solution of silver nitrate was by far the best prophylactic remedy. Protargol and solutions of corrosive sublimate were good, but inferior to the silver.

DR. HERMAN said the mass of evidence collected by Mr. Stephenson clearly showed the superiority of the 2 per cent. solution of silver nitrate originally recommended by Credé to every substitute for it that had as yet been tried. At the General Lying-in Hospital some years ago several cases of ophthalmia neonatorum occurred, in spite of the routine instillation of corrosive sublimate solution. The nitrate of silver 2 per cent. solution was then used instead of sublimate solution, as recommended by Credé, and cases of ophthalmia at once ceased to occur. He had published this bit of experience in the *Lancet* at the time. The objection to Credé's method was that it always produced some conjunctivitis. This was really only a trifle, but from a mother's point of view it was a great thing, and a young practitioner, who should give people occasion to say of him that he always did something to newly-born children which inflamed their eyes, would be much handicapped in practice; and he could not explain to his patient that he did it lest the eyes should be infected with gonorrhoea. He thought the best thing to teach was that the practitioner should inquire into the presence or not of vaginal discharge, and if there was discharge or any history or symptoms suggesting the probable presence of the gonococcus, he should use nitrate of silver; but if there was no suspicion of gonorrhoea he should be content to use 1 in 2,000 sublimate solution, which, as Mr. Stephenson had shown, was a very efficient germicide, although not so powerful as the 2 per cent. nitrate of silver solution. Mr. Stephenson's careful analysis of the cases, in which Credé's method was said to have done harm showed how hollow all the graver objections were which had been raised against it.

DR. WALTER SWAYNE, having the supervision of a maternity charity in which, as in all the London hospitals with medical schools attached, the work was carried on by students, felt certain that the work would fall off if it was found that the use of Credé's method, although it was universally acknowledged to be the best, gave the public an opportunity for saying that the babies got sore eyes in consequence. On this account in the maternity department a weak solution of corrosive sublimate was used instead of nitrate of silver. He also thought it would be interesting to hear the experiences of others in large provincial towns. In his own locality the customs and habits of the mining population led to pregnant women being very liable to gonorrhoeal infection, and consequently a large proportion of gonorrhoeal ophthalmia would be expected. In his experience, however, and in spite of this, the actual number of cases of true gonorrhoeal ophthalmia, as endorsed by microscopical examination and bacteriological cultivation was small.

MR. TREACHER COLLINS pointed out that one circumstanc which rendered newborn children liable to ophthalmia was that they secreted no tears. If an irritant were introduced into the conjunctiva of any but an infant's eye, there was at once a gush of tears, which mechanically tended to wash it

away. The tears, moreover, had been shown to have a bactericidal action. It was to supply newborn infants with these means of defence, which were developed later in life, to which their endeavours should be directed. If the conjunctiva immediately after birth was simply washed with water, it had been shown that the number of cases of ophthalmia were reduced, but if a sufficiently powerful bactericidal fluid was used, they could almost entirely be done away with. It was satisfactory to know that the amount of ophthalmia neonatorum was decreasing. In 1885, the number of cases coming to Moorfields Hospital was about 1 to every 200 patients, now it was about 1 to every 400. Blindness was also decreasing, the last census had shown that though the population of London had largely increased, the number of blind people had decreased. When a case of ophthalmia neonatorum came under his care, he was in the habit of asking, if the mother had been attended by a doctor or a midwife. He was sorry to say that he found nearly half the cases had been attended by medical men. This he thought showed that the profession generally did not yet realize the great value of employing prophylactic measures against this disease. Ophthalmia neonatorum was not only preventable, but might be cured without loss of sight, if dealt with sufficiently early and skilfully treated. Obviously, midwives could not be trusted to undertake such treatment. Unfortunately, he often found that valuable time was lost by mothers using lotions suggested by them. He asked if it would not be possible for the Midwives Board, now drawing up rules for midwives, to make it compulsory for them to call in a medical man to a case occurring in their practice, or to notify it to the medical officer of health for the district.

Dr. W. S. GRIFFITH said his experience at Queen Charlotte's had convinced him, even before he had the advantage of Mr. Stephenson as a colleague, and Dr. Sikes in the pathological laboratory, of the undoubted superiority of the silver nitrate, and he regarded the very small percentage of imperfect results, not as failures of the method, but as failures in carrying it out; and this was not to be wondered at when one realized the difficulties of disinfection of a little baby's eyelids in comparison with the same process in an adult. At the same time, in his own practice, he did not use it as a routine procedure in private, being satisfied to use it in all cases in which he suspected gonorrhoeal infection; and, for the rest, he was satisfied to cleanse the eyelids, nose, and lips thoroughly with an ample wash with mercuric iodide, 1 in 1,000, as soon as the head was born, and before the child opened its eyes or attempted to breathe; and he had no reason to be dissatisfied with the results. Dilute mercury solutions, 1 in 2,000, or 1 in 4,000, or less, were utterly unreliable. Boracic solutions were little better than plain water.

Dr. CULLINGWORTH said that in advocating legislation for improving the training and controlling the practice of midwives, he had always regarded the prevalence of blindness due to preventable causes as one of the strongest and most telling arguments, and he had frequently made use of it, but in doing so he had found himself seriously hampered by having to fall back upon the statistics of nearly twenty years ago. Mr. Stephenson's paper furnished fresh statistics, not a wit less startling and convincing than those collected and published by the Ophthalmological Society in 1884, and would be extremely useful even from that point of view alone. With regard to the modes of infection enumerated by Mr. Stephenson, no doubt, as he himself had said, the ordinary source of infection was the presence of gonorrhoeal secretion in the vagina of the mother at the time of parturition, but this was not the only source. He (the speaker) remembered being present many years ago at a Caesarean operation, resulting in the birth of a living child, which in the course of a day or two presented all the symptoms of acute purulent ophthalmia. He was not sure that he could quote chapter and verse for the statement, for he was uncertain whether the case had been published. It was a matter about which, however, he was not likely to be mistaken, as it created much interest at the time, from being so contrary to all that was then believed and known on the subject. In that case it was manifest that, whatever the source of infection, it was not the secretion of the maternal passages. The question of preventive measures interested him more particularly on account of his happening to be a member of the Central Midwives Board, the body which had been entrusted under the new Midwives Act with the duty of formulating rules and regulations for the training and practice of midwives in this country. The rules which had been drawn up were now in the hands of the Privy Council, and had not yet assumed their final shape. It was, therefore, impossible to say whether, when they came to be published, they would be found to contain a satisfactory injunction with regard to the disinfection of the child's eyes or not. For his own part, he sincerely hoped they would. He had not been aware until quite recently of the great divergence of opinion that existed in the medical profession as to the need for and wisdom of such a measure. He trusted that the paper just read would do much to remove this divergence. With regard to the particular solution to be recommended, he was glad that the author, whilst upholding the silver nitrate solution as the best, spoke highly of the efficiency of the solution of corrosive sublimate, which undoubtedly for ordinary use had certain advantages. It was important, for example, not to render it compulsory for a midwife to carry more than one kind of antiseptic. To make her carry several kinds not only tended to still further overburden her already overburdened bag, but was also in danger of confusing her mind. If it was desired that the use of antiseptics in midwifery should become general, the instructions for their use must not be too complicated. It was all very well in hospital, when the solutions were all in readiness and supervision was constant. There, by all means, let the ideally best method be carried out. But let them imagine, on the other hand, the district midwife in a remote country place, where her loyal efforts to carry out in full detail the methods in which she had been trained were not seldom ridiculed, instead of being encouraged by the neighbouring practitioner, upon whom she was dependent for help in her difficulties. Let them imagine what would be said, if, in addition to the ordinary basins of antiseptic solution, themselves far too often an object of contempt and ridicule, she produced a little phial of silver nitrate eye-drops. The contempt and ridicule would know no bounds, and there would be a fear lest the poor woman should, in her bewilderment and despair, give up all attempts at antisepsis. For these reasons amongst others he thought that for general use in the homes of patients the solution of corrosive sublimate, though it might not be ideally the best, was the most suitable. In the rules about to be issued by the Central Midwives Board, although the use of antiseptics was repeatedly enjoined, it had been thought undesirable to go into details as to the kind and strength of the antiseptic to be used. For all such details would require to be modified as knowledge advanced, and it would be inconvenient to have them embodied in rules, which, when approved by the Privy Council, would have the effect of law and would be difficult to alter. Might he mention by way of illustration the solution of the biniodide of mercury, to which several speakers had alluded? He was informed by competent chemists that the efficiency of solutions of the salts of mercury depended upon their ionization, and that ionization occurred satisfactorily only in simple watery solutions of one mercurial salt. If another salt were present, ionization was interfered with. Now it was well known that iodide of mercury was almost insoluble in plain water, but was freely soluble in a solution of potassium iodide, with which it was almost invariably combined. Hence it was doubted by chemists whether the ordinary solution of the biniodide of mercury, not being a simple aqueous solution, had any antiseptic value. He was not himself enough of a chemist to speak with any authority on the subject, and probably the matter would be decided rather upon the results of clinical and bacteriological experiment than upon chemical theory. Meantime, he had merely given this as an instance of the manner in which accepted methods might be called in question, and might have to be modified or cast aside in the light of fresh knowledge.

Dr. AMAND ROUTH was impressed by the strength of the advice that the Obstetrical Society should change their recommendation as regards the routine use of corrosive sublimate solution for the eyes of the newborn, and should adopt in its place a 2 per cent. solution of nitrate of silver. The difficulties of such a routine use had been fully stated. He had been interested to hear from Dr. Griffith, who strongly advocated the change suggested by Mr. Stephenson, that whilst he wished all midwives to adopt this course, he did not find it advisable to do so himself, and this made his advice somewhat unpractical. If the nitrate of silver was only to be used in special cases, it was at once obvious that the special cases would have to be very clearly defined, and that was where the difficulty would be in any half-and-half measures. The difficulty of preparing and of keeping the solution always fresh would militate against its routine use, and these were among the points which had led the Council

of the Society hitherto to advise the corrosive sublimate solution, which was always at hand and very easily prepared. Dr. Routh then read the rules of the Society bearing on the subject, and also those making it imperative that midwives should at once send for a doctor should the eyes show any symptoms of inflammation. He asked if in the recorded cases of congenital (intrauterine infection) gonorrhoeal ophthalmia infection of other mucous membranes had been observed, and also whether changes in the liquor amnii had been observed.

Dr. PETER HORROCKS said that up to five years ago, when he was seeing out-patients in the gynaecological department at Guy's Hospital, he used to send specimens to the bacteriological department. He did not remember to have been assisted in the diagnosis of gonorrhoea in a single instance. Pus was taken from the urethra, the vagina, and the cervix uteri. In cases of undoubted gonorrhoea, often enough the report was negative, and no gonococci could be found. When gonococci were found it was only when the case was clearly gonorrhoea, and where there was no difficulty at all in the diagnosis. In cases of chronic vaginitis, where it would have been a real help, the bacteriologists could find no gonococci. They used to say that enough pus was not sent. They wanted a teaspoonful! He did not know whether improvements had been made during the last five years, so that it was now a much easier matter to detect the gonococcus; or whether, whilst still difficult in regard to vaginal gonorrhoea, it was easy in gonorrhoeal ophthalmia. It certainly was a thing to be desired, and he often wished it was as easy to test secretions for gonorrhoea as it was to find out whether they were alkaline or acid by means of litmus paper; because, obviously, if one could tell easily in any given case whether a woman was suffering from a gonorrhoeal vaginitis, or a child from a gonorrhoeal ophthalmia, then suitable treatment could be carried out in these cases, whilst healthy women and children could be let alone. Mr. Stephenson had stated that 10 per cent. of children suffered from ophthalmia, and he thought this was too high a percentage, particularly in places where modern aseptic midwifery was practised. But even if it were so high that would leave 90 per cent. of children who did not suffer from ophthalmia. Obviously, when routine measures of dropping germicidal solutions into the eyes of every newborn child were adopted, they did no good at all in 90 per cent. of cases. If it could be shown conclusively that they did no harm he would join in advocating these routine prophylactic measures. But he did not think it had been proved that no harm was ever done by this routine treatment, and therefore one had to consider whether 90 per cent. of children should be put to some risk for the sake of benefit to the other 10 per cent. Again, supposing prophylactic measures were not used, and a child showed signs of commencing ophthalmia, would it not be an easy matter to treat it successfully by starting the application of these germicidal remedies? One speaker had spoken of the reduction in the number of cases of ophthalmia neonatorum at Moorfields Eye Hospital since the routine method of using germicidal solutions to the eyes of newly-born children. But was not this diminution due, in part at all events, to the aseptic methods of the nurse and doctor at the confinement? Look at the routine method of vaginal syringing in labour. At one time it was thought to be absolutely necessary in order to prevent puerperal sepsis: whereas it had been shown to be unnecessary in healthy women and in normal confinements, and indeed it was a positive danger. In his own lying-in ward at Guy's Hospital, he did not allow routine syringing in normal cases, and no one could have better results in regard to the normal puerperium. He could not help feeling glad that he had not been born in 1903 at Queen Charlotte's Hospital. He was born in pre-aseptic days, and no solutions were dropped into his eyes, and he certainly never had suffered from ophthalmia. He did not see why a selection should not be made, and only those children treated where there was a suspicion of gonorrhoea in the mother, or of a commencing ophthalmia in the child. This would save at least 90 per cent., probably considerably more, from any such treatment. He thought that not only experts like obstetricians, but also the rank and file of the profession, could tell with great accuracy whether a woman was healthy or not. Very few mistakes would be made, and even if a gonorrhoea were latent and only showed itself by ophthalmia beginning in the child, such a case would be extremely rare and could be at once treated, and in all probability effectually cured.

Dr. BOXALL considered that strong reasons existed for the adoption of routine measures for the prevention of ophthalmia neonatorum, and more particularly in the practice of students and midwives. Mention had been made of 10 per cent. as representing the incidence of the disease when no prophylactic measures were taken. But, even were it 3 per cent., or even less, he saw good grounds for adopting a routine practice of prevention. For, in the first place, the disease, when allowed to become established, was so difficult to cure and so disastrous in its consequences that preventive rather than curative measures were demanded. And, seeing that in the hands of the experienced practitioner it was difficult, and in many cases impossible, to decide at the time of delivery in what particular cases the source of infection might be lurking in the vagina, in the hands of midwives, who could not be expected to form an opinion as to the existence of latent gonorrhoea, routine measures were absolutely necessary. Among these he desired to draw attention to the distinct advantage in the prevention of ophthalmia, which he had noted years ago at the General Lying-in Hospital following the routine use of sublimate vaginal douches before delivery, at a time when no systematic antiseptic treatment of the infants' eyes was carried out. At the present time, as a routine practice, the infants' eyes were freely flushed with 1 in 4,000 sublimate solution at the time of delivery, which probably brought to bear on the conjunctival surfaces about the same amount of antiseptic, as 1 minim of 1 in 100 solution dropped directly into the eye, and had the additional advantage of mechanically washing away any discharge which might have found lodgement between the eyelids.

Dr. SIKES said he thoroughly agreed with Dr. Boxall as to the necessity for the routine treatment of children's eyes in hospitals, and by midwives. In lying-in hospitals, as Queen Charlotte's, there was no difficulty in the carrying out of the method, but, of course, there were the difficulties mentioned as to the employment of the silver nitrate method by midwives at the homes of patients. He thought that with hospital patients it was absolutely necessary to have a routine treatment, as it was impossible to tell whether the mothers had not at some time been infected, and it was quite possible that the gonococci might be present, even though the discharge had ceased, and, under these circumstances, one could not pick out those cases which ought and which ought not to be treated with antiseptics. Statistics, as quoted by Mr. Stephenson, undoubtedly showed that the best results were to be obtained with silver nitrate, and surely they ought as a Society to recommend what gave the best results. The only point was the strength of the silver nitrate which ought to be used. With regard to the difficulty mentioned by two of the previous speakers, that silver nitrate solution would not keep for any time, he did not agree with this. He said that he knew from experience that it would keep much longer than was generally supposed if care were taken to keep it in well-stoppered bottles of coloured glass; he did not see why there should be any difficulty in getting midwives to carry with them a small bottle of silver nitrate. The reaction of the eyes to silver nitrate was a difficulty to those not accustomed to its use, as it varied roughly between three and thirty-six hours, but they ought to try to introduce, at least amongst hospital patients, that which gave the best results. One point the difficulty of which he thought had been very much over-estimated by one at least of the previous speakers was the detection of the gonococcus. Dr. Horrocks had said that he had been told that it was necessary to send about a teaspoonful of the pus for the detection of the organism! Dr. Sikes had examined a great many cases of pus from the vagina and from the eyes at Queen Charlotte's Hospital, and had come to the same conclusion which many others had come to, that it was really a very easy matter. The gonococcus was very readily stained, had a very characteristic appearance and grouping in the cells, and even without using Gram's method or attempting cultivations, one could tell from the appearance alone to within, say, 99 per cent. of all cases. One point of interest in connexion with the examination of the conjunctiva for organisms was mentioned by Dr. Eyre in his paper on a contribution to the bacteriology of the normal conjunctival sac, that was that the lower sac was more likely to contain organisms than the upper; so that it was better to examine the lower sac in suspected cases. In the same paper Dr. Eyre mentioned results he had obtained showing the inhibitory action of the lachrymal secretion on the growth of bacteria. With regard to the examination for gonococci in the vagina, Dr. Sikes mentioned that his experience was that the most certain way of finding the organism was by taking a scraping

with the wire loop directly from the cervix, using a Ferguson's speculum to get a clear view. Many cases clinically gonococcal were missed because the cover-slip preparation was so often made from the pus about the entrance to the vagina. The presence of sarcinae mentioned in the statistics from Queen Charlotte's Hospital in Mr. Stephenson's paper were probably due to the proximity of the hospital to a brewery; they were more often found in the latter months of the summer. They were, of course, quite innocuous. Dr. Sikes insisted on the early bacteriological examination of all sore eyes in newly-born children, and also of any vaginal discharge in the mother, so that if gonococci were found, even greater care might be taken so as to prevent the cases arising by infection from the mother after birth.

Dr. CUTHBERT LOCKYER said he was pleased to note that the author advocated that the Obstetrical Society should use its powerful influence in helping to bring about the universal adoption of Credé's instillation as the only reliable prophylactic measure for the prevention of ophthalmia neonatorum. In the *Journal of Obstetrics and Gynaecology of the British Empire*,[1] Dr. Lockyer drew attention to the fact that this method was quite unknown to the candidates for the certificate given by the Obstetrical Society—unknown, because untaught! He mentioned the experiments conducted in the obstetric wards of the Bonner Frauenklinik by Fritz Engelmann, in which, having regard to the bad results obtained by Cramer with silver nitrate, Engelmann employed protargol as a substitute, and found that by using a 2 per cent. solution of this salt he got the equivalent prophylactic action to that of 2 per cent. silver nitrate, but without exciting anything like so much inflammatory reaction. Whilst Cramer found no reaction in only 4 per cent. of cases with 2 per cent. solution of nitrate of silver, Engelmann could boast of 80 per cent. of cases, in which protargol was employed, without any sign of irritation. In no instances was secondary catarrh noted, whereas that trouble was met with in 11 per cent. of Cramer's subjects. Bischoff, Engelmann's successor at Bonn, uses a 1 per cent. solution of acetate of silver, which he regards as equal to 2 per cent. silver nitrate in germicidal activity, and considers that the so-called "silver reaction" is so harmless and slight as to present no argument against the eye instillation as practised by Credé.

Dr. SYDNEY STEPHENSON, in reply, said it was significant that, notwithstanding the various opinions expressed, no single instance had been brought forward during the discussion in which bad results had followed the adoption of Credé's method. He was convinced that it was the best available plan of prophylaxis, and he appealed to the Society to recommend it for general adoption. In that way the profession, and ultimately the public, might be reached. In reply to Dr. Routh, he stated that a purulent vulvitis was present in Armaignac's case of intrauterine infection of the eyes. In two cases of his own, there had been a simultaneous otorrhoea, but gonococci could be demonstrated in the discharge from the ear. He trusted that the case that had been cited of ophthalmia in a baby delivered by Caesarean section might be published in full, since it testified to the possibility of an intrauterine infection of the eyes. He agreed with Mr. E. T. Collins's suggestions with regard to the notification of ophthalmia neonatorum as carried out in certain countries. As to the prophylactic use of corrosive sublimate, mentioned by several speakers, he said that the results so far obtained with a 1 per cent. solution (as with a 20 per cent. solution of protargol) were excellent, but the figures available were not yet large enough to allow one to recommend its general adoption. Besides, by some observers sublimate was thought to be detrimental to the corneae of babies. In Mr. Stephenson's experience, a 2 per cent. solution of nitrate of silver kept well enough provided it was placed in an amber-coloured bottle and kept away from the light.

PAPER.

Mr. J. H. CURTIS read a short communication on extirpation of uterus and vagina in a child 12 months old for "grape-like" sarcoma of the cervix, fungating into, and infiltrating the walls of the vagina, and the paper was discussed by Dr. HORROCKS, Dr. HERBERT SPENCER, Dr. LEWERS, and Dr. HEYWOOD SMITH.

SPECIMENS.

Dr. LEWERS showed a specimen of carcinoma of the cervix, complicating tubal pregnancy, in which vaginal hysterectomy had been performed. Dr. AMAND ROUTH, Dr. HERMAN, and Dr. HEYWOOD SMITH joined in the discussion which followed.—Lieutenant-Colonel STURMER showed a specimen of fibromyoma of the ovary.

[1] Vol. iii, No. 4, pp. 361.

ULSTER BRANCH OF THE BRITISH MEDICAL ASSOCIATION.—At the annual meeting, held on July 10th, Professor THOMAS SINCLAIR, President, in the chair, Mr. ROBERT CAMPBELL showed a child with several congenital malformations of the face, and gave an account of six consecutive cases of acute intussusception seen within ten days.—Dr. JOHN G. COOKE (Derry) read short notes of a case of appendicectomy, with the very unusual sequela of profuse true mucous diarrhoea.—Dr. DARLING (Lurgan) made some remarks on cases of excision of the knee-joint by Lockwood's method.—Mr. A. FULLERTON, F.R.C.S.I., showed a case of spinal caries complicated by scoliosis.—Dr. JAMES HUSTON (Carrickfergus) read notes of a case of perforated duodenal ulcer, successfully operated on by Mr. Robert Campbell; and showed a patient upon whom Professor Sinclair had performed amputation at the hip-joint in 1899, when he was suffering from amyloid disease; and in whom the signs of amyloid disease had lately disappeared.—Mr. A. B. MITCHELL showed (1) A case of excision of 4 in. of rectum by trans-sacral method, with complete control over the sphincter ani; (2) a patient wearing a Symond's tube for oesophageal stricture; (3) a case of primary skin grafting after removal of large sarcoma of breast, and of secondary grafting on extensive scald of arm and forearm; (4) a patient trephined for epilepsy, in whom the fits had since ceased.—Dr. DEMPSEY, for Dr. J. B. MOORE, showed a tuberculous kidney successfully removed from a female patient, and gave notes of the case.—Dr. HENRY O'NEILL, Belfast, showed two patients whom he trephined for severe compound comminuted depressed fracture of the skull; the fragments of bone were transplanted on the trephine wound.—Dr. J. ARMSTRONG, for Professor SYMINGTON and himself, gave an exhibition of specimens, photographs, and drawings of internal hydrocephalus.—Dr. J. E. MACILWAINE, for Dr. CALWELL, gave a demonstration in the library of the institute of a case of syringomyelia, and subsequently made some remarks on the case.—Dr. MOSES HENRY showed a case of ankylostomiasis in a soldier who went to India in 1897; he had malaria in 1899, and 1901 and 1902. Since 1901 he had suffered from abdominal pain, intestinal irritation, followed by anaemia, for which he was invalided home in 1902. He was admitted to hospital in March, when the blood count was: Red corpuscles, 4,350,000; white corpuscles, 103,000; haemoglobin, 56 per cent. On May 6th, 1903: Red corpuscles, 2,710,000; white corpuscles, 13,000; haemoglobin, 24 per cent. He was very anaemic-looking, and at times presented little urticarial eruptions. Stained and fresh specimens of the ova found in the faeces were shown under the microscope.

REVIEWS.

TROPICAL DISEASES.

THE rapidity with which the several new and revised editions of Sir PATRICK MANSON'S *Manual of Tropical Diseases*[1] have appeared is sufficient testimony of the estimation in which the work is held by the medical profession. No one has promoted the study of tropical medicine to such an extent as Sir Patrick Manson. By scientific research, by the foundation of the London School of Tropical Medicine, and by the publication of his *Manual* he has aroused an interest in the subject which a few years ago it seemed impossible to inspire. Now there is a great number of workers busily engaged in research in this department of medicine, and with such important results that tropical medicine has undergone a remarkable development. New facts have been discovered, and theories which not long ago had but slender hypotheses for their basis have now been established on a sound foundation. Sir Patrick Manson's *Manual* chronicles these newly-discovered facts, and in an interesting and lucid style records what is known at the present time concerning tropical diseases, particularly with reference to their causes, effects, and treatment. The revision in this edition has been very extensive. Much has been added to the chapters on malaria, trypanosomiasis, yellow fever, plague, and filaria nocturna, and in some cases they are almost rewritten. Notwithstanding the additions, Sir Patrick Manson has with much skill contrived to add very little to the bulk of the volume, so that it still remains a handy textbook and book of reference. Malaria is dealt with very fully. The life-history of the parasite, and the symptoms, treatment, and

[1] *Tropical Diseases: A Manual of the Diseases of Warm Climates.* By Patrick Manson, C.M.G., M.D., LL.D. Aberd. New edition. London: Cassell and Co. (Crown 8vo, pp. 780; 116 illustrations. 10s. 6d.)

prevention of the disease are carefully explained in the space of 173 pages in such a manner as to carry conviction that both curative and preventive medicine have been gainers, and have acquired a precision and certainty of action which they never previously possessed. A new chapter is given to trypanosomiasis. Formerly of pathological interest because of the presence of trypanosoma in the lower animals, it has now acquired a new and absorbing interest owing to its discovery in man. The chapter on yellow fever sets out the experiments and researches of American investigators who have proved that it is a disease in which the mosquito is an essential factor in the life cycle of the parasite; and the author gives a timely warning of the danger which threatens the East when the Panama Canal is constructed unless preventive measures are taken to destroy at the ports of departure the *Stegomyia fasciata*. It would be impossible to do full justice to this volume in the small space at our disposal, but we can say with confidence that it is the best book of its kind extant, and we recommend it to all practitioners interested in the diseases of warm climates.

We agree with Surgeon-General BAINBRIDGE's remarks in the introduction to the *Manual of Plague*[2] by Major JENNINGS's that his long acquaintance with the disease and its treatment entitles him to undertake a work of the kind. There was room for a non-controversial account of plague, and Major Jennings's manual supplies the deficiency. The subject is dealt with in ten chapters, and perhaps the last two, dealing with "the measures for the suppression of plague" and "measures for the prevention of the spread of plague," will be most carefully read by those engaged in dealing with plague practically. The plague virus may find entrance into the system, it is stated, by way of the skin; by way of the mucous membranes especially of the respiratory tract, through the conjunctiva, and even through the genital tract: nor is the entrance of infection through the mucous membranes of the alimentary canal considered impossible. Symptomatology is fully dealt with, and the chapter on pathology and morbid anatomy is illustrated by several useful plates. Diagnosis is discussed under the headings of clinical, differential, and bacteriological methods of diagnosis, and the last mentioned is further subdivided into the microscopical examination of the blood and of the products of the disease, cultivation methods, inoculation experiments, and serum diagnosis. Regarding serum diagnosis, the finding of the Indian Plague Commission is restated, namely, that "we are of opinion that no practical value attaches to the method of serum diagnosis in the case of plague." Concerning prognosis the author remarks that "there can be no doubt that the sanitary conditions amidst which people dwell and become infected influence the mortality rate in a remarkable way." The treatment of plague continues unsatisfactory, and the hope that was entertained at one time that the administration of antiseptics would prove efficient has not been fulfilled, and the author expresses the opinion that the future application of the principle is not likely to be attended with success. Of the methods recommended for the suppression of plague prominence is given to the following: (1) Preventive inoculation "by the injection of Haffkine's antiplague vaccine, a sterilized broth culture of plague bacilli, has been employed on a large scale for several successive years, and with conspicuously successful results." Lustig's plague prophylactic has not been afforded the same extensive trial, but it has the advantage that it can be preserved for a longer time without deterioration, that the reaction is less severe and the dosage definite: (2) isolation of the infected and (3) segregation of the probably infected are considered essential factors in checking the spread of plague; disinfection of (4) houses, (5) clothes, etc., (6) of the person, and (7) evacuation of dwellings are each dealt with in an expert fashion, and finally (8) the destruction of rats is insisted upon. Of all methods of disinfection fumigation by the Clayton process is held the best for destroying rats and vermin. A useful appendix deals with the prevention of the spread of plague by railway passengers, and supplies forms for reports of cases and outbreaks of plague, thereby ensuring uniformity in description. The book is well printed, the illustrations are good, and the author has given us a useful book of high scientific and practical value.

[2] *A Manual of Plague.* By William Ernest Jennings, M.B., C.M., Major I.M.S.; Chief Medical Officer for Plague Operations in the Bombay Presidency. With an introduction by Surgeon-General G. Bainbridge, M.D., M.R.C.P., I.M.S. London: Rebman, Limited. 1903. (Demy 8vo pp. 270; 12 plates. 8s.)

There are few diseases of tropical climates round which so much obscurity hangs as beri-beri, and therefore an interesting inquiry into its etiology and pathology, lately published by Hamilton Wright,[3] will be welcomed by all interested in the subject, especially as it sweeps away many of the old ideas and advances in their place an ingenious theory as to the real nature of the complaint. The report proper, consisting of ninety-one pages, is supplemented by many tables of carefully-drawn-up statistics and a map. The vast amount of material investigated for the inquiry was obtained in the Malay Peninsula, a notorious haunt of beri-beri, by the author when acting as the Director of the Department of Medical Research at Kwala Lumpur, in the Federated Malay States; and the publication is of further interest as being the second from that laboratory. After a description of the geography of British Malaya, the geology and mineralogy of the peninsula are treated exceptionally fully, in order to demonstrate that arsenic cannot be looked upon as a factor in the production of the disease. Meteorology and climatology are briefly discussed, and then the classification of cases of the disease is entered upon. The old classification into wet and dry, or, following Scheube, into acute pernicious, hydro-atrophic, atrophic and rudimentary the author thinks unsuitable, when the pathological lesions in the central and peripheral nervous system and in the alimentary tract are considered, and instead he proposes the following: (1) acute pernicious beri-beri, which is always fatal; (2) acute beri-beri which runs a course of from three to six weeks leaving the patient paralysed; (3) beri-beri residual paralysis, which persists after the specific virus has ceased to act. The first class is made up of beri-beries who may die within a few days of (1) an acute pernicious attack or (2) of an acute onset, the stomach and duodenum exhibiting inflammation or congestion with haemorrhagic injections, and the nervous systems showing more or less an acute parenchymatous change as the result of the direct action of the beri-beric toxin. The third class is composed of those who survive an acute attack of the virus but remain with a more or less shattered nervous system especially the cardiac and lumbar spinal neurones. In them, if they die of some intercurrent disease, no duodenal inflammation is to be seen. If this is so the disease would resemble diphtheria, with its local lesion in the throat first, and with its paralysis following on afterwards, and it would further indicate that all the cases seen in England from steamers and ships are residual cases that have suffered from the acute phase of the disease before. It is difficult to explain on this assumption, however, how cases removed from ships and infected areas should almost always as a rule recover, whereas if left on board or in the district they usually die. Manson's theory that beri-beri is a place disease explains this fact much better, and it is one that cannot be lightly pushed aside since it has many facts to support it. The other theories of the causation of beri-beri, that it is due to arsenic, to the ingestion of mouldy rice, or of an organism which develops on growing rice, and the haemic plasmodial theory are attacked in turn and demolished by the evidence obtained from the outbreak in the Kwala Lumpur Gaol. The author's own idea of a specific germ is plausible, and is supported by the pathological lesions found in the stomach and duodenum, but no organism has been found, either extra or intra-corporeally to make the proof definite, no pyrexia has been found in the stage of invasion, and in this respect, therefore, it cannot be said to be more valid than Manson's theory. The entire escape of a party, mentioned in paragraph 377, does not prove that there may not have been a volatile poison or emanation coming from the infected part of the gaol which remained localized there and was the cause of the trouble. Certain experiments on monkeys go to show that they developed a condition closely resembling beri-beri, which, if they are liable to the disease, is not to be wondered at when they were kept in the infected area. The investigations and the elucidation of many points are deserving of the greatest praise, but there is still an obscurity hanging over beri-beri and it will remain hanging there until the demonstration of the germ finally dispels it.

The report on the yellow fever expedition of the Liverpool School of Tropical Medicine to Para recalls the sad end of Dr. Walter Myers, who died a victim to scientific research.

[3] *An Inquiry into the Etiology and Pathology of Beri-Beri.* By Hamilton Wright, M.D. (McGill), Director of the Institute for Medical Research, Federated Malay States. *Studies from the Institute for Medical Research, Federated Malay States.* Vol. ii, No. 1. Singapore: Kelly and Walsh. 1902. (Demy 8vo. pp. 97. 3s.)

Dr. H. E. DURHAM, his partner in the expedition, who also suffered from yellow fever but recovered, has written an abstract of the interim report[1] containing the main issue of the work, which was the finding of a fine, small bacillus in the organs of fatal cases of yellow fever. It was present in fourteen cadavers in the kidneys, spleen, mesenteric, portal, and axillary lymphatic glands, and also apparently in the contents of the lower intestine. The chief characteristic of the bacillus would seem to be the difficulty with which it takes up stains, and this Dr. Durham believes is the reason why it was not recognized before. Carbol fuschin (Ziehl) diluted with 5 per cent. phenol solution (to prevent accidental contamination during the long staining period) is used for twelve to eighteen hours, and then a differentiation is made with weak acetic acid. Cultivation experiments do not seem to have been carried out in much detail, all that is mentioned being that pure growths of the bacilli are not obtained in ordinary aërobic and anaërobic culture tubes, but that some pure cultures had been obtained by placing whole mesenteric glands into broth under a strict hydrogen atmosphere. The investigation into the necessary constitution of culture media for successful cultivation, which is promised, does not appear. The proof that this organism has anything to do with the disease is insufficient, and the work of the American physicians in Cuba, which was proceeding about the same time, has pretty distinctly shown that no bacterial organism so far has been implicated as the cause of the malady. To show how much care is necessary and how deceptive the finding of bacilli which resemble each other in shape may be, the example given by the author of the *Culex fatigans* dissected on December 6th, 1900, may be quoted. This insect, on dissection, showed a large number of bacilli resembling those found in the necropsies of yellow fever, and at first sight this seemed conclusive; but the Americans in Cuba have proved that this insect does not act as a spreader of yellow fever at all. The observations on the life-habits of mosquitos are good, and the observations on malaria are interesting, but the "odd notes" seem rather out of place as a termination for a treatise on yellow fever.

In a pamphlet entitled *Inoculation against Malaria*,[5] Dr. PHILALETHES KUHN, staff surgeon to the imperial troops in German South-West Africa, tries to prove a relationship between horse sickness and malaria, and on this hypothesis has attempted to treat the latter disease by a serum which he states he has discovered to be curative for the former. Unfortunately, the paper shows few signs of accurate scientific work. Though the author declares that he has discovered a serum which can cure horse sickness when it has broken out, and also bestow a tolerably high degree of temporary immunity, he does not even say what this antidote is or how it is prepared. Further, his statement that 50 per cent. of the infected horses treated were saved means absolutely nothing, when no figures are given to show how many were treated, or what the usual percentage of ordinary recoveries in the district is. A series of diffuse observations on malaria leads up to the conclusion that there is a close connexion between the two diseases, so close apparently that the author believes that they are one and the same disease. Acting on this assumption the serum was boldly injected into several individuals suffering from malarial fever, fortunately for them with no serious results. According to Dr. Kuhn the patients were cured, but as he goes on almost in the same breath to say that he was unable to make continuous and accurate observations on all of them, and as the charts he produces in support of his statement do not at all prove his case, his contention is rather absurd. The paper, no doubt, is well meant, but it must not be taken seriously: it is a striking example of the old saying, that a little knowledge is a dangerous thing.

Bilious Typhus Fever or Infectious Febrile Jaundice[6] is the title of a voluminous and somewhat bulky report by Dr. A. VALASSPOULO, chief of the Greek Hospital in Alexandria. He holds that the disease is not typhus fever, nor the bilious fever of hot climates (bilious remittent fever is really malaria), nor typhoid, nor yellow fever, and therefore the name he proposes for it of bilious typhus is an unfortunate one. The conclusion reached is that it is the same as Weil's disease, an acute febrile icterus about which there has been much discussion. As a synonym to bilious typhus the name infectious febrile jaundice is given. The account given seems to correspond very closely to Weil's cases described in 1886, but in addition profound alterations are noted in the liver and kidneys. No micro-organism has been found, but it is supposed that the germ—whatever it may be—develops in sewers and in putrefying animal matter, infection taking place by the digestive tract. It is to be hoped that this useful paper will stimulate further research into this obscure disease.

[1] *Report of the Yellow Fever Expedition to Pará of the Liverpool School of Tropical Medicine and Medical Parasitology.* By H. E. Durham, Liverpool School of Tropical Medicine. Memoir VII. London: Longmans, Green, and Co. 1902. (Roy. 8vo, pp. 86. 7s. 6d.)

[5] *Inoculation against Malaria.* By Dr. Philalethes Kuhn, Staff Surgeon to the Imperial Troops of the South-West Africa Protectorate. Translated by H. A. Nesbitt, M.A. London: H. K. Lewis. 1902. (Demy 8vo, pp. 32. 2s.)

[6] *Rapport sur le Typhus Bilieux* (Ictère Infectieux Fébrile). Par le Dr. A. Valasspoulo, Médecin-en-Chef de l'Hôpital Hellénique d'Alexandrie. Paris: A. Maloine. 1902. (Demy 8vo, pp. 109. Fr. 2.50.)

EVERY ONE HIS OWN BIOGRAPHER.

THE first edition of the *Life History Album*,[7] which appeared many years ago, was due, Mr. FRANCIS GALTON tells us in a preface to the present edition, to the enthusiasm of the late Dr. Mahomed, of Guy's Hospital. A small committee of medical men was formed by him, and met frequently at Mr. Galton's house to compose the book, Dr. Mahomed having made the condition that Mr. Galton's name should appear as the editor of the work. The book turned out to be very bulky and ill-arranged, and, as Dr. Mahomed died soon after its publication, Mr. Galton rewrote, rearranged it, and published it in its present form. The book is intended to contain a record of different important occurrences in life, and might serve as a groundwork for an autobiography. It is especially suitable as a present for very young children, whose parents will fill it up until they are old enough to take charge of it themselves. The wider the space of the record the more instructive it will be. The album only affords space enough for essentials. By turning over the book leading events will appear in their just proportions. Hereditary predispositions are noted; attacks of illness with their after-effects; the good and bad results of change in habit, diet, residence, etc.; the development in weight and stature. Thus the insidious approach of preventable maladies may be arrested. The future of every man is greatly influenced by his own past and that of his ancestors, and the past should be constantly referred to. Memory is an imperfect guide and this record will refresh it. The diseases of ancestors should be recorded honestly, so as to induce their descendants to take reasonable precautions against inherited tendencies. The first entry to be made is the genealogical record containing particulars as to the cause of death of the parents and brothers and sisters of the parents of the owner of the album. The more serious affections should be noted such as gout, rheumatism, consumption, spitting of blood, struma, cancer, bronchitis, asthma, paralysis, epilepsy, insanity, heart disease, dropsy of abdomen, general dropsy, diabetes, stone, goitre, and fistula. Minor ailments—such as colds in the head or throat, sick headaches, sleeplessness, boils, quinsy, enlarged glands in the neck, nose bleeding, bilious attacks, constipation, skin eruptions, varicose veins, imperfections of sight, hearing, or dentition are also to be recorded. Characteristics of members of the father's or mother's families likely to be interesting from a hereditary point of view should next be noted. These relate to stature, form, features, gestures or voice; the growth of the hair and its colour; to eye colour; and to aptitudes of all sorts, whether moral, aesthetic, or intellectual. Then follows a description of the child (owner of the book) at birth, and photographs up to 5 years of age. The person's life is supposed to be divided up into terms of five years, to each of which eight pages are assigned. The first and second pages contain the life and medical history of each year, while the third is left blank for remarks. The fourth and fifth are tabulated to hold anthropometric observations, the sixth is blank, the seventh is for photographs, and the eighth is blank. Each birthday is suggested as a suitable date for reviewing the events of the past year. The following points are recommended to be noted:

1. *Place of Residence.*—Change of residence, whether temporary or permanent.
2. *Occupations.*—Where carried on; number of hours given to them.
3. *Recreations.*—Their character; the number of hours given to them.
4. *Sleep.*—Its amount; whether liable to be much disturbed.
5. *Food.*—Number of meals; daily average of meat and alcohol.
6. *Anxiety.*—Whether much or none during the year; its subject.
7. *Fatigue.*—Any unusual fatigue, mental or bodily.

[7] *Life History Album.* Second edition. Rearranged by Francis Galton, D.C.L., F.R.S. London: Macmillan and Co. 1902. (Demy 8vo, pp. 178. 5s.)

8. *Important Events.*—As going to school or college, passing examinations, prizes, commencement of professional study, entering professional life or business, marriage, loss of near relations.

The medical history should be carefully noted, and photographs put into each five-yearly space, and the importance of frequent observations of weight and stature is insisted on. Simple tests of vision conclude the book, which seems to us one of great originality, and of real interest and use to those wishing to keep a record of their life.

EDUCATION.

MADAME MOLL-WEISS takes a deep and intelligent interest in children, and that her *Les Mères de Demain*[7] should be interesting and full of practical advice was a foregone conclusion. In an introduction she points out that just as the child is getting to an age when she would specially require the companionship and guidance of her mother, she is relegated to the schoolroom and given into the charge of a governess who may not be a suitable companion. The reason for this banishment is that the mother feels she is made to appear old with a growing-up child, and also because she and her friends cannot speak freely in her presence. The author first discusses the physical side of the question, too often neglected at a time when brainwork makes it all the more imperative that the health should be studied. Great care should be taken in gymnastics that girls should not wear tight corsets and clothes. Girls should be taught to be graceful by such exercises as dancing, swimming, croquet, tennis, and it is suggested that they should be taught to move and balance the body and head properly by carrying a vessel on their heads, as women in the East do, and thereby acquire a grace of carriage unseen among western nations. Cleanliness is next insisted upon. Regular baths: the head to be shampooed once a fortnight at least: the teeth to be scrubbed after each meal, and periodical visits—as a precaution—to be made to the dentist. The digestion is to be carefully watched, and only nourishing and wholesome food given at regular hours. Exercise in the open air, and cold baths, will help to give an appetite, and children should be made to eat well at meals, and avoid ruining their digestions and their appetites by the constant eating of sweets between meals. A diet rich in albuminoids—meat and eggs—is recommended by Madame Moll-Weiss, so that the growing girl may be able to resist disease. Clothes should be light and warm, made loosely so as to allow ample room for growing and development. Shoes should be of the shape of the foot, with low heels, and a light simple hat, and tight corsets to be absolutely banished. Madame Moll-Weiss asserts that all children of the present day are more or less nervous, and in order to spare their nerves she recommends that they should lead a quiet life, reading books which are not exciting, the strain of special study for examinations being avoided, and their home life being as calm as possible, in order to ensure for the girl when she becomes a wife the happiness of being serious and well balanced morally, a capable mother to her children, and a companion to her husband when he comes harassed to her for rest and for moral support. Madame Moll-Weiss holds that it is bad morally and physically for great numbers of girls in large boarding schools to be herded together in dormitories. It is impossible for them to be as clean as they should be: the life in common destroys their modesty, and the governesses cannot look after such numbers properly. She suggests that large schools should house their boarders in pavilions, each holding ten or fifteen girls, with a mistress in charge, though they could meet for classes in a large room. Prizes should be given for the best arranged pavilions with the most nicely behaved girls. In this way the girls would receive some of the home affection from their governesses, who, having fewer pupils to look after, would gain personal influence over them. Madame Moll-Weiss anticipates a difficulty in getting competent governesses, and suggests that all governesses should attend classes to be taught practical domestic science, the management of children, hygiene, cooking, and children's ailments. We are not aware that any special difficulty has been experienced in girls' schools in this country, where the house system has been adopted. Whatever difficulties there may have been have been surmounted, for the system is working well. There should be a very large playground to do away with the monotony of walks along the roads. This interesting book ends by advising all parents to look upon their daughters as never going to marry, and yet to educate them as if marriage was a certainty. After the age of, say 14, each child should be allowed to follow any particular taste, and should be helped to cultivate it seriously with a view to future independence. The fact of being able to earn her own living if necessary will not make a girl—should she marry—a less good wife or mother, and in case of necessity she will always be prepared to face life. Girls should be made more self-reliant; to face the thought of their future, instead of entirely depending on those with whom they live, and those who bring them up should see in the girl of to-day the mother of the future.

Our Sons: Their Start in Life[9] is a reprint of a series of articles which appeared in the *Guardian* between October, 1902, and March, 1903. They make an excellent book. Nine professions are suggested for boys, the navy, army, civil service, the medical profession, surveying, farming at home and abroad, engineering, solicitors, and the city. There are two useful chapters on public and private schools and the Universities. The question of cost for training and special education and probable eventual salary is carefully gone into. In dealing with professions and occupations for women, the author laments that an income, to which a woman rises when her capacities are fully trained, and she is in her bodily and intellectual prime, is little more than that which men expect to earn within a year or two of their start. The reason given is that professional salaries adjust themselves very closely to the standard of living; and while men have to bring up a family a woman should be satisfied when she can support herself in tolerable lodgings. Say that a woman could earn £150 for 30 years, and saved £1,000, this would only buy her an annuity of about £65, and on 25s. a week old age for an educated woman offers a dreary prospect. It is urged that all parents should, in view of unexpected necessity, bring up their daughters to some profession, but the assertion that the pecuniary results of training are in direct proportion to the time and money spent on securing it, cannot be accepted without many reservations. As professions for women the following are suggested: Teaching, secretarial and clerical work, medicine, nursing, gymnastics and physical training, and inspectorships (factory and sanitary). This list appears to us incomplete, especially if is a question of making money. We hear of lady milliners and dressmakers retiring with large fortunes; and are there not gardening, dairy farming, and, as suggested in a daily paper a short time ago, calling from house to house to clean and mend the pipes of those gentlemen too lazy to clean them for themselves? All those things would be less drudgery than teaching for the thirty best years of one's life, with a prospect of saving £64 a year.

NOTES ON BOOKS.

THE new edition of *Merck's Index*,[10] like its predecessor, is compiled from the whole of the products in which the firm has commercial dealings, and, since these are ever increasing in number, the information given has also been extended. The *Index* is divided into six parts. The first three are of particular interest to the profession. They treat of chemical bodies and galenicals, analytical and histological reagents, and crude drugs respectively. In each of these the arrangement is alphabetical, and, by suitably abbreviating, a large amount of information is condensed into a small space. In Part I. the name of the substance is followed by notes on its chemical and physical characters, dosage, and therapeutics, and by any other particulars considered sufficiently important. In this way facts have been collated which could otherwise only be found by consulting several works of reference. Similarly, in Part II. the notes on reagents have been enriched by remarks on special modes of application. The *Index*, which is in German, should prove extremely useful to both practitioners and pharmacists.

We have previously had occasion to speak favourably of PERKIN and KIPPING'S *Organic Chemistry*,[11] and welcome the appearance of a new and revised edition. No change of any

[7] *Les Mères de Demain (l'Education de la Jeune Fille d'après sa Physiologie).* By Madame Auguste Moll-Weiss. Paris: Vigot Frères. 1902. (Cr. 8vo, pp. 196. Fr. 2.)

[9] *Our Sons: Their Start in Life.* With two articles on Professions and Occupations for Women. Reprinted from the *Guardian*. London: the *Guardian* Office. 1903. (Cr. 8vo. pp. 120. 1s.)

[10] *Merck's Index.* II Auflage. London: E. Merck. 1902. (Demy 8vo, pp. 374.)

[11] *Organic Chemistry.* By W. H. Perkin, jun., Ph.D., F.R.S., and F. Stanley Kipping, Ph.D., D.Sc. (Lond.), F.R.S. London and Edinburgh: W. and R. Chambers. 1902. (Crown 8vo. pp. 635. 7s. 6d.)

importance has been made in the general plan of the work, but the whole of the matter has been brought up to date, and with such a rapidly advancing science this has necessitated many alterations and additions. Owing to judicious pruning, however, the size of the volume has not been appreciably increased. At p. 540 we note an explanation of the reactions occuring in the synthesis of indigo which can now be carried out at such a low cost that our great Indian industry is seriously threatened. This may be taken as a sample of much new matter introduced, from which it is evident that the authors are abreast of the times. We can again recommend it with confidence as a textbook which is admirably adapted to the needs of the medical student.

MEDICAL WITNESSES' FEES.

THE REPORT OF THE DEPARTMENTAL COMMITTEE.

The report of the Departmental Committee, appointed last year by Mr. Ritchie when at the Home Office, to inquire into the allowances to prosecutors and witnesses in criminal prosecutions, was issued last week, with the evidence taken before it and appendices.[1] The Committee consisted of Sir John Dorington, M.P., Mr. W. F. Lawrence, M.P., Mr. Humphreys-Owen, M.P., Mr. H. B. Simpson, of the Home Office, Mr. F. Merrifield, Clerk of the Peace for Sussex, and Mr. J. R. Roberts, Clerk to the Magistrates, Newcastle-on-Tyne.

The report commences by giving a history of the legislation on the subject, from which we gather that prior to the year 1752 no allowance was made from any public fund to prosecutors and witnesses. In that year was passed the 25th Geo. II, chapter 36, which recited that "Many persons are deterred from prosecuting persons guilty of felony upon account of the expense:" and provided that the Court before whom any person had been tried and convicted of felony should have power, upon consideration of the circumstances of the prosecutor, to order the treasurer of the county to pay him a reasonable sum not exceeding the expenses he was put to in carrying on such prosecution, and a reasonable allowance for his time and trouble therein.

Succeeding statutes are quoted which extended the provisions of the above Act to witnesses as well as prosecutors; made the allowance payable to the prosecutor whether the prisoner was convicted or acquitted; and made the allowances payable to witnesses whether any bill of indictment was preferred or not; extended the power of committing magistrates to order payment of costs in cases where no committal for trial actually takes place, and the parties are not bound over to prosecute or give evidence; permitted allowances to be made to witnesses for the defence if bound over to give evidence in any case of felony or misdemeanour, and defined the allowance as "such sum of money as to the court shall seem reasonable and sufficient to compensate such witness for the expenses, trouble, and loss of time he shall have incurred or sustained in attending before the examining magistrate, and at or before such court." Finally, the Summary Jurisdiction Act of 1879 extended the power to grant allowances to the prosecutor and his witnesses to cases in which the Act empowered magistrates to deal with indictable offences summarily.

Such being briefly the history of legislation on the subject, we are next told the action taken by the various authorities, and it appears that up to the year 1836 the whole cost of prosecutions fell upon local funds, and that in consequence the local scales of payment differed very widely from one another. A Select Committee of the House of Commons appointed in 1834 and a Royal Commission of the same year both reported that the control at that time exercised over these costs by magistrates and other authorities was "insufficient in the highest degree," and in the end the Government undertook to pay at first one half and finally the whole cost of these prosecutions. This arrangement came into force in 1846, and for more than 40 years the whole of this expenditure

Costs of prosecutions did not diminish under the new system. On the contrary they continued year by year to show a large increase. The total charge on public funds grew so heavy that about the year 1853 the Treasury appointed gentlemen to go on circuit to assizes and to quarter sessions to examine into the manner in which costs were allowed by the different courts. These gentlemen did their duty with energy, and caused large disallowances to be made in the bills of costs in many places. Complaints were made by the local authorities, in consequence of which a Committee, consisting of Messrs. Straight, Wilkin, and Preston, was appointed in 1855 by the Home Office and Treasury jointly to consider whether the costs of prosecutions could not be reduced, and why they should vary so much as they did in different jurisdictions.

This Committee reported that there was great variation in the allowances paid to prosecutors and witnesses in different jurisdictions, but that the effectiveness of the administration of the criminal law was apparently neither promoted by a high scale nor retarded by a low one, and they recommended that the rates of allowances should be uniform in all cases, whatever the pecuniary or social position of the witness, and should be fixed by the Secretary of State for all jurisdictions alike in accordance with a suggested scale which they drew up.

Their recommendation was adopted, and their suggested scale was promulgated in February, 1858, by Sir George Grey. That scale is, with a few modifications, the one in force to-day.

Having finished its historical summary, the report proceeds to say that:

We have heard the evidence of thirty-three witnesses, including gentlemen of thorough legal and practical acquaintance with the subject matter of our inquiry, and have obtained, as we hope and believe, not only a sound acquaintance with the actual facts relating to criminal prosecutions, but also opinions representative of each of the diverse views that may be held on the question of these allowances.

While it has been plain to us from the outset that some increase in the allowances is required, we have found much divergence of opinion as to the justice of the principle of equality of payment to all witnesses, other than those giving professional or expert evidence, which was recommended by the Committee of 1855, embodied in Sir G. Grey's scale, and approved by the Royal Commission with only one dissentient.

We need not follow the discussion in the report of the allowances to ordinary witnesses, except as regards one or two points which seem to affect all classes of witnesses. At p. 11 the Committee states that—

We think that there is not sufficient reason for distinguishing between police courts, on the one hand, and assizes and quarter sessions, on the other, in the matter of allowances, to the extent of making a separate scale for each; but the following proviso, which would chiefly operate at petty sessions, would have much the same effect;

> Any witness, if detained less than four hours from his home or place of business, one-half the allowance he would otherwise have received.

And, again, at p. 12, as to travelling expenses:

> Here we recommend the allowance of the railway fare actually and reasonably paid. In nearly all cases, as we need hardly point out, the fare should be third class.
>
> Where there is no railway available, any actual expenses incurred should be allowed, not exceeding 1s. a mile one way.

As we shall find hereafter, this applies to those giving professional evidence, as well as to ordinary witnesses.

We next come to the part of the report directly dealing with fees to medical witnesses, which is divided under two headings, as follows:

Professional Evidence.

By far the largest class of witnesses who give professional evidence are doctors. Beyond these and lawyers and chartered accountants, very few witnesses are called on for evidence of this kind. With regard to chartered accountants, we would refer to the evidence given by the representative of the Chartered Accountants' Institute (Question 1,300 *et seq.*), which seems to carry much weight.

For the present purposes, therefore, we define professional men as—

> Lawyers, doctors, and members of such other professions as the Secretary of State may decide hereafter to include by order in this scale.

And our definition of professional evidence is—

> Evidence as to facts which have come to the professional man's knowledge in the ordinary practice of his profession, not brought before him in the first instance with a view to a prosecution.

We think that the allowances hitherto paid under this head have been inadequate, especially in the case of doctors summoned to places distant from their practice. It seems to us that the complaints made by the medical profession in respect of the present scale are justified by the very fact that its members are much more frequently called on to assist

[1] To be obtained through any bookseller from Eyre and Spottiswoode (London), Oliver and Boyd (Edinburgh), or F. Ponsonby (Dublin). Price, 1s. 3d.

criminal justice by evidence drawn from their professional experience than any other class of the community.

We recommend, therefore, that the following be the maximum allowances in future:

For giving evidence in the town of residence, 1 guinea per case; but for more cases than one not to exceed 2 guineas for one day.

For giving evidence away from the town or place of residence, 1 guinea per day in addition to the above.

We have further had our attention drawn to the frequent cases in which doctors are required to make preliminary examinations of persons of both sexes with a view to a prosecution for an offence under the Criminal Law Amendment Act of 1885, or some offence of a similar nature. After making such examination they are invariably called as witnesses, but receive no additional remuneration for the preliminary duty. This appears to us unfair, and we recommend that for thus qualifying to give evidence in such a prosecution a doctor should be allowed 1 guinea for the examination of each person in addition to the allowances he receives as a witness.

It may be that Courts already have power, under the provisions as to "expert witnesses" to make such payments, inasmuch as the doctor in such a case may often be an "expert witness" and not to be distinguished from a medical analyst employed to give evidence in an alleged case of poisoning: but this power escapes notice, and it would perhaps be better if a special allowance under this head were inserted in the scale.

Expert Evidence.

We think that the amount allowed under this head should be left as at present to the discretion of the Court, but we think that some alteration should be made in the definition of an expert witness. Sir George Grey's order of February 9th, 1858, runs as follows:

"And whereas it may become necessary in certain cases that persons, unacquainted with the facts to be given in evidence upon the prosecution, may be required to attend as witnesses, in order to state their opinions on matters as to which such opinion is admissible in evidence, and it is reasonable in such cases that the foregoing rates of allowance should be departed from, I hereby direct that the allowances to be made to such persons shall be subject to the decision of the Court before which such persons may be examined, which may direct such allowances as to such Court may appear reasonable."

We consider that the differentia of an expert witness is that he is previously unacquainted with the case, which is brought to his notice expressly in order that he may qualify himself to give evidence in a criminal prosecution, having himself special knowledge of the subject.

The professional witness, on the other hand, gives evidence upon facts which have come to his notice in the ordinary course of his profession, and which have not been brought to him in the first instance with a view to a prosecution.

We, therefore, define an expert witness as follows:

A person to whose notice a case, with which he was previously unacquainted, is brought expressly in order that he may qualify himself by his special knowledge to give evidence of facts ascertainable by him, or evidence of opinion, where such opinion is admissible.

It will be noticed that under neither of these headings is anything said about travelling expenses, but in the summary of recommendations at p. 17 a note is added—"Travelling expenses as to ordinary witnesses," and with reference to the payment of experts the following note: "To expert witnesses as defined such allowance as the court may think reasonable."

Two of the Committee, Messrs. Humphreys-Owen and J. R. Roberts, dissent from some of the conclusions of the majority, and sign a minority report which is principally taken up with the allowances to ordinary witnesses; as regards professional witnesses giving professional evidence they concur in the definitions and recommendations of the majority, and as to travelling and night allowances they suggest that these should be the sums reasonably paid. In both the majority and minority reports testimony is borne to the courtesy and valuable services of Mr. Maurice Waller, of the Home Office, who acted as Secretary to the Departmental Committee, and in this all who have had dealings with the Committee will fully agree.

From the minutes of evidence we extract the evidence given on behalf of the British Medical Association by Mr. Nelson Hardy, and that given on behalf of the United Kingdom Police Surgeons' Association by Mr. Fred. L. W. Lowndes, of Liverpool, as presenting the case for the two bodies whose united action has led to the appointment of this Committee.

The following is a condensed report of the evidence of Mr. Nelson Hardy and Mr. Lowndes. (The figures refer to the questions in the official minutes of evidence.)

259/0, 1. Mr. NELSON HARDY. I am a Fellow of the Royal College of Surgeons of Edinburgh, reside at Dulwich, and am here on behalf of the British Medical Association.

262/3/4. You can certainly take that as a body which fairly represents the whole profession. It is, in fact, as far as I know, the largest representative body of any sort in the world. It has a General Secretary to transact its business and a weekly journal, the BRITISH MEDICAL JOURNAL, which all members receive. Any member having a complaint against a public body or any one connected with the profession communicates it to the Secretary, or writes to the JOURNAL, the Editor of which deals with the communication as he thinks fit. For years, in this way, complaints have been received as to the inadequacy of the fees to medical witnesses, and I propose to give you two samples.

265/6. This copy of a newspaper I hand in contains an account of a trial for indecent assault at Bury St. Edmunds. It was given in evidence that no doctor at the place where the offence was committed, Bungay, could be got to examine the child, which was the subject of the indecent assault. The judge commented on this fact, and said it would be his duty to draw the attention of public bodies to it. He was informed that the fee for medical evidence was one guinea, and it appeared that the doctors refused to examine the child because they were afraid the case might go to trial, and they would be insufficiently paid. It was important that poor people should be able to get cases of this sort examined at once, and the state of things should be considered in some way, because it was prejudicial to the cause of justice. Another case in which complaints were made to the JOURNAL was that at Willenhall. In this case the doctor (Dr. Hartill), in his letter, which was published in the JOURNAL, complains that a sum of only £2 19s. 6d. each was tendered to himself and his assistant for professional services and attendance at Stafford Assizes and before the magistrates at Willenhall. The sum was made up in each case of 7s. second class travelling expenses, 10s. 6d. for attendance at the police court from mid-day to nearly 8 p.m., and £2 2s. for attendance at the assizes at Stafford from 10 a.m. to 6 p.m. on one day, and 8.45 a.m. to 6 p.m. on the second day, from the time of leaving home until return. He concludes his letter by urging that the time has come when the inadequacy of such fees should be pressed upon the notice of the proper authority.

267. It is in consequence of many such complaints being brought before it, either through the General Secretary or the Editor of the JOURNAL, that our Association has taken the matter up. I have had twenty years personal experience of the matter myself, as a police surgeon attending at the Old Bailey, and can tell you about the work. The Old Bailey is a dirty, insanitary building, and attending there is most unpleasant. There is no method and no system; you have to get there by 10 a.m., and hunt out the police officer in charge of the case among a lot of greasy witnesses and friends of the prisoner. Sometimes the officer when found knows how to proceed and sometimes not. If he does, he collects his witnesses, takes them to the office and reports them all present, and then tells them to wait about until the case comes on. It may come on that day or not for two or three days, but all the time you are virtually a prisoner, and leave the place at your peril, and in any case are bound to arrive each morning at latest by half-past 10, under threat of a fine. One day I was myself nearly fined £10. I had a patient whom I could not put off visiting until the evening: I arrived, nevertheless, at 10.45, but owing to other cases having dropped out, ours was unexpectedly called on first, and Mr. Justice Hawkins declared that £10 was the least fine he could possibly inflict on the witnesses for not being ready. Fortunately for me, he forgot by the end of the case to formally inflict the fine, partly perhaps because I always got on well with his lordship, and he had occasion to ask my opinion on a medical point that turned up in a case other than my own. Nevertheless, we are liable to fine, and in some cases it has been exacted, and the consequence is we have to hang about the court all day, for no police officer will take it upon himself to allow a witness to go outside the four walls of the Old Bailey; he must stick there; and until recently there was not even a waiting room except that dreadful hall. If the Treasury has charge of the case, things are rather better, for the solicitor finds out when the case is likely to come on, and can so relieve us from unnecessary waiting.

268/9/0. I do not know exactly how cases are managed, but it very often happens that there is no solicitor and our time is greatly wasted, but curiously enough this is not the case with experts such as my friend the late Mr. Thomas Bond. As he was paid five guineas a day, his time was considered of value, and he was warned by telephone or telegram exactly when he was wanted. But when a man is a general practitioner and only paid a guinea, the Home Office thinks his time is of no value at all, and does not care how much of it it wastes. It is practically a whole day that is wasted, for we have to be there by 10 or half-past, and cannot get away until 4 or 5 in the afternoon. For that a guinea is really no proper remuneration at all.

271/2. There is another point too. The payment is not a guinea a case, but a guinea a day. For instance, my friend the late Mr. Phillips, the medical man engaged in the Whitechapel Jack the Ripper cases, had a very great deal of police work. He was a police surgeon like myself, not paid for his whole time, but, like myself, in private practice. He was nearly always at the Old Bailey during sessions, and generally had to give evidence in several cases, but however many times he gave evidence and however many days he was detained he was only paid at the rate of a guinea a day for all the work.

273/4/5/6. I cannot say that it is right to lump cases together like this, but anyhow it is the way in which the authorities interpret the scale. I will deal with what I consider proper remuneration later on.

277. I have been speaking hitherto only of our experiences in London at the Old Bailey. For police-court work we are paid half a guinea. It is too little, but personally I have not much to complain of, since I live outside the boundary, more than three miles from a court, and so get 15s. 6d.

278. Some things about the police courts in the country are almost incredible. There are some where no fee whatever is paid to medical witnesses. There are others where no fee is paid unless the prisoner

is committed for trial. This offers a direct incentive to medical men to get cases committed. I am far from saying that it actually acts in that way, but it is contrary to the interests of justice that any such possibility should exist. There is even one place, and that not a small one—Bradford—where no fee is paid unless the case is one "of grievous bodily harm." They get the evidence of a medical man in all cases, but if it proves to be one of common assault they will not pay him. By way of introducing independent evidence, I have here a return prepared by the Town Clerk of Southampton for the information of his council with regard to the duties of police surgeons in sixty other boroughs in England. One question he put to them was, "Is he paid for attendance at police courts, inquests, and the like?" Most boroughs answer "Yes," but some answer "No."

279/0. I am speaking of police surgeons; they are paid by salary, but their salary does not include evidence.

281/2/3/4/5/6. Yes, in places where the police surgeon is allowed no fee, an ordinary practitioner is paid none either. The idea as you suggest appears to be that the unhappy person who gets merely knocked about can pay the doctor himself, and that in this case the injured person is the prosecutor and the doctor his witness, a distinction being made between cases treated summarily and those committed for trial. (Witness quoted letters from Dr. Heald, of Leeds, and Dr. Barlow, of Leicester, on the subject.)

287/8/9/0/1. Retaining fees are not paid to police surgeons in London, and according to this return things vary in every borough. Some pay a regular salary to the surgeons, and others, like the metropolitan police, only pay so much a head for attending the men. I am paid in this way for the men in my district. As you suggest, it is like an old Friendly Society. I have to take all cases as they come, and get 8s. for each private or sergeant, and 10s. for each inspector. The payment is only for attending them medically, a sort of quasi-salary calculated on the number of men to be attended.

292/3/4. Yes. As I am connected with them the police naturally come to me for other cases, but my salary includes no work with regard to the general public, and if I am called to a police-station to attend one of the public I receive a certificate, and am paid at the half year. The money is paid out of the police funds, and if I go to the police-court I go for extra payment.

295/6. The places on the Southampton list are all boroughs. I do not think that the explanation of non-payment for evidence at certain places can be that it is considered that since the expense of the police-courts as well as of the police falls practically on the same fund, police surgeons already receive enough without extra fees. You see the rule is not applied only to police surgeons but to ordinary medical men also. Besides this, the places where they do not pay are the exception.

297/8. If I go to attend a private person at a police-station I am, as I have said, paid. They never send for me to see a private person at a private house except in cases of murder or manslaughter, in which case I should certainly be paid.

299. The rule in the metropolitan police is that if a person can pay he shall pay. It is the police who are responsible to me, and whether they recover the money or not does not concern me.

300/1/2/3. In the note in the Southampton list on Leicester it is said that it is the surgeon's duty to give evidence at the police-court when required and when fees are ordered by the Court he shall be allowed to receive them—implying that in some cases he is not paid. The 8s. a day rate I mentioned refers to the metropolitan police. The Leicester surgeon is paid £75 a year for 176 men. It certainly is not meant to cover all evidence because it is expressly stated that when fees are ordered by the Court, he shall be allowed to receive them.

304/5/6/7. It certainly is open to the interpretation that the local authority thought he ought to do some official work outside the police, but it is really put in to compel him to, because otherwise he would probably refuse. It is a matter of special arrangement. At Newport the answer is that "he is not paid for attendance as a witness." At Newcastle it says he is paid for attending court. At Reading the answer is "he is paid at inquests and quarter sessions, but not at police-court."

308. That may look as if they made it his duty to attend at the police-court in consideration of his appointment, but you must remember that in places in which payment is not made to police surgeons it is refused also to medical men who have no official position at all. This Southampton return was drawn up independently of the profession, and with no reference to the matter now before the Committee, and I hand it in.

309/0/1. No, the refusal to pay for attendance at police-courts does not apply only to police surgeons, but to independent practitioners also. How under the circumstances they manage to get men to attend puzzles me not less than you. Until I received these and other letters the whole thing seemed to me incredible. The result, as you see, is that men resent it, and won't see police cases at all, so that they may not have to go to court; not merely police surgeons, but the whole of the medical men in certain towns.

312/3/4/5. The men at Bungay would have been paid for the examination, but they refused to make it, because they would have had to go into court. It was not the examination they minded, but because if they once made it they could be compelled to go into court. That is why they refuse to have anything to do with the case. That is a case of inadequacy; what we have been referring to before is that of no remuneration at all, which is even much worse.

316/7/8. The Southampton list only refers to police surgeons because it was prepared for a special purpose. Mr. Lowndes, the next witness, can give you evidence as to medical men being paid nothing for police-court evidence, although in no way connected with the police. I can quote two cases myself. This letter is from a medical man, not a police surgeon. He writes that when at Bradford he had a dispute with the stipendiary and was treated in an insulting fashion because he refused to give evidence without being assured of a fee. Garbled accounts were put in the papers, and but for the spirited action of Dr. Hime, who brought the whole weight of the profession to bear through the Medico-Ethical Society, he would have been censured by the authorities of the hospital with which he was connected. As it was, says the writer, "I rather scored, but the police still only give a fee when the case is one of grievous bodily harm, and pay nothing for those of common assault." Here is another letter from a medical man at Mansfield, also unconnected with the police. He says he was called to see a man injured in a public house; he admitted him to hospital and had to excise his eye. On May 1st the police asked him either to attend court and give evidence as to the man's state or give a certificate about it. To save trouble he did the latter, but on May 4th was asked to give personal evidence in court which he did. May 31st he again gave evidence and the prisoner was committed for trial. The Town Clerk told him he could not get a fee for his certificate or first evidence in court, because the prisoner was merely remanded, not committed. Later on he had another case of injury and was asked by the police for a certificate, but a fee being refused, he declined to give any certificate and heard no more of the matter. You see he was not to be paid for his certificate, nor yet for his verbal evidence, except on the day the prisoner was committed. Another case in point to which I have already referred is that of Dr. Hartill, the Willenhall case. His letter, appearing as it did in the BRITISH MEDICAL JOURNAL, attracted a good deal of attention, and from the comments of the lay and medical press you will see what was thought of it both in and out of the profession. The BRITISH MEDICAL JOURNAL, commenting on it, says: "It draws attention to a persistent and very real grievance under which the medical profession in England continues to suffer. From Dr. Hartill's letter to the Treasury it will be seen that for giving up three working days to attend before the magistrates and the assizes, involving him in considerable additional work and inconvenience, he received, or rather was offered and refused, the most inadequate remuneration of £2 10s. 6d.; and this, under the existing statutory orders, is, we regret to say, no doubt the full amount authorized." After some other comments, the JOURNAL continues: "There is no doubt that the remuneration to medical witnesses, who are in a very different position to ordinary witnesses, is in this country most inadequate, and unfortunately there is little hope of early remedy. In 1895 the Home Secretary admitted this fact to a deputation, but in effect declined to make any alteration." Reference is also made to other efforts made, and to a memorial prepared in 1898 by the British Medical Association, which the Home Secretary (Sir Matthew White Ridley) refused to receive. The JOURNAL concludes by pointing out the necessity of continued strong effort, or future Home Secretaries will assume the same attitude of *non possumus* as their predecessors. I hand this memorial in because it gives the main facts of the case. It is dated August, 1898.

319/20. There are comments from lay papers, such as the *Liverpool Courier*, which I should like to hand in, as well as other matter from the BRITISH MEDICAL JOURNAL, because points are dealt with which have not at present come out in my evidence. Speaking of fees, the Liverpool paper says "they certainly do not err on the side of excess, and as at inquest cases a medical man may have to attend several times they may be considered most inadequate;" but, says the *Courier*, "this is the least part of the grievance of which medical witnesses have to complain." It then points out that they only receive half a guinea per diem for attendance at police-courts within 2 miles, and one guinea per diem for those outside this radius, and this only when cases are committed for trial, the magistrates observing they can pay nothing for cases not committed. Is such a petty fee as half a guinea, asks the *Courier*, a proper remuneration to a professional man for spending some hours, or it may be a whole day, in aiding the administration of justice? Passing on to the assize courts, the *Courier* remarks that the fee paid here is one guinea, and is most inadequate even if the practitioner resides in or near the assize town, for attendance involves early rising and late retiring, in order to attend to exacting patients as well as an exacting court. The climax, however, is reached when a country practitioner has to leave his work in charge of a *locum tenens*, and attend a distant court, receiving in return a guinea, second class fare, and 2s. a night. He must return home not only unremunerated, but actually out of pocket. The whole thing, says the *Courier*, is most unjust, and members of Parliament should see it put right. A comparison is then drawn between medical and other professional witnesses, and it is pointed out that all medical men, and not police surgeons alone, are concerned. A large proportion of all indictable offences involve medical evidence, and the tax thus thrown upon medical men is out of all proportion to that thrown upon any other profession. "But for this the matter would have been set right years ago. It is only among a profession which gives death certificates without fee and works gratuitously among the poor that the injustice of being compelled to suffer pecuniary loss would have been suffered so long."

321. There are some other remarks of the BRITISH MEDICAL JOURNAL which I will hand in without comment, and a comparison of the Scotch and Irish practice is important. In Dublin, when a medical men has to attend assizes in his own town, he gets an extra guinea if detained more than three hours.

322/3. At the Old Bailey and all Assize Courts in England we are constantly detained more than three hours, but never get more than a guinea, even if detained all day, whereas in Ireland, a poorer country, we should get 2 guineas. For attendance at assizes in towns where the witness does not reside, 2 guineas and a sum for hotel and travelling expenses is allowed. The same is done in Scotland, and there a guinea is also paid in serious cases for what is called "precognition" before the case goes to court. We get nothing of that sort. In all serious cases in Scotland, such as murder and manslaughter, and if summoned to circuit courts, 2 guineas and first-class railway fare are allowed; so here we have two poor countries paying more for medical evidence than a rich country like England.

324/5. The Association asks that the fee to medical witnesses be fixed at 2 guineas a day for each case and first-class fares.

326/7/8/9/30. I have it from Dr. Mason, of Hull, that this is what he receives there—2 guineas a day, expenses, and first-class fare. He does not say who pays it, but he receives it from the City Treasurer. It may be in excess of the scale and by special arrangement with those who employ him as police surgeon, but at any rate it is evidence of one place at which 2 guineas a day is recognized as the value of medical evidence at the Assizes, and 1 guinea a day for each case for police-court evidence.

331/2/3. What we ask for is 2 guineas a day for each case at assizes and sessions, whether there is one case or more, and 1 guinea for police-court cases.

335. I cannot say what is the probability of there being more than one case. Mr. Lowndes can tell you more about it. I do not think it is very frequent myself, but when it does occur I think a man has a right to be paid for each case. If a lawyer had two or three cases what would he say to being paid by the day for the whole lot?

336/7/8. When a case is dealt with summarily, or a prisoner sent to prison because unable to pay a fine, I consider that the medical witness should be paid nevertheless. The payment should be made by the same authority which would pay if the case were committed for trial. I consider that the fund which is available for the payment of cases committed for trial should be made equally available for those dealt with summarily.

339/40. The theory of payment of ordinary witnesses may not be that of payment for services rendered, but that is the ground on which I put the

claim of a special fee for medical witnesses. The service they render is different to that of an ordinary witness as to fact, because they could not give evidence at all unless they had gone through an expensive education.

341/2. I should only claim the two guineas when a medical man is giving evidence as a professional witness. The claim is made for professional evidence alone. For ordinary evidence as to fact nothing is claimed beyond what is paid to an ordinary witness. The professional evidence of a medical man is a special thing, and the fee paid at present is inadequate.

343/4. The fee mentioned would satisfy the profession, but not if made to cover several cases. That is a point to which we strongly object.

345. A country doctor's ordinary fees may not be as great as those of a man in a large city, but as a medical witness he most certainly ought to be paid just as much. The inconvenience and financial risk is greater in his case. Men in large towns generally have friends who will help them for a day, but a man in a remote district must either leave his work neglected or hire a *locum tenens*.

346/7. Giving evidence could never be considered merely an afternoon's work because the medical man always has to attend in the morning; possibly if he lived quite close and the case came on early he might only have his morning taken up.

348/9. Two guineas may possibly be more than some men make in a morning but that is not a fair way to look at it. It usually means the loss of a day; besides that, a man has to leave his practice. He might not actually have received two guineas if he remained there, but he may lose by his absence a patient who would in the course of the year be worth a very great deal more. For some people if they do not find the doctor at home no excuse is good enough. They leave him altogether. I do not think the same argument applies to shopkeepers.

351½/3/4. I do not at all agree that because a police surgeon is a quasi-official and constantly called on to give evidence that he should on that account receive a smaller fee than that paid to an unofficial doctor only occasionally summoned. On the contrary police-surgeons regard giving evidence as most unpleasant work and so far from desiring to take it at lower fees than others we would rather be without it at all.

355. Readiness to give evidence is certainly not one of the conditions of our appointment. We are practically free in that matter and are only paid to attend the men of the force.

356. It is quite understood that we are paid simply for our medical attendance, though no doubt the Home Office in selecting the best man for appointment bears in mind the fact that the man appointed may have to give evidence.

357/8/9. In the provinces it is the Watch Committees who appoint police-surgeons, but in London we are appointed by the Home Secretary, being recommended first by the Chief Police Surgeon, and next by the Chief Commissioner of Police.

360/1/2/3. There is a chief surgeon employed by the police for certain duties; he is not in their sole employ, but in private practice. He is the same as the rest of us, but has to exercise a kind of general superintendence. He picks out men for appointment, but the latter is actually made by the Home Secretary.

364. No authority tries to make a bargain with police surgeons to consider evidence as paid for by our salaries for attending the police. We should not agree to do such work for less than what is paid to ordinary medical men. It is very unpleasant spending hours at the Old Bailey.

365. If in the place you mention the police surgeon's salary were raised so as to specifically cover evidence in court, I agree that it would not be an unfair arrangement, even if the new rate were arrived at nominally by a payment of so much a head for each policeman under the surgeon's charge. But I am here on behalf of the general body of medical men, and not specially on account of police surgeons.

366/7/8/9. I understand that you are taking the matter as regards ordinary practitioners as granted, but personally I do not consider that police surgeons should be treated differently, or that they would be satisfied if they were. A suggestion of the sort referred to before was once made by Mr. Asquith, that is, that we should be paid more by our respective authorities so as to cover these disagreeable duties, but the idea did not take, and no one of us that I have met, has approved of the notion. It may be said we prefer the chances of work and fees to salary. I do not think London surgeons ever actually decline cases in which they may have to give evidence. The Old Bailey is even a worse place to attend than sessions.

370. The best answer to your inquiry whether the profession approves of the conduct of the Bungay doctors in declining to exercise professional knowledge in the public interest is an extract from the BRITISH MEDICAL JOURNAL: "We only hesitate to recommend that this practice should be universal by reason of the public inconvenience which would ensue, but now that the Home Office and the House of Commons are aware of the matter and have done nothing to remedy the wrong, they have only themselves to blame for any results that may follow." You see the profession claims that there is a great wrong, and representations to the authorities have failed to get it righted. Certainly we recognize that there is a duty to some extent to the public, and no "strike" on this point is proposed.

The evidence of Mr. Fred. Walter Lowndes of Liverpool was as follows (condensed):

373/383. Mr. FRED. W. LOWNDES: I live at Liverpool, where I have been surgeon to the police for nearly twenty-five years, and am also in private practice. I am not paid *per capita*. My salary began at £150 a year. As far as I know, it was not calculated on the number of men, like a friendly society. It has gradually increased to £180. My present duties are to examine candidates for enlistment and men proposed for superannuation. I have no other duties. Men sick are seen by the divisional surgeons. I used to attend the courts for twenty years, but am not required to do so now.

384/5. I did not attend in respect of my salary, but was paid the regular fee of one guinea. My salary is certainly not in lieu of payment of fees. I used to have to attend court because I saw men injured on duty, which involved many police court trials and attendance at assizes.

386/7/8/9. I certainly was not satisfied with the fees. That for attendance at a magistrate's court was half a guinea, quite inadequate for being detained for hours; nor is a guinea enough for assizes. Besides this, a judge can direct a medical witness to attend a juryman or any one else ill in the building. I am assured that he has this right, and I have been asked to give such attendance myself.

390/1/2. My divisional surgeons give evidence, and are paid in the same way. They are equally discontented, and with better reason, because they live at a distance, and only get 2s. a night extra for absence from home. That and the railway fare—one fare each way—is all that is, allowed beyond the guinea.

393. I have letters from certain medical men who are willing to attend but their letters can be summarized if preferred. Dr. Chronnell writes that he refused to examine a girl criminally assaulted, and all the other men refused too. He had had similar cases which forced him to rise at six to see patients, attend at Liverpool all day, and do his own work until midnight. The strain was great and the pay inadequate, so he refused to take any more of it. To persons whose life was in danger or injured, he could not refuse to go, but an assaulted girl seemed to him different. They were cruel shameful cases, but entailed immense responsibility, including examination of the accused, and microscopic and chemical work involving time and trouble, for which he got nothing at all.

394/5/6. The police used to pay me a guinea for examining the woman and one for examining the man in such cases; not at first, but later, and very likely because, being at the Lock Hospital, I had special experience. They are most repulsive cases, even to a man case hardened as I am. They paid to secure my evidence. They are generally remitted to the end of the assizes. I have given evidence often in two cases, sometimes in three and once in five in the same day, all for one guinea. I am fond of medical jurisprudence, and should like to continue to place my experience at the service of the authorities, but the fees are too small.

397/8. I do not complain of the fee I received for examining such cases; it is the guinea for going into court that is so inadequate.

399/400/1. What I would suggest is that we ought to be paid the same as in Ireland and Scotland. Two guineas for being in court all day it not unreasonable, and a guinea before magistrates. Of course in special cases special fees are paid. I was called in the Flannagan and Higgins case, the poisoners' case, and was paid 60 guineas, but it was not too much for the work done. It was paid by the Treasury, who give what they call special evidence fees for expert evidence.

402. A judge can order special fees. In the case mentioned I exhumed three bodies, removed viscera, and attended one court or another for eleven days, so the fee was not so very high. In the Conway murder case and in that of the American doctor who pretended to cure deafness I got 3 guineas. In one or two other cases of murder the judge has asked my opinion on the evidence, and then I have got more than a guinea.

403/4. I have given evidence in two courts in five cases on the same day for a guinea, and think this is a grievance. I do not think it would be unreasonable if the fee of 2 guineas referred to were paid for each case, or say, a fee of 3 guineas when there is more than one case.

405/6/7. The letter from Dr. Roocroft, who also offers to give evidence, is to the same effect as that of Dr. Channell, a repetition of the same sort of complaint which strengthens the evidence. Much the same may be said of that of Dr. Barling, of Lancaster, who sometimes has to come to Manchester or Liverpool.

408/9/0. I think there ought to be a difference for a surgeon living at a distance, as in Scotland. There to the best of my belief the surgeon gets 2 guineas for a case in his own town, and 3 guineas if he has to go to a distance.

411. Yes, I put in this case of Reg. *v.* Murray—a very aggravated case. The surgeons did the work, but received these very inadequate fees. The doctor when he goes from Lancaster to Manchester only gets his fare, nothing else. He desires to give evidence. Possibly, as you say, he could tell you no more than I have, but he could give chapter and verse.

416-17. The present system is that we get no more for going away from where we reside. I put in those letters. I think I have stated their grievances, but they wish to give evidence if you will allow them to.

418. The general feeling in Lancashire is what I have stated. Medical men nowadays have to be very highly educated, and once the novelty of going into Court has worn off young medical men recognize the inadequacy of the fees. I wish to press upon you that the present state of things may lead to a miscarriage of justice. There was a case where a police-superintendent complained to the magistrate that he could not get proper plans drawn by a surveyor because the payment was inadequate. I was present myself once when a plan proposed by the defence had to be used by the Court because for the fee offered no one would draw one for the prosecution.

419/421. I draw no distinction between what ought to be paid to a police-surgeon and an ordinary practitioner. It is not fair to consider salary as compensation. My salary was simply to cover attendance on the police.

422/3. Possibly other arrangements may be made in other places, but certainly as a rule, the salary only covers medical attendance and not evidence. If called to attend members of the general public, they would be paid separately.

424. If I were starting life again should I prefer to be paid by salary or fees as at present? I do not think it would be fair to expect Watch Committees to pay for what should be paid by the prosecuting authorities; besides which cases occur so capriciously that it would be difficult, if not impossible, to fix a fair salary. There is one point of my own experience which I will mention because it confirms what my brethren would say. I once had to go to Leeds assizes, getting up very early, and being detained all day; only got home late at night. I also had to go to York one Thursday and was detained all Friday and Saturday. For these visits I simply got a guinea a day and my fares, with two shillings a night while detained, and after paying my hotel bill I was out of pocket.

425. I do not think there should be any difference in the payments to town and country practitioners. The duties are the same and the pay should be the same.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of the directors of this Society was held on July 8th, the President, Mr. Christopher Heath, being in the chair. Four new members were elected. There were no fresh applications for grants. The death of a widow was reported, who had received £35 a year since 1885. A sum of £1,328 was voted for distribution among the 54 widows, 13 orphans, and the 4 recipients from the Copeland Fund now receiving half-yearly grants. The expenses of the quarter were £46 8s. 6d. A legacy of £25 had been received from the executors of Miss Alicia Harvey, and a donation of £5 from a relative of a widow who died in 1883, and had had grants of £50 a year since 1876, as a thank-offering.

CONGRESS OF THE SANITARY INSTITUTE.

(Concluded from p. 104.)

Conference of Municipal Representatives.

Garden City Scheme.

Dr. F. E. Fremantle, County Medical Officer of Health for Hertfordshire, read a paper on the Colonization of Rural England. After giving an outline of Mr. Ebenezer Howard's garden city scheme, Dr. Fremantle went on to say that the whole principle of centrifugal decentralization from the cities back to the country was the inevitable later result of improved and yearly improving communication. If the first experiment proved a commercial success, a wide vista of benefits to the nation was displayed. Improved health and healthy surroundings, assisted by measures directed from the first against intemperance and overcrowding, could not fail to bring in their train a moral improvement; while eventually agriculture and the value of agricultural land would improve, and slum property in the towns would fall in value, slums would gradually disappear, and the towns would approximate in the course of centuries to the ideal of the garden city.

Municipal Milk Dépôts.

Dr. G. F. McCleary, Medical Officer of Health for Battersea, dealt with the municipal infants' milk dépôt. He said one of the most remarkable features of the vital statistics of this country during recent years was the continuance of a high infantile mortality. Since 1875 the general death-rate had gone down from 22.7 to a little over 16 per 1,000, but the infant mortality was as high now as it was fifty years ago, and, in fact, the highest infant mortality figure since 1850 was reached in 1899, when the number of deaths under 1 year per 1,000 births was no less than 163. It would appear that some condition specially inimical to child life had come into operation in the last few decades. Might this not be found in the growth of the practice of artificial feeding, which every medical man of long experience would agree had occurred in recent years? There was no doubt that a large proportion of infant deaths was due more or less directly to improper feeding, and it was generally recognized that, in order to bring about a material reduction in infant mortality it would be necessary to effect something like a revolution in the methods of baby feeding now employed in the poorer districts of the urban centres of population. The methods adopted hitherto by sanitary authorities had been chiefly educational. What was the problem of artificial infant feeding amongst the poor? It was to supply the baby with a nutritious food which he could digest, which was free from chemical preservatives and pathogenic organisms, and was supplied in such a form as to prevent home contamination. To attain these objects the Infants' Milk Dépôt supplied cows' milk free from chemical preservatives, modified to suit the infants' digestive capacity, sterilized to destroy the contaminating organism received during transit, and supplied in stoppered bottles, each bottle containing sufficient food for one meal and no more, so that home contamination, unless wilful or due to culpable carelessness, was prevented. Dr. McCleary quoted figures relating to Battersea as to the rate of mortality among infants fed upon milk supplied at the municipal dépôt as compared with the infant mortality for the borough as a whole.

Dr. P. Boobbyer (Nottingham) said there was a matter that rendered the danger of a high infantile mortality still more conspicuous, and that was that the birth-rate was continually declining. He mentioned the matter for the purpose of emphasizing the importance of caring for infant life, the preservation of which was a matter of national importance.

After further discussion, Dr. McLeary moved:

That this Conference is opinion that the high death-rate of infants urgently calls for special inquiry, and recommends the Institute to appoint a special committee on the subject.

The resolution was carried unanimously.

Conference on Industrial Hygiene.

The Conference on Industrial Hygiene was presided over by Professor Thomas Oliver (Newcastle-on-Tyne), who delivered an address, of which the concluding portion was published in the British Medical Journal of July 11th.

An Employer's View of the Factory Acts.

Mr. W. H. Mitchell (Burley-in-Wharfedale) gave an address on Factory Legislation from an Employer's Point of View. He said that during a period which covered a large part of the first half of the nineteenth century there was practically no limit to the hours which might be worked in a worsted mill, nor to the age at which a child might begin to work; there was no protection from danger; and there was no consideration for health. The condition of the workers under these circumstances was as bad as possible. The Ten Hours Bill, which established the right of the State to control the industries of its people—so far, at any rate, as to enable it to protect its women and children—put an end to this state of things. Further legislation on the same lines had steadily reduced the hours of labour, insisted upon greater precautions for the safety of the workpeople, enforced better sanitary conditions, protected the workers in many ways, and gradually raised the age at which a child was allowed to commence work. What were the results from an employer's point of view? The Factory Acts had helped employers to success by compelling them to turn their attention from the old wasteful and ruinous methods of trying to obtain large production by long hours of work and economy by low wages, to the only way of obtaining these results satisfactorily, by means of improved machinery, better management, and more efficient workers. By establishing a standard of health, comfort, and safety to which all must conform, by helping, by means of carefully-trained inspectors, not only to enforce that standard, but to point out to employers how it could be attained, they had done much to make worsted mills as free from risk of accident, and as healthy to work in, as was possible under the circumstances. By a strict limitation of the hours of labour, and by preventing very young children from commencing work at an age when their strength would not bear the strain, they had given us a stronger and healthier, a more intelligent and efficient race of workers. There were those who said that the best thing the State could do for the industries of a nation was to let them alone. The factory legislation of Great Britain was a standing proof of the fallacy of this position.

Conference of Medical Officers of Health.

President's Address.

Dr. Spottiswoode Cameron (Leeds), President of the Section, in his opening address dealt first with small-pox, which, he said, had been somewhat prevalent in London, had travelled, largely through the agency of tramps, through the populous north-west districts to Lancashire and thence to Yorkshire, and during the last eight or nine months the energies of the sanitary executives in these northern counties had been largely taxed in grappling with the disease. He traced the common form of outbreak to the newcomer in a town who slept in a common dormitory and occupied the common day room in a doss house. The lodging-house had no separate room in which a suspect could be placed, and there was no legal power of detention unless a doctor was prepared to certify that the illness was indeed small-pox. Common lodging-houses were, however, not so difficult to deal with as the occupants of a private house or of an unlicensed lodging-house, who might never send for a doctor, though there was this advantage about private householders, that they did not wander from town to town. Was there any remedy for the tramp class? Many Boards of Guardians had wisely determined that all vagrants should be medically examined. Many had adopted the cubicle system. Where both these measures were in operation it was seldom that the disease made great spread. The practice adopted in some towns—notably in Liverpool and Manchester—of offering a small fee to the frequenters of vagrant wards and lodging-houses had probably done something to check the spread of the disease. Dr. Cameron next spoke of the inadequacy of the Food and Drugs Act. As at present administered, the law gave no protection to persons who were dosed unawares with borax in certain foods. Through the would-be effective Margarine Act the enterprising dealer had managed to drive his coach-and-four. Margarine, for instance, was not exposed for sale, and did not, therefore, require a distinctive label, if it stood on the shop counter behind a showcase. Was it not time that all sophistications, whether for the purpose of preserving or otherwise should require to be declared on the label? With regard to the Education Act, Dr. Cameron said it was doubtful whether the new committees would in all cases where they found the working expenses for non-provided schools insist upon having these put into a proper sanitary condition in regard to lighting, ventilation, air-space, and all other respects before they took them over. It was probable that in these matters the profession would have to make its voice heard on behalf of

public health. In conclusion, Dr. Cameron dwelt upon the importance of phthisis being included in the list of notifiable diseases. The Local Government Board had, he believed, drafted a clause intended to meet the difficulty.

Sale of Food and Drugs Act.

Dr. S. G. MOORE, Medical Officer of Health for Huddersfield, in a paper on the Application of the Sale of Food and Drugs Acts, said the use of preservatives in cream and milk was a matter demanding urgent consideration. Very real advantage to the public would result if independent and specially qualified assessors were appointed to assist magistrates in cases involving decisions where technical knowledge was requisite for a just appreciation of conflicting evidence.

Dr. BOSTOCK HILL (Warwick) said that so long as there was conflict of medical evidence on this subject so long would there be a difficulty in procuring convictions from magistrates. He agreed that on many points the magistrates required educating.

Dr. KENWOOD, honorary recording secretary, said that harmfulness of antiseptics should be judged from the effect it had on the most susceptible part of the population, and not from its effects on adults. He was sure the effect of boracic acid on infants under 1 year old fed principally on milk must be very injurious, and so, too, it must be in the case of the aged, who were not able to throw off its ill-effects.

Finally the Conference unanimously passed the following resolution:

That whenever preservatives are added to food, their presence, nature, and maximum amount should be indicated on the label or otherwise declared.

Tramps and Small-pox.

Dr. KAYE, Medical Officer of Health for the West Riding County Council, dealt with the part played by tramps in dissemination of small-pox. Taking the whole country, the number of tramps and vagrants was estimated at about 36,000. It was scarcely credible that so small a section of the public should be allowed to exert so baneful an influence in times of epidemic, taxing the resources of a great part of the sanitary officers of the whole country, and incurring an expenditure on the State wholly out of proportion to their numbers. In 1894 the London County Council called a conference of the sanitary authorities in England and Wales to consider this very question. Representatives of more than 100 sanitary authorities attended, and a number of resolutions were adopted indicating the directions in which increased powers were desired by local authorities in controlling common lodging-houses, etc. These included powers for compulsory disinfection, detention, or revaccination of tramps suspected of having been in contact with small-pox infection. The notable feature of these proposals was that they involved power to deal with the tramp himself, whereas the present powers were chiefly confined to supervising the lodging-house keeper and his premises, and did not touch the tramp himself prior to actual illness. It seemed anomalous that the Government should deem revaccination necessary in the army, navy, and postal services, and yet allow the vagrant to wander about in times of epidemic without let or hindrance. He was aware that to compel the revaccination of a vagrant against his will was a proposal which would raise great opposition, but if the great tax-paying public could be brought to realize the anomalies of the situation, extended powers would soon be obtained. Dr. Kaye, in conclusion, made the following suggestions in dealing with tramps: (1) Vaccination or revaccination of any such person exposed to the infection of small-pox; (2) disinfection of the person and clothing; (3) detention of the present inmates of infected common lodging-houses and refusal of new admissions: (4) complete closure of common lodging-houses where necessary. He also proposed the following resolution:

That in view of the recurrent outbreaks of small-pox, largely contributed to by a certain class of society, the Government be requested to take into consideration the necessity for legislation to deal more effectually with those resorting to common lodging-houses and workhouse tramp wards as a constant and dangerous element in the propagation and dissemination of small-pox.

The resolution was carried unanimously.

SECTION OF SANITARY SCIENCE AND PREVENTIVE MEDICINE.

President's Address.

Professor CLIFFORD ALLBUTT, the President of the Section, delivered an address, which was virtually a condemnation of the theory of the survival of the fittest. The reproach made against the medical profession since the time of the Greeks, or even longer, is that a physician might be well employed in curing wounds, or transient inflammations or distempers, but that his interference, which might well cease here, was extended to the mitigation of incurable maladies, whereby not only were useless lives extenuated but, what was worse, the survival of bad stocks was promoted. Elimination of the unfit by disease, was, however, too rough a method of compassing the survival of the fittest, even if the most vigorous of body were regarded as the salt of society. The profits were remote and precarious; the cost instant, enormous, and inevitable. They would do better to banish incidental disease, and to keep and develop the strong and the weak together for other conflicts. Disease did not kill only; too often it maimed or enfeebled, so that in a large proportion of cases it subtracted the patient whom it might ultimately spare from the sum of the vigorous, and added them to the sum of the relatively inefficient. Instead of withdrawing himself into the contemplation of disease as a means of suppressing the feeble and the maimed, the physician must endeavour to gain the countenance of the Darwinian by making it appear more and more approximately true that if the physician could but carry prevention far enough back—back to youth, back to childhood, back to infancy, back to the womb, nay, farther and farther, back to the parent and grandparent, even to the third and fourth generation, whose physiological and other sins had visited their children—the margin for essential frailty of pedigree might merge into extinction. When Sir Frederick Maurice and other philanthropists warned them that the people were degenerating, should they submit to be told that medicine must bear some part of the blame? Should not the physician proclaim again to the deaf, and those affected with the malady of not marking, that it was not only infectious fevers and the poisons of tubercle, of rheumatism, of syphilis, of alcohol, which often blighted when they did not kill, but also the more insidious and, therefore, more pervading and more perpetual degradation of bad air, bad houses, and other bad or defective conditions of life which perverted the lines of natural development and took the bloom of the fruitage of successive generations? To proclaim that by preventive medicine they could improve all bad stocks up to the present mean value, and fertilize the good ones to be fruitful infinitely above the mean, was more than he had dared to suggest; but he did call upon the Congress to declare that public health would do it better and more permanently than public disease could do it; and to urge upon the common Darwinian to study his origin even more closely than he had done, whereby he might learn that even unfitness is not uncaused; and that it might be even more practicable and more economical to hunt for and discover its various causes than to look to blind and violent readjustments after the extrinsic degenerative causes had done their work.

A Minister of Public Health.

Dr. BUSHNELL (Plymouth) proposed that a Minister of Public Health should be created, and that the medical department of the Local Government Board should be enlarged and made into a Health Ministry. He said a Minister of Public Health would stir up local authorities to progress. The great thing was to get a leader. He would not have a politician, but a Minister of Health with a seat in the Cabinet when health matters were discussed. He moved the following resolutions:

The members of this Congress are of the firm opinion that the national health would gain by the appointment of a Minister of Public Health, and the separation and enlargement of the medical department of the Local Government Board into a Health Ministry.

This Conference believes that an inquiry should be made by the Government as to the need for this suggested development and separation of the medical department of the Local Government Board in the light of the growth and complexity of public health administration.

Dr. HERBERT JONES (Hereford) asked had we not already a Minister of Health in the President of the Local Government Board? and asserted that we should really be very little better off with a change in the manner suggested. The great bane of the public health work was the insecurity of the tenure of medical officers of health.

Mr. ANDERSON, Chairman of the Glasgow Health Committee, strongly opposed the resolution. He said he would not have progress tied and hampered by a Cabinet Minister. What was wanted was freedom—freedom of medical officers from the influence of property owners on local councils. A Cabinet Minister was not selected because of any fitness he had, but usually because he was a good party man. Immediately he showed undue insight respecting the business of

his department he brought a hornet's nest about him. The Prime Minister selected his Cabinet so as to have a homogeneous whole.

Dr. F. E. Fremantle, Medical Officer for Hertfordshire, described Mr. Anderson's speech as a libel upon the methods of the British Government. It was not true that the Prime Minister took no account of capacity.

Mr. W. Whitaker, Chairman of the Council of the Institute, said it did not matter what sort of a Minister of Health they had, so long as he was a decent man and knew how to behave himself. It was the permanent officials who told Cabinet Ministers what to do.

The first resolution was carried by 54 votes to 24, and as regards the second the "previous question" was carried, the meeting being of opinion that an inquiry was inevitable if the first resolution were to be given effect to.

One Meal a Day.

Dr. Rabagliati (Bradford), in a paper, contended that the chief cause of fevers was not overcrowding, but overfeeding. He attached great importance to cleanliness and fresh air; but these came after wrong feeding in order of causation. We were in the habit of eating more than our systems could assimilate. Twice a day was sufficient to feed an infant, and adults between the ages of 21 and 50 ought to do with one meal a day. After the age of 75 persons might be trusted to know for themselves the sort of régime that would be suitable for them.

Other papers dealt with the treatment of sewage and the pollution of rivers.

The Notification of Consumption.

Dr. A. Newsholme, Medical Officer for Brighton, contributed a paper which was in the main a description of the educational methods and precautions adopted by the Brighton Corporation with notified cases. At Brighton the curative aspect of sanatorium treatment was regarded as of secondary importance. They were chiefly concerned with educating patients, and thus avoiding risks to others. At the same time, the patients had a practical personal demonstration of the benefits to be derived from abundant food, an open-air life, and freedom from infective dust. When they left the sanatorium at the end of the month—which in the majority of instances was the limit of time—they were without exception ardent advocates for the fresh-air régime, and were not careless as to coughing and expectoration.

Dr. Kenwood (Stoke Newington) and Dr. Gerard C. Taylor presented a paper on two years' experience of the voluntary notification of phthisis in the metropolis. They agreed that much good had been done by voluntary notification, but felt that compulsory powers would benefit larger numbers by bringing about earlier notification. But the hope of exterminating phthisis was impossible to realize; selfishness, ignorance, and poverty would always maintain sources of possible infection.

Dr. Niven's experience of voluntary notification of consumption in Manchester was also given.

Dr. Sykes (London) said that at present doctors were groping in the dark. Until notification was made compulsory they would be unable to put their hand upon the disease. Of two things, however, they were certain. They knew from figures and experiments that the cause of the spread of phthisis was sputum, and they also knew that the want of cubic space in the homes of the poor was a great factor in generating the disease. The first thing to do, then, was to stop all spitting, at any rate in covered public places, the next to increase the amount of air space in the houses of the poor. The people ought to be better clothed and fed, and there ought to be early diagnosis of the disease by bacteriological examination. Sanatoria were the remedy for the disease in the middle stage, but the hopeless cases were certainly ones for the guardians of the poor to deal with.

Dr. Willoughby (Eastbourne) protested against the extravagance to which public authorities were compelled to go in building sanatoria.

Dr. Fisher (Garstang) said voluntary notification was a practical failure. He urged the importance of the tent system in grappling with the disease in rural parts.

Dr. Chalmers (Glasgow) was of opinion that patients leaving consumption sanatoria ought to be found suitable employment, and for this purpose it seemed important that there should be a kind of national bureau where information could be obtained.

A resolution was passed, on the motion of Dr. Sykes, seconded by Dr. Kenwood, to the effect that the time had arrived for systematic statutory notification of consumption, and calling upon the Council of the Sanitary Institute to act upon this information.

Section of Physics, Chemistry, and Biology.

Professor C. Hunter Stewart who presided over the Section devoted to Physics, Chemistry, and Biology, dealt in his opening address with the history of experimental hygiene.

Bacteriology and Disease.

Dr. P. J. Cammidge, County Bacteriologist for the West Riding, read a paper on The Scope and Limitations of Bacteriology in the Local Investigation of Infectious Diseases. The efficacy of a disinfectant could now be so readily tested by bacteriological or chemical means that there was no excuse for the haphazard way in which the result was usually left to chance, or to the thoroughness with which the subsequent cleansing operations were carried out. The period of quarantine or isolation in most infectious disorders was generally determined by taking the average time which experience had shown to be sufficient, but it was an everyday experience of all who made frequent bacteriological examinations of the throats of convalescents from such a disease as diphtheria to find the specific bacillus present, often in large numbers and in a virulent form, several weeks, or even months, after all local evidence of the disease had passed away. Other diseases, due to microbic infection, such as anthrax, cholera, plague, and tuberculosis, presented opportunities for investigation by bacteriological methods, and he thought that a wider recognition of this fact by those responsible for the preservation of the public health would result in a great benefit to the community at large.

The Standardization of Disinfectants.

Dr. S. Rideal and Mr. J. T. Ainley Walker presented a paper on the standardization of disinfectants. The steadily-increasing demand for disinfectants, due in great measure to the fact that the general public were acquiring a better knowledge of the true cause of zymotic disease, had so stimulated invention that many chemical products of undoubted value had been introduced in recent years. But the makers of these genuine articles had to compete with others whose preparations were not only worthless, but actually dangerous, since the use of such products gave rise to a false sense of security. It was absolutely necessary that the efficiency of all disinfectants sold as such should have, if not a Government guarantee, at least a makers' warranty, which was capable of being checked. It was notorious that at present there existed no official control over the sale of disinfectants, with the exceptions of those set forth in the Privy Council Orders of July 27th, 1900, and June 5th, 1902. It had been frequently suggested that the provisions of the Food and Drugs Act should be extended to such articles. In other countries such legislation existed, and it was hoped, as an outcome of the present discussion, that some Parliamentary action might be taken in this country which would effectively deal with this particular problem.

In the course of the discussion it was mentioned that the cost of some of the largely-advertised disinfecting preparations worked out to as much as £128 per 1,000 gallons, and that an equally efficient disinfectant could be had for 6½d. per 1,000 gallons.

Dr. Rideal moved the following resolution, which was carried:

That the Council of the Sanitary Institute do appoint a Committee to inquire into the desirability of establishing a standard bacteriological method for determining the efficiency of disinfectants, and take such steps as may be necessary for ensuring the legal control of disinfectants.

Tipping and Soil Purification.

A paper on the self-purification of made soil, contributed by Dr. William G. Savage, Bacteriologist to the Cardiff and County Public Health Laboratory, who was unable to be present, was read by Major R. H. Firth (recording secretary). The author pointed out that animal and vegetable matter contained in house refuse had been in the past, and was to a very large extent at the present day, disposed of by depositing it upon land outside the town. It was generally deposited in hollows and inequalities, and so served the subsidiary purpose of levelling up the surface of the ground. With the extension of the town this waste ground became a valuable building site and a monetary asset. Too frequently, unless restrictive by-laws were in force, made soil was built upon

long before it could become to any satisfactory degree purified. The material deposited was readily decomposable, and its decomposition must cause the evolution of offensive gases. Every one would admit that such made soil was unfit to build upon when recent, while that such soil would eventually become broken up, decomposed, and rendered harmless seemed equally incontrovertible. Apparently, however, very little was known as to when such soil would become a possible and sanitary one to build upon. The model by-laws of the Local Government Board prohibited the erection of a new building "upon any site which shall have been filled up with any material impregnated with any animal or vegetable matter, or upon which any such matter may have been deposited, unless and until such matter shall have been properly removed by excavation or otherwise from such site." It was frequently impossible to remove by excavation such material. Was land which had been so used never to be built upon? That was hardly reasonable to expect, and, at any rate, would not be practised by urban authorities. It was of great practical importance to, if possible, gain some idea of the purification progress likely to be met with under different conditions.

CONFERENCE ON THE HYGIENE OF SCHOOL LIFE.

President's Address.

Dr. JAMES KERR, who presided over this Conference, delivered an address in which he said that educationalists were just beginning to suspect that much time might be wasted on precocious work which at a later age would be learned rapidly and with little effort, and over-pressure and bad school habits were the result. Apart from infantile mortalities, there were multitudinous conditions that sprang from ill-feeding, and left results not only in rickety deformities but in enfeebled intellects. Next to drink, ignorance in the home was the chief factor of that death and disease in very young children which was out of the reach of the sanitary inspectors. Education permeating those homes was the only way of effecting improvements. Dr. Kerr proceeded to call attention to the importance of the report of the Royal Commission on Physical Training (Scotland)—a report which, however, had attempted too much in the way of statistics. The report stated that school doctors were wanted. Bradford had the credit, ten years ago, of being the first in the country to appoint a medical man to visit the schools regularly, and examine into whatever affected the well-being of the children. The first result of any such appointment of school doctors would be the demand for the general training of future teachers, and a new era would dawn in educational progress.

Dr. H. MEREDITH RICHARDS (M.O.H. Croydon) read a paper on Some of the Medical Problems of Public Elementary Schools. The chief duties which arose in connexion with children attending public elementary schools, he said, were: (1) To ensure that children do not attend school while suffering from infectious disease, or while liable to carry infection: (2) to ensure that children are physically fit for compulsory attendance to be enforced without the production of bodily or mental injury, and that the curriculum is arranged with due regard to the capacities of the children; (3) to ensure that school premises shall be in such a condition as shall not be detrimental to the health of the children.

It was agreed, on the motion of the PRESIDENT, to send the following resolution to the Board of Education:

That this Conference of the Sanitary Institute on the Hygiene of School Life suggests the desirability of recognizing the Code regulations for the payment of grant (Section 61*) in cases where the absence is due to epidemic disease, as this has been a sanitary influence of great practical use in the past.

The Eyes and Ears of School Children.

Three papers were afterwards read bearing upon the general health of the children. Dr. S. STEPHENSON dealt with the care of children's eyesight as scholars; Dr. BRONNER dealt with the importance of examining the eyes and ears of all school children, not only those of Board schools; and Dr. A. LITTLE spoke of the care of the eyes of children attending elementary schools.

POPULAR LECTURE.

Major RONALD ROSS, C.B., delivered a popular lecture on insects and the part they played in the spread of malarial fever. Malaria was carried from "host" to "host," or man to man, by the deadly mosquitos, which in Sierra Leone especially—he spoke of that place because he had experience there—thrived in myriads in the small stagnant pools, beside rivers, in the middle of native villages, and even in places like Freetown. The remedy was to fill up these stagnant pools with sand, but the Government were still inquiring as to whether that would be a good thing. As regards Freetown, a private gentleman had given a special donation for the purpose of having the pools filled in. That the process was successful was just proved by experience at Ismailia, on the Suez Canal, where an energetic French company had acted on his (Major Ross's) advice. A report stated that within almost six months malaria had begun to diminish. As a result of oiling the stagnant pools, and incessant surveillance of the breeding places, mosquitos had been suppressed almost absolutely, and in the hottest period of the year it had been found possible to abandon the use of mosquito nets.

CLOSING MEETING.

The closing meeting of the Congress was held on July 10th. Mr. E. WHITE WALLIS (Secretary of the Institute) gave his report on the Congress. There had been present 700 delegates, representing 335 local authorities, and 451 members and associates of the Institute, while 130 tickets had been taken by local members. The complimentary tickets numbered 100, and there were a number of ladies attending with members, the total attendance being 1,556. In reply to a question, Mr. Wallis said this number was not quite so large as that of last year, when it reached about 2,000.

HYGIENE OF FACTORIES AND WORKSHOPS.

GENERAL ACCIDENTS.

IN a previous brief notice of the Annual Report of the Chief Inspector of Factories and Workshops for the Year 1902[1] mention was made of the large number of accidents that occurred during 1902, namely, 90,355, as against 83,760 for 1901. Although there are indications that laundry machinery and electrical plant are better fenced than previously, danger has arisen owing to the rapid growth of these industries. It is pointed out, too, that gas engines are not so well fenced as they ought to be. The employment of young persons to look after machinery is a fruitful source of accidents. Another cause of accidents is that young girls, contrary to all advice, will wear their hair down when working near machinery in motion. This unfortunate custom is still the cause of "scalping," which figures in the annual report. In the textile factories flying shuttles are responsible for many accidents. During 1902 there were 63 accidents from this cause, as against 96 in 1901. Factory laundries, too, figure largely in the accident returns, namely, 288 for last year. Miss Anderson the Principal Lady Inspector, does not find that any particular season of the year with its pressure of work has any special influence upon the number of accidents, but this may be due to the fact that such accidents as might be caused by hurry would scarcely show themselves at a particular time in a general table for the whole of the kingdom. Attention is directed by Mr. H. J. Wilson to the very large number of accidents in shipbuilding yards, many of which would seem to be preventable. Out of 93 fatal accidents in the North-Eastern district during 1901-2, no fewer than 13 occurred to boys of 16 years of age and under, a number out of all proportion to the percentage employed as compared with adults. Shipbuilding is, therefore, a deadly trade to young persons, owing to such hazardous work as "heating" and "catching" rivets, and passing them when heated to the riveter.

ACCIDENTS FROM ELECTRICITY.

For the first time in the annual report of the Chief Inspector of Factories there is incorporated one by the electrical inspector. Mr. Ram's report is of considerable value both from a scientific and an industrial point of view. The notification of accidents caused by electricity is still imperfect, and there is far too great a tendency to employ unskilled persons in responsible work. The fact that the supply of high-pressure and extra high-pressure current is increasing ought of itself to be an additional reason for precaution. Low pressures, on the other hand, are not without danger. Many of the electrical accidents reported occurred with pressures under 500 volts, and two accidents occurred with pressures as low as 250. During 1902 there were 30 electrical accidents, 5 of which were fatal. Most of the accidents happened to persons when working on "live" switchboards or conductors at low pressure; short circuiting occurred in some of these cases and caused severe burns. An

[1] Messrs. Eyre and Spottiswoode, East Harding Street, London, E.C., and others. Price 3s. 10d.

accidental short circuit may produce an explosion of great energy within a few inches of the worker's face, and, apart from the actual burns inevitably received, there is danger of poisoning from the vapour and particles of copper. Although there is a tendency to the employment of electrical energy on a greater scale and of extra high pressures, Mr. Ram does not think that this need lead to extra dangers if proper safeguards are introduced.

LAUNDRY REGULATIONS.

The Principal Lady Inspector of Factories gives at length in the form of appendices the regulations that obtain in France, Germany, and Belgium in the laundries of religious institutions. It would appear that England stands alone in reserving for the laundries of convents or of other charitable institutions an exceptional exclusion from regulations. In Miss Anderson's visit to a large penitentiary laundry in Ireland that had hitherto failed to respond to the Home Office to submit to voluntary inspection, the impression formed was extremely favourable so far as regards the arrangements made for sanitation and safety.

TOBACCO TRADES.

It is interesting to observe how one after another of the old industries keeps passing away. The clay-pipe trade in this country used to be very prosperous, but it has been killed very largely owing to the increased demand for cigarettes. As a consequence, too, of the increase of cigarette smoking and the light nature of the work, larger numbers of women and young persons are annually finding employment in this particular branch of the tobacco trade.

INFANTILE MORTALITY AND FEMALE WORKERS.

There has been an impression that great infantile mortality and brick making go together, but Miss Martindale shows that the highest death-rate of infants occurred in Staffordshire and Lancashire, the figures there being 178 and 180 per 1,000 births, whereas in South Wales, where women work in the brickfields, the infantile death-rate was 154 per 1,000 births. The lowest similar death-rate was in Rutlandshire, namely, 79. It is scarcely possible from these figures to arrive at any decisive conclusion other than the general fact that wherever women are largely employed infantile mortality runs high. The effects of imperfect housing and overcrowding have also to be considered.

PHTHISIS IN LAUNDRESSES.

Last August at the meeting of the British Medical Association in Manchester Dr. McCleary, Medical Officer of Health for Battersea, read a paper on the incidence of phthisis on laundry workers. The lady inspectors allude to this subject. Amongst laundresses admitted into the Wandsworth and Clapham Infirmary during 1899 and 1900 phthisis cases formed 8.7 per cent. of the total admitted, while in the class of women other than laundresses the percentage was 5.3. In the Isleworth Infirmary during the same period the percentages were 10.9 and 4.5 respectively. Pulmonary phthisis is most marked in females from 15 to 25 years of age.

REPORT OF THE MEDICAL INSPECTOR.

The report of the Medical Inspector, Dr. T. M. Legge, is again one of very great interest and value from a professional point of view. Allusion is made to the establishment of the Industrial Hygiene Section at the meeting of the British Medical Association in Manchester, to the papers read and the various discussions that took place. It is pleasing to note the diminution of lead poisoning throughout the country. Taking all the industries together there were 629 cases of plumbism notified during 1902 as against 863 and 1,058 of the two previous years. More men than women are at present employed in lead processes. The larger number of severe cases among men, the smaller proportion reported for first attacks, and also the higher proportion of paretic symptoms among men, Dr. Legge regards as proofs that men continue to work in lead much longer than women, while the higher proportion of the symptoms of headache and encephalopathy among women shows the greater tendency for the cerebral system to be affected in women than in men.

Dr. Legge draws attention to the fact, hitherto unrecorded so far as we are aware, of perforation of the septum nasi occurring in men employed in the manufacture of sheep-dip. The dip is a compound of sodium arsenite with arsenic sulphide and free arsenious acid. During the processes of grinding and packing, a considerable amount of dust is evolved. The perforation of the nasal septum is similar to that which occurs to workers in bichromate factories. Poisoning by nickel carbonyl is discussed and the experiments by Professor McKendrick mentioned as well as the conclusions of Professor Tunnicliffe and Dr. Mott.

BELGIAN EXPERIENCE.

The report of Dr. Glibert, Medical Inspector of Factories, Belgium, a translation of which appears in the appendix, is extremely interesting. Females commence work in the linen industry of Belgium as early as 13¼ years of age, and on an average they continue to follow their employment for nearly nine years, while men work for about eleven years. Dr. Glibert is of the opinion that the early commencement of work by females in the linen industry is particularly injurious and that the health of the women deteriorates *pari passu* with their age. Men enter the linen factories later, as a rule after 20 years of age, and as a consequence they keep their health better. Heckling and carding are the processes in the factory most injurious to the men, and carding to the women.

COMMENTS BY THE CHIEF INSPECTOR.

The Chief Inspector of Factories, in his report, alludes to two events of the year as bearing closely upon the work of the Factory Department of the Home Office. These are: (1) The appearance of Dr. Oliver's textbook on *Dangerous Trades;* (2) the annual meeting of the British Medical Association at Manchester, with a new special Section for industrial hygiene and diseases of occupation. Both are an indication of the spirit of the age in which we live and mark a period.

The increasing medical value of the annual report of the Chief Inspector of Factories is apparent, since Dr. Whitelegge assumed office. The report for 1902 is in advance of its predecessors. It is an excellent piece of work done both by himself and his subordinates, and will bear more than favourable comparison with similar reports issued by foreign Governments.

MEDICAL SICKNESS, ANNUITY, AND LIFE ASSURANCE SOCIETY.—The usual monthly meeting of the Executive Committee of this Society was held on June 26th at 429, Strand, London, W.C. There were present Dr. de Havilland Hall (in the chair), Dr. St. Clair B. Shadwell, Dr. J. W. Hunt, Dr. F. S. Palmer, Mr. H. P. Symonds, Dr. F. J. Allan, Mr. F. S. Edwards, Dr. W. Knowsley Sibley, Mr. J. Brindley James, Dr. Alfred S. Gubb, and Dr. J. B. Ball. The list of sckness claims presented was somewhat shorter than at the same date in last year, and on the whole the sickness experience of the first six months of this year compares favourably with that of the corresponding period in 1902. The claims have been numerous, but for the most part of short duration, and the average amount paid in respect of new claims has been moderate. On the other hand, the number of those who will, in all probability, require to draw sickness pay continuously, grows steadily, and when these cases are taken into account, it is found that the average duration of the sickness claims shows signs of increasing. At the close of the present year the business of the Society will be valued, and the surplus funds will be at the disposal of the members. A large proportion of the £160,000 now belonging to the Society must necessarily be reserved to meet the future ordinary claims. In addition a considerable extra reserve has always been retained for the purpose of securing the annuities paid to the permanently incapacitated members. These annuities, which are usually 100 guineas a year for each member, now amount to between £2,000 and £3,000 a year, and a considerable special reserve will be made to ensure that there shall be no possible risk of any failure in their regular payment. The Committee has always considered that the safeguarding of these practically permanent provisions is the most important feature of the Society's business. Large reserves will, therefore, have to be made, but the economy with which the Society's business has been conducted has produced a considerable saving, and there is no reason to doubt that a substantial surplus will be at the disposal of the members at the general meeting of next year. Prospectuses and all information on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

CANADIAN MEDICAL ASSOCIATION.—The Canadian Medical Association will hold its thirty-sixth annual meeting at London, Ontario, from August 25th to the 28th, under the presidency of Dr. Walter B. Moorhouse.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1903.

SUBSCRIPTIONS to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, JULY 18TH, 1903.

THE ANNUAL REPRESENTATIVE MEETING.

THE first annual Representative Meeting of the British Medical Association will assemble at Swansea on Tuesday, July 28th. The meeting will consist of the representatives elected by the Divisions or by combination of Divisions, and the members of the Council are also entitled to take part in the discussions of the meeting. The meeting can, and no doubt will, adjourn on the first day, and under Article XXVIII can meet from day to day until the completion of its business, or until the expiration of four days from the first day of its meeting, whichever shall first occur. Although the Representative Meeting is not a continuing body, but one elected with special instructions for each meeting, there can be no doubt that this first meeting will practically establish a good many precedents. According to Article XXXI. the first business of the meeting will be to elect a representative of a Division as the Chairman of the Representative Meetings for the year, and afterwards it will probably be found necessary to provide for keeping the official minutes of its proceedings and to make standing orders.

The meeting will have before it certain reports and various motions, notices of which were, in accordance with Article XXVII. given by the Council, Branches, or Divisions, three months before the day of meeting, and duly published in the BRITISH MEDICAL JOURNAL.[1] By-law 17 provides that the next business after the election of a Chairman shall be to determine the order in which the various matters on the agenda paper shall be dealt with. As on this occasion the same or nearly allied matters are dealt with in more than one notice of motion, the wisdom of this provision is already evident. In France this task would probably be entrusted to a bureau or small committee, the meeting adjourning for half an hour or so to allow this work to be done, but it would be equally consonant with British methods to leave the arrangement to the Chairman, subject to the will of the meeting as expressed at the time.

The meeting will have before it the annual report of the Council on the general state and proceedings of the Association for the past year, and the estimates for the coming year. The Medico-Political Committee and the Ethical Committee will also present annual reports to the meeting, which will have the further duty of electing half the members of these two Committees for the coming year.

It will be observed that both the Council of the Association and the Southern Branch have given notices of motion to amend By-law 2, which governs the election of members of the Association by a Branch Council. The by-law as it stands provides for election by the Branch Council upon the application of the candidate; the alterations proposed would require the candidate to furnish a certificate or statement signed by two or more members of the Association to whom he is personally known, to the effect that he is a suitable person for election. The motion proposed by the Council would make the regulation permissive; that it is to say, it would empower any Branch to adopt such a regulation, while the motion proposed by the Southern Branch would make the condition obligatory on all Branches. The suggestion of the Southern Branch is also more stringent, in that it would require three signatures instead of the two proposed by the Council.

The whole subject of the present conditions of contract practice will be brought before the meeting by notices of motion sent up by the Gateshead Division of the North of England Branch, instructing standing committees of the Association to investigate the economic conditions of contract practice in various parts of the country, and the ethical position of medical men engaged in various kinds of such practice. No more live subject can come before the Representative Meeting at this session, and the result of some inquiries which have been made for this JOURNAL recently are sufficiently diversified to show that the conditions vary so much in different localities as to make it imperative—as the notices of motion propose—to obtain accurate information, since it might be easy to fall into the mistake of laying down general rules which would not be workable in particular cases.

We are glad to observe that the present system of death certification and registration will also come before the Representative Meeting on a notice of motion by the Cleveland Division of the North of England Branch. This is a matter to which this JOURNAL has for many years past frequently called attention, and in 1900 a series of articles was published showing some of the injurious consequences which flow from the present defective law and lax administration. Since then many other instances have accumulated, in fact hardly a week passes without our columns affording fresh evidence of the need for reform. As will have been seen by the reports of the proceedings of the Medico-Political Committee, published in the SUPPLEMENT of the last issue of the JOURNAL (page cxxi), the matter has already engaged the attention of the Medico-Political Committee, which has prepared a memorandum for submission to the Registrar-General.

The amelioration of the hard conditions under which the medical officers of the Irish Poor-law service now discharge their onerous duties is a matter to which the British Medical Association has long given anxious consideration. That a satisfactory remedy has not yet been found must be, in a large measure, attributed to a want of cohesion among those engaged in such practice, or seeking appointments under the Poor Law. There are now encouraging signs that this source of weakness is being removed, and we have no doubt that the Representative Meeting will give most sympathetic consideration to the notice of motion given by the Leinster Branch. This Branch expresses the opinion that the amendments required are the fixing of a minimum salary, the granting of superannuation, and the privilege of an annual holiday of at least a month. With regard to the first point our Irish brethren appear to be practically unanimous; as to the second, it may be observed that it does not involve any serious innovation, inasmuch as Boards of Guardians now have power to grant superannuation. It appears from a reply made by the Chief

[1] April 25th, 1903, p. 994.

Secretary to a question in the House of Commons the other day that under the Local Government (Ireland) Act, 1898, 18 medical officers have received superannuation allowance. The matter is, however, governed by the Medical Officers' Superannuation (Ireland) Act of 1869. This Act gives Boards of Guardians the power at their discretion to grant a superannuation allowance to any Poor-law medical officer. The Act is therefore permissive, and the decision to grant or refuse superannuation rests with the guardians. There is abundant evidence that the fear that superannuation might be refused has caused medical officers to drag on in bad health, or to a very advanced age, a condition of things which cannot be to the advantage of the sick poor in Ireland.

Among the other matters which are to come before the meeting is the proposal contained in notices of motion sent up by the South-Eastern Counties Division of the Edinburgh Branch and by the Dundee Branch. It is proposed that a standing committee should be appointed consisting of the Scottish members of Council and standing committees, and of representatives of the Scottish Branches, to consider matters specially relating to Scotland. The two resolutions are not quite identical, but the above gives their general effect, and the Dundee Branch proposes that the committee should report to the Council upon matters specially concerning Scotland. This would mean the creation of another standing committee, and the proposition would therefore appear to require careful consideration in order that the scope of work of the proposed committee should be distinctly defined.

THE DOSAGE OF CHLOROFORM.

The second report of the Special Chloroform Committee appointed by the Association on July 10th, 1901, is published in the Supplement to this issue (page cxli).[1] It will be interesting to trace briefly the evolution of the practical conclusions of the new report from the preliminary investigations.

The original reference to the Committee was to investigate methods of quantitatively determining the presence of chloroform in the air and in the living body, and it was impossible to arrive at the ultimate aim of the research—which was to determine the minimum dose of chloroform which would secure an adequate anaesthesia for operations and at the same time not endanger life—until it became possible to ascertain with exactitude various data. Although many investigators had followed many methods of testing quantitatively what amount of chloroform was inhaled in the various methods employed clinically, yet no definite knowledge existed as to which of these was reliable. When it became possible to select methods or invent them, the Committee became in a position to advance their work a step further.

The importance of learning how much chloroform passed into the body, what proportion entered the blood and became stored in the tissues and how much left the body during expiration and whether or not any of the tissues evinced a selective power of appropriating and retaining the drug, was recognized by the Committee and an endeavour was made to obtain a trustworthy answer. In the current literature of chloroform there is a tacit acknowledgement of the existence of individual idiosyncrasy and an acceptance of the assumption that chloroform is a cumulative drug. The research before us neither accepts nor denies such statements but it offers some valuable evidence bearing upon them.

The next step in the research was to ascertain whether clinical methods of giving chloroform were trustworthy. Did they, for example, enable the administrator to increase or decrease the dose according to the requirements of the case, such requirements being judged of by observations upon the physiological effects produced in the patient? This part of the investigation has essentially practical bearings, and is dealt with by one of the Committee with experience on this side. The older methods—the so-called "open methods" which still appeal to those who prefer personal skill to scientific exactitude—cannot fall within the scope of any research which aims at a rigidly accurate method of giving a powerful and therefore dangerous drug, and the methods which require apparatus are mostly inaccurate in so far as they offer no readable index by which the administrator can tell at a glance what percentage of vapour he is offering to the patient. Mr. Harcourt, a member of the Committee, has suggested an inhaler which remedies some of these defects, and the trials conducted with his instrument appear to have satisfied the Committee that the principle at least is right.

The Committee insists upon the absolute necessity of dosage in the case of chloroform, and demands an apparatus which shall enable the administrator to maintain the dose within such limits as will on the one hand give an adequate anaesthesia, and, on the other, not endanger life. Safety is held to be in the main a question of dosage, by which the Committee does not mean any quantity of the drug, but its percentage mixture with air. Even a very small quantity will kill when given in a concentrated form, while a comparatively large amount is absolutely safe if presented in a vapour below 2 per cent. It will strike practical readers as not a little remarkable that experts writing for the Committee state that while for most patients 2 per cent. or less will be adequate to induce, 1 per cent. or less will maintain, anaesthesia. It would be interesting to learn what is the percentage of chloroform commonly given by the usual inhalers and other inexact methods in everyday use.

When this clinical datum was established, it became necessary to ascertain with accuracy what physiological effects various known percentages produced. The valuable paper presented to the Committee by Professor Sherrington and Miss Sowton deals with the effects upon the isolated mammalian heart. Their research, undertaken early in the year and presented in May, adds to our knowledge in some most important particulars, and is of the utmost value. A mammalian heart removed from a recently-killed animal was so arranged that a warm stream of modified Ringer's solution entered through a cannula fixed above the sinuses of Valsalva. This fluid, after traversing the coronary system, leaked over the surface of the heart and so kept it moist and warm. It was thus easy to introduce various doses of chloroform from one volume in a thousand to one in a hundred and fifty thousand volumes of saline. The movements of the auricle and ventricle were studied by very light levers, which marked each upon a revolving sheet of blackened paper. Electrical excitation was also provided for, so that both the cardiac nerves and the heart muscle could be stimulated at will and the results noted. The tracings thus obtained show clearly that the heart muscle takes up chloroform from the fluid circulating in the coronary vessels; its physiological effect, or

[1] The first report was published in the British Medical Journal of July 12th, 1902, p. 116.

we may say its lethal effects, vary according to the fluid. Thus in diluted blood the chloroform produces less effect than in the saline solution. As the amount of chloroform is increased in the circulating fluid, more is taken up by the heart muscle, until with relatively large doses toxic effects are manifested. In the cases of weaker (non-toxic) doses, after a comparatively short time an equilibrium is established between the circulating fluid containing chloroform and the tissues of the heart muscle. Provided the same strength of chloroform is circulated, no further effect upon the muscle shows itself. The degree of enfeeblement remains constant, and after an interval of ten to twenty minutes becomes even less marked. This fact, of course, in a sense contradicts the theory of cumulative action. However, when the strength of the chloroform is increased, further enfeeblement shows itself, until at a certain point toxic phenomena make their appearance.

From the clinical side, the value of these experiments is great, although the problem is less simple. Provided the elimination of chloroform proceeds side by side with its introduction, we have Professor Sherrington's uniform circulating fluid, but as soon as we have any interference with expiration we have an accumulation in the sense that the circulating fluid—in this case the blood of the animal—is receiving constant additions of chloroform. The chloroform tension therefore increases and the cardiac muscle is exposed to those more concentrated solutions which the experiments show paralyse first the ventricle and then the auricle. The reverse of this is proved to be equally true. When from any reason the amount of chloroform circulating is lessened experimentally by introducing weaker solutions, or even omitting the drug, the degree of paralysis of the heart muscle rapidly diminishes. This is so remarkable that we are told it almost suggests simple solution in the muscle without chemical union with it, and that so soon as the circulating fluid contains less chloroform than the muscle the latter yields up whatever amount of the drug it holds until equilibrium is established. Of course these statements only hold good for weak solutions, and emphasize the extreme importance of restricting the dose of chloroform to such percentages as correspond to the weaker solutions which Professor Sherrington employed.

These experiments therefore serve to establish the doctrine that it is the dose of chloroform which circulates in the fluid through the heart and not the length of time during which the fluid circulates that is important. After a sufficiently long time the effect is lessened and an apparent "immune" condition appears. But when strong solutions are used quite other effects make their appearance. In a period of time differing according to the dilution of chloroform perfused the ventricle and auricle stopped absolutely. The former was more susceptible than the latter, and more difficult to restore when the drug ceased to circulate. To a certain point recovery was possible when the chloroform was washed away by undrugged fluid, but when a certain dose was reached no such recovery took place. When the solutions were of a certain dilution the mere fact of their being circulated for a prolonged period did not appear to hinder the recovery of the heart muscle as soon as the conditions were favourable. It has always been rather a moot point how far chloroform interferes with the cardiac nerves. It is important therefore to note that while from the nature of the experiments no very definite results could be arrived at upon the question of inhibition of a heart drugged with chloroform, yet electrical excitation of the nerves increasing the heart's movements could, even when the heart was brought to a standstill by chloroform, re-initiate and maintain active rhythmic cardiac contractions even when the muscle was flaccid.

The results of this important research are grouped around the questions of dose and accumulation. First, it is shown that chloroform kills in certain doses, and there is a disposition to accept 2 per cent. as a working limit, and to question the propriety of higher concentration. Professor Sherrington found that solutions representing larger doses paralysed the heart, and must be discontinued before recovery can take place. Within this region of safety even prolonged perfusions caused no cumulative effects. If we translate this into practice it would lead us to believe that a prolonged inhalation of a "safe" dilution of chloroform need cause no fear of gradually increasing paralytic effects, but rather may be followed by diminishing effects. The effects produced upon individual hearts offer, we are told, some ground for believing that some persons are more easily affected than others. The evidence, though at present inconclusive, supports the belief in "idiosyncrasy," applying that term to connote the fact that what is a small dose for the heart of one animal may prove large for that of another.

It may be asked, Does the report offer any hope to the practical chloroformist that eventually he may feel he is using a drug whose properties he knows, and that a method will be found whereby he can regulate to the requirements of the case the strength of the anaesthetic? We venture to think that there is every hope of such desirable ends being at last achieved. With a definite decision upon dosage, an assured belief that the danger of chloroform is practically that of giving an overdose, with a decisive mandate that all inhalers must supply only definite percentages, much is achieved; and if to this be added the conclusions arrived at by Professor Sherrington, it will be seen that very much has already been done, and that there is good reason to expect that much more will in the near future be carried out.

MEDICAL WITNESSES' FEES.

THE summary of the report and evidence taken before the Departmental Committee of the Home Office, which we print elsewhere, will be read with interest by all who are concerned in medico-legal matters, and especially by that large number of members of our Association who have suffered in times past from the inadequate payments—now openly confessed to be inadequate—hitherto paid under the antiquated scale which was framed in 1858 by the then Home Secretary, Sir George Grey.

To the historical sketch, given in this report, of the legislation which preceded, and the administrative circumstances which led up to, the framing of Sir George Grey's scale, we may here add a note of our own as to the action taken by the medical profession in recent years to draw attention to their grievance in this matter, action which led to the appointment of the Committee which has now reported.

In January, 1895, when Mr. Asquith was Home Secretary, an outline of the facts as to medical witnesses and their fees, which have now been given in evidence, was laid before the Home Office by a deputation of the United Kingdom Police Surgeons' Association. In 1898 a memorial to the same effect was prepared under the

authority of the Council of the British Medical Association and forwarded to the Home Office; in 1899 a Joint Committee of the two Associations was formed, and in the following year a letter going fully into the matter was addressed to the *Times* by Mr. Andrew Clark, Chairman of the Joint Committee. This letter, with additions, was reprinted and circulated during the general election of 1900 amongst candidates for seats in the House of Commons, many of whom thus became acquainted with the facts of the case for the first time, and promised to give their active sympathy to the movement for reform if elected. By subsequently interviewing M.P.'s, and placing printed statements in their hands, the Joint Committee at length succeeded in getting sufficient Parliamentary interest aroused to induce the Home Secretary to appoint a Departmental Committee of Inquiry.

The Committee examined thirty-three witnesses, of whom three were medical practitioners, twenty-one officials who have to do with payment of expenses in criminal cases, such as clerks of the peace in various counties, while the remainder were accountants, barristers, solicitors, and a retired judge from New Zealand.

The case for the Joint Committee was stated by Mr. Nelson Hardy and Mr. Frederick Lowndes, who described very fully the inconvenience and loss of time experienced by medical witnesses, especially those practising in the country, by being taken away from their work, sometimes for a week at a time, put to expense both by having to stay at hotels in the assize town, and also by having to provide *locum tenentes* to do their work while away from home, for which the present allowance of a guinea a day does not at all recompense them. The well-known instances of Bungay and Willenhall were also quoted as examples of how badly the present system works, and a number of other towns were named in which no fee whatever is paid to the medical witness in the police-courts unless the case is committed for trial at the sessions or assizes. Cases were also mentioned where a medical man had given evidence in two, three and even five cases in one day, and had only received a fee of 1 guinea for his day's work. It was stated that in Ireland and Scotland the fees were more liberal, 2 guineas being paid in Ireland to medical witnesses coming from another town to the assize town, and an additional guinea if detained in court for more than three hours; and that in Scotland, as the Lord Advocate afterwards personally corroborated, medical witnesses residing in Edinburgh were allowed 2 guineas, and those from a distance 3 guineas a day. The Committee procured for themselves copies of the scales of payments in Scotland and Ireland, and these, which are published in the appendix, fully bear out the statements of our representatives. A strong, indeed an unanswerable, case was thus made out, and the Department Committee in their report fully admit that the allowances at present in vogue in England and Wales are inadequate, especially as regards witnesses coming from a distance, and that the complaints of the medical profession are justified by the fact that its members are much more frequently called on to assist criminal justice by evidence drawn from their professional experience than any other class of the community. They therefore recommend that the rate of payments be altered for those giving evidence in the town of residence from 1 guinea a day to 1 guinea a case, but for more than two cases not to exceed 2 guineas a day, and for those giving evidence away from their town or place of residence 1 guinea in addition to the above. They think there is no sufficient reason for paying less for evidence given in police-courts or petty sessions than for that given at assizes, and would allow a guinea in these cases also. They add, however, a proviso in the case of ordinary—that is, non-professional—witnesses, which, if intended to apply as it is worded to any witness, would materially diminish the value of the recommendation. The proviso is to the effect that, if any witness is detained less than four hours from his house or place of business, he should only receive one-half the allowance to which he would otherwise be entitled.

No recommendation is made with reference to the cases where magistrates allow no fee for medical evidence unless the case is committed for trial, the explanation, we understand, being that as the magistrates base their refusal on the fact that the statute says they may, not that they must, make such allowance, fresh legislation would be required to put the matter right.

The Committee make an attempt to define professional as distinguished from expert evidence, in which, we think, they are not particularly successful. Their definition of professional evidence is, "Evidence as to facts which have come to the professional man's knowledge in the ordinary practice of his profession, not brought before him in the first instance with a view to a prosecution;" and with regard to experts they say: "We consider that the differentia of an expert witness is that he is previously unacquainted with the case, which is brought to his knowledge expressly in order that he may qualify himself to give evidence in a criminal prosecution, having himself special knowledge of the subject." Under these definitions, all police surgeons, both in London and the country, would find themselves at once turned into experts, which is not, if we understand the report aright, at all the intention of the Departmental Committee as regards allowances in criminal cases.

On another important point to which the Committee's attention was directed by one of our representatives, the report recommends a further concession. Hitherto the preliminary examination of either males or females in sexual cases has, in many places, been either not paid for at all, or paid for at a most inadequate rate. The Committee recommend that for the future a fee of 1 guinea should be paid for each medical examination in cases of sexual or kindred offences.

We congratulate our Joint Committee, and the two Associations which they represent, on these results, excellent so far as they go, of their united and patient labour, the fruits of which will be reaped by the whole profession. We look to the Home Office to embody, without unnecessary delay, the recommendations of its Departmental Committee in a new scale of allowances to witnesses in criminal prosecutions which shall supersede the now antiquated and confessedly defective rates of 1858.

NATIONAL PHYSIQUE.

IF the intention of the Government, as expressed by the Lord President of the Council, to appoint a Royal Commission to inquire into the alleged deterioration of the national physique is eventually carried, it is to be hoped that the reports to be received from the Royal Colleges will be of such a nature as to induce it to sift the matter to its very root, and that it will not be allowed to fall into the error of putting the cart before the horse, as have

done most of those who have spoken and written on the subject up to the present.

It does not seem to have struck many of those who have suddenly become interested in the subject that the time of most vital importance in a human being's life is from its birth until the age of 2. In truth we must go farther back, for we assert without fear of contradiction that the amount of care the mother takes of herself before her child's birth will go a long way to give it a good or a bad start in life. Women who have to work early and late in factories, in laundries, or as charwomen, who perhaps work up to the very day of their child's birth, are likely to bring into the world puny, fretful, unhealthy offspring. In this respect the Swiss set an example to the world; other countries—Belgium, Holland, Denmark, Germany, and Austria—forbid with more or less stringency the employment of women in factories or workshops until a period of four weeks has elapsed after childbirth, but in Switzerland "total absence from employment in factories of women during eight weeks before and after childbirth must be observed." What provision is made for the support of women during this period we are not aware, but in this country the Friendly Societies might be expected to give attention to the matter if properly brought before them, while private charity, or, failing that, the Poor Law might meet the needs of these women who were in extreme poverty.

The next vitally-important period of a human being's life is its infancy. To begin with, there can be no doubt that a great part of the heavy infantile mortality from gastro-intestinal disorders which occurs at all times of the year, and more especially in summer, is due to improper feeding. In some cases infants are starved, in more they are overfed, while countless children are fed unsuitably with prepared foods, bread, and scraps of whatever the family eat. Their health is thus often so seriously injured that it never recovers the strain on a delicate digestion, and many deaths occur from these apparently slight causes. That is bad enough, but the fate of the survivors is little better, since they never attain a good standard of physical development and health, and are unable to resist infection when it comes.

Born healthy, babies can generally be brought up healthy by clean, sensible feeding and reasonable attention to general hygiene. Every child, where it is possible, should be suckled by its mother. The Spanish law, which forbids the employment within three weeks of childbirth, further lays an obligation upon the employer to allow at least one hour, which may be divided into two separate absences of half an hour, during the ordinary period of employment without deduction from wages, to nursing mothers to nurse their infants.[1] When suckling is not possible, and we are inclined to think that it is often too readily assumed to be impossible, artificial feeding must be resorted to. Cow's milk is the most generally available natural food to replace the breast, and here comes in what we contend is a most important factor, if not indeed the most important, in the question of the physique of the nation. We may take it that little or nothing is known or thought about milk, and by the time the children of the poor are fed upon it—after it has passed through a score of stages all contributing to its contamination—it is usually in a highly dangerous condition. We may also take it for granted that the majority of babies are imbibing, through filthy long-tubed bottles, the germs of gastro-intestinal disorders, and by being given milk deficient in fat and loaded with starchy food predisposed to rickets, with its long train of complications. Even if such infants escape acute ailments their digestions become so weakened by the sort of milk food they get, that they are unable to resist sickness when it comes.

Until a serious effort is made to improve the existing milk supply of the poor, and until women are taught the rudiments of hygiene and the proper feeding and management of their babies, there will be no radical cure. Ignorance is the people's enemy, and until their ignorance is dispelled by practical education the present state of deterioration will increase. There is a cry that a large proportion of the children who attend Board Schools are physically unfit. Sir William Anson told the House of Commons the other day that in London there were 60,000 children who were unable to get the full benefit of teaching in schools owing to physical inferiority. This inferiority is generally put down to bad or insufficient feeding, and rightly so. Many of the mothers are unfit to be mothers, and others from ignorance are unable to cook food decently. The consequence is that the children sit for hours doing brain work in school on a starving stomach, so that their frame becomes exhausted. Free meals are open to many objections, but as an alternative it may be suggested that each parent should pay a fixed sum every week to the school in order that their children should be supplied with wholesome food there. This plan would have many advantages, especially when coupled with the further suggestion that the elder children themselves should take it in turns each day, under the supervision of a teacher, to cook the food for batches. Thus, not only would they have wholesome food to eat, but they would at the same time learn to cook for themselves, and when their time came to be mothers they would be able to provide comfortable meals for their families. Many of our young men go to the Colonies, and many are left widowers or have drunken wives, so that some training in cookery would be useful to boys. The poorest French peasant can make the most excellent soups and can cook tempting food for half the price that the English lower classes dish up their uneatable, or at least unpalatable, food. This ignorance causes a state resembling starvation, and no doubt the discomfort and craving so produced account for the fall of some of those who take to drink.

These unhappy dregs of our town population seem to increase in spite of the advances in hygiene and medical science. A good deal of the increase is due to the crowding into towns of the country population. As the Earl of Meath stated in the House of Lords' debate the urban population of England and Wales in 1851 was 8,990,000 out of a total population of 17,927,000, or 50 per cent., while in 1891 it was 25,000,000 out of a total population of 32,000,000, or 77 per cent. Not only does the portion of the urban districts, overcrowded by the rural population, suffer, but the country folk, coming into town life, with less good air, less sleep, and worse vegetables and milk, themselves deteriorate, and bring less robust children into the world.

In the course of the debate in the House of Lords the opinion that a process of physical degeneration is going on was based mainly upon the evidence as to the unfit state of recruits offering themselves for enlistment. It is true many of the men trying to enlist do

[1] *Dangerous Trades: The Historical, Social, and Legal Aspects of Industrial Occupations as Affecting Health, by a Number of Experts.* Edited by Thomas Oliver, M.A., M.D., F.R.C.P. London: John Murray. 1902.

so merely because they have failed to get civil employ, and they are looked upon by the ordinary working population as a grade below themselves. Nevertheless, this is not always the case, and it is a fact that one man out of every three brought up by the recruiting officer is rejected as unfit on medical examination. We may take it that large proportions of children are improperly fed, and when they go to school for nine years their weakly condition is not improved by the compulsory confinement to brain work at an age when they should be for most of their time running wild to develop physically. Supposing a child to be healthy and robust, to be properly fed and to have as part of the school course gymnastics and games, there is no reason why lessons should hurt it. But constant brain work with very little exercise and less food is calculated to destroy the best constitution. Physical exercises should be a part of school hygiene, always taking care in the case of girls or delicate children that the exercises should not be beyond their strength. We go back to our first point; as the mothers of the coming race, the health of girls should be carefully watched; married women, when they are expecting children, should be induced to be careful of their health and to rest before and after their confinement; infants up to 18 months or 2 years should be fed scientifically, and for this purpose mothers should be encouraged to suckle them. When this is impossible the mother should be instructed in simple rules of hygiene and the care and artificial feeding of their babies. Milk is required for this; at present the state of the milk supply of towns is dangerous, and it behoves the public to open their eyes to this fact and to remedy it as soon as possible. When the infant has done with a milk diet it still requires clean wholesomely cooked food. For this there should be classes in schools, the elder children taking turns to cook, thereby solving the double problem of decent food and learning to cook. We recommend also in girls' schools that classes be held for the practical teaching of the management of the baby. Might it not be possible so to combine the system of crêches with the schools that the crêche should form the school nursery where the real baby could be demonstrated—how to dress and undress it and bathe it; how to mix its bottles and clean them; in short, easily understood lessons which would be valuable to girls when they married and became mothers?

THE INDIAN MEDICAL SERVICE.

We learn that a special meeting of the Royal Naval and Military Committee was held at the offices of the Association on July 13th to consider the grievances of the Indian Medical Service. The nature and extent of the disadvantages under which the service now labours were indicated in the articles published recently in the British Medical Journal, and we understand that the Committee has drawn up a memorandum setting out all the main points in a concise form. This memorandum will be brought before the Council at its meeting on July 28th. With the approval of the Council the Committee then proposes to take an early opportunity of bringing the matters at issue under the notice of the authorities and of members of Parliament. We believe that the prompt action taken by the Committee will be highly appreciated by the officers of the Indian Medical Service as a body. The disabilities from which the service suffers have in some instances existed for a good many years past, others have come into existence or have been aggravated in recent years, all of them have been made more galling by the recent improvement in the conditions of service of the Royal Army Medical Corps. We have reason to believe that the reality of many if not all of them is in fact recognized by the Government of India, and we trust that the Association may, through the action now taken by its standing Royal Naval and Military Committee, be instrumental in bringing about speedy redress.

THE LISTER INSTITUTE.

In 1896, the centenary of Jenner's crucial experiment in proof of the efficacy of vaccination, a movement was started at St. George's Hospital to perpetuate his name by some suitable national memorial. It was decided that it should be associated with the then newly-established British Institute of Preventive Medicine, the form which it was to take being left to be determined by the Council of the Institute, according to the amount of money which might be raised. It was determined that if this amount should be so large as to place the funds of the Institute in a thoroughly satisfactory position, the name should be changed to the Jenner Institute; if the sum proved to be considerable, but less than enough for this purpose, it was to be applied to the endowment of a Jenner professorship, while if a still smaller amount were obtained it was to be devoted to founding a Jenner scholarship. The sum actually raised proved not more than adequate for the founding of a scholarship, but the Council of the Institute wishing to honour the pioneer of preventive medicine, resolved that the name of the Institute should be changed. Afterwards, however, it was found that there already existed in London a commercial firm trading under the name of the Jenner Institute for Calf Lymph, and that it had a prior claim to the name of Jenner Institute. It was hoped, however, that as the Institute of Preventive Medicine was not preparing calf lymph, and in fact had agreed with the proprietor of the other Institute not to do so while it retained a similar name, no confusion between the two would arise. This hope, however was falsified as the two institutes were frequently supposed to be one and the same to the inconvenience of both. The mistake acquired additional probability from the fact that the Local Government Board rented certain laboratories in the Jenner Institute of Preventive Medicine wherein the Government staff prepared the lymph issued to public vaccinators. The governing body, finding the inconvenience so great, apart from the restriction mentioned above, and all efforts to meet the difficulty having failed, have determined again to change the name of the Institute. The Jenner Memorial Committee has acquiesced with regret, and it has been agreed that its contribution shall remain invested in a Jenner memorial studentship in the Institute under its new name. The governing body proposes that the Institute shall in future be called the Lister Institute of Preventive Medicine. The name has, we are informed, been chosen against Lord Lister's own strong personal wish; but we believe that the profession and the public at large will agree with the governing body in thinking that no name could more appropriately be identified with the Institute than that of the founder of antiseptic surgery. The proposed change has the approval of Lord Iveagh, whose munificent endowment of the Institute was made just after the previous change had been effected; indeed, we are informed that it is no secret that, had it not been for that change, Lord Iveagh would then have suggested that the British Institute should be definitely associated with the name of Lister, as the similar institute in Paris is with the name of Pasteur.

THE LINCOLNSHIRE MEDICAL BENEVOLENT SOCIETY.

The Lincolnshire Medical Benevolent Society holds its centenerary meeting on Thursday. The medical profession in Lincolnshire has always held its head high, and a perusal of the earlier minutes of the anniversary meetings of this Society to some extent explains why it has done so, when coupled with the knowledge that the necessity for precise adherence to the principles of the founders of the Society has always been a matter of faith with those

admitted to its membership. One of the objects of the Society was that indicated by the title, and this has been steadily and quietly carried out in favour of those members whom misfortune had overtaken, or of the widows and children whom they left behind them. Another object, however, and one which from the first appears to have been put more prominently forward, was to inspire among its members a high ideal of their duty towards themselves and their fellows both in and out of the profession, and to promote the cause of medical reform throughout the country. In 1804 it would appear that the King's writ in matters medical did not run outside the metropolis, and practically no attempt whatever was made by the authorities to distinguish between regular practitioners of medicine and those who were merely charlatans and quacks. The founders of the Society had caused inquiry to be made, and discovered that regular practitioners constituted less than one-ninth of all those who at that time practised medicine within the county, and that more than one of those who occupied a prominent position had no claim to it beyond an assumption of knowledge and titles which he did not really possess. "Where the professional dignity and concomitant privileges of a physician," says one of the founders in an address, "are so easily acquired, it is not surprising that other persons should have obtruded themselves into subordinate departments with slender and inadequate pretensions." Some of the evils that accrued to the public by this state of things are set forth in rather quaint language. Thus, in speaking of the practice of abortion by quacks, Dr. Harrison, of Horncastle, the first President, says they "... do irreparable harm to many pregnant women and their harmless offspring by trying to relieve the former from the natural consequences of their indiscreet and unauthorized familiarities." It was also pointed out that few medical men sent their relatives into the profession, and that of those who present themselves as "journeymen and apprentices" few were "of respectable parentage or have acquired a suitable knowledge of the classics and other branches of preparatory learning." Hence the need for medical reform. One passage of the President's address has quite as much force now as it had when it was delivered in the year 1805. "It must be admitted that partial efforts and selfish combinations are more calculated to excite suspicion and awaken jealousy than to produce a reform in which the interests and privileges of the different classes would be equally consulted and impartially maintained." Hence it was hoped to induce "medical men in other parts of the empire to unite for the common benefit of themselves, and, what is of far greater national importance, the general advantage of their fellow creatures."

AMBULANCES AND FIRE BRIGADES.

THE question of what public body shall provide London with proper horse ambulance service is, as mentioned in a recent issue, still undecided, and upon the way in which it is determined depends another question of very practical interest. This is, by whom, and upon what general system, shall the service, when provided, be worked. If the Metropolitan Asylums Board takes the matter in hand, as it seems to desire to, the street accident work will presumably be made a branch of the ambulance system, which the Board already keeps up in connexion with its infectious hospitals. If, however, as seems more natural, the London County Council is left to complete the business-like effort which it commenced last year, a choice will probably be made between attaching the ambulance system to the Fire Brigade and the alternative plan of arranging for it to be worked by the police. In the twelve great provincial towns in which the local authorities have either themselves organized or have taken over a service of horse ambulances, the decision has been in favour of the fire brigade in seven cases and of the police in the remaining five. The former arrangement is not found to interfere with the fire duties of the brigade and has several conspicuous advantages. The extra annual expense after providing an ambulance and appliances is almost *nil* because the whole machinery is ready to hand, stables, horses, grooms, harness, skilled drivers, supervising officers, and not uncommonly also, sufficient room for an extra vehicle. The stations are necessarily always open and on the alert for calls, night and day; while the men are already trained to instant action. Most of them, too, have a knowledge of "first-aid" work, having passed the necessary examinations of the St. John Ambulance Association, and are adroit at lifting insensible and injured person. To add on to such a system such extra hands as may be required is simply a matter of slightly enlarging the pay-sheet, and does away with the expenses of inventing an entirely new service. The erection of a separate and complicated system of ambulance calls is also superfluous because an accident call can be really added to the fire alarms. The County-Borough of Bootle, in Lancashire, has had long experience of the system, and is well satisfied with it, as would also appear to be the case with the other towns in which it has been adopted. The experience of Bootle, however, in this respect, is the longest, and to that extent it is therefore the most valuable. The report of the Borough Hospital in this town for the year 1902 makes special mention of the value of the system, and refers to the promptness with which all accident cases are brought in. It appears that it takes less than half a minute for an ambulance with its driver and attendants to get under weigh after receipt of a call, and that the average time taken to pick up the injured person, deliver him at the hospital, and return to the station is only twenty-four minutes if the accident happens inside the borough, and thirty if it happens outside. In this town the system was begun in 1889, and was due to the initiative of a member of the medical profession, Brigade-Surgeon-Lieutenant-Colonel T. M. Wills, who took a prominent part at that time in municipal affairs, and we believe does so still. He saw the need which existed, and the way in which—in that town, at any rate—it could best be met. He conceived the idea of utilizing the fire brigade men and horses in connexion with an ambulance, and induced the Council to try it, with the result that it was formally adopted, and has been worked without a hitch ever since. Captain Parker, of the Fire Brigade, took a special interest in the work, and afterwards introduced the system at Belfast. It is also adopted in several other towns with much success, and there is no reason to doubt that the scheme could be carried out with advantage in a large city if divided into workable areas.

UNDERGROUND ROOMS.

AT the meeting of the London County Council on Tuesday last the Public Health Committee directed attention to the question of the occupation of underground rooms in London, in contravention of Section XCVI of the Public Health Act, 1891. This section forbids, under a continuing penalty not exceeding 20s. a day, the letting or occupation, as separate dwellings, of any underground room, unless it possesses certain requisites intended to secure its dryness, ventilation, drainage, etc. For the purpose of this section an underground room is held to include any room the surface of whose floor is more than 3 ft. below the surface of the street. It appears from the report of the Public Health Committee of the Council that St. Pancras has an unenviable pre-eminence in the number of such cellars illegally occupied. The Borough Council, in reply to this accusation, urges that the poor are harboured in these dreadful hovels in consequence of the inadequate supply of decent accommodation to meet the demand. The County Council, after a detailed inquiry, has elicited the disgraceful disclosure that more than 1,000 persons are dwelling in some 400 cellar dwellings in St. Pancras in contravention of the law. Moreover, ten of these tenements, accommodating 29 persons, did not even conform to the less exacting requirements of the law as it was before 1855. The Medical Officer of Health for St. Pancras is stated to have proposed to deal with rooms not in accord with the Act of 1855 in four classes. He, however, suggested that these illegal tenements should be dealt with consecutively and at intervals, "so as to avoid the serious

effects of suddenly displacing a large population." The County Council decided to send a letter to the St. Pancras Borough Council, enforcing the importance of putting the provisions of Section xcvi of the Public Health Act into operation with regard to underground rooms in the borough. When we recall the vigorous onslaughts of an earlier generation, led by Chadwick and Simon, against the abominations of ill-lit, damp, drainage-sodden underground cellars as unfit for human habitation, it is far from exhilarating to read such reports as these. No one has been more insistent than Dr. Sykes, the experienced Medical Officer of Health of St. Pancras, on the dangers which beset any local authority which is less vigilant than others in enforcing the sanitary law. The laxly-administered area becomes the dumping ground of the undesirables from elsewhere. We have reason to believe that the housing operations of the County Council, the borough councils, and of private enterprise, together with improving means of locomotion from the centre of London to the periphery, are tending to relieve the "house famine" of which so much has been heard. What is wanted is a diffusion of knowledge amongst the poorer classes of where accommodation of sanitary quality and at a reasonable rental is to be had, and also the means which are available by tram and train of getting to and from their work. When this is done there will be no ground for the excuse that cellar hovels are to be tolerated because of the inconvenience of displacing a large population. The very fact that in this twentieth century in the capital of the empire anything approaching "a large population" can be said to exist in a single borough in such conditions of squalor is little less than scandalous, to say nothing of the dangers it discloses in the matter of propagation of infectious disease.

THE HOME OFFICE AND VIVISECTION.

A deputation from the Parliamentary Association of the British Union for the Abolition of Vivisection waited upon the Home Secretary on July 15th to protest against the increase of vivisection; to ask for its total abolition; to demonstrate the uselessness of looking for any genuine advance of medical science by vivisection; the impossibility of its being carried out through the sufferings of animals; and to protest against the prolonged and severe observations at the Brown Institute. The deputation consisted of Lord Tankerville, Sir John Rolleston, M.P., and others. After a few introductory words from Lord Tankerville, Sir John Rolleston, M.P., advocated the increase of inspectors, who, he said, were at present appointed by proved vivisectors, and, therefore, naturally inclined towards vivisection. They had it on the highest authority that experiments on animals were practically useless to determine or direct the medical treatment of man, and were generally misleading. It had been admitted by Sir Frederick Treves that his experiments on animals had not been of service, for when he went out to South Africa and operated upon the soldiers, the results obtained were quite different. The advances in medical science were due to clinical observations, and this was much more hindered than helped by experiments on animals. Pending the time when public opinion would cause the abolition of vivisection, he hoped the Home Secretary would lessen the number of experiments and the pain caused on suffering animals. Dr. Hadwen, Mr. Lloyd Price, Mr. Norris, K.C., and others also addressed the Home Secretary. Mr. Akers-Douglas, in reply, said his duty was to administer the Act of 1876, and he had no power to stop vivisection. As to its total abolition, he would neither introduce a Bill on behalf of the Government with that object nor advise them to do it, and nothing would induce him to vote for the Bill if it was in Parliament. He maintained that vivisection was an important aid to medical science, and, however much they all disliked the incidental suffering which might follow from the experiments, the result was justified in the well-being of the country at large. With regard to the administration of the law, every care was taken to cause as little suffering as possible. It was not true that inspectors were appointed by approved vivisectors, for it was laid down that the Secretary of State should appoint the inspectors, and it certainly was not his practice nor the practice of his predecessors to go entirely into the ranks of one party or another for inspectors. Every care was taken by the Home Office to prevent any unnecessary suffering of the animals; and in a large number of cases no suffering was entailed upon the animals. Sir Frederick Treves had repudiated the statement that he was opposed to vivisection. The Home Secretary concluded by saying that he could not give them any consolation with regard to the main object of their visit; but he could assure them that in the administration of the Act he would see that the greatest care and consideration were shown to the animals operated upon. We are sure that not only the medical profession, but all who are interested in the progress of science and in the deliverance of the human race from many of the diseases which now cause so much preventable suffering and hinder its higher development, will rejoice that the Home Secretary has had the courage to defy the powers of darkness and fanaticism. It is often said that the present Government has no backbone. It is matter for congratulation that in Mr. Akers-Douglas at least we have a vertebrate Minister.

ANTIVIVISECTIONISM AT BELFAST.

A drawing-room meeting of the Belfast Branch of the London Antivivisection Society was held a week or two ago under the presidency of the Rector of Lisburn. The proceedings were begun with "devotional exercises," with which the speakers, both clergymen, stimulated themselves to the exhibition of Christian charity that followed. The reverend Chairman, whom the mistress of the drawing-room had thoughtfully supplied with appropriate literature beforehand, asserted that the whole moral tone of the medical faculty was lowered by vivisection experiments. May we ask the worthy divine whether he thinks the whole moral tone of the clergy is likely to be raised by calumny? He declared that he would rather die a thousand times than have his life saved by the results of one of the experiments of vivisectors. To be logical he must extend his refusal of the benefits of science to other lives possibly dearer to him than his own. We may remind him of the fable of the sick man who called on Death to ease his pain, but changed his mind when the "formidable shape" answered his summons. The history of one at least of the antivivisectionist societies will furnish him with an instructive instance of a prominent member who, when the hour of trial came, at once rushed off to the laboratory which he and his friends had often denounced as a chamber of torture. The Chairman added that those who could read the literature which he had perused without tears trickling down their cheeks must have hearts that were not very soft. Is the reverend gentleman prepared to state on oath that the tear of sensibility did in fact bedew his cheek as he read the literature given him to get up his case? Another clerical orator, not to be undone by the weeping philosopher aforesaid, announced that a shadow had fallen upon his life since he read certain publications on the subject. We are scarcely surprised to hear this, for antivivisection literature is in its very nature obscurantist. We take it, however, that this is not quite what the speaker meant. To him and his colleague and to all the fraternity of antivivisection we commend the advice of Dr. Johnson. Let them clear their minds of cant, and above all let them not forget that the spirit of the Christian religion, which they say is violated by vivisection, teaches that man is of more account than many sparrows—or guinea-pigs. To speak as if it were wrong to apply the knowledge gained by experiment to the saving of human life is either cant or perverted sentiment.

THE LATE MR. CADGE.

In the quarterly report of the Board of Management of the Norfolk and Norwich Hospital, presented at a meeting of the governors held on July 11th, an appreciative reference

was made to the great services rendered by the late Mr. Cadge, to his munificence as a benefactor, and to the prominent part which he took in originating and carrying out the scheme for the rebuilding of the hospital, and in organizing new nursing arrangements. The governors felt that they had lost in him not only a great surgeon, but one who had pre-eminently maintained and increased the high reputation of the hospital, and in many other ways had liberally helped to promote and advance its general interests. Colonel Dawson, in moving the adoption of the report, paid a tribute to the memory of Mr. Cadge. Dr. Beverley, in seconding the motion, said that in considering Mr. Cadge's long and honourable connexion with the hospital, one was at once struck by its threefold character, first as a surgeon, then as administrator, and lastly as philanthropist. In all these three aspects Mr. Cadge was equally distinguished. To him, more than to any other man, Norfolk and Norwich Hospital students and surgeons, young and old, considered themselves indebted. They often sought his guidance and advice, and never in vain. Mr. Cadge's sound judgement was always considered of the greatest value in all questions relating to the financial and economical details of hospital management. As a philanthropist, his munificent donations to the building and endowment funds of the hospital had probably never been equalled by any member of his profession. Sir Peter Eade, who had been his colleague during the greater part of his career, said that Mr. Cadge was not only one of the greatest surgeons who had ever been attached to the hospital, but he had always been in quite a distinct way—and one which, so far as he knew, was not paralleled by any other of their medical officers—a benefactor to the hospital by his wisdom and advice, and by the money he had given to it. In the Norfolk and Norwich Hospital, it might fittingly be said of William Cadge, "*Si monumentum requiris circumspice.*"

SPELLING AND COMPOSITION.

THE observations addressed by the Commander-in-Chief to the cadets of the Royal Military Academy, Woolwich, at his half-yearly inspection on Tuesday last, with reference to the defects which have been observed in preliminary education are of general interest. Remembering that the officers entering the Royal Engineers and the Royal Artillery are in a sense the picked men of the army, it will surprise many to find the Commander-in-Chief stating publicly that many of the cadets were strangely deficient in spelling and knowledge of the English language. "Complaints," he said, "about bad spelling and the deplorable want of acquaintance with our own language were so common that he could not help thinking that sufficient attention was not paid to English composition and dictation at the private and public schools where candidates for the army received their preliminary education. He strongly advised those who failed in this respect to lose no time in improving themselves, or they would find that they were heavily handicapped in their future career." He added that he had more than once refused to give an officer a staff appointment because he could not spell properly and wrote an illegible hand. Complaints with regard to the bad spelling and deficient powers of expression shown by many candidates at medical examinations have been common for many years past, and as the observations made by Lord Roberts show that these defects are not peculiar to medical students it is to be hoped that schoolmasters will give more serious attention to these matters in future. With regard to an illegible hand we can only express our personal sympathy with Lord Roberts's troubles. Why the art of writing a hand which can be easily read should be so uncommon in this country and so usual in the United States we cannot pretend to say, but no doubt it depends upon some defect in teaching, as it can hardly be supposed that we in this country live under a greater pressure on our time than do our American cousins. Whatever the cause it is one of those minor sources of irritation and loss of time which the next generation ought to be spared.

THE PETTENKOFER MEMORIAL.

DR. CHRISTOPHER CHILDS, Honorary Secretary and Treasurer of the British Committee of the Pettenkofer Memorial Fund, has informed the subscribers that fifty-two subscriptions, amounting to £89, have been contributed in Great Britain. The accounts of the fund have been audited by Dr. Deane Sweeting, Honorary Treasurer of the Epidemiological Society, and the balance, after deducting £5 for the cost of printing, postage, etc., has been sent to the Bürgomeister of Munich, who has expressed his warmest thanks to all who assisted in providing the contribution from this country. It is intended that the memorial shall take the form of a marble statue of von Pettenkofer of double life-size, to be erected in Munich.

ANOTHER MONUMENT TO PASTEUR.

JOHNSON said of his hero that panting time toiled after him in vain, and the same may almost be said of Pasteur in regard to the monuments erected to his memory in his native country. There must already be two or three dozen statues of him in different parts of France. Only a week or two ago we recorded the unveiling of a monument of the great chemist at Chartres. On July 12th another was unveiled in the commune of Marnes-la-Coquette in the presence of many well-known men of science. It is the work of a young sculptor, M. Fernand Chailloux, who, though self-taught, obtained a medal at the last Salon. The monument consists of a bust of Pasteur on the top of a column, at the foot of which, kneeling on the dead body on one of the animals on which Pasteur experimented, is a young man who holds up to him his inoculated arm. It was in the district of Marnes-la-Coquette that Pasteur established his laboratory for the study of hydrophobia, and it was there that he died.

IT will be recollected that Dr. E. Thompson, M.P., recently obtained a decree for £6 6s. against the Omagh guardians for services rendered during the illness of the medical officer, Dr. Fleming, who nominated him. The guardians dispensed with these services at their next meeting, and Dr. Thompson demanded £12 12s. for four days' work. The county court judge gave a decree for £6 6s., and against this decision the guardians appealed to the judge of assize, Mr. Justice Madden, who has just affirmed the decree for £6 6s., with costs.

MEDICAL NOTES IN PARLIAMENT.

[FROM OUR LOBBY CORRESPONDENT.]

The Physique of School Children.—Sir William Anson, in making his official statement on the Education vote on Thursday in last week, said that on good authority there were more than 60,000 children in London who were physically inferior, and who were unable to get the full benefit of the teaching in the schools. They were ill fed, badly housed, and arrived at school breakfastless. An inquiry had been promised, and the Board of Education would do all they could to make the inquiry complete. In addition to action by the Local Government Board and the Home Office, the Education Department should limit the size of the schools in the poorer districts so as to ensure more individual attention on the part of teachers. Philanthropic assistance was also needed. Sir John Gorst dwelt on the miserable condition in which children were sent to school, and said that the Scotch report showed that bad hearing and defective sight affected large numbers, and that 30 per cent. were more or less starved. As to the lessened size of schools, he regarded it as necessary to lay down a limit of 400 in each department, then systematic examination of the physique of the children would be easier by the teachers, and this should be supplemented by periodical medical inspection. Curable defects would then be detected and remedied. He also strongly urged better ventilation of the schools. Lord Edmond Fitzmaurice, in the course of his speech, dwelt on the necessity of medical inspection of the children, and specially referred to the importance of attending to their teeth, remarking that he was informed on medical authority that some cases of lunacy were due to neglect of the

teeth in early life. Mr. Yoxall thought it was an exaggeration to say that the health and physique of the children were going backward. He held that the experience of teachers would show that, as regards height, weight, sight, and feeding, the children were improving. Mr. Bryce supported an inquiry similar to that recently made in Scotland, and afterwards the discussion drifted on to other subjects.

Small-Pox at Liverpool and Imperfect Vaccination.—Mr. Weir asked the President of the Local Government Board last week, whether his attention had been called to the fact that three out of the five vaccinated children under 5 years of age who had been attacked by small-pox during the present epidemic in Liverpool, and whom the Liverpool medical officer of health alleged at a meeting of the Liverpool Health Committee on May 21st last had been imperfectly vaccinated, were vaccinated by two of the public vaccinators appointed by the Liverpool Select Vestry; whether the local authority was entitled to recover these fees from the public vaccinators; and whether he would issue a definition of perfect vaccination with a view to a better understanding on this point between the medical officer of health and the Liverpool public vaccinators. Mr. Long answered that his attention had been drawn by the Local Antivaccination League to the 3 cases referred to in the question, and he had communicated with the clerk to the Select Vestry of the parish of Liverpool on the subject. As to one of the cases, the clerk informed him that there was no record of it in the vaccination registers or in the workhouse books of the parish. The other 2 cases appeared to have been vaccinated by public vaccinators of the parish, and according to the vaccination registers successful vesicles were produced by the operations. In one of the 2 cases the child was in the hospital. In the other case the parents had removed and their address was at present unknown; in both cases further inquiries would, if possible, be made at the instance of the vestry. Upon the information before him he was not prepared to say that the public vaccinators were not entitled to fees in these cases. The instructions issued by the Local Government Board to public vaccinators directed that in all ordinary cases of primary vaccination the public vaccinator should aim at producing four separate good sized vesicles or groups of vesicles, not less than $\frac{1}{2}$ in. from one another. The instructions stated further that the total area of vesiculation resulting from the vaccination should not be less than $\frac{1}{2}$ sq. in. It did not appear to him that he could do anything further with the view of meeting the point referred to in the last part of the question.

The Public Health Acts Amendment Bill.—Sir Alfred Hickman asked the President of the Local Government Board, whether, having regard to the general desire expressed by local authorities throughout the kingdom, he would state when he would introduce the Public Health Acts Amendment Bill. Mr. Long replied that, looking to the period of the session and to the other legislation proposed by the Government, he feared it would not be practicable to proceed with the measure referred to this year.

The Medicine Stamp Duty and New Regulations.—Sir John Leng asked the Secretary to the Treasury whether, under a notification recently issued by the Board of Inland Revenue, a druggist would not be allowed to sell the smallest quantities of pills, powders, mixtures, or other form of medicine without attaching to every descriptive label, either written or printed, a 1½d. stamp; whether the Board had considered the extra cost to the poor of this additional charge, or the danger of selling drugs unlabelled; and whether, in view of the interests of the poorer classes and of the public safety, the Board would still, in accordance with their former intimation, recognize the necessity for giving to a preparation such a designation or name as shall distinguish it from other medicines and attribute some further meaning to such words as cough mixture, liver pills, lip salve, teething powders, corn paint, etc. Mr. Arthur Elliot answered that the change in the Board's practice had been rendered necessary by the decision of the High Court in the recent case of Ransom *v.* Sanguinetti, the effect of which was to render liable to the medicine stamp duty any preparation sold under a description which refers only to the ailment which it was intended to remedy, for example, cough mixture. But payment of duty would not be required in respect of a preparation which bears upon the label an indication of its ingredients, such as would bring the article within the scope of the special exemption in favour of known, admitted, and approved remedies, sold by duly-qualified persons, as interpreted by the recent decision in the case of Farmer *v.* Glyn Jones.

Orphans and Deserted Children under Poor Law.—Mr. Long informed Mr. Harwood last week, that 52,804 was the total number of children classed as in receipt of indoor relief on January 1st, 1902. It included not only children in establishments belonging to the guardians, but also those in hospitals and other institutions where the cost of their maintenance was borne by the guardians. Of this number 34,506 were orphans or children relieved without their parents. The corresponding numbers for January 1st, 1903, was 54,493 and 35,620. Of the children in workhouses, infirmaries, and sick asylums on January 1st, 1903, 10,356 were orphans or children relieved without their parents.

The Statistics of Irish Lunatic Asylums.—In answer to a request made by Mr. Samuel Young for a return of the inmates in lunatic asylums in Ireland, Mr. Wyndham said that at p. 14 of the last-published annual report of the Inspectors Lunatic Asylums there was a table showing, in quinquennial periods, the ages of patients (distinguished according to sex) who were admitted to district asylums and who recovered during the year 1901, and also of those remaining in the asylums on December 31st, 1901. Similar tables would be found at pp. 44 and 62 in respect of the Dundrum Criminal Lunatic Asylum and the private asylums. These tables would be continued to December 31st, 1902, in the next annual report of the inspectors. He saw no sufficient reasons, however, for imposing on the department the preparation of a return setting forth this information for each asylum separately.

Irish Medical Officers and Superannuation.—Mr. J. P. Farrell asked the Chief Secretary to the Lord Lieutenant of Ireland to state the number of Irish medical officers who had been superannuated under the existing Local Government Acts; in how many cases these grants were made voluntarily; and whether the guardians in any case refused; and if so, in how many such cases was superannuation so refused. Mr. Wyndham answered that under Section CXVIII of the Local Government (Ireland) Act, 1898, eighteen medical officers had received superannuation allowances. The local authorities were obliged to grant pensions in the case of all officers qualified as provided by the section.

Sterilization of Water for Troops in the Field.—Sir Michael Foster asked the Secretary of State for War on Monday whether the experiments on sterilization of water for troops in the field, referred to in his answer of July 31st, 1902, had led to any scheme of sterilization being put to the test at manœuvres or otherwise; and, if so, with what results. Mr. Secretary Brodrick answered that experimental tests had been made with various forms of heat sterilizing apparatus and sterilizing filters, and on the results of these further tests were being made in Somaliland, and would be made at the forthcoming manœuvres. The sterilization of water in standing camps could be arranged, but in the case of moving bodies of troops great difficulty was being experienced in obtaining really satisfactory results.

Medical Inspectors and Vaccination Officers.—On Wednesday Mr. Weir asked the President of the Local Government Board if he would state where the rules relating to the conduct of medical inspectors under the Local Government Board are laid down; and would he say whether these inspectors have power to threaten vaccination officers with dismissal? Mr. Long replied that the medical inspectors of the Local Government Board visited different parts of the country, and carried out the particular directions given to them. There were no fixed rules on the subject to which he could refer the hon. member. As regards the last part of the question, the inspectors reported to him as to the manner in which vaccination officers carried out the duties of their office, and in certain cases, when it was found that important duties were wilfully neglected, they had been instructed to point out to the officers that similar neglect had been considered by the Department a reason for requiring the resignation of the officer concerned.

THE GENERAL MEDICAL COUNCIL.

The Regulations and Examinations of the Conjoint Board in England.

The special session of the General Medical Council summoned for the consideration of the reports of the Education Committee on the return of teaching institutions furnished by the Conjoint Board in England, and on the primary examinations of that Board, and on the examinations of the Universities of Oxford and London, began on Wednesday, July 15th.

The report by the Education Committee on the Returns from Teaching Institutions recognized by the Conjoint Board in England for the subjects of the first year of medical education, but not recognized by the General Medical Council, was the first business. As this report contained no recommendations, the motion for its adoption did not lead to much discussion; it was in the main a question of ratifying the summary drawn up by the Committee of the facts disclosed, although this summary contained some comments, the most important being the expression of the opinion "that had the Conjoint Board made a full investigation into the conditions of study in each of the institutions recognized by it, the number of teaching institutions to which it would have been able to extend formal recognition would hardly have exceeded one-third of those on its present list."

All the issues raised were, however, closely bound together, and the President ruled that the report of the Examination Committee upon the visitation of the examinations in chemistry, physics, and biology should be taken next, and afterwards Sir Victor Horsley's motion to report the Conjoint Board's examination to the Privy Council as insufficient. Hence it was hardly possible to limit discussion rigidly to the motions before the Council at the moment, and several speakers trenched upon the ground more appropriate to the discussion of the later motions when speaking upon the earlier one.

The report upon the examinations, which condemned their standard, was adopted by a large majority after a temperate, and in some particulars interesting, discussion. Dr. Windle, one of the Visitors, emphasized the necessity of a knowledge of physics, the weakest part of the whole examination, and expressed a doubt, which was shared by certain other members, as to the expediency of including elementary biology at that stage of a student's career. Dr. Norman Moore laid it down that the Council's proper function did not extend beyond criticism, to which the Royal Colleges were bound to give attentive and respectful consideration, a position which did not satisfy Dr. McVail. Sir Victor Horsley pointed out that the attitude of the two Colleges was essentially different; the Royal College of Physicians had promised to give consideration to the report and its suggestions, while the Royal College of Surgeons defended the examination at every point, and he hinted that were the latter governed, as is the former, by the body of Fellows instead of by its Council, the result would have been different. He further stated that he had corresponded with the examiners who had been cited as giving their approval to the examination, with the result that he considered their approval to be very materially conditioned by the words "suited to the circumstances."

Mr. Bryant produced statistics of the results of twenty examinations for the army, navy, and Indian Medical Services. The holders of the English Conjoint diploma failed in this examination to the extent of only 8 per cent. (577 being the total number presenting themselves), of the Irish Conjoint diplomates (137) 30 per cent. failed, and of the Scottish Conjoint diplomates (138) 32 per cent. failed. The University of London and the Victoria University had no failures; the Universities of Edinburgh and Dublin had respectively 14 and 22 per cent. of failures. Thus the English Conjoint Board made a very good show in these post-graduate tests, and this was held by the President to be relevant, inasmuch as it indirectly, by indicating the net result of the whole education, bore upon the question of the adequacy of education and examination in the earlier stages of the student's career. It was urged that the report should not have contained an admission that the standards of different examinations must necessarily differ, but it appears to have escaped the attention of those who held this view that there may very well be a minimum standard without uniformity in other directions.

Sir Victor Horsley's motion was divided into three portions or rather into four. The first declared the examination in chemistry, physics and biology of the Examining Board in England to be insufficient. This was only carrying a little further in the form of definite statement the result of the adoption of the Visitors' report, and this was carried by a large majority. The second portion dealing with the synopses and general requirements was dropped, as it seemed somewhat superfluous, and the amended synopsis in physics had met with some approval in the Visitors' report. The third portion declared the courses of study in the majority of the teaching institutions in dispute to be also insufficient, and this was carried also.

In the course of discussion Dr. Norman Moore produced some statistics which indicated that after all the whole dispute ranged round a somewhat insignificant number of candidates. Of those educated at medical schools, 2,653 had passed in the period from 1893 to 1902, and 1,849 had failed in chemistry; whilst only 195 had passed, and 132 failed who had been educated at various science schools, some recognized by the Council and some not. Hence it appears that the number of candidates who come up from the school under dispute must be very small, and for the sake of these few the Royal Colleges have broken up the consensus which previously existed between the licensing bodies. It is curious that although this examination is not of a high standard, the numbers who pass it are totally insufficient to supply the number who subsequently seek their qualification from this Conjoint Board, so that it is evident that many pass in chemistry elsewhere.

The final clause of Sir Victor Horsley's motion was to the effect that a representation be made to the Privy Council that the course of study and examinations was not a sufficient guarantee of the possession of adequate professional knowledge. This was not discussed, being postponed till Thursday, partly for want of sufficient time to discuss it, and partly because an alternative course had been proposed by Dr. Windle. The precise terms of his amendment are not in our hands, but in general effect it was a proposition that a committee should be appointed to confer with the two Colleges, and possibly suggest some alterations in the first year studies.

[We are compelled by pressure on space to postpone the publication of the detailed report of the proceedings of the Council.]

Scotland.

Small-pox in Edinburgh.

A man appeared at the out-patient department of the Royal Infirmary one day last week and was found to be suffering from small-pox of a malignant type. He was removed to the small-pox section of the City Hospital, where he died within a week. He had contracted the disease in Antwerp.

The Purification of the River Clyde.

The County Council of Lanark occupies what is probably a unique position as regards the administration of the Rivers Pollution Prevention Act. Lanarkshire was anciently known as Clydesdale, and an examination of a rivers map shows at once how excellently applicable is the old name. Instead of being bounded by rivers, as are so many other counties, it is bounded by watersheds. It is indeed practically identical with the gathering ground of the river Clyde, and the Clyde, including its numerous tributaries, is practically the only river with which Lanarkshire has to do. The head streams of the Clyde flow north-west from the hills which separate the county from Dumfriesshire, and, after passing through the healthful district of the Upper Ward, the river enters on the Middle Ward with its

teeming population and great coal and iron industries. At the extreme north-west the Clyde passes into the territory of the City of Glasgow, but by that time it has become tidal, so that the Rivers Pollution Act does not apply. Acting under the advice of Dr. John T. Wilson, the county medical officer, the County Council has, within the last few years, entered definitely on a bold policy of rivers purification. The Rivers Pollution Act may be brought into operation either by any aggrieved individual, or by a local sanitary authority, or by a county council. In the case of Lanarkshire there are strong reasons why the Council rather than any of the sanitary authorities should have undertaken the work. As just noted the Clyde area is practically coterminous with Lanarkshire. At the same time, the County Council, not being the administrative authority under the Public Health Acts, is not itself a contributor to pollution of the stream, so that in taking proceedings with regard either to trades pollution or to sewage it occupies a position quite free from criticism.

While the County Council has been busying itself with the removal and prevention of contamination of the upper waters of the Clyde, the City of Glasgow has been equally occupying itself in arranging for the exclusion of the gross pollution which takes place within the municipal boundaries. In a very few years from now, therefore, there should be a wonderful transformation in the condition of the fine river which has been so long maltreated and abused. The work done by the County Council is very well recorded in a valuable report by Dr. Wilson which has recently been published. The report is divided into sections devoted respectively to administration, industrial pollutions, sewage pollutions, the Clyde and its tributaries as a source of water supply, the Clyde and its tributaries as affected by pollution, and a historical narrative of efforts at purification of the Clyde. In addition there are short notes on the effects of river pollution on fish life and on public health. The first section of the report contains a very full account of legal proceedings which have been undertaken by the County Council against offending sanitary authorities and manufacturers. Dr. Wilson points out with justifiable satisfaction that these proceedings have in every case been successful, so that the Rivers Pollution Act, though in many respects very weak, can yet be effectively enforced by a public body which is quite clear in its own mind that enforcement is desirable. Concerning industrial pollutions the principal causes reported on are coal dross washing, ammonia works, paper works, print works, oil works, whisky distilleries, and breweries. The report is freely illustrated with maps, photographs, and diagrams, whilst the tabular matter contains a useful mass of statistics, including the results of numerous chemical analyses. For such work there is now included in the staff of the county a chemist in addition to inspectors and medical assistants. It is not in Lanarkshire a question of public health which is at issue. The river becomes a nuisance injurious or dangerous to health only when it reaches Glasgow. As regards pollutions above Glasgow, it is necessary to distinguish between the Clyde and its tributaries. In the course of his report, Dr. Wilson points out how quickly natural purification takes place in the tributaries, so that when, even after much contamination, they reach the Clyde, there is little to complain of regarding many of them. In these cases the Council has not hesitated to take action to bring about the purification of the tributaries, a consummation for which when accomplished there will be due the thanks of every trout-fisher from the Middle Ward, and of every summer health seeker who transports himself and his family from the grime of Glasgow or Coatbridge to the uplands where the great river is represented by streamlets converging from the hills. In these days there is much search after suitable sites for sanatoria for consumptives. One is about to be established near Lanark, but there are in this region splendid situations for a score of others. With valleys at an elevation of 700 to 1,000 feet above sea level; with surrounding hills some of which rise for yet another 1,000 feet; with a light open soil drying quickly after the heaviest rain; with entire absence of town and factory smoke; with fine cycling roads within easy distance of many a picturesque and historically interesting scene; with pleasantly situated golf courses; with the main line of the West Coast railway route passing through the centre of the district—with advantages like these it is not surprising that the Upper Ward from Biggar and its neighbourhood on the one side to Leadhills on the other is becoming more and more of a health resort to those who have been fortunate enough to discover its beauties and experience its benefits. Fortunately the Clyde and its feeders need little purification in many parts of the Upper Ward, but the County Council is to be congratulated on its public spirited action as regards tributaries where such action is necessary, and Dr. Wilson is to be congratulated on his full and interesting report.

LITERARY NOTES.

THE German Cancer Investigation Committee has decided to issue a journal to be entitled *Zeitschrift für Krebsforschung* and to be devoted to the publication of original articles on cancer and abstracts of all papers and monographs on the subject appearing in various parts of the world. The editors are Professors D. von Hansemann, of Berlin, and George Meyer, of Jena. The publisher is Gustav Fischer, of Jena.

A new monthly medical journal entitled *Archives Latines de Medécine et de Biologie* has been founded in Madrid. The first number will appear on October 1st. The journal which is intended to be a medium for the publication of the most important contributions to medical science made by workers belonging to any one of the various Latin nations will be under the direction of a committee consisting of Professor Ramon y Cajal, Carlos Cortezo, R. Blanchard, A. Robin, B. Grassi and E. Maragliano. The editor-in-chief will be Dr. Gustavo Pittaluga.

For a number of years a Commission composed of fifty professors and doctors, with the Hon. Seth Low as its president, has been considering the drink problem as it presents itself in the United States. The Commission has already issued three bulky reports, in which the legislative, economic, and administrative aspects are dealt with. It is now announced that a fourth is about to appear, which will be entitle *Physiological Aspects of the Drink Problem*. The volume, which will be published by Messrs. Gay and Bird, has been prepared by Professor W. O. Atwater, Dr. John S. Billings, Professor H. P. Bowditch, Professor R. H. Chittenden, and Dr. W. H. Welch.

We have received a reprint of Some Notes concerning the First Egyptian Medical Congress, contributed by Mr. Spanton, of Hanley, to the *Birmingham Medical Review*. Mr. Spanton attended the Congress as a delegate from the British Medical Association. He gives an interesting and instructive account of the work of the Congress. He was particularly impressed by the excellence of the numerous pathological specimens exhibited to illustrate some of the papers read. Some of them were not only beautiful in themselves but of great rarity, and such as in this country are never met with in ordinary practice. His description of the anatomical museum of the medical school at Cairo is particularly fascinating. The anthropological and comparative anatomical specimens as described by Professor Elliot Smith included a unique collection of remains of the inhabitants of Egypt who lived before the first dynasty (that is, considerably more than 4,000 years B.C.), now commonly known as the "prehistoric" or "archaic" period. The whole museum was arranged with the object of displaying these archaic remains side by side with corresponding objects from later periods of Egyptian history and modern times. Among the exhibits were two sets of splints, probably the earliest known. They were of wood, covered with linen, two being used for the forearm, and fastened by bands of linen tied round, with a pad opposite the seat of fracture. In one instance linen was seen plugged into a compound fracture in which no union had taken place; probably the patient had died quickly. In a case of Colles's fracture (about 3400 B.C.) there was a good union. In one instance there were four splints round a fractured femur about the middle, in which the knee, but not the hip-joint, had been fixed. There were also some splints made of bark and moulded to the limb, very much as we employ leather or pasteboard, enveloping the entire circumference of the limb. One splint was made entirely of reeds covered with linen, much like the splints one used to see a few years ago. It was abundantly evident that the Egyptians 6,000 years ago understood the principles of the treatment of fracture as well as modern surgeons do. The bulk of the archaic remains was obtained by the Archaeological Expedition of the University of California (under the direction of Dr. George Reisner, at Naga-ed-der, opposite Girga (Upper Egypt), in the winter of 1901-1902; other prehistoric and early dynastic remains were dug up by an expedition of the Egyptian Exploration Fund in the winter of 1900-1 at El Amrah, near Abydos, Upper Egypt.



View of the Centre Block of the Hospital taken from the Railway.

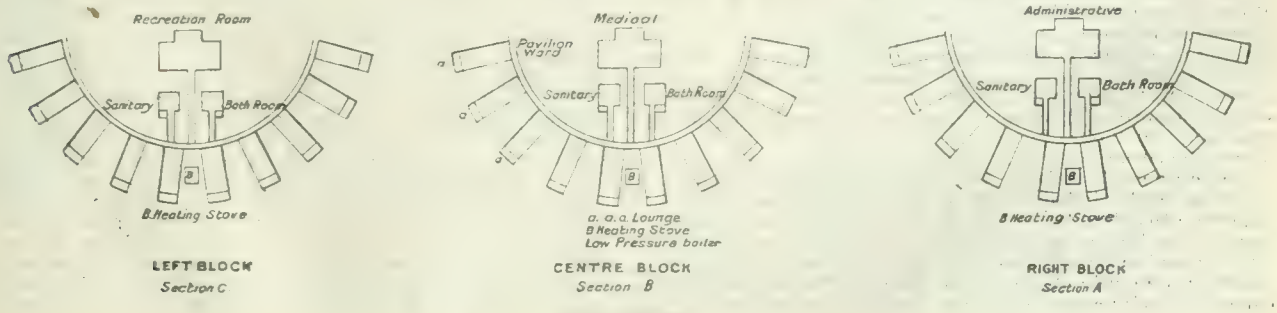
THE PRINCESS LOUISE HOSPITAL, ALTON, HANTS.

One of the more permanent results of the Absent Minded Beggar poem during the war was the formation of a kind of hospital known as the A.M.B. camp. It always enjoyed the special patronage of the Princess Louise, and now, having been modified in various ways, it has been taken over as a regular military hospital, under the title of the Princess Louise Hospital. The Princess herself paid it a formal visit on July 16th, and the following description of the place in its new guise may be interesting.

The surroundings are picturesque, the air bracing, and the soil chalky; viewed from the railway the camp looks rather like a big straggling village. On closer examination, however, a definite and good design becomes apparent. The hospital buildings proper are arranged in three divisions or blocks, each division containing ten pavilions, and each pavilion providing accommodation for 10 patients. At present, however, it is not intended to use more than 270 beds out of a total possible of 300.

In front of the divisions are the administrative quarters consisting of a bungalow for the commanding officer, and smaller buildings of the same general type for the other officers, matron, nursing sisters, and married orderlies, the unmarried quarters being near the entry gates. Further on, but in the same line, is the house for the senior non-commissioned officer, and further still, a large elevated tank which is kept supplied by an engine. It is said to hold about 18,000 gallons of water.

The pavilions in each division radiate like the spokes of a wheel from a horseshoe verandah. Opposite the pavilions on the other side of the verandah are covered ways, leading to the lavatories and bath rooms, which are elaborately constructed. They contain both portable and fixed baths, and the latter have shower bath attachments. The lavatories are certainly very practical in their arrangements and the commanding officer states that 100 men can complete their ablutions in them in forty minutes. On either side of the short passage leading into each pavilion are rooms of which the large one on the right is devoted to use as a ward kitchen, and the two smaller ones on the left for use as equipment and night stool rooms. Down the middle of the pavilion is a table with a good supply of papers and books, and on each side five Lawson Tait wire mattress beds, each with a neat locker alongside. At the end of the ward facing south is a sun lounge, which, if necessary, can be cut off from the ward. Each occupant of the ward has 120 square feet of floor allotted to him, and cubic space of 1,200 cb. ft. Arrangement is made for the entry of air by a new form of "Tobin shaft," which is free from angles, while air-exit channels are provided by a roof ridge running the full length



Plan of Blocks.

of the ward. The walls are white, the appearance of the ward cheerful and bright, and on entering them from the hot sunshine outside they seemed pleasantly cool. The floors are covered with French-grey linoleum which, if well laid, is possibly preferable to polished floors, since it is more elastic and less slippery. The arrangements for the disposal of faeces and urine are very complete. Discharge of an infectious nature, such as the urine and faeces of patients suffering from bilharzia haemotobia are boiled, while those from enteric cases are treated, according to army regulations, with mercury perchloride. To get rid of discharges from non-infectious cases automatic bedpan washers of the best modern type have been provided. It should be noted that the pavilions do not stand on the ground, but each is supported on brick pillars over a drained and cemented basement. There is no chance, therefore, of either damp, flooding, or accumulation of foul air below the wards. Whether the simple form of ventilation before described will prove satisfactory in cold and stormy weather remains to be seen. The drainage of the establishment is well arranged, being capable of inspection throughout its whole length. The fall is good and the hospital drain eventually connects on to the main sewer of Alton, whence its contents pass to bacterial beds, the total distance being about 1½ mile.

To the central division or block of the hospital are attached the kitchens, dining hall, stores, operating room, dispensary, and *x*-ray room, all of which are excellently arranged. The *x*-ray room is not yet quite complete, but when it is, both it and the well-fitted and well-ventilated operating room will bear comparison with those of any hospital in London. The kitchen is fitted with six Dean's range ovens, and a large hot-plate steam box, as well as a steam oven and steam-heated kettle. Other features are a large copper and an Aymard milk sterilizer.

The dining hall is a pleasant room and conveniently near the kitchen, but is believed to be too small for the number of men who will probably have to use it. The original dining hall was in another division, and the present arrangement may be considered a temporary one. All the divisions have the same fundamental design, but in the left one there is a large recreation room in connexion with which a library is being formed. At the back of this division there is also a large underground ice house. In the grounds there are a number of stores, the commanding officer's stables, a laundry, disinfector, mortuary, and engine house. The disinfector is a "Thursfield" low-pressure apparatus. The laundry is very well fitted with labour-saving appliances, and has three electric motors at its command. There are two engines in the engine-house, one of 16, and the other of 12, estimated horse power. Considering the amount of work they have to do in driving dynamos and raising water, they appear to work very economically, since they consume only some 15 cwt. of coal per diem.

In view of the short time that Colonel Rainsford and his staff have been in occupation, the excellent working order in which the whole place appears to be, is remarkable. In many ways the establishment is quite unique, and sitting in the sun lounges conveys a pleasant sensation of being on board ship rather than in a hospital. Before the place is considered quite complete, a certain amount of tree-planting, floor-caulking in some parts, and additional painting, will probably have to be taken in hand. Wood enters very largely into the construction of the buildings, and for this reason further fire precautions are probably desirable, in addition to the coils of fire-hose on each verandah. The provision of a Shand-Mason hand pump to every other pavilion would meet this need, while a 100,000 gallon tank on the hillside would supply a jet of sufficient force for general purposes.

The present staff consists of Colonel W. J. R. Rainsford, F.R.C.S., C.I.E., Captain Dansey Browning, D.P.H., Lieutenant and Quartermaster Morrison, Miss Garriock, Miss Tullick, and Miss Dods, sisters respectively of the medical and surgical divisions, and staff nurses, Miss Ward and Miss Byers. Besides this there are a sergeant-major and staff-sergeant, and twenty-seven other non-commissioned officers and men.

CREMATION IN SOUTH AUSTRALIA.—The crematorium in Adelaide has now, we learn from the *Australasian Medical Gazette*, been completed, and the first cremation of a human body took place on May 4th. The ceremony was made doubly interesting by the fact that the body was that of a Sikh, who died in Adelaide on May 2nd. Only Sikhs and officials were allowed inside the building, where one of the natives recited an impressive funeral service.

THE DERWENT VALLEY WATER SCHEME.

A GOOD supply of water is the very life's blood of large towns. Accessibility to such a supply has in the past frequently determined the location of large centres of population, and the failure of that prime necessity has, in many instances, caused, or hastened, their decay. As from the nature of things the average amount of water in a locality is fixed, while population is for the most part increasing, it follows that from time to time in the history of every large city the existing supply is found to be inadequate and fresh sources have to be sought for. Londoners do not need to be reminded that their needs in this respect are now having the attention of Parliament, and that it will probably not be long before the water supply of the metropolis will be under the control of a single body whatever the ultimate composition of that body may prove to be.

In the discussion which took place as to the provision of an efficient water supply for London, it was the opinion of many that no source of supply sufficient for such a colossal city could be found nearer than the mountains of Wales, and this view is strengthened if we consider what has been the experience of large provincial towns. Situated for the most part on rivers, from which or from wells in the shallow valley gravels an ample supply of water for their infant wants was attainable, they soon began to illustrate the universal liability of living things to perish of their own excrement. Pollution of river water and ultimately of shallow wells was inevitable, and to stem the rising death-rate water had to be taken from nearer the sources of rivers or from deep wells, in the one case necessitating long carriage, in the other the substitution of hard water for the softer river water. When in time these sources were found insufficient for the ordinary population many of our great towns found it necessary to go outside the watersheds of their own supplying rivers and tap distant sources of supply, in some cases natural lakes, such as Loch Katrine or Thirlmere used by Glasgow and Manchester, or artificial reservoirs in mountainous districts, as has been done by Liverpool at Vyrnwy, and Birmingham in the valley of Elan and Claerwen, in Radnorshire.

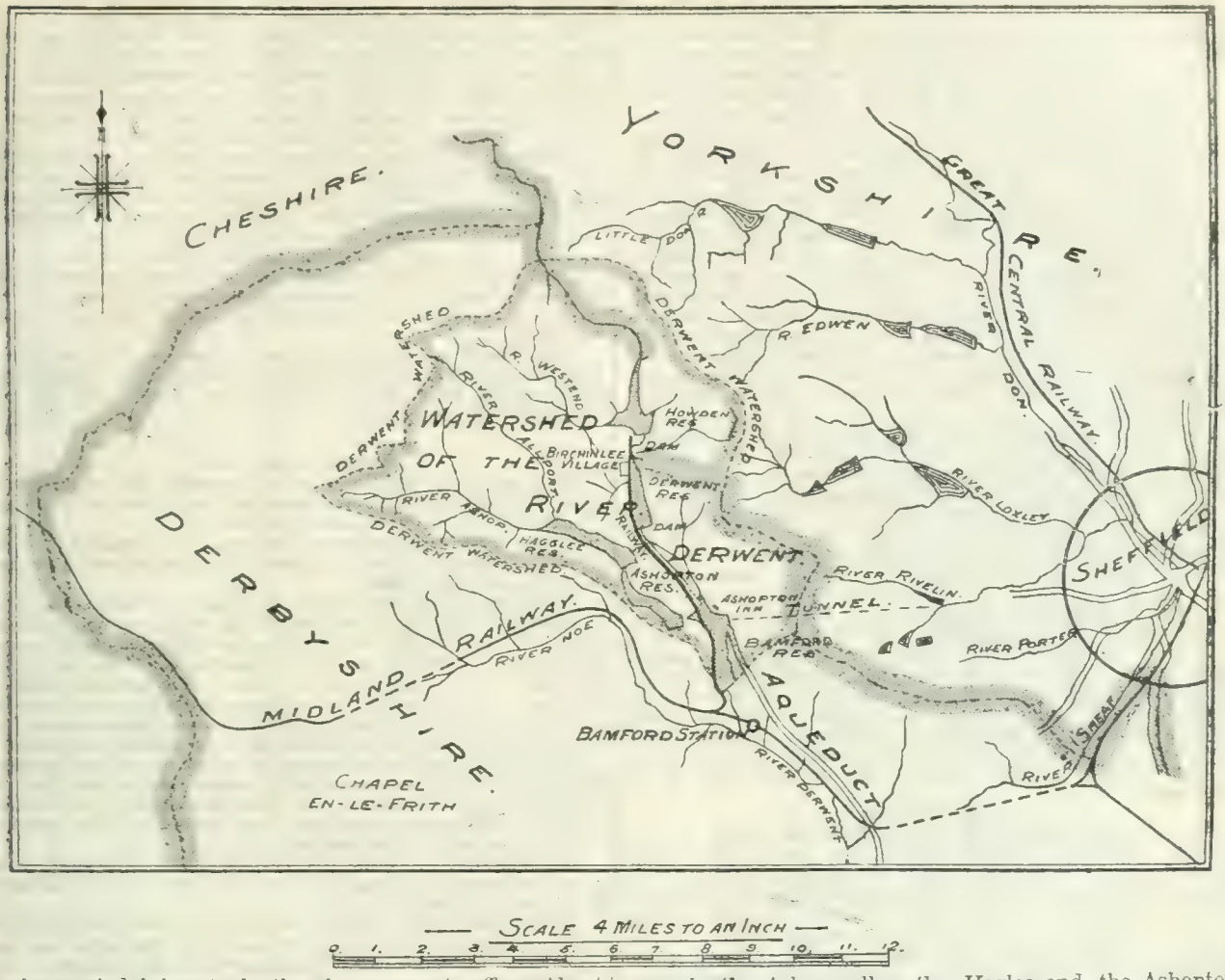
WATER SUPPLY OF LEICESTER.

Leicester in recent times has illustrated in the history of its water supply all the phases mentioned above. Its population, which is 1872 was about 100,000 is now about 220,000. Up to 1893 the yield of two reservoirs in the Charnwood Forest district had given a supply of about 3½ million gallons daily, but about this time a rapid increase of population coincided with a diminution of rainfall (which at no time exceeded about 22 in. annually) over the district. Temporary sources of supply from collieries and deep wells were resorted to pending the completion of a third reservoir, estimated to give an additional 2,000,000 gallons per day. The relief afforded by the last was only temporary, and it soon became clear that to obtain anything like a permanently sufficient source of supply the example of Liverpool and Birmingham would have to be followed. By the exertions of the consulting water engineer, Mr. J. Breedon Everard, attention was turned to the sources of the Derwent River in the High Peak district of Derbyshire.

THE JOINT SCHEME.

But here a new difficulty arose, for several other towns situated in the watershed of the Trent and its tributaries and at least one other just outside the watershed but nearer to the proposed source of supply, considered their claims to be equal, if not superior, to those of Leicester. A Bill was promoted in Parliament with the different authorities at first in opposition, but eventually, thanks mainly to the action of Mr. Edward Wood, Alderman and Chairman of the Water Committee of the Borough of Leicester, these authorities all joined in promoting a scheme of considerable magnitude, and settled amicably to what proportion of the total supply each community should eventually be entitled. Briefly, they proposed to utilize the valley of the Ashop river and that portion of the Upper Derwent valley above Bamford (see map). These valleys possess a watershed of about 50 square miles, and as the estimated rainfall is at least 50 in. per annum this will give a supply for storage purposes of about 50,000,000 gallons per day or 18,250,000,000 gallons annually. The Act, however, provides against the consumption of the whole of this water by the Board. One-third of the quantity collected has to be returned into the Derwent below the reservoirs in order that the riparian owners and others

DERWENT WATERSHED.



having vested interests in the river may not suffer. About 17,000,000 gallons per diem will be used for the purpose. This leaves 33,000,000 gallons for consumption. The authorities concerned are Sheffield, Nottingham, Leicester, and Derbyshire Council and Derby Borough. Of these Leicester is to take 35.72 per cent., Sheffield and Derby 25 per cent. each, and Nottingham 14.28 per cent. The cost of the work will be borne by each in the same proportion.

THE RESERVOIRS.

The works were commenced a little over twelve months ago, and on July 7th Mr. Edward Wood, Vice-Chairman of the Board, invited about 200 inhabitants of Leicester as his guests to see the progress that has already been made and to give some idea of how the proposed storage of water is to be effected. The nearest railway station is Bamford on the Dore and Chinley line of the Midland Railway and there commences the construction line about six miles long built by the contractors for the purposes of this work. The party were conveyed over this line to the site of the dam of the Howden or uppermost reservoir. This dam when completed will have a height of 114 ft., a width of 160 ft., and a length across the valley of nearly 2,000 ft. The reservoir it creates will have an area of 157 acres a maximum depth of 114 ft. and a capacity of 1,886 million gallons. Reaching to the base of the Howden reservoir is the second reservoir called the "Derwent." Its surface will be 110 ft. lower, its extent 168 acres and its maximum depth 113 ft. with a cubic capacity of 2,000 million gallons. These two reservoirs will take about ten years to complete and it will be nearly that time before any water from even the uppermost can reach Leicester.

For the future remains the construction of the lowest or Bamford reservoir to hold 2,495 million gallons, and two more in the Ashop valley, the Haglee and the Ashopton, respectively of 2,160 million and 1,472 million gallons capacity, the former having the great maximum depth of 136 ft. The total storage capacity will thus be about 10,000 million gallons.

It is estimated that the total cost when completed will be about £7,500,000, but, of course, it will be long before all that expenditure is incurred.

It is considered that Leicester will not have to spend more than £1,000,000 for the next fifty or even seventy-five years.

CHARACTER OF THE WATER.

The water is of exceptional purity. Very few habitations, if any, exist on the gathering grounds, and it is expected to show not more than 2 or 3 degrees of hardness. The danger of the possibility of its dissolving lead from the service pipes will be decreased by mixing with the present water of Leicester, which has about 20 degrees of hardness, though Mr. J. B. Everard considers that the property mentioned above is due to organic acids derived from decaying vegetable organisms and peat rather than to the exceptional purity of the water.

DISTRIBUTION OF THE SUPPLY.

As the upper reservoir is over 900 ft. above ordnance level no difficulty will be found in supplying Leicester, Derby, and Nottingham by gravitation. A large aqueduct will be constructed, and the supplies of the places *en route* drawn from it. Sheffield will obtain its supply by means of a tunnel, over four miles in length, through the hills, connecting with the reservoir on the River Rivelin (see map). The reservoirs to the east of the Derwent watershed are those of Sheffield's present supply.

The Works.

The construction of the uppermost dam has been delayed by the discovery of a "squeeze," or partial fault, at the lowest part of the valley, which has rendered difficult the attainment of a good and watertight foundation. Other structural difficulties pertain more to the engineering profession than our own. A short description of the means adopted to ensure the health of the workmen employed may be mentioned. About a quarter of a mile below the Howden dam has been built a village of corrugated iron buildings. It has two parallel streets, contains spacious school building, recreation room, with billiard tables, stage, etc., post-office, canteen, under the control of the Board, grocers', shoemakers', and barbers' shops.

The houses or "huts" are of two varieties—a family hut, containing living room, back kitchen, and two sleeping rooms, and an associate "hut," similar, but having in addition a dormitory for eight single men, who are received as lodgers by the occupants and chief tenants, and are boarded at a fixed rate. Sanitation is effected by a good temporary water supply from a special reservoir, and closets at the back of the houses, but separate from them, on the trough system, with an automatic flush. Stringent sanitary regulations are laid down by the Board, and a copy of these is hung in each house. The number of lodgers allowed in each house is strictly limited.

The village of Birchinlee has also two hospitals. The larger in the middle of the village contains a good ward, with accommodation for ten beds, several single rooms, accommodation for nurses, dispensary, and sanitary arrangements. Two cases of accident—a fractured leg and fractured ribs—were being treated as in-patients at the time of our visit. In addition to this is a smaller isolation hut of five beds for infectious diseases. This has already successfully combatted the introduction of one case of small-pox. In addition to these, special means are taken to quarantine all new comers. On the opposite side of the valley, and at a distance of about one mile and a-half, is a large hut termed the "doss house." When a man is engaged he is sent to this house, has a bath, his clothes are disinfected, and he has to sleep there for a week before being admitted to Birchinlee village. It is rather illustrative of the practical inutility of all such quarantine arrangements that there have already been outbreaks of scarlet fever and measles in the village, as well as the case of small-pox above mentioned.

The Future.

While congratulating the authorities concerned on the solution of their present difficulties, one cannot help speculating on the final result of the present rush for water. It seems as if we must conclude that the ultimate check to increase of urban population will come from this quarter, and one may well doubt if our towns dependent on what by comparison are but feeble rivulets can compete in the distant future with the cities of the New World seated on the great lakes and gigantic waterways of the Western Continent.

THE SCHOOL BOARD FOR LONDON.

Report of the Medical Officer for the Year ending March 25th, 1903.

During the year under consideration, Dr. James Kerr succeeded Professor W. R. Smith as medical officer at Lady Day, and additions were made to the staff which now consists of the medical officer and three assistants (giving half-time) six oculists (giving different amounts of time), three nurses and sundry clerks; while an extended programme of work was taken in hand.

General Considerations.

Examination of Candidates.—The number of candidates for employment examined was 2,738, of whom 2,360 were passed unconditionally, and 382 after the reception of special reports by an aurist, oculist, dentist or surgeon, etc.

Visits to Schools.—The weekly average number of schools visited for examination and inspection and domiciliary and other special inquiries made was 116.2, including the work of the nurses.

Standard Heights and Weights.—No trustworthy statistics as to these, relative to London children, exist. They require to be obtained for boys and girls at each quarter year of age from 5 to 15 and should cover many thousands of children. The National Society for the Prevention of Cruelty to Children has been granted permission to make inquiries out of school hours with a view to obtaining standards of physical conditions.

Physique.—More precautions appear necessary to obtain better physique. Exercises in the infant departments should never be slow, but easily learned, automatic and accomplished without much regard to detail, and aided by music. A few seconds exercise is required in each hour of desk work.

Towels.—The supply is too scanty, there should be a clean towel at the very least every other day for every 100 children.

Nurses.—From the experimental employment of nurses it is expected that they will do much to improve standards of cleanliness, and diminish the grosser infections of hair, etc., which interfere so much with school attendance.

Ringworm.—The nurses inspect any children submitted by the teacher, and occasionally examine whole classes and visit the houses of children absent on account of supposed parasitic and allied infections. They take no part in treatment, and cases of doubt are referred to the medical officer.

Blight.—Many children are excluded by teachers on account of this, but it is doubtful how far such cases are really contagious. Usually it is an unimportant matter, and only one very small outbreak of contagious ophthalmia occurred during the year.

Dirty Heads.—A common cause of absence. It is worthy of consideration whether children with pediculi, etc., should not be excluded from school, and parents prosecuted for not sending them in a fit state.

School Infection.

The more accurate knowledge becomes, the more likely does it appear that school dissemination of infectious disease is a matter of close personal contagion.

Scarlet Fever.—Not all cases are equally contagious. Some, although detected late in children attending school, have not given rise to other cases.

Diphtheria.—The occurrence of "latent" cases makes this disease very difficult to deal with. A school epidemic of sore throat at Isleworth was found to be diptheritic, and its continuance, in spite of very active measures, to be due to the presence of the bacillus in the throats of apparently healthy children. The detection of such cases has been arranged for by the provision of a laboratory for bacteriological examination of swabs from any children in whom latency may exist.

Measles.—An extensive inquiry is going on as to the exact relation between the incidence of measles and school life. It is at present incomplete, but it would appear as if every school might with advantage keep record of the measles history of every child attending.

Whooping-Cough.—This disease seriously interferes with school attendance, though its chief incidence is on children below school ages.

Mumps gives rise to much trouble, and children with supposed mumps are frequently excluded by teachers, but the question of school or class closure does not often arise.

Chicken-pox, except for its resemblance to small-pox, is without importance, and the regulations in respect of it might be modified.

School Closure.

A few girls' classes were closed during the year on account of infectious disease, but none in the boys' department.

Small-pox led to closing of two classes. In one case the class was reopened as soon as the children had been vaccinated. The only second case was the child who shared the desk of the first patient. Two schools were temporarily closed for disinfection after scarlatina and one after diphtheria, while for whooping-cough one class-room was closed during March. Of all infectious diseases measles is the most important in its effect on school life. Where outbreaks have occurred in single classes of schools, otherwise free, closure has been applied. Individual children affected, or coming from an infected house, have been rigorously excluded. A number of charts showing the relation between general disease notification in relation to school life, etc., are appended to the report.

Abolition of Grant.—This is most unfortunate. The grant made by Clause 101 of the Code removed any inducement to teachers to keep up attendances at the risk of infection. Calculation of attendances and the corresponding remuneration of teachers should be made as if the epidemic grant still existed.

Nutrition.

Apart from the conditions considered, mal-nutrition due to poverty or ignorance is the chief retarding factor in school progress, but a certain amount of harm is done by undesirable.

conditions of school life such as inefficient ventilation and over fatigue.

Vision.

A great deal of work is being done with regard to visual defects, and statistics are given with regard to the vision of 20,000 children. Each child in whom a defect exists is provided with a card stating what it requires to show to its parents. Analysis of the statistics shows that there is definite correspondence between visual defect and retarded school progress, and further analysis showed that there is a causative relation between visual defects and unfavourable conditions of home life. The general result is to prove that from 10,000 to 20,000 children annually require treatment for visual defects if the best educational results are to be obtained. Provision is being made for constant work on this subject.

Hearing.

Work to some extent is being done on the subject of deficient hearing, which probably exists in about 10 per cent. of all school children. It is difficult to convince patients of the need for treatment of the minor degrees of deafness.

Children with Special Defects.

Between 1 per cent. and 2 per cent. of the whole school population is so defective in some respect as to be unfit for ordinary schools. These cases may be divided into classes according to the provision made for them, which is as follows:

Blind Schools.—There are eight day and two residential, with an attendance of 210. More active exercise is required in them, and, except for special subjects, the teacher should be a person of ordinary vision.

Deaf Schools.—Of deaf schools there are fifteen day and two residential. Children with offensive discharges should not be admitted. The condition can be cured by treatment. A number of deaf boys of normal intelligence are being taught manual occupations at Homerton, and a corresponding place for girls is projected. A good many children are also boarded out, and children thus treated appear to improve in general intelligence.

Mentally Defective.—There are special classes for the mentally defective in sixty-one centres, and about 2,605 children attend them. Teachers should not be confined to this work, and physical drill should enter largely into the routine adopted. The question of provision for imbecile children is under the joint consideration of the School Board, the County Council, and Metropolitan Asylums Board. Special provision for epileptics has not yet been attempted though urgently required.

Nurseries.—In a special report on nurseries many defects were reported, and it was suggested that they should be developed and used to train older girls in the management of children. There are also 298 physically defective children attending at eight special centres.

School Buildings.

These, in London, are many-storied, as a rule, and present special difficulties. It is impossible to bring many of them up to the standard of modern requirements. The lighting of many is very defective. To improve matters so far as may be white paint should be introduced everywhere and properly-arranged reflectors introduced. Ventilation is also bad in many schools. Mechanical ventilation is necessary in practically all schools, and suggestions are made as to improvements in this direction which might be effected. Single desks and seats should be introduced in schools, double ones promoting the coarser infections.

Certificates in Hygiene for Teachers.

Some knowledge of hygiene on the part of teachers is essential. A certain number of lectures have been given to them by Dr. Collie and Dr. Thomas, but the whole subject requires more attention.

The School Doctor.

The function of the school doctor is much misunderstood. His work is purely preventive, and his work as regards individuals applies only to matters involving educational questions. It is no part of his duty to treat cases; but, on the other hand, his work should extend far beyond mere examination of buildings and exclusion of diseased children. He should be the counsellor of the school, with good knowledge of its routine, and advise on all questions that can possibly affect the physical condition of children, and, in consequence, favourably or unfavourably influence their educational progress, such as methods of instruction, duration of desk work exercise, etc.

NOVA ET VETERA.

THE POETRY OF THE HOSPITAL.

Mr. William Ernest Henley, whose death all lovers of literature are now deploring, may be called the laureate of the hospital. Some of his best poetry was written in the Edinburgh Royal Infirmary, and was inspired by his environment there. It was therefore a gracious act of Mr. Walter B. Blaikie at a meeting of the managers of the Infirmary to move that the Board should record the deep regret felt at the death of its *vates sacer*. Thirty years ago, he said, Mr. Henley, attracted by the fame of Professor, now Lord, Lister, had entered the old Edinburgh Infirmary to undergo a long course of treatment. His literary career might be said to have begun in that hospital, begun in suffering which never left him, but which all his life he faced with the most heroic courage. He never omitted an opportunity of expressing the gratitude he felt to the institution. His wonderful realistic poem, *In Hospital*, was a monument of which the Edinburgh Infirmary might well be proud. In that poem or series of poems Mr. Henley paints with a quick, sure touch the atmosphere, spiritual as well as physical, of the hospital, and gives vivid impressionist sketches of the scenes amid which he lived, and of the figures which lay around him or passed before him. The verses in which he records his experience of "the thick sweet mystery of chloroform" may be quoted as affording a sidelight on the report of the Chloroform Committee:

> You are carried in a basket,
> Like a carcase from the shambles,
> To the theatre, a cockpit,
> Where they stretch you on the table.
>
> Then they bid you close your eyelids,
> And they mask you with a napkin;
> And the anaesthetic reaches
> Hot and subtle through your being.
>
> And you gasp, and reel, and shudder
> In a rushing, swaying rapture,
> While the voices at your elbow
> Fade—receding—fainter—farther.
>
> Lights about you shower and tumble,
> And your blood seems crystallizing—
> Edged and vibrant, yet within you
> Racked and hurried back and forward.
>
> Then the lights grow fast and furious,
> And you hear a noise of waters,
> And you wrestle, blind and dizzy,
> In an agony of effort.
>
> Till a sudden lull accepts you,
> And you sound an utter darkness.....
> And awaken.....with a struggle.....
> On a hushed, attentive audience.

Patients are no longer carried into the theatre in the unceremonious manner here described, but are anaesthetised before they "face the music." After the operation Mr. Henley struggled for a time with stupor and sickness, then awoke "to an immense complacent dreamery."

The companion pictures of the "Staff Nurse, Old Style" and "New Style," are masterpieces of close and sympathetic observation. We see in the former "the sweet old roses of her sunken face" we hear "the broad Scots tongue that flatters, scolds, defies" and we feel the stroke of "the thick Scots wit that fells you like a mace."

> Thirty years has she been nursing here,
> Some of them under Syme, her hero still.

No wonder is it that

> Patients and students hold her very dear,
> The doctors love her, tease her, use her skill.
> They say "The Chief" himself is half afraid of her.

The sly touch in the last line is delicious, and will remind many of us who were students in the Sixties and Seventies of old-fashioned nurses of the same type. Equally living is the portrayal of the "New Style" nurse who

> Knows that she has exceeding pretty hands;
> Speaks Latin with a right accentuation;
> And gives at need (as one who understands)
> Draught, counsel, diagnosis, exhortation.

Mr. Henley's portrait of "The Chief" (Lord Lister) shows such marvellous insight that we cannot refrain from reproducing it:

His brow spreads large and placid, and his eye
Is deep and bright, with steady looks that still.
Soft lines of tranquil thought his face fulfill –
His face at once benign and proud and shy.
If envy scout, if ignorance deny,
His faultless patience, his unyielding will,
Beautiful gentleness, and splendid skill,
Innumerable gratitudes reply.
His wise, rare smile is sweet with certainties,
And seems in all his patients to compel
Such love and faith as failure cannot quell.
We hold him for another Herakles,
Battling with custom, prejudice, disease,
As once the son of Zeus with Death and Hell.

It may be mentioned that it was while he was a patient in the Royal Infirmary that Mr. Henley made the acquaintance of Robert Louis Stevenson who

Young, yet in shape most like an elder, came,
Laden with Balzacs
(Big, yellow books, quite impudently French),
The first of many times
To that transformed back-kitchen where I lay.

We advise all medical men, and in particular all students, to read *In Hospital*. It will enable them to see things from the patient's point of view, and in this way give them a knowledge that will be of priceless service to them in the practice of their profession.

PROPOSED GOVERNMENT VACCINE ESTABLISHMENT FOR SCOTLAND.

Lord Balfour of Burleigh, Secretary of State for Scotland, received a deputation at Dover House on July 15th in support of the proposal to provide a Government vaccine establishment in Scotland.

Memorial.

A memorial on the subject had been sent to Lord Balfour, which stated that at a Conference in Edinburgh, representing the medical profession in Scotland, it had been unanimously resolved that it was desirable that the medical profession in Scotland should enjoy the same facilities in regard to an authorized supply of vaccine as were enjoyed by the medical profession in England, and that an institution for the preparation of calf lymph should be established by Government in Scotland. The memorial went on to say that as vaccination was rendered compulsory upon the inhabitants of Scotland by Act of Parliament, and as in accordance with medical science vaccination with calf lymph was greatly preferable to the former methods of arm-to-arm vaccination, it had become of great importance that an adequate supply of trustworthy calf lymph should be placed at the disposal of the medical practitioners of Scotland. At present, with some insignificant exceptions, the only calf lymph available in Scotland was obtained by purchase from private manufacturers whose primary object was profit, and whose methods of manufacture and whose manufacturing premises, situated for the most part outside Great Britain, were not subject to the authoritative inspection and guarantee necessary to secure purity and efficiency, and to gain the confidence of the public and of the medical profession. In England these requirements had been met for several years by the Animal Vaccine Establishment of the Local Government Board, from which satisfactory and guaranteed lymph was gratuitously supplied for the vaccination, and even the revaccination, of a large proportion of the younger inhabitants of that country. The removal of that inequality of advantage between the two countries was stated to be urgently necessary, and the opinion was expressed that this could best be done by establishing a vaccine establishment for Scotland conducted on similar lines to that existing in England, from which calf lymph should be gratuitously supplied to medical practitioners under such regulations and conditions as might be considered necessary, and to local authorities during threatened or existing outbreaks of small-pox. It was estimated that about 200,000 tubes of vaccine would be required annually in Scotland for primary vaccinations, and for the revaccination of adolescents a considerable additional number of tubes to meet the demands that would arise during outbreaks of small-pox. The Vaccine Establishment in Scotland should therefore be in the position to supply nearly half a million tubes annually. The probable expense in ordinary years would be £3,500, while in epidemic years £5,000 might be required. It would be recognized that these sums were only moderate in amount in view of the very large expenditure during epidemics or threatened epidemics of small-pox, and in view of the great benefit that would be obtained by increasing the efficiency of vaccination, the facilities for its performance, and the confidence of the public. The memorial concluded by praying that provision should be made as soon as possible for an adequate supply to Scotland of guaranteed calf lymph, and that for this purpose a Treasury grant should be included in the estimates shortly to be submitted to Parliament. The memorial was accompanied by a statement of reasons in support of it, giving in detail the facilities enjoyed by the medical profession in England in regard to an unauthorized supply of vaccine. During the year 1902 the Local Government Board supplied lymph free for a total of more than 1,020,000 vaccinations, made up of about 523,000 cases of primary vaccination, and about 498,000 cases of revaccination, and the cost of the preparation, storage, and distribution of this large amount of glycerinated calf lymph was defrayed in England from money voted for the purpose by Parliament. There was no provision for a supply of calf lymph for Scotland, and the conditions under which vaccination is practised in Scotland was shown by the particulars given to afford a marked contrast to those obtaining in England. The proposal to utilize the existing Government establishment in London for the supply of calf lymph for Scotland as well as England was probably not feasible. Scotland had always been separate from England in its Poor-law and public-health administrations, with a separate financial system and money voted for the supply of calf lymph to public vaccinators in England could not be diverted to supply calf lymph to private practitioners in Scotland. The statement of reasons concluded by urging that the proposed Government vaccine establishment for Scotland should provide free from cost a continuous supply of lymph of an assured quality for parochial vaccinators and for private practitioners, and that such an establishment would do much to check epidemics, and to save money spent in the isolation of small-pox cases.

Deputation.

The deputation which attended at Dover House in support of the memorial was introduced by Sir Herbert Maxwell, M.P.

Sir Thomas R. Fraser (Edinburgh) said that as vaccination had been rendered compulsory by the State it was not unreasonable that the State should adopt the requisite measures to insure that the material with which that compulsory vaccination was made should be pure and efficient.

Dr. R. Farquharson, M.P., said that Scotland had always been ahead in matters concerning vaccination and ought to get its reward. The Scotch demanded a Government vaccine establishment as a right. There was no guarantee for the purity of the vaccine used in Scotland with the result that there was a great deal of inefficient vaccination in Scotland. Impure vaccine provided the antivaccinator with a very powerful argument against vaccination. Every practitioner in Scotland ought to have the opportunity of getting glycerinated calf lymph for use in his practice.

Baillie Graham (Glasgow) spoke of the practical difficulties encountered by the Glasgow authorities on account of the want of a proper supply of good lymph. They had to send to Paris for lymph when they were dealing with the Glasgow outbreak of small pox. They spent £4,500 in buying lymph and much of it was bad.

Mr. Lang Todd, Convener of the Public Health Committee, Edinburgh, said that in Edinburgh they had also had great difficulty in procuring sufficient supplies of good lymph.

Sir Michael Foster said that the great strength of the anti-vaccination movement was in the inadequate supply of trustworthy lymph. The only real security for an absolutely trustworthy lymph was by the Government supplying it.

Lord Balfour, in reply, said that in regard to the question of fair treatment between England and Scotland, he wished them to remember that it was a very easy thing to raise the question, but they were too apt to allow themselves to be carried away by *perfervidum ingenium*. He did not think that there was to any large extent any national grievance in the matter. The question of supplying calf lymph to both public vaccinators and private practitioners could not be discussed by him alone. They could not expect that for Scotland unless the Imperial Government gave it to England and Wales. That question, therefore, if raised at all, must be treated as an imperial matter, and he—Lord Balfour—reserved his opinion on it. It was due to the policy of the Scotch Local Government Board in the past and to the good sense of the people in the present that the condition of Scotland in regard to vaccination was so satisfactory.

In regard to the resolution in the memorial that the medical profession in Scotland should enjoy the same facilities in regard to supply of vaccine as their brethren in England, Lord Balfour said that the resolution as it stood was liable to mislead people, for no one reading it could be expected to understand the whole truth of the position which underlay it. Lord Balfour read the resolution as implying that the medical profession in Scotland had some grievance that did not affect the profession in England, and if the resolution meant that the memorial was inaccurate and misleading. In England the public vaccinator was provided with Government lymph, but the private medical practitioner was not supplied, and had to buy in the open market. The system of vaccination in Scotland was wholly different to that in England, the public vaccinators in England did 56 per cent. of the vaccinations whereas in Scotland the parochial vaccinators who were provided by the Scotch Government with lymph only did 2 per cent. Therefore the private practitioners in Scotland were on the same footing as the English private practitioners. He was not prepared to give any help in the direction of changing the system at present followed in Scotland which secured the successful vaccination of 97 per cent. of all infants over six months of age and had obtained the confidence of the people. No substantial complaint had been made against the lymph used in Scotland at the present time. He took exception to the manner in which quotations in the memorial had been taken from the Report of the Vaccination Commission. They were not accurate because many words had been left out, and many of the omitted words were material and qualified the sense. He promised when the memorial had been made distinct and clear to give it his earnest attention. He did not think there was any chance of getting a gratuitous supply of Government lymph to meet every demand.

Sir JOHN TUKE having thanked Lord Balfour, the deputation withdrew.

CONTRACT MEDICAL PRACTICE.

THE COUNTY OF DURHAM MEDICAL UNION.

THE County of Durham Medical Union held its fifth annual meeting at Durham on June 29th. Dr. Jepson, the President, was in the chair, and among the members present were Dr. Murphy, the Vice-President, and Drs. D. T. Todd, R. S. Hubbersty, K. C. Hill, W. Galloway, R. Stuart, H. Smith, R. E. Ingram Robinson, G. Stephen, James Arthur, J. F. Armstrong, J. H. Hunter, E. H. Davis, John Taylor, E. Edwards, and others.

President's Address.

The President in his address alluded to the loss sustained by the Union through the death of Dr. Ellis, of Bishop Auckland, and of Dr. F. S. Pearcy, of Sunderland, and moved that letters of condolence be addressed to each family. Turning from the sorrowful to the cheerful, he then reminded the members of a subscription begun at the last meeting for a wedding present to the daughter of one of their secretaries. With the assistance of Drs. Murphy and Hubbersty a clock and rose bowl, suitably inscribed, had been selected, and its presentation had caused much pleasure to Miss Shepherd and her father. The Union, Dr. Jepson stated, still justified its existence, now numbered 267 members, and was increasing. The difficulties, he said, it had to settle were more often connected with irregular and unqualified than contract practice, and some experiences gathered by him in visits in the county were narrated. It must not, he said, be thought that the reorganization of the British Medical Association made the Union unnecessary. Mr. Whitaker had come from London to tell them something about the larger Association, and they would be glad to hear him after the business of the meeting was over. In conclusion he, as President, thanked the members for the consideration always shown him, and also the secretaries, Messrs. Graham and Shepherd, for the splendid help they had always given him.

On the motion of Dr. Hunter, seconded by Dr. R. Stuart, Dr. Jepson was then elected President for the fifth year in succession. Dr. Murphy was also re-elected Vice-President, as well as all the members of the Council with the exception of Dr. Wardle, who retired, and was succeeded by Dr. Lawrence.

The vote of condolence proposed by Dr. Jepson was seconded by Dr. Davis, and passed.

Report of the Council.

The report of the Council narrated attempts made by several collieries to reduce the fortnightly subscription of 6d., and how they had been foiled by the firm attitude of the practitioners concerned, supported by the Council of the Union. The number of friendly society medical associations had not increased. The Judicial Committee of the Union had investigated several cases, and the Council had successfully suggested certain modifications in the Midwifery Bill. Active steps were being taken with a view to suppressing unqualified practice. The reports of the local committees were also included in the Council's statement.

The British Medical Association.

On the conclusion of ordinary business, Mr. Whitaker, Organizing Secretary of the British Medical Association, was invited to address the meeting. He said that it was desirable that there should be only one organization of the profession for medico-political and similar work. Scattered unions out of touch with one another could do little good, whereas if federated and blended their combined strength would give practical effect to the will of the profession. No new association was required, but the existing unions should avail themselves of the existing British Medical Association as now reorganized. As an example of the work which could be done by a body representative of the profession in general, such as the British Medical Association, as compared with purely local bodies, Mr. Whitaker instanced the petition to Government with regard to unqualified practitioners and death registration which was then lying on the table. A matter of that kind could be taken up much more powerfully by such a body as the British Medical Association, the Cleveland Division of which was bringing the subject forward at the annual representative meeting of the British Medical Association. The basis of the Association was now so broad that existing local bodies could be included in it, each local body preserving its own individuality, with its own laws, officers, and methods of dealing with contract practice, ethical, scientific, or other subjects. He thought the County of Durham Medical Union very well organized, and its work, as exemplified at that meeting, very good indeed. He saw nothing, however, in the constitution of the British Medical Association to prevent the work of the Union being carried on by joint action on the part of the Divisions of the Association in the County of Durham, if these Divisions so desired. Certain financial difficulties had been suggested; but those could be got round by a local voluntary subscription—say of 5s. in addition to the subscription to the British Medical Association. Certain difficulties as to officers might possibly remain, but they were not affected by anything in the constitution of the Association or its by-laws, and would be matters for the Divisions to settle for themselves.

CONTRACT PRACTICE AND "SWEATING."

ANTI-SWEAT writes: I most cordially agree with your correspondent who writes concerning principals who employ assistants and junior partners to do club work. No Medical Aid Association that ever existed has sweated its medical officer more than the majority of these men sweat their juniors. Two most glaring instances of this kind have come under my notice, and I may send further details later. There is no doubt whatever that this practice is one of the greatest bars to the reform of contract practice.

THE HEALTH OF CUBA.—In a report to the Superior Board of Health of the Island of Cuba dated May 1st, 1903, Dr. Carlos J. Finlay, Chief Sanitary Officer, points out that the statistics for 1902 and the beginning of 1903 are very satisfactory not only in regard to complete immunity from yellow fever and small-pox, but also in the number of deaths from malaria and in the total mortality. There has been no small-pox on the island since July, 1900, nor yellow fever since September, 1901, and the progressive decrease in malaria has continued without interruption. The state of affairs as to tuberculosis is not, however, so satisfactory. There has been an increase of 5 to 6 per cent. in deaths from that disease in each of the years 1901 and 1902; and at the present time the proportion of deaths from that cause to the general mortality amounts to over 16 per cent. These figures evidently show that while the deaths from other causes have been reduced those from tuberculosis continue unabated. The Superior Board of Health is therefore making serious efforts to increase the efficiency of sanitary measures in that direction, and will submit a plan for the establishment of a sanatorium for curable cases upon the site which was purchased for that purpose two years ago.

Association Notices.

NOTICE OF MEETINGS.

COUNCIL.

Meetings of the Council will be held in the Guardians' Council Chamber, Union Offices, Swansea, on Tuesday, Wednesday, Thursday, and Friday, July 28th, 29th, 30th, and 31st next, at 9.30 o'clock in the forenoon of each day.

ANNUAL REPRESENTATIVE MEETINGS.

The Annual Representative Meetings will be held in the King's Hall, Orchard Street, Swansea, on Tuesday, July 28th, at 3.30 o'clock in the afternoon; on Wednesday, July 29th, at 2 o'clock in the afternoon; and on Thursday, July 30th, at 3 30 o'clock in the afternoon if required. Also at 2 o'clock in the afternoon of Friday, July 31st, if required.

By Order,

GUY ELLISTON, *General Secretary.*

DELEGATES OF DIVISIONS AND MEMBERS *of the British Medical Association from the Manchester and Liverpool Centres who intend going to Swansea for the Annual Meeting are requested to send postcard to* Dr. S. BAGLEY, *229, Clowes Street, Manchester, S.E., who has undertaken to arrange for a special saloon car to be attached to the 11.50 a.m. train, L.N.W., from London Road on Monday, July 27th. Members from other towns may join the train at Stockport and Crewe.*

BRANCH MEETINGS TO BE HELD.

DORSET AND WEST HANTS BRANCH.—The next meeting will be held at Ringwood, on Wednesday, July 22nd, 1903. The business meeting will be held at the Crown Hotel at 3.30 p.m. Agenda: Place of autumn meeting; discussion, Some of the Effects of Influenza, to be opened by Mr. William Turner, one of the Vice-Presidents; communications, Major A. E. Grant, I.M.S., the Treatment of Diabetes and Obesity in Britain; Mr. Foley, (1) The Effects of Influenza in the Falkland Islands, (2) Cholesterin Calculi. Drive to Somerley, the residence of the Right Hon. the Earl of Normanton, who will kindly allow his picture gallery to be open for inspection. Lunch at the Hotel at 2 15. Charge, 2s. 6d. each. Train leaves Weymouth 12.10, leaves Dorchester 12.33, arrives Ringwood 1.59. Train leaves Bournemouth Central 12.43, arrives Brockenhurst 1.27; leaves Brockenhurst 1.45, arrives Ringwood 2.9. No paper, except on the subject for discussion, must exceed ten minutes in length, and no subsequent speaker must exceed five minutes.—WILLIAM VAWDREY LUSH, M.D., Weymouth, C. H. WATTS PARKINSON, Wimborne, *Honorary Secretaries.*

SPECIAL CORRESPONDENCE.

MONTREAL

The Roddick Bill.—Doctors in the Pulpit.—Foreign Visitors.—New Medical Graduates.

THE rejection of the Roddick Bill by the Quebec Legislature, though not unexpected, has caused a commotion in Canadian medical circles, suggestions and advice for subsequent action being dealt out with a liberal hand in the current medical journals. Dr. Roddick, in 1902, succeeded in persuading the Dominion Parliament to pass an Act providing for the establishment of a Dominion Medical Council, empowered to hold examinations in medicine, and to give licences to practise in any portion of Canada, with the proviso that this Council should be constituted only when all the provinces had accepted the provisions of the Act. Four provinces have passed the necessary legislation, and a fifth will shortly follow suit; but in Quebec a Bill providing for the adoption of the Act was defeated, and the explanation advanced for this action is that the medical profession of that province is unable to accept the Act as it stands, and that this has influenced the attitude of the Legislature. The reason for the opposition of the medical men appears to be a clause introduced into the Bill at the request of the Ontario representatives, which is as follows:

The possession of a Canadian university degree alone or of a certificate of Provincial registration founded on such possession obtained subsequent to the date when this Act shall become operative, shall not entitle the possessor thereof to be registered under this Act.

It must be understood that in Quebec a student who wishes to obtain a Provincial licence passes his college examinations under the inspection of assessors appointed by the Quebec Board, while in Ontario the Board examinations are quite separate and distinct from the college examinations. This clause, then, would change the methods of the Quebec Board and impose another examination upon the candidates, a change which is vigorously opposed by one section of the medical men of the province. In consequence of this action on the part of the Quebec Legislature, Dr. Roddick proposed to the Premier that the Bill should be taken before the Dominion Parliament for operation in those provinces which had accepted it, but this was not thought advisable, as Quebec had positively refused the measure, and Ontario, on account of pressure of business, had not yet definitely accepted, consequently, as far as can be ascertained, the Bill will not be discussed at the present session.

Last autumn the physicians of Montreal held a meeting to consider what could be done to lessen the mortality from tuberculosis in the city. A temporary Committee was at this time appointed, and a public meeting presided over by His Excellency the Governor General was called on October 30th, when the Montreal League for the Prevention of Tuberculosis was formed, and all the prominent citizens joined its ranks. An energetic Committee was secured, and from the beginning the League has been a success. A central office was immediately obtained from which to conduct the work, and as the first object of the League was to increase the general knowledge of the disease and interest the people in the movement for its suppression, a liberal supply of popular literature on the subject was put into circulation. Then in May last a novel proposition was made to the Ministerial Association, namely, that prominent physicians should occupy the city pulpits on Sunday evening, May 17th, or if preferred on some evening of the week following, and that they should deliver lectures on tuberculosis. The ministers at once fell in with the suggestion, and with few exceptions every Protestant church in the city was well filled with people, attracted by the novelty or the common sense of the proceeding. The same general plan was followed by each lecturer, and the points insisted upon were: First, the close relation of hygiene and medicine to religion; secondly, the terrible havoc wrought by tuberculosis; thirdly, the success of prevention in other infectious disorders; fourthly, the methods to be instituted in order to control the disease. The press and public expressed themselves as being well pleased with the result of the meetings, and undoubtedly numbers were influenced who could not have been reached in any other way. Recently the League has been engaged in still more practical work, for in conjunction with the Board of Health a circular letter was sent to the physicians of the city, asking for notification of tuberculous patients. Upon notification, an inspector will be sent to instruct the household in proper sanitary measures, and in cases of poverty to see that the necessary supplies are provided.

Two well-known European surgeons have visited Canada within the past two months, Mikuliez of Breslau and Lorenz of Vienna. Both operated in the hospitals of Montreal before large audiences of students and doctors.

The number of graduates from the Canadian medical schools appear to be increasing yearly. McGill University has the largest final year in its history, 100 men receiving the degree of M.D., C.M. The following are the numbers of graduates from the other medical colleges: Queen's University 48, Trinity 23, Dalhousie 21, Western College 19, Bishops College 5.

CAPETOWN.

Proposed South African Medical Congress.—Tenure of Medical Officers of Health in the Transvaal.—Plague, Slum Properties and Rats.

A MOVE has been made for holding a Congress of South African practitioners. The Cape of Good Hope Branch of the British Medical Association took the initiative by convening a meeting of medical men of the Cape Peninsula, and that meeting decided to invite medical practitioners all over the sub-continent to meet at Capetown during the last week in December. At that time of the year the Cape Peninsula is a

pleasant place of resort, and being holiday time specially cheap railway and steamer fares will be in operation, and medical men will be better able to get away from their practices. A committee was appointed to issue invitations and make all arrangements, with Dr. C. F. K. Murray, the President of the Cape Colony Medical Council, as chairman. The presumption is that he will be President of Congress, but it was felt impossible to actually make the election until that body meets. There has been a long break in South African Medical Congresses. Five have been held altogether, at Kimberley, Capetown, Durban, Grahamstown, and Johannesburg in chronological order, but the last was in 1898. One was arranged for in this city in 1899, but it fell through on account of the war. It is, of course, too early to forecast the results, but there is some fear that the attendance of men from a distance will not be very great, owing to the dread of leaving their practices. Competition is now so intense, and men have so much leeway to make up after the war losses, that they cannot afford to risk a loss. But no effort will be wanting on the part of the Capetown men to attract a large gathering.

The Transvaal Legislative Council has made a bad beginning in public health matters. In the draft Municipal Bill introduced during the present session it was provided that medical officers of health, although appointed by the local authorities, should not be removable without the consent of the Government. Several of the unofficial members opposed this, and insisted that the same body which appointed should have the right of dismissal. Although the Colonial Secretary has the official element—which is the majority—at his back, he weakly gave way and amended the clause. Thus, an essential safeguard, without which sanitary reforms, so badly needed in this land, can never be properly carried out, was dropped, from the morbid deference of the official to the non-official element. How essential this security of tenure of medical officers is was shown the other day in the Cape House of Assembly. The Colonial Secretary, Sir Pieter Faure, in replying to a question on the plague epidemic, stated that the obstinate persistency of the plague in Port Elizabeth, as compared with its prompt suppression in Capetown—a place in most respects much more favourable to epidemic disease of that type—was mainly due to crass opposition of the local municipal authorities to the measures recommended by the Colonial Health Office. He mentioned that in one case it was recommended, both by the Government medical officer and the municipal medical officer of health, that a batch of slum properties should be declared unfit for human habitation, but the Town Council refused to give effect to this recommendation because several councillors are or were owners of these and similar properties. The Attorney-General has told the Legislative Council the same story. When the plague broke out in Capetown the Colonial Secretary, seeing that with the feeble measures the Town Council was adopting the epidemic would advance apace, took the whole thing out of its hands, gave the colonial medical officer of health full control and paid the bill. This action was of very doubtful legality, but, in the case of the metropolis, the Government had the courage to follow it, otherwise the plague would still have been with us. It is certain that, with the fear of offending Bumbledom, very few municipal officers of health dare push for reforms, however much they may be needed, unless they have an appeal to a more intelligent authority against dismissal. The municipal spirit is conspicuous by its absence in this country, and councils are largely recruited from exactly the two classes least in favour of sanitary reforms—the slum landlords and the speculative builders. From them an energetic medical officer of health can expect no mercy.

Plague continues much in *statu quo* as regards human distribution, but a new rat-infected centre, the Stockenstrom Division of the Cape Colony, has had to be proclaimed, and doubtless we shall hear of some human cases from there soon. It is a district occupied almost entirely by small Hottentot peasant farmers, descendants of military settlers of the old Cape corps. They are very apathetic, and if the disease breaks out amongst them the outlook is not hopeful.

MANCHESTER.

Gift of Convalescent Hospital to Radcliffe.—Reformatory for Female Inebriates.—Sandlebridge Epileptic Colony.

THE town of Radcliffe, near Bury, has just been presented with a convalescent hospital by Mr. Adam Crompton Bealey, a manufacturer of the town. The building cost £7,000, and Mr. Bealey has provided £21,000 for its endowment. The hospital is for the benefit of the community without distinction of party or sect. It is intended for the treatment of persons who are in a convalescent stage after serious illness, and where circumstances at home are such that recovery of health is thereby impeded. It will thus bring within reach of the poorest the skilled nursing and attention which has hitherto been only within reach of the rich and the well-to-do.

The Lancashire Inebriates Acts Board propose to borrow an additional £60,000 for the purposes of an inebriates home for females at Langho, near Blackburn. According to the statement of the Clerk of the County Council, there is a far greater number of habitual female than male inebriates coming from the law courts. At present the county has 12 males and 93 female inebriates in other homes. Already £50,000 have been spent on the undertaking. It is intended to provide for over 100 inmates.

Boards of Guardians and county authorities can only provide for insane epileptics. There is, however, a large number of suffered from epilepsy who do not fall into this category but still require careful treatment. In 1900 some Manchester gentlemen interested in this matter set about seeking a remedy, or at least, providing for the care of the latter class. Ultimately the David Lewis trustees resolved to establish a colony for epileptics. Ground to the extent of 500 acres was acquired from Lord Knutsford on the Sandlebridge estate in the parish of Warford, near Alderley Edge, in Cheshire. The trustees have erected and equipped at their own expense a sanatorium for epileptics at a cost of £120,000. It is rapidly approaching completion, and will soon be formally opened. It is not intended for patients who would ordinarily come under the Poor Law, but for paying patients. Arrangements, however, will be made for admitting a certain number of patients whose friends are unable to pay for their maintenance. It is also intended to be a centre where epilepsy in its various phases can be made the subject of careful study.

SHEFFIELD.

New University Buildings.—The Election of a Surgeon to the Royal Infirmary.

THE ceremony of laying the foundation stone of the new University Buildings by the Lord Mayor of London, who visited Sheffield in State for the purpose, accompanied by the Sheriffs, went off well. Large numbers of the leading citizens of the city, and civic authorities and others from the adjoining towns and districts attended, and were present at the garden party afterwards held in Weston Park, which adjoins the site of the new buildings. Academic dress was worn by the professors and lecturers of the College, by many members of the medical profession, and by others. The scene was most interesting and picturesque, and fortunately the weather was fine and bright. It was announced that the President of the College, the Duke of Norfolk, had contributed £8,000 to the new building and endowment fund, bringing his total subscription to that object up to £10,000. Sir Henry Stephenson had, by giving another £5,000, made his up to £10,000, whilst Sir F. T. Mappin had added £5,000 to his previous donation. Since then other substantial subscriptions have come to hand, and the endowment fund has been well launched. During the earlier part of the day the freedom of the city was conferred upon the Lord Mayor, and he and the Sheriffs were entertained at luncheon by the Lord Mayor and Corporation of Sheffield. In the evening the Master Cutler entertained them at dinner in the Cutlers' Hall, together with the Masters of many of the London City Companies and mayors of neighbouring towns and leading citizens. Altogether the number of ladies and gentlemen dining was about 350.

A vacancy has occurred in the office of surgeon to the Royal Infirmary by the resignation of Mr. Charles Atkin. Since the retirement of Mr. Arthur Hallam two years ago Mr. Atkin has been senior surgeon. There are several excellent candidates in the field for the vacant post. Fortunately the election is no longer in the hands of the general body of Governors, for it is some years since this power was entrusted to a special Election Committee. Already two vacancies, both in the surgical staff, have been filled since the Committee was first constituted.

CORRESPONDENCE.

MEDICAL DEFENCE.

SIR,—As it may be presumed that the question of medical defence will receive a considerable share of attention in the near future, it may be of interest to your readers to place before them a brief account of what has been done in this direction by a kindred body, modelled to no small extent upon the British Medical Association—namely, the British Dental Association.

Medical defence in the narrower sense—namely, the defence of practitioners against malicious actions—it has never undertaken. Its original by-laws have precluded it from doing so, its objects having been defined as relating purely to the carrying out of the provisions of the Dentists Act. Nevertheless, it has occasionally given some assistance to its members who have been placed in difficulties by obtaining opinions from its legal advisers on their behalf and by the like sort of service. But in the direction of aiding in the enforcement of the law it has been very active, and has successfully prosecuted a very considerable number of those who sought to evade or acted in defiance of the provisions of the Act. It has also brought under the notice of the General Medical Council a number of cases in which the offence alleged did not come within the province of statute law, but was of the nature of a professional offence.

For a considerable time, by a judicious selection of cases, under the guiding principle that failure in a prosecution would do more harm than refraining from taking action, it was uniformly successful in obtaining convictions. Later, certain cases were taken up with a view to testing the interpretation to be placed upon clauses in the Act, the exact application of which might be questioned, and in these also it has been for the most part successful. This large measure of success has conferred upon it strong influence, so that in many cases a threat of proceedings by the Association is now sufficient to put a stop to objectionable practices.

On the whole it may be said that the attitude assumed by the British Dental Association has been productive of very great good, and that, but for its existence, the Dentists Act would have been far more frequently evaded than has been the case, while at the same time a good many doubtful points of law have been cleared up. It has, however, not been without its difficulties: its central executive, which had gained considerable experience, was sometimes too cautious to please the more zealous of its members, and sometimes individual branches of the British Dental Association have taken action independently of the central body, not always with the happiest results.

The lesson, then, which may be drawn from the British Dental Association is that such a body may very usefully undertake legal proceedings in enforcing the law where it is clear, and in testing the interpretation of its provisions where they are doubtful. But although the collection of evidence must of necessity be done locally by the officers of the branches, it is far better that the actual proceeding should be left to the central body, even if it seems at times to err on the side of caution. I would not for a moment say that in all cases the opposite course has effected no good, and so, presumably, done harm; but on the balance of the cases known to me I have formed the very decided opinion that actual proceedings should be taken by a central executive, which cannot fail to become possessed of large experience, and I hope that in any steps taken by the British Medical Association in the direction of medical defence this will be kept steadily in view.—I am, etc.,

Park Crescent, W., July 13th. CHARLES S. TOMES.

A "HEALTH CONSCIENCE" AND A NATIONAL LEAGUE FOR PHYSICAL EDUCATION.

SIR,—The proposal to develop a "health conscience" in this country so admirably made by Dr. Clouston in his address printed in the BRITISH MEDICAL JOURNAL of July 11th, is one with which every well-wisher to his country must sympathize. But the difficulties in the way are so many and the inertia to be overcome is so great that a more extended organization than that which he has proposed seems to be required, although the three medical corporations which he mentions might most usefully form a part of it.

The advantages to be obtained from combined work have been so strongly felt by some of those interested in the subject of physical education, that more than a year ago we drew up a draft scheme for its promotion, but the sudden death of Lord Frankfort, pressing duties on the part of others and my own severe illness, lasting nearly a year, have prevented further action from being taken in the matter.

The present seems a suitable time for bringing this scheme forward. In the draft which we had drawn up it was proposed that some one of high position should be invited to become president, and that vice-presidents might be found amongst the members of both Houses of Legislature, whilst the clergy, the law, the medical profession, the press both medical and lay, as well as educational institutions of all kinds, might be induced to work together for one common end. Such an institution might be called a National League for Physical Education, or shortly a Physical Education League, and by bringing about the co-operation of the medical profession with other bodies might effect all that Dr. Clouston desires, and even more, for it might ensure that the dictates of a national "health conscience" should be carried into effect.—I am, etc.,

Stratford Place, W., July 14th. LAUDER BRUNTON.

THE REFORM OF CONTRACT PRACTICE.

SIR,—I see in the BRITISH MEDICAL JOURNAL for April 25th that notice has been given for a discussion at the representative meeting at Swansea of the economic conditions of contract practice as carried on in various parts of the country, and the ethical position of men in contract practice with regard to (1) the amount of canvassing carried on, and (2) the position of those men who continue to hold appointments which the general body of men in the neighbourhood have agreed to give up.

It is very much to be hoped that the discussion may result in something tangible, for that this question of contract work needs investigation and drastic reform cannot be denied by any one who knows anything about it. Still, resolutions do not carry us very far along the path of reform, and it seems to me that our best hopes of success lie in sinking our individual differences and pulling together; we must work out our own salvation. The reports which have been appearing in the JOURNAL lately of what is being done in various centres are useful as giving us a basis on which to work elsewhere. Until men are willing to work together for the common good, and until such time as each man ceases to play solely for his own hand, "contract medical practice" will remain a vexed question.—I am, etc.,

Walsall, July 8th. FRANK G. LAYTON.

THE ADMISSION OF WOMEN TO THE FELLOWSHIP OF THE ROYAL COLLEGE OF SURGEONS, EDINBURGH.

SIR,—I send you a copy of a letter addressed by me to the President and Council of the Royal College of Surgeons, Edinburgh, and hope that you will allow me through your columns to request the Fellows of the College to pass a resolution at the statutory meeting in October authorizing the Council to open the Fellowship examination to women.—I am, etc.,

Edinburgh, July 8th. CHARLES FREDERICK KNIGHT, M.D.

7, Chambers Street, Edinburgh.
June 15th, 1903.

MR. PRESIDENT AND GENTLEMEN,—On behalf of Miss A. N. D. and several other women licentiates, I beg to apply for permission for them to enter for the Fellowship examination. I know that no woman has yet been allowed to enter for this examination, but licentiates are very reluctant to leave their "Alma Mater," and at present they are compelled to take the Fellowship of the Irish College.

If this is a question which can only be determined at a general meeting of the Fellows, I trust that the Council will see fit to make a recommendation on the subject at the next meeting.

I have the honour to be,
Mr. President and Gentlemen,
Your obedient servant,
CHARLES FREDERICK KNIGHT.

The President and Council of the Royal College of Surgeons, Edinburgh.

THE OCTOBER SCHOOL DINNERS.

SIR,—Now that October 1st is approaching, and the authorities of the various metropolitan hospitals are arranging for their annual "dinner," may I make a suggestion on the subject, that is, that two or more should hold theirs on another date, thus leaving their former pupils free to do duty for those who are going to "dinners" held on the first? This they might do in turns if the inconvenience of having the

introductory address and opening of the session on one day and the dinner on another were found to be great. I appeal to the powers that be to consider this matter, which is important to us "country mice," many of whom cannot under present circumstances always manage to get away. Many a time have I gone round in vain looking for a *locum tenens* only to find every one of those neighbours who on occasion kindly act for me as such intent on going to their hospital dinners, and relying on me to look after their practices in their absence. Most of us in the provinces have had a similar experience, and the simple arrangement I have suggested would prevent country towns from being practically denuded of their doctors on this festive occasion as they are at present. Hoping that some more powerful advocate will take up the cause, I am, etc.,

GEORGE A. BALLINGALL, M.D. BRUX.

St. Leonard's-on-Sea, July 9th.

TRYPANOSOMIASIS.

SIR,—A perusal of the very interesting communication on the black fly of the Niger which appeared on page 120 of the BRITISH MEDICAL JOURNAL for July 11th indicates that the insect in question, though probably dipterous, is neither the common tsetse nor the little known tsetse of the Gambia. During the preparation on my forthcoming work on zoology I have had occasion to study the South African tsetse (*Glossina morsitans*). This winged terror was originally figured on far too large a scale in Livingstone's book of travels, and the error has been subsequently repeated in many other works, the insect being absurdly represented as a kind of long-legged humble bee. The true tsetse does not even attain the dimensions of a large blue-bottle, being no larger than a house fly with a wing expanse of $\frac{3}{8}$ in. from tip to tip. The thorax is grey with six longitudinal lines, and the abdomen is yellowish with two greyish brown spots and four dark brown lines. The wing nervures are dark brown, and the elongated proboscis is guarded by adpressed palpi.

Although of course it is difficult to name an insect without seeing a specimen one might perhaps hazard the suggestion that the black fly of the Niger is a member of the *Tabanidae*, a group of insects which includes the kleg of Norway and the gad-fly of the British Islands. I understand that the bite of the true tsetse only occasions transient itching, never suppuration, so that the Niger fly is obviously no true *Glossina*.—I am, etc.,

Sale, Manchester, July 12th. GRAHAM RENSHAW, M.B.

THE EXTIRPATION OF *CULEX* AT ISMAILIA.

SIR,—I beg to enclose for favour of publication the translation of a report from the General Secretary of the Suez Canal Company regarding the effects of the anti-malaria campaign at Ismailia since the visit of Sir William MacGregor and myself last September. While it is obviously too early to speak definitely regarding the result on the malaria rate, the Secretary is able to announce that mosquitos of the genus *Culex* "ont été supprimés d'une mannière presque absolue." Under the term *Culex* I think he means to include also gnats of the genus *Stegomyia*. I have received confirmatory evidence from a gentleman in Egypt, who says that he was recently able to sleep at Ismailia without mosquito nets.

The campaign against *Culex* at Ismailia originally promised to be a difficult one, owing to the large number of sewage cisterns under the houses; and the result shows how easily a simple and obvious idea like that of diminishing mosquitos by dealing with their breeding places can be acted upon by an intelligent and effective executive, which sets to work at once instead of wasting time on useless discussions—as for the most part we have been doing in British possessions during the last four years.

It is to be hoped that, following the work of Gorgas at Havana and Logan Taylor at Freetown, the result at Ismailia will be accepted as clinching the proof of the fact that *Culex*, at least, may be materially diminished in tropical towns.—I am, etc.,

Liverpool, July 11th. RONALD ROSS.

Translation of letter dated July 2nd, 1903, from M. le Secrétaire Général de la Compagnie Universelle du Canal Maritime de Suez, Paris, to Major Ronald Ross, Liverpool School of Tropical Medicine.

Sir,—I have the honour to inform you that, following your mission of last September, numerous works of drainage and filling up of ditches have been effected, and that a permanent department has been created for the purpose of oiling cisterns and pits, and suppressing marshes and pools of water amongst the habitations of Ismailia. Moreover, measures of prophylaxis, consisting of the gratuitous distribution of quinine and arsenic, commenced in the month of April, 1902, are continued without interruption.

Since last December, the number of cases of fever has very sensibly diminished by comparison with previous months and with the corresponding period of last year, and this decrease is maintained until to-day.

Owing to the time at which the sanitary works have been made, the complete disappearance of the *Anophelès* is not yet realized; but it can be stated that recently-captured insects have not been infected—which can, perhaps, be attributed to the fact that the number of cases of fever have been considerably reduced.

On the other hand it is interesting to note that, thanks to methodical petrolage, and to the incessant surveillance of the breeding places of mosquito larvae, the mosquitos called *Culex* have been suppressed in a manner almost absolute, and that in the hottest period of the year it has been possible to abandon the use of mosquito nets.

Regarding the consequence of these measures, a definite statement cannot be made until after August to November next, the principal malaria season. We have every ground for hoping that the efforts with which you have been so usefully associated will end in the complete extinction of malaria in the town of Ismailia, and we will communicate with you when we receive definite information on this interesting subject.

THE REFORM OF THE BRITISH MEDICAL ASSOCIATION.

SIR,—I find that the result of the recent election of members of the Council to represent the Metropolitan Counties Branch has been to place there six consultants. All our members of Council now reside within five minutes' walk of Cavendish Square, and although for some purposes this may be convenient, it is hardly what was expected from a reformed Association. In its unreformed days the Council of the Metropolitan Counties Branch always took care that some general practitioners should be sent to the Council of the Association, and the first result of reform is not altogether reassuring. One obvious fact is made clear by the recent election: either the general practitioners in the metropolitan area have no confidence in members of their own class, or they take little interest in the affairs of the Association.—I am, etc.

Kingsland Road, N.E., July 13th. F. HEWITT OLIVER.

GLASSES FOR PRESBYOPES.

SIR,—The letter written by Colonel Hall and published in the BRITISH MEDICAL JOURNAL of July 11th concerning the review on Mr. Lawson's book, *Diseases and Injuries of the Eye*, requires a little comment.

With regard to Colonel Hall's contention that Mr. Lawson's advice is not good concerning the low correction of presbyopes, I may perhaps be allowed to quote his own words rather than what I, at the time I read the book, considered to be his meaning. After pointing out the difference there is in presbyopes in accepting glasses for its correction, and also the difference there is between those who follow occupations such as watchmakers, who hold their work very close to them, and musicians and artists who work at a greater distance, he says: "The weakest convex lens with which the patient can see clearly to do his work at his own distance is the right glass." This, perhaps, conveys rather a different meaning from the words I used in the review in question.—I am, etc.,

July 13th. THE WRITER OF THE REVIEW.

OBITUARY.

JOHN CHARLES GALTON, M.A.OXON., M.R.C.S.ENG.

WE regret to have to record the death of Mr. JOHN CHARLE GALTON, who died on June 14th at his residence in Upper Cheyne Row, Chelsea, at the age of 63. Mr. Galton was the eldest son of the Rev. J. L. Galton, rector of St. Sidwell's, Exeter, and received his early education at Radley and Magdalen College School. He afterwards proceeded to Exeter College, Oxford, and after graduating there as M.A., took up the study of medicine, and was admitted M.R.C.S. in 1866. Mr. Galton then went abroad where he continued his scientific studies at Vienna, and on his return, after filling several minor appointments, became lecturer on comparative anatomy at Charing Cross Hospital Medical School. On the outbreak of the Franco-German war Mr. Galton volunteered for foreign military service and for the next seven or eight years spent most of his time abroad as a military surgeon. During the Franco German war he was a staff-surgeon in the Hessian division of the German army and at its close was in charge of the Princess Alice Hospital at Darmstadt. Later on he volunteered again for service in the Netherlands East Indian Service, and served throughout the second expedition to Atchin. In 1876 he saw further war service as a Surgeon of the National Society for Aid to the Sick and wounded during the Turko-Servian war, being stationed most of the time at the Belgrade Hospital. For his

service on these various occasions he received the fourth class of the Prussian Order of the Crown, the Hessian Cross, and the German war medal; while Atchin brought him another cross medal and clasp, and the Turko-Servian war the Order of Takovo. On returning finally to England he exhibited the same activity as he had done elsewhere, giving most of his spare time to the pursuit of literature. Among other work he published a translation of Professor Roser's *Chirurgico-Anatomisches Vade Mecum* and Professor Ecker's *Die Hirnwindungen des Menschen*. He was a Fellow of the Linnean and Zoological Societies, and contributed a good many papers to the *Transactions* of the former Society, to the *Magazine of Natural History*, to *Brain*, and other scientific journals. He was a member of the British Medical Association, and a Fellow of the Medico-Chirurgical Society and the Society of Anatomists.

DAVID JAMES LAWSON, M.D., D.P.H.

We much regret to chronicle the very sudden and unlooked for death of Dr. Lawson, of Portland. He had attended the Assizes at Dorchester on the morning of June 6th, and after leaving the court fell forward on the pavement in the street, and died in a few minutes.

David James Lawson was a graduate of the University of Edinburgh. He obtained the degrees of M.B. and C.M. in 1885, and of M.D. in 1889, and the Diploma of Public Health from the University of Cambridge in 1896. He had practised in Portland for seventeen years, and at the time of his death was Poor-law Medical Officer, Public Vaccinator, and Medical Officer of Health for the Island, and also Admiralty Surgeon and Agent, Certifying Factory Surgeon, Surgeon to the Trinity Board, Surgeon to the Royal Portland Dispensary, and Surgeon Captain to the 1st Dorset Volunteer Artillery.

Devoted to and skilful in his profession, affable and kind in disposition, strictly honourable, considerate for others, good and true in all things, he had won the affection and esteem of the inhabitants of Portland, and his sudden death came upon them as one of personal bereavement.

A memorial service was held at St. John's Church on June 10th, and, followed by a large number of mourners, past hundreds of bare-headed people, whose tear-stained faces evidenced their grief and distress, his body was conveyed to the railway station *en route* for Scotland, the interment taking place at Blackford, near Perth.

Dr. Lawson leaves a widow and two young children, and was 43 years of age.

Deaths in the Profession Abroad.—Among the members of the medical profession in foreign countries who have recently died are: Dr. John P. Bryson, of Saint Louis, a prominent specialist in genito-urinary diseases and one of the founders of *America Medicine*; Dr. I. N. Love, of New York, sometime Professor of Clinical Medicine and Diseases of Children in the Marion-Sims College of Medicine, Saint Louis, President of the Section of Children's Diseases in the American Medical Association in 1889, and founder and editor till his death of the *Medical Mirror*, aged 49; and Dr. Monfils, one of the founders of the Belgian Medical Federation.

The Late Dr. Thos. Smallhorn.—A dedicatory service was held last week at the parish Church of Eynsham, Oxfordshire, on the occasion of the unveiling of the memorial window which has been placed in the church in commemoration of the life and work of the late Dr. Thos. Smallhorn. The service was choral, and was attended by a large congregation drawn from Eynsham, Sutton, Stanton Harcourt, Hanborough, Freeland, and Northmoor. The movement to perpetuate in some way the memory of Dr. Smallhorn met with so much favour among all classes, that the original idea of simply placing three coloured lights in the chancel gave place to that of building the present very beautiful window. At the foot is an inscription which reads: "To the glory of God, and in loving memory of Thomas Smallhorn, for thirty-seven years medical practitioner of this district, who died February 9th, 1902, aged 63, this window is affectionately dedicated by his grateful friends and patients."

French Surgical Association.—The French Surgical Association will hold its sixteenth annual meeting in Paris on October 19th and following days under the presidency of Dr. Charles Périer. The following two questions are proposed for discussion:—(1) Tumours of the brain (to be introduced by M. Duret, of Lille); (2) exclusion of intestine (to be introduced by M. Hartmann, of Paris). The General Secretary is M. Lucien Picqué, 81, Rue Saint Lazare, Paris.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Regulations for the Entry of Surgeons for Temporary Service in the Medical Department.

It is announced that "Surgeons who may be temporarily employed in the Royal Navy to meet the requirements of the service will be appointed under the following regulations":

Qualifications.

To be of pure European descent and the son either of natural born British subjects, or of parents naturalized in the United Kingdom. To be registered under the Medical Acts as qualified to practise medicine and surgery in Great Britain and Ireland. To produce certificates of good character (up to date). To be reported physically fit after medical examination. Age not to exceed 40 years.

Pay and Allowances.

Full pay, 22s. a day. Half-pay, for sickness and extra leave only, 10s. a day. To be granted thirty days advance of pay on joining a ship after appointment. To receive the same allowances as are payable to permanent officers of their rank.

Uniform to be Provided by each Surgeon.—Frock coat, waistcoat, and trousers. Undress coat. Uniform cap. Mess jacket and waistcoat. Sword and undress belt. All as specified in the Uniform Regulations. An equipment allowance of £20 will be payable on an officer being called up for active service.

Messing.—Surgeons will be allowed, when attached to ships on commission, the ordinary naval ration; but will have to pay about 2s. a day towards the maintenance of their mess as wardroom officers.

Pensions for Wounds and to Widows, etc.

Unmarried candidates will be preferred. In the event of surgeons engaged for temporary service being wounded in His Majesty's service, gratuities or pensions, varying in amount according to the injuries sustained, will be granted on the basis of the awards in similar cases of naval officers.

Should temporary surgeons be killed in action, die within six months of wounds received in action, or meet their deaths by acts of the enemy, the following pensions and allowances will be granted to their widows, children, etc.:

Widows' Pensions.—If surgeon be killed in action £80, and in addition one year's pay of their husband's corresponding rank in the Royal Navy—£225 10s.—as a gratuity. If surgeon be drowned, etc., by acts of the enemy, £65.

Children's Pensions, up to the Age of 18 for Boys and 21 for Girls.—If surgeon be killed in action, £12 to £16, and each unmarried child under the age of 21 one-third of the gratuity paid to the widow. If the surgeon be drowned, etc., by acts of the enemy, £10 to £14. In the case of widowed mothers dependent on their sons, if the latter left no widows or children, and orphan sisters dependent on their brothers, if the latter left no mothers, widows, or children, and the surgeon be killed or drowned or suffered violent death by acts of the enemy, a pension of £50 will be granted.

No pension or gratuity can be given on account of injury or death, which may result from carrying on the ordinary duties of the service.

Conditions of Service.

To engage for six months certain, but the liability to serve will be limited to five years. To serve when and where required. To be liable to immediate discharge for misconduct or incompetency. To rank with, but after, surgeons in the permanent service. To be under the general rules of the service as regards discipline, etc. To receive two calendar months' notice of services being no longer required. To be granted a gratuity of two calendar months' pay on discharge, if not discharged for misconduct or incompetency. Voluntary resignation of appointment will be allowed subject to the convenience of the service, but the gratuity of two calendar months' pay or discharge will be thereby forfeited.

DEFECTS IN EXISTING CONDITIONS OF SERVICE.

Mr. Gerald Sichel, F.R.C.S.Eng., F.C.S., etc., late Surgeon in H.M. Navy and late Assistant Instructor at the Naval Medical School at Haslar addressed from Guy's Hospital on June 24th a letter to the First Lord of the Admiralty, of which a copy is printed below. In forwarding the letter Mr. Sichel has sent also another letter from himself for publication in this Journal, but as the two letters virtually cover the same ground, only a summary of special parts of the second need be given. Mr. Sichel, having now left the service, has no interest in its improvement except as a taxpayer and member of the medical profession, but in taking up the question he is fulfilling a virtual promise made to several brother officers who knew that he was about to leave them. The need for reform is patent to all those acquainted with the subject, and is evidenced by the falling-off in the number of candidates. It was, indeed, admitted by the First Lord in a speech in March at Haslar, but whether the Admiralty is prepared to take reform in hand frankly, honestly, and efficiently is another matter. The cry is not for increased pay, but for such transformation as shall make the navy offer a satisfactory career to able men with a proper amount of ambition and energy. At present the Royal Army Medical Corps offers much better prospects to candidates.

The letter to the First Lord reads as follows:

"I had the honour of being present, as a surgeon in the Royal Navy, when you made your important speech at Haslar on March 31st last, in which you stated that you were only too glad, and so were your colleagues, to welcome suggestions for the solutions of problems.

"This statement and my earnest desire to benefit both the Royal Navy and the medical profession form my only excuse for writing to you like this.

"In order that the Naval Medical Service should become efficient, it is absolutely necessary that it should afford a self-respecting career to the majority, and to the ambitious a greater prospect of honour than is at present the case.

"In order to attain this much-desired end, I would venture to humbly suggest that we should be given much more control over our own affairs than we have now.

"Individual responsibility should be encouraged, even among the most junior of us.

"To be an inspector-general is our ambition, and it is disheartening and humiliating to us juniors to see these officers—ranking as they do with rear-admirals—forced to sit under the presidency of a post-captain, or even a commander, at medical surveys, which are held for purely medical purposes.

"If we are ever to have the entire confidence and respect of the sick-berth staff, we must have—at all events in hospitals—complete control and authority both as regards their training—professional and disciplinary,—promotion, and, where necessary, punishment. In our own ranks we much desire more speedy promotion to level us up with other branches. The question of war promotion, almost purely a question of chance, wants serious reconsideration. It is most important to note that we do not ask for increased pay, but, as even in this respect we compare badly with the army, it is doubly desirable that steps be taken to render our Service more attractive in other ways. In short, although they will cost the country nothing, drastic changes in organization are necessary.

"That the confidence of the medical profession generally is much shaken in the navy is evidenced by the results of the entrance examinations during the past three years.

"The appointment of an official Advisory Board would do well to restore this confidence, and moreover be of great assistance in the entire reorganization which is necessary and bound to come before the Royal Navy attracts the desirable class of candidates.

"I have been a surgeon for 8½ years, and for 8½ years have watched and waited in vain for the inevitable changes which are bound to, and still have not, come."

In reply to this Mr. Sichel received a note stating that it had been handed to the Secretary of the Admiralty.

APPOINTMENTS.

THE following appointments have been made at the Admiralty: WILLIAM SURY, Staff Surgeon, to the *Bonaventure*, July 28th; EDWARD B. PICKTHORN, Staff Surgeon, and ERNEST F. ELLIS, Surgeon, to the *Montagu*, July 28th; SAMUEL H. WOODS, B.A., M.D., Surgeon, to the *Gleaner*, July 28th; JAMES J. WALSH, M.B., Staff Surgeon, and H. B. SIMPSON, Surgeon, to the *Kent*, August 1st.

AN ANNUAL DINNER?

STAFF-SURGEON W. H. S. STALKARTT, M.D., F.R.C.S.E., R.N., writes: Many will admit that the expression "an age of dinners" may not inaptly be applied to the present time, perhaps more so than at any previous period. For how much is it the custom of all societies, institutions, etc., to meet annually at the festive board; or, again, for those who have been associated together at some noted event to celebrate its anniversary in that manner. To the above the Royal Navy Medical Service would appear an exception. The institution of an annual dinner in connexion with the Medical Service of the Royal Navy would, I am sure, meet with favour. Such gatherings have a more important result than the one of social pleasure. A spirit of *camaraderie* is engendered and *esprit de corps* fostered to the benefit of the Service.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT F. W. W. DAWSON, from the Seconded List, to be Lieutenant, June 1st. He was seconded on January 31st last, while a Lieutenant on probation.

Lieutenant-Colonel A. E. J. CROBY, from the Seconded List, to be Lieutenant-Colonel, July 7th. He has been serving as Surgeon to Lord Northcote, Governor of Bombay.

Lieutenant-Colonel A. W. BROWNE, half-pay, retires on retired pay, July 15th. He was appointed Surgeon, August 5th, 1877; Surgeon-Major, August 3rd, 1889; was granted the rank of Lieutenant-Colonel, August 5th, 1897; and made Brigade-Surgeon-Lieutenant-Colonel, November 20th, 1899. He was placed on half-pay, July 14th, 1900. He served in the Afghan war in 1878-80, including the actions at Ahmed Khel and Urzoo (medal with clasp), and in the Soudan Campaign in 1884 (medal and Khedive's bronze star).

Lieutenants C. H. CARR, M.D., E. BENNETT, F. P. LAUDER, A. C. ADDERLEY, J. TOBIN, and H. E. WESTON, whose first commissions date from May 30th, 1900, are promoted to be Captains, May 30th, 1903.

Lieutenant K. C. EDWARDS resigns his commission, July 15th. He was appointed Lieutenant, on probation, January 31st, 1903.

Captain JOSEPH MCARDLE, M.D., died at Khartoum on June 16th. He was appointed Surgeon-Lieutenant, July 28th, 1897, and Captain three years thereafter. He was in the Soudan campaign in 1898, receiving the British and Egyptian medals. He had been serving with the Egyptian army since January 21st, 1899.

Surgeon-Major THOMAS CAREY died at Hove on June 2nd. He joined as Assistant-Surgeon, January 24th, 1851; became Surgeon, January 26th, 1858; and Surgeon-Major, January 31st, 1872; retiring from the service, February 6th, 1874. He served in the Persian war in 1856-7, including the capture of Reshire, the surrender of Bushire, and battle of Kooshat (medal with clasp). He was also in the Indian Mutiny campaign, and was present in numerous actions with the rebels, including the first relief of Lucknow and the defence of Cawnpore, where he was severely wounded (medal with clasp, and a years' service for Lucknow).

EXCHANGE.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 3s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

FIELD OFFICER, R.A.M.C., wishes an exchange to India this trooping season. For particulars address No. 3,291 BRITISH MEDICAL JOURNAL Office.

ARMY MEDICAL RESERVE.

SURGEON-CAPTAIN P. B. BENTLIF to be Surgeon-Major, July 11th.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

SURGEON-LIEUTENANT J. R. BIBBY, M.B., 1st Gloucestershire, to be Surgeon-Captain, July 11th.

Surgeon-Lieutenant G. S. J. BOYD, 1st Gloucestershire, and Surgeon-Captain J. A. CORNETT, 1st Lancashire, resign their commissions, July 11th.

VOLUNTEER RIFLES.

SURGEON-LIEUTENANT-COLONEL T. H. AGNEW, 1st Volunteer Battalion the King's (Liverpool Regiment), and Surgeon-Major W. J. LAWRIE, M.D., 2nd Volunteer Battalion the Royal Scots Fusiliers, resign their commissions, July 11th.

The undermentioned Surgeon-Lieutenants are promoted to be Surgeon-Captains, dated July 11th: W. G. GALLETLY, M.B., 4th Volunteer Battalion the Norfolk Regiment, W. B. ARMSTRONG, M.B., 1st Dumbartonshire.

Surgeon-Captain R. J. PATON, M.D., 2nd Volunteer Battalion the South Wales Borderers, to be Surgeon-Major, July 11th.

Mr. DANIEL J. THOMAS is appointed Surgeon-Lieutenant in the 3rd Volunteer Battalion the South Wales Borderers, July 11th.

Surgeon-Lieutenants A. T. F. BROWN and H. J. BRYAN, 4th Volunteer Battalion the Queen's Own (Royal West Kent Regiment) to be Surgeon-Captains, June 6th.

Surgeon-Lieutenant C. C. HEYWOOD, M.B., 2nd Volunteer Battalion the Manchester Regiment, resigns his commission, and is appointed Lieutenant, July 11th.

Mr. GEORGE P. CRARER, M.B., to be Surgeon-Lieutenant in the 2nd Volunteer Battalion the Gordon Highlanders, July 11th.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS)

LIEUTENANT J. F. WRIGHT, the Manchester Companies, to be Captain July 11th.

VOLUNTEER INFANTRY BRIGADE.

SURGEON-MAJOR F. J. KNOWLES, 2nd Volunteer Battalion the Prince Wales's Volunteers (the South Lancashire Regiment) to be Senior Medical Officer South Lancashire Brigade, July 11th.

VOLUNTEER INFANTRY BRIGADE BEARER COMPANY.

MR. FREDERICK B. JEFFERIES to be Lieutenant in the Sussex and Kent Company, July 11th.

VOLUNTEER OFFICERS' DECORATION

CORRECTION.—In the notification of the awards of the Volunteer Officers' Decoration, which appeared in the *London Gazette* of June 30th, Surgeon-Lieutenant-Colonel F. J. WALKER, M.D., should be shown as belonging to the 3rd Volunteer Battalion the Lincolnshire Regiment.

INSTRUCTIONS TO MEDICAL OFFICERS OF BRIGADE CAMPS.

BRIGADE-SURGEON-LIEUTENANT-COLONEL PHILIP E. HILL, V.D., Senior Medical Officer of the South Wales Border Volunteer Infantry Brigade, has issued very complete instructions to the medical officers of the brigade, which should go far to ensure the efficient working of the medical arrangements during the camp at Towyn-on-Sea. The brigade field hospital will be in charge of Surgeon-Lieutenant-Colonel S. B. Mason, V.D., with Surgeon-Captain C. E. Humphreys to assist him. Surgeon-Captain J. Howard Jones, M.D., is appointed Sanitary Officer. The details for duty in the hospital will be furnished by the brigade bearer company which is under the command of Major J. W. Davies. The reference to the various paragraphs of the regulations for the medical services is given for the duties of each medical officer, whether in charge of the hospital or of the bearer company, on duty with troops or acting as orderly medical officer. This is a very useful addition to the instructions, and one which will be appreciated by the medical officers, who would otherwise have to search through the regulations to find what was specially applicable to their particular duties. We note that the officers of the Brigade Bearer Company are described as officers of the R.A.M.C.(Vols.); this is surely somewhat premature, to say the least.

THE MAIDSTONE COMPANIES R.A.M.C.

THE Director-General of the Army Medical Department, Sir William Taylor, K.C.B., inspected the Maidstone Companies of the R.A.M.C.(Vols.) on June 24th. These companies sent 151 men to the front during the war, and were marched on to parade 210 strong by their commanding officer, Major C. Pye Oliver, M.D., the other officers present being Lieutenant Rogers-Tillstone, Lieutenant Fry, and Captain and Quartermaster Saveall. There were about 40 non-commissioned officers also on parade, of whom the seniors were Sergeant-Instructors Fowler and Harris. The Director-General, who was accompanied by Colonel Leake, P.M.O. of the Thames District, and Colonel Wilson, of the Head Quarters Staff, arrived on the parade ground about 3 p.m., after which the companies with their transport marched past, headed by the drum and fife band.

On conclusion of the inspection the Director-General distributed sundry medals and clasps, and then addressed the men. He referred to the services of the company in the war, and regretted, he said, the delay which had occurred in serving out medals; but it was a long and trouble-some task to ascertain the different engagements at which each man had been present and the clasps to which he was in consequence entitled. He, however, hoped that the rolls would soon be complete. He was glad to be able to congratulate Major Pye Oliver on the appearance of the men and the smart intelligence with which they had gone through their work. Major Oliver, he knew, was anxious for an increase of the establishment, but it must be remembered that the sanction of such increase did not lie entirely in the hands of the Medical Department of the War Office. Personally, he wished the detachment every success, and hoped that it would prosper and progress as much in the future as in had in the past.

MEDALS FOR SERVICE IN AFRICA.

AN army order recently issued announced that the King has been pleased to extend the "West African Medal," with clasp, to the Imperial and Colonial forces employed in the Munshi and Kaduna Expeditions, 1900, those already in possession of the West African medal receiving a clasp only.

The African General Service Medal, with clasp, "N. Nigeria, 1902," is also granted to the forces engaged in the Bornu and Kontagora Expeditions, 1902.

THE PRINCIPAL MEDICAL OFFICER, DUBLIN.

ON July 10th Lieutenant-Colonel Dorman, C.M.G., R.A.M.C., was entertained at dinner at the Shelbourne Hotel by the officers of the Royal Army Medical Corps and civil surgeons of Dublin Garrison prior to his transfer to Bermuda.

Colonel Dorman has been Principal Medical Officer, Dublin District Staff for nearly a year, and it was the unanimous wish of the officers and civil surgeons serving under him that his departure should be attended by some mark of their esteem and their appreciation of the kind and considerate way in which he had carried out the duties of his office. Every available officer and civil surgeon of the garrison was present.

After the toast of "The King," that of "Our Guest" was proposed in a few well-chosen words by Lieutenant J. G. MacNeece, and was received in a manner worthy of the occasion. Colonel Dormer replied in a happy and feeling speech.

MEDICO-LEGAL AND MEDICO-ETHICAL.

THE TRANSATLANTIC SPIDER AND THE ENGLISH DOMESTIC FLY.

We have received from a member of the Association the following copy of a letter sent to one of s domestic servants who had apparently on some occasion consulted the "Institute":

Dear Patient,—We beg to inform you that your treatment will expire in a short time, and while we feel confident you wish to continue the same until the good results already obtained have been brought to a successful issue and you are permanently cured, still we wish to avoid any misunderstanding regarding the continuance, and therefore write you thus early that you may remit the fee of 21s., so that the treatment will continue without any interruption.

You have undoubtedly received considerable benefit from the treatment already given you, but we have found by our broad experience that in cases such as yours it sometimes requires two, and occasionally three months, to completely eradicate the disease, and restore the patient to perfect health. The treatment is peculiar in that it works quietly and surely. You may think that it is having no particular effect, but after faithfully following it you will wake up some day feeling like a new being, and you will wonder where the disease has gone.

We are making a very careful study of your case, and you may rest assured that we will do everything in our power to bring about a perfect cure, in the very shortest possible space of time. Our physicians and specialists are selected with the greatest care, and are eminently fitted to diagnose and prescribe for you. Our remedies are prepared for each particular case. Our physicians write a prescription, and it is filled in our laboratory under the direction of the most expert chemists that it is possible for money to secure. Our physicians and specialists are paid a large salary, and are paid according to the number of patients they cure monthly, so that you can readily see that it is to their financial advantage to cure the patients in the shortest possible length of time. Common sense teaches that a man who has spent his life in treating a particular disease, who has treated and cured thousands of people of this disease, should know more about it than a man who perhaps never treated more than a dozen patients for this complaint in his life.

We have specialists for almost every disease. These specialists are treating and studying the disease which they treat day in and day out. Thus you see we can give you expert advice and treatment. Were you to apply to any competent specialist for similar treatment, he would charge you from 15s. to £1 per day for his services. Our treatment is absolutely harmless. No poisonous drugs or minerals are left in the system that might in a few years weaken it and produce premature decay.

The basis of our treatment is a building-up process. We study the needs of every organ of the body, and give such treatment as will restore the organs to their normal condition. Our treatment builds up the body, creates new life, new nerve force, and if taken systematically will positively cure every curable disease. We absolutely guarantee this. We will forfeit £200 in gold for any case that we cannot cure, that can be cured by any one else.

In ordering the next month's treatment kindly use the enclosed order blank and fill out the enclosed symptom blank, that our specialists may review your case as it is at the present time and prescribe accordingly. Your symptoms may have entirely changed since you filled the last symptom blank, so be sure and send a new one.

We trust you will see the importance of attending to this matter promptly that there may be no interruption in your treatment. We shall consider it a great accommodation if you will let us hear from you within a few days, so that our physicians will have plenty of time to study your case in detail before prescribing for you.

Most cordially yours,
Thos. F. Adkin, Pres.

The letter is accompanied by an "order blank" and a long list of questions called "symptom blank." Among the questions we notice this, "Please give us the name of the newspaper or magazine in which you saw our advertisement." The system pursued by these gentlemen is evidently to advertise in English newspapers and magazines, the columns of the halfpenny daily press being especially full of such contributions to the publisher's exchequer; and, should any one be so foolish as to commence correspondence, every effort is no doubt made to maintain the hold thus acquired.

MEDICAL ETIQUETTE.

M.R.C.S. sends us the following statement: Dr. A. and Dr. B. are two general practitioners in a small town where no consultant resides. Mrs. C. has been a patient of Dr. A.'s for years. The question of operation having arisen, Mrs. C. wishes to have the operation at home and that Dr. B. should help. She is over-ruled by Dr. A., who wishes her to go as a private patient into hospital, where he will operate and be assisted by his colleagues. After returning to her home and being still treated by Dr. A., Dr. B. was called in consultation. Dr. B. saw her twice with Dr. A., and a third time gave an anaesthetic while Dr. A. curetted the uterus, but did not see her again until, at the end of two and a half months, Mrs. C. sent him a message to see her. On calling he was told that Dr. A. had failed to give relief in Mrs. C.'s case, and that she had told him that she wished other advice. He agreed and asked whom she wished to have, to which she replied "Dr. B." Dr. A. replied that Dr. B. would probably be the best to consult, and said that Dr. B. had succeeded in cases where he (Dr. A.) had failed and vice versa, and offered to send word to Dr. B. asking him to go there, but he more strongly advised her to go to one of the larger cities and consult some higher authority. All this being related to Dr. B. by the patient, he had no hesitation in undertaking the case. Was it wrong for Dr. B. thus to take on the treatment of a patient whom he had seen two and a half months previously in consultation? In considering this question it must be borne in mind that there are no consultants in the town, that all the medical men are general practitioners, and that Mrs. C. was determined to have a change of doctor; if she had not called in Dr. B. she would have called in someone else.

*** We hold the opinion very strongly that a medical practitioner who has been called in consultation should not supersede the original medical attendant in the treatment of the same illness unless this is done so at his request. If the patient had accepted Dr. A.'s offer to ask Dr. B. to go to her, this condition would have been fulfilled, but this does not appear to have been done, and therefore Dr. B. should not have taken over the case without ascertaining directly from Dr. A. that he was perfectly willing to give up the case to him.

R.S.O.—(1) We can see no objection to our correspondent taking a consulting-room and putting up a plate in the town. It is not unusual to put the consulting hours thereon, and to do so is no breach of medical etiquette, although it is in our opinion better to put nothing upon the door-plate except the name. (2) If a patient is not at the time under the care of any medical practitioner he is free to consult any one he pleases, and the practitioner so consulted may give his services without any reference to any other medical practitioner who may have attended the patient in a previous illness.

G. P. sends us a copy of a circular sent to the medical profession in the neighbourhood by one who is about to start as an ophthalmic surgeon, and desires the medical profession to know his intentions and his qualifications for the post. As the gentleman in question appears to possess the proper training and experience to practise in this department of surgery, he is in our opinion justified in sending this circular to his professional colleagues, all the more as the place in question is one in which it would be almost impossible to convey the information in any other way. We are sorry to see, however, that he speaks of "putting a card in such lay papers as circulate in districts likely to be interested in the matter," which, he says, is "in conformity with custom" and "not considered unprofessional" in that country. It must be understood that this is a distant colony, in which methods may be sanctioned by professional opinion different from those that prevail here, and we consider that the local Branch would be a better judge of his professional conduct than we can be.

M.B.—We should recommend our correspondent to consult his solicitor, as it is not possible to advise without a full knowledge of all the facts.

HOW TO COMMENCE PRACTICE AS A SPECIALIST.

Mirror asks how he may commence practice as a specialist in a district where there is no one engaged in this particular branch. May he call upon the medical men, and write to those whom he is unable to see?

*** We see no objection to the proposed plan.

CERTIFYING FACTORY SURGEONS AND MEDICAL ATTENDANCE.

Persia writes: R. is certifying factory surgeon (Scotland). An accident happens to a young woman when at work in a mill; the mill manager sends for R., without asking the woman, a patient of X., who is her doctor or whom she wishes; R. stitches the cut and attends until the woman resumes her work. Now (1) as certifying factory surgeon must R. be sent for to all accidents occurring in the mills? (2) Is it his right to treat and attend all such cases, even although they are patients of the other practitioner? (3) Would X. be correct in notifying the mill owners or managers that R. has no right to be sent for to treat any of X.'s patients who may meet with accidents in the mills? (4) Ought R. to have intimated the accident to X., who has since been informed by the patient that she would rather X. had attended it, but did not know how to act? R. knew that the woman was a patient of X.

*** (1) Only for the purpose of conducting the necessary investigation. (2) A certifying surgeon, as such, has nothing to do with treatment. It is, however, not uncommon for an employer to engage the factory surgeon to attend to persons injured at his works. (3) X. would scarcely be correct in notifying the employer that he was not entitled to provide free medical attendance of any kind for his hands, or to select his own practitioner for the work. There is no obligation on the injured person to accept the attendance provided should he or she prefer to engage and pay the usual family attendant. (4) If the patient desired X. to attend her, her duty was to have intimated the fact to R., and then transferred herself to the care of X. R. could not be considered as under any actual obligation to advise X. of his attendance, though, if on friendly terms, it might have been taken as an act of courtesy if the fact had been mentioned.

PURCHASING A PRACTICE.

H.E.D.—As we understand our correspondent, he is bound to collect the outstanding accounts, otherwise we should advise him to have nothing to do with them. We can see no objection to his sending to each patient in his practice a letter to say what fees in future he intends to charge, but he ought not to comment upon the charges of his predecessor or to institute any comparison; he may leave that to be done by the patients themselves. He should be careful to bring his fees into line with those of the other medical practitioners in the town, or he may be accused of desiring to undersell them; and he must not send the letter to any one who is not bona fide a patient of his.

DOCTORS AND CHEMISTS.

J.S.N.—Our correspondent uses private formulae in prescribing to which one chemist only has the key. He complains that a prescription was dispensed by another chemist with unsatisfactory results to the patient, and he asks whether either he or the patient has a ground of legal action for damages. This is a matter on which our correspondent should consult a solicitor; but, so far as we can judge, he would have to show that the chemist failed to exercise due care and skill.

PARTNERSHIP ACCOUNTS.

X. Z. inquires whether in a medical partnership where one of the partners has attended on certain members of a family during the year, and the other has attended on certain other members of the same family, it is usual for the whole account to be sent in in the name of the firm; or whether each partner should send in a separate account for his own attendance.

*** In partnerships it is usual for every account without exception to go in in the name of the firm.

UNIVERSITIES AND COLLEGES.

GLASGOW UNIVERSITY EXTENSION.

NEW buildings for the extension of Glasgow University some time ago received the sanction of the University Court, and the work will be commenced forthwith. Provision will be made for the departments of physiology, materia medica, and forensic medicine and public health in one building, while another will be devoted to the department of natural philosophy. The entire cost, including equipments and fittings, will be between £90,000 and £100,000. The plan of the medical building is arranged with its main axis running east and west, and the various wings or blocks have been so arranged that there is no overshadowing of the laboratories or classrooms. The style of architecture adopted is a phase of modern Renaissance, selected chiefly for its ready adoptability to the requirements of the buildings, its directness and simplicity, and consequent economy in design.

The physiology department occupies the lower ground floor and part of the upper ground floor plans in the west half of the building, while the other two departments are located in the east and south blocks. The lecture theatre for the physiological department is at the extreme west end of the building, while the theatres of the other departments are at the extreme east end. Each of the three departments contained in this building has its own independent entrance, and is absolutely self-contained, having no communication whatever with either of the other departments. The lecture theatre of the physiological department is horse shoe shaped, 48 ft. wide by 45 ft. deep, and capable of seating 200 students in loose order, or a working capacity of 250. Immediately adjoining the theatre on the north side is the professor's room, 18 ft. by 15 ft. The museum is 37 ft. 6 in. by 35 ft., lighted on its longest side by three large double-light windows, and enters direct from the entrance hall. Beyond the museum is the psychology department, consisting of a laboratory 36 ft. by 34 ft., and a lecturer's room, 27 ft. by 14 ft., communicating. The position of these rooms is close to the museum and large class-room. An animal room is placed in the area, and is entirely isolated from the main building, its door opening direct into the area. On the south side of the building is placed the physiological chemistry room, 77 ft. by 35 ft. It is provided with two large fume chambers, one at either end, each having a flue starting with a bell-shaped opening to carry off noxious gases. The experimental room, 76 ft. by 35 ft., is placed with its long side facing north (this room, requiring a more steady and equal light than the chemistry room, has been placed on the north side).

The histology room is 100 ft. by 42 ft., is lighted from the north side, and also from the roof. Throughout the whole of this department the greatest care has been bestowed on the lighting, not only of all rooms and laboratories, but also of all corridor passages and staircases.

The department of materia medica and therapeutics is entered by a porch and vestibule at the east end of the building. In front of the diaphragm screen a series of electric lights will be suspended on a horizontal rod, capable of being raised or lowered to any degree required. Descending a few steps from the entrance hall is placed the pharmacy laboratory, 50 ft. by 30 ft. lighted throughout its entire length and end and partly on the west side. Communicating with it is the preparation room, 14 ft. by 13 ft., and a large store 21 ft. by 13 ft., communicating with the preparation room. The museum for students is placed at the end of the corridor; it is 27 ft. by 23 ft., with large windows in the front wall, and having one in side wall. Between the museum and the store is placed a room for the preparation of specimens for the museum, 22 ft. by 14 ft. Off the top landing of the stair are the experimental laboratory, chemical laboratory with the balance room placed between, all facing the east. The experimental laboratory is 30 ft. by 25 ft., and is lighted on three sides; this laboratory has altogether 68 ft. of continuous wall lighting. The chemical laboratory is 30 ft. by 20 ft., with its longest side lighted throughout its entire length. The departmental museum and library is a large and beautifully lighted apartment, it is L-shaped on plan, and contains 2,150 superficial ft. of floor area.

The department of forensic medicine and public health is L-shaped, having all the rooms and laboratories arranged entering off a continuous corridor well lighted throughout its length. The toxicological laboratory is 52 ft. by 25 ft., lighted with its long side facing east, but also has windows on the south and west end, the total length of continuous wall lighting in this laboratory being 90 ft. A storeroom is provided communicating with this laboratory. The balance room, assistant's room, and service room are placed on the south side of the corridor. Beyond these is the laboratory for chemical, chemico-physical, and meteorological work, 51 ft. by 27 ft., and having a large double window in the end and in addition to the front windows. The laboratory for bacteriological, pathological, and microscopic work is placed at the end of the corridor. In the laboratory is provided an enclosed incubation chamber, entered from the main room by means of an intermediate lobby, so that the door between laboratory and lobby would be closed before opening the door into the incubating chamber, thereby preserving an equable temperature in the chamber. Next the incubating chamber is placed a well-lighted store or specimen room. The private research laboratory, 22 ft. square, is placed in a projecting wing on the north side of the corridor, and has a north light. Its position is very central, and is convenient to the bacteriological laboratory. The theatre is 36 ft. by 34 ft., and is seated for 150 students. The departmental museum and library is situated immediately over the toxicological laboratory, cloak room, etc., and is a fine apartment, 85 ft. long by 25 ft. wide, lighted all round by large double windows.

The natural philosophy building is to be three stories in height, the basement story being well lighted and ventilated, and only partly below the ground line. On entering the hall the main corridor is found running east and west, leading to the general laboratory on one side, and the large lecture theatre on the other. There are in addition on this floor special laboratories for electricity and chemical physics, also balance room, apparatus room, and private rooms for the professor and his assistants. On the upper floor there are a small lecture room for about seventy students, and a magnetic room specially insulated from all steel and iron work. There are also a museum and four special research laboratories. On the basement floor there are rooms for dynamo, battery, and other electric work, a large and well-lighted workshop, and further research laboratories. The buildings are to be heated and ventilated on the "plenum system," the air being cleansed and, after passing over large coils of hot pipes, being propelled through the buildings by electrically-driven fans.

THE following have passed the Fourth (Final) Professional Examination:

For M.B., C.M.—C. L. S. Gibson.

For M.B., Ch.B.—R. Adam, J. W. Arthur, T. Ballantyne, T. Bennett, M.A., A. G. Bisset, A. Blair, R. G. Bradford, J. Brown, C. H. Browning, R. Bruce, R. Bryson, D. L. Carmichael, A. A. Carruthers, W. B. Chapman, A. E. Clark, A. Connal, S. C. Cowan, J. Cross, D. Dickie, D. G. Dykes, J. Eadie, C. C. Finlator, J. Forsyth, J. Glover, J. Hanson, M.A., W. Harvey, M. Hutton, M.A., B.Sc., J. M. Kelly, A. D. Kennedy, T. W. Love, T. Lovett, D. Macaulay, J. D. M'Culloch, J. F. Macdonald, N. A. Macleod, J. A. Macvea, A. Matheson, M.A., B.Sc., S. Mort, J. B. Morton, G. Muir, J. C. Pairman, M.A., G. Richmond, D. F. Riddell, M.A., P. H. Robertson, W. G. Shand, J. B. Stevenson, W. D. H. Stevenson, M.A., W. Stewart, A. W. Sutherland, M.A., J. W. Sutherland, P. L. Sutherland, J. A. Thom, J. R. Thomas, J. Walker, M.A., W. N. W. Watson, R. T. Wells, M.A., J. F. Weston, J. Wilson, J. Young (Glasgow), W. Young.

Women.—J. Auld, H. S. Baird, B.A., G. D. Bostock, B.Sc., M. C. Cameron, J. Campbell, J. G. Duncan, K. Fraser, B.Sc., J. R. F. Gilmour, J. S. MacEwen, A. P. Martin, E. J. Miller, I. D. Mitchell, M. A. T. Ritchings, M. H. Scott, E. H. Smith.

The summer graduation ceremony will take place on July 21st in the Bute Hall.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY Council was held on July 9th, 1903, Sir Henry G. Howse, President, in the chair.

Election of Three Members of Council.

The President reported the results of the election of Members of Council. (See BRITISH MEDICAL JOURNAL, July 4th, p. 24.)

The late Mr. William Cadge, of Norwich.

The Council passed the following vote of condolence: "That the Council hereby express their deep regret at the death of their former colleague, Mr. William Cadge, and their appreciation of his services to the College whilst a Member of the Council. That the Council do also record their warm regard for Mr. Cadge, not only for his admirable skill as a surgeon, but for his great liberality in the cause of suffering humanity; and they are assured that his long and honourable career of usefulness will cause his name to be always held in esteem and remembered with gratitude."

Meeting of Fellows.

The President reported that on July 2nd, the day appointed for a meeting of Fellows under Section XXIII of the Regulations of the Council, the required quorum of 30 was not obtained, and that accordingly no meeting had been held. The matter relating to this meeting in general was referred to a special committee for consideration.

City of Nottingham Museum and Art Gallery.

The Council agreed to lend the portrait of Sir Spencer Wells, but not that of Sir William Fergusson, for exeibition at the above, the second portrait being considered too large for safe transport.

Lecturers for the Ensuing Year.

The following were selected by the Council:—Hunterian Professors (3 lectures each): Arthur William Mayo Robson, Arthur Keith, Louis Bathe Rawling, Thomas Crisp English. Erasmus Wilson Lecturer (3 lectures): Edred Moss Corner. Arris and Gale Lecturers: John Herbert Parsons (2 lectures), Percy John Cammidge (1 lecture).

Election of President and other Officers.

The President and officers were elected as follows:

President: Mr. John Tweedy.

Vice-Presidents: Mr. Henry Morris, Sir Alfred Cooper.

Museum Committee: Mr. Cheyne, Mr. Robson, Mr. Gould.

Library Committee: Mr. Godlee, Mr. Marsh, Mr. Morgan.

Committee for General Purposes: Mr. Langton, Mr. Lucas, Mr. Makins.

Finance Committee: Mr. Jessop, Mr. Clutton, Mr. Owen.

Discipline Committee: Mr. Jessop, Mr. Marsh, Mr. Page, Sir Henry G. Howse, Mr. Butlin.

Committee on the Annual Report of the Council: Mr. Lucas, Mr. Langton, Mr. Owen, Mr. Gould, Mr. Moullin.

Dental Surgery Examinership.

The vacancy on the Board occasioned by the expiration of the period of office of Mr. J. Howard Mummery will be filled up at the next meeting of the Council.

Army Recruits: Physical Disability.

A letter of June 11th from Mr. Henry Gunyughame was read, forwarding, by direction of the Secretary of State for Home Affairs, a copy of a circular which has been prepared by the Director-General of the Army Medical Service in regard to a proposed inquiry as to the causes which have during recent years led to the rejection on the ground of physical disability of so large a number of recruits for the army, and as to the possible measures by which this state of affairs may be remedied, and asking the Council to favour Mr. Akers-Douglas with their confidential observation on the matter.

The subject was referred to a Committee for consideration.

Date of Next Council.

The date of the next Council was fixed for Tuesday, August 4th.

THE following gentlemen, having previously passed the necessary examinations, and having now conformed to the by-laws and regulations, have been admitted Members of the College:

A. H. D. Knight, Cambridge University and St. Bartholomew's Hospital; and T. De Smith, Cambridge University and London Hospital.

The following gentlemen, having previously passed the necessary examinations, and having now conformed to the by-laws and regulations, have been admitted Licentiates in Dental Surgery:

H. J. Fox, Guy's Hospital Dental Department; and A. S. Stancombe, Charing Cross and the Royal Dental Hospital.

OWENS COLLEGE, MANCHESTER.

THE Council have appointed Mr. William Simms, L.P.S., Lecturer in Dental Materia Medica.

The following awards have been made:—

Scholarships.—Dauntesey Entrance Medical, H. Whitehead and J. Bride; Agnew, D. L. Sewell; Special Prize of £20, H. D. Haworth; Special Prize of £10, A. N. Benson; Turner, no award.

Prize.—Dumville Surgical, A. E. Johnson.

TRINITY COLLEGE, DUBLIN.

THE following candidates have passed the Final Examination as under:

Section B.—J. G. Wallis, C. J. Coppinger, G. B. M'Caul, H. St. M. Carter, H. Stone, K. R. C. Hallowes, G. A. Crowley, H. E. M'Cready, T. J. T. Wilmot, J. C. Hall, T. C. A. Sweetnam, C. J. Wyatt, F. W. Bury, A. W. Goldsmith, H. T. Marrable.

The following candidates have passed the Previous Medical Examination in the subjects undernoted:

Physics and Chemistry.—*W. Pearson, *A. J. Powell, *R. G. T. Gregg, *E. C. Stoney, *J. C. C. Hogan, G. F. Graham, C. T. Atkinson, R. E. Wright, W. S. Thacker, Rev. T. Brook, W. J. Dunn, W. L. Hogan, F. Stevenson, C. B. Jones, D. Drew, B. A. H. Solomons, E. J. H. Garston, G. B. M'Hutchison, D. Miller, R. de C. Wheeler.

Botany and Zoology.—*W. Pearson, *R. G. S. Gregg, J. F. Clarke, G. Halpin, G. F. Graham, R. J. Attridge, R. de C. Wheeler, T. T. H. Robinson, E. H. Sheehan, R. B. Jackson, W. J. Dunn, H. Goodbody, J. B. Jones, R. Magill, C. K. Denham, G. Mecredy, F. Stevenson, J. H. Askins, C. Powell, J. B. Stewart, H. W. de V. White.

Anatomy and Institutes of Medicine.—*J. D. Sands, *S. G. S. Haughton, *R. S. Oldham, *A. G. Alexander, *C. Conygham, E. Gibbon, B. Brooke, T. O. Graham, C. H. M'Comas, P. B. Egan, E. D. Attwell, J. M. Harold, W. R. Galwey, J. Gray, J. Murdoch, J. P. R. Poch, E. C. Crawford, G. Dougan, J. E. M'Farlane, H. B. Leech, T. B. W. Mac Quaide.

* With high marks.

Prizes and Scholarships.—Medical Travelling Prize: R. A. Stoney, M.B., B.Ch., B.A.O. Fitzpatrick Scholarship: S. Pringle. Medical Scholarships (Anatomy and Institutes of Medicine): G. MacG. Millar, Trinity College; H. H. A. Emerson, Stewart. John Mallet Purser Medal: J. D. Sands.

BRUSSELS MEDICAL GRADUATES' ASSOCIATION.

Annual Meeting.

THE twenty-fourth annual general meeting of this Association took place at the Trocadero, Regent Street, London, on July 7th, at 6.30 p.m. Dr. A. G. Haydon was elected President for the ensuing year, and Dr. Major Greenwood, Vice-President. Dr. Walter Smith was re-elected Treasurer, and Dr. F. H. Edwards, Hon. Secretary. The following were elected members of Council: Drs. E. Furness Potter, A. E. Cowburn, F. Norman, J. Maughan, A. W. Fortescue Sayres, Chas. Langton, F. R. Miller, Norman Lavers, W. E. Kirby, and Percy Lewis.

Dinner.

At 7.30 the members and their friends dined together, the President being in the chair. In responding to the toast "Our Guests," Sir Isambard Owen said that the want of medical degrees for British practitioners was an old-standing grievance, and was far from remedied at the present day. The work of the Association was good, as assisting medical education, and he thought their degree a very honourable one, and quite worthy of comparison with those granted by English universities.

Sir Wm. Collins, in proposing "The Health of the Brussels Medical Graduates' Association," said he thought its members had adopted a very business like way of redressing a notorious want in the university system of this country. He quite agreed with Sir Isambard Owen in his estimate of the merits of the Brussels degree, and he pointed out that the Vice president was a graduate of the University of London as well as Brussels, and that this showed that Brussels graduates might well bear comparison with those of English universities.

Dr. Major Greenwood, in responding, said that the members would greatly appreciate the remarks of Sir Wm. Collins on the character of their degree. They were specially valuable, as coming from so high an academic authority as a member of the Senate of the University of London. He certainly thought their work deserved recognition from all interested in medical education. To promote the latter it was very desirable that medical practitioners should aspire to medical degrees, and if the universities in this country would not afford facilities, it was better to get a degree abroad than lazily go without one altogether.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8,835 births and 3,969 deaths were registered during the week ending Saturday, last, July 11th. The annual rate of mortality in these towns, which had been 14.3, 14.3, and 14.4 per 1,000 in the three preceding weeks, declined again to 13.7 per 1,000 last week. The rates in the several towns ranged from 5.3 in Smethwick, 6.2 in Tottenham, 6.5 in King's Norton, 7.1 in Barrow-in-Furness, 7.3 in Hornsey, 8.0 in East Ham, 8.2 in Willesden and in Norwich, and 8.3 in Brighton and in Bournemouth to 17.7 in Devonport and in Bolton, 18.3 in Newcastle-on-Tyne, 19.1 in Great Yarmouth and in St. Helens, 19.6 in Merthyr Tydfil, 19.7 in Sheffield, 20.3 in Middlesbrough, 20.4 in Warrington, and 26.0 in Wigan. In London the rate of mortality was 13.3 per 1,000, while it averaged 13.9 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.5 per 1,000 in the seventy-six large towns; in London this death-rate was 1.3 per 1,000, while it averaged 1.6 in the seventy-five other large towns, among which the highest death-rates from the principal infectious diseases were 3.0 in Newport (Mon.), 3.2 in Preston, 3.6 in Coventry, 3.8 in Oldham, 4.0 in Sheffield, and 4.9 in Walthamstow and in Hanley. Measles caused a death-rate of 1.8 in Sheffield, 2.5 in Walthamstow, and 2.9 in Coventry; scarlet fever of 1.2 in Boston; diphtheria of 1.6 in Hanley and 2.0 in Great Yarmouth; whooping-cough of 1.1 in Oldham, 1.4 in Preston, 1.5 in Sheffield, 2.0 in Walthamstow, and 2.2 in Newport (Mon.); and diarrhoea of 1.1 in Oldham, 1.4 in Preston and in Gateshead, 1.5 in Hull, and 1.6 in Hanley, in Warrington, in Burnley, and in Middlesbrough. The mortality from "fever" showed no marked excess in any of the large towns. Three fatal cases of small-pox were registered in Liverpool, 1 in Hanley, and 1 in Leeds, but not one in any other of the seventy-six large towns. The number of small-pox patients under treatment in the Metropolitan Asylums Hospitals, which had been 70, 67, and 57 at the end of the three preceding weeks, had risen again to 77 at the end of last week; 31 new cases were admitted during the week, against 16, 7, and 4 in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday last, July 11th, was 1,700, against 1,650, 1,644, and 1,646 on the three preceding Saturdays; 253 new cases were admitted last week, against 170, 234, and 241 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, July 4th, 1,028 births and 531 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 17.0, 19.1, and 16.3 per 1,000 in the three preceding weeks, further declined last week to 16.2 per 1,000, but was 2.5 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 10.8 in Perth and 13.8 in Edinburgh to 22.7 in Paisley and 23.3 in Greenock. The death-rate from the principal infectious diseases averaged 2.5 per 1,000 in these towns, the highest rates being recorded in Paisley and Greenock. The 250 deaths registered in Glasgow included 5 which were referred to measles, 10 to whooping-cough, 2 to "fever," and 15 to diarrhoea. One fatal case of small-pox, 3 of measles, 2 of scarlet fever, 2 of diphtheria, 2 of "fever," and 2 of diarrhoea were recorded in Edinburgh. Four deaths from diarrhoea and 2 from whooping-cough occurred in Dundee; 5 from diarrhoea in Aberdeen; 5 from measles, 2 from scarlet fever, and 2 from diarrhoea in Paisley; 3 from diarrhoea in Leith; and 3 from whooping-cough and 1 from fever in Greenock.

LYMPH FOR THE REVACCINATION OF CONTACTS.

DR. J. FLETCHER LITTLE, M.O.H. for Harrow (Harley Street, W.), writes: I send you enclosed herewith a copy of a letter from the Local Government Board, dated July 7th. You will see that it expresses the willingness of the Board to offer facilities for public vaccinators keeping a supply of vaccine lymph sufficient to revaccinate all "contacts" promptly. During the recent outbreak of small-pox amongst the navvies at Harrow great difficulty was experienced in getting "contacts" revaccinated on the day of the certification of a case of small-pox, owing to the obstacles placed in the way of the public vaccinator keeping a sufficient supply of lymph.

[Copy]

Local Government Board,
Whitehall, S.W.
July 7th, 1903.

Sir,—I am directed by the Local Government Board to advert to your letter of the 22nd ult., with reference to the revaccination of persons who have been exposed to small-pox infection.

As regards the request with which your letter concludes, I am to point out that there is no statutory obligation on the Board to provide public vaccinators with lymph sufficient for such revaccinations as they have in immediate prospect. The Board's instructions in regard to the retention of lymph by public vaccinators were devised with a view to ensuring as far as possible the maintenance of a certain standard of potency in the lymph used in public vaccination, so as to avoid discontent on the part of the public through unsuccessful attempts at vaccination by means of stale lymph. If a public vaccinator, however, has, owing to threat of small-pox in his district, reason to think that he may be called upon to perform a large number of revaccinations, the Board would not object to his exercising his discretion and retaining for a few days such lymph as he thinks he may require—as, for instance, over Sundays. The public vaccinator should, however, observe the instructions as to the manner of keeping the lymph. The Board is, however, of opinion that, in ordinary circumstances, lymph should not be kept more than a week as an extreme limit, and that all tubes not used within that time should be returned to the National Vaccine Establishment. At the same time, the Board cannot undertake to furnish public vaccinators week by week with supplies of lymph to keep in hand for emergencies as you propose.

I am to add that the public vaccinator should not delay the revaccination of "contacts" until he is able to obtain a supply of lymph from the Board, and that, in any case where it has been undesirable to defer the vaccination of such persons until lymph has been obtained from the Board and the public vaccinator has purchased lymph from other sources, the Board has been willing to consider an application from the guardians for sanction to the payment of the cost of such lymph by the guardians.

I am, Sir,
Your obedient servant,
(Signed) JOHN LITHIBY,
Assistant Secretary.

J. Fletcher Little, Esq.

FUNERALS OF PERSONS DEAD OF DIPHTHERIA.

T. M. asks is it illegal to take a body that has died from diphtheria into the parish church.

*** It is constantly done, and we know of no statute making such action illegal. We understand, of course, that our correspondent means that the body is coffined in the ordinary way.

MEDICAL NEWS.

An American Medico-legal Society.—A Medico-legal Society has recently been founded in Washington. The President is Dr. Robert Reyburn.

A vacation course in practical and clinical bacteriology will be given at King's College in the department of pathology and bacteriology by the Director, Professor Hewlett, and the Demonstrator, Dr. Willson. The course will begin on August 5th and terminate on August 15th.

Mr. G. H. Mounsey, M.B., C.M.Edin., who is about to leave Lincoln after fifteen years' practice in that city, was recently the guest of his professional brethren at a dinner given in his honour. Later in the evening he was presented by them with an inscribed silver salver as a mark of their personal esteem.

Medical Men in the German Parliament.—The newly-elected German Imperial Parliament includes six members of the medical profession. These are Dr. Mugdan, of Berlin (Radical); Dr. Krzyminski, of Inowrazlaw (Pole); Medical Privy Councillor Dr. Hoeffel, of Buchsweiler (Imperialist); Dr. Leonhart, of Kiel-Gaarden (Radical); Sanitary Councillor Dr. Ruegenberg, of Bonn (Centre); and Dr. Becker, of Hessen (National Liberal).

The Medical Profession in Liverpool and St. Luke's Day.—It has recently become the custom for a special service to be held in St. Luke's Church, Liverpool, on the Sunday nearest St. Luke's Day, especially intended for the members of the medical profession. This year St. Luke's Day, October 18, falls on a Sunday. The Right Rev. Dr. Jacob, Lord Bishop of St. Albans, has consented to preach the sermon. A collection will be made on behalf of the Medical Benevolent Fund, and it is hoped that there will be a good attendance.

A Temperance Breakfast.—We are asked to state that the temperance breakfast given annually by the National Temperance League during the annual meeting of the British Medical Association will take place this year at Swansea on Thursday, July 30th, at 8 a.m. The chair will be taken by Dr. J. Adams Rawlings, and any member of the Association who desires to attend can obtain a card of invitation on application to Mr. John T. Rae, Secretary, Paternoster House, London, E.C.

Hampstead Heath Extension.—An influential committee, with Mr. Shaw Lefevre as chairman, has been formed to raise £48,000 to acquire eighty acres of land as an addition to Hampstead Heath. This action is being taken owing to the fact that, as a result of the Tube Railway Extension, the most beautiful view and the wildest part of the heath are in danger of being spoilt. The land to be acquired is known as Wyldes Farm, and is adjacent to the proposed Tube station. It is in part well adapted for playing fields, and would be a valuable addition to the healthful recreation of some of the many additional thousands who will in future frequent the heath. It would also offer a means of diffusion of the crowds arriving at this station (which will be easily, speedily, and cheaply accessible from a very large area of London), and who otherwise would soon reduce to bareness the beautiful adjacent corner of the heath. This opportunity of extending the heath is almost the last that can possibly offer, since owing to the extension of the railways, this heath will in a few years be built on on all sides. It is to be hoped that the action of the committee will be liberally supported by the public, and that this valuable addition to the most healthful of the London lungs will be promptly secured. Subscriptions are coming in satisfactorily, and amongst them is one of £1,000 from Lord Rothschild.

MEDICAL VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

AYLESBURY: ROYAL BUCKINGHAMSHIRE HOSPITAL.—House-Surgeon; unmarried; resident. Salary, £100, rising to £120 per annum.

BELFAST: MATER INFIRMORUM HOSPITAL.—Resident Surgeon. Salary at the rate of £50 per annum.

BIRMINGHAM WORKHOUSE INFIRMARY.—Assistant Resident Medical Officer of the Infirmary. Salary, £100 per annum.

CANTERBURY: KENT AND CANTERBURY HOSPITAL.—Second Honorary Physician.

CARDIFF: UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE.—Professor of Anatomy. Salary £350 per annum.

CHELSEA HOSPITAL FOR WOMEN.—Physician to In-patients.

COLCHESTER: EASTERN COUNTIES ASYLUM.—Resident Medical Attendant. Salary, £100 per annum.

DOVER: ROYAL VICTORIA HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

GATESHEAD UNION.—Assistant Resident Medical Officer at the Workhouse. Salary, £150 per annum.

GENERAL POST OFFICE.—Second Assistant to the Medical Officers. Salary, £200, rising to £300 per annum.

GUY'S HOSPITAL MEDICAL SCHOOL.—Gordon Lectureship in Experimental Pathology.

HAYDOCK LODGE ASYLUM, Newton-le-Willows.—Assistant Medical Officer, resident. Salary, £200 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street.—(1) House-Surgeon. (2) House-Physician. Both resident. Salary, £20 for six months each.

JARROW-ON-TYNE: PALMER MEMORIAL HOSPITAL FOR ACCIDENTS.—House-Surgeon, resident. Salary £150 per annum.

LISCARD: WALLASEY DISPENSARY AND VICTORIA CENTRAL HOSPITAL.—House-Surgeon, resident. Salary £100 per annum.

METROPOLITAN EAR, NOSE, AND THROAT HOSPITAL, Grafton Street, W.—(1) Assistant Surgeon. (2) Anæsthetist. (3) Clinical Assistants.

SARAWAK STATE.—Medical Officer. Salary, 300 dollars a month and unfurnished quarters.

SHEFFIELD CITY.—Medical Officer of Health. Salary £700 per annum.

SHEFFIELD: ROYAL INFIRMARY.—Vacancy on Honorary Surgical Staff.

SOMERSET AND BATH ASYLUM, Co.ford.—Assistant Medical Officer, resident. Salary £60, rising to £200 per annum.

SOUTHAMPTON: ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House-Surgeon, resident. Salary, £60 per annum.

STOCKPORT INFIRMARY.—(1) Assistant House and Visiting Surgeon. (2) Junior Assistant House-Surgeon. Both resident. Salary, £80 and £40 per annum respectively.

TYNEMOUTH INFIRMARY.—Two House-Surgeons, resident. Salary, £50 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House-Surgeon, resident. Salary at the rate of £75 per annum.

WAKEFIELD: CLAYTON HOSPITAL AND WAKEFIELD GENERAL DISPENSARY.—Junior House-Surgeon, resident. Salary, £80 per annum.

MEDICAL APPOINTMENTS.

Bealy-Smith, R. L., M.R.C.S., L.R.C.P.Lond., Certifying Factory Surgeon for the Bishopstoke District, Hants.

Bonney, W. F. Victor, M.S., M.D.Lond., Obstetric Registrar and Obstetric Tutor of the Middlesex Hospital.

Burton, John S., L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glasg., Assistant Resident Medical Officer at the St. Mary's Hospital for Sick Children, Plaistow.

Dunlop, John Beattie, M.A.Cantab., M.R.C.S., L.R.C.P., Resident Medical Officer to the Royal United Hospital, Bath.

Handley, W. S., M.S.Lond., F.R.C.S., Richard Hollins Cancer Research Scholar at Middlesex Hospital.

Hartigan, T. J. P., F.R.C.S., Medical Officer in charge of the Light Department, X-Rays High Frequency, etc., at the Hospital for Diseases of the Skin, Blackfriars.

Johnston, G. A., M.D.Brux., F.R.C.S.I., Certifying Factory Surgeon for the Ambleside District of Westmorland.

Keay, A. Campbell, M.B., Ch.B., Resident House-Surgeon to the Perth Infirmary.

Kilbride, James, L.R.C.P.I., M.R.C.S., Medical Referee under the Workmen's Compensation Acts for County Kildare.

Lazarus-Barlow, W. S., M.D.Camb., F.R.C.P. Director of the Cancer Research Laboratories of the Middlesex Hospital.

McCallin, William, M.D.R.U.I., D.P.H.Camb., Assistant Medical Officer of Health to the Southampton Corporation.

Ormerod, H. L., M.D., B.Ch. R.U.I., Certifying Factory Surgeon for the Westbury-upon-Trym District, Gloucester.

Peake, G. A., L.R.C.P., L.S.A., M.R.C.S., L.D.S.Eng., Honorary Dental Surgeon to the Cheltenham General Hospital.

Pershouse, Frank, M.R.C.S., L.R.C.P.Lond., Certifying Factory Surgeon for the Stanford-le-Hope District, Essex.

Robertson, John, M.B.Edin., B.Sc., Medical Officer of Health for Birmingham, *vice* Alfred Hill, M.D., resigned.

Smeall, W. F., M.B., Ch.B.Edin., Resident Medical Officer at the St. Mary's Hospital for Sick Children, Plaistow.

Spooner, W. C., M.B., Ch.B.Edin., Certifying Factory Surgeon for the Blandford District, Dorset.

DIARY FOR NEXT WEEK.

THURSDAY.

Guy's Hospital Medical School, 4 p.m.—Dr. E. W. Ainley Walker: Recent work upon the Nature of Immunity (Gordon Lectures in Experimental Pathology).

Society for the Study of Disease in Children, 25, Weymouth Street, W., 5.30 p.m.—Annual general meeting.

POST-GRADUATE COURSES AND LECTURES.

Hospital for Sick Children, Great Ormond Street, W.C., Thursday, 4 p.m.—Demonstration of Selected Cases.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—Demonstrations will be given at 4 p.m. as follows: Monday, skin; Tuesday, medical; Wednesday, surgical; Thursday, surgical.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C., Tuesday, 3.30 p.m.—Lecture on Hydrocephalus.

Post-Graduate College, West London Hospital, Hammersmith Road, W., Monday, 5 p.m.—Lecture on the Examination of Stomach and Gastric Contents.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTH.

Gordon.—On July 9th, at 52, Endless Street, Salisbury, the wife of James E. Gordon, M.R.C.S., L.R.C.S., of a son.

MARRIAGES.

Ackerley—Ravenhill.—At St. Mark's Church, Surbiton, on Tuesday, July 14th, by the Rev. Canon Ravenhill, Vicar of Buckland Newton, uncle of the bride, assisted by the Venerable Archdeacon Burney, Vicar of the Parish, Richard Ackerley, M.A., M.B., of Croft House, Surbiton, to Constance Mary, youngest daughter of the late William Waldron Ravenhill, Barrister-at-Law, and of Mrs. Ravenhill, of Medbourne House, Surbiton.

Biss—Scott.—On June 24th, 1903, at the Parish Church, Talland, Cornwall, Hubert E. J. Biss, M.A., M.D.Cantab., D.P.H., of 6, Meads Street, Eastbourne, second son of Cecil Y. Biss, M.A., M.D., F.R.C.P., to Janie W. Scott, second daughter of Mrs. H. B. Scott, of Torphins, N.B.

Ferguson—Wales.—On July 8th, at St. Edmund's Church, Downham Market, by the Rev. E. D. L. Harvey, M.A., assisted by the Rev. H. J. Adams, Godfrey William, second son of the late Henry Shaw Ferguson, M.D., of Belfast, to Katherine Harriet, second daughter of Thomas Garneys Wales.

Sharp—Paige.—On July 2nd, at the Parish Church, Redruth, by the Rev. Canon Moore, M.A., Truro, assisted by the Rev. W. R. Finch, Curate-in-Charge, Hugh Cullifford Sharp, B.A., M.B.Camb., eldest son of E. Sharp, J.P., Truro, to Freda P. Paige, only daughter of Henry Paige, of Trengwrath House, Redruth.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

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IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Associate, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

SANITAS asks for advice on the best system and construction of earth closets suitable for a good-sized country house.

ANSWERS.

THE TREATMENT OF HYPOSPADIAS.

MR. H. J. CURTIS (London), in reply to "Clio's" inquiry, writes: Treatment depends on the severity of the condition. Omitting the infrequently seen form in which the floor of the urethra is wanting right back to the bladder, and producing a condition of false hermaphroditism, the varieties commonly met with may be arranged into two groups:

1. Where the urethral orifice is situated between its normal position and at, or in the immediate neighbourhood of, the fraenum praeputii.

2. Where the urethral orifice is further back or there is a more or less complete absence of the floor of the penile urethra, the urine escaping from an aperture, often minute, placed at the junction of the under surface of the penis with the front of the scrotum.

Group 1. In infants, provided micturition is free so that there is no straining or discomfort tending to bring down herniae, treatment is often unnecessary, or may be postponed to a later age, when the parts are larger and there is more skin available for plastic surgery, if indicated. Should there be straining and a tendency to hernia, the meatus should be enlarged ("meatotomy"), inserting the point of a tenotomy knife, edge downwards, into the orifice and directing it forward and upwards to emerge at the top of the solid glans penis, where a vertical scarlike depression, the line of union of the two corpora spongiosa, indicates the normal position of the meatus urinarius. The knife is made to cut from within outwards along the line of the scar-like depression, the groove thus formed continuing the normal direction of the urethra. The edges of this groove must be kept apart for a fortnight by a loop of stout silkworm gut tied in a stout knot, after having been passed through the tissues of the glans forming the floor of the groove. Subsequently a bougie is inserted for an inch or so along the urethra, so as to distend the groove in the glans. This is done daily for the first week, then every other day, and so on, until at the end of two months once a month is sufficient. The object is to convert the shallow groove into more or less of a hollow cylinder, continuous with the canal of the urethra. The floor, however, can at once be made complete by a method I first saw successfully carried out by Mr. Stansfield Collier at Great Ormond Street. A wide transverse slit is made at the level of the corona glands through the exuberant prepuce. The glans is brought out through this, and what was formerly the free edge of the prepuce is pared and sutured to the under-aspect of the penis, so as to form a lower lip completing the floor of the new meatus. The only difficulty is that due to the passage of urine, which may prevent union of the skin edges. In this case a preliminary median perineal section may be necessary. (See below.)

Group 2. Where the deficiency in the floor of the urethra is more or less complete. I have successfully adapted Arbuthnot Lane's modification of Davies-Colley's operation for cleft palate, raising a flap of skin, with its free edge outwards, from one side of the groove or line indicating the normal position of the urethra, turning inwards, and stitching it to the under aspect of a flap from the other side of the groove, having its base outwards and its free edge inwards. The smooth outer surface of the first flap thus forms the floor of the urethra, whilst its raw surface is made to adhere to the raw surface of the second flap. It is absolutely essential to success, however, to do median perineal section before commencing the urethro-plasty. This little operation is easily done and is well borne by young children, the drainage tube being safely omitted on the fourth day. The efficacy of this method was emphasized in one successful case by the fact that a plastic operation had previously been done by another surgeon without drainage and had completely failed.

NOTES, LETTERS, ETC.

JOSEPH BELL OF HIGH WYCOMBE.

MR. F. H. PLEASANCE (Higher Slade Cottage, Polperro, R.S.O. Cornwall) writes: I am endeavouring to trace the history of Joseph Bell, a surgeon, who was in practice at High Wycombe in the second half of the eighteenth century. His name appears on the books of the old College of Surgeons up to 1799, but never appeared on the register of the present Royal College of Surgeons, and it is therefore possible that he died in 1799-1800. He did not qualify either at Surgeon's Hall or Barber's Hall, London, and he may therefore have been licensed by one of the provincial companies of barber-surgeons, or by a bishop. I consider it very highly probable that he was identical with a Joseph Bell who was born at Marlow in 1751, and, if so, he was the son of the Rev. Joseph Bell (rector of Radclive and vicar of Stowe), was educated at Winchester College, and left school in his 17th year. If by chance any one of your readers should be able to give me any information about this surgeon, and especially as to the exact date of his death, the place where he died, and the authority by whom he was licensed, I shall be most deeply obliged if he will communicate with me by letter. To yourself, if you can find space for this letter, my obligation will be great.

A DRUG RASH.

DR. J. BRENDON CURGENVEN (Hildenborough, Kent) writes to say that in the course of his practice in London he has met with several persons in whom the smallest dose of opium would induce such a scarlatinal rash as Dr. Hartzhorne describes in the BRITISH MEDICAL JOURNAL of June 13th, p. 1416. In one lady a small dose of paregoric, as given in a mixture for a cold, brought out the rash. It is usually attended with a good deal of pruritus and followed by fine desquamation.

ERRATUM.—In connexion with his paper entitled A Case of Hernia of the Bladder Associated with an Inguinal Hernia, appearing in the BRITISH MEDICAL JOURNAL of July 11th, Mr. H. J. Curtis wishes to point out that on the sixth line from the bottom of the right hand column on page 70, the word "excised" should have been *incised*, the sentence reading, "the protrusion of the bladder was incised,"—that is, was wounded—and not completely excised—as happened in the case quoted immediately before.

LETTERS, COMMUNICATIONS, ETC., have been received from:

A Mr. H. E. Allen, London; Anti-Sweat; Dr. F. H. Alderson, Bournemouth. **B** Mr. E. G. Bunbury, Bristol; Dr. G. A. Ballingall, St. Leonards; Dr. H. D. Bishop, Houge-a-la Pêrre; Dr. F. D. Boyd, C.M.G., Edinburgh; Dr. J. B. Buist, Edinburgh; Mr. J. B. Blackett, London; Belgrave Hospital for Children, Secretary of, London; Mr. L. A. Bidwell, London; Sir L. Brunton, London. **C** "Cowkeeper and Dairyman's Journal," Editor of, London; Dr. W. A. Carline, Lincoln; Mr. J. Clark, Clay Cross; Mr. J. G. B. Coleman, Sutton Bridge; Messrs. Cassell and Co., London; Mr. H. J. Curtis, London; Miss Christie, High Wycombe; Dr. F. J. H. Coutts, Blackpool; R. W. Cruickshank, M.B., Eynsham; Mr. E. S. Chilcott, Bitterne. **D** J. Dundon, M.B., Cork. Dr. H. Dobell, Parkstone; Dr. L. G. Davies, Pelsall; J. W. Duncan, M.B., Birmingham. **E** Dr. J. H. Edwards, Altrincham; Messrs. R. J. Elliott and Co., Huddersfield. **F** Dr. W. H. S. Fosbery, Reading; Mr. H. E. Friend, London. **G** G. P.; Mr. V. P. Gonsalves, London. **H** Miss Hornbuckle, Brighton; Dr. J. B. Hellier, Leeds; H. E. D.; Dr. R. T. Hewlett, London; Dr. W. Habgood, Marple; Mr. F. S. Hex, Torquay; H. L. B.; Mr. P. E. Hill, Crickhowell; Dr. W. J. Horne, London; Haemoglobin. **I** Messrs. Ingram and Royle, London. **J** Dr. J. A. Jones, Aberavon; Dr. G. L. Johnson, London; Dr. G. P. Johnson, Stoke-on-Trent; Mr. H. Juler, London. **K** Dr. T. N. Kelynack, Manchester; Dr. C. F. Knight, Portobello; S. Keith, M.B., London; Dr. W. M. Kelly, Worthing. **L** Mr. F. G. Layton, Walsall; Dr. J. T. Leon, Southsea; Dr. W. V. Lush, Weymouth; E. Le C. Lancaster, M.B., Swansea; J. F. Little, M.B., London. **M** Dr. W. J. C. Merry, Eastbourne; Mr. S. S. Monro, London; Dr. L. S. McManus, London; Mr. B. E. Matthews, London; Mr. W. H. Martindale, London; Mirror; Dr. R. Muir, Glasgow; D. M. Mackay, M.B., Brighton; Dr. A. Macfadyen, London; Messrs. S. Maw, Son, and Sons, London; M.B.; Mr. H. J. Manning, Salisbury. **N** J. H. Nicoll, M.B., Glasgow; Dr. G. H. F. Nuttall, Cambridge. **O** Sir F. Osborne, Bart., London; Sir I. Owen, London; Mr. F. H. Oliver, London. **P** Mr. E. Pearson, Bideford; Mr. A. Priestley, Birmingham. Mr. H. J. Prangley, London; D'A. Power, M.B., London. **Q** Queen Charlotte's Hospital, Secretary of, London. **R** Rus in Urbe; Dr. M. A. Ruffer, Alexandria; Mr. W. Rushton, London; G. Renshaw, M.B., Sale; Mr. W. H. Rowthorn, Rotherham; R.S.O.; Dr. O. A. Rayne, Lancaster; Major Ronald Ross, C.B., Liverpool; Dr. A. F. B. Richards, Swansea; Mr. H. A. Reeves, London. **S** Mr. F. C. Soar, London; Scientific Press, Assistant Manager of, London; Messrs. G. Street and Co., London; Dr. W. Stephenson, Aberdeen; Mr. J. H. Simpson, Salterton; R. Skelly, M.B., Liverpool; Dr. R. Stockman, Glasgow; St. Francis Hospital for Infants, Secretary of, London; Sanitas; S. Stephenson, M.B., London; Mr. G. F. Shee, London. **V** Victoria Hospital for Consumption, Secretary of, Edinburgh. **W** Dr. A. Whitfield, London; Dr. P. W. Williams, Clifton; E. W. White, M.B., Dartford; Dr. H. Waldo, Clifton; Dr. C. J. Whitby, Bath. **X** XZ.

BOOKS, ETC., RECEIVED.

Patologia e Terapia dell' Orecchio e delle Prime vie Aeree (Otologia, Rinologia, laringologia). Per Dr. Giuseppe Gradenigo. Torino: S. Lattes and C. 1903. Prezzo: L.20.

The Insurance Register, 1903, with review of life assurance in 1902. By Arthur Wyndham Tarn, F.I.A. London: Chas. and Edwin Layton. 1903. 1s.

Lectures on Massage and Electricity in the Treatment of Disease. By Thomas Stretch Dowse, M.D.Aberd., F.R.C.P. Edin. Fourth and revised edit on. Bristol: John Wright and Co. 1903. 7s. 6d.

Modern Bullet Wounds and Modern Treatment. By Major F. Smith, D.S.O. London: J. and A. Churchill 1903. 3s.

The Natural and Artificial Methods of Feeding Infants and Young Children. By E. Cautley, M.D., F.R.C.P. Second edition. London: J. and A. Churchill 1903. 7s. 6d.

Lehrbuch der Geburtshulfe zur wissenschaftlichen und praktischen Ausbildung. Von F. Ahlfeld. Dritte umgearbeitete Auflage. Leipzig: Fr. Wilh. Grunow 1903. M.9.

Elementary Bacteriology. By M. L. Dhingra, M.D., C.M. Edin. London: Longmans, Green and Co. 1903. 3s.

*** In forwarding books the publishers are requested to state the selling price.

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Remarks
ON
ECTOPIC GESTATION AND THE CONDITIONS FAVOURABLE FOR ITS ADVANCE TO THE FULL TERM.

By JOHN WARD COUSINS, F.R.C.S., M.D.Lond.,
Senior Surgeon to the Royal Portsmouth Hospital and the Portsmouth and South Hants Eye and Ear Infirmary.

THE fertilized ovum may be arrested within the ovary or in any part of the Fallopian tube in its passage to the uterus, and when this occurs it seldom escapes destruction amid the many dangers which threaten its vitality. During the first few weeks the ovum may be destroyed and absorbed without any symptoms sufficiently definite to indicate the real nature of the accident. Tubal arrest and tubal abortion may both take place before any marked symptoms of pregnancy have developed, and the transient disturbance attending them may be regarded only as a recurrence of menstruation. Even early rupture of the tube may take place without any definite indications. The shock attending the accident may be slight, and the evidence of haemorrhage obtainable by palpation and bimanual examination very unreliable.

Difficulty in Diagnosis of Early Tubal Pregnancy.

In the absence of abdominal tenderness and swelling and of well-marked signs and symptoms of pregnancy, it is certainly not surprising that early tubal gestation should sometimes be destroyed, and the patient speedily recover without any recognition of her real condition. It is quite certain that precision in diagnosis is not always possible, that ectopic gestations are often overlooked, and that any definite statement upon the relative proportion of ectopic to normal pregnancies is surrounded by insurmountable difficulty.

In some cases, fortunately, an early and correct diagnosis can be made and a successful operation performed before the life of the patient has been seriously imperilled. Whenever the symptoms of pregnancy are associated with the occurrence of fitful and irregular haemorrhage, obscure pelvic pains, the presence of a swelling adjacent to or continuous with the uterus, and well-marked changes in the breast, I think we have sufficient evidence of the existence of an unruptured tubal pregnancy to justify an abdominal exploration.

Early Signs of Ectopic Gestation.

Sudden rupture of the gravid Fallopian tube is in a large proportion of cases the first indication of this abnormal condition. Before this accident the symptoms are often very indistinct and quite insufficient to suggest the dangerous character of the gestation, and the patient may have considered herself normally pregnant. The diagnosis then of ectopic gestation rests upon the recognition of intra-peritoneal rupture and haemorrhage. There may be no appreciable enlargement, and the presence of blood can seldom be established by palpation and pelvic examination; so that our chief reliance must be placed upon the symptoms of sudden collapse associated with acute abdominal pain and tenderness.

Usual Terminations of Ectopic Pregnancy.

In some cases the gestation sac grows downwards and expands the folds of the broad ligament, and when this takes place the rupture is attended with less pain and faintness as the effused blood is limited by the resistance of the surrounding structures. Primary rupture in extra-peritoneal ectopic gestation is sometimes followed by secondary rupture into the peritoneal cavity with serious laceration of blood vessels and dangerous haemorrhage.

In every case, then, the urgency of the symptoms is in direct proportion to the suddenness and extent of the injury. When the rupture is followed by profound shock and severe internal haemorrhage, the only hope of saving the mother rests often upon immediate laparotomy. Fortunately, in a large proportion of cases of tubal rupture, the maternal danger is less urgent, and surgical interference is unnecessary; but when the accident is attended with little risk to the mother, it is generally followed by the death of the ovum, and when this happens during the early stage of pregnancy, the embryonic structures become enveloped in effused blood and fixed by protective exudation, and then in the course of a few months the whole mass undergoes complete absorption.

It would be often a considerable help in practice if we were able to define the limit within which this favourable result could be anticipated, but this we are unable to accomplish, yet I think we can fairly venture to assert that complete absorption of a fetus may take place up to the middle or even the end of the third month of pregnancy. After this period it is not likely to occur, for the placenta is now distinctly formed, the centres of ossification are rapidly advancing, and the whole ovum has reached the average weight of about 4 oz.

After the death of the fetus an ectopic gestation may terminate in various ways. Suppuration sometimes takes place within and around the gestation sac, and this is followed by prolonged and dangerous septic disturbance. I have met with fetal remains in several cases of pelvic abscess, and others also have been successfully operated upon which were clearly caused by extrauterine gestation. The prolonged suffering of patients is often extremely painful to witness. During the last few months I have on several occasions seen a lady who for fifteen years has been discharging through the rectum portions of a fetal skeleton, and other small pieces of bone from a vaginal fistula. At other times the fetus undergoes a slow process of calcification, or passes into a mummified condition in which all the organs and structures are shrunken into a mass loaded with fat, margarine, and cholesterin. Occasionally the fetus is converted into a soap-like mass of adipocere formation in which the bones of the skeleton are enclosed. These strange transformations have been attributed to the absorption of nutritive fluids from the maternal blood through adhesions between the fetal structures and the walls of the gestation sac, after the cessation of the placental circulation; but their exact nature still remains to be unravelled. We can only affirm that these processes occur in tissues which are practically lifeless, although they are still surrounded and in contact with living structures.

Conditions Favourable for Advance to Full Term.

When we consider the great risks which surround tubal gestation, it is certainly not a matter of surprise that so small a number of these cases ever reach the third or fourth month, and that only a very few attain an advanced stage of development. It is evident that there must be some special and favourable conditions occasionally present which powerfully aid in maintaining the development and vitality of the fetus. What, then, are these conditions? Their consideration, I think, opens up many interesting questions.

1. During the early stage of ectopic pregnancy the ovum is very movable, and as the expansion of the tube proceeds it continues to develop outside the peritoneum and opens out the loose structure of the broad ligament. It may occupy in the pelvis very variable positions. Sometimes it is in front of the uterus, or it may be on one side of that organ, or it may be deeply lodged in the pouch of Douglas. As the pregnancy advances the uterus may remain in the pelvis, or it may be drawn upwards by the ascent and expansion of the gestation sac. Mobility of the sac is generally well marked during the early months, and in favourable cases the ovum continues to be a movable swelling through all the stages of its development. On the other hand, if this essential mobility is hindered by its impaction in the pelvis, or by adhesions to the surrounding organs, the chances of continuous growth and vitality are greatly reduced.

2. Another favourable condition consists in the gradual expansion of the gestation sac. In advancing cases the symptoms of rupture of the sac are very indistinct, and sometimes they are altogether absent. Its wall appears to undergo a slow process of stretching without any marked laceration of its fibrous structure. It is a remarkable fact that the ovum undergoing an evolution of such rapid and delicate changes can ever escape destruction; but we may be certain that its occasional safety is the result of the gradual expansion of the normal coverings of the embryo, and the support they obtain from plastic exudation and fibrous consolidation. Whenever slight rupture takes place, it is, with very few exceptions, extraperitoneal, and the openings are soon securely plugged without any serious haemorrhage or disturbance of the placental circulation.

3. Favourable cases of ectopic gestation are marked by the early ascent of the gestation sac towards the abdominal cavity. The direction it may take is variable. It may advance almost vertically, or it may early assume an oblique position, and as it ascends it carries before it the peritoneal

covering of the pelvic viscera, and then the peritoneum of the anterior abdominal wall. Sometimes the sac becomes firmly encysted in Douglas's pouch, or fixed by adhesions in the pelvis, so that its ascent is entirely prevented. In other cases the upward movement is incomplete and partial, and the sac gets stretched backwards towards the spine, and the broad ligament around it becomes condensed and thickened by the irritation of the growing ovum. The expansion may also take a downward direction towards the pelvic floor, and when in this position urgent symptoms are often excited, accompanied with displacements of the uterus and of the other pelvic viscera. As a general rule, every case of ectopic gestation, in which from any cause the sac becomes locked in the pelvis and stopped in its ascent towards the abdominal cavity, seldom advances beyond the fifth or sixth month, as the fetus is destroyed by the compression of the surrounding structures, and by interference with the placental circulation.

4. It has long been recognized that the advance to the full term of an ectopic gestation is greatly influenced by the position of the placenta. After the arrest of the ovum in the tube it becomes attached to the internal surface, and the vascularity of this spot undergoes a rapid increase. The tube wall gradually expands, the chorionic villi soon surround the ovum, and the future position of the placenta is fixed, but, as the fetal development proceeds, this organ passes through much shifting and stretching caused by the expansion and elevation of the gestation sac, and during these changes there is the risk of haemorrhage and rupture of the sac, or of a blocking of the placental circulation, followed by destructive changes within its substance.

Now for the purpose of illustrating my remarks it will be quite sufficient to recognize three positions which the placenta may occupy in relation to the gestation sac: (1) It may be situated below at the bottom of the sac. (2) The organ may be uppermost and attached to the upper part of the wall of the sac. (3) The placenta may be laterally incorporated with the sac, and elongated and displaced upwards for many inches into the abdominal cavity.

1. In the first position the placenta can undergo very little elevation and displacement. The gestation sac may be supported by the expanded tube and a layer of connective tissue, or it may be sustained only by the peritoneal covering of the pelvic organs and lower abdominal region as it rises out of the pelvis. It is remarkable how thin a covering is sometimes sufficient to support the sac at an advanced period of gestation. An interesting case of this kind is recorded in the *Journal of Obstetrics and Gynaecology* by Drs. T. R. Smith and Herbert Wilkinson. The fetus was enclosed in a large spherical sac attached to the uterus by a pedicle near the base of the left broad ligament. The tumour was almost wholly covered by peritoneum, and it advanced to the full term without any indication of rupture or haemorrhage. When the placenta is in this position the gestation sac is always liable to suffer serious laceration with the escape of its contents into the peritoneal cavity. If the rupture is gradual the wall of the sac slowly bulges and forms a protrusion which at length gives way, and the fetus, partially enclosed in its amniotic covering, is carried into the abdomen. Some years since Jessop, of Leeds, operated on a case of ectopic pregnancy in which the sac ruptured in this fashion, and the child was found free in the peritoneal cavity. The patient recovered from the operation. In this case it is probable that the fetus escaped alone, and that the placenta was retained at the bottom of the sac.

2. When the placenta is uppermost it forms the upper portion of the gestation sac, and in this position it undergoes both displacement and compression, as the organ is exposed on one surface to direct pressure from the development of the fetus, and on the other surface to the varying tension of the surrounding viscera, and this continuous and increasing pressure generally terminates in destructive changes. The life of the fetus may be endangered by sudden haemorrhage and blood extravasation, or it may succumb to the draining away of the liquor amnii into the peritoneal cavity or the loose cellular structure of the broad ligament, and this loss is soon followed by collapse of the sac, compression of the fetus, and slow destruction of the placental structure. Sometimes the impacted sac extends downwards towards the floor of the pelvis, disturbing the position of the uterus and bladder, and getting into close relation with the bowel, so that in addition to the risks I have mentioned we must add the dangers arising from septic absorption, suppuration, and septicaemia.

3. When laterally situated in relation to the gestation sac the placenta occupies the most favourable site for maintaining the vitality of the child. In this position it aids in supporting the wall of the sac, and it obtains a free and direct current of blood from the large vessels which supply the pelvic organs. The early movement of the gestation sac towards the abdominal cavity assists in the elongation and stretching of the placental structure, and in promoting through the organ a free circulation; at the same time it reduces the risk of haemorrhage and blood extravasation. During the latter months of pregnancy the expansion and elevation of the placenta must be regarded as greatly contributing to the complete development of the fetus.

The favourable conditions to which reference has been made may now be arranged in the following table:

1. Early and continuous mobility of the ovum.
2. Slow subperitoneal expansion of the gestation sac.
3. The absence of urgent symptoms indicating intraperitoneal or extraperitoneal rupture.
4. Early ascent of the fetus towards the abdominal cavity.
5. The lateral position of the placenta in relation to the gestation sac and its upward expansion and elongation.

Illustrative Cases.

Case I. *Subperitoneo-abdominal Gestation: Operation: Recovery.*—M. B., aged 30, married thirteen years, one child 9 years of age, came under my care in May, 1900, suffering from an abdominal tumour.

History.—In 1893 she had an attack of fever, but with this exception her health had been good. Signs of pregnancy occurred again in May, 1899, and from that time she had not been well, and had been troubled with constant pain and sickness. In September the abdominal swelling was well marked, her breasts became full and tender, and distinct fetal movements frequently occurred. On December 28th some vaginal haemorrhage took place, and continued irregularly for two weeks. After this attack she had much increased abdominal pain and persistent fever. Before her admission to the Royal Portsmouth Hospital in March, 1900, she had been confined to her bed for some months.

Condition on Examination.—The patient had a worn and anxious appearance. The abdomen was enlarged and hard, and the swelling extended as high as the umbilicus. There was no fluctuation. The dullness reached across from the crest of one ilium to the other, and on palpation the whole area felt solid and resisting. The uterus was firmly fixed behind the pubic arch, and the pelvic structures were firm, but no definite swelling could be discovered. The bladder was irritable and micturition painful.

Operation.—Abdominal section was performed on March 15th, 1900. The abdominal wall was very vascular, and when the mass was exposed it was found covered with adherent omentum and intestine. The sac was then opened and a dead fetus removed; it contained about an ounce of dark-coloured fluid. After peeling away the placenta, which occupied the upper surface of the sac, the abdomen was carefully cut off by sutures and the sac cleaned out and packed with iodoform gauze.

Progress.—The patient made a slow and uneventful recovery. The cavity steadily contracted, and was cleaned out daily with gauze swabs and a solution of dilute sulphurous acid. She left the hospital at the end of two months. Her health was good in April, 1903, and the uterus was normal in size and freely movable.

The fetus measured 12 in. in length; the skin was wrinkled, and the nails slightly projected beyond the fingers.

Case II. *Subperitoneo-abdominal Gestation: Operation: Recovery.*—M. G., married ten years, aged 28, two children, the youngest 7 years.

History.—Her third pregnancy commenced in September, 1901, and during the early months she suffered constant abdominal pain and tenderness with frequent vaginal haemorrhage. In November she was received into the Female Military Hospital, Portsmouth. The abdomen steadily increased in size, and she underwent an examination under chloroform, and was informed by the medical officer that she was pregnant. In February, 1901, she much improved and left the hospital, but in April she was readmitted for increasing pain and swelling. During May and June she took morphine to relieve her sufferings. The fetal movements were constant.

Condition on Examination.—The patient came under my care on July 8th, 1902; she was then extremely ill, and her acute suffering compelled her to implore for immediate relief. The abdomen was irregular in shape and very tense. On the left side at the level of the umbilicus there was a round swelling which could be seen to undergo severe contraction every few minutes. On the right the abdomen was very prominent, and marked dullness on percussion extended from the pelvic region to the crest of the ilium. Below the costal arch on the left side a small portion of the surface was soft and elastic on palpation. No fluctuation could be detected in any part. The uterus on pelvic examination could not be felt; the vagina was much elongated, and the pelvic structures were full and oedematous.

Operation.—A catheter was passed into the bladder, and the incision extended 3 in. above to 3 in. below the umbilicus. The edge of the placenta was exposed and drawn to the right side, the sac opened, and three pints of dark-coloured and inodorous liquid were evacuated. The incision in the sac was then enlarged and the child extracted, but in doing this the thin wall of the sac ruptured and the intestines slipped into the wound. After careful washing with sterilized water they were replaced,

and the sac with the edge of the omentum was sutured to the parietal peritoneum. The cavity was then cleaned out and packed with gauze. The placenta was not disturbed, and the right half of the abdomen looked as if it were distended with a solid tumour. The uterus at once sank down towards the pelvis. The body of the child was quite fresh. It weighed 7¾ lb., and in length it measured 20 in. The hair on the head was 1¾ in. in length, and the nails projected well beyond the tips of the fingers. The body and limbs were plump, and the face had lost its wrinkles.

Progress.—Great relief followed the operation, and all pain ceased at once. The cavity gradually contracted, the placenta separated slowly, and after the first week detached portions were daily removed, and the cavity regularly deodorized. The wound completely healed in three months, all induration disappeared, and the abdomen looked symmetrical and normal. In April, 1903, the patient was in excellent health.

The cases that I have briefly narrated contain several points of interest. The first patient became pregnant about May, 1899, and the death of the fetus appears to have taken place in December, and this was soon followed by septic absorption and fever, attended by constant abdominal pain and great depression of the system.

No symptoms occurred at any period of the pregnancy indicating internal haemorrhage and rupture. At the time of the operation the placenta was found to be in a necrotic condition, and it was easily peeled off with very little haemorrhage. The fetus was soft and flabby, and the bones of the skull were loose. Its death was probably caused by pressure, the result of pelvic impaction, chronic inflammatory changes in the broad ligament and escape of the liquor amnii. The placenta, moreover, was situated on the upper surface of the gestation sac, and it was in an unfavourable position for shifting and expanding with the advance of pregnancy.

In the second case pregnancy took place about August, 1901. During the early months a correct diagnosis was attended with difficulty, and the patient suffered much from pain, abdominal tenderness, and occasional haemorrhage, but no definite symptoms occurred at any time of rupture of the gestation sac. When she was admitted into the Royal Portsmouth Hospital, the existence of advanced ectopic pregnancy was easily recognized. On the right side of the abdomen the lateral position and upward expansion of the placenta was very evident, and a loud *souffle* was audible over a large area; but the sounds of the fetal heart could not be detected. The pains of spurious labour had then been increasing in severity for many days, and the agony suffered by the patient during the uterine contractions was extremely distressing to witness. Her limbs were rigid, and the uterus could be seen contracting and rising up against the abdominal wall. It really seemed probable that rupture of the sac or separation of the placenta might take place during the severe straining; but accidents of this kind rarely occur in cases which have reached the full term, and this can be attributed to the strength and thickening of the connective tissue around the sac, and also to the support of the adjacent organs and the diffused pressure of the abdominal wall.

The severity of the uterine contractions continued up to the hour of the operation, and although the urgent symptoms of spurious labour had been progressing without any marked intermission for at least ten days, only a small quantity of dark-coloured discharge had escaped from the vagina. In many cases, however, free haemorrhage has taken place, and sometimes this has been associated with pieces of decidual membrane. The formation of a uterine decidua in all cases of ectopic pregnancy must be regarded as an unsettled question; still there are many cases on record in which a decidual structure had been expelled from the cavity of the uterus.

Spurious Labour.

There is often considerable difficulty in estimating the exact age of an ectopic pregnancy, and the onset of the symptoms of spurious labour cannot be regarded as evidence that the full term has been reached. Spurious labour may occur at any time during the last months of pregnancy, or it may be delayed some weeks beyond the normal period of gestation. We can, at all events, be sure that it appears with more or less distinctness in all cases of advanced ectopic pregnancy, and that the pains and contractions which accompany it are of very variable duration. In some cases the symptoms last only a few hours, while in others they are extended over a period of many days. The child never long survives the onset, and its death is caused by the disturbance of the placental circulation and haemorrhage into the gestation sac. It appears probable that contraction of the sac wall and the pressure of the abdominal muscles may contribute in producing asphyxiation of the child.

Etiology of Ectopic Gestation.

Many explanations have been put forward to account for the occasional arrest of the fertilized ovum, but the difficulties which surround the causation have not been overcome. The existence of internal and external disorders of the tube may prove an important factor in the production of ectopic gestation, and obstructions may be associated with displacements and adhesions of the tube, the presence of kinks and constricting bands, the results of bygone inflammation, and the obliteration of its lumen by endosalpingitis. It is very difficult to estimate the real influence of any form of mechanical causation, as there are no outward signs by which we can detect the incipient changes. The arrest may occur suddenly, or it may be the gradual result of irregular contraction of the tube, and the complete absence of symptoms at this early stage is certainly not surprising when we consider that the fertilized ovum in normal pregnancy reaches the cavity of the uterus about the eighth or tenth day, and at that time it is only a small mass of jelly-like substance about the size of a large pea. It can then be fairly assumed from our knowlege of the special function of the Fallopian tube that changes in the lumen may seriously hinder the onward movement of the ovum, and that its final arrest may at least be partly dependent upon some form of mechanical obstruction excited by morbid conditions within or around this organ.

But it is now generally admitted that there are other essential factors in the production of ectopic gestation. It has long been known that very early in normal pregnancy the uterine mucosa undergoes decidual changes. The observations of Clarence Webster and others have, however, clearly shown that although these changes usually take place only in the uterine mucosa, yet in some cases the mucous lining of the tube responds more or less to the genetic influence. Now the extension of the deciduous structure into the tube promotes the fixation of the fertilized ovum, and renders possible the maintenance of its vitality. Clarence Webster has pointed out the importance of the relationship between this tubal formation and the progressive development of the embryo. The extension of the decidual structure into the tube is probably "a developmental fault—a reversion of structure or reaction tendency of the tubal mucosa to an earlier type in mammalian evolution."

The occasional development of a tubal decidua in the human female in association with gestation has recently received singular corroboration. An extension of a decidual formation under genetic influence, far beyond the genital tract, has been published by Schmorl and also demonstrated at a recent meeting of the Dresden Gynaecological Society. On the organs of a woman who died of puerperal eclampsia he found a remarkable condition, which he had also observed in other cases. The serous coat of the uterus and ovaries was covered with numerous decidual growths, and some were found on the peritoneum in Douglas's pouch. He stated, moreover, that 70 such cases had been recorded. In a case of extrauterine pregnancy Prochownik had detected in the omentum decidual formations. Now all these independent records possess great interest, as they clearly indicate a widely diffused development of a structure exhibiting deciduous characters under the influence of the growing embryo.

Up to the present time we must admit that the causation of ectopic gestation is surrounded by many unravelled difficulties; still, it is not too much to assume that the following conditions can be taken as a basis for future investigation:—

1. The fertilization of the ovum sometimes occurs within a tube in which the lumen has been distorted by chronic changes within or around it.

2. That in addition to some form of mechanical obstruction the tubal mucosa may be transformed under genetic influence into decidual tissue, and that this structural change is essential for the vital attachment and development of the embryo.

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PETER I, the recently-elected King of Servia, has appointed as his physician in ordinary Dr. Kosta Dietrich, who took part in an attempt to upset the Obrenovitch dynasty. For this he was condemned to penal servitude, but escaped and went to the Congo, where he was well-known among the members of the Belgian colony.

A CASE OF PUERPERAL ECLAMPSIA.

By ROBERT McDOWELL, M.B. (R.U.I.),
Belfast.
With Remarks by Professor Byers, M.D.

History.—Mrs. M., a strong muscular woman, pregnant for the first time, and expecting her confinement in the middle of June, 1903, was seen by me early in March, when she was in good general health, and her urine free from albumen. Her health continued good till the end of the first week in April, when she first noticed some swelling in her hands, ankles, and eyelids. She then began to be troubled with headache, occasional vomiting, and on the evening of April 14th she could not see to read distinctly. She attributed all these symptoms to the effects of a cold, and did not trouble to consult any one. Next morning she could not see objects in front of her, and was troubled with severe vomiting. Her friends now became alarmed, and were about to send for me, when she was seized with a violent convulsion.

State on Examination.—I saw her at 10.30 a.m. She was then lying completely unconscious, her face congested and swollen, pupils dilated and equal, limbs oedematous, the breathing stertorous, and the pulse full, bounding, and of high tension. She had passed about 2 oz. of dark, smoky urine, which was loaded with albumen. She had five convulsions at intervals of ten to fifteen minutes previous to my arrival. A few minutes later a sixth seizure ensued. Her eyes became fixed and staring, the muscles rigid, breathing arrested, the veins of the neck distended, and the face livid. Then followed clonic spasms affecting the whole body, the breathing started again, and the livid colour of the face disappeared. After the fit the patient remained unconscious.

Treatment.—During the convulsion a piece of wood was placed between the teeth and chloroform given to control the spasms. Sulphate of morphine, ¼ gr., was given hypodermically and two drops of croton oil mixed in a little butter placed in the mouth. The patient was then put into a hot pack, and in a short time was sweating profusely. At 11.30 a.m., as the fits were returning every fifteen minutes, another ¼ gr. of morphine was given; she was now wrapped up in warm blankets and a diaphoretic mixture administered. There was no return of the convulsions till 2 p.m., when she had another severe seizure. Dr. Austin kindly saw the case with me at 3 p.m., and as the patient was very plethoric, with congested face and full and hard pulse, venesection was done, some 30 oz. of blood being drawn off, and immediately afterwards nearly two pints of normal saline solution were injected. About ten minutes later she showed some slight return of consciousness, opened her eyes, and spoke for the first time since the onset of the fits. As the purgative had for so far failed to act 10 gr. of calomel and ℥ss of compound jalap powder were given. She remained partly conscious for about an hour and a-half, then lapsed gradually into a state of complete unconsciousness, accompanied with stertorous breathing. At 7.30 p.m. she had her thirteenth convulsion, which was again controlled by chloroform. At 9.30 p.m. Professor Byers kindly saw the case in consultation with Dr. Austin and myself. The patient had passed no urine all day, and the bladder was empty. The cervix was now beginning to dilate, and as the condition of the patient was not improving it was decided to end the pregnancy. Professor Byers dilated with Bossi's dilator, and delivered a feeble 7-months child with forceps. The child lived for a few minutes. The patient had no return of the convulsions after delivery. Next day, though feeling dazed, she was quite conscious, could see a little better, and was passing water freely. The puerperium thereafter was normal, and on April 23rd, though the urine still contained a little albumen, the patient felt quite well, could see distinctly, and was apparently nothing the worse for the loss of blood.

Remarks by Professor Byers.

The above case, the details of which have been carefully recorded by Dr. McDowell, illustrates well a type of puerperal eclampsia very difficult to deal with; that is, one in which the convulsions begin before the onset of labour, and in which, in spite of every care and attention, the patient gets worse. She had been treated with purgatives (croton oil, calomel, and compound powder of jalap), diaphoresis (hot pack, and a diaphoretic mixture), morphine, chloroform, venesection (30 oz.), and saline transfusion (nearly 2 pints); and when I saw her she had gone through thirteen convulsions, and was lying in a comatose condition with a quick pulse of 120. Under anaesthesia, I found that the head had not entered the pelvic inlet, and the os, which was soft and dilatable, would only allow the introduction of one forefinger. We decided, under the circumstances, that our best course was to induce labour, which I did by dilating the cervix with Bossi's four-bladed steel instrument. This was done under chloroform anaesthesia, and only twenty minutes elapsed from the time I introduced the instrument until the os and cervix were sufficiently enlarged to allow the use of the axis traction forceps. Within less than an hour from the time I saw the patient the child was delivered. The above case adds another to those already recorded in the British Medical Journal in which Bossi's dilator has been of the greatest service in rapidly and safely inducing labour in a case of eclampsia eminently calling for this plan of treatment.

ON INFLUENZAL ORCHITIS:

with three cases.*

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Although cases of orchitis have been reported from time to time as dependent upon influenza, I do not think the relation of inflammation of the testis to this widespreading epidemic, influenza, is very generally recognized or understood. It is possible that as different epidemics appear to assume special types, so at one time the testis may be more prone to be attacked than at another, according to the tendency of a special epidemic. As in the case of mumps, the severity of the original disease may bear no special relation to the subsequent sequelae, and therefore this relation is liable to be overlooked in endeavouring to trace the course of an orchitis. When an epidemic of mumps is raging boys may be attacked with orchitis without showing any signs of parotitis, and as influenza has few characteristic features save its sudden and and short-lived fever, the relation of an orchitis to an influenza becomes more difficult to trace than the dependence of a similar inflammation upon mumps. By some curious coincidence three cases of orchitis, two of which were certainly and the third was almost certainly, caused by influenza came under my care in Lazarus Ward, Guy's Hospital, in November and December of last year.

The first case was that of a married man who had a severe inflammation attacking each testicle in succession following upon an attack of influenza. The other two cases were in boys, one aged 8, and the other 3½ years.

These three cases, all occurring within a few weeks during the severe autumn epidemic, led me to suggest that perhaps in certain epidemics the tendency to testicular complications may be more common than in others, just as in certain other phases the catarrhal, nervous, or intestinal symptoms may predominate.

I have spoken of the inflammation as an orchitis, and though the body of the testis was certainly enlarged and tender, the epididymis in each case appeared to be more severely attacked, was greatly enlarged and excessively tender. The scrotum in two of these cases shared in the inflammation, being thickened and brawny, intensely red and also tender. A certain amount of fluid also was noticed in the tunica vaginalis. The acuteness of the symptoms was the same in these two cases, being at once obvious from the redness and infiltration of the scrotal tissues, thus differing from those cases of subacute epididymitis often noticed during catheterism or gleet, when the epididymis enlarges without implicating the subcutaneous cellular tissue. In the other case the scrotal tissues were not inflamed. So severe was the inflammation in the man's case that one can well imagine, if such a complication were to attack a person suffering from some serious general condition as diabetes or Bright's disease, supervening upon the depressing influence of the influenzal fever, suppuration or sloughing of the scrotal tissues might take place. This actually took place in the case of an old gentleman aged 70, residing in the West of England, concerning whose condition I was consulted last year, and for whom I recommended a consultant from Bath. He had both glucose and albumen in his urine, and after

* Read before the South-Eastern Branch of the British Medical Association.

suffering from influenza and pneumonia one testis became acutely inflamed and went on to suppuration. He, however, made a good recovery.

It might be an interesting question to discuss in what way the organism of influenza reaches the testis and excites inflammation therein.

This organism has a special proneness to attack mucous surfaces, and, being carried through the kidneys into the urine, may act on the urinary tract and spread by the common ejaculatory duct and vas deferens to the testis. In this case the epididymis would be the part first and principally attacked. On the other hand, when circulating in the blood, it may be carried to the capillaries of the testis, and be there lodged, so as to excite the inflammation spoken of. It will be noted, when I give the details of the man's case, that he had considerable irritability of his bladder and urethra, and his case strongly suggests that the inflammation spread from the urethra to the testis. It may not, perhaps, always follow the same route, but the fact that in all my cases the epididymis showed very definite enlargement, and that the inflammation spread readily to the surrounding tissues, would appear to favour the view that this was the course in each case.

Case I.—E. W. K., aged 31, a gardener, was admitted into Lazarus Ward, Guy's Hospital, under my care on November 13th, 1902, suffering from an inflammation of the testis.

History.—He was married, and had had two children. There was no history of gonorrhœa, syphilis, or tubercle. He first suffered from influenza four years ago, and was very nervous afterwards. He suffered from indigestion, and lost most of his teeth from decay. The stumps were extracted and replaced by a set of false teeth, since which time he has improved in health. About nine weeks ago he had a second severe attack of influenza with high fever, and was laid up in bed. He then noticed a frequent desire to micturate and an irritable sensation in the urethra in passing water. Next he says a little blood appeared at the beginning and end of micturition. This improved at the end of a week, when he had a sudden onset of pain of a severe character in his right testicle. This gave him agony for thirteen hours, till the doctor injected morphine subcutaneously, and supported the testis on a pillow. The right testis became much swollen, and the pain extended along the cord into the groin and back. He lay in bed for a month, and then was convalescent for about three weeks. He then, on November 9th, commenced work, but was immediately seized with a return of his former symptoms—irritability and frequent micturition, a little bleeding from the urethra, and acute pain in the left testis, which became rapidly inflamed and swollen. Drs. Holman and Bailey of Midhurst, under whose care he had been, communicated with Mr. Lucas, and he was admitted into hospital on November 13th.

Condition on Admission.—The patient appeared to be a healthy, ruddy countryman, but of a nervous temperament. There was no evidence of any discharge whatever from the urethra. The urine was specific gravity 1015, acid, straw colour, free from blood, albumen, and pus. The left side of the scrotum was inflamed and the left testis enlarged. The body of the testis was somewhat swollen but the epididymis was distinctly enlarged, especially the globus minor. There was evidence of a little fluid in the left tunica vaginalis. Examined per rectum the prostate was felt well developed, smooth, and normal. Some evidence of the old inflammation of the right testis could be detected in slight remaining enlargement of the right epididymis. The scrotum was raised on a pillow and mercury and belladonna applied locally to it. Under this treatment the inflammation rapidly subsided and the pain disappeared. On December 2cd, 1902, the swelling had entirely gone, and he was discharged wearing a suspensory bandage for the scrotum. During the time he was in the hospital his temperature never rose above normal, and no blood or other abnormal constituent was found in his urine.

When cross-examined as to the cause of the blood in his urine, he admitted that on both occasions it occurred as the result of sexual congress, when he believed himself to be convalescent. I have known this condition to be produced under similar circumstances after epididymitis from other causes, and I have known patients to complain that their emissions were stained with blood so as to colour their sheets for some months after epididymitis of gonorrhoeal origin. The haemorrhage is therefore to be regarded only as an expression of the congested state of the genital passages under inflammation excited to capillary oozing by the act in question. The other two cases were in boys, and one testis only was attacked in each patient.

Case II.—H. W., aged 8, was admitted into Guy's Hospital, under my care, on November 16th, 1903, on account of double rupture and swelling of the left testis.

History.—He was one of three children, both parents being alive, the father healthy, and the mother said to be consumptive. There was no history of gout or rheumatism in the family. His elder sister was suffering from pneumonia after influenza. When 14 months old he was noticed to have an inguinal hernia on each side. He was then brought up to the hospital, and, having phimosis, was circumcised and a truss applied. When 2½ years he was again brought up on account of the ruptures, and discharged three days later. He had left off the truss for some weeks before his admission, and the herniae generally went back when he was lying down. He had been laid up with an attack of influenza for about a week before his admission. He then began to complain of pain and tenderness in the left testicle, and had vomited three times, on account of which symptoms he was admitted into the hospital.

Condition on Examination.—When seen, he was a pale, delicate-looking boy. The inguinal herniae were not down, but the left testicle was considerably enlarged and tender. He referred the pain to the front of the testis, and had a vague sort of ache or pain running up into the abdomen. The skin of the scrotum was normal, but the body of the testis, epididymis, and cord were all enlarged and tender. He was kept in the hospital for three days, and then sent home to rest till the inflammation of the testis had subsided. Subsequently he was readmitted and a radical cure performed on each hernia.

It will be observed that in this case the orchitis followed directly upon the influenza, as in the first case related, and that the pain was sufficient to excite vomiting, which led the parents to bring him to the hospital to ascertain whether this symptom and the swelling had any relation to the hernia that had existed from infancy.

Had he been wearing a truss the epididymitis might possibly have been caused by the pressure due to the instrument, but the double truss had been discarded before the inflammation of the testis commenced. The orchitis was less acute than in the man's case, and the tissues of the scrotum were not inflamed in sympathy, as in his case. The organ had quite resumed its normal size when the boy was readmitted for the radical cure of his herniae.

The absence of any other exciting cause, such as mumps, and the occurrence of influenza in other members of the family at the same time that the boy was attacked, led me to regard the influenza and orchitis as cause and effect.

Case III.—C. G., aged 3½, was admitted into Lazarus Ward, Guy's Hospital, on December 14th, 1902, for inflammation of the left testis.

History.—He was the son of a neighbouring publican, who was rheumatic and had had haemoptysis. When six months old he was noticed to have a left-sided inguinal hernia for which a truss was applied. The hernia had not been down since he was twelve months old. On December 11th the child complained of pain on the left side of his chest, and he had suffered for some days from a cold. On December 13th it was noticed that the left testis was swollen and that the skin of the scrotum was red and inflamed. There had been no mumps in the neighbourhood, and there was no evidence of parotitis or enlargement of any of the salivary glands. The friends were inclined to attribute the inflammation to his having been picked up roughly.

Condition on Examination.—On admission he appeared to be a healthy-looking boy. The left testis was considerably swollen, and the scrotum red, tense, and inflamed. It was exceedingly tender to the touch. The swelling was most evident at the lower and back part of the testis. The cord could scarcely be felt, owing to the distension. For the same reason the scrotum was tender all over, and on both sides, but the right testis was not similarly affected. Warm boracic fomentations were applied over the inflamed scrotum, and he was kept in bed. On December 17th he was better and the distension less. An ointment of mercury and belladonna was then applied. He was discharged on January 2nd, 1903, the inflammatory swelling having completely disappeared.

The acute inflammation which occurred in this boy's case closely resembled the acute inflammation, with redness and oedema of the scrotum noticed in the case of the man; and though we had no more definite history of influenza than that the boy had been suffering from a cold and pain in his chest, considering the prevalence of the epidemic at this time, I am inclined to think that we were right in thinking this cold an influenza, and the orchitis secondary thereto.

One can scarcely imagine so acute an inflammation to be caused by roughly picking the child up. Had it been caused in any such way, some evidence of bruising or injury would probably have been noticed; but of this there was not the slightest evidence. It was an acute inflammation of both the body and epididymis of the left testis, extending through to the scrotum, causing oedema and redness of the superficial tissues. Apart, then, from any other epidemic influence known to produce orchitis, it is fair to assume that the inflammation bore a relation to the prevailing epidemic of the time of which the little boy had shown signs, rather than that it was an idiopathic disease, or due to traumatism, of which there was no evidence.

From these cases it will be gathered: (1) That inflammations of the testes may occur as the result of influenza following close upon the fever; and that after one testis has recovered the second may be attacked. (2) That when there is an epidemic of influenza in the neighbourhood, sporadic cases of orchitis probably occur as the result of the influenzal organism, though it may be difficult to trace the relation of the orchitis to the preceding infection.

THE CAUSES OF ACUTE ABDOMINAL PAIN IN THE HEALTHY, EXCLUSIVE OF TRAUMATISM.

By J. LYNN THOMAS, C.B., F.R.C.S.Eng., J.P.,

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In comparing textbooks upon abdominal surgery of 1892 with those of 1902 one cannot help being astonished at the extraordinary progress that has been made in this department. Operations such as pylorectomy and removal of large portions of the stomach were within the last five years looked upon as nothing more or less than "surgical exercise." In 1896 the late Mr. Greig Smith, who was one of our most able surgeons as well as a pioneer in abdominal surgery, wrote thus: "It is doubtful if it can ever be the surgeon's duty to advise the operation; he ought to undertake it only at the patient's urgent request."

Under the subject of this paper are included all those conditions which are comprehended under the designation of acute intestinal obstruction, and also that most important class which should be separated from the above, that is, perforation or rupture of the viscera in the abdominal cavity covered by peritoneum. It should always be borne in mind that a considerable number of cases of acute abdominal pain call for prompt surgical interference long before the classical symptoms of so-called acute intestinal obstruction show themselves. Waiting for these symptoms often means the loss of the best opportunity for saving life. What can possibly be the diagnostic value of the act of passing flatus, or of the time which has elapsed since the last defaecation in cases of ruptured Fallopian tube or perforation of the stomach or of the appendix? The symptom of vomiting in some of the most fatal cases of gangrenous appendicites is of very little value and is frequently absent. The assemblage of symptoms which in cases of acute abdominal pain forms the basis for operative interference may be discussed separately, firstly (1) pain, (2) condition of the abdominal parietes and of the abdominal contents, (3) facial expression, (4) pulse, (5) temperature, and (6) vomiting.

1. *Pain.*

It is a matter of prime importance to have the patient's version of the onset of the attack; whether it started in (*a*) the umbilical area, (*b*) epigastric area, (*c*) caecal area, (*d*) hypogastric, or in the regions of (*e*) the right or left costal margin. I have found the diagrams (Figs. 1 and 2) useful in assisting me to estimate the value of pain in many cases and to unravel the common assemblage of symptoms:

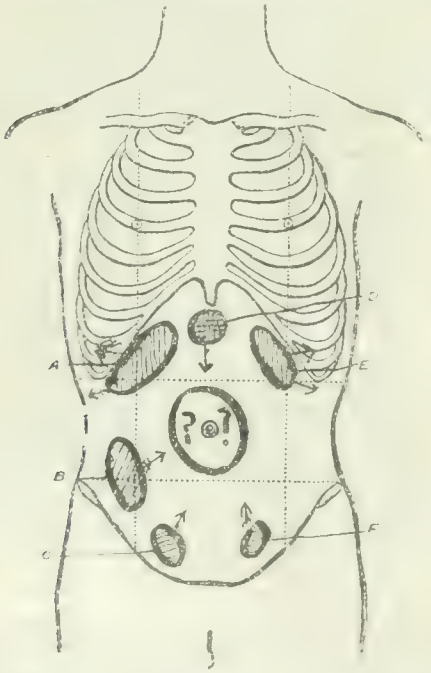


Fig. 1.—A, Biliary, renal, pulmonary; B, Appendicular, volvulus; C, Tubal, ovarian; D, Gastric; E, Renal, pulmonary; F, Tubal, ovarian. Figure shows areas of pain with surgical significance. When pain is in the umbilical area marked with ? ?, the surgeon should operate below the umbilicus in the middle line. Sudden pain may start at umbilical area and afterwards radiate to one of the other areas.

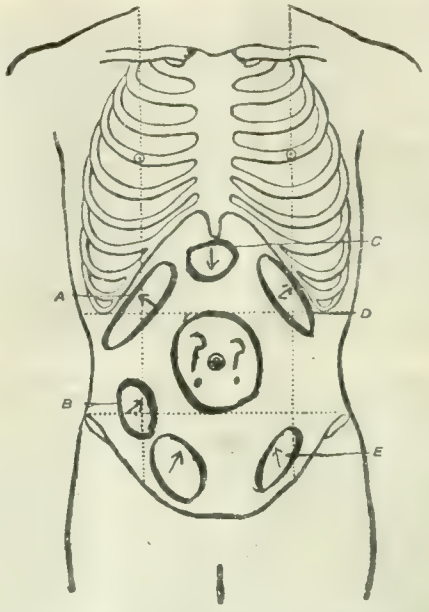


Fig. 2.—A, Biliary, renal, pulmonary; B, Appendicular, volvulus, C, Gastric; D, Renal, pulmonary; E, Tubal pregnancy, strangulated ovarian cyst. When pain is exclusively in area marked ? ? (umbilical), the abdomen is to be opened below the umbilicus in the middle line.

Suddenness of onset is a characteristic of all the cases I am discussing. The intensity of the pain, its continuity, with or without exacerbations, will depend upon the site, the extent, and the nature of the cause.

Umbilical or circum-umbilical pain is a common sign of grave abdominal lesions in any locality, and it is in these cases when an operation is decided upon that one should alway perform coeliotomy in the middle line below the umbilicus.

Pains which start in the other regions, marked in the diagrams as tubal, volvulus, appendicular, gastric, have all a tendency to merge into the umbilical area as the disease progresses, whilst those of the biliary, pulmonary, and renal areas tend to subside into their recognized spheres.

It is very significant that small perforations of a viscus may be accompanied by a very profound shock, whilst the surgeon can crush an inch or more of the intestines with powerful clamps without giving rise to any appreciable shock. It is a subject for speculation why a surgeon, after deliberately opening the abdomen, can evacuate the intestines through several incisions without causing shock, whilst a small penetrating stab is usually accompanied by profound collapse.

2. *The Condition of the Abdominal Wall and of the Abdominal Contents.*

Personally I attach very little significance to the absence of hepatic dullness, as I have so often found it absent in cases of distension of the bowel alone without there being any free gas in the abdominal cavity; and, on the other hand, hepatic dullness has been present and well marked in cases of free gas in the abdominal cavity with slight distension of the intestines.

What is of much more importance is the degree and continuity of rigidity of the abdominal muscles under prolonged examination with the patient's thoughts diverted. A rigid abdominal wall with no respiratory movements in it is very significant of perforation of stomach, duodenum, appendix, or some other viscus. It is present also in ruptured tubal pregnancy, but it lacks the continuous board-like condition of perforation of any portion of the intestinal canal. When the pain is in the upper abdominal areas, it is important to observe the effect of fixing the lower ribs by means of our hands placed firmly upon the chest wall; in cases of perforation

of the intestine I have never seen this manœuvre make the slightest difference to the degree and the continuity of the rigidity, but in cases of incipient pneumonia or pleurisy there was a distinct modification of the condition of the abdominal parietes with an expression of slight relief from pain.

Distension of the intestines with gas is a very dangerous complication. I know of no single symptom which at the present time is so adverse to successful surgical interference as that of being "very much blown out." It is next in importance to hiccough, which is too frequently the harbinger of the coming end; but I am glad to say that a few patients can be saved by evacuating the distended coils, thanks to the pioneer work of the late Mr. Greig Smith in this direction.

3. *The Facies.*

I think the most difficult sign of all is to express in words the significance the facies convey to the observer. One often says, after a glance at the patient's face, that "he is dying, unless there is a change very soon." I am sorry I do not know of any word picture to convey to you the mental image of this condition. It is not very long, unfortunately, that one has to wait in our profession before this haunting picture appears in real life.

It is extremely rare for a patient suffering from perforation of an abdominal viscus to demur to operation, unless he has reached the stage of non-responsiveness to pain. It is a singular fact and matter of common experience that the last stages of perforation are accompanied by a mental condition which is decidedly optimistic as regards the prospects of recovery without the surgeon's aid. The surgeon who takes the hint is acting wisely.

4. *Pulse.*

The frequency and the condition of the pulse are of considerable value in estimating the gravity of the patient's illness. One must discriminate between the pulse of the nervous and the pulse of the acutely septic patient suffering from perforative peritonitis; it requires some experience to differentiate them, but a pulse that keeps at a rate of over 95 a minute for a few hours has serious surgical significance in a patient suffering severe sudden abdominal pain.

5. *Temperature.*

Temperature is a factor of questionable value in forming an opinion as to the necessity of surgical interference; a small, flickering, rapid pulse, with a normal temperature, is of much graver importance than a pulse of 85, with a temperature of 103° F. Some of the deadliest septic poisons do not possess pyrogenic properties.

6. *Vomiting.*

I have purposely left the symptom of vomiting to the end, as it is one of the least significance from a purely surgical standpoint. If it is of an urgent, persisting, and distressing occurrence, such as in acute strangulation of the bowel, the surgeon is, as a matter of course, sent for: but if it is of only an occasional occurrence, or complicated with recurring spasms of the diaphragm or of an occasional hiccough, as in cases of acute or primary gangrene of the appendix, or of some cases of perforation of the stomach, I think that the proper interpretation of this condition needs recognition as being of vital surgical significance.

I deliberately refrained from alluding to shock, chiefly because if the conditions of the patient's facies, the intensity of the pain, the character and rate of the pulse, and the nature of the vomiting or its allied phenomenon of diaphragmatic disturbance be carefully observed, there is no need to use a term which is very elastic, very misleading, and conveying nothing but a misty conception of the symptom-complex.

I will now refer very briefly to three specimens and to some cases illustrative of the difficulty and sometimes the disappointment in dealing with them.

(*a*) *Gall Stone.*

A gall stone passed through the common bile duct without giving rise to obstruction, and got impacted in the ileum about 1 yard from the ileo-caecal valve, and caused death from obstruction within three days. I got it through an insurance company questioning the cause of death of a man who was struck on his right side whilst getting into a dogcart through his horse running away: slight umbilical pain came on at once, and passed off for a short time, to recur and develop within twenty-four hours into a case of acute intestinal obstruction. I made the necropsy nine years ago; no operation had been performed. The stone is remarkable as being conico-cylindrical in shape like a pom-pom shell; it is 1⅛ in. in length, and its base is 1½ in. in diameter, and its point had travelled in front. There were no adhesions round the gall bladder and bile duct.

(*b*) *Thrombosis of the Superior Mesenteric Veins.*

I have come across two cases of thrombosis of the superior mesenteric veins, and both of them simulated acute intestinal obstruction. My friend, Dr. Mitchell Stevens, Pathologist to the Cardiff Infirmary, has carefully dissected out a specimen which shows well the character of the lesion. The extent of small intestine involved is just under one yard. The history of one of the cases illustrates well the extreme difficulty of differential diagnosis.

A doctor and two members of his family partook of supper on a Monday night, and the three suffered more or less from ptomaine poisoning before the following morning. The old lady did not completely recover from the effects of the poison, and towards Tuesday evening showed symptoms of increasing pain around the umbilical region. Early on the Wednesday morning I was called in to see her, and found the abdomen fairly rigid with tenderness on deep pressure a little to the right of the umbilicus: there was occasional vomiting, with a quick, small pulse, and temperature a little subnormal, and an expression of face designating serious intestinal trouble. Three doctors agreed that an operation should be done immediately, as the condition of the patient was getting from bad to worse. Whilst making the necessary preparations for operation, the patient passed a copious offensive motion with a great deal of blood mixed with it; then she became rapidly worse and died in the course of the day, the illness not lasting much over 36 hours.

The history of my other case is practically the same and death supervened before operation was performed.

It is interesting to know that similar cases have been operated upon and have recovered. It would have been extremely difficult to advise laparotomy in my two cases in time to save the patients on account of the absence of acute and serious symptoms until the time when the end came on rather quickly with blueness of the nails and lips.

(*c*) *Extrauterine Pregnancy.*

Mrs. X. had been married a few weeks, and had a past history of having suffered severely from ulcer of the stomach, with haematemesis. When I saw her she was blanched, abdomen moderately distended, with slight rigidity of the abdominal muscles. She had had sharp pain in the hypogastric region, had missed one period, and these facts, combined with pallor and only slight rigidity of the abdominal muscles, justified the diagnosis of rupture of a tubal pregnancy, with intraperitoneal haemorrhage, and not that of perforation of the stomach. In the latter condition we should have found quickened, laboured breathing, and an extremely rigid abdominal wall. These are the special points which seem to me to be of the greatest importance in the differential diagnosis of such cases. She recovered without any trouble, and has since had three boys.

There is one type of rupture of an extrauterine pregnancy which is rather uncommon, and therefore a little liable to put one off making a correct diagnosis: it is the one that takes place during the inter-menstrual period. I have come across but one case (with Dr. Skyrme). The accident came on suddenly in the usual manner, with acute pain and the ordinary accompaniments of such a lesion. Laparotomy was performed immediately, and the patient recovered. This case might possibly have got well without an operation, but as recurring sudden pains supervened, with pulsation in the left broad ligament, we considered that the indications for operative interference were sufficient.

It is well to bear in mind that a certain number of cases of undoubted perforation of the stomach, or of the vermiform appendix, and of rupture of a pregnant Fallopian tube, get well without the surgeon's aid, and on that account it is desirable to explain the remote possibility of such an occurrence in order to avoid the risk of becoming a false prophet in cases where surgical aid is declined by the patient or his friends.

(*d*) *Gastric Ulcer.*

I have opened the abdomen on ten occasions for perforating gastric ulcer, and in two of them I was unable to find the opening on account of the patients being *in extremis*.

The first occurred in 1893, a patient of Dr. A. C. Taylor, and the other one in 1896, a patient of Dr. E. Traherne. In the two cases I performed laparotomy above the umbilicus, and not finding the perforation the abdominal cavity was mopped dry, and large drainage tubes put in through a separate opening above the symphysis pubis and packed with iodoform gauze; one of them recovered without further surgical attention.

In another case of Dr. Sparrow's, I opened the abdomen at midnight

within twelve hours of perforation and found a small opening where the oesophagus comes through the diaphragm. As it was impossible to apply a suture in that situation I determined to pack with iodoform gauze for thirty-six hours, and recovery was uninterrupted, and three years afterwards she was in perfect health.

I think it is quite possible that in this case Nature could have effected a cure if no operation had been done, because the opening was very small and in a position which would be in favour of only a small leakage of the gastric contents taking place. It is in the lower dependent positions along the greater curvature of the stomach that we get large quantities of the gastric contents rapidly effused into the general peritoneal cavity.

HERNIA OF THE BLADDER AS A COMPLICATION OF INGUINAL HERNIA.

By G. B. FERGUSON, M.Ch.Oxon., F.R.C.S.Eng.,
Senior Surgeon to the Cheltenham Hospital.

Mr. H. J. Curtis's paper published in the British Medical Journal of July 11th, on a case in the practice of Mr. Bilton Pollard, induces me to publish another example of the condition illustrated by him, and referred to above. Though uncommon, it is of sufficiently frequent occurrence to put all operating surgeons on their guard, with a view to its recognition. I must confess that I was not aware of such a condition, as of practical importance, before I was recently introduced to it in the case which I will now briefly narrate.

It is that of a young man who sought relief for a large irreducible left inguinal hernia, recurrent after an operation for radical cure. This hernia proved to be mainly omental, together with a small knuckle of the transverse colon. The operation done by me was made difficult by adhesions, though it was satisfactorily accomplished at last. Some pounds' weight of omentum was removed, and the neck of the sac was closed, though its total extirpation was impracticable. At the end of the operation a thin, blue, and distended cyst, about the size of a pigeon's egg, was noticed in the immediate proximity of the spermatic cord, and adherent to the remains of the sac. It was mistaken for a hydrocele of the cord, and was punctured, when a considerable amount of clear fluid escaped, and the finger introduced into the cyst passed, at a deeper level, through a constricted neck, into the bladder. The cyst was of extreme thinness, consisting of little more than attenuated mucous membrane. Regrettable as such a mishap was, I am glad to add that no harm followed it. The mucous membrane was stitched together continuously with fine silk, which I used in preference to catgut, feeling more confidence in its asepticity, and trusting that from its fineness it would not project into the bladder to originate incrustations therein; and this continuous suture was completely covered in by a layer of interrupted Lembert's. *Caeteris paribus*, catgut would, of course, have been safer for the mucous suture. A catheter was tied into the bladder for a few days, and I am pleased to add that uneventful healing by first intention ensued. Still and nevertheless the puncturing of vesical cysts is clearly a practice to be avoided, and I am grateful to Mr. Pollard for the simple suggestion that the diagnosis can be quickly cleared up by a sound passed through the urethra.

In the case treated by me the bladder hernia was extraperitoneal, and its mechanism was very evident. After the first operation there was inflammation with suppuration, and an adhesion resulted between the remains of the sac and the bladder, the former of which in its re-descent drew down with it a diverticulum of the mucous lining of the latter.

I suspect that there have been many more cases of vesical hernia observed than have found their way into medical literature, and I am permitted to refer to another case in the practice of my friend, Mr. E. Dykes Bower, Surgeon to the Gloucester Infirmary. Here an innocent-looking little cyst, projecting, as in Mr. Pollard's case, into the hernial sac, was removed, after ligaturing its neck. As in my case, the man had previously undergone an operation for radical cure, also on the left side, and fortunately here again no harm resulted from the injury to the bladder, and the patient made a good recovery, though during the next day, and for some time afterwards, there was a copious flow of urine through the wound. Clearly, however, it must be the rule hereafter to leave all such suspicious cysts untouched, and surgeons are much indebted both to Mr. Pollard for indicating the proper treatment of such cases, and to Mr. Curtis for his clear and helpful diagrams and descriptions.

FURTHER OBSERVATIONS ON ALCOHOLIC AND ARSENICAL NEURITIS.

By ERNEST SEPTIMUS REYNOLDS, M.D.Lond., F.R.C.P.,
Assistant Physician to the Manchester Royal Infirmary; Visiting Physician to the Manchester Workhouse Infirmary.

It will probably be remembered that in 1900 there was an outbreak of arsenical neuritis amongst beer drinkers, especially in the North of England and in the Midland Counties. This was due to the accidental contamination of glucose with arsenic. In various papers which I wrote in connexion with this epidemic, and in my evidence given before the Royal Commission on Arsenical Poisoning, I contended that by far the greater number of cases of so-called alcoholic paralysis, at any rate in the Manchester district, were in reality due to chronic arsenical poisoning, and were not due to alcohol, and that this had been the case for years, probably apart altogether from the use of contaminated glucose. Subsequent investigations showed clearly that malt, especially when prepared by the use of certain cokes, was largely contaminated with arsenic, and that beer prepared from this malt also contained heavy traces of arsenic. Indeed, a small epidemic of marked arsenical poisoning occurred in beer drinkers at Halifax last year quite apart from arsenicated glucose, and was probably due to the malt having been prepared with gas coke.

In evidence given before the Royal Commission in 1902 I stated that I had seen cases of peripheral neuritis in pure spirit drinkers where there was no evidence of arsenical contamination. These cases, however, are very different from the cases of so-called alcoholic paralysis with which we have been so familiar for many years. They show some loss of power in the legs and arms, absent knee-jerk, paraesthesiae of the feet and hands, only slight tenderness on pressure of the muscular masses, very little atrophy, no loss of memory, and no oedema. Such cases are, moreover, considering the large amounts of alcohol consumed in this country, very rare, and during the last two years I have certainly not seen half a dozen in my private practice, in a large out-patient practice at the Manchester Royal Infirmary, and at the Manchester Workhouse Infirmary, where I have 800 medical beds.

By the old so-called alcoholic paralysis I mean those cases of peripheral neuritis, with much paralysis and atrophy of the legs and arms, loss of knee-jerks, great tenderness on pressure of the muscles, and peculiar and typical loss of memory for time and place, and often oedema of the legs—sometimes general oedema—from dilatation of the heart. This was the type found so commonly during the arsenical poisoning epidemic, when with it there were also found various skin lesions—notably pigmentation, keratosis, various erythemata, and herpes.

These cases (even apart from the epidemic), I venture to think, were in reality due to arsenical poisoning and not to alcohol, but many observers have thrown doubt on this view. It is interesting, therefore, to be able to send a short report of what has happened in Manchester during the last two years, in which period Manchester beers have contained perhaps not $\frac{1}{100}$ gr. arsenic per gallon. A close look-out has shown that these cases have practically disappeared (up to about three months ago, about which more presently), and in this statement I am confirmed by the observations of several other Manchester physicians. The "alcoholic" heart has also practically disappeared. Now I think I may take it for granted that the people in Manchester and district are still taking alcohol in large quantities. If these cases are really due to alcohol, why have they disappeared? This is the negative evidence.

Now take the positive evidence. During the last two months I have seen six cases of the old so-called "alcoholic" paralysis type, five of whom are at present under my care.

Case I.

Edward R., aged 40; has taken ten glasses of beer nightly, more at week ends. Has pressure pains well marked, loss of knee-jerks, some atrophy, paralysis of the legs, slight paralysis of the arms, no loss of memory, burning pains of the soles of the feet, slight general pigmentation.

CASE II.

Albert B., aged 42; very marked paralysis of legs and arms, marked pressure pains, marked wasting, purpura on legs, marked loss of memory, peculiar hoarse voice, marked keratosis of the soles of the feet; has been a heavy beer drinker.

CASE III.

Mary B., aged 49; well-marked paralysis and atrophy of legs and arms, pain on pressure, marked loss of memory, very slight keratosis; has taken much beer.

CASE IV.

Emily D., aged 53; paralysis and atrophy specially marked in the legs, pain on pressure, loss of memory, rapid heart, fairly marked keratosis; husband says she has taken much beer, no spirits.

CASE V.

Hessie T., aged 32; very marked paralysis and atrophy of legs and arms, great pain on pressure, slight oedema, slight keratosis, very rapid heart. This is a most interesting case. She is the wife of a beerhouse keeper, and both her husband and the doctor told me that she drank practically nothing but whisky—in fact, had got drunk on whisky every day for years. But the symptoms have only come on during the last two months. If the cause were alcohol *per se*, why had the symptoms not come on before? I therefore cross-examined the husband very carefully, and he said that during the last three months his wife had also taken a glass of beer occasionally, but he reiterated his statement that whisky was her particular and practically her only beverage. I asked if she had been taking as much as six glasses of beer daily, and he said: "Oh, yes; perhaps eight or ten glasses." This is only another example of what I have pointed out before—namely, that a spirit drinker does not count the amount of beer consumed; he or she looks upon beer more or less as a temperance beverage.

With these five cases under my care I thought it was time to have the beer examined again; and two samples from different breweries, both of which had supplied more than one of the five patients with their beer were obtained for me and analysed, and both were again found to contain arsenic in quantities certainly greater than $\frac{1}{5}$ gr. per gallon, possibly about $\frac{1}{5}$ gr. per gallon.

How this arsenic is again getting into certain beers (even obtained from different breweries) I cannot at present say; but the matter is being investigated for me, as for various reasons it is not an inquiry which I can personally conduct.

I contend that the negative and positive evidences above put forward strongly support, if they do not prove, my statement that, at any rate in this district, what we have been calling for years alcoholic paralysis was really in the vast majority of cases arsenical in origin.

There are no acute symptoms of arsenical poisoning in the cases I have narrated because there is not the enormous amount of arsenic present in the beer which there was when it was manufactured from arsenical glucose; indeed, the only skin affection is the keratosis, to which I would again draw attention as a most valuable sign of arsenic poisoning even if slightly marked. I would again suggest, as I did in a paper read at the Cheltenham meeting of the British Medical Association in 1901, that just as minute traces of lead in drinking water may cause marked paralysis in some persons without any other symptoms of lead poisoning, so also minute traces of arsenic may in a few susceptible people cause peripheral neuritis, loss of memory, and heart failure. It is, of course, only a very small percentage of those taking the arsenic who suffer, for it must be remembered that although there were some hundreds of people affected during the late epidemic in 1900, yet there were tens of thousands drinking the highly contaminated beer who suffered hardly or not at all.

Another practical point, I think, to be noted from the above remarks is that it is not advisable that beer should contain more than $\frac{1}{5}$ gr. of arsenic per gallon or symptoms of poisoning may occur.

A CASE OF ANKYLOSTOMIASIS IN SCOTLAND.

BY RALPH STOCKMAN, M.D.,

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THE widespread prevalence of ankylostomiasis in Central Europe and the recent occurrence of a severe outbreak among the men employed in the Dolcoath Mine, Cornwall, arouse the fear that it is only a question of time for the parasitic worm to become widely distributed throughout the mines and brickfields of the whole country. Each person who harbours the intestinal worms and passes ova becomes a centre of infection for others, and owing to the constant migrations of workmen the disease is apt to be spread easily and rapidly. It is very prevalent in Egypt, India, and other tropical and subtropical countries, and since 1854 the ankylostoma duodenale has been generally recognized as the cause of "miners' anaemia," "tropical anaemia," and "Egyptian chlorosis." As a consequence its life-history has been very carefully studied and is now well-known. In temperate climates the ova develop into the infective larval form most readily under the conditions of temperature and damp which are present in mines, tunnels, and brickfields, hence, in Europe, men working in these places are most frequently, but by no means exclusively, affected. In warm climates the ova flourish in the moist earth anywhere, and hence the agricultural classes and the rural population generally may be greatly afflicted by the parasite and the resulting anaemia. The number of worms in the intestine may amount to several hundreds, and they cause the anaemia by direct abstraction of blood from punctures made in the mucous membrane. A fatal result is by no means uncommon if the case is left untreated. Where the number of worms is small, the host may suffer little inconvenience, and, if he be not further infected by swallowing fresh larvae, the original worms die in about six years, and a natural cure results. The mature worms are very seldom passed in the faeces, and a diagnosis is made by finding the characteristic ova on microscopic examination. The worms are readily killed by large doses of thymol or oil of male fern. The blood presents the usual characters of slight or severe anaemia, but, as in several other diseases, there is a more or less marked absolute and relative increase of the eosinophile leucocytes.

The following case is important from a public-health standpoint, and is interesting as being probably the first which has been observed in Scotland.

The patient was a man, aged 25, a coal-miner by occupation, and working in a Lanarkshire mine. He was admitted to the Western Infirmary on May 15th, 1903, complaining of general weakness and shortness of breath of over a year and a-half's duration. He dates his present illness from an attack of "enteritis," which he contracted in India about two years ago while serving as a soldier, and for which he was treated in hospital at Lucknow for two months. On his discharge from hospital he noticed that he was pale, and very breathless on going upstairs or making any unusual exertion. After being three months longer off duty he was invalided home to Netley Hospital, where he was treated for anaemia with iron, arsenic, and tonics. He did not improve, and six months ago was discharged from the army as suffering from leukaemia.

About the beginning of this year he returned to his former employment as a miner, but has never been really fit for work, and a fortnight before admission had to give it up on account of weakness and breathlessness. He was accustomed to defaecate daily in any convenient part of the mine. He has had no serious illnesses except two attacks of malaria in India; he is a moderate smoker and drinker, and of good physique.

On admission the patient presented the outward appearances of pretty severe anaemia. The cardiac impulse was feeble, the heart was slightly dilated; there were soft systolic murmurs in the mitral and pulmonary areas, and a venous hum in the neck. The pulse varied from 62 to 96 per minute, but was full and of fair tension. He was subject to palpitation. There was no enlargement of the spleen or of any of the lymphatic glands. The lungs and abdominal organs were all healthy, the urine contained no abnormal constituents; the appetite and digestion were good, but the bowels rather constipated. The red blood corpuscles formed rouleaux normally; they were pale in colour, and showed some degree of poikilocytosis. They numbered 3,200,000 per c.mm., the leucocytes were 9,000 per c.mm., and the haemoglobin 28 per cent. of the normal. On several examinations the eosinophile cells were counted as equal to from 12 to 43 per cent. of the total number of leucocytes (the normal being about 2 to 4 per cent.).

On examining the faeces numerous ova of ankylostoma duodenale were found, most of them in the four-celled state, with others more advanced in segmentation. On May 21st (before treatment) the leucocytes numbered 7,850 per c.mm. and their proportions were: polynuclear cells 62 per cent., eosinophiles 12 per cent., large lymphocytes 10 per cent. small lymphocytes 16 per cent.

The patient was put on six Blaud's pills daily, and on May 26th he received 20 gr. of thymol in powder, preceded and followed at an interval of several hours by 2 drachms of castor oil. Owing to a misunderstanding this stool was not properly examined for the worms, but none were found on subsequent occasions, although ova were present in the faeces up to June 10th but no later. On May 29th and June 5th the thymol was repeated, but no worms were discharged.

On June 10th the red blood corpuscles equalled 5,000,000 per c.mm., the white 5,000, and the haemoglobin 70 per cent. of the normal; the polynuclear leucocytes were 64 per cent., the eosinophiles 13 per cent., the large lymphocytes 6 per cent., and the small lymphocytes 17 per cent. His colour had become good, and the subjective symptoms of anaemia had passed off. He was sent to the convalescent home on June 12th, and on his return a fortnight afterwards he reported himself as being in perfect health. The red blood corpuscles then numbered 5,700,000 and were well formed, the white 8,420, and the haemoglobin equalled 90 per cent.; the polynuclear leucocytes numbered 42 per cent. of the whole, the eosinophiles 43 per cent., the small lymphocytes 10 per cent., and the large lymphocytes 5 per cent.

TREATMENT OF ATROPHIC RETINAE WITH RETINAL EXTRACT.

By ROBERT W. DOYNE, M.A.Oxon., F.R.C.S.,*

President of the Oxford and Reading Branch of the British Medical Association; Reader in Ophthalmology in the University of Oxford; Consulting Ophthalmic Surgeon, Radcliffe Infirmary; Senior Surgeon, Oxford Eye Hospital; Assistant Surgeon, Royal Eye Hospital, London.

I DO not propose to occupy your time for more than a few minutes with my address, but I am glad of this opportunity, which the honour you have done me to-day in electing me the first President of this Branch affords, of making known to the profession the results of some work I have recently been engaged in, which I trust may have valuable and far-reaching effects in relieving to some extent the disabilities of the semi-blind.

My attention was first drawn to cases of retinitis pigmentosa in which the functional activity of the eye is rapidly exhausted by bright light, and I wondered if it would not be possible somehow or other to supply the necessary pabulum for preserving the functional activity of the retina, the blood supply in a case of retinitis pigmentosa being extremely limited, one of the signs being marked contraction of the retinal vessels. Not long ago I had another case of the same disease in which, as well as the peripheral contraction of the field of vision, there was also great loss of central vision. Some time before this patient had crossed to Jersey, and had been most violently sick, with great retching; after a night's rest, however, the vision, which had been for some time previously failing, returned with wonderful clearness, and she could read with the greatest ease, the print looking firm and black. This lasted for some weeks, when it gradually again faded away, the print becoming very pale and difficult to distinguish. Here, then, was something definite to go upon, and I tried to think out some plausible reason for the improvement, and I imagined it was possible that the violent straining caused by the sickness might have forced more blood into the retinal vessels in the same way as into the vessels of the skin of head and neck, as evidenced by the intense congestion observed in such cases. It seemed to me at least plausible that in this way a greater blood supply, and consequently more pabulum, might have been conveyed to what had been a starved retina. I then thought of using amyl nitrite occasionally, keeping the patient lying down as much as possible, and using red glasses, which recent experiments of mine seemed to show are less exhausting to the retina.

Realizing that in retinitis pigmentosa the retina was, as it were, starved by the diminished blood supply through the contracted vessels, I wondered if any good would result by charging the blood more richly with the retinal constituents, and so compensating for the limited supply, and it was with this end in view that I first tried feeding with raw retinae of sheep and oxen. The results have been so striking that they seem to suggest that there may be some active principle present in retinae, and that the results are not due merely to the pabulum supplied by anatomical constituents of a similar tissue. Of course, it is very necessary to be on one's guard against accepting too readily that the results obtained are directly due to the treatment. One recognizes that the indirect effect of any treatment may be the real cause of any apparent improvement; in other words, the concentration of the mind upon any organ may stimulate any latent function that may remain. Such results we often see in the so-called Faith cures and Christian Science.

One thing, however, is perfectly clear, that there is actual improvement in function, and not mere imaginary improvement, the wish being father to the thought. For the patients, without any leading questions, themselves suggest the exact course of physiological improvement that one would expect. For instance, a patient who eventually gained a striking improvement explained early in the course of treatment that though she did not seem to be able to read more or smaller print, yet that it looked much blacker, whereas formerly the ink looked so pale that at times she could hardly distinguish it from the paper. Again, a man who asserted he was sure he was much better, when pressed to explain how he recognized his improvement, said that he could see the red flowers in the gardens quite readily, whereas he had not been able to do so for a considerable time before.

It would not be appropriate for me now to enter into technical details of the series of cases in which I have tried this remedy; this I hope to do at the meeting of the British Medical Association at Swansea, but I may give you one more fairly conclusive piece of evidence of the value of this treatment.

After I had had several cases, all of which seemed to show very decided improvement, I remarked that, if this treatment was as valuable as it appeared to be, there was one disease that should be markedly benefited—that being tobacco amblyopia, which is very generally considered to be associated with some want of nutrition. Now, tobacco amblyopes whose vision is grossly reduced usually require three to four weeks' treatment before they show any marked improvement. The result of my trying this treatment on four cases was that within fourteen days, though they were not well, they could read small print quite readily. I think that ophthalmic surgeons will recognize this as a fair test of the value of the treatment.

The great difficulty has been securing the needful supply of fresh retinae. I have usually given from six to nine daily to each patient. But retinal tissue degenerates very rapidly, and there is great difficulty, especially in London, in getting them fresh from the slaughterhouse. I have made various experiments in attempting to secure a potent extract, which have been continued by Messrs. Burroughs, Wellcome and Co., and, under the dame of "Optocine," they can supply an extract that seems to have all the value of fresh retinae. I should mention that, so far as I have been able to make observations, improvement can only be expected in cases of retinal atrophy in contradistinction to nerve atrophy. It would be well, however, to have a much more extended observation before coming to any definite conclusion on that point.

The cases in which I have had marked improvement have been retinitis pigmentosa, retinal degeneration in high myopia, retinal degeneration in choroiditis, and tobacco amblyopia. Cases of asthenopia from functional exhaustion should undoubtedly be benefited, but I have not as yet used it in such cases for two reasons: first, the difficulty of getting a sufficient supply of retinae; and, secondly, because they, of all cases, would be apt to be the most misleading. If its value can be established in gross cases, it can be given with confidence in minor troubles.

That is all I have to say on this occasion. I hope before long that other ophthalmic surgeons will be able to endorse my experience. I am anxious that this particular treatment of retinae that I am introducing to you should not be discredited by making greater claims than can be substantiated by actual experience.

I shall be glad at any time to communicate with any medical man who wishes for particular information with respect to this treatment.

* Delivered before the Oxford and Reading Branch of the British Medical Association.

TWO CASES OF FRACTURE OF THE BASE OF THE SKULL, WHICH RECOVERED AFTER VENESECTION.

By STEPHEN PAGET, F.R.C.S.,

Surgeon to the West London Hospital; Surgeon to the Throat and Ear Department of the Middlesex Hospital.

Two cases are not of much value; but the treatment, when a patient with fractured base begins to lose ground, is so nearly hopeless that they may be worth recording. In each of them, so far as I can see, the patient's life was saved by free bleeding, and by that alone. The first of them has already been published in the BRITISH MEDICAL JOURNAL (October 5th, 1901), and I give only an abstract of it here.

CASE I.—A young man, who had fallen from a height, was admitted to hospital on the night of June 8th, 1901. There was a wound an inch long over the occiput; he was unconscious, bleeding from nose and ear; pupils unequal; breathing stertorous; temperature 96°. On June 9th, in the morning, he had recovered consciousness, and complained of severe headache; in the evening he became very restless, irritable, constantly trying to get out of bed; temperature 100°. On June 10th, in the morning, he was again unconscious, and the breathing was of the Cheyne-Stokes type; knee-jerk absent; constant spasmodic movements of lower jaw and of eyelids; temperature 102.4°. In the afternoon the temperature had risen to 104°, the Cheyne-Stokes breathing was intensely marked, the pulse was slow and of high tension; the face was deeply congested. It seemed certain he could not live more than a few hours. He was now bled from the arm to 20 oz.; and during the night he was bled again to 12 oz. On June 11th, at 8 a.m., the temperature was 101.5°; the

breathing a few hours later became regular. Evening temperature 101.3°. On June 12th the morning temperature was 100.4°, patient sleeping comfortably. In the evening knee-jerk returned: patient could understand what was said to him. On June 13th he could answer questions; complained of severe headache; evening temperature 98°. June 17th. To-day for the first time, nine days after the fracture, there was a discharge of bloodstained cerebro-spinal fluid from the ear. This discharge lasted till July 14th, that is, for four weeks. The patient left the hospital quite well on July 25th.

CASE II.—Dr. Hawkins of Broxbourne kindly lets me publish this case. The patient, a middle-aged man, was thrown out of a trap on March 13th last, and was picked up unconscious, with no visible injury except a trivial cut over the left eyebrow, and a broken wrist. The left pupil was widely dilated and immovable, and there was complete loss of power, but not of reflex movement, in the left arm and leg. For a day or two he remained wholly unconscious: then there came a return toward consciousness, and he could answer questions, and said a word or two now and again: and at nights he was restless, talking wildly.

He remained in this state for a fortnight. On the fourteenth or fifteenth day he took a change for the worse: there was a slight rise of temperature, with quickened pulse and respiration, more complete paralysis, and deeper unconsciousness. I saw him for the first time on April 1st, the nineteenth day: the temperature was normal that day, and we decided to wait. Next day it rose to 102°. On the twenty-first day, with the help of Dr. Hawkins and Dr. Hoskins, I exposed the bone in the left temporal region, and found it fractured but not depressed. The chief line of fracture ran downward to the base of the skull. While I was examining the fracture blood began to well up through it so freely as to hinder the use of the trephine, and I had to use a mastoid chisel and a cutting forceps. The bleeding, which came from a vein of the dura, stopped so soon as it was exposed. The dura was very tense, and did not pulsate; it was incised, and about a drachm of clear fluid was let out; the dura then fell inward over a depression of the brain, and pulsated freely. A strip of gauze was laid over it, and the wound was closed. There was free bleeding into the dressings a few hours after the operation, so that he lost, at and after the operation, about 12 oz.

For the next few days he seemed a little better, and on April 7th the loss of power was less marked, and the temperature was normal, and he was quiet and sensible, and for the first time spoke of his accident, remembering how it had happened. On April 10th, the twenty-ninth day, he relapsed again, and next day he had a rigor, temperature 103°, and signs of pneumonia at the base of the lung. He was now bled by Dr. Hawkins to 12 oz., and that evening his temperature fell to normal, and he was quite sensible.

During the next week, April 12th to 18th, he very slowly gained ground, the pneumonia cleared up, and he became stronger and more responsive, recognizing those round him, and fairly sensible during the day; but at night he was very restless and excitable, trying to get out of bed, and talking and behaving like an insane person. Sensation was almost unimpaired, both in the arm and in the leg, and there was no impairment of vision. On April 19th, for the first time, thirty-two days after his accident, he began to move the arm, and could move the leg more freely; he was still very noisy at night.

On June 13th, Dr. Hawkins writes, "He is recovering slowly: he can walk with a little assistance, and sits up to meals. His head-symptoms are also subsiding."

These two cases have not much in common, except that in each of them recovery seems to have been due to venesection. It may be well to take the second case first. Here the evidence is incomplete, because the occurrence of pneumonia confused the issue; but it seems almost certain that the temporary improvement after the operation was due partly, if not wholly, to the loss of blood at the time, and that the improvement which began on the day of the venesection was due to the venesection, and to that alone.

The other case speaks for itself. Here was a man who, thirty-six hours after fracture of the base of his skull, was profoundly unconscious, with a temperature rising rapidly to 104°, and the intensest degree of Cheyne-Stokes breathing. It was impossible to doubt that he was dying fast; but so soon as he was bled to 20 oz. *plus* 12 oz. he began to get better, and made a complete recovery. The delay of nine days before the cerebro-spinal fluid began to flow from the ear is hard to understand: probably it was due to the lowering of the blood pressure by the venesection.

If venesection in cases of this kind could restore consciousness more or less for a few hours only it would still be a valuable method. But these two cases seem to show that it may in this or that case, as it were by chance, bring about not mere temporary improvement, but recovery.

SANATORIA FOR CONSUMPTIVES IN MADEIRA.—Prince Frederick Charles of Hohenhohe has asked permission of the Portuguese Government to erect vast sanatoria in Madeira. He has offered by way of payment to the State or to charitable institutions one third of the net profits, in the meantime paying a deposit of £20,000. The Prince is said to be forming a company, with a capital of £2,000,000, which will undertake to open within two years two magnificent sanatoria in Madeira.

THE BURIED UNABSORBABLE LIGATURE AND ITS SEQUELAE.*

By C. HAMILTON WHITEFORD, M.R.C.S., L.R.C.P.,
Plymouth.

SURGICAL literature for years past has teemed with references to, and with explanations and excuses for, the perverse behaviour of what has been euphemistically termed "the permanently buried unabsorbable ligature."

That a sterile unabsorbable ligature, of which silk may be taken as the type, planted in an aseptic wound ought to remain permanently buried is perfect in theory, but when in practice it is found that such a ligature is shed, its reappearance is accounted for by the statement that the ligature must have been infected at the time of the operation.

The following remarks refer to the soft tissues of the body, more especially the muscles: The rigid tissues, such as bones, come in rather a different category, although even in the case of the bones it is not an infrequent occurrence for a screw or wire, after lying quiet for months, to create a disturbance which necessitates the removal of the offending body.

During the past eleven years I have seen, both in hospital and private practice, frequent examples of this process of ligature shedding from wounds which have healed by first intention and have remained healed for weeks, months, or even years before disgorging the unabsorbable ligatures.

The ligature of an ovariotomy pedicle is frequently a beautiful example of this process. I have seen such a ligature removed four years after its insertion, when it was caught in the act of perforating the bladder. Doran has quoted a case in which such a ligature had to be removed ten years after its insertion.

A recent case which has come under my notice is that of a lady who had a painful loose kidney fixed with sutures by a well-known surgeon. The wound healed *per primam*, and the kidney pain was cured, but a month later the loin became tender, a sinus formed from which, after many weeks of annoyance, appeared the silk ligature, and at the present time, six months after the operation, the persistence of a tender sinus suggests that other ligatures will follow.

In explanation of cases such as these, I am asked to believe that: (1) The ligatures were infected at the time of the operation, but that (2) the infecting bacteria did not prevent sound union by first intention, and (3) these bacteria, after lying dormant for many weeks, months or even years, during which time they neither injured, nor were injured by, the tissue cells among which they lay, have suddenly broken out into activity and have caused the ligatures to be shed.

I am unable to accept such a string of improbabities. In a patient peppered with shot, the leaden pellets continue to be extruded for years after the apertures of entrance have healed. These shot are not accused of being septic from the time of their insertion to the time of their extrusion. In a patient peppered with silk, the pieces of silk are similarly shed, but are said to have been septic throughout.

I grant that the sinus from which the shot or silk appears is septic and also that the shot or silk at the time of its reappearance is septic, but that is a very different thing from admitting that the foreign body has been septic from the day of its insertion.

I am fully aware that some ligatures are not shed, that is to say, they do not escape from the patient's body, but how many of them can be found in their original situation a year later? Very few, and if they have been placed in muscular tissues which are frequently and actively contracting, search for such ligatures is usually futile.

What has happened is this. A ligature uniting muscles which are constantly changing their relative positions and forms, gradually cuts its way through until it lies loose among the tissues. Then one of two things takes place.

1. If unexposed to muscular action the ligature becomes more or less encapsulsed, or (2), what is much more probable, it is propelled by the movements of the muscles which surround it, in the same way as a needle is moved by muscular action, and drifting with the tide, ultimately settles in some backwater, where it can lie in peace undisturbed by muscular contractions. In this haven of rest the foreign body, for such it really is, becomes more or less encapsuled by the action of the surrounding cells. In the first instance the ligature is encapsuled at its original site, in the second it becomes encapsuled at a distance from its first habitat.

* Read before the South Western Branch of the British Medical Association.

Thus far the process has been an aseptic one; bacteria have played no part. Why, then, does not the ligature remain buried for ever? The reply is that it would do so were it not for the advent of bacteria, which have a special affinity for damaged tissues, in this case the tissues surrounding the foreign body.

The presence of bacteria from time to time in the blood stream is an admitted factor in the infection of deeply-situated organs, such as bones, when the infection takes place without any breach of surface, as in cases of osteomyelitis. It is from the blood stream that many of these ligatures become infected. In some cases the bacteria are derived from viscera in which they normally live—for instance, from bowel—which may be adjacent or adherent to the ligature. The ligature has not always been infected any more than the bone has been.

The use of unabsorbable ligatures and sutures results from an exaggerated idea of what ligatures are capable of effecting. Ligatures simply hold tissues in apposition temporarily while they are uniting, and unless the tissues grow together not all the silk and metal in the world will produce permanent union, and when this union has taken place the ligature has served its purpose, and the sooner it disappears from the scene the better for all concerned. A ligature which lasts at most a few weeks will do all that is necessary or can be expected.

Catgut, if necessary hardened by chemical reagents, answers this purpose, because after a few weeks it is disintegrated, and as a definite body ceases to exist. Catgut, prepared by either the formalin or xylol process, produces immediate results equal to those of silk, and being absorbed within a few weeks causes none of the annoying sequelae inseparable from the use of unabsorbable material. The unabsorbable ligature must from its nature always be a foreign body, which, as soon as it becomes infected, but not before, will result in suppuration.

The soft tissues of the human body are unsuited to act as a cemetery for pieces of knotted silk and twisted metal, and if surgeons persist in peppering their patients with these foreign bodies, no matter how freely boiled or carbolized, they must expect them to be extruded at varying intervals, just as shot are worked out a person who has been peppered with lead.

THE TREATMENT OF HYDROCELE BY THE METHOD OF SETON.

BY A. A. SCOT SKIRVING, C.M.G., F.R.C.S.ED.,
Assistant-Surgeon, Leith Hospital.

AT the spring meeting of the Edinburgh, Fife, and Lothian Branches of the British Medical Association I showed five patients in whom cure had taken place by means of the above method. The ages of the patients were 47, 16, 9, 2¾, and 1 year. In the case of two of them nine months and seven months had respectively elapsed since treatment; in the others treatment had been more recent. In two of the cases, previous treatment by tapping and by needling the inner wall of the sac had been tried without effect. In four other patients, referred to but not exhibited, cure had occurred in two cases, recurrence in two cases. The former were young children, the latter adults of 69 and 49 years of age respectively, in whom the condition had existed for many years. Both of the latter cases had previously been repeatedly tapped, and one of them, if not both, had been injected with iodine without success. Since the meeting, one further case, an infant, has been treated by the method, and so far no recurrence has taken place.

The treatment of hydrocele by means of a seton, combining as it does two other treatments of hydrocele, namely irritation of the sac and drainage of its contents, has probably suggested itself to others besides the writer as an apparently original method. It is, however, very far from being new, although it has dropped out of modern textbooks. It was, indeed, employed as long ago as the time of the Arabian surgeons. Later, it was revived by Percival Pott, and practised by Sir Astley Cooper and others. It, however, again fell into disuse.

Two reasons probably account for this. In the first place, it is certain that the method cannot be relied on invariably to cure hydroceles in adults, and it is quite useless in old-standing cases of hydrocele with thickened walls. But no more can be claimed for injection, however thoroughly done, or for any other method short of (*a*) excision of the parietal layer of the tunica vaginalis, or (*b*) Winkelmann's more recent inversion operation. Secondly, there is the risk of sepsis. Probably it is this which has been the important factor in causing the method to be abandoned.

That sepsis not infrequently occurred in this region, one can readily imagine, and the older records show that it did. With proper care, however, sepsis nowadays should very rarely take place, and it would therefore seem worth while to give this old method a new trial under happier conditions.

I do not venture to draw any absolute conclusion as yet from so small a number of cases, but the impression I have gathered in comparing these results with those of previous cases treated by injection is distinctly favourable to the seton. Should further experience show this impression to be well founded, the seton may prove of service to those who do not care to undertake either of the two radical operations referred to.*

The actual method adopted by the writer is slightly different from any of those briefly referred to in the older books. A sterilized trocar and cannula of the ordinary pattern, but rather longer than usual, are thrust from behind forwards completely through the affected side of the scrotum. The trocar is withdrawn, and two or three strands of silkworm gut are passed through the cannula and secured. The cannula is next partially withdrawn, and the hydrocele emptied. The cannula is then completely withdrawn, and the two ends of the seton tied together in front of the scrotum. Horsehair or silk can also be employed; if ordinary catgut is used, the knot may soften and come undone. It is important to leave some "slack" to allow for any subsequent swelling of the parts within the loop.

This little operation can easily be carried out in thirty seconds. No local anaesthesia is necessary. If the trocar is sharp, no more, or very little more, pain is felt than in ordinary tapping, and much less than in injection of iodine without cocaine.

After a variable number of hours, swelling of the epidymis, and sometimes of the cord, generally occurs, and is accompanied by some tenderness, which lasts for a few days, or until the removal of the seton. The swelling may be very marked, and may persist for some weeks after the removal of the seton. It is difficult to say when the seton should be taken out. The shortest period during which it was retained in any of the above cases was two days. On the other hand, in one of the chronic cases, in which treatment proved useless, it was kept in for two and a half months! Probably four or five days is sufficient, if a cure is going to occur at all. While the seton remains in, and for a day or two afterwards, a moist antiseptic (boracic) dressing is kept applied. This encourages drainage, is soothing, and protects the parts.

Since the danger of sepsis is the point most to be considered, it is, perhaps, not superfluous to mention how this, in the writer's opinion, may without very much trouble be avoided. The whole neighbourhood is first well washed with soap and water. In adults it is safer to have the pubes shaved as well. In infants a boracic, and in adults a weak carbolic, fomentation is then applied for some hours. Just before passing the seton, the scrotum is washed with spirit. The retention of the dressing can be satisfactorily accomplished if the entire scrotum is enveloped in the dressing, if a small aperture be made for the penis both in the lint and in the guttapercha tissue or jaconette which covers it, and if a suitable bandage be applied. A double spica of the groin, with "variations" across the scrotum, answers well, slits being made for the penis in some of the scrotal turns, and plenty of safety pins used. In infants, a small piece of jaconette is usefully pinned on over all.

Where a hydrocele, either of the scrotum or cord, obviously communicates with the abdominal cavity, neither setons nor injections should, of course be employed. Here excision alone should be performed. In children, however, there is often some doubt as to whether a minute communication exists or not between the two sacs. I do not think this uncertainty should weigh as an argument against the careful use of the seton. Even if sepsis did occur in such a case, the danger of peritonitis must be remote, since the "peritonitis" in the sac of the hydrocele would almost certainly shut off the greater sac from infection?

* Cure can also, of course, be obtained, by the old tedious method of incising the hydrocele and causing it to granulate up from the bottom.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

ADENITIS MISTAKEN FOR CANCER OF THE PANCREAS.

At the present time, when one is constantly reading of cures of cancer by all sorts of methods, it seems worth while recording the after-history of what was considered a hopeless case of cancer of the pancreas.

A woman, aged 35, attended a London general hospital with a tumour of the upper part of the abdomen. Her abdomen was opened, and the disease pronounced to be cancer of the head of the pancreas. She was discharged unrelieved. Complaints of pain and rigidity of the spine only confirmed the diagnosis, and she went home to die.

I was asked to see her to advise as to giving her some relief for the intolerable pain in her back. She had just been confined, but was unable to lie down or to remain easy in any position. There was deep fluctuation on the left side of the spine in the mid-dorsal and lower dorsal region, and on cutting down at the outer edge of the erector spinae I opened a large and foul abscess cavity, letting out about half a pint of pus. The abdominal tumour disappeared, and in three weeks the woman was well.

The case was evidently one of suppurating glands in front of the spine, pushing forward the head of the pancreas, and spreading backwards along the posterior branches of the dorsal and lumbar arteries.

A. E. Kennedy,
Honorary Surgeon Maternity Charity and
St. Mary's Children's Hospital.

Plaistow, E.

GANGRENE OF MECKEL'S DIVERTICULUM.

G. R. C. was first seen at 7 a.m. on November 12th, 1902, having been taken suddenly ill with violent pain in the abdomen on November 5th. His parents at first thought he had colic, but as the pain kept on, the temperature rose, the abdomen became distended, and neither purgatives nor enemata succeeded in getting the bowels to act, they got a doctor on November 10th, from about eighty miles away, and he ordered the boy to be taken into Kimberley for operation. This journey, sixty miles by wagon and forty by luggage train, did not improve matters, and operation was evidently only a very forlorn hope, as the abdomen was greatly distended, fairly acute peritonitis was present, and there was a good deal of fluid in the peritoneum. On opening the abdomen in the middle line, the fluid was found to be clear and quite sweet, but the peritoneum was acutely inflamed, a thin band ran from the anterior abdominal wall, a little to the right of the incision and midway between the umbilicus and pubes, deeply amongst the coils of intestine towards the sacral promontory where it was apparently adherent, but owing to the great distension of the intestines it was impossible to make out the exact relations of the parts. This band partially strangulated several coils of intestines which lay between it and the lateral wall of the abdomen on the right, and there was a good deal of flaky lymph exuded on the bowels at the seat of the strangulation. Ligatures were tied round each end of the band, and a piece about 2 in. long was excised between these ligatures. Not being quite satisfied that this band was sufficient to cause all the symptoms, a further examination of the bowel was made, and whilst feeling down in the pelvis a sudden gush of thin, black, fetid fluid, evidently faecal, welled up. Examining carefully a sloughy piece of bowel was felt, and I found that it was an end, and at first thought I had torn a gangrenous piece of bowel right across, but, failing to find the other end, I brought the gangrenous piece to the surface, and then discovered that it was the end of a diverticulum 3 in. long, which sprang from the ileum about 4 in. from the caecum, and was of about the same calibre as the ileum. The appendix was quite healthy, and had nothing to do with the peritonitis. Only the last 1½ in. of the diverticulum was gangrenous, so there was no difficulty in cutting it off close to the ileum and closing the resulting opening with Lembert sutures.

The abdomen was washed out as carefully as possible with warm boracic solution, and a search made for any concretion or foreign body which might have started the inflammation in the diverticulum, but nothing was found. The wound was closed, but a large gauze drain was put down into the pelvis. The patient did not rally, but died about six hours after.

The case is an unusual one; the band was evidently a part of the vitello-intestinal duct which had become obliterated fairly completely, but a part of it had remained patent and persisted as the diverticulum. I think the partial strangulation by the band only took place after the peritonitis set in and the bowel became distended. The real seat of the trouble was at the closed end of the diverticulum, but what caused it is not clear, as no necropsy could be obtained.

E. Oliver Ashe, M.D.Lond., F.R.C.S.Eng.,
Surgeon to Kimberley Hospital, South Africa.

PARTURITION COMPLICATED BY MALARIAL FEVER.

M. C., an English lady, was admitted to the Maternity Hospital of the Government Civil Hospital, Hong Kong, on December 21st, 1902. She was a primipara, at full time, and stated that she had been suffering from fever for some days, and that her temperature had reached 105° F. Though not in labour when admitted, she was recommended to come in at once owing to the fever, and especially as both she and her relatives were very anxious. Her temperature on admission at 9 p.m. was 101.6° F., descending to 98° F. on the following morning. She was placed on low diet, milk Oj, and chicken broth Oss, with a diaphoretic mixture ordered every four hours. A blood film examined at noon showed her to be suffering from malarial fever of mixed infection (simple tertian and aestivo-autumnal). Five grains of quinine in pill were ordered thrice daily, and one pill was given at 6 p.m. when the temperature was 98.2° F. Symptoms of commencing labour were then apparent, and the pains continued during the night. At 6 a.m. on December 23rd the temperature was 100° F.; it reached 100.5° F. at 12.15 p.m., when the child was born. Beyond slight *post-partum* haemorrhage, checked by a hot lysol douche, the labour was normal. The pills were now ordered every four hours, but the temperature steadily rose and at 8 p.m. the same evening reached 104° F. Except for a severe headache the patient stated that she felt very comfortable. The diaphoretic mixture was continued and by noon on December 24th the temperature registered 97.4° F. The temperature now remained normal and on December 27th a blood film was examined when a few ring-form parasites were found, but no simple tertian parasites were to be seen. Quinine was continued and the patient discharged eighteen days afterwards free from malaria after repeated careful blood examinations; temperature had been normal for twenty days.

This case is interesting from the fact that the patient had arrived in this Colony only a few months previously. She had never had malaria before, and did not come from a malarial district, but during her stay in Hong Kong she had resided in a locality known to be infested with *Anopheles*, and where malaria was rife (Macdonnell Road).

Immediate blood examination revealed the cause of the fever, and the subsequent rise of temperature after labour caused no anxiety as to sepsis, etc., besides enabling us to ease the mind of the patient and her relatives as to prognosis.

Wm. Atkinson, M.B.Lond., etc.,
Principal Civil Medical Officer.

Hong Kong.

NOTES ON A CASE OF EXTREME HYPERPYREXIA.

The following notes may be of interest, as a temperature of 111° F. is not often met with in general practice.

The history of the case is as follows: J. L., aged 24, cook, had enjoyed good health until May, 1903.

History of Illness.—At the end of May she had an attack of rheumatic fever, for which she was treated at her employer's house. Not making good progress there she came home at her own request, and was attended by her family doctor (Dr. W. H. Stevens, Bristol), for whom I saw the patient, and by whose permission I publish these notes. He informed me that she had had a relapse, and that he had been treating her for rheumatic fever complicated by mitral incompetence—the temperature varying between 101° and 104° F. When I visited her on the morning of June 24th she was unconscious, and presented all the clinical symptoms of one dying of rheumatic fever and extreme hyperpyrexia, the temperature, which I took twice to prevent error, being 111° F. She died ten minutes after I left the house. I was, unfortunately, unable to make a necropsy.

Remarks.—Such an extreme rise of temperature is unusual, but when met with nearly always a symptom of the final stage of a fatal disease. This is well illustrated in this case, as her temperature the previous evening was 104° F., when she was conscious and able to recognize her friends, her unconsciousness not coming on till about two hours before death.

Very high temperatures are not uncommon in patients after spinal injury, Weber[1] recording one of 111.2° F., and Quincke[2] another of 110.2° F.; in both these instances the patients had sustained spinal injuries.

I have before this met with a temperature of 107° F. shortly before death in a girl suffering from acute general peritonitis.

Bristol. E. G. BUNBURY, M.R.C.S., L.R.C.P.

POTASSIUM PERMANGANATE IN THE TREATMENT OF LUPUS.

MR. J. HALL-EDWARDS's communication on the above subject appeared in the BRITISH MEDICAL JOURNAL at a time when I was treating a most intractable case of ulcerative lupus of the nose, and with only partial success. I hastened, therefore, to try potassium permanganate, and with the most excellent result. The patient, a boy aged 15, had a large ulcerated patch of lupus embracing the point of the nose, with the outer edge and part of the septum of one nostril. The portion on the point of the nose had healed by the use of a Miller lamp, with ice compress and adequate pressure, which latter could be exerted on that part of the ulcer; the remaining surface, however, gave a good deal of trouble, refusing to heal, and simply crusting over. These crusts I painted with a saturated solution of potassium permanganate, and on the third application they came away, leaving a healthy-looking surface. To this I am now applying the rays from a Miller lamp, and, although not yet quite healed, it is responding in a most gratifying way to the treatment, healing steadily, and forming no crusts.

I feel greatly indebted to Mr. Hall-Edwards for what has been to me a most timely suggestion.

Bideford, N. Devon. ELLIS PEARSON, F.R.C.S.E.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

LIVERPOOL INFIRMARY FOR CHILDREN.

OBSTRUCTION OF ILEUM BY ADHERENT APPENDIX EPIPLOICA OF SIGMOID FLEXURE.

(By R. C. DUN, C.M., F.R.C.S.Eng., Surgeon to the Infirmary.)

ABNORMALITIES of the appendices epiploicae of the large intestine have for long been recognized as among the rarer pathological conditions giving rise to intestinal obstruction. But the recorded cases are few, and the following one is of interest in adding to their number, and in differing, in some respects, from any previously reported case.

History.—The patient, a boy aged 4½, was admitted to the infirmary on a Saturday evening. On the Tuesday, five days before admission, he had complained of slight abdominal pain on getting up in the morning, and could not eat his breakfast. A dose of Gregory's powder was given and immediately vomited. Very shortly after a severe attack of pain in the abdomen was experienced, causing the boy to scream and "double himself up." When put to bed, he lay with his legs drawn up, and the "stomach was very hard." During the day a number of similar paroxysms of pain occurred at intervals (about six in all), and everything taken by the mouth was vomited. An enema given in the evening led to no movement of the bowels. Attacks of pain occurred during the night, the child sleeping quietly in the intervals. On Wednesday the abdominal pains were more frequent and severe, and were always accompanied by vomiting. The next day the same symptoms continued, and the boy was taken to a doctor. Castor oil and some medicine, to be taken thrice daily, were ordered. Vomiting followed immediately on their administration, and all food taken was at once returned. On the Friday and Saturday the symptoms gradually increased in severity. The vomiting became almost continuous, and the vomited matter was of a green colour. The abdominal pain was constant, with occasional exacerbations. During the last two days the boy had lost flesh rapidly and become very weak. The bowels had not moved since the night before the onset of symptoms, when a natural motion occurred. Neither flatus, blood, or mucus had been passed per anum. The child had been in perfect health up till the Tuesday morning. There was no history of tubercle in the family, and five other children were all strong and healthy.

State on Examination.—The child was well grown but extremely thin. He was in a state of collapse, with face pale and drawn; the pupils were dilated; pulse 100 and easily compressible; temperature 99° F. He lay on his back with the legs drawn up. The abdomen was moderately and generally distended, and moved slightly with the respirations. I could distinguish no irregularities of the abdominal wall such as might have been caused by distended coils of intestine. The boy did not appear to be suffering severe pain, but when asked where it hurt him he placed his hand on the umbilicus. On palpation the whole abdominal wall was equally resistant. The child appeared to suffer increased pain when gentle pressure was made in the epigastric region, and the finger tips could be passed more readily than normally into the right iliac fossa. On percussion a tympanitic note was given over all the regions of the abdomen. No hernia could be found in any of the usual positions, and rectal examination threw no light upon the condition. While being examined a small quantity of bile-stained fluid with no faecal odour was vomited after much retching.

Diagnosis.—In the absence of the passage of blood-stained mucus from the bowel I set aside intussusception in coming to my diagnosis and decided that I had to deal with some form of internal hernia. The child was immediately prepared for laparotomy and chloroform administered. Under the anaesthetic abdominal palpation revealed a hard, slightly elongated swelling, about the size and shape of a walnut, lying with its long axis vertically placed, immediately below the umbilicus. This swelling appeared to be fixed and deeply situated.

Operation.—I opened the abdomen in the middle line below the umbilicus. The great omentum was found thickened and congested and firmly adherent to the abdominal wall, necessitating its division in the line of the skin incision, with ligature of bleeding points. Numerous coils of distended and congested small intestine were thus exposed, the

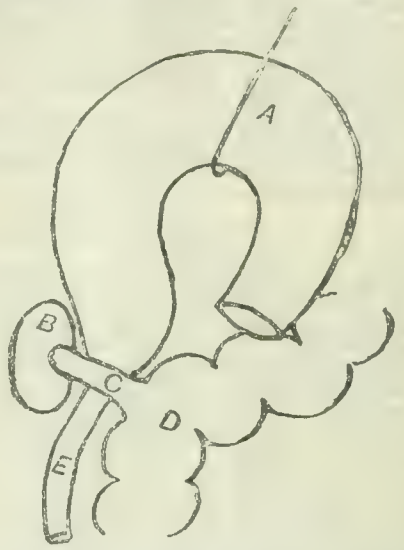


Diagram showing relations of adherent appendix epiploica. A, distended small intestine pulled up out of pelvis; B, enlarged gland; C, adherent appendix epiploica; D, sigmoid flexure of colon; E, collapsed small intestine.

vascularity being most marked in those lying towards the lower half of the abdominal cavity. To the left of the middle line a long narrow band passed down from the free lower edge of the omentum to be attached to the parietal peritoneum over the iliacus muscle at a point about one inch immediately posterior to the left anterior superior spine. This adhesion was stretched over several coils of small gut, and lay in a distinct groove in the intestines over which it passed. Seeing, however, that the intestinal coils on either side of it were equally distended, and that gas could readily be made to pass from one portion of the gut to another under the adhesion, it was obvious that the tension of this band was insufficient to cause complete obstruction. I next proceeded to examine the hard mass which had been felt through the abdominal wall before the operation, which was now readily palpable by the hand in the abdominal cavity. To get at it I had to pull up from the pelvis a deeply-congested and widely-distended loop of small intestine. On packing this coil up into the superior angle of my incision, and retracting the edges of the wound, I exposed an enlarged retroperitoneal gland nearly an inch long, lying on the anterior surface of the fifth lumbar vertebra, and bulging forward the overlying peritoneum. Several small yellow areas were present on its surface, indicating the caseous nature of its contents and thinning of its capsule. Above and below this larger gland were several much smaller ones. On raising the distended loop of small intestine, it appeared, at first sight, to end abruptly at the left side of this enlarged gland. But upon closer examination it was seen that the small gut was at that point bound down by an adhesion which crossed its anterior aspect, the intestine below the band being pale and collapsed and passing down again into the pelvis. The constricting band passed from the left side of the middle line, where it was attached to a portion of large intestine, and ran in front of the small gut, to become adherent to the anterior surface of the capsule of the enlarged gland. The portion of large gut to which this band was attached was recognized as the lower part of the sigmoid flexure of the colon; the mesocolon was long, and the gut was displaced towards the middle line

[1] *Trans. Clin. Soc.*, vol. i, 1868.
[2] *Berl. klin. Woch.*, 1869, N. 29.

by the traction of the adhesion. This band proved to be a thickened and elongated appendix epiploica. Several large free appendices were seen hanging from the same region of the sigmoid flexure. The adherent appendix was about 1 in. long and ⅝ in. broad, it was flattened antero-posteriorly, lay almost horizontally in the abdomen, and was firmly attached distally to the gland capsule. During manipulation gas passed, in considerable quantity, from the distended intestine above the constriction into the pale and collapsed gut below it. I found that there was no difficulty in passing a double ligature round the adhesion: in fact the little finger could be inserted under the band as far as the middle of terminal phalanx. Unfortunately in tightening the ligature close to the gland, its thin capsule gave way, and about two teaspoonfuls of thick caseous material escaped into the abdominal cavity. This was carefully removed with sterilized gauze, and the gland cavity gently cleaned out with the same material. When the band was divided and the constricted area examined, it was found that the obstructed portion of ileum was situated some 4 ft. from the ileo-caecal valve. The seat of constriction showed a transverse groove on its anterior aspect, markedly anaemic, but not gangrenous, where the gut had been folded over the free upper edge of the adherent appendix epiploica. The mesentery attached to the constricted portion was much thickened and shortened, being only about 1½ in. in length. The caecum was collapsed and the vermiform appendix healthy. Owing to the escape of tuberculous matter from the ruptured gland, a glass tube with gauze wick was used, passing down into the pelvis from the abdominal incision, which was closed round it. The operation lasted twenty-five minutes. Flatus was freely passed and there was only one attack of vomiting after its completion, but the child never rallied, and died twelve hours later.

Pathological Report.—I was unable to obtain permission for a necropsy, but on reopening the wound I discovered the ileum at and beyond the seat of constriction considerably congested. I removed the enlarged retroperitoneal glands, and found them to be clearly tuberculous. Portions of thickened mesentery and two elongated appendices epiploicae which I removed from the sigmoid flexure showed microscopically diffuse round-celled infiltration, but no typical tuberculous deposits. There was no free fluid in the abdominal cavity, and no intestinal diverticulum was found in the ligatured base of the adherent appendix epiploica.

Remarks.—I believe that the obstruction in this case was not due to actual constriction of the intestine by the adherent appendix epiploica. Its firm adhesion to the gland capsule indicated that it had most probably occupied the position found at the operation for a longer period than that during which symptoms were present. The ready passage of gas from the distended intestine above the adhesion into the collapsed portion below it during the handling of the gut before the band was divided, and the ease with which the finger could be passed under the adherent appendix also indicate that the tightness of the band was not the principal factor in producing occlusion of the intestine. I am inclined to take the view that the bowel had been crossed by the epiploic appendage for some time, but that no symptoms of the condition resulted until a sudden peristaltic movement caused the portion of small intestine immediately above the band to fall into the pelvis. This would appear to have led to a kinking of the gut over the free upper edge of the adherent appendix and consequent acute intestinal obstruction.

REPORTS OF SOCIETIES.

Ceylon Branch of the British Medical Association.—At a meeting held on May 30th, Dr. T. F. Garvin, President, in the chair, a paper on *post-partum* hemiplegia was read by Mrs. S. C. K. Rutnam. She said paralysis of almost all varieties might complicate any part of the gestational or puerperal period. The larger portion of reported cases, however, occurred before labour and were hemiplegic. In 35 cases recorded by Churchill, 23 occurred before labour and 12 during or after labour, 13 of the cases being hemiplegic. Imbert Gourbeyre stated that more than half of his cases occurred before labour, and two-thirds of these were hemiplegic. Charpentier in 1872 collected 172 cases, of which 57 were hemiplegias and 45 paraplegias. Aldrich in an instructive paper on the subject had classified the various paralyses met with, citing illustrative cases. Mrs. Rutnam presented this classification in tabular form, showing the various lesions, causes, and evidences of both gestational or *ante-partum*, and puerperal or *post-partum* paralysis. *Ante-partum* paralysis was usually uraemic. In 14 cases reported by Darcy, albuminuria was present in 9, while in 19 cases by Gourbeyre it was present in all. While haemorrhage was a frequent cause of hemiplegia before labour, embolism was a more frequent cause of *post-partum* hemiplegias. Cerebral haemorrhage following labour was usually associated with eclampsia. The majority of *post-partum* neuritides and paraplegias would be found to be due to a peripheral lesion, traumatic or non-traumatic. The injury to the nerve might be direct, due to unskilful use of instruments, or to pressure of the child's head on the lumbo-sacral nerve as it passed over the bony pelvic wall at the linea innominata, or it might be due to pressure on the nerve from exudations, septic or non-septic, into the surrounding tissues. Mrs. Rutnam read the following notes of an interesting case of *post-partum* hemiplegia:

The patient, a primipara, after a tedious labour was delivered by forceps at 1 a.m. Monday, October 27th, 1902. At the moment of delivery, the mother had an eclamptic seizure, and ten hours later a second convulsion; thirty-six hours after delivery she had a prolonged chill followed by high fever, great restlessness, and slight mania. She complained of much pain. The next morning (Wednesday) the temperature was normal but about 11.30 that night it suddenly dropped to 96°, and the patient lost all consciousness. Thursday morning (the fourth day after delivery) the left arm was noticed to be paralysed, and later in the day both legs were found motionless, while the right arm was continually being tossed about. On Friday the paralysis was more marked. There was conjugate deviation of the head and eyes to the right, some soreness of the eyes with matting and drooping of the lids, and the mouth markedly drawn to the right. The unconsciousness continued and food could not be given by the mouth. On Sunday the paralysis began to pass off, and during the week following rapidly disappeared. Consciousness slowly returned, although there still remained a certain stupor and slowness and indistinctness of speech. The patient was restless and sleepless, and constantly kept uttering cries of pain not unlike the howling of a dog. There was noticed a hard painful swelling over the whole sacral region, and urine still passed involuntarily on any attempt to move. Improvement continued slowly until the nineteenth day after labour, when, after a heavy meal, a mild diarrhoea developed and the patient lapsed again into a state of semi-consciousness, with constant cries and difficulty of swallowing. The case ultimately recovered, and two months after the confinement the patient, except for some general weakness, was enjoying perfect health.

A discussion followed.

REVIEWS.

INTERNAL SECRETIONS.

Dr. Gauthier has published a monograph[1] on thyroid treatment under the auspices of the Paris Academy of Medicine, and M. François-Franck, in writing a preface, gives expression to his appreciation of the industry with which Dr. Gauthier has for the last twenty years applied himself to the study of the thyroid gland both as a seat of disorder and as a remedial agent. Dr. Gauthier has divided his subject into two parts. The first contains a general study of the function of the thyroid gland, the parathyroids and the pituitary body; the second deals with the application of the thyroid, parathyroid, and pituitary tissues to the treatment of various disorders, some of which are obviously associated with changes in these bodies, and others are so obscurely related that they would not be discussed but for the contradictory results obtained by observers of good repute in the empiric application of these organs or their derivatives. Dr. Gauthier must not be considered to have been carried away by enthusiasm for his subject, because of his reference to the many and various applications of the thyroid gland to the cure of disease, although a cursory glance would seem to justify this criticism. It has been his purpose to review the observations of others, and the reader is left to judge for himself, the facts and references being abundantly supplied. Only occasionally does Dr. Gauthier state his own views, and then not obtrusively; sometimes he endeavours to find arguments to explain away difficulties which are insuperable in the present state of our knowledge, and we would call attention to his efforts in this direction in his explanation of the beneficial effect of thyroid treatment of myxoedema, Graves's disease, insanity, psoriasis, impotence, chlorosis, obesity, and simple goître; no wonder that M. François-Franck, in his prefatory notice, expresses a wish that the author had devoted a chapter to the advisability of keeping so powerful a drug strictly within medical control. Dr. Gauthier is sceptical of the results of mouth-feeding as against injection of thyroid products, and probably it is this which leads him to recommend so often, though not invariably, the use of such products as have been derived by chemical and physical means from the thyroid body, but the recognition of the existence of a vestige of the thyrolingual duct which originally entered the alimentary tract at the foramen caecum of the tongue may help

[1] *Les Médications Thyroïdiennes (Treatment with Thyroid Gland).* Par le Dr. Gabriel Gauthier (de Charolles). Préface de M. François-Franck. Paris: J. B. Baillière et Fils. 1902. (Royal 8vo, pp. 227. Fr.5.)

to explain any difficulty in this direction. The author expresses a preference for the glycerine extracts of the gland or for the "thyroidin" or "iodothyrin" of Baumann and Bayer, and also for the "arsenucleine" of A. Gauthier rather than for the iodine-free bodies "thyroantitoxin" and "thyroprotein" described by Fraenkel and Notkine. Practical hints are given for the successful management of a course of thyroid treatment. Just as arsenic prevents the unpleasant toxic effects of bromine, so too Mabille finds that arsenic given with thyroid products obviates symptoms of "thyroidism." Young subjects are very susceptible to thyroid treatment and readily show signs of over-dosage; death may even occur. The initial doses should be small, and care should be taken to ascertain that the heart, liver, and kidneys are in good condition: whilst under treatment the patient should be kept upon milk diet, preferably in bed to ensure warmth: treatment should be continuous, and no alcohol should be taken. Frequently thyroid treatment fails to relieve myxoedema, and readers will find an account of all available observations made upon the use of parathyroid tissue in the treatment of this disorder, as also in the treatment of exophthalmic goitre. Surgeons will appreciate Dr. Gauthier's well-known observation upon the good influence exerted by thyroid treatment in cases of delayed union of fractured bones. In fairness to the author, we abstain from further quotation; the work is replete with many observations both interesting and useful, and must be read by all observers following the subject of organotherapy. We miss, however, any reference to the observations and conclusions so thoroughly developed by Walter Edmunds, though every care is taken to give full appreciation of the work done by Horsley, Murray, Hutchinson, Mackenzie, and other British observers.

In the limited space which is all we can assign to Dr. SAJOUS'S *Internal Secretions and the Principles of Medicine*,[2] it is impossible to mention more than a few of his marvellous ideas for the reconstruction of modern physiology and medical science. He finds that the internal secretion of the adrenals is "of overwhelming importance," and regulates "the better-known organs, such as the heart, lungs, liver, etc.," which are described as "subsidiary structures." The adrenals are directly connected, by means of sympathetic nerves and ganglia, with the anterior pituitary body, which is "the most important organ of the body, as governing centre of the adrenals, and, therefore, of all oxidation processes." The thyroid gland is also important, because its "physiological purpose" is "to sustain the functional efficiency of the anterior pituitary body." These three glands form together the "adrenal system," which is "autonomous"; disturbance in the functions of this system is regarded as explaining the symptomatology and giving the clue to the treatment of most diseases, such as Asiatic cholera, pulmonary tuberculosis, tetanus, septicaemia, and hydrophobia, and a multitude of others. Syphilis, too, is described as "due to adrenal insufficiency." We think we have quoted enough to give our readers an insight into the character of the book before us.

PROTOZOA AND ANIMAL PARASITES.

THE importance of the protozoa as agents in the production of disease has of late years become more and more recognized. Up to the present time most of the literature on this somewhat complicated subject has been published in German and French, so that the small book entitled *Protozoa and Disease*[3] by Mr. J. JACKSON CLARKE will come as a boon to those whose time is limited and who are unable to read the many original papers on the subject. The scheme of the book is simple and good; it is not meant for the advanced biologist, but it should give the medical reader a very clear idea of the important pathogenic protozoa. The unicellular organism and the cell are dealt with in the first chapter. The others are devoted to a systematic description of the different groups of the protozoa, the sarcodina, sporozoa, flagellata, ciliata, etc. The part devoted to malaria will probably interest medical men most; its place in the group is well brought out, and a very good description is given of its different phases. The three groups included under the name of the neosporidia, though not of much importance from the human standpoint, are yet of considerable interest, pébrine, a disease that almost ruined the silk industry in France, being due to one, and an epidemic amongst fish in a trout farm in America to another. The chapter on the flagellata is also interesting; a good synopsis of the diseases caused by trypanosomes in animals is given, and the recent discovery of the disease in the human subject is dealt with. Leishman's modification of Romanowsky's stain might with advantage have been mentioned in the chapters on methods: it is simpler than many of the modifications, especially where time is an object, and the results are equally satisfactory. The book is copiously illustrated and contains good bibliographies, and will meet a distinct want.

The new and revised edition of Dr. Max Braun's book on the animal parasites of man[4] will be a welcome addition to the library of students of animal parasitology. The author commences his somewhat vast task with an introduction on parasitism in general, and then passes on to the classification of the individual parasites in detail. The *Protozoa* are taken up first, then the *Plathelminthes*, then the *Nemathelminthes*, and lastly the forms of the *Acanthocephali*, the *Hirudinei* and the *Arthropoda* that attack man. The trypanosomata, which belong to the flagellata group of the protozoa, are perhaps rather briefly dealt with when we remember that man is now known to be attacked by one of those minute organisms; the discovery is, however, mentioned and the names of Nepveu and Dutton associated with it. The *Coccidia* and *Haemosporidia* are described at length, and after a historical summary of the latter, malaria from the parasitic side is described. The account of this, both as regards the sexual and asexual stages of the organism, is good, and is supplemented by several of Grassi's original drawings, though the error of the Italian zoologist in calling the common European *Anopheles Anopheles claviger* instead of *maculipennis*, its proper name, is retained. Haematozoal parasites are mentioned in beri-beri, but as their presence has not been confirmed the author is probably correct in his supposition that the cases were combinations of malaria and beri-beri. A short account of some of the allied parasites of certain of the lower animals concludes this interesting part of the subject. The chapters on the *Trematodes* and *Cestodes* are exact and thorough, and though the latest nomenclature is adopted no confusion should arise as the old synonyms are placed under each name. A fair account is given of the *Filaridae*, but here some slight errors have crept in: for example, *Culex taeniatus*, or, as it ought now to be called, *Stegomyia fasciata*, is not an efficient host for the development of the embryos of *Filaria nocturna*. Again, the position in the book of the article on *Filaria immitis* is not good, as this parasite, though Bowlby claims to have seen it in an Arab with haematuria who died, does not really belong to man, and the description of the escape of the embryo filaria into the proboscis of the mosquito gives the impression that this was first discovered in this species. Its proper place should be after the human *filariae*, where *Filaria equina*, a parasite worm of the horse, is described. The presence of anal papillae, stated to occur in the adult male of *Filaria nocturna*, has been described by other authors, and it is strange that no mention is made of the adult forms of *Filaria perstans* and *Filaria Ozzardi*, described by Daniels. The arrangement of the book is, on the whole, good, and the illustrations, many of which are new, are excellent. Very fair bibliographies are inserted, and a good index completes a work of a high standard of merit.

To the physician interested in the extra-corporeal stage of the malarial parasite and to the biologist the second part of *Studies in Relation to Malaria*,[5] consisting of the structure and biology of *Anopheles*, published in the *Journal of Hygiene*, by Dr. NUTTALL and Mr. SHIPLEY, will be of special interest as it is the only accurate account of the subject published in English. With the exception of Professor Grassi's work on the anatomy of the mosquito, which has not been translated into English, the literature of this subject up-to-date has been scattered, fragmentary, and difficult of access. The conclusion of Part II, with which we are now specially concerned, deals with the digestive organs of the *Anopheles* mosquito, and shows the same care as characterizes

[2] *The Internal Secretions and the Principles of Medicine.* By Charles E. de M. Sajous, M.D. Vol. i. Philadelphia: F. A. Davis and Co. 1903. (Demy 8vo, pp. 800; 42 illustrations.)

[3] *Protozoa and Disease.* By J. Jackson Clarke, M.B.Lond. Part I. London: Baillière, Tindall, and Cox. 1903. (Demy 8vo, pp. 197, 91 illustrations. 7s. 6d.)

[4] *Die thierischen Parasiten des Menschen: ein Handbuch für Studirende und Aertze.* Von Dr. Max Braun, Oö Professor für Zoologie und vergl. Anatomie und Director des zoologischen Museums der Universität Königsberg. Dritte Auflage. Würzburg: C. Kabitzsch, 1902. (Demy 8vo pp. 360. M.8.)

[5] *Studies in Relation to Malaria.* II (concluded). The Structure and Biology of *Anopheles* (*Anopheles maculipennis Meigen*). By George H. F. Nuttall, M.A., M.D., Ph.D., and Arthur E. Shipley, M.A. From the *Journal of Hygiene*, vol. iii, No. 2, April 1st, 1903. Cambridge: University Press. (Demy 8vo, pp. 50.)

the former parts. The mouth and buccal cavity are first dealt with and then the pharynx or pumping organ, the mechanism of this in suction being explained by the contraction of the latero-ventral dilator muscles making the slit-like lumen nearly circular. The authors thus agree with Meinert, who long ago described this organ. Three theories as to the function of the three sacs given off at the posterior end of the œsophagus are mentioned; (1) That of Giles, who claims that they act like the air-spaces in birds, but as this author has fallen into the error of estimating the number as two without any organic connexion with the alimentary canal, his contentions are untenable; (2) that of Grassi, who claims for them a suctorial function; and (3) that of the authors, who believe them to be food reservoirs. A series of fourteen experiments consisting of feeding mosquitos with sugar-carmine serum or sugar serum shows clearly that food does go into those sacs, and the explanation is therefore probably correct, though the presence of the air bubbles still requires clearing up. The extension backwards of the ventral or large reservoir to the sixth or seventh abdominal segment does not agree with Grassi's figures, which show it extending only for a short distance into the abdomen, and certainly sections support the latter's views. The other parts of the intestinal canal are admirably described, and the salivary glands are dealt with fully. The effects of the salivary secretion on different individuals is a subject that might well be taken up, as also the saliva of the different genera of mosquitos, as it is well known that some cause great irritation and others hardly any. It is unfortunate that the other systems—circulatory, nervous, respiratory, and reproductive—have been omitted, but a promise is given that they will be published elsewhere. A bibliography of recent literature on malaria relating chiefly to prophylaxis, epidemiology, and mosquitos, forms a useful appendix.

INDIAN HISTORY AND FOLK MEDICINE.

THE origin of Lieutenant-Colonel CRAWFORD'S *Brief History of the Hooghly District*,[1] is in this wise. Colonel T. H. Hendley, Inspector-General of Civil Hospitals, Bengal, while serving in Central India, prepared a medico-topographical account of Jeypore, which was followed by several others compiled by medical officers serving in other native States. These were published by the Government of India in the Foreign Department. One volume of this series—a description of the Western Rajputana States by the late Lieutenant-Colonel Adams, I.M.S.—was reviewed in the BRITISH MEDICAL JOURNAL of February 10th, 1900, p. 322, and the remarks made thereon indicate the scope and value of these works. On his appointment to the Civil Medical Administration of Bengal, Colonel Hendley invited the civil surgeons under his control to prepare similar reports, and the book under notice is one of the first fruits of this movement. Dr. Crawford appears to have devoted himself to his task with energy, and to have produced a most elaborate and able account of his district. The volume under notice is but a fraction of it relating to the history of this, the most interesting portion of Bengal in which Portuguese, English, Dutch, French, and Danes established settlements, for purposes of trade, fought with the native rulers and amongst themselves, until the English eventually asserted their supremacy, and with the exception of the small French settlement of Chandernagore, succeeded in ousting their rivals and supplanting the natives in the government of the country. The story of these struggles is told by Lieutenant-Colonel Crawford, who has a special talent for historical and antiquarian research, systematically, clearly, accurately, and most entertainingly. In addition, information is given regarding ethnology and folk lore, and a description of the deities who preside over diseases and crafts, and of the rites and offerings by which their favour is propitiated or anger appeased. The work is a most valuable one, and offers in moderate compass a complete account of events which contributed materially to bring India under British domination.

[1] *A Brief History of the Hooghly District.* By Lieutenant-Colonel D. G. Crawford, M.B., I.M.S., Civil Surgeon of Hooghly. Calcutta: Bengal Secretariat Press. (Demy 8vo, pp. 184. 1s. 10d.)

THE COST OF CONSUMPTION.—From a compilation of statistics, Dr. H. Biggs, of New York, shows that the prevalence of consumption among the poor alone costs the city of New York £4,600,000 and the United States £66,000,000.

RADIUM.

A METHOD OF APPLYING THE RAYS FROM RADIUM AND THORIUM TO THE TREATMENT OF CONSUMPTION.

By FREDERICK SODDY, M.A.

(From the Chemical Laboratory of University College, London.)

SOME strikingly successful results obtained by Mr. Mackenzie Davidson in the cure of rodent cancer by the use of the rays from radium, the success of Professor Gussenbauer in the same direction recently reported from Vienna, and the well-known general germicidal action of the rays from radium, have suggested that possibly medical men will be interested in some recent physical discoveries which make it practicable to apply the same agency to the treatment of consumption. What is needed, of course, for this purpose is a radio-active gas which can be breathed into the lungs. Such an agent is to be found in the so-called "radio-active emanations" which are being spontaneously and continuously produced by the elements radium and thorium, and which were discovered and fully investigated from the physicist's point of view by Professor Rutherford, of McGill University, Montreal. A short account is given here of the properties of the two emanations, so far as is necessary for the present purpose, and of the methods by which these agents can be most efficiently employed, in the hope that those who have the opportunity may be induced to carry on research in the treatment of consumption with these new weapons.

Radium and thorium are both spontaneously radio-active elements, the former being roughly a million times more powerful than the latter. The general resemblance in the rays of the two elements make it extremely probable that the physiological action will prove to be the same in kind, differing only in degree. The difference of degree is, however, enormous. Thus five minutes' application of a radium salt, would, *caeteris paribus*, be equivalent to ten years' application of the same weight of thorium salt. Both elements continually and spontaneously produce (in addition to their "rays") radio-active emanations, that is, gases in infinitesimal quantity, capable of giving out on their own account rays of exactly similar kind to the rays from radium and thorium themselves. It may be said at once that the absolute amount of these emanations is so infinitesimally small, being at present beyond the most refined means of detection, either chemically or spectroscopically, that no toxic action whatever is to be feared from their use. But their radio-activity, or power of giving rays, is very considerable indeed, and this is all we are now concerned with. The unceasing production of these emanations by radium and thorium is an unalterable property of these elements and takes place under all chemical and physical conditions at exactly the same rate. Sometimes, however, the emanations escape freely into the surrounding air, sometimes they do not, but remain stored up in the compounds producing them, or as the chemist would say "occluded." This depends on the physical condition of the compound in question, and those conditions under which the emanation freely escapes, so that it can mingle with the air the patient breathes, need only be considered here. The best and most certain condition for this to happen with both radium and thorium compounds occurs when they are dissolved in water. Radium compounds especially hardly give off any emanation at all in the dry solid state. Three-quarters of the radio-activity of solid radium compounds is due to the emanation which has not escaped from the compound but is stored up within it. When a soluble salt of radium is dropped into water, all of this emanation is instantly evolved as gas, and mixes with the air above the solution.

We now come to the crucial fact about the phenomena. Let the emanation be removed from the radium solution by passing a current of air through it, and let this air with the emanation be stored in a gasholder away from the original radium altogether. One-half of the emanation present in the gasholder will disappear every four days, so that in eight days there is only one-quarter of the original amount left, in twelve days one-eighth, and so on, until after about three weeks the amount remaining is negligible. But the radium solution from which it was obtained in the meantime has grown a fresh crop as fast as the old disappeared. The law is that the sum total of the emanation in existence at any one time is a constant, provided of course that the vessels used

to store and contain it are airtight, so that no leakage of emanation occurs during the processes. When the emanation removed from the radium solution has diminished to half its initial quantity, one-half of the initial quantity has reappeared in the bottle containing the radium solution; when it has diminished to one-quarter, three-quarters is to be found in the radium solution. After about three weeks the quantity re-formed by the radium solution is a practical maximum, the same as was originally obtained on dropping the solid salt into water. The emanation from thorium behaves theoretically precisely similarly, the only difference being that instead of four days being required for one-half of the thorium emanation to disappear or be reproduced as the case may be, it only takes one minute. This makes an enormous practical difference. For a very few minutes after removing the emanation from a thorium solution it has practically all disappeared, and the original stoppered-up solution of thorium again contains as much emanation as it ever did or can contain. In about five minutes in the case of thorium, and in two or three weeks in the case of radium as much emanation disappears as is reproduced, and the quantity present is at a maximum, in the same way as the population of a country is at a maximum when the number of births for any given time equals the number of deaths.

These considerations serve to regulate the "dosage" of the emanation to the lungs of the patient. Two essential points are to be noted. First, in the case of thorium to secure the most efficient action of the emanation, the patient should breathe continually through a thorium solution. The longer he breathes the greater the dose. But in the case of radium, once he has breathed in all the emanation from any quantity of radium solution, further inhalation is without effect until the latter has stood, carefully stoppered, for a certain definite time. If the patient breathes in the emanation once a day, and the solution is kept tightly stoppered between whiles, he will get practically the maximum dose possible for any one amount of radium solution. To increase this more than one quantity of radium must be employed. The second point to be noted is that it is essential in the case of thorium to get the emanation from the solution into the patient's lungs in the least possible time, say within half a minute, or else the greater part of the emanation will disappear *en route*. For this reason the "dead air space" above the thorium solution should be as small as possible. If it is found advisable to absorb water vapour, a tube of drying material—such as pounded caustic potash—may be introduced between the solution and the mouth, but this for the reason cited should be of the smallest possible volume. In the case of the radium emanation these considerations do not apply.

A few words must be said about another property of the two emanations. Wherever they come in contact they leave behind a film of radio-active matter, which is, like the emanations themselves, invisible, unweighable, and undetectable, except by means of the rays it emits. These deposits of radio-active matter (again like the emanations) disappear at definite fixed rates; at least their activity disappears, which is all we are now concerned with. This is the cause of the much-discussed "induced" or "excited" activity produced by the elements radium and thorium on all objects in their neighbourhood. For present purposes this phenomenon is important because the excited activity would be left behind in the air cells of a patient's lungs after the emanations themselves had all been exhaled, and the action of the rays would therefore continue for a certain definite time after the treatment. In each case the effect of this excited activity continuously gets less and less, and finally disappears. The excited activity from the thorium emanation falls to half its initial intensity after eleven hours, and disappears practically in about two days; that from the radium emanation disappears in three or four hours. In both cases this effect will constitute a feebler continued action after the more powerfully radio-active emanations have all been exhaled. For medical purposes it is sufficient to know that a given dose of emanation will always carry with it a fixed and unalterable proportionate dose of "excited activity," and all considerations connected with the manner and duration of the administration of the emanation, therefore, do not affect this result.

The question might be asked, How is it possible to state all these facts so dogmatically until the treatment has been practically tried? It is the essential feature, however, of all these radio-active processes that they go on their appointed courses absolutely without regard to the environment or to the action of any known force which may be brought to bear upon them. Thorium and radium in solution give off their emanations whatever chemical compound of the elements is employed. The emanations disappear and the excited activities are produced in their place, and these in turn disappear, at exactly the same rates, whatever the conditions under which they exist. It is, therefore, to be confidently predicted that the same laws will be found to apply when these agencies are made to act inside the living organism.

With regard to the important question as to which emanation is likely to prove the more suited for the purpose in hand; this of course is primarily a matter for trial, but it by no means necessarily follows that the advantage will be found with the more powerful agent. In the first place, there is the question of cost and available supply. A milligram of radium salt equals roughly a kilogram of thorium salt in radio-activity, but the cost of a kilogram of thorium nitrate—about £2—is only two or three times as great as the cost of a milligram of radium bromide, and whereas the former can if necessary be obtained by the ton, the supply of radium is notoriously limited. A very important point in this connexion must not be overlooked. For direct application of the rays it is probable that the thorium salts can never be sufficiently powerful to replace radium for medical purposes. A limit in the quantity effectively employable is very soon reached in practice. In the solid salt so large a proportion of the rays is absorbed that the effect is practically proportional to the surface, and this is almost always strictly limited. But with the emanations no such absorption occurs. It is as though we extracted from the radium or thorium the very essence of its radio-activity, and obtained it as a gas, in as concentrated a form as we could desire. There is no reason why the emanation from a kilogram or even, with special arrangements, from a ton of thorium salts, should not be effectively employed on the lungs of a single patient. The sole condition to be satisfied is that the air should reach the patient's lungs within, say, half a minute of time after leaving the thorium solution. The immense advantage already mentioned of thorium over radium, namely, that the effect of the emanation in the former case is proportional to the time of inhalation, must also be remembered. Indeed, every physical consideration would suggest that the feebler but more continuous action of the thorium emanation should be first tried, and this can, if necessary, be increased indefinitely by increasing the quantity of thorium and the time of inhalation. Thorium is, moreover, within the reach of every one who cares to make the trial.

A few points in the practical application of these emanations may be of value. The cheapest and most convenient salt of thorium to employ is the nitrate, as this is very soluble and is manufactured in large quantities for the Welsbach mantle industry. But this salt contains a very large amount of free nitric acid, the inhalation of which would be apt to be extremely injurious. This may be neutralized by addition of ammonia to the solution in water, with constant stirring until precipitation (of thorium hydroxide) is just about to take place. An ordinary gas-washing bottle with outlet and inlet tubes ground in would prove a convenient form of inhaler, and this should be filled as full as possible with the fairly concentrated solution. A small caustic potash tube could be inserted in the air stream before it enters the mouth, and would serve to remove moisture and also any free nitric acid, in case the neutralization had not been properly performed. If a large quantity is employed so that several bottles are necessary, these should be connected up in parallel and not in series; 100 grams of thorium nitrate in solution, and one hour's daily inhalation, might be suggested as a commencing "dose," to be increased indefinitely if no harmful results accrue. If this is without effect the more powerful radium emanation might be tried. The gas-washing bottle must be provided with two taps, so that no leakage of the precious and slowly formed emanation occurs during accumulation. A few milligrams of the dry salt radium bromide, for example, should be introduced, and a few drops of water drawn in to dissolve it, and the taps immediately closed. For the first trials a few bubbles only of the total gas contained in a fairly large bottle should be drawn into the lungs with a deep breath of air, which should then be retained as long as possible before being exhaled. If no ill-effects follow the dose may be gradually increased, until finally the whole gaseous contents of the bottle may be inhaled into the lungs, a few bubbles at every breath, this treatment being repeated once every twelve

or twenty-four hours. But the very powerful nature of the agent must be remembered. The emanation from a few milligrams of radium bromide mixed with air glows quite brightly in a dark room. In an atmosphere containing oxygen the emanation possesses a surprisingly powerful oxidising effect on carbonaceous matter, and even upon metallic mercury; so that great caution must be observed during the preliminary trials that too great a dose is not given before its effects on the system have been carefully studied. But there is not much fear that the action of the thorium emanation, at least in moderate quantity, would prove too powerful, and it is advisable that its action should be first tried.

To sum up, the absolute immunity of these processes from external interference, the simple nature of the treatment proposed, the infinitesimal quantity of the active agents employed, the manner in which the emanations may be inhaled to do their work at the very seat of the disease, leaving behind the excited radio-activity to continue the work in a gentle manner after they have been exhaled, make out a strong case why the attention of medical men should be directed to the new weapons physics and chemistry have placed at their disposal. Indeed, if Nature had designed these phenomena for the purpose proposed, it is difficult to see in what way they could have been improved upon.

ON THE THERAPEUTIC EFFECTS OF THE SALTS OF RADIUM.

By John Macintyre, M.B., C.M., F.R.S.E.,
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In an article written by me and published in the British Medical Journal of June 6th, reference was made to the possible therapeutic effects of radium or its compounds. I then pointed out that the results were not sufficiently definite to state whether or not any effects had been obtained in certain cases on which I had been experimenting. That the salts of radium have, however, an action on diseased tissues cannot be doubted, but it cannot yet be said whether they will take the place of some of the other forces, such as *x* rays, high-frequency and potential currents, or Finsen's light at present employed in the treatment of lupus, rodent ulcer, or superficial epitheliomata. All that can be said meantime is that something emanates from the compounds of radium which has a very exciting, and, if pushed far enough, even a destructive, power on healthy tissues, and that to some extent the radio-activity for which the substance and its compounds are famous is also capable of stimulating diseased tissues in something like the excited Crookes's tube.

In the paper referred to a description was given of a burn of my arm, brought on artificially by allowing the rays from a few milligrams of radium to pass through a thin layer of air and another of mica for one hour. The reaction, which was described at the time, did not come on at once, and the results have not yet disappeared; that is to say, the reaction has continued for over two months, and looks as if some time would yet be required ere the wound is healed.

At the present time it is impossible to say how this agent produces an action on the healthy or unhealthy tissues, but the same thing may be said of any of the other forces. In the case of radium, however, there are some things known from the physical standpoint with which we have not yet reckoned in the case of others. At least if they are present, say when the patient is being subjected to the action of an excited Crookes's tube, we have not that definite information about them which is at our disposal in the case of radium, thanks to the admirable work of Monsieur and Madame Curie, Professors Rutherford, J. J. Thomson, and others.

The study of radium is evidently going to throw a considerable amount of light upon questions hitherto obscure in the region of physics, and it is not altogether improbable that we shall be able to say the same thing of it in medicine. To begin with, it seems tolerably certain that the extraordinary power of emission known as radio-activity possessed by the substance is not a simple one. Already three kinds of rays are distinguished: (*a*) Infinitely small positively charged atoms of matter flying at great speed, which can be measured, and the result seen by the bombardment on zinc sulphide screens; (*b*) rays which seemingly correspond to the cathodic rays in a Crookes's tube, and also described by Leonard as passing through an aluminium window in the same; and (*c*) rays which evidently correspond to the *x* rays. In this connexion it is interesting to note that in an excited Crookes's tube one can also get a variety of rays, some of them invisible. Some of these are got when pumping out the air in a Crookes's tube before the vacuum is high enough to give the green coloration of the *x*-ray tube. I satisfied myself on this point four years ago, and found that these rays had great penetration, were capable of acting on a photographic plate enclosed in envelopes, and also capable of producing burns on the skin.

The *a* rays of radium are easily stopped by thin interposed substances, and the *b* or second set have great penetrating power.

There is another curious property of radium and its salts which we have not hitherto had to take into consideration in *x*-ray work generally—namely, that property which has caused such great excitement in the physical world, the power of emitting heat. Evidently the substance is constantly generating heat. If properly packed in some enclosure of a heat-insulating nature, 5° F. may be registered above the temperature of any other substance enclosed in the same way. What effect this may have in therapeutical questions cannot at present be stated.

Bearing in mind the serious destructive effect on the normal tissues and the many resemblances to *x* rays, I thought it well in my experiments to keep the substance at a considerable distance from the diseased tissues. The method of application is simple, and it need hardly be pointed out that if equal effects could be obtained therapeutically by radium or its salts it would be a great saving in complicated and expensive apparatus. The method I adopted was to have the radium enclosed in a small cell with a mica front ½ in. in diameter. This was surrounded by a small piece of indiarubber tube. The glassblower made me a number of cones with an opening at the apex into which the indiarubber fitted. They varied in size and depth, but those chosen were usually about ½ in. in depth. The radium is thus applied to the parts for a period of twenty to forty minutes daily or longer, and the effects on the patients can be watched with comparatively little risk.

The first case in which the experiment was tried was that of a patient suffering from lupus of the nose and nostrils; but inasmuch as she had recently had *x* rays applied to the diseased part, it was thought better not to apply the radium in this situation. The patient, however, had developed a small patch of lupus on the dorsal surface of the right hand. The radium was applied daily to this, the exposures varying from twenty minutes to half an hour according to the reaction. Within a week it was evident that the part was healing up, and in three weeks the lesion, which was about ½ in. in diameter, had disappeared.

The second case was that of a woman, aged 28, suffering from lupus of the nostrils and nose. The area selected was just at the side of the left ala. The same treatment was pursued as above indicated, and within four weeks the lesion, nearly an inch in diameter, had practically disappeared. In this case Finsen's light treatment had been tried last year, and, as far as the face was concerned, it healed up. The result was not, however, satisfactory, as recurrence took place within two months of stopping of the treatment, and the affection had been spreading for the last four months.

In another case of rodent ulcer under the influence of radium the discharge soon dried up, reaction set in, and within a fortnight improvement was evident. This patient is still under treatment. Other cases are under observation, and the results are being carefully noted.

A considerable time must yet elapse ere any opinion can be offered about the true value of radium compounds in the treatment of such cases. Even if its therapeutic value be thoroughly established, there will remain the questions of the time taken to produce the desired effect, the kind of cicatrix or covering which forms, and last, but not least, to what extent they are likely to compete with the *x* rays, high-frequency, or other forces.

The London Hospital Medical School.—The prizes and certificates gained during the year by the students of this school were distributed on July 20th by Mr. W. Douro Hoare, Chairman of the College Board. The Prize Scholarship in Science of £120 was awarded to Mr. R. C. Roberts, and that in Anatomy and Physiology (£60) to Mr. J. T. Macnab. The entrance scholarships in Science of £60 and £35 went to Mr. S. J. A. Beale and Mr. H. L. Morgan. A large number of minor prizes and certificates were also awarded.

ANNUAL MEETING OF THE MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE presidential address at the above meeting, held in London on July 16th and 17th, 1903, was delivered by Dr. ERNEST W. WHITE, Medical Superintendent of the City of London Asylum, who chose for his subject the legal and general desiderata bearing upon the care and treatment of the insane.

PRESIDENT'S ADDRESS.

Lessons of the Colney Hatch Fire.

After referring to approaching legislation and sundry incidents of the year, Dr. White dealt with the lessons to be drawn from the recent disastrous fire at Colney Hatch Asylum, which were: (1) That all temporary buildings were unsuited to the insane; (2) that provisions for dealing with fire must be complete in all asylums, and that asylum fire brigades must be made as efficient as possible; (3) that all stokeholds, furnaces, and smoke-shafts at various points in the buildings should be abolished, and live steam from one general station should be used as the heating agency; and (4) that all alternative exits and escape staircases must be systematically used by patients for their egress, as insane patients would in the event of fire refuse to leave except by the door they are accustomed to go out by. A tribute of admiration was paid to Dr. Seward and the medical officers and staff of the asylum, who by their heroic efforts succeeded in rescuing many patients from death by the flames.

Tuberculosis in the Insane.

Dr. White then dealt with the subject of the isolation and treatment of tuberculous patients in asylums. The large percentage of deaths from pulmonary tuberculosis in public asylums has attracted attention during the past few years. The insane, he said, are peculiarly liable to phthisis, but this predisposition is to-day recognized as arising in the main from the defective hygienic conditions under which they live. Too little cubic space by day and night, insufficient ventilation and ill-regulated heating, too little fresh air and exercise, uncleanly habits, and a total absence of isolation (of phthisical from non-phthisical patients) had in the past favoured the growth and dissemination of phthisis in asylum inmates. The general hygiene of asylums has, however, been vastly improved in recent years, and during the past two or three years the question of providing suitable isolation buildings or sanatoria for the care and treatment of the insane has engaged the attention of county councils and asylum committees. Among others, the authorities at Lancaster, Warwick, Claybury, and Leavesden asylums in England; Woodilee, Gartloch, and the Crichton Royal Asylum in Scotland have taken steps in this direction. Dr. White added that the question of lighting was also germane to the issue. The day-rooms of such sanatoria, as of asylums generally, should have light on all sides. The introduction of electric lighting into asylums brought with it many advantages, not the least important of which was the fan ventilator. Dormitories formerly never properly ventilated without draught were now kept cool and sweet by electric fans. The great increase in the mortality from dysentery in asylums was a regrettable fact. Indeed, in some institutions the disease had become endemic, and was in danger of becoming epidemic, owing to conditions of overcrowding and defective sanitation. Fortunately, the attention drawn by the Commissioners in Lunacy to the subject of special returns of such cases occurring in all asylums would tend to check sanitary defects and to draw the attention of local asylum authorities to any sanitary defects which might be looked upon as a favouring cause of this disease. The development of pathological research in the capitals of England and Scotland which were provided with pathological laboratories attached to the asylums of London and of Edinburgh, and the appointment of pathologists to our larger public asylums throughout the country, were already producing excellent results. Dr. White then passed to the main subject of his address, namely, the desiderata, general and legal, relating to the care and treatment of the insane.

The Increase of Lunacy.

The report of the Commissioners in Lunacy issued in June, 1902, stated the indisputable fact that insanity was on the increase, that the average annual increase of patients for the quinquennial period ending December 31st, 1901, for England and Wales was 2,270, an increase exceeding the average annual increase of the preceding decade by 483. The average increase of pauper lunatics in London was at the rate of 500 patients per annum, but this figure was itself rising higher year by year. The number of insane persons under the cognizance of the Commissioners in Lunacy was now one to every 298 of the population of England, whereas in 1859 the proportion was one to 536. The recovery-rate during the past thirty years has shown no sustained advance, while the occurrence of a high proportion of cases of chronic mental disease has produced an enhanced death-rate. To learn that there had been no material advance in the recovery-rate *pari passu* into the development of rational and practical therapeutics, with the advancement of general hygiene, and with the improved hygienic environment of modern asylums, was not pleasant reading, and it was our duty to discover, if possible, why this was so.

Neurotic Aliens.

In discussing this question they had to ask themselves: Were there any racial or environmental changes in the present population compared with the population of 1859? With the increase of our population there has been less encouragement for eligible aliens to settle in the United Kingdom and intermarry with our people, so that there has been less infusion of new blood into the race than formerly. The aliens we did receive were of a most ineligible class, needy and pauper, the social and economic refuse of other countries, poor or feeble in physique, and often tainted with neurotic and constitutional disease. Many of them were undesirables of the criminal type, and as a body they constituted a source of detriment and harm rather than a benefit to the stability and the economic resources of the race.

Insanity and Heredity.

Heredity played a large part in the production of insanity. The intermarriage of persons afflicted with grave neuroses or even with the actual taint of insanity was all too common. Yet it was one which should be prevented, by educating public opinion and morality if possible, or even by State measures. (Dr. White here cited illustrative instances of this all too deplorable practice.)

Change of Type.

The clinical type of admissions into asylums showed in many instances a less favourable type of mental disease as regards prospects of recovery than was the case thirty years ago. Dr. White was forcibly impressed with the fact that there was a vastly increased number of cases of melancholia relatively to mania in new admissions to-day. We seldom saw to-day typical cases of acute mania, but were inundated with the depressive and demented forms of insanity of insidious onset, in which relapses were common, convalescence protracted, and of which the issue was in most cases chronic and incurable dementia.

Modern Education.

He had also noted in recent years an increase in the number of cases of mental breakdown occurring in persons during the age of puberty and adolescence (at 18 to 28 years of age), among persons of the upper and middle classes, a condition evoked by the great strain of education and the worries of life upon brains which a quarter of a century ago, living under less stress and worry, were able to tide over this critical period of brain evolution. Social and economic conditions to-day tended to marriages later in life than a quarter of a century ago, and this did not conduce to the production of a healthier stock physically or mentally.

Congenital Imbeciles.

The growth of congenital idiots and imbeciles in proportion to all births was greater to-day than in 1859. It has been said that 1 person in every 150 of the population belongs to this mental category, and when they considered how unfitted imbeciles were to battle with life, and how often those at large were a danger to society or a source of disgrace to their families, the seriousness of this aspect of the lunacy problem could not be overlooked. Inherited syphilis and the taint of pulmonary tuberculosis were factors that operated powerfully in the production of insanity. Juvenile general paralysis, for example, was almost entirely the outcome of inherited syphilis. Syphilis was, moreover, the most potent exciting cause of general paralysis of the insane, and he thought it was the duty of the Association to agitate for means which would lead to the limitation of the spread and propagation

of this disease. The abuse of alcohol led to many and varied forms of mental decay and insanity. Many weakling children born to-day were reared up by the aid of elaborate therapeutical means, to grow up into feeble adults capable only of propagating a faulty stock. The increase of the urban population, with its vices, its greater stresses of life, and its crowding into slums, and the parallel depletion of the agricultural and rural population, was another factor favouring the increase of insanity.

Changes in Asylums.

Dr. White was of opinion that huge asylums built to accommodate 2,000 or more patients were a mistake, both medically and economically, and he advocated a capacity of 600 beds as the proper limit to the size of an asylum. He thought some good could be done by physical drill and "school discipline" for chronic demented cases, which otherwise lapsed fast into the depths of apathetic dementia. The provision of separate buildings for acute and curable cases of insanity was proving a success in large institutions which received all classes of patients. Dr. White referred to the system of detached villas as contrasted with detached wards connected by galleries, and stated that both had advantages. The opening of the epileptic "colony" at Ewell, Surrey, on July 1st, was an indication of recent developments in the medico-economic aspects of lunacy, from which they hoped much good to follow.

New Legislation.

Finally, Dr. White referred to the new Lunacy Acts Amendment Bill, which had just passed its second reading in the House of Lords.

Receiving House for the Insane.

It was "an act to authorize the London County Council to provide receiving houses for the reception of persons mentally affected or alleged to be of unsound mind, and to authorize the detention of such persons in such houses, and for other purposes connected therewith." The "houses" were thus not only to be receiving houses but detaining houses for treatment. At the outset there were to be two of these houses, to be erected at a cost of £125,000 each, but the ultimate number was not limited. These proposed "houses" were in reality an old friend—the Hospital for the Insane in London (London County Council Special Report, 1890) in another garb, and they were intended to obviate the existing practice of taking alleged pauper lunatics into workhouses to be examined before being sent to a lunatic asylum. It was also proposed that such receiving houses should be available for the treatment of out-patients, and should be conducted in accordance with the law regulating county asylums. Clause 4 of the Bill provides for the appointment of a resident medical officer of each receiving house, and of a staff of such other officers as the Visiting Committee think fit, and it specifies that a visiting physician or surgeon may also be appointed. The duration of the detention order under which a patient was admitted was fixed at six weeks, but the period of detention could from time to time be extended by a justice on the recommendation of any two members of the Visiting Committee for further periods of three weeks each. There was, however, added Dr. White, no guarantee that the resident medical officer of the house should be a physician who has had training and experience in an institution for the treatment of mental diseases, and such a clause should be added in order to safeguard the care and treatment of the patients received. The location of such "houses," however, in the heart of London was, said Dr. White, a serious drawback, for it would be impossible to secure the influence of the sun, of fresh pure air, of trees and shaded grounds, and all the other healthful and necessary benefits which location in the country alone could confer, and which were a *sine qua non* for successful treatment. Dr. White concluded by referring to some unsatisfactory aspects of asylum life as regards emoluments and pensions, and asserted his firm conviction that while we should endeavour to secure a wise and beneficent legislation for dealing with existing and future cases of insanity, our higher aims should be directed towards doing all in our power to combat the preventable sources of insanity.

A vote of thanks was accorded unanimously to Dr. White for his interesting, important, and practical address.

PAPERS.

Dr. A. R. Turnbull read a brief paper upon Female Nursing of the Male Insane, a system which he had adopted at the Fife and Kinross Asylum with success in the "sick wards." Female nurses had been employed for many years in the Meerenberg Asylum, Holland, which is under the care of van Deventer. These nurses have first to pass a period of probation in the management and duties of male wards before they were entrusted with the care of patients. At the Wilhelmina Asylum, Amsterdam, female nursing was also employed with success in the male infirmary wards. Patients who are troublesome and suffering from acute excitement are placed in single rooms, and noisy patients are placed in a separate ward away from the sick room. Dr. White, the President, said he had employed female nurses in a small way in the male sick room of his asylum, and hoped to extend it further. Dr. Robert Jones thought the presence of female nurses had a soothing and restraining influence upon sick patients, who would under the case of ordinary male nursing become restless. Dr. Thompson, of Norwich Asylum, condemned the whole system of female nursing advocated by Dr. Turnbull as preposterous in regard to the claims it made, and undesirable as regards decency and administration. This discussion, in which Dr. Oswald (Glasgow) and Dr. Morison (Hereford) joined, terminated the work of the first day.

On the following day, Dr. F. W. Mott, Pathologist to the London County Asylums, read a paper on Tumours of the Brain in Asylums and Hospital Practice, accompanied with drawings and lantern slides of the microscopical and naked-eye changes. A number of limelight projections were thrown on a screen to illustrate the specimens of cerebral tumours, and several beautifully finished and coloured illustrations were handed round, showing the nature of the finer pathological changes present in and around the tumours and growths referred to.

Dr. Lewis C. Bruce (Medical Superintendent of the Perth District Asylum, Scotland) read a paper entitled Clinical and Experimental Observations on Katatonia and Hebephrenia, the joint work of himself and Dr. A. Peebles, Assistant Medical Officer of Perth Asylum. The paper was based on the study of 12 cases of katatonia, 10 females and 2 males. The history of the disease and the course of symptoms was quite in accordance with the classical descriptions of Kahlbaum and Kraepelin. Hereditary predisposition was present in 6 out of the 12 cases; 9 women and 1 man were adolescents. In every case case the origin of the disease was insidious and gradual. After describing the clinical symptoms of failure of energy—the hallucinations of hearing and the delusions of the disease—the physical signs were enumerated, namely, anorexia, irregularity of the heart's action, a rising arterial pressure, dulling of sensibility to touch, heat, and pain, dull and sluggish pupils, loss or perversion of taste and smell, insufficient control of bladder and rectum, exaggeration of skin and tendon reflexes, and the occurrence at uncertain intervals of katatonic spasm of the muscles. The mental state was essentially one of confusion, and auditory hallucinations always of a distressing nature were present, which sometimes led to attacks of terror. The power of attention was gone, and no recollection of events round him existed in the patient's mind. The acute confusional stage was slightly febrile or afebrile with a moderate and persistent leucocytosis. This was succeeded by the stage of stupor, the transition to which was marked by a febrile crisis and a high leucocytosis. Bacterial examination of the blood was made in eight cases by means of cultures, with the result that in one case a pure culture of a short streptococcus was obtained. This organism agglutinated in the presence of blood serum of katatonic patients and certain cases of dementia. The stage of acute mental confusion never lasted more than four weeks. During the stuporous stage the temperature was subnormal, the hands cold, cyanosed, and oedematous, amenorrhoea was present, and urine and faeces were persistently retained. The skin reflexes continued to be exaggerated, and it was difficult to elicit tendon-reflexes on account of muscular resistance. The state of stupor was further marked by impulsive actions, mutism, curious attitudes, and rhythmical movements. As recovery from the state of stupor became manifest the leucocytosis did not necessarily rise, but the polymorphonuclear cells increased in number. Cultures of the streptococcus injected into rabbits gave varying results, ranging from listlessness to lethargy, and from subnormal to irregularly febrile temperature. Dr. Bruce also made a few remarks on treatment. The general conclusion drawn was that katatonia was an acute disease with a definite onset and

course, and probably of toxic origin. There were the following stages in it, namely, a gradual and insidious prodromal period, a period of acute mental confusion with hallucinations and occasional paroxysms of excitement, a succeeding stage of stupor with muscular resistiveness to induced passive movements. The hyperleucocytosis at the transition from the confusional to the stuporous stage indicated a virulent toxaemia. The paper was discussed by the PRESIDENT, Dr. LLOYD ANDRIEZEN, Dr. HAYES NEWINGTON, and Dr. F. W. MOTT.

Dr. CHARLES H. FENNELL read a paper on Mongolian imbecility, based upon observations made on idiots and imbeciles of the Mongolian type of physiognomy at Darenth Asylum and elsewhere. Concise descriptions were given of the anatomical features of the skull and face, jaws, palate, osseous system, and the characters of the skin. Fissuring of the tongue and hypertrophy of the circumvallate papillae were present in every case, and were regarded as pathognomonic. The causation of the osseous defects in the skull and face were believed to be associated with disturbances in the normal process of ossification of the base of the skull. The circulation was defective, added the author, in all these cases, and in three which came to a necropsy congenital defects of the heart were noted. The mental grade of the Mongolian imbecile was usually found to be low. A discussion followed, in which Drs. FLETCHER BEACH, LLOYD ANDRIEZEN, ROBERT JONES, and C. S. MORRISON took part.

Dr. ALFRED WILSON read a paper on a Case of Double Consciousness. The patient in question was a young girl who had been under observation for many years, and who apart from her normal self exhibited from time to time as the result of obscure mental "crises" (attacks of loss of consciousness, convulsions, or catalepsy) changes of personality deeply involving intelligence, character, and conduct. These abnormal personalities were twelve in number. In one of these personalities she called herself "critter," and in another "Old Nick." Her speech, conduct, writing, and mood were different in these two personalities. In the list enumerated by Dr. Wilson the sixth personality was self-styled "good creature." While in this state the patient was intelligent and learnt French. While in the state of personality No. 9 she was an imbecile, blind, but able to draw, though in her normal state she was incapable of drawing. Her sense of touch was extraordinarily keen, and pencil-marks made by her on paper were readily detected with the finger-tips. Personality No. 10 was a curious one, as the patient exhibited a degree of moral delinquency she had not exhibited before, attempting to push her sister into the fire, and to do other wicked deeds. The various personalities alternated and recurred from time to time irregularly, but there was sufficient definiteness in the various features of each to enable them to be clearly differentiated from one another. The author then discussed the theory of a "double brain," and other views of brain action propounded by writers who had recorded cases of double and multiple consciousness.

The paper was discussed by Drs. JULIUS MICKLE, ERNEST WHITE, THOMAS SAVILL, LLOYD ANDRIEZEN, ROBERT JONES, and others.

The proceedings then terminated.

NATIONAL HEALTH AND MILITARY SERVICE.

A MEMORANDUM, by the Director-General, Army Medical Service, on the physical unfitness of men offering themselves for enlistment in the army, has been issued as a Parliamentary paper by the War Office.

Sir William Taylor observes that interest in the question has been aroused by the writings of Sir Frederick Maurice and others drawing attention to the alarming proportion of young men in this country unfit for military service, owing to defective physique, especially among the urban population. The question arises whether this defective physique exists only in a particular portion of the population, for the public health statistics show a progressive improvement in the national health, owing to the advance of sanitary knowledge. In spite of feats of agility, endurance, and strength among the well-to-do classes, a large proportion of men who offer themselves for enlistment in the army are physically unfit for military service.

The Director-General quotes Sir Frederick Maurice's statement that only two out of every five men enlisting remain in the army as effective soldiers at the end of two years' service, or in other words, that 60 per cent. of the men offering themselves are physically unfit to serve as soldiers. Upon this, Sir William Taylor makes the following observations: "The want of physique thus shown to exist with regard to a large section of the community is not only serious from its military aspect, it is serious also from its civil standpoint, for if these men are unfit for military service, what are they good for? As Lauder Brunton says: "Poor in physique as they all are, and poor in mental capacity and power of application as many of them must be, what becomes of them? Many of them probably marry girls as weak as themselves, and have children, some of whom go to swell the lists of infant mortality, some to join the criminal classes, while others grow up more weak and incompetent than their parents."

The need for inquiry in order to ascertain the real cause of physical deterioration is pointed out, and reference is made to the statement by Mr. B. S. Rowntree [1] in his paper read in the course of the discussion on Poverty and Disease in the Section of Public Health at the annual meeting of the British Medical Association last August, that 28 per cent. of the population in York are living in poverty, and to Mr. Charles Booth's estimate, made some years ago, that in London 30 per cent. of the people were living in poverty.

In his annual report for 1902 the Inspector-General of Recruiting remarked that the gradual deterioration of the physique of the working classes, from which recruits must always be drawn, is causing much anxiety. Taking into consideration that recruiters are instructed not to submit for medical examination candidates unlikely to be passed as fit, the percentage considered by the medical officers as unfit for the service is striking.

A tabular statement is submitted, from which it is demonstrated that between 1893 and 1902 the number of men medically examined for enlistment was 679,703, and of those 234,914 were rejected as medically unfit for service, giving a rejection ratio of 34.6 per cent.; of the men passed fit, 5,849 broke down within three months after enlistment, or 0.9 per cent.; while 14,259, or 2.1 per cent. were discharged as invalids under two years' service.

It must be remembered that the Inspector-General of Recruiting states in his report for 1902 that a large number of men are rejected by recruiting officers, and such men are never medically inspected, and do not appear in any returns. As only 37.3 per cent. of rejections have been accounted for from official statistics, and as according to Sir Frederick Maurice's estimate 60 per cent. who offer themselves are unfit for service, the number of men turned away by the recruiters themselves must be "appalling large."

The chief causes of rejection by medical examining officers are under chest measurement, under height, and under weight, and the numbers rejected for loss or decay of teeth is steadily increasing.

The memorandum concludes as follows: "It was 10.88 per 1,000 in 1891, and had risen to 49.26 in 1902. Whether," the memorandum continues, "the increase in the rejections for bad teeth is an indication of increasing prevalence of physical unfitness is open to question; the increase may partly, at least, be due to the more common use of articles of food which readily undergo acid fermentation, and partly also to examining medical officers having gradually come to place a high value on soundness of teeth as a matter of the greatest importance in its relation to the maintenance of the physical efficiency of the soldier on service."

However this may be, it is pointed out that the main inference to be drawn from a consideration of the figures is that the bulk of the rejections arise from causes indicating the operation of agencies antagonistic to healthy physical development.

"The question at issue constitutes a problem by no means easy to solve. Were all classes of the community able to provide their offsprings with ample food and air space, a healthy race would be produced, and the proper material to fill the ranks of the army would probably soon be obtained.

"Information is wanted as to the causes of physical deficiency and as to the best available methods of remedying defects and improving the national health. Such an inquiry might fitly be undertaken by a commission as to the composition of which the advice of the Colleges of Physicians and Surgeons might be asked. As the matter is one of the utmost importance from the recruiting point of view, it is suggested that the Secretary of State might take the initiative in the

[1] BRITISH MEDICAL JOURNAL, 1902, vol. ii, p. 449.

matter of getting the opinion of the Councils of the Colleges with regard to:

"1. The necessity for such an inquiry.
"2. The ground to be covered by a Commission if appointed.
"3. Composition of Commission."

NOVA ET VETERA.

THE QUEENSLAND BLACKFELLOW.

MR. WALTER ROTH has written another exceedingly interesting memoir on the North Queenslanders[1]—interesting, at least, to all anthropologists and to many scientific men who do not claim that title.

In the last of these "bulletins" we saw reason to admire the industry and even the intelligence of the despised "blackfellow" exhibited in the discovery, collection, and preparation of quite a multitude of different kinds of food. In this one the blackfellow appears to less advantage, credulous, superstitious, mischievous, obscene, all in a childish way. Judged by their ideas as to the origin of man and of other animated beings, these people would no doubt stand very low in the scale. But their faculty of observation is very keen: thus we find that they know, name, and recognize sundry constellations, in this respect far surpassing the whites with whom they are in contact, and even the author himself. This kind of ignorance has frequently caused the death of white men lost in the bush.

Anthropomorphism is carried to the furthest extreme in in their beliefs. Thus, Thunder is a personage—the most potent known. Rain also is a personage: though many of their beliefs respecting it would appear to us quite inconsistent with such a notion. But in truth the reasoning or logical faculty, though conspicuous in the blackfellows' language, and in much of their practical life, is almost unrecognizable in their superstitions and magic.

It seems clear that all animated beings were originally blackfellows. This comes out in most of the folk tales here quoted, and gives to them an extraordinary appearance of folly and absurdity. Thus the galah parrot acquired his lovely crimson plumage through being struck by a lizard with an adze; and the bat became blind in consequence of his illicit amours with an eagle hawk, an iguana, and other animals. These stories vary much from tribe to tribe, and are, it may be supposed, the product of individual fancy, and not necessarily of any antiquity.

Their physiological and psychological notions are not merely crude, but often extremely bizarre and ludicrous. Thus it is hard to believe, even on authority so excellent as that of Mr. Roth, that not only is conception in woman not thought to be necessarily due to copulation, but that the Tully River blackfellows do not admit copulation as a cause at all, though they allow that it is so in the lower animals: nor is the relation of puberty to fecundity recognized. Conception may arise in various ways: for example, a baby may be formed from mud or pandanus root by a spirit, and inserted in a woman thereby. The husband, however, acknowledges a relation of paternity.

Their notions about a vital principle are rather complex, and vary in different tribes. It is associated with the heart, the afterbirth (!), the breath, and in some degree with the shadow. Anyhow there is a something, which we should call a spirit, which survives the individual, and that for an indefinite period, perhaps for ever, so far as the blackfellow can conceive such an idea. Such spirits haunt the forests, and may be friendly or malevolent; but a blackfellow is afraid of encountering them when alone. A spirit may travel eastwards, and in some way develop into a whitefellow. "In many North Queensland dialects the same word does duty for a white man and for an aboriginal's ghost."

The ear is believed to be the seat of intelligence. In the Kokoyimidir language, already noted in the BRITISH MEDICAL JOURNAL for its logical construction, MILKA being the word for "ear," we have

Milka—mul (without), stupid.
" —dir (with), intelligent, obedient.
" ngamba (closed), or-buntchir (hard), obstinate.
" ninggal (to sit), listen.
" bakal (to dig), persuade.

And so forth.

[1] *North Queensland Ethnography, Bulletin No. 5, Superstition, Magic, and Medicine.* By Walter E. Roth, B.A., M.R.C.S., and Northern Protector of Aboriginals, Queensland. Brisbane. 1903. (pp. 42, and 7 of plates.)

The subject of medicine, as is the case among most savages and barbarians, is curiously interwoven with that of magic or witchcraft. Where disease and death are not supposed to be occasioned by what we call natural causes, but to be, as a rule at least, wilfully produced by enemies, or by medicine men (wizards) at their instigation, there is little room for the development of the healing art, in which, as we shall presently see, these blackfellows have made very little advance. In credulity and what may be called hallucinatory power, they would "give points" to the followers of the late Madame Blavatsky.

Dooming, or bewitching, is usually effected by pointing at the intended victim a quartz crystal or a curious implement called a mangani. The latter contains a hollow, into which the medicine man is supposed to be able to attract the victim's life-blood. Thanatomania is a frequent result. A case is cited in which a doctor died in consequence of being doomed by a layman. But the death of the bewitched one may occur from a great variety of apparent causes—for example, from snakebite.

Diseases and accidents, though usually produced wilfully by the enemy's machinations, may sometimes be referred to the fault of the subject, who may have broken a tapu, or wandered alone in a haunted bush, or committed some other imprudence or breach of rules. Or his parents or children may be in fault.

What we should call the actual practice of medicine is not the special profession of the wizard; the subject is one of common knowledge in the tribe. The list of materia medica is not a long one. Some of the plants used have probably real value; and several of them, or their near congeners, are employed in native medicine in India, Ceylon, or Cochin China, for example the *Ocimum sanctum*, much used in fevers. Some of the external applications used for wounds and sores, appear to be possessed of irritant qualities—the blackfellow never allows a wound to heal by first intention. Blood drawn from a male friend's arm (the posterior ulnar vein) is used externally for various internal pains: it is also drunk, as are other more disgusting fluids. Bleeding is also used as a remedy for fever, headache, and inflamed joints. From the number of remedies for headache, it would appear to be a common affection, which seems strange: but one of these remedies is stranger, to wit, beating the patient on the head with a waddy (club).

The bite of venomous snakes seems to be by no means always fatal. At Cape Bedford cure is said to be effected by rubbing the excrement of the reptile into the wound; this sounds not unplausible. Other favourite remedies are sucking, emetics, and an ingenious kind of vapour bath. The author does not mention the wonderfully clever practice of the Dalleeburra tribe, near Hughenden, described by Mr. Robert Christison, who says that the blackfellow will tie a ligature tightly round the limb (almost always the leg), above the wound, and then freely scarify the parts below the ligature.

LITERARY NOTES.

WITH the help of a bequest of the late Baron A. de Rothschild, a new journal, entitled *Les Annales Anti-alcooliques*, has recently been founded in France. The editor is Dr. Legrain, President of the French Antialcohol Society. Among those who have promised their collaboration are Professors Brouardel, Bouchard, Chauveau, Landouzy, Forel, Joffroy and Richet, and Drs. Daremberg, Letulle, Jacquet, and others.

Messrs. Williams and Norgate have made arrangements for the introduction of a second, enlarged and thoroughly revised edition of Hare's *System of Practical Therapeutics* to the medical profession of this country. Among the contributors are Dr. I. Burney Yeo (nutrition and foods, including the treatment of obesity and leanness), Dr. A. D. Rockwell (electro-therapeutics), Professor Ralph Stockman (diseases of the blood), Professor William M. Welch (small-pox), and Sir Lauder Brunton (nervous diseases of the heart).

A *Journal of Infectious Diseases* is to be issued in the autumn of the present year under the editorship of Professor Ludwig Hektoen and Professor Edward O. Jordan, of the University of Chicago. The cost, which it is estimated will amount to £1,000 annually, will be defrayed by Mr. and Mrs. Harold McCormick. This agreement is made for an indefinite term, and amounts to a £25,000 endowment. Since the death of their son, Jack Rockefeller McCormick, a few years ago, Mr. and Mrs. McCormick have founded the Institute for the

Study of Infectious Diseases, connected with the Rush Medical College, Chicago. The *Journal of Infectious Diseases* is intended to present to the scientific world the results of work done in that institute and in other laboratories.

Dr. Weir Mitchell is making an investigation into that curious form of idiosyncrasy which takes the form of a fear of the harmless, necessary cat. The sensation has no connexion with physical fear, as is sufficiently proved by the fact that men like Lord Roberts who have courageously faced death in every form will shudder at the sight of a cat. A writer in a recent number of the American *Bookman* holds that cat fear is a secondary manifestation of serpent fear. He says:

> The peculiar loathing which the white man feels for the snake extends, in highly sensitive natures, to creatures or even inanimate objects which resemble or suggest the snake. Thus, most persons shudder and shrink back when a large eel is thrown writhing at their feet. They know perfectly well that it is not only a harmless creature, but that it is not a snake at all; yet they would not touch it, and few care to eat it. As to inanimate objects, there are many which are sufficiently condemned when they have the adjective snaky applied to them. Snaky locks, snaky ringlets, snaky movements—all these and a score of other expressions connote something repulsive. Now, the cat is essentially a snaky creature. Most of us do not realize this because we lack the observing eye and the instinct of comparison, and, moreover, we are not troubled with hyperaesthesia. But to watch a cat as it moves about at ease, as it lies in the sun, or as it curves itself into its usual position when about to sleep; its stealthiness, its sinuous movements, the undulations of its lithe body—these are closely comparable with what we notice in the serpent, and if the cat have glossy fur, and if it be barred with stripes, there are moments when the resemblance is so striking as almost to make us shiver. Many persons feel this at times, but only in a momentary way. Other persons, however, are conscious of a feeling of repulsion which they cannot explain, but which, in reality, represents the serpent dread—the loathing of the snake and all that suggest the snake—even when the mind is not aware of the underlying reason. This dread is, we believe, the dread to which Dr. Mitchell has given the name "cat fear." It may be called "cat fear, but in the last analysis it is a satisfactory manifestation of snake fear."

The writer suggests "ælurophobia" (αἴλουρος, a cat) as a name for the dread of cats. Dr. Weir Mitchell will be glad to receive particulars of authentic cases.

To the *Glasgow Medical Journal* for June, Professor Jardine contributes a very interesting study of labour among primitive peoples. Parturition, he says, is a perfectly natural process and nature has taught primitive women many ways of assisting the process of childbirth which we, with all our vaunted skill in this era of science, have only comparatively recently re-discovered. With regard to posture he says that however savages may err in their theories concerning the phenomena of labour, we may be sure that uncivilized women untrammelled by the usages of society will instinctively assume the position best adapted for easy and speedy delivery. The posture assumed by the women of different tribes varies considerably; but they are seldom delivered lying down. By a few the erect posture is maintained all through labour. Those who are delivered standing walk about in the intervals between the pains, but cling to a stake, a limb of a tree, or a rope, or clasp their arms around the neck of a friend. According to Spence this position was quite common in the North of Scotland in the eighteenth century. The squatting posture is chosen by many. This is the position naturally assumed by a woman when attending to the calls of nature. Berry Hart has shown that the acts of micturition, defaecation, and parturition are analogous. Savage women instinctively assume the same posture for the performance of these three acts. This posture, says Professor Jardine, is undoubtedly the one in which the greatest amount of intra-abdominal pressure can be brought to bear on the abdominal contents. The semiprone position is often adopted, especially among the lower order of French Canadians. Closely allied to this is the semi-reclining position on the lap of an attendant. It is practised by some of the Indian tribes, and seems to be common among civilized people in remote country districts, the unfortunate husband being generally chosen to hold the patient. Professor Jardine thinks there can be little doubt that obstetric chairs, which were in great vogue at one time and are still used in Corsica and the East, owe their origin to this position. In one Indian tribe the woman lies upon her belly during the final stages with a support under the abdomen. An assistant stands astride the patient with his hands clasped below the fundus, and, as it were, lifts the woman during the pains, thus helping the expulsive powers of the uterus. In difficult labour, savages have very few expedients to assist, and those they do try are unfortunately generally fraught with harm to the patient. Vapour baths are frequently used to soften the parts, medicines are taken internally, and copious draughts of warm water are drunk. The herbs used are generally found to have some action on the uterus. The parts are frequently oiled, and in some cases the midwife distends the vagina with her hands. They rarely support the perineum. The Moors do this by means of a folded towel, as has already been mentioned. Kneading and massaging the abdomen is very generally resorted to, or the abdomen is compressed by an assistant clasping her arms round the patient. In some cases the woman is shaken much as one shakes a sack to empty its contents. Another equally severe form of treatment is for the patient to be placed on her back while the assistant tramples over the abdomen with her bare feet. In the management of the third stage of labour many tribes have instinctively adopted a method of treatment which we look upon as one of the advances made in obstetrics within recent times, namely, the expulsion of the placenta by kneading the uterus through the abdominal wall, or what is known as Credé's method. Some leave the expulsion of the placenta entirely to Nature, while others, again, attempt to expel it at once. One would naturally expect the cord would be used to draw it out, but fortunately this is not done nearly so often as among uneducated women in civilized countries. Usually the abdomen is kneaded, and firm pressure is exerted over the uterine fundus. This is done with the hands or sometimes with the bare feet. Some tribes use what is known as the squaw belt. This is four to five inches broad, and is buckled round the body over the uterus and drawn tight, expelling the placenta at once. The same effect is got by the woman leaning against a padded stick. Some of the negroes use a band of cloth, which a friend twists firmly by means of a stick. By some a stream of cold water is allowed to fall on the abdomen from a height. In very few cases do they attempt to extract the placenta manually. During the puerperal period in many tribes, especially in nomadic ones, the woman goes about her daily work as if nothing had happened, but with some she is carefully nursed for a week or so. In a few instances she is very much neglected, and sometimes both mother and child perish from sheer starvation. In Siam, what may be called a process of purification by fire has to be undergone for a month. The woman lies naked on a couch in front of a hot fire, exposing her abdomen to it until it is nearly roasted, and then turning her back for its share of heating. This alternate roasting of back and belly goes on day after day for a month until she is purified or dead.

THE PREVENTION OF CONSUMPTION.

UNITED STATES.

New York.—By signing a Bill regulating the establishment of tuberculosis hospitals in the various counties of the State by municipalies, corporations, associations, or individuals, Governor Odell has placed himself in opposition to the vigorously expressed sentiment of the medical profession and the more intelligent portion of the community. The special feature of the Bill is that it prevents the erection of such hospitals without the consent of the Board of Supervisors of the county or the Town Board of the town in which it is desired to place the proposed hospital. It thus makes it impossible not only for any city, but for "any fraternal order, charitable society, or philanthropic individual" to establish a hospital or even a camp for consumptives except under practically prohibitive conditions. It is felt, says the *Boston Medical and Surgical Journal*, that the approval by the Governor of this ill-advised Bill puts an end, for the present at least to a large extent, to the work of public-spirited citizens of New York State in combating and restricting the ravages of tuberculosis. The prohibition of sanatoria by the town and county authorities may be regarded as a certainty, because local interests will be arrayed against such institutions, through a mistaken idea of their dangers; and until this law is repealed an incalculable amount of injury will be inflicted.

NOTIFICATION OF PUERPERAL SEPTICAEMIA IN NEW YORK.—The Health Department of New York City proposes to extend the list of notifiable diseases, the most important of the proposed additions to the list being puerperal septicaemia. There is already in existence a State law requiring midwives to report the occurrence of fever in childbed, but apparently it is allowed to remain a dead letter.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1903.

SUBSCRIPTIONS to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, JULY 25TH, 1903.

THE LUST OF SLANDER.

AMONG the members of the deputation from the Parliamentary Association of the British Union for the Abolition of Vivisection which, as stated in the BRITISH MEDICAL JOURNAL of July 18th, waited on the Home Secretary last week was the Rev. J. Verschoyle. We know nothing of this ornament of the clerical profession, and we are ignorant of the religious denomination which has the privilege of owning him as one of its ministers. To him July 16th should be a memorable day, for, like Byron, he awoke on that morning and found himself famous. It is true the *Times*, from the report in which we took the brief account of the deputation we were able to give, does not mention his name. It is to the *Morning Leader* that we are indebted for the specific indication of the reverend gentleman's contribution to the dainty dish of slander set before the Home Secretary by the deputation. According to that light shining in the darkness of the lower middle classes, Mr. Verschoyle said that watching these operations -to wit vivisections—induced a callousness that in time in some cases developed into a feeling of positive pleasure. This allegation is said to have "highly incensed" the Home Secretary, who declared that such a statement was "a gross and grotesque libel on a high-minded and self-sacrificing profession." It is surely not surprising that any honourable and right-thinking man should be highly incensed at hearing so outrageous a calumny uttered by a minister of the religion a cardinal principle of which is the charity that thinketh no evil. The only evidence which Mr. Verschoyle seems to have vouchsafed in proof of his charge was that he had heard of "a vivisectionist who, when he had a moment to spare, had an animal brought out for experiment without removing his coat and hat." This reads like a distorted version of a statement made in Sir Michael Foster's *Life of Claude Bernard*. But the real source of the libel so happily characterized by the Home Secretary as gross and grotesque lies much deeper, and it will be interesting and instructive to trace the foul kennel of slander to its parent cesspool.

In the *Contemporary Review* for May, 1902, there appeared an article by Miss Frances Power Cobbe, entitled "*Schadenfreude*," a word which was explained to mean pleasure in the infliction of suffering. It is this emotion or sensation which, according to Miss Cobbe, is the real cause of every kind of cruelty from a slashing review to an *auto da fe*. In regard to flogging at school, it was said, with the spiritual insight of a beautiful soul, that "if no hidden and abominable gusto accompanied the indecent and cruel act, it is certain there would not have been one whipping for ten thousand which have been actually inflicted." Only a small part of the article was devoted to vivisection, but we cannot help thinking that Miss Cobbe followed the example of a famous religious leader who was said to write a long discourse for the sake of a single sentence. At any rate the feeling of pleasure in the infliction of suffering which forms the subject of her essay is said to find satisfaction at the present day mainly in "the most prolonged and acute agonies in hundreds of physiological and pathological laboratories in England, France, Germany, and America." Readers are invited to turn over for themselves "the great works of Cyon, Claude Bernard, and the other chief vivisectors and judge what are the real springs of interest which bring them to work over the torture trough." We think it best to give Miss Cobbe's conclusion in her own words:

> The conclusion which I, for my part, have reached after a quarter of a century of such painful study is that we have done vivisectors more than justice heretofore when we have credited them with either a burning zeal for therapeutic discoveries or for the advance of Science, and have merely blamed them for *disregarding* the claims of humanity in view of such high aims. I am persuaded that what (no doubt by a slip of undesigned candour) is described in the recent *Life of Claude Bernard* by an eminent English physiologist as the "Joys of the Laboratory," are very real "joys" to the vivisector; that is, *Schadenfreude*—Pleasure in the Pain he witnesses and creates.

Could there be a more striking illustration of *Schadenfreude* than this passage? Miss Cobbe, on no evidence whatever but that of her own morbid fancy, deliberately makes a charge of the most odious kind against a body of men who in respect of humanity will compare favourably with any other class of the community. Of the malicious insinuation against Sir Michael Foster in particular we need only say that it is difficult to believe that even Miss Cobbe, with all her power of autosuggestion, could have so grossly misunderstood what was meant by the "joys of the laboratory." We shall learn presently, however, what she considers to be the true interpretation of the words.

Miss Cobbe's article received the approval of Mr. Stephen Coleridge, who in the *Zoophilist* of June 2nd, 1902, said that she had "handled the matter with the dignity and restraint imperatively necessary in such a case." He added that it afforded him "great satisfaction to welcome this contribution to clear thought and right morals from a pen so often occupied of late years in indicting unhappy imputations upon ourselves." The last words refer to the divisions existing between the two parties among the antivivisectionists—the abolitionists and (if we may be allowed the word) the restrictionists. It may be said in passing that in their dealings with each other they had given abundant evidence of *Schadenfreude*.

The certificate of approval from Mr. Coleridge which has been quoted deserves special attention in view of a previous indictment of imputations against experimenters, which, if not actually written by Miss Cobbe, was fully approved by her and the Honorary Secretary of the British Union for the Abolition of Vivisection. The two articles bear so close a family likeness that it may with tolerable safety be inferred that if not written by the same hand they had the same source of inspiration. In the *Abolitionist*, which is the official organ of the British Union aforesaid, there appeared on February 15th, 1901, an article entitled A Terrible Revelation: Vivisection and Sexual Psychopathy. The "terrible revelation" is that vivisectors "make use of the sight of dying animals or torture animals to stimulate their lust." This atrocious charge is made on the authority of Dr. Leffingwell, an American antivivisectionist, and of some unnamed person whom he cites as saying, "En France on prolonge les vivisections pour se procurer d'infâmes plaisirs." Such,

then, are, according to the *Abolitionist*, the "joys of the laboratory," at the nature of which Miss Cobbe could only discreetly hint in the *Contemporary Review*. The writer proceeds as follows:

> It is only with difficulty and danger that the Slave of Sadism can gratify his perverted appetite at the expense of human beings: but he has merely to get a licence to vivisect to be empowered (for that is what it comes to as a matter of fact) to torture animals in any way he pleases in his own laboratory for his own enjoyment. Think of the fate of the affectionate dog in the power of such a vivisector, strapped to the trough, and mangled slowly to gratify the morbid cravings of one who finds delight in the prolongation of its agonies. What Sir Michael Foster in his able *Life of Claude Bernard* calls the "joys of the laboratory," are seen in a new light and a new significance in connexion with Dr. Leffingwell's terrible revelation.

These fruits of maiden meditation fancy-free were too much even for the *Zoophilist*, which, in its issue of March 1st, 1901, entered "a solemn protest against the publication of this unspeakable article, which must inevitably inflict the gravest injury upon our cause." But what is any cause to a person capable of writing the stuff which we have quoted compared with the pleasure of inflicting suffering on men whose motives are as far beyond the estimation, as their work is beyond the comprehension, of such revilers? The evident relish with which the foulest charges are made—often it would seem "only for wantonness"—against the medical profession, and the joy with which the most offensive epithets are hurled at the heads of scientific workers, seem to suggest the existence of a peculiar mental abnormality which we have ventured to call the lust of slander.

THE SCIENTIFIC SCHOLARSHIPS AND GRANTS OF THE ASSOCIATION.

THE British Medical Association has for many years past voted a sum of money annually for scholarships and grants for the promotion of scientific investigation. The amount thus voted in 1902-3 was £806, and for the year 1903-4 it is £800. Abstract reports of the work done in the past year were published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of July 4th, and we think it will be agreed that they show that the money has been well expended. The salaries of the men engaged in the work of medical research are often far less than those of a hospital beadle or a clerk—in one case within our knowledge an instrument porter in the operating theatre of one of the London hospitals received a salary much greater than the assistant bacteriologist. To such men the expenses of living only are met with difficulty, and they are certainly not themselves in a position to defray the cost of the researches they are desirous of undertaking. Thus the aid of the grants of the British Medical Association and of those made from the fund placed at the disposal of the Royal Society by the Government are of vital importance for the furtherance of their work.

The published reports, to which reference has been made before, show how wide a field of inquiry is being covered by the scholars and grantees of the Association, and it is admitted by the best German authorities that, in spite of the inadequate recognition of research in this country, much of the best work in physiology is now being done in it. Among the reports of the grantees, that of Dr. C. Bolton has no doubt been noted. He has carried out a valuable research on the causation of heart disease and dropsy. By constricting the pericardium he obstructs the filling of the heart, and produces an uncompensated heart lesion with the accompanying symptoms of dropsy, dyspnœa, and lessened secretion of urine. The dropsy begins in the serous cavities and subsequently invades the subcutaneous tissues. The immediate result of the operation is a fall of arterial and a rise of venous pressure, just as occurred when Cohnheim obstructed the heart by injecting oil into the pericardium. The venous pressure soon returns to its old level, for, as Leonard Hill has shown, the venous side of the vascular system when distended is sufficiently capacious to hold the blood, and without any elastic tension of its walls. The capillary pressure is below normal in consequence of the fall of arterial pressure, and the velocity of flow is lessened. The dropsy, therefore, cannot be ascribed to leakage from increased capillary pressure. Probably the diminished flow damages the capillary wall and renders it more permeable, while the diminished blood supply increases the osmotic pressure of the tissues by heightening their katabolic processes. The bioplasm becomes broken down into less complex bodies of higher osmotic pressure. These two factors increase transudation and diminish resorption, and hence the dropsy.

One of the most astounding discoveries of the present decade is the power of the blood to develop an infinite number of specific lysins and precipitins in response to the peritoneal injections of the blood, organ cells, spermatozoa of other animals, milk albumin, etc. Uhlenhuth has even noted the production of a precipitin for egg albumin by merely feeding a rabbit with this substance for twenty-four days. Dr. Langdon Brown has been working on this subject, and has, but without success, tried to produce a milk precipitin by feeding cats on milk. Bordet has produced this precipitin by intraperitoneal injections.

Dr. Mott, in conjunction with Professor Halliburton, has carried out interesting researches on the relation of stimulus to the healing of nerves. Some few years ago Mott and Sherrington proved that section of all the posterior nerve roots supplying one of the limbs of a monkey produces paralysis of that limb. The monkey no longer feels the limb, and so ceases to move it. Sherrington has shown us how impulses continually stream upwards from the sensory nerve endings in the muscles which control movements. Thus the flexors when in activity inhibit the extensors their antagonists and vice versa. From the skin, the joints and ligaments, likewise sensory impulses, ceaselessly stream up the sensory nerves, and modify the impulses dispatched down the motor nerves. Dr. Mott conceived the idea that this stream of impulses might accelerate the healing of divided and resutured nerves. On both sides he divided the ulnar and median nerves and resutured them; on one side only he divided the posterior roots. The result, however, is so far negative for the healing of the nerves has occurred with equal readiness on both sides. Dr. Mott has studied also the effect of division of the posterior roots on the grey matter of the spinal cord, and on the fibres which arise from the cells of the grey matter. He finds that extensive section of the posterior roots causes vascular changes in the grey matter of the posterior horns. Arteries supplying the grey matter run in the posterior roots, and these were divided. At the same time the nerve fibre atrophy which follows the section of the roots damages the blood supply of the posterior horns; the degeneration of the fibres arising in the grey matter is, therefore, very variable, and is to be ascribed to these secondary vascular changes rather than to the section of the posterior root fibres.

In regard to the regeneration of nerve, Dr. Mott supports the old view that the axis cylinder grows down from the

central end. The whole question of nerve regeneration has recently been restudied in this country by Anderson, Mott, and Head. Anderson has shown that nerves may regenerate through their anastomoses almost as freely as the circulation after ligature of main vessels may become established through collateral arteriole and capillary pathways. The function of the neurilemma cells in the peripheral end of a divided nerve seems to be the preparation of a protoplasmic bed into which the sprouting axis cylinders may grow.

Mr. J. J. R. Macleod, in conjunction with Mr. Leonard Hill, has carried out researches on the causation of caisson sickness. Paul Bert thirty years ago proved that oxygen at a high pressure is a convulsant, arrests the respiratory exchange, and finally kills all forms of protoplasm. At the same time he suggested that men exposed to high-pressure air are in danger of gas embolism on coming out of the caissons or diving bells. Hill and Macleod have proved that the circulation is mechanically unaffected by compressed air. The blood and tissue fluids, on the other hand, become surcharged with gas, and this gas on decompression froths off just as when a soda-water bottle is opened. They have demonstrated gas embolism by watching during decompression the circulation in the web of a frog or bat's wing through the thick glass window of their pressure chamber. On recompression they have observed the resolution of the gas bubbles and the re-establishment of the circulation. Blood-gas analysis showed that the solution of the compressed air in the fluids of the body is a slow process. Thus the arterial blood only becomes saturated with nitrogen to the full amount, corresponding to Dalton's law, after exposure of an animal to seven atmospheres of air for one hour and a-half. Their experiments prove that the shorter the working shifts and the slower the late of decompression the less will divers and caisson workers be exposed to the dangers of gas embolism. The diminished risks of short shifts have been established empirically by the death roll of several caisson works. Hill and Macleod find that high pressures of oxygen diminish the output of carbonic acid and lower the body temperature. Too much oxygen is a protoplasmic poison, lessening metabolism, acting as a convulsant to the nervous system. As Lorrain Smith first showed, congestion, haemorrhage, and exudation, producing consolidation of the lung, may be caused by two hours' exposure to five atmospheres of pure oxygen gas. In a compressed air chamber the air becomes saturated with moisture, and this prevents the loss of water from the body. Thus a man working in a warm caisson may have great difficulty in regulating his body temperature. On the other hand, in a cold caisson the compressed wet air rapidly conducts away heat from the body, and the workman is exposed to excessive cooling.

Dr. Pembrey, in conjunction with Dr. Haldane and other observers, has proved the surprising fact that the rectal temperature of healthy men during muscular work may rise to 101° F. The average temperature of the urine of eighty-three soldiers was found to be 99.65° F. at about 4 p.m. The maximum was 100.8°, and the minimum 99.2°.

One of the most rapid and astonishing advances in physiological knowledge has been in the subject of pancreatic secretion. After Pawlow had discovered that the passage of the gastric juice or dilute hydrochloric acid into the duodenum excited the secretion of pancreatic juice, Popielski, Wertheimer, and Lepage showed that this excitation took place when all the nerves of the duodenum were divided. Starling and Bayliss then proved that the acid, by acting on the mucous membrane of the small intestine, leads to the formation of a substance "secretin" which passes into the blood and so to the pancreas, and there excites the flow of juice. The juice when first secreted has no digestive power on proteid; it holds the ferment precursor or zymogen which must be "activated" to become the enzyme. The workers in Pawlow's institute have shown that the "activation" is brought about by enterokinase, a substance secreted in the intestinal juice, and according to Vernon it is the entrance of the pancreatic juice into the gut which excites the formation of this enterokinase. Thus the interactions are linked together in a marvellous fashion; the acid of the gastric juice excites the formation of secretin; the secretin excites the formation of pancreatic zymogen; the pancreatic secretion excites the formation of the enterokinase; and the enterokinase activates the zymogen into the enzyme, which digests the proteid. Finally, the products of pancreatic digestion (peptones, albumoses) are further split up into simple crystalline bodies by "erepsin," a ferment discovered by A. Cohnheim in the intestinal mucous membrane. The Pawlow school have also shown that the constitution of the food taken alters the nature of the secretion. Sand thrown into the mouth of a dog produces a watery fermentless secretion, while bread excites a secretion rich in ptyalin. So bread, milk, and potatoes excite the secretion of a maximal and flesh a minimal amount of trypzymogen. The more difficult the proteid to digest the greater is the amount of ferment produced. Similarly, a fatty diet was found by Walther to produce more steapsin in the pancreatic juice than a diet devoid in fat, while Weinland found that a diet of milk excited the appearance of a milk-sugar splitting ferment lactase—a ferment not normally present in the pancreatic juice of dogs. Dr. F. A. Bainbridge, one of the Research Scholars, confirmed the results of Weinland. He finds, moreover, that extracts of the intestinal mucous membrane taken from milk-fed animals cause the pancreas of other animals not fed on milk, to secrete lactase. The action of milk-sugar on the intestinal mucous membrane apparently produces some chemical substance which, by passing into the blood, excites the formation of lactase in the pancreatic juice.

These researches open up a wide field for fresh investigation. Just as the injection of blood, epithelia, etc., into the peritoneum produces the appearance of specific lysins in the serum of animals, so the taking of particular food stuffs seem to excite the digestive apparatus to the formation of specific ferments. How this conception throws light on the proverb that "one man's meat may be another's poison" need hardly be insisted on. The ferments are formed to suit the diet, and if the latter be suddenly changed the equilibrium is naturally disturbed.

Several other excellent researches might be noticed, but enough has been said to show how yearly the Association helps in this way to advance the progress of the medical sciences.

NATIONAL HEALTH AND MILITARY SERVICE.

THE statements as to physical unfitness of men offering themselves for enlistment in the army contained in the memorandum by the Director-General, Army Medical Service, an abstract of which is published at page 202, will not come as a surprise to those who have been interested

in the subject. The facts were referred to in the House of Lords by the Earl of Meath on July 6th, in connexion with the report of the Royal Commission on Physical Training in Scotland, and the annual report of the Inspector-General of Recruiting for 1902. The outcome of the Earl of Meath's speech, followed by one from the Bishop of Ripon, was a reply from the Duke of Devonshire, promising that later on, if necessary, a Royal Commission would be appointed to inquire into the matter. In order to ascertain whether physical degeneracy is actually increasing in the lower classes at the present day, it would be essential that we should know the physical standard of the same class, say, fifty years ago, and such data are not readily available.

To the steady flow of the rural population into towns, and the consequent overcrowding, is due much of the physical degeneration of the nation which certainly exists, though its extent is not accurately determined. Had it not been for the improved sanitary conditions in towns initiated by the labours of Sir Edwin Chadwick and Sir John Simon, we tremble to think of the state of our towns would be in now. Two centuries ago the mortality in London was 80 per 1,000, while in 1902 it was under 18. The death-rate of the English troops at home is less than one-half what it was thirty years ago. This is accounted for chiefly by the improvement in the cleanliness of dwellings, the better removal of refuse, a better water supply, the prevention of infectious disease, the care of personal health (hospitals and dispensaries), improved nursing and hygiene in the sick room, and better means for the disposal of the dead. Yet in spite of the enormous reduction in the death-rate of London and other large towns, and in that of the troops at home, Sir Frederick Maurice states that 60 per cent. of the men offering themselves for service are physically unfit to be soldiers.

Complete reliance cannot be placed upon the statistics of the causes of rejection given in the Director-General's memorandum, owing to the fact that recruits have not always been examined with the same strictness. For instance, there has been a marked increase in the rejections under the head of "loss or decay of teeth," but the recognition of the high value to be placed upon the soundness of teeth in relation to the maintenance of the physical efficiency of the soldier on service is a comparatively new thing. Though it may be accepted that bad teeth are as a rule a sign of bad health, yet it does not follow that all athletes and men of endurance must have good ones. It is generally understood that recruits with unsound teeth are rejected because they could not eat the regulation biscuit. Perhaps if Government were to supply sponge cakes to the men instead of brickbats the 49.26 per thousand recruits rejected might be greatly reduced! It is said that the War Office has decided to provide soldiers invalided from active service on account of diseased teeth with artificial dentures, and that men not invalided are also to be supplied with a set, provided they can prove that the loss of their own was caused by active service in the field. It may be asked why artificial teeth should not be supplied to all men desiring to enlist who would be rejected on the ground of unsound teeth alone provided they are fit in other respects. The objection is that Tommies are careless and would lose them, as in the case of a man in the Royal Engineers, who lost his on his way to South Africa and was an invalid in consequence during the whole campaign.

But, apart from rejections for bad teeth, the figures are alarmingly large, and Sir Lauder Brunton attributes the deterioration of physique to the fact that weakly men marry girls as weak as themselves, and bring into the world sickly children, who grow up more weak and incompetent than their parents. These children are apt to be neglected and to deteriorate still further from various causes: ignorance on the part of mothers of the simplest rules of feeding and hygiene; scarcity of milk, and the impossibility of getting it clean and free from contamination; crowding of children in badly-ventilated schools, where they are compelled to do hard brain work regardless of ill-nourished bodies; and badly-ventilated sleeping rooms, into which possibly sunshine never penetrates. Curious particulars have come to light in the summary of tables relating to the census of England and Wales (1901) lately published. Between the ages of 10 and 14 there are in England and Wales 2,673,967 children, the sexes being pretty evenly divided, 1,334,688 boys, and 1,339,279 girls. Of these children, 138,130 boys and 70,262 girls are at work. There are, for instance, 142 10-year-old charwomen, 505 employed in laundries, 681 in the tobacco trade, 450 in the jewellery and watchmaking industries, 674 in the earthenware trades, and 30,367 in various textile occupations. There are 22 girl messengers, 19 photographers, and 102 actresses all 10 or 11 years old.

The effect of close confinement and hard work upon children of tender years cannot but be injurious. Small wonder if they bring into the world, when their time comes, sons with narrow chests and imperfect constitutions. If, in addition, the parents' earnings are insufficient to obtain the minimum necessities for the maintenance of physical efficiency in the family, as, according to Mr. Rowntree and Mr. Charles Booth, happens in the case of more than a quarter of our town populations, it is easily conceivable that the British race will deteriorate. The bulk of our soldiers are drawn from that stratum of the population living in actual poverty or close to the poverty line. To quote Sir Frederick Maurice: "Is it or is it not true that the whole labouring population of the land are at the present living under conditions which make it impossible that they should rear the next generation to be sufficiently virile to supply more than two out of five men effective for the purposes of either peace or war?" Now, more than at any time in the history of the British people, do we require stalwart sons to people the colonies and to uphold the prestige of the nation, and we trust that the searching inquiry which the Duke of Devonshire's speech seems to foreshadow, if it does not dispel the fears engendered by the memorandum of the Director-General, may, at any rate, be the means of arresting the physical decline of the nation.

THE PRINCE OF WALES AND THE BRITISH MEDICAL ASSOCIATION.

AT the annual meeting of the British Medical Association to be held at Swansea next week, the Prince of Wales having graciously consented to accept the honorary membership of the Association, one of the first duties of the new President, Dr. T. D. Griffiths, will be to move the following resolution:

> That H.R.H. the Prince of Wales be and he is hereby elected an honorary member of the British Medical Association, not only for the honour his membership will confer on the Association, but for the distinguished services His Royal Highness has rendered to the medical profession.

It will be remembered that the King (who is now the Patron of the British Medical Association) was elected as Prince of Wales an honorary member when the Association

held its annual meeting at Ipswich in 1900. It is felt to be a happy coincidence that the Heir Apparent should similarly honour the Association on the occasion of its first meeting within the Principality since His Royal Highness was created Prince of Wales. We drew attention last week to the business which was likely to come before the annual Representative Meeting and in the SUPPLEMENT of this issue the programme of the sectional business is republished revised to date. The social side of the meeting had also been very carefully considered and, as will be seen by the detailed statement in the SUPPLEMENT, p. clxxviii, a large number of interesting excursions and many garden parties and receptions have been arranged. Among these special mention may, perhaps, be made of the garden party at Craig-y-Nos Castle given by Baron and Baroness Cederstrom, on Friday, July 31st. In the BRITISH MEDICAL JOURNAL of June 6th, an illustrated article was published on the excursions which have been arranged on Saturday, August 1st, and in the SUPPLEMENT of this issue will be found the latest particulars. The Mayor and Corporation of Tenby will entertain a large party. A smaller party will visit Caerphilly Castle, at the invitation of the Marquis of Bute, while Miss Talbot will receive members who join the party visiting the Peninsula of Gower at her seat, Penrice Castle. In addition, arrangements have been made for parties to visit Llanwrtyd Wells, where, after luncheon offered by Mr. Campbell Davys, an opportunity will be afforded of visiting the sulphur springs. Another party will visit Llandrindod Wells, at the invitation of the local urban council and the medical profession, and will be shown over the pump-house and entertained at lunch. In addition to these longer excursions on Saturday, there will be, on Wednesday, Thursday, and Friday, excursions to Towy Valley, Bishopston Valley, Caswell Bay, Oystermouth Castle, and to Ilston and Park-le-Breos Valleys, the Mumbles Pier, Cerrig Cennen Castle, and Glyn Hir Falls, and a circular drive through Golden Grove by Druslyn Castle, round Crongaer and Dynevor Park, as well as a sea trip to Carmarthen Bay. The list of apartments and hotels at which members attending the annual meeting at Swansea can be accommodated, either at Swansea itself or at the Mumbles, five miles away, but easily reached by a frequent tramway service, is again published this week. As will be seen, there is ample accommodation, and we are informed that all the rooms advertised have been inspected by ladies, and are guaranteed to be suitable. For the convenience of members who have not previously made a selection, a complete list of rooms not engaged up to Monday, July 27th, will be available in the Reception Room at the Free Library during Monday and Tuesday; it would, however, greatly facilitate the business of the Lodgings Committee if the visitors who have not engaged rooms would write beforehand to one of the Secretaries, Dr. Rhys Davies, Swansea, or Dr. Veale, Mumbles, stating their requirements; suitable rooms could then be at once recommended to them on their arrival.

THE POPE AND HIS MEDICAL ADVISERS.

THE Pope's illness has had the ending which was foreseen from the beginning by all who read the bulletins with understanding. The case was a simple one of pneumonia, with pleurisy, in a man of very advanced age. The illness seems to have run a perfectly normal course, the only remarkable feature in it being the extraordinary power of resistance displayed by the patient. The bulletins have throughout borne the stamp of perfect honesty, and there has been no appearance of their being "edited" for publication, as those relating to royal personages sometimes are. Nor were cryptic phrases used to disguise the fact that the venerable patient presented the usual symptoms of impending dissolution. The papers, as is their wont, found stones of stumbling in the simple procedure of thoracocentesis, and in the nature of the fluid drawn off with the syringe. There were serious headshakings over the blood, and whispers of cancer; other correspondents, having what must be regarded as very exclusive information, informed an anxious world that the "pleuric" fluid contained fibroma! The doctors have been criticized in a manner which we can only characterize as grossly indecent; yet there could be no better proof of their skill than the fact that they succeeded in keeping a somewhat indocile patient of 94 alive for more than a fortnight under conditions that but for their care would probably have proved fatal in a few days. The men whose names have lately been so much before the world have both achieved considerable distinction in their profession. Dr. Giuseppe Lapponi, the "Archiatro di Sua Santità," took his degree at Bologna in 1875. He was for some time assistant to Dr. Tartuffi, Professor of Pathological Anatomy in that University. After practising in various places he was invited in 1888 to take medical charge of Leo XIII under Dr. Ceccarelli, who had been Surgeon to Pius IX. On the death of Dr. Ceccarelli, which occurred not long after, Dr. Lapponi was entrusted with the charge of the Pope's health. The official remuneration of a position demanding great tact and discretion in addition to medical skill is only £10 a month. Dr. Gaetano Mazzoni is Professor of Clinical Surgery and Lecturer in Special Pathology in the University of Rome and Surgeon to the Giovanni Hospital of that city. He has contributed largely to surgical literature. A few years ago he operated on the Pope for a cystic tumour in the groin. For his services on that occasion the Pope conferred upon him the Grand Cross of the Order of St. Gregory the Great. He had previously been decorated by the King of Italy for a book in which he traced the initiation of the Red Cross movement to a Neapolitan surgeon, Ferdinando Palasciano.

IN HONOUR OF "CADGE OF NORWICH."

THE late Mr. Cadge was not content with being a prophet of a new and better order of things in hospital construction and management, but he gave effectual help towards the fulfilment of his own prophecies. And now that he is gone the recognition of his work and the honour done to his memory in the scene of his fruitful labours show that in his case at least the general statement that a prophet is without honour in his own country finds no application. On July 16th a new nurses' home in connexion with the Norfolk and Norwich Hospital was opened by the Countess of Leicester, who made the interesting announcement that the Earl of Leicester—who was unfortunately unable to be present at the ceremony—had given £5,000 towards the endowment of the home, and that he wished this munificent gift to be a memorial to his old friend, Mr. Cadge, "to whom the Norfolk and Norwich Hospital and the Cromer Convalescent Home are so deeply indebted." We understand that a surgical ward in the Norfolk and Norwich Hospital is to be named after the distinguished surgeon whose scientific reputation shed such lustre on the institution, and whose ceaseless efforts and generous benefactions contributed so materially to its renovation. A further testimony to the veneration in which Mr. Cadge was held by his medical and surgical colleagues and his professional brethren is the fact that they propose to place a brass tablet to his memory in the chapel of the hospital.

STATE AND VOLUNTARY HOSPITALS.

THE question of the London hospitals falling upon the rates for support can, at present and most fortunately, hardly be considered to be within the area of practical politics, but in our issue of April 11th we were led to discuss it in some of its bearings by some recent incidents at Liverpool and an article in the *Times* by Mr. J. G. Craggs, M.V.O. It has again during the last few weeks been the subject of some discussion in the press, and in connexion with it an occurrence at the annual meeting of a large limited liability company in the City is of some interest. The chairman, after the usual business had been discussed, asked for the formal approval by the shareholders of a proposal of the directors to set aside out of the profits for the year

a sum of £500 for hospital purposes, and the approval asked for was immediately forthcoming. The two grounds upon which the propriety of limited companies making a regular practice of contributing to hospitals and other great charities of an allied character has been urged are that such contributions are eminently sound from a business point of view, inasmuch as that in default of them local rates may be enormously increased, while the other is that to support hospitals is a duty inherited from the great private mercantile houses which most of these limited companies have absorbed on their formation. The one argument, in short, represents the contributions as a kind of insurance against heavily increased rates, and the other as the necessary sequence of the law "*noblesse oblige*," which applies not less to public companies than to private persons. It is not certain which of these views the shareholders had in mind when voting the sum in question, but from the remarks with which the chairman introduced his proposal, it would appear as if the directors at any rate were chiefly influenced by a consciousness that their company had received benefit from hospital enterprise, and wished to recognize this fact in a suitable manner. The incident, however, has a particular as well as a general interest, since the fund for which it was mentioned that the sum to be set aside is intended is the future rebuilding fund of St. Bartholomew's Hospital. Reference was made to the allegation that the hospital was not required where it now stands, only to be set aside by quotation of the practical knowledge and observation of those connected with the company, and of the extent to which the directors knew their own employés resorted to it.

BURGH POLICE (SCOTLAND) BILL.

WE have the satisfaction of announcing that this Bill has been amended, in Grand Committee, in accordance with the views urged in these columns. The clause transferring the duty of certifying houses unfit for habitation from the medical officer of health to a triumvirate composed of the medical officer of health, burgh surveyor, and sanitary inspector, and leaving the decision in such cases, without appeal, to the local authority, was struck out, on the motion of the Lord Advocate. For the milk (tuberculosis) clauses originally standing in the Bill there have been substituted a series of clauses generally upon the lines advocated by us. Positive authority to apply the tuberculin test in the case of cows whose udders are under suspicion has, however, been withheld. The confusing duplication of the existing powers for the appointment of deputy medical officers and sanitary inspectors, to which we took exception, has been abolished. Altogether, the critics of the Bill have reason to be satisfied with the result of their opposition.

PROPOSED HEALTH SOCIETY AT WESTMINSTER.

THE Mayor of Westminster (Captain H. M. Jessel, M.P.) presided on Monday afternoon, at the Westminster City Hall, over a meeting held for the purpose of forming a Health Society in Westminster. The object of this society will be to teach the poor of the city simple rules of health, and to improve the conditions under which the poor of the city live. A large assembly of ladies and gentlemen prominent in local philanthropic work were present, and listened with interest to Captain Jessel's scheme. He said that the Government had recognized that the question of the health and physique of the people was very pressing and important, and had pledged itself to the appointment of a Royal Commission to inquire into the matter. But as the Royal Commission might take a long time to act, he wished to enlist the sympathies of district visitors and the various charity organizations in order to get them to work collectively and systematically towards improving the public health at once. Much had been done by a system of voluntary notification of consumption, but much remained to be done. The Medical Officer of Health for Westminster stated that in Manchester and Salford health societies had been formed, and that the need for help in Westminster was urgent, as there were 41,000 families who lived in one or two-roomed houses. A committee was appointed to submit a scheme for starting the "Westminster Health Society," and letters were read from the Duke of Norfolk, Lady Rothschild, the Bishop of London, and the Earl of Kilmorey backing up the scheme. Captain Jessel is to be congratulated on promoting so excellent a work, and it is earnestly to be hoped that other boroughs will speedily follow his example and assist in the work of teaching the people simple rules of health at present ignored by them. If we may express an opinion, a special feature of the teaching should be as to the feeding and management of infants, say, up to the age of 2 years. If mothers once realized what this meant for the future happiness and well-being of their children, the physique of the nation would rapidly improve instead of deteriorating. We wish Captain Jessel all possible success in carrying out his scheme.

THE TORQUAY WATER SUPPLY.

WE have received a copy of a report made by Professor Percy Frankland, F.R.S., on the water supply of Torquay. The history of the Torquay water supply dates back to 1856. By a recent Act of Parliament the corporation has acquired the gathering ground of its water supply, comprising 2,241 acres, and by the abolition of every habitation within the watershed a gathering ground which was open to criticism is now satisfactory. A number of springs come to the surface and give rise to two principal streams—the Trenchford and Kennick brooks. The streams are protected by fences in order that no pollution may arise from cattle, and the land under cultivation has been restricted to the outlying portions of the gathering ground. The farmhouses have been removed, and objectionable fertilizers disallowed on the cultivated land. As a result of these improvements, and the consequent control of the gathering ground, Professor Frankland considers the water supply much improved. He has made chemical and bacteriological examinations of samples from the two tributary brooks and the supply as delivered in Torquay itself. The water as delivered appears to be slightly turbid, and possesses a very slight peaty taste. It is free from poisonous metals, and contains on an average about 300 micro-organisms per c.cm. on gelatine plates. No indol is produced in broth or carbolic broth, and there is no growth on carbolic gelatine. It would have been interesting to know a little more about the species of organisms which were found to be present, but information on that point is not given. Several bacteria developed on carbolic gelatine in the samples from the Trenchford source and the main stream, but these had apparently vanished before the water reached the town. Anaërobic cultivations were made in milk with a negative result. The report appears to be, on the whole, satisfactory, and calls for but little comment. We may, however, add that it lays emphasis upon a point the importance of which we have continually advocated, namely, that an examination of water must be threefold, and include examination of gathering ground and bacteriological and chemical tests. We entirely disagree with a view which has recently been expressed in London that a chemical examination is sufficient. All three investigations should be made before a conclusion is arrived at.

THE EPIDEMIC IN THE WEST INDIES.

IN the BRITISH MEDICAL JOURNAL of May 23rd a review was published of a large number of communications received some time before from various correspondents in the West Indies relative to an epidemic disease prevailing there as to the nature of which an acute controversy had arisen. After consideration of the clinical picture of the disease as given by writers on both sides of the question, we expressed the opinion that the disease could be nothing but small-pox, and gave instances of corresponding epidemics of a somewhat abnormal type which had occurred elsewhere. At the time the communications were sent the chief seat of the disease was Trinidad, and Mr. Bridger,

who had been sent over to report as to the nature of the disease on behalf of the Government of the neighbouring island of Barbadoes, considered it to be small-pox, as which it had also been diagnosed from the beginning by Dr. Masson, of Port of Spain (Trinidad). The Trinidad Government, on the other hand, would not admit that the disease was small-pox, and no adequate steps were being taken to arrest its progress, the disease indeed being treated as of small importance. Although the Trinidad authorities were supported to some extent by local medical opinion, there was reason to doubt whether the Government was allowing itself to be guided by medical considerations solely, and whether it was not, partly at least, influenced by the consideration that official admission of the existence of small-pox would lead to trade losses through the imposition of quarantine. The subsequent course of events supports the view that the disease was small-pox, and though there has been no definite admission of this fact by the Trinidad Government, it is satisfactory that it has at least allowed proper measures to control the disease to be adopted. The disease spread to or appeared in several other colonies, where a diagnosis of small-pox was made, and in Trinidad itself the Chief Medical Officer of Health apparently received permission to take the matter actively in hand. He issued, therefore, a popular tract, a copy of which we have received, which describes the disease as not being "in the air as believed," but as "catching" from person to person. It goes on to state that it has an incubation period of "about fourteen days," and clear directions are given for the isolation of cases and the precautions to be taken by those in attendance on the sick. The duty of those affected, however lightly, to abstain from tailoring and corresponding work, and to keep their children from school, is also touched on. Finally, it is stated that it has been found that recent vaccination gives protection against the disease, or renders its attacks very light, and offers free vaccination to all who apply for it. The term "pox" and not small-pox is used, but this official statement as to the effect of vaccination removes all doubt as to the nature of the disease, since it was only the conflicting evidence on this point which appeared to us to leave any possible room for doubt as to the diagnosis which should be made.

THE RESPONSIBILITY OF SURGEONS AND THEIR FEES B.C. 2300.

IN the time of Hammurabi, King of Babylon, who lived 2,300 years B.C., the laws regulating the practice of surgery seem to have been rather uncomfortable. According to the code of laws of this monarch, discovered at Susa in 1902 by M. de Morgan, and transcribed and translated by Father Scheil, a surgeon who operated on any one with a bronze stylet or removed a film and saved an eye, was entitled to receive 10 shekels of silver. In the case of a noble the surgeon received 5 shekels, and for a slave 2 shekels. For setting a fracture in the case of a freeman he received 5 shekels, for the son of a noble 3 shekels, for a slave 2 shekels. These fees are doubtless large; but, on the other hand, the surgeon had to bear a somewhat onerous responsibility, for if, when operating with the stylet, he killed a freeman or caused the loss of an eye, his hands were to be cut off: if the slave of a noble died after a similar operation, the surgeon had to give a slave in return: if he caused the loss of a slave's eye, he had to pay half his value. Apparently the surgeon was charged with the duty of marking slaves; if a surgeon marked a slave as "inalienable" without the knowledge of his master, his hand was to be cut off; but if he was induced to do this by the deception of a third person, that person was to be killed and buried in his house, while the surgeon was set free on swearing that he did not perform the act knowingly. It is somewhat difficult to understand how it would be possible to exercise the profession of a surgeon under such laws. And yet the civilization in which they were enacted was one of long date and far removed from the primitive organization of society. Perhaps, like some legislation nearer home, they were not so formidable in reality as they appear on the statute book. In England a hundred years ago the law punished sheep stealing with death; but we know the result was not to hang sheep stealers, but to make it impossible to get a conviction.

THE EPILEPTIC COLONY, CHALFONT, BUCKS.

ON July 21st Sir William Broadbent laid the foundation stone of the administration house, comprising accommodation for the matron, storerooms, central kitchen, and water tower, which the progress of the Colony has rendered necessary for its efficient and economical working. The entire cost will be £4,800, and of this sum £3,000 has been provided by the munificence of Mr. Passmore Edwards, whose previous benefactions to the Colony are well known. The proceedings took place in a marquee erected near the "Eleanor House," in the presence of a considerable number of supporters of the National Society for the Employment of Epileptics. Mr. Montefiore Micholls, in the unavoidable absence of Dr. Buzzard, moved a vote of thanks to Sir William and Lady Broadbent for their attendance, remarking that Sir William was not only a great physician, but a great philanthropist. He also expressed gratitude for the presence of Mr. and Mrs. Passmore Edwards, to whom the Colony owed so much. Mr. H. A. Harben seconded, and the resolution was unanimously adopted. Sir William Broadbent, having laid the foundation stone, acknowledged the compliment, and read a telegram from the Prince of Wales conveying his good wishes as President of the Society. The work of the Colony was now too well known to require any long description. Its object was to remove the state of isolation in which unfortunate sufferers from epilepsy were placed through not their fault, but their afflictions, and to provide them with cheerful and healthy surroundings, and suitable occupations and recreations. These indeed formed a most important part of treatment, and he thought that the curative results of the Colony system would probably contrast favourably with the somewhat depressing statistics as to lack of progress in the cure of epilepsy which Dr. Aldren Turner had recently brought under the notice of the Royal Medical and Chirurgical Society. Explaining that the absence of children from the Colony was due to a piece of legislative stupidity restricting the size of houses, which he was happy to say was on the point of being repealed through the sympathetic action of Mr. Heywood Johnstone and Mr. Haldane, he announced that before long the Executive Committee hoped to see established upon the estate two houses for epileptic children, each for twenty-four. In conclusion, he warmly eulogized the judicious generosity of Mr. Passmore Edwards, whose multifarious public benefactions had been guided, not merely from the heart, but from the head. The company afterwards inspected the various buildings, in one of which were exhibited specimens of work by the colonists.

THE OPENING OF THE BELGRAVE HOSPITAL FOR CHILDREN.

THE Princess Henry of Battenberg opened on July 20th those portions of the Belgrave Hospital in Clapham Road consisting of the centre, east, and part of the south wing, out-patients' building, and mortuary which have been already built, and which contain three wards with cots, babies' ward, in all about 35 cots, with operating room and offices for the staff. A general description of the building and an account of how it was proposed to conduct the hospital was published in the BRITISH MEDICAL JOURNAL of July 7th, 1900, p. 35. In asking the Princess to declare the hospital open, Lord Windsor state that since Her Royal Highness laid the foundation stone three years ago, a sum of £35,000 had been expended on the buildings, £10,000 was still owing, and an additional £5,000 would be required to finish the present buildings. Anonymous donors had, he said, been most generous: one had offered £1,000 on condition that a similar amount was subscribed in sums of not less than £25, and so readily had this been done that the money was already

available, and a second sum of £1,000 was being offered by the same anonymous donor on somewhat similar terms. The whole of the internal fittings had been presented, and two members of the Committee had each offered to furnish a ward. After the Princess had declared the hospital open, and had consented to one of the wards being named the Princess Beatrice Ward, the visitors were conducted round the wards. The operating room is fitted with all the most recent appliances for the performance of aseptic operations, even to the elbow-handles on taps and doors, to which our attention was drawn by one of the surgical staff, designed to prevent the surgeon's hands needing to come into contact with taps or doors. In the babies' ward, pictures of Little Boy Blue, Goosey-Goosey Gander, and Round About the Mulberry Bush on the walls will delight many an infant heart. No trouble or expense seems to have been spared to make the wards attractive to children, or to equip the hospital generally for its work in South London.

THE NEW SYDENHAM SOCIETY.

WE have been requested to draw the attention of our readers to the fact that the New Sydenham Society will hold its annual meeting at Swansea during the sittings of the British Medical Association. The meeting will take place at 9 a.m. on Friday, July 31st, in the Board Room of the Higher Grade School, Mr. Henry Power, the treasurer, will take the chair. This is the forty-fifth anniversary, and all who take interest in the Society's objects are invited to attend. The sixth and seventh fasciculi of the *Atlas of Clinical Medicine and Surgery*, which are now in course of issue, embrace a wide variety of subjects. It may interest those who are accustomed to contribute to the annual pathological museums of the British Medical Association to know that not a few of the illustrations which have been published are taken from originals exhibited last year at the Manchester meeting. It is, we understand, proposed to select (by permission) each year from specimens exhibited such as may seem desirable for publication. Thus the *Atlas* may secure important novelties, and the temporary museums may gain an element of permanency which must prove an encouragement to exhibitors. The *Atlas* will be, so far as drawings are concerned, in some degree an illustrated companion to the museum. We are informed that the rate of issue of the fasciculi and the number of plates given may easily be doubled if the profession, as seems likely to be the case, should give the Society adequate support. Amongst those whose exhibits were selected from last year's museum and have been published are Dr. Arthur Hall of Sheffield, Dr. Kelynack, Dr. Thelwall Thomas, Mr. Robert Jones, and Dr. David Morgan.

INFANT MORTALITY IN BOMBAY.

IN a paper recently read before the Bombay Medical and Physical Society upon Infant Mortality in Bombay: its Causes and Prevention, Dr. D. R. Bardi deals exhaustively with a subject, the serious nature of which is evident when it is pointed out that in 1899 the infant mortality was 593 per 1,000 births, and 867.67 per 1,000 of population amongst children under 1 year of age. Comparisons with preceding years show that matters are growing worse rather than improving: whilst, compared with the mortality of children under 1 year of age in England, Bombay shows a mortality nearly seven times as great. Twenty-two "tables" of statistics are given, and from an examination of those bearing upon the more immediate causes of death, it is seen that debility is the most potent factor under seven months, whilst respiratory and nervous diseases kill many more before they are two years of age. This condition of things is to a large extent due to overcrowding, bad sanitation, poverty, and, above all, ignorance and superstition, which can only be efficiently dealt with "by sustained and organized efforts on the part of Government and the municipality no less than the public at large." Among the principal causes producing debility a graphic picture is drawn of the effects of "bad feeding," general "mismanagement during childbirth," and neglect of "personal hygiene," while "intemperance" and "too frequent gestation" in producing weakly offspring very materially aid in increasing the death-rate. Broadly speaking, the main factors thus causing infant mortality from disease are "ignorance or wilful neglect of the first principles of sanitation; domestic and social conditions including superstition and prejudice, especially among the poor; the evils of poverty, and the unsuitability of compulsory outdoor work for nursing mothers." The remedies consist mainly, therefore, in the enforcement of sanitary measures, education specially directed towards a knowledge of hygienic principles, and the minimizing the ill-effects of the necessary industrial conditions of the poor. The excellent results of the Vaccination Acts where the "conscientious objector" is not recognized, clearly show the advantages of compulsory enforcement of sanitary laws in that particular direction, and, as seen during the plague, the quiet persistent efforts of tactful people may be invaluable in overcoming prejudice and superstition. The impure milk supply is another serious menace to infant life, and suggestions are made for betterment in this direction. Seeing that the milk industry is increasing in Bombay, it is suggested, among other things, that dispensaries should be attached and nurseries built where infants could be left in charge of good nurses while their mothers were at work. In many directions, by carefully organized authoritative measures much of the enormous infant mortality in Bombay could be prevented, and the causes of its unnecessarily high percentage to a large extent removed.

AT a recent meeting of the Wurtemberg Diet the question of the establishment of a chair of homoeopathy in the University of Tübingen came up again for discussion. Notwithstanding the affirmative vote of the Chamber of Deputies, the Government declined to establish the chair, basing its refusal on a report of the Academic Senate of the University.

THE London County Council at its meeting on Tuesday resolved, subject to certain conditions, to contribute the £20,000 a year required for the maintenance of the new Institute of Technology which it is proposed to establish in connexion with the University of London at South Kensington. Among the conditions laid down were the following: that a sufficient number of scholarships be placed at the disposal of the Council; and that, in view of the national scope and utility of the work, substantial contributions towards maintenance should be made from national funds, and that other counties and boroughs should be invited to contribute.

MEDICAL NOTES IN PARLIAMENT.

[FROM OUR LOBBY CORRESPONDENT.]

Vivisection.—On Thursday in last week Dr. Shipman put three questions to the Home Secretary, in which he asked: (1) How many experiments under Certificate C (Cruelty to Animals Act, 1876) had been witnessed by an inspector; (2) in how many instances the conditions of the licence under the Act had been violated since the Home Secretary's accession to office, and the steps taken in any such instances; and (3) on what authority it was stated by the inspector in the return made under the Act that only four irregularities had occurred during the year? Mr. Akers-Douglas replied that no experiments under Certificate C (which relates to experiments under anaesthetics in illustration of lectures) were reported as having been witnessed by an inspector in the year 1902. In answer to the other questions, he said that he was not aware of any instances of violation of the conditions of the licence other than the four mentioned in the last annual report, and that these were trifling departures, by inadventure, from the strict letter of the law and did not call for criminal proceedings. The statement of these four irregularities was made on the authority of the inspector as a result of his visits and his constant communication with the licence holders.

The Norwood Poor-Law Schools and Infectious Diseases.—Sir John Gorst asked the President of the Local Government Board whether his attention had been called to recent outbreaks of measles and whooping-cough, and excessive mortality from other causes, amongst the children of the Norwood Poor-law Schools, and to a report made on this subject by Dr. Priestley, the Medical Officer of Health of Lambeth, in which the aggregation of children was condemned; whether any additional expenditure on the schools by the Lambeth Board of Guardians had been sanctioned by the Local Government Board, and to what amount; and whether Dr. Priestley's report could be published as a Parliamentary paper. Mr. Long answered that his attention had been drawn to this matter, and he had seen the report made by Dr. Priestley. He had been in communication with the guardians on the subject. A committee appointed by them had been investigating the matter, and he was now expecting their final report. On receipt of it he should consider what action it might be necessary to take. He had stated on June 29th last the expenditure which had been sanctioned in connexion with these schools. No further expenditure had been sanctioned. He did not think that Dr. Priestley's report should be issued as a Parliamentary paper at the present time.

The Prevention of Corruption Bill.—This Bill, which has already passed all its stages in the Lords, now, after the ordeal of the Grand Committee of Law in the House of Commons, stands for third reading at an early date. It is one of the minor Bills likely to become law before the House rises. In the Grand Committee, Subsection IV of Clause 1 was struck out, which prohibited as a defence to an accusation under the proposed Act the production of evidence to show that the commission was usual and customary. Subsection V of Clause 1, which threw on the accused the onus of proving that his acceptance of commission was not a corrupt act, was also omitted. In addition to these two changes, the necessity of obtaining the fiat of the Attorney-General before a prosecution could be instituted was also negatived. The Bill will of necessity be of much interest to all insurance officials, and will probably affect fire and accident offices more than those dealing only with life insurance. All agents, and the word agent is defined as any "person acting for or being trustee for another," will have to be most careful in receiving "consideration" of any kind. The Bill has not so much concern for medical men as for lawyers, who more especially do agency work, but it might affect any medical man who acted as agent for a patient and received valuable consideration for services from an insurance office or any third person. The penalty under the Bill on conviction or indictment is two years' imprisonment with or without hard labour, or a fine not exceeding £500, or both, and on summary conviction imprisonment as above for four months, or a fine of £50, or both.

The following is the text of the Bill:

A Bill [as amended by the Standing Committee on Law, etc.] intituled An Act for the better Prevention of Corruption.

Be it enacted by the King's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:

1. *Punishment of Corrupt Transactions with Agents.*—(1) If any agent corruptly accepts or obtains, or agrees to accept or attempts to obtain, from any person for himself or for any other person, any gift or consideration as an inducement or reward for doing or forbearing to do, or for having done or forborne to do, any act in relation to his principal's affairs or business, or for showing or forbearing to show favour or disfavour to any person in relation to his principal's affairs or business; or

If any person corruptly gives or agrees to give or offers any gift or consideration to any agent as an inducement or reward for doing or forbearing to do, or for having done or forborne to do, any act in relation to his principal's affairs or business, or for showing or forbearing to show favour or disfavour to any person in relation to his principal's affairs or business; or

If any person knowingly gives to any agent, or if any agent knowingly uses with intent to deceive his principal, any receipt, account, or other document in respect of which the principal is interested, and which contains any statement which is false or erroneous or defective in any material particular, and which to his knowledge is intended to mislead the principal,

he shall be guilty of a misdemeanour, and shall be liable on conviction on indictment to imprisonment, with or without hard labour, for a term not exceeding two years, or to a fine not exceeding five hundred pounds, or to both such imprisonment and such fine, or on summary conviction to imprisonment, with or without hard labour, for a term not exceeding four months, or to a fine not exceeding fifty pounds, or to both such imprisonment and such fine.

(2) For the purposes of this Act the expression "consideration" includes valuable consideration of any kind; the expression "agent" includes any person employed by or acting for or being trustee for another; and the expression "principal" includes an employer or beneficiary under any trust.

(3) A person serving under the Crown is an agent within the meaning of this Act.

2. *Prosecution of Offences.*—(1) Every prosecution under this Act shall be subject to the provisions of the Vexatious Indictments Act, 1859, and any enactment amending or extending the same.

(2) Every information for any offence under this Act shall be made or laid upon oath.

(3) The expenses of any prosecution on indictment under this Act shall be defrayed as in cases of indictment for felony.

(4) A court of quarter sessions shall not have jurisdiction to inquire of, hear, and determine prosecutions on indictments for offences under this Act.

(5) Any person aggrieved by a conviction made by a court of summary jurisdiction on determining an information under this Act may appeal therefrom to quarter sessions.

3. *Application to Scotland.*—This Act shall extend to Scotland subject to the following modifications:

(1) Section 11 shall not extend to Scotland;

(2) In Scotland all offences which are punishable under this Act on summary conviction shall be prosecuted before the sheriff in manner provided by the Summary Jurisdiction (Scotland) Acts.

4. *Short Title and Commencement.*—(1) This Act may be cited as the Prevention of Corruption Act, 1903.

(2) This Act shall come into operation on the first day of January nineteen hundred and four.

The Prevention of Small-pox.—On Tuesday last Colonel Sadler asked the President of the Local Government Board if he would favourably consider the desirability of making an order for preventing the spread of small-pox, to the effect that all persons who had been exposed to the infection thereof should be isolated during the incubation period of the disease, or alternatively vaccinated or revaccinated; and further that it should be made an offence to withhold information or give false information in respect to cases of small-pox. Mr. Long answered that he would consider the expediency of giving local authorities further powers in relation to these matters. But legislation would probably be necessary if the subject was to be dealt with satisfactorily.

Instruction in Hygiene for Female Prisoners.—The Home Secretary, in answer to a question put by Mr. Flower, stated last week that the industries carried out under skilled instruction as a part of the regular prison routine for female prisoners furnished practical teaching in laundry work and cooking, and, with regard to "hygiene," as much as was possible was done by including "sanitation" as one of the subjects of a course of lectures which had now for some months past been delivered by lady visitors to female prisoners in the metropolis according to a regular and approved plan. It was hoped to extend, in due course, the good work that was being done by lady visitors in London in this respect to other prisons throughout the country.

Parochial Medical Officers of Scotland.—Mr. Cathcart Wason on Monday last moved for and obtained a return "of the number of parishes in the counties of Orkney, Shetland, Caithness, Sutherland, Ross, and Cromarty, Inverness, and Argyll, in which the office of resident parochial medical officer has been vacant within the last seven years, stating (*a*) name of parish, (*b*) number of times vacancy has occurred, (*c*) length of time the office has been vacant in each case. This information will be of much interest when published, as showing how far the provision of regular medical attendance is secured in the Highlands and Islands of Scotland.

The Vaccination Act, 1898, which expires this year, has been inserted in the schedule of the Expiring Laws Continuance Bill, and so will be renewed for one year.

Dropped Bills. The two Bills dealing with vaccination and vaccination prosecutions introduced by Mr. Broadhurst and Mr. Channing have been dropped. The same fate has overtaken the Medical Acts Amendment Bill of Sir John Tuke, and two Bills introduced for a similar purpose by General Laurie. Sir Francis Powell still perseveres with the Pollution of Rivers Bill, but has dropped the Public Health Bill. The Plumbers' Registration Bill, the Poor-law Officers' Superannuation Bill (Scotland), and the Local Authorities

Officers' Superannuation Bill have all disappeared from the orders, but the Cruelty to Animals Bill, the Poor-law Superannuation (Ireland) Bill, and the Pharmacy Bill are still kept on the paper, but with no chance of passing this session.

Experiments on Animals without Anaesthetics.—On Wednesday Mr. Perks asked the Secretary of State for the Home Department whether he was aware that during the year 1902 there were 12,000 experiments performed on living animals without anaesthetics, and, if so, would he state whether the feeding experiments forming part of the 12,000 included starving animals to death and also forced overfeeding; and whether these experiments were authorized by the Home Office. Mr. Secretary Akers-Douglas answered that the return which had been laid before Parliament showed that, under licences and certificates duly authorized by the Secretary of State for the Home Department, over 12,000 experiments (being mostly inoculations and in no case involving any serious operation) were performed in 1902 without anaesthetics. Neither the starving of animals to death nor the forced overfeeding of animals was included among the experiments authorized or performed. In the case of one gentleman who was authorized to perform certain experiments, including four upon rats or rabbits kept without food for certain periods at the end of which they were to be killed, the return showed one experiment.

The Medical Examination of School Children.—Sir John Brunner on Monday called attention to the action of the larger School Boards in Scotland in instituting a medical examination of the children, and asked the Secretary to the Board of Education if similar action would be encouraged in England and Wales. Sir William Anson answered that the question of the medical examination of the children of their area by a local authority was one which the Board considered must be left to that authority to decide; but the Board would of course gladly welcome any such step as this which was likely to contribute to the improvement of the health and well-being of the children. The Board issued in October, 1901, a circular to the managers and teachers of schools in large towns as to the great importance of proper attention being paid to the eyesight of the children.

THE GENERAL MEDICAL COUNCIL.

The Regulations and Examinations of the Conjoint Board in England.

On the second day of the session the statistics presented by Dr. Norman Moore were available in print, and it appeared that in ten years only 172 students had presented themselves who had taken chemistry and 76 who had taken biology at schools refused recognition by the General Medical Council; of these, 101 and 46 respectively had passed. The attitude assumed by the Royal Colleges would thus appear to be a rigid insistence upon legal rights, with consequences deleterious to medical education in general, and without the justification which might have been afforded had the matter been of substantial importance from any other point of view.

Sir Victor Horsley's motion to report the Conjoint Board to the Privy Council was withdrawn after some discussion, in which the mover urged that it should be postponed until November rather than withdrawn. A resolution proposed by Dr. MacAlister in the first instance, and afterwards fathered by Dr. Windle, took its place. This was to the effect that the resolutions of the Council be formally communicated to the two Royal Colleges, and that they be urged to take steps to remedy the defects pointed out. Finally it was resolved that a small committee should be appointed by the President to confer with representatives of the two Colleges, in order to arrive, if possible, at a solution of the difficulty.

Dr. Windle's proposal to institute an inquiry into the whole question of the first year's curriculum, and also into the question whether any of the subjects might be made subjects of the Preliminary Examination, was not brought forward in that form, inasmuch as it was thought premature until the reports on the examinations of the other bodies had come in and been considered. It is significant, however that a motion embracing so much alteration should have been framed, and it seems probable that at a later stage the whole question may be discussed, and alterations introduced.

The University of Oxford.

An important and interesting debate took place upon the report of the Examination Committee with regard to the Qualifying Examination at Oxford, which had been declared to be insufficient. Here again Mr. Bryant—though as Chairman of the Committee he formally moved the adoption of the report—declared that he dissented from parts of it, and proceeded to read the draft report which he had himself prepared. This was objected to, as it was suggested that he ought to have presented a minority report; the nature of his objections were, however, made sufficiently plain in his speech.

Dr. Payne, as representative of the University of Oxford, argued against the adoption of the report. He admitted that certain lapses from the letter of the regulations of the University had taken place, and that the arrangements were not all that they might have been. He complained that a portion of the report was an account of conversation between the examiners, which, if properly part of the report at all, should have been taken down verbatim, but that a general report of mere conversation was not material on which to base conclusions. He further pointed out that in all of the examinations of the University large latitude was left to the examiners, who might use marks or not as they thought best. This being the case, he argued that blame for the passing of a candidate attached rather to the examiner, who frequently had no connexion with the University, than to the University itself, and that in this case the two examiners thus indirectly complained of were Dr. Frederick Roberts and Dr. Seymour Sharkey, who both had very wide experience as examiners, and were not at all likely to allow unfit candidates to pass. Moreover, there was a direct conflict in most material particulars between the statements of the report and a statement from an examiner as to the amount of time which had been devoted to the clinical examination in medicine.

But what, perhaps, carried as much weight as anything was the statement that one of the candidates who was said to have passed improperly had had a most distinguished career as a student, and both at the University and at a London medical school had carried everything before him. Further, from statistics as to the results of the examinations over a period of years it appeared that a large number of the candidates are already qualified, and that amongst those holding the qualifications of other licensing bodies no less than 33 per cent. are rejected, which, it was urged, was hardly consistent with the statement that the examination was insufficient. Comparative statistics drawn from the different universities brought out a percentage of rejections at Oxford of 55 per cent., of 48 at the London University, of 40 at the Victoria University, of 44 at the Royal University of Ireland, of 37 at Cambridge, of 35 at Aberdeen, of 25 at Glasgow, and of only 20 at Edinburgh. Thus the university whose examination it was proposed to brand as "insufficient" had actually rejected a higher percentage of candidates than any other university. Notwithstanding that it was urged that the Council ought to support the reports of its Visitors and Inspector, an amendment to the motion that the report be adopted was proposed and carried by Dr. MacAlister to the effect that the examination should be again inspected. A strong argument for such a course was afforded by the statement made by Dr. Payne that many of the recommendations contained in the report were under consideration at the instance of the examiners, and that new regulations were in course of being framed.

The University of London.

On similar grounds the report on the Final Examinations of the University of London received similar treatment; the examination in surgery here was the portion of the examination which had been declared to be unsatisfactory, and new regulations will soon be in force.

Scotland.

THE VICTORIA HOSPITAL FOR CONSUMPTION, EDINBURGH.

THE principal event in Scotland last week was the opening by Lord Rosebery of the new pavilions of the Victoria Hospital for Consumption at Craigleith, which took place on Wednesday in the grounds of the institution. A large marquee had been erected for the occasion, and the attendance of representative personages was very large in spite of the heavy rain which to some extent marred the proceedings from a social point of view. The Lord Provost of Edinburgh, Sir James Steel, who took the chair, made a short speech in which he drew attention to the importance of the work that had been already done, and called for assistance in that which remained to be accomplished, mentioning that ample room remained in the grounds, and that any one could put up a new pavilion for a sum of £2,500. He then called upon Dr. R. W. Philip to give a brief sketch of the history, scope, and prospects of the institution.

Origin of the Work.

Dr. Philip said that the institution was founded in 1887 by one or two persons who desired to commemorate the jubilee of Her Majesty Queen Victoria by taking in hand a crusade against consumption among the poor. They commenced operations in a small way, but from the first laid down for themselves a comprehensive programme. It included first of all the establishment of a dispensary for the treatment of consumptive poor at their own homes and at the institution; secondly, the dissemination of information regarding the prevention and treatment of the disease by means of printed leaflets; thirdly, the erection of a hospital or sanatorium for the curative treatment of the more hopeful cases; and, fourthly, the erection of a Friedenheim home for the reception of dying and very advanced cases. The dispensary began work in an upstair room in Bank Street. On November 22nd, 1887, the first two patients were received, being recommended to it by two medical men in the town, a fact which gave the speaker an opportunity of commenting on the pleasant relations which had always existed between the institution and the medical profession both in Edinburgh and the country. By 1891 the work had grown so much that a move had to be made to the existing premises in Lauriston Place simply for want of accommodation. The numbers had grown so much that on one afternoon 87 patients were registered as in attendance, and the annual average attendance throughout the year either at the patients' houses or at the dispensary was 15,000. In 1894 the Committee were able to make a start on the third part of their programme by becoming subtenants of Craigleith House, in the park of which they started forthwith the open-air treatment. In 1898 they were enabled to purchase the property outright, including the old mansion house and some 16 acres of ground for the sum of £17,000. Having succeeded in this, they immediately started the erection of the existing annexes and shelters. In 1902 the three new pavilions which were that day to be opened were commenced. The number of beds occupied at first was only 15. At the present time the average number of in-patients was 60, and the new pavilions would add 32 beds to the potential accommodation of the institution.

Needs and Finances.

At the start the finances of the undertaking were of the simplest kind. One or two friends paid for everything. Whenever difficulties arose application was made to them, and they supplied whatever money was required. With the advancing interests of the institution, however, the situation naturally became somewhat more complex, and appeal had to be made to a wider circle, which will again require to be enlarged to meet the needs of the immediate future. Up to the present expenditure has only been £1,093 in excess of ordinary income, but when the new pavilions are at work the income, in default of additions, is expected to be some £3,000 too little. The first need of the hospital, therefore, is a considerable addition to its annual income to meet ordinary expenditure; but in addition to this the erection of a new central administrative block, which shall contain a kitchen, dining room, and other offices, is very much needed. Besides this there is still room in the grounds for five other pavilions similar to the three new ones, and a small clinical laboratory for observation and research in connexion with the disease is also desirable. The Committee which has been in charge of the undertaking for the last fifteen years feels that each of those items is of importance, but attaches at the present moment the greatest importance to the erection of a central administrative block, because meanwhile with sixty, and possibly seventy, patients the present administrative accommodation is totally inadequate. Further, the Committee has always before it the picture of many patients whose lives might be saved if it were possible to admit them at once, but who under present circumstances have to run the risk of waiting month after month until their turn for admission comes. The Committee was sanguine that one of the outcomes of the gathering that day would be that complete fulfilment of the original programme would be possible, and the hospital be placed on a basis somewhat more commensurate with the necessities of the case. In conclusion Dr. Philip, on behalf of the Committee, expressed thanks to the number of friends to whom the hospital had been indebted. Some of them were no longer alive, but he particularly desired to recall Mrs. Dickson (one of the earliest and most substantial contributors), Miss Motherwell, Mr. Julius Beilby, the late Bailie Pollard, and Mr. Findlay of Aberlour. Further, it might be recalled that one of the last public functions in the neighbourhood performed by General Wauchope was the opening of a bazaar in the interests of the hospital. It was also desired to acknowledge the great help given by those who had been kindly collecting money for the hospital and the munificent gift of a pavilion by Mr. William Younger. The service rendered by the Lord Provost in presiding, and by Lord Rosebery in coming down to open the pavilions, was also suitably acknowledged.

The Victoria Hospital and the Medical Profession.

Dr. T. S. Clouston, President of the Royal College of Physicians, said that when any comparatively new undertaking of a philanthropic nature connected with medicine came before the Edinburgh public, most of the Edinburgh citizens—or a great many of them at least—were apt to ask, "What do the doctors think of it"? And it was in respect of that question he had something to say. The doctors in their turn naturally ask, Is the undertaking founded on good principles? Is it well carried out? Is it needed? Is it a success so far as it has gone? These were the questions, and as representing the Royal College of Physicians, a very representative body of the profession, he was able to give an emphatic "yes" to every one of them. The profession of medicine had watched the undertaking from the beginning with the greatest possible interest. The development of the modern treatment of consumption was one of the great dramatic events in medicine, and founded on principles the great simplicity of which was doubtless one reason of its success. The Victoria Hospital was a pioneer undertaking. The fortunate patients who had been in it under the care of Dr. Philip and his staff were not the only ones who had benefited. It had also conferred great advantage on Edinburgh and the country generally by helping to promote the education of the people in regard to such a large sanitary question as phthisis. The mere fact of a few consumptive patients being treated, whether successfully or not, was a very small matter in the history of mankind, but if the general public could be so educated that not only should they understand the treatment of consumption, but, above all things, understand how it might be prevented, then beyond a doubt the work of the hospital would be one of the greatest that any institution could undertake. He therefore desired to express as emphatically as he could the entire appreciation of the profession of medicine, not only in Edinburgh but in Scotland, of the whole undertaking.

Consumptives in the Past.

Sir J. Halliday Croom, President of the Royal College of Surgeons, followed with an assurance that his presence there would be approved by the whole body which he represented. He was old enough, he said, to remember when consumption was a different thing in its treatment from what it was to-day, and he was pleased to be able to say that he was one of those present when the Victoria Hospital was founded, and thankful to have lived to see it now a recognized institution of the City of Edinburgh. Edinburgh was full of medical charities and some of them overlapped one another. They all deflected money from the great institution, the Infirmary, but this particular institution took no money from the Royal Infirmary, and overlapped no charity whatever, because it fulfilled a function entirely its own, and performed a work that

the Royal Infirmary could not look at or touch. He felt safe in saying that no greater progress had been made in anything than in the treatment of phthisis, and while the great achievement in the department of surgery had been the introduction of Listerism, the great achievement in medicine has been the open-air treatment. It had been a surprise and pleasure to him on a visit to the hospital to see the condition of the patients within it. They all remembered the consumptives of past times with pale faces, anaemic and hectic, but in this hospital young men and women might be seen with no hectic peculiarity, no cough, but with good colour and evidently in the enjoyment of robust health. They might indeed almost pass for dairymaids and ploughmen. Such had been the change which open-air treatment had made on the patients, and while a great number of them were permanently cured, the large majority of the remainder were relieved and enjoyed a long period of good health. Not only did they live better, but they died better. It helped them in death; because whereas in the old days a consumptive patient died in a box bed, looking the picture of all that was miserable, he died now in a nice, clean, healthy atmosphere, leaving behind him a more consoling memory to his friends. He considered that all present owed a deep debt of gratitude to Dr. Philip for what he had done for this institution; but for his energy and self-effacement the institution would never have been what it is, and there was only one way in which they could repay him, and that was by increasing their subscriptions.

The Anti-Consumption Crusade.

Mr. Malcolm Morris, Honorary Treasurer of the National Association for the Prevention of Consumption, said that he had been invited from London to take part in the proceedings, and he considered the meeting a red-letter day not only in the history of that particular hospital, but also in the crusade against consumption throughout the land for this reason: The Victoria Hospital commenced work a few years ago in an exceedingly small way, and was the first hospital in Scotland to demonstrate the truth that it was possible to save consumptives and not to leave them to die as was done formerly. Pioneer work was no easy work, and it was something more than the self-denial and unselfish conduct of Dr. Philip which had brought the movement to the position that it occupied to-day. At the time the work was begun the rich consumptive was sent to Africa, to Egypt, to the Alps, to all parts of the world where he could be protected from the stress of bad weather. No one, if he could afford it, would have dreamt of staying in Scotland for a single day. Through the experimental skill and pluck of Dr. Philip, however, it had been demonstrated that not only the poor but the rich might remain in Scotland and get as much advantage towards the cure of their consumption as if they went to the uttermost ends of the earth to find it. It was no trifling matter that a man should run the risk of obloquy, should be sneered at, and probably at the start have exceedingly bad nights thinking of the poor unfortunate victim lying in the open air in a blizzard in December in Scotland. Dr. Philip must have had very considerable doubts as to whether it was a risk worth running, and yet he knew from the knowledge of the facts of the case, from his work, from his learning, that he was right; and on that knowledge he persisted in carrying this out in spite of laughter, in spite of sneers, in spite of hundreds of difficulties, to the position in which matters now were. It was easy to be wise after the event, but what about the difficulties in the early days of what was really a pioneer work? It was pioneer work of that sort which had led to the formation of the Society which he had the honour to represent, and so far things were going well, but there was great risk of the whole thing being overdone in one direction.

The Need for Economy.

The huge sums which were being spent in the erection of consumption palaces were unnecessary, and the Victoria Hospital was a proof that the disease can be met by the very simplest possible means. It was not necessary to spend £400 or £500 per bed upon the patient; his needs could be met by a simple building of this character, in which not more than £100 to £120 per bed was expended. It was a matter of the greatest possible importance that this point should be thoroughly understood at the present time, because there was a risk that in the further extension of the movement towards costly palaces this might lead to the swing of the pendulum the other way; rather than spend any more money on bricks and mortar the treatment of the disease might be neglected. Too much importance could not be attached to this question, for the treatment of phthisis must be extended to the lowest stratum of society, and the whole crusade was practically one of economics. Another point was that the contrast between a palatial place such as many hospitals unfortunately were and the humble homes of the poor was too great. In hospitals such as the Victoria patients could be taught the lesson of absolute scientific cleanliness, the value of keeping their windows open, and other sanitary laws, and taught it in a way which was not in too great a contrast with their own homes.

Lord Rosebery's Address.

Lord Rosebery then rose, and said it was one of the ironies of the world that public men were called upon to perform every kind of duty, even those for which they are least qualified. He was probably less qualified to speak on it that any of those present, and certainly less so than those distinguished specialists whom it was his fate to follow. It required, however, no special knowledge to enable him to express on behalf of the meeting the thanks due to Mr. Younger for his gift of one of the pavilions, and to the architect for the way in which the work had been done. The curse of consumption was widespread, and, excluding deaths of children under 5 years, it was calculated that no less than one-seventh of the deaths in Edinburgh arose from this source alone. It was a great evil, and only of late years had the remedy which Nature herself seemed to suggest been adopted.

The Climate of Scotland.

He learned from Dr. Philip that open-air treatment had been urged as long ago as the middle of the last century, but that in England it had only been in operation for some ten years. In that case, if Dr. Philip was scoffed at when he began his labours, as had been mentioned, it was surely not without some prima-facie reason. The climate of Scotland at certain seasons of the year was not easy to endure, and even in the middle of summer it was not invariably benignant. If then, it was found difficult to bear with the help of closed windows and stoves, it was not remarkable that it should have come as a shock to many to find that it was suggested that consumptive patients, who most needed care and sedulous attendance, were to be exposed for their cure to all the worst that the climate of Scotland could do. Nevertheless, it was an undoubted fact that free exposure to that very climate had been of the most miraculous benefit to patients who were not in so advanced a stage of the disease as to make their recovery hopeless. He believed that every male patient in the hospital at that moment was sleeping in the open air—that was, not with open windows, but under a slight shelter in the open air, much less effective as a protection than the marquee in which he was speaking. Some patients slept all last winter in the open air. Sometimes the snow had to be taken from under their beds when they arose in the morning; and even when they were in the house an endeavour was made to keep every window open, and to approximate the room as nearly as possible to the conditions of the outer atmosphere, whatever that atmosphere might be, and to meet the demands made on the system by cold simply by clothing. In a comparatively short time little extra clothing was needed, as he heard from Dr. Philip, because the patients became acclimatized. The fact of the very small number of deaths that had occurred in the hospital since it was opened was also striking; and surely, bearing these facts in mind, their hearts might be lifted up with thankfulness to the Almighty, who had vouchsafed to disclose the secret of this great healing prescription, and at the same time express gratitude to the men who had given their lives, their energies, and their time to the relief of this particular form of illness. A few years ago the uninitiated, at any rate, regarded consumption as a disease almost beyond hope, but those who went round this cheerful home of illness he thought might feel that there was every hope for those consumptive patients who were taken in time, and be correspondingly anxious to help, so far as their means permitted, in enabling this experiment to be carried out on a much larger scale than it was at present. Other appeals were constantly being made, but this was one of a singular kind. It did not take any money away from the Infirmary, and yet did so much to stem the deadly incursions of a most fatal disease. There was, after all, when all was said and done, not very much that mankind could do for each other, but in ways of this sort the wealthier members of the community could feel that their wealth was not altogether idle, and that what they subtracted from their own

pleasures bore an interest not lower but higher than any money that they might otherwise expend.

On conclusion of Lord Rosebery's address the Treasurer (Mr. Norman Cairns, C.A.,) announced that the result of the appeal recently issued was a sum of £1,589 11s. 6d.

Vote of Thanks to Lord Rosebery.

The Lord Justice General, Lord Kinross, then moved a vote of thanks to Lord Rosebery for the great service he had performed to the institution, and he might say to Scotland. His words would be widely read, and further study of the subject and effort to the same end be stimulated.

A Friedenheim Home.

Sheriff Guthrie then moved a vote of thanks to the Lord Provost, and in the course of his speech called attention to the activity which the Town Council had always shown in matters of public health, and hoped that it would see its way to doing what the Committee of the Victoria could not do. This was to establish homes for those who were past curative treatment, and so enable them to die without infecting their untainted friends and relatives.

Sir Alexander Christison then presented Lord Rosebery with a key, and asked him to accept it from the Committee, and with it open the entrance of the new pavilions. With this request Lord Rosebery complied, and, after adding a few words as to the reasons which had led him to come and to the fact that he had stipulated that he should not be expected to make a very formal address, declared the new buildings open.

Ireland.

Youghal Auxiliary Asylum.

At the last monthly meeting of the Cork District Lunatic Asylum, Dr. Brown, Roman Catholic Bishop of Cloyne, moved the following resolution, which was carried by 14 votes to 1:

That the offices of matron, assistant matron, and hospital nurses in the auxiliary asylum at Youghal be entrusted to nuns.

Dr. Meade, Protestant Bishop of Cork, the only dissentient member present, urged that it would be unfair to exclude officials of the Cork Asylum from applying for positions in the Youghal Auxiliary. These nurses, many of them holding certificates of proficiency in general nursing, together with special training in mental nursing, having given their life to the work and passed the necessary examinations in the Medico-Psychological Association, would find their reasonable hopes and prospects of promotion barred by such a resolution. Bishop Meade also drew attention to the rules laid down by the Privy Council in regard to the appointment of matron, namely:

That candidates shall be between 25 and 35, except in case of existing officials; they shall produce certificates of hospital training or the certificate of the Medico-Psychological Association.

The same rule applied to the assistant matron and head nurses. While acknowledging the kindness and devotion of nuns, he urged that in so large an institution as the Cork District Asylum there must be many of the minor officials who were well qualified by past training and experience to fill such positions as were needed in the Auxiliary Asylum.

A Doctor's Suicide.

Dr. John Jones, who until a year ago was Dispensary Medical Officer of Drumconrath Dispensary Union, was found dead in bed on Sunday last, having died from the effects of prussic acid. He was 76 years of age, and had spent fifty years in the service. Long illnesses, contracted in the discharge of onerous duties, destroyed his practice, and when at last he retired on a small pension, he found himself loaded with debt and pressed by creditors. In a letter he wrote pathetically: "Myself almost gone: my reason almost. Awful temptation—debts on every side—no loophole—no way of escape save one which greatly tempts..... Forgotten, forsaken, disgraced, disappointed, tempted beyond measure. May God forgive the thoughts in my mind." A verdict of temporary insanity was returned. The house is said to have presented all the appearances of abject poverty.

Granard Again.

The guardians of this union appear to need some common sense. Annoyed by the decision of the Local Government Board on the nursing scandal, they have entered upon a series of worrying annoyances, by which it is evidently hoped they will in time get rid of their medical officer. The other day he applied for leave of absence, and another medical man appeared and took over charge, without, it is alleged, communicating with Dr. Kenny. When the matter was inquired into before the guardians he produced a telegram from another doctor telling him to "go at once to Granard." The guardians declared that he had fully exonerated himself. Dr. Kenny does not appear to have been satisfied with these proceedings, and the guardians settled the matter by suspending him, and appointing the new doctor as his *locum tenens*. But the Local Government Board promptly removed the suspension, required that Dr. Maguire should be informed that he was not authorized to act as temporary medical officer, and has now ordered a further sworn inquiry.

Antivivisectionism in Belfast.

We have received the following note from Dr. George St. George, Surgeon to the County Antrim Infirmary:

In your issue of Saturday, July 18th, there is an account of an antivivisection meeting. The chair is reported to have been taken by "The Rector of Lisburn." Allow me to contradict this, as the worthy Rector of Lisburn (Rev. Canon Pormden) "has more wit than to be there," as Lady Fairfax said about her husband at the trial of Charles I. The rev. gentleman that occupied the chair was the Rev. R. U. Greer, the incumbent of Christ Church (a district church in the parish), Lisburn.

Central Midwives Board.

We are informed by Mr. G. W. Duncan, Secretary, that a meeting of the Central Midwives Board was held at the Privy Council, Whitehall, on July 14th, 1903, Dr. Champneys in the chair.

The Secretary reported that in accordance with the resolution of the Board at the last meeting, he had taken the offices at No. 6, Suffolk Street, Pall Mall. The rooms were now being redecorated, and it was hoped that the Board would be able to move in early in August.

Messrs. Barclay and Co., Limited, 1, Pall Mall East, were appointed bankers to the Board.

Dr. J. R. Kaye, County Medical Officer for the West Riding of Yorkshire; Dr. G. Reid, County Medical Officer for Staffordshire; and Dr. Shirley Murphy, County Medical Officer for London, attended as a deputation from the Conference of County Medical Officers in order to make certain suggestions with reference to the administration of the Act in county areas. At the conclusion of the discussion the Chairman thanked the members of the deputation for their attendance, and for pointing out how certain difficulties in the administration of the Act might be overcome.

The Epidemic of Small-pox.

During the last month the tide of the small-pox epidemic has continued in the majority of localities to fall with steadiness. A great many places and districts are now considered quite free, and local sanitary authorities are beginning to clear up accounts and endeavour to count the cost. Some idea of what this is likely to be is given by Accrington. Since the middle of November last year there have only been 48 cases in this town, but it is stated that they have cost the authorities not less than one and not more than two thousand pounds. This is a very vague estimate, but the fact is that in towns where the whole machinery for dealing with epidemics is not ready to hand and in working order, it is difficult to make a precise estimate of the maximum cost which should be ascribed to the immediate *causa causans* of an unusual sanitary effort. The lower limit is more easily arrived at, since it is represented by plant bought and extra labour specially engaged.

Of infected localities which have long been on the list the general subsidence is perhaps less marked in the extreme north of England than anywhere else, north-west Durham having had to complain of quite a sharp little outburst.

At Cambridge a large number of cases have occurred. They were at first considered to be chicken-pox, but expert advice in the person of Dr. Wanklyn was sought, and the cases at once pronounced to be small-pox. By that time sixty-one cases had occurred.

Seeing the extent to which small-pox has prevailed in northern and central England during the last nine months, it seems curious that a diagnosis of chicken-pox should any where be thought to be a sufficient explanation of a large number of cases of an infective eruptive disorder occurring among other people than small children, and giving rise to 2 deaths. The moral of such cases is that whenever small-pox

prevails to any extent in England, sanitary authorities would do well to exercise their power of putting chicken-pox upon the list of notifiable diseases. The same mistake at Newstead in Nottinghamshire led, as noted in a former report, to quite a serious outbreak. The earlier cases were of a very mild character, and so escaped the notice of any one in authority, but later on cases occurred which the medical officer said were of as virulent a type of small-pox as he had ever observed. This same outbreak led also eventually to a very unpleasant incident, which has been cleared up since the last issue of this report. The medical officer of health of the district, Dr. Saunders, was charged in an informal kind of way with having neglected his work in connexion with this village of Newstead, and to this charge considerable local currency was given. He fortunately, however, obtained an inquiry into it, and this resulted in his complete exoneration, and moreover afforded an opportunity incidentally to some of the guardians to testify to the excellent way in which he had done his work in Hucknall Torkard.

Nottingham itself has had to deal with more cases lately than heretofore, and the outcome of the Cambridge outbreak still remains to be seen. It may be said, therefore, that these two localities constitute the chief danger spots which now remain in central England.

In London itself there are still only some 70 cases under treatment, although during the second week of the month the number of cases removed by the Metropolitan Asylums Board suddenly increased largely, 12 fresh cases being notified in the Westminster area.

In Wales, except for Pontypridd and 1 case at Penybont, things have been very quiet, Cardiff having had no cases since June 27th.

In Scotland cases have continued to occur from time to time, but there has been nothing like an epidemic, and the total notifications throughout the country only amount to one or two a week.

THE PLAGUE.

PREVALENCE OF THE DISEASE.

INDIA.

DURING the weeks ending June 18th and 25th the deaths from plague in India numbered 2,084 and 1,362 respectively. In the Punjab, which remains the most seriously affected district, the deaths from plague during the former week amount to 1,101; so that throughout the rest of India there were only 873 deaths from the disease. The mortality statistics show that during the week ending June 25th the deaths from plague in India were about 300 lower than during the corresponding period of last year. A slight increase of plague during the week ending June 25th is reported from the Bombay Presidency; the disease has reappeared in Belgaum city. During the week ending July 2nd there were reported in Bombay city 91 cases of plague and 75 deaths from the disease; up to July 2nd the total deaths from plague in the city for 1903 amounted to 522, compared with 579 in 1902 and 667 in 1901. On July 1st, 4 fresh cases of plague were notified in Ootacamund, and deaths and seizures are now almost daily occurrences in that district.

CAPE COLONY.

During the weeks ending June 20th and 27th, the plague reports in Cape Colony were as follows:

Port Elizabeth.—Fresh cases, 2 and 4; deaths, 2 and 3; remaining in hospital, 8 and 6 respectively.

East London.—Fresh cases, 0 and 1; deaths, 0 and 0; remaining in hospital, 4 and 5.

King Williamstown.—Fresh cases, 0 and 0; deaths, 0 and 0; remaining in hospital, 11 and 5. At Graaff-Reinet, Burghersdorp, Queenstown, Stockenstrom, no cases of plague have been met with, but rats dead of plague have been found in all the above towns except at Graaff-Reinet.

At Riversdale a sick cat, killed on July 20th, was found to be infected with plague.

HONG KONG.

During the weeks ending July 4th and 11th the fresh cases of plague in Hong Kong were registered as 25 and 33 respectively, and the deaths from the disease as 18 and 29.

MAURITIUS.

During the weeks ending July 9th and 16th the fresh cases of plague in Mauritius numbered 8 and 3, and the deaths from the disease 5 and 2 respectively.

CHILE.

According to a telegram in the *Times*, dated Valparaiso, July 17th, several cases of suspected plague have appeared in Valparaiso. The patients have suffered so slightly from the attacks that doubt exists as to the disease being bubonic plague; at the same time the principal ports along the Pacific coast of South America have adopted quarantine precautions against Chilian ports generally.

SUSPECTED PLAGUE ON BOARD A P. AND O. STEAMER.

On the arrival of the P. and O. steamship *Egypt* on July 16th it was reported that a native coal trimmer showing symptoms of plague was landed at Suez from the ship on July 3rd. The ship after leaving Suez was thoroughly disinfected. No more cases were reported on board, and the crew and passengers, after being medically inspected and their addresses taken, were allowed to leave Plymouth and proceed to their destinations.

Association Notices.

NOTICE OF MEETINGS.

ANNUAL GENERAL MEETING.

The Annual General Meeting of the British Medical Association will be held in the King's Hall, Orchard Street, Swansea, on Tuesday, July 28th, at 2 o'clock in the afternoon.

ANNUAL REPRESENTATIVE MEETINGS.

The Annual Representative Meetings will be held in the King's Hall, Orchard Street, Swansea, on Tuesday, July 28th, at 3.30 o'clock in the afternoon; on Wednesday, July 29th, at 2 o'clock in the afternoon; and on Thursday, July 30th, at 3 30 o'clock in the afternoon if required. Also at 2 o'clock in the afternoon of Friday, July 31st, if required.

COUNCIL.

Meetings of the Council will be held in the Guardians' Council Chamber, Union Offices, Swansea, on Tuesday, Wednesday, Thursday, and Friday, July 28th, 29th, 30th, and 31st next, at 9.30 o'clock in the forenoon of each day.

By Order,
GUY ELLISTON, *General Secretary.*

For full Programme see p. CLXXV *of the* SUPPLEMENT.

ANNUAL CHURCH SERVICE.

FOR the convenience of members attending the Church Service on Tuesday morning, a room has been secured for robing purposes in the premises of Messrs. B. Evans and Co., Limited, two minutes' walk from the church.

SPECIAL CORRESPONDENCE.

BIRMINGHAM.

Presentation to Dr. Alfred Hill.—The Birmingham and Midland Eye Hospital.

A PRESENTATION was made to Dr. Alfred Hill at a meeting held in the Council House, Birmingham, on his retirement from the position of medical officer of health for the city. The Town Clerk (Mr. E. O. Smith), who presided over a large and representative meeting of the Corporation, spoke of the valuable services which Dr. Hill had rendered the city during a period of over forty years. He was ten years analyst of what was then the Borough of Birmingham, and for more than thirty years he had been medical officer of health, during which time he also held his former post of analyst. When Dr. Hill began his work in Birmingham the death-rate was 25 per 1,000; he left it at 18 per 1,000—a most eloquent testimony to the thorough way in which he performed his duties. His conduct in times of hard work and in times of comparative freedom was always the same; he was always ready to give assistance and advice, and a more pleasant companion and brother official it had never been their pleasure to meet. The presentation was not so much in recognition of the services, invaluable as they were, which Dr. Hill had rendered to the city, as a testimony of their regard and affection. The presentation consisted of a handsome silver tea and coffee service, with a dozen silver teaspoons.

The annual report of the Birmingham and Midland Eye Hospital shows a slight increase in the amount of the annual subscriptions, but a distinct decrease in the amount of money received in donations and in legacies when compared with the previous year. The total number of patients treated

in 1902, exclusive of those on the books at the commencement of the year, and exclusive of renewals, was 27,384. This number was made up of 1,022 in-patients and 26,362 out-patients. The daily average number of in-patients had slightly increased, and the average length of stay in the hospital was a little longer than during the last year. The total attendance of out-patients was 65,394. A number of persons bringing out-patient tickets had been refused attendance on the ground that they were in a position to pay for advice. The Committee expressed the hope that subscribers would endeavour to prevent this abuse of the benefits offered by the hospital. The improvements in the out-patient department had been completed, and the new operation room had been found to be quite satisfactory. More suitable accommodation for nurses seemed to be needed, but the Committee could not yet see its way to provide for this.

INDIA.

The Progress of Plague and Plague Policy.

THE annual hot weather abatement of plague in India has once more set in, so stock may conveniently be taken of the present situation, especially in view of Sir Walter Foster's recent question in the House of Commons as to what measures the Government of India propose to take in view of the steady increase in the number of deaths caused by the epidemic year by year. That the disease is becoming more widespread each year is unfortunately true, and coincidently the difficulties of adequately dealing with it become proportionately greater, while experience has revealed the necessity of decreasing rather than increasing the severity of the measures undertaken for its repression in view of the active and passive opposition of the enormous population involved to each and every method which is of practical value if adequately carried out. It is very difficult to realize the conditions to be faced. In an average district with about 1,000,000 inhabitants, it will be found that more than nine-tenths are essentially rural, while not one in 1,000 can be called educated in the European sense of the word, and very few of these are free from the grossest prejudices. In such a district there will be four administrative, and one medical European officer, who are more than fully employed without any extra plague work. Imported medical officers, ignorant of the language and customs of the people, are too much distrusted by them to be of any material assistance for a year or so, and few remain long enough to become really valuable officers; while the Indian Medical Service can ill spare even the few men who form the backbone of the plague administration in every province. It may safely be said that the disease is widespread over all the most densely-populated parts of India, with the exception of Eastern Bengal and Assam—the most malarious parts of the country. In April last over 30,000 deaths a week from plague were being recorded, spread over an enormous area, the Punjab contributing about half the total number. In the United Provinces there were over 4,000 deaths a week, such large towns as Allahabad, Lucknow, Cawnpore, etc., being involved. The Bombay Presidency and town are still widely affected, as well as Calcutta and many parts of Southern India. In each province the rural tracts are infected as well as the towns.

Such being the problem, what is being done and what more can be done? Three years ago the Plague Commission showed conclusively that the time was long past when coercive measures could be adopted with any chance of good resulting, while much harm had accrued from them in many instances owing to their having led to wholesale concealment of cases and flight of infected persons to previously uninfected places. The severer measures of compulsory isolation, evacuation, and disinfection, except in the case of the first few cases in any place, have very rightly been abandoned as worse than useless. In their place facilities for voluntary inoculation, disinfection of infected houses, and for voluntary evacuation are afforded, and these are undoubtedly effective in lessening the loss from the disease.

In illustration of these measures we may first refer to the great inoculation campaign in the Punjab last cold weather, details concerning which have recently appeared. The plan of work has already been explained in the BRITISH MEDICAL JOURNAL, and reference has also been made to the unfortunate mishap at Malkowal on November 9th, 1902, which wrecked the scheme—the report of the Commission on this event was sent in at the end of February last, and is now in the hands of the Secretary of State for India, and it may therefore be expected to see the light very shortly. It was proposed to inoculate voluntarily 10,000,000 people in the course of six months. A most favourable start was made, 200,000 people being done in the first two weeks with the aid of a large number of specially imported medical men. Then the outbreak of tetanus occurred, the supply of inoculating fluid having previously fallen short of the demand, and all operations had to be suspended. Later on they were resumed, but the harm done was irrecoverable, and it says a great deal both for the staff and the people that even as many as 300,000 more inoculations were carried out; the total, however, only reaching 5 per cent. of the original estimate. The results, as far as they go, have been satisfactory, for the proportion of deaths to cases among the inoculated was only 25 per cent., and among the uninoculated 60 per cent. The incidence of the disease among the two classes is not yet known.

Some interesting evidence as to the good results of disinfection in Allahabad during the last two seasons will serve to illustrate what can be done by this measure. In this town, once the disease had become established, all compulsory measures were abandoned, and the system of offering advice and assistance, and providing remedies and leaving the people to take advantage of them or not as they chose, has been followed. This policy has at least been successful in promoting an excellent feeling between the authorities and the people, while it also appears certain that the measures adopted with the hearty good will of the people have at least checked the ravages of the disease, while it has avoided the positive harm always done by severe action carried out against the wishes of the people themselves. The results show that only 7·5 per cent. of houses disinfected during 1901-2 had cases of plague in 1902-3, although out of 51 infected houses which escaped disinfection, 43 returned plague cases during the following year. During the last season's work in only 0·5 per cent. of disinfected houses did cases recur within the next ten days and in 0·4 per cent. after ten days, although they were as a rule occupied immediately after disinfection.

Although the plague was much more widespread in the city than in the previous year, the number of deaths was over 1,000 less, instead of being greater, as might have been expected, while the city was also not so much deserted, with much less consequent dislocation of business. In the districts assistance was also given in a similar manner as far as possible, but the staff was insufficient to carry out adequate disinfection in all cases. The people are already learning the lesson which the inhabitants of the Kamaon Hill tracts learnt long ago in respect to the form of plague known as Mahanari—namely, voluntarily to evacuate their villages as soon as plague appears among them, or even in some instances as soon as rats begin to die. It is only by the acquirement of such knowledge through bitter experience that the people at large can be taught to save themselves. It would seem that it is in the diffusion of such knowledge by sympathetic advice and help, as opposed to any form of coercion, that the hope of the future lies, for it is an impossible task to compel over two hundred million people to carry out measures they distrust. More can be done by a single officer in touch with the people than by an army of imported medical men who are ignorant of their language and customs.

The result of the three years' additional experience since the publication of the Plague Commission's report is to strengthen its plea for the abandonment of compulsory measures, and to extend the argument still further in the same direction. In a series of articles now being published in the *Pioneer*, a writer, evidently well informed, argues that no attempt whatever should be made to enforce any active measure after the disease has become established, but at the same time warning should be given to the surrounding people and villages of the danger of admitting any one within ten days of their leaving an infected area, so as to enlist the aid of the people in preventing the spread of the disease. When desired by the infected persons, every help in evacuation and disinfection should at the same time be given. There is much to be said for this policy.

It may be argued that it is a policy of doing nothing, but the attempt to force unpractical methods on an unwilling people with a totally inadequate staff has been proved to assist the spread of the disease. The policy sketched aims at enlisting the people on the side of the authorities. To carry out this policy efficiently, more medical men of

the right stamp are wanted, the main qualification being good temper and tact, who will first be taught the language and pass a colloquial test before getting full pay, and who will remain at the work as long as required. To obtain such a plague department, adequate and increasing pay and a gratuity or pension in proportion to length of service is required. Such a department alone will meet the demands of the situation.

SYDNEY.

Preservatives in Food.—Control of Noxious Trades.—Plague Restrictions.—Hospital Saturday Collection.—Vital Statistics.

THE regulations recently adopted by the Board of Health regarding the use of preservatives in articles of food have met with decided opposition from some interested manufacturers. The Board decided that no boric acid was to be used in the preparation of concentrated milk, and a firm of manufacturers of this article represented to the State Treasurer that if this regulation were to be enforced this industry would be destroyed. Mr. Waddell, the Treasurer, accordingly sought a conference with the members of the Board of Health to see if it were possible, consistently with the maintenance of the public health, to relax this regulation. The Board of Health, however, resolutely insisted upon the enforcement of the regulation, and it will be adhered to. The Board of Health also recently decided that practically no boracic acid was to be used as a preservative in butter. In consequence, however, of representations which have been made to the effect that in England the law allows the use of ½ to 1 per cent. of this preservative in butter, the Agricultural Department and Mr. O'Callaghan, the dairy expert, have recommended that the use of ½ per cent. of boracic acid as a maximum be allowed. This recommendation has since been adopted.

Under the Public Health Act the municipal councils are entrusted with the duty of controlling the conduct of noxious trades within their boundaries. The Board of Health has, however, experienced considerable difficulty in inducing the councils to enforce the regulations, with the result that public nuisances have been created in places where there has been a laxity in the supervision of the trade. A circular has now been issued to to the municipal councils calling attention to these facts and the duties imposed by law upon them, and intimating that if they fail in their duties the Board will take the necessary legal proceedings against the manufacturers, and afterwards take proceedings against the municipal authorities to recover the legal costs to which the Board has been put. It is a matter of regret that such action should be necessary in view of the large amount of suffering and disease which can be directly attributed to these nuisances.

We are still happily free from bubonic plague in Sydney, thanks very largely to the care exercised both by the officials of the Board of Health and also by the city health officer, Dr. W. G. Armstrong. It is, of course, recognized that some of these restrictions which relate to the shipping arriving here from foreign ports are somewhat harsh in their operations, and recently a deputation of the three lines of steamers trading from Sydney to China and Japan, and a number of importers waited upon Dr. Ashburton Thompson, the President of the Board of Health. The restrictions at present in force provide that vessels carrying rice from China or Japan must, if they touch at Hong Kong, discharge their cargoes into lighters in Port Jackson. It was represented that any cargo taken on board at Hong Kong is lightered into steamers, hence there is no connexion whatever between them and the shore. The danger of infected rats getting into the steamers was so slight as to warrant shippers in asking that the Board should not insist upon steamers discharging their rice cargoes into lighters instead of coming alongside the wharves and discharging their cargoes. It is probable that some relaxation in this regulation will be permitted.

On Saturday, May 2nd, the tenth annual collection in aid of the Saturday Hospital Fund was made in Sydney and suburbs. Strenuous efforts had been made to ensure the success of the collection; several new stands were erected in the city, and some new suburbs were tapped for the first time. The total amount received was £4,325 18. 9d. This sum includes the industrial collections made during the year, but is about £100 less than last year. The slight falling off is attributed to the general commercial depression resulting from the prolonged drought, and from the fact that a street collection on the same lines as the Hospital Saturday collection was made a short time ago on behalf of the Drought Relief Fund. During the last nine years the sum of £33,978 18. 6d. has been collected by this Fund, of which £31,250 has been distributed, the balance being required to meet the necessary expenses in the management and collection.

The Government Statistician in his report on the vital statistics of the metropolis for the quarter ending March 31st states that there were 3,202 births, equivalent to a rate of 6.30 per 1,000 of the population; and 1,538 deaths, or 3.02 per 1,000. These totals are respectively 171 and 142 greater than the average numbers registered for this quarter during the previous five years, and the rates are 0.05 and 0.14 higher than the corresponding quinquennial rates. The mortality from zymotic diseases has been 16 per cent. above the quinquennial average. Increases are apparent in scarlet fever, diphtheria, typhoid fever, and diarrhoeal diseases. Constitutional diseases as a whole were not above the normal, but cancer and phthisis caused 95 and 129 deaths respectively, as compared with 87 and 116 the average numbers.

CORRESPONDENCE.

THE HAY-FEVER ANTITOXIN.

SIR,—Kindly permit me to add to the information given in my report on Professor Dunbar's hay-fever antitoxin, published in the BRITISH MEDICAL JOURNAL of July 18th, the following fact, which has been stated in this week's number of the *Berliner klinische Wochenschrift* in a postscript to a paper on Autumnal Catarrh, published by Professor Dunbar himself (p. 637). The author states that he has succeeded in preparing the serum in powder form, and adds that the results obtained by the administration of the powder are even better than those gained with the serum in fluid form. According to the directions given, this powder is to be sniffed up into the nostrils, and to be applied by means of a brush to the conjunctivae. The application may apparently have to be made a good many times during the day, but Professor Dunbar states that with renewed application the patient gradually becomes less susceptible to the hay-fever poison, and that the periods of immunity gradually become longer and longer. At the same time the effect of the remedy is said not to diminish with continued usage. He also insists that the antitoxin is absolutely innocuous. For further details I must refer to the original, which brings especially interesting particulars as to the etiology of the "autumn catarrh" so frequently observed in North America.

In the same number of the *Berliner klinische Wochenschrift*, in which Professor Dunbar's paper is published, Dr. Robert Immerwahr of Berlin, who himself suffers from hay fever, reports about the experiences he has made with Dunbar's antitoxin during the present hay-fever season in his own case. His results on the whole conform with the experiences made by my patients.—I am, etc.,

Wimpole Street, W., July 18th. FELIX SEMON.

P.S.—Since writing this letter I have received an interesting communication, which I append in somewhat abbreviated form, from a practitioner in the North:

"Dear Sir,—I should have written to you sooner, as I promised, but I was waiting till the hay-fever season was quite over. In these northern latitudes vegetation and hay fever are rather later than with you. My experience with Professor Dunbar's serum, when applied locally to the eyes and nostrils—three patients—is practically identical with your own. But I have also used it hypodermically on myself and on one patient.

"I began with injecting ♏iij of the serum ('Pollantin,' obtained from Burroughs, Wellcome, and Co.) into my left forearm. Next injection was ♏v, then ♏x, and lastly ♏xv, which I repeated several times. I had the injections about every second day.

"My 'impression' (undoubtedly you have used the right word) is that the serum treatment made very little if any difference as regards asthma; but I have certainly had very much less hay fever (affecting eyes and nose, as distinguished from asthma) this summer than in any other summer during the last thirty years at least, excepting of course those years I spent in Ceylon, where I was completely free from hay fever and asthma. Locally the first injection produced slight swelling, redness, soreness, and itching, lasting for a couple of days. Each subsequent injection produced the same effect in a greater degree up to the last injection, which caused a hard brawny swelling from

the elbow to the wrist with an appearance almost like erysipelas, with considerable pain and tenderness, and at times maddening itching. This irritation lasted from one injection to the next, and the last one lasted six days. The effects in the case of my patient who had the injections were very much the same as in my own case."

MEDICAL WITNESSES' FEES.

SIR,—There is an ambiguity in the recommendation of the Departmental Committee on this subject which should be cleared up without delay. Does "for giving evidence in the town of residence, 1 guinea per case," mean 1 guinea per case per day, or 1 guinea per case, however many days the witness may have to be at the court? In the latter case our position would be far worse than at present. My thirty-five years' experience as a police surgeon entirely confirms Mr. Nelson Hardy as to the inconvenience we have to suffer both at the Old Bailey and at the Sessions House, Clerkenwell, for which we are very inadequately recompensed by the existing fees. I have, however, long been convinced that if only some common-sense plan were adopted by those responsible for the management of the business at these courts, it would be possible not only very materially to diminish the amount of waiting about, which we have to endure at present, but also, and in consequence, very materially to diminish the demand upon the public money.—I am, etc.,

Canonbury, July 18th. FRANCIS JOHN BUCKELL.

THE REFORM OF THE BRITISH MEDICAL ASSOCIATION.

SIR,—As in years gone by, you seem to still be in receipt of letters containing groans and regrets as to the political, ethical, defence, or representation sides of our Association. That was the only way in which we as individual and isolated members could in the past get ourselves heard, and in a vain way hope for reforms that never came.

But do not your correspondents yet realize that these days are past and gone? There is now no necessity for these letters written off at so little trouble, and which take up your valuable space. A new era has come for us all. The machinery has been overhauled, partially renewed, and well oiled. It will take time to get into full swing, and although it will grind slowly, it depends on individuals that it should grind surely.

Let a member, if he thinks he has spotted a sore, at once approach his Divisional secretary, not you. He will be welcomed. Let him get a resolution on the agenda for the next meeting. Let him and his friends attend and see the matter is well threshed out, and having carried his Division with him, see that the representatives, either on the Branch Council or at the annual meeting, ventilate the reform he so much desires. Then good will result. But these letters, like damp squibs, only attract a passing thought, and they and their originators soon sink into oblivion.—I am, etc.,

Southfields, S.W., July 18th. E. ROWLAND FOTHERGILL.

SIR,—Dr. F. H. Oliver's letter on the above subject deserves consideration. The conclusion he draws from the result of the election of councillors in his Branch is that "the general practitioners in the metropolitan area have no confidence in members of their own class, or they take little interest in the affairs of the Association."

There can be no doubt that heretofore members generally have taken very little interest in the affairs of the Association, and there were reasons for such conduct. With our new Constitution, however, I, like Dr. F. H. Oliver, expected that there would be a change in that respect. In the Edinburgh Branch, to which I am now attached, I tried to excite the interest of the members by having a large number of candidates as members of Council, but the feeling among the few who have hitherto managed its affairs was that it would be well to let things stand as they were, for the first year, under our new Constitution, and only three names were sent sent out to be voted upon—the two former representatives and one from the Fife Branch. I had only heard of one of the candidates as taking any interest in the affairs of the Association, the other two were quite unknown to me. How then could I, with any intelligence, vote for either?

It appears to me that if our new Constitution is to do any good, there must be more effort made by members who have any desire to see it properly worked to become members of Council. Why should not any member who has the ambition to become councillor try to get himself nominated and put his views before the electors, as does a candidate for Parliamentary honours? Until such action is taken by would-be councillors there will be little interest in elections.

The more candidates there are the more members will know something about them and be able to vote intelligently for those of their choice. If unsuitable councillors are appointed they will at least be appointed by the votes of the members, and not by the few who up to this date have arranged such matters. Hoping that next year there will be no dearth of candidates, and that no false modesty will restrain those who have any desire to be councillors from having themselves nominated.—I am, etc.,

Denholm, N.B., July 18th. JOHN HADDON, M.D.

ADMISSION OF WOMEN TO THE HIGHER DIPLOMAS.

SIR,—In the BRITISH MEDICAL JOURNAL of July 18th Dr. C. F. Knight draws attention to the desirability of women being enabled to proceed to the higher diplomas, such as the Fellowship of the College of Surgeons of Edinburgh. I desire to endorse Dr. Knight's remarks on this subject, and to urge that the Colleges of Physicians of Edinburgh, London, and Ireland would also do well to give this question their careful consideration.

The M.R.C.P. and F.R.C.S. are regarded as passports to hospital appointments on the medical or surgical staff respectively, inasmuch as they bind the holders of these diplomas to certain restrictive obligations, either implied or direct, which tend to elevate the morale and status of the medical profession. There is now a women's hospital in London, all the members of the staff of which are women, and women are making their way on to the staffs of other hospitals in London and elsewhere in Great Britain. Now, if the possession of these higher diplomas is considered necessary to enable men to obtain appointments upon the visiting or consulting staff of a hospital, is it not equally necessary that women aspirants to hospital posts should also be obliged to be similarly qualified; but how is it possible for hospital authorities to lay this desirable obligation on women if they are not admissible to these higher qualifications?

The time has certainly arrived when the several Colleges of Physicians and Surgeons should consider this question in the interests both of the medical profession and of the public.—I am, etc.,

Upper Berkeley Street, W., July 21st. THOS. D. SAVILL.

OPHTHALMIA NEONATORUM.

SIR.—A propos of the discussion on this subject at the last meeting of the Obstetrical Society of London, the report of which appears in the BRITISH MEDICAL JOURNAL of July 18th, my chief, Mr. Priestley Smith, has suggested that I should state the results of our prophylactic treatment. In the outdoor maternity department of this hospital about 500 cases are attended annually, and all by students doing their regulation 20 cases. The honorary obstetric officer is Dr. Purslow, and his house-surgeon holds at the same time the post of house-surgeon in the ophthalmic department. It is evident, therefore, that this resident, in his dual capacity of ophthalmic and obstetric house-surgeon, has a good opportunity of observing this point.

For many years it has been our routine practice to drop a 2 per cent. solution of silver nitrate into the eyes of every child immediately after birth. The house-surgeon takes the students to their first five cases, and one may be sure that he will lay special stress upon the treatment of the child's eyes; for, humanity apart, if a case occur, the somewhat unpleasant daily treatment devolves upon him. Definite instructions are given "to first wipe the child's eyelids and nostrils, and then to drop the silver solution into the eyes." If there is any suspicion of gonorrhoea, the person who washes the baby is told not to touch the face with the sponge. In only 1 out of about 240 cases attended since my appointment has ophthalmia developed, and inquiry elicited the fact that, either through carelessness or inadvertence, the drops had not been used. This, I think, is worthy of note.

A transient and mild conjunctival catarrh frequently occurs, but in no case has any more serious inflammation followed the use of the drops. In a case attended quite recently, where the mother was suffering from a profuse gonorrhoeal discharge and labial abscesses, the child's eyes simply received the usual treatment and escaped infection. I have never heard of the mother or her friends making the slightest objection to the use of the drops, and they are almost

invariably ignorant of the real cause of the slight irritation that sometimes occurs.

The number of cases of ophthalmia neonatorum treated in our ophthalmic department shows that the disease is fairly prevalent in this neighbourhood. I have discussed the matter with several of my predecessors in this post, and all agree in their good opinion of the efficacy and safety of the use of the 2 per cent. silver nitrate solution.—I am, etc.,

F. W. BYWATER,
Ophthalmic and Obstetric House-Surgeon.

Queen's Hospital, Birmingham, July 21st.

A COMPARATIVE AND BIOLOGICAL STUDY OF THE NATURE OF CANCER.

SIR,—In connexion with Dr. E. F. Bashford's paper on the above in the BRITISH MEDICAL JOURNAL of July 18th, it is interesting to note that the late Sir John Forbes, writing so long ago as 1857, states:

It is, no doubt, a matter of just regret that the investigation of the subjects of health and disease has been hitherto restricted to so small a part of the wide field to which it is applicable; as there seems every reason for believing that the pathology of the superior animal, Man, would be benefited by such investigations, in the same manner, if not to an equal extent, as human physiology has been advanced by the study of the normal conditions of the inferior animals and vegetables (cf. *Nature and Art in the Cure of Disease*).

Sir John Forbes strongly advocated the establishment of a distinct chair for instruction in the natural history of disease in all medical schools.—I am, etc.,

Christopher Street, E.C., July 20th. HOPE GRANT, F.R.C.S.E.

RESIDENT HOSPITAL APPOINTMENTS AND CONTRACTS NOT TO PRACTISE.

SIR,—The attention of the Council of the Medical Defence Union has lately been called to a case in which house-surgeons and house-physicians of a provincial hospital have been required by the Board to sign a bond to prevent and prohibit them from practising in the district in which the hospital is situated at the termination of their resident appointments and at any future time. I am directed by the Council to ask you to allow it to warn candidates for such appointments against signing such bonds, which cannot be enforced legally, but which morally may prevent them from advancing their career in a district in which they might desire later to settle down. The method adopted is contrary to all ethical principles, as it makes a condition which may prevent men well qualified from holding the appointments; such appointments should be open to the best candidates. It is impossible to believe that in case of breach of this bond the moneys of the hospital would be spent in obtaining or attempting to obtain an injunction, and no medical man should bind himself down to a lay authority not to practise in a certain district.—I am, etc.,

A. GEORGE BATEMAN,
General Secretary.

Medical Defence Union, 4, Trafalgar Square, W.C., July 21st.

OBITUARY.

ROBERT HALL WOODHOUSE, M.R.C.S., L.S.A., L.D.S.

BY the sudden death of Mr. Robert Hall Woodhouse at the comparatively early age of 52 the dental profession loses one of its most distinguished members. He was the son of the late Mr. G. E. J. Woodhouse, of Ansty, Dorset, and was educated at Milton Abbas Grammar School. He passed the College of Preceptors Examination, and entered the Middlesex Hospital in 1868. He obtained the diploma of M.R.C.S. when 21 years of age, and subsequently commenced his dental studies at the Dental Hospital of London. He entered upon private work by assisting his uncle, Mr. A. J. Woodhouse, of Hanover Square, and subsequently he joined his uncle in partnership. He was for many years officially connected with the Dental Hospital of London as Surgeon and as Treasurer to the Dental School, holding the latter responsible office till within a short time of his death. He became Vice-President of the Odontological Society in 1892, and President in 1896. In 1901 he was elected Chairman of the Representative Board of the British Dental Association. In a quiet and unostentatious way he did much to raise the status of the dental profession. He was conscientious in all his official duties, attending committee meetings and discharging all work entrusted to him with the utmost ardour and fidelity.

Save that he lost two of his sons—one died from illness, the other was killed in the South African war—his private and domestic life was uninterruptedly happy. He was married in 1880, and leaves a widow, four sons, and a daughter. Though he worked hard, he had the courage to take long holidays, and during the last few years of his life he reluctantly gave up, to some extent, both hospital and private work in obedience to medical advice. He visited most parts of the world during his travels. He was a keen golf player, and won many prizes and medals. For the last two or three years his health had failed somewhat. Degenerative cardio-vascular changes, probably of gouty origin, manifested themselves, first by retinal haemorrhage, then by mitral and aortic disease, and then by a slight hemiplegic attack. Whilst recovering from this, and whilst full of hope that he might shortly again return to work, he was seized in the early hours of the morning of July 8th with an attack which was in all probability one of angina pectoris, and died within the space of an hour.

Robert Woodhouse was one of the best of men. To know him slightly was to like him and respect him; to know him well was to love him. He endeared himself to every one by his simplicity of mind, straightforwardness, integrity, generosity, charity, and consideration for others. His charity was of a high order: when he helped one friend he did not tell another. In his official and professional life he was the very soul of honour. In a word his personality was such that not only did it influence for good, during his lifetime, those who were fortunate enough to know him, but it remains in their memories as a personality that will continue to influence them even though Robert Woodhouse is no more.

FRANCIS HARRISON WALMSLEY, M.R.C.S., J.P.

WE regret to announce the death of Alderman Walmsley, which occurred at his residence, Belmount, Higher Broughton, on July 16th. Up to the previous Sunday he had been well, but on that day he was seized with a serious illness. The deceased alderman had a large medical practice in Salford, but notwithstanding his many professional duties, he was able to find time for carrying out a large amount of municipal work, and just that kind of work which medical men are best suited to do, or at least to guide and direct. As long ago as 1864 he became a member of the Council of Salford; he was elected an Alderman in 1874 and Mayor of the royal borough in 1878 and again in 1879. Dr. Walmsley came of a medical stock, and after studying at the Pine Street School of Medicine in Manchester, he gained the qualification of M.R.C.S. in 1849, and L.S.A. in 1854. He took a deep interest in sanitary affairs, and was largely responsible for the formation of the Health Committee and for the appointment of a medical officer for the borough of Salford. He was one of the advocates for the Ship Canal, and was also energetic in his endeavours for the purification of the "inky" Irwell. For many years he did good service as Surgeon to the Salford Royal Hospital, and was one of the earliest members of the Manchester and Salford Sanitary Association. He took a prominent part in the foundation of the Wilton Hospital for Infectious Diseases, and for a long period held the office of Certifying Factory Surgeon for this district. He was also a Governor of Owens College. He was known as the "Father of the Salford Corporation," and amongst his compeers as one of the most honourable and upright of men, who did much good in his day and generation. He has left a progressive impress on the sanitary affairs of his native city.

DR. JAMES CUSHING MERRILL, who died not long ago at Washington, was born in 1845, and after going through the Arts course at Harvard, graduated in medicine at the University of Pennsylvania in 1874. Not long afterwards he was appointed Assistant Surgeon in the United States army, and was stationed for many years at various posts on the Western frontier. During his service on the Texas-Mexican border he made an extended study of the birds of the region, and introduced to the fauna of the United States a number of species never before found within its borders. Afterwards, he was stationed for some years at Fort Klamath, in Oregon, and again at Fort Shaw, in Montana, and in both places devoted much time to the study of birds, and published many interesting notes about the less known species. Later he served at Fort Reno, in the Indian territory—now Oklahoma—where he continued his work on bird life. For more than twenty years his name was a very familiar one in the annals

of North American ornithological literature, his most extensive contribution being *Notes on the Ornithology of Southern Texas*, 1878. Dr. Merrill was also an ardent sportsman and big-game hunter. After many years' service on the plains and in the mountains, he was detailed as Librarian in the Surgeon-General's office in Washington, and there he had been for some years before his death. He was associated with Dr. Robert Fletcher in the redaction of the *Index Catalogue*, vols. iii-vii, 1898-1902.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: H. W. HALL, Surgeon, to the *Vivid*, June 14th; ROBERT W. G. STEWART, Surgeon, to the *Thames*, undated.

DR. J. H. BRYANT (Mansfield Street, W.) writes: I was glad to see published in the BRITISH MEDICAL JOURNAL of July 18th a letter from Mr. Gerald Sichel, F.R.C.S.Eng., late surgeon Royal Navy, calling attention to the serious disabilities under which naval medical officers at present labour. The temperate spirit shown in the letter emphasizes the importance of the issues with which it deals.

Mr. Sichel has been personally known to me since he first entered Guy's Hospital as a student, where before entering the navy he held the important posts of House-Surgeon and Resident Obstetric Officer, and took the F.R.C.S. diploma of the Royal College of Surgeons of England. Considering the fact that in the whole Naval Medical Service there were at the time of his resignation only three, I believe, who were possessed of this diploma (which is a *sine qua non* for a surgeon attached to any of the large London hospitals), it might be of interest to those who have the welfare of the navy at heart, or who contemplate entering the service, to know that when he was appointed to Haslar Hospital he was placed on the medical side, when all his interests were and had been in the direction of surgery. It is evident from this specific example of hopeless want of discrimination and a desire to encourage good work, that when they have a gentleman with such exceptional surgical attainments they fail to recoguize his value, and pitchfork him into a medical instead of a surgical post.

Another ridiculous restriction, and one which is an insult to any qualified man, is the rule which forbids the administration of an anaesthetic by a surgeon except in the presence of a Principal Medical Officer.

Considering the social disadvantages, the hardships of sea life, the snubs and petty annoyances to which naval surgeons are subject, and on the other hand, the hopelessly inefficient and unsatisfactory manner in which the Admiralty deal with these most-important problems—which make it impossible for any self-respecting man to remain in the service, unless, indeed, he is obliged to for pecuniary reasons—I have, in my position as an assistant physician and teacher at Guy's Hospital, for some time past strongly advised young qualified men to avoid a service in which there is widespread discontent founded on such just and reasonable grounds.

Until the Admiralty are advised by an unbiassed, energetic, and independent civilian advisory board constituted on the same or similar lines as in the R.A.M.C. there is no hope of any radical or satisfactory reform such as is absolutely necessary. The success of the army scheme is sufficiently testified to by the results of the recent entrance examinations, at which the competition has been very keen, and, further, the quality of the candidates as well as the quantity affords a sufficient proof of the correctness of my contention. If further argument be needed, let me add the striking fact that at least three naval surgeons quite recently have thought it worth while to leave the Navy and risk the trouble and expense of getting a commission in the R.A.M.C.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT-COLONEL H. J. BARNES is placed on temporary half-pay on account of ill-health, July 18th.

EXCHANGE.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 8s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

A MAJOR, at present in Bengal and who is going home tour expired early next trooping season, is prepared to exchange soon after arrival home either to Egypt or South Africa.—Address Medicus, c.o. Holt and Co., 3, Whitehall Place, London, S.W.

A LIEUTENANT-COLONEL, R.A.M.C., due for foreign service this next trooping season, desires to exchange with an officer recently home. Address "Tropicus," c.o. Messrs. Holt and Co., 3, Whitehall Place, London, S.W.

FIELD OFFICER, R.A.M.C., due for foreign service this trooping season, wishes to exchange with a field officer recently returned. Address No. 3,443, BRITISH MEDICAL JOURNAL Office.

ROYAL ARMY MEDICAL CORPS (MILITIA).

LIEUTENANT E. U. BARTHOLOMEW to be Captain, June 18th.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

MR. ALAN Y. GREENWOOD, M.B., to be Surgeon-Lieutenant in the 3rd Lancashire, July 18th.

VOLUNTEER RIFLES.

ALEXANDER WAUGH (late Surgeon-Lieutenant in the Battalion) to be Captain 3rd Volunteer Battalion the Duke of Wellington's (West Riding Regiment), June 6th.

MR. THOMAS S. ALLAN to be Surgeon-Lieutenant in the 1st Volunteer Battalion the Duke of Cambridge's Own (Middlesex Regiment), July 18th.

Surgeon-Captain E. JONES, 21st Middlesex, resigns his commission, July 18th.

Surgeon-Lieutenant G. W. O'F. CLARK, 3rd London, to be Surgeon-Captain, July 18th.

CHANGES OF STATION.

THE following changes of station amongst the officers of the Royal Army Medical Corps have been officially reported to have taken place during the last month:

		From.	To.
Lt.-Col.	G. A. Hughes, M.B., D.S.O.	—	Dublin.
,,	B. T. McCreery, M.B.	Mauritius	—
,,	G. E. Twiss	S. Africa	Netley.
,,	S. C. B. Robinson	,,	Colchester.
,,	J. H. A. Rhodes	Lichfield	Birmingham.
,,	A. S. Rose, M.D.	S. Africa	Stobs Castle.
,,	F. J. Jencken, M.B.	Bombay	Aldershot.
,,	S. F. Lougheed, M.D., C.M.G.	S. Africa	Home District.
,,	W. G. Macpherson, M.B., C.M.G.	,,	,,
Major	R. J. A. Durant	Chester	Warrington.
,,	J. J. C. Donnet	Portsmouth	Gosport.
,,	A. E. C. Spence, M.B.	Holywood	Finner Camp.
,,	J. R. Forrest	Sheffield	Bombay.
,,	W. H. Starr	Wei-hai-Wei	Dover.
,,	S. J. W. Hayman	Dublin	Dundalk.
,,	G. Bent	Birmingham	Chester.
,,	R. Holyoake	—	Colchester.
,,	A. Wright	Barbadoes	Portsmouth.
,,	F. Smith, D.S.O.	—	Netley.
Captain	A. G. Thompson, M.B.	Curragh	W. Africa.
,,	F. R. Buswell	Portsmouth	Parkhurst.
,,	D. J. Collins, M.B.	Fermoy	Cork.
,,	C. K. Morgan, M.B.	Edinburgh	Aberdeen.
,,	H. A. L. Howell	Bombay	Chatham.
,,	F. J. C. Heffernan	Mauritius	York.
,,	D. E. Curme	Devonport	Penally.
,,	T. J. Crean, V.C.	Aldershot	W. Africa.
,,	D. O. Hyde, M.B.	S. Africa	Chester.
Lieutenant	H. G. Pinches	,,	Salisbury Plain
,,	C. V. B. Stanley, M.D.	Curragh	W. Africa.

Lieutenant-Colonels J. Martin, J. Stevenson, M.B., and H. L. Donovan, M.D., all on retired pay, have relinquished the medical charge of troops at Londonderry, Aberdeen, and Warwick respectively.

Lieutenant-Colonel W. J. Macnamara, M.D., has been selected for increased pay under Article 362 of the Royal Warrant.

MEDICO-LEGAL AND MEDICO-ETHICAL.

MEN OF THE DAY.

SEVERAL correspondents have received cards from the editor of a publication called *Men of the Day* asking for particulars of their lives, and they desire to know our opinion upon the propriety of giving the information asked. We cannot in principle see any objection to the proposal. "Who's Who" has no doubt set the fashion for this kind of thing, and it is possible that rival publications will seek to obtain support by widening the circle of those who are included in their pages.

MEDICAL ETIQUETTE.

ARCADIA.—A., B., and C., are three practitioners in the same town. A. quarrelled with C. some seven years ago. Lately B. has also quarrelled with C. A. and B. have assistants, C. has none. C., it is asserted, has been guilty of unprofessional conduct of various sorts towards both A. and B., but B. has preferred to take no notice to avoid the quarrel if possible. Sometimes C. requires help of the nature of the loan of instruments, the administration of chloroform, or the seeing of urgent cases during his absence, and for this has been in the habit of applying to B. A. now appeals to B. to withhold this help on the ground that C. being guilty of unprofessional conduct should not be helped in any way. B. replies that the help ought to be given, not for C.'s sake, but for the sake of his patients, and also because, C. having constantly given out that he is prevented from practising by A. and B., such action would give colour to his statements. B. also replies that it ought to have been taken, if at all, before his quarrel with C., as B. was morally bound to support A. in any action for the good of the profession, but that now it would look like concerted action to ruin C. A. has been longest in practice, C. a few months longer than B., and his practice is entirely a new one; B. represents the oldest practice in the place.

*** In our opinion B. takes a proper view of his duty in the situation.

QUACK CIRCULARS.

H. E. F. complains of a lithographed circular signed M. Lecomte, and dated from an address in King William Street, E.C., which was put under his door, and was presumably intended to fall into the hands of some of the female members of his household. It is the usual quack circular vaunting a remedy which will be sent on receipt of a postal order for 4s. 6d. We cannot suggest any means of prevention, as the law appears to regard such circulars as on the same footing as those of any other tradesmen.

ADVERTISING FOR CLUB APPOINTMENT OR ASSISTANCY IN THE LAY PRESS.

M.D.—Our correspondent sends us the following advertisement—"Experienced Physician; club appointment or outdoor assistancy; married; South Coast preferred. Best references"—and asks whether it is ethically correct for medical men to advertise for professional work in the lay press, and reminds us that the clergy do so.

*** We should like to see all such advertisements restricted to the medical press, but we recognize that there is an essential difference between such an advertisement as this and those which seek to get practice—that is, patients—by appealing to the public through the advertisement columns of the lay press.

PROFESSIONAL SECRECY.

A CORRESPONDENT writes to complain of the action of an insurance company in sending him a telegram to ask whether "in view of nervous apprehension and other features do you think C. is likely to live as long as other healthy persons of his age?" As the place is a small one, and C. one of the most important inhabitants, our correspondent fears that the contents of the telegram would be the subject for local gossip, and he asks us to give our opinion upon the action of the insurance company in the matter.

*** Upon the facts as stated to us it seems to have been a singularly indiscreet mode of making the inquiry. The plea of extreme urgency put forward by the secretary is not a valid excuse, as the telegram might have been so worded as not to reveal the identity of the proposer.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF LONDON.

MEETING OF THE SENATE.

Recognition of Teachers.

THE following were recognized as teachers of the University: Mr. W. McAdam Eccles, as a Teacher of Surgery at St. Bartholomew's Hospital; Dr. Farquhar Buzzard, as a Teacher of Clinical Medicine; Dr. Raymond Crawfurd, of Materia Medica and Pharmacology; Dr. G. C. Low, of Parasitology; Dr. W. J. R. Simpson, of Hygiene; and Sir Patrick Manson, K.C.M.G., of Tropical Medicine; all at the London School of Medicine for Women.

Examiners.

The following were appointed Examiners in Physiology: Dr. W. M. Bayliss (University College), Dr. Brodie (London School of Medicine for Women), Dr. Buckmaster (St. George's Hospital), Dr. Edkins (Bedford College), Professor Halliburton (King's College), Mr. Leonard Hill (London Hospital), Dr. Leathes (St. Thomas's Hospital), Dr. Pembrey (Guy's Hospital), Professor Starling (University College), Dr. Waller, (appointed teacher).

Committees.

Among the Committees of the Senate constituted for the year 1903-4 were the following: The Chancellor, Vice-Chancellor, and Chairman of Convocation being in each place members *ex officio*.

Committee of the Medical Members of the Senate.—Dr. Allchin, Sir Thomas Barlow, Dr. Bradford, Dr. Buzzard, Sir William Collins, Dr. Crosby, Dr. Fowler, Mr. Gould, Sir Henry Howse (Vice-Chairman), Dr. Payne, Dr. Waller, and Dr. Wells.

Institute of Medical Sciences Committee.—Dr. Allchin, Sir Thomas Barlow, Dr. Bradford, Sir William Collins, Dr. Farmer, Dr. Fowler, Sir Philip Magnus, Sir Edwin Perry, Sir Henry Roscoe, Dr. Waller.

Committee on Scientific Apparatus.—Dr. Bradford, Dr. Farmer, Mr. Gould, Mr. Hatton, Sir Henry Roscoe, Dr. Thompson, Dr. Waller (Vice-Chairman).

Faculty of Medicine Revision Committee.—Dr. Allchin, Sir Thomas Barlow, Dr. Bradford, Dr. Buzzard, Sir William Collins, Dr. Crosby, Dr. Fowler, Mr. Gould, Sir Henry Howse, Dr. Payne, Sir Edwin Perry, Dr. Wells.

University College.

Dr. Sidney Martin has been appointed Professor of Clinical Medicine, Dr. Page May Lecturer on the Physiology of the Nervous System, and Dr. J. H. Parsons Lecturer on Physiological Optics.

King's College.

Dr. Hugh Playfair has been appointed Assistant Obstetric Physician, and Dr. David Sommerville Senior Demonstrator of Public Health.

Matriculation Examination.

At the matriculation examination held in June under the old regulations 414 candidates passed, 6 in the honours division, 205 in the first division, and 203 in the second division.

In the general matriculation examination under the revised regulations 1,288 candidates passed, 469 in the first division, and 819 in the second division; in addition 12 candidates passed in logic only. Fifty-seven candidates matriculated by passing the School Leaving Certificate Examination, which was held at Mary Datchelor Girls' School, Camberwell; Owen's School, Islington; Elson House High School, Leytonstone; North London Collegiate School for Girls; and University College School. Thirty-four candidates were passed in the first division, and 23 in the second division.

ST. BARTHOLOMEW'S HOSPITAL MEDICAL COLLEGE.

THE prize-giving ceremony of the Medical School of this hospital took place on July 15th, Sir Trevor Lawrence presiding. The Warden gave an account of the progress of the School during the year and showed that its prosperity had been fully maintained. The total number of students was 573, so that it still headed the list among the metropolitan schools in regard to the number of students who enter for the full course. The retirement from the active staff of Sir William Selby Church was suitably referred to as well as the appointment of Mr. Butlin as Consulting Surgeon. The retirement of the former led to the arrival of Dr. Norman Moore at the rank of full Physician, while Mr. Bruce Clarke succeeded Mr. Butlin. Five students had taken the degree of Doctor of Medicine at the University of London during the year, one of them, Dr. W. T. Rowe, obtaining the gold medal. Fourteen others had received the degree of Bachelor of Medicine, and five that of Bachelor of Surgery at the same University, Mr. S. R. Scott being awarded first-class honours and the gold medal. At Cambridge seven men became Doctors of Medicine, fourteen Bachelors of Medicine, and nineteen Bachelors of Surgery. At Oxford two students took the Mastership in Surgery, and one became Bachelor of Medicine. At the London Colleges the honours were two Fellowships of the College of Physicians and thirteen Fellowships of the College of Surgeons, sixty-three students taking the ordinary qualifications of these two Colleges. The School Scholarships were awarded as follows: Kirkes Scholar, Mr. C. M. H. Howell; Brackenbury Surgical Scholar, Mr. F. J. Faulder; Brackenbury Medical Scholar, Mr. C. M. H. Howell; Lawrence Scholar, Mr. A. A. Meaden.

UNIVERSITY OF EDINBURGH.

THE following candidates have passed the First Professional Examination in the subject indicated:

Physics.—J. L. Annan, Christina H. Barr, V. V. Blake, A. M. Britton, E. A. Brummitt, T. Buchan, L. A. P. Burt, G. Coats, C. E. A. Coldicutt, C. H. Corbett, H. C. D. Cross, S. K. Datta, C. H. Derksen, C. A. A. Dighton, Joanna M. F. Drake, J. Eaves, F. B. Eberhardt, R. Edwards, S. B. Faulkner, E. M. Figaro, C. Gamble, K. N. Ghosh, F. G. Harper, Hester M. Henderson, M. Heyns, P. F. Hugo, R. L. Hutton, J. A. Jamieson, S. W. Joubert, Beatrice Kippenberger, D. Lees, A. R. Leggate, J. Lorimer, T. Lyon, A. Macdonald, J. C. Mackenzie, E. R. D. Maconochie, S. E. Malherbe, W. J. Mayne, F. W. Michael, G. G. Middleton, C. C. Murray, P. F. Nolan, P. G. Palmer, E. M. Reid, W. A. Scobie, F. Shannon, J. T. Simson, Dorothy W. Stevenson, W. A. Stewart, A. E. Tait, H. B. Thomson, H. M. Vickers, L. J. Wallis, F. K. te Water, J. M. Heron Watson, J. C. B. Williams, W. A. Wyllie.

CONJOINT BOARD IN ENGLAND.

THE following gentlemen have passed the Second Examination (Anatomy and Physiology) of the Board:

C. E. H. Adams and A. K. Armstrong, St. Bartholomew's Hospital; C. Amarasuriya, King's College, London; G. F. E. Allison and W. H. S. Burney, Guy's Hospital; W. K. Beaman, Charing Cross Hospital; W. H. Bennett, Owens College, Manchester; J. E. M. Boyd, St. Mary's Hospital; H. W. Burman, University of Birmingham; O. Bruce and H. G. Cole, St. Thomas's Hospital; H. F. Collins, University of Madras; P. S. Connellan, University College, Bristol; P. A. Creux, Lausanne University and London Hospital; H. L. Deck, University of Sydney; H. C. Colyer and F. G. Edholm, Charing Cross Hospital; G. B. Edwards, London Hospital; H. R. Elliott, University College, Sheffield; J. J. W. Evans, Westminster Hospital; A. W. Eyles, Guy's Hospital; V. B. Green-Armytage, University College, Bristol; C. G. Grey, W. B. Griffin and J. H. Gurley, St. Bartholomew's Hospital; C. V. Griffiths, King's College, London; H. G. Hobson, Middlesex Hospital; E. T. C. Hughes, University College, London; G. M. Huggins, St. Thomas's Hospital; H. M. Inman, B.A.Oxon., St. Mary's Hospital; Q. S. Keat, B.A.Cam., Cambridge University and King's College, London; C. M. Kennedy, London Hospital; T. Lloyd-Williams, University of Birmingham; J. R. Lloyd and E. S. Marshall, St. Bartholomew's Hospital; P. C. Litchfield, B.A.Cam., E. Morgan, and H. H. Moyle, Guy's Hospital; E. J. C. McDonald, L.M. and S.Bombay, University of Bombay and St. Thomas's Hospital; J. G. Macdonald, University of Otago, New Zealand; O. R. McEwen, London Hospital; F. E. W. Meadows and G. N. Montgomery, Middlesex Hospital; F. W. Murray, University College, Liverpool; A. Moore and R. B. Nicholson, Owens College, Manchester; C. M. Ockwell, Guy's Hospital; M. Onslow-Ford, St. Bartholomew's Hospital; G. S. Parkinson, University College, Bristol; C. R. M. Peaty, St. Mary's Hospital; O. P. N. Pearn, Westminster Hospital; R. H. Phillips, University College, Sheffield; S. Reader and R. J. Reynolds, Guy's Hospital; E. Roberts, L.M. and S.Ceylon, University of Ceylon; C. F. Robertson, Middlesex Hospital; F. S. Rood, University College, London; G. N. B. Sebastian, St. George's Hospital; H. W. Skan, St. Bartholomew's Hospital; W. H. Smith, Owens College, Manchester; J. H. Spencer, Charing Cross Hospital; G. Stone, D. W. Taccy, B.A.Camb., and H. F. Vellacott, London Hospital; A. H. C. Suhr, B.A.Camb., O. Teichmann, B.A.Camb., and H. B. Weir, B.A.Camb.; Cambridge University; S. Vosper, W. H. Williams, B.A.Camb., and H. D. H. Willis-Bund, St. Bartholomew's Hospital; G. Wacher, Guy's Hospital; J. W. Whiteman, University College, Bristol; G. E. Wood, St. Mary's Hospital; and F. P. Young, B.A.Camb., Cambridge University and St. Bartholomew's Hospital.

116 gentlemen presented themselves for this examination, of whom 74 passed, and 42 were referred.

SOCIETY OF APOTHECARIES OF LONDON.

PRIMARY EXAMINATION, PART I.—The following candidates passed in:

Chemistry.—J. M. Burke, Cork and Middlesex Hospital; C. J. Evans, St. Bartholomew's Hospital; J. N. Turner, Guy's Hospital.

Materia Medica and Pharmacy.—L. W. Bradshaw, Leeds; E. G. Brisco-Owen, Cardiff; R. P. Wylde, Manchester.

PRIMARY EXAMINATION, PART II.—The following candidates passed in:

Anatomy.—H. R. Coombes, Westminster Hospital; C. E. Pring, Royal Free Hospital; C. A. E. Ring, Guy's Hospital; G. W. Simpson, Bristol; T. R. Williams, Cardiff and Glasgow.

Physiology.—A. J. K. Drayton, Liverpool; C. G. Grey, St. Bartholomew's Hospital; R. D. Neagle, St. Mary's Hospital; C. A. E. Ring, Guy's Hospital; T. R. Williams, Cardiff and Glasgow.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

VITAL STATISTICS OF LONDON DURING THE SECOND QUARTER OF 1903.

IN the accompanying table will be found summarized the vital statistics of the metropolitan boroughs and of the City of London, based upon the Registrar-General's returns for the second, or spring, quarter of the year. The mortality figures in the table relate to the deaths of persons actually belonging to the various boroughs, and are the result of a complete system of distribution among the several boroughs in which the deceased persons had previously resided.

The 33,327 births registered in London during the three months under notice were equal to an annual rate of 29.0 per 1,000 of the population, estimated at 4,613,812 persons in the middle of the year; in the corresponding quarters of the three preceding years the rates had been 29.2, 28.8, and 27.7 per 1,000 respectively, while the average rate for the second quarters of the ten years 1893-1902 was 29.5 per 1,000. The birth-rates last quarter ranged from 13.4 in the City of London, 17.5 in the City of Westminster, 18.2 in Hampstead, 19.9 in Kensington, 20.2 in Chelsea, 21.1 in Stoke New-

Analysis of the Vital Statistics of the Metropolitan Boroughs and of the City of London after Distribution of Deaths occurring in Public Institutions during the Second Quarter of 1903.

BOROUGHS.	Estimated Population middle of 1903.	Births.	Deaths.	Annual Rate per 1,000 Living. Births.	Deaths.	Principal Infectious Diseases.	Deaths from Principal Infectious Diseases.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Typhus.	Enteric Fever.	Simple and Ill-defined Fever.	Diarrhoea.	Phthisis.	Deaths of Children under 1 year of age to 1,000 Births.
COUNTY OF LONDON	4,613,812	33,327	16,314	29.0	14.2	1.54	1,771	2	758	82	171	443	2	44	1	268	1,694	102
Paddington	146,032	833	459	22.9	12.6	1.37	50	—	18	1	5	17	—	3	—	6	41	91
Kensington	178,409	883	528	19.9	11.9	0.83	37	—	1	4	7	19	—	1	—	5	47	86
Hammersmith	115,803	781	397	27.1	13.8	1.06	31	—	5	1	2	7	—	2	—	14	45	114
Fulham	147,780	1,222	445	33.2	12.1	0.98	36	—	1	3	5	10	—	1	—	16	42	92
Chelsea	74,169	373	275	20.2	14.9	1.07	20	—	2	1	—	11	—	1	—	5	25	123
City of Westminster	179,052	782	596	17.5	13.4	0.85	38	—	12	5	4	9	—	4	—	4	73	93
St. Marylebone	131,234	1,017	511	31.1	15.6	1.22	40	—	5	5	6	12	—	1	—	11	66	81
Hampstead	85,197	386	185	18.2	8.7	0.48	10	—	1	3	1	4	—	—	—	1	12	62
St. Pancras	235,716	1,587	948	27.0	16.1	2.75	162	—	114	4	12	21	—	2	—	9	95	110
Islington	339,137	2,278	1,224	26.9	14.5	1.65	140	—	66	2	11	42	—	2	—	17	118	108
Stoke Newington	52,069	274	164	21.1	12.6	1.78	23	—	8	—	4	8	—	2	—	1	19	102
Hackney	224,082	1,599	757	28.6	13.6	1.94	108	—	62	7	9	16	—	5	—	9	68	100
Holborn	57,845	422	272	29.3	18.9	2.09	30	—	11	3	4	5	—	—	—	7	44	85
Finsbury	93,717	940	458	37.8	18.4	2.29	57	—	29	2	3	16	—	—	—	7	51	100
City of London	24,539	82	71	13.4	11.6	0.82	5	—	2	—	—	3	—	—	—	—	5	122
Shoreditch	117,513	1,017	510	34.7	17.4	2.56	75	—	45	1	9	8	—	1	—	11	70	125
Bethnal Green	130,028	1,157	537	35.7	16.6	1.88	61	—	39	1	5	10	—	—	—	6	68	97
Stepney	302,153	2,990	1,196	39.7	15.9	1.62	122	—	61	3	10	20	—	1	—	27	144	93
Poplar	169,550	1,490	694	35.3	16.4	2.89	122	—	64	2	10	24	—	2	—	20	74	132
Southwark	207,369	1,677	879	32.4	17.0	1.53	79	—	30	5	2	23	—	3	—	16	107	127
Bermondsey	129,801	1,075	547	33.2	16.9	1.77	57	—	11	7	6	18	2	—	—	13	54	119
Lambeth	307,711	2,257	1,102	29.4	14.4	1.28	98	2	36	4	2	31	—	6	1	16	107	106
Battersea	173,422	1,199	637	27.7	14.7	2.13	92	—	54	3	6	24	—	1	—	4	63	129
Wandsworth	249,678	1,723	680	27.7	10.9	1.11	69	—	24	4	3	28	—	2	—	8	52	77
Camberwell	265,562	1,828	786	27.6	11.9	0.83	55	—	6	—	8	28	—	2	—	11	77	97
Deptford	112,537	872	387	31.1	13.8	1.93	54	—	12	5	19	9	—	—	—	9	33	100
Greenwich	99,824	658	290	26.4	11.7	1.36	34	—	11	1	10	10	—	—	—	1	28	90
Lewisham	136,405	938	370	27.4	10.9	1.03	35	—	14	2	7	2	—	1	—	9	33	72
Woolwich	121,478	987	409	32.6	13.5	1.02	31	—	14	2	1	8	—	1	—	5	33	87

ington, and 22.9 in Paddington, to 33.2 in Fulham and in Bermondsey, 34.7 in Shoreditch, 35.3 in Poplar, 35.7 in Bethnal Green, 37.8 in Finsbury, and 39.7 in Stepney.

The 16,314 deaths of persons belonging to London registered during last quarter were equal to an annual rate of 14.2 per 1,000, against 17.4, 15.5, and 15.7 per 1,000 in the corresponding quarters of the three preceding years; the mean death-rate in the ten preceding second quarters was 16.6 per 1,000. The lowest death-rates last quarter were 8.7 in Hampstead, 10.9 in Wandsworth and in Lewisham, 11.6 in the City of London, 11.7 in Greenwich, and 11.9 in Kensington and in Camberwell; the highest rates were 16.4 in Poplar, 16.6 in Bethnal Green, 16.9 in Bermondsey, 17.0 in Southwark, 17.4 in Shoreditch, 18.4 in Finsbury, and 18.9 in Holborn.

During last year 1,771 deaths were referred to the principal infectious diseases; of these, 2 resulted from small-pox, 758 from measles, 82 from scarlet fever, 171 from diphtheria, 443 from whooping-cough, 2 from typhus, 44 from enteric fever, 1 from simple continued fever, and 268 from diarrhoea. These 1,771 deaths were equal to an annual rate of 1.54 per 1,000, against an average rate of 2.23 per 1,000 in the corresponding periods of the ten preceding years. In the second quarters of the three preceding years the rates had been 1.80, 1.61, and 2.08 per 1,000 respectively. The lowest death-rates last quarter from these infectious diseases were 0.48 in Hampstead, 0.82 in the City of London, 0.83 in Kensington and in Camberwell, 0.85 in the City of Westminster, and 0.98 in Fulham; the highest rates were 2.09 in Holborn, 2.13 in Battersea, 2.29 in Finsbury, 2.56 in Shoreditch, 2.75 in St. Pancras, and 2.89 in Poplar. Measles showed the highest proportional fatality in St. Pancras, Hackney, Finsbury, Shoreditch, Bethnal Green, Poplar, and Battersea; scarlet fever in St. Marylebone, Hampstead, Hackney, Holborn, Bermondsey, and Deptford; diphtheria in Stoke Newington, Holborn, Shoreditch, Poplar, Deptford, and Greenwich; whooping-cough in Chelsea, Islington, Stoke Newington, Finsbury, Poplar, Bermondsey, and Battersea; "fever" in Paddington, the City of Westminster, Stoke Newington, Hackney, and Lambeth; and diarrhoea in Hammersmith, Fulham, Holborn, Shoreditch, Poplar, and Bermondsey. The 2 fatal cases of small-pox belonged to Lambeth.

During the second quarter of the year, 1,694 deaths from phthisis were registered, equal to an annual rate of 1.47 per 1,000, against 1.74, 1.57, and 1.52 in the corresponding quarters of the three preceding years. Among the various metropolitan boroughs the lowest death-rates from phthisis last quarter were recorded in Kensington, Hampstead, the City of London, Wandsworth, Lewisham, and Woolwich; and the highest rates in St. Marylebone, Holborn, Finsbury, Shoreditch, Bethnal Green, and Southwark.

Infant mortality, measured by the proportion of deaths of children under 1 year of age to registered births, was equal to 102 per 1,000 last quarter, against 124, 112, and 119 in the corresponding quarters of the three preceding years. The rates of infant mortality during the quarter under notice ranged from 62 in Hampstead, 72 in Lewisham, 77 in Wandsworth, 81 in St. Marylebone, 85 in Holborn, 86 in Kensington, and 87 in Woolwich, to 122 in the City of London, 123 in Chelsea, 125 in Shoreditch, 127 in Southwark, 129 in Battersea, and 132 in Poplar.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,677 births and 3,894 deaths were registered during the week ending Saturday last, July 18th. The annual rate of mortality in these towns, which had been 14.3, 14.4, and 13.7 per 1,000 in the three preceding weeks, further declined to 13.5 per 1,000 last week. The rates in the several towns ranged from 5.4 in Bury, 6.3 in Hastings and in West Bromwich, 6.4 in Norwich, 6.6 in Aston Manor, 7.2 in Handsworth, 7.3 in Hornsey, and 7.4 in Croydon and in Willesden, to 18.9 in Warrington and in Burnley, 19.1 in Rotherham, 20.1 in Great Yarmouth, 20.6 in Bootle, 20.9 in Rochdale, 21.4 in Middlesbrough, and 22.6 in Wigan. In London the death-rate was 13.0 per 1,000, while it averaged 13.7 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.6 per 1,000 in the seventy-six large towns; in London this death-rate was equal to 1.5 per 1,000, while it averaged 1.7 in the seventy-five large provincial towns, among which the highest rates were 3.3 in Stockport and in Middlesbrough, 3.4 in Bootle, 3.6 in Coventry and in Rotherham, 3.7 in Birkenhead, 4.3 in Blackburn and in Sheffield, and 5.0 in Wigan. Measles caused a death-rate of 1.1 in Nottingham, 1.5 in Ipswich, and in Merthyr Tydfil, 1.7 in Wigan, 2.1 in Sheffield, 2.7 in Middlesbrough, and 3.6 in Coventry; scarlet fever of 1.7 in Bootle; diphtheria of 2.0 in Great Yarmouth; whooping-cough of 1.0 in Walthamstow and in Sheffield, and 1.1 in Oldham; and diarrhoea of 1.2 in Walsall, 1.4 in Leeds, 1.6 in Liverpool, 1.7 in Bootle and in Wigan, 1.8 in Wallasey and in Bolton, 2.7 in Rotherham, 2.8 in Birkenhead, and 3.1 in Burnley. The mortality from "fever" showed no marked excess in any of the large towns. Three fatal cases of small-pox were registered in Liverpool, 2 in Gateshead, and 1 in Manchester, but not one in any other of the seventy-six large towns. The number of small-pox patients under treatment in the Metropolitan Asylums Hospitals, which had been 67, 57, and 77 at the end of the three preceding weeks, had declined again to 71 at the end of last week; 7 new cases were admitted during the week, against 7, 4, and 31 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital on Saturday last, July 18th, was 1,710, against 1,644, 1,646, and 1,700 on the three preceding Saturdays; 243 new cases were admitted last week, against 234, 241, and 253 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, July 18th, 984 births and 497 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 19.1, 16.3, and 16.2 per 1,000 in the three preceding weeks, further declined last week to 15.2 per 1,000, but was 1.7 per 1,000 in excess of the mean rate during the same period in the seventy-six large English towns. The rates in the eight Scotch towns ranged from 12.3 in Aberdeen and 12.4 in Perth to 17.6 in Dundee and 18.9 in Paisley. The death-rate from the principal infectious diseases averaged 1.7 per 1,000 in these towns; the highest rates were recorded in Paisley and Greenock. The 225 deaths registered in Glasgow included 6 from measles, 3 from diphtheria, 6 from whooping-cough, and 15 from diarrhoea. Three fatal cases of measles, 3 of whooping-cough, and 2 of diarrhoea were recorded in Edinburgh; 3 of diarrhoea in Dundee; 2 of measles and 2 of whooping-cough in Paisley; and 2 of whooping-cough in Greenock.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday July 11th, 574 births and 302 deaths were registered in six of the principal Irish towns. The mean annual rate of mortality in these towns, which had been 17.1, 21.6, and 17.6 per 1,000 in the three preceding weeks, fell to 14.3 per 1,000, being only 0.6 above the mean rate during the same period in the seventy-six English towns.

This is a very considerable change for the better, being a drop of 7 per 1,000 in a fortnight. The death-rates ranged in these six towns from 7.6 in Waterford and 9.6 in Limerick to 19.0 in Dublin and 19.2 in Cork. Belfast, with its smaller population, again beat Dublin by 67 births. The death-rates from the principal zymotic diseases in the six principal towns averaged 0.5 per 1,000, against 0.6 in the previous week and 1.7 a fortnight ago. The highest rate, 1.3, was reached in Londonderry, while Limerick and Waterford again registered no deaths from these diseases at all, Waterford occupying this position for the fifth week in succession. The deaths registered in Dublin include 1 from whooping-cough and 1 from diarrhoea, no deaths being recorded either from small-pox, scarlet fever, measles, diphtheria, or typhoid. In Belfast 5 deaths are recorded from measles, 4 from diarrhoea, and 1 each from whooping-cough and simple continued fever. Londonderry and Cork register 1 death each from whooping-cough, and none from any other disease on the zymotic list.

THE PUBLIC HEALTH CONGRESS.

THE Public Health Congress promoted by the Royal Institute of Public Health began at Liverpool on Wednesday last week, and carried on its proceedings until the 21st.

The work was divided into the following sections: The sanitation of congested areas and the rehousing of those dispossessed; preventive medicine and vital statistics; bacteriology and comparative pathology; tropical sanitation; municipal hygiene and sanitary legislation; engineering in its application to sewage disposal, refuse destruction, and the maintenance of highways; child study and school health; port sanitary administration; and domestic sanitation, which was dealt with in a section under the management of ladies.

A large number of papers were read in all the sections, and the following subjects came in for more special consideration: Mosquitos and malaria; the need for a National Conservancy Board which should preserve the whole of the visible water supply from contamination; the adequate rating of ground values; the value of open spaces; the transmissibility of infectious disease and the control of small-pox; underground bakehouses; expectoration in the streets and other places of public resort; the establishment of standards by which water and sewage effluents should be judged from the point of view of bacteriology; the relation of animal to human diphtheria; the sterilization and distribution of milk; district nursing and military drill in schools. The bacteriological section also expresses an opinion in favour of the appointment of a Minister of Public Health. Two of the sections joined forces to discuss the question of tuberculosis, and this perhaps was the best-attended discussion of the meeting. The papers in connexion with mosquitos and malaria, however, excited a good deal of interest, and the practical importance of the question from a trade point of view, punctuated by the presence at the discussions upon it of persons other than those whose ordinary interests lie in the direction of preventive medicine. Of the practical results that can be achieved by the destruction of mosquitos, an example was given by Major Ross, who read a letter just received from Major Penton, R.A.M.C., Principal Medical Officer in the Soudan. In this he mentioned that the destruction of mosquitos and their larvae round Ismailia this year had been followed by a great diminution of fever, and that up to the date of his letter the year had been the healthiest on record; in short, only seventy-two cases of malarial fever had been recorded, as against 569 in the previous year.

SMALL-POX AT OLDHAM.

IN a report on the prevalence of small-pox at Oldham during the year 1902, Dr. Wilkinson, the Medical Officer of Health, shows that the disease began in April, and practically continued throughout the year. Dr. Wilkinson has thoroughly analysed his vaccination figures, and shows that they confirm the results that have been obtained by similar analyses elsewhere. In addition, however, he has made a special study of the incidence of the disease among small-pox "contacts," among whom there were 60 cases in all. Dividing them up into vaccinated and unvaccinated, he shows that if the incidence had been unaffected by vaccination, the town would have had to bear the expense, loss, and additional risks of 220 cases instead of only 60. During the epidemic he employed a staff of 26 persons, all of whom were revaccinated, and none of whom contracted the disease, in spite of their being specially exposed to infection. The death-rates among the vaccinated and unvaccinated were 3.4 and 7.4 per cent. respectively, while the average detention in hospital of a patient who had been vaccinated was six days shorter than that of an unvaccinated case.

RESPONSIBILITY OF OFFICIALS IN CASES OF ATTEMPTED SUICIDE.

CORAL, who is a district medical officer, asks for our opinion on the following case: He has been attending a man with advanced rectal cancer who attempted suicide by cutting his throat. The relieving officer when applied to refused an order for the workhouse on the ground that the man was a criminal. There was then a deadlock, which was only removed by the police retiring from the case. The patient was subsequently removed to the workhouse by the relieving officer after having lain without proper attention for three days.

*** In our opinion it would have been very unwise for the police to have apprehended this patient as a criminal when suffering as described. There was no necessity for them to do so, and if any action had been considered desirable this should have been by a summons and not by apprehension, either with or without a formal warrant. The relieving officer appears to have shirked his duty by refusing to take charge of the case when the application was first made to him.

THE UNIVERSITY OF BERNE.—The new buildings of the University of Berne were recently opened. An address was delivered by Professor Kocher. For nearly seventy years the University was housed in an old Dominican friary. In recent years its popularity has increased and the names of 1,200 students are now on its books. The new buildings are charmingly situated on an eminence commanding a view of the whole city and of the Bernese Oberland. The total cost has been £48,000.

HOSPITAL AND DISPENSARY MANAGEMENT.

SURREY COUNTY ASYLUM, BROOKWOOD.

THE annual report of this asylum shows that 336 patients were admitted during 1902, and that the total number under treatment was 1,338, the average number resident being 1,036. The general health of the patients was good, and the death-rate below the average, although influenza was prevalent, and caused considerable inconvenience through the nursing staff being attacked.

The type of insanity among the admissions was not of a curable nature, and only some 30 per cent. were deemed to possess a fair chance of recovery. More than 25 per cent. were over 50 years of age, and 64 had suffered from previous attacks; 26 were transfers from other asylums, 37 were epileptics, and 15 were the subjects of general paralysis. Hereditary predisposition or congenital defect was found to exist in 32 per cent. With such a class of admissions the recovery-rate could not be high, and we note that, calculated upon the admissions, it reached 29.03 per cent., which is lower than for some years past. There were 98 deaths, and the death-rate, calculated upon the average daily number resident, was 9.46 per cent. Of the 1,070 patients remaining in the asylum at the end of the year, scarcely 5 per cent. were deemed curable.

Dr. Barton, the medical superintendent, speaks well of the work done and of the general conduct of the nursing staff, but states that although classes of instruction and systematic training upon the lines of the Medico-Psychological Association continue to give excellent results, yet the duration of service among the staff does not improve. There is no doubt that asylum service is a constant strain, and calls for qualities possessed by few, so that constant unrest and change continue, although every consideration is shown to all. The Commissioners speak well of the general management and conditions of the institution.

CUMBERLAND AND WESTMORLAND LUNATIC ASYLUM.

THE report of this institution for 1902 shows that on the first day of the year there were 664 patients in the asylum, and on the last day of the year 694. During the year 190 patients were admitted, a number considerably above the average, which has only been twice exceeded during the long history of the asylum. Dr. Farquharson states that nearly two-thirds of the patients admitted were in weak health, and several died shortly after admission. Fifty-seven of them had suicidal tendencies, and no less than 21 had actually attempted suicide prior to admission. These cases are a source of grave anxiety, and tax the resources of the nursing staff by the unceasing care and attention they require. In spite of every precaution, however, suicides occur, and 3 deaths are recorded as due to this cause—a woman who had previously shown no suicidal tendency who hanged herself with a towel, a man who dived through a window so small that it is marvellous he could have done so so quickly with a male nurse standing within a few yards of him, and another man who overbalanced himself and was accidentally strangled.

Hereditary tendency is given as the cause of insanity in 32.1 per cent. of the admissions, and 26.3 per cent. had had at least one previous attack. Of the 99 patients discharged the recovery-rate was 36.8 per cent. The death-rate was 9 per cent. of the average daily number resident.

The number of pauper patients chargeable to Cumberland and Westmorland has risen from 495 in 1884 to 631 in 1902. Every available bed on both sides of the institution is occupied, and it has even been found necessary to put up beds in excess of the number for which the accommodation was intended. After careful consideration, the Committee has decided to build accommodation for recent and curable cases and for the sick and infirm at a cost approximately estimated at £37,000.

THE NIGHTINGALE FUND.

THE report of the Nightingale Fund for the year 1902 shows that 81 new probationers were admitted to the school at St. Thomas's Hospital, while 47 who had completed their year's work were taken on to the extra staff of the hospital. From the opening of the school in 1860 until the end of 1902, the total number of candidates who, after completing their year's training, have been placed on the register of Nightingale nurses is 1,067. The annual gratuity of £2 allowed by regulations for the term of three years to nurses who have completed a year's work satisfactorily was awarded to 96 nurses, but its further issue has been suspended. A list is given of some 22 Nightingale nurses who have been successful in obtaining hospital appointments of some importance during the year. Sympathetic reference is made to the regretted death, so soon after her retirement in October, of the late matron, Miss S. M. Gordon. She was succeeded by Miss H. E. G. Hamilton, while Miss Haig-Brown "Home Sister," who left to take up another appointment, was succeeded by Miss Florence Coode. The St. Marylebone Infirmary Branch of the school appears to be equally flourishing, 36 new probationers having been admitted, and 21 who had completed their year being admitted to the infirmary staff. A list of some 17 former probationers who have received hospital and infirmary appointments figures in the report. Miss Maud K. Clark was promoted to the post of assistant matron in February, and was succeeded as Home Sister by Miss Cockrell. The abstract of accounts shows that the fund on December 25th, 1902, had invested assets amounting to £56,424 and cash in hand of £159. Candidates for admission as probationers should apply to the matron at St. Thomas' Hospital.

THE West Riding Medical Charitable Society held its seventy-fifth annual meeting at the end of last week at Sheffield, a large number of members being present. The accounts showed that during the year £1,300 had been disbursed among disabled medical men, their widows, and dependents, and that the amount distributed by the Society since its inception is now £36,000. It was also shown that working expenses absorb only 1 per cent. of income, the business of the Society being done voluntarily by the members themselves.

MEDICAL NEWS.

MEDICAL MAGISTRATE.—Dr. G. S. Stephenson has been appointed to the Commission of the Peace for the borough of Grimsby.

SIR WILLIAM CHURCH, President of the Royal College of Physicians, will deliver the opening lecture of the winter session of the Post-graduate College, West London Hospital, early in October.

A FELLOWSHIP founded at Newnham College by Mrs. Sturt has been awarded to Miss G. L. C. Matthaei, who is engaged in making investigations on the respiration and assimilation of plants.

FRENCH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.—The French Association for the Advancement of Science will hold its thirty-second annual meeting this year at Angers from August 4th to the 11th, under the presidency of M. Levasseur, Administrator of the Collége de France. The questions proposed for discussion in the Section of Medical Science are: (1) Direct interventions in local manifestations of general diseases; (2) influenza, its influence in the production and evolution of other diseases; family epidemics of influenza; (3) wine, from the medical and hygienic points of view. The Section of Hygiene will discuss the application of the law concerning the protection of the public health.

THE UNIVERSITY OF CHICAGO.—We announced some time ago that Mr. John D. Rockefeller had offered to endow Rush Medical College so that it might become a part of the University of Chicago, and to place it in a position to carry out the highest attainable idea in medical education. It was estimated that for this purpose a sum of £1,400,000 to £2,000,000 would be required. Mr. Rockefeller offered to give the required amount provided that £200,000 was raised by the College by July 1st, 1903. On that date the Committee appointed to deal with the matter reported that the £200,000 had been raised. Mr. Rockefeller has approved of the items in the fund raised by the College, which will doubtless now be incorporated with the University of Chicago. It is a curious coincidence that the sum of £3,000 has now at last, after thirty-four years of untiring effort, been raised to erect a fitting monument to the memory of Benjamin Rush. The movement was set on foot in 1879 at the meeting of the American Medical Association in New Orleans. Of the three Boards of trustees in charge of the movement, Dr. Henry D. Holton, of Vermont, President of the American Health Association, who has served on the three Boards, is now the only surviving member of the first two Boards.

THE MADRID CONGRESS.—A meeting of the National Committee of Great Britain and Ireland was held in the rooms of the Medical Society on July 15th; Dr. Pavy, F.R.S., the President, in the chair. A report was read, stating that 238 persons had enrolled themselves members of the Madrid Congress from the United Kingdom, and that of this number 150 were present in Madrid, of whom several were appointed to honourable offices in various sections of the Congress. It was noticed with regret that certain radical alterations had been made in the constitution of the Congress without any previous consultation with the National Committee for Great Britain and Ireland. The second article, for instance, of the general regulations for the last Congress, enacted that the Congress shall be composed of medical men, pharmacists, veterinarians, and other persons practising one of the different branches of medical science.....and that any one who holds a professional or scientific title shall be admitted to take part in the Congress on the same terms as members of the medical profession. The admission of a large number of members, apart from medical men, made the Congress unwieldy in point of size, and to a large extent frustrated the objects with which it was founded. It was further reported that much confusion had been caused by the omission of the Congress authorities to communicate the names of the official delegates to the National Committee. A discussion took place upon the report, and it was decided to appoint a subcommittee to inquire into the subjects complained of, and to suggest the most efficient remedy. It was announced that the next Congress would be held at Lisbon in the year 1906. A letter was read from the Medical Society of London suggesting certain alterations in the constitution and duties of the National Committee. The letter was referred for consideration to a subcommittee consisting of the President (Dr. Pavy, F.R.S.), the two Secretaries (Dr. P. Horton-Smith and Mr. D'Arcy Power), Sir John W. Moore, M.D., ex-President of the Royal College of Physicians of Ireland; Sir Dyce Duckworth, M.D., Treasurer of the Royal College of Physicians of London; Dr. Allchin, ex-President of the Medical Society of London; and Dr. J. F. Sutherland, Deputy Commission for Lunacy in Scotland. The meeting adjourned after passing a vote of thanks to the Medical Society of London for the use of the rooms.

MEDICAL VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

AYLESBURY: ROYAL BUCKINGHAMSHIRE HOSPITAL.—House-Surgeon; unmarried; resident. Salary, £100, rising to £120 per annum.
BIRMINGHAM WORKHOUSE.—Duly qualified medical man for four weeks, resident. Salary, £3 3s. per week.
BRIGHTON: SUSSEX COUNTY HOSPITAL.—Second House-Surgeon and Anæsthetist, resident. Salary, £70 per annum.
CHELSEA HOSPITAL FOR WOMEN.—Clinical Assistant.
CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Second House Physician, resident. Salary at the rate of £30 per annum.
DEVONPORT: ROYAL ALBERT HOSPITAL.—Assistant House-Surgeon, resident. Salary at the rate of £50 per annum.
EXETER: ROYAL DEVON AND EXETER HOSPITAL.—Junior Assistant House-Surgeon, resident. Salary at the rate of £50 per annum.
GATESHEAD UNION.—Assistant Resident Medical Officer at the Workhouse. Salary, £150 per annum.
HOSPITAL FOR SICK CHILDREN, Great Ormond Street.—(1) House-Surgeon. (2) House-Physician. Both resident. Salary, £20 for six months each.
IPSWICH: EAST SUFFOLK AND IPSWICH HOSPITAL.—House-Surgeon, resident. Salary, £110 per annum.
LANCASHIRE COUNTY ASYLUM, Whittingham.—Assistant Medical Officer, resident. Initial salary, £175 per annum.
LIVERPOOL DISPENSARIES.—Assistant Surgeon. Salary, £100 per annum.
SALFORD UNION.—Resident Medical Officer at the Union Infirmary. Salary, £130 per annum.
SOMERSET AND BATH ASYLUM, Cotford.—Assistant Medical Officer, resident. Salary £60, rising to £200 per annum.
STOCKPORT INFIRMARY.—(1) Assistant House and Visiting Surgeon. (2) Junior Assistant House-Surgeon. Both resident. Salary, £80 and £40 per annum respectively.
WIGAN INFIRMARY.—Male Junior House-Surgeon, resident. Salary, £80 per annum.

MEDICAL APPOINTMENTS.

ANDERSON, W., M.B., C.M., Medical Officer of the Poplar Union Schools.
BROWN, William Brodie, M.B., C.M.Aberd., Medical Officer of Health for the Aboyne District of Aberdeenshire, *vice* Dr. Keith, resigned.
DYER, Charles Harold, M.D. and C.M.Aberd., Medical Superintendent of the Cleckheaton Small-pox Hospital, and reappointed Medical Officer of Health to the Cleckheaton Urban District Council.
GILL, Jos. Wm., M.R.C.S., L.R.C.P., D.P.H.Lond., Surgeon and Agent for the care of Sick and Wounded Seamen and Marines at Llantwit Major (Admiralty), and Medical Officer to the Nash Lighthouse Establishment by the Elder Brethren, Trinity House.
HAWTHORNE, C. O., M.D., M.R.C.P., Examiner in Medicine and Clinical Medicine in the University of Aberdeen.
HOLMES, J. W., M.R.C.S., L.R.C.P., District Medical Officer of the Sheffield Union.
MARWOOD, A. E., L.R.C.P. and S.Edin., District Medical Officer of the Portsmouth Parish.
PELLIER, C. de C., M.A., B.C.Camb., District Medical Officer of the Malling Union.
PEMBERTHY, W., M.R.C.S., L.R.C.P., District Medical Officer of the Wellington (Somerset) Union.
POWERS, C. H., M.R.C.S., L.R.C.P., District Medical Officer of the Penrith Union.
PRIESTLEY, T., M.R.C.S., L.R.C.P., District Medical Officer of the Sheffield Union.
READMAN, T., L.R.C.P. and S.Edin., District Medical Officer of the Lancaster Union.
WATT, A. M., M.B., C.M.Aberd., Medical Officer of the St. Olave's Union Children's Homes.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

HATHAWAY.—On July 21st, at Grove House, Osborne Road, Windsor, the wife of Frank T. Hathaway, M.D.Edin., of a son.
MANSELL.—On July 20th, 1903, at Crofton, West Hill, Hastings, the wife of H. R. Mansell, M.R.C.S., of a son.

MARRIAGES.

CALLENDER—HOYSTED.—At St. John's Church, Sidcup, on July 15th, by the Rev. James D. Hoysted, Rector of Ramsden, Orays, Essex, uncle of the bride, assisted by the Rev. E. Basil Spurgeon, Vicar of Sidcup, and the Rev. Chas. Hoysted, Thomas Marshall Callender, M.D., C.M.Edin., to Charlotte Elizabeth Marie Rose, eldest daughter of Colonel Hoysted, R.A.M.C. (retired), Sidcup.
FAWCETT—SWAN.—On July 15th, at Holy Trinity, Wallington, Surrey, by the Rev. Canon Brook, assisted by the Rev. A. F. Ryder Bird, James Hill Fawcett, "The Mythe," Banstead Road, Ewell, to Edith Mary Jocelyn, only daughter of R. Jocelyn Swan, M.R.C.S. and L.S.A., of "Hawthorndene," Wallington, Surrey, late of Park House, Camberwell New Road, S.E.
HARPER—SCOTT.—On July 16th, at St. Mary's Church, Wimbledon, by the Rev. Ronald C. Scrimgeour, M.A., Vicar of Sibton, Suffolk, uncle of the bride, assisted by the Rev. J. Allen Bell, M.A., Vicar of Wimbledon, Alexander Harper, M.D., of Eastbourne, son of James P. Harper, M.D., of Hertford Street, Mayfair, and West Norwood, to Constance Evelyn, daughter of Charles Scott, of Homefield Road, Wimbledon.
SEQUEIRA—ADAMS.—On July 16th, at St. Nicholas Parish Church, Kenilworth, by the Rev. E. Sequeira, M.A., brother of the bridegroom, assisted by the Rev. R. F. Hanning, M.A., vicar, James Harry Sequeira, M.D.Lond., M.R.C.P., to Nellie, daughter of Mr. and Mrs. J. E. Adams, of the White Lodge, near Stafford, niece of Mr. and Mrs. Harry Quick, Kenilworth.
SMITH—MORT.—On July 15th, at St. John's, Westminster, by the Ven. Archdeacon Wilberforce, D.D., Rector, Edward Archibald Smith, M.B., F.R.C.S.Eng., son of the late Dr. W. J. Smith, of Malvern Lodge, Southport, to Annie Erskine Mort, daughter of William Julius Winter, Esq., of Alexandra Road, Southport.

DEATH.

GOADBY.—On July 20th, at Guthlaxton, Southern Hill, Reading, Millicent Janet, widow of Rev. J. Jackson Goadby, in her 67th year. No cards.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aetiology, London*. The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

C. F. asks for advice as to the best leg clothing to wear for motor cycling, both in dusty and in muddy weather.

XEMA asks for information as to any means of effectually keeping sea water out of the ears during bathing. Is there any form of small rubber bag which could be distended with cotton wool? Oiled wool seems to be useless (with his patient).

SUDDEN ONSET IN ENTERIC FEVER.

DR. W. H. COUPLAND (Lancaster) writes: I should be much indebted for any references to the literature of "sudden onset" in enteric fever especially as regards children. I wonder if statistics give any help towards proving that a sudden onset is more common now than twenty years ago? It seems to me that influenza has had something to do with that change of type that we find at the present time.

ANSWERS.

S.—We have ascertained that the "croquet balls" mentioned as forming part of Saturday's dinner at a convent school in the South of England (BRITISH MEDICAL JOURNAL of April 4th, 1903, p. 709) are a kind of meat rissoles. Our correspondent's facetious reference to the "beefsteak with obstacles," followed by "cold sweats," which once appeared in the bill of fare of a North German Lloyd steamer, is thus out of place.

D.M.—Practical details for the open-air treatment of phthisis at home will be found in a small book called *Nordrach at Home*, by J. J. S. Lucas. (Bristol: J. Arrowsmith. 1s.) Working plans for the erection of a shelter might be obtained from Messrs. Boulton and Paul, Rose Lane Works, Norwich. There is a description of a simple shelter in the July number of *Tuberculosis*, the journal of the British National Society for the Prevention of Consumption. It is for two patients, but could easily be modified.

THROMBOSIS AFTER ENTERIC FEVER.

MAJOR REUTER E. ROTH, P.M.O., Commonwealth Military Forces, New South Wales, writes in reply to "W. D. E.'s" query published on May 9th, p. 1128: I had over twenty cases of thrombosis after enteric under my treatment. In all the cases the fever was contracted whilst on service in South Africa. In none of my cases was there enlargement of the abdominal veins. My treatment consisted of active and passive movements of the affected limbs and massage, the latter performed from the extremity towards the trunk. The treatment took up about fifteen minutes daily, and was carried out for seven days in the shortest case and twelve weeks in the longest. Those who rested themselves thoroughly—that is, kept the lower limbs in a horizontal position—made a more rapid recovery. Bandaging the limbs I found utterly useless. The recovery in most of the cases was retarded by the fact that they were receiving sick pay.

NOTES, LETTERS, Etc.

REFORMED SPA.

DR. A. CAFFERATA (Spa, Belgium) writes: I am afraid that a great many of my colleagues are still ignorant of the fact that gambling has been utterly done away with in Belgium. Chloro-anaemia patients may now be sent to Spa for the chalybeate waters without any fear of their coming into contact with the objectionable element which formerly accompanied gamblers. Drainage and water supply are now faultless here.

BAD SPELLING AND COMPOSITION AND ILLEGIBLE WRITING.

DR. JOS. WM. GILL, D.P.H.Lond. (Llantwit Major, Cardiff), writes with reference to the note on this subject in the BRITISH MEDICAL JOURNAL of July 18th: I think one of the reasons can be assigned to the tendency of late years to neglect the study of Latin, a dead language, on which so much of our grammar depends. To understand the derivation of a word means knowing how to spell it and also the true value of its meaning. A thorough knowledge of Latin is a real essential for the production of good English, and to a lesser extent Greek, French, and other languages. I may here add that it is interesting to note the manufacture of new words which to-day are universally adopted, such as "bike" and "motor;" a "wire" and "to wire," are more often used than a "telegram" or "to telegraph," and there are many other instances of this. As regards writing, the absurd custom that prevailed in my schooldays of giving as a punishment, "a thousand lines," or five hundred as the case may be, usually the same line repeated so many times, was one of the chief causes of scribbling and writing illegibly. These impositions (with many other lessons and exercises) had to be done out of school hours, which of course was a premium on bad writing. I think also that writing is not now taught as a special subject as it was in preceding generations

THE EFFECTS OF TOBACCO.

THE Washington correspondent of the *Daily Mail* states that the American Government, through its chemist, Professor Wiley, will begin experiments in the autumn on eighteen men to determine the effects of tobacco on the heart, the lungs, the digestive organs, and the human system generally. During the first month of the experiments the men will not use tobacco in any form. Then they will be divided into three squads, namely, smokers, chewers, and snuffers. They will begin with a gradual use of tobacco, and finally be permitted to indulge to the fullest extent. The smokers will have all kinds of cigars, cigarettes, and pipes; the chewers, all kinds of chewing tobacco, and the snuffers will be equally well treated. During the last month of the experiments the men will have no tobacco.

LETTERS, COMMUNICATIONS, ETC., have been received from:

A Miss L. B. Aldrich-Blake, M.D., London; Association of Registered Medical Women, Secretary of, London; Mr. A. Ashton, London; A. S. A.; Dr. F. J. Allan, London; Messrs. Armour and Co., London. **B** Dr. T. S. Balfour, Chard; Mr. H. N. Barnett, Knock; F. J. Buckell, M.B., London; A. H. Burgess, M.B., Manchester; Dr. A. Bettencurt, Lisbon; Dr. F. Bushnell, Plymouth; Mr. P. W. Bywater, Birmingham; Mr. L. A. Bidwell, London; A. G. Bateman, M.B., London; Mr. J. P. Bush, C.M.G., Clifton. **C** Country Practitioner; Charity Organisation Society, Secretary of, London; A. Cox, M.B., Gateshead; Dr. A. Cafferata, Spa; Messrs. Cassell and Co., London; Mr. W. H. Coupland, Lancaster; Mr. N. Cairns, Edinburgh; Dr. J. Campbell, Belfast; Messrs. H. W. Cox, Limited, London; C. F.; Dr. G. Crichton, London. **D** Messrs. Down Brothers, London; Mr. G. St. L. Daniels, London; Mr. G. W. Duncan, London; Mr. R. W. Doyne, Oxford; Mrs. C. E. F. Davie, M.D., Rewari; Deputy; Mr. K. R. P. Dalal, Bombay; Dental Surgeon; Dr. S. Delépine, Manchester. **E** Enquirer; Mr. H. Elliot-Blake, Bognor. **F** Sir M. Foster, M.P., London; Mr. C. A. Foyl, Blackpool; V. G. L. Fielden, M.B., Belfast; E. R. Fothergill, M.B., London; Dr. T. C. Fisher, Paignton; Fairplay; Dr. R. Farquharson, M.P., London. **G** F. S. Genney, M.B., Lincoln; Mr. G. P. Gaskell, London; Dr. L. Grant, Ballachulish; M. Grabham, M.B., Jamaica; Mr. J. W. Gill, Cardiff; Messrs. W. Green and Sons, Edinburgh; Mr. H. Grant, London; G. C. C.; Mr. J. T. Garrish, London. **H** Mr. R. M. Hugo, Purley; Dr. W. J. Horne, London; H. T. Herring, M.B., London; Dr. F. W. Hewitt, London; Dr. J. Haddon, Denholm; Mr. H. T. Hicks, London. **J** J. B.; Dr. R. Jones, Woodford Bridge. **L** Messrs. Lee and Nightingale, Liverpool; E. Lawrie, M.B., London. **M** M.D.; Dr. C. M. Moullin, London; Marcus; Dr. G. Macdonald, Dunedin; Dr. A. Macfadyen, London; Mr. W. J. Midelton, Bournemouth; D. McMordie, M.B., Omagh; L. McNabb, M.B., South Shields; Mr. R. Martin, London. **O** Oxygen Hospital, Secretary of, London; Messrs. Oppenheimer, Son, and Co., London; Mr. W. B. Orme, Port Said; O'Connor Extension Co., Manager of, London. **P** Mr. S. Paget, London; Mr. F. T. Paul, Liverpool; Mr. W. T. Partridge, London; Dr. W. H. Peake, London; Mr. A. G. Parrott, Shanghai; Dr. C. B. Plowright, Kings Lynn; Mr. W. C. Paterson, Jujuy; G. M. Pittock, M.B., Margate; Mr. H. E. B. Porter, Windsor; Mr. O. Polland, London; Mr. A. de Prenderville, London; Dr. R. J. Prohyn-Williams, London; Dr. T. Petty, Eastbourne; Mr. R. J. H. Price, Bala. **R** Mr. J. T. Rae, London; Dr. J. Robertson, Sheffield; Mr. A. W. M. Robson, London; Mr. J. Rankin, Kilmarnock; Dr. F. T. Roberts, London. **S** Dr. J. Smith, Kirkcaldy; Dr. W. Stephenson, Aberdeen; Dr. G. S. Stephenson, Grimsby; Mr. H. C. Standage, Birmingham; Mr. H. G. Smith, Edinburgh; Messrs. W. B. Saunders and Co., London; Mr. G. Stokes, C.M.G., London; Sir F. Semon, C.V.O., London; Surgeon R.N.; Dr. E. W. Selby, Doncaster; Substitute; Surgeon; A. A. S. Skirving, C.M.G., M.B., Edinburgh; Dr. A. Stanley, London; Messrs. G. Street and Co., London; Mr. H. Sewill, London; Dr. T. D. Savill, London; School of Medicine of the Royal Colleges, Secretary of, Edinburgh. **T** T. F.; Dr. D. Thomas, Ystalyfera. **W** Mr. T. J. Verrall, Brighton; Mr. W. Van Praagh, London. **W** Dr. P. W. Williams, Clifton; W. W. Westcott, M.B., London; Mr. C. G. Wheelhouse, Filey; Dr. H. Woods, Messrs. Williams and Norgate, London; Dr. J. Welland, Dublin; Dr. A. D. Waller, London; Dr. P. W. Watson, Clifton; Dr. A. Wear, Leeds. **X** Xema. **Y** G. P. Yule, Bloemfontein. **Z** Mr. P. C. Zeiss, London.

BOOKS, Etc., RECEIVED.

Lehrbuch der speciellen pathologischen Anatomie. Von Dr. Johannes Orth. Zehnte Lieferung. II Hälfte. I Theil. Berlin: August Hirschwald. 1903. M. 7.

Polyphase Currents in Electrotherapy. By George Herschell, M.D.Lond. London: Henry J. Glaisher. 1903. 2s. 6d.

Manual of Intragastric Technique. By Geo. Herschell, M.D.Lond. London: Henry J. Glaisher. 1902. 7s.

The Complete Law in Nature Unveiled. By F. Warner Jones, C.E. London: "Knowledge" Office. 1903. 1s. 6d.

Experimentelle Studien über Rückenmarksverletzungen. Von Dr. August Luxenburger, Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. 1903. 5s.

Zur Differentialdiagnose von Dermatosen und Lues bei den Schleimhauterkrankungen der Mundhöhle und oberen Luftwege mit besonderer Berücksichtigung der Hautkrankheiten als Teilerscheinungen. Von Dr. Gottfried Trautmann. Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. 1903. 4s. 6d.

The Mortality Experience of the Imperial Forces during the War in South Africa, October 11th, 1899, to May 31st, 1902. By Frederick Schooling, F.I.A., and Edward A. Rusher, F.I.A. London: Charles and Edwin Layton. 1903. 2s. 6d.

A Pharmacopoeia of Diseases of the Skin. Edited by James Startin. Fifth edition. Bristol: J. Wright and Co. 1903. 2s. 6d.

Die Periodizität der Diphtherie unde ihre Ursachen. Epidemiologische Untersuchung. Von Dr. Adolf Gottstein. Berlin: August Hirschwald. 1903. M. 1.20.

Atmokausis und Zestokausis. Die Behandlung mit hochgespanntem Wasserdampf in der Gynaekologie. Von Dr. Ludwig Pincus. Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. 1903. 10s. 6d.

Wesen und Entwickelung der Arteriosklerose auf grund anatomischer und experimenteller Untersuchungen. Dargestellt von Professor Dr. L. Jores. Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. 1903. 5s.

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President's Address

DELIVERED AT THE

SEVENTY-FIRST ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION,

BY

T. D. GRIFFITHS, M.D.Lond., M.R.C.S.,

President of the Association.

THE EVOLUTION OF ANTISEPTIC SURGERY AND ITS INFLUENCE ON THE PROGRESS AND ADVANCEMENT OF BACTERIOLOGY AND THERAPEUTICS.

I HAVE chosen for the subject of my address the evolution of antiseptic surgery and its influence on the progress and advancement of bacteriology and therapeutics, and the further practical application of our knowledge for the benefit of mankind. This subject is no doubt full of interest to us all, but it is far too long to be treated fully in the short space of time in which I have the honour of addressing you.

In the first place, I must ask your indulgence to bear with me for a few minutes in reminding some of you of the practice of surgery, as we witnessed it in the best London hospitals some forty years ago. There are probably many of the younger members of the profession who have no conception of the condition and state of things in surgical practice even at so recent a period. During my student days in the latter end of the Fifties and early Sixties the large wards of our hospitals were filled with all sorts of cases indiscriminately – simple and compound fractures, suppurating joints, traumatic, senile, and hospital gangrene, erysipelas, septicaemia, pyaemia, and cases operated on for accidents and diseases, all of which were dressed by the same attendants. Each ward had its set of sponges for the purpose of dressing wounds, and these were used indiscriminately for the various cases under treatment. There was no such thing as absorbent cotton wool in those days, and great economy was observed in the use of lint. Linseed meal and charcoal poultices were frequently employed to sweeten and cleanse wounds and to encourage healthy suppuration. "Laudable pus" was a sign of good dressing and healthy action!

The operating theatre was often crowded with students from the dissecting room, and at the operations the great surgeon invariably wore, with evident pride, the same old black frock coat, buttoned up to the chin, which was kept ready for the occasion in the anteroom, and which was well stained and saturated with blood and matter. It is unnecessary to give a detailed account of the operations, but I may mention that the sponges which were used in the wards were also used at the operating table. Stout silk ligatures were employed to tie the blood vessels, and were left hanging out of the wound to be pulled at from day to day until they were separated by the process of suppuration.

I well remember listening on one occasion to a clinical lecture on pyaemia, which was delivered by the senior surgeon of a London hospital, who confessed to the students that the causation and vagaries of pyaemia were inexplicable. To illustrate this remark, he reminded his class of a strong, healthy young man, who had been admitted into the hospital for a trifling accident, and who died shortly afterwards of pyaemia, while a middle-aged, drunken, abandoned woman in the adjoining ward was convalescent after a serious operation.

The dawn of antiseptic surgery was now not far off. Schwann's discovery of organic germs in the air led Pasteur to formulate a theory that fermentation is never excited except under the influence of microscopic organisms; and, further, that each particular organism sets up a peculiar species of fermentation. In 1861 Pasteur published the result of his researches on fermentation, and in 1863 he demonstrated that putrefaction was caused by minute organisms suspended in the air. Prior to this oxygen had been regarded as the agent which produced it.

Lister, now aided by the result of Pasteur's researches, devoted his talent and energies to solving the problem of inflammation and its attendant suppuration in wounds. He was not long in arriving at the conclusion that it was due to decomposition—putrefaction—and he naturally evolved the idea that if decomposition of blood serum and destroyed tissue in wounds could be prevented, Nature would repair the parts much in the same way as she did in cases of simple fracture. He applied this principle to the treatment of wounds in his practice in the surgical wards at the Glasgow Infirmary, and afterwards in Edinburgh, and used carbolic acid as his antiseptic agent.*

At the annual meeting of this Association held in Dublin in 1867, Lister communicated to the world the result of his investigation, and clearly enunciated the principles of antiseptic surgery, which we recognize and practise to-day. Naturally the practical application of these principles has since been gradually modified and improved. The use of the carbolic spray, which was at first a prominent feature of Lister's method, was gradually discontinued. It was found very inconvenient in practice, and not so necessary as had been anticipated, and it was finally renounced by Lister himself in 1887. When the spray was given up greater attention was paid to the purity of the atmosphere in the hospital ward, and more especially in the operating theatre, and of the instruments and dressings. Then, by a natural transition, attention was turned to the possibility of asepticism, with the view of discarding antiseptics at operations, and for the dressing of wounds.

After some experience, not a few argued that the acme of success in surgery could be attained by the proper use of aseptic means. There is no doubt a great amount of truth in this, but not to the extent claimed by the advocates of asepticism. It must be admitted that the purest air which we can obtain in the operating theatre contains micro-organisms, and some of these must alight on the surface of exposed wounds. Fortunately, there is far less danger of septic action being set up by micro-organisms floating in the air than by those which are conveyed to the wound by a foreign substance. The reason of this is probably that the pathogenic micro-organisms suspended in the air are less numerous, and, as a rule, less active than those which rest on solid or liquid substances. When no antiseptic lotion or swabs are used the aërial micro-organisms settling in the wound are left to the digestive cells and phagocytes to be disposed of. In ordinary circumstances and with proper aseptic precautions they are able to do so; but it cannot be denied that this delegation of trust to the cells, coupled with the possibility of imperfect sterilization of the skin and materials used at the operation, involves greater risk of disasters (such as are not unknown to some of us) than when antiseptic means are also used. We must be careful that the pendulum does not swing too far to the aseptic side. It is at all times a difficult matter to guard the surgeon's work effectually by means of sterilization against every possible access of pathogenic micro-organisms. Why should one trust to asepticism alone when the position can be made impregnable by the assistance of antiseptics, which are practically harmless to the healing process? It is therefore evident that the acme of safety is secured in operative surgery by the judicious application of the two principles advocated and practised by Lister.

The architect has been very rightly called into service to further the practical application of Listerism. This is especially to be noticed in the construction of modern hospitals and in the addition of new operating theatres to old institutions. They are invaluable in surgical work.

Some thirty-six years ago the mortality from major operations in the London hospitals was about 33 per cent. This high mortality after major operations is now reduced to about 3 per cent., and after minor operations practically to nil, as the outcome of Lister's antiseptic surgery.

Nursing Institutions and Surgical Homes.

We are now doing, with the aid of public charity, all that science up to date can do to help the poor. Let us now consider for a moment what has been done, what is being done, and what should be done to meet the requirements of the middle classes for medical and surgical aid in time of need. Their own homes, or perhaps lodgings, are often unsuitable for operative surgery, or for serious medical cases requiring skilful nursing. There are, it is true, many surgical homes in our large towns which are, with very few exceptions, private ventures for profit, many unworthy of recommendation.

I may, perhaps, be allowed to inform you very briefly what

* Carbolic acid was used for some time in this country in a diluted state to preserve pathological specimens before Lister introduced it as an antiseptic agent in the practice of surgery.

provision we have at Swansea for paying patients and for nurses. We have a dual institution—a nursing institute and a surgical home in one. This institution is supported to a very small extent by public subscription. It is managed by a small committee elected by the subscribers, and is worked by a resident matron. The nurses are allowed, practically, all the privileges of a co-operative nursing institute, and receive all their earnings, with the exception of the incidental expenses of the home. The public is in this way supplied with efficient nurses whose training and character are guaranteed by the institute. The house adjoining, and communicating with the nursing institute, is provided for paying patients, who are attended by their own medical men. The tariff varies from three to five guineas a week, according to the requirements of the patient.

Although differing from it in some details, the main principle of this dual institution is the same as that of the Home Hospital in Fitzroy Square, London, which was established by Sir Henry Burdett some twenty-six years ago, and which is now managed by a registered association without profit. Dual institutions of the kind we have at Swansea, provided with a Listerian surgical home, equipped with all the necessary modern appliances, are very much needed in towns to replace many private nursing institutes, some of which are now flourishing by imposing on the invalid public women imperfectly trained as nurses, who are engaged at low wages to be let out on hire like cab-horses for gain; and also to replace many of the so-called surgical homes, which are totally unsuitable for operative surgery. Self-supporting institutions of this kind must be started in our country by public subscription, or by the beneficence of individuals. A certain number of subscribers should be enrolled to elect a committee of management, or to form an association, certain advantages being assured for the subscribers. The public would in this way provide for itself a nursing institute and surgical home at minimum cost, with all the advantages of a Listerian hospital, equipped with every modern appliance, and every patient would be able to employ his or her own doctor. As soon as the institution has become self-supporting the small amount of subscriptions contributed for the purpose of securing a trustworthy committee of management, and any profit made, should be allowed to accumulate for the purpose of extension or the improvement of the building. No party feeling should be allowed to interfere with the management, and one or two medical men, elected annually or biennally, as representatives of the profession in the district, should act on the committee of management. I make this suggestion advisedly, as all the medical practitioners in the district would be more or less interested in the institute. It would be wise to avoid every possibility of friction or jealousy in the working of an institution of this kind, which is for the benefit of the public, as well as being a great convenience and advantage to the local practitioners.

BACTERIOLOGY AND IMMUNITY.

The brilliant discoveries of Pasteur and the evolution of antiseptic surgery by Lister gave a great impetus to the study of bacteriology, with the result that new and unexpected discoveries were made as to the part played by bacteria in Nature. We now find that these micro-organisms have a definite and important place in the scheme of Nature. They are distinctly separated by gradation from both the vegetable and animal kingdoms. They form a kingdom of their own which we may term the "bacterial kingdom." Their very existence appears to be antagonistic to both animal and vegetable life. Their object in nature is evidently one of destruction—the breaking up of complex molecules of animal and vegetable substances into simpler combinations. They are nature's scavengers, and undoubtedly they are the causal agents of all the communicable diseases to which flesh, and not human flesh alone, is heir.

The varieties of bacteria, differing in size, form, action, character, and power for good or evil, are almost endless.

The bacteria with which we are familiar measure from 1μ to 5μ=$\frac{1}{25000}$ to $\frac{1}{5000}$ in. If each bacterium measured $\frac{1}{75000}$ in. in length and $\frac{1}{25000}$ in. in breadth it would take 250,000,000 of these micro-organisms to cover 1 sq. in. of glass. These micro-organisms grow with great rapidity—a bacterium may reach maturity and divide or split into two in twenty or thirty minutes. If it divided into two every half-hour it would produce a colony of over 16,000,000 in twelve hours. It has been shown in the laboratory that the growth and rapidity of reproduction and the character of bacteria depend upon their surroundings, and that their virulence may be attenuated or increased according to circumstances. It is therefore evident that the law of evolution and involution of the animal and vegetable kingdoms applies also to bacteria. Supposing that the evolution of a new species of plant—say an annual—takes 336 years, then if the law is equally applicable to micro-organisms, a bacterium under favourable circumstances would take only one week to run through 336 generations, provided it took only thirty minutes to reach maturity and division, and so a new species might be thus rapidly evolved.

I wish also to remind you, for the purpose of my argument, of the important fact that a bacterium may have two states or stages of existence. One is the active or vegetative stage, and the other the spore or resting stage. In the latter state, which may be compared to that of a hard nut or seed, it may remain dormant for a long time until the surroundings favour its development into the active state. This, as I shall show, has an important bearing on the treatment and etiology of specific diseases.

Pasteur's and Davaine's discoveries led up to Koch's investigation. Davaine discovered bacteria in the blood of animals suffering from anthrax in 1863, thus confirming the observations made by Pollender in 1849. Koch repeated the experiments and finally established in 1876 the causal relationship of bacteria and disease. Tuberculous disease had been proved by Villemin to be inoculable, and in some countries it had long been believed to be infectious, but it remained for Koch to demonstrate, in 1882, that tuberculous disease was due to the agency of a micro-organism. He proved that a bacillus played a part in the production of tuberculosis which is analogous to that which is played by torula cerevisiae (yeast bacillus) in fermentation. The tubercle bacillus feeds, grows, multiplies and produces its toxin at the expense of the surrounding tissues, very much in the same way as the yeast bacillus feeds, grows, multiplies, and produces its toxin (alcohol) at the expense of the saccharine solution in which it is placed. The principle discovered by Pasteur in the processes of fermentation and putrefaction was proved, after years of close investigation by Koch, to be absolutely identical in the development of tuberculous disease in the animal body. He demonstrated the bacillus in the tissue, and cultivated the organism outside the body, and observed the formation of the toxin. The same remark may be applied to diphtheria (diphtherization). The diphtheria bacillus grows, feeds, and multiplies on the mucous membrane and there forms its toxin.

If we compare the processes of fermentation, tuberculization, and diphtherization a little further, we may gain an idea as to the nature of immunity, which is far more rational than any of the numerous and complicated theories and suggestions already proposed.

After a certain stage of fermentation torula cerevisiae (the fermenting agent) ceases to act, it becomes inert and falls to the bottom of the vat. Tubercle bacilli and other pathogenic bacteria behave in exactly the same manner. After a certain stage of crowding and production of toxin they become inert, and are at last practically killed by their own poison. The same thing happens in the overcrowding of animals.

When yeast has ceased to perform its functions in the vat the alcohol (fermentation toxin) which it produced, if not protected artificially, is attacked by another bacterium, the germs of which are always at hand, and it is soon reduced to vinegar, which possesses different properties. Even if more must is added to the vat the acetic acid fermentation will continue. It is well known that the toxin produced by one bacterium can be destroyed or metamorphosed by the action of another. Advantage has already been taken of this power by sanitarians for the disposal of sewage, aërobic and anaërobic bacteria being called into service to do the work desired.

When the pathogenic bacteria are destroyed by their own poison, and when this poison in its turn is metamorphosed into a simpler compound by other bacteria, in the same way as alcohol is changed into vinegar, the patient is convalescent, and as long as the spores of the second bacteria remain in the blood, the patient is rendered immune† ; but if the toxin of the first pathogenic bacteria has been removed by the leucocytes or destroyed by the oxygen of the red blood corpuscles, or, in fact, digested, or if the spores of the second set of bacteria are no longer retained in the circulation or tissues of the body, the patient has no immunity. When the germs which secure immunity become attenuated, the immunity is lessened, and when they are destroyed the immunity is lost for the time.

† Rheumatism produces immunity to tuberculosis, and vice versa.

In convalescence after diphtheria the toxin, which may be called for convenience sake "diphtherin," is no doubt metamorphosed, and its toxic character is destroyed by another ferment, and the new or metamorphosed product may be called "met-diphtherin." As long as the met-diphtherin, or its causal agent, remains active or dormant, it confers immunity on the individual body which it occupies. Diphtherin antitoxin is the met-diphtherin obtained from the horse's blood, which confers immunity on the human subject. When this is used at an early stage of diphtheria it damages the vitality of the diphtheria bacilli, and reduces their diphtherin to met-diphtherin, which is harmless.

Pasteur demonstrated that when grapes are ripe in October a large number of the berries and their stems have their skins covered with spores of torula cerevisiae, ready to develop under favourable conditions. This happens immediately when the grapes are crushed and the solution is kept at a proper temperature.

He also demonstrated that yeast can be weakened (attenuated) by nursing it in a weak solution of sugar, until eventually it is unable to cause any fermentation.

We may also study, with advantage the processes of sporulation and vegetation of yeast cells, which are analogous to those of pathogenic bacteria. By the process of sporulation the yeast cell contracts and hardens like a grain of corn, and retains its vitality in this condition for months or years. The same is also true of pathogenic bacteria, which exist either in the state of vegetation or sporulation.

Professor Sims Woodhead pointed out at our annual meeting last year that diphtheria bacilli may remain dormant in the spore stage in the throat for months. This is an important fact worth remembering, inasmuch as it may account for anomalous outbreaks of acute specific disease.

Considering the rapidity with which bacteria grow and attain their maturity and multiply, and considering how easy it is to attenuate or increase their virulence, it is logical to infer that the process of evolution may be brought about very quickly, as has already been pointed out. It is therefore natural to infer that, under favourable conditions, B. coli communis may be developed into B. typhosus, both being alike in size, shape, and appearance, and the so-called pseudo-diphtheria bacillus into diphtheria bacillus, which are also alike in appearance, etc.

Like the ripe grapes with germs of yeast in the dust on their skins and the surface of their peduncles, we also have germs of specific diseases about us which only require certain conditions to develop them. The late Sir James Paget, in his memorable address at the International Medical Congress in London, in 1881, dwelt at some length upon the importance of studying the physiology and pathology of plants to help the advance of knowledge of human pathology.

Nature always works on definite plans, but with ever varying difference.

Bacteriology has done much to unravel the mysteries of pathological processes, and it will do still more to advance our knowledge of medicine.

Therapeutics.

Both bacteriology and Listerism have greatly helped to advance our knowledge of the action of medicine. Therapeutics have now been raised in many departments from the plane of empiricism to that of science. Peruvian bark, the active principle of which is quinine, was accidentally discovered to be of great value in the treatment of malarial fever. The discovery was the result of observation, but the knowledge gained was entirely empirical. Prior to the discovery of the haemamoeba and the observation of its action on the red blood corpuscles, and until the Listerian property of quinine was ascertained, we had no idea how the drug acted as a curative agent. It is now evident that it acts simply as an antiseptic in destroying the malarial parasites which are conveyed to the human body by mosquitos, and it is now very doubtful whether it has any other beneficial action as a therapeutic agent. The world is greatly indebted to Sir Patrick Manson—whose name we were glad to see in the last Birthday Honours list—and to Major Ross, for their discovery of the part played by mosquitos in the causation of malarial fever.

Salicin.—Very much the same remarks may be applied to salicin, salicylic acid, and the salicylates, which are powerful antiseptics. The discovery that these drugs were specially valuable in the treatment of rheumatic fever was accidental also. It is now acknowledged that rheumatic fever is due to a micro-organism which probably gains access to the circulation through the tonsils or mucous membrane of the pharynx. Sore throat is a frequent precursor of acute rheumatism. It is probable that scarlatinal sore throat predisposes the patient to infection by rheumatic micro-organisms, over which the salts of salicin have a lethal action.

Mercurial salts are the most efficient antiseptic agents we possess in surgical practice, and it may be argued that the therapeutic action of mercury, when administered internally, is to be accounted for to a great extent by its antiseptic property; hence its specific action on syphilis, which is now stated to be a bacterial disease. It has been recognized for many years that mercury is a valuable remedy in tonsillitis, which is also, no doubt, caused by micro-organisms. Dr. Jamieson, of Edinburgh, pointed out some years since (British Medical Journal, 1887) that mercuric chloride is most valuable as a bactericide in the treatment of scarlet fever.

Arsenic, like mercury, a valuable remedy, is a powerful bactericide. It has been stated lately, on very good authority, that it is useful in the treatment of tuberculosis. It is well known as a most valuable remedy in malarial diseases. Its lethal action on other micro-organisms, which we have not yet discovered, may account for its therapeutic value in the treatment of anaemia, pernicious anaemia, skin diseases, and degenerative changes which are attributed to "premature old age." It is possible, and very probable, that micro-organisms are active agents in the production of atheromatous changes in the vascular system. We now acknowledge that the deposit of tartar on the teeth is the product of certain bacteria; even the gouty deposit in various tissues of the body should probably be credited to some as yet unknown bacilli. In any case, the facts before us are sufficient to justify the suggestion as a working hypothesis.

Iodine is another powerful antiseptic agent and a cell stimulant favouring absorption of exudative and inflammatory products; as it possesses these two properties to a high degree, and is readily tolerated by the animal economy, it ranks among the most useful remedies we have in our *Pharmacopoeia*.

Iron may act as a powerful antiseptic remedy indirectly. In cases of anaemia it improves the condition of the red blood corpuscles which are the carriers of oxygen in the animal economy.

The local treatment of skin diseases, as well as those of the mucous membranes, may be briefly stated to be a judicious use of antiseptics alone, or in combination with some sedative or stimulating agent, as the case may require.

All the useful remedies we employ in the treatment of inflammatory trouble in the genito-urinary passages are antiseptics, and although the amount which is passed by the urine is very small and much diluted, yet it is sufficient, within a certain limit, to destroy by degrees the offending bacilli. This gradual process of destroying bacteria can be imitated in the laboratory. The virulence of bacteria can be attenuated by growing the organism in the presence of weak antiseptics, and can be weakened also by injecting certain chemical substances along with them into the animal body.

All conditions which are unfavourable to the growth of bacteria attenuate their virulence, render them innocuous, and finally destroy them. Sunlight and the Roentgen light are fatal to bacteria. The open-air treatment of consumption, which is a combined aseptic and antiseptic treatment, is an illustration of the value of light, pure air, and ozone.

The effect of heat and cold on bacterial life is a most interesting and important subject. Every species of bacteria has its latitude of temperature in which it can flourish, a few degrees above or below being fatal.

Bacteria differ in their power of resistance to the toxic action of antiseptic agents. Tubercle bacilli are readily destroyed by iodoform, while other micro-organisms flourish in it. Even mercuric chloride solution of moderate strength does not kill all bacteria equally quickly.

Time will not permit me even to enumerate, much less to expatiate on, all the antiseptic agents which we have now at our command.

We now see that Listerism is as valuable in the practice of medicine as it is in surgery.

Public Health.

The practical application of our knowledge for the benefit of the public health has not kept pace with the great progress made in medicine and in surgery during the last thirty-six years. The Public Health Act of 1875, which was very comprehensive and well conceived, has been of great service in improving the sanitary condition of urban and rural districts;

but, in spite of the amending Acts, and in spite of the Local Government Act of 1894, it is now clear that both the law and its administration are defective in many points, and the time has come when both should be improved in order to secure for the public the full benefit of the advance recently achieved in the science of hygiene by bacteriology and the principles of Listerism. Thus, while it is true that every urban rural sanitary authority is required to appoint a medical officer of health, the duties and salary of the officer are left to the discretion of the local authority, except in those cases in which part of his salary is repaid by the Local Government Board. Rural sanitary authorities are generally satisfied with very little more than the exercise of their power of electing their officer and the fixing of a small salary. The officer, who is as a rule a local practitioner, is allowed to limit his own work as he may think proper; and as the tenure of his appointment is precarious, he is naturally disposed, in the performance of his duties, to interfere as little as possible with individual interests; practically he has no power to correct matters which come under his notice.

A few months since, a conscientious medical officer of health confessed, in a letter which appeared in the British Medical Journal, that he was paid about £50 a year for doing nothing. The principle of action which he had to observe was "how not to do it." The medical officer's reports consist principally of statistics—the number of births and deaths per thousand living, the number of deaths from acute specific diseases, etc.—which are, no doubt, very interesting and instructive, but these details could and should be supplied to the Board of Guardians by the registrar of births and deaths. It would be far more to the point if the medical officer of health were allowed or required to report how many houses were badly drained, how many houses were unfit for human habitation, etc. Speaking generally, the appointment of the medical officer of health in a rural district is very little better than a farce, and waste of public money.

Now it may be argued that sanitation in rural districts is of comparatively secondary importance since in the country there is plenty of space and pure air; and that, in fact, the mortality in rural districts is lower than in the country as a whole. But there are many fallacies in such a line of argument, and I propose to direct your attention to one. It has become too much the custom to gauge the sanitary state of the country by the general death-rate; a decline in the rate has, perhaps tended to blind us to facts which lie a little below the surface. It is true that during the last thirty years the annual death-rate of all ages in England and Wales has fallen from 22.25 to 16.3 per thousand living, a gain of about 26 per cent; but the death-rate of infants under 1 year of age has risen nearly 2 per cent., while the birth-rate has diminished. Nearly half the children born are dead within five years. Increased infant mortality and diminished birth-rate are two ugly facts which are not to the credit of our country or of modern civilization. The increased mortality among infants is due to diarrhoea and enteritis, and we find that the increase due to these two causes is seven times greater in towns than in the country. We also find that the mortality from diarrhoea is much greater among infants artificially fed than among those which are fed at the breast alone, or in part. No doubt much of this increased mortality is due to the ignorance and carelessness of mothers and nurses; but it is also an illustration of a defect in our sanitary administration due to the optional character of the Acts and regulations already referred to. There are in existence model rules and regulations for the cleanly and sanitary conduct of dairy farms, which, though they have been approved and sanctioned by the Local Government Board in England, are not adopted, or, where they have been formally adopted, are not enforced in rural sanitary districts. The medical officers of health of our great cities complain that, owing to the neglect of rural sanitary authorities, the milk supplied for consumption, especially in the poorer quarters of large cities, is often either decomposing or putrescent.

The illustration which I have given shows that we must regard our system of sanitary administration as a whole, and must not be content with enforcing sanitary precautions in the cities while neglecting their application in the country districts, from which those cities draw their supplies.

Notwithstanding the defects in the administration of the Public Health Act, the country is often under a debt of gratitude to sanitary authorities and medical officers of health for protecting our shores from the invasions of plague and cholera from time to time. The importation of plague to Glasgow and to the London Docks, a couple of years ago, is still fresh in our memories, and we have not yet forgotten the feeling of relief we experienced when we were assured that the causal agents had been destroyed and that we had safely escaped a terrible calamity. Great credit is due to the sanitary authorities for their promptitude, energy and determination in the performance of their duty on these occasions. The same may be said of our local authorities generally when an epidemic of small-pox, typhoid fever, or some other infectious disease attacks a populous district. Unfortunately the public is apathetic in these circumstances; it must be hard hit, and many lives must be lost, before it wakes up to realize the situation and give material help to the medical officer. We are indifferent and accustomed to the endemic and preventable diseases which are always with us, persistently destroying a large percentage of the population. This may be attributed to three causes:

1. The absence of a strong central authority.
2. The ignorance, apathy, and prejudices of the smaller authorities.
3. The objections and the loud protestations of faddists and conscientious objectors to vaccination, objectors to the Contagious Diseases Act, objectors to the advancement of medicine by experiments, etc.—a class of persons who, regardless of the consequence to others, claim freedom to do as they please in matters pertaining to health, freedom to do what is unjust and wrong, freedom to endanger the lives of others.

And this is allowed in Great Britain, the land of liberty! Gentlemen, this is not liberty, it is undue licence and abuse of freedom. Liberty means freedom and security, freedom of action and security to person and property, freedom of action with due regard to others. These conscientious objectors, of whom there are many species in the world, repudiate the conclusions and recommendations of our Commissioners. They claim freedom to break one of the Ten Commandments, and they also disregard one of the great moral principles of Christianity: and, moreover, they are allowed to have a voice in the Government and the country, and considerable influence in Parliament! It is high time the country should be rid of this tyranny of faddism and ignorance which is responsible for the loss of tens of thousands of valuable lives every year.

In obedience to the influence of democracy, the tendency of legislation for many years past has been in the direction of decentralization. Unfortunately this has been carried a little too far in the case of the Public Health and Local Government Acts. A healthy reaction is now much to be desired. The Sewage Commissioners, who are gentlemen of the highest abilities, have recently reported, and have pointed out "the need of setting up a central authority." All the various committees appointed by the Local Government Board to consider and report on questions relating to food, questions of preservatives, colouring matters, beer materials, and adulterations of food products have made similar recommendations—namely, the necessity of setting up a greater central authority to secure intelligent co-ordination and direction and a satisfactory administrative control.

Here the matter ends. The recommendations of Commissions and Committees are put on one side. Questions affecting the health of communities and of the nation at large are presumably not urgent! Both Parliament and the country are more interested and concerned in trivial and sentimental questions of religious teaching in Board schools than in the physical and mental development of our children. The Opposition, whichever party be in power, apparently prefers wasting the Legislature's time in wrangling over a dispute between a set of recalcitrant quarrymen and their employer to devoting itself to an amending Act to secure better health, longer life, and greater comfort to the community for which they legislate.

It is evident that the reform we need is greater central authority and greater power to county councils over public health administration within their respective areas, and for this purpose it appears to me that the following scheme would meet the case.

1. That the President of the Local Government Board should be raised to the rank of Secretary of State, on an equality with the Home Secretary, for the purpose of improving the status of the central authority. It is true that Mr. Long is a member of the Cabinet; but that is not due to the fact that he is President of the Local Government Board.

There is, I understand, an agitation going on at present to establish a Ministry of Public Health. This at first sight appears to be the very remedy required; but on second

thoughts it is evident that this would defeat its own end and prove a retrograde step. We must remember that the administration of public health in this country is almost entirely local; and we must not forget that the local administrable business of the country, for which the Local Government Board is trustee, and the business of public health are inseparable; it therefore follows that an independent Minister of Health would be in constant collision with the Local Government Board, and the result would be friction and a deadlock.

2. (*a*) That the county councils, urban and rural sanitary authorities should be under compulsion to appoint medical officers of health who should be precluded from private practice. (*b*) That the county councils should also have power to compel the combination of small sanitary authorities into conjoint areas sufficiently large to secure the services of an efficient medical officer who should give his whole time to public health work. In short, a public health service should be developed to provide the efficient medical officers of health, who are absolutely necessary. The service should be sufficiently tempting to induce some of the best talent in the profession to enter it. The young medical officers of health should begin their work in rural or less important districts, to be promoted, according to merit and seniority, to higher or more important posts with increased salaries. The appointment, in the first place, should be competitive; the tenure of office should be secure; and there should be provision for superannuation. The medical officers of health should have competent sanitary inspectors as at present; their duties should be specified, and they should have the power to carry out the work prescribed for them, very much in the same way as responsible officers in other services. Every medical officer of health should be provided with a bacteriological and chemical laboratory and the services of an analytical chemist. Laboratories of this kind, properly equipped, which are now few and far between, would also be an invaluable help to general practitioners and specialists.

One of the duties of the medical officer should be to deliver popular lectures on sanitary questions, and hygiene generally, in his district for the purpose of educating the public on the vital importance of observing the ordinary laws of health. The sanitarian motto should be that which the late Lord Beaconsfield once gave to his party, "Educate—Educate—Educate."

Although it is well to advocate the establishment of sanatoria for the cure of tuberculous diseases, it is far more important and much more logical to go to the root of the evil at once and teach the public the importance of healthy houses, good drainage, proper ventilation, hygienic dressing, and wholesome diet. Prevention is better than cure.

A Modest Estimate.—A moderate improvement in our present sanitary administration would, no doubt, result in a reduction of 1.5 per 1,000 living, in our annual death-rate. Supposing then that the population of the United Kingdom be 40,000,000, the saving of life would amount to 60,000 a year—a total of 1,200,000 in twenty years. A creditable asset even to the British Empire.

Ladies and Gentlemen,

The object of the British Medical Association is to secure concord and fraternity, unity and strength; power to organize and advance our knowledge; power to protect our own interests and uphold the honour and noble traditions of the profession; power to promote and keep a jealous watch over the well-being of the community, and to educate them on all matters relating to health, both of mind and body; and finally, power to influence and guide Parliament in legislating for the health of the nation. The possibilities of the Association are great; its influence, which is increasing year after year, will last as a living power in the country, and remain a valuable legacy for the benefit of posterity.

Although our profession is not a lucrative one, it is honourable and heavenborn, and we may have the satisfaction of knowing that we are doing noble and Christian work in our effort to cure disease and alleviate human suffering. Moreover, we may claim that we live and labour to procure for the whole civilized world Nature's choicest blessing—health.

Presentation.—On Wednesday, July 15th, Dr. J. H. Stowers was presented by his colleagues at the North-West London Hospital with a handsome silver salver, the inscription on which explained that it was given "As a token of friendship and in recognition of seventeen years' service as Honorary Secretary to the Medical Committee."

Address in Medicine

At the Annual Meeting of the British Medical Association at Swansea, July, 1903.

BY

FREDERICK T. ROBERTS, M.D., B.Sc.,

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ON INFECTIVE AND INFECTIOUS DISEASES.

Mr. President, Ladies, and Gentlemen,—It is just forty-five years, Sir, since you and I left our native land and began our career as medical students at University College, London. Never in my wildest dreams could I then have imagined that we should meet on such a memorable occasion as this, in the respective positions which we now have the honour to occupy. You are pre-eminently worthy of the dignity of being President at the meeting of the British Medical Association in Swansea, but it would have been very easy to fix upon many more deserving and far better qualified to deliver the Address in Medicine than myself. I am fully conscious that I owe my selection, in the first instance, to our long-standing personal friendship; and, secondly, to the fact that I am a Welshman, having many friends and not a few old pupils among the members of the Association in South Wales. To you, Mr. President, and to all concerned I offer my cordial thanks and acknowledgements for inviting me to deliver this address, as well as to the Council of the Association for accepting your nomination.

In an address of this kind it is some advantage nowadays if one can fix upon a definite period of time for contrasting the past with the present. There is a popular inclination towards centenaries, jubilees, and the like, and if I may be excused another personal reference, it so happens that I can go back beyond the forty-five years to which I have just alluded, and can to-night actually and truly speak of my "jubilee" in connexion with the medical profession. I entered upon my apprenticeship in Carmarthen in 1852, which I can assure you was no mere sinecure, but involved downright hard work. I take this opportunity of saying, however, that I have never regretted the time spent in that capacity, for the knowledge and experience then gained have proved most useful to me on many an occasion, not only when a student, but during my subsequent professional life.

It has always seemed to me desirable that the "Address in Medicine" at the annual meeting of the British Medical Association should be devoted to some particular subject, of more or less general interest, and not savouring, so far as can be possibly avoided, of the absurd, irrational, and most mischievous "specialism" which is so rampant at the present day. From the very first, after I consented to deliver this address, I was for several reasons powerfully attracted towards the subject of "Infective and Infectious Diseases," to which I now propose to ask your attention, of course entirely from a comprehensive point of view. It is one that appeals to the entire profession, in all its different branches, and by no means least to the "general practitioner." I well remember seeing most of the ordinary infectious diseases on a considerable scale when I was an apprentice, and have a vivid recollection of serious epidemics of small-pox, cholera, and even typhoid fever, which, however, we did not then identify. Looking back, it may be truly affirmed that this class of diseases illustrates in a striking manner and degree some of the most remarkable scientific and practical advances in medicine which have been achieved during the last half century; while the future promises further progressive developments, the importance and value of which it is impossible to forecast.

Scientific Definition—Additions and Developments.

I may take it for granted that when the pathological factor or factors which directly originate a particular disease or group of diseases, about which there had previously been but vague theories and hypotheses, have been definitely recognized and their true nature established, we may claim that a distinct and important advance in knowledge has

been gained. This applies emphatically to the whole range of complaints with which I am now concerned, for the term "infective," according to modern teaching, has come to have a very precise pathological signification, founded on a scientific basis, and the outcome of the researches and experimental investigations of Pasteur, Lister, Koch, and their followers. To this doctrine the medical faculty generally, with but comparatively few exceptions, have given their cordial and uncompromising assent. It affirms that every infective disease is the result of the direct action upon the body of one or more living pathogenic micro-organisms or bacteria and in many instances it has been positively demonstrated that a specific organism is the cause of a particular disease, and of no other. It must be clearly understood that according to this definition the term "infective" is not synonymous with "infectious," which implies that a complaint is capable of being communicated, either by direct inoculation or contagion, or indirectly in various ways, from person to person, or from some other animal to man. In short, an infectious disease must be infective; but an infective complaint is not necessarily infectious.

I need scarcely remind you that a number of contagious diseases have long been known to be due to obvious or easily demonstrable parasites, animal or vegetable, and it is interesting to note in passing that the investigations of recent years have added, and are still adding, to the list, of which actinomycosis may be cited as a conspicuous example. The organisms we are now dealing with, however, are on an infinitely more minute scale, and the profession as a body have to accept in the main what trained bacteriological experts tell us about them, their toxins, pathological effects, antitoxins, and other details. The theory of *contagium vivum* is of very ancient date, but the positive demonstration of the nature of the so-called virus was only started, and has been progressively accomplished well within the last half century; while the investigations which are still going on in all directions are adding daily to our knowledge and to the practical results following thereform. These investigations, however, have shown that there are still not a few difficult questions to be solved, and we must be on our guard against too hasty conclusions or generalizations on insufficient data. It is a remarkable fact that in the case of some of the most prominent infectious diseases with which we have long been familiar, no definite or specific organism has thus far been recognized, at least so as to be acknowledged by competent and reliable authorities, and we cannot accept the alleged discoveries of such organisms in individual complaints, unless and until they have received the stamp of the approval of such authorities. At the same time we may be certain that they exist, and this fact may be accepted as the basis of a sound working hypothesis.

When we look back upon the history of medicine during the past half century, but more especially during recent years, we cannot avoid being struck with the additions which have been made to the group of infective and infectious diseases, and with the way in which others, though previously known, have come so much more prominently to the front. The multiplication of these complaints has been partly due to the differentiation of diseases which were formerly regarded as identical, as the result of careful and systematic clinical observation and *post-mortem* examination. It is, however, to the revelations of bacteriology that we mainly owe these additions, which in the first place have brought all inflammatory, suppurative, and septic conditions within the infective group. Among special medical diseases coming under these categories which, according to modern views, are thus definitely classed as infective, may be mentioned pneumonia, rheumatic fever, gonorrhoeal synovitis, possibly rheumatoid arthritis, malignant endocarditis, certain acute throat inflammations, and different forms of meningitis. But, further, bacteriology has proved conclusively that several unsuspected complaints or morbid conditions are infective or even infectious, of which the most remarkable are tetanus, tuberculosis, and malaria. Influenza and diphtheria are striking examples of infectious diseases which seem to have developed into terrible scourges within living memory, though they are by no means new complaints, and their prevalence can be easily explained in the light of modern knowledge. Anthrax and glanders have come to the front because they illustrate in a remarkable way certain important points relating to the pathology of micro-organisms. Glandular fever, specially studied in this country by Dawson Williams, is an interesting addition to the acute infectious diseases. I have already alluded to malaria, and I wish now to draw special attention to the fact that the effects of this condition, as well as several diseases always known to be infectious, such as cholera, dysentery, plague, and yellow fever, which originate and prevail chiefly in tropical or subtropical countries, and with most of which we as a nation had formerly little or no direct concern, have nowadays assumed a conspicuous prominence, and have become of extreme practical importance. New diseases belonging to this category have also been, and are still being, brought to our notice, such as blackwater fever, Malta or Mediterranean fever, trypanosoma, sleeping sickness, and beri-beri. So important have they become that "Schools of Tropical Medicine" have been, as you are aware, established in different places for those who need special training in relation to these diseases. The free intercommunication which now exists between Europe and tropical countries, many of them far distant, has brought them to our very door, so to speak, and we are compelled to deal with them seriously, and to do what lies in our power to cope with them. And more especially Great Britain as a nation cannot ignore these complaints, as many of the regions in which they prevail form an integral part of this vast empire. We are, I presume, most of us "Imperialists" nowadays, but in this relationship, at any rate under existing circumstances, no one dare be a "Little Englander!" We cannot evade the responsibilities which the Imperialistic sentiment brings with it with regard to these terrible diseases, whether from the point of view of humanity and philanthropy; of trade, commerce, mining industries, or other remunerative enterprises in which this country is now so actively and widely engaged; of military engagements; or of Christian missionary work. In this connexion I cannot refrain from calling attention to the intelligent, far-seeing, disinterested, and truly patriotic efforts made by our distinguished countryman, Sir Alfred Jones, a native of Carmarthen, to promote the study of tropical complaints on the spot, as well as at the Liverpool School of Tropical Medicine, and to do all in his power to endeavour to diminish their prevalence and gravity, or even to exterminate them altogether.

PRACTICAL ETIOLOGY.

I now proceed to deal briefly with certain points relating to what I may term the practical etiology of infectious diseases. With this aspect of the subject all members of the profession, whatever their position or sphere of work may be, are unavoidably and deeply concerned; and there is hardly any branch of medicine in which greater or more beneficent progress has been made, thanks mainly to those who have worked in the various departments of public health, and who have taken an active interest in sanitation.

Now the first question to be determined from the point of view of practical etiology is whether a particular disease is infectious, in the true sense of the term, or not? As I have already remarked, some affections have been in modern times definitely proved to come under this category, which previously could not be so regarded on any scientific grounds, of which tuberculosis is a conspicuous example. The dogmatic statements made on this point about other diseases, which seem to be undoubtedly infective, such as pneumonia and rheumatic fever, must, however, be received with caution until further and more extensive inquiry has been made, though in the meantime it may be well to regard them provisionally as infectious under certain circumstances, and to act accordingly. At the same time we should not ignore or forget the ordinary causes which long experience has taught us are capable of exciting these diseases, such as chill produced in various ways.

In the next place, it is very desirable, with regard to each individual infectious disease, to have as definite a knowledge as possible concerning its period of incubation; the degree of infectiousness; and the period of infectivity, that is how long infection lasts in a particular case? In relation to many of the best known affections belonging to this group, these points have been now established fairly accurately, but there is still much to be done in this direction. As regards the degree of infectiousness, undoubtedly the gradations in this respect between different diseases are by no means so clearly recognized as they ought to be, even by the profession sometimes, but more especially by the laity, and consequently one cannot help being struck with the want of proportion and tendency to exaggeration exhibited in the way in which certain of these complaints are dealt with. For instance, phthisis is really nowadays looked upon by the large majority of persons as if it were a most virulent infectious

disease, equal to small-pox or scarlet fever, which is of course absurd, but the idea has none the less got a firm grip, and is doing an infinite deal of serious harm in different ways.

The most important and striking advance which has been made in relation to the practical etiology of infectious diseases is in our knowledge of the sources, modes, and channels of infection, both generally and with reference to individual members of the group; of personal predisposing conditions; and of the external circumstances which favour or promote their endemic and epidemic prevalence. On these matters our information was, within my own recollection, extremely vague and indefinite, and many most significant facts, with which we are now quite familiar, were utterly unknown and even unsuspected, except by a few intelligent observers and earnest workers.

The question of the communicability of certain infectious complaints from person to person through the atmosphere is an extremely important one, especially when a number of individuals are aggregated together; as well as the distance to which the contagium can be thus conveyed, and the agencies which assist in its dissemination. This question is by no means settled in not a few instances. Let me refer more particularly to typhoid fever and small-pox. While typhus fever has always been regarded as a disease strongly infectious from person to person, typhoid fever has been practically dealt with by the large majority of the profession as being free from danger in this way. Now, however, the tendency undoubtedly is, and probably rightly, to be much more careful as regards enteric from this aspect, and there is a growing objection to the admission of typhoid patients into the ordinary wards of general hospitals. Small-pox is still more important. Of course it is a fact familiar to all that this complaint is highly infectious through the atmosphere, but how far it can be thus carried, particularly from a small-pox hospital or hospital ship, and the influence of winds in conveying the infective agent, is another matter, and may involve troublesome or even momentous consequences. I have noticed in the medical press recently directly contrary opinions on this question, expressed by those who apparently have had equal experience and opportunities of arriving at a practical conclusion. How far emanations from drains, sewers, defective waterclosets, and the like can produce so-called "blood poisoning" and other indefinite infective conditions, is another question which needs clearing up.

Passing now to the more practical results of modern investigations as to infection, the following facts are worthy of special attention:

1. As a starting point infective micro-organisms have been found and demonstrated in the blood; in certain secretions; in the excreta, urine as well as faeces; in the cutaneous structures or shed epithelium; possibly in the expired air; and in specific lesions, morbid products, and discharges from the body of various kinds. Hence we can readily understand how and why most of the diseases with which these organisms are associated are likely to be transmitted from individual to individual; how the infected materials may contaminate fomites, and be thus conveyed far and wide; how they retain their activity in a dried state for an indefinite period, thus rendering apartments or other places infectious; and how they may be "airborne," being carried about by atmospheric currents or winds, and afterwards either inhaled or swallowed by persons, it may be, far removed from the original source of infection, remote epidemics being thus not uncommonly originated.

2. The communicability of certain grave diseases by the contamination of drinking water in different ways, but especially by admixture of infected excreta, is an established fact the importance and far-reaching consequences of which it is impossible to estimate or realize in any adequate degree. Why such contamination should take place is often obvious enough, but it is rather startling to be told, as we have been within a recent period, that unsuspected and most inviting "spring water" may be a highly dangerous source of enteric fever. I have a very vivid recollection of an epidemic of cholera, and another of enteric fever, in Carmarthen when I was an apprentice, and in the light of modern knowledge there can be no doubt but that they were the result of infection through an excellent "spring water" in common use, which had become contaminated with the specific excreta. While we are now all so familiar with the dangers of infected water, it required some hard teaching to convince the profession and the laity of its reality, and we ought never to forget the excellent work done by Snow Beck, Ballard, and other pioneers in relation to this matter. Even at the present time, moreover, my experience has led me to the conclusion that these dangers are by no means always appreciated as they ought to be, and I have met with not a few glaring instances of the injurious effects of ignorance or carelessness. In this connexion I may refer for a moment to the vigorous and praiseworthy efforts of my former pupil and friend, Dr. Leigh Canney, who at any rate is fully alive to the evils and risks of water infection, to establish a Royal Water Corps as a special section of the R.A.M.C., the functions of which it would be to prevent enteric fever, dysentery, cholera, and diarrhoea. It does not look, however, as if his project had "caught on" with the governing bodies, and no doubt there would be serious practical difficulties in carrying it out.

3. One of the most striking additions in modern times to our knowledge regarding the conveyance of infection is in relation to food. In this connexion milk and its products stand out very prominently, not only on account of their frequent contamination by infectious materials, probably mainly from the deliberate addition of tainted water to milk, but also because this valuable food may convey organisms directly from diseased animals by whom it is secreted. No doubt you are all familiar with the present controversy as to the communicability of bovine tuberculosis to the human subject in this way; but, notwithstanding Koch's dogmatic negative statement, more recent investigations, prominent amongst them those of Professor Hamilton, of Aberdeen, and Mr. M'Laughlan Young in this country, seem to have demonstrated conclusively that this authority, in spite of his high scientific claims and standing, is entirely wrong. At any rate it would be a grave mistake to act on Koch's view, or to ignore in the slightest degree the possibility of the conveyance by milk of the infective agents of tuberculous or other diseases. I will merely allude in passing to the probable danger in some cases of infection through meat, fried fish, uncooked vegetables, or various foods accidentally contaminated, as from being kept in infected rooms, or it may be by winds carrying organisms from a distance. But what shall I say about shellfish? Dare I whisper in this neighbourhood the word "oysters"? Unfortunately there can be no doubt but that these "luxuries" are not uncommonly potent agents in originating enteric fever; and the same statement applies to the more humble and democratic mussels, cockles, or even periwinkles, as well as possibly to lobsters, crabs, and the like. May I venture to suggest that it is extremely desirable for all concerned, that everywhere the utmost precautions should be taken to prevent as far as possible these most desirable and valuable articles of food from being contaminated by sewage of any kind; and the deliberate feeding of oysters on such materials, for commercial purposes, cannot be too strongly condemned, and ought to be put a stop to by the most stringent legal measures.

4. The rôle which different animals play in the transmission of infectious diseases to man is another aspect of the subject upon which modern observations and researches have thrown remarkable light. Of course the relationship in this respect of such diseases as hydrophobia and glanders has long been recognized. The idea of direct infection through the milk or flesh of infected animals is of comparatively recent date. The danger of infection being carried directly by domestic animals, such as birds, cats, and dogs, from person to person, or perhaps because they themselves are suffering from certain diseases, is not yet appreciated as it ought to be. The rôle played by such unwelcome "large vermin" as rats and mice in relation to plague, and probably some other complaints, is now familiar to all. Flies, cockroaches, and the smaller but too well-known personal vermin may no doubt be instrumental in conveying infection in certain cases, and flies may thus taint food. But the most remarkable and important revelations which modern investigators have given us as to the transmission of infection by animals are those relating to mosquitos. The discovery and demonstration of the connexion between these minute torturers of humanity and malaria, in which Sir Patrick Manson and Major Ross have taken such a prominent part, has already worked incalculable good, and promises in the future to revolutionize the conditions of life in many parts of the world, to the inestimable advantage of the communities who are native to the district, as well as of Europeans whom circumstances compel to reside there. The same statement applies to yellow fever, and

probably to other affections prevailing in climates and localities where mosquitos abound.

5. The question of the relation of infection to soil, place, and particular houses or groups of houses is very important, but is one about which there is at present much that is uncertain and indefinite, and which needs to be worked out more fully before any positive conclusions can be arrived at with regard to individual diseases. The fact that the tetanus bacillus comes from the soil, being especially associated with garden earth or horse-dung, is well established, and was a most interesting and important modern discovery. Beri-beri is regarded by Manson as a "place disease," due to a toxin produced by a living germ operating in some culture medium outside the body. Of course, houses or rooms may, when once infected with the organisms of well-known diseases, retain them indefinitely, and thus be the means of originating similar affections after long intervals.

6. Another most important aspect of infection, from a practical point of view, is the fact that we are every one of us always carrying about in various parts of our bodies microbes, which while habitually innocuous and non-virulent, may under favouring conditions, so far as they are concerned, become extremely virulent, or possibly specific, to our personal undoing; or we may even be harbouring in our mouths, throats, noses, ears, and thereabouts specific germs by which, quite unintentionally, we are liable to infect others at any time, while we ourselves go scot free. It is certain that very dangerous germs may lie dormant for an indefinite period in the human body, such as the bacilli of diphtheria, influenza, or tubercle, or their spores, and either lead to unexpected auto-infection, or to the corresponding specific disease in others. When suppuration is set up in any part of the body, moreover, it is wonderful how disagreeable the different organisms can be, in the way of migrating to various other structures, and producing a similar condition in connexion with them.

7. I must just refer, lastly, to the progress made in our knowledge of the channels of entrance of microbes into the system, and the modes in which they are disseminated. Here again the mouth, throat, and neighbouring parts come into unpleasant prominence, especially the tonsils, in connexion with scarlatina, rheumatic fever, tuberculosis, actinomycosis, and other diseases. The dissemination of the organisms by cells, the blood stream, and the lymphatic channels is also an important fact positively demonstrated; and in this dissemination embolism not uncommonly plays a conspicuous part.

MORBID ANATOMY AND HISTOLOGY.

I can only touch very superficially on this aspect of my subject, in order to draw attention to two or three of the more important points. Our knowledge of the actual nature and characters of the specific pathological lesions of most of the infectious diseases, both macroscopic and microscopic, has, I need hardly say, made enormous strides, and much of it is in reality, for obvious reasons, of quite modern discovery and demonstration. Further, the recognition of the fact that certain pathological manifestations in connexion with internal organs or other structures are an essential part of an infective disease, and not merely accidental complications or sequelae, as was formerly supposed, if they were recognized at all, is an important step in advance. This may be exemplified by the relationship of renal disease to scarlet fever; and of cardiac inflammations to the rheumatic state. At the same time our knowledge of what may be fairly regarded as complications and sequelae of this class of complaints has not only greatly increased, but has become much more definite and intelligible. As important pathological factors which are particularly liable to bring about complications and sequelae in infective diseases, may be mentioned congestion, inflammation, suppuration, embolism or thrombosis, and acute degenerations.

The last point I would refer to in this connexion is the very striking and most valuable results which have been derived from experimental investigations on animals with regard to the pathological effects of different pathogenic microbes and their toxins, and more especially in relation to the nervous system. These have a direct bearing on the nervous sequelae which so often follow several of the infectious diseases, and which have come so prominently before the profession during recent years.

CLINICAL HISTORY AND PHENOMENA—DIAGNOSIS.

While we have to record certain distinct advances in our knowledge of the clinical history of several of the infective diseases, and while important additions have been made to our means of diagnosis, to which I shall presently refer, it cannot be said, speaking broadly, that the progress in this direction has been anything like commensurate with that relating to their pathology and etiology. Of course, we are better acquainted clinically with such diseases as enteric fever, diphtheria, influenza, and tropical fevers, because they have become more familiar to the profession generally, and modern knowledge enables us to understand and explain more clearly their clinical phenomena on a pathological basis. Moreover, now and then careful observation reveals a new symptom or class of symptoms, which proves to be of conspicuous diagnostic significance, as in the case of the "prodromal exanthems" of small-pox, and Koplik's "buccal spots," which seem to be of real value in the early recognition of measles.

I presume it will be acknowledged on all sides that as early and correct a diagnosis as possible is of the utmost importance in the case of the several infectious diseases which come under observation in the ordinary routine of medical practice. This is of special moment when dealing with numbers of individuals brought into more or less intimate association; and I mention schools as a prominent and constant source of anxiety and worry to all concerned in relation to these complaints. Now it must be insisted upon at the outset that such diagnosis is in the large majority of instances actually and positively founded on very simple data, easily observed and readily studied. That is to say, we must, as a matter of general routine, rely, and can safely rely, in the diagnosis of a particular infectious disease, as regards its actual clinical history, on its mode of onset or invasion, its course or progress, and the simpler phenomena which personally I always speak of as "symptoms," as distinguished from those revealed by skilled physical or other special methods of investigation. And, in my opinion, it would be a serious mistake to encourage in any way the idea that in the ordinary run of cases of this class of complaints we cannot come to any definite conclusion except with the aid of modern scientific methods. Under the category of symptoms it must be noted that subjective morbid sensations, either general or local, are very conspicuous and significant in several diseases of an infectious nature. But, of course, it is from objective symptoms, which we can ourselves note and investigate, that we derive our chief and more reliable information. They may be evident or attract attention at once, and one or more may be even quite pathognomonic, such as the peculiar cough of pertussis, or the nervous and muscular disorders characteristic of tetanus and hydrophobia. The cutaneous eruptions or rashes of the exanthemata constitute a most important group of objective symptoms, with which it is essential to be thoroughly conversant in all their details. The external manifestations of such infectious diseases as mumps, syphilis, plague, anthrax, and glanders also come under this category. So-called catarrhal and throat symptoms are of common occurrence, and the affected parts can as a rule be easily seen or felt; while such a disease as gonorrhoea is recognized by its specific urethral discharge. The phenomena associated with the well-known internal lesions of such diseases as typhoid fever or dysentery, are as a rule very significant or even characteristic. Of course such affections as pneumonia or rheumatic fever, which are now classed among the acute specific fevers, as well as tuberculous affections, will have their own peculiar localizing symptoms.

There are certain general symptoms which, in a large proportion of infectious and infective diseases and cases, demand careful observation and study. Those indicative of the "febrile state," I need scarcely say, often assume a special prominence. From this point of view I presume that every medical man, as a matter of routine, "feels the pulse," "looks at the tongue," and "takes the temperature." In some instances both the pulse and the tongue afford special information; but I am not at all sure that this fact is always duly appreciated nowadays. In this connexion one can scarcely avoid making some allusion to the "clinical thermometer." This small instrument is, I need hardly remind you, at present universally recognized as an invaluable and often essential aid in diagnosis in most infective diseases, not only in determing the existence of pyrexia, but also in studying its degree, course, and other details.

Quite recently there was an interesting correspondence in the BRITISH MEDICAL JOURNAL concerning the history of the thermometer for clinical purposes, to which may I be

permitted briefly to refer. In the Journal for April 4th Sir William Broadbent brought forward the historical fact that an army surgeon, Dr. Archibald Arnott, recorded the temperature in the case of the First Napoleon at St. Helena in 1821. He says that the record is set down as if it were a regular part of routine observation, and Dr. Arnott must have had a thermometer with him for the purpose. In attempting to trace back how Dr. Arnott came to adopt the instrument, he thinks it probable that he learnt its use in the wards of the Edinburgh Royal Infirmary. He calls attention to the fact that Dr. James Currie, of Liverpool, whose first edition of his work on "Cold Affusion in Fever" was published in 1797, was an Edinburgh graduate, and was first led to employ the thermometer by a debate at a society of students there. Sir William's interesting statement led to further communications, showing that the bodily temperature was systematically recorded in febrile diseases by several observers during the latter half of the eighteenth and first half of the last century, amongst them by Dr. Livingstone, in Africa, in 1853. As is well known, however, it is to the observations and writings of Wünderlich, about the year 1860, and subsequently, that we owe the general recognition of the value of clinical thermometry. Sir Samuel Wilks states that he was led to procure an instrument for Guy's Hospital by reading the chapter on the subject in Aitken's *Practice of Medicine*. He thus describes it: "I think it was nearly a foot long, and was so great a novelty that it was taken to a South-Eastern meeting of the British Medical Association for exhibition, where the members regarded it with much curiosity and interest, although, I am sorry to say, one or two with ridicule." What a contrast to the neat and convenient, easily applied, very rapid, and most accurate recorder of bodily temperature now at our command!

I have thus dealt with the symptomatic aspect of infectious diseases somewhat at length—in the first place, because I regard it as of fundamental and essential importance in the ordinary run of cases, notwithstanding the progress made in scientific clinical methods; and secondly, as a protest against the tendency amongst the rising generations of our profession, which it is impossible to overlook, either to ignore common symptoms altogether, as if beneath their notice, or to take no trouble whatever either to understand or to study them. I would remind them that their predecessors—not so very long ago either—had no other data upon which to found their diagnosis, and practically no scientific instruments or apparatus to help them, and yet most of them knew pretty well what they were about. In relation to the complaints with which we are now concerned, it is usually a combination of symptoms which are of diagnostic significance; and in many instances they are more or less characteristic even during the so-called "premonitory stage," though they usually become more definite later on, and it may be impossible for a time to arrive at a positive opinion. As already stated, in some of these diseases one particular symptom or class of symptoms is, however, quite pathognomonic.

I now pass on to refer briefly to other modes of investigation not uncommonly of much diagnostic value in relation to infectious and infective diseases, which are also comparatively easily practised, and are supposed to be carried out more or less as a matter of routine in ordinary medical practice. I allude to physical examination, especially as applied to the chest and abdomen: and examination of the urine. Of course, in the clinical study of many inflammatory diseases and special affections now included under this category—for example, pneumonia or cardiac rheumatic manifestations—skilled physical examination is essential; while it is also of great help in the detection of complications and sequelae, to which it must be noted attention may not be attracted by any prominent symptoms, and consequently they are very liable to be overlooked unless the practitioner is constantly on the alert to detect them by the systematic employment of this method of investigation. The necessity for examining the urine at frequent intervals would, I suppose, be generally recognized in scarlatina, or perhaps even in diphtheria, for well-known reasons; but this measure is not always carried out so regularly or systematically as it might be in other complaints of an infectious nature. As a special test applied to urine I may remind you of Ehrlich's "diazo-reaction" for typhoid fever: but it is not reliable, even when present, as it may be met with in other affections.

The special methods of diagnosis applicable to infective and infectious diseases which modern scientific researches have brought so prominently before the medical profession have naturally attracted great attention and excited keen interest. It might be thought an occasion like this would afford a most suitable opportunity for discussing these methods at some length, and endeavouring to estimate their practical advantages up to the present time and their future possibilities. I have preferred, however, to devote most of the time I could give to the clinical aspect of my subject to the more common modes of investigation, for reasons already sufficiently indicated. I have, therefore, left myself but little space to deal with these more scientific methods, which I may remind you often require the help of an expert before their results can be safely relied on. I shall content myself with merely giving the following summary of these methods and their objects, mainly coming under the head of bacteriological diagnosis. They include:

1. Examination of the blood, both as regards its normal constituents, especially the number of leucocytes and the relative proportion of different kinds of cells, the blood plates, and the presence of abnormal corpuscles; and from a bacteriological point of view. The spirillum of relapsing fever and the malarial parasites are prominent examples of pathogenic organisms found in the blood, and the latter have to be observed and studied during the changes they undergo, along with their effects upon the red corpuscles and the formation of pigment.

2. The further detection and microscopic demonstration of organisms, specific or non-specific or both, either obtained from the tissues of the body; or contained in secretions, faeces and urine, various discharges, sputum being particularly noteworthy, and other morbid products of different kinds, fluid or solid, of which diphtherial material is a conspicuous example. The organisms are not only identified by their morphological characters, but also as a rule by their peculiar staining reactions.

3. Separation or isolation of the microbes, which are afterwards grown on suitable media, in order to obtain cultures, the results being often highly characteristic, both to the naked eye and on microscopic examination.

4. Application of the "segregation" and "agglutination" tests in relation to the blood serum of the patient, which is most familiar to us in Widal's test for enteric fever.

5. The observation of the effects on the individual of the inoculation of certain products of the specific microbe of the disease from which he is supposed to be suffering, as in the so-called "reaction test" with tuberculin for tuberculosis.

6. The pathological results of inoculation of animals, either with the organisms themselves or with their toxins, which in some instances are essential for positive and accurate diagnosis, lesions of a definite and characteristic nature being thus produced, as is well-exemplified by diphtheria.

A rather awkward question, but one of extreme practical importance to the profession, has been recently forced upon our notice, which I cannot altogether pass by. In the British Medical Journal for March 7th an abstract is given of a disquieting statement issued by the Hospitals Committee of the Metropolitan Asylums Board as to the numbers of cases of mistaken diagnosis sent to the Board's hospitals as notifiable during the three years 1899-1901. The subject is very ably, fairly, and sensibly dealt with in a leading article in the Journal of March 14th, on the "Diagnosis of Notifiable Diseases," which might be read with advantage by all who are directly interested in the question, or indeed even by the laity generally. They do not in the least realize the difficulties which confront the practitioner, with whom I have the deepest sympathy; and residents at the infectious hospitals cannot be too careful and particular not to hurt the feelings of their brethren in the profession more than can be possibly helped. Of course any carelessness in diagnosis in relation to infectious diseases is inexcusable; but really young practitioners are not responsible for the fact that they are not so familiar with these complaints clinically as would be desirable, and that many of them have to gain the requisite experience after they have entered upon their active professional duties. May I venture to suggest that while the modern medical student has immense advantages, he labours under a decided disadvantage from this point of view, as compared with those of us who served an apprenticeship, and became familiar with at any rate the more common infectious diseases, even before we started upon our regular studies at a medical school? As a matter of fact he gets very little opportunity of gaining practical knowledge of most of these complaints during his period of studentship, and has to fall back upon so-called "post-graduate instruction," if he desires further and more special training and experience. The bacteriological

methods of diagnosis ought to help materially, should there be any real difficulty, in diminishing the number of mistaken cases in the future, especially if facilities are afforded to the practitioner of using them without delay, but they are not infallible, even where they can be applied.

Treatment and Prevention.

To the laity of course the question which appeals most directly and pressingly with reference to infective and infectious diseases is, What position do we as a profession stand in to-day as regards their treatment and prevention? Have we made any progress at all, and, if so, to what extent and in what directions? Have we fulfilled the somewhat optimistic forecasts and promises which have been so frequently and loudly expressed in speech and written article during recent years?

In the first place, it must be admitted that we can boast of but very few "specific remedies" added to our list for the treatment of individual infective or infectious diseases in modern times, though we understand far better the modes of action of several of those which were used previously on empirical grounds, as you, Mr. President, have pointed out in your Address. Indeed, beyond the employment of salicin and salicylates or allied agents for rheumatism, I am not sure that we can claim any positive and assured discovery of this kind. Of course there are not a few practitioners who have a routine treatment or a particular remedy for each one of these complaints, in which they implicitly believe, and which is infallible according to their own account. I must, however, much to my regret, while envying their "cocksuredness," decline to accept their statements as gospel. In my opinion, speaking generally, the more of an "open mind" and a "free hand" the practitioner cultivates in dealing with the majority of infectious diseases, the better will it be for his patients.

Taking a comprehensive survey of the changes and modifications which have taken place in the treatment of infectious diseases, one of the most conspicuous and beneficial is that the severe depleting and depressing measures which were formerly extensively, if not almost universally, carried out, have been practically done away with, and are now only resorted to under exceptional circumstances or for particular purposes, as in the free use of purgatives for certain individual complaints. Further, it is a profound matter of congratulation for ourselves and our patients that we now apply practical common sense, and sound physiological, natural, and sanitary principles in dealing with these diseases as a matter of routine, in the way of physical and mental rest, abundance of fresh air and free ventilation, careful attention to hygienic conditions and surroundings, regulation of diet, personal cleanliness, general comfort, judicious disinfection, and other essential matters. In this connexion we can never forget or ignore the immense advances which have been made in the science and art of nursing, and it would be impossible to overestimate the service and help which the "trained nurse" can, and as a rule does, render in dealing with cases of infectious diseases under many trying and anxious circumstances. In my opinion a very large proportion of cases of acute specific fevers can be steered through their course on the lines just indicated, without any active treatment whatever, unless it be an occasional aperient: or, if the exigencies of private practice demand some "medicine," we have excellent friends in the old-fashioned "saline mixture" and the "effervescent mixture," which, at any rate, are quite harmless, and may be of definite use for certain purposes. The "open-air" treatment of phthisis is in reality in the main a mere development of similar principles.

Let it not be supposed, however, from what I have just said, that I advocate a general policy of "masterly inactivity" in dealing with infectious diseases. Although we have but few novelties in the way of "specific remedies" to boast of, many most valuable medicinal agents in the treatment of these complaints have been introduced within comparatively recent times, whilst others previously known have also come to be employed with much advantage for certain definite purposes. There are many diseases and cases in which even from the outset the practitioner must recognize the necessity of administering in some way or other suitable medicinal remedies; or events not uncommonly supervene during their course which call for his interference, and he ought to know what to do under the particular circumstances, and be prepared to act accordingly.

Without entering into any details, I may point out that one of the chief classes of therapeutic agents which in modern times have come to the front in the treatment of infectious diseases are antiseptics, antiferments, germicides, or bactericides, as they are variously called, to which group not only many most valuable additions have been and are being made, but which are now employed in ways which our predecessors never dreamt of, though I think that some of the methods of using or administering certain antiseptics in relation to particular diseases, which are advocated and practised at the present day, are decidedly open to criticism. Another remarkable group are the antipyretics prepared in the chemical laboratory—phenazone, acetanilide, phenacetin, etc.—which, when judiciously given, may be of conspicuous service. Other agents deserving of mention are cardiac stimulants and tonics, strychnine being now recognized as a most valuable remedy from this point of view; and the newer hypnotics or other drugs intended to relieve particular symptoms, which may thus afford material assistance in guiding patients through serious illnesses of this nature. In this connexion I may also mention certain therapeutic methods and agents, of comparatively modern introduction, which are undoubtedly of conspicuous service in combating grave conditions immediately threatening life, such as subcutaneous or intravenous injection of ether or other diffuse stimulants, inhalation of oxygen, saline injections, and transfusion of blood or other suitable substitutes. For the various complications and sequelae with which we have so often to deal in relation to infectious diseases, and which not uncommonly sorely perplex us, treatment must be conducted on general principles, guided by the knowledge, experience, and common sense of the practitioner.

There are certain special questions bearing upon the treatment of infectious diseases which I cannot pass over on an occasion like this without brief comment.

1. *Hydrotherapy and Allied Methods.*—No doubt you are aware that Dr. James Currie of Liverpool, to whom I have previously alluded, strongly advocated and carried out the treatment of fevers on a considerable scale by baths and douches. This treatment fell into practical desuetude, and, indeed, was generally looked upon with aversion and dread. In modern times, however, it has not only been revived, but numerous other methods for applying cold to the body, either generally or locally, have been added, not only by means of water, but also of ice and cold air. These methods are now generally recognized and extensively adopted, probably more on the Continent and in the United States than in this country, even in the treatment of many of the ordinary fevers, but especially in the more severe cases; and the local application of ice is strongly advocated in acute pneumonia and other inflammatory infective diseases. While of great value as antipyretics they have other important beneficial actions, which I need not now specify. Regarding hydrotherapy and allied measures in the treatment of infectious diseases, I would remark that every medical practitioner ought to be familiar with them, and be able and ready to carry them out when required. The milder methods, such as sponging the skin or applying ice locally, are easily practised, and are often of the greatest service. Personally, however, I do not advocate or employ the more severe methods as a routine system, as many do; and I feel sure that I have met with serious injurious consequences from such a practice. On the other hand, their essential value in saving life under grave conditions cannot be too strongly insisted upon.

2. *Use of Alcohol.*—I now come to a question in relation to the treatment of infectious diseases and cases, both generally and individually, which demands the most thoughtful consideration, namely, that of the administration of alcohol. And I feel bound to take this opportunity of stating emphatically that when we, as members of the medical profession, approach from any point of view this alcohol question, we ought to do so under a deep sense of responsibility, but at the same time rationally and without undue bias one way or the other. At a large political meeting held not very long ago an eminent statesman was contrasting imperial with local questions, and giving his own ideas about their relative importance, founded upon certain personal experiences. Amongst the local questions he mentioned "temperance reforms," and his allusion was received by the audience with "loud laughter"! I venture to say that such is not the spirit in which this grave subject ought to be regarded at the present day by any community; and, at any rate, the medical profession as a body is bound to sympathize with and encourage every effort made in this country to check the terrible evils produced by intemperance, which confront us in such an overwhelming and appalling

degree on all hands in our daily experience, and to do our utmost to promote sobriety amongst all classes, however hopeless the task may appear to be. And from this point of view we should always be most careful to avoid ordering stimulants to patients not accustomed to them, unless they are, in our individual opinion, really necessary; while it is well always to give very definite instructions as to their administration. There is an influential body of the medical faculty in this and other countries, some of them of the highest professional and scientific standing, who absolutely and entirely object to the use of alcohol under any circumstances, and for these ladies and gentlemen I entertain the highest respect. As you are probably aware, an "International Medical Manifesto" against the use of alcoholic liquors was issued a short time ago, which roused resentment and a strong protest on the part of some members of our profession. To a certain extent I share their feelings, for, with all due respect to the opinions and statements expressed in that manifesto, I think those who signed it have gone too far, and I regret that I cannot altogether agree with them. At any rate, so far as infectious diseases are concerned, I must express my own strong conviction that in a large number of cases the judicious administration of alcohol is of the greatest service, and I have seen a considerable number of grave and sometimes almost hopeless cases in which I have no hesitation in affirming that recovery was due to the use of alcoholic stimulants, not uncommonly in considerable quantities. Moreover, they are often of conspicuous value during convalescence. With ordinary prudence and care it is quite easy to avoid establishing a habit of taking stimulants in the case of patients who have been previously abstainers. While thus expressing my personal opinion in favour of the use of these agents in infectious diseases under suitable circumstances, I feel bound, on the other hand, to warn against their employment as a matter of routine, and venture to urge that the most thoughtful and conscientious consideration should be given to every individual case before ordering them.

3. *External and Local Treatment.*—The treatment of external or local manifestations of particular infectious diseases, such as scarlatina, small-pox, or diphtheria, affords legitimate ground for differences of opinion, and I must confess it is often puzzling to determine what is best to be done for such conditions when one reads the different methods of treatment advocated by different experienced authorities. I cannot refer to them further now, and must content myself with saying that the measures to be adopted must be determined very much by the particular views of the practitioner, guided by judgement and discretion, and modified by the special circumstances of each case. Antiseptics and disinfectants are employed with great advantage as local applications for various purposes. How far the light treatment, the *x* rays, or particular colour rays are going to help us, cannot be definitely determined at the present time. Just now the subject has come very prominently before the profession and the public, and the "red-light treatment of small-pox," which, however, is by no means a novelty, so strongly advocated by Professor Finsen in the Journal for June 6th, is attracting special attention, as well as some adverse criticism. What we may expect, also, from that wonderful, newly-discovered element—radium—it is impossible to foretell, but we must be on our guard against accepting statements as to its marvellous curative effects by irresponsible observers.

4. *Vaccines: Serumtherapy.*—What would, no doubt, be generally regarded as the most vitally interesting and important question of modern times, bearing upon the prevention and treatment of the entire group of infective diseases, is that of "serumtherapy," using the term as an inclusive one, which has come as the natural outcome of the microbic theory, and is founded, on the whole, on reliable bacteriological researches and experiments, supported by the results of practical experience in living subjects. Time will only permit me on the present occasion to touch the fringe of this most attractive and fascinating subject, and I will only ask you to bear with me while I remind you for a moment of what this method of treatment consists, and what are its objects and aims. Following Sims Woodhead's classification, the materials used are divided into—(1) Vaccines, which are either cultivations containing pathogenetic micro-organisms with toxins, or toxins only; or the tissues or fluids of an animal suffering from a particular infectious disease. (2) Antisera, which may be antitoxic only, neutralizing the toxins; antibacterial or antimicrobic, acting directly upon the organisms; or in some instances having both actions. The comparatively recent investigations of Professor Macfadyen and Mr. Sydney Rowland with regard to the immunizing power of the cell plasma of the typhoid bacillus, and the effects of repeated injections of this substance in rendering the blood serum of an animal both antitoxic and bactericidal, are very remarkable, and promise great results in the future. Up to the present time these therapeutic agents have been practically only employed by inoculation, being usually injected subcutaneously, but exceptionally more deeply, or into special structures. I note, however, that the antidiphtherial serum has lately been recommended to be administered by enema, or even in pastils. Vaccines and antisera are employed either for the purpose of producing temporary or permanent immunity against an individual disease; or for the actual treatment of certain complaints or morbid conditions, either acting as definite "cures," or so modifying their course that their severity and dangers are materially lessened, their progress is hastened, and their mortality greatly diminished. The large majority of these agents are specific, being only used in relation to a particular disease; but the antistreptococcus serum has been found of service in various affections, and so-called "Coley's fluid" is also non-specific. The diseases thus treated with which we are most familiar are small-pox, as prevented or modified by vaccination and revaccination, hydrophobia, diphtheria, tetanus, enteric fever, scarlatina, cholera, pneumonia, septicaemia, anthrax and glanders, plague, tuberculosis, leprosy, and cancerous or sarcomatous growths, assuming them to be infective. Now, no one who has watched the course of events during recent years, and who is unprejudiced, can doubt for a moment or fail to acknowledge the immense value of this modern therapeutic method in relation to some of these complaints; there are others, however, in which thus far it has entirely failed in its objects; while in others still it is on its trial, and those who are in a position to speak authoritatively differ widely in their views and conclusions as to its efficacy in some of the most important infectious diseases. Personally I confess that I am inclined to regard not a few of the positive statements made with a sceptical mind, and I think we ought to be particularly careful in accepting and acting upon them at the present time, remembering the suspicious and not too friendly attitude of a large number of the influential laity towards the medical profession. At the same time, it cannot be too strongly insisted upon that every member of the medical profession ought to avail himself or herself to the full of any method of treatment which bacteriology offers us, provided it has been scientifically and practically proved and demonstrated to deserve our confidence. It is not for us, in the present state of the law, to deal with the "conscientious objector," but I emphatically affirm that any individual practitioner who wilfully and with intent neglects or is in actual antagonism to vaccination and revaccination as a protection against small-pox, may be justly regarded as guilty of a grave dereliction of duty, and is responsible for serious mischief, the results of which are but too evident to any unprejudiced observer. The same remark certainly applies to the neglect of the vaccine or antitoxin treatment for diphtheria, hydrophobia, tetanus, and anthrax. The opening of the new buildings of the Jenner (now the Lister) Institute of Preventive Medicine encourages the hope that this country will not in the future be behind others in advancing this most important and promising branch of scientific and practical medicine.

It was my original intention to offer some observations on the prevention of infectious diseases from a general standpoint, but I have already trespassed too long upon your patience, and must content myself with a few closing remarks. I venture to affirm that the predominant aim of the medical profession as a whole is essentially beneficent. In support of which statement I can confidently draw attention to the deep interest exhibited by its members in this question, and to the efforts made by them, not only to limit and prevent these complaints in a general way, but to eradicate and exterminate those with which we may be thus able to cope effectually. This is no sham or pretence on our part, but an honest and straightforward policy and purpose, to which not a few devote their lives and best efforts, which ought to be a rebuke to scoffers and slanderers, of whom there are many. I will go further, and say that in dealing with infectious diseases, medical practitioners and scientific workers often exhibit a brave, courageous, and self-sacrificing spirit which is worthy of our highest esteem and admiration. To go into the midst of a virulent epidemic, and fight against it day and night, often under the most trying and adverse conditions, which is no uncommon experience, is no trifling matter; and I could give many instances of individual courage and devotion, as

well as of voluntary exposure to grave personal danger, sometimes ending fatally, which were truly heroic. Even the bacteriological researches in laboratories, which are intended to benefit humanity, are a source of danger—witness the cases of fatal infection with tuberculosis, and the death of the young Austrian doctor who not long ago succumbed from plague while working in Berlin. But I feel bound to pay a special tribute of respect and admiration to those who have gone forth to pestilential climates, and often under great hardships, or even by submitting themselves to dangerous personal experiments, have done such marvellous work in diminishing and controlling, or in some districts even exterminating, malarial and other diseases which were formerly the cause of destruction of human life on a vast scale, as well as of such extensive and profound deterioration of health.

What will be the future progress of events in relation to the prevention of infectious diseases it is impossible to foretell or estimate, though the forecast is in certain directions decidedly hopeful. I venture, however, to submit that we as a profession should be extremely cautious as to what we say, and should avoid a too "cheery optimism," in the way of making promises and predictions which, recognizing the very nature of things, the conditions under which humanity exists, and the difficulties which so-called civilization brings with it—experience and common-sense must tell us are, to say the least, extremely rash. On the other hand, let us never relax in our efforts to promote the good cause, and to encourage, develop, and enforce every measure, scientific or practical, which has for its object the mitigation or prevention of those widely-spread and often terrible infectious diseases which now add so enormously to the death-rate, and which, even in cases of recovery, leave such serious after-consequences amongst large numbers of the community. And this we must do in spite of opposition, however powerful, persistent calumny, vicious attacks on our motives, or even being called foul names. There are numerous "antis" about just now, but for downright insolence and impudence the antivivisectionists "hold the field." They have the most astounding faculty and capacity for fabricating statements for which there is absolutely no foundation, for distorting facts, and for cooking statistics, and they stick at nothing. Let us treat them and their hysterical outbursts with the contempt they deserve. Our duty is plain enough. Not only must we work on steadily as a profession in the direction I have indicated, but we must earnestly strive to gain the confidence and co-operation of influential individuals and communities, and to guide them on intelligent and rational lines.

I have been asked to speak in this address in support of the appointment of a Minister of Public Health. I note that you, Mr. President, are not in favour of such an appointment; but personally I really do not feel competent to speak one way or the other. You have sketched a scheme with regard to the practical and official working of the Public Health Department which appears to have sound principles underlying it; and at any rate some change is obviously necessary. In the meantime, however, we must do what we can to educate and influence borough and county councils, and other public bodies which are concerned with sanitary matters, as well as members of both Houses of Parliament, and to stimulate them to do their duty. Thus will we, as members of a self-sacrificing and noble calling, while endeavouring in our individual capacity to perform conscientiously and intelligently the duties which devolve upon us in relation to actual cases of infectious diseases which come before us in our several spheres of practice, be further collectively and with concerted action doing what lies in our power to promote the health and well-being of our fellow creatures on a large and comprehensive scale, and to avert or mitigate the effects of those grave maladies which are now such a scourge to humanity.

The forty-second annual meeting of the Congress of Scientific Societies will be held at the Sorbonne in Paris, on April 5th, 1904, and following days.

Cancer in Hungary.—The number of deaths from cancer in Hungary is about 8,000 annually. The Buda-Pesth Society of Medicine has appointed a Committee to make an inquiry into the distribution and prevalence of the disease in the country. The Committee, of which the Chairman is Dr. J. Döllinger, has issued a schedule of questions on the subject to all medical practitioners in Hungary.

Address in Surgery

At the Annual Meeting of the British Medical Association at Swansea, July, 1903,

BY

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OBSERVATIONS ON THE EVOLUTION OF ABDOMINAL SURGERY FROM PERSONAL REMINISCENCES EXTENDING OVER A THIRD OF A CENTURY AND THE PERFORMANCE OF 2,000 OPERATIONS.

Mr. President,—I know well that to be invited to deliver the Address in Surgery before the British Medical Association is to receive one of the greatest compliments that the profession can confer, for the Council represents a unique constituency, both in numbers and intellect. But with the sense of honour comes also the profound sense of responsibility, hence it was with mingled feelings that I ventured to accept your kind invitation. A third of a century has elapsed since I entered on my medical work, and when I look back over that long period and see the changes that have occurred, I am inclined to wonder whether I really belong to the same profession as in 1870. It was then quite usual for the surgeon to be physician, obstetrician, and general practitioner at the same time, and only in a very few of the large centres was surgery made a speciality; yet such has been the increase of knowledge and the improvement in technique in the art and science of surgery in its various branches, that the extinction of the general surgeon at one time appeared possible, which would have been a misfortune; for although thoroughly believing in specialization, I consider that the speciality should come later; in other words, I would have the surgeon first to know something of everything in his profession, and later everything of something, since we must all acknowledge that the accumulation of knowledge renders it impossible that one should know all of everything.

Along with many of my audience I have had the advantage of witnessing the revolution not only in surgery and medicine, but in every branch of medical work, which occurred during the last thirty years of the nineteenth century, such changes as will stamp that period for ever in the annals of our art.

The surgeon who entered on his work in the Eighties or later can scarcely picture to himself the state of affairs that existed in the early Seventies, when it was possible to see, as I myself have done, a hospital ravaged with hospital gangrene and phagedaena; when erysipelas, pyaemia, and septicaemia were never long absent from any surgical wards; when any operation, however simple, might assume complications of the most serious import; when secondary haemorrhage was of frequent occurrence; when compound fractures often took months to heal, and frequently ended in loss of life or limb; when erysipelas was put down to change of weather, tetanus to nerve irritation, tubercle to a diathesis, and rapid deaths from septicaemia to shock.

Those of my hearers who have passed through this period of the history of medicine have witnessed the birth and growth of the science of bacteriology, and the nativity, infancy, adolescence, and sturdy manhood of its brilliant offspring, antiseptic and aseptic surgery, the distinguished author of which, I am glad to say, is still with us and has himself witnessed the truth of his theories and the success of his system in the saving of more lives each year than Napoleon destroyed in all his wars.

It is clearly impossible in a short time even to briefly record all the advances made in surgery, but in my work as a general surgeon I have also had the privilege of taking part in the development and progress of a special branch, abdominal surgery, than which nothing could better exemplify the great changes that have occurred during the thirty-three years which I am considering; for, in the early Seventies, abdominal diseases were practically always treated expectantly, and if we look at the reports of 1870 we shall see that, as judged by results, it was perhaps just as well that surgery had then no business inside the abdomen.

As knowledge increased, and surgery became more scientific, many of the diseases in question became surgical either from the beginning or at a later period in their course, so that to-day abdominal surgery is a subject of the first importance. Not only has treatment advanced by leaps and bounds, but our knowledge of abdominal diseases and their successful diagnosis has enormously increased, partly by pathological advancement generally and by experimental research, but also by philosophical observations on the operating table and the study of disease in the living subject—in other words through biopsy instead of necropsy. The time was when the physician thought he had done all that was necessary when he had arrived at a probable diagnosis, and he philosophically waited until his hypotheses were proved or disproved in the deadhouse; treatment was left to the junior as being quite a secondary matter, and I am bound to say that in abdominal diseases that were not merely functional, and that could not be treated in the out-patient department, the estimate placed on treatment was often correct.

Then ovarian disease was generally known as a form of dropsy, and was either treated by tapping, when the pressure became so severe as to demand some relief, or seeing that tapping was at times fatal or only gave a temporary respite, the greater number of cases went untreated. The surgery of the intestines, except for strangulated hernia, was not thought of, and uterine, renal, gall-bladder, stomach, liver, and pancreatic surgery were hardly dreamt of as possible. In 1870 an attempt was being made in some of the general hospitals to emulate the example set by certain pioneers, such as Clay, of Manchester, Spencer Wells, of London, and Keith, of Edinburgh, but with what result? It is interesting to note the following facts:

In St. Bartholomew's in 1870 there were 3 ovariotomies, all fatal, and 20 cases of herniotomy in which the sac was opened, with 9 deaths. In Guy's there were 5 ovariotomies with 3 deaths, and 19 herniotomies with opening of the sac, of which 11 died. In St. Thomas's there was 1 ovariotomy, which died, and there were 14 herniotomies, of which 8 died. In St. George's there were 2 ovariotomies, both of which died, 1 colotomy, which died, and 20 herniotomies, of which 8 died.

In the same reports there was always found a special record of the number of cases which are now so rarely seen. For instance, in one of the reports for 1870 there were recorded 53 cases of erysipelas, 20 of phagedaena, 93 of diffuse cellulitis, and 4 cases of secondary haemorrhage after operation, which at the present time would be sufficient to condemn any surgical clinic; yet this record was no exception, as all the hospitals furnished similar reports.

It would be invidious to compare the work of the various hospitals, as shown by the reports of 1902 published this year, but in one of the chief hospitals I notice a record of 40 ovariotomies with 39 recoveries, of 18 hysterectomies with 17 recoveries, of 241 herniotomies including strangulated hernia as well as radical cure of hernia, with 233 recoveries, of 16 gall-bladder operations with 15 recoveries, a record of which no hospital in the world need feel ashamed.

The rise and progress of abdominal surgery has centred more around ovariotomy than any other branch of work, hence it may be of interest to review for a moment the evolution of that operation, for it has been the battlefield of abdominal work.

The history of ovariotomy is one of international importance, for the performance of the first operation has been claimed both by Great Britain and America. Williams, of Basle, in 1731 seems to have recognized the possibility of ovariotomy, and Hunter in 1762, with characteristic genius, actually suggested the modern operation, urging a small incision, the tapping of the cyst, removing it and ligaturing the pedicle. Houston, of Glasgow, operated for ovarian tumour before McDowell, but according to the best authorities McDowell, of Kentucky, performed the first complete and successful ovariotomy in December, 1809. Both in America and Great Britain the operation struggled into existence in the provinces before it engaged the attention of surgeons in the great medical centres, and in 1825 Liston boasted that Lizars (who had done several not very successful operations in Edinburgh) did not set about any such operations in the infirmary after he became attached to it. The medical papers of that day also condemned it absolutely.

Although Clay, of Manchester, between 1842 and 1850 had chronicled 33 operations with 21 successes, a 36.3 per cent. mortality, and Spencer Wells in his work up to 1870 showed a mortality of 25 to 30 per cent., yet in that year, in the large general hospitals, the mortality was no less than 81 per cent. I distinctly recollect as a student the question being raised as to whether ovariotomy ought to be continued, and I remember as a dresser that the easiest cases, where there was a healthy peritoneum free from adhesions, were almost certain to die.

From 1870 I followed keenly all the controversies on the subject, and a little later took the opportunity as a post-graduate of visiting Keith in Edinburgh, Spencer Wells in London, and some years later Lawson Tait in Birmingham, from all of whom I learned valuable lessons. Keith, a thorough believer in antiseptic procedures, in 1884 published a series of cases with a 9.11 per cent. mortality, but later he had 80 consecutive recoveries in completed cases, while Tait published an account of 405 cases with 33 deaths, an 8.1 per cent. mortality, and in 1885 he had had 139 cases without a death.

The success in private practice and in the smaller hospitals was so much greater than in the general hospitals that the question was raised as to whether such operations ought ever to be performed in a general clinic. Yet what do we see to-day—last year there were 67 ovariotomies including malignant and suppurating cases performed in the Leeds General Infirmary (with which until recently I was actively associated) with only 3 deaths, a mortality of 4.4 per cent., which I find to be about the average in general hospitals; for although in private practice, where operations are performed at an earlier stage and in patients not worn down by suffering and hard work up to the last moment, better results may be shown, yet it may now generally be fairly stated to any patient suffering from ovarian cyst that her chances of recovery are fully 95 out of the 100, for excluding accidents such as syncope, embolism, and pneumonia, which are often unavoidable, there is no reason why any patient should die after an ordinary ovariotomy skilfully performed.

It is interesting to note the changes that have brought about these results. I remember in the early Seventies, when there was no special preparation of ligatures, which were of silk used straight out of the storage cabinet, and often handed to the surgeon by the theatre porter, who might even be *post-mortem* attendant; when little care was spent on cleansing the surgeon's hands and none on cleaning the patient's skin; when a perfunctory washing was supposed to be sufficient for instruments, and a very superficial cleansing to be ample for sponges, which were doubtless the most fertile source of mischief. The surgeon then wore a non-washable operating coat to protect his own clothes from being soiled, and not, as now, a sterilized overall to guard his patient from contamination.

The introduction of antiseptics started the change, but at first and for some years, carbolic acid was by many thought to act like a fetish, and to cover a multitude of sins; a mere dipping of the hands in a 1 in 20 to 40 solution was considered a means of cleansing, the soaking of catgut ligatures in carbolic oil was thought to be a sufficient preparation, and the skin of the patient was for a long time ignored as a source of infection. Moreover, the improper use of the carbolic spray, which was allowed to play straight into the opened abdomen, was itself a source of danger, undoubtedly causing many deaths, though it was not dangerous when properly employed, as, for instance, by the late Thomas Keith, who, while using antiseptics, including the spray, yet took every care to cleanse his hands and instruments and the patient's skin; and in this way, so early as 1884, was able to record such good work. In the Eighties, following on the same lines, I was able to report my first series of 83 cases in a general hospital with 4 deaths, only two of which could be referred to wound complications, though later I had a consecutive series of 103 cases in private, with only one death, and that patient was operated on when suffering from acute peritonitis.

Then came a reaction against the use of antiseptics, and a veritable crusade, with much acrimonious writing, was led off by Lawson Tait, who argued that antiseptics were not only unnecessary to success, but were actually injurious. By Dr. Bantock, who held similar views, asepsis was carried out quite early; and I remember, when seeing him operate at the Samaritan Hospital, the infinite care he took in cleansing his hands and everything that came in contact with the wound; but in the late Lawson Tait's case his success came from another discovery, for, although he was by no means what we should now call an aseptic surgeon, as shown by his results in other than abdominal wounds, his genius found a different way, for he taught us the value of natural drainage through the intestines, and the importance of the avoidance

of morphine. He made a routine practice of purging after operation, and so avoided that distension which used to kill so rapidly in early ovarian work. Had purging and the avoidance of morphine been adopted in the early Seventies I have no doubt that the large mortality of that day would have been materially lessened. Over and over again as a student I have seen patients killed by intestinal paralysis induced through morphine, who, I now know, might have been saved by a dose of calomel and Epsom salts. Other lessons I learnt from Lawson Tait were the value of rapidity in operating and of thoroughness in the removal of disease, for in early work on the uterine appendages it was not at all uncommon for the surgeon to be deterred by adhesions, and to rest satisfied with the drainage of pus tubes and cysts, instead of their complete removal, with the result that such patients either remained invalids or died more rapidly than if they had never been treated. I followed the evolution of the treatment of the ovarian pedicle by means of the external clamp (Wells), the cautery (T. Keith), the *écraseur* (Jessop), and, lastly, by ligature with dropping of the pedicle, which we all now adopt, and which Baker Brown was the first to advocate.

Under perfected technique, and a judicious combination of asepsis and antisepsis, ovariotomy has become one of the most successful major operations in surgery, and has paved the way for other equally great triumphs within the abdomen.

It has proved a truly beneficent procedure, and has not only saved thousands upon thousands of valuable lives, but has restored to their families sound and healthy very many of the wives and mothers and daughters of the nation.

What gives special interest to surgical affections of the abdomen is the fact that the viscera are invested in whole or in part by the large serous peritoneal sac, and that infection, however communicated, is apt to assume serious proportions, involving not only the whole abdominal cavity but the system at large. In the Seventies, and even much later, the diagnosis of peritonitis used to be made with great satisfaction, as if it were final and sufficient; but I should like to ask, who, at the present time with any claim to scientific knowledge would be content with a mere name that gives no idea of the disease to be treated, or of the cause of the illness?

It may not be convenient, as has been suggested by M. Aimé Guinard, that the term peritonitis should be altogether given up, for even at the present time it is a convenient cloak for ignorance; moreover, the public have some idea of what is meant by the term; but do not let us deceive ourselves,—peritonitis so-called is an infection pure and simple of a large serous sac, and the symptoms will vary with each form of organism, whether streptococcus, pneumococcus, gonococcus, or bacterium coli, as well as with the amount of toxin absorbed.

Accepting this view, we cannot be astonished to find an acute infection associated with a lowered temperature and a rapid small pulse. This paradox is so characteristic that for years one has been teaching pupils to look on a subnormal or even a normal temperature combined with a rapid pulse as serious in surgical diseases of the abdomen, and as indicating absorption of toxins. If the disease were a true inflammation we should look for the cardinal symptom, fever, which is absent in these toxaemic cases.

The discovery of the frequency of perforative appendicitis, of perforating gastric ulcer, and of other peritoneal catastrophes is gradually abolishing the term acute peritonitis for the more rational one of acute peritoneal infection, for the treatment of which surgery alone is of any use, and even for it to be of service operation must not be long delayed.

These more rational views of pathology and treatment have originated and developed within recent years, and I can recall case after case, during my student days, in which peritoneal catastrophes ended fatally, where now we should by timely interference give a very fair chance of life. Could anything show this more definitely than the results of treatment of perforated gastric ulcers, which if operated on at once would have hardly any mortality, if within 12 hours of rupture have a mortality of 16.6 per cent., if within 24 hours, 63.6 per cent., if within 36 hours, 87.5 per cent., and if delayed for 48 hours will only rarely succeed; or to give another example, than the results of surgical treatment of the intestine in typhoid fever, alas too seldom resorted to. To give an example kindly obtained for me by Dr. P. J. Cammidge: Out of a total number of 900 cases of typhoid fever occurring in St. Bartholomew's Hospital in the years 1895 to 1901 there were 102 deaths. Among the 900 cases were 38 of perforation, of which 34 died unoperated on, whereas of the 4 operated on 3 recovered. Could operation have been done in the remaining cases it would seem possible that 25 more lives might have been saved. In Professor Osler's clinic, out of 11 cases 5 were saved by operation. Intimately related to intestinal perforation is perforation of the gall bladder in typhoid fever, of which 34 cases have been collected by Dr. Erdmann, of New York; of these 27 were not operated on and all died, but of the 7 which were operated on 4 recovered.

As spontaneous recovery from perforation is extremely rare it is of the utmost importance that not only should we have an early recognition of the perforation, but also an immediate operation.

Up to 1883 every case of intraperitoneal rupture of the bladder had died, but in that year the late Sir William MacCormac operated on and saved two lives; since that time there have been 54 operations recorded (according to Dr. Jones),[1] out of which 28 recovered, could these cases have been seen earlier, the saving of life would have been much greater, for in the cases that recovered there had only been an average interval of 25¾ hours between the accident and the operation, whereas in the cases that died the average interval had been 32 hours, and of the 26 deaths, 17 were due to peritoneal infection. Just as in gastric ulcer, the danger is increased with every hour of delay between the accident and operation; hence in case of doubt, exploration (which can be done through a very small incision, just sufficient to admit the finger) is safer than waiting, and experience shows that the aiding of the diagnosis by the injection of air or fluid into the bladder adds to the risk of general peritonitis by spreading infection over the whole abdomen.

In injuries of the abdomen by penetrating wound, whether stab or bullet wounds, the resulting troubles are from infection, either directly through the instrument causing the injury or by perforation of one of the hollow viscera and escape into the peritoneal cavity of the septic contents; how much more rational it is to consider this as an infection and immediately to set about the removal of the poison and the repair of the damage, if it can be done under conditions favourable to success, than to treat it as peritonitis and rely on so-called antiphlogistic remedies. Few greater triumphs of scientific surgery can be shown than some of the remarkable cases of visceral injury, where stomach, bowel, liver, gall bladder, and other viscera have been perforated, either by bullet or some other sharp instrument, and in which operation has been successfully performed, before infection has had time to occur.

It may be argued that the treatment of abdominal injuries in the late Boer war showed very definitely that many cases recovered without operation, and that few got well after surgical procedures; but there the circumstances were such that successful operations on the abdomen were almost impossible in the turmoil of war and in the presence of flies and dust, which inevitably introduced other infections of the peritoneum; moreover, the small projectile with high velocity, even if passing through the viscera, produced small wounds that were frequently not followed by extravasation and therefore did not infect the peritoneum, thus acting very differently from the ordinary revolver bullet which is so commonly the source of trouble in civil life. I think, therefore, we must be careful not to let the circumstances occurring in war time influence our judgement in the treatment of ordinary perforating wounds of the abdomen occurring under circumstances more favourable for treatment.

Appendicitis of the acute, perforating, or gangrenous type comes on so suddenly as often to constitute a peritoneal catastrophe, and in a proportion of cases terminates fatally in so rapid a manner that the diagnosis is made only with great difficulty, or not at all. Such cases, when I was a student, went undiagnosed, and death was ascribed to peritonitis simply, a sufficient diagnosis in those days; and it was not till 1886 that we heard anything of this lethal malady, which though it has slain its tens of thousands is now, thanks mainly to the labours of Fitz, of Boston, who laid the foundation of our modern knowledge of the subject, brought under subjection in a very large percentage of cases.

The disease is said to be on the increase, but I am not at all clear as to the truth of this, as there have been buried in our literary records for generations, fairly accurate accounts of dangerous inflammations occurring in the right iliac fossa and described vaguely as typhlilitis, perityphlilitis, paratyphlitis, etc., and both Copland and Burne in 1837 gave accurate descriptions of perforative appendicitis and its consequences

It is certainly more frequently diagnosed and more scientifically treated than it was, and it is a comfort to know that the operation, when undertaken early, is attended with an encouraging amount of success, and, as shown by Sir Frederick Treves, when treated in the quiescent period it is almost devoid of risk. Arguing from my own experience of operations in the quiescent period in a large number of cases without a death, and from that of many other surgeons at home and abroad, I have no hesitation in saying that had I an attack of appendicitis I should prefer accepting the infinitesimal risk of removal of the organ directly the attack was over to the decided risk of waiting for the next seizure, which might be one of the acute type. Even in the acute type of the disease, operation, if undertaken early, as is the practice advocated by some surgeons, is very successful, and though we cannot expect it to be devoid of danger like the operation between the attacks, yet it is certainly very much safer than waiting for the gangrenous process to extend, for an abscess to burrow or burst in various directions, for infection to invade the blood, or for the onset of complications of infinite variety and danger.

Hysterectomy for Myoma.—What an amount of controversy and acrimonious debate has waged around this subject, for while, on the one hand, it has been urged that uterine myoma is not a fatal disease and rarely requires surgical treatment, on the other, it has been shown that the disease is not only often fatal, but that in many cases medical treatment is absolutely futile and that many of the victims of uterine fibroids unless treated radically are condemned to life-long invalidism often ending in death. As Dr. Cullingworth, Mrs. Scharlieb, and others have shown so convincingly, it is quite a mistake to say that the symptoms usually cease with the menopause. I myself can point to many cases in which I have had to operate for myoma or its sequelae long after the time when, according to some gynaecologists, these tumours should give no further trouble. As usual, the best course is the middle one: many cases need no treatment, while others, when growing rapidly or when associated with free bleeding or pressure symptoms, demand operation. Hegar, followed by Tait, advocated the removal of the appendages in myoma of moderate size, and the operation in their hands had great success, but a careful analysis of the cases under gynaecologists generally showed that not only was it attended with great difficulty at times but that the mortality was almost equal to that of complete removal of the disease, and that in about 7 per cent. of cases it failed in its purpose of causing an arrest of growth in the tumour. Out of 40 operations in which I removed the appendages for myoma I had 1 death, a mortality of 2.5 per cent., and in only one of these cases did the operation absolutely fail in arresting the recurring haemorrhages; it is, I think, therefore worth bearing in mind in certain cases of severe metrorrhagia from small myomata in patients below 35 years of age.

Although hysterectomy was unsuccessfully done by Heath in 1843, and successfully performed by Burnham in 1853, yet surgical progress was so slow that in 1883 a series of cases collected by Bigelow gave a mortality of 42 per cent., which was enough to condemn the operation, had it not been that Thomas Keith at that very time was doing brilliant work on the most serious cases, and establishing the operation on a sound basis. His mortality was 8 per cent., according to the late Greig Smith, who was himself operating with great success—barely a 5 per cent. mortality.

My own experience has been in 170 cases of operations for myoma, with a 5.2 per cent. mortality, this including all the earlier as well as the later operations, and including cases treated by the *serrenoeud* and by enucleation as well as by the more modern treatment of the pedicle and by panhysterectomy.

The evolution of the operation of hysterectomy has been most interesting; just as the external treatment of the pedicle in ovariotomy gave the best results at first, so in hysterectomy the treatment by Koeberlé's *serrenoeud* rendered the operation a justifiable one, and Dr. Bantock, Mr. Thornton, Lawson Tait, and others had considerable success by this means; but the difficulty of keeping the pedicle dry, the prolonged convalescence, and the subsequent liability to hernia led some surgeons to be discontented with it; yet I distinctly remember years ago when advocating the internal treatment of the pedicle at one of the societies, how some operators were very tardy to acknowledge the advantages of the operation introduced by Schroeder, and well on in the Nineties Greig Smith condemned it, stating that the mortality was double that of the extra-peritoneal method.

The latest statistics have been furnished by Mr. C. Bond, of Leicester, who recently reported 50 cases with 2 deaths—an excellent record.

Panhysterectomy, or removal of the whole uterus by the abdominal route, has been advocated by Doyen, and when I saw him operate some years ago, I could not help being impressed with the ease and rapidity with which it can be completed. With the patient in the Trendelenburg position it is comparatively easy of performance, and as it is thorough, it should certainly be the operation of choice whenever there is the slightest suspicion of malignancy, or when the myomatous growth extends down into the cervix.

Freund advised the abdominal operation for removal of a cancerous uterus, but a mortality of nearly 70 per cent. in 106 published cases caused its abandonment for a time, though after the introduction of the Trendelenburg position matters became changed, and now the abdominal operation is coming to the fore again under very different auspices, for it enables a most thorough technique to be carried out by the removal if needful of part of the broad ligaments and the lymphatic glands. Jacobs reported 81 cases with a 7.4 per cent. mortality.

As showing the feasibility of this method, I have recently operated successfully on a patient at the advanced aged of 72, who had no more shock than after some simple operation. Where the cervix is chiefly involved and the broad ligaments and lymphatic glands are free, the vaginal operation will, however, still be the operation of choice.

I have employed all these methods, and have come to the conclusion that it is better to be eclectic and to treat each case on its merits.

The contrast presented by those patients who have been operated on, and who are as a rule completely restored to health in a few weeks, with the chronic invalids who show their disease in their bloodless features, and have to spend half their time in bed, is very marked; and I feel convinced that where the symptoms of haemorrhage and pain and other distressing complications supervene, the old views ought to be discarded and operation advised, for there is nothing in the whole range of medicine to be compared with the disappointment of a woman who, having spent twenty to thirty years of misery as a chronic invalid under the idea that her troubles will cease at the menopause, finds that her dream of health has been a "will o' the wisp," and that her life can only be saved even then by the operation she has been living to avoid.

The surgery of the bile passages is one of the most interesting episodes in abdominal work, for although the first cholecystotomy was performed so far back as 1867 by Bobbs, of Indianopolis, it is only within recent years that surgery has come to be recognized as the treatment for gall stones. I performed my first cholecystotomy in 1885, since which time I have operated nearly 600 times on the gall bladder and bile ducts.

When in 1889 I read a paper before the London Clinical Society, one of the leading London surgeons said to me, "Wherever do you conjure your gall-bladder cases from: we never see them here?" I referred him to the medical wards and to the *post-mortem* room of any of the hospitals, with the result that within a short time he found many cases requiring relief.

At first cholecystotomy only was practised, with the result that the ducts were often left obstructed and fistula necessarily followed. It was thought to be a bold venture when Lawson Tait crushed a stone in the common duct, a procedure which I followed with success on a number of occasions, until Courvoisier in 1891 showed it to be better to directly incise the common duct.

Common-duct operations, as performed by the upward incision and rotation of the liver, which I introduced some time ago, are now as easy as an ordinary cholecystotomy used to be, for the improved method enables the whole of the biliary ducts to be brought near to the surface and to be deliberately dealt with.

Nothing could demonstrate this better than the results in my own practice in an experience of over 100 choledochotomies, for whereas in my first series before 1900 the rate of mortality was 23.8 per cent., in my last series it is only 1.5 per cent., and I have had a continuous series of 50 cases without a death; moreover, it must be borne in mind that nearly every one of these cases is not merely a successful operation but a life saved, for common-duct

cholelithiasis associated with infective or suppurative cholangitis and deep jaundice is a mortal malady.

It is interesting to recall the views that were held of cholelithiasis in the Seventies, when the pathology of the disease was ill understood, and the dangers were not at all realized. The first real step in the study of the pathogenesis of gall stones was made in 1886, when Bernheim showed the relation of typhoid fever to the development of cholecystitis, and the next was in 1886, when Galippe demonstrated the bacterial origin of gall stones. Now we may say that by whatever course, whether through the blood or from the bowel, bacteria enter the bile channels, there is no longer a question that in bacterial infection of low virulence we have explained the etiology of cholelithiasis.

Fortunately, gall stones are usually easily diagnosed, the symptoms are classic and in the early stages before complications have supervened, cholelithiasis is curable by surgical methods in 99 per cent. of cases, as I myself have demonstrated in a large series of operations; but if we wait for complications to supervene, and for the onset of jaundice and various infections, or until cancer has invaded the liver and gall bladder, which it does ultimately in 50 per cent. of cases in which jaundice is present, then there will be a very different tale to tell.

Even yet we do not get these cases always in time, and until the fact is grasped that medicine can, as a rule, only relieve and cannot cure cholelithiasis we shall be continually having to operate in the presence of serious complications, endangering life, when operation is five to ten times more dangerous than if it had been undertaken at an earlier stage.

But you say, What about the cures at Carlsbad, Harrogate, and other spas? Well, the waters undoubtedly do relieve the catarrh so often associated with gall stones; and for the rich who can afford to make periodical pilgrimages thither the troubles may for a time be tided over, until, in a considerable proportion of cases, the descent of the stone into the common duct, or the supervention of cancer, compels more active intervention; and fortunate it is for them if it be not too late. For the poor, to whom time wasted means starvation for those dependent on their wages, fortunately surgery holds out good hope of speedy cure.

The great reduction in mortality in gall-bladder surgery is due to an earlier diagnosis, a closer study of the pathogeny of the disease, and infinitely greater care in operative technique. Much work remains to be done in this region, for it is a difficult and complex field, less accessible than many other regions of the abdomen, and often complicated by pancreatic trouble coexisting; but progress is steadily being made, and every year shows real advance tending towards perfection.

The surgery of the liver was until recent years limited to the evacuation of abscesses and hydatids, and it is interesting to note the evolution of the various methods following closely one on the other: of emptying by trocar or aspirator; of opening by caustic or thermo-cautery; of incision *à deux temps;* and, lastly, of the method which we now generally adopt—hepatotomy, or direct incision of the organ after reaching the liver, either through the abdominal parietes, or, if necessary, through the thoracic wall—an operation the credit of which must be given to Lawson Tait, who published a first series of 10 cases between 1873 and 1882, all successful. Mr. Bryant, Mr. Knowsley Thornton, Mr. Godlee, myself, and others followed on the same lines. As showing the extent of this field of work I have operated directly on the liver for one disease or another nearly 100 times, this being exclusive of cases of jaundice dependent on gall stones or pancreatic disease, for which I have operated on many more occasions.

At first sight it would seem impracticable to remove a tumour of the liver, but experience shows that although the liver tissue is friable and the capsule thin and not easily sutured, the bleeding is readily arrested by pressure, and it is possible to remove both simple and malignant tumours if localized and not too extensive. Out of 9 operations for partial hepatectomy that I have performed, 8 have recovered, and in 2 cases where I removed a cancer of the gall bladder and liver, the disease being proved microscopically, the patients are now in perfect health four years and three years respectively after operation.

Dr. Keen, of Philadelphia, collected 20 cases of partial hepatectomy with only 2 deaths, and others have been performed since with equal success, so that the operation is one of real practical utility.

The relief or cure of ascites dependent on cirrhosis of the liver is quite a recent development of surgery, due to Dr. Drummond and Mr. Rutherford Morison, who conceived the idea of establishing a collateral circulation by stitching the omentum to the abdominal parietes. Quite a number of cases are now on record where Morison's operation has undoubtedly saved life, and among others I can point to a patient who is now well and free from dropsy for whom I operated two years ago.

The surgery of the stomach is still more recent than that of the gall bladder, but unlike gall-bladder work, which was successful from the outset, the way to success in gastric operations has been paved with many failures, and only recently has the surgeon been able to show what can be done in this branch of work. For instance, when gastrotomy was first performed by Sedillot and by those who followed him, it was nearly always fatal, the chief reason being that the patients were never handed over to the surgeon until nearly moribund; of such were my first 8 cases, of which 6 died; even up to 1890 the mortality was so great that the operation was seldom advised, yet it can now be done in so short a time and with so little disturbance that out of my last 24 cases all have recovered except 1, leading to considerable prolongation of life in the malignant and to saving of life in the simple cases. In the Seventies, any one with carcinoma of the stomach was at once given up as hopeless, and only in 1879 was the first attempt made by Péan to remove a malignant pylorus, the first successful operation being performed by Billroth in 1881, when the operation was looked on with as much disfavour as was the first attempted complete gastrectomy a few years ago by Connor in America, yet Schlatter's patient a little later lived fourteen months after complete gastrectomy, and I can point to a man in good health on whom I performed almost complete excision of the stomach two and a-half years ago, and to others now well who have had partial gastrectomy done. Professor Kocher's statistics in this branch of work are of great importance as showing that the radical operation may in some cases, if done thoroughly, prove curative; and my friend Mr. Jessop has a patient now living from whom he removed the pylorus for cancer several years ago.

I am firmly convinced that many deaths are ascribed to cancer when the disease is inflammatory and perfectly curable by the operation of gastro-enterostomy without removal of the tumour; this I can prove from my own experience in patients now living and well several years after an operation, which at the time was thought would be only of a palliative nature.

Nor was the palliative operation of gastro-enterostomy much better thought of at first, for although Wölfler successfully performed the operation in 1881, his patient surviving for four months, yet the mortality of 65.71 per cent. in the years between 1881 to 1885, of 47 per cent. in the period from 1886 to 1890, of 33.91 per cent. from 1891 to 1896, though showing a steadily-decreasing death-rate, yet presented so doleful a picture as to deter medical men from recommending their patients to submit to operation. Even so recently as 1900, when I gave the Hunterian lectures on the Surgery of the Stomach, of the 1878 cases of gastro-enterostomy that I was able to collect from all sources, the mortality was 36.4 per cent. But since that time the surgery of the stomach has made such rapid progress that, in 103 posterior gastro-enterostomies which I myself performed up to December, 1902, for various diseases, including cancer, there was a mortality of only 3.8 per cent.

Until quite recently gastric ulcer, except for one or two of its complications, has been considered to be a subject for medical treatment from first to last. The profession is, however, becoming awakened to the fact that it is not the trifling ailment it was once considered to be, and that it should from the first be taken seriously, for it is in the early stages that medical treatment can be employed to the best advantage, and in the later stages that general treatment is so often followed by relapse or by serious complications.

Leube, one of the greatest medical authorities on the subject, says that one-half or three-fourths of all cases will be cured by four or five weeks of treatment, but, if not better in that time, they will never be cured by medical treatment alone; and Einhorn says it is fatal directly and indirectly in 50 per cent. of cases when reliance is placed exclusively on medical treatment. It can be demonstrated that in the patients incurable by medical means surgery holds out a good hope of relief or cure in 95 per cent. of

cases, as I have shown in an address recently given before the London Polyclinic. The subject is too large to enter minutely into, but from what I have stated now, and in other places have given in detail, it will be seen that in this as in other diseases of the stomach, modern surgery has very great triumphs to record.

The pancreas had practically received no attention from a surgical point of view up to Senn's classical experimental work in 1886, and even for some time after that the only interest centred around cysts, so that Greig Smith, writing in 1896, said, "The experience of the last ten years has added little to the work of Senn of Chicago." But what do we see to-day? That the subject is of such magnitude as to need a volume of considerable size to adequately deal with its pathology and surgical treatment. I myself have operated on nearly a hundred cases of diseases of the pancreas of various kinds.

Acute pancreatitis is one of the most serious and fatal of diseases, often coming on with startling suddenness, and it is astonishing how it can have escaped the notice of pathologists until so recently. Fortunately surgery has been able to interfere beneficially in some of these cases, especially those ending in suppuration, and as our knowledge of the subject increases we shall be able to do more both in the way of prevention and cure.

Chronic pancreatitis, though recognized from a pathological point of view, was practically unrecognized as a subject for surgical treatment until I drew attention in June, 1900, to the facts derived from an experience extending over some years, that many cases described as cancer of the head of the pancreas and leading to chronic jaundice, which ended fatally, were really cases of chronic pancreatitis that could be cured by draining the pancreatic duct indirectly through the bile passages; this has led to great success in the treatment of a class of cases previously treated as hopeless.

As yet the treatment of cancer of the pancreas is very unsatisfactory, and whether we shall ever be able to do much for malignant disease in this situation the future alone will prove: for, although a portion of the pancreas has been removed with success in one or two cases, it is an operation not likely to be frequently repeated, and the cure must be sought in that extended knowledge of cancer generally which we are all striving for.

The treatment of cysts is most successful, and it is now well established that in drainage we may reasonably expect to cure or materially relieve in a very large proportion (probably 93 to 95 per cent.) of cases.

Calculus of the pancreas is a disease about which very little has been heard and still less done, but of which more will be recorded in the future. A case of removal of calculus was described by my friend, Mr. Pearce Gould, in 1895, which survived the operation for twelve days; one last year in which my friend Mr. Moynihan successfully removed a calculus through the duodenum; and in February of this year I operated and removed three calculi from the pancreas, one from the gland by the side of the common duct, one from the main duct which it was obstructing, that being reached through the duodenum; and one about the size of a cobnut from the main pancreatic duct on the left of the spine, this being the first case in which the main pancreatic duct has been deliberately opened through the substance of the pancreas, and stitched up again after removing the obstruction. The patient recovered.

The more complete exposure of the pancreas which can now be obtained by the method I have suggested for exposure of the common bile duct will give an impetus to pancreatic surgery, and will render the operative technique both easier, safer, and more certain.

Tuberculous Disease.—The advances in the pathology and treatment of phthisis since the discovery of the tubercle bacillus have become public knowledge, but I do not think it is quite realized how enormous the saving of life has been: for, while in 1838, 38 persons in 10,000 died of phthisis, the proportion is now but 13 in 10,000. Now can we show anything like this in surgical tuberculosis? I think we can, since preventive medicine of course applies equally here; and there can be no doubt that the early recognition of joint and bone disease has led to more rational therapeusis and a great saving of life and limb. To-day, however, I need only consider tuberculosis as it concerns the abdomen; and just as we saw that so-called acute peritonitis may be better described as an acute peritoneal infection, so, in the case of chronic tuberculous peritonitis, we should do better to term it tuberculous infection of the peritoneum, for it is generally a secondary infection; and frequently, as can be proved from actual cases, may be treated in an early stage by removal of the cause, whether that be a tuberculous appendix, a tuberculous pyosalpinx or ovary, a tuberculous mass of intestine or mesenteric glands.

Although Spencer Wells some years previously, accidentally discovered that an extensive abdominal tuberculosis was cured by drainage of the peritoneum, it was not until 1884 that Koenig[2] planned the operation which has had such good results, and has led to so many successes.

What we must do in the future is to prevent these diseases if we can, by avoiding the distribution of tubercle bacilli in the air and in our food; or failing that, we must if possible catch cases at an earlier stage, and remove the primary focus, so as to prevent the general invasion of the peritoneum to which I have just referred. If, however, we are only consulted when the disease is so far advanced that medical treatment can do no more good, drainage of the abdomen by a simple and short operation may bring about recovery in a remarkable manner, and I have seen patients reduced to the last extremity of weakness, where the mesentery was standing stiff with tubercle, and the abdomen was swollen to an enormous size, recover completely and be thoroughly restored to perfect health from a condition apparently completely hopeless.

The surgery of the intestines provides the most varied and difficult field of work in the abdomen, and as the ordinary methods adopted in general surgery here need modification, the evolution of intestinal surgery has been accompanied by infinite variety in detail.

The interrupted suture at first employed occupied so much time in application that many modifications were soon introduced, and in 1885 Mr. Bishop showed there were no fewer than thirty-three distinct methods of enterorrhaphy, and since probably as many more have been introduced.

In 1887, Senn's plates were employed to facilitate the process of intestinal anastomosis, and I remember what a great impetus was given to the surgery of the intestinal canal by Dr. Senn's very able paper and demonstration at the International Medical Congress in Copenhagen. In 1892, being dissatisfied with the methods then in vogue, I invented a decalcified bone bobbin shaped like a cotton reel, which would form a temporary splint around which to apply two continuous sutures, one to the serous and another to the mucous margin of the new openings; which method has proved most useful, and I feel sure has ministered to whatever success I have had in this line of work.

The continuous sutures applied over the bone bobbin considerably shortened the time of operation and left the union so safe and secure that in a large number of operations since performed on the hollow viscera, I have continued to employ it with great satisfaction. As illustrating its utility, the series of cases of posterior gastro-enterostomy performed by me up to the end of last year were all done by this method; and, in the 4 cases that died, the union, as proved by necropsy, was perfect; moreover I know that the anastomotic opening has not the tendency to contract that occurs after some of the other methods, and as the bobbin dissolves within two or three days no foreign body remains to cause further trouble. In end-to-end junction of the divided bowel in enterectomy the decalcified bobbin has given me equal satisfaction, and, though from the nature of the cases the actual operative mortality has been greater, yet in no case has the result been due to imperfect coaptation.

In 1892 Dr. Murphy, of Chicago, invented his well-known metal button, which, since it is employed without previous application of sutures, can be used very quickly, and by its distinguished inventor as well as in the hands of other surgeons it has been adopted with great success. The chief disadvantages it presents are, first that it is necessarily associated with sloughing of the compressed and coapted ends of the bowel, next that a foreign body is left in the canal which sometimes produces ulceration and other troubles, and thirdly that the opening has been found in some cases to contract and necessitate a further operation. Along with many other surgeons I gave it a thorough trial, but soon reverted to the method of suture round a bobbin, and the general trend of opinion is now to rely on simple suturing with or without any mechanical support.

Cases of tumour of the bowel when I was a student were given up as hopeless, though a little later colotomy was performed as a means of giving relief, which was of course merely temporary. At the present time such growths are removed before the supervention of obstruction and with very good results both immediate

and remote; for instance, my colleague, Mr. H. Littlewood, recently reported a series of 14 colectomies with 10 recoveries, and out of 38 enterectomies which I have performed 26 have recovered, but out of my last 16 in private 15 recovered, showing the progress that has been made in the operative technique.

It is astonishing what large portions of the intestinal tract may be taken away with safety; for instance, Mr. Barker removed 5½ ft. of damaged bowel with success in a case of strangulated gangrenous hernia, and I have on several occasions removed part of the ileum, the caecum, the ascending and part of the transverse colon with recovery of the patient.

In the first number of the *International Archives of Surgery* is the description of a case in which Dr. Roswell Park removed 8 ft. 9 in. of gangrenous small intestine, the patient being well a year later; and in the same paper reference is made to 17 other cases in which over 6 ft. of bowel had been excised with recovery in 14; in one of these cases no less than 11 ft. were removed.

In 1884 colotomy had the enormous mortality of 31.6 per cent. for the lumbar and 53.1 per cent. for the inguinal operation, as shown by Dr. W. R. Batt, who collected the records of 351 cases; in 1889, under improved technique, the inguinal operation was reintroduced by Mr. Allingham, with the result that the mortality was diminished within a short time to under 10 per cent., even including cases of acute obstruction, though excluding the acute cases the mortality is under 5 per cent. Looking to the future, it seems highly probable that colotomy will be largely replaced by the removal of the disease, for it has been clearly proved that there is no part of the lower bowel which cannot be safely excised if taken sufficiently early, and I can point to a number of patients living in comfort from whom I removed rectal cancer years ago; in one the patient being in good health ten years after. Mr. Watson Cheyne estimates the mortality of excision of the rectum at from 5 to 10 per cent., and refers to Kocher's statistics in which 28 per cent. of cases remained well from three to sixteen years after proctectomy.

For the rational treatment of intestinal obstruction we owe much, first to the anatomical researches of Sir Frederick Treves, and secondly to his admirable work on the pathology and surgery of the subject.

Although there are vague accounts of a successful operation for volvulus in 1768, the surgery of the last century until within twenty years of its close had no history bearing on the subject of intestinal obstruction, and I can remember when it was considered no discredit to stand by with folded hands while a patient was dying of internal strangulation. Many of those present will remember it being proposed seriously less than twenty years ago, in one of the medical societies, by a very eminent surgeon, that operation could be frequently avoided by calling in the nearest policeman, and suspending the patient head downwards with the knees bent over the constable's shoulders, who was then directed to jump up and down a number of times so as to displace the hernia or undo a twist; this will show the state of intestinal surgery in the Eighties.

At the present day the differential diagnosis has been so well worked out, and the technique of operative work so much improved, that no physician or surgeon long delays resorting to operation if relief be not soon obtained, and the results as shown by numerous reports, amply justify the change.

Did time permit, I could give numerous examples of the cure of acute intestinal obstruction by the division of bands, the untwisting of volvulus, the unfolding of intussusception, the reduction of internal hernia, and the removal of concretions; all of which, but for the recent advances of surgery, must inevitably have perished, and all of which would undoubtedly have died had they occurred in the Seventies.

Hernia. When I was a student much time was spent and great expense incurred both by patients and hospitals in the fitting of trusses to enable those crippled by rupture to go about with any degree of safety or comfort and many of those patients ultimately lost their lives through strangulated hernia, the operation for which at one time as shown by Mr. Barker, had the huge mortality of 53.1 per cent., and even yet, according to that surgeon, has in hospital practice the high rate of 22.2 per cent. My own experience does not bear out this high mortality, though I find it, as one would expect, to vary in hospital and in private patients. Taking all my cases of strangulated hernia from 1880 to 1903, both in hospital and in private, the mortality has been 13.5 per cent., but while the private cases, for the most part operated on without loss of time, show only a mortality of 5 per cent. since 1890, the hospital cases seen at a later stage, show the all-round mortality of 14.2 per cent., and I thoroughly agree with Mr. Barker that cases seen when the bowel has become seriously changed will stand a much better chance of recovery if the damaged gut is removed by a free enterectomy of the proximal end.

What we want, however, to impress on the public, is to have the radical cure performed early, when it is practically devoid of risk, as shown by the following statistics. In the Johns Hopkins Hospital there was only 1 death in 459 operations. In Carle's clinic in Rome, 2 deaths in 1,400 operations, in the Vienna clinic 3 in 804, and in Dr. W. B. Coley's 1,075 cases only 2 deaths, all of which when massed together give a mortality of about one-fifth per cent. But where the radical cure has not been done and strangulation unfortunately occurs, it ought to be more fully grasped that no time should be lost in taxis, but that operation should be performed without delay, when it can be done with a risk of not more than 5 per cent. and radical cure can at the same time be performed.

Among the great advances of surgery in the period in question, has been the successful treatment of many of the anomalies of pregnancy; for instance, the eminently satisfactory results now obtained in that ancient operation, Caesarean section, where at one *séance* two, or sometimes three, lives are saved, and which in the hands of Murdoch Cameron, Leopold, Sanger, and other operators has been done in recent years with an extremely small mortality, whereas in the large maternity hospitals in Paris during half a century before the aseptic era, although the operation had been done sixty times, in no instance had the mother's life been saved, and in England the operation for similar reasons was condemned absolutely. I know of no operation that has given greater satisfaction than this one, for the patients are eternally grateful, which is truly the highest reward of the surgeon.

Dr. Amand Routh has been kind enough to furnish me with statistics showing the improvement in the operation of hysterectomy performed at or near the full term of pregnancy, for contracted pelvis, cancer of the cervix or obstructing fibroids.

From 1876 to 1881, out of 99 cases, there was a mortality of 60.6 per cent., from 1887 to 1901, out of 311 cases, the mortality was reduced to 16.7 per cent., and while the extraperitoneal treatment of the stump had a mortality of 31.3 and panhysterectomy one of 21, the retroperitoneal method of treating the stump only gave a rate of 16.6 per cent.

Ovariotomy during pregnancy has been remarkably successful, the mortality for a large series of collected cases being only 5.19 per cent., and the recovery after operation being as satisfactory as under ordinary circumstances.

Ectopic gestation until recently constituted a dark chapter in medicine; it was altogether misunderstood both as to cause, pathology, symptoms, and treatment, and hundreds of lives were lost annually which are now saved by timely surgical intervention. To the genius of Lawson Tait, who utilized the *post-mortem* experience of Bernutz and Goupil published in 1886, and the clinical observations of J. S. Parry, we owe the successful treatment of this otherwise fatal disease. His work on this subject alone should be sufficient to establish a claim for him to be placed among the great benefactors of science and of humanity.

As showing the success of his treatment from the first, up to 1887 he had operated 35 times for ruptured tubal pregnancy with only 2 deaths, and in my valedictory address at the termination of office as President of the British Gynaecological Society in 1898 I was able to report, following on the same lines, 23 operations for ectopic gestation with 1 death. The subject has received much attention at the hands of Professor J. W. Taylor, of Birmingham, Mr. Bland-Sutton, and others, but only recently has it been distinctly proved by 4 undoubted cases, 1 of which came under my care, that ovarian gestation is a possibility.

The subject is replete with interest, and it may be said without any fear of contradiction that this operation alone has saved many thousands of lives which, when I was a student, would have been sacrificed, and probably certified as having died from internal haemorrhage.

The Surgery of the Kidneys and Ureters.—Although the dawn of renal surgery dates, from August 2nd 1869, when Simon, of Heidelberg, deliberately performed nephrectomy, the first successful operation in England was

done by a member of your Council, my respected colleague, Mr. T. R. Jessop, an operation which I had the privilege of witnessing. Sir Thomas Smith advocated nephrotomy in 1869 before Simon's operation, but it was not until 1870 that Mr. Bryant first performed the operation and until 1880 that Mr. Henry Morris applied it to the removal of a calculus. As showing the advances that followed, the last named surgeon was in 1898 able to report 34 nephro-lithotomies with 33 recoveries, showing the invalidity of the objection which had before 1880 been urged against the proposal to operate on a kidney not already converted into a mere abscess sac; and proving that the conservation of the kidney by removal of the disease was infinitely better than the sacrifice of the organ, which was at one time advocated. The next advance was due to Hahn, who in 1881 described two cases in which he had performed the operation of nephropexy for the fixation of movable kidney, a procedure which in proper cases confers great benefit on a class of patients who previously had to bear their troubles until the movable organs were often converted into large fluid cysts owing to intermittent kinking of the ureters. By utilizing the partly-stripped capsule and the posterior incision of Edebohls, I have been gratified with the results, both immediate and remote, of the operation, which with little or no risk, in properly selected cases, has been the means of restoring many invalids to a state of health and comfort.

Partial excision of the kidney as a conservative operation is the next advance to chronicle.

Czerny in 1887 excised part of the organ for tumour, preserving the remainder of the kidney, which seemed to be free from disease; this was followed by a number of conservative operations by Tuffier, Kimmnell, Bloch, Morris, myself, and others, many of which have been completely successful; for instance, I know of a lady in perfect health from whom I removed a large wedge from the centre of the right kidney for localized tuberculous disease some years ago: of another from whom I removed the upper half of the right kidney for growth which apparently started in the suprarenal capsule, and who was well three years later; and of other cases in which formerly one would have considered it absolutely essential to remove the whole organ.

The differentiation of diseases of the kidney—a great advance in diagnosis—has been rendered much more certain by catheterization of the ureters, which I was privileged to be among the earliest to do in 1886; but to Kelly, of Baltimore, is due the credit of working out the subject systematically and demonstrating with what facility it may be done. Already, however, this is replaced by a much superior method, the idea of E. Lambotte, of Brussels, who in 1890 invented an instrument which, when passed into the bladder, collects the urine from each side and conveys it to two separate bottles. The invention in 1898 of a segregator by Harris, of Chicago, has still further extended the usefulness of this method, so that there is now no longer need for doubt in any case as to whether the disease is limited to one, or involves both kidneys.

The most recent advance in renal surgery has been in the treatment of chronic nephritis or Bright's disease, which was first drawn attention to by my friend, Mr. Reginald Harrison, who recommended renal puncture or incision in certain cases of chronic albuminuria; but to Dr. Edebohls, of New York, must be given the credit of adopting an original operation for the treatment of Bright's disease. He in 1898 deliberately exposed both kidneys, stripped their capsule, and fixed them in position, in a young woman of 26. Frequent examinations during the five years showed in every instance normal conditions, and the patient has recently married and is well. In March of this year Dr. Edebohls reported 51 cases of renal decapsulation, and in 47 of these cases both kidneys were operated on at the same time. Out of this large number, 22 are said to be improving from three to fifteen months after operation.

As yet it is too early to pronounce a definite opinion on the procedure, but it is an undoubted fact that decapsulation does effect some improvement in this serious malady, and it may possibly prove effectual in saving life in those terrible cases where suppression of urine comes on after some trifling operation, such as catheterism, or after a chill, or in scarlatina: just as surgery has effectually stepped in and saved life where suppression was due to obstruction of both ureters. We may certainly go so far as to say that no patient ought to be allowed to die from suppression of urine without the surgical question being considered.

Did time permit, it would be interesting to mention the various advances in ureteral surgery: for instance, the removal of calculi, first performed in 1882 by Bardenheuer, and now frequently done; and the anastomosis of the ureters, first done by Schopf in 1886, and which, I believe, that I had the privilege of doing for the first time in England. Formerly such patients would have had to suffer loss of the kidney, where it is now frequently saved.

Ureterotomy for stricture and valvular obstruction, leading to hydronephrosis, was an innovation first successfully performed by the late Christian Fenger, of Chicago, in 1892, and since done by others: for instance, in a case of this kind, where the kidney merely formed a shell over an enormously dilated pelvis, I found the ureter strictured and coming off from the upper part of the dilatation. By dividing the stricture, bringing the edges together transversely, and afterwards constricting the large sac by a number of running sutures, the kidney was saved, and has since performed its work satisfactorily.

I find that I have operated on the kidneys 130 times with 122 recoveries; but 5 out of the 8 fatalities were in my first 18 cases before 1892, 2 being from nephrectomy, and 3 from nephrotomy; this leaves 112 cases since 1892, with 3 deaths, or a mortality of 2.6 per cent. As the series includes cases of nephrectomy, nephrotomy, nephrolithotomy, and nephropexy, it serves to show the greater safety of these operations within the last ten years.

The surgery of the spleen, of retroperitoneal and mesenteric cysts of the large abdominal blood vessels, of the suprarenal capsules, of the abdominal lymphatic glands, of the bladder, and of the prostate, are all subjects concerning which much might be said did time permit, but I must pass from retrospection to consider for a few moments what remains to be done.

Although abdominal surgery in its widest sense has practically sprung into being and developed within the last third of a century, something more than merely crossing the threshold has been accomplished, though very much still remains to be done; the diligent student has no need to lament with Alexander and bemoan that there are no more worlds to conquer.

It is reasonable to hope that before another decade has passed that great scourge of mankind, cancer, will have been hunted to its source, and then we may reasonably expect the discovery of a means of cure; but as yet, let us confess it plainly, we know nothing of its pathogeny and can only recommend its removal as soon as discovered, for if it be discovered early and removed freely, surgery can undoubtedly cure a fair proportion of cases and give relief and respite in many more. I do not think we shall hasten the discovery by promulgating wild theories and, without adequate reason, frightening the public about this or that article of diet; for instance, what can be more absurd from the public point of view than that they should read a paper one week which has for its text cancer due to eating of salt, and in the next to find another, cancer due to want of that necessary article of diet; nor can I see why we should frighten the working man out of taking his glass of beer or cider, which is the latest craze, for I feel sure that it will be a bad thing for England if spirits should replace the national beverages. The statement that cancer is more frequent in Germany and England and other beer-drinking countries is no more proof of beer being the cause than was the statement of some years ago that tomatoes produce malignant disease.

I look forward to the time when, knowing the cause, we shall discover the antidote, and, either by an antitoxin or by some form of serumtherapy, we shall be able to prevent or cure the disease; then, instead of the aid of surgery, the sufferer will have to look to the help of the pathologist and physician.

When we see what preventive measures have done in England for rabies and leprosy, is it too much to hope for the extinction by repressive legislation of that hydra-headed monster, syphilis, or those many serious diseases due to the gonococcus? I think not, but this will never be accomplished so long as sentiment takes precedence over common sense and judgement.

Nor is it too much to hope for that the next generation will see tuberculosis in all its forms becoming a rare disease, for as sure as legislation based on knowledge prevents the distribution of the tubercle bacillus both in the air and in food, so will cases become fewer and fewer and the disease will die out, since the seed for its distribution will be no longer propagated.

We all remember the disappointment that followed the

injection of Koch's tuberculin in the treatment of tuberculosis, which we now know was based on an erroneous therapeutic principle: but since that time many modifications have been made that will bring the new tuberculin more into line with the ordinary bacterial vaccines, and the outlook for a useful application of inoculation for tubercle is much more hopeful, since we have at our disposal a vaccine which contains in it elements derived from the bacterial protoplasm. Moreover, the tuberculous serum sedimentation reaction furnishes a method by which we can obtain information of the progress of the reaction of immunization in the patient's system.

It was hoped that the principle of serumtherapy which has been so eminently successful in the cure of diphtheria would also be applicable in the case of bacterial diseases. Unfortunately, however, our hopes have not been fulfilled, as not only have the sera thought to be applicable to other diseases failed to do good, but in some cases actual harm has resulted. Nevertheless, the principle is capable of being worked out, and doubtless ere long will be, and I feel sure that it is destined to revolutionize our practice in dealing with localized bacterial invasions.

An immense impetus has been given to this line of work by the investigations of Dr. Macfadyen, who, utilizing the discovery of the liquefaction of air made by Professor Dewar, and the intensely low temperature that can be obtained through its employment, has succeeded in grinding up typhoid organisms and liberating the bacterial contents, which can be used as protective vaccines without the danger of introducing living organisms that would tend to intensify and continue the disease.

The success of the experimental work already undertaken leads one to hope for good results in other bacterial affections. For instance, take the numerous diseases due to infection by the bacterium coli commune, among which one may mention appendicitis, cholecystitis leading to gall-stone formation, colitis, cystitis, pyelitis, peritonitis, etc., all serious and often fatal diseases.

In future it seems absolutely assured that many of those infections will be dealt with by the method of immunization; and it seems not at all improbable that, even if such diseases cannot be prevented, the necessity for operation may in some be staved off, while in others the operative results may be materially improved, and the post-operative anxieties lessened by protective inoculation before operation.

Of the treatment of streptococcus infection, such as erysipelas and other diffuse inflammations, by the antistreptococcus serum we can probably all point to some excellent as well as to other uncertain results; but as improvement in the preparation of the antitoxin occurs, and as our knowledge of when and how to use it is increased, we shall be able to calculate on more certain results. At the present time surgeons are finding the injection of the serum of service in immuninizing before operating in certain regions, such as the tongue, mouth, throat, and rectum, where asepsis cannot be secured with certainty.

Dr. A. E. Wright's researches with regard to localized staphyloccocus infection, as in boils, acne, and sycosis, have shown that in all these cases there is a defective power of phagocytosis with respect to the staphylococcus, as well as invasion by that organism. The inoculation of a staphylococcus vaccine has the effect in a considerable proportion of cases of immunizing the patient against the special organism, and in the *Lancet* for March 26th, 1902, Dr. Wright has given his experience of the remarkable results he has obtained in these well-known and troublesome diseases of the skin and hair follicles.

These researches on the localized cutaneous invasions of staphylococci have paved the way for further therapeutic applications in connexion with wounds and open ulcers.

It seems not improbable, in the early future, that in all inflammations, whether of the respiratory tracts or the pleura, of the brain or the meninges, of the uterus or its appendages, of the middle ear and its sinuses, of the abdomen and its contained viscera, as well as of the joints and bones, the services of a skilled pathologist will be required, who will by a blood examination or otherwise determine the organism or organisms causing the infection, when the appropriate serum or vaccine will be immediately employed, so as to arrest the inflammatory process, or in case of the disease having advanced too far for arrest, to limit its extension, and by a process of immunization to prepare the patient for operation, should such be called for.

Gentlemen, I have tried to show that the advances in treatment during the past third of a century have been commensurate with our increased knowledge of disease, and simply on account of time have I limited myself in a great measure to diseases of the abdominal cavity.

I have tried to show what a close connexion exists between the science and art of our profession, and how very necessary it is, if we are to continue our march of progress, that experimental research should not only be untrammelled by factious and unreasoning opposition, but that it should receive greater recognition, encouragement, and support at the hands of the public.

I have tried to forecast the future, and to show that while surgery has still great strides to make and many difficulties to conquer, such progress will be in a great measure intimately bound up with the work of the physician, the pathologist, and the bacteriologist, and I think the time will come when preventive measures such as I have portrayed will save much operative work, and when it will be thought a greater triumph to prevent than to cure disease.

We can see that methods and policies which were sufficient years ago are totally inadequate to day. We may modify but we cannot prevent the world's advance, and while times change men change with them. The medical profession is imbued with a spirit that half a century ago was undreamed of. Not only have apparently insurmountable difficulties been overcome, but habits of thought have been attained which have made such achievement possible, and a scientific attitude of mind has become characteristic of our profession, as it has of the leaders in every branch of the world's progress.

In becoming more scientific, it is a mistake to suppose that the medical profession has lost touch with higher beliefs. As Lord Kelvin has so happily stated it lately, "Science positively affirms creative power. We only know God in His works, but we are absolutely forced by science to believe with perfect confidence in a directive power, in an influence other than physical, or dynamical, or electrical force." There is no harm in free thinking, for if we think strongly enough we are forced by science to the belief in a higher power, which is the foundation of all religion.

In conclusion, I must thank you for giving me so patient a hearing, and at the same time I would apologize for many conscious omissions which, had time permitted, would not have occurred. I trust, however, that what I have said will serve to show that we are one and all imbued with a desire to carry out our duties conscientiously, and to live up to the privileges of our high calling.

REFERENCES.

[1] *Annals of Surgery*, June, 1903. [2] *Centralbl. f. Chir.*, 1884 and 1890.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

EXTREME HYPERPYREXIA.

I NOTICE that in the BRITISH MEDICAL JOURNAL of July 25th, p. 193, there is a note on extreme hyperpyrexia. I think that most general practitioners occasionally notice very high temperatures before death, and those mentioned by Dr. Bunbury are fatal cases. These are certainly extreme temperatures. Dr. Bunbury, however, mentions finally that he has met with a temperature of 107° F. before death from peritonitis. More wonderful than these, however, are the very high temperatures one now and then comes across in cases that are not fatal, more particularly in influenza. I have many times seen influenza produce most alarming temperatures, often 106° F., and a few months ago I had a case of influenza in which the temperature, taken with all care, was 107.2° F. It was a case with no complication, and under small continued doses of antipyretics this alarming temperature yielded to the extent of 7 degrees within 24 hours. A sudden very alarming temperature, followed by a wonderfully rapid fall I have seen occur very often in this affection.

Peebles, N.B. J. RODGER WATSON, M.D.

TRANSMISSION OF SYPHILIS AS A PENAL OFFENCE.—A man has been sentenced to five months' imprisonment in Munich for having knowingly infected a woman with syphilis. The judgement was based on the ground that a serious injury had been inflicted on the complainant.

SEVENTY-FIRST ANNUAL MEETING

OF THE

British Medical Association.

Held at Swansea, July 28th, 29th, 30th, and 31st.

First General Meeting, Tuesday, July 28th.

The first general meeting of the members of the Association was held in the King's Hall, Swansea, on Tuesday, July 28th, when the chair was taken by the President, Mr. Walter Whitehead.

The minutes of the last meeting, as published in the British Medical Journal, were taken as read, and signed by the President.

Introduction of New President.

The President said his next and final duty was to introduce to them the new President, Dr. Thomas Dryslwyn Griffiths. That gentleman was well known to a large number of the members of the Association, and he was sure that Dr. Griffiths would make an admirable President and maintain the prestige of the British Medical Association.

Mr. Walter Whitehead then vacated the chair, which was taken by Dr. Griffiths.

Dr. Griffiths (the new President) thanked the members present for the honour which had been conferred upon him.

Mr. Brook, as one of the local secretaries on behalf of the Executive Committee, presented to Dr. Griffiths his badge of office. The Executive Committee felt that in no hands could the honour of the Association be more safely placed than in those of Dr. Griffiths.

Honorary Membership of Prince of Wales.

The President, in reply, said that he was greatly pleased to find that the first duty he had to perform in his new office was to announce that H.R.H. the Prince of Wales having graciously intimated that the honorary membership of the British Medical Association would be acceptable to him, the Council had great pleasure in recommending the members to confer on His Royal Highness the highest distinction they had to bestow for the great services he had rendered to the profession. They might well rejoice that they had the honour of electing the Prince of Wales as an honorary member. This mark of royal favour was not only a great honour, but was also an indication of the sympathy which was invariably shown by the Royal Family for the profession, and moreover they might take it as a recognition of the power and influence for good of the British Medical Association, as well as the earnest desire of His Royal Highness to further its progress. The Prince, like his illustrious father, invariably showed great solicitude for the well-being of the community, and he recognized by his actions the importance of hygiene and public health. It was a fitting occasion to elect the Prince as a member of the British Medical Association in the Principality whence he derived his first and best known title. He had much pleasure in proposing:

That His Royal Highness the Prince of Wales be and is hereby elected an honorary member of the British Medical Association, not only for the honour his membership will confer on the Association, but for the distinguished services His Royal Highness has rendered to the medical profession.

Mr. Andrew Clark seconded the resolution, which was carried unanimously.

At the invitation of the President, the members sang "God Bless the Prince of Wales," the audience standing meanwhile.

Vote of Thanks to Mr. Walter Whitehead.

Dr. Ferguson, in proposing a vote of thanks to Mr. Walter Whitehead, said his fame was not confined to this country alone, and that wherever surgery was practised his name was well known. He was in many ways a remarkable illustration of surgical science, and he (Dr. Ferguson) might say of him: *Nullius addictus jurare in verba magistri*—that was to say, with regard to various surgical procedures he had thought them out for himself and simplified and perfected them; so that, whatever books were read or in whatever country, it would always be found that they quoted with approval the name of Mr. Walter Whitehead. The Association had never lacked distinguished Presidents; but he ventured to say that many years hence, when the qualifications of the different Presidents were weighed in the balance, few would be found to have been more worthy to occupy the position than Mr. Whitehead. It was a position of great dignity, and Mr. Walter Whitehead had certainly shown himself well capable of adorning it. He moved:

That the warmest thanks of the Association be given to Mr. Walter Whitehead for so ably presiding over the Association during the past twelve months, and, in accordance with By-law 36, that he be and is hereby elected a Vice-President of the Association for life.

Dr. Langley Browne seconded the resolution, and heartily endorsed all that had been said.

The resolution was then put and carried unanimously, the members rising and singing, "For he's a jolly good fellow," and then giving three hearty cheers.

Mr. Walter Whitehead thanked them for the honour they had done him in electing him to be a Vice-President, and, as an encouragement to the new President, would like to say that his year of office had been one of the best of his life; he had made many new friends whose friendship he hoped to retain.

In accordance with the rules of the Association, the formal business having concluded, the President vacated the chair, which was taken by Mr. Andrew Clark, Chairman of Council.

Financial Statement.

The Treasurer, in presenting the financial statement for the year 1902, said that the assets were £91,926, showing a profit for the year of £4,500. He thought it would be agreed that that was very satisfactory. Another very satisfactory feature was that during the past year the remainder of the mortgage, amounting to the sum of £10,000, had been paid off, so that their property was now entirely free from encumbrances. Another aspect to which he wished to call attention was the increased cost of the new Constitution, which he thought would attain to something like the estimated amount of £3,000 a year. A very gratifying fact was the income from advertisements. That item was £20,355 during the past year, showing an increase of some £800 on the previous year. It was an interesting fact that their loss by bad debts on that sum amounted to 6s. only. He would like in this connexion to express his conviction that they were very highly privileged in having a General Secretary like Mr. Elliston to look after their affairs. For himself, he was convinced that Mr. Elliston's ability was only exceeded by his devotion to their interests, and it was impossible for the officials to have a better colleague to work with. The total turnover had increased by some £1,300, and he thought, taking the statement as a whole, they would agree that he was right in congratulating them upon the prosperity of the Association; and, in conclusion, he begged to move:

That the financial statement for the year ending December 31st, 1902, be received and adopted.

Mr. Eastes seconded the motion.

Dr. Robert Bell (Glasgow) said that in a large business like the British Medical Association a little more information should be given as to how the money was spent. Something should be done to reorganize the present unbusiness-like state of affairs. On a revenue of over £40,000, surely there ought to be more than a profit of £4,000. The Journal was a large business in itself. It should be conducted, not by seventy members of Council, but by five or seven business men as the case might be. If the Journal was conducted upon the present lines it would soon be found that the revenue from advertising would diminish very materially. The Journal was full of recondite and abstruse subjects, but nobody cared to read it. The British Medical Association was made up of 90 per cent. at least of general practitioners. A member of the Association of thirty years' standing wrote to the Editor stating that he intended reading a paper shortly on a subject of which he had made a special study for over nine years, and which had been, and still was, exciting great interest in medical circles. He politely asked the Editor if he would kindly publish his paper as soon as it was read; but the Editor curtly refused to have anything to do with it. He thought that the conduct of the Editor was simply disgraceful. The speaker was proceeding to make some proposals for the reconstitution of the Association, when he was interrupted on a point of order by Professor Saundby, who asked whether the matter could be discussed without notice.

Dr. Bell proposed that his suggestions should be put before a select committee.

Dr. Groves said that the matter had been discussed constantly in the Council and by the Journal and Finance Committee. The directors of the Journal were very able, and the Council had full confidence in the Editor of the Journal.

They knew very well that the income depended upon the advertisements; but as they represented the bulk of the medical profession they did not think it proper to introduce, for the sake of income, advertisements which would be disapproved of by the profession generally. They could make their income larger if they chose to be recreant to their trust as members of the British Medical Association. There were men on the Council who had very marked ability financially. Better men could not be found in the commercial world. The accounts were published in the JOURNAL, and if members only read the JOURNAL they would not get such extraordinary notions.

Mr. WOLSTENHOLME stated that he had been requested to ask for more details in reference to the editorial expenses, which included salaries, contributions, engravings, and reporting. His Division wanted to know whether the editor and subeditor wrote articles, and whether such contributions were included in their salaries. They also wanted to know something more about the sums expended in scientific grants, scholarships, Association expenses, and Committees. He thought that it would be an excellent thing that those details should be shown in the profit and loss account.

Dr. GRIFFITHS (the President) regretted to have to speak on a disputed question of the kind, but some of the questions that had been raised were simply childish. The Association returned 90 representatives to the Council. It was their duty to look after the interests of the Association. The proper course was not to find fault with the Council, but with the members of the Association, who returned the members of the Council, who had the matter in their hands. In the case of a successful company the details of everything were not asked for, and certainly were never given. All that was given in such a case was bare details. He was afraid the medical profession was not a business profession, and he thought the best plan was that they should get their representatives to look after their interests, and if they did not please them they should get somebody else. Of course, there were men who would find fault, and woe to the man of whom everybody spoke well.

Sir VICTOR HORSLEY pointed out that the Council of the Association had before it every year a most excellent document giving exactly the details which Mr. Wolstenholme had suggested ought to be given; he had always felt that there was not the slightest objection to that document appearing as a public document. He was quite aware that he was only expressing his own opinion, but his view was that the details in that document gave every member of the Association correct information as to the disposal of the money without any indiscreet revelation as to the reception of the money or to the manner in which cheapness or economy might have been secured. He hoped that next year the Council would feel it right to publish them to all the members.

Dr. BRASSEY BRIERLEY said that the details which had been asked for as to the money granted to those who were pursuing their scientific investigations were published. The present balance-sheet indicated a very handsome surplus in favour of the Association. A year ago he felt rather alarmed at the probable course of the proposed change, but he was convinced that after they had paid the expenses of the delegates and the members of the Council the financial position of the Association would be found to be better than it was a year ago.

Dr. LATTIMER thought they had been befogged over one or two things. He wished to know how much was paid for contributions, etc.

Mr. GEORGE JACKSON suggested that in future the balance sheet of the former year should be presented for comparison.

The TREASURER, in reply, observed that the Association was not a trading, but a scientific body, and many expenses were incurred in connexion with special scientific work from which they had no result financially. They were very careful with regard to their advertisements, and their income from that source would be greater if they did not scrutinize them so carefully. There were many matters he would like to give information upon under the item "Editorial Department," but to do so would necessitate his going into matters in great detail, which, he took it, they did not wish him to do.

The motion was then agreed to.

SUPERANNUATION FUND.

Dr. LANGLEY BROWNE moved:

That a sum of £300 be voted to the Superannuation Fund of the staff.

On their staff they had many who had been with them a number of years, and who had worked for the Association faithfully, and for whom, in his opinion, the Association should do something when they found themselves no longer able to work. He held that the superannuation fund ought to be put upon a settled basis. He saw no difficulty in urging such a scheme, because he was sure that many of them, as Poor-law officers and medical officers of health, would agree with him that superannuation was the right thing to go in for; but until they had such a scheme placed upon a definite basis, he would ask them to vote this money. He hoped that in the near future a proper scheme would be brought forward and would be adopted.

The TREASURER seconded.

Dr. GROVES looked upon this as a grant to their officers' salaries, to which they were entitled; he took it, when a detailed scheme was submitted, the employés would have to contribute a certain percentage of their salaries, as the Poor-law officers did. The British Medical Association was well able to contribute from time to time to this superannuation fund, which the officers had formed for themselves.

Dr. BRASSEY BRIERLEY inquired to what fund this was to be added; they had not been told what the superannuation was.

Dr. LANGLEY BROWNE replied that it was a sum of £500 subscribed in memory of the late Sir Charles Hastings.

Dr. ROBERTSON thought the matter of superannuation ought to have been discussed by the members of the British Medical Association before it was called into existence. He maintained that there were gentlemen on the staff of the British Medical Association who were by no means in need of a superannuation fund, and before voting they ought to know where the line was to be drawn and who were the people who were to receive benefit from this fund.

The CHAIRMAN OF COUNCIL wished to explain that it was mooted some years ago, and a subcommittee appointed to consider the best way of carrying out the scheme. That Committee came to the conclusion that they were not in a position to recommend a scheme. In the meantime they felt that some of the employés were getting old, and, should they be incapacitated, there ought to be some means of assisting them; and this sum of £500 was the basis of a fund, and now the members were asked to add £300 to it. It was not intended, of course, that the Editor or the higher officials should benefit by the scheme. As far as the compositors were concerned, they had their own club, but he hoped they would be included by-and-bye. At present it was only intended for the clerks.

The motion was agreed to.

APPOINTMENT OF AUDITORS.

The TREASURER moved, Dr. POPE seconded, and it was resolved:

That Messrs. Price, Waterhouse, and Co. be, and they are hereby, appointed Auditors of the British Medical Association until the next Annual Meeting at a remuneration of 100 guineas.

The meeting then adjourned.

ADJOURNED GENERAL MEETING, TUESDAY, JULY 28TH.

Dr. T. D. GRIFFITHS, President, in the Chair.

RECEPTION OF REPRESENTATIVES OF COLONIAL BRANCHES AND FOREIGN GUESTS.

On Tuesday evening, at the Albert Hall, Swansea, the PRESIDENT received the representatives of the Colonial Branches and the foreign guests, as follows:

Representatives of Colonial Branches.

Adelaide and South Australia Branch: A. H. Bennett, M.D.; R. St. Mark Dawes, M.D.

Barbadoes Branch: Dr. W. B. Clarke; Dr. James F. E. Bridger.

Colombo and Ceylon Branch: H. Marcus Fernando, M.D.

Grahamstown Branch: E. G. D. Drury, M.D.

Malta Branch: Major D. V. O'Connell, R.A.M.C.

Montreal Branch: J. G. Adami, M.A., M.D.; Geo. E. Armstrong, M.D.; Sir Wm. Hingston, M.D.

Foreign Guests.

J. H. Edwards, M.D. (Wylam, Alabama, U.S.A.); E. E. Foster, M.D. (Boston, U.S.A.); W. A. Gowing, M.D. (Toledo, U.S.A.); M. C. Gill, M.D. (Hartford, U.S.A.); F. D. Sanger, M.D. (Baltimore, U.S.A.); Professor Th. Gluck, M.D. (Berlin); Professor John Ruhrah, M.D. (Baltimore, U.S.A.); Professor Hartmann, M.D. (Berlin); Dr. Delseaux (Brussels); Professor Senator (Berlin); Dr. Ledermann (Berlin).

Welcome by the Mayor.

The Mayor (Mr. Griffith Thomas) said they were met that night on a special occasion, and he had great pleasure, on behalf of the town of Swansea, in welcoming the members of the British Medical Association. Those present were aware of the important position which medical practitioners took in their lives, and he was sure he was re-echoing the sentiments of the inhabitants of Swansea when he said on their behalf that they desired to give the British Medical Association a most cordial welcome to their town. The British Medical Association gave Swansea the honour of visiting them fifty years ago, when Swansea was not so large or important a place as it was now, nor did he believe that the British Medical Association numbered among its members so many distinguished gentlemen as it did now. The pleasant duty which had been entrusted to him would not be completed unless he stated that they were all glad to know that their esteemed townsman, Dr. Griffiths, had been elected President of the Association.

Telegram from the Prince of Wales.

The President said he had to report that H.R.H. the Prince of Wales was elected an honorary member of the British Medical Association that afternoon. He had now the pleasure of reading a telegram which had just been received:

"In thanking you for your kind telegram, I beg you to convey to the Association my appreciation of the resolution passed to-day. I feel very proud to have been elected an honorary member, and I wish the British Medical Association all prosperity.—George."

The Morriston Male Voice Choir then sang "God Bless the Prince of Wales."

Stewart Prize.

The President then presented the Stewart Prize to Mr. Fred. Walker Mott, M.D., F.R.S.

President's Address.

[The President then delivered his Presidential Address, which is published at p. 229].

Surgeon-General Evatt, C.B., proposed:

That the best thanks of the meeting be given to Dr. T. D. Griffiths for his able and interesting address.

It had been a happy privilege on his part to listen to it. He understood it was fifty years since the Association met at Swansea, and he would prophesy that when the Association again visited that busy centre the fruits of the most admirable sermon which they had heard that night would be seen throughout the town. He called it a sermon because if the medical men of England were the priests of humanity, as he thought they were, then the lecturer was their high priest, and he was justified in calling it a sermon. Surgeon-General Evatt concluded by proposing his resolution.

Professor Robert Saundby seconded the resolution, which was carried unanimously.

Vote of Thanks to the Mayor.

Professor Adami (Montreal) proposed:

That the best thanks of the British Medical Association be given to his Worship the Mayor of Swansea both for the warm welcome he has extended to members of the Association, and for so kindly presiding over this meeting.

Dr. Ferguson, in seconding the resolution, said that with knowledge of what an ordinary meeting of that kind required to cause it to be a success it was practically impossible to organize such a meeting without the full assistance of the municipal authorities and also of the townsfolk generally. He was sure the meeting would be a success equal to that of any meeting which had been held during recent years. He had only one more word to add, it was really a jest, and that was if the Mayor could only call on the clerk of the weather to abate the somewhat frequent deluges of rain the meeting would be most enjoyable.

The President put the resolution to the meeting, which was carried unanimously.

The Mayor, in responding to the resolution, said he had great pleasure in presiding over a meeting of such distinguished men, and he was happy to accord to the British Medical Association a hearty welcome to Swansea. He also thought they might congratulate themselves that their President was one of their own townsmen. He had given a lecture or sermon that night which it was necessary all should attend to. He (the Mayor) could safely say on behalf of the town of Swansea that they were desirous of doing their duty as far as lay in their power, and they would do all they could for the town and for its health. He thanked them most cordially for their reception of the resolution.

After some selections by the choir, the meeting concluded with the singing of "God Save the King."

Second General Meeting, Wednesday, July 29th.

Annual Meeting 1904 at Oxford.

The second general meeting of the Association was held in the King's Hall on Wednesday, July 29th, 1903.

The President, who was in the chair, called upon the Chairman of Council, who reported that at the meeting of the Council that morning a deputation from Oxford had attended and had invited the Association to hold their annual meeting at Oxford next year. The Council had adopted the following resolution:

That it be recommended to the general meeting of members of to-day that the annual meeting for 1904 be held in Oxford, and that Dr. William Collier be nominated President-elect.

He begged to move:

That this meeting accepts with pleasure the invitation from the members residing at Oxford, and endorses the resolution of the Council.

Dr. Ferguson seconded the resolution, which was carried with enthusiasm.

Dr. William Collier, the President-elect, said that, speaking on behalf of the Oxford Division, he thanked them for the very hearty way in which they had received and accepted the invitation. He could assure them that when the Association visited Oxford they would receive a hearty welcome, not only from the medical men but also from the members of the University, more especially from the old medical graduates, and also from the city. It would be their aim, as far as the scientific work of the Association was concerned, to try to keep it at the same high level as it had maintained for many years past. As far as the social duties were concerned, they would give the Association every facility for enjoying the pleasures of the beauties of their College gardens and the charm of the many branches of the river. But there was one great cause for regret. The members of the Oxford Division regretted very much, and he was sure the members of the Association would share in that regret, that a man who had done so much for the science of medicine and such sterling work for public health and so much to build up the medical schools of Oxford was unable, on account of his health, to undertake the somewhat onerous duties of President-elect. He referred to Sir John Burdon Sanderson, Regius Professor of Medicine. It was their hope and full belief that he would be able to take part in the meetings. He thanked the members of the Association for conferring on him the very high honour of choosing him to be President-elect, and he promised that he would make every effort to prove himself worthy of that honour.

ANNUAL REPRESENTATIVE MEETING.

The first annual Representative Meeting was held in the King's Hall, Swansea, on Tuesday, July 28th, at 3.30 p.m.

Preliminary Proceedings.

The Treasurer proposed that the Chairman of the Council should take the chair pending the election of a Chairman by the meeting.

This was agreed to, and Mr. Andrew Clark took the chair.

The Chairman announced that, as more than half the representatives were present, the meeting was properly constituted, and the first business was to elect their Chairman.

Election of Chairman.

Dr. Douglas wished that some one more suitable than himself had been asked to propose the Chairman. They wanted a man who would make a good chairman, one who knew the work of the past and whose heart was in the work of the present. They were starting on a new epoch, and upon their Chairman would depend to some extent the work the Representative Meeting was to do, whether it was a success or a failure. He had great pleasure in proposing Sir Victor Horsley to be Chairman of the Representative Meeting.

Dr. Cox, in seconding, said that but for Sir Victor Horsley possibly there never would have been a Representative Meeting at all, and he thought they could not have a better man.

Sir Victor Horsley said he could not allow his name to be

presented to the meeting until the question of whether his election as a representative for the Central Division of the Metropolitan Counties Branch was valid, or not, had been considered. He then explained that when he was elected by the Central Division of the Metropolitan Counties Branch as its representative, the Honorary Secretary of the Division wrote to inform him of his election and of his instructions, but had omitted to apprise the General Secretary of the fact. In consequence the General Secretary had very properly not issued to him a ticket, and therefore at present he was not a fully-elected representative. It was a novel accident, and, in fact, the whole procedure was novel; but unless the meeting, as it had power to do under its Articles, carried by a two-thirds majority a resolution that the election was valid in spite of the irregularity, he could not allow himself to be nominated as Chairman.

After some discussion, Dr. Crawford Thomson proposed

That Sir Victor Horsley's election be and is hereby considered valid.

Dr. Murphy seconded the resolution, which was carried unanimously.

The Chairman stated that if there were no other members to be nominated as Chairman he would put the motion, which was carried unanimously.

Sir Victor Horsley then took the chair, and said that it was no exaggeration to say that his election as Chairman was certainly the highest honour which the profession, which had always been most kind and generous to him on many an occasion, had ever conferred upon him. He could only thank the meeting most sincerely. He would endeavour to justify the confidence they had placed in him.

Validation of Election.

It was moved and seconded and agreed that the election of Mr. Sinclair White (Sheffield Division) and Dr. Hyslop (Lambeth Division of the Metropolitan Counties Branch), as to which similar irregularity had occurred, should also be declared valid.

Order of Business.

It was then agreed that the order in which the various matters had been placed upon the agenda by the Organization Committee of the Council should be adopted.

Returns of Elections.

The first item was the reception of the return of the election of Representatives of Divisions for the year, and the reception of notices, if any, of the appointment of substitutes for Representatives under Article XXX.

The General Secretary stated that the total number of Representatives returned was 133, and that therefore the quorum was 66. There were 9 deputies.

The return was received.

Standing Orders.

Standing orders, drafted by the Organization Committee for submission to the meeting, were then considered paragraph by paragraph, amended, and adopted as amended.

Report of Council.

The meeting then proceeded to consider the annual report of the Council presented under By-law 32.

Mr. Wolstenholme objected to the paragraph in reference to the grant of £100 to the Imperial Vaccination League on the ground that, although it was an organization which sought to influence public opinion on a medical question, the Association would have no control over its action. The League did not approve of the general practitioner being regarded as a general public vaccinating officer, and paid by the State even in those cases in which he might vaccinate according to the conditions required by the Local Government Board, although that was distinctly recommended by the Medico-Political Committee. His Division hoped that the Council would refrain from making grants in the future.

The Chairman thought it only right to state that, as Chairman of the Medico-Political Committee when this matter came before the Council and before the Journal and Finance Committee in accordance with the instructions he had received from his Committee, he had opposed the grant; but the question was fully discussed, and the grant made against the wishes of a minority.

Dr. Galton, who had proposed the grant in the Council, desired to say that it was true that no absolute proposition was put forward by the Imperial Vaccination League that the general practitioner should be considered a public vaccinator for those cases he had done. The Executive Committee of the League felt that such resolution was impracticable and the policy of the Imperial Vaccination League was rather to seek to obtain things which were possible than to advocate plans which were excellent in theory but which would only increase the opposition to vaccination.

Dr. Browne (Winchester) doubted whether, as a medical body, they had a right to give £100 to the Imperial Vaccination League.

Dr. Rees (Wigan) considered the grant impolitic.

Dr. Brassey Brierley protested against spending the Association's funds in subsidizing the work of His Majesty's Government. Vaccination was a public question. The Imperial Vaccination League, however, only desired vaccination to be efficient, and was working on the same lines as the Association.

The Chairman said, in reply to Dr. Browne, that notice to disallow the grant would not be in order.

Mr. Andrew Clark (the Chairman of Council) did not consider it necessary to go into the details of the report of Council. Evidently the only part with which the meeting was seriously concerned was the vaccination question. He did not think he was breaking the secrecy of the Council in saying the vote was not unanimous; but the Council carried it, and the money had been paid. The minority had had to give way to the majority. No doubt the Council, having heard the views expressed, would be guided by them in future. He moved the reception and adoption of the report.

Dr. Buist seconded. No one individual would agree with everything done by the Council, but, on the whole, he thought the report showed a very good year's work.

Dr. Douglas called attention to the passage in the report which referred to the Supplements issued recently with the Journal, and proposed to leave out certain words, but——

The Chairman said that he could not accept the amendment. He would suggest that Dr. Douglas should give notice of a motion for the following day—a motion in the form of an instruction, and not merely an amendment to leave out words in a report.

Dr. Douglas undertook to do so.

Dr. Saundby suggested that the report should be received, and then considered paragraph by paragraph.

Dr. Bruce Goff asked whether it was competent for a member of Council who was not a representative either to move or second a motion.

The Chairman said that he would give his ruling on the following day, after he had been able to consult the Articles and By-laws more closely.

The motion that the report be received was carried.

The report of Council was then considered paragraph by paragraph.

Dr. Cox, on the reference in the report to the arrears of subscriptions, suggested that the Council should, if it had the power, make a clean slate. It was very desirable to bring all practitioners into the Association, and the existence of this claim for arrears of subscriptions sometimes acted as a deterrent.

Dr. Browne strongly opposed this, and no one else speaking on the subject the paragraph was agreed to.

On the question of the Poor-Law Officers' (Ireland) Superannuation Bill, Dr. Mitchell (Belfast) called attention to a paragraph in the report which stated that Sir James Haslett, M.P., had consented to introduce a deputation to wait upon the Chief Secretary for Ireland, but had been unable to arrange a convenient date. A year had passed and the matter was no further forward. Had Sir James Haslett given a sufficient reason for not arranging it?

The Chairman thought the best course to adopt under the circumstances was to refer the matter to the Medico-Political Committee. The action mentioned had been undertaken before that Committee was formed.

Dr. Saundby thought it would be better to postpone the paragraph until they had considered the superannuation question, and after some discussion this course was adopted.

Upon the paragraph as to the grant to the Imperial Vaccination League, the Chairman, after some discussion, said that he held that the Representative Meeting must have the opportunity of expressing its opinion upon the different paragraphs of the report.

Dr. Wolstenholme then moved:

That the meeting disapprove of the action of the Council in making a grant to the Imperial Vaccination League on a matter affecting the interests of the medical profession.

Dr. D. Browne seconded.

Dr. Galton hoped the meeting would not agree. Such a resolution would, he thought, be a great discouragement to the League, which was doing valuable public work. The Imperial Vaccination League was not a purely lay body. The Secretary was a member of their own Association, and there were also on the Executive Committee other members of the Association, and some of the leading medical authorities on vaccination. The League had recently appointed an organizing secretary, who was to go about taking specially those towns in which an epidemic of small-pox broke out, and endeavour to influence lay opinion, and carry into the minds of the lower classes and others the importance of efficient vaccination as a preventive of small-pox. He believed the League was doing much good and useful work, which the Association could not itself undertake. He thought the Association did wisely in making a grant of £100.

Dr. A. E. Larking, as a general practitioner, was in favour of what the Council had done. He had suffered very much from the slanders and insinuations of the antivaccinators, and therefore welcomed help from a body which was going to try to defend members of the profession from such slanders. They could not do it themselves, because they were told that they were pecuniarily interested in the matter. He had been astonished to hear the remarks which had been made against the League, and he implored the representatives present not to let it go forth to the public that the representatives of the general practitioners of this country disapproved of a grant being given to the Imperial Vaccination League.

Dr. Wolstenholme, in reply, stated that the Medico-Political Committee had declared its opinion that the general practitioners should be regarded as public vaccinators for those cases in which the vaccination fulfilled the requirements of the Local Government Board standard. The Imperial Vaccination League, without consulting the Medico-Political Committee, had decided that it could not recognize or advise Parliament to accept the general practitioner as a public vaccinater. He considered that if the Association gave a grant to the League it would be practically accepting and endorsing all it did. He had no objection to the public being educated in vaccination, but he objected to the money being given in the way proposed.

The amendment was then put and declared to be lost.

The meeting then adjourned.

Adjourned Meeting: Wednesday, July 29th.

The adjourned Representative Meeting was held in the King's Hall on Wednesday, July 29th: Sir Victor Horsley in the chair.

Admission of Reporters.

The Chairman stated that he had received a request for the local lay press to permit their representatives to be present at the meetings, and he asked for directions on the matter. After a short discussion as to the desirability of acceding to this request, during which it was pointed out that such reports were apt to be misleading, and also that the privileged nature of members' observations would be seriously interfered with, it was resolved that the request should not be acceded to.

Minutes.

The minutes of the previous day's meeting were then confirmed.

Privileges of Members of Council.

The Chairman, in accordance with the standing orders, having indicated the course of business to be pursued, which was approved by the meeting, proceeded to give his ruling with regard to the action of members of Council in the meeting in moving resolutions or amendments, or seconding the same. Article 26 stated "The representatives so elected, together with the members of the Council, shall be entitled to take part in all Representative Meetings." Whatever might have been in the minds of the Constitution Committee, he thought the actual wording of the article was quite clear, and it placed members of Council on the same footing as the representatives in all respects, save as their position might be conditioned by the by-laws. The only condition in the by-laws related to voting. Therefore, he ruled that members of Council were entitled to move resolutions or amendments or second the same. He also reported, as it would enter into consideration when the meeting came to discuss the formation of committees, that the Council had co-opted four members. It was entitled to co-opt five, but it had in its discretion only co-opted four, and they were Mr. Edmund Owen, Professor Saundby, Dr. Roberts Thomson, and Dr. Woodcock.

Replying to Dr. Hind, the Chairman stated that members of Council were not obliged to be present like the representatives.

Annual Report of Council.
Supplements to Journal.

Dr. Douglas moved the following resolution, of which he had given notice:

That the present arrangement of the British Medical Journal into three parts is inconvenient, and that it is desirable that each number should be arranged as a complete whole, properly classified and paged continuously from beginning to end, except the advertisement sheets.

He said that at the present time the Journal was divided into three parts, differing in paging. There was, first, what might be called, perhaps, the ordinary contents of the Journal, relating to the science and art of medicine, and containing certain medical notices and so on; that was paged by itself from beginning to end. Then there was, and there had been for some years, the Epitome which related specially to extracts from foreign journals. That was paged by itself. Now there was the Supplement that did not appear every week, and it did not appear yet as if there was crystallized in the minds of those who had to consider the matter any opinion as to what should exactly be put into the Supplement. It would be much more convenient that all these things should be paged continuously. Although he had spoken to a considerable number of members of the Association with regard to the present arrangement, he had never heard one who advocated it.

Mr. Horder seconded.

The Chairman called upon the Editor (Dr. Dawson Williams) who said that it would perhaps be convenient that he should explain how the present arrangement had come about. The history of the thing went back thirteen or fourteen or fifteen years, when representations were made by many members of the Association that the Journal was getting unwieldy, and that it was impossible to bind it and keep it, and that it would be more convenient if it were made into two parts. That suggestion was gone into very carefully by a committee, but the Council did not see its way to make any change. When alterations in the Constitution which were now in force were settled, the Council appointed a small committee which recommended that it would not be convenient to divide the Journal into two parts, one to contain medico-ethical and political matters and matters of ephemeral interest, and the other clinical and scientific matter. As a kind of compromise it was thought that in view of the increase of the work of the Association on the medico-political side, and in view of the numerous applications received from time to time from members interested in particular subjects, it would be convenient to publish supplements from time to time as matter accumulated. Dr. Douglas had said that a supplement did not appear every week. That indicated one of the difficulties. Large amounts of medico-political matter were received at irregular intervals, and its publication in the body of the Journal dislocated the ordinary arrangements. His information differed from that of Dr. Douglas, and was rather to the effect that members would like to see the subdivision of the Journal carried out more systematically. In any case he ventured to think that a matter of this kind ought to be carefully considered, because it was a matter which affected the finances of the Association and the popularity of the Journal.

Dr. Hyslop thought that the system of publishing the proceedings of Sections at the annual meeting in successive numbers ending in November was inconvenient, and that it would be better if it could be arranged to publish the whole proceedings of the Sections in a single number at as early a date as possible.

Dr. Brassey Brierley was of opinion that what had already been done was in the right direction, and he hoped it would be continued and elaborated for the purpose of simplifying the work.

Dr. Walter Smith moved as an amendment:

That the Council be entrusted to refer the arrangement of the Journal to the Journal and Finance Committee for consideration and report.

Dr. Goodall thought the Journal much improved by the Supplement, and speaking as a secretary who had been recently appointed, he hoped the supplements would be kept by themselves.

Dr. DOUGLAS, with the consent of the meeting, withdrew his resolution in favour of the amendment, which was carried.

Subsequent paragraphs were then passed, and on that dealing with the Preliminary Education Committee the CHAIRMAN said that he had received a letter from Mr. Miller (Exeter and Barnstaple) requesting the Council to ask the General Medical Council whether they were ready to give a final answer to the proposal of the British Medical Association on the subject of preliminary education which had been placed before them in November, 1902. He desired to say that the General Medical Council had returned an answer that the report of the Education Committee was the answer of the Council.

The meeting then agreed to the paragraph as to the Standing Organization Committee, and, upon the question of the estimate of receipts and expenditure, Mr. WOLSTENHOLME moved:

That it be an instruction to the Council to furnish fuller details of the estimated expenses for the coming year.

The motion was seconded by Professor SAUNDBY, and carried.

Dr. WALTER SMITH inquired whether there was any proposition as to the allocation of profits, a matter which the representatives ought to take into consideration.

The CHAIRMAN said that the matter was not in order. It was a proper question to be brought before the Divisions, and then it would come before the Representative Meeting. It could not be brought up without notice.

The report was then adopted.

MEDICO-POLITICAL COMMITTEE.

The report of the Medico-Political Committee (see p. 270) was received and entered on the minutes.

Dr. LANGLEY BROWNE then moved the adoption of the report, which, he said, contained matters of great importance. Referring to the paragraph on the Vaccination Acts, he observed that the proper time had come to make an effort, if anything was to be done. Sooner or later there would be a general election, and members of Parliament were more easy to deal with before than after an election. In regard to the amendment of the Medical Acts, he expressed the hope that every representative would go back to his Division and urge upon the members the necessity of taking up the matter most seriously, and to support it in every way.

Dr. ALFRED COX, in seconding, said that the report in itself was a sufficient answer to the question sometimes put by individual members of the profession, "What is the good of joining the Association: what would it do for me?" He thought it would be a great pity to discuss the vaccination question that day, as many representatives had received no instructions upon it; and it would be a farce to attempt to force the opinion of the meeting before the subject had been thoroughly discussed by the Divisions.

The report was then taken paragraph by paragraph. When the paragraph dealing with action taken with regard to the Coroner of South-West London, the CHAIRMAN stated that a deputation had waited upon the Lord Chancellor, who had given a very guarded reply, and had sent the remarks of the deputation to the Coroner, who had forwarded a document making a very definite attack upon the conference of Medical Societies and this Association. Owing to an intimation that the Lord Chancellor was not able to give more than a short time to the deputation, it had not been able to supply details, but the conference of Medical Societies had now drawn up a document containing full details of a number of cases. This would be forwarded to the Lord Chancellor.

The succeeding paragraphs of the report were then passed down to that on the Scottish Poor-law medical officers, upon which Dr. MUIR said that he was specially instructed to thank the Chairman of the Medico-Political Committee and its members for the great assistance they had given them in regard to this matter.

With regard to the paragraph on "Legal rights to refuse to consult," Dr. MACKEITH said that this matter had been discussed in his Division; legal opinion was to the effect that they could not publish the names of those practitioners whom they had resolved not to meet, but the difficulty had been met in another way, by publishing a list of those men whom they might meet.

With regard to the Vaccination Acts, the CHAIRMAN pointed out that the resolutions of the Committee had been arrived at as a matter of urgency, but if any member thought his Division ought to have the resolution under its consideration he hoped that he would move that they referred to the Divisions. Dr. Walter Smith had sent in the following motion:

That the action of the Council with regard to vaccination be approved, and that the six resolutions arrived at by them be forwarded to the Divisions for consideration.

Dr. WALTER SMITH thought that the resolutions ought to be referred to the constituencies, and he presumed if this course was adopted that it would be on the understanding that another Representative Meeting could be held before next year, as the matter ought not to be hung up for another twelve months.

Dr. OLDHAM seconded for several reasons: First, because it was undesirable that the Representative Meeting should give "its opinion upon" the resolutions before the Divisions had had an opportunity of considering them; secondly, because public vaccinators objected to the resolutions, and many of them, within his knowledge, had separated themselves from the Association because the Council had adopted them. It was a pity that these gentlemen should have a cause of quarrel with the Council and the Medico-Political Committee, and he thought the difficulty would be got over if the course now suggested were adopted.

Mr. T. GARRETT HORDER thought the Council had not had a full opportunity of going fully into the question, and that the resolutions had been arrived at hastily in an emergency; and he, for one, most strongly disapproved of the meeting expressing its approval of the resolutions. He moved as an amendment that the words "be approved" be left out.

Dr. GOSSE seconded.

Mr. GEORGE JACKSON could not agree to all the conditions, and suggested that the matter be referred back for further consideration.

This was negatived.

The CHAIRMAN put the amendment, to leave out the first paragraph of the motion, which was carried. He then put it as a substantive motion:

That the six conclusions regarding vaccination arrived at by the Council be forwarded to the several Divisions for consideration.

Professor SAUNDBY seconded.

Mr. JACKSON moved as an amendment:

That the consideration of the Vaccination Acts be referred back to the Medico-Political Committee, and that they take into consideration public vaccinators, especially having regard to fixity of tenure and the right to superannuation.

The CHAIRMAN could not accept this as an amendment; it was a distinct proposition.

The motion was then put and agreed to.

With regard to the paragraph upon the amendment of the Pharmacy Act, Mr. JACKSON said that it was very important to endeavour to introduce the metrical system.

The CHAIRMAN said that the Medico-Political Committee would be very happy to receive the suggestion as an instruction.

The paragraph was then agreed to.

On the paragraph as to the amendment of the Medical Act, the CHAIRMAN said that the draft Bill had been sent by the Council to the Divisions and it would also be circulated to the members of the Representative Meeting in order that they should have it in their hands before they received the summons to the meetings of their Divisions to consider it.

The report was then adopted.

REPORT OF ETHICAL COMMITTEE.

Dr. SAUNDBY, Chairman of the Ethical Committee, moved the reception of the report of that Committee (see p. 272), which was agreed to. He then moved that the report be adopted.

Mr. BALLANCE said that he would support the motion for the adoption of the report because the Division he represented (Norwich) was very greatly interested in the matter. The two rules which the Norwich Division had adopted, and which the Central Council had approved, afforded a good illustration of the possible autonomy of a Division and of the extension of the work of the Divisions, and therefore an illustration of the efficiency that the Division might attain, and so be a benefit to the Association at large.

Dr. COLLIER objected to the recommendation as to the advertisement in local papers of the physician and surgeon for the week at a hospital. Such advertisements were inserted (1) for the convenience of poor people who came from a distance, and perhaps wanted to come to one or other physician or surgeon; (2) the rule was instituted for the convenience of the subscribers to the institution, because subscribers had their own special wishes, and they sometimes wanted to send a patient to this or that medical man; (3) the rule was also instituted for the convenience of medical practitioners who

might wish to know to whom they were going to send their patients. He moved that the matter be brought before the Divisions.

Dr. Odell seconded. He could not see that it was a case of advertisement, inasmuch as there were four or six or more members of the staff. It was no advertisement of any particular man.

Dr. Beverley, speaking from his own experience, strongly supported the retention of the words.

Dr. Wolstenholme said that he sincerely hoped that this question would not be referred back to the Divisions, because he hoped that it was pretty nearly the unanimous opinion of the profession that announcements on the hospital wall were objectionable.

Dr. Chapman said that he had given instructions some time ago that he did not wish his name to appear. He believed that to-morrow it would, by resolution of the Board of Management, be made totally impossible for anybody on the staff of the hospital to have his name inserted in the papers.

After some discussion,

Dr. Collier said that after the very strong expression of opinion which had been given by the members he would withdraw his resolution.

The Ethical Committee's report was then adopted.

Nomination of Members.

The Chairman said the next business was the motions with regard to proposed changes in the by-laws. The first of these was proposed by the Council as follows:

That By-law 2 be amended by the addition of a clause that any Branch may, by special resolution, require that each candidate for election to the Association shall furnish a certificate from two members of the Association to whom he is personally known.

The resolution did not require a seconder, but he would ask the Chairman of Council to speak on the matter.

The Chairman of Council said that the suggestion originated in the Metropolitan Counties Branch. Neither the Secretary nor any member of the Council had any means of knowing who, in some instances, gentlemen proposed as members were. This was not so in country districts, but in populous places if the present suggestion were not carried, either desirable members would be excluded or there would be a risk of occasionally getting undesirable members.

Dr. F. Rees and Dr. Ferguson said that their Divisions were strongly in favour of the proposition.

After some discussion the Chairman put a rider, proposed by Mr. Stevens Pope, that after the words "is personally known" should be added "and who are also members of the Division in which the candidate resides."

Several members asked Mr. Pope to withdraw his rider, but Mr. Pope stated that he had received definite instructions to bring it forward.

The Chairman put the rider to the meeting, and declared it lost. He then put a rider which had been proposed by Professor Morrison, that after the words "personally known" should be added "and that upon such certificate being furnished not more than seven days' notice of the proposed election should be required."

Dr. Langdon-Down seconded.

After some discussion the Chairman put the rider, which was lost.

Dr. Macdonald proposed that the word "may" should be substituted for the word "shall."

Mr. Murphy seconded.

The amendment was lost.

Dr. Hind moved, and Dr. Bailey seconded, that the words "Branch" should be substituted for the word "Association," when it was proposed and seconded that the question be put, and this was agreed to.

The original resolution was then put and agreed to.

The Chairman stated that the next motion was:

That all officers of the Army, Navy, and Indian Medical Service be eligible for election through the Council or a Branch without approving signatures as laid down in By-law 3.

By-law 3 provided:

That every candidate whose place of residence is not included in the area of the Branch shall forward his application to the General Secretary of the Association, together with a statement signed by three members of the Association, that from personal knowledge they considered him a suitable person.

He begged to move this motion, which abrogated that necessity.

Dr. Wolstenholme, Dr. Stevens Pope, and Dr. Walter Smith said that they were instructed to oppose it. The idea was that no distinction should be made.

The Chairman of Council said that the suggestion came from the Naval and Military Committee, as it was felt that it was impossible for officers on active service to obtain three signatures.

Dr. Ward Cousins, as the Secretary of the Southern Branch for some twenty years, said that members of the Army and Navy Medical Services had great difficulty in obtaining "signatures" abroad.

Dr. Browne was instructed to support the resolution.

In the course of further discussion, the resolution was modified by the insertion of the words "on active service" after the words "medical service," and it was agreed to.

Scottish Committee.

The Chairman said that the next business was the notice of motion by the South-Eastern Counties Division (Edinburgh Branch) to amend By-law 39 and following that was the notice of motion by the Dundee Branch which was almost in the same terms. He understood that Dr. Somerville was willing to withdraw the notice of the Edinburgh Division in favour of that proposed by the Dundee Branch. The resolution had been modified with the consent of the mover.

Dr. Buist proposed the resolution modified as follows:

To amend By-law 39 by adding (9) "A Scottish Committee consisting of one secretary from each Scottish Branch and the Scottish members of the General Council. It shall have a secretary resident in Scotland, and shall meet at such place and time as the Committee may itself direct, and shall report to the Council on any matters specially concerning Scotland.

Scottish law was in many respects different from that of England, and to discuss Scottish questions before the Standing Committees would involve the consideration of legal intricacies and difficulties with which Englishmen were unfamiliar. There was no idea of establishing a Scottish Council; it was merely a Standing Committee, which had no executive power except to report to the Council, which could deal with the matter after the legal difficulties had been threshed out in Scotland. It would be an economy of time to the Council and to the Standing Committee, and it would be an economy of money to the Association, because the business would be done in a much more efficient way.

Dr. Somerville, in seconding, said that the movement had not arisen from any separatist tendency, and they would support as before most loyally the British Medical Association. But the Public Health Acts and the Poor-law Acts, the Lunacy Acts, and, what was very important, Scottish legal procedure was entirely different from that of England, and therefore it was necessary that the members of the profession in Scotland should occasionally consult together to determine what action should be taken in connexion with matters concerning their profession in Scotland.

Replying to Dr. Wolstenholme, the Chairman stated that it involved no additional expense to the Association.

Mr. Mayo feared that the proposal was the thin end of the wedge to divide the Association into four or six divisions.

Dr. Muir was of opinion that if the proposition were adopted it would save the time of the Association and obviate the necessity of the Scottish representatives coming up to London when they had no business in which they were specially interested.

Replying to Dr. Walter Smith, the Chairman stated that the motion did not mean that the representatives were not to attend the meetings in London; it had nothing to do with the Representative Meeting at all.

It was then moved and seconded and agreed that the question be now put.

The resolution was then agreed to.

Substitute Members.

The Chairman said that the next business was a motion which had been handed in by Dr. Walter Smith:

That it be an instruction to the Council to consider the best means whereby substitutes may be appointed for representatives who are absent through unavoidable causes from the Representative Meetings, or any sessions thereof, in cases in which the representative is unable to notify his constituency in time for a substitute to be elected under Article XXX.

This motion was seconded and agreed to.

Contract Practice.

Dr. Cox then moved the following motion, of which notice had been given by the Gateshead Division (North of England Branch):

(A) That it be an instruction to the Medico-Political Committee to investigate the economic conditions of contract practice as carried on

in various ways in this country, to report thereon to the next Annual Representative Meeting, and to present an interim report to the Council on any points which appear to call for action during the year.

(B) That it be an instruction to the Ethical Committee to investigate the ethical position of medical men engaged in various kinds of contract practice with reference to (*a*) the amount of canvassing necessarily or commonly associated with the several varieties of contract practice; (*b*) the ethical position of medical men who accept or continue to hold appointments which the general body of medical men in the locality have agreed not to hold on the ground that the conditions of tenure are detrimental to the honour and interest of the profession.

(C) That the Medico-Political Committee consider the advisability of placing the services of the Organizing Secretary at the disposal of any Division which may desire him to act on its behalf in negotiations with outside bodies, or in the adjustment of differences among medical men in connexion with contract practice.

The Association, he said, now had an organization by means of which something could be done to place contract practice and similar subjects upon a proper basis, so that a policy could be formed for the Association, and ultimately for the whole profession. Every one would admit that this question was one of the most pressing matters which had been before the profession for a long time. He had been a member of the Committee appointed by the Council of the Association a few years ago to meet officials of the chief Friendly Societies mainly on the question of a Conciliation Board. The thing that struck him most then was that the officials of the Friendly Societies knew exactly what they wanted and the medical profession did not. The members of the Committee could speak for themselves, but they could not speak for the Association. Now, as a result of this Representative Meeting, they would be in a position to speak in the name of a united profession. Until they could meet the Friendly Societies, who were united, as a united profession with a definite policy, it was no use tackling the question at all. With regard to Resolution No. 3, some of them knew the admirable work which the Organizing Secretary, Mr. Whitaker, had done on the occasions when he had been called down, and some of them knew the admirable work which he was capable of doing. He moved resolutions (A), (B), and (C).

In reply to a suggestion that the resolutions should be referred to the Medico-Political and Ethical Committees jointly, the Chairman said he thought that the procedure that was adopted in the case of the vaccination resolutions might be followed. In that case the Public Health Committee and the Medico-Political Committee met in conference.

Resolution (A) was agreed to.

Dr. Wolstenholme proposed the omission of the words "necessarily or commonly" in resolution (B). His Division thought that the resolution seemed to imply that a certain amount of canvassing might be permitted, and to that they were very much opposed.

Dr. Cox accepted the alteration, as also a suggestion of the Chairman that resolution (C) should begin as follows: "That the Medico-Political Committee should as far as possible place the services."

In answer to a question, the Chairman said that any expenses incurred through the employment of the Organizing Secretary would be borne by the Association.

Resolution (C) was then agreed to.

Direct Representatives on the General Medical Council.

Dr. Cox then moved the following:

(D) That it be an instruction to the Medico-Political Committee to consider and report upon the advisability of running at the next election of direct representatives on the General Medical Council a candidate or candidates under the auspices of the British Medical Association.

The motion having been seconded, Dr. Wolstenholme said that his Division instructed him to oppose the motion as it was feared that it would lead to cliquеism and also that it would be very difficult for the Representative Meeting to select or vote for the candidates, that it would practically be holding an amateur election beforehand.

A motion for the previous question was proposed and lost, whereupon a motion that the question be now put was proposed and carried.

Resolution (D) was then carried.

The Chairman said that he would put to the meeting as a substantive resolution the following notice of motion by Dr. W. Smith which stood on the paper as an amendment:

And that a petition be presented to the Privy Council praying that in any future legislation the British Medical Association be directly represented on the General Medical Council in proportion to its magnitude and representative character.

The motion was carried, and referred to the Divisions.

Death Certification and Registration.

The following notice of motion by the Cleveland Division was moved by Dr. Stevens Pope:

That, it being considered that the present system of death certification and registration renders unreliable the statistics of deaths from disease, tends to encourage and assist quack practitioners in their impositions upon the public, and facilitates the concealment of crime, the Council be instructed to take forthwith such steps as may be deemed best calculated to bring about an early amendment of the law on the subject.

The Chairman stated that the Council was taking steps in the matter, and the motion was agreed to.

Irish Poor-law Medical Service.

The Chairman said that now they came to a really serious matter of business, which ought to have appeared upon the programme far earlier. He referred to the notice of motion by the Leinster Branch.

Dr. Kidd (Dublin) said that the dispensary officers in Ireland had had a great many grievances to contend with. For a number of years there had been deputations sent to the Chief Secretary, and deputations to the Local Government Board, but he regretted to say they had all failed. In Ireland to-day the profession was united in seeking to improve the position of the dispensary officer. If the resolutions which had been passed by the Dublin Branch, and which were practically word for word what was called in Ireland the Mayo programme, which had been adopted by the Irish Medical Association, were accepted, they would improve the prestige of the British Medical Association in Ireland, which would result in a large increase of members to this Association.

Dr. Muir (Glasgow East) desired to be allowed to second the resolution to show his sympathy with his Irish brethren.

Dr. Mitchell heartily endorsed the remarks of Dr. Kidd.

Dr. O'Brien said that success could be achieved if the British Medical Association warmly backed up the Irish medical practitioners.

After some further discussion it was moved and carried that the question be now put.

The Chairman then put the propositions:

(A) That in the opinion of this meeting the conditions of the Irish Poor-law Medical Service require amendment in the following respects:

1. That a minimum salary be fixed of £200 per annum for dispensary appointments, and £120 per annum for workhouse appointments, with a reasonable reduction where both appointments are held jointly.
2. Superannuation.

This was agreed to.

The third clause, providing for an annual holiday of at least a month was then discussed, and, after some explanations had been given by the Irish representatives, was put and carried.

Dr. Kidd proposed, and it was agreed:

That it be an instruction to the Council of the Association to take such steps as may be deemed best calculated to bring about the early adoption of these reforms.

Election of Medico-Political and Ethical Committees.

The ballot was then held for members to be elected by the Representative Meeting to the Medico-Political Committee and Ethical Committee with the following result:

Medico-Political Committee: Dr. Kidd (Dublin), Mr. Geo. Jackson (Plymouth), Dr. Garrett Horder (Cardiff), Dr. Macdonald (West Somerset).

Ethical Committee: Mr. H. A. Ballance (Norwich and West Norfolk), Dr. Broadbent (Manchester Northern).

Arrangements for Future Representative Meetings.

Dr. Sellers proposed, and Dr. Oldham seconded,

That at future annual meetings the Council be requested to endeavour to arrange that the first Representative Meeting be held at an earlier hour.

Mr. Mitchell moved as an amendment, and Dr. Wolstenholme seconded, that the words "more convenient" be substituted for the words "an earlier."

The amendment was put and declared lost; the original motion was then put and carried.

Vote of Thanks.

On the motion of Dr. Collier, President-elect, seconded by Dr. Murphy, a hearty vote of thanks was accorded to the Chairman for his services in the chair.

The Chairman, in returning thanks, said it would have been perfectly impossible in a new venture like this to conduct such a meeting without the loyal support of the members, which had been accorded to him in a way which he supposed had never been seen before in this Association.

MEDICAL NOTES IN PARLIAMENT.

The Housing of the Working Classes (No. 2) Bill. On Thursday in last week Mr. Long introduced this Bill, which was promised during the debate on the King's Speech at the beginning of the session. The Bill proposes the extension of the period of repayment of loans from sixty to eighty years, a discretion being reserved to the Local Government Board in certain cases. The longer period would apply to the purchase of land, and the sixty years to loans for buildings. The duties now divided between the Home Office and the Local Government Board will be transferred to the latter department. The central authority will have power to intervene when the local authority has neglected the recommendations of the medical officer of health. The form of procedure for approving and modifying schemes is improved, and the powers with regard to closing orders are strengthened. A number of other matters are dealt with in the Bill, such as giving the local authority the powers of a landlord in cases of condemned buildings, and power to recover costs in certain cases from the owner after the demolition of insanitary buildings. In these and other minor matters the Bill will meet difficulties which have been found to exist. It was introduced as a modest measure, and as it only touches small details on the fringe of a great question, it may probably be regarded as uncontroversial, and may possibly become law this year.

Plague Inoculation and Tetanus. Sir Charles Cayzer asked the Secretary of State for India last week whether he had received the report of the Commission appointed by the Government of India to inquire into the cause of the Mollkowal disaster in the Punjab, where nineteen people died of tetanus after plague inoculation; and, if so, would he state what action he intended to take on the recommendation of the Commission with a view to re-establishing confidence in antiplague inoculation; and would he lay the papers before the House. Lord George Hamilton answered that the report had reached him, and was under consideration. It was confined to ascertaining the circumstances which led to the issue of impure plague prophylactic from the Bombay laboratory in the autumn of 1902, and the persons responsible for the same. The question of process to be used in future for the preparation of the fluid or of the organization of the laboratory was not referred to by the Commission and was not dealt with in its report. Measures had previously been taken by the Government to re-establish confidence by reverting to the former method of preparing the prophylactic and by strengthening the staff of the laboratory. At the present stage he was unable to state what orders would be issued upon the report, or whether the papers could be laid before the House.

Civil Surgeons attached to the R.A.M.C. Mr. Soames asked the Secretary of State for War last week, whether, in terminating the engagements of civil surgeons attached to the Royal Army Medical Corps, inasmuch as by the conditions of their appointment such surgeons were required to devote their whole time to army duties, the services of those who held civil appointments in addition would be dispensed with before those of gentlemen holding no such appointments. Mr. Secretary Brodrick answered that the engagements of the civil surgeons who were devoting their whole time to military duty, and which were liable to termination on the services of an army medical officer becoming available, were quite distinct from those of civil surgeons who did not devote their whole time to military duty, and which were liable to termination at any time, such appointments being made locally. The latter were available always to meet local difficulties, and were paid considerably less than the former. The proposal of the honourable member would therefore throw additional expenditure on the State without any corresponding advantages.

The Prohibition of Arm-to-Arm Vaccination.—On Monday Mr. Weir asked the Lord Advocate whether, seeing that the use of humanized lymph was prohibited in England and most other European countries, he would consider the expediency of taking such steps as might be necessary to prevent parochial vaccinators in Scotland from adopting a system of arm-to-arm vaccination which had been condemned by a Royal Commission, and also by leading medical authorities in Europe. The Solicitor-General for Scotland said in reply that the hon. member had been misinformed. Humanized lymph had not been prohibited, and it was not intended to take the steps suggested in the question.

The Prevalence of Glanders.—Mr. Kearley asked the member for North Hunts, as representing the President of the Board of Agriculture, on Monday, whether he was aware that glanders among horses and men had been more than usually prevalent during the past year; and, if so, could he say whether the returns showed a considerable increase generally over those of twenty years ago; and whether the Department intended, under the circumstances, to carry out the recommendations made four years since by a departmental committee. Mr. Ailwyn Fellowes replied that there had recently been some increase in the number of cases of glanders reported, 795 outbreaks having occurred in the first twenty-nine weeks of the present year, as compared with 641 in the corresponding period of 1902. The disease was one, however, which had always been subject to considerable fluctuations, and it was not more prevalent last year than it had been on several occasions since it was first scheduled in 1877. The number of deaths from glanders amongst men had varied from six in 1889 and 1897 to one in 1896. The inquiry to which the hon. member referred was necessarily followed by further scientific investigations as to the communicability of the disease and the effects of the application of mallein. The report of those investigations had been received, and they were now in communication with the local authorities principally concerned with a view to ascertain to what extent it might be practicable to give effect to the recommendations of the Departmental Committee.

Dispensary Doctors and the Irish Medical Association.—Mr. Delaney asked the Chief Secretary to the Lord Lieutenant of Ireland on Tuesday whether his attention had been drawn to a resolution passed at a special meeting of the Irish Medical Association, held at Tullamore on July 8th, protesting against the action of Dr. M'Carthy in accepting the position of medical officer of the Killoughy Dispensary District, King's County, in defiance of the expressed and conveyed opinion of the members of the Irish Medical Association, and requesting him to reconsider his position; and whether, seeing that in consequence of this resolution Dr. M'Carthy had tendered his resignation, although his appointment had been sanctioned by the Local Government Board, he would state what steps he proposed taking in the matter. Mr. Wyndham replied that the resignation had been received. The Local Government Board had suggested to the guardians to call on Dr. McCarthy to take up his duties at once. In case he should fail to do so the Board would hold a sworn inquiry into the case.

The Liverpool University Bill passed through its Committee stage as an unopposed Bill on Tuesday, and was reported to the House. The consideration on report may be taken this week, and the third reading may be expected next week.

The Medical Examination of Military Cadets.—Mr. MacNeill asked the Secretary of State for War whether, having regard to the fact that at present the successful candidates for admission to both Woolwich and Sandhurst were required to present themselves in London for medical examination as to their physical fitness, with the view to the lessening of the expenses of successful candidates resident in Ireland and Scotland, arrangements could be made for allowing them to present themselves for the medical examination in Dublin or Edinburgh. Mr. Secretary Brodrick answered that it was considered to be in the best interests of the candidates that they should be examined by the same Medical Board rather than by two or three Boards, especially in view of the fact that in cases of appeal the Board could only be held in London.

The Close of the Session.—Although Mr. Balfour, in moving the suspension of the 12 o'clock rule on Tuesday, did not give a date for the close of the session, it is generally expected to take place about August 14th. The long list of Bills which the Prime Minister read out as Bills to be persevered with will have to be seriously diminished to bring the session to an end at the expected date. The Employment of Children Bill is pretty sure to pass in the opinion of the Leader of the House, but the prospects of the Port of London Bill are not so good. The Prevention of Corruption Bill, which seems popular on both sides of the House, has a doubtful chance, while the Butter Adulteration Bill has even less prospect of becoming law.

Ireland.

THE KING AND THE COLLEGES OF PHYSICIANS AND SURGEONS.

AMONG the public bodies which presented addresses to His Majesty the King during his visit to Ireland, a prominent place was taken by the Royal Colleges of Physicians and Surgeons and the Royal Academy of Medicine in Ireland.

The following address was presented on behalf of the Royal College of Physicians by the President, Dr. Arthur V. Macan, and the Registrar, Dr. James Craig:

MAY IT PLEASE YOUR MAJESTY,—We, the President and Fellows of the Royal College of Physicians of Ireland, take the auspicious opportunity of your Majesty's visit to your Kingdom of Ireland and City of Dublin to give expression to our loyal devotion to your Throne and person, and to offer your Majesty a most enthusiastic welcome on this the first occasion on which your Majesty, since your accession to the Throne, has been graciously pleased to honour our city and country with your august presence. We recall to mind, with feelings of deepest reverence, the unselfish love which prompted our late beloved Queen to visit her Irish subjects at a time when she was bowed with the weight of years and with many sorrows; and we recognize in your Majesty's present visit a similar desire to gratify your people in Ireland. As physicians we regard with grateful appreciation the intelligent favour which your Majesty has ever extended to our profession, and the great interest you have taken in its efforts for the advancement of medical science as well as for the preservation and improvement of the health of the nation. We venture in particular to express our gratitude for the encouragement which your Majesty has afforded to the medical profession in the earnest efforts which it is now making with the object of checking the fatal ravages of cancer and tuberculosis. We also beg to offer a loving welcome to Her Gracious Majesty Queen Alexandra, who, on the occasions of her previous visits to this country as Princess of Wales, won a secure position in the affections of the Irish people. Good and womanly as she is noble, Her Majesty's influence has ever been cast on the side of what has tended to the advancement of women, and her sympathies with ailing humanity have found expression in the support which she has given to numerous movements for improving the status and extending the usefulness of the profession of nursing. We humbly pray that the Almighty may vouchsafe your Majesties a long and prosperous reign, and during that reign we venture to hope that on many occasions your Irish subjects may be afforded the felicity of again according your Majesties a loyal and hearty welcome.

The following was presented on behalf of the Royal College of Surgeons in Ireland by the President, Dr. L. Hepenstal Ormsby, and the Vice-President, Mr. Arthur Chance:

MAY IT PLEASE YOUR GRACIOUS MAJESTIES.—We, the President, Vice-President, and Council of the Royal College of Surgeons in Ireland, beg most respectfully to offer you our loyal and cordial congratulations on the auspicious occasion of your Majesties' first visit to Ireland since your accession to the Throne. Not the least devoted of your Majesties' subjects are the members of this ancient College, founded in 1784 by your august ancestor, King George III. For nearly a century and a-quarter the College has furnished highly-trained surgeons for the navy, army and the civil service. Your subjects are profoundly sensible of, and grateful for, the continuous and active interest which your Majesties take in projects having for their object the betterment of the people, the alleviation of human suffering in disease, and the general welfare of the nation. It is our earnest hope that the cordial Irish welcome which your Majesties are receiving may induce you to repeat a visit which cannot fail to promote the prosperity and happiness of this portion of your Majesties' great Empire.

The following was presented on behalf of the Royal Academy of Medicine in Ireland by Dr. Lombe Atthill, President, and Mr. John B. Story:

MAY IT PLEASE YOUR MAJESTY,—We, the President and Council of the Royal Academy of Medicine in Ireland, desire to offer a loyal and hearty Irish welcome to you and to your amiable and august Consort, Her Most Gracious Majesty Queen Alexandra, on the auspicious occasion of this your first visit to your Kingdom of Ireland since your accession to the Throne. Representing as we do the various medical societies of your Majesty's Irish capital, the ancient City of Dublin, we rejoice to think that in your Majesty scientific medicine has ever found, not only a powerful but also a staunch and sympathetic friend. We have noted with admiration and delight the constant interest shown by your Majesty in everything that concerns the health and welfare of your people in all parts of your vast dominions, the encouragement you have on every occasion given to medical research. We remember with pride and satisfaction that you have been graciously pleased to allow yourself to be enrolled in the ranks of the noble profession to which we have the honour and privilege to belong. Nor do we forget the consistent favour and sympathy which Our Gracious Queen Alexandra has extended to the nurses of the sick throughout the United Kingdom, that band of devoted women to whom the community at large and the medical profession owe so much. We earnestly hope that your Majesty may derive much pleasure from your sojourn in Ireland, and that your visit may knit more closely than ever to your throne and person the affection and the good will of your Majesty's warm-hearted and devoted Irish subjects.

Addresses were also presented by the Apothecaries' Hall of Ireland, the Royal City of Dublin Hospital, the Royal Hospital for Incurables, the Governors of Mercer's Hospital, the Adelaide Hospital, the Incorporated Dental Hospital, the Pharmaceutical Society, the St. John Ambulance Association, and the Matrons and Nurses of Dublin.

THE INQUIRY AT GRANARD.

Following the latest developments of the conflict between the guardians of the Granard Union and their medical officer, Dr. Kenny, Dr. Joseph Smyth, Medical Inspector of the Local Government Board, has been holding a sworn inquiry at the workhouse. An outline of the position was given in the BRITISH MEDICAL JOURNAL of July 25th.

Dr. James McGuire swore that he visited Granard Workhouse on account of private letters he had received. These letters he had destroyed. On July 27th, he had received a telegram from Dr. Dolan requesting him to come to Granard. On July 29th he came to Granard Workhouse and told the master that he came to do duty for Dr. Kenny, and asked to see the patients. He told the nurses to continue Dr. Kenny's treatment. One or two patients he considered necessary for operative measures. He did not tamper with the books in any way. He said that he would come on the following day to become resident in Granard. He had no animosity to Dr. Kenny; he came because he had heard that Dr. Kenny was suspended.

The Inspector: Did you think that Dr. Dolan had suspended Dr. Kenny?—I did not think over the matter at all. What was the import of these letters?—I don't think I can remember. Why did you not destroy the telegram?—I don't know. Were those letters the only authority you had to take up duty in Granard?—Yes. Then you came without the knowledge or authority of the medical officer of the institution?—Yes. Or of the Board of Guardians?—No answer.

Mr. Montgomery: Were you aware that you were appointed medical officer of the institution?—No. He had sent in a report to the guardians which was written by Father Connolly. The signature was his. He might have got wires from a Granard clergyman. Asked why he went to Coole and left the sick poor derelict, he said he heard things that he did not want to be mixed up with. He could not remember why he did not answer the master's telegram. He could not say why he had not informed the Board that he had changed his mind.

Dr. Dolan said his brother was a priest in another district, and one of the nuns was his sister. He sent the wire to Dr. Maguire. He thought he might have had a conversation with Father Connolly previously. He did not try to displace a brother in the profession.

Dr. Kenny related the case of a man named Masterson whose life he had prolonged by tapping. When he was suspended, Masterson died. No operation was done. The master did not think he had the power to call him in, as he was suspended.

A guardian named Bartly said his intention to suspend Dr. Kenny was altogether on account of the priests and nuns. He would propose his suspension again and again, and he believed the Board would support him. He accused Dr. Kenny of perjury.

Mr. Masterson, a guardian, said he did not remember whether he used expressions to terrorize the guardians likely to vote against him. He did not remember such expressions as "nun hunters" or "priest hunters."

LOCUM TENENTES IN VACANT DISPENSARIES AND WORKHOUSES.

The following resolution was passed at a recent meeting of the County Wexford Branch of the Irish Medical Association:

That we endorse the opinion of the Council of the Irish Medical Association that it is not advisable, except in urgent cases, for medical officers to take up the duties of *locum tenens* for vacant dispensaries or workhouses in order that opportunities may be afforded to newly-qualified medical men to act as substitutes in these districts, as complaints have been made that up to now they have not been allowed this opportunity unless in rare instances.

WE are requested to state that the library of the Royal Medical and Chirurgical Society will be closed during the whole of the month of August for necessary cleaning.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1903.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, AUGUST 1st, 1903.

THE PRESIDENT'S ADDRESS.

The address which Dr. Griffiths, of Swansea, delivered on taking up the office of President of the British Medical Association, dealt with several matters of immediate interest touching the relations of the medical profession to the public, and his views and suggestions, coming as they do from a general practitioner who holds, and has long held, a leading place in one of the most populous districts in this island, are well worthy of careful study. The main thesis of his address was that bacteriology, applied under the inspiration of Pasteur and Lister to practical affairs, had transformed surgery, had profoundly influenced medicine and therapeutics, and had furnished to the science of hygiene a rational basis.

In establishing the truth of his thesis in regard to surgery, Dr. Griffiths had an easy task, and his picture of the old-fashioned surgeon operating in discarded frock-coat deeply stained with blood and discharges, impresses on the imagination more strongly than columns of statistics the great change which has come over not only the methods of the surgeon but also his point of view. Modern surgical methods carried out in modern operating theatres have conferred incalculable boons on mankind by saving life and limb, by diminishing suffering, and by sending the worker back to his work cured *cito, tuto, et jucunde*.

Dr. Griffiths turned aside for a moment to ask whether all was being done that might and ought to be done for that large class of most deserving patients who, while not suitable inmates of charitable hospitals, yet cannot afford to pay the high charges demanded by private nursing homes. Sir Henry Burdett has recently been discussing the same question, and has suggested the provision of paying wards in every hospital. Dr. Griffiths would prefer to see the establishment on a self-supporting basis of suitable separate paying or private hospitals, and he was able to describe the success of such an experiment from his own experience at Swansea, where a small paying hospital is combined with a nursing institution. The fact that this question has been brought forward almost coincidently by the President of the British Medical Association and Sir Henry Burdett is a proof that it is ripe for discussion, and we have no doubt that Dr. Griffiths's views as to its solution, founded as they are on long knowledge of the need and practical experience of an effort to meet it, will have great weight.

In defending the application of his thesis to medicine and therapeutics Dr. Griffiths had a more difficult task than in the case of surgery. He was able, however, to make plain the large measure in which our views as to the nature of disease have been influenced by the genius of the two great masters, and the unremitting labours of countless followers in every country of the civilized world. Further, in an interesting passage he pointed out that the most trustworthy remedies in the pharmacopœia, though their value had been discovered empirically, possess antiseptic properties to which their efficacy should, in part at least, not improbably be attributed.

That bacteriology has had an enormous influence on general hygiene and on public health administration down to its most minute details was a proposition which it would have been superfluous to labour, and the President passed on quickly to ask whether the public was in fact receiving the full benefit of the new knowledge, or whether, owing to various causes, practical hygiene was not a long way behind theory, just as in therapeutics theory lagged behind practice. His answer was a strong appeal for a reconsideration of the present machinery of public health administration, especially in rural districts. While we know that many rural and small urban districts are blessed with medical officers of health who strive to discharge the duties of that office efficiently, we know also that too often they have to struggle against the apathy of the general public and the unceasing opposition of interested persons. The absurdly small salaries usually paid indicate only too clearly that the local authorities desire nothing so little as the active enforcement of the Public Health Acts, and the insecure tenure by which the appointments are held operates still further to discourage activity and initiative. In pointing to larger districts and fixity of tenure as two chief remedies for existing defects, Dr. Griffiths will have with him, we believe, the opinion of all those best qualified to judge. He further advocated the establishment of a graded public health service, so that a young man might enter on this career as the medical officer of health of a district with a small population, and be promoted as he gained experience to a more populous district.

In discussing another change, much favoured at the present time by some who perceive the defects in our system and would seek a remedy in greater centralization, Dr. Griffiths showed that he had a clear grasp of the scheme of local government which has its roots deep down in the history of the nation, and is, in spite of some of its obvious drawbacks, best adapted to the genius of the people. There is a cry for the creation of a Ministry of Public Health. We are told that a Minister of Public Health would be able to co-ordinate public health work, and that the status of the public health service would thus be improved. Dr. Griffiths pointed out that the application of the Public Health Acts is a part of local administration so inextricably mixed up with other duties of local authorities that any attempt to place it under a separate central authority must lead to confusion and friction. The importance of public health questions to the welfare of the nation he contended demands that the President of the Local Government Board should be advanced to the dignity of one of the principal Secretaries of State coequal with the Home Secretary, and, if this were done, certain duties now entrusted to the Home Office ought to be transferred to the Secretary for Local Government.

THE ADDRESS IN MEDICINE.

Dr. Roberts's Address in Medicine, delivered before the Association on Wednesday, is one of peculiar interest. He is among our most experienced and distinguished clinicians, a trained and conscientious bedside investigator, and withal a physician well-read in the ever-

increasing literature of medicine. In his address he records, with the clearness of diction for which he is noted, the critical impressions which modern scientific investigations and their applications have left upon the mind of a man who is in the best sense practical. It may be taken, therefore, as a clinical commentary upon those pathological researches which have of late been so prominently before the profession, and a shrewd corollary to those numerous lectures and addresses which have recently been devoted to the exposition of the etiology and pathology of disease.

Taking as his text the field of infection and infectious diseases, in which these modern weapons have admittedly won their most striking victories, Dr. Roberts analyses their successes from the point of view of the various departments of practical medicine. It must be admitted that his note, though sounded temperately and with caution, is somewhat that of a Recessional. He grants freely that enormous strides have been made towards the recognition of the causes of diseases, of the channels by which they are spread, and of the pathological changes which they induce in the body; and that, although enormous chasms still remain in our knowledge, the science of prophylaxis is on the way to obtain a rational basis. But at the same time he is constrained to point out—and in this few will be inclined to differ from him—that the advances made in diagnosis and treatment are in no sense commensurate. Some remarkable results have indeed been achieved, particularly in connexion with the clinical investigation of the blood, but it would be rash to assert that the newly-qualified medical man of to-day is a better trained diagnostician and therapeutist than his predecessor of a generation ago.

That the application of modern methods must eventually ensure improvements in these departments must be the belief, as it is the hope, of all who follow the drift of professional thought. But to many it will appear that this development is retarded by two circumstances, one inseparable from our present imperfect system of education, and both, it is to be trusted, to be removed in a few years, when our knowledge, both actual and of our limitations, shall have settled down from its present state of ferment.

The first evil is that of over-specialization. By this we do not refer merely to the limitation of study to certain branches of the practice the abuse of which Dr. Roberts unsparingly condemns, but also to the present tendency of hospital teachers to divorce pathology from medicine and in consequence to neglect to equip themselves completely in one or other of what should be inseparable studies. The whole field is no doubt vast, and he who is entering upon it must command our sympathy should he shrink from cultivating the whole and restrict himself to tilling one corner. But unfortunately the attractions of science lure many of the brightest spirits among our young men to neglect, or at least curtail, clinical work in favour of the brilliant possibilities of laboratory research. In this respect it is to be feared that our hospitals and schools cannot be held entirely blameless, for it by no means follows that the man who has won the Fellowship of the Royal Society is thereby fitted for a position on a staff the primary duties of which are the treatment of patients and the training of students. It cannot, we think, be denied that there has of late been an inclination to award such professional prizes to those who have achieved distinction rather in the laboratory or the examination hall than at the bedside. One cannot but feel how much such men, and those who work under them, have lost by the abolition of that system of apprenticeship to which Dr. Roberts, in common with many other leaders of the profession, acknowledges his great indebtedness.

The second, and for the present less remediable, disadvantage arises from the very nature of the sciences newly prosecuted as ancillary to medicine. Bacteriology and haematology, which are destined to have an important share in the future of pathology, are as yet immature. Bacteriology should be essentially a branch of botany; at present, as taught in England at any rate, it consists of no more than a catalogue of micro-organisms with a list of what may be called test reactions for each. Its future opens up a vista of illimitable possibilities; for the present we must not expect too much practical assistance from the application of an almost formless mass of undigested facts; rather should we wonder and be thankful that in its infancy it has been able to lend such important aid to special provinces of medical study.

This difficulty time will, it may be hoped, remove; the other must be fought by a rigid insistence on the paramount importance of clinical study. The thoroughly equipped practitioner should be equally well trained in bedside observation and in the scientific aids to its interpretation; but whereas he can be assisted in the latter by expert advice from the laboratory, he must learn the former in the hard school of experience. "Many more mistakes," said our great master, Jenner, "are made by not looking than by not knowing." Of the discovery of the tubercle bacillus and of the agglutination test for typhoid fever it may be said that their practical value is as great as their scientific interest, but they will do as much harm as good if they are allowed to pauperize our intellects by leading to neglect of the study of physical signs. The benefit of the human race, not the laying up of a personal crown of glory, is the first and last object of medicine: *verumque est ad ipsam curandi rationem nihil plus conferre quam experientiam.*

THE ADDRESS IN SURGERY.

Year by year, if not month by month, we hear and read summaries of the evolution of abdominal surgery, yet Mr. Mayo Robson showed us that it is a theme practically inexhaustible. We are in truth somewhat weary of listening to recitals of the establishment of ovariotomy, and perhaps that subject takes up too large a space in the address, yet it could not be omitted, as it includes so many points associated with evolution, the basis of the discourse. Amongst them is Lawson Tait's practice of speedy purging after ovariotomy, for not only was it justified by results, but it led to further triumphs in far more serious abdominal operations. Again, the perfecting of ovariotomy included object lessons in the pathology and treatment of peritoneal infection. No longer is a bad result explained by "idiopathic peritonitis," essential "hyperpyrexia," and so forth. The care which the earlier ovariotomists bestowed on after-treatment taught surgeons unknown truths about the relation of pulse to temperature, and about the power of the peritoneum to absorb with impunity a certain amount of septic material, and with advantage a great quantity of fluid used at the operation for the flushing of its cavity.

Abdominal surgery advanced beyond ovariotomy—slowly, very slowly, at first; speedily after a few years. Yet there were surgical superstitions, imaginary lions in

the path of those who aimed higher, especially in an anatomical sense, as there was a theory that operations in the upper part of the abdominal cavity involved great risk of shock as well as much danger from peritonitis. Experience showed that this theory was based on error. The same dangers had been conjured up years before by the opponents of ovariotomy. In a case of perforating ulcer, one of the diseases of the upper abdomen first to be taken in hand by the new school, there is certainly shock and peritonitis, but these are due to the perforation. Mr. Mayo Robson showed that the danger is increased with every hour of delay between the accident and the operation. When surgical interference is prompt and timely there is no surgical shock, the patient often feeling better the moment he has recovered from the anaesthetic. After cholecystotomy twenty years ago we sometimes heard about "shock." But the operators believed in small incisions and trusted to touch; important structures were unwittingly damaged, and the ill-results were attributed to a wrong cause. Mr. Mayo Robson favours a very long incision to expose the common duct, and freely draws forward the liver. This manœuvre facilitates operation and is not followed by shock. Yet surely, it has been said, cases where there is jaundice not rarely show the most distinct signs of true shock after operation. Quite true, says the new school, but it is pancreatitis, not jaundice alone, that renders the patient subject to shock, and not only to shock but also to a tendency to haemorrhage, shown by obstinate and perilous capillary oozing. Yet even this fully-recognized danger is faced boldly, and not only do surgeons now operate on cases of gall stone and jaundice manifestly complicated by pancreatitis, but they also treat that disease itself surgically.

Mr. Mayo Robson could proudly declare in his address how he had proved that "cancer of the head of the pancreas" often means chronic pancreatitis, a condition which can be cured by draining the pancreatic duct indirectly through the bile passages. Even acute suppurative pancreatitis has been successfully treated by surgical means. On the other hand, it is significant that so bold an operator insisted that drainage is the proper treatment for pancreatic cysts. The expert knows where to stop; experience has shown that an attempt to remove a cyst of the pancreas entire involves risk of damage to the aorta and vena cava, to their primary branches, and to important nerve plexuses.

The observations on diseases of the type of tuberculous peritonitis, more properly termed by him tuberculous infection of the peritoneum, may call for some criticism, as it is questionable whether drainage of the peritoneum is a procedure which ought to be advocated. We hear, or ought to hear, of exhaustive discharges and faecal fistula following the opening of a tuberculous peritoneal cavity, and authorities have not absolutely defined what cases are and what are not suited for operation.

On the surgery of the intestines, Mr. Mayo Robson may well speak with enthusiasm. Inguinal colotomy has reached a high degree of perfection, it substitutes a year or more of comfort for a few months of agony; he thinks, however, that in future colotomy will be largely replaced by the removal of the disease, for it has been clearly proved that there is no part of the lower bowel which cannot be safely excised if taken sufficiently early. The surgery of the stomach has led to certain invaluable discoveries. Not only can a large part of the organ be removed without fatal results, but Mr. Robson pointed out that in many cases diagnosed as "cancer" the disease is inflammatory, and curable by the operation of gastro-enterostomy.

There is much dissension between those who operate through the vagina and those who open the abdominal cavity for the removal of the cancerous uterus. Mr. Robson declared that he favoured the latter route. The plan of elevating the pelvis and the improvement in many matters of detail allow of more certain extirpation of the whole area of disease. He told how he had successfully operated by abdominal section on a recent occasion on a patient 72 years of age, and there was no more shock than in cases of the vaginal operation. The latter method, no doubt, has the great disadvantage of being largely done in the dark, quite contrary to the principles of modern surgery in these days of long incisions, yet its advocates can claim brilliant results as regards immunity from recurrence; quite contrary to the verdict of *a priori* judgements. Turning to hysterectomy from myoma all of us, we trust, will rejoice in Mr. Robson's impartiality. We must not war against all fibroids nor neglect the patient when they give trouble; "many cases," he observes, "need no treatment, while others, when growing rapidly or when associated with free bleeding or pressure symptoms, demand operation." This is the decision of a true surgeon, neither timid nor over-eager in the use of the knife.

Mr. Robson's views on the surgery of the kidney are of very special interest, owing to the remarkable experiences of Dr. Edebohls, who declared recently on his own operative experience that Bright's disease had been brought within the range of operative surgery. After deliberately tearing off the capsule of the kidneys in cases of chronic nephritis, he found that the patient's health was, as a rule, greatly improved. We admitted when recording the American surgeon's experiences,[1] that there seemed but little doubt that the state of the kidneys themselves was improved by decapsulation, but the opinion was expressed that larger experience was required before medical practitioners could be convinced that the general disorder was likewise cured by this remarkable operation, for chronic Bright's disease is to a great extent a general disorder which happens to be most manifest in the kidneys. Mr. Robson's opinion about this new operation was, as might have been expected, somewhat reserved; on the whole, however, he favoured the prospects of this new way of treating kidney disease. He even believed it to be suited to acute cases, for he thought that it might possibly prove effectual in saving life in cases where suppression of urine came on after some trifling operation, such as catheterism, or after a chill or in scarlatina, just as surgery had effectually stepped in and saved life where suppression was due to obstruction of both ureters. Should Edebohls's principles as well as his practice be established—an important qualification—then, indeed, his recent experiences will deserve the now over-used term "epoch-making." As with the practice of fixing the omentum to the parietes in cases of dropsy, decapsulation may be the starting-point of a new system by which certain chronic and acute visceral diseases may be treated by the surgeon, and the establishment of such a system would indeed revolutionize medicine.

At the same time it will be well for the surgeon to take care not to be a little too sanguine—and sanguinary—about the value and justifiability of operations

[1] British Medical Journal, April 18th, 1903.

for inflammatory disease of the stomach and for acute and chronic nephritis. He should beware of excess of zeal, especially when he reads that epic of surgical triumphs, Mr. Mayo Robson's Address in Surgery; for we do not all possess the judgement and skill of the heroes of contemporary surgical art whose feats were related with just pride and enthusiasm.

THE ROYAL ARMY MEDICAL CORPS.

We understand that 72 candidates have entered for the competitive examination for commissions in the Royal Army Medical Corps. The number of vacancies is 30. The examination began on July 29th. The degrees and qualifications held by a large proportion of the candidates prove that they are men of the highest professional training. Several have served the office of house-physician or house-surgeon in their hospitals. A peculiarly gratifying feature in the competition is the considerable proportion of candidates from London schools who have entered. Among the Irish candidates are some graduates of Trinity College, Dublin; and from Scotland, which in former days gave so many distinguished officers to the service but which for some years has sent very few of her graduates to join the Corps, a few candidates are at last forthcoming. We congratulate the army and the nation on a state of things which indicates in the most convincing possible manner that the medical service of the army is now attracting men of the right stamp.

THE CHAIR OF SURGERY AT CAMBRIDGE.

The Chair of Surgery in the University of Cambridge, which has remained vacant since the death of Sir George M. Humphry in 1896, was filled on July 27th by the election of Mr. Frederick Howard Marsh, F.R.C.S., Surgeon to St. Bartholomew's Hospital. The stipend is £600 a year, and the Professor is permitted to practise, the obligation being imposed on him of residing at the University during term. Mr. Howard Marsh, who was born in 1839, studied at St. Bartholomew's Hospital, and was admitted a Member of the Royal College of Surgeons of England in 1861, proceeding to the Fellowship in 1866. He was for some years closely associated with Sir James Paget in his private practice, and edited that great surgeon's *Clinical Lectures and Essays*. He was appointed Assistant Surgeon to St. Bartholomew's Hospital in 1873, becoming full Surgeon in 1891. He was for a long time Surgeon to the Hospital for Sick Children, Great Ormond Street. Mr. Howard Marsh was for many years Lecturer on Surgery at St. Bartholomew's Hospital; he was Hunterian Professor of Pathology and Surgery at the Royal College of Surgeons, and in 1902 he delivered the Bradshaw Lecture at the College on "Septic Arthritis." Among his other publications are a monograph entitled *Joints and Spine*, which appeared in 1895, and a volume of *Clinical Lectures and Essays* (1902). He is the author of the articles "Fractures" and "Hip Disease" in Heath's *Dictionary of Surgery*, and "Joints" in Treves's *Manual of Surgery*. He has also contributed largely to the current literature of surgery, among his more important papers being one on "Bone Setting," published in the Clinical Society's *Transactions* (1882), and "Lectures on Tuberculosis in Some of its Surgical Aspects," "Some Rare Forms of Bony Ankylosis," and "Dislocations and Injuries of Muscles and Tendons," all of which were published in the British Medical Journal. Few men in the surgical branch of the profession have had greater experience either in the practice of the art or in the teaching of its principles than Mr. Howard Marsh. His writings are marked by freshness and originality of thought, accuracy of observation, lucidity in the presentation of facts, and soundness of judgement in the statement of opinions and conclusions. No worthier successor of the true begetter of the modern school of medicine at Cambridge could have been found, and the University is to be congratulated on the wisdom which it has shown in its choice. Mr. Howard Marsh is deservedly most popular with his professional brethren in London, and they will, therefore, doubtless be pleased to know that his translation to Cambridge will entail only a partial removal from London. He has resigned his office at St. Bartholomew's Hospital, but the duties of his chair will not require him to reside in Cambridge for more than a couple of months in each of the three terms of the academic year. We are sure the whole profession will join with us in wishing Professor Howard Marsh a long and successful tenure of the great position which the excellence of his scientific and practical work and his professional eminence have won for him.

A PROPOSED SANATORIUM FOR LONDON.

On July 25th a special conference of the Council of the Hospital Saturday Fund was held at the offices of the Fund in Gray's Inn Road, to consider the urgent need of increased accommodation in the neighbourhood of London for sufferers from tuberculosis belonging to the working classes. Delegates from nearly thirty trade, friendly, co-operative, and other societies of working men were present. The chair was taken by Sir Savile Crossley, M.P. A letter was read from Mr. J. Hastings Medhurst, offering under certain conditions to subscribe £1,000 towards the cost of providing a convalescent home for consumptive patients. Dr. Hillier, Honorary Secretary of the National Association for the Prevention of Consumption and other Forms of Tuberculosis, stated that in England alone there were 60,000 deaths annually from tuberculosis. Consumption, with other forms of tuberculosis, caused one death in every eight in this country, and of all the deaths in the United Kingdom of persons between the ages of 25 and 35 one-half were due to consumption. At the present moment it was estimated that at least a quarter of a million persons were suffering from tuberculosis. The death-rate from tuberculosis to-day was practically what it was in Germany, but there was more system in dealing with its spread in Prussia, and unless fresh efforts were made in England this country would fall behind. This disease was responsible for more poverty and suffering than any physical evil they had to deal with. Pure air and wholesome food were wanted in sanatoria. It was his firm faith that by sanatoria the disease might be extinguished. He gave particulars of a plan for a municipal sanatorium for New York which was to cost £95,000 and would accommodate five hundred patients. In answer to questions, Dr. Hillier stated that they contemplated treating cases in an incipient stage, and that there was good prospect of curing permanently 60 or 70 per cent. of such cases. Mr. W. G. Munn, the secretary, hoped the proposed sanatorium would be self-supporting. A resolution confirming that passed by the executive committee was unanimously carried, and a committee will formulate a scheme which will be considered later at a meeting to be held at the Mansion House.

MEMORIAL TO SIR WILLIAM FLOWER.

On July 25th the Archbishop of Canterbury unveiled a bust of the late Sir William Henry Flower, K.C.B., F.R.S., F.R.C.S., Director of the Natural History Department of the British Museum. The bust, which is from the chisel of Mr. Brock, R.A., is in Carrara marble, and stands in the Central Hall of the Natural History Museum at South Kensington. Lord Avebury, as Chairman of the Memorial Committee, presided, and among those present were Professor Ray Lankester, Dr. P. L. Sclater, the Lord Chief Justice, the Master of the Rolls, and Mr. John Morley. Lord Avebury expressed his respect and admiration for the late Sir William Henry Flower, and spoke of the great services he had rendered to the British Museum, and on account of his great eminence

as a naturalist. Dr. Sclater also spoke as an old and intimate friend of Sir William Flower, who, he said, was for fourteen years Hunterian professor, and delivered the course of lectures on comparative anatomy which had rendered his name famous in that branch of science. He had filled the posts of President of the Zoological Society of London, Director of the Natural History Museum, and President of the British Association at Newcastle, and made his mark in all of them. Among the mammals the whales had occupied Flower's chief attention, and no more appropriate position for the bust offered to the trustees by 185 of his friends and admirers could be found than the whale room of the museum, which he had himself planned and fitted up. The Archbishop of Canterbury, in unveiling the bust and accepting it on behalf of the trustees of the museum, said it seemed to him that no man in the whole range of his acquaintances among scientific men had done so much as Sir William Flower to popularize the special subjects represented by the collection gathered within the walls around them.

PROPOSED UNIVERSITY AT LEEDS.

The Leeds Corporation Technical Institution Subcommittee has decided to support the application of Yorkshire College for the establishment of a university in Leeds, to be entitled The Victoria University of Yorkshire, and, in the event of a charter being granted, to give £4,000 per annum towards the university funds, in addition to the £1,550 granted from the residue of local taxation, customs, and excise. The Finance Committee also approved of the resolution. A petition has been presented to the King in Council praying that a charter be granted constituting an independent university in Sheffield. In a few months, therefore, there will be no fewer than sixteen universities in the United Kingdom. Already there are four in Scotland—Edinburgh, Glasgow, St. Andrews, and Aberdeen; Ireland has two—Trinity College, Dublin, and the Royal University of Ireland: while Wales has one—the University of Wales. The predominant partner has seven—Oxford, Cambridge, London, Birmingham, Liverpool, Durham, and Manchester, to which Leeds and Sheffield will in all probability soon be added.

THE JENNER INSTITUTE OF PREVENTIVE MEDICINE.

An extraordinary general meeting of the members of the Jenner Institute of Preventive Medicine was held on Wednesday, July 22nd, to consider a resolution to alter the name of the institute to "The Lister Institute of Preventive Medicine." Sir Henry Roscoe, who was in the chair, in moving the resolution, said that out of motives of delicacy, which they all appreciated, Lord Lister, the Chairman of the Institute, had not attended the meeting. Sir Henry Roscoe read extracts from the memorandum, which explained the reasons that had induced the governing body to propose the change of name, and said members would be glad to know that the name proposed had met with the full approval of Lord Iveagh, who had been such a munificent donor to the institute. He was sure that all present would agree that they could not have a name which was more consonant with the feelings of those who were interested in the progress of preventive medicine than that of the Lister Institute. He thought it would be approved not only by the members present but by all the members, and also by the medical profession generally and the public at large. Sir Joseph Fayrer, in seconding, said he had never before seconded a resolution with greater pleasure. He did not think it possible to have a more appropriate name than the one proposed. Professor W. J. Simpson supported the motion, which was unanimously adopted. A second meeting will be held on Friday, August 7th, when the resolution will be submitted for confirmation.

THE BRITISH PHARMACEUTICAL CONFERENCE.

The British Pharmaceutical Society held its fortieth annual meeting during the past week at Bristol, under the Presidency of Mr. T. H. W. Idris, L.C.C., J.P., F.C.S. In his address the President referred to the opportunities which the occupation of pharmacy presents for personal culture and financial success, and mentioned the decease since the last meeting of the conference of three pharmacists, F. Baden Benger, Gustav Mellin, and J. Robbins, who had achieved fortune by the application of science to articles of common use. Turning to matters of current interest he drew attention to the researches which had been going on for some years into the precise nature and composition of essential oils; to the different opinions held as to the value that should be attached to the ester contents of lavender oils; to the discovery of certain nitrogenous compounds in certain essential oils, of which the amido-acid, methylanthranilate is an example, and to that of the open chain alcohol, nerol, which is isomeric with geraniol. The increasing difficulty in detecting adulteration owing to the scientific way in which it is now carried out was also mentioned. Another point of interest mentioned was the application of refrigerating processes to the manufacture of aërated water. It was shown that when water is cooled down to its point of lowest density it can be charged with carbonic acid at a pressure of only two atmospheres and practically treated like a still liquid. Mr. Idris then discussed the subject of the sale of poisons, and mentioned the part the Society had played with regard to the endeavours made to secure exception from the ordinary laws for poisons sold nominally for horticultural and agricultural purposes. He hoped that the sale of secret preparations of that character would be made much more difficult; that an authoritative statement would be made as to what things were really useful as sheep dips, etc.; and that the prices of such preparations as were really effective would be fixed by the Board of Agriculture. He next turned to a consideration of death certification, the law with regard to which he considered required amendment if the possibility of death by intentional or accidental administration of poison were to be avoided. He gave a long list of fatal accidents which had occurred from mistakes made in surgeries, in public institutions, and in chemists' shops, and the conclusion at which he arrived was that the businesses of prescribing and dispensing should be absolutely separated. He believed that chemists prescribed much less commonly than formerly, and he desired to see them give it up entirely. In conclusion, Mr. Idris expressed a belief that a separation was proceeding between pharmacy and medicine; but it was very slow, and he thought that it was in the interest of medical men, pharmacists, and the public that it should be hastened.

SCIENTIFIC PROGRESS AT CAMBRIDGE.

Readers of our small-pox reports must have noticed the frequency with which complaints have been made in most districts as to the indifference shown by the people to the disease and the failure of the sanitary authorities to secure the co-operation of the inhabitants of the infected districts in their efforts to cope with it. Such neglectful indifference, the natural outcome of ignorance, is, of course, natural in small country places and huge manufacturing centres, but it would be surprising if it were found in an ancient seat of learning such as Cambridge. Those, therefore, who believe in the atmospheric dissemination of modern ideas and that contact with the learned is in itself a liberal education will be gratified, though not surprised, to learn that the townspeople of Cambridge are exhibiting a laudable ambition to help the authorities to stamp out the small-pox epidemic in every possible way. With a fore-knowledge that does them credit they have apparently discovered a connexion between small-pox and goats, of which less intelligent persons will probably remain in ignorance until the year 2000. As a means of securing themselves against small-pox they, according to the *Daily Express*, employ a man who possesses a very fine goat. This animal, under the influence of a piece of string, is induced to walk round all the rooms of a house, and thereafter there is no fear of small-pox entering it. It has not

yet been determined how long the immunity lasts nor whether the result is due to a symbiotic relation between the goat and the small-pox germ, in virtue of which the latter cannot flourish, or to a negative chemotaxis which makes it impossible for the germ to approach any spot where the goat has ever been. As, however, the antagonism between the two beings has apparently been well known in Cambridge for a very long time, the fact seems worthy of study by the Folk Lore Society as well as by bacteriologists.

A NATIONAL LEAGUE OF PHYSICAL EDUCATION.

The first step towards the foundation of a national league for the promotion of the study and practice of physical education was, we learn, taken in an informal way at a dinner recently given by Sir Lauder Brunton at the Athenaeum Club. Later a meeting of persons interested in the subject will be held, and a committee will be formed. Afterwards a public meeting will be held in London and the league duly constituted. The league will, it is stated, endeavour to co-ordinate the various agencies which are at present acting independently of each other for the advancement of physical training, and will seek to supply the information and assistance needed to complete the work. For these purposes it is proposed to unite all the bodies and individuals interested in the subject as members of one league, with an executive body consisting of president, vice-president, and council. It is intended that the council shall be a body representative of the whole country, and it is proposed that the league shall issue a weekly or monthly journal as a means of communicating information.

THE ANNUAL MEETING.

The seventy-first annual general meeting of the British Medical Association began at Swansea at 2 p.m. on Tuesday last when the chair was taken for the last time by the outgoing President, Mr. Walter Whitehead, of Manchester, who at once introduced the new President, Dr. T. D. Griffiths, of Swansea. The President then took the chair amid loud applause, and received a badge of office from the hands of Dr. W. F. Brook, one of the Honorary Local Secretaries. After thanking the Association for the honour done to him by his selection for the office of President, Dr. Griffiths announced that the Prince of Wales, following the example of his father, had expressed his readiness to accept the honorary membership of the Association. In putting to the meeting the resolution electing the Prince as honorary member, the President observed that it was a most fitting occasion, in view of the fact that the annual meeting was being held in the Principality whence the Prince of Wales derived his title. The resolution, having been seconded by the President of Council, was carried by acclamation, and thereafter the meeting, led by Dr. Cromwell Jones, of Merthyr, sang "God Bless the Prince of Wales."

Dr. Ferguson, who was President of the Association when the annual meeting took place at Cheltenham, then proposed a vote of thanks to Mr. Walter Whitehead, which was seconded by Dr. Langley Browne, carried unanimously, and acknowledged by Mr. Whitehead in a few cordial words; the meeting reciprocated by singing with much enthusiasm, "For he's a jolly good fellow." The President then vacated the chair, which was taken by the Chairman of Council, and the meeting proceeded to the consideration of the financial statement and other business submitted by the Council.

Dr. Griffiths delivered his presidential address in the Albert Hall on Tuesday evening before a crowded audience, which included a large number of ladies. The ceremony of receiving the foreign guests preceded the delivery of the address, and Dr. Griffiths was introduced to the meeting by the Mayor of Swansea. The address, a full report of which will be found at page 229, was delivered without notes, and was listened to with much interest and attention. Many of the passages, in which Dr. Griffiths made suggestions for the improvement of our sanitary system, were loudly applauded. After a vote of thanks moved by Surgeon-General Evatt, C.B., seconded by Dr. Saundby, and carried by acclamation, the Stewart Prize was presented to Dr. F. W. Mott, F.R.S., in recognition of his researches into the occurrence of dysentery in asylums, and to the part played by syphilis in the production of diseases of the nervous system.

The first annual Representative Meeting was held at 3.30 on Tuesday, immediately after the general meeting. It was called to order by the Chairman of Council, who stated that the first business was the election of a Chairman. Thereupon the election of Sir Victor Horsley was proposed and seconded, but he explained that there had been a slight informality in the intimation of his election as the representative of the Central Division of the Metropolitan Counties Branch, and that he was not eligible unless the matter could be put right. The meeting at once decided to recognize his election as valid, and the same thing was done in the case of two other representatives with regard to whose election there had also been some informality. Sir Victor Horsley, who was elected unanimously, in taking the chair, expressed to the members his sense of the honour done to him by electing him to so responsible an office. The meeting then at once proceeded to business, and a considerable time was spent upon the consideration of the Draft Standing Orders which had been prepared for the consideration of the meeting by the Organization Committee. These were adopted with slight emendations, and the meeting then proceeded to consider the report of Council; this was not concluded at half-past five, when the meeting resolved to adjourn.

The annual service took place at St. Mary's Church at 11 a.m. About 100 members of the Association assembled in Castle Square, several being attired in academic robes, and marched thence to the church. The Mayor, Mr. Griffith Thomas, in his robes of office, with the Town Clerk, and a detachment of the local police bearing javelins, also went in procession to the service. Dr. Griffiths, the President-elect, who headed the procession, was met at the door by the Vicar and churchwardens. The service commenced by the singing of the first verse of the National Anthem as the procession was about to enter the church. The lesson was from Ecclesiasticus, chap. xxxviii; the hymn before the sermon was No. 332, "Leader of faithful souls and guide of all that travel to the sky." The Lord Bishop of St. Davids preached the sermon, taking his text from part of v. 21, chap. ii, of the first Epistle of St. Peter, "Christ also suffered." The Bishop said that he esteemed it a great privilege to take part that morning in the service with which the distinguished Medical Association on its welcome visit to this diocese opened its annual meeting. It was, indeed, most appropriate that the noble profession his hearers represented should seek inspiration and guidance from devout communion in public worship with the Great Physician, who, by his great example, had ennobled for all time the ministry of healing. One of the many benefits to be derived from public worship was this: That in worship the light of heaven fell upon the difficulties of earth. It was suggested nowadays that Christian faith had increased the difficulties of life. Such an opinion, he respectfully submitted, was an entire mistake. The manifold difficulties which pressed in these modern days very heavily upon hearts and minds lay in human life, not in Christianity. What the gospel in its genuine simplicity did was, not to increase human difficulties, but to give us divine light and divine power, that we might face difficulties which were known to human experience before the gospel came into the world. The unbeliever by no means ridded himself of the difficulties—of any of the

difficulties—of life by his unbelief. The old profound problems which all down the ages had perplexed the greatest intellects of East and West remained as dark as ever when the direct answer given to them in the gospel was rejected. They had heard a great deal too much about the difficulties of Christianity; it was time that they began to face the difficulties of unbelief, and to ask themselves what power unbelief had to help man to live his life and do his work. The gospel of Christ was a really practical, precious message for the difficulties of life. Though it was never meant to solve the speculative problems of metaphysics, it was an unquestionable fact that Christianity had enlightened and strengthened all sorts of men and women under all circumstances for nineteen centuries; but unbelief, on the other hand, had never, as far as he had been able to ascertain, had good things for man at all. It left him without guidance and without help to confront the difficulties of life as best he might. The preacher next dwelt on the problem of pain, and the comfort a knowledge of Christ's sufferings and sympathy brought to the believer. In conclusion the Bishop said: It is your high calling to be ministers of the sympathy of Christ, who in His earthly ministry was the Divine Healer as well as the Divine Sufferer, and who Himself took our infirmities and bore our sicknesses. Your profession is rife with very honourable traditions. It is your noble ideal to set the progress of medical science above individual gain, and any medical discovery is freely placed by its discoverer at the service of the whole profession for the benefit of mankind. Humanity is deeply indebted to you, moreover, for your noble efforts to improve the sanitary condition of the people. No profession is more honoured in crowded centre and on country-side for unassuming devotion to duty. But you will allow me respectfully to remind you that for the encouraging of your efforts, for the refinement of your sympathies in your daily experience, for the strengthening of your devotion to duty, for the elevation of your ideals of life, there is constant inspiration to be found in the recollection that the Lord Christ, who also suffered, associates himself now on His heavenly throne with suffering humanity. You will remember the question put to Him at the last day, "Lord, when saw we Thee sick?" and His reply, "Verily I say unto you, inasmuch as ye have done it unto the least of these my brethren, ye have done it unto Me." The sermon was followed by Hymn 342, "Saviour, blessed Saviour, listen whilst we sing." The offertory was divided between the Royal Medical Benevolent College and the British Medical Benevolent Fund.

On Tuesday, the President, Dr. T. D. Griffiths, entertained at luncheon in the Minor Albert Hall a large party, including the Mayor of Swansea, the Bishop of St. David's, the Vicar of Swansea, many ladies, members of the Council and officers of the Association. The occasion was informal and no speeches were made.

The new Council at its first meeting on Wednesday, July 29th, on the proposition of Sir Victor Horsley, appointed a Committee to consider whether the general or the individual medical defence of its members should be undertaken by the British Medical Association. The Committee was further instructed that if its report should be in favour of the proposition it should present a scheme according to which the Association could, in the opinion of the Committee, safely and efficiently execute the work of medical defence.

The Representative Meeting met again on Wednesday, under the chairmanship of Sir Victor Horsley, and continued the consideration of the report of Council. After hearing an explanation from the Editor as to the reasons which had led the Council to sanction the publication of supplements, the meeting referred the matter to the Council to obtain a report from the Journal and Finance Committee. The report of the Medico-Political Committee was considered at some length, and the subject of the amendment of the Vaccination Acts was referred to the Divisions. The report of the Ethical Committee was then more speedily disposed of, and the meeting passed on to the motions of which due notice had been given. The recommendation of the Council that Branches should be empowered to require from candidates for election a certificate signed by two members was approved after prolonged discussion, and the resolutions sent up by the Gateshead Division instructing the Medico-Political and Ethical Committees to report upon the conditions of contract practice were accepted. The proposal from the same Division that the Association should support candidates for election as direct representatives on the General Medical Council led to some discussion, but was finally adopted. The proposal of certain Scottish Branches for the appointment of a standing Scottish Committee was criticized as foreshadowing a split-up of the Association. The suggestion was warmly repudiated by the Scottish representatives, and the proposal to appoint a committee was finally approved. Dr. Kidd (Dublin) brought forward the resolution of the Leinster Branch, practically identical with the Mayo resolutions, in an eloquent speech. The resolutions were seconded by Dr. Muir (Glasgow), who expressed the hope that Ireland would give a like support to the medical officers of parishes in the Highlands and Islands was supported by several representatives of Irish Divisions, and unanimously adopted. The members of the Medico-Political and Ethical Committees, which the Representative Meeting are entitled to elect, were selected by ballot, and after some discussion as to the arrangements for future Representative Meetings, the proceedings, which had lasted for four hours and a half, were brought to an end by a vote of thanks to the Chairman. This first Representative Meeting may be pronounced a distinct success owing to the manner in which the members devoted themselves to business, and owing in a very large degree to the conspicuous ability with which Sir Victor Horsley conducted its proceedings.

At the adjourned second general meeting on Wednesday evening, July 29th, at the King's Hall, Swansea, the President of the Association, Dr. Griffiths, who was in the chair, stated that by an oversight the names of Professor R. A. Reeve, B.A., M.D., LL.D., of Toronto, and Mr. J. H. Cameron, of Toronto, were omitted from the names of the guests and visitors. He had great pleasure in welcoming those gentlemen to the town of Swansea. Dr. F. T. Roberts, Senior Physician to University College Hospital, then delivered the Address in Medicine, which is published at p. 233. After the address Dr. Radcliffe Crocker proposed that the best thanks of the meeting be given to Dr. Frederick Thomas Roberts for his able and scholarly address in Medicine. He was glad to be allowed to propose this vote to his old friend and colleague, Dr. Roberts. He had given them a most interesting address upon subjects with which they were deeply concerned, and had treated it in a way that all his old pupils, of whom there were many in the room, would readily understand. He had delivered it in eloquent terms and with much humour, and he had great pleasure in proposing the resolution. Dr. Jones Morris, as a fellow countryman of Dr. Roberts, had much pleasure in seconding the resolution. They had listened to the address with great pleasure, not for its lucidity only, but because he had raised the character of Welshmen by the humour he had introduced. The resolution was carried unanimously. Dr. Roberts, in reply, thanked the members present very much for the kind way in which they had proposed the vote of thanks to him.

On Wednesday evening, after the Address in Medicine, the President and Local Executive Committee held a reception in the Albert Hall, which was attended by most of the members present and by many ladies. The number of members who had registered up to the time of closing the reception room on Wednesday was over 600.

THE SECTIONS.

BRIEF SUMMARY OF PROCEEDINGS.

Wednesday, July 29th, 1903.

THE character and scope of the work of the different Sections will appear from the following short summary of the proceedings. A full report of the discussions and of the various papers read in the Sections will be published in due course.

SECTION OF MEDICINE.

IN the unavoidable absence of Sir Isambard Owen, the President of the Section, Dr. C. T. Vachell, the senior Vice-President, occupied the presidential chair. The first discussion on the programme was on the Medical Treatment of Inflammations in the Caecal Region. It was opened by Dr. Paul Chapman (Hereford) who principally referred to appendicitis, first alluding to the question of the need for operation and the physician's responsibility in arriving at a decision. If a clear history of previous attacks were obtained, and if there was a tumour in the right iliac region, operation was indicated, but the frequency of recovery without operation was emphasized, and the need for the adoption of expectant treatment in many cases was urged. Dr. H. W. King (Chester) thought that many patients operated on would have made a satisfactory recovery without operation. Sedatives and the limitation of food were the first indications. An aperient was of service in the subacute cases but not in the acute. The exhibition of belladonna in the subacute cases was also of service. Dr. T. D. Savill (London) said the treatment of appendicitis was preventive, remedial, or operative. An important part of the preventive treatment was that of antecedent chronic catarrhal colitis, which was chiefly irrigation with weak antiseptic solutions, particularly chinosol and silver nitrate. Opium should be withheld for as long as possible, as it masked the symptoms. Operation should not be put off too long, and he preferred to have a surgeon in contact with the case as soon as possible. Dr. W. Collier (Oxford) deprecated the idea that an operation should be performed as soon as a diagnosis of appendicitis was made. Many of the slight cases speedily recovered. It was too much the tendency to try to safeguard against loss of reputation from a fatal result by leaving the case to the surgeon. There were disadvantages in operation, such as hernia or persistent pain in the cicatrix. Dr. Straton (Salisbury) considered that many of the cases that recovered were cases of colitis, the appendix enlarging to resist micro-organismal invasion. Professor Saundby (Birmingham) said that if there were any reason to believe that pus was present an operation should be done. If there was a doubt a leucocyte count should be made, and if excess were found with continued pyrexia operation might be done. An operation should be performed where an indolent lump persisted in the right iliac region, also where relapses occurred. Dr. W. J. Tyson (Folkestone) thought the subject was essentially a combined medical and surgical one. Many cases that relapsed at least twice recovered without operation. In the future the origin of the disease should be more carefully considered with a view to prevention. Dr. Michael Foster alluded to the preliminary catarrh of the colon. Of 30 cases of membranous colitis under his observation, 4 had developed appendicitis, the subsequent history of which was given. Dr. MacPhedran (Toronto) thought that the medical treatment of appendicitis was rest, physical and physiological, with in some cases leeching over the caecal region. Operation should be performed either in the first few days, or not until much later when adhesions had formed. Dr. Odell (Torquay) held that the dictum that operation should be performed after a second attack was a sound one. Dr. Paul Chapman then gave a demonstration of an instrument for obtaining simultaneous heart tracings and tracings from the pulse of the index finger. Dr. W. J. Harris and Mr. V. W. Low (London) communicated a paper on two cases of Erb's palsy, in which the fifth cervical root was cut down on in the neck and stimulated faradically, and in one it was joined to the seventh root and in the other to the sixth. In a corresponding case of infantile paralysis, the other half of the fifth root was sewn into the sixth. In one of the former cases sensation immediately returned after the operation, and improvement in the galvanic reactions was observed at the end of six weeks. Dr. R. Lord (London) read a paper on Serumtherapy, which was discussed by Dr. Bertrand Dawson and Dr. E. Le Cronier Lancaster.

SUBSECTION OF ELECTRO-THERAPEUTICS.

DR. LEWIS JONES made some introductory remarks on advances in the use of electricity in medicine, and then opened a discussion on the Results of Treatment of Malignant Disease by Electrical Methods. The following gentlemen took part in the discussion: Mr. Hall-Edwards, Mr. Chisholm Williams, Drs. V. H. Rutherford, C. H. Allfrey Horace B. Manders, Lovell Drage, M. Bannister. W. Kenneth Wills, W. B. Crawford Treasure, and Preston King. Dr. Lewis Jones replied.

SECTION OF SURGERY.

THE work of the Section was commenced with a discussion on Practical Experience regarding the most satisfactory Methods of performing Intra-abdominal Anastomosis, which was opened by Mr. G. H. Makins, who divided the subject under the two headings: First, which form of anastomosis was safest and to be generally preferred; secondly, what method of union should be chosen? Axial union was best limited to portions of intestine provided with a complete peritoneal investment and a sufficient mesentery, while the lateral method was applicable to any portion, provided that sufficient length and mobility existed to allow of the desired arrangement of the bowel ends. He considered also that, in addition to this, axial union was indicated in any part of the small intestine where there was no inconvenient disparity in the lumen of the two portions of bowel and when the bowel wall was in good condition; that lateral anastomosis was the more suitable operation for the large intestine, and especially in cases of enterectomy for the removal of a growth; that lateral implantation offered all the advantages of lateral anastomosis, but its employment should be confined for the most part to cases in which the disparity in size of the portions of bowel was marked. Recent statistics at St. Thomas's Hospital showed a mortality of 50 per cent. for axial and 30.7 per cent. for lateral unions. Clamps were preferable to digital compression, and the mesentery should be dealt with early in order to avoid haemorrhage and the risks of spreading infective material thereby. In suturing the bowel two tiers were used: the first perforated the mucous membrane only, the second being sero-muscular; he used a continuous suture, and preferred to employ simple suture unaided by any means of mechanical support. Mr. Stanmore Bishop thought that absorbable appliances were indicated only in the small intestine, owing to the nature of the contents of this portion of the canal and the non-digestive nature of the contents of the large intestine. He showed a variety of appliances for mechanical support, and commented favourably on the wafer support of Wackerhagen, made of dough which disintegrated rapidly. He did not agree that a mucous membrane suture obviated the risk of a diaphragm. With regard to the suture perforating all the walls of the gut, he thought that its dangers had been much exaggerated; the main object of the retaining suture was to obtain a firm hold of the submucous coat, and the really dangerous suture was that which yielded from an insecure grasp of the tissues. Mr. Jordan Lloyd thought that different methods of anastomosis were advisable under different conditions. He believed in simplicity in technique and used the simple suture, the only appliances necessary being sewing needles and silk. Murphy's button was not simple in application, and did not save much time. Haemorrhage was the worst of the dangers attendant on anastomosis, and the lateral method was as a rule safer. Mr. Deanesly favoured axial implantation as a general rule; he passed his first row of sutures through both coats, but used no mechanical apparatus, and believed that the accuracy of application of sutures was more important than the method. He was in the habit of passing each row as a complete suture without interruption. Mr. R. C. Elsworth had recently had six consecutive successful cases with Murphy's button, and usually employed a few sutures in support. Mr. Basil Hall had been in the habit at one time of employing the bobbin, but now advocated the simple suture, which he did not hesitate to pass through all the coats of the bowel. Mr. G. Hamilton thought that the Murphy's button was of use chiefly in the case of the large intestine. Mr. Sinclair White considered that lateral anastomosis was the safest of all methods, but was not always the method of choice in all

situations. Mr. M. B. Mitchell favoured the continuous simple suture; in lateral implantation he was in the habit of making his incision in the intestine parallel with the vessels. Mr. Mayo Robson was in favour of suture in anastomosis of the hollow organs, but had found the bobbin he employed of value as a support to this suture. He considered the Murphy's button distinctly harmful. The advantages of the bobbin were that it provided at once a continuous channel, a protection and a splint to the line of suture, and avoided dangers of subsequent contraction. Mr. Horrocks thought that gangrenous bowel could be invaginated to a considerable extent without risk. Mr. Burghard held that haemorrhage was best controlled by a continuous suture passing through all the coats. The President, Mr. Edmund Owen, thought that the best clamp was the fingers of a good assistant, and next to that a thin rubber tubing tied not too tightly. He attached much importance to the careful closing of the triangular gap at the mesenteric attachment.

Section of Obstetrics and Gynaecology.

The President (Professor William Stephenson, of Aberdeen) opened the proceedings of this Section with a short address, in which he contrasted the present position of obstetrics and gynaecology with that of forty years ago. In obstetrics the risks of temporizing were now recognized, and interference earlier and more frequently undertaken than was possible in the days before asepsis. In consequence of this attitude, a much higher education was required by the general practitioner. The course in midwifery in the Scottish universities formerly consisted of one hundred lectures, but he had yearly found it harder to comprise his teaching into this number. He found that if students were offered facilities for good oral teaching, with the aid of demonstrations on specimens, models, and the cadaver, they were ready to give the required time, and that legislation for the reform of the curriculum was not indispensable. Dr. Amand Routh opened a discussion on the Management of Pregnancy complicated with Uterine Fibroids. He showed that with modern methods the dangers had been diminished and the mortality decreased. Fibroids had been said to enlarge during pregnancy, but it was doubtful if individual tumours ever did so, and also whether any marked atrophy took place during involution. These tumours had a tendency to degenerate and become septic, especially during the puerperium, submucous fibroids might become necrotic, and be extruded or expelled. Neither sterility nor abortion was, in his opinion, often due to fibroids, but malpresentations and placenta praevia were often so, and though uterine inertia was not usual, delay in labour was the rule. *Post-partum* haemorrhage was of frequent occurrence. Owing to spontaneous elevation of pelvic fibroids during the last few weeks or days of pregnancy, threatened obstruction to labour did not as a rule persist. Sepsis with secondary infection of the fibroid was a serious danger in the puerperium. An expectant treatment was indicated in all cases unless there were urgent symptoms. Induction of abortion should be abandoned. If urgent pressure symptoms supervened, myomectomy was the ideal operation for subserous growths; failing that, hysterectomy. After the child was viable reposition might be tried, leaving radical measures for a later date. A cervical fibroid might be enucleated from the vagina as an alternative to panhysterectomy. In all other cases of obstructing fibroid, as a first step the child must be delivered by Caesarean section, followed by myomectomy, supravaginal hysterectomy with retroperitoneal treatment of the stump, or panhysterectomy. If during childbed fibroids became infected, a prompt extirpation of the uterus might save the patient's life. The discussion was continued by Dr. Heywood Smith, Professor Murdoch Cameron, Dr. F. W. N. Haultain, Dr. Andrew J. Horne, Dr. J. A. Rawlings, Dr. T. W. Eden, Dr. E. J. Maclean, Dr. J. Nelson Jones, and Dr. J. L. Lackie, and Dr. A. Routh replied. On the whole, though opinions varied upon his statements that the induction of premature labour should be altogether abandoned, that at least one ovary, if healthy, should be left after removal of the uterus, the policy of non-intervention except in the presence of urgent indications was generally accepted. Dr. C. E. Purslow contributed a case of Persistence of the Urogenital Sinus, which supported the theory that the lower part of the vagina is formed from that sinus rather than from the continued coalition of the ducts of Mueller.

Section of State Medicine.

In lieu of a presidential address Dr. McVail, the President of this Section, opened the discussion on Vaccination and the Prevention of Small-pox. He referred to the attitude of the medical profession on the subject, claiming that the final responsibility lay with the Government and nation. It was the duty of the medical profession to advise that there was no reason to suppose that small-pox could be stamped out of Britain without vaccination and revaccination. Yet over-persuasion was not always wise or desirable. This attitude did not of course mean that any possible opportunity for improvement of vaccinal legislation should be lost. Special attention was drawn to the importance of prompt action and epidemic regulations on the part of the Government and the local authorities in times of small-pox outbreaks, and particularly should attention be paid to tramps, vagrants, and common lodging-houses. Dr. McVail next dealt with the law as to vaccination and revaccination and the exemption clause and its defects. He urged also that calf lymph should be used for all vaccinations which was either Government lymph or had been prepared under Government inspection and restriction. As to the authority responsible for vaccination opinion was divided. In any event local authorities should have concurrent powers to vaccinate and revaccinate within their own boundaries; but local authorities should be relieved of prosecution which should be carried out by authority of a central body. Dr. McVail also discussed the tenure of the public vaccinator and his relationship to the private practitioner. Dr. Drysdale compared the condition of things as to vaccination in England with that existing in Germany, to the credit of the latter, and Dr. Mole animadverted upon the report of the Medico-Political Committee of the Association. Dr. Garrett Horder, as a public vaccinator in Cardiff, read a paper full of practical points. He dealt chiefly with four points, namely, (*a*) the authority for vaccination, (*b*) the relation of the public vaccinator to private practitioners, (*c*) revaccination and (*d*) fees paid to public vaccinators. He advocated that sanitary authorities should be the vaccinating authorities, and urged that private practitioners should be supplied with Government lymph which should not be kept in too long. Dr. Horder considered that children should be revaccinated before or during school age. Dr. Morris (Portmadoc) gave various illustrations of the work involved in public vaccination, and considered the fees inadequate. Dr. Groves asked for a wide view to be taken of these questions. Public vaccinators were apparently almost unanimous in support of the view that a central authority should be responsible for vaccination. Dr. Ebenezer Davies, Medical Officer of Health for Swansea, referred to the experience of Swansea in the recent small-pox epidemic. In summing up, Dr. McVail urged that the principle to maintain was that the State should take charge of systematic revaccination, as well as primary vaccination. The remaining time of the Section was devoted to a consideration of the Midwives Act (1902), especially in relation to the public health. The discussion was opened by a paper from Dr. Ward Cousins, who dealt with the duties vested in the county councils or delegated bodies under the Act. He described the new order of midwives, and claimed that they would possess an important influence on home sanitation, etc. He dealt also with the records of stillbirth and the reduction of mortality. Dr. Groves, Dr. Coutts (Blackpool), and others took part in the discussion.

Section of Psychological Medicine.

The presidential address was delivered by Dr. Robert Jones (London County Asylum, Claybury), who dealt with the subject of the Development of Insanity in regard to Civilization. With the progress of civilization mental breakdown became more serious and more frequent, and the different varieties of insanity to-day were more chronic and less curable than in the early years of the last century, when life was simpler and men more content. The care and cure of the insane was hardly known as a subject of serious study a hundred years ago. The past century had been the most marked of any of its predecessors in regard to the material and moral progress of mankind, and in this progress medical sciences occupied a conspicuous place. Civilization, however, was not always an unmixed blessing, for in the struggle for progress the pathway of advance was freely strewn with physical wreckage and physical degeneration. It was not the presence alone of delusions and hallucinations which characterized insanity. The disturbance

of the mental faculties might be so uneven and dangerous as to render the patient unfit to be at large. Many persons were placed in asylums who were constitutionally insane persons, whose brains were so abnormally developed that social life was impossible for them. In primitive races and societies insanity proper was rare, though idiocy and imbecility were as prevalent as they were now. The progress of mankind had caused a more or less complete change in the types of insanity during the last half century. An inherited instability of nervous organization was more frequent to-day than half a century ago in highly civilized communities. The causes of insanity were numerous. Pinel a century ago showed that 30 per cent. of all the cases observed by him were due to domestic bereavement, 26 per cent. to the events of the Revolution, 22 per cent. to fanaticism. A recent writer on the Life and Labour of the People (Charles Booth) had stated that the anxieties and uncertainties of professional life were responsible for a very large proportion of insanity which the middle and lower classes showed. In their efforts to rise to the higher level of work and capacity demanded by modern civilization many failed owing to mental, physical, and moral deterioration. Civilized society, in forcing the pace, manufactured its own unfit—its lunatics, paupers, and criminals. London alone was responsible for the production of over 70 insane persons per week, and this number was destined unrelentingly to increase. The only neutralizing agency was the fact that sterilization followed in the wake of three or four generations of town-bred people—a natural law which ensured that the unfit should cease to cumber the earth. In cities where the population had to accommodate itself to the pressure of competition the tension of mind was more continuous. In cities, also, artificial desires multiplied, unhealthy activities were created, and ambition forced the brain to efforts which it could not and should not wisely make, with the result that mental breakdown often occurred. Fatigue was unfavourable to good mental work, and fatigue could be caused by intense mental application. Boerhaave said that unremitting mental attention to a single subject for a whole day once kept him for six weeks without sleep. Bodily fatigue was demonstrably injurious to thought, for Kraepelin had shown that muscular work weakened brain power in definite ratios which could be expressed in graphic curves. Civilization brought to the idle rich sensuous luxuries of all kinds, and to the poor lack of proper food, overcrowding, and unsuitable surroundings—both moral and hygienic—alcoholic indulgence, poverty, and crime, all of which bore a very intimate relation to insanity. Overcrowding led to physical discomforts, and gave rise to facilities for moral contamination, which were both humiliating and demoralizing to grown-up persons as to children. London, although the greatest of cities, and one of the healthiest in the world, bred her legions of anaemic, hydrocephalic, and unhealthy children in slums where pure air, radiant light, and freedom from noxious substances (dirt and garbage) were not easily obtained. Crowds of the dwellers in slums, stifled by the unattractive nature of their environment, sought to drown their misery in alcohol. One-fifth of all the cases of insanity occurring in men and more than half this proportion in women were due to alcoholic intemperance. The crowding into towns of the country-dweller who left agricultural pursuits to enter workshops and factories, the steeping of our youth in the sensational, exciting, and prurient literature of the day—a literature that crowned every vice and crime with an illusory halo of glory—had contributed to the mental and physical degeneration of the lower classes. The physique of the nation had deteriorated. Deaths from cancer and nervous diseases had absolutely increased. Athleticism was always attended with the danger of arterial overstrain, a condition which was potent for the future harm of brain and body alike. Altruism had diminished and selfishness had increased during the past century, charity had never been doled with less liberality, while the judicial statistics showed that certain kinds of crime and law-breaking are on the increase. There was more laxity of morals among the "smart set" than in years gone by; commercial morality was on the decrease; there was a dearth of men who kept "dead straight." Drink and gambling were indulged in by women more largely than before, and the increase of general paralysis of the insane—a result of syphilitic disease of the nervous system—pointed to the increasing ravages of syphilis. Fanatics and faddists had raised such "conscientious objections" on this point that there was but little hope of limiting the spread of syphilis by legislative regulation of contagious diseases. Dementia praecox—a disease rare at the beginning of last century—was now a common (as it was an incurable) disease. The recovery-rate of insanity had also fallen during the past century. With the progress of civilization, therefore, not only was insanity on the increase, but the occurring varieties were less curable, the physique of the town-dweller deteriorated, and the burden of maintaining the wrecks and failures of humanity in asylums, workhouses, etc., continued to increase. Spiritual influence and the education of public opinion might do much to improve matters, for there was no question that there existed a strong and immediate necessity for preventing the extension of this lowered mental and physical vigour—this human degeneration—in large sections of our civilized communities. Dr. W. Ford Robertson opened a discussion on the Pathology of General Paralysis, illustrated with lantern slides. Evidence was adduced to show that a toxaemia was present and was the chief agency in producing the rapid cerebral and mental decay of general paralysis. This toxaemia was due to the presence of a diphtheroid bacillus, which was present in the nasal cavities, tonsils, respiratory tract, and alimentary canal of general paralytics, as could be shown by cultivations from the nasal mucus, from the tonsillary secretion, and from washings of the stomach. A filamentous form of this organism was met with in the mucous and submucous tissues of general paralysis. Dr. Robertson stated that changes in the blood took place which lowered the defensive power of the organism, and under such circumstances this diphtheroid organism invaded the system. Syphilis was a predisposing cause, but he thought the special and rapid symptoms of dementia and of death were due to invasion of the body by this microbe, which resembled closely the Klebs-Loeffler bacillus, Inoculations into rats produced symptoms of acute nervous and body paralysis and deterioration, ending in death in a few weeks. Among those who followed and took part in this discussion were Drs. Robert Jones, E. Goodall, Maule Smith, Haddon, T. B. Hyslop, F. W. Mott, D. Yellowlees, Edridge-Green, Lloyd Andriezen, J. G. Adami, and Professor Hamilton. Dr. R. S. Rows read a brief paper, with lantern demonstration, on Cavities in the Spinal Cord. In the cases shown (three in number) the causation varied. In the first of these the cavity formation was due to atrophy of the nervous substance and neuralgia, in the second to syringomyelia, and in the third to haemorrhage.

SECTION OF PATHOLOGY.

PROFESSOR HAMILTON, in opening the proceedings of the Section, replied to certain criticisms of his work on the inoculability of human tuberculosis in bovines. In 15 out of the 19 animals used in the course of his investigations he had obtained definite and demonstrable proofs of the inoculability. Of the remaining 4 cases, 2 died of intercurrent diseases too early for any conclusive deductions, and in 2 only was the result negative. His opinion was now more firmly in favour of the unity of human and bovine tuberculosis, the differences being dependent on the environment and in no way inherent. Dr. Nathan Raw, while admitting the experimental proof of transmission from the human to bovines, pointed out that the converse was not susceptible of similar demonstration. Nevertheless, from the clinical point of view and from that of morbid anatomy, there was evidence strongly indicative that children especially were attacked by abdominal tuberculosis of bovine origin. A paper by Mr. E. Michels and Dr. Parkes Weber on Two Cases of Obliterative Arteritis in Young Men leading to Gangrene in Extremities, had for its object the demonstration of the existence of a variety of obliterative arteritis commencing in the arterioles of extremities, particularly those of the muscles and subcutaneous connective tissue. A discussion on Miner's Phthisis was opened by Professor Oliver in a paper dealing with the morbid anatomy and histology of pneumokoniosis artificially produced in animals, with the absorption and means of transmission of dust particles through the human lung, and with the nature and causation of fibrosis in the lung apart from tuberculosis. Dr. Oliver's conclusions, supported by both statistical and experimental evidence, were in direct opposition to those of Tripier, and strongly pointed to independence of the tubercle bacillus, and to the establishment of pneumokoniosis as a pathological entity. Professor Adami, while quite prepared to admit the general conclusions, took exception to the rôle attributed by Dr. Oliver to the macrophages. Professor Hamilton, whose experience of the disease was a very large one, found himself in complete

agreement with the introducer of the discussion as to the general lines of his paper, and as to the desirability of dropping the term phthisis in this connexion; he believed however that the macrophages mentioned were in reality catarrhal epithelial cells.

Section of Ophthalmology.

After the President, Mr. H. E. Juler, had made a few remarks in commencing the work of the Section, Mr. Stanford Morton opened the discussion on the Operative Treatment of Conical Cornea. He remarked that although he usually did the operation of excision of the apex, yet he held no brief for any one method. He urged the necessity of recording all cases, good and bad, before an accurate opinion could be come to as to the best method of operating. He gave details of thirty operations. Mr. Tatham Thompson described a method he had adopted of passing horse-hair sutures through the cornea. This he had given up, and used now only the cautery short of perforating, and latterly he had done an iridectomy previous to cauterizing, as it much lessened the chances of after-complications. Dr. Karl Grossmann had operated on about ten cases and described his methods. Mr. Richard Williams (Liverpool) found that glasses improved a vast number of cases and operation was seldom necessary. He preferred perforation with the cautery. Mr. Doyne never now did anything but cauterization without perforation, and thought the operation most satisfactory with one sitting. The President used to take much interest in the operations. He had used several methods and had done about 25 cases, but the results were not so brilliant as those of Mr. Morton. He preferred the cautery himself with a small perforation, and thought they should be able to come to a conclusion as to when it should be necessary to operate. Mr. Morton, in reply, thought that it was very difficult to gauge the depth of a suture, and was very diffident in putting stitches in. He would prefer not to do an iridectomy in all cases. Sometimes it was useful. He would not operate if the vision could be brought up fairly high with glasses, and he thought that all operations had their own peculiar merits in certain cases. Major H. Smith read a paper on the Extraction of Cataract in its Capsule. His results were drawn from about 8,000 operations, of which 2,000 were done with opening the capsule, and 6,000 by extraction with the capsule. He found that in about 4 per cent. of these cases the capsule was left, and it should then be caught with forceps if possible, or, if it were too far retracted, the contained lens matter should be pressed out. Out of 1,023 cases 6.6 per cent. had escape of vitreous. The visual results were far better when the capsule was removed. Iritis was seldom seen if the lens was removed in its capsule. Mr. Bishop Harman had done an extraction in which he accidentally removed the lens in the capsule; the case did quite well. Dr. Brailey had great difficulty in knowing how great pressure should be used in order to get the lens out. The President had seen the operation done, but nearly always with escape of the vitreous. Dr. Darier (Paris) read a paper on Subconjunctival Injection of Koch's Tuberculin from a Diagnostic and Therapeutic Point of View. The patient was a girl who had tuberculous interstitial keratitis. He also read a second paper on the Treatment of Serous Syphilitic Disease of the Eye, in which he strongly advocated the use of subconjunctival injections and intravenous injections of cyanide of mercury. He thought the treatment should be pushed and persisted in. Mr. Sydney Stephenson strongly advocated the method advocated by Dr. Davies.

Section of Diseases of Children.

The work of this Section commenced with a discussion on the Pathology and Treatment of Chorea opened by Dr. D. B. Lees. He limited his remarks to true chorea in childhood. After referring to the distribution of the muscular movements he discussed the clinical evidence indicating implication of the brain, especially the cortex in the Rolandic area. The affection of the speech centre, alterations in mental and moral faculties, emotional attacks, and loss of memory, were all regarded as indicating a cerebral affection. He regarded the affection as mainly due to a toxaemia, but pointed out that there was much pathological evidence in favour of focal lesions in addition. Passing on to the association of the disease with rheumatism, he remarked on the frequency with which symptoms common in rheumatism were found antecedent to, during the course of, and subsequent to, chorea. He gave statistics showing that rheumatism, in some form, was common after chorea, and argued that it was much more common than was generally supposed. The bacteriological evidence in favour of the disease being due to the diplococcus of rheumatism was suggested, though at present scanty and not conclusive. He held that in the great majority of cases chorea might be regarded as cerebral rheumatism. In others possibly other causes were effective. Still he maintained that even the mildest case should be regarded presumably as rheumatic in origin, and should be very vigorously treated by salicylates. In giving these large doses, gr.x to gr.xl, every two or three hours for a child aged 6 to 10 years, he insisted on it being combined with twice the amount of sodium bicarbonate in each dose. Without the addition of the alkali symptoms analogous to the "air hunger" of diabetes might arise. The salicylate must be stopped if symptoms of poisoning should arise. Cardiac failure was stated to be due to rheumatic dilatation of the heart, and not to the action of the salicylates. He referred to other methods of treatment, but wished to sum up his methods as consisting essentially of rest in bed and vigorous antirheumatic treatment. Dr. H. Ashby thought it possible to exaggerate the influence of rheumatism as an etiological factor, and that, holding such views, other factors did not receive due attention. The frequent relapses in chorea among out-patients completely vitiated the statistics on the subject. The undue preponderance of its incidence in girls was in favour of the view that other factors were concerned. In the few cases in which he had tried large doses of salicylates he had not been favourably impressed by the results. Dr. Theodore Fisher gave statistics of the incidence of heart affection in chorea. Dr. William Ewart asked as to the duration of the treatment before recovery. He thought that large doses of carbonates might produce dilatation of the stomach. Dr. G. Crawford Thomson asked why large doses should not be given, in the beginning, as in rheumatism. Dr. F. J. Poynton attached special importance to the pia mater in the pathology. He was not strongly in favour of salicylates as a specific. Dr. Edmund Cautley asked whether the absence of hyperpyrexia should not be regarded as an argument against the theory of cerebral rheumatism. In the worst cases he had found frequent small doses of chloral of great value. Dr. M. O'Sullivan then contributed to the discussion, and read a paper on Chorea: its Complications, Course, and Treatment. Dr. George Carpenter asked as to the effect of salicylate on the blood, and suggested that the "air hunger" was due to haemolysis of red corpuscles. Dr. Logan (Liverpool) thought herpes was sometimes due to the disease and not to the remedies. It occurred sometimes when arsenic was not given. Dr. D. B. Lees, in reply, regarded salicylate as a specific. It was not given in sufficiently large doses. Professor Ruhrah (Baltimore) read a paper on the Relation of the Thymus Gland to Marasmus. Drs. F. J. Poynton, H. Ashby, W. Ewart, D. B. Lees, G. Carpenter, McVittie, T. Fisher, Logan, and Pinkerton took part in the discussion. Mr. R. W. Murray (Liverpool) read a Note on the Age for Operating in Cleft Palate. It was discussed by the President, Mr. W. Arbuthnot Lane, Drs. A. Garrod, Thomas, H. Ashby, and F. J. Poynton.

Section of Laryngology and Otology.

The Section was opened by the President (Dr. Watson Williams), who in a brief address dwelt upon the importance of the examination of the throat in general medicine and surgery, especially as enabling practitioners to detect disease in its early and tractable stages. Sir Felix Semon then introduced a discussion on the Treatment of Malignant Disease of the Larynx. He traced the history of the subject from 1870 onwards, and showed that many of the early bad results were due to the diagnosis having been made too late, when the time for successful interference was already past. Endolaryngeal methods were practically never suitable for malignant disease, and the best results were obtained by thyrotomy, with or without removal of pieces of cartilage, in suitable cases where the diagnosis had been made early and operation had not been delayed. The laryngoscope was generally deceptive in respect of the extent of the disease, and one must be prepared for more extensive proceedings if found to be necessary. His results showed 80 per cent. of cures in cases of undoubted malignant disease. Professor Gluck read a paper on the subject, and showed two patients from whom the whole of the larynx and a considerable part of the pharynx had been removed successfully.

Both were able to speak with considerable ease and distinctness. Dr. Hubert Tilley said that Professor Gluck's work placed the subject upon a new basis, and was most encouraging to surgeons. His own experience was limited to five cases, all of which had done well. He used a saw for dividing the cartilage, and did not stitch through the whole thickness in uniting the wound. He recommended Whitehead's varnish for bleeding from the posterior part of the cords. Dr. Jobson Horne, in referring to early diagnosis, said one was more apt to call a simple growth malignant than a malignant growth simple. Before removing bits for examination the patient's consent should be obtained to any necessary operation. Dr. Hugh Woods gave his experience of nine cases, including seven thyrotomies, one removal of half the larynx and one complete laryngectomy. The thyrotomy cases were alive and well. He attached importance to purging the patient before operation. Dr. Eugene Yonge referred to the difficulty of hitting the middle line of the cartilage, and narrated two successful cases from his own practice. Dr. Dundas Grant narrated a case in which he had removed the entire larynx and thyroid gland for sarcoma. The patient lived for a year, but died from recurrence in the neighbourhood. Dr. Childe remarked that patients sometimes died from unexplained causes after extensive throat operations, with high temperature and impaired consciousness. Sir Felix Semon said that the critical period in these cases was the three days following the operation. A rise of temperature with a demonstrable cause, such as a limited pneumonia or bronchitis, was less to be feared than an unexplained pyrexia. Most cases of intrinsic cancer of the larynx occurred in men, and when women did have the disease it was generally extrinsic. This disposed of alcohol and tobacco as prominent causes. He passed his stitches as deep as the perichondrium, and trusted to pressure to stop the bleeding from the posterior part of the cord. He used cocaine in the operation, but not adrenalin. Professor Gluck agreed that early diagnosis would obviate the necessity for the more extensive operations.

NAVY, ARMY, AND AMBULANCE SECTION.

THE first paper communicated to this Section was by Staff-Surgeon J. Falconer Hall, R.N., on the Water Supply for Landing Parties and Naval Brigades. Six pints per day for drinking and cooking ought to be the minimum, and in hot climates at least nine pints. Undoubtedly under active service conditions boiling the water was the best method to get it pure and free from typhoid or cholera germs, but if this could not be done the Berkefeld filter should be used, the candle being sterilized once a day. Chemical methods were practically useless. Fleet Surgeon Lloyd Thomas, R.N. then read a paper entitled A Surgeon's Notes with the Naval Brigade—China. After describing the manner in which the drinking water was treated, he said that in view of the hair being a very great protection to the scalp, men should be forbidden to indulge in a "short crop" when landed for shore work in hot climates. He believed that the time was not far distant when soldiers and sailors would be provided with a shade in the form of a goggle. The 31 cases of diarrhoea were probably due chiefly to mechanical irritation of the mucous surfaces of the stomach and intestines from the presence of solid matters which had been ingested in a condition of suspension in various vehicles. If the purely mechanical irritant theory was accepted then the remedy consisted in restricting the drinking water to that which had been carefully filtered. There were 12 cases of sunstroke, but these did not include transient cases. Only 2 ended fatally. The term "sunstroke" was more applicable to this form of insolation inasmuch as it was attributable to the direct sun's rays as opposed to the more universally fatal form of heat stroke where moisture existed in the air. The sunstroke on the march might be termed the cerebro-spinal variety, and water was the treatment *par excellence*, introduced into the circulation by the stomach and by the skin. The immediate after-treatment consisted of simple bland restoratives. Surgeon-Major Arnallt Jones said the paper by Fleet-Surgeon Lloyd Thomas was of great interest to the volunteer service. Deputy Inspector-General H. M. Ellis, R.N., said that, in regard to the water discipline of troops, it was impossible for civilians to realize the overwhelming temptation that came over troops when they felt they were almost dying of thirst. Surgeon-General Evatt and Dr. Leigh Canney also joined in the discussion. A paper was read on a Mounted Bearer Company by Lieutenant-Colonel H. Hathaway, R.A.M.C.

SECTION OF TROPICAL DISEASES.

THE President (Dr. George H. F. Nuttall), in opening this Section, said that in no department of medicine were more important advances being made, and the idea of any important medical conference taking place in which a Section of Tropical Diseases was not held could hardly be considered to be fulfilling its mission. Professor W. J. Simpson, M.D., F.R.C.P. (London) opened a discussion on the Disposal of Excreta in the Tropics; he was followed, in a paper on the Disposal of Sewage in the Tropics, by Dr. Andrew Davidson; and on the Influence of the Septic Tank on Pathogenic Bacteria, by Captain Leonard Rogers. The following gentlemen joined in the discussion: Dr. H. Marcus Fernando (Colombo, Ceylon), Dr. C. Christy (Liverpool), Dr. W. B. Clarke (Liverpool), Fleet Surgeon P. W. Bassett-Smith, Sir Patrick Manson, K.C.M.G., F.R.S. (London), Dr. F. M. Sandwith (Cairo), Dr. L. Sambon (London), Mr. J. Cantlie (London), Captain Leonard Rogers, Captain A. T. W. King, Major I. Penny, Mr. Kenneth W. Goadby (London), and the President. Fleet Surgeon P. W. Bassett-Smith then read a paper on Sprue, Primary and Secondary, with Special Reference to the Blood Changes found, with Illustrative Cases. The following took part in the discussion: Sir Patrick Manson, Dr. L. Sambon, Dr. W. B. Clarke (Barbadoes), Dr. G. C. Low (London), Mr. J. Cantlie, Mr. Kenneth W. Goadby, and Major I. Penny. Dr. C. Christy (Liverpool) contributed a paper on the Entry of the Spore into the Red Corpuscle, which was illustrated by drawings and microscopic specimens. Sir Patrick Manson discussed the paper. The Section was well attended, and the papers created keen discussion.

MEDICO-POLITICAL COMMITTEE.

Report to the Annual Representative Meeting and Council.

IN reporting upon the medico-political work of the past twelve months, the Committee would first draw attention to the special conditions by which the work has been in some degree governed during the year 1902-3. These special conditions arose from the fact that the important changes in the local organization of the Association consequent upon the adoption of the new Constitution have been in progress during the year, and are only recently completed. Under the new Constitution it has been made possible for the executive, through the agency of the Divisions and of the Representative Meeting, to ascertain the opinion of the Association in a manner not previously available, and the existence of such means carries with it the constitutional obligation that the Association shall be consulted before any important departure in policy is made. During the period covered by this report the details of local reorganization have necessarily occupied much of the time and energies of the members of the Association. The majority of the newly-created Divisions have only come into active existence at the end of the period, and therefore the constitutional machinery for taking the opinion of the Association has not been ready to be brought into full operation. The result has been that in one important matter in which immediate action was necessary—that of Vaccination Law reform—the Committee was compelled to recommend the Council at once to approach the Government, and thus in a sense to take the responsibility of defining the policy of the Association. On the other hand, the contrary course was adopted in relation to the question of contract practice referred to the Committee. As obviously no similar urgency existed in relation to this matter, the Committee held that action should be deferred until the Representative Meeting and the Divisions had thoroughly discussed it. The motions of which the Gateshead Division has given notice will bring this most important question before the Annual Representative Meeting in a comprehensive form.

It is gratifying to the Committee to be in a position to report that, notwithstanding the special difficulties natural to a period of transition, the work of the year testifies to the increasing usefulness of the Association to the medical profession in matters affecting its honour and interests, and also to the increasing recognition of the Association by the profession generally as a body capable of acting with representative authority. In this connexion the Committee

considers that attention should specially be drawn to the large proportion of the matters considered by the Committee which have come before it through being referred to the Association by bodies of medical men not organically attached thereto, both local medical societies not affiliated to the Association, and societies of medical practitioners engaged in various kinds of special work. The relations thus established between the Association and purely local societies, such as the South-West London, Huddersfield, and Middlesbrough Medical Societies, tend to familiarize medical men generally with the work and benefits of the Association. On the other hand, the co-operation with the Association of such Societies as the Society of Medical Officers of Health, the Scottish Poor-law Medical Officers' Society, and the Association of Certifying Factory Surgeons, is mutually advantageous, by affording to the Association the assistance of experts in dealing with technical questions often affecting indirectly the interests of the whole profession, and at the same time bringing to each special class of members of the profession the support of a body representative alike of every section.

The following is a list of the matters which have engaged the attention of the Committee during the year:

Subject.	Result of Consideration.
Contract Practice.	To come before Representative Meeting.
Coroners Bill.	Adopted. Parliamentary action deferred.
Coroner (Huddersfield).	Advice given. Settled.
,, (S. W. London).	Action taken. Pending.
Death Certification from Unqualified Practitioners (Middlesbrough).	Action taken. To come before Representative Meeting.
Irish Poor-law Medical Officers.	To come before Representative Meeting.
Legal right to refuse to consult (Cork)	Advice given. Apparently settled.
Local Government (Scotland) Act Amendment Bill.	Promised action when required.
Medical Acts Amendment Bill.	Referred to Divisions.
Notification of Industrial Accidents.	Action taken.
Pharmacy Act (Amendment)	Consideration deferred.
Public Health Bill.	Introduced into Parliament.
Vaccination Act Amendment.	Action taken. Recommendations herewith submitted.
Workmen's Compensation Act (Medical Referees).	Action taken.

Since the minutes of the Committee have already been published after each meeting in the British Medical Journal, it will be convenient in this report to review in detail the matters stated in the above list, not chronologically, but in such order as will bring together kindred subjects.

The Investigation of Cause of Death.

It is significant of the long-continued and growing dissatisfaction of the medical profession in this country with the existing law and practice in relation to the investigation and registration of the cause of death, that so many of the matters referred to the Committee should have come under this head.

Coroners Act Amendment.

The first of such subjects considered was a Bill for the amendment of the Coroners Act, which had been prepared by a special Committee during the previous year. The provisions contained therein related to the compulsory notification by registrars to coroners of deaths not medically certified, the remuneration of medical witnesses at inquests and of medical men giving information to coroners in cases not resulting in inquests, and the remuneration of coroners in certain special cases. The Council was recommended by the Committee to approve the Bill, but that before it was introduced into Parliament an effort should be made to secure the support of the Coroners' Society. The Committee regrets to state that after prolonged consideration the Coroners' Society declined to support the Bill, on the ground that in its view any amendment of coroner's law should be initiated by a Government department. Owing to the late period of the session at which this reply was received, it has been found necessary to defer the introduction of the Bill, but the Committee is arranging to press it forward next session.

Registration of Death Certificates from Unqualified Practitioners.

On behalf of the Middlesbrough Medical Society, the attention of the Committee was specially drawn to one of the abuses which the first provision of the Bill above referred to was designed to prevent—namely, the systematic acceptance by registrars of statements by unqualified practitioners as to the cause of death, which are accepted technically as "information," but virtually as death certificates. The Solicitor to the Association had previously, in his capacity as Solicitor to the Medical Defence Union, interviewed the Registrar-General as to suggested procedure, whereby under the existing law such documents might in general be referred by the registrar of deaths to the coroner before registration, and with the advice of the Solicitor the Committee was enabled to inform the Middlesbrough Medical Society of the steps which under the present regulations of the Registrar-General, can be taken in the direction indicated. At the same time it appeared to the Committee desirable, and the Council was so recommended, that the Registrar-General should be approached on behalf of the Association with a view to the extension of such procedure, and also to urge the importance of amendment of the law as to death certification and registration, on the lines laid down in the report of the Select Committee of the House of Commons presided over by Sir Walter Foster. The Council adopted the recommendations of the Committee, and the subject will also come before the Representative Meeting upon a motion submitted by the Cleveland Division.

Action Concerning Certain Coroners.

The attention of the Committee has been drawn to two cases in which the procedure of coroners appeared open to grave objection:

(*a*) *Huddersfield.*

At Huddersfield the coroner instructed the registrar before registering a death in which a surgical operation had been performed within the fourteen days prior to death, to submit the medical certificate to him for his consideration. The Committee at once responded to an application made to them on behalf of the Huddersfield Medical Society to take the matter up, but before definite action could be taken by the Association the coroner withdrew from his position.

(*b*) *South-West London.*

The other case was that of the Coroner for South-West London, Mr. John Troutbeck, who has made a practice of dispensing with the assistance in necropsies, and in many cases with the evidence at inquests, of the practitioner in attendance during life, or who first saw the deceased after death. On the recommendation of the Committee the Council has taken action in the matter, in conjunction with the South-West London Medical Society, the Medical Defence Union, and the London and Counties Medical Protection Society. A joint deputation from these bodies waited on May 11th upon the Lord Chancellor, and the matter is still under the consideration of his lordship.

Medical Investigation of Industrial Accidents.

The principles underlying the question of medical evidence as to deaths apply also in considerable degree to that of the adequate investigation by medical experts of non-fatal injuries to workmen, which has come under the consideration of the Committee in two connexions.

At the instance of the Association of Certifying Factory Surgeons the Committee has carefully considered the report of a Departmental Committee of the Home Office on the Notification of Industrial Accidents, by which certain changes in the law were suggested. The general tendency of those amendments proposed by the Departmental Committee, to which special attention has been given by the Committee, is to remove to a great extent accidents of certain classes from primary investigation by the factory surgeon. Such changes would materially diminish the efficiency of the measures at present adopted for preventing recurrence of accidents from preventable causes. On the recommendation of the Committee the Council has decided that in relation to this matter the Home Secretary shall be requested to receive a deputation in conjunction with a deputation from the Factory Surgeons' Association.

Medical Referees under the Workmens' Compensation Acts.

The unsatisfactory working of those provisions of the Workmen's Compensation Act which relate to the employment of the medical referees appointed by the Home Office under the Act was carefully inquired into by a special Subcommittee. In the result it appears that the majority of medical referees so appointed have not been called upon at

any time to render the services contemplated by the Act, and that the efficiency of medical investigation of compensation cases is impaired in consequence. The causes of the relative failure of the provisions of the Act in question appear to be: (*a*) The peculiar conditions prescribed as regards calling in the official medical referee prior to litigation; and (*b*) the disinclination of county court judges to employ the official referee in the way provided by the Act in cases coming before them. There can be no doubt also that in practice the medical officers of insurance companies have largely replaced the official medical referees. On the recommendation of the Committee the Council has decided to appoint a deputation to make representations to the Home Office on this subject also.

Security of Tenure of Office.

(*a*) *Medical Officers of Health.*

The Committee regrets to report that, owing to the congestion of Parliamentary business, it has again been found impossible to obtain the consideration by the House of Commons of the Public Health Bill, promoted by the Association, dealing with the above subject.

(*b*) *Scottish Poor-law Medical Officers.*

The subject of security of tenure of the medical officials of local authorities came before the Committee also in relation to the Local Government (Scotland) Act Amendment Bill. As to this Bill, the Council, as recommended by the Committee, acceded to a request received from the Scottish Poor-law Medical Officers' Association for support.

The Position of Poor-law Medical Officers in Ireland.

The South-Eastern of Ireland Branch brought before the Committee the subject of the present position of the Irish Poor-law medical officers, and subsequently the Organizing Secretary, when visiting Ireland, made inquiries into the subject for the information of the Committee. At a meeting of Poor-law medical officers convened in Dublin in connexion with this visit, resolutions were adopted embodying the principal remedies desired by the Poor-law officers. The resolutions so prepared were subsequently adopted by the Leinster Branch, and, on a notice by that Branch, will come before the Representative Meeting; pending the discussion by the Meeting, no action has been taken by the Committee.

Legal Right to Refuse to Consult.

A letter was received from the Secretary of the Munster Branch inquiring, on behalf of the Cork medical profession, as to their legal right to agree not to hold professional intercourse with medical practitioners who may be deemed to have behaved unprofessionally. The Committee was glad to be able to inform the Cork profession of the opinion of the Solicitor to the Association that such agreement was not contrary to the law.

The Vaccination Acts.

In view of the approaching expiration of the present Vaccination Act, your Committee carefully considered, in conjunction with the Public Health Committee, the amendments of the law which appeared desirable in any future legislation. The conclusions of the joint Committee as set forth in the following propositions were approved by the Council on behalf of the Association, under the special conditions referred to at the commencement of this report:

1. That revaccination be made compulsory by law, and that it be performed between the ages of 10 and 13 years.

2. That both primary vaccination and revaccination be subject to the same provisions for conscientious objection as in the present Vaccination Act, but that the procedure for exemption should be more strictly defined in any future legislation.

3. That the Vaccination Act should be administered directly by a department of the Local Government Board.

4. That in future vaccination legislation no certificate of successful vaccination should be accepted unless it contains a statement as to the number and area of the vesicles produced.

5. That all lymph shall be supplied by the Government, or by private establishments under Government supervision and guarantee.

6. That every private practitioner furnishing vaccination authority with certificates of successful and efficient vaccination, satisfying a standard fixed by the Local Government Board, should receive a suitable fee for each such certificate.

As no measure dealing with vaccination law has been introduced by the Government in the present session, it will therefore be possible for the Representative Meeting to discuss the six propositions as here presented, or to refer them for consideration by the Divisions.

Amendment of the Pharmacy Act.

The attention of the Committee was drawn to a report of a Departmental Committee of the Privy Council relating to the amendment of the provisions of the Pharmacy Act regulating the sale of poisons. As, however, it is not anticipated that legislation on this matter will be attempted during the present session of Parliament, the Committee has deferred the consideration of the subject until the autumn.

Amendment of the Medical Acts.

The Medical Acts Amendment Bill drafted by the Parliamentary Bills Committee has been revised by the Committee provisionally for submission to the Divisions, to which it has now been referred by the Council. The main principles of the Bill are: The reform of the constitution of the General Medical Council, the one-portal system, an annual licence to practise, and the suppression of unqualified practice. The Committee would express the hope that the careful consideration by the Divisions of this question, so important to the medical profession, and their subsequent support of such a measure as may, in the Annual Representative Meeting of 1904, receive the sanction of the Association, may result in the early achievement of amendments of the Medical Acts which will greatly improve the conditions of medical practice and the efficiency of the medical service of this country.

The Medico-Political Committee has held Six Meetings, at which the Attendances have been as stated below.

Name.	Attendances.	
	Committee.	Subcommittees.
Sir Victor Horsley, Chairman	6	(5 possible) 5
Mr. Walter Whitehead, President	0	(5 ,,) 0
Mr. Andrew Clark, Chairman of Council ...	4	(5 ,,) 0
Dr. E. Markham Skerritt, Treasurer ...	2	
Dr. H. Langley Browne	6	(3 ,,) 3
Professor J. W. Byers	0	
Dr. A. Cox	3	
Dr. W. Gordon	1	
Dr. Major Greenwood	5	(2 ,,) 2
Dr. G. A. Heron	4	(5 ,,) 5
Mr. M. A. Messiter	4	(3 ,,) 3
Dr. C. H. Milburn	5	(3 ,,) 3
Dr. A. Brown Ritchie	2	
Dr. Norman Walker	3	
Dr. S. Woodcock	3	

VICTOR HORSLEY,
Chairman.

ETHICAL COMMITTEE.

Report to the Annual Representative Meeting and Council.

INASMUCH as the Ethical Committee will in future be appointed partly by the annual representative meeting and partly by the Council, it appears constitutionally proper that at the time of the annual reappointment of the Committee a report should be presented to each of these bodies of its proceedings during the year.

The duties of the Ethical Committee as laid down by By-law 39 (7) are: (1) To consider and advise the Council upon all rules of Branches and Divisions relating to ethical matters; (2) to report to the Council on the conduct of individual members where this is to be considered by the Council; (3) to arbitrate between members when so desired; (4) to act generally under the Council in reference to all matters of professional conduct. It will be convenient to narrate the work of the Committee under these heads.

In approaching its duty of advising as to rules, the Committee was met at the outset by the question whether the Council should be advised, in exercising the discretion conferred upon it by By-law 11 as to the approval of rules of Divisions and Branches, to endeavour to secure the adoption

of a uniform ethical code throughout the Association, or in general to give its approval to such rules as the local body in each area might desire to adopt. It appeared to the Committee that in this matter the autonomy of local bodies might with advantage be restrained by the Council to this extent, that the Council should be satisfied that the rules adopted had the sanction of such a majority as to show that such rules were the genuine expression of public opinion in the profession throughout the area in which they would be binding. Subject to this provision for the protection of minorities the Committee advised that the rules adopted by Divisions and Branches to regulate the professional conduct of members in their own respective areas should in general be approved by the Council. This question has been again brought before the Committee in another form by the following resolution of the Wandsworth Division:

That it is the opinion of the Wandsworth Division that the Ethical Committee of the Association should draw up and submit for approval a code of ethical rules, and in that way help to unanimity in the Association.

The Committee felt unable at present to advise the adoption by the Council of this suggestion.

The Gateshead and Norwich Divisions have submitted for the approval of the Council certain rules for the regulation of the professional conduct of their own members. These rules had been unanimously adopted by meetings of the two Divisions, which include in their membership almost all the medical practitioners in their respective areas. After certain modifications resulting from suggestions of the Committee, the rules as finally submitted by the two Divisions were approved by the Council in the following form:

GATESHEAD DIVISION.

1. In the event of the Division agreeing to take combined action, any member found guilty after discussion and ballot of gross breach of faith shall be reported to the Branch Council for reference to the Council of the Association. If this report shall lead eventually to the expulsion of a member from the British Medical Association, no member shall have any professional intercourse with the said expelled member except under circumstances of great urgency.

2. No member shall be reported to the Branch Council (as per previous rule), except on the vote of a clear majority of the whole of the members of the Division.

NORWICH DIVISION.

1. A member of the Division shall not oppose another member in any course of action which, with the previously expressed sanction of the Division, he may take for the general good of the profession.

2. A member of the Division shall not undertake in future any fresh contract practice, directly or indirectly, at a lower rate than that adopted by the public medical service, or accept any appointment in any Medical Aid or similar Society, or have any professional intercourse, except under circumstances of great urgency, with any medical man who associates himself with any of the companies known as Medical Aid Societies or similar institutions whose methods are held by the Division to include touting or canvassing for members in the interests of individual practitioners, or the sweating of their medical officers by inadequate remuneration. If, under circumstances of great urgency, professional intercourse should take place between a member of the Division and a medical man associated with a Medical Aid Society or similar institutions, the fact, with an account of the attendant circumstances, shall be reported by the member to the Secretary of the Division within fourteen days from its occurrence.

The Committee has also considered the question of the procedure of Divisions and Branches in dealing with matters of professional conduct. It appeared to the Committee that suggestions in the form of model rules for this purpose might be found useful by the local bodies of the Association. These were therefore prepared, and have already been adopted without material modification by a sufficient number of Divisions and Branches to show that the action of the Committee in this matter has been helpful.

It is gratifying to the Committee to report that it has not been called upon to advise the Council on any question of professional conduct arising under Articles XLIII and XLIV. The Committee also has not been called upon formally to arbitrate in any question between individual members of the Association, though questions affecting the conduct of members have come before it on the initiative of other members, and its decisions thereon have been accepted by the members concerned.

The questions of individual conduct referred to the Committee have chiefly related to some form of advertisement, and it will be observed with satisfaction by the representative meeting and by the Council that in the majority of cases considered there was no reason to believe that the medical man whose name was made use of had sought, or in some cases was even aware of, the objectionable publication. The medical profession had long suffered from the unwarrantable use made of the names of its members by traders in the advertisement of their own wares. The Committee, with the approval of the Council, has instructed the Organizing Secretary in all cases brought under his notice in which the name of a member appears in a trade advertisement issued to the general public, to draw thereto the attention of the member concerned, and in the case of a non-member to bring the matter to the notice of the licensing body from which he obtained his qualification to practise. The Committee has pleasure in reporting that in the majority of cases the medical practitioner written to has at once requested the advertiser to cease such use of his name, and that the advertiser has as a rule complied.

While judicial decisions at present do not encourage any attempt to enforce the withdrawal of advertisements by legal proceedings, the experience of the Committee has shown that a simple protest by the medical man, and request for discontinuance of the advertisement is, as has been stated, usually successful, and this result would appear to justify the action of the Committee.

A kindred matter brought under the notice of the Committee was that of an alphabetical list of London consulting practitioners published among the general information contained in the price list of a firm having several retail chemists' shops in London suburbs. It appeared to the Committee that those whose names were included in the list should be informed of the fact in order that they might take such steps as they might think proper.

The Council approved this course, and also directed that a letter should be written on behalf of the Association to the firm in question drawing their attention to the objections entertained by the profession to such publication. Of the 400 practitioners named in the list, about 300, in compliance with the suggestion of the Committee, requested the withdrawal of their names, which was promised, and the firm also replied to the Association promising to cease in future the publication of the list. Under the threat of legal proceedings by one practitioner concerned the firm has withdrawn these promises, but it is believed that eventually they will be carried out.

Another group of cases of advertisements referred to the Committee have arisen from complaints received as to newspaper announcements of various kinds. In many of these there has been no question beyond the application of the generally recognized professional rule that medical notices, reports of medical cases, and similar matters containing the names of the practitioner concerned should not be communicated to the lay press. Special attention may, however, be drawn to the subject of bulletins brought before the Committee by Sir Victor Horsley, in connexion with a letter he had written to the editor of the *Times*, objecting to a paragraph which had appeared in that paper giving his name as in attendance on a case. It was resolved thereon:

That a circular letter be sent to the principal London papers deprecating the mention in paragraphs relating to the illnesses of persons other than members of the Royal Family, of the names of medical men in attendance, and that it be suggested to Branch Councils that they should take similar action as regards the leading provincial papers.

Special mention should also be made of the subject of the following recommendations of the Committee:

That the Committee is of opinion that the advertising in local papers of the physician or surgeon for the week, or any systematic advertisement in newspapers of the names of the staff and their days of attendance is open to grave objection, and instructs the Secretary to write to any member of the profession whose name may so appear requesting him to take steps to have the practice discontinued.

The latitude in respect of advertisements accorded by the medical profession to institutions of various kinds, appears to be seriously abused by the proprietors of certain hydropathic and similar establishments. Two conspicuous instances of such abuse have been brought under the notice of the Committee. In one case the medical man concerned agreed to act upon the opinion of the Committee; the other case has been referred by the Association to the General Medical Council.

In conclusion, the Committee desires to point out that during the past year many matters have been considered which, had the Divisions been in active existence, would have been referred to them at least for inquiry, and that in the opinion of the Committee this course is desirable for the future.

The Committee has held four meetings, the attendances at which have been:

Professor R. Saundby (*Chairman*)	 3
Mr. Walter Whitehead (*President*)	 3
Mr. Andrew Clark (*Chairman of Council*)	 4
Dr. J. Barr	 2
Dr. A. G. Bateman	 4
Dr. P. Maury Deas	 3
Dr. W. A. Elliston	 4
Dr. E. Jepson	 4
Mr. R. H. Kinsey	 2
Sir Isambard Owen	 1
Dr. R. W. Philip	 3
Mr. R. H. Wolstenholme	 3

Robert Saundby,
Chairman.

COMPLIMENTARY DINNER TO MR. JONATHAN HUTCHINSON.

A complimentary dinner was given to Mr. Jonathan Hutchinson by members of the medical profession on July 23rd at the Trocadero, London, with Sir H. Greenway Howse in the chair. Those present at the dinner numbered over 160.

After the usual loyal toasts Dr. Hugh Woods announced that many letters and messages had been received from doctors and others who were unable to attend. Lord Strathcona wrote that nothing short of physical inability prevented him from assisting in doing honour to one in every way so deserving of it as Mr. Hutchinson.

The Chairman, in proposing Mr. Jonathan Hutchinson's health, said that Mr. Hutchinson was a practitioner of fifty-three years' standing, and he (the Chairman) could remember that Mr. Hutchinson's name had become a familiar word in the profession when he entered it in 1861. He reminded them that the most important early work of Mr. Hutchinson was on the effects of syphilis on the eyes and teeth, and though that work had become a matter of everyday knowledge to them all, its importance could not be over-estimated. He recalled how Mr. Hutchinson, in his earlier days, was constantly to be seen studying in the Museum and the Pathological Department of Guy's Hospital. Mr. Hutchinson had shown astonishing virility and vitality in the course of the last two or three years in making long journeys to South Africa and to India, and was, moreover, still able to do more work, which would be of great assistance to the medical profession. The Chairman then related how Mr. Hutchinson had persuaded the Royal College of Surgeons to acquiesce in the opening of Lincoln's Inn Fields to the public.

Dr. Robert Barnes, in seconding the toast, asked to be excused from making a long speech on account of ill-health, and in a few words praised Mr. Hutchinson for the work he had done for the medical profession.

Sir Joseph Fayrer also spoke to the toast, and said that he was a pupil of Mr. Hutchinson, and had read his works always with profit. He considered that what was most worthy of imitation in Mr. Hutchinson was his indomitable energy, his fidelity to conscience, and his true scientific spirit. He regretted that Mr. Hutchinson had not received any public recognition for the great work he had done. He concluded by congratulating Mr. Hutchinson on reaching his 75th year with his eye undimmed and his natural forces unabated.

Mr. Hutchinson, in reply, said that he would endeavour to avoid any undue elation from the praises bestowed on him, because he remembered how a friend of his in former days had been ruined in life by believing his own testimonials. Mr. Hutchinson, however, admitted that he was not at all superior to the healthy feeling of pride and satisfaction in knowing that he had gained the esteem of such a large body of friends. He recalled how, when he proposed that the College of Surgeons should not oppose the opening of Lincoln's Inn Fields, he was met by the retort, "How would you like Cavendish Square thrown open to the public?" His reply was, "If any one will propose it I will vote for it." He thanked Sir Joseph Fayrer especially for the expression "fidelity of conscience," and in regard to that he mentioned that he had had the great advantage of being trained up in the society of Quakers, whose one dogma was that a man should do what he believed in his conscience to be right. Some of the success he had attained in teaching was due, he thought, to the training he had acquired in Sunday school work. Referring to his visit to Robben Island in the course of his leprosy tour, he said that there were 500 persons confined in that island simply because the medical profession was inattentive to facts, and declared leprosy to be contagious. He had seen on Robben Island men as healthy as he was confined for life on account of this medical dogma. In that direction there was motive enough for work, and Mr. Hutchinson said "I shall spend what remains of my life in attempting to make the profession alive to their duty in respect to leprosy." Mr. Hutchinson concluded by telling his audience some of his life mottoes. One was to keep true to the dream of your youth, and not to allow yourself to feel old. Another motto which he borrowed from a lady novelist was to remember the distinction between fame and immortality on earth. Fame was for a man's name to be known widely and for many generations. Immortality on earth was that a man's influence and the influence of his writings should continue on for generations after his name had been forgotten.

Sir Thomas Barlow, in proposing the toast of "The Visitors," said that they were welcome not only for their own sakes but because they joined in doing honour to one who had truly been to many a guide, philosopher, and friend. Their guests were drawn from many different walks of life and he was proud to emphasize the fact that it was not alone in the fields of surgery and pathology that Mr. Hutchinson had gained his laurels, but that he had also given a rare example of unremitting labour and practical enthusiasm in the sacred cause of education. The stimulus given by Mr. Hutchinson to the development of educational museums endeared his memory to every one who cared for the advancement of knowledge and the scientific enlightenment in the body politic.

After the toast of "The Visitors" had been responded to by Mr. Christie, Sir Alfred Cooper, proposed the health of the Chairman, who made a suitable reply.

FOUNDERS' DAY AT EPSOM COLLEGE.

On Saturday, July 25th, another successful year's work at Epsom College was terminated by the usual distribution of prizes. There was a large attendance of the relatives and friends of the boys and the proceedings were marked by much enthusiasm.

Before the prize-giving, a service was held in the chapel, and after the anthem, Mr. Winston Churchill, M.P., unveiled a stained-glass window which has been placed in the chancel in memory of old Epsom boys who lost their lives in the recent war.

The College sent no fewer than thirty-four soldiers to South Africa and this beautiful window bears testimony to the fact that nine of that number yielded up their lives for their Queen and country. The window is the work of Mr. Oldacre, of Epsom, himself an old member of the school, who generously presented the brass commemorative plate which is inserted in the chancel wall below the memorial.

At the conclusion of the service an adjournment was made to the big schoolroom and there the prizes were distributed partly by Mr. Hart-Smith, the Head Master, and partly by Mr. Winston Churchill.

Before the distribution the Head Master made an interesting speech in which he welcomed the visitors, thanked Mr. Churchill for his kindness in assisting at their Founders' day ceremonial, and congratulated those interested in the school on the satisfactory character of the year's work, and on the unusual number of successes gained both by present and former pupils. He referred with much gratification to the honour done the school by the unexpected visit of His Royal Highness the Prince of Wales a few days before the festival dinner over which he presided with such remarkable success. The dinner had proved a record one from every point of view, and the charitable side of the work at Epsom had very materially benefited from the response made to the Prince's appeal. He thought there was so much misapprehension as to the relationship between the school and the charity that he was in full agreement with Lord Rosebery's expressed hope that the day might not be far distant when the school would be rechristened under the more crisp, and for many reasons more desirable, name of Epsom College. Mr. Hart-Smith concluded his remarks by stating that the athletic side of their work had been no less successful than the scholastic. During the year they had been fortunate in having a most excellent cricket eleven; their rifle corps had flourished until it now numbered close upon one hundred members, and within the year a shooting range had been opened within the grounds; a new swimming bath had been added to their other facilities for physical development, and a voluntarily trained fire brigade was kept by constant practice well up to whatever might be required of it. In connexion with this subject it was announced that the College had been

gone carefully over by an expert, who had certified as to the completeness of the apparatus provided for dealing with fire, and of the precision made for easy and rapid escape from every part of the buildings should such a contingency arise. The most distinguished student of the year was Mr. Arthur Charles Cosmo Parkinson, who, in addition to a perfect library of books and other prizes, gained an open classical scholarship of £80 at Magdalen College, Oxford.

The distribution of prizes being ended, Mr. Winston Churchill addressed the boys. He offered his sincere congratulations to the prize winners, and also to the Head Master, staff, and council for the excellent results which the school had achieved. He thought it doubtful whether the old adage about the schooldays being the happiest period of a man's life would always bear the investigation of experience; his impression rather was that they should preferably be regarded as the threshold of a happier period to follow. But whether that might be accepted or not, he was quite clear that the happiest period of these happy school days was the end of the term when the holidays were at hand. Mr. Churchill proceeded to say that he had never himself been overburdened with prizes, so that while he congratulated those who that day had carried away armsfull of books, he was filled with sympathetic condolences for those for whom there were no rewards. He counselled all of them to have their minds filled with something more than the mere list of prizes, and reminded them that success at school did not necessarily mean a similar success in the greater battle of after-life. None the less, it was a great thing to be a "swell at school," because seldom did such autocracy ever again occur throughout the curriculum of life. He paid a warm tribute of admiration to the profession of medicine in whose service many of his hearers would ultimately pass their lives, and he finally urged upon them to ever keep, amid the storm and stress of life, a warm corner in their hearts for the Alma Mater to whom they owed so much.

An interesting feature of the proceedings was the award of a cup, made for the first time this year, for the best turned out squad of the cadet corps among the houses of the College. The cup, which was presented by Captain Newsom, was won by Forest House.

The proceedings were terminated by a vote of thanks to Mr Winston Churchill, proposed by Sir William Church and seconded by Dr. Buzzard.

CONTRACT MEDICAL PRACTICE.

Aberaman and Cwmaman.

It would appear from a report in the *Merthyr Express* of July 25th that the medical men of Aberaman and Cwmaman, in Glamorganshire, will be called on shortly to deal with the question of contract practice in a form which is somewhat uncommon elsewhere.

Up to the present time the employés of the Cwmaman and Powell Duffryn collieries have had an arrangement by which any of them could select as his medical attendant any one of three medical men generally recognized as colliery surgeons. For some reason, however, local leaders, if not the men and their families themselves, desire to put an end to this arrangement, and a committee was appointed to consider the subject. The result of its work was that it drafted and submitted to mass meetings of the men a set of rules for a "Workman's Doctor's Fund," the objects of which are as follows:

1. To provide for the workmen of the Powell Duffryn and Cwmaman Coal Companies an efficient staff of doctors to attend to their wants and those of their families in cases of illness or accident. (2) To provide the said doctors with all necessary medicines and surgical instruments for the sole benefit of the workmen subscribing to the fund. In the address to the men issued by the Committee, it is stated that the estimated expenditure for one year has been worked out as follows: "One chief medical doctor, £600; five assistants at £200 each; drugs and instruments, £500; saddlery and stables, £100; rents, coals, water, and gas, £200; rates, taxes, and fixtures, £100; management, £50; total, £2,550."

It is estimated that on these figures there will be a saving of at least a thousand a year if the present wage-rates at the collieries are maintained. The doctors in view, it is to be observed, are to be debarred from private practice. There is no information as to what rates the men at present pay to their club doctors, nor as to the contribution to be exacted from each man under the new scheme. The idea, however, appears to be to deduct a definite percentage from each man's wages, and from the aggregate figures given it would appear as if this percentage must represent a very much higher sum than it is conceivable is at present paid to the medical men who so far have looked after the wants of the men and their families.

At the mass meetings resolutions in favour of the scheme were passed, but as there was evidently a good deal of outside influence at work it is by no means certain that the men at the different pits involved will be equally enthusiastic in its favour when they come to consider it quietly by themselves.

CENTRAL MIDWIVES BOARD.

We are informed by Mr. G. W. Duncan, Secretary to the Central Midwives Board, that a meeting of the Board was held at the Privy Council Office, Whitehall, S.W., on Thursday, July 23rd, Dr. Champneys in the chair.

The Secretary reported that, subject to the confirmation of the Board, he had made an arrangement with Messrs. Spottiswoode and Co. for the sale of the Board's publications, including the rules, forms, and midwives' roll.

The action of the Secretary was approved.

The Secretary was instructed to advertise for a lady clerk to enter on her duties when the Board takes possession of its new office at 6, Suffolk Street, about the middle of August.

A letter was read from the Clerk of the Council, enclosing a copy of the rules as revised by the Privy Council after consideration of the representations made by the General Medical Council, the Home Office, and the Local Government Board.

After discussion of the suggested amendments, some of which were accepted and others modified, the Secretary was directed to return the rules to the Privy Council, with the observations of the Board on the alterations made.

It is not anticipated that any difficulty will now arise to prevent the approval of the rules by the Privy Council at an early date.

The West Sussex Council and the Midwives Act.

At a recent meeting of the West Sussex Council Alderman Johnstone moved:

That the County Council do at this meeting appoint a Committee to report on all matters requiring provision to be made under the Midwives Act, 1902, and do delegate to such Committee the powers and duties of the County Council in all matters in which the Committee consider that action should be taken before the County Council has made full provision on the subject.

This was agreed to, and the following Committee was appointed: The Rev. C. S. Dunlop, the Rev. E. D. L. Harvey, Major Helme, Mr. J. H. Johnstone, Mr. Long, Mr. Matthews, and Mr. J. Whitehead.

INDIAN REPORTS.

Charitable Hospitals and Dispensaries in the Central Provinces.

The report for the three years ending 1901 has been prepared and submitted by Colonel Geoffrey C. Hall. Colonel Scott-Reid was administrative medical officer during the most of the period. The number of institutions increased from 127 in 1899 to 188 in 1901. This increase was mainly due to the inclusion of police and railway hospitals and missionary dispensaries in the returns. The figures for 1901 represent all charitable medical institutions—public-aided and private—in the province. There is one dispensary to every 614 square miles and to 63,000 of the population. The supply is held by the administration to be on the whole equal to the demand. The number of patients treated in 1901 was 1,813,588, an increase on former years, indicating growing popularity. There was a decrease in the number of indoor patients, attributed to the healthy year. The death-rate among these was 9.22 per cent. against 8.1 in 1899, and 15.2 in 1900—the famine year. There was an increase in the number of surgical operations performed. They include 906 extractions of lens and 40 lithotomies and 69 litholapaxies. The number of women treated was larger. Special hospitals for females are doing good work, and trained midwives are being employed. The total expenditure in 1901 was Rs. 177,719, of which Government contributed 30 per cent. The proportion of income obtained from private subscriptions is held to be unsatisfactory, and efforts are being made to stimulate contributions in money and appliances.

SPECIAL CORRESPONDENCE.

BRISTOL.

Report of Medical Officer of Health.—Western Branch of British Dental Association.

THE annual report of the Medical Officer of Health, which has just been distributed, contains much interesting matter. From it we gather that the population of Bristol is now 334,632, spread over an area of 11,682 acres, a density of 28.64; and that the new reservoir at Blagdon has not yet been drawn upon; that there are 678 acres of parks and open spaces. Dr. Davies includes in the report some remarks on the medical inspection of public elementary schools, referring to the absence of any supervision of this sort in the country, though half-hearted attempts have been made in a few towns. Considering the prevalence of diphtheria during the past year, and its certain spread in schools, the question may well be asked whether the time has not yet arrived for some action to be taken. In December, 1902, as many as 61,886 children were attending Board schools, and in a later part of the report Dr. Davies instances several outbreaks in which the disease was no doubt spread through the children's attendance there. Bristol has not many slums, and is, unlike many towns, without a slum district. During 1902, 61 houses were closed as insanitary, and the New Streets Committee have erected 60 tenements in different parts of the city, and are building 10 more. The rent of two rooms is 3s. 3d. per week, three room tenements being 4s. 6d. A casuals' lodging-house is also being built to provide 120 beds, at a cost of over £7,000. The charge will be 4d. per night, or 2s. per week. The vaccination returns are for the year 1901, and show that the percentage of successful vaccinations to births was 63.72. The birth-rate for Bristol is 27.4, an increase on that of 1901, and it is satisfactory to see that the marriage-rate also shows an increase—8.4 compared with 8.3 in the previous year. The uncorrected (for age and sex) death-rate was 17.31 per 1,000 living as against 15.9 in 1901. This is, however, lower than the rate of the 76 large towns, which was 17.4. One per cent. are returned as deaths of illegitimate children, and the infant mortality is 130.7. During the winter 1901-2 four cases of small-pox were introduced into the city—three from Portland, Maine, U.S.A., the fourth from Salonika, and from none of these cases did the disease spread. This is fortunately a similar experience to what has happened eleven times during the last fifteen years, but Dr. Davies points out that it is unwise to rely upon this administrative success, and to disregard the urgent need for further hospital accommodation. From the fact that all the cases came from abroad it is evident that the greatest risk of importation of this disease is from the United States, a risk which when the new docks are finished will not diminish. Of scarlet fever there were 2,724 notifications, with 66 deaths. The disease has on the whole been of a mild character, and the difference in mortality to that of forty years ago is noted. Enteric fever—319 cases—caused 58 deaths, a case-mortality of 18 per cent. Increased accommodation is being provided at Ham Green for these cases. No cause could be found for the increased prevalence of the disease in the third quarter of the year. Of diphtheria, 1,095 cases were notified, and 14 of membranous croup, with a total of 187 deaths, a case-mortality of 17 per cent. The increased prevalence of diphtheria is an experience shared by most towns, but appears to bear no relation to fever mortality-rate. The report shows that in 1900 the disease was chiefly found in Bedminster and Totterdown, but in 1901 broke out in fresh localities, due chiefly to school influence. Dr. Davies thinks closure of schools in towns unnecessary, and sometimes worse than useless, as it only removes the suspects from observation, and scatters them to their homes; further, any bacteriological examination is more easily carried out at school. In 1902 the disease appeared in a school at Horfield, several fatal cases occurring. An examination was made of 102 children, and cultures taken from 45, of whom 7 were found to have marked diphtheria, and 22 to have suspicious organisms in the throat or nose. The affected cases were removed, and the suspected excluded from school, and the epidemic was stopped, which, as Dr. Davies says, reflects great credit on his colleague, Dr. Hearen, who had charge of the outbreak. This is one instance of several quoted in the report. In a short article headed "Treatment of Suspects," Dr. Davies recounts his experience of the short varieties (Hoffmann's) of the bacillus, and says that its presence among children who have been in direct association with cases of clinical diphtheria is a danger-sign that must not be neglected if we are to eradicate the disease quickly and thoroughly, such cases acting as "carriers." The bacteriological work is now done by Professor Stanley Kent at University College, Bristol. Of the other notifiable diseases, it suffices to say that no cases of cholera or typhus have occurred. Measles caused 411 deaths, whooping-cough 105, and phthisis 415. Regarding this last disease, a special report, issued in 1899, recommended the examination of milk—an important matter in Bristol, as milk comes from three counties. Of 74 samples, only 4 showed the presence of tubercle. The above gives a general view of the contents of the report, but there is much more that would well repay perusal by those interested in public health.

The meeting of the Western Branch of the British Dental Association was held at University College on Friday, July 24th, Charles Hayman, M.D., presiding. In his address the President referred to the great importance to general health of a good set of teeth, and pointed out how materially the growth of children might be evilly affected by decayed and carious teeth. A good demonstration of the anaesthetic properties of chloride of ethylene was given by Mr. Flemming and Mr. Hatch. The social part of the meeting consisted of a dinner on the 24th and an excursion to Portishead on the 25th.

CORRESPONDENCE.

MOTOR CAR LEGISLATION.

SIR,—I wish to draw the attention of the profession to the serious penalties to which those of us who own motor cars or motor cycles, and who use them in our work, will be liable under the Motor Cars Bill at present before Parliament.

For an offence under this measure there are three kinds of penalties:

1. Imprisonment, not exceeding three months, for the first offence, and six months for any subsequent offence.
2. Fines amounting to a maximum of £20 for the first offence, £50 for any subsequent offence.
3. Deprivation of licence for an unstated period.

The uncorroborated testimony of any police constable may lead to a conviction, and thus we should be completely in the hands of a Bench whose members, it may be, have openly avowed their hatred of mechanical locomotion. There are not a few in the country of whom this could be said.

When a doctor is urgently summoned, and when minutes may mean whether his services are to be of any avail or no, are the stringent regulations and the severe penalties of the Act, as it stands, to be enforced against him equally with the "scorcher," whom every one desires to see punished? Surely some latitude should be allowed to magistrates in the case of doctors. The use of cars or motor-cycles by the profession is becoming more and more common, and in country districts, so far as the doctor is concerned, the horse is steadily disappearing in favour of the car. One trembles to think what may happen in the case of a doctor living in an area where a hostile feeling exists to this form of locomotion, either on the part of the police or of the Bench, as, being constantly on the road, he would be constantly liable to prosecution.

What would it mean to a country doctor owning a car to have his licence revoked? Surely some exception should be made in our favour—when carrying on professional work—and penalties should be enforceable only when abuse of the privilege is proved.

There should also always be:

1. Some corroboration of a police constable's testimony as to speed.
2. An appeal against a fine, and not only against a sentence of imprisonment.

The Committee stage of this Bill in the House of Commons will be reached next week. I would suggest to all those members of the profession who are interested in this Bill—and many must be vitally so—to bring pressure to bear at once—there is no time to be lost—on their representatives in the House of Commons in order to get some such modifications as I have briefly sketched introduced into the Bill before it becomes law.—I am, etc.,

Bournemouth, July 29th. J. ROBERTS THOMSON, M.D.

MEDICAL WITNESSES' FEES.

SIR,—The doubt which has arisen in Dr. Buckell's mind appeared to me to have come from not reading the sentence which he quotes, with its context, but as one of your con-

temporaries also considers the recommendation ambiguous, I have to-day seen the Secretary of the Departmental Committee at the Home Office, and he tells me that the intention of the Committee was to recommend a fee of one guinea per case per day for those giving evidence in the town in which they reside. I have no doubt that when the new scale makes its appearance this point will be found to be quite clear.—I am, etc.,

Dulwich, July 27th. H. Nelson Hardy.

THE SCIENTIFIC SCHOLARSHIPS AND GRANTS OF THE ASSOCIATION.

Sir,—In the leading article of the British Medical Journal, July 25th, on the Scientific Scholarships and Grants of the Association it is stated that "Dr. Mott conceived the idea..... On both sides he divided the ulnar and median nerves and resutured them;" etc. But in my report I stated that all the experiments were performed by Professor Halliburton and that I am responsible alone for the histological investigations. As this might lead to some misconception I hasten to correct the statement in the leading article.—I am, etc.,

Nottingham Place, W., July 27th. Frederick W. Mott.

MEDICAL DEFENCE.

Sir,—Mr. Chas. Tomes, from his position of pleasant detachment, is able to take an optimistic view of the working of the Dentists Act; but not more than a small percentage of practitioners in the speciality can possibly see the matter in so rosy a light. Attempted enforcement of the penal clauses of the Act has resulted now and again in conviction of some petty obscure offender, whilst, on the other hand, it has made plain how easily the Act can be evaded by the exercise of the smallest amount of cunning. The penal clauses of the Act were devised with the intention of enabling the public to distinguish between qualified and unqualified practitioners. In this they have almost completely failed. The number of unqualified practitioners has largely increased; the number of candidates for qualification has lately fallen off. In no position in the dental profession can incomes be gained comparable to those common in other departments of practice. The average dental surgeon has usually a hard fight for years if not throughout. It must be a demoralising spectacle to see the advertising quack amassing wealth by the aid of the Limited Liability Act, and under the cloak of sham American dental institutions worked by gangs of unqualified assistants, whilst the educated professional man struggles on in poverty. Unless a fair amount of protection can be provided by new legislation, the public will be left in the future more and more in the hands of ignorant mechanics, and more and more at the mercy of fraudulent quacks, who find so profitable a field for enterprise in dentistry.—I am, etc.,

Cavendish Square, July 21st. Henry Sewill.

THE REFORM OF THE BRITISH MEDICAL ASSOCIATION.

Sir,—I am glad to find that Dr. Haddon considers my letter worthy of consideration. I can assure him no false modesty prevented the nomination of candidates in the metropolitan area. Fourteen were duly nominated, of whom six were consultants and eight general practitioners, the former being elected *en masse*, and the first of the rejected—a general practitioner who had served on the old Council for two years—was some 80 or 90 votes behind.

Your other correspondent thinks your columns are not a suitable medium for ventilating this subject, though he does not quite explain why. I am sure I do not pretend to have "spotted a sore." For aught I know, the result I pointed to may be regarded by him and other reformers as a sign of healthy growth. My doubts were in consequence of remembering the constant complaints in the pre-reform period of members of this Branch, that its direction was "bossed" by consultants, and that this would be impossible in a reformed association. I have only shown that it is not impossible.

I admire Dr. Fothergill's enthusiasm with regard to Divisions. Ours has held three meetings. At the first about sixteen were present out of a membership of between 300 and 400, and at the second about ten. If this matter were "threshed out" before such a meeting it is not quite clear to me what is the benefit to be derived. It is even possible that the effect might be like the "damp squibs" referred to, only to attract a passing "thought."—I am, etc.,

Kingsland Road, N.E., July 27th. F. Hewitt Oliver.

Sir,—In remarking upon the noteworthy fact that all the six members elected to the Council belong to the Central Division, and live near Cavendish Square, I am not to be considered as suggesting that better men could be chosen. Far from it. But although I do not hold it for an objection that any one is a consultant, as some of these are, yet I would advocate the introduction at the next vacancy of a member of an outlying Division, for these two reasons: first, to represent as many interests and local circumstances as possible; and secondly, to stimulate and keep alive a widespread interest in the affairs of the Association. It is manifestly impossible that one living in Lambeth, say, should be sufficiently well-known in Walthamstow or Hampstead to carry enough votes, and vice versa. But the difficulty is not insurmountable. Let some of the smaller or outlying Divisions draw lots as to which one should nominate a candidate. If the lot, for example, fell to Stratford, their nominee would receive the votes of all the others, on the understanding that in another year a call would be made upon one of these other Divisions.

The only other way is by cumulative voting, to which there are some objections. I do think this aspect of the election should be considered. It is not a question for the Divisions, and the metropolis is unlike other places. Also, the time is favourable, while forms are yet plastic and ere they become set and rigid. Perhaps the various secretaries might confer together, and make a recommendation.—I am, etc.,

Earl's Court Road, W., July 24th. G. Crichton.

THE DOSAGE OF CHLOROFORM.

Sir,—The leading article on "The Dosage of Chloroform," and the Report of the Special Chloroform Committee, in the British Medical Journal of July 18th call for a few remarks. In the first place it is clear that the delivery of a percentage vapour of chloroform by means of an apparatus cannot ensure the intake by the patient of a regular, safe, dose of the anaesthetic. Nothing can ensure this but regularity of the respiration, and with regular breathing it does not matter how concentrated chloroform is. Rigid accuracy in measuring the dilution of the chloroform is therefore not required, but it is an absolute necessity as regards the breathing, for it is entirely upon the regularity of the respiration that the safety of the patient depends. But to maintain regular respiration requires the undivided attention of the chloroformist, and one of the dangers of an apparatus for regulating the percentage of chloroform vapour is that it must distract an appreciable, and in many cases a dangerous, and in a few a fatal, amount of the chloroformist's attention from the all-important respiration. This contention receives confirmation from the circumstance that overdosing actually appears to have occurred in one of the second series of cases put forward in the report of the Special Committee to show the advantages of the new regulating inhaler, and the anaesthetist became so much alarmed that he substituted ether from a Junker's inhaler for chloroform from the regulating apparatus for the remainder of the operation.

In the second place I should like to know what practical conclusions, of the smallest scientific or clinical value, can be drawn from one-sided experiments with chloroform on the isolated hearts of dead cats. No conditions can ever arise clinically in which the effects of chloroform given by inhalation will in any way resemble those produced on the isolated heart by douching it with chloroform mixed with a "warm stream of modified Ringer's solution." This proposition is strengthened by the fact, which was discovered by the Committee, that the effect on the isolated heart of chloroform mixed with Ringer's solution is altogether different from that of chloroform mixed with blood.

In the third place, I beg leave to ask, What is the meaning of the following sentence in the leading article:

"The older methods—the so-called 'open methods' which still appeal to those who prefer personal skill to scientific exactitude—cannot fall within the scope of any research which aims at a rigidly accurate method."

The term "open method" is a nickname applied by a member of the Committee in order to ridicule, I presume, the old and safe Scottish method of giving chloroform. But even that method, which has been superseded in our practice by my own, possesses far more scientific exactitude if it is properly carried out than any method which depends for safety on an apparatus, since it permits the administrator to increase or diminish the quantity of air which is necessary to maintain the all-important regularity of the respiration under chloroform, without distracting his attention in the smallest

degree from the inhalation. We make no claim that the so-called open method demands any particular personal skill on the part of the chloroformist to make it safe, or any special skill whatsoever beyond that which is possessed by an average medical student. On the contrary, I venture to assert that anybody who has sufficient intelligence to look after the patient's breathing properly can be trained to carry out the open method with uniform safety. I agree with Dr. Dudley Buxton (*vide* SUPPLEMENT to the BRITISH MEDICAL JOURNAL, page clxiv, July 18th, 1903) that there is no margin for "such human frailties as fatigue, distraction of attention, or want of appreciation of the many deviations from the normal process," though I differ from him, probably, in holding the administrator himself responsible for all deviations from the normal physiological action of chloroform which occur during narcotization. We are told that the Special Committee was originally appointed "in view of the very regrettable number of cases in which chloroform terminated fatally." The fatal overdosing in the majority of these truly regrettable cases was undoubtedly due to faulty administration, founded upon the erroneous doctrine that chloroform directly affects the heart, and yet it is this perilous belief that the work of the Special Committee tends to keep alive.

I venture to inquire whether nothing can be done by the Special Committee to improve the anomalous and restricted position of chloroform in the profession. It is a reproach to British science and surgery that my work should be ignored, and that there should still be two distinct and irreconcileable methods of chloroform administration. In the one, which is founded on pseudo-scientific experimental data and antiquated beliefs, the heart is dragged in as a factor, while in my method, which is founded on proved facts—experimental and clinical—the heart is completely ignored. In the former fright of the heart predominates, and deaths are unavoidable; in the latter there is no fear but that of overdosing, and deaths are impossible.—I am, etc.,

Harley Street, W., July 20th. EDWARD LAWRIE.

SIGHT TESTING BY OPTICIANS.

SIR,—Dr. Lindsay Johnson appears to have forgotten that the business of an optician is the selling of spectacles; the testing of sight is merely an accessory to the sale.

Ophthalmic surgeons are hardly attempting to prevent the working man consulting whom he pleases about his sight; they are rather, in the interests of their own work and the nation's eyesight (concerning which Dr. Johnson is so solicitous), endeavouring to inform a dull-eared public that, in spite of all his assurances to the contrary, the optician is not competent to treat all cases of visual defect from refractive error, nor, with any amount of experience short of a medical training, is he likely to acquire this competency.

In the matter of advice the British working man will probably please himself whatever action be taken; in the meantime he consults the optician, partly because he cannot pay specialists' fees, mostly because, by reason of the floods of spectacle-dealers' garbled advertisements, he has come to the belief that the optician alone is competent to prescribe glasses for defective sight. Often, indeed, he accepts the optician's opinion as final, and perhaps for the rest of his life goes about with an uncorrected defect in the delusion that his sight is merely "weak."

Dr. Johnson proposes that the optician be duly instructed in sight testing—the usual "diplomas" presumably being granted—to enable him to treat all simple cases, in the fond belief that he will refer all difficult cases to a higher authority.

Now, has the behaviour of the average optician in late years been such that the oculist can work on a satisfactory footing with him? Has Dr. Johnson never looked into the average dealer's window, with, among other devices for impressing the ignorant public, its showy "diplomas," its statistics of defective sight (so often false), and, of course, the inevitable assurance of ability to treat all cases of visual defect? Or, has Dr. Johnson never seen the advertisements of big spectacle firms, the parading of trade licences as real qualifications (the public can hardly be expected to regard these unwonted combinations of letters as meaning anything except medical degrees), the unblushing guarantee of ability to treat all forms of defective sight, and, in not a few cases, to treat squints as well?

Is it likely that when this increased instruction is afforded the optician will become any the more frank than he now is in advertising his limitations? Is is not much more probable that, with increased self-confidence, he will use it for more extensive and impudent advertising purposes?

The Utopian dream of the oculist and optician working hand in hand would involve the latter putting himself under such restrictions as the treating only of simple cases of error, the ordering neither of cylindrical nor prismatic lenses, the refusal to treat cases with squint or evident eye disease, the refraining from using any drug whatsoever, and (in my mind the crucial point), the total ceasing from advertising ability to treat *all* cases of refractive error.

Perhaps Dr. Johnson can show how to have these, especially the last, strictly enforced.—I am, etc.,

Oldham, July 23rd. A. W. M. SUTHERLAND, M.B., CH.B.

A COMPARATIVE AND BIOLOGICAL STUDY OF THE NATURE OF CANCER.

SIR,—In reference to the letter of Mr. Hope Grant, F.R.C.S.E., under the above heading, I may be permitted to state that I was not so much concerned with the general question raised by your correspondent as with certain crying necessities in regard to the advance in our knowledge of malignant new growths, which may be summarized as follows:

1. Malignant new growths identical histologically and in consequences with those met with in human pathology occur in animals.

2. In addition to the identical new growths, others peculiar to the different lower animals occur which it is extremely difficult to assign to the groups recognized in man.

3. Malignant new growths in animals come under observation in greatest number and in typical form at what—although the adult or old-age period of life for the various species—is relatively a much shorter lapse of time as compared with man.

The identity of the malignant new growths of man and animals justifies the transference of investigations from man to animals. The practical advantages accruing from studying the questions of etiology, heredity, and conditions of growth, when the time demanded for observation can be curtailed in accordance with the shorter life and earlier attainment of the "cancer age" in animals, need not be again insisted upon.

A rational system of classification of new growths is only possible by studying the aberrant and intermediate conditions which distinguish the new growths of animals from those of man.

The necessity for directing the attention of embryologists, zoologists, and veterinarians, who have a large amount of material passing through their hands, to the desirability of themselves investigating or bringing to our notice abnormalities and other pathological conditions of interest in this connexion is essential to progress, and may again be emphasized.—I am, etc.,

Harley House, W., July 25th. E. F. BASHFORD, M.D.

CHEMISTRY AND PHYSICS.

SIR,—I have gathered the impression that the Preliminary General Education Committee of the British Medical Association would not like to see chemistry and physics imported into school education, presumably lest those subjects should displace something else. By some their undesirability as school work appears to be regarded as a self-evident proposition. But something may be said on the other side; most teachers have found that whilst first year students can and will learn bald facts, their cast of mind is conspicuously unscientific, and they cannot grapple with principles or with the reasoning which leads up to those principles, whilst second year students show a marked improvement in this respect. And it is a familiar fact that general and literary culture may be carried to the highest extent without rendering the mind receptive to the class of fact and of reasoning that science has to offer, a circumstance from which we as a profession have to suffer in a variety of ways, in Parliament and elsewhere. This defect is emphasized indirectly in the reports made to the General Medical Council on the examinations in chemistry and physics, where we are told that students have learnt strings of facts, and are passed, and must be passed under present conditions, without having acquired any grip of principles. Here seems to be a case in which the element of time cannot be left out of consideration; a new mental habit cannot be acquired in a moment, and it is more than possible that a student who had taken up in the later years of his school life some scientific subject would be in a position to learn his first year subjects in a way impossible if they are all new to him. This is secured by those, for example, who pass the matriculation of the

University of London and take up chemistry and physics, of an elementary kind it is true, but still enough to place them in a much better position to start upon their work for the Preliminary Scientific Examination than those to whom the subjects are fresh. Hence it seems worth consideration whether in a preliminary examination recognized for entry into the medical profession some quite elementary knowledge of a scientific subject would not be a desirable requirement, and it is not at all certain that the general mental training thus afforded would be in any way inferior to that bestowed by the small amount of classics displaced.—I am, etc.,

Park Crescent, W., July 24th. Charles S. Tomes.

THE TREATMENT OF APPENDICITIS.

Sir,—I have been interested in the correspondence which which has appeared in the columns of the British Medical Journal on the subject of appendicitis. During the twenty-six years I practised in a coast town I have often attended cases which I diagnosed to be typhlitis or perityphlitis, but I cannot remember a single fatal case or one which resulted in ulceration or abscess in the region of the appendix. Several patients had a susceptibility to pain and inflammation in that region induced by a chill, especially cold feet; or at other times the symptoms were referable to local irritation or obstruction; but as resolution usually occurred in the course of a week, no opportunity was afforded of ascertaining the exact pathological condition.

The *rationale* of treatment was first to relieve the pain by the administration of a pill containing calomel and opium every four or six hours, and the application of hot fomentations and poultices of linseed meal, with the addition of some laudanum locally, followed by a fly-blister on the third or fourth day. As vomiting was often troublesome for a day or more, the diet was liquid and restricted in quantity, usually milk alone or with soda or lime water.

When the acute pain was relieved, the next object was to relieve the bowels, either by enema or by a dose of castor oil, with the addition of 3 or 4 gr. of grey powder. By the end of the week the patient was convalescent, though weak for some time afterwards.

I presume this experience coincides with that of many country practitioners who like myself have been astonished by the prevalence of appendicitis in recent years and by the frequency with which operations have been performed for the removal of the appendix. In fatal cases after operation it would be interesting to discriminate whether the event was the result of the disease or the operation. It also seems to me that the attention of the profession should be directed to the causation of this comparatively new disease, and if the over-indulgence in cigarette smoking has any relation to its prevalence.—I am, etc.,

Glasgow, July 28th. William A. Caskie, M.A., M.D.

OBITUARY.

FREDERIC NORTON MANNING, M.D.St. And., M.R.C.S., L.S.A.

Sydney, New South Wales.

We deeply regret to record the death of Dr. F. N. Manning, of Sydney, New South Wales, which took place on June 18th, after a lingering illness, in his 65th year.

Frederic Norton Manning was born at Rothersthorpe, in Northamptonshire in the year 1839. He studied medicine at St. George's Hospital, and in 1860 obtained the diploma of the Royal College of Surgeons of England and the Licence of the Apothecaries' Hall in London. Two years later he obtained the degree of M.D. from the University of St. Andrews. Having got an appointment as surgeon in the Royal Navy he served on H.M.S. *Esk*, and saw considerable service in New Zealand during the Maori war.

In 1867 there were only two asylums for the insane in New South Wales, and the management of them and of the patients within their walls is said to have been atrocious. Sir Henry Parkes, who was at that time Premier of the Colony, recognized the urgent need of a complete reform. Happening to meet Manning whose ship, the *Esk*, was then in Sydney Harbour, he was so impressed with his character and abilities that he offered him the task of reorganizing the asylums. This offer Manning accepted, and he was appointed Medical Superintendent at the Gladesville Asylum, or as it was then called, "Tarban Creek." In the following year he was commissioned to visit Europe and America to report on the management and construction of lunatic asylums in those countries. On his return to Sydney he wrote a valuable report, which gained for him a high reputation, and was for a long time regarded as a standard work. He was subsequently appointed Inspector of Hospitals for the Insane, and on the passing of the Lunacy Act he became Inspector-General of the Insane. This position he retained for twenty years, retiring in 1898. During his tenure of office he thrice visited England, and on each occasion he took the opportunity of inquiring into the latest methods of treatment of the insane. He was thus able to render an immense service to New South Wales, the newer asylums at Callan Park and Kenmore having been practically designed by him. One of the last occasions on which he appeared before a gathering of the medical profession was a meeting of the New South Wales Branch of the British Medical Association two or three years ago, when he read a paper on a subject which was near to his heart, "the establishment of farm colonies for epileptics." Unfortunately, he did not live long enough to see this realized.

Dr. Manning held several appointments at various times. He was the Visitor to Court patients under the Lunacy Act, a position which corresponds to that of the Lord Chancellor's Visitor in England. He had also held the positions of President of the Board of Health and Medical Adviser to the Government. He was formerly Lecturer on Psychological Medicine at the University of Sydney, a Trustee of the National Art Gallery, a local Director of the Equitable Life Assurance Society of the United States, a Director of the Carrington Convalescent Hospital at Camden, and lately President of the Australasian Trained Nurses' Association.

On his retirement from the position of Inspector-General of the Insane he became a consultant in mental diseases, continuing to render valuable assistance to the Government in many matters bearing on the management of the hospitals for the insane. His health began to fail some two or three years ago, and the last year of his life was spent in much pain and suffering.

Dr. Manning was a bachelor. Of his personal and professional qualilties it is hardly possible to speak too highly. He was a perfect type of an English gentleman, and he was indeed beloved by all who knew his sterling worth and kindly disposition. Few men have done more than he to adorn and exalt their profession, and his death is felt as not only a national loss but as a real personal one by many of his professional friends and others who never sought his help or advice in vain. Testimonies to his worth were uttered in the Supreme Court by the Chief Judge in Lunacy, and these were re-echoed by the leaders of the Equity Bar. But no stronger manifestation of the esteem in which he was held could be given than the imposing funeral procession which followed his remains to their last resting place in the cemetery which is attached to the institution where he had spent his best days, and which he had himself selected some time ago for his grave. As the coffin was borne to the grave by four senior attendants of the different hospitals for the insane, a large number of the attendants followed, and he was laid to rest in the presence of a very large gathering of the medical profession, the judges of the Supreme Court, members of Parliament, and representatives of many of the institutions with which he had been connected.

The memory of Norton Manning will ever remain green in the minds of those whose privilege it was to know him as a friend and adviser, and the profession in New South Wales mourns to-day the loss of one of its brightest ornaments.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF EDINBURGH.

Graduation Ceremonial.

The autumn or Medical Graduation Ceremonial took place on Saturday, July 25th, the Vice-Chancellor (Principal Sir William Turner) presiding. The following degrees were conferred:

Degree of M.D.—†A. L. Anderson, M.B., C.M.: The Roentgen rays in intra-thoracic disease. F. T. Auden, M.B., C.M.: The diagnosis between yaws and syphilis. (*In absentiâ*). ‡W. J. Barclay, M.B., Ch.B.: A study of the vital statistics of New Zealand, with a life table for the five years, 1891-96. ‡J. B. Blaikie, M.B., C.M.: The intestinal dyspepsia of children. J. Blyth, M.B., C.M.: Infantile convulsions. D. J. M. Bone, M.B., C.M.: The etiology and the pathology of the Chorea of Sydenham. R. T. Bruce, M.B., C.M.: Associated movements in hemiplegia. *A. F. Cameron, M.B., C.M.: The factors on which diagnosis in small-pox is based. B. J. Courtney, M.B., Ch.B.; The diarrhoeal diseases of infancy: their causes, symptoms, and treatment, etc. ‡L. Crossley, M.B., Ch.B.: Erysipelas, with notes on eighty cases. ‡J. M'E. Dalziel, M.B., C.M.: Framboesia in South China, with description of cases. ‡H. B. Dodds, M.B., Ch.B.: Blackwater fever. ‡O. J. Evans, M.B., Ch.B.; Clinical ob-

servations on enlargement of the spleen, and their diagnostic significance and pathology. ‡H. Faulkner, M.B., Ch.B.: The microscopic changes in the blood during pregnancy and the puerperium, with special reference to leucocytosis. ‡R. M. Freer, M.B., C.M.: The value of vaccination at and after infection from small-pox, with some reference to the duration of protection afforded by vaccination. A. W. Fuller, M.B., Ch.B.: An investigation of the urine of children—its normal amount and the contained urea and purins. ‡J. J. Galbraith, M.B., Ch.B.: The pathology and etiology of pulmonary tuberculosis in relation to the natural method of limitation of the disease, and the various methods of inducing artificial limitation. A. Gilmour, M.B.; Ch.B.: Some South African diseases. T. P. Greenwood, M.B., C.M.: Morbid bodily conditions in the insane—some remarks, comparisons, and cases. ‡A. H. Griffith, M.B., Ch.B.: Dysentery, with special reference to the disease as studied in Persia. F. A. Hardy, M.B., C.M.: An inquiry into the etiology, pathology, and clinical features of thoracic aneurysms. ‡H. Harris, M.B., Ch.B.: Some common morbid conditions of the infantile alimentary system, with special reference to summer diarrhoea. ‡J. Henderson, M.B., C.M.: The treatment of pulmonary tuberculosis by intravenous injections of hetol, and subcutaneous injections of cinnamate of sodium. †T. Henderson, M.B., Ch.B.: A study of the changes following upon extraction of cataract, with a histological report of thirty cases. A. L. Husband, M.B., C.M.: Agoraphobia, and some allied conditions. W. R. Jackson, M.A., M.B., C.M.: Some considerations on the disease rheumatism. ‡W. E. Jennings, M.B., C.M.: The value of measures for the prevention of the spread of plague by railway traffic in India. W. J. B. Jones, M.B., Ch.B.: Carneous mole—its nature and pathology. F. F. Kerr, M.B., C.M.: The treatment of nineteen cases of an epidemic of diphtheria of two months. †L. Kingsford, M.B., C.M.: Tuberculosis in childhood. J. D. Leigh, M.B., C.M.: Gall stones—their etiology, physical characters, pathology, symptoms, and treatment. P. A. Leighton, M.B., Ch.B.: Diphtheria, a study, illustrated by cases. G. H. Lewis, M.B., Ch.B.: The open-air treatment of chronic pulmonary tuberculosis. T. H. Livingstone, M.B., Ch.B.: A study of gastric ulcer. *G. Lyon, M.B., Ch.B.: Inflammatory changes in the kidney—an experimental study of the action of some toxins and poisons upon the kidney, and also upon the spleen. ‡D. M. Mackay, M.B., C.M.: The light sense in strabismus, epecially in the amblyopia of strabismus, examined by means of a new photometer. ‡J. W. MacKenzie, M.B., Ch.B.: The use of paraldehyde as a pulmonary sedative. ‡A. H. M'Shine, M.B., C.M.: The morbid anatomy of glaucoma and its relations to the theories of causation. ‡A. A. Martin, M.B., Ch.B.: Medical and surgical experiences while a civil surgeon, South African Field Force, late Boer war. (*In absentiâ.*) F. C. Matthew, M.B., Ch.B.: Chronic hyperplastic tuberculosis of the intestine, commonly causing stenosis. ‡W. W. Maxwell, M.B., Ch.B.: A series of eighteen successive cases of post-scarlatinal diphtheria. ‡F. N. Menzies, M.B., Ch.B.: Flushed breast—a form of mastitis occurring very early in the puerperium. *P. E. Millard, M.B., Ch.B.: Appendicitis. *J. Miller, (B.Sc.,) M.B., Ch.B.: The histogenesis of the tubercle, or the primary action of the tubercle bacillus on the tissues. J. R. Munro, M.B., Ch.B.: Emergency abdominal surgery in a provincial hospital. J. Nightingale, M.B., C.M.: A study of infantile mortality in England and Wales, its causes and prevention. A. S. M. Peebles, M.B., Ch.B.: Epilepsy; etiology and treatment from the point of view of a toxaemia. ‡H. G. Pesel, M.B., Ch.B.: Some observations on the blood in phthisis pulmonalis. R. O. Petrie, M.B., C.M.: Primary carcinoma of the body of the uterus. E. E. Porritt, M.B., C.M.: Twelve cases of practical interest, with comments. (*In absentiâ.*) S. C. Pritchard, M.B., Ch.B.: Henoch's purpura. A. M. Rattray, M.B., C.M.: General paralysis of the insane, with special reference to its etiology, symptomatology, and morbid anatomy. ‡M. B. Ray, M.B., C.M.: Some remarks on the therapeutic value of antistreptococcus serum. †J. M. Reid, M.B., Ch.B.: Simple basal meningitis in children. H. Richardson, M.B., C.M.: Some fevers met with in South Africa: their treatment and diagnosis from clinical observation during the Boer War, 1899-1902. G. L. Roberts, M.B., C.M.: The etiology and treatment of exophthalmic goitre. J. A. Robertson, M.B., C.M.: Cape Colony as a health resort for those suffering from pulmonary consumption, with special reference to the "graduated altitude system." (*In absentiâ.*) L. Rose, M.B., C.M.: The etiology and treatment of ulcer of the stomach, with special reference to the causal relation of anaemia. ‡Laura Stewart Sandeman, M.B., Ch.B.: Six cases of osteomalacia. A. M. Scott, M.B., C.M.: The radical cure of entropion and trichiasis. T. R. S. Sibbald, M.B., C.M.: Mucous colitis. †F. D. Simpson, M.B., Ch.B.: Pelvitomy through the pubic bone by Gigli's method, as an operation in obstetrics. ‡G. S. Small, M.B., C.M.: Toxaemia of pregnancy; etilogy and pathology, with observations on three cases of eclampsia. H. L. Spark, M.B., Ch.B.: Pulmonary tuberculosis in pauper patients, with suggestions for their cure and treatment. ‡W. H. Swaffield, M.B., C.M.: The induction of premature labour, with especial relation to past and present Continental views of the questions involved. ‡H. M. Traquair, M.B., C.M.: The microscopic examination of the secretions in conjunctivitis. ‡E. J. Tyrrell, M.B., Ch.B.: Dissertation and research on the bactericidal action of some compounds of silver. E. E. Waters, M.B., C.M.: An inquiry into the prevalence and causation of malaria, dysentery, and tuberculosis as seen in the Andaman penal settlements. (*In absentiâ.*) ‡J. W. Wells, M.B., C.M.: Cod-liver oil and cod-liver oil emulsions. A. E. White, M.B., C.M.: Pneumonia, pleurisy, empyema—cases, suggestions, and reflections. ‡R. H. A. Whitelocke, M.B., C.M.: The injuries incidental to athletic exercises considered as to their causation, pathology, and rational treatment. L. A. Williams, M.B, C.M.: Notes on the pathological effects of alcohol. H. D. Wilson, M.B., Ch.B.: Cases of carcinoma and epithelioma in childhood and youth, with notes.

*Gold medal. †Highly commended. ‡Commended.

Degrees M.B., C.M. (Old Regulations).—Margaret Ida Balfour, W. H. Winstanley.

Degrees of M.B., Ch.B.—D. Allison, ‡J. A. Anderson, F. L. Atkinson, M.A., C. M. Begg, W. F. Brayne, B.A., Edith Cochrane Brown, G. L. Brunton, G. M. Brunton, A. Buchanan, S. Burns, M.A., H. Caird, T. P. Caverhill, Katherine Jane Stark Clark, Elizabeth Lucy Colby, B.A., C. H. Craig, R. W. Craig, C. S. Crichton, D. M'K. Crooks, D. H. Croom, B.A., H. Curwen, J. M. Darling, M.A., *H. S. Davidson, J. Davidson, W. H. Davison, D. E. Derry, A. C. Devereux, J. R. Dobbin, J. Donaldson, M.A., C. E. Dumanoire, Alice Mary Ebden, G. J. Farie, H. N. Fletcher, J. Fortune, *C. R. Gibson, M.A., J. D. Giles, †J. Girdwood, M.A., J. M. Glasse, W. Goodchild, R. G. Gordon, A. Gray, M.A., LL.B., J. A. Gray, M.A., Elizabeth Catherine Gunn, Annie Mabel Gurney, H. W. Gush, *A. A. Hall, M.A., Frances Margaret Harper, G. W. Harty, G. Henderson, M.A., R. L. Henderson, A. E. Hodgson, R. B. Hole, A. O. Hooper, A. Hutley, I. Ivey, Bertha Jex-Blake, J. M. Johnston, †R. W. Johnstone, M.A., J. H. Kay, J. W. Keay, I. C. Keir, *J. M. Kirkness, *L. A. H. Lack, W. S. Laidlaw, F. T. C. Linton, M.A., A. Lundie, B.Sc., F. W. Lundie, H. MacCormac, J. R. M'Gregor, G. S. Mackay, Marion Ellen Mackenzie, Clara Violet M'Laren, W. MacLaren, J. J. M'Millan, J. B. M'Niell, I. M. Macrae, R. M. Mainwaring-White, H. C. Martin, A. S. Millard, B.Sc., †G. H. S. Milln, C. R. P. Mitchell, A. M. Moll, *W. C. Morton, M.A., E. Muir, C. H. Muller, †H. L. Munro, †D. M'K. Newton, W. H. Nutt, C. O'Flaherty, D. E. S. Park, †D. D. Paton, M.A., †T. Peebles, J. A. Pottinger, Julia Letitia Pringle, W. L. Pritchard, A. M. Pryce, W. Readman, Eva Anne Robertson, W. S. Robertson, Amy Robinson, L. C. Robinson, J. A. Ross, M.A., Mabel Ross, J. A. Roux, B.A., N. C. Rutherford, W. Sanderson, †D. J. Scott, D. G. A. Scott, J. E. Scott, M.A., M. Sinclair, G. W. R. Skene, *G. H. Skinner, J. H. Smith, B.A., S. W. Smith, †Eva Maud Snowball, H. Speirs, F. H. Stirling, Amelia Sutcliffe, *J. Tait, B.Sc., J. E. Taylor, J. P. du Toit, L. Turiansky, R. Veitch, W. R. S. Watkins, G. J. Wentzel, D. H. Wessels, L. West, G. Wight, W. Y. Woodburn, W. D. Wright, G. W. Young.

* First Class Honours. † Second Class Honours.

Certificates in Diseases of Tropical Climates were gained by D. Allison, A. K. Baxter, Nina Henrietta Beath, Edith Cochrane Brown, A. Buchanan, H. Caird, Katharine Jane Stark Clark, C. S. Crichton, D. M. Crooks, J. Davidson, F. I. Dawson, W. E. C. Dickson, H. B. Dodds, A. L. Duke, C. E. Dumanoire, J. Fortune, Agnes Josephine Gardner, R. G. Gordon, P. Gray-Marshall, Frances Margaret Harper, A. W. M. Harvey, J. M. Johnston, J. M. Kirkness, A. Lundie, W. MacLaren, J. A. Pottinger, Eva Anne Robertson, Amy Robinson, Mabel Ross, W. Sanderson, G. H. Skinner, Eva Maud Snowball, H. Speirs, E. L. Steyn, A. C. Turner, R. Veitch.

Prizes and Scholarships.

Prizes and Scholarships were awarded as follows: The Goodsir Memorial Fellowship, O. C. Bradley; the Gunning Victoria Jubilee Prize in Physiology, A. Hunter; the Ettles Scholarship, L. A. H. Lack; the Allan Fellowship in Clinical Medicine and Clinical Surgery, A. A. Hall; the Freeland Barbour Fellowship and the Buchanan Scholarship in Gynaecology, J. M. Kirkness; the James Scott Scholarship in Midwifery, C. R. Gibson; the Moust Scholarship in Practice of Physic, R. Veitch; the Charles Murchison Memorial Scholarship in Clinical Medicine, C. J. Shaw; the M'Cosh Graduates and Medical Bursaries, J. Tait; the Beaney Prize in Anatomy and Surgery, A. A. Hall; the Pattison Prize in Clinical Surgery, L. R. H. P. Marshall; the Dorothy Gilfillan Memorial Prize, Eva Maud Snowball; the Dobbie Smith Prize in Botany, A. N. Bruce; the Vans Dunlop Scholarship in Chemistry, J. Anderson.

The degree of B.Sc. in the department of Public Health was conferred on G. Rattray, M.B., Ch.B., and J. Scott, M.D.

The address to the new graduates was given by Professor Crum Brown. He referred to the changes that had taken place in the Senatus during the past year, congratulated the new graduates, and referred to changes in our methods of diagnosis, to the improvements in our means of observation, to the new methods of treatment, and to the additions to our power of doing things. Amongst these changes he specially noted the Roentgen rays and their uses. He next discussed the antiseptic treatment of wounds; the great advances in medicine, as, for example, in the treatment of disease by drugs, in the discovery of the action of micro-organisms, in the "toxins" they produce, in the remedial "antitoxins"; he discussed the great work of Pasteur; he noted rapidly the gland extracts, specially thyroid extract and adrenalin; he referred to the need for sound judgement, a faculty which could be cultivated—"it comes from the habitual conscientious performance of duty. It is a gift to the good and faithful servant over and above his wages. May this and all other good gifts be yours; you know whence they all come."

UNIVERSITY OF GLASGOW.

GRADUATION CEREMONY.

THE summer medical graduation ceremony in connexion with the University of Glasgow took place in the Bute Hall on July 21st. There was a large attendance of ladies and gentlemen who had come to see their friends capped, and the Very Reverend Principal Story, the Vice-Chancellor, presided. The following degrees were conferred:

Doctors of Medicine (M.D.).—*J. H. Teacher, M.A., M.B., C.M. (Thesis: On Chorion-epithelioma and the Occurrence of Chorion-epitheliomatous and Hydatidiform Mole-like Structures in Teratomata; a Pathological and Clinical Study). D. Stone, M.B., C.M. (Thesis: Infantile Atrophy, with Statistics). A. C. White, M.B., C.M. (Thesis: Blatta Orientalis: Secondary Reproductive Organs: Period of Development, etc.)

Bachelor of Medicine and Master in Surgery (M.B., C.M.).—C. L. S. Gibson.

Bachelors of Medicine and Bachelors of Surgery (M.B., Ch.B.).—*†S. Mort, *A. Matheson, M.A., B.Sc.; *W. D. H. Stevenson, M.A.; *C. H. Browning, *P. L. Sutherland, ‡M. Hutton, M.A., B.Sc.; ‡W. G. Shand, ‡Gertrude Dorman Bostock, B.Sc.; ‡A. W. Sutherland, M.A.; ‡J. C. Pairman, M.A.; ‡J. W. Sutherland, ‡Martha Hunter Scott, ‡J. Eadie, R. Adam, J. W. Arthur, Jeanie Auld, Helen Stephen Baird, B.A.; T. Ballantyne, T. Bennett, M.A.; A. G. Bisset, A. Blair, R. G. Bradford, J. Brown, R. Bruce, R. Bryson, Mary Charlotte Cameron, Jane Campbell, D. L. Carmichael, A. A. Carruthers, W. B. Chapman, A. E. Clark, A. Connal, S. C. Cowan, J. Cross, D. Dickie, Jessie Galloway Duncan, D. G. Dykes, C. C. Finlator, J. Forsyth, Kate Fraser, B.Sc.; Jane Reid Foulds Gilmour, J. Glover, J. Hanson, M.A., W. Harvey, J. M. Kelly, A. D. Kennedy, T. W. Love, T. Lovett, D. Macaulay, J. D. M'Culloch, J. F. Macdonald, Jessie Seath MacEwen, N. A. Macleod, J. A. Macvea, Anna Pollock Martin, Eliza Jane Miller, Isabel Deane Mitchell, J. B. Morton, G. Muir, G. Richmond, D. F. Riddell, M.A.; Mary Ann Thompson Ritchings, P. H. Robertson, Elizabeth Helen Smith, J. B. Stevenson, W. Stewart, J. A. Thom, J. R. Thomas, J. Walker, M.A.; W. N. W. Watson, R. T. Wells, M.A.; J. F. Weston, J. Wilson, J. Young (Glasgow), W. Young.

* With honours.

† Mr. Mort gains the Brunton Memorial Prize of ten pounds, awarded to the most distinguished graduate in medicine of the year.

‡ With commendation.

The usual valedictory address to the graduates was delivered by Professor Graham Kerr, who congratulated them on the conclusion of their academic labours, and wished them prosperity in the careers they were about to begin. Speaking to them as a zoologist he felt his task was an easier one than it would have been a few years ago. To-day the claims of zoology upon medicine were recognized to be greater than formerly, and could not be denied. The problem of malaria—one of the greatest

scourges of mankind—had gradually resolved itself into a beautifully complex zoological problem of the life-history of a low sporozoon organism. Moreover, month by month fresh evidence was being brought forward to show the connexion of other diseases of man with the habits of the lower animals. He recommended to them the study of parasites that have successfully intruded themselves in the human being and other animals as their hosts, and it was certain that in the study of their life-histories great results still awaited the investigator. Many of them, no doubt, might become medical officers of health, and would have to do with the bacterial treatment of sewage, which was another subject of remarkable biological interest. In conclusion, Professor Kerr made an appeal for a more efficient collection of zoological preparations for his department in the University. He trusted the graduates would assist in this matter, especially those who might be going to the tropics, and to those he said he would be happy to furnish a list of the forms most needed from the different regions, along with full instructions as to the best methods of preparation. He wished them godspeed, and hoped they would do good in the world, bring honour to their University, and sometimes think with affection of their old Alma Mater.

UNIVERSITY OF ABERDEEN.

Graduation Ceremony.

The graduation ceremony at the close of the summer session took place on Friday, July 24th, in the Mitchell Hall, at Marischal College. The following is the list of graduates in the Faculty of Medicine:

Degree of Doctor of Medicine (M.D.)—A. G. Allen, M.A., M.B., C.M. (Thesis: "Clinical Observations on Infective Gastro-Enteritis of Infants.") J. S. Cooper, M.B., C.M. (Thesis: "Some Clinical Observations on cases of Pulmonary Tuberculosis.") W. Cruickshank, M.B., C.M. (Thesis: "Notes on cases of Blackwater Fever.") A. Dingwall, M.A., M.B., C.M. (Thesis: "A Review of the Antitoxin Treatment of Diphtheria.") S. J. C. Fraser, M.B., C.M. (Thesis: "Some Remarks on the Allied Subjects of Rickets, Infantile Scurvy, and Artificial Infant-feeding.") G. Geddes, M.B., C.M. (Thesis: "A Record of Observations on Cerebral Pneumonia in Children.") G. A. Gibb, M.B., C.M. (Thesis: "On the Prevention of Puerperal Septic Disease.") A. Jamieson, M.B., C.M. (Thesis: "Neurasthenia and some allied Neuroses.") *C. Murray, M.A., M.B., Ch.B. (Thesis: "Studies on Proteids." [New regulations.] *G. F. Petrie, M.B., Ch.B. (Thesis: "On the Relationship of the Leucocytes and certain Organ-Extracts to the Bacteriolytic power of the Blood.") [New regulations.] †J. M. Petrie, M.B., Ch.B. (Thesis: "The Significance of Pain as a Symptom in Gynaecology.") [New regulations.] A. W. Reid, M.B., C.M. (Thesis: "Observations on Epidemics of Cholera in India.") [New regulations.] G. Stephen, M.B., C.M. (Thesis: "The Uric Acid Diathesis.") †F. M. Tindall, M.B., C.M. (Thesis: "Gastric Ulcer, Acute and Chronic.") R. S. Trotter, M.B., C.M. (Thesis: "A Contribution to the Hygienics of Coal Mining." W. Tuach, M.B., Ch.B. (Thesis: "Acromegaly: A Clinical and Pathological Study." [New regulations.] A. Urquhart, M.A., M.B., Ch.B. "Thesis: "A Contribution to the Study of recent Cancer Mortality in the Thames Valley.") [New regulations.] ‡J. Wishart, M.B., Ch.B., B.Sc. (Thesis: Part I. "The Influence of Climate and Soil on the Public Health of Bedlingtonshire." Part II. "A Clinical Study of Skin Cases.") [New regulations.]

Degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) (New Ordinances).—‡A. Callam, ‡W. C. Souter, B. J. Alcock, M.A., R. G. Brown, Margaret Duncan, W. Elwood, Isabella Gunn, M. H. Harris, M. B. Johnson, A. F. MacBean, M.A., W. S. M'Gillivray, D. J. Macrae, J. W. Miller, F. Le Q. Pelly, F. G. T. Peterkin, G. B. Sleigh, M.A., Isabel Copland Smith.

Degrees of Bachelor of Medicine (M.B.) and Master in Surgery (C.M.) (Old Ordinances).—G. C. M'Gregor, A. L. N. Maclean.

Diploma in Public Health.—K. Fraser, M.B., Ch.B.. J. Halley, M.B., C.M., J. Macfarlane, M.B., Ch.B., A. J. Milne, M.B., Ch.B., J. S. Rose, M.B., Ch.B., J. A. Simpson, M.B., Ch.B., R. A. Slessor, M.A., M.B., Ch.B., W. E. Taylor, M.B., Ch.B., G. C. Trotter, M.B., Ch.B.

*Highest Honours. †With Commendation. ‡Second Class Honours.

Memorial to Dr. H. Alleyne Nicholson.

At the close of the ceremony a bronze tablet to the memory of the late Dr. H. Alleyne Nicholson, F.R.S., Professor of Natural History in the University of Aberdeen, was handed over to the custody of the University authorities. An artist to design the tablet was fortunately found in Miss Woodward, the daughter of the veteran geologist and palaeontologist of that name. In the eloquent speech of the present occupant of the Natural History Chair, Professor Arthur Thomson, attention was drawn to the writing at the foot of the tablet—"He did a day's work and a man's work"—words which Dr. Nicholson had said were all he wished said of him. Other professors bore affectionate testimony to his work and personality.

Scholarships, etc.

The John Murray Medal and Scholarship to the most distinguished graduate (M.B.) of 1903 was awarded to A. Callam and H. Maclean (equal), and the George Thomson Fellowship to G. G. Macdonald, M.A., M.B., Ch.B.

ROYAL UNIVERSITY OF IRELAND.

The examiners have recommended that the following candidates be adjudged to have passed the First Examination in Medicine:

S. Acheson, Queen's College, Belfast; T. Arnold, Queen's College, Belfast; D. Barry, Queen's College, Cork; R. N. Berman, Queen's College, Belfast; J. H. P. Boyd-Barrett, University College, Dublin; W. Bradbury, Queen's College, Belfast; D. Broderick, Queen's College, Cork; E. B. Brooke, University College, Dublin; T. G. Buchanan, Queen's College, Belfast; J. P. Cahir, University College, Dublin; M. J. Caldwell, Queen's College, Belfast; J. P. Carolan, University College, Dublin; W. J. A. Carson, Queen's College, Galway; D. S. Clarke, Queen's College, Belfast; J. Clarke, University College, Dublin; R. J. Clarke, Queen's College, Belfast; A. J. W. Compton, Queen's Colleges, Galway and Belfast; A. W. Connolly, Queen's College, Belfast; Mary Cowhy, Royal College of Science for Ireland; C. P. Crymble, Queen's College, Belfast; L. J. Curtin, University College, Dublin; J. Devereux, University College, Dublin; E. P. Dewar (Galway), Queen's College, Galway; J. Dewar, Queen's College, Belfast; F. T. Dowling, University College, Dublin; W. Faith, Queen's College, Belfast; E. Forbes, Queen's College, Cork; T. Forde, Queen's College, Cork; J. W. Garry, Queen's College, Galway; W. E. Graham, University College, Dublin; T. J. Hollins, Queen's College, Cork; J. Hughes, Queen's College, Galway; M. F. Huston, Queen's College, Belfast; J. G. Johnston, Queen's College, Belfast; A. H. Joy, Queen's College, Belfast; J. J. Kearney, Queen's College, Cork; R. G. Kevin, Queen's College, Belfast; R. G. C. M. Kinkead, Queen's College, Galway; R. R. Kirwan, University College, Dublin; J. B. Lapsley, Queen's College, Cork; M. Leane, Queen's College, Cork; S. Levy, University College, Dublin; J. E. A. Lynham, Queen's College, Galway; J. S. McCombe, Queen's College, Belfast; J. P. J. McGivern, University College, Dublin; A. P. MacMahon, Queen's College, Cork, and University College, Dublin; G. H. Martin, Queen's College, Belfast; R. Martin, Queen's College, Belfast; C. J. Murphy, University College, Dublin; J. F. Keary, University College, Dublin; P. J. O'Brien, University College, Dublin; P. C. O'Donnell, Queen's College, Cork; W. H. O'Grady, University College, Dublin; P. O Hart, Charing Cross Hospital Medical School; C. F. X. O'Sullivan, Queen's College, Galway; D. O'Sullivan, University College and Royal College of Science, Dublin; H. H. Prentiss, Queen's College, Belfast; J. P. Quiery, Queen's College, Belfast; D. T. Sheehan, University College, Dublin; J. Sinclair, Queen's College, Belfast; M. Waldron, Queen's College, Cork; M. White, Queen's College, Cork.

UNIVERSITY OF BRUSSELS.

The following is a list of English candidates who were successful at the June examination for the degree of Doctor in Medicine.

E. Cullinan, M.R.C.S., L.R.C.P.Lond. (Westminster); R. Gillett, L.S.A.Lond. (Royal Free); *E. C. Lambert, M.R.C.S., L.R.C.P.Lond. (Westminster); J. C. McWalter, M.A., L.R.C.S.I., F.F.P.S.Glas., D.P.H. (Catholic University, Dublin); C. E. J. Philippson, F.R.C.S. (Cape Town); *G. Sowden, M.R.C.S., L.R.C.P.Lond., D.P.H.Cantab. (London Hospital).

*Passed with Honours.

Three candidates failed to satisfy the examiners.

CONJOINT BOARD IN SCOTLAND.

The quarterly examinations of the above Board, held in Edinburgh, were concluded on July 25th, with the following results:

First Examination, Four Years' Course.—L. C. Webster.

First Examination, Five Years' Course.—Effie Jemima Cassels, M. A. Mulraiu, T. R. McKenna, L. E. Ashley-Emile, A. Davidson, G. E. W. Henderson, L. Galdemar, C. H. A. Alderton, J. S. Ward, L. Murphy, P. T. Rutherford, D. C. Woods, T. D. Murison, H. M. Sturrock, J. H. Johnston (with distinction), D. L. G. Radford (with distinction), H. C. Orrin, R. E. Laurent, J. Quinlan, and F. W. Bullock.

One passed in Physics, 2 in Biology, and 1 in Chemistry.

Second Examination, Four Years' Course.—W. Murray, H. G. Campbell, and W. P. Timmon.

Two passed in Anatomy, 1 in Physiology, and 2 in Materia Medica.

Second Examination, Five Years' Course.—L. E. Ashley-Emile, D. T. H. Croly, H. A. Pascoe, W. Damms, C. F. Fiaschi, D. J. M. Legge (with distinction), P. R. Eskell, D. Kennedy, T. McL. Galloway (with distinction), D. C. Woods, T. C. Dykes, H. J. Gorrie, S. C. Chuckerbutty, R. T. A. Patchett, D. J. Neethling, L. Patchett, and S. J. Bhathend.

One passed in Physiology.

Third Examination, Five Years' Course.—T. N. Darling, W. C. Renshaw, G. H. van Zyl, E. H. Knowles, J. N. G. W. McMorris, J. J. Gillis, C. Garner, C. Chaves, J. D. Haley, S. S. Antia, N. S. Sodhi, R. K. Dhuru, R. W. Townley, and H. M. Agnew.

Two passed in Pathology and 1 in Materia Medica.

Final Examination.—J. A. Turnbull, M. J. King, J. St. A. Maughan, G. J. Stones, B. P. Donald, J. S. McLean, W. E. Robertson, G. M. A. Thomas, A. E. E. Reboul, H. F. Alsop, A. W. Hall, H. Armstrong, A. G. Hurdman, T. B. Lewers, C. S. Macaskie, A. F. Walker, W. P. Cowper, T. Bragg, J. Brydon, V. P. Pereira, R. Sterley, N. C. Rutherford, A. M. S. Kelso, L. W. May, D. G. Advani, T. J. Walsh, P. O. Jollie, R. B. Smith, H. Carlaw, L. M. Bhatt, M. S. Irani, A. Neville, T. Gibbons, and F. H. Rae.

Two passed in Medicine and Therapeutics, 1 in Surgery and Surgical Anatomy, 7 in Midwifery, and 9 in Medical Jurisprudence.

At the July sittings of the Scottish Conjoint Medical Board in Glasgow, the following candidates passed the respective examinations:

First Examination, Five Years' Course—J. R. D. Holtby, Queen's College, Belfast (with distinction); J. D. Jones and A. D. Macfie, St. Mungo's College; M. H. Fleming, Anderson's College Medical School, Glasgow; C. Nyhan, Queen's College, Cork.

Second Examination, Five Years' Course.—J. M'Arthur, St. Mungo's College; H. R. Morehead, Queen's College, Cork; G. L. Baker, Owens College, Manchester; H. G. Anderson and J. Beveridge M'Gregor, Anderson's College Medical School; W. Tregea, University of Birmingham.

Second Examination, Four Years' Course.—R. Roberts, W. H. Williams and E. W. Strickland, Glasgow School; A. Jack, Queen's College, Belfast; and J. Crétin, University College, Bristol.

Third Examination.—Eva Mary Handley and Anne Fenton Cleaver, London School of Medicine for Women; W. N. Walker, Anderson's College Medical School; D. H. Vickery, Queen's College, Cork, and Trinity College, Dublin; C. Parker, Westminster Hospital Medical School; G. H. Waugh, Owens College, Manchester; J. Owens, Edinburgh School of Medicine; J. P. Newton, St. Mungo's College; and R. Crothers, Edinburgh University and St. Mungo's College.

Final Examination.—A. Allan, St. Mungo's College (with honours); R. C. Blyth, W. D. Cockburn, T. M'M. Glen, A. M. Laurie, J. R. Robertson, J. Walker and A. R. Young, St. Mungo's College; R. Cumming, M.A., B.D., Glasgow University and Anderson's College; J. M. Gerety, I. A. Jackson, R. G. W. Adams, and J. Gilmour, Edinburgh Medical School; Anne Fenton Cleaver and Margaret Lucy Tyler, London School of Medicine for Women; D. H. Vickery, Queen's College, Cork, and Trinity College, Dublin; C. Parker, Westminster Hospital School; T. M. Haugen, Royal Frederick University of Christiania; J. Martin, Queen's Colleges, Galway and Belfast; and C. E. Hargitt, Queen's College, Birmingham, and Sheffield Medical School.

CONJOINT BOARD IN IRELAND.

Candidates have passed the First Professional Examination as undernoted:

Honours in Order of Merit.—C. Sheahan, W. H. W. C. Carden, W. A. J. Ponton, J. B. Hanafin, J. Dalton; P. M. Keane and J. W. M'Namara (equal), J. M. Molyneux and D. Adams (equal).

In all Subjects Alphabetically.—T. J. Bradley, H. C. Carden, J. J. Clarke, V. J. P. Clifford, M. E. Cussen, J. Dillon, J. Ellenbogen, P. G. M. Elvery, S. A. Furlong, D. J. Hanafin, R. de S. B. Herick, F. M. Hewson, J. Holmes, W. F. Lane, G. J. M. Martin, E. Montgomery, S. A. Murphy, J. J. Murray, P. MacCarthy, J. B. McClancy, W. R. Mackenzie, P. J. McKevett, C. McQueen, M. H. O'Sullivan, W. A. Ryan, T. Sheehy, G. F. Shepherd, J. F. Walsh, L. D. Woods, A. D. Woolf.

Completed the Examination.—R. C. Galgey, P. Holmes, J. Moran, J. Smith.

Candidates have passed the Second Professional Examinations as undernoted:

In all Subjects (Old Regulations).—T. A. Burke, M. Cohen, J. Gaffney, W. Glennon, C. W. Greene, H. M. Harrison, J. B. Kelly, M. J. Kelly, W. P. Kelly, T. H. Massey, W. St. L. Moorhead, J. O'Brien, G. Petit, W. H. Soady, M. Walters.

Completed Examination (Old Regulations).—F. P. Byrne, H. Hipwell, R. Martin.

Honours in Order of Merit (New Regulations).—J. Prindiville, P. Foran, M. O'Connor, H. J. Perry.

All Subjects Alphabetically (New Regulations).—M. D. Healy, C. F. Murphy, T. O'Brien, P. I. Rooney, J. R. Talbot, C. H. Waddell, C. M. Wilson.

Completed the Examination (New Regulations).—J. Bourke, E. C. MacDermot.

Part II. Honours in Order of Merit.—V. Dolan, R. V. Burbage and F. P. Leyland (equal), J. Hogan, W. Glennon, L. Lucas.

Part II. Alphabetically.—T. A. Bennet, C. J. D. Bergin, J. Clarke, T. Coffey, R. F. O'T. Dickinson, C. W. Greene, E. J. Higgins, A. Hipwell, F. Lyburn, A. W. McLaughlan, D. McLaughlan, W. J. McCormack, J. McQuillan, B. Marten, P. Mullany, N. L. O'Keeffe, N. E. Sampey, N. R. Ussher, J. Vasquez, P. D. Walsh, W. G. Wright.

Candidates have passed the Third Professional Examination as under noted:

Honours in Order of Merit.—Miss A. M. Barry and Miss E. O'Meara (equal), G. A. D. Harney, M. Keane, Miss G. W. Clarke.

In All Subjects Alphabetically.—T. J. Brooke-Kelly, R. A. Browne, R. Bury, W. I. Cowell, A. N. Crawford, R. McElvy, L. McGuinness, J. Pratt (old rules).

Completed the Examination Alphabetically.—R. G. Allen, J. Bell, E. B. Bird, G. P. A. Bracken, C. H. Bryan, A. H. R. Duncan, F. O. D. Fawcett, B. D. Gibson, J. Hayes, E. C. Jennings, F. J. Lennan, J. C. Murphy, R. H. MacManus, J. M. Reynolds, C. Robinson, E. L. Sheridan, P. M. Sheridan, E. Walsh.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

The Carmichael Prize.

Notice has been given that essays in competition for this prize of £120 must be lodged with the Secretary of the Royal College of Surgeons in Ireland on or before July 1st, 1904. The general subject to be treated is the state of different departments of the medical professson at the time of writing the essay, particularly with regard to educational requirements and the manner in which examinations might be made a better test of professional knowledge. Intending competitors should, however, write to the Secretary of the College for an official copy of the conditions attached to the competition.

The Barker Anatomical Prize.

This prize of 30 guineas, open to all medical students in the United Kingdom, has been this year awarded to Mr. A. N. Crawford, a student of the Royal College of Surgeons in Ireland.

SOCIETY OF APOTHECARIES OF LONDON.

Pass List, July, 1903.—The following candidates passed in:

Surgery.—W. C. P. Bremner, Toronto and London Hospital; F. G. H. Cooke (Sections I and II) University College Hospital; M. B. Dawson (Section I), Middlesex Hospital; E. H. Drinkwater (Sections I and II), Liverpool and St. Bartholomew's Hospital; L. E. Ellis (Sections I and II), St. George's Hospital; J. Ewing, Leeds; D. R. T. Griffiths, Guy's Hospital; K. Heanley (Section II), Royal Free Hospital; T. W. S. Hills (Section II), Cambridge and St. Mary's Hospital; W. Miles, Middlesex Hospital; H. G. Peel (Sections I and II), Leeds; A. Turner (Section I), Charing Cross Hospital.

Medicine.—S. Bentley (Section I), Sheffield; F. M. Boclet (Sections I and II), Charing Cross Hospital; H. H. Clarke (Sections I and II), Cambridge, Liverpool, and St. Bartholomew's Hospital; H. N. Collier, Guy's Hospital; G. C. M. Davies (Sections I and II) Charing Cross Hospital; R. S. Dollard, R.C.S.I. and Westminster Hospital; E. H. Drinkwater (Section II), Liverpool and St. Bartholomew's Hospital; A. D. Edwards (Sections I and II), London Hospital; A. C. George (Section II), Manchester; K. Heanley (Section II), Royal Free Hospital; P. A. Pettavel, Lausanne; C. H. Pring (Section I) Westminster Hospital; A. Rogers (Section I), St. Mary's Hospital and Cardiff; F. J. Turner (Sections I and II), Guy's Hospital; S. J. Weinberg (Section I), Manchester.

Forensic Medicine.—H. H. Clarke, Cambridge, Liverpool, and St. Bartholomew's Hospital; R. S. Dollard, R.C.S.I. and Westminster Hospital; A. D. Edwards, London Hospital; A. C. George, Manchester; W. B. Harris, St. Mary's Hospital; A. E. Henton, St. Mary's Hospital; T. W. S. Hills, Cambridge and St. Mary's Hospital; L. H. Lewis, Middlesex Hospital; P. A. Pettavel, Lausanne; C. H. Pring, Westminster Hospital; F. J. Turner, Guy's Hospital; A. Williamson, Royal Free Hospital.

Midwifery.—A. A. Angelis, Athens; P. A. Hendley, King's College and St. Mary's Hospitals; F. W. Higgs, St. George's Hospital; C. Kellgren, Royal Free Hospital; W. G. Kinton, Manchester; D. A. Stepney, Royal Free Hospital.

The Diploma of the Society was granted to W. C. P. Bremner, F. G. H. Cooke, H. N. Collier, E. H. Drinkwater, J. Ewing, D. R. T. Griffiths, A. E. Henton, W. Miles, F. J. Turner.

SCHOOL OF MEDICINE OF THE ROYAL COLLEGES, EDINBURGH.

At a meeting of the Governing Board of the School of Medicine of the Royal Colleges, Edinburgh, the Secretary, Mr. R. N. Ramsay, reported that the number of students attending the school during the winter session 1902-03 was 1,244, and during the summer session 1903 the number was 1,080.

WESTMINSTER HOSPITAL MEDICAL SCHOOL.

The prizes in connexion with this medical school were distributed on Saturday, July 18th. Lord Strathcona was to have distributed the awards, but, owing to an injury, he was unable to attend. The duty, therefore, was undertaken by the Chairman of the School Committee, Mr. G. V. Yool. Of the principal prizes, the scholarship of 110 guineas went to Mr. J. A. B. Hicks, and the two £60 scholarships to Mr. J. N. Beadles and Mr. G. G. James respectively. Mr. A. W. Hayward received a scholarship of £40, and Mr. G. H. Curtis was awarded one of a similar amount. The Chadwick Prize of 20 guineas for medicine and surgery went to Mr. W. C. Nimmo. A number of minor prizes were also distributed.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Surgeon A. R. Bankart, M.B., M.V.O., has been specially promoted to be Staff Surgeon for distinguished service, May 5th. He was appointed Surgeon, May 15th, 1895. In 1900 he attended the Khedive while under treatment on board the royal yacht, and received the order of the Osmanieh of the 4th class. In July, 1902, he attended the King on board the *Victoria and Albert*.

The following appointments have been made at the Admiralty: Francis H. A. Clayton, Staff Surgeon to the *Cressy*, July 20th; A. C. W. Newport, Surgeon, to the *Talbot*, July 20th; Hardy V. Wells, Surgeon, to the *Dwarf*, July 22nd; G. F. Alderdice, Surgeon, to the *Hogue*, July 22nd.

Mr. Thomas Howard, M.B., has been appointed Surgeon and Agent at Portland, July 24th.

DEFECTS IN ROYAL NAVAL MEDICAL SERVICE.

Naval Medical Officer writes: Dr. Bryant's letter in the British Medical Journal of July 25th made very interesting reading. I do not think the matters dealt with were represented at all too strongly. I regret to say many of the disabilities we labour under are due not to the Admiralty as a whole, but rather to the heads of our own department. Dr. Bryant mentions one of the grievances we have to put up with—namely, the inability of surgeons serving in hospitals to give an anaesthetic except in the presence of a P.M.O. This is only one of the many indignities and petty tyrannies to which we are subjected. We feel we are not trusted, and this by-the-bye leads to a sullen indifference or a total loss of self-respect. Let me add another instance even more galling than that just mentioned. A surgeon in charge (?) of a ward is liable to have the treatment of his patients changed—prescriptions or otherwise—by the P.M.O. of his section, without any reference or notification being made to him. His first intimation of this interference will be when next he visits his patient, and sees the altered dressings or changes in the prescription ticket. The natural result is the patients and attendants in the ward think the surgeon has made a mistake, and all their faith in him vanishes. Why, if a change is necessary, cannot the P.M.O. send for the surgeon and ask him to make the alteration? Knowledge is supposed to go with stripes. What we wish for now is not so much a rise of pay—I do not mean to say we should not like it—as certain administrative changes that would help us to hold up our heads, and make us feel we are of some little importance. At present we are bound down by regulations and restrictions as old and antiquated as the hospitals we serve in. Much has been said and written about improving our position. I, personally, do not care twopence whether I wear one stripe or three: I certainly do not wish to be called a surgeon-lieutenant or a surgeon-commander, but what I should like to see would be the dignity and the etiquette of the profession worthily upheld by the heads of the Naval Medical Service, and then I have no doubt we should have from the Admiralty all that was necessary and all we asked for. I have no doubt our future is in our own hands, or, I should say, in the hands of the medical profession. If only an inquiry could be held composed largely of eminent members of our own profession and independent witnesses called—this last is most important—I think something might be done; but I am afraid this course would be opposed to the uttermost, as light and publicity are the things least desired.

M. writes: Like Mr. Sichel I have had the honour of serving for a few years in the navy as a surgeon. But I am not prepared with him to attribute the undoubted unpopularity of the service to the causes he suggests. I believe those causes to be far more fundamental, and of the nature which I hope now to indicate. For the really first-class man it is obvious that neither in opportunities for work, in pay, nor in position does the Navy offer sufficient inducement as a career; nor can it so long as it is manned by men of a healthy age living a healthy life, and controlled, as it must be, by the executive officer. Even for the average man, the length of time spent on medical education and its monetary expense in these days act as deterrents from entry into the service when he thinks that at any rate for two-thirds of his period of service he must, at sea, professionally run to seed. Such a man may reasonably hope ashore during middle age to be earning a respectable income in comparative comfort, and in the esteem of his patients and professional colleagues. At sea the middle-aged doctor has, unlike the executive officer, no greater comfort than when he first joined the service, and as a rule, I regret to record it, has the reputation of being far less capable than the newest joined surgeon. For the man of less than average ability the service is an ideal mode of existence. He can in it be sure of a livelihood, of plenty to eat and to drink, and of little or nothing to do. I am personally convinced that it is only by a scheme of short service with *pro rata* gratuities that the medical service will ultimately be carried on with advantage to it and to the profession. That is, however, another question.

Surgeon, R.N.—(1) In its advertisement about the last examination for admission into the Medical Service of the Royal Navy, the Admiralty abstained from publishing the number of vacancies to be competed for, but 15 candidates were eventually accepted. (2) The new Army Medical Warrant was published on March 24th, 1902, and a copy of it will be found on page 813 in the Journal of March 29th, 1902. An article commenting on it was published on the same date. Further regulations as to admission and promotion were issued on May 1st, 1902, and appeared in the Journal on May 10th the same year.

ROYAL ARMY MEDICAL CORPS.

Lieutenant F. L. Henderson, from Seconded List, to be Lieutenant, July 7th.

EXCHANGES.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 8s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

A Major, at present in Bengal and who is going home, tour expired, early next trooping season, is prepared to exchange soon after arrival home either to Egypt or South Africa.—Address Medicus, c.o. Holt and Co., 3, Whitehall Place, London, S.W.

Captain due for foreign service (probably India) early Trooper desires exchange so as to remain at home for one year at least.—Address, No. 3,550, British Medical Journal.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Major J. J. de Z. Marshall, R.A.M.C. (Volunteers), East Surrey Volunteer Infantry Brigade Bearer Company, was attached for Instruction to the Training School, Dépôt Royal Army Navy Medical Corps, Aldershot, from June 7th to July 11th, and has been granted a P.S. Certificate on Army Form E. 558.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS) LEEDS COMPANY.

The Leeds Company of the Royal Army Medical Corps (Volunteers) underwent their annual inspection, on July 18th, on the parade ground of the Leeds Rifles. Colonel O'Connell, P.M.O. North-Eastern District, York, was the inspecting officer. The company was under the command of Major de B. Birch, M.D., the other officers present being Lieutenant Wear, M.D., Hon. Captain and Quartermaster Gardner (in charge of the transport), and the Rev. J. F. Phillips, Acting Chaplain. There were 90 of all ranks on parade, including the transport section, two ambulance wagons, with four-horse teams, driven by men of the section. After a display of company and bearer-company drill and the execution of special work, such as dressing and bringing in wounded, the Inspecting Officer addressed the company. He said that this was the third year in which he had inspected them, and he regretted that this was the last time he should so meet them. He congratulated them upon the efficiency which they had obtained, and upon the manner in which they had maintained their smartness and efficiency.

INDIAN MEDICAL SERVICE.

The promotion of Lieutenant-Colonel H. S. Browne, C.I.E., M.D., Bengal Establishment, to be Colonel, which has been already announced in the British Medical Journal, has received the approval of the King.

Colonel W. E. Johnson, M.D., Madras Establishment, has retired from the service, from June 30th. He was appointed Assistant Surgeon, March 30th, 1872, and was made Surgeon-Colonel, July 30th, 1898.

Lieutenant-Colonel A. W. Leahy, M.D., F.R.C.S., Bengal Establishment, has also retired from the service (in substitution for the notification of this officers retirement in the *London Gazette* of June 30th.) He joined as Surgeon, September 30th, 1882, and became Lieutenant-Colonel, September 30th, 1902.

The following retirements from the service, already published in the British Medical Journal, have received the King's sanction: Colonel A. M. Branfoot, C.I.E., M.B., Madras Establishment, May 19th; Lieutenant-Colonel D. P. Macdonald, M.D., Bengal Establishment, July 6th; Major W. G. Thorold, Bengal Establishment, April 15th.

THE CARRIAGE OF WOUNDED ON HORSEBACK.

The support for carrying sick and wounded in the saddle invented by Lieutenant-Colonel H. G. Hathaway, Royal Army Medical Corps, and described fully in the British Medical Journal of February 14th, 1903, p. 404, has been tried in the presence of His Excellency the Commander-in-Chief, India; the Principal Medical Officer, His Majesty's Forces in India; and the Inspector General of Cavalry, and the expression of their approval was unanimous.

MEDICO-LEGAL AND MEDICO-ETHICAL.

MEDICAL ETIQUETTE.

Substitute.—1. A. and B. have repeatedly during the last two years acted as *locum tenens* for each other, and it has been the usual rule for A. and B. to divide the fees for attendance on each case. A. has always assumed that he cannot attend such patients of B., nor the ordinary residents in the households who are under the age of discretion, even in a new illness, though he has been repeatedly asked to do so. As a consequence of his refusal to attend patients he has seen for B., in two cases, at least, the patients have gone to C., another practitioner. Is A. right and just to himself, in all cases, in adhering rigidly to his practice of not seeing any patient professionally that he has seen for B., "for all time," provided they have not in the meantime called in another medical attendant? If not for all time, after what interval can A. attend such patients?

*** 1. The arrangement suggested, if carried out loyally by both parties, is undoubtedly the best, but A. should see B. and have an understanding that they will mutually respect the agreement not to take over any patient seen by either when acting as substitute for the other, unless under very exceptional circumstances and with the full consent of the original medical attendant.

2. The town being a health resort, A. whilst attending a patient Z. in a boarding-house to which B. is usually summoned, has seen a B.'s substitute a certain party X., a visitor, whom B. never sees at any time. If X should return to the same or to another boarding-house or hotel in the health resort in question and send for A., can A. attend X. if the latter states that she does not know B. and does not wish to call him in, as she prefers A., whom she knows and is satisfied with? Also, should A. inform B. of his attendance on X. if it be right for him to attend?

*** A visitor seen for B. should be on exactly the same footing as any other patient.

3A. A., B., and D. have administered anaesthetics for one another. Are they all mutually debarred from attending such patients professionally?

*** The administration of an anaesthetic is not to be regarded as debarring the administrator from attending the patient, should he be subsequently called in.

3B. If debarred from such attendance in the case of residents, how about visitors?

*** This would apply also to visitors.

4. D. has a partner P. D. has several times seen patients for A. As D. is debarred in the degree entailed by the answer to question 1, is it to be considered that P. is also in a similar degree debarred?

*** P. must accept any disability which applies to D, or men in partnership would be easily able to evade their ethical obligations.

Dr. D.—Dr. A. goes for a holiday, leaving Dr. B. as his substitute. Mrs. C. sends for Dr. A.; finding he is away she declines Dr. B.'s services, and sends for Dr. D. The latter offers to act on behalf of Dr. A. Mrs. C. now declines to see Dr. A. professionally. Is Dr. D. justified in retaining the case? The patient is an old lady aged 90.

*** The offer referred to was presumably made to the patient, and not to Dr. A.; under these circumstances if Mrs. C. desires to change her medical attendant Dr. D. is justified in retaining the case, but should insist upon Dr. A. being written to and informed of the patient's wish.

H. J. F.—A patient of A., practising in a small country town, consults a dentist, who advises her to have gas for tooth extraction, and sends for B., another practitioner in the same town. He administers gas, and afterwards visits the patient at her own house several times, no intimation of this being sent to the patient's own medical man. Did B. act strictly professionally in thus attending the patient of another medical man, who had previously been told by the patient that she wished him to give the anaesthetic if required?

*** B. did not act unprofessionally in giving the anaesthetic if he was was asked to do so, but it is undoubtedly irregular to make a professional call without being invited. The remedy is obvious, for if the patient does not wish him to attend her she can write and tell him not to call again.

FEES IN WORKMEN'S COMPENSATION CASES.

J. G. B. C.—With the exception of the fees allowed to medical witnesses in courts of law and the fees allowed by the Local Government Board there is no settled scale of medical fees which can be called legal. The Secretary of State has sanctioned a scale of fees to be charged by medical referees for services under the Workmen's Compensation Act, and this includes the following: "For a first examination and report, £2 2s." It would be quite fair for your correspondent to charge this amount, but whether he could recover it or not in a county court would entirely depend upon the view the judge happened to take. Our correspondent should write to the solicitors quoting the fee mentioned (£2 2s.), and ask them to send him another guinea, and in the future he should always make an arrangement about his fee before sending in his report.

CONTRACT MEDICAL PRACTICE.

W. J. M.—The matter has been referred to the Ethical Committee for their consideration, as in all probability the whole question will come before that Committee after the holidays.

A DISCLAIMER.

Dr. W. D. Jefferson (Ripon) writes: A paragraph has recently appeared in the local papers with regard to two cases of lupus, which I treated with the *x* rays in connexion with the Cottage Hospital. I need hardly say this was done without my consent, and has caused me much annoyance. I have asked the newspapers in question to make this fact public.

PROFESSIONAL SECRECY.

Perplexed.—A, (a domestic servant) consults B. and pays him his usual fee. A. then asks B. for a certificate of unfitness for work to show her mistress C. B. refuses, but he offers to write to C., giving her his opinion of A.'s case. A. acquiesces, subject to the approval of the contents of the letter. B. accordingly writes to C., but before dispatching the letter he reads it aloud to A. A. leaves her situation the same day without giving previous notice. B. is C.'s family attendant. Was B. wrong in reading the letter to A.? Has C. any good reason to feel aggrieved at B.'s action?

*** It is particularly in the case of domestic servants that medical men are tempted to violate the rule of professional secrecy, which imposes upon them the obligation not to reveal to any person information acquired by medical examination without the consent of the patient. B. may have refused to give A. the certificate for good reasons of his own, but he would have had no right to communicate with C. without showing A. the letter and obtaining her consent to his sending it. C. has no legitimate ground for grievance against B.; unfortunately, ladies often take a strange view of their rights over their servants, and are capable of taking offence if the doctor declines to subordinate his duty to his patient to their interests.

MEDICAL TESTIMONIALS IN TRADE ADVERTISEMENTS IN THE LAY PRESS.

W. H. R.—We are much obliged for the cutting, which we have referred to the Ethical Committee, as that body is dealing systematically with all cases of this kind.

CAN A MEDICAL PRACTITIONER BE THE OWNER OF A SECRET REMEDY?

ENQUIRER.—The general opinion of the profession is undoubtedly adverse to the connexion of a medical practitioner with any business having for its object the sale of a nostrum. For instance, the Royal College of Surgeons of Edinburgh in By-law 15 says: "No Fellow of the College shall connect himself in partnership or otherwise or continue in connexion with any person practising by means of, or advertising the sale of, a secret remedy." The Glasgow Faculty of Physicians and Surgeons also requires that, "No Fellow of the Faculty shall keep an open shop for the sale of drugs or other merchandise or be a proprietor or have a proprietary interest in a secret remedy." We think our correspondent would find himself in a false position if he practised the profession of medicine, and at the same time remained the owner of a quack remedy, even although it came to him by inheritance; he would be obliged to choose between his profession and the business.

AMERICAN QUACK ADVERTISEMENTS AND PAMPHLETS.

MR. HAMMOND should bring the facts to the notice of the district branch of the Young Men's Christian Association. If such institutions refused to subscribe for magazines containing the advertisements of pernicious quacks of this description it would perhaps induce the publishers to refuse them.

WORKS APPOINTMENTS.

SURGEON.—The objection to these works appointments in South Wales is that the committee makes money out of the medical officer's labours, and that, as the servant of a workmen's committee, he does not find himself exactly on a bed of roses. But we are informed that the profession in the locality would not regard an application for the appointment to which our correspondent refers as improper.

W.L.G.—Our correspondent is entitled to claim a fee of one guinea for his services on the occasion. As his second visit was occupied in doing what he ought, in our judgement, to have done at the first he is not entitled to make any additional charge for it.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

THE METROPOLITAN ASYLUMS BOARD.

AT an ordinary meeting of the Metropolitan Asylums Board on July 25th, Sir Robert Hensley presiding, a resolution was passed recording the great regret of the managers at the decease of Sir Vincent Kennett-Barrington, after twenty years' service as a member of the Board, upon which he served as one of the nominees of the Local Government Board. The Clerk of the Board was directed to send a copy of it to Lady Kennett-Barrington, together with an expression of the Board's sympathy with her and her family in their bereavement. The accounts presented showed that during the fortnight ending Thursday, July 23rd, 25 small-pox patients had been admitted to the Board's institutions as compared with 30 in the two preceding weeks, and that there remained under treatment 69 patients as compared with 76 the fortnight previously. During the same period, 777 cases of other infectious diseases had also been taken in hand, the total remaining under treatment being 2,677, or an increase of 103 over the total at the end of the previous fortnight. The accounts of the Finance Committee for the half year ending at Lady Day showed an expenditure on asylums of some £6,000 in excess of that in the corresponding period in 1902. The expenditure on hospitals was some £19,000 less than in the first half of 1902; that on the training ships remained about the same, while expenditure on children's homes and schools had nearly doubled. A special expenditure of £60,659 had been incurred on small-pox accommodation and transport, and general expenses had risen from about £87,000 to nearly £130,000. The grand total spent, therefore, was £585,909, as compared with £487,405 in the corresponding half of last year, being an increase in expenditure of nearly £100,000. The managers were authorized to incur an expense not exceeding £8,680 on additional buildings at Joyce Green Hospital. The next meeting of the Board will be held on September 5th.

THE DIAGNOSIS OF SMALL-POX IN LONDON.

THE annual report of the Metropolitan Asylums Board contains some important particulars on this subject, based on the experience of 1902. Dr. McC. Wanklyn reports that of 7,842 certified cases of small-pox sent to the North and South Wharves of the Board, 607, or a percentage of 7.7, were found not to be small-pox, as compared with 13.3 per cent. in the year 1901, and 10 per cent. in the year 1893. Some of the subsequent diagnoses of the 607 cases erroneously regarded as small-pox are very surprising. As might be expected chicken-pox heads the list with 203, then follow measles 48 cases, acne 42 cases, eczema 31, syphilis 30 cases. In 74 other cases "dermatitis unclassified" was responsible for the mistake, while in 36 cases there was no ascertainable disease. Probably the last-named cases came from families members of which had previously been attacked by small-pox, and it is noteworthy in connexion with this point that Dr. Wanklyn remarks: "The sending of patients to the wharf before any rash has appeared is undesirable. It is detrimental to the patients, many of whom develop no rash under observation and are returned." Among other causes of mistake were lichen 26, erythema rheumaticum 13, nettle rash 12, German measles 7, vaccination rashes 3. It is difficult to understand how apart from the panic caused by neighbouring cases of small-pox, such diseases as influenza, typhoid fever, phthisis, bronchitis, uræmia, appendicitis, pericarditis, delirium tremens, chloasma, drug rashes, psoriasis, etc., could be mistaken for small-pox, but all these mistakes appear to have been made. Of the 7,208 cases sent through to the small-pox hospitals, only 2 were found there to be not suffering from small-pox. Neither of these acquired small-pox. No statement is made as to the subsequent fate of the 607 patients who were sent home from the wharves. We are not informed whether they were revaccinated before being sent home, though doubtless this was offered to them. Of the 607, 406 were sent home on the day of admission or on the following day, 138 after detention in shelters two to four days, 42 after detention five to seven days, and 9 after detention for eight days or longer.

UNSOUND RATIONS AT PRETORIA.

THE recent Parliamentary paper on the destruction of unsound rations at Pretoria does not form pleasant reading. Properly-prepared food, properly stored, should not go wrong, as happened in this case. The question, therefore, is a simple one of responsibility for preparation or for storage. When such food is seized in this country, and proved against the contractor, the penalties to which he is liable are considerable.

CALF LYMPH AND DIPHTHERIA SERUM.

DR. R. R. RENTOUL.—Several of the questions which our correspondent puts to us concern obscure points which are still the subject of much controversy, and therefore cannot be dealt with in brief or categorical fashion. He will find many valuable articles on calf lymph in the yearly Supplements to the Report of the Local Government Board. For diphtheria serum we may refer him to Professor Woodhead's Report to the Metropolitan Asylums Board on the Bacteriological Diagnosis and the Antitoxic Serum Treatment of Cases admitted to the Hospitals of the Board during 1895 and 1896; to a valuable paper by Dr. Cobbett on the Nature of the Action of Antitoxins (*Journal of Pathology and Bacteriology*, August, 1899); and to a short article by Dr. Eyre, entitled, Antitoxic Sera: their Preparation and Standardization, *International Clinics*, vol. iii, Eleventh Series, 1901, p. 24. We do not know of any experiments dealing with the destruction of calf lymph or diphtheria antitoxin by a reduction of temperature.

In Appendix C. of the Supplement to the 30th Report of the Local Government Board, Dr. Blaxall says, as the result of his experimental observations, that "lymph was potent on calves after an exposure of five minutes to a temperature of 57.5° C., but failed entirely after exposure to 60° C. for five minutes." In the same Appendix Dr. Blaxall also records his experiments on the effect of desiccation on calf lymph. He finds that "the vaccine organism can withstand desiccation for as long a period as four months without loss of vitality." He adds that he is making further observations on the influence of variations of moisture and temperature on the vitality of the vaccine organism. Some years ago the same author (Supplement to Report of Local Government Board for 1897-8) stated that a sample of glycerinated lymph 10 months old gave in 10 children an insertion success of 100 per cent. With regard to diphtheria antitoxin, Dr. Eyre, in the article by him already referred to, states that "short exposure to temperature at 60° C. does not seem to alter the characteristic properties of antitoxin, although prolonged exposure causes considerable alteration. Heating from 60° to 70° C. or more, however, causes marked weakening, and even destruction, according to the temperature and the length of exposure." Professor Woodhead, on p. 159 of his Report deals with the question of the deterioration, on keeping, of antitoxic serum. His observations are too lengthy to admit of brief summary. Opinions appear to differ as to whether or no scale preparations of diphtheria serum retain their power for a considerably longer period than the ordinary serum.

DEDUCTIONS UNDER SUPERANNUATION ACT.

T. P. was appointed district medical officer in a provincial union last December, but as he does not reside in his district the appointment was made for one year only. He asks whether the guardians can under such circumstances deduct 2 per cent. of his emoluments under the Superannuation Act; and if so, whether he will be able to obtain a return of such deductions if he is not re-elected.

*** The guardians are bound to make the deductions described, but in the event of our correspondent from no fault of his own not being re-elected to office, he will be entitled under Clause 8 of the Act to claim a return of all such deductions at the expiration of his term of office.

PAYMENT BY GUARDIANS OF POOR-LAW MEDICAL OFFICERS' *LOCUM TENENS*.

DEPUTY asks: (1) Whether Poor-law guardians are allowed to pay a medical man acting for their medical officer when the latter is away on his annual holiday?

(2) Whether a medical officer of a workhouse is legally entitled to a reasonable holiday annually?

(3) Whether the guardians are legally bound to pay a *locum tenens* in the medical officer's absence.

*** (1) This is very unusual, but with the special sanction of the Local Government Board it might perhaps be done.

(2) We are not aware of any such regulation.

(3) A Board of Guardians is not bound to pay a *locum tenens* when the latter is acting for a workhouse medical officer.

ENGLISH URBAN MORTALITY IN THE SECOND QUARTER OF 1903.

[SPECIALLY REPORTED FOR THE "BRITISH MEDICAL JOURNAL."]

THE vital statistics of the seventy-six large towns dealt with in the Registrar-General's weekly returns are summarized in the accompanying table. During the three months ending June last, 113,630 births were registered in these towns, equal to an annual rate of 30.2 per 1,000 of their aggregate population, estimated at 15,075,011 persons in the middle of the year. During the second quarter of last year the birth-rate in these towns averaged 29.7 per 1,000. In London the birth-rate last quarter was 29.0 per 1,000, while it averaged 30.8 in the seventy-five large provincial towns, among which the rates ranged from 17.2 in Hastings, 18.6 in Bournemouth, 21.0 in Hornsey, 21.5 in Halifax, 22.9 in Bury, 23.0 in Bradford, and 24.5 in Brighton and in Northampton to 36.4 in Wigan, 36.5 in Middlesbrough, 36.7 in South Shields, 37.2 in Merthyr Tydfil, 37.4 in Gateshead, 38.2 in St. Helens, 38.6 in Warrington, and 41.2 in Rhondda.

During the quarter under notice 57,626 deaths were registered in these seventy-six towns, corresponding to an annual rate of 15.3 per 1,000, against 16.6 per 1,000 in the second quarter of last year. In London the rate of mortality was 14.7 per 1,000, while it averaged 15.6 per 1,000 in the seventy-five other large towns, among which the death-rates ranged from 7.8 in Hornsey, 9.5 in Walthamstow, 9.7 in Willesden, 10.1 in Kings Norton, 10.4 in Croydon, 10.9 in Leyton and in Handsworth, and 11.0 in East Ham to 19.0 in Coventry and in Oldham, 19.5 in Liverpool and in Manchester, 19.7 in Sunderland and in Swansea, 21.6 in Wigan, and 22.8 in Middlesbrough.

The 57,626 deaths from all causes in these seventy-six towns last quarter included 5,798 which were referred to the principal infectious diseases;

Analysis of the Vital Statistics of Seventy-Six of the Largest English Towns during the Second Quarter of 1903.

Towns.	Estimated Population middle of 1903.	Births.	Deaths.	Annual Rate per 1,000 Living. Births.	Deaths.	Principal Infectious Diseases.	Deaths from Principal Infectious Diseases.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping-Cough.	Fever.	Diarrhoea.	Deaths of Children under one year of age to 1,000 Births.	Rate per cent. of Uncertified Deaths.
76 Towns	15,075,011	113,630	57,626	30.2	15.3	1.55	5,798	172	1,812	569	673	1,379	331	862	115	1.2
75 Provincial Towns	10,461,199	80,303	40,726	30.8	15.6	1.54	4,015	170	1,052	487	498	934	282	592	120	1.6
London	4,613,812	33,327	16,900	29.0	14.7	1.54	1,783	2	760	82	175	445	49	270	103	0.3
Croydon	141,157	954	365	27.1	10.4	1.08	38	2	12	—	1	18	—	5	84	—
Willesden	127,077	1,054	308	33.3	9.7	1.10	35	1	2	4	2	16	2	6	85	1.8
Hornsey	78,386	411	152	21.0	7.8	1.06	21	—	11	1	3	4	—	2	85	—
Tottenham	109,749	886	357	32.4	13.0	2.74	75	—	45	2	7	19	1	1	97	—
West Ham	281,894	2,326	914	33.1	13.0	1.78	125	—	36	8	11	44	3	23	115	0.8
East Ham	110,451	973	304	35.3	11.0	1.75	48	—	26	4	1	13	1	3	87	0.3
Leyton	107,153	810	290	30.3	10.9	1.94	52	—	25	2	4	11	2	8	105	2.1
Walthamstow	106,290	887	251	33.5	9.5	1.74	46	—	27	2	6	7	1	3	65	—
Hastings	66,194	284	183	17.2	11.1	0.66	11	—	3	1	2	4	—	1	81	—
Brighton	125,405	766	437	24.5	14.0	0.54	17	—	3	—	7	2	1	4	90	0.5
Portsmouth	194,960	1,388	653	28.6	13.4	1.17	57	—	4	7	19	13	5	9	91	0.9
Bournemouth	63,132	293	182	18.6	11.6	0.25	4	—	—	—	1	—	2	1	51	0.5
Southampton	110,120	790	334	28.8	12.2	0.70	19	—	—	5	9	3	1	1	75	—
Reading	75,082	534	226	28.5	12.1	0.86	16	—	3	—	2	7	2	2	101	1.8
Northampton	89,863	549	308	24.5	13.8	1.53	34	—	6	8	6	12	—	2	120	0.3
Ipswich	68,818	456	212	20.0	12.4	0.64	11	—	2	—	3	2	1	3	103	0.5
Great Yarmouth	51,851	390	238	30.2	18.4	2.70	35	—	—	9	14	—	2	10	85	—
Norwich	114,351	791	404	27.7	14.2	0.64	18	—	—	5	4	3	2	4	111	1.0
Plymouth	112,022	742	431	26.6	15.4	0.72	20	—	1	4	4	8	2	1	105	0.2
Devonport	73,815	505	256	27.4	13.9	0.53	10	—	3	2	1	1	—	3	81	—
Bristol	338,895	2,387	1,122	28.3	13.3	0.91	77	1	1	15	31	13	5	11	82	0.2
Hanley	63,205	539	246	34.2	15.0	1.95	31	3	—	1	21	1	1	4	130	3.3
Burton-on-Trent	51,450	357	156	27.8	12.2	0.55	7	—	2	1	—	3	—	1	73	—
Wolverhampton	96,947	728	392	30.8	16.2	2.65	64	—	32	4	4	1	6	17	128	0.5
Walsall	89,878	786	349	35.1	15.0	0.97	22	2	—	6	3	5	1	5	130	0.6
Handsworth	57,557	358	156	24.9	10.9	0.56	8	—	1	4	1	—	—	2	92	1.9
West Bromwich	66,558	598	296	36.0	17.8	2.88	48	—	17	7	5	5	5	9	161	0.7
Birmingham	533,039	4,239	2,183	31.9	16.4	1.70	225	—	66	44	21	25	19	50	128	2.4
Kings Norton	63,717	453	161	28.5	10.1	0.38	6	—	2	2	1	1	—	—	106	1.2
Smethwick	58,787	463	203	31.6	13.9	1.10	16	—	2	2	—	7	3	2	119	5.4
Aston Manor	79,417	573	252	28.9	12.7	1.65	33	2	9	6	3	5	2	6	119	2.8
Coventry	72,684	562	345	31.0	19.0	3.31	60	—	41	1	8	6	—	4	146	1.2
Leicester	220,272	1,562	708	28.4	12.9	1.31	73	14	31	4	3	6	5	10	127	2.4
Grimsby	65,772	503	222	30.7	13.5	1.15	19	—	—	3	1	9	3	3	133	1.4
Nottingham	245,985	1,832	1,035	29.9	16.9	2.01	123	—	51	9	14	33	3	13	130	0.8
Derby	118,707	825	383	27.9	12.9	0.54	16	1	—	1	1	7	2	4	104	—
Stockport	95,709	704	388	29.5	16.3	1.21	29	—	12	5	—	10	1	1	114	0.3
Birkenhead	113,598	907	423	32.0	14.9	0.92	26	1	2	6	3	8	4	2	99	0.5
Wallasey	58,258	418	198	28.8	13.6	1.11	16	—	2	6	1	3	2	2	98	—
Liverpool	716,810	6,026	3,487	33.7	19.5	1.76	315	49	25	41	38	50	39	73	125	3.5
Bootle	60,761	516	232	34.1	15.3	1.33	20	2	1	5	1	3	3	5	95	5.2
St. Helens	87,259	832	367	38.2	16.9	1.53	33	—	—	6	6	13	1	7	131	7.1
Wigan	62,165	564	335	36.4	21.6	4.77	74	1	48	9	4	3	5	4	140	1.5
Warrington	66,370	639	281	38.6	17.0	1.14	19	—	1	2	4	4	—	8	135	8.2
Bolton	173,401	1,170	718	27.1	16.6	1.61	69	1	21	24	8	—	6	9	121	—
Bury	58,313	333	240	22.9	16.5	0.77	11	2	1	3	3	—	1	1	108	—
Manchester	553,486	4,548	2,691	33.0	19.5	2.30	317	10	106	14	29	88	22	48	146	1.5
Salford	226,480	1,794	976	31.8	17.3	2.40	135	6	29	13	18	40	10	19	142	0.7
Oldham	138,786	865	635	25.0	19.0	3.45	119	17	8	9	19	50	3	13	163	0.3
Rochdale	84,824	528	383	25.0	18.1	1.23	26	4	—	6	5	9	—	2	117	1.3
Burnley	99,469	686	448	27.7	18.1	2.21	55	6	7	9	3	20	2	8	198	1.1
Blackburn	131,218	925	517	28.3	15.8	0.90	30	1	2	6	3	5	5	8	129	3.7
Preston	114,404	913	473	32.0	16.6	1.70	48	—	—	3	5	18	7	15	129	3.9
Barrow-in-Furness	59,009	525	210	35.7	14.3	0.96	14	—	2	—	1	3	6	2	93	5.7
Huddersfield	94,963	585	397	24.7	16.8	0.71	17	1	—	5	2	8	—	1	111	1.3
Halifax	106,754	571	370	21.5	14.1	0.50	13	1	—	2	3	5	1	1	93	0.8
Bradford	283,412	1,670	1,071	23.6	15.2	1.11	78	12	—	4	7	38	6	11	132	0.7
Leeds	443,559	3,298	1,683	29.8	15.2	1.20	133	11	27	30	11	25	13	16	116	0.8
Sheffield	425,528	3,528	1,955	33.3	18.4	2.95	314	2	136	27	10	108	8	23	158	3.0
Rotherham	57,212	509	237	35.7	16.6	1.61	23	1	—	3	3	12	1	3	145	2.1
York	86,186	584	270	29.2	13.5	0.40	8	—	3	2	1	—	1	1	108	0.4
Hull	249,639	2,004	971	32.2	15.6	1.28	80	4	24	2	25	10	1	14	127	1.4
Middlesbrough	95,013	864	539	36.5	22.8	3.28	78	1	40	—	11	6	9	11	168	2.8
Stockton-on-Tees	51,965	427	196	33.0	15.1	1.00	13	—	—	7	2	—	1	3	96	1.0
West Hartlepool	67,201	607	219	36.2	13.1	0.48	7	1	3	1	—	1	1	—	79	0.5
Sunderland	149,572	1,348	733	36.2	19.7	1.72	64	1	15	15	6	13	4	10	148	3.1
South Shields	105,325	963	434	36.7	16.5	0.52	14	—	3	1	3	1	3	3	103	4.4
Gateshead	115,531	1,076	391	37.4	13.6	0.72	21	6	2	7	—	2	1	3	86	3.6
Newcastle-on-Tyne	222,241	1,763	933	31.8	16.8	0.51	28	1	1	6	3	10	1	6	109	0.5
Tynemouth	52,531	420	204	32.1	15.6	0.47	6	—	1	—	1	4	—	—	133	1.5
Newport (Mon.)	70,217	610	251	34.8	14.3	0.68	12	—	—	2	3	6	—	1	120	—
Cardiff	172,598	1,357	562	31.5	13.1	0.81	34	2	2	6	8	8	3	5	95	0.2
Rhondda	119,652	1,228	481	41.2	16.1	2.31	69	—	—	15	11	14	23	6	128	0.2
Merthyr Tydfil	71,651	664	378	37.2	17.8	2.63	47	—	13	8	4	10	3	9	143	0.3
Swansea	95,489	780	469	32.8	19.7	3.36	80	—	51	3	6	10	2	5	153	0.6

of these, 172 resulted from small-pox, 1,812 from measles, 569 from scarlet fever, 673 from diphtheria, 1,379 from whooping-cough, 331 from "fever" (principally enteric), and 862 from diarrhoea. The death-rate from these diseases averaged 1.55 per 1,000, being 0.29 per 1,000 below the death-rate from the same diseases in the corresponding period of last year. In London this death-rate was slightly below the mean rate in the seventy-six towns, while in the seventy-five large provincial towns the rates ranged from 0.25 in Bournemouth, 0.38 in King's Norton, 0.40 in York, 0.47 in Tynemouth, 0.48 in West Hartlepool, 0.50 in Halifax, 0.51 in Newcastle-on-Tyne, 0.52 in South Shields, and 0.53 in Devonport to 2.65 in Wolverhampton, 2.70 in Great Yarmouth, 2.74 in Tottenham, 2.88 in West Bromwich, 3.28 in Middlesbrough, 3.31 in Coventry, 3.36 in Swansea, 3.45 in Oldham, and 4.77 in Wigan. The fatal cases of small-pox registered during the quarter included 49 in Liverpool, 17 in Oldham, 14 in Leicester, 12 in Bradford, 11 in Leeds, 10 in Manchester, 6 in Salford, 6 in Burnley, and 6 in Gateshead. The death-rate from measles was equal to 0.48 per 1,000, being slightly less than the rate in the corresponding period of last year; in London the death-rate from this disease was 0.66 per 1,000, while it averaged 0.40 in the seventy-five large provincial towns, among which measles was proportionally most fatal in Tottenham, Walthamstow, Wolverhampton, West Bromwich, Coventry, Wigan, Sheffield, Middlesbrough, and Swansea. The mortality from scarlet fever was equal to an annual rate of 0.15 per 1,000, or 0.02 per 1,000 below the rate in the second quarter of last year. In London the scarlet fever death-rate was only 0.07 per 1,000, while it averaged 0.19 in the seventy-five large provincial towns, among which the highest death-rates from this disease were recorded in Great Yarmouth, Wigan, Bolton, Stockton-on-Tees, Rhondda, and Merthyr Tydfil. The mean death-rate from diphtheria in the seventy-six large towns was 0.18 per 1,000, and showed a decline of 0.05 per 1,000 from that recorded for the corresponding quarter of last year; in London the rate was 0.15 per 1,000, while it averaged 0.19 in the seventy-five provincial towns, the highest rates being recorded in Portsmouth, Great Yarmouth, Hanley, Coventry, Oldham, Hull, Middlesbrough, and Swansea. The fatal cases of whooping-cough were equal to an annual rate of 0.37 per 1,000, against 0.45 per 1,000 in the second quarter of last year; in London this disease caused a death-rate of 0.39 per 1,000, and an average rate of 0.36 per 1,000 in the seventy-five other large towns, among which the greatest proportional mortality from this disease occurred in Tottenham, West Ham, Manchester, Salford, Oldham, Burnley, Preston, Sheffield, and Rotherham. The death-rate from "fever" averaged 0.09 per 1,000 in the seventy-six large towns, and was 0.03 per 1,000 below the rate in the corresponding period of last year; in London the "fever" death-rate was only 0.04 per 1,000 while the mean rate was 0.11 per 1,000 in the seventy-five provincial towns, among which "fever" was proportionally most fatal in Wolverhampton, West Bromwich, Liverpool, Wigan, Preston, Barrow-in-Furness, Middlesbrough, and Rhondda. The mortality from diarrhoea was equal to an annual rate of 0.23 per 1,000, against 0.17 per 1,000 in the second quarter of last year. The rate in London corresponded with the average rate for the seventy-six towns, while among the seventy-five large provincial towns the highest death-rates from diarrhoea were recorded in Great Yarmouth, Wolverhampton, West Bromwich, Liverpool, Warrington, Preston, Middlesbrough, and Merthyr Tydfil.

Infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births, was equal to 115 per 1,000 last quarter, against 127 per 1,000 in the corresponding period of last year. In London the proportion, during the quarter under notice, was 103 per 1,000, while it averaged 120 in the seventy-five other large towns, and ranged from 51 in Bournemouth, 65 in Walthamstow, 73 in Burton-on-Trent, 75 in Southampton, 79 in West Hartlepool, 81 in Hastings and in Devonport, and 82 in Bristol to 146 in Coventry and in Manchester, 148 in Sunderland, 153 in Swansea, 158 in Sheffield, 161 in West Bromwich, 163 in Oldham, 163 in Middlesbrough, and 198 in Burnley.

The causes of 697, or 1.2 per cent., of the deaths in these seventy-six towns last quarter were not certified, either by a registered medical practitioner or by a coroner. The causes of all the deaths were duly certified in Croydon, Hornsey, Tottenham, Walthamstow, Hastings, Southampton, Great Yarmouth, Devonport, Burton-on-Trent, Derby, Wallasey, Bolton, Bury, and Newport (Mon.); while the highest proportions of uncertified deaths were registered in Smethwick, Liverpool, Bootle, St. Helens, Warrington, Blackburn, Barrow-in-Furness, South Shields, and Gateshead.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,687 births and 3,874 deaths were registered during the week ending Saturday last, July 25th. The annual rate of mortality in these towns, which had been 14.4, 13.7, and 13.5 per 1,000 in the three preceding weeks, further declined to 13.4 per 1,000 last week. The rates in the several towns ranged from 5.7 in Tottenham, 6.3 in Reading and in Handsworth, 6.9 in Walthamstow, 7.0 in Northampton, 7.1 in East Ham, 7.2 in York, and 7.3 in Hornsey, to 18.1 in Sunderland, 18.2 in Ipswich, 18.9 in Warrington and in Burnley, 19.1 in Stockport and in St. Helens, 19.2 in Bolton, 20.6 in Bury, and 21.1 in Great Yarmouth. In London the rate of mortality was 12.7 per 1,000, while it averaged 13.7 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.8 per 1,000 in the seventy-six large towns; in London this death-rate was equal to 1.4 per 1,000, while it averaged 2.0 in the seventy-five large provincial towns, among which the highest death-rates from the principal infectious diseases were 3.1 in Rhondda, 3.2 in Birkenhead, 3.6 in Leeds, 3.7 in Burnley, 4.0 in Tynemouth, 4.7 in Sheffield, 4.9 in Stockport, 5.1 in Bootle, and 5.5 in Warrington. Measles caused a death-rate of 1.3 in Aston Manor, 1.5 in Ipswich, 1.6 in Stockport, and 2.1 in Sheffield; whooping-cough of 2.1 in Willesden; "fever" of 1.7 in Bootle; and diarrhoea of 1.8 in Bury and in Gateshead, 2.0 in Tynemouth, 2.8 in Birkenhead, 3.4 in Bootle, and 5.5 in Warrington. The mortality from scarlet fever and from diphtheria showed no marked excess in any of the large towns. Of the 5 deaths from small-pox registered in these towns last week, 1 belonged to Smethwick, 1 to Liverpool, 1 to Leeds, 1 to Hull, and 1 to Newcastle. The number of small-pox patients under treatment in the Metropolitan Asylums Hospitals, which had been 57, 77, and 71 at the end of the three preceding weeks, was again 71 at the end of last week; 12 new cases were admitted during the week, against 4, 21, and 7 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital on Saturday last, July 25th, was 1,711, against 1,046, 1,700, and 1,710 on the three preceding Saturdays; 229 new cases were admitted during last week, against 241, 253, and 243 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, July 25th, 946 births and 503 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 16.3, 16.2, and 15.2 per 1,000 in the three preceding weeks, rose again last week to 15.4 per 1,000, and was 2.0 per 1,000 above the mean-rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 11.1 in Leith and 12.0 in Greenock to 16.9 in Glasgow 19.5 in Paisley. The death-rate from the principal infectious diseases averaged 1.9 per 1,000 in these towns; the highest rates being recorded in Edinburgh and Paisley. The 255 deaths registered in Glasgow last week included 4 which resulted from measles, 3 from scarlet fever, 6 from whooping-cough, 3 from "fever," and 11 from diarrhoea. Four fatal cases of whooping-cough, 2 of "fever," and 9 of diarrhoea were recorded in Edinburgh; 5 of diarrhoea in Dundee; 2 of diarrhoea in Aberdeen; 2 of measles and 3 of diarrhoea in Paisley; and 2 of diarrhoea in Greenock.

HOSPITAL AND DISPENSARY MANAGEMENT.

AMALGAMATION OF THE NATIONAL ORTHOPAEDIC AND THE ROYAL ORTHOPAEDIC HOSPITALS.

A special meeting of the Governors of the National Orthopaedic Hospital for the Deformed was held at the hospital on July 24th, with Mr. Robert Cooper in the chair. The Chairman, in proposing that the amalgamation of the National Orthopaedic Hospital and the Royal Orthopaedic Hospital in accordance with the arrangements agreed upon at the meeting of the Committee of Management on March 20th, 1903, be approved of, and that the carrying out of the details be left to the Chairman and the Committee of Management, discussed the steps which had led up to the proposed amalgamation. The Chairman also read a letter from the Medical Board of the hospital which stated that at a meeting of the Medical Board on July 22nd it was unanimously resolved that it having been reported in the press that on amalgamation of the two hospitals the surgical staffs, as at present constituted, would be joined together, the medical staff of the National Orthopaedic Hospital desired that at the special general meeting of the Governors called for July 24th, their absolutely unanimous opinion should be recorded that all members of the surgical staff of the amalgamated hospitals without any exception must be Fellows of the Royal College of Surgeons, England. This stipulation, the medical staff understood from the Chairman of the Committee of Management, had always been put forward by him in the negotiations with the King's Hospital Fund. After Mr. Muirhead Little and Mr. A. H. Tubby had spoken on this subject, Mr. C. D. Hoblyn, seconded the resolution proposed by the Chairman, which was thereupon unanimously agreed to. It was announced that the name of the future hospital was to be the Orthopaedic Hospital, and the proceedings terminated with the usual votes of thanks.

MEDICAL NEWS.

A female practitioner, Dr. Charlotte Steinberger, of Buda-Pesth, has been appointed Kurarzt of the Visk-Varhegy Baths in the Marmaros County, Hungary.

The Honorary Treasurer of the Cancer Research Fund under the direction of the Royal Colleges of Physicians and of Surgeons has received a donation of £1,000 to the fund "In Memory of 'M.'"

Antialcohol Congress in France.—The first French National Antialcohol Congress will be held in Paris from October 26th to 29th under the honorary presidency of M. Casimir-Périer. The programme consists of two parts—the first devoted to a review of the existing situation in regard to alcoholism and the struggle against it; the second to the plan of campaign, including the action of the State, and of local authorities and private initiative, the medical profession, the clergy, etc.; syndicates, prudential associations; educational propaganda among young people; the influence of women. The Congress will also discuss the organization of a systematic warfare against alcoholism by means of the federation of antialcoholic forces directed by a permanent committee.

Odontological Society of Great Britain.—The following have been elected officers for the ensuing session: *President:* Arthur S. Underwood. *Vice-Presidents* (resident): W. H. Woodruff, E. G. Betts, L. Matheson; (non-resident) W. B. Bacon (Tunbridge Wells), H. B. Mason (Exeter), Dr. J. Arkövy (Buda-Pesth). *Treasurer:* C. F. Rilot. *Librarian:* H. Baldwin. *Curator:* J. F. Colyer. *Editor of Transactions:* H. Lloyd Williams. *Honorary Secretaries:* J. H. Mummery (Foreign), M. F. Hopson (Council), G. Hern (Society). *Councillors* (resident): R. Denison Pedley, J. Percy Smith, A. Hopewell-Smith, E. Preedy, Carl Schelling, W. Rushton, H. W. Messenger, J. B. Parfitt, D. P. Gabell; (non-resident), J. J. H. Sanders (Barnstaple), E. A. Bogue (New York), J. F. L. Pike (Sheffield), G. W. Watson (Edinburgh), Kevin E. O Dufly (Dublin), John E. Grevers (Amsterdam), J. C. Foran (Eastbourne), W. S. Holford (Sutton), O. Fergus (Glasgow).

The Registration of Plumbers.—At the meeting of the Royal Institute of Public Health recently held at Liverpool, the Section of Preventive Medicine and Vital Statistics passed unanimously the following resolution proposed by Dr. Francis Vacher, County Medical Officer for Cheshire, and seconded by Dr. Scurfield, Medical Officer for Sunderland: "That this 1903 Congress of the Royal Institute of Public Health, held at Liverpool, approves of the efforts made by the Worshipful Company of Plumbers, in promoting the Plumbers' Registration Bill, believing that such a measure will be for the safeguarding of the public health, and beneficial to all classes of the community, and appeals to the Government to give facilities and support to the measure."

French Congress of Alienists and Neurologists.—The Congress of Alienists and Neurologists of France and French-Speaking Countries will hold its thirteenth annual meeting at Brussels on August 1st and following days under the honorary presidency of Baron van der Bruggen, Minister of Agriculture, and M. A. Gerard, French Minister at Brussels. The programme of discussions is as follows:—Psychiatry: Katatonia and stupor, to be introduced by Dr. Claus of Antwerp. Neurology: Histology of general paralysis (to be introduced by Dr. Klippel of Paris). Therapy: Treatment of restlessness and insomnia in mental and nervous diseases, to be introduced by Dr. Trenel of Saint Lyon. The General Secretary is Dr. Crocq, 27, Avenue Palmerston, Brussels, to whom all communications should be addressed.

MEDICAL VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BIRKENHEAD BOROUGH HOSPITAL.—Junior House-Surgeon. Salary, £80 per annum.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—Second House-Surgeon and Anaesthetist, resident. Salary, £70 per annum.

CHELSEA HOSPITAL FOR WOMEN.—Clinical Assistant.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Second House Physician, resident. Salary at the rate of £30 per annum.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Assistant House-Surgeon, resident. Salary at the rate of £50 per annum.

LANCASHIRE COUNTY ASYLUM, Whittingham.—Assistant Medical Officer, resident. Initial salary, £175 per annum.

LANCASTER ROYAL INFIRMARY.—House-Surgeon, resident. Salary, £100 per annum.

LIVERPOOL STANLEY HOSPITAL.—Second House-Surgeon, resident. Salary, £80 per annum.

RAMSGATE GENERAL HOSPITAL.—Resident Medical Officer. Salary £100 per annum.

READING: ROYAL BERKSHIRE HOSPITAL.—(1) House-Physician; (2) House-Surgeon. Salary, £80 per annum each.

SHREWSBURY: SALOP INFIRMARY.—House-Surgeon, resident. Salary, £100 per annum.

SOUTHWARK UNION.—Assistant Medical Superintendent, resident. Salary, £130 per annum.

STOCKPORT INFIRMARY.—(1) Assistant House and Visiting Surgeon. (2) Junior Assistant House-Surgeon. Both resident. Salary, £80 and £40 per annum respectively.

MEDICAL APPOINTMENTS.

ALLISON, T. M., M.D., B.S.Durh., Physician to the Hospital for Diseases of Women, Newcastle-on-Tyne.

BUTLER, William, M.B., C.M.Glasg., D.P.H.Lond., Medical Officer of Health for Willesden, *vice* D. S. Skinner, M.D., deceased.

CRAIG, C. Hawkins, M.B., Ch.B., House-Surgeon to the Edinburgh Royal Maternity and Simpson Memorial Hospital.

EDRED, M. Corner, B.Sc.Lond., M.A., M.B.Cantab., F.R.C.S.Eng., Assistant Surgeon to the Hospital for Sick Children, Great Ormond Street.

FOX, Hugh Clayton, F.R.C.S.I., Assistant Surgeon to the Metropolitan Ear, Nose, and Throat Hospital, Grafton Street, W.

WEST, Leonard, M.B., Ch.B., House-Surgeon to the Edinburgh Royal Maternity and Simpson Memorial Hospital.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

GRIFFITHS.—On July 21st, at 6, Windsor Place, Cardiff, the wife of Cornelius A. Griffiths, F.R.C.S., of a son.

MOORE.—On July 23rd, at Rosslyn, Warley, Essex, the wife of George A. Moore, M.D., Captain R.A.M.C., of a son.

O'KINEALY.—On July 27th, at 10, Westbourne Crescent, Hyde Park, W., the wife of Major F. O'Kinealy, Indian Medical Service, of a son.

ROBERTSON.—On July 26th, at 57, Crouch Hall Road, Crouch End, N., the wife of Andrew Robertson, M.B., C.M., of a daughter.

MARRIAGES.

BOOTH—EVANS.—On July 18th, 1903, at Christ Church, Martin's Lane, Liscard, by the Rev. Dr. Bowman, M.A., Lawrence T. Booth, L.R.C.P.Lond., M.R.C.S.Eng., son of Lawrence Booth, Curzon Park, Chester, to Ethel, second daughter of Samuel Evans, of Liscard, Cheshire. (At home, Melrose Terrace, Liscard, September 2nd and 3rd.)

RUTHVEN—HENDERSON.—On July 25th, in the Presbyterian Church, Capetown, James Henry Ruthven, Johannesburg, to Jane Buchanan Henderson, M.D.Brux., and L.R.C.P.&S.Edin. and Glasg., younger daughter of the late George Henderson, Bo'ness. (By cable.)

TITTERTON—GRAHAM.—At the Parish Church, Portobello, on July 22nd, by the Rev. George T. Jamieson, Minister of the Parish, assisted by the Rev. John Fergusson, Linlithgow, John Tarratt Titterton, M.B., C.M., Portobello, son of C. R. Titterton, Eastbourne House, Portobello, to Effie Garven, youngest daughter of the late Rev. Robert Graham, Minister of Dunlop, Ayrshire, and formerly of St. David's Parish, Kirkintilloch, and of Mrs. Graham, Dunlop Villa, Joppa, N.B.

WILMSHURST—PATERSON.—At All Souls Church, South Hampstead, on July 23rd, by the Rev. George Frederick L. Th. Terry, F.S.A., George Cecil Wilmshurst, of 50, Adelaide Road, South Hampstead, to Eva, daughter of Surgeon-Major-General Henry Foljambe Paterson, Army Medical Staff (retired).

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

Communications respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the Journal, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

Original Articles and Letters *forwarded for publication are understood to be offered to the* British Medical Journal *alone, unless the contrary be stated.*

Authors desiring reprints of their articles published in the British Medical Journal are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

Correspondents who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

Correspondents not answered are requested to look at the Notices to Correspondents of the following week.

Manuscripts forwarded to the Office of this Journal cannot under any circumstances be returned.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the Journal be addressed to the Editor at the Office of the Journal, and not at his private house.

Telegraphic Address.—The telegraphic address of the Editor of the British Medical Journal is *Aetiology, London.* The telegraphic address of the Manager of the British Medical Journal is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

KINGSTON asks for advice in the treatment of a case of verruca on the mucous membrane of the upper lip.

A. G. would be much obliged for information concerning Johannesburg, South Africa, as an opening for an ophthalmic surgeon; also cost of living, etc., there; or where such information could be reliably obtained.

HAEMOGLOBIN inquires where he can purchase the Tallqvist's Haemoglobinometer recommended by Dr. Cabot in his book on *Clinical Examination of the Blood.*

*** We understand that Messrs. Hawksley, 357, Oxford Street, have them upon sale, and that the price is 5s.

ANSWERS.

E. R. F.—Application might be made to the Lady Superintendent, Invalid Children's Home, Witney, Oxon, this being one of the few institutions where some amount of mental defect would not be a bar to admission.

MICRO.—We advise our correspondent to consult the Fourth Edition of the work by Drs. Vaughan and Novy, on *Cellular Toxins, or the Chemical Factors in the Causation of Disease* (London: Messrs. Rebman, 1903. 14s.)

DR. W. H. MACDONALD (Antigonish, Nova Scotia).—The passage occurs at the end of a paper by Dr. George Parker in the British Medical Journal of May 9th, p. 108. The reference is to a reaction described by Ehrlich, not very recently. The process is as follows: Mount a dried but unfixed blood film in a solution of iodine 1 gram, potassium iodide 3 grams, distilled water 100 c.cm., to which enough gum arabic has been added to form a syrupy solution. Examine after about five minutes. The reaction consists in a brown staining of the protoplasm of the polymorphs, which is either diffuse or confined to large or small granules. It is supposed to be due to the presence of glycogen in the cells. In normal blood cells this intracellular reaction does not occur, but it is more or less marked according to circumstances in cases of septic toxaemia and pneumonia. Some who have examined it state that the reaction forms a useful guide as to the formation of pus in cases of appendicitis and allied conditions.

Cycling during Pregnancy.

F.R.C.S.I. writes: With reference to the query by "Connaught Ranger" in the British Medical Journal of June 27th, I beg to state that my experience, which, however, is limited, makes me decidedly favour cycling for ladies during pregnancy, provided, of course, that there is no obvious contraindication, and that the exercise is taken with due care. The saddle must be absolutely comfortable (I prefer the "Esmond," E. 17), and not too high. The pace must be slow, and the exercise taken on a smooth, level road where there is little or no traffic. I have lately seen two primiparae who cycled up to within a few weeks of their confinements. In both the general health was much benefited by the exercise. There was an entire absence of morning sickness, and both labours were exceptionally rapid and easy.

The Treatment of Hypospadias.

MR. J. HOWSON RAY, F.R.C.S. (Salford) writes: With reference to the inquiry by "Clio" and the reply given by Mr. H. J. Curtis, I have operated on 18 cases of this condition in the last five years, and have invariably used the method by reversed and superimposed flaps for scrotal and penile varieties. I cannot think that a median perineal section is essential to success, as it was not carried out in any one of my cases, each of which proved successful. It is advisable to cut the flaps carefully and to avoid tension by making a dorsal incision through the prepuce at the conclusion of the plastic operation.

Portable Filter.

J. W.—In reply to our correspondent's inquiry as to the best, most portable and efficient pocket filter for use in South Africa, there appears to be no single filter that meets all requirements. We have referred the question to one of the highest authorities on the subject, who expresses the belief

that the best combination would be an ordinary block carbon filter or coarse asbestos filter to get rid of coarse particles, and then a Berkefeld or Pasteur-Chamberland candle fitted with an air pump, acting not directly on the filter, but through an intermediate "receiver." All this might be got together into fairly portable bulk, but certainly not as a pocket filter.

NOTES, LETTERS, Etc.

GABRIEL V. MAX'S picture of Our Lord as "The Great Physician" is probably well known to many of our readers, since it has been included in exhibitions in England as well as in most places abroad. A good engraving of it has recently been published by Nicolaus Lehmann of Prague, at the price of 30s. The original work is one of great power and intensity, and its beauties have been well reproduced. The subject of the engraving makes it a suitable picture for presentation to a hospital or infirmary, and the price is so low that it may be expected to become a familiar object in many wards. An engraving of another class is a reproduction of the picture by Hatherell last year of "The Homecoming of General Lord Kitchener," which is a companion picture to "The Relief of Ladysmith." The publishers are Bovril, Limited, and the work can be obtained in exchange for twenty-one shillingsworth of the coupons that are issued with the company's meat preparations, or 10s. 6d. in cash.

"TABLOIDS."

Messrs. BURROUGHS WELLCOME and Co. (London) write: Referring to the article in your issue of the 11th inst., entitled "A New Method of Counting the Corpuscles of the Blood," the authors inform us that the preparations employed were not "Tabloid" products, and that they used the title "Tabloid" inadvertently. We write this with the knowledge and approval of the authors of the article.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION.

DR. C. H. FENNELL (London) writes: Permit me to correct a detail in the report of a paper I read at the annual meeting of the Medico-Psychological Association. I did not attribute the causation of the osseous defects in the skull and face to disturbances in the normal process of ossification of the skull base, but merely quoted Dr. Sutherland's suggestion that some of the facial peculiarities might arise from the shortness of skull base associated with deficient development of the base of the brain.

PRELIMINARY NOTE ON A SIMPLE REMEDY IN THE TREATMENT OF CONSUMPTION.

DR. J. DULBERG (Manchester) writes: I made the acquaintance, some time ago, of a man who claims to be able to cure consumption by means of a very simple remedy—namely, the eating of raw carrot. I was inclined to listen to his story, as he is not a quack, but a man in business who devotes a great deal of his time and money to "curing" poor people suffering from the disease. Though naturally sceptical, I consented to see some of the cases he "cured," with a view to publishing my conclusions for the benefit of the medical profession and the public; and the impression I have derived so far is that the remedy is worth trying. It is my intention at a later stage to publish full particulars of the cases I have seen and the progress they have made. My reason for writing this preliminary note is to inquire whether any one has ever heard of this treatment, and to suggest that it be given a trial, considering that it is harmless. If any fellow-practitioner wishes for information on the subject, I shall be pleased to supply the same on hearing from him.

THE PRACTICE OF SURGERY AND THE CURRICULUM.

RUS IN URBE writes: One of your correspondents writes to suggest in jest, that surgery should be omitted from our curriculum; and really those of us who are in general practice in town must often wonder in what way our surgical training has benefited us. What has become in town of that minor surgical work which was such a grateful source of income in the country? The bulk goes to hospital, and the rest is attended by amateur first-aid pupils, for we have carefully instructed policemen, postmen, railwaymen, shop-assistants and Board School children in the elements of the art which we have worked hard and spent much to attain; with the result that we are fast losing one of our chief sources of income and one of the most interesting branches of our profession, just as the maternity branches of hospitals, trained midwives, and Salvation Army nurses are absorbing our "guinea" midwifery cases. The result is, the town practitioner loses his minuter anatomical knowledge and surgical dexterity, as a musician out of practice loses the necessary touch with his instrument, unless he is sufficiently interested to keep it up for its own sake, and it is a poor game keeping up knowledge that one has no opportunity of putting into practice. We, in town, are rapidly becoming "dispensing chemists" without the privilege of selling dummies and feeding-bottles, and we have to thank those members of the profession who preach that no decent surgical work can be done out of hospital, and those others who are spreading our knowledge broadcast among the public, for our unenviable and, in many cases, impecunious position.

SWALLOWING A PIN WITHOUT BAD RESULTS.

DR. M. JENKINS (Port Dinorwic, North Wales) writes: Recently I was called to see a little girl who had swallowed a pin. On arrival there I found a child 2 years old looking very blanched and excited, surrounded by a number of women, each one suggesting a different mode of treatment, some advising a large dose of castor oil, and others an emetic. On examining the child I could not find any place that caused her pain, but the mother was certain she had swallowed it, she having given her the pin to play with a few minutes before, and the child having run to her partly choking. I searched the floor and clothing of the child, but found no pin. I advised the mother to give her a small quantity of very thick porridge, at stated intervals, varying now and again with a little boiled rice, and to continue the same until further developments may take place. I called again during the day, and found the child lying in bed and looking much better. On visiting next day I was told she had had a good night's sleep and had not complained of any pain. The treatment was continued throughout the day. The bowels acted late in the evening. I had given strict instructions that each motion was to be carefully searched. On arrival there on Saturday afternoon I was pleased to hear she had passed the pin, which was 1¾ in. in length, during a motion at 12.15, without the slightest pain or discomfort.

LETTERS, COMMUNICATIONS, ETC., have been received from:
A Mr. K. Anstruther, London; Dr. T. Clifford Allbutt, Cambridge; A. G. **B** Dr. J. H. Bryant, London; Messrs. Bewlay and Co., London; Dr. W. C. Bosanquet, London; Dr. T. H. Bishop, London; Messrs. Burroughs, Wellcome and Co., London. **C** J. J. Clarke, M.B., London; Mr. W. R. E. Coles, London; Dr. W. Collingridge, London; Dr. T. D. Crothers, Hartford, Conn.; Dr. G. Crichton, London; Mr. A. S. Cooke, Stroud; Dr. R. C. Cabot, Boston, Mass; Candidate; Dr. W. A. Caskie, Glasgow; Dr. E. Cullinan, London. **D** Mr. J. T. Davies, Swansea; Dr. D.; Dr. F. Drewett, London; Delta; J. W. Duncan, M.B., Birmingham; Mr. G. W. Duncan, London; Doubtful. **E** Mr. K. C. Edwards, Sawston; Ethical. **F** Mr. H. J. Finch, Sudbury; Dr. F. R. Fairbank, Dorking; Dr. C. H. Fennell, London; Rev. R. Free, London. **G** Mr. W. H. Galloway, Otley; Mr. W. L. Goodridge, Winds r. **H** Dr. D. H. Hogg, London, Ont.; H. M. M.; Miss Hogg, St. Leonards: Dr. W. B. Hunter, Londonderry; H.; Mr. F. G. Hallett, London; Dr. S. P. Huggins, London; Dr. W. D. Halliburton, London. **I** Mr. T. H. W. Idris, London; Ignis. **J** Mr. W. D. Jefferson, Ripon; Mr. E. Jones, Aberdare; J. R. R. **K** Mr. F. W. Kirkham, Bedford; Mr. C. P. Kelly, Navan. **L** Dr. W. V. Lush, Weymouth; T. H. Littlejohn, M.B., London. **M** Mr. H. W. Mackintosh, Dublin; Messrs. Mayer and Meltzer, London; Mr. A. McCabe-Dallas, London; Dr. J. Metcalfe, Bradford; Dr. A. Macfadyen, London; Mr. W. J. Morris Portmadoc; Mr. J. Y. W. MacAlister, London; M.; Mr. D. Macdonough, Bettws-y-Coed. **N** Naval Medical Officer. **O** Omar; Mr. F. H. Oliver, London. **P** Mr. F. T. Paul, Liverpool; Perplexed; Mr. C. R. Paracicini, London; Mr. A. D. Prenderville, London; Dr. V. Pendred, Buckingham. **R** J. H. Ray, M.B., Manchester; Dr. J. Robertson, Sheffield; Dr. E. Ryan, Kingston, Ont.; Mr. J. T. Rae, London; A. Rose, M.B., Horwich. **S** Mr. G. L. St. George, Lisburn; Mr. A. W. Sinclair, South Petherton; Dr. D. W. Samways, London; Mr. A. W. M. Sutherland, Liverpool; Surgeon, R.N.; Sardam; Dr. E. W. Selby, Doncaster; H. Simpson, M.B., Brenchley; Seaside. **T** Mr. D. J. Thomas, Merthyr Tydvil. **V** P. N. Vellacott, M.B., Bloemfontein; A. S. Vallack, M.B., Sydney; Visanus Co., Manager of, Glasgow. **W** Dr. A. D. Waller, London; Mr. C. Williams, London; Mr. A. Watts, London; Mr. J. Wood, Oxford; Dr. J. R. Watson, Peebles; Dr. H. Woods, London; Dr. G. S. Woodhead, Cambridge; Dr. B. W. A. Walker, London. **Y** Dr. W. Young, London.

BOOKS, Etc., RECEIVED.

Statistical Tables of Patients under Treatment in the Wards of St. Bartholomew's Hospital during 1902. By the Medical Registrars and the Surgical Registrar. London: Charles Skipper and East. 1903.

Die chemische Pathologie der Tuberculose. Herausgegeben von Dr. med A. Ott. Berlin: August Hirschwald. 1903. M. 14.

Zahn- und Mund-Hygiene im Dienste der öffentlichen Gesundheitspflege. Bearbeitet von Dr. Paul Ritter. Zweiter Supplement-band vierte Lieferung. Jena: Gustav Fischer. 1903. M. 5.

The Practical Application of the Roentgen Rays in Therapeutics and Diagnosis. By William Allen Pusey, A.M., M.D., and Eugene Wilson Caldwell, B.S. Philadelphia, New York, and London: W. B. Saunders and Co. 1903. 21s.

Modern Materia Medica and Therapeutics. By A. A. Stevens, A.M., M.D. Third edition. Philadelphia, New York, London: W. B. Saunders and Co. 1903. 16s.

Surgical Diseases of the Abdomen. By Richard Douglas, M.D. London: Rebman, Limited. 1903. £1 10s.

Some Practical Points in the Diagnosis and Treatment of Gonorrhœa in the Male. By H. Oppenheimer, M.D., M.R.C.P. London: Rebman, Limited. 1903. 1s. 6d.

Flora of Thanet. A Catalogue of the Plants Indigenous to the Island: with a few rare aliens. By G. M. Pittock, F.R.M.S., M.B.Lond., and friends. Margate: R. Robinson and Co. For private circulation.

Diseases of the Stomach. By Max Einhorn, M.D. Third edition. London: Bailliere, Tindall, and Cox. 1903. 14s.

A Manual of Ophthalmic Practice. By Charles Higgens, F.R.C.S.E. Second Edition. Edited by Arthur W. Ormond, F.R.C.S.E. London: H. K. Lewis. 1903. 7s. 6d.

The Holidays, 1903. Where to Stay and what to See. London: Walter Hill. 1s.

Holidays in Eastern Counties. Edited by Percy Lindley. London: Great Eastern Railway Company.

Packing and Selling Fruit and Vegetables. Gold Medal Essay. By R. Lewis Castle, F.R.H.S. London: W. H. and L. Collingridge. 1s.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. On the Action of the Venoms of the Cobra (Naja Tripudians) and of the Daboia (Daboia Russellii) on the Red Blood Corpuscles and on the Blood Plasma. By George Lamb, M.D., Captain I.M.S. Calcutta: Office of Superintendent of Government Printing. 1903. 8 As., or 9d.

Sight and Hearing in Childhood. By Robert Brudenell Carter, F.R.C.S., and Arthur H. Cheatle, F.R.C.S. London: The Scientific Press. 2s.

Klinisches Jahrbuch. Unter Mitwirkung der Herren Prof. Dr. M. Kirchner und Dr. Naumann. Herausgegeben von Prof. Dr. Freih. v. Eiselsberg, Prof. Dr. Flügge, Prof. Dr. Freih v. Mering und Prof. Dr Werth. Elfter Band. Zweites Heft. Jena: Gustav Fischer. 1903. M. 2.

Royal Leamington Spa. Edited by George W. May. London: Health Resorts Association. Free on Application

Vorlesungen über Magen- und Darmkrankheiten von Hofrath Dr. Friedrich Crämer. 1 Heft. Magenerweiterung, motorische Insufficienz und Atonie des Magens. Von Hofrath Dr. Friedrich Crämer nebst einem Anhang über chirurgische Behandlung bei Magenerweiterung. Von Dr. med. Albert Krecke. München: J. F. Lehmann. 1903. M. 3.

Lessons on Massage. By Margaret D. Palmer. Second edition. London: Bailhère, Tindall, and Cox. 1903. 7s. 6d.

A Short Manual of Analytical Chemistry. By John Muter, Ph.D., F.R.S.E., F.I.C., F.C.S. Ninth edition. London: Bailhere, Tindall, and Cox. 1903. 6s.

Das Problem der Syphilis und die Tegende von der specifischen Wirkung des Quecksilbers und Jods. Von Prof. Dr. O Rosenbach. Berlin: August Hirschwald. 1903. M. 2.

Notes of my Life. By George Wyld, M.D.Edin. London: Kegan Paul, Trench, Trubner, and Co. 1903. 3s. 6d.

The Praxis of Urinary Analysis. By Dr. Lassar-Cohn. Authorized translation by H. W. F. Lorenz, A.M., Ph.D. New York: John Wiley and Sons; and London: Chapman and Hall, Limited. 1903. 1 dol.

. In forwarding books the publishers are requested to state the selling price.

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N.B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.

SEVENTY-FIRST ANNUAL MEETING

OF THE

British Medical Association.

Held in Swansea, July 28th, 29th, 30th, and 31st 1903.

PROCEEDINGS OF SECTIONS.

SECTION OF STATE MEDICINE.

J. C. McVail, M.D., F.R.S.E., President.

A DISCUSSION ON THE VACCINATION ACTS AND THE PREVENTION OF SMALL-POX.

I.—J. C. McVail, M.D., F.R.S.E.,
President of the Section.

Dr. McVail said: When it was originally agreed by the Sectional Committee to have a discussion at Swansea on the subject of the Vaccination Acts and the Prevention of Small-pox it seemed possible that the main question would be the administration of a new Vaccination Act of 1903. As announced in Parliament, however, Government determined to introduce no fresh legislation during the session now ending, but at the same time gave some indication that a Bill might be brought in next year. We are still therefore in the position of discussing not what the law is, but what it ought to be. And first of all I want to say a word on the subject of our attitude to all such questions. Medical men have no final responsibility for the action or inaction of Government regarding vaccine legislation. It is our duty to advise, and not to weary of keeping the subject before Parliament and the public. We have much less occasion than the public to worry over any parliamentary delay or hesitation in giving effect to our advice. The value of vaccination as a preventive of small-pox is not for us a matter of opinion. It is a matter of knowledge. We know that vaccination and revaccination prevent small-pox, and there is no reason whatever to suppose that small-pox can be stamped out of Britain without vaccination and revaccination. If Parliament desires to achieve the end it must use the means. Our advice will be justified alike in its acceptance and in its rejection. Acceptance will in due time rid the country of small-pox epidemics. Rejection will continue to be accompanied by its own punishment. Small-pox is after all one of the most interesting of infectious diseases, and if the Legislature persists in providing opportunities to study it, we must just make the best of the situation. Fortunately, protected by vaccination and revaccination, its study is unaccompanied by the slightest risk to ourselves and our families, while all other people who choose can obtain for themselves the immunity which the prophylactic is capable of affording. Once in a while, to make assurance triply sure, the presence of epidemics may cause a repetition of the protective operation which otherwise would not be thought of, and, so far as personal security against small-pox is concerned, that is all the trouble that national neglect of vaccination need cost any member of the medical profession.

At the same time it is our obvious duty in the interests of the public to make the very best use of whatever even incomplete legislative provisions may at any time be in force. It is something of a thankless task to spend time trying to persuade people to accept protection against the results of their own folly, but that is no new medical duty and has to be fulfilled to whatever degree the circumstances of time and place may render possible. Such work, however, should always be done with discretion. In dealing with small-pox outbreaks, while making it a point to advise frankly and firmly, I try never to push my advice too far. If after reasonable persuasion a "contact" will not accept vaccination, his subsequent attack by small-pox may have quite an admirable effect in bringing about the vaccinal protection of a whole village. In such cases it is a good precaution to recommend vaccination in presence of a houseful of people, who will carry the story of the refusal to their neighbours, and will watch subsequent developments with interest. A vaccinator may once in a while meet with a man who in presence and in fear of small-pox is prepared to make a loud and blustering surrender of himself to the Jennerian lancet. He does not believe in vaccination—not a bit of it—but to please his wife, or his neighbour, or his employer, he professes himself agreeable to yield. That is not a case for too elaborate or forceful advocacy of acceptance of vaccination. By pressing vaccination and revaccination too strongly, whether directly or indirectly, it may even be possible to protect a whole town from small-pox and to find it afterwards girding against the very measure to which its escape has been due.

Coming now more closely to the subject of discussion, the question of vaccinal legislation presents so many aspects as to make it almost impossible to do more than indicate the principal points that call for consideration. But perusal of the weekly reports in the British Medical Journal of small-pox in the provinces during the recent widespread prevalence of the disease suggests the importance of obtaining under Act of Parliament special powers for meeting special difficulties. When the country is threatened by cholera or plague the Local Government Board is in the habit of using its powers under the Public Health Act to bring into operation various provisions which are at other times in abeyance. Similarly, when small-pox threatens, the Board should be in a position to issue epidemic regulations either to the whole country or to a defined area. Such regulations should be perfectly definite in scope and purpose, and should at no time be open to the charge of being framed *ultra vires*.

One matter of special importance with which the regulations ought to deal is the prevention of the spread of small-pox by tramps or vagrants. The part played by such people in conveying the disease has long been known, but has lately been much emphasized. Their migratory habits make it very difficult to procure anything like universality of vaccination of their children, or revaccination of their adolescents and adults. At the same time the opportunities which they have of carrying the disease from village to village and from town to town make them a most serious danger to the nation. The question is what exactly should be the measures enforceable on them. If we assume that next year will see the passing of a Revaccination Act subject to an exemption clause, should tramps who have been in contact with small-pox and require vaccination be excluded from the operation of the clause? In other words should compulsory vaccination in their case be absolute? To such a question one naturally replies with an emphatic affirmative, but on consideration I doubt if it would always be found a practicable measure. Even if contacts have chanced to stay on in a lodging-house until the case of small-pox to whose infection they have been exposed has been discovered, the time required to set in motion actual compulsory powers of vaccination, say, by order of a magistrate, might give the variolous disease too long a start to permit of its being overtaken. But quite possibly after exposure to small-pox a whole lodging-houseful of tramps may have distributed themselves all over the country before the existence of the disease had been recognized. In fact, if Parliament is to take any action of this sort, such powers should apply, not merely to tramp contacts, but to all tramps within the scheduled area of the epidemic regulations. Wherever found their vaccinal condition should be ascertained and recorded, and if necessary they should be vaccinated. It can readily be conceived that during small-pox prevalence local authorities may be more anxious to get rid of tramps than to detain them for vaccination. If there is a risk of their thus being posted on from union to union it might be got over by charging the cost of their vaccination on a wider basis than that of the union—say that of the county, or of the whole area under epidemic regulations—an area which might sometimes be the whole country.

But quite possibly the Legislature may not, even under restrictions of time and place, exclude vagrants from the operation of any generally applicable exemption clause. In that, as in the entire domain of obligatory vaccination, Parliament must, of course, do just as it pleases. If it will not actually enforce the vaccination of vagrants, is there any useful alternative? In recent years tramps under vaccination in lodging-houses have sometimes received from local sanitary

authorities a few days' board and lodging. The right to offer this without any question of subsequent surcharge by a public auditor should be definitely conferred by statute. With regard not to tramps in general, but only to tramp contacts, the further suggestion arises whether, in the event of their refusal to accept vaccination, or of the time being obviously past to make small-pox prevention probable, there might be a regulation for their compulsory detention until the incubation period of the disease had gone by. That would sometimes be a very useful measure, and possibly Parliament might sanction such a degree of interference with the liberty of the subject. The usual steps to prevent spread of infection immediately by means of clothing or person would, of course, be taken in every case.

Under epidemic regulations there ought further to be the amplest powers, not merely for inspection of every place resorted to by vagrants and navvies, whether or not such place be registered as a common lodging-house, but also for the examination of all persons found in such premises, even in the absence of any special reason to suppose them suffering from small-pox. In the Public Health (Scotland) Act of 1897, Section XLV enacts that the medical officer of health may in the day time enter and inspect any house where he has reason to believe that any infectious disease exists or has recently existed, and may examine any person found in such house. This power to examine persons in addition to premises should, under the regulations, be given independently of actual suspicion of the existence of small-pox in the house. Needless to say, such a right of examination of apparently healthy persons would constitute a considerable interference with personal liberty. Whether Parliament would grant it I have no idea. Our point is that it would be useful for the detection of small-pox and for the ascertainment of the vaccinal condition; but if the Legislature would prefer to risk small-pox rather than confer the power, then it is not we who would have cause to grumble. Once more our advice would be justified by the results either of its acceptance or of its rejection.

Having spent so much of the time at my disposal in considering the possibilities of epidemic regulations, I can do little more than name the other questions that may occupy you in discussing vaccinal legislation. During the past year or so the whole subject has been repeatedly under consideration in the medical press and by various societies and organizations—the Council and Public Health Committee of the British Medical Association, the Incorporated Society of Medical Officers of Health, the Imperial Vaccination League, and others. The result is that, on some points, opinions have become pretty well crystallized, while on others they are still in a state of flux.

There is practical unanimity that vaccination should be performed in infancy, and again about the twelfth year of life.

As to an exemption clause opinions are somewhat varied, but the view that it tends, as the Royal Commission expected, to the promotion and not to the diminution of vaccination, and the further view that we cannot expect obligatory revaccination without an exemption clause, have been accepted by many who have given thought to the subject. Dr. Bond, who has devoted so much time and attention to vaccination, holds that exemption certificates for infants should remain good only until the beginning of school life, when vaccination or renewal of exemption should be required. The present "conscience" clause is obviously defective in that the practice under it varies too much according to the views of the magistrates, administration being sometimes too lax and sometimes too severe, both of these defects being hurtful to the practice of vaccination.

Regarding the necessity for a thorough and proper performance of the vaccinal operation there is practically unanimity of medical opinion, and the same is to be said of the necessity for stating on the vaccination certificates the number and area of the successful insertions of lymph in every case. There is now also a consensus of opinion that under any new Vaccination Act, calf lymph for all vaccinations should either be provided directly by Government, or if to any extent produced by private makers, that these should work under Government supervision or certification.

As regards the best authority or authorities for administration of the Vaccination Acts considerable divergence of opinion exists. The great majority of public vaccinators would very naturally prefer to be in the service of the Local Government Board, rather than be subject to the vagaries of Boards of Guardians, many of whose members are not infrequently elected on account of their root and 'branch opposition to the very system which it is their statutory duty to administer. Others again think that too much centralization is not good, but that local bodies might be selected better fitted for the work than the guardians have proved to be, such as county councils whose administrative areas are large, and whose membership is less parochial in character, and who could have power given to devolute some of their administrative functions to more strictly local authorities.

I am strongly of opinion that whatever public bodies be charged with the general and systematic administration of any new Act, local sanitary authorities should have, at least during the operation of epidemic regulations, full concurrent powers to vaccinate and revaccinate within their own boundaries. The Public Health (Scotland) Act provides that "the local authority may defray the cost of vaccinating or revaccinating such persons as to them may seem expedient." This is a most valuable provision, and wherever a medical officer of health finds reason, owing to the presence of small-pox in his neighbourhood, to offer vaccination to contacts or others, no red-tape system should hinder him from doing so. I may explain that in Scotland whole-time medical officers make no charge for such work.

Whatever local authorities are to have charge of the Vaccination Acts, it seems to me that they should be relieved of all responsibility as to prosecution of defaulters, and that in every area there should be a public prosecutor directly under the Local Government Board, instead of as at present a vaccination officer appointed by the guardians, but requiring to act independently of them. The vaccination officer's relation to the matter should consist in handing to the public prosecutor, who would no doubt be a local lawyer, periodical lists of defaulters who had neither submitted to vaccination or obtained an exemption certificate. It would be for the central authority, in consultation with their local prosecutor, to determine what cases should be taken to court and what should be passed by. The primary purpose of the Vaccination Acts is, not to punish antivaccinists, but to promote vaccination, and punishment of antivaccinists is wise only in so far as it does promote vaccination. By means of consultation between the local prosecutor and the Local Government Board prosecutions might often be avoided where their effect would be not to advance but to hinder vaccination.

Concerning the relation of the private medical practitioner to official vaccination there are differences of view. I think myself that if a fee were paid for every certificate of vaccination complying with a standard of area and number of marks to be prescribed by the Local Government Board, the effect would be to promote the practice of efficient vaccination without the formal appointment as public vaccinator of every medical man who might choose to apply. If certificates were to be paid for, false certification should be a heavily punishable offence. At present public vaccinators are under serious hardship in being merely contractors dismissible at four weeks' notice, and without any proper official status. This should be remedied in any new legislation. If systematic vaccination and revaccination are to be obligatory, then the evolution of the public vaccinator ought to be towards whole-time service, and, at reasonable salaries, that system ought to be economical as well as efficient. It would not come into force all at once, but as appointments become vacant areas could be combined under one officer.

These are all the points that I desire to bring under your notice, and the whole subject is now open for your discussion.

At the end of his paper Dr. McVail suggested the following resolution:

That this meeting of the State Medicine Section of the British Medical Association begs to press on the Council the importance of fully using the machinery of the Association for bringing before the members of Parliament throughout the country, by means of local deputations and representations, the necessity for further legislation for the promotion of vaccination and revaccination.

This resolution was proposed by Dr. Garstang and seconded by Dr. Herbert Jones (Hereford), and carried *nem. con.*

II.—C. R. Drysdale, M.D., M.R.C.P., F.R.C.S., London.

Dr. Drysdale said that the profession in the United Kingdom must have felt greatly humiliated by seeing so many epidemics of small-pox (such as those in Gloucester, London, etc.), whilst in Germany, since 1875, epidemics of small-pox

had been unheard of, because vaccination was enforced on all infants and on all children before the age of twelve years. Most young practitioners in Germany had never experienced an outbreak of small-pox. Dr. Drysdale concluded his remarks by proposing the following resolution, which was seconded by Dr. H. H. Tidswell:

Considering that, of late years, there have occurred in cities of the United Kingdom several epidemics of small-pox, whilst in Germany since the year 1875 such epidemics have been unheard of, on account of the fact that all children under two years old are under a law of compulsory primary vaccination, and all the population under a law of compulsory revaccination, and that all vaccinations are done with animal vaccine—this meeting is of opinion that all children in the United Kingdom should be vaccinated in infancy and revaccinated at the age of 10 or 12 years, and that animal vaccine alone should be made use of. If this plan were thoroughly carried out this meeting is of opinion that epidemics of small-pox would no longer occur in this Kingdom.

III.—T. W. H. Garstang, M.R.C.S.,
Medical Officer of Health for Knutsford, etc.

Dr. Garstang asked permission to propose *pro forma* the resolution read by the President, printed on p. 290. He agreed that medical opinion was largely "crystallized." The position of the public vaccinator must "develop" either towards the "whole-time" officer, or towards inclusion of all medical practitioners. In the meantime, questions between public vaccinators and private practitioners were details which ought to await a later opportunity for discussion. Such methods, in his opinion, need not to-day affect action in regard to the points included in the resolution.

IV.—Thomas Garrett Horder, M.R.C.S.,
Cardiff.

Dr. Horder said: As a public vaccinator of some considerable experience in a populous centre I may be allowed to deal with some points which more particularly concern the administration of the present Acts relating to vaccination. I therefore propose to deal with the following points:

1. The authority for the administration of the Vaccination Acts.
2. The relation of the public vaccinator to private practitioners.
3. The supply of lymph to private practitioners.
4. The question of revaccination and how it is best to be carried out.
5. The fees of public vaccinators.

First, with regard to the proper authority for the administration of the Vaccination Acts. At first sight it would appear to many of us that the administration should be undertaken by a central or Governmental department; but, on more fully considering the matter, it must occur that there are many very strong objections to such a course being adopted. For instance, the Local Government Board, which would undoubtedly be the department to which such duties would be assigned, is, as at present constituted, a very much overworked body, and is not really able to cope with the multifarious duties it has now to perform. Then, again, the tendency of all administrative work is in the direction of decentralization. Local bodies, such as county and borough councils, have now to undertake many more duties than heretofore. Everything that is connected with the health and welfare of the people, such as water supply, drainage, lighting, locomotion, and last, but not least, education, are now, or shortly will be, carried out by these or similar bodies.

Recognizing this fact, and also fully recognizing the extreme importance of making one authority responsible, not only for the treatment of but for the prevention of infectious diseases, I have come to the conclusion that the powers now possessed by the Boards of Guardians should be transferred to the sanitary authorities. I am the more inclined to come to this conclusion because there is some prospect, if it were adopted, of seeing the juvenile population of this country more effectually protected against the ravages of small-pox.

With few exceptions I take it our sanitary authorities believe in the efficacy of vaccination and of revaccination. Many of them have known to their cost what an epidemic of small-pox means to a populous community. We can tell to a penny the amount of money spent on small-pox hospitals, on the appointment of extra inspectors, and on public vaccinators and their assistants, but who can gauge the amount of loss incurred by the trading community in whose midst small-pox epidemics have occurred? Perhaps, Sir, some of those present here to-day could draw a harrowing picture of the state of Swansea two years since. Others would be able to say something about Sheffield, Liverpool, Gloucester, and London. It appears to me, therefore, evident that if the sanitary authorities had the entire control of the Vaccination Acts they would necessarily take every possible precaution to ensure the proper and efficient vaccination of every child within their respective areas. You may ask what more can they do than has been done by the Boards of Guardians. My answer is, with their staff of inspectors they will have better opportunities of discovering unvaccinated children. The action taken by them (the sanitary authorities) will also be more prompt. There will be no communications to be sent to the vaccination officers. A case of small-pox is reported to have occurred in a certain street in a town. The medical officer of health will at once dispatch a number of inspectors to make a house-to-house visit in order to find out if there are any unvaccinated children living in that street, and the names of the unvaccinated ones would be promptly sent to the public vaccinator. That is one point. But another point is this: As the new educational authority it will surely occur to the sanitary authority that the best and surest way of discovering unvaccinated children is to visit the elementary and other public schools, and have all the children's arms periodically inspected; and if after sundry inspections they find—as many public vaccinators have found—that a considerable number of children are attending school without being properly protected from small-pox, I venture to say that they will promptly ask the Board of Education to give them permission to make it a by-law that no child should be admitted into an elementary school without first furnishing reliable evidence that he or she has been efficiently vaccinated. Every one who has had any experience of the working of the Vaccination Acts knows perfectly well that a very large number of children escape the operation. I believe myself that the great majority of the parents are not really averse to vaccination, but either from indifference or from sheer laziness they neglect to have their children vaccinated. It is only when an epidemic of small-pox occurs that these unvaccinated children are discovered. Our working-class population is a very "floating" one. Work of a certain kind is scarce in one big town, and the families remove to another big town where better prospects await them. Others move because their creditors are pressing them hardly, whilst there are no doubt a few who really remove to escape the attention of the vaccination officer. Now if it were once known that the children of such parents would have to be vaccinated before they could enter an elementary school they would resign themselves to the inevitable and have them vaccinated during infancy.

Mr. Shirley Murphy, the Medical Officer of Health of the London County Council, has kindly sent me a return, which shows that the number of children not finally accounted for is a steadily increasing one:

1886	7.8	1893	18.2
1887	9.0	1894	20.6
1888	10.3	1895	24.9
1889	11.6	1896	26.4
1890	13.9	1897	29.1
1891	16.4	1898	33.0
1892	18.4	1899	27.7

The number of children in respect of whom certificates of conscientious objection were received numbered 226 in 1897, 1,814 in 1898, and 1,362 in 1899, these numbers representing less than 1 per cent. of the total births in the three years.

Dr. Hope, the Medical Officer of Health of Liverpool, in a report on the epidemic of small-pox that occurred in that city last year (1902), states that in one of the schools the number of boys found by the headmaster to be unvaccinated was 24 per cent.; and that the inhabitants in a certain street were about 600, 50 of whom were found never to have been vaccinated at all: and that one of the public vaccinators found that upwards of 10 per cent. of people coming for revaccination had never been vaccinated.

Dr. Greenwood, of London, writes me as regards the schools: "I visited Board schools containing an aggregate of 4,291 children, of whom 1,673 refused to be examined. Amongst the 2,618 children who were examined 404 were found to be unvaccinated; and I had reason for believing that of the 1,673 children who refused most of them were unvaccinated."

The Medical Officer of Health for Birmingham (Dr. Alfred Hill) writes in his report for 1901: "About 10 per cent. of the

surviving children appear to have escaped the vigilance of the vaccination officers, while at the time of making up the return 4.6 remained under their notice, but had not till then been vaccinated. These are principally cases in which the parents defy the law, but do not even go to the trouble of making a 'conscientious objection' and are not prosecuted by the guardians as they ought to be. It seems to me that under the present law every parent who will not have his child vaccinated and will not obtain exemption in the proper manner ought at once to be prosecuted."

The Medical Officer of Health for Cardiff (Dr. Walford) in his report on the Vaccination Act, 1898, says: "In Cardiff the number of exemptions obtained since the passing of the Act up to the present time is 288, equal to 1.8 per cent. of the births during that period. During the year 1901 5,206 births were registered within the borough, 503 children died unvaccinated; of the remainder 3,597, or 76.1 per cent., were successfully vaccinated, 69 certificates of conscientious objection were granted, equal to 1.4 per cent. of the births, 933 or 19.7 per cent. were unaccounted for."

I venture to think, Sir, that these figures go to show that a very considerable number of the infantile population escape vaccination and that it is therefore necessary to take some further steps to reduce the unprotected class.

With respect to my second point, the relation of the public vaccinator to private practitioners, I have only one or two remarks to make. Although hard words have been used about public vaccinators I would like to mention that we as a body had nothing whatever to do with the framing either of the Act or the regulations made by the Local Government Board. That taking the public vaccinators as a body there have been very few instances where any departure has been made from the regulations laid down by the Local Government Board. That in populous centres the public vaccinators have to devote nearly all their time to their official duties and have therefore little or no time for private practice. In some instances that have come under my notice public vaccinators have given up private practice altogether. For my own part I have always advocated the system of making public vaccinators officials whose sole duty would be to look after the vaccination of the infants residing in the districts to which they were appointed. There would necessarily have to be a rearrangement and many of these gentlemen who hold Poor-law appointments in addition would have to be compensated. It has been argued that men would not care to do nothing else besides vaccination, but on that point I do not agree. If a public vaccinator has a populous district to attend to he really cannot do anything else very thoroughly if he conscientiously carries out his duties as public vaccinator. Until something of this sort is done I am afraid there will be from time to time some jealousy and some friction between the public vaccinator and other private practitioners.

Respecting the supply of lymph to private practitioners, I am strongly of opinion that Government should make arrangements whereby every registered practitioner should be enabled to receive lymph which has been prepared under Government supervision.

The question of revaccination requires a separate paper. All I have to suggest is this, that if the Government are not prepared just at present to make revaccination compulsory, the new education (that is, the sanitary) authority might urge the children to be revaccinated before leaving school, and might with truth point out that if any of them intend entering any of the public services, for example, the army, navy, the post-office or the teaching profession they would have to be revaccinated before they became eligible. Lectures on vaccination and small-pox could be given from time to time by medical officers of health and others, and children would then have an opportunity of becoming acquainted with what has been done by Jenner's great discovery.

And now, Sir, I come to my final and I may add delicate point, that of fees to public vaccinators. I for one can well understand the attitude of members of Boards of Guardians when they pass resolutions memorializing Government to reduce our fees. The difference between an eighteen-penny fee and one of 6s. is so great, and the total amount paid for vaccination by Boards is so much greater than it was under the old Acts that it is only reasonable that some stir should be made. At the same time, all I would ask the members of the various Boards to do is to make themselves thoroughly acquainted with all the details of the work of public vaccinators under the new Act, and if after mastering those details they do not alter their views, I for one should feel greatly surprised. As this is a matter of great public concern, I may be permitted very briefly to summarize what our duties are:

1. To send a written notice to every parent whose child is on the list (II) sent to the public vaccinator by the vaccination officer.
2. To call on the parents and offer to vaccinate the children, after inspecting and examining them to see if they are in a fit condition of health.
3. To vaccinate under strictly aseptic conditions.
4. To postpone by certificate the vaccination of those children who are not in a good state of health. If the home of the child is in an insanitary condition, a certificate to that effect has to be sent to the medical officer of health and to the vaccination officer.
5. To enter the names, ages, and addresses of the children vaccinated in a register.
6. To inspect the children vaccinated at the end of a week or so, and to re-dress the arms. In those cases where the vaccination vesicles do not run a normal course, to revisit the children and prescribe and supply medicines if necessary.
7. After the inspection to fill up certificates and dispatch them to the vaccination officer.
8. To write to London for lymph, and when it has been all used to write out a detailed report of the results and dispatch it to London.

Will any reasonable person be disposed to say that a fee of 6s. is an excessive one for the due and faithful performance of such duties?

I am afraid I have wearied you, but the importance at the present time of the vaccination question must be my excuse for the length of this paper.

V.—J. M. MACKENZIE, L.R.C.P.,
M.O.H., Kirkby-in-Ashfield.

MR. MACKENZIE said: The children are in reality not merely the patients of any practitioner; they must be considered as the children of the State in the same way as they are so considered in the matter of education. The State appoints and authorizes certain trained persons to vaccinate in the one case and to educate in the other. Why should the private practitioner complain if he is allowed four months in which to vaccinate? It is very questionable if a whole-time vaccinator would be an improvement. When you divorce the practitioner from the clinical—the living—part of his work he loses his clinical faculty. The same thing happens when practitioners are set apart for public health work. The private practitioners are very much to be blamed for vaccinating with one vesicle—say for a fee of one shilling. They do not, however, lose so much as they think, for the public vaccinator is not as a rule particularly popular. Again, the public vaccinator vaccinates the very poor, who often have no marked preference for any particular practitioner.

VI.—W. JONES MORRIS, M.R.C.S.,
Portmadoc.

MR. MORRIS, as a public vaccinator, repudiated the charge made too often that in the exercise of their duties attempts were made by public vaccinators to lessen the confidence of the parents in their own private practitioner. He urged that all public vaccinators should be specially careful in the discharge of the duties imposed upon them by the State not to encroach in any way on the privileges of the private practitioner.

VII.—JAMES RANKIN, L.F.P.S.G.,
Kilmarnock.

MR. RANKIN said: I have pleasure in giving my testimony to the very great efficacy of vaccination and revaccination. In Kilmarnock we have 1,000 births annually, and of that number 98 per cent. are successfully vaccinated, and the remaining 2 per cent. are dealt with by the medical officer of the parish council, which is the recognized authority in Scotland to see the Act carried out. If any antivaccinator refuses to allow the medical officer to vaccinate he is summoned before the sheriff and dealt with accordingly. I have vaccinated upwards of 20,000 children with great success. I would recommend a systematic vaccination of children at 6 months of age and revaccination at a period between 7 and 14 years, and, if necessary, during any severe epidemic of small-pox, according to circumstances.

VIII.—Joseph Groves, M.B.,
M.O.H. Isle of Wight.

Dr. Groves said: Constant agitation by the profession upon the subject of vaccination, and especially of revaccination, is most important. The Local Government Board, undermanned as it is, is unwilling to increase its responsibilities, and the Treasury as such, not being sympathetic, is not likely to afford facilities. Hence the view that every practitioner should be treated as a public vaccinator is impracticable. If the public money were spent it would be necessary to inspect the results of the work. Having regard to the perfunctory manner in which the work of the present public vaccinators is inspected, it is not likely it would be considered good policy to increase their numbers. With reference to the authority which should administer the Vaccination Acts it may be desirable to explain why the Public Health Committee of the Association recommended the Council to adopt the view that the authority should be central. They took the opinion of the public vaccinators themselves, who in large majority prayed that they may be relieved from the control of the local authorities, the members of which, including the county councillors, are being constantly drawn from a less educated class. This view is not universally accepted in the profession. Perhaps we as members of a class are not sufficiently broad in our views; we judge from our own experience in our own environments, and are too little given to consider that the experience and environment of our fellows may be very different from ours. The conditions in rural districts and smaller towns are very different from those of large cities. But in this question of the authority which should administer the Vaccination Acts there is a remarkable unanimity of opinion among the public vaccinators working in different parts of the country and under widely varying conditions, in favour of a central authority.

IX.—Ebenezer Davies, M.R.C.S.,
M.O.H. Swansea.

Mr. Davies said Swansea passed through an outbreak in 1902 amounting to nearly 200 cases and 33 deaths. Neglect of vaccination was not a marked feature in the Swansea District and what existed arose less from opposition than neglect and indifference. The proportion of cases not accounted for fell to 4 per cent. before the outbreak. Revaccination of contacts was hindered seriously by the fear of loss of work, the possibility of which it was impossible to deny. The need for revaccination at an early age was thereby emphasized. If in addition to this primary vaccination was compulsory before admission to an elementary school and on leaving school, the whole ground would be covered.

X.—J. Brassey Brierley, M.D.,
Old Trafford.

Dr. Brierley said there was, in his opinion, no difficulty in adopting a change so generally approved as the transfer of the control of public vaccination from the guardians to the sanitary authority without compensation to the present public vaccinators, whose appointment need not be disturbed. The duty of a whole-time vaccinator would become so monotonous that few would care to do the work. The reason why the public vaccinator was now more popular than previous to the present Act was that it had become known that the Government kept a strict control over the lymph supply and efficiency of the operation. Private practitioners would do well to take up the action of the practitioners who made one mark for sixpence or a shilling and assured the patient that it was sufficient.

XI.—J. M. Morris, M.B., C.M.,
M.O.H. Neath.

Mr. J. M. Morris said that there was no probability of further vaccination legislation taking place for some years, but merely renewal of the present Act from year to year. The tramp question in South Wales was most pressing in regard to conveyance of small-pox, as vaccination was generally well carried out. Legislation was needed to bring about vaccination of tramps and inspection of lodging-houses at frequent intervals. A census of tramps was desirable, as these people were little short of a nuisance and most difficult to follow up.

Reply.

Dr. McVail, in reply, said the British Medical Association had to consider this question on broad lines and as it concerned the public. Any discussion on the issues existing between the public vaccinator and the private practitioner did not touch the root of the matter. The great principle upon which emphasis had to be laid was that the State should take charge of systematic revaccination as well as primary vaccination. Then animal lymph prepared under strict supervision should be obtainable by every medical practitioner. The difficulties of supply would be got over if there were regular and systematic vaccination and revaccination going on at all times. And by this method epidemics themselves would disappear. The regular and steady revaccination of the community was the great need. He agreed that, concerning fees, the first duty of the guardians was to make themselves genuinely acquainted with the actual day-to-day work of the public vaccinators, which was not, as had been suggested, narrow and unimportant work. It was, in fact, wide and far-reaching in its issues, and one of the greatest means of preventive medicine which they possessed. Dr. McVail believed it inconvenient in many small districts for the sanitary authority to be the vaccinating authority, and it was desirable to have some larger body authorized to carry out the Acts. The principle of decentralization was one having great force in the Imperial Government. The aim of punishment under the Acts should be not vindictive, but to secure better and more efficient vaccination.

THE MIDWIVES ACT OF 1902.

By J. Ward Cousins, F.R.C.S., M.D.Lond.,
Senior Surgeon to the Royal Portsmouth Hospital.

Up to the first day of April, 1903, any uneducated woman, without any training or experience, could style herself a midwife, and practise as one in any part of England and Wales. This statement is correct; and it appears hard to understand that our country should have so long been behind other European nations in seeking legislation for protecting the lives of women of the humbler class who are unable to obtain skilled help in the hour of danger.

The Midwives Act of 1902, there is every reason to hope, will steadily wipe out the ignorance and incapacity of the past. It provides a Central Midwives Board to regulate the training of midwives, the issue of certificates after examination, and the annual publication of a Midwives Roll. Moreover, the Board is empowered to regulate and restrain within proper limits the practice of midwives, and the carrying out of all the provisions of the Act, with the approval of the Privy Council.

After April 1st, 1905, no woman will be able to style herself a midwife unless certified under the Act.

After April 1st, 1910, no woman will be allowed to practise for gain as a midwife unless she is certified as the Act provides.

Up to March, 1905, women holding certain certificates mentioned in the Act, or other certificates approved by the Midwives Board, may claim to be certified. Women also who can satisfy the Central Board that they have been in actual practice as midwives for at least one year prior to July 31st, 1902, and that they bear a good character, may claim to be certified under the Act.

[Candidates not coming within one of these classes will be required to pass the examination of the Central Midwives Board before obtaining a certificate.]

Now, the largest number will be admitted as midwives, and will be placed on the first roll, belong to the third-class, and many of them will have been very imperfectly trained. Now, let us hope that the local supervising authorities throughout the country will be able to find some means of helping these women to obtain an increase both of knowledge and efficiency.

Local Supervising Authorities.

The Midwives Act is to be carried out by the important process of decentralization. Every council of a county or county borough throughout England and Wales is the local supervising authority over midwives, but these bodies can delegate their duties to committees or to the district councils. The provision for carrying out the Act by the help of local bodies is a very helpful and practical method. Local bodies are well able to do the work and look after their own interests, and it is my opinion that the success of the Act will greatly depend upon the work done by the local supervising authorities.

The local authorities may delegate their powers to a committee consisting wholly or partly of members of the council. The Act wisely permits also the appointment of women

members on the committee, selected by the council, and as the Act principally involves the interests of women, it appears very desirable that the authority should secure the services of two women at least who are recognized workers and conversant with the needs of the locality.

I think, too, that the local supervision should be regarded in its relation to the medical profession of the locality, and that in all instances the local supervising authority should include the medical officer of health of the county, and one or more registered medical practitioners who are specially interested in the practice of midwifery.

The local authority is to exercise general supervision over all midwives practising within the area of the county or county borough, and to investigate charges of malpractice, negligence, or misconduct, and report the same to the Central Midwives Board. Every certified midwife must, before commencing to practise, give notice in writing to the local authority of her intention, and must also repeat the notice in the month of January in every year during the period in which she continues to practise.

The local authority will be in direct contact with the midwives, and for carrying out supervision the midwives must give every facility to the authority and their executive officer. It will probably generally be the duty of the medical officer of health to act as executive officer to the local supervising authority, and supervision will include inspection of the casebook, bag of appliances, and place of residence. The midwives will be prohibited from engaging in any unhealthy occupation.

In Sweden the midwife has to be examined every year by the officer of health of the district as to the state of her knowledge in the presence of witnesses, and should her knowledge on any material subject be found deficient she can be suspended for a period from practice.

Duties and Restrictions.

The midwife by the Act is permitted to attend normal labour only, and she is compelled to send for a qualified registered practitioner in every emergency. Her ability to recognize danger and abnormality in either mother or child will be an important test of her training and efficiency.

The midwives in Switzerland are required to make a solemn affirmation on receiving their certificate. They promise on oath to practise their profession with reverence, patience, and earnest endeavour, and on every occasion to send for a physician in all abnormalities and also to abstain from intermeddling with his duties. If any midwife outstrips her powers in practice she can be fined from 10 to 1,000 francs.

Midwives and the Prescribing of Drugs.

I shall now refer to a subject on which I find there is great difference of opinion. Some consider it sufficient for a midwife just to enter in a book every occasion on which she is under the necessity of administering any drug, whether scheduled as a poison or not, the dose, and the time and cause of its administration. Others are of opinion that the safety of women will be endangered if active remedies are placed in the hands of any one but registered practitioners. They consider that any ordinary remedy that the patients themselves would take may be suggested by the midwife: that in a great emergency, whenever an active drug is administered, the case must be considered abnormal and a practitioner must be consulted. Can, then, the administration of morphine, opium, or other dangerous remedies be placed at the discretion of thousands of unqualified persons who are only certified for attendance upon normal labour, without involving the safety of the public?

In Sweden midwives are allowed to give some ordinary remedies, but they are bound by law not to order any active medicine for either the mother or the child without calling in a medical man.

Notification.

The duty of notifying an infectious fever must be undertaken by the registered practitioner who is called in by the midwife to attend the case. Medical men are required to notify puerperal fever and other infectious disorders. The midwife does not diagnose the disease, but sends for the doctor on the occurrence of urgent symptoms. The record of the midwife will show the number of cases of fever which have occurred in her practice, and the name of the doctor who assisted her. Information of all cases of fever ought to be forwarded at once to the local supervising authority, and also to the county medical officer of health.

After any attendance upon a patient suffering from puerperal or any other illness supposed to be infectious, the midwife must disinfect herself, her appliances, and have her clothing thoroughly disinfected before going to another case. The local supervising authority may suspend a midwife from practice if suspension appears necessary to prevent the spread of disease. In Sweden a midwife must abstain from practice for a week after attending puerperal fever, and live as much as possible in the open air.

Stillbirths.

The number of cases of stillbirth in any area is at present unknown, and we cannot attempt to ride over existing legislation. The midwife has no power to grant any medical certificate or any certificate of stillbirth or death. Her record, however, will show the number of cases of stillbirth that she has attended, and this number will be considered by the local supervising authority. In this way the total number of stillbirths attended by certified midwives within any area can be readily ascertained. Beyond this voluntary information nothing can be known, and for the present we must wait for the amendment of the law as to death certification and registration. Stillborn children are too easily disposed of, and no doubt many evils and irregular practices are hidden which ought to be investigated. Let us hope that the successful working of the Midwives Act and the records of the local supervising authorities may turn out to be the successful insertion of the thin end of the wedge of progress.

Improved Household Sanitation.

The educated midwives will help their patients to put in order their houses and carry out sanitary precautions for their own protection. They will teach personal cleanliness and the value of cleanliness at home, and, as far as possible, they will surround their patients with sanitary precautions. I believe that the work of midwives in promoting reform in the houses of the poor will have a wide and wholesome influence. They will be brought face to face with the question how best to deal with overcrowded and insanitary areas, and their efforts will tend to create a broader interest in the subject of rehousing the poorer classes under new conditions which will benefit their health and arrest the spread of disease. Interest has been recently manifested by the activity of many members of Parliament, by the introduction of projects for remedial legislation, and by the work of many voluntary associations, and I think it is not too much to hope that indirectly the silent work of educated midwives will prove a wholesome stimulus to the higher classes of society and arouse their sympathy in the great work of improving the dwelling houses of the labouring classes of our country.

I am quite certain that the Midwives Act of 1902 is far from perfect, and that experience will show the necessity of many modifications. Still, perfection in this world is very difficult to obtain at once, although perfection ought always to be our aim. It may be necessary to work for many changes in the future; at the same time, we may safely affirm that the introduction of educated midwives controlled in their practice by well-defined duties and restrictions will prove an inestimable benefit both to society and the medical profession.

England and Wales have long been lagging behind France, Russia, Sweden, Germany, and Switzerland in the education and State control of midwives. The great importance of the reform in the practice of midwifery in our country has long been loudly accentuated by the consideration of the small number of trained and intelligent midwives at the present time compared with the host of unqualified and ignorant women who are unfortunately almost everywhere engaged by the humbler classes. It has been estimated by authorities that 60 or 70 per cent. of the births in Great Britain take place without the presence of a qualified practitioner, and that in many of the poorer districts as many as 70 or 90 per cent. of the births are attended by women. Surely these statements demand our earnest consideration, and I am bold enough to express a hope that more general interest will be developed in this great step in the right direction, especially when we consider that the dangers of childbirth are practically confined to the poorer class of our countrywomen, who, from lack of means, are unable to obtain skilled labour in the hour of need.

Dr. GROVES (Isle of Wight) said: The medical profession opposed the Midwifery Bill, but now that it has passed it is our duty to make it the greatest use possible to the community. The county councils will delegate their authority to the district councils, and in the rural districts the useful

work which so many medical officers of health have been doing for years. There is in every village a woman, or women, who are quite efficient in normal labour, for they have been trained by the men practising in the particular village; the medical officer of health has or should train the nurse in the simple laws of health and the hygiene of the lying-in room. The nurse not only attends to the woman and the baby, but she looks after the house and the family, doing the cooking and washing, etc. In the future this class will disappear, and it will become the medical officer of health to keep a firm back and make his authority felt for the good of the community in the future as he has done in connexion with midwifery in the past.

Mr. J. M. Mackenzie, L.R.C.P. (M.O.H. Kirkby-in-Ashfield), hailed the new Midwives Act with much satisfaction. He feared that too often medical practitioners were likely to be more responsible for the spread of puerperal fever than midwives owing to the fact that medical men came into contact with various septic and infectious diseases, and might thus convey septic matter to the lying-in woman. From this sort of conveyance the midwife was generally free. Yet there was great need for education and training of midwives.

Mr. C. R. Straton, F.R.C.S. (Salisbury), considered that the local supervising authority should be wholly composed of medical men.

Dr. Herbert Jones (Medical Officer of Health for Hereford Combined Districts) protested against the idea that the infection of puerperal fever was mainly conveyed by medical men. His experience was quite to the contrary, and, moreover, it was idle to assert that contact with cases of infectious disease, such as measles and diphtheria, could transmit puerperal fever. Dr. Jones further pointed out, in reply to previous remarks, that puerperal fever was already notifiable.

Dr. Francis J. H. Coutts, D.P.H. (M.O.H. Blackpool) emphasized the uncertainty which existed in regard to the composition of the local supervising authority. In some cases it was proposed to retain all the power in the hands of the county council authorities; in others it was proposed to delegate the powers to certain urban sanitary authorities, when the duties would fall on the local medical officer of health. At the present time information was being obtained from medical officers of health by the county council authorities, without any fee for medical men, who must furnish information without any arrangement for delegation of the powers of the county council to the local authority.

In reply to Dr. Groves, Dr. Ward Cousins said: We must try the Act; no doubt experience will suggest alteration. We must distinguish the certified midwife of the future altogether apart from the lying-in nurse; the latter is in attendance on natural labour under the direction of a medical man. With reference to disinfection, the local supervising authority will be responsible for the disinfection of the nurse, her residence, her clothing, and instruments; and, if they think it necessary, they can suspend her from practice for a certain period. The midwife must engage in no unhealthy occupation. I cannot agree with Dr. Mackenzie with reference to the diffusion of infectious diseases by the medical profession, as I am sure that the practitioners throughout the country are anxious to use every precaution and to protect every patient under their care; when in attendance under dangerous infectious cases they get their colleagues to attend the lying-in room for them. As regards the midwife giving certificates, she has no power to do so under the Act.

THE SPREAD OF ENTERIC FEVER AND OTHER FORMS OF ILLNESS BY SEWAGE-POLLUTED SHELLFISH.

By Arthur Newsholme, M.D., F.R.C.P.,
Medical Officer of Health of Brighton.

In March, 1894, I reported to the Brighton Town Council a series of cases of enteric fever and diarrhoea which appeared to be due to oysters obtained from polluted layings at Southwick, near Brighton. A copy of this report, with further details based on later experience, will be found in the forthcoming volume of evidence before the Royal Commission on Sewage Disposal.

Representations as to the state of the oyster layings at Southwick, near Brighton, were made to the Local Government Board during April, 1894, by the Corporation of Brighton, and these representations, and the suspicion that oysters from Grimsby "might have had to do with certain cases of cholera which occurred during the outbreak of that disease in this country in 1893,[1] led to the institution of an exhaustive inquiry into the conditions under which oysters and other molluscs are cultivated and stored along the coast of England and Wales.

The inquiry was made by Dr. Bulstrode, and its results were published in the autumn of 1896. Between 1894 and 1896, several reports and papers on the subject appeared; one of these, by Sir William Broadbent,[2] being especially instrumental in drawing public attention to the danger from sewage-polluted oysters. In each of my annual reports from 1894 onwards I have given details of a considerable number of cases of enteric fever attributable to contaminated oysters and mussels, and in a paper read at the summer meeting of the Sanitary Institute at Newcastle-on-Tyne in 1896,[3] I summarized the evidence on the subject and the inquiries which had led me to conclude that at least one-third of the cases of enteric fever originating in Brighton were caused by sewage-polluted molluscs. It should be added that as early as 1880 Sir Charles Cameron read a paper before the British Medical Association on the possible relation of cases of enteric fever in Dublin to the consumption of specifically-polluted oysters; but this suggestion had been unfortunately disregarded, and, so far as I am aware, no further observations on the subject were published before 1894.

The evidence on the strength of which enteric fever, attacks of diarrhoea (resembling those caused by the Gaertner bacillus), and allied illnesses are ascribed to the ingestion of oysters and other molluscs requires consideration in connexion with outbreaks of two kinds—(*a*) sporadic cases, (*b*) definite groups of cases. Of the latter the most remarkable are the outbreak among the students of the Wesleyan University, Connecticut, in which 25 per cent. of the students attending an oyster supper were subsequently attacked by enteric fever, and the simultaneous outbreaks following after mayoral banquets at Winchester and Southampton recently reported on by Dr. Bulstrode. In these two outbreaks, out of 266 total guests 21 (all of whom had eaten oysters), or about 8 per cent., suffered from enteric fever, while 118, or 44.3 per cent., of the total guests, all of whom except 3 had eaten oysters, suffered from minor forms of illness. In the two banquets 38 guests are stated not to have eaten oysters; none of these had enteric fever, hence the number of attacks among oyster eaters was 9.2 per cent.

In Brighton the cases ascribed yearly to this cause (21 in 1894, 19 in 1895, 31 in 1896, 30 in 1897, 41 in 1898, 52 in 1899, 17 in 1900, 9 in 1901, and 21 in 1902) have in most instances occurred sporadically at irregular intervals and without any demonstrated relationship to other cases. In other words, on the assumption of causative relationship to the Southwick oysters which had been eaten by the patients, the infection must have been frequently present in a certain proportion of these oysters. In the paper already mentioned,[4] I showed that this fitted in with the epidemiological facts of the case, no long interval elapsing between the occurrence of cases of enteric fever in the Southwick and Shoreham districts and in the inhabitants of Brighton who had eaten oysters or mussels contaminated by the Southwick or Shoreham sewage.

It is obviously much more difficult to prove the relationship between cause and effect in connexion with such sporadic cases than when definitely associated cases occur. The chief evidence on the strength of which I arrived at the conclusion that this fairly steady stream of sporadic cases was caused by sewage-polluted shellfish may be classed under four heads: (1) Clinical evidence; (2) exclusion of other known causes; (3) topographical evidence; (4) bacteriological and chemical evidence.

These are placed in the order of importance. The three first are, I think, immensely more important and more trustworthy than the fourth, both on the negative and the positive side, though no line of evidence should be neglected.

The clinical evidence is usually as follows: About ten to sixteen days after eating oysters or mussels the patient falls with enteric fever. Very often the definite attack of fever has been preceded by a violent attack of diarrhoea and vomiting occurring about twelve to twenty-four hours after the ingestion of the shellfish. Either (1) the person who has partaken of the shellfish is the only one affected, or (2) other members of the family who have partaken of shellfish at the same time escape or suffer only from minor disorder. Numerous instances of both these are given in my annual reports. In the latter cases it is occasionally observed that the patient noticed something "queer" about his share of the oysters. Further, it is to be remembered that only a certain proportion of persons are susceptible to infection, that it is not

reasonable to assume that every mollusc from a sewage-polluted source contains the typhoid bacillus, and that, even when an outbreak of enteric fever is caused by contaminated milk or water, only a small percentage of the persons drinking these are attacked.

The clinical evidence is supported by the ability to exclude other known causes. Cases of enteric fever due to contaminated water or milk nearly always occur in groups, while those due to oysters and other molluscs are, apart from certain exceptional outbreaks, generally sporadic. In a minority of the cases the possibility of the attack of enteric fever being caused by defective house drains had to be considered. On this point it was noteworthy that the attack generally occurred in the head of the household, who was least at home, his wife and children escaping. As more exact inquiries are made, it will now be generally agreed that defects of house drainage as a cause of enteric fever can be relegated more and more into obscurity. Given, on the one hand, bad drains, and on the other hand the fact that the only person suffering in a given house from enteric fever has partaken of oysters known to have been subject to pollution by sewage, we are bound to decide that in all probability the latter are responsible for the attack of enteric fever.

The topographical evidence is as follows. The oysters or other molluscs are traced to their original layings. In these layings, or more often in the market ponds in which they are finally placed before being sent to market, the oysters are found to be subjected to more or less gross contamination by sewage. The gravity of this contamination depends upon the proximity of the sewage outfall to the layings or the ponds, on the set of the tides, and on the size of the population whose sewage discharges at this point. Obviously the risk of the typhoid bacillus being conveyed to the oysters is much greater if they are subject to contamination by the drainage of several thousand persons than if only a small hamlet is concerned in the pollution. In my own experience, which has been concerned chiefly with oysters and mussels from Shoreham Harbour (Southwick, etc.) and with oysters from Emsworth, there has been no difficulty in stating that there has been sewage-contamination of the grossest character.

Bacteriological and chemical evidence has been placed last, as least important. It is not for me to assess the value attaching to the detection of the bacillus coli communis in a given oyster. I am quite clear, however, that if this organism were not found I should brush the certificate to this effect aside as valueless in the face of clinical and topographical evidence that oysters from a given source were responsible for cases of enteric fever. If it were found its presence would be useful confirmatory evidence.

Attempts at Obtaining Remedies.—Having come to the conclusion that one-third of our enteric fever of local origin was caused by sewage-polluted oysters and muscles, a remedy was energetically sought. The Town Council of Brighton was in the first instance advised by the Local Government Board that the suspected oysters should be seized under the powers given by Sections CXVI to CXIX of the Public Health Act, 1875, and it has recently been informed by the Board that in view of the above "stringent provisions" of the Public Health Act, and of the belief that a by-law proposed by the Town Council for regulating the sale of molluscs in the Corporation market was *ultra vires*, such a by-law could not be allowed. This lack of appreciation of the requirements of local administration on the part of the legal department of the Local Government Board is unfortunate, and, furthermore, is inconsistent with its action in promoting legislation in the Oysters Bill of 1899.

The above sections of the Public Health Act enable the medical officer of health or sanitary inspector to seize articles of food which are diseased, unsound, unwholesome, or unfit for the food of man. The oysters which the Corporation is advised to seize under these sections present absolutely no naked-eye evidence of unwholesomeness, although they may, judging by past experience, be capable of causing fatal illness. If samples are bought and subjected to bacterioscopic examination, the rest of the consignment has been sold before the results of the examination can be obtained, and the result of the examination of such samples is not evidence in respect of any consignment of oysters from the same source other than the consignment from which such samples were taken. If the whole consignment is seized, its condemnation must presumably be delayed until samples have been subjected to bacterioscopic examination, and the uncertainty of such a procedure—although it has succeeded in one instance in the City of London—is obvious.

In 1896 the Brighton Corporation promoted a Bill embodying the following proposed powers:

> In case the medical officer of health is in possession of evidence that any person in the borough is suffering from infectious disease attributable to the consumption of shellfish supplied within the borough, from any pond, river, or other place, situate within or without the borough, in which shellfish are commonly kept, bred, or cultivated, and in which pond, river, or other place such shellfish have been (or are liable to be) exposed to contamination by sewage, or that the consumption of shellfish from such pond, river, or place is likely to cause infectious disease to any person residing in the borough, such medical officer shall, if authorized in that behalf by an order of a justice having jurisdiction in the locality in which such pond, river or place is situate, have power to inspect such pond, river or place, and all shellfish, matters, and things therein, and if on such inspection the medical officer of health is of opinion that the infectious disease is or is likely to be caused by the consumption of shellfish supplied from such pond, river, or place, he shall report thereon to the Corporation or to the Sanitary Committee of the Council, and the Corporation or the Sanitary Committee, as the case may be, may thereupon give notice to the person by whom such shellfish is so kept, bred, or cultivated, to appear before them within such time, not being less than twenty-four hours, as shall be specified in the notice, to show cause why an order should not be made prohibiting the supply within the borough of any shellfish from such pond, river, or place until such order has been withdrawn by the Corporation or the Sanitary Committee, as the case may be, and if in the opinion of the Corporation or the Sanitary Committee, as the case may be, such person fails to show such cause, then the Corporation or such Committee, as the case may be, may make such order as aforesaid, and the Corporation or such Committee, as the case may be, shall forthwith give notice of the fact to the Sanitary Authority and County Council (if any) of the district or county in which such pond, river or place is situate, and also to the Local Government Board. An order made by the Corporation or such Committee as aforesaid in pursuance of this section shall be forthwith withdrawn on the Corporation or such Committee, as the case may be, or the medical officer of health being satisfied that the cause of the infection has been removed. Any person refusing to permit the medical officer of health, on the production of such order as aforesaid, to inspect any such pond, river, or place, or after any such order prohibiting the supply of shellfish as aforesaid has been given supplying within the borough any shellfish from such pond, river, or place in contravention of such order, or selling it for consumption in the the Borough, shall be liable to a penalty not exceeding Five pounds, and to a daily penalty not exceeding Forty shillings. Provided always that proceedings in respect of such offence shall be taken before the Justices of the Peace having jurisdiction in the locality where the said pond, river, or place is situate. Provided that no person on whom an order prohibiting the supply of such shell-fish has been made by the Corporation or such Committee as aforesaid shall be liable to an action for breach of contract if the breach be due to such order. Every person who shall wilfully obstruct such medical officer or other officer of the Corporation assisting him in the exercise of the powers of this section shall be liable for such offence to a penalty not exceeding Five Pounds.

The clause was objected to by the Board of Trade on the ground that the powers, if granted, should be the subject of a public Act, and after a hearing extending over two days, the Parliamentary Committee refused to grant the powers.

In 1897 the Town Council of Brighton adopted a memorial to the Local Government Board, praying for public legislation dealing with this question. This memorial was also sealed by 27 of the 33 great towns and by the London Port Sanitary Authority, and the London County Council also passed a resolution supporting the proposal.

On March 30th, 1899, the President of the Local Government Board received a deputation of the memorialists, and gave them an assurance that legislation in the desired direction would be proposed.

In 1899 the Oysters Bill was introduced by the Local Government Board. A Committee of the House of Lords amended the Bill by substituting the local fisheries committees for the local sanitary authorities as the authority for administering the provisions of the Bill, and the Local Government Board thereupon withdrew the Bill.

The recent action of the Sanitary Authority of the City of London, in conjunction with the Fishmongers' Company, by temporarily preventing the sale of contaminated oysters and cockles in the City has done much to arouse public attention and to safeguard the public interest. The necessity for further protection of the public still remains, and as the Royal Commission on Sewage Disposal is receiving evidence on the subject there is some ground for hoping that practical proposals will ere long be forthcoming.

The proper legal remedy, in my opinion, would be a combination of the powers of the Brighton Corporation Bill of

1896 and the Government's Oyster Bill of 1899, extended to other shellfish in addition to oysters. The Government Bill did not extend to mussels and cockles. Shellfish, like mussels and cockles, which are not laid down in special beds, but may be gathered in various parts of the bed of an estuary, could not be controlled by its means. It is essential that not only should sanitary authorities have control over oyster-layings situate in their districts, but also that they should be able to prevent the sale in their districts of oysters and other molluscs shown to be derived from sewage-polluted sources outside their districts, or when they are able to show that these shellfish have caused cases of enteric fever or other serious illness.

The restriction of the sale of shellfish from a particular source in one town would awaken other towns to the possibility of evil, and thus—as in the recent action of the Fishmongers' Company—the good achieved would extend far beyond the immediate area of administrative control involved in the action taken.

So far, apart from the attempts at legislation of the Corporation of Brighton, the much feebler proposed Bill of the Local Government Board, and the vigorous action of the authorities of the City of London, the chief good done in this field of preventive medicine has been by the aid of publicity. Whenever in Brighton cases of enteric fever have been known to be caused by oysters, the oyster trade has subsequently suffered, and the notifications of enteric fever have greatly declined, and when the "scare" has been forgotten, enteric fever has again become increasingly prevalent. Every possible means has been taken locally to warn the Brighton public of the danger incurred, including the danger from mussels, which accounts for 32 per cent. of the total cases of enteric fever in Brighton due to shellfish. The public cannot, however, be expected consistently to refuse to purchase tempting food which is offered for sale. There is an implied obligation on the part of local authorities to protect the public against unwholesome and dangerous foods. This obligation in the present state of the law they are unable to meet. Consequently, a serious amount of disease is caused, many lives are lost, and great and unnecessary expense is incurred not only by private families but also on behalf of the ratepayers by local authorities in the hospital treatment of cases of enteric fever, owing to the insufficiency of the powers with which local authorities are at present endowed.

References.

[1] Dr. Bulstrode's Report on Oyster Culture, p. 1. [2] British Medical Journal, January 12th, 1895, p. 61. [3] *Journ. San. Inst.*, vol. xvii, Part III. [4] Ibid.

RIVER AND SEASHORE POLLUTION AS IT AFFECTS SHELLFISH.

By J. T. C. Nash, M.D.Edin., D.P.H.Cantab.,

Medical Officer of Health, Southend-on-Sea.

In my opinion it should be illegal to expose shellfish for sale unless they are from layings which are either entirely above suspicion, or at any rate are a very considerable distance from any obvious source of pollution, and in such a position as to be covered with seawater at all states of the tide, and unless a bacterial standard such as I have suggested elsewhere[1] is satisfied. I feel inclined to go even further, and say that, as with a public water supply, so also with all all kinds of public food supplies, including shellfish—it ought to be an absolute condition that these should be uncontaminable by drainage. A proper control of shellfish will, I think, secure a notable reduction in the seasonal incidence of typhoid fever and a moderate reduction in that of diarrhoeal diseases generally.[2]

There is bound to be some opposition in enforcing restrictions on the shellfish industry until the shellfish merchants recognize that it is in their own interests to take every possible care to obtain their shellfish from the purest possible layings. As a public health officer I consider it my duty to warn the public against eating shellfish from sewage-contaminated sources. In my own district the majority of the local shellfish merchants have realized the importance of taking every possible precaution. They now obtain their cockles from Whitstable from a spot well removed from any obvious pollution, instead of from the sewage-contaminated creek in a neighbouring district as formerly. In addition they boil them for at least three minutes and a-half in pure water. If all cockle vendors would take the same precautions I venture to think that this variety of shellfish might be safely eaten, and that the cockle industry, if intelligently and carefully managed under proper sanitary supervision, may yet flourish and cease to be a serious danger to the public health.

With respect to oysters, however, the conditions as to the cultivation, layings, and supervision must be most stringent and exacting, because this form of shellfish is generally eaten raw, and is, in my opinion, dangerous unless all the conditions are above any suspicion of sewage pollution.

I have noticed that, generally speaking, the type of typhoid fever following the ingestion of par-boiled cockles is milder than that observed when raw shellfish are eaten. The inference is that the partial cooking of cockles has diminished the numbers or attenuated the virulence of the contained pathogenic bacteria of typhoid. On the other hand, Dr. Elliston of Ipswich has observed a severe type of typhoid fever following the ingestion of raw cockles collected from the Orwell. This would be in accordance with Dr. Klein's observation that typhoid bacilli actually multiply within the cockle even though the cockles may be put to clean for three days in clean seawater. The importance of these observations cannot be over-estimated, nor those of Professors Klein, Boyce, and Hewlett that the oyster naturally does not contain the B. coli or B. enteritidis sporogenes, and that, therefore, the presence of these organisms is strong evidence of pollution of the shellfish by sewage or a sewage effluent.

We must remember that different kinds of shellfish are eaten by different classes of people largely according to their means. This was happily put by Sir James Crichton-Browne, who spoke of "the aristocratic oyster, the plebeian cockle, and the hooligan mussel."[3] We must also bear in mind that other forms of food besides water, milk, and shellfish occasionally carry the infective germ of typhoid. In my experience watercress is the next most likely agent, and this is not to be wondered at, considering that this pleasant vegetable is often obtained from streams which are liable to occasional pollution, if not constantly polluted. Other uncooked vegetables, such as salads, lettuce, and radishes must also be borne in mind. Ice-creams may occasionally be the vehicle. It is important to point out that whenever shellfish or uncooked vegetables are the vehicles of infection, the real source of infection is really, as usual, a polluted water, and therefore really only another form of waterborne typhoid.

Uncooked vegetables are eaten in all parts of the country, but it is a significant fact that typhoid fever is, as a rule, more prevalent in littoral coast towns (this is so at least in Essex), where shellfish are abundant; and in large centres of population inland which import considerable quantities of shellfish. Infected dust and fabrics, and flies,[4] no doubt all play some slight part in securing the admission of typhoid bacilli to articles of food, or directly to the mouth; but in my opinion these sources of infection are comparatively rare in this country. But infected fabrics and infected flies certainly account for a considerable proportion of secondary cases where the primary cases have followed the use of infected water, milk, or shellfish.

Schemes for the purification of sewage may prove disastrous as regards the pollution of shellfish. The creek to which I have alluded more than once is a case in point. Though this creek has for years past been subject to some pollution by the discharge of crude sewage, it latterly has received the sewage of the whole town, which numbers about 4,000 residents, besides a considerable number of visitors in the summer. The sewage is treated bacterially in contact beds, and the effluent is discharged into the creek a few hundred yards above the cockle layings. Though a considerable degree of chemical purification may be thus achieved we know that bacterially the effluent is practically as impure as the crude sewage, and that we cannot expect contact beds to keep back typhoid bacilli. Hence this method of sewage treatment has rendered this creek even more dangerous than formerly, for whereas formerly, it was necessary for one of only a very few houses to harbour a case of typhoid fever in order for the specific germ to enter the waters of the creek, nowadays it is only necessary for a case of typhoid fever to occur anywhere in the town, even a mile away, to run the almost certain risk of pollution by the specific microbe. Hence these cockle layings are obviously much more dangerous since the bacterial beds installation than formerly. This is an important point to bear in mind when advising a sanitary authority as to the treatment of sewage for a town which has a shellfish industry.

REFERENCES.

[1] Evidence before the Royal Commission on Sewage Disposal. [2] See *Trans. Epid. Soc.*, 1903, The Seasonal Incidence of Typhoid Fever and Diarrhœa, by J. T. C. Nash, M.D. [3] Presidential Address to the Sanitary Inspectors' Association, January, 1903. [4] Firth and Horrocks, BRITISH MEDICAL JOURNAL, 1902, ii, p. 936.

Major R. H. FIRTH, R.A.M.C., F.R.C.S., said: The suggestive papers which we have heard from Drs. Newsholme and Nash merit serious consideration both from the point of view of public health administration and of pure bacteriology. It is in respect of this latter aspect that the papers chiefly interest myself. The circumstances and time do not permit of any elaborate review of the complex question as to the inter-relationship of B. coli to B. typhosus, but we cannot get away from the fact that a mass of epidemiological evidence is accumulating that points to the genesis of a class of continued fevers which apparently are due to faecal influences and yet do not conform clinically to classical enterica. The idea suggests itself whether, as the result of a closer attention to sanitary details, a section of the population is not gradually coming into being which is more susceptible to infection by certain sewage bacteria (other than B. typhosus) and as a result is presenting a larger number of cases of continued fever of an anomalous type than occurred in former years. The answer to this question can only be obtained by a prolonged series of clinical and bacteriological studies, and a vast field of research is opened in this connexion to the profession at large. But, whatever may be the precise final verdict upon these cases, I think there can be little doubt that faecal pollution is the root evil. Therefore, in this sense, I am disposed to doubt whether we need worry ourselves today as to what particular micro-organism may be the causative agent of disease resulting from consumption of dirty molluscs, but look at it in the practical way of recognizing that it is sewage pure and simple and direct our efforts to the freeing, not only all of man's surroundings from sewage, but specially, in respect of the points raised in these papers, to the prevention of sewage gaining access to the laying grounds of oysters and other shellfish.

Dr. F. J. H. COUTTS, D.P.H. (Medical Officer of Health of Blackpool), said: Social circumstances are not an important factor in the question of typhoid infection from shellfish. Among the poorer classes who eat cockles and mussels a considerable number of cases of typhoid fever occur which seem distinctly attributable to these shellfish. Other foods are liable to be exposed to infection by typhoid bacilli—for example, in a village where pail-closet system in vogue the excreta were used for manuring a vegetable garden where lettuces, cabbages, etc. were grown. It is of great importance that sanitary authorities should have power to prevent sale of shellfish and other foods from sources liable to infection, and I think the new organization of the British Medical Association might be utilized in order to bring pressure on the Government to bring forward legislation on the subject. The Council might remit the question to the Divisions, who should communicate with the member of Parliament for the district.

Mr. EBENEZER DAVIES, M.R.C.S. (M.O.H. Swansea) referred to the importance of including in the investigation of the question of shellfish contamination the incidence of fever, not only in the localities that consumed shellfish imported, but also the incidence of enteric fever in the places from which they were derived. Speaking of the Gower peninsula, which included the oyster district of the Mumbles and the cockle district of Penclawdd, the incidence of enteric fever (mortality) was undoubtedly low—in a population of between 9,000 and 10,000, 3 deaths in five years; 0.06 per 1,000. Powers of control over food supplies from districts outside were urgently needed by sanitary authorities.

A. LLOYD JONES, M.R.C.S. (M.O.H. Oystermouth) said: As medical officer of health for Oystermouth, where in name and in fact oysters are obtained, it might be instructive to state that, practically, typhoid fever is unknown there. The inhabitants—more especially the lower classes—live largely on oysters in and out of season, and are immune against enteric disease. The native oyster is eaten both cooked and raw, and, on the whole, it forms the basis of the broth, to which a little meat is added, and which constitutes the fishermen's family dinner. In spite of the proximity of the sewage outfall to the oyster plantations and perches, the native population at any rate is free from enteric, perhaps thoroughly vaccinated against the worse forms of enteric disease which may exist here as elsewhere. Visitors certainly are prone to diarrhœal diseases during summer, but whether from oysters, or other food or water, it is difficult to tell. The local water supplies also contain the bacilli coli, although obtained from moorland water percolating through limestone. Still the enteric group of diseases are practically absent from the place; and, whatever the life-history of these bacilli, they seem to have no power to develop enteric amongst our natives.

Dr. C. R. DRYSDALE said that he would like to express his great interest in the views put forward by Major Firth with respect to the possible conversion of the bacillus coli into the germ of typhoid fever. In 1812, long before the days of Pasteur, Dr. Bancroft had written a most learned treatise on the occurrence of fevers and their generation. He showed that the slaves in the slave ships, who were in a most filthy condition, never developed fever. And so, in the Yourts of Siberia, where filth reigned supreme, fevers did not occur. Dr. Drysdale expressed his view that such change of germs had not been proved, and until that was done he refused to accept the hypothesis.

(To be continued.)

THE SECTIONS.

BRIEF SUMMARY OF PROCEEDINGS.

SECTION OF MEDICINE.

Thursday, July 30th.

THE work of the Section on the second day of its meeting was commenced with a paper by Dr. E. Lloyd Jones on the Physical Examination of the Chest, in which he especially distinguished between the physiological and the pathological signs in the lungs. Dr. John Haddon then read a paper on Food and Fasting in the Treatment of Disease, arguing for the routine use of a spare diet and for the establishment of chairs of dietetics in the medical schools. A discussion on the Treatment of Gastric Ulcer was opened by Dr. H. D. Rolleston, who pointed out that the general recommendation of physiological rest to the stomach was not always rigorously carried out. He would not allow even sips of water in the acute stages, as water was absorbed from the intestines, and had therefore to be expelled from the stomach by peristaltic action. The mouth should be kept clean by an antiseptic mouth wash, so as to diminish the risk of septic infection of the stomach. The parotitis which was frequently developed in patients fed per rectum might be indirectly attributable to dryness of the mouth. If enough water were given by the bowel nutrient enemata need not be given for a week, and semi-solid enemata were often to be preferred to fluid. When gastric irritation had subsided iron should be given in anaemic subjects, and in men potassium iodide should be tried on the chance of the ulcer being syphilitic. Apart from perforation, the only complication requiring surgical treatment was repeated haemorrhage. Haematemesis was to be treated by absolute rest and the hypodermic injection of morphine to calm anxiety, while adrenalin locally might be advantageous. Ergot, digitalin, and lead were contraindicated. Operative measures were justifiable in persistent pain, in persistent pyloric obstruction, and in repeated haematemesis. Professor Saundby pointed out that the diagnosis of gastric ulcer was still imperfect. If a patient had severe vomiting and pain he should be put to bed, placed on milk diet, and later on gradually returned to full diet. Still later magnesium and iron sulphates were indicated. In case of recent haematemesis nutrient enemata should be used for forty-eight hours, after which milk and lime-water feeding might be commenced. Prolonged starvation and rectal feeding were to be deprecated. If pain persisted, alkalies, morphine, and sometimes olive oil were useful. He had never found the vomiting intractable. For haematemesis he used an icebag to the epigastrium and morphine hypodermically, but, if persistent, operation should be considered. Dr. Tyson considered that every case of anaemia should be looked upon as a possible case of gastric ulcer. Dr. H. W. King emphasized the importance of good nursing. Rectal alimentation he employed for from four to seven days, and he gave water freely by the mouth unless there was much vomiting or haematemesis. He had tried adrenalin in one case without apparent benefit. Dr. W. Collier considered that rectal feeding was chiefly of value on account of its mental influence. For the relief of pain he relied on bismuth, large doses of alkali, and cannabis indica. Dr. F. D. Boyd, C.M.G., advocated operation in cases of chronic ulcer. He would withhold even water by the mouth. It was debateable whether the value of rectal feeding was commensurate with its

discomfort. Iron might be given hypodermically, for example in the form of the citrate. Dr. MacPhedran had found olive oil of benefit in diminishing the pain and hyperacidity, and he alluded to the value of operation in relieving the persistent pain that was apparently due to the presence of adhesions. Dr. T. D. Griffiths (President of the Association) considered that the aim of affording rest to the stomach was best obtained by rectal feeding, and that the guide to this was a moist tongue and sweet breath. Ten days of such treatment were usually sufficient. He would increase the diet in the same way as he would for an infant. The use of cane sugar was to be avoided. In the intervals between the four-hourly meals he gave drinks of saline water. Flatulence should be prevented. Laudanum relieved the rectal irritation. From two to three weeks in bed usually sufficed. Dr. Bertrand Dawson would feed by the rectum for one week; the mental good of so doing was perhaps equal to the physical benefit. The harmfulness of withholding food was probably overestimated. In acute haematemesis, in addition to ordinary treatment, he would give calcium chloride by rectal injection. Both ergot and adrenalin he considered to be unsafe. An emergency operation for acute haematemesis was not to be advised, the cases nearly always yielded to medical treatment. Dr. W. Ewart demonstrated an instrument for the continuous administration of nutrient enemata. Dr. G. Parker had obtained good results from the administration of calcium chloride by the mouth, and he insisted on the need for giving a large quantity of water daily also by the mouth.

Friday, July 31st.

On the third meeting of the Section, Dr. R. J. M. Buchanan opened a discussion on Susceptibility and Infection. He differentiated three types of infection: the purely bacterial, the toxic, and a combination of these. The occurrence of a natural immunity was referred to as found in animals of different species, in those of different colour in the same species, and in persons of different race and different age-period. He alluded to the function of the skin, lymphatic glands, and mucous membranes in preventing infection, to the protective substances on which natural and acquired immunity depended, and described investigations he had made on the protective influence of the leucocytes of leucocythaemic blood in regard to anthrax and typhoid bacilli. Hardly any infectious disease was capable of gaining a lodgement unless the bodily resistance was lowered from some cause. The natural resistance was raised by anything which caused hyperleucocytosis. Natural resistance occurred in the pig and hedgehog, for example, in regard to snake poison. A reduction of the natural resistance by starvation, unsuitable diet, exposure to heat, cold, and damp, by fatigue, traumatism, the removal of organs, and the injection of chemical bodies was discussed. With regard to mixed infection, it was pointed out that a pure tuberculous infection was slow in development, and that the tendency was to recovery, but if streptococci were added the progress was rapid and the prospect of recovery less favourable. Artificial or acquired immunity was then alluded to, and the possibility of reciprocal infection occurring between the bacilli and the host. The poisonous effects of bacilli might depend on their being irritated or stimulated by the otherwise harmless products of the disturbed metabolism of the body. Dr. MacPhedran asked if the natural resistance of an individual were proportional to his bodily vigour; from the conditions of epidemics of typhoid and small-pox, it would seem that it was not. He referred to the apparent antagonism of streptococci and malignant disease. It was possible that the greater resistance of children fed on mother's milk, as compared with those fed on cow's milk, might depend on their being better nourished. Dr. D. C. McVail had also observed that those most violently attacked in epidemics of infectious disease were among the most robust, practically suggesting that there was some unascertained factor in the production of immunity other than the so-called vital resistance. Dr. Buchanan, in reply, said that robustness recognized clinically must be distinguished from specific resistance. Dr. Chowry Muthu then read a paper on the treatment of tuberculosis by formaldehyde, and Dr. Buchanan expressed approval of the method of giving it by inhalation. Dr. G. Parker described a case of bronzed diabetes, giving an account of its pathological appearances and classing the disease with hypertrophic cirrhosis and pernicious anaemia rather than with diabetes. Dr. D. C. McVail read a paper on the employment of lumbar puncture in uraemia; Dr. T. N. Kelynack and Mr. Sydney Williams communicated one on the relative value of rectal and oral registration of temperature, in which they recommended the oral method; and Dr. W. Black Jones contributed a paper on the mineral waters of Llangammarch Wells.

Subsection of Electrotherapeutics.

The work on Thursday consisted of a discussion on the Treatment of Tuberculous Disease by Electrical Methods, which was opened by Mr. Chisholm Williams. The following members took part: Drs. Joseph Bolton, Hall-Edwards, J. Rutherford, J. C. Fergusson, Preston King, H. H. Hulbert, J. McVittie, and J. Haddon. Mr. Hall-Edwards read a paper on Some Debateable Points in the Application of the X Rays to Therapeutics. On the third day, Dr. J. C. Fergusson read a paper on High-Frequency Currents as a Remedy for Some Forms of Deafness, and several members took part in the discussion. Dr. Donald Baynes presented a paper on the Treatment of Some Cases of Painful Stumps by Electrical Means. Dr. Joseph Bolton opened a discussion on the X Rays as a Diagnostic Agent in Pulmonary Conditions, and Dr. W. K. Mills demonstrated a new form of ultra-violet lamp.

Section of Surgery.

Thursday, July 30th.

Mr. G. A. Wright read a paper introducing a discussion on the Treatment of Advanced Tuberculous Disease of the Knee-joint. He first gave a summary of the answers which he and Mr. Haslam had received to a series of questions addressed to a number of surgeons regarding their practice in dealing with the condition. As indications for operative interference the majority considered of most importance the presence of progressive disease in spite of adequate treatment; most favoured erasion in the young, and in adults about an equal number were in favour of erasion and formal excision. The incision most popular was of horseshoe shape with division of the patella or the ligament; the patella was preserved by the majority, and there was a consensus of opinion in favour of preserving the crucial ligaments whenever possible. Opinion was about equally divided as to the use of a tourniquet, as also about the use of drainage. As a preventive of flexion, the prolonged use of a Thomas's knee splint was generally considered of most value. The great majority of those who practised erasion made no attempt to obtain a mobile joint afterwards. Mr. Wright's practice was to operate if there were no improvement after three months; he very rarely performed excision at any age. The usual method of operation he employed was transverse section of the patella. He was in the habit of leaving the crucial ligaments when ever possible, and did not employ drainage unless the condition was septic. As a safeguard against flexion he used the Thomas knee splint for two years after operation. He seldom tried to obtain a mobile joint after operation; in the great majority of cases there was no shortening after erasion. As to the primary seat of the disease, he thought this was usually synovial; failure after operation was usually due to infection, and on the whole he considered erasion a very satisfactory operation if thoroughly done. Dr. Ward Cousins thought the disease originated in bone and synovial membrane about equally; he believed in erasion in young children. Mr. C. B. Keetley considered that, in operating on children, a regard for the epiphyseal line was a matter of great importance; he made his operation sufficiently extensive to remove the disease, and, if this were not possible, he removed the limb. Mr. Tubby thought that the ultimate results of operation on this condition were disappointing, and that the ankylosis obtained was very rarely bony. Muscle grafting held out a prospect of being able to avoid flexion, and he intended to employ it. Mr. Sinclair White favoured excision, not erasion, and performed it even in the earlier forms without suppuration. Mr. Monsarrat had experience only of erasion, as he never performed a formal excision; he considered erasion a very satisfactory operation as far as recovery from the disease was concerned; he thought flexion of the joint was always likely to occur when the extensor was cut across, and advocated a method of exposing the joint in a vertical direction. Mr. Betham Robinson thought that, in the presence of breaking down caseous foci, amputation was best. Mr. Mitchell considered that the benefits which were supposed to follow the use of the Thomas splint were not usually obtained. Dr. Latimer favoured excision, but removed as little bone as possible. Dr. Ferguson thought that firm fixation after excision was aided by wiring. Mr. Edmund Owen said that he was in the habit of performing amputation for this condition, and

thought it was frequently best. No difference should be made between erasion and excision. When any bone had been removed a movable joint was not to be expected. The best result after excision was in reality a miserable condition. Mr. Jordan Lloyd did not agree with Mr. Owen, and considered excision a highly satisfactory operation. Operation was rarely necessary in better-class patients. After operation, absolute immobility was essential. Mr. Basil Hall read a paper on Gastro-jejunostomy by a New Route. He performed the posterior operation, but brought the jejunum, not through the transverse mesocolon, but through the gastro-colic omentum. Mr. McAdam Eccles read a note on a case of Gastro-jejunostomy which ended fatally from subsequent haemorrhage, apparently consequent on the necessary manipulations at the operation. Mr. Sinclair White always performed the anterior operation. Mr. Mitchell did not see any advantage in Mr. Hall's method over the usual posterior operation. Mr. Keetley thought the proposed operation had all the disadvantages of the anterior method.

Friday, July 31st.

Mr. Sinclair White (Sheffield) read a paper on Two Cases of Ascites Secondary to Alcoholic Hepatitis Treated Successfully by Operation. Both patients were women, the one aged 38 the other 34; in both cases the omentum was fixed to the anterior abdominal wall over an area from which the peritoneum and the posterior layer of the rectus sheath had been removed, and adhesions were created between the liver and diaphragmatic peritoneum. In both the ultimate result was very good. Mr. Sinclair White gave a short history of the operation and related some statistics. Mr. H. Betham Robinson (London) read a paper on Separation of the Acetabular Epiphysis of the Femur, and related six illustrative cases, three of which had been operated on for the condition. He referred to some difficulties attending the diagnosis, *x*-ray examination being necessary to differentiate the lesion from fracture through the narrow part of the femoral neck. Probably some antecedent morbid condition of the bone is concerned in the causation of the accident. Mr. W. Sheen (Cardiff) read notes of a Case of Operative Treatment of Cirrhosis of the Liver. The patient was a man aged 53. The abdomen was opened and drained for nine days: four months later there was no reaccumulation of fluid. Mr. R. W. Murray (Liverpool) contributed observations on the ultimate results in a series of 88 cases of fracture of the tibia and fibula. He remarked particularly on the serious impairment of utility which the collected cases showed, particularly in oblique fractures. He exhibited a splint which fulfilled certain requirements which he considered of importance in treatment, and also discussed the advisability of treating such cases by operation. Mr. Betham Robinson thought that some of the difficulties in treatment were met by the use of plaster-of-paris splints. Mr. Reginald Harrison referred to the value of tenotomy of the tendo Achillis. Mr. Childe thought that the knee-joint should be controlled, and that therefore the splint shown was not a good pattern. Mr. Tubby thought the risks attached to operation in simple fracture were easily controlled. Mr. Whitelocke also used the open method of treatment in many cases. Mr. A. Sheen used plaster of paris soon after the injury. Mr. Jordan Lloyd thought that Mr. Murray was probably right in saying that sufficient attention was not given by surgeons to simple fractures. Mr. Freyer (London) gave an account of a further series of 32 cases of prostatectomy, and showed specimens. He stated that one of three things occurred, either the prostate came away as a whole, leaving the urethra intact, or the two lobes came away separately leaving the urethra, or the prostatic urethra came away together with a band of recto-vesical fascia. Mr. Freyer described the last 10 cases he had operated on, one of the patients being 81 years of age. He thought that previous mental symptoms were a contra-indication for the operation. In his 50 cases there had been 5 deaths, but at least 3 of these had nothing directly to do with the operation; his last 21 cases included no fatality. Mr. Sinclair White asked whether perineal drainage was advisable; he had found it of value. Mr. Reginald Harrison thought that the perineal operation was very well adapted for some forms of prostatic enlargement. He related two cases of interest, and referred particularly to the removal of adenomatous masses in the course of operations for stone. He used the incision as for lateral lithotomy. Dr. Comyns Leach related his experience of Mr. Freyer's operation in his own person. Mr. Mitchell thought the suprapubic route was the one to be preferred. Mr. Herring thought the disadvantages of catheter life were exaggerated, and that the operation should be reserved for special cases. Mr. Jordan Lloyd recognized the value of Mr. Freyer's operation, and the difference between his procedure and that of others. Mr. Betham Robinson said that if the recto-vesical fascia were encroached upon, the prostatic plexus and the ejaculatory ducts must be damaged. Mr. Freyer replied. Mr. Tubby (London) read a paper on a Method of Treating by Operation Paralysis of the Upper Root of the Brachial Plexus. He found that by muscle grafting he was able to restore the lost movements, and gave details of the procedure. Mr. Wilfred Harris referred to three cases showing the value of nerve grafting of the brachial plexus in this condition. Mr. Tubby also read a paper on the Pathology of Hallux Rigidus, Hallux Flexus, and Hallux Extensus. He considered that in the majority of cases palliative treatment was of comparatively little avail, and that excision of the head of the metatarsal was the best procedure for all three conditions. Mr. Muirhead Little gave an account of the results he had obtained in 27 cases of club-foot operated on by Phelps's method. An important modification of the original procedure was the reflexion of a triangular flap from the inner side of the foot, which was subsequently used to fill in the gap left by the operation. Dr. Herbert Snow read a paper on Cystic Tumours of the Mammae and their removal by forcible massage without incision. He gave an account of his procedure, and related several illustrative cases. Mr. Betham Robinson was doubtful whether it was possible to rupture most of the cysts in this condition, and whether the ultimate result was likely to be good. Mr. R. H. A. Whitelocke (Oxford) read a paper on the substitution of temporary and absorbable for permanent and unabsorbable sutures in the operations on bone. Mr. Whitelocke advocated the use of ordinary catgut or kangaroo tendon, and mentioned seven cases of bone suture in which he had successfully used these suture materials.

SECTION OF OBSTETRICS AND GYNAECOLOGY.

Thursday, July 30th.

PROFESSOR MURDOCH CAMERON read a paper on the Diagnosis and Treatment of Uterine Fibroids. He had not found these tumours more common in single than in married women, and considered sterility a consequence rather than a cause. Fibroids were seldom single, but when so, and growing from the fundus, tended in shape to resemble a bullock's heart. Some, soft in consistence, might be mistaken for ovarian cysts. During pregnancy they increased in size, and during the involution of the uterus diminished. They underwent a certain amount of atrophy at the menopause, and also under electrolysis, the administration of ergot, or the ligation of the ovarian arteries, but they did not in any of these cases disappear. Subserous tumours, except from torsion of the pedicle, gave rise to few symptoms. Submucous and interstitial ones caused bleeding, generally menorrhagia, sometimes metrorrhagia. When no urgent symptoms were present interference should be delayed. When operation became advisable, hysterectomy was the most satisfactory proceeding; enucleation had been almost abandoned, as had been oöphorectomy. It was sometimes better to remove the tumour first, and in that case an elastic ligature should be passed round the cervix. Dr. Heywood Smith spoke in favour of enucleation. Dr. Frederick Kidd, Dr. E. J. Maclean, and Dr. J. J. Macan joined in the discussion; and the President, having drawn attention to the importance of distinguishing between the different kinds of fibromatous growths, and the much more dangerous character of the soft solitary myoma, Dr. Cameron briefly replied, suggesting that it was desirable that the question of the disappearance of these tumours under electrical treatment, which he entirely discredited, should be systematically investigated. Dr. James Oliver then read a Clinical Study of Internal Haemorrhage in Association with Ectopic Pregnancy. Vaginal haemorrhage was sometimes the first symptom, and was apt to recur. In some cases this was not preceded by previous amenorrhoea, but in nearly all there had been a long period of sterility. Rupture generally happened between the sixth and twelfth weeks. The consequent haemorrhage might stop, but was apt to return and prove fatal. There might, however, be collapse without any signs in the pelvis, and the effusion of even a very slight amount of blood into the peritoneum occasionally caused symptoms of intense shock. The paper was discussed by Dr. A. J. Horne, Dr. Frederick Kidd, Dr. Purslow, Dr. T. W.

Eden, who spoke of the large field open for expectant treatment, Dr. T. B. Grimsdale, Dr. R. V. McKerron, and Professor J. A. C. Kynoch. Professor Stephenson (the President) said that as regarded operation a great distinction must be drawn between cases of collapse with diffuse haemorrhage, in which the indications were urgent, and others; and it must be remembered that the degree of collapse bore no fixed relation to the amount of haemorrhage. The pulse was the main guide, and a steady increase in its rate warranted operation; he thought that the rise of temperature often met with was due to the absorption of blood products into the tissues. Dr. Oliver, in replying, concurred that there was much scope for expectant treatment, and referred to the collapse met with in some cases of pyosalpinx. Dr. Ewen Maclean, of Cardiff, related two successful cases of Caesarean section for contracted pelvis in dwarfs. The proceedings of the day terminated with a paper on the Maternal Circulation in Pregnancy, by Dr. Oliphant Nicholson, who pointed out that the hypertrophy of the heart which occurred in pregnancy was not always of a compensatory nature, and insisted on the value of thyroid extract in controlling the pre-eclamptic symptoms associated with arterial constriction.

Friday, July 31st.

Mr. Targett, in introducing Tuberculosis of the Uterus and Adnexa as the subject for discussion, said that this form of disease, always serious and sometimes fatal, was undoubtedly more common than had been supposed. In tuberculous subjects *post-mortem* anatomy showed that the genital organs were affected in some 7.7 per cent. and at the Children's Hospital the percentage was as high as 9.5. In the internal genital organs tuberculosis was not primary but due to infection from the blood stream, or from the peritoneal cavity in general miliary tuberculosis, or tuberculous ulceration of the bowels. Possibly infection might come from external sources, from examination, or sexual congress, but the external genitals were, save owing to ritual circumcision, rarely affected. The tubes were the seat of the disease in 90 per cent. of all cases involving the genital organs. The salpingitis might be miliary or caseous, and the tube when pus accumulated in it assumed a remarkable banana-like shape. In the uterus tuberculosis might be miliary or caseous, or might cause a true pyometra. In acute cases the diagnosis was difficult, but in chronic ones was materially assisted by the presence of tubercle in other parts of the body. Amenorrhoea was not uncommon, otherwise dysmenorrhrea was the rule, and pelvic pain was generally present. Laparotomy was beneficial, with vaginal drainage through Douglas's pouch when necessary; the removal of the tuberculous organs was often difficult owing to the presence of adhesions, or the rottenness of the bowels or of the organs themselves, and was sometimes followed by rapid toxaemia. In another room Mr. Targett then demonstrated eighteen very remarkable specimens of diseased tubes and uteri with the magic lantern. On return to the former room, Professor Kynoch read a paper on Primary Tuberculosis of the Cervix Uteri, based on a personal observation. He mentioned that of 69 cases of cervical tuberculosis collected by Beyea, two were certainly, and nine probably, of primary origin, and that three cases had been fully reported in the *Journal of Obstetrics and Gynaecology* within the last eighteen months. The condition was, therefore, not so uncommon as had been supposed, and, from the absence of characteristic symptoms, was likely to be overlooked. In the absence of tuberculous disease elsewhere, hysterectomy was better than curetting; palliative measures were only suitable for cases in which there were active tuberculous lesions elsewhere. Dr. Arnold Lea read a paper on Tuberculosis of the Tubes, accompanied by four specimens: the ovary was affected in only one instance. Dr. Herbert Snow thought many cases might be cured by milder measures than hysterectomy. Dr. F. W. Haultain considered dysmenorrhoea to be the most constant symptom of tuberculous salpingitis. He showed a drawing of cervical tuberculosis in a maiden, bright red in colour, soft to the touch, and not friable or bleeding on pressure. Dr. E. J. Maclean cited a case of adnexal disease secondary to miliary tuberculosis of the peritoneum: Dr. C. R. Straton one of infection of the wife by the husband. Professor Kynoch and Dr. Lea replied, and then Mr. Targett, who pointed out the danger that a negative examination after curetting might be misleading. Caseous tuberculosis should be left alone: pus, he considered, implied mixed infection. For Dr. A. H. N. Lewers, who was unable to be present, Dr. Maclean (Secretary) read a report, accompanied by skiagraph, of the discovery of a hairpin in the uterus by means of the *x*-rays, and of its successful removal with remains of an early ovum. The proceedings terminated with a hearty vote of thanks to the President of the Section, Professor William Stephenson of Aberdeen.

Section of State Medicine.

Thursday, July 30th.

Dr. Mackenzie (Kirkby-in-Ashfield) read a paper on the Relation between Vaccination and Acute Concurrent Infantile Disease, dealing with death-rates among the vaccinated from the ages of 2 to 12 months, and the death-rates among the unvaccinated at corresponding ages. He also discussed the complications of vaccination, insusceptibility to the vaccine, and the influence of insanitary surroundings upon the process. Dr. McVail urged the importance of a systematic study of the vaccination process by public vaccinators, who had unique opportunities for such work. Dr. Newsholme (Brighton) furnished a paper on the Spread of Enteric Fever and other Forms of Illness by Sewage-polluted Shellfish. The evidence on the strength of which such illnesses were ascribed to shellfish was based upon sporadic cases and outbreaks, and the evidence was fourfold: (1) Clinical, (2) exclusion of other known causes, (3) topographical, and (4) bacteriological and clinical. He also dealt with the various attempts at obtaining remedies, particularly regulations in force at Brighton. He considered the best legal remedy would be a combination of the powers of the Brighton Corporation Bill of 1896, and the Government's Oyster Bill of 1899 extended to other shellfish in addition to oysters. Dr. J. T. C. Nash also supplied a paper on the same subject. Major Firth discussed the susceptibility of the individual to anomalous organisms related to the true typhoid bacillus. He considered a great deal might be done by medical officers of health if they would collect facts respecting the social status of those attacked, for such data might throw light on the susceptibility of certain classes. Another matter of importance was the relationship between the true typhoid bacillus and B. coli. Major Firth had been able to show that the true typhoid bacillus might be converted into an organism culturally similar to a true B. coli. The reverse had not yet been proved, though the Lyons School held such conversion did occur. The speaker urged the importance of a study of environment in relation to these organisms, which should include a study of the individual as well as external artificial media. The personal factor was one of great importance. Dr. Coutts believed most cases of shellfish-produced illness occurred amongst the poorer classes, but the cases were mild, and in pre-bacteriological days would probably have been overlooked. Dr. Ebenezer Davies thought attention should be paid to the occurrence of typhoid cases in districts supplying shellfish. The discussion was carried on by Dr. Lloyd Jones, Dr. Mole, Dr. Mackenzie, Dr. Drysdale, and Dr. Morris. Dr. McVail thought sporadic cases were only explainable, in some cases, by supposing the specific organisms lived in the soil, or were more numerous in species than was generally supposed. He drew a comparison between small-pox and cow-pox, and typhoid and anomalous diseases, and discussed the susceptibility of the individual. The following resolution was proposed by Dr. Coutts and seconded by Dr. Mole:

> That all layings from which shellfish are taken for market should be subject to periodical inspection and should be registered if satisfactory, and that shellfish should not be sent to market from any but such registered layings, under supervision of a Board free from local influences.

Dr. Groves read a paper on Fixity of Tenure, pointing out that efficiency in the public health service was in large measure dependent upon this principle. A fearless and vigorous medical officer of health ran a risk of dismissal, and in any event, if not enjoying fixture of tenure, such officers were prevented in many cases from doing their full duty. Dr. Herbert Jones, of Hereford, pointed out that the only link between the Local Government Board and the sanitary authorities was the medical officer of health, and on this account the Board should make his post secure. Dr. Coutts said that many authorities had applied to the Local Government Board for permission to make their medical officers permanent. Dr. McVail pointed out that security of tenure existed throughout Scotland, and the tendency was increasingly to employ "whole-time" officers. Special qualifications were required. Medical officers of health needed fixity of tenure much more than Poor-law medical officers.

Friday, July 31st.

Dr. Bushnell read a paper on the Appointment of a Minister of Public Health. He considered a strong leader on this subject in the Government was necessary, and discussed various arguments which had been brought forward against such an appointment. He also outlined what he considered to be the proper duties for such a Minister. Drs. Herbert Jones, H. H. Tidswell, Groves, and Ellis took part in the discussion, each of whom urged, from various points of view, the importance of unifying local government administration. Dr. McVail referred to the condition of things existing in Scotland, and thought what was required at present was careful inquiry into the whole subject, as it seemed that whilst there was unanimity as to final objects to be obtained, there was not as to ways and means. Dr. Bushnell, in reply, believed that whilst the Local Government Board had so many and complex duties public health must remain subservient to other matters, and this should not be so. Dr. Groves moved the following resolution, which was seconded by Dr. Howard Jones:

That the State Medicine Section, while tendering their acknowledgements to the Council and thanking them for the efforts they are making to secure continuity of office to sanitary officers, venture to suggest the advisability of bringing the question before the Divisions through the Representative Meeting.

This was carried. Dr. H. H. Tidswell read a paper on Physical Degeneration, its Causes and Prevention. Dr. Dawson Williams thought it desirable that there should be more accurate definition of the terms used. The question of Weismann's theory and the existing conditions affecting physical deterioration, heredity, physique of pregnant women, nutrition of children, use of artificial foods, overcrowding, and insanitation all required careful consideration and study. He considered clear distinction should be made between mind and brain, the latter could alone be physically wearied. Drs. Mackenzie, Bushnell, Strachan, and Brown also took part in the discussion. Dr. Groves urged the importance of efficient ventilation of schools. Dr. McVail, in summing up, referred to the possible effect of compulsory education upon mal-development of children. Whilst many defects existed, it was to be remembered that the death-rate had declined. It might be that the general physique of the race was declining, but not in a way to affect the mortality. The question was perhaps one more for inquiry than action, yet there was abundant need for action along the lines of ordinary hygiene, medical inspection, and sanitation, especially of elementary schools. Much of what was necessary could be accomplished without much expense. Dr. Morris (Neath) read a paper on the Housing of the Working Classes in Small Municipalities.

SECTION OF PSYCHOLOGICAL MEDICINE.

Thursday, July 30th.

DR. T. B. HYSLOP (Medical Superintendent, Bethlem Royal Hospital) opened a discussion on Alcohol in its Relation to Mental Disease. He argued that the rôle of alcohol in the healthy body was more harmful than good, and that its use was abuse. In debilitated and neurotic persons its use was comparable to a loan raised at a heavy rate of interest. Alcohol produced a specious feeling of well-being, but it tended to lower mental capacity and energy and to produce acceleration and confusion of ideas. The muscular overaction of alcoholic indulgence resulted from stimulation of the motor areas and diminished power of the inhibitory cortical centres. Alcohol increased the exudation of lymph and of leucocytes from the cerebral blood vessels into the surrounding tissues. Various morbid changes described and illustrated by Andriezen and by Berkley (in *Brain*, 1894 and 1895) were met with in the brains of chronic and acute alcoholism. Dr. Hyslop concluded by endeavouring to correlate some of these observed changes with the clinical and psychological symptoms of alcoholism, and stated that alcohol *per se* did not cause general paralysis of the insane. Dr. G. Archdall Reid followed with a paper on Human Evolution, with especial reference to Alcohol. His conclusion was that parental disease (chronic or acute alcoholism, plumbism, syphilis, and the like) did not prejudicially affect the germ and sperm cells; at any rate, that the offspring of parents suffering from these diseases did not inherit the disease in question, and that it was impossible for medical men to produce a single genuine instance of so-called "degeneration" of the offspring arising from these diseases. Such a belief in the transmission of disease was of course popularly and widely held, but this he looked upon as a superstition lacking a scientific basis. Dr. Reid went on to argue from the present state of such nations as the Jews, Greeks, Italians, and other North Mediterranean peoples, that the most temperate races on earth were those whose ancestors had drunk freely of alcohol. He concluded that repressive legislation against alcoholism was useless amongst civilized nations. A lengthy discussion followed the reading of the above two papers, in which the following gentlemen took part: Drs. Charles Mercier, David Yellowlees, T. N. Kelynack, F. Edridge-Green, Schofield, Ridge, J. Flashman (Australia), Ford Robertson, Lloyd Andriezen, Heywood Smith, Fletcher Beach, Wilfred Harris, James Stewart, and the President, after which Drs. Hyslop and Reid briefly replied. Miss Alice Johnson and Dr. E. Goodall contributed a paper (read by Miss Johnson) upon the Action of the Blood Serum from Cases of Mental Disease upon the Bacillus Coli Communis. The examination of twenty-five cases of insanity showed that in 60 per cent. of the cases the blood serum caused agglutination of cultures of the bacillus coli. A leucocytosis count was also made in a few cases of insanity, and it was found that leucocytosis was high in acute mania, or when patients were passing through acute exacerbations, whereas in states of remission and of recovery the leucocytosis tended to fall. These observations showed that the bacillus coli communis was an important source of toxaemia in certain forms of insanity, that the study of leucocytosis was valuable as an index of remission or recovery, and that with acute exacerbations a high degree of leucocytosis occurred.

Friday, July 31st.

Dr. W. Maule Smith (West Riding Asylum, Wakefield) read a paper on the Nature of Fragilitas Ossium in the Insane. This undue fragility of bones was most commonly met with in the insane after the age of 50 years, and the ribs were by far the most commonly affected. An analysis of 200 cases from the *post-mortem* records of the Wakefield Asylum was made. No case of fragility could be met with in 26 out of 27 cases of idiocy and imbecility, and in the remaining case fragility was not marked. No fragility could be noted in cases of chronic mania which had died at or below the age of 44 years. Melancholia and dementia were marked by increase of friability of the bones, especially in female subjects. Cast into percentages, it appeared that dementia, chronic melancholia, chronic mania, and general paralysis showed fragility of bones in 78 per cent., 76 per cent., 66 per cent., and 66 per cent. of cases respectively. In idiocy and imbecility fragility occurred in a few, and in epilepsy it occurred in 22 per cent. of cases. Fragility was to be regarded as a morbid change which occurred in the insane in late middle life and old age. Dr. Smith gave an interesting summary of the microscopical changes in "fragile" bones. A brief discussion followed, in which Dr. Mercier and Dr. Flashman took part. Dr. Shuttleworth (Richmond) read a paper on Some Slighter Forms of Mental Defect in Children, and their Treatment. During three years' experience as examiner of children for admission to the Special Instruction Schools of the London School Board many of the lighter shades of mental defect were observed, and cases or "types" of cases were recognized similar to those which occurred in an exaggerated form in asylum practice. These included submicrocephalic cases with head-measuring circumferentially not more than 18 in. or 19 in. (7 per cent.), large heads suggesting hydrocephaly (3 or 4 per cent.), mongoloid cases of weakmindedness (2 to 3 per cent.), scrofulous cases (over 10 per cent.), cases with cerebral or spinal paralysis (about 2 per cent.), cretinoid cases (2 to 3 per cent.), syphilitic cases bearing characteristic stigmata (about 1 per cent.), and a few cases of post-febrile or traumatic origin. There was a large group of cases which could only be characterized as "neurotic." Of the epileptic cases 17 per cent. were estimated as fit to continue in ordinary elementary schools, while 27.5 per cent. were regarded as needing separate instruction in "special" classes. In addition to these there were 40 per cent. which were suitable for resident institutions for epileptics, while a residue of 15.5 per cent. were only fit for hospital or asylums. Rickety skulls with insufficient room for expansion and growth of the brain were met with in pauper children, and sometimes in well-to-do families who reared their children on the feeding bottle and patent foods. Dr. Shuttleworth then proceeded to describe the various types, and to hand round illustrative photographs of the same. Cretinoid children did remarkably well under thyroid treatment. A discussion followed, in which Drs. Fletcher Beach, Lloyd Andriezen, Helen Boyle, and the President took part, after which Dr. Shuttleworth replied. Dr. Charles

Mercier (London) read a paper on the Classification of Insanity. He distinguished between mere psychological states such as mania and melancholia, and true varieties of insanity such as delirium tremens and general paralysis, which had a characteristic sequence of symptoms. He proposed the broad lines of classification into forms and varieties on the lines advocated by him recently (in his *Textbook of Insanity*), and gave further subdivisions of the varieties. A discussion followed, in which Dr. Yellowlees, Dr. Lloyd Andriezen, Dr. Flashman, and Dr. Cole took part, after which Dr. Mercier replied. Dr. David Yellowlees opened a discussion on the Treatment of Incipient Insanity. Incipient insanity was defined as the mental condition during the period between the first manifestations of mental disorder and the development into certifiable insanity. It was also used to include cases of insanity where the insanity, though obvious, was of very recent origin, and had not become fairly established or confirmed. Dr. Yellowlees then touched upon the general indications for the treatment of incipient insanity—namely, removal, as far as possible, of the cause of the illness, removal of the patient from the surroundings where his illness originated, experienced nursing, wise medical treatment, pleasant companionship and surroundings, good food, sufficient occupation, and suitable amusement. Though general principles could be thus laid down, their value lay in the discrimination and judicious application of the same. He then dealt with the means provided in the shape of asylums, and mental wards of general hospitals, for the reception and treatment of such cases. Any institutions, whether called reception "houses" or by other names, which received incipient lunatics for care and early treatment, should be under the jurisdiction of the Commissioners in Lunacy, and the resident physician by whom all the cases were to be examined, diagnosed, and allocated to this or that line of treatment must be a man who had gained wide experience of insanity in all its phases, and had proved himself an alienist physician of the first rank. Special asylums for the cure of acute cases of insanity should be small. A discussion followed, in which Dr. Robert Jones (President), Dr. R. Stewart, Dr. Helen Boyle, Dr. Flashmann, and Dr. Edridge-Green took part. Dr. R. S. Stewart read part of a paper on the Relationship of Wage, Lunacy, and Crime in South Wales. Dr. Schofield read portions of a paper on Psycho-therapeutics, its Use and Abuse. Owing to lack of time the following papers were taken as read, namely, a paper by Dr. W. Lloyd Andriezen on the Premature Dementia of Puberty and Adolescence: a paper by Dr. Edridge-Green on the Relation of Hysteria to Insanity; a paper by Dr. Pugh on Syphilis in the Insane (apart from General Paralysis); a paper by Dr. Conolly Norman on Freund's Theory of the Origin of Obsessions; and a paper by Dr. Nathan Raw on the Relation of Mental Symptoms to Bodily Diseases. The meeting then concluded with the passing of a resolution that the name of the Section should be the Section of Psychological Medicine, the name adopted for it at a meeting of the Council a year previously, and that the attention of the Council should be drawn to this matter.

Section of Pathology.

Thursday, July 30th.

Dr. D. H. Rolleston, in introducing a discussion on the Pathology of Splenic Anaemia, commented upon the vague sense in which the term was commonly employed. He defined the condition under consideration as one characterized by splenic enlargement, absence of lymphatic gland enlargement, anaemia of a type midway between secondary anaemia and chlorosis, leucopenia, prolonged course, and a tendency to haemorrhages. It was desirable to ascertain whether this clinical entity was also a pathological entity. In dealing with the morbid anatomy great stress was laid on the endothelial proliferation exhibited by certain types of splenic enlargements within this category. The effect of splenectomy as a curative procedure was held to exclude the possibility of a chronic intestinal intoxication as the cause of the condition, and to eliminate the idea of splenic inadequacy or deterioration of function: the possibility of chronic infection, however, deserved careful consideration. Dr. Trevor read an account of three cases in which he had made a very complete examination of the morbid anatomy and histology of the viscera implicated, and exhibited both macroscopical and microscopical specimens to indicate the close similarity of the lesions to those found in well-defined conditions such as tubercle and syphilis. Professor Senator, of Berlin, preferred to consider the spleen in connexion with the other haemopoietic organs. He described in detail the appearances to be found in the spleen, the marrow, and the liver, emphasizing the frequency of occurrence of certain very large cells with large vesicles or nuclei, within dilated capillaries; these cells were to be regarded as indicative of the transference of noxious material from the spleen to the liver. He drew attention to the constant enlargement of the abdominal lymphatic glands, and suggested this as evidence that the source of the materies morbi was the digestive tract. The affection of the liver, as described by Banti, he agreed was secondary to that of the spleen. Dr. Michell Clarke, reporting several cases which had come under his care, described histological appearances practically identical with those mentioned by the previous speakers: in discussing the pathogeny he inclined to the view that the spleen itself was the site of production of the toxic material. Dr. Ewart thought that more might be made of the clinical aspect of the question, and especially of the remarkable reaction to treatment exhibited by some cases, as showing that no inherent inadequacy of the haemopoietic viscera was the underlying cause. Dr. Sandwith drew attention to the occurrence of splenic anaemia in Egypt, and particularly to its incidence in childhood. The President, Professor Hamilton, said that he was inclined to regard all the changes in the spleen, liver, and bone marrow as epiphenomena, and considered that enough attention had not been paid to the intestine as the *fons et origo mali*. Dr. Michell Clarke gave a lantern demonstration of the changes to be found in the cornual cells in cases of so-called "peripheral neuritis" of diphtheria and alcoholism. He demonstrated the marked chromatolysis and cellular degeneration found in such cases, and incidentally pointed out that the anterior mesial group of anterior cornual cells invariably escaped, whilst the lateral and intermedio-lateral suffered heavily, indicating the function of the former group as innervating the trunk muscles

Friday, July 31st.

Dr. Kenneth Goadby read a paper explanatory of the system of classification of bacteriological records used in his laboratory, consisting essentially of an elaboration of the card-index method. A paper was read by Dr. I. Walker Hall on the Purin Bodies of Human Faeces in Health and Disease. The object of the research was to determine the amount of purin excreted by different individuals; to ascertain its relation to food, and inquire into its origin. After briefly describing the method employed, Dr. Hall stated that on a constant diet the purin excretion remained practically constant, even over long periods of time. Whereas the administration of guanin or pancreas caused marked increase in the faecal excretion of purin bodies, the administration of xanthin and hypoxanthin had no effect. Into the absorption of nucleins the personal factor entered largely. In diarrhoea and inflammatory conditions the purin bodies were increased: in the former case the cell nuclei of the intestinal mucous membrane were probably the source of origin. As to the practical significance of these results, the knowledge of an individual factor for nuclein absorption must assist in the determination of dietaries, and also suggest therapeutic measures, whilst pointing to the probability of autointoxication in certain cases. Dr. Dimmock and Mr. Branson contributed a paper descriptive of a new method of estimating uric acid in urine. Dr. Leslie Eastes said that the great advantage of the method was that it shortened Hopkins's procedure by some four or five hours. Dr. Bushnell gave details of numerous blood examinations he had made, and now brought forward as a contribution to the diagnostic value of leucocytosis and lymphocytosis in malignant disease, lymphadenoma, and leukaemia. The almost constant leucocytosis in sarcoma and the variability in carcinoma were remarked upon. Commenting on the very large digestion lymphocytosis of children, he suggested the desirability of closely observing the relationship between errors of diet and lymphatic glandular disease; he noted the presence of crescentic bodies in the blood of a case of blackwater fever with a leucocytosis of 25,600; of eosinophilia in a case of malaria, with "jigger" and bubo; and of a leucocytosis exceeding 20,000 in cases of beri-beri, Addison's disease, hypertrophic cirrhosis, and cerebral abscess.

Section of Ophthalmology.

Thursday, July 30th.

Mr. Nettleship opened a discussion on Ocular Changes in

relation to Renal Disease, and said that, although much was already known regarding the eye changes in renal disease, yet information was still needed on several points both from physicians and ophthalmologists. He discussed the question of retinitis occurring as the result of lardaceous disease, as well as from nephritis due to inflammation of the bladder, ureter, and pelvis of the kidney. With regard to pregnancy retinitis, his cases showed that the prognosis in this condition was better than in retinitis due to other diseases. With regard to cases other than pregnancy, there were twice as many males as females affected. With regard to the retinitis of glycosuria which occurred with some albuminuria, he thought that, although some of the changes might be due to the latter, yet glycosuria had been shown to be the cause of it in cases when there was no renal disease. He said that among other points requiring elucidation were the influence of inherited syphilis and scarlet fever, and the nature of the ophthalmic appearances of the white opaque thickening of the coats of arteries and veins. Dr. George Carpenter mentioned 3 cases in children, and Mr. Henry Power recorded 2 cases. Mr. Hartridge thought that many cases were toxic. Mr. Silcock said he had never seen retinal changes in cases of well-marked surgical kidney without cardio-vascular changes due to interstitial nephritis, neither had he seen changes in cases of suppression of urine. Dr. Reeve (Toronto) urged the importance of the routine examination of the urine. Mr. Doyne and the President also made remarks. Dr. Karl Grossmann described a case of aniridia in which he observed the effects of eserine on the shape of the lens, and he found that both anterior and posterior surfaces bulged, and the equatorial diameter of the lens became less. Mr. Harman thought that it was unwise to draw general conclusions from a single case which was evidently very abnormal, and Mr. Silcock agreed. Mr. Nettleship asked as to how much accommodation the patient had. Mr. Grossmann replied about 2.5 D. Mr. W. T. Lister read a paper on Epithelial Tumours of the Conjunctiva. They were non-malignant, and showed simply heaped-up epithelium. He gave a lantern demonstration of the sections. Mr. Sydney Stephenson read a paper on Interstitial Keratitis in Acquired Syphilis. He described a case and mentioned several cases already recorded. Figures showed that from 1.9 to 10 per cent. were due to acquired syphilis. Mr. Devereux Marshall mentioned a case that had come under his own observation in which the choroid was first affected, and subsequently keratitis developed. Mr. Stephenson said that this combination had been seen in several of the cases. Mr. Doyne read a paper on the Treatment of Atrophic Retinae with Retinal Extract. He referred to the difficulty of getting the fresh retinae, and also to the fact that an extract had been prepared. In cases of retinitis pigmentosa the diet had to be continued or the sight went back. He gave details of several cases; tobacco cases quickly improved, and he had had good results in a case of optic atrophy. Mr. Sydney Stephenson mentioned three other cases, one of which was a case of tobacco amblyopia which was cured in spite of his continuing to smoke. Mr. Nettleship had seen some of Mr. Doyne's cases, and said he was not yet convinced as to the improvement in their vision. Dr. Edridge-Green said that some years ago he had tried to prepare an extract of visual purple. This had quite failed. Dr. Darier had previously tried extract of retina, choroid, and ciliary body. He injected this subconjunctivally; the patients improved, but it was very transitory. He got nearly as good results with sodium chloride injections. Dr. Edridge-Green moved his resolution on the tests for colour blindness for the public services. Mr. Beaumont seconded this, and it was carried unanimously.

Friday, July 31st.

Mr. Hartridge opened a discussion on the treatment of Convergent Squint. In order to undertake the treatment satisfactorily they must discover the various factors which helped to produce the disorder. There were three methods of treatment (1) optical, (2) orthoptic, and (3) operative. The two former should be carried out for at least one year before an operation was done, and as the condition was one of abnormal innervation, so operations on the muscles were unscientific and deformity was nearly always produced. He proposed as points for discussion—(1) When was an operation necessary or justifiable? and (2) what operation gave the best results. Mr. Claud Worth read a paper on Methods of Preserving or Restoring the Vision of the Deviating Eye and developing the Fusion Sense. He said that no child was ever too young to wear glasses, and that congenital amblyopia was exceedingly rare. Atropine should be used to the fixing eye only for several weeks or months, and thus making the deviating eye useful for near work. From investigations he had made on infants he had found the first certain evidence of binocular vision between four and five months of age. The fusion sense was fully developed at six years; attempts at fusion training after this age were mere waste of time. He described his methods of educating the deviating eye, and gave his results in a large number of his cases. Mr. Tatham Thompson (Cardiff) said that he thought glasses should be worn as early as possible, but that one seldom saw the patient before 4 years. His tendency was to do less and less in the way of tenotomy. He never operated upon both eyes at the same time, and he would much prefer it to advancement in squints above 15 or 20 degrees. In advancements he split the tendon and took one-half above and one below the level of the cornea. Mr. Maddox said that he fully agreed with Mr. Hartridge and Mr. Worth, and thought the latter had done good service in insisting on the necessity of early training. After Mr. Harman had spoken, Dr. Darier said that both eyes should not be operated upon at the same time. He thought that advancement combined with tenotomy was the best operation. Dr. Reeve (Toronto) also was opposed to operations on both eyes together; he described several operations. Remarks were also made by Dr. Grainger and the President. Mr. Lister asked whether the operations done by Mr. Hartridge and Mr. Worth were done under an anaesthetic when the patient was under puberty. He thought the results of operations done under cocaine were excellent, but not so when an anaesthetic was used. Mr. Hartridge in reply said that anaesthetics were necessary in children. Mr. Worth said that in cases in which he had been able to train the fusion sense, he had no hesitation in resorting to operation at any age, because the trained fusion sense could be relied upon to do the fine adjustment; but in cases in which binocular vision was out of the question he never operated until he was able to do so under cocaine. Mr. Tatham Thompson read a paper on the fixation of the eye during operations in intractable patients. This consisted of passing sutures on both sides of the conjunctiva near the cornea at the level of the centre of the cornea. It caused far less gaping than the ordinary forceps. Mr. Bronner thought that two pair of forceps would do as well. Mr. Beaumont (Bath) described some double forceps he had used. Mr. H. Collen Ensor described an improved operation for ptosis. Major H. Herbert, I.M.S., read a preliminary note on the pathology and diagnosis of spring catarrh, and also read a further note on the superficial punctate keratitis of Bombay. Dr. Bronner described a modified Mules glass ball for use after removal of the eyeball. Mr. Bishop Harman read a paper on the knee-jerk phenomenon in interstitial keratitis. Mr. Doyne said that in 32 cases of interstitial keratitis he had found the knee-jerks present in all. Mr. Beaumont tested 15 cases, and in all the knee-jerk was present. Mr. Bishop Harman described an improved operation for congenital ptosis. He mentioned several objections in Mules's operations with wire, and he used a gold chain to take its place.

SECTION OF DISEASES OF CHILDREN.

Thursday, July 30th.

MR. F. F. BURGHARD opened a discussion on Congenital Dislocation of the Hip with a prefatory account of the anatomical changes met with at various periods of life. He considered the effects of these changes in preventing the reduction of the dislocation. He had found that in early cases there was little alteration in the head of the bone. The character of the dislocation frequently varied as the child got older, and other changes occurred in the component parts of the joint. Hence the older the patient the greater was the difficulty of effecting a cure. He regarded the supra-cotyloid form of dislocation as the most common in very early life, and referred to subsequent alterations in this displacement. The methods of treatment adopted at present were described, especially in the "Hoffa-Lorenz operation," and the objections to this method with the speaker's mode of avoiding them were carefully considered. The "bloodless method," so-called, of Lorenz with its difficulties, dangers, and after-treatment, was described. He then defined the cases most suited for each form of operation. He referred to the difficulty of obtaining a true anatomical cure by Lorenz's method and stated that the open operation yielded a better chance of such a result. The bloodless method was increasingly unlikely to produce a radical cure

with increase in the age of the patient. The proportion of good results obtained by different surgeons was quoted. The nature of the beneficial results, apart from a true cure, and the risks and complications resulting from Lorenz's method were described. The bloodless method was most suitable in early life, under five years, and in unilateral cases. He considered the difference in prognosis in unilateral and bilateral cases, the limits of age at which the various methods were applicable, and gave his own results, obtained by the different methods. All cases should be submitted to radiography before pronouncing upon the nature of the result. Mr. Noble Smith showed skiagraphs of four cases he had recently operated on by Lorenz's method with excellent results. Mr. R. C. Dun thought the weight of the plaster a disadvantage in the bloodless method, and had utilized aluminium strips to make the plaster case lighter. Mr. Robert Jones considered no one method should be depended upon. He had occasionally obtained good results in very young children by simple manipulation. The neck of the femur might be broken by Lorenz's method. Mr. Openshaw insisted on the importance of dividing the capsule to secure reduction. Mr. A. H. Tubby thought there was less risk and more certainty in the open operation. Dr. Darier (Paris) read a paper on Some New Dental Signs of Hereditary Syphilis. He regarded "Hutchinson's teeth" as the most striking, but as frequently wanting. A similar arrest of development he had noted in the first permanent molar teeth. These special alterations were to be distinguished from the dental changes due to scrofula, rachitis, or mercury. Dr. George Carpenter did not regard the "Hutchinsonian teeth" as conclusive evidence of hereditary syphilis. Drs. Ashby and Goadby also discussed the paper. Dr. George Carpenter read a paper on Splenomegaly in Infants and Young Children, based on 348 cases from various causes during the first twelve years of life. Dr. Edmund Cautley made a few criticisms, to which Dr. Carpenter replied. Dr. T. D. Lister read a paper on the Utilization of Infants' Milk Dépôts. Several economical and practical objections were raised by Dr. Cautley to the establishment of such dépôts, although he recognized the advantages on theoretical grounds.

Friday, July 31st.

Dr. Nathan Raw opened a Discussion on Tuberculosis in Children—its Relation to Bovine Tuberculosis. He regarded tuberculosis in man as due to two kinds of infection—one due to infection *viâ* the lungs, the other due to food infection. As a result of numerous necropsies he maintained that the lungs were attacked by two distinct types of tuberculosis. He thought tuberculosis in children was commonly due to food infection, which gave rise to "tabes mesenterica," or "consumption of the bowels," and quoted various statistics bearing on the point. In his opinion tabes mesenterica was a bovine tuberculosis due to milk. Tuberculosis in cows was extremely prevalent, and the mortality from tabes mesenterica in the country was not diminishing in accordance with the general decline in the mortality from tuberculosis. He maintained that in most cases—for example, in tuberculous meningitis—the mode of infection was through the mesenteric glands and extension by the lymph stream. Such a mode of spread he had frequently noted in extension to the mediastinal glands and lungs. The growth on culture media, in 2 cases out of 37, from the glands and joints was identical with that of the bovine tubercle bacillus. He held that bovine tuberculosis was more virulent to children than human tuberculosis. The enlargement of lymph glands might be also due to the bovine bacillus. Finally, he maintained that human and bovine tuberculosis were distinct diseases, and that the human body, especially in early life, was susceptible to both kinds of infection. Possibly the two varieties were antagonistic. The President, Mr. Arbuthnot Lane, pointed out that in many instances local injury or disease predisposed to infection. He thought that glandular enlargement in children should not be so readily accepted as tuberculous. Dr. Douglas Reid contributed some facts and statistics connected with India, showing that tuberculous disease in children was very rare among the civil population. Dr. John Mackenzie had difficulty in accepting the theory of bovine infection, and pointed out the innumerable sources of human infection, especially among the poor. He accepted experimental results with great caution. Many cases of tuberculous meningitis followed middle ear disease. Dr. Theodore Fisher quoted evidence in favour of infection taking place through the bronchial glands. Drs. C. G. Higginson, W. Langford Symes, Edmund Cautley, George Carpenter, and Mr. W. McAdam Eccles, also took part in the discussion and Dr. Raw replied. Dr. George Carpenter read a paper on A Case of Syphilitic Nephritis in an Infant aged 5 Months. The signs of inherited syphilis were very definite. The urine contained hyaline and granular casts and blood corpuscles. The condition was typical of acute catarrhal nephritis. Microscopical examination of the kidney after death showed the same condition, with distinct changes in the blood vessels. There were no interstitial changes. He held that syphilis played a much more important part in the nephritic affections of children than was usually supposed. Mr. R. C. Dun read a paper on Adenoid Vegetations in Infancy.

A Correction.

In the summary of the proceedings in the Section of Children's Diseases of the annual meeting of the British Medical Association held last week at Swansea, which appeared in the British Medical Journal of August 1st, p. 269, it was stated that Dr. David B. Lees urged that in the treatment of chorea large doses of sodium salicylate—"grs. x to xl"—should be given. The range of dosage should be grs. x to xx.

Section of Laryngology and Otology.

Thursday, July 30th.

A discussion on the Technique of Operations on the Temporal Bone in Suppurative Middle Ear Disease was introduced by Dr. McBride of Edinburgh and Dr. Arthur Hartmann of Berlin. Dr. Hartmann also showed a number of temporal bones to illustrate various points in the surgical anatomy of the region. The discussion was continued by Dr. Dundas Grant, who expressed the opinion that the operations for acute suppuration were far too seldom performed, and so cases were allowed to become chronic and eventually, perhaps, required the complete radical operation. He did not always open the antrum in acute cases—especially post-influenzal ones. In the radical operation he found Körner's flap frequently satisfactory. Dr. R. C. Elsworth showed sections of temporal bones displaying the "accessory antrum." He also demonstrated a vein which skirted this cavity, and through which thrombosis often spread to the sigmoid sinus in cases where the sinus groove was not eroded. Professor Gluck discussed the treatment of sigmoid sinus thrombosis, and described two cases in which he had performed extensive operations. Dr. Jobson Horne thought the vein described by Dr. Elsworth was a tributary to the petro-squamosal sinus described by Mr. Arthur Cheatle. Dr. Herbert Tilley said he had abandoned the use of gold leaf in the skin-grafting operation; he used pellets of sterilized wool to pack the grafts into position, and used one large graft for the main cavity, with smaller ones to fill in. The sole advantage of grafting was that it shortened the after-treatment. Excellent results could be obtained without packing the mastoid wound, but the cases required more individual attention. Dr. Bronner thought prolonged packing only retarded the healing. He would like to know the final result in cases treated by skin-grafting; how were they after a year or two? Dr. Logan Turner raised the question of acuteness and chronicity. After what duration might a case be treated as an acute case, and when did it fall into the chronic category and require to be treated as such? Dr. R. H. Woods thought that the chief use of grafting was to prevent stenosis of the meatus. Dr. Delsaux (Brussels) related the experience of himself and a colleague in dispensing with plugging. They plugged for one day only, and then filled the cavity with boracic acid powder, renewed as necessary. After a fortnight there was a granulating surface with islands of epidermis which gradually spread. Dr. Bronner read a paper on the Local Use of Formalin in the Treatment of Nasal Polypi before and after Operation, on the same by the usual methods. The President thought formalin probably acted much in the same way as the galvano-cautery, which produced a sort of localized boiling of the parts, and was a most efficient antiseptic. Dr. A. Haydon read a paper on Illustrations of the Effects produced by the Singing Voice in a Suitable Medium.

Friday, July 31st.

A discussion on the Upper Respiratory Tract as a Source of Systemic Infection was introduced by Dr. de Havilland Hall, Dr. Jobson Horne, and Dr. F. J. Poynton. Dr. Goodale (Boston, Mass.) dealt particularly with the histological alterations in the lymphoid tissue of the upper respiratory tract which predisposed it to permit of the entrance and development of micro-organisms, and illustrated his remarks by sketches. Dr. Herbert Tilley discussed the effect upon the

general health of septic absorption from suppurating foci in the nose and naso-pharynx. Patients who suffered in this way generally had symptoms of indigestion and he thought it probable that vigorous digestion and copious secretion of gastric juice, with free hydrochloric acid, were direct and powerful protective influences in such cases. He narrated two cases of throat infection following the use of the galvano-cautery in the nose and emphasized the importance of anti-septic precautions. Dr. Patterson (Cardiff) drew attention to the occurrence of albuminuria in patients suffering from atrophic rhinitis and gave details of 3 cases. He had also noticed the occurrence of tuberculosis in these cases. The supra-tonsillar fossa was in his opinion a favourite starting point for septic absorption. Dr. R. H. Woods thought diseased teeth were frequently to blame for tuberculous disease of cervical glands. He had seen a case of Hodgkin's disease, which apparently originated in infection from the tonsil, and spread down the neck to the axilla. In connexion with the intravenous injection of micro-organisms he narrated two cases of septic throat affections which became rapidly worse and died after incisions which evacuated no pus, but apparently allowed of rapid absorption of poison. Dr. Lamb described a case in which the disease began as an acute laryngitis with marked oedema. This subsided without operation, but was succeeded very shortly by double pneumonia, from which the patient died. The President summed up the discussion, referring more particularly to the nose as a source of systemic infection, and to the extreme importance of latent nasal diphtheria. The mechanical effects of enlarged lymphoid tissues were, he thought, much exaggerated. Dr. McKeown read a paper on the Fallacies of Modern Theories of Adenoid Deafness, which was criticized by the President and Dr. R. H. Woods.

Section of Navy, Army, and Ambulance.

Thursday, July 30th.

The work of the second day was commenced by the reading of a paper on the feeble attraction to men to become stretcher-bearers and the consequent inefficiency of that section by Surgeon-Captain G. A. Stephens, who discussed the necessary standard of efficiency for the regulars and for the volunteers. He also dealt with cyclist ambulances and with the question of pay and other rewards. In the Royal Army Medical Corps the men were supposed to be specially trained for the work, and able, with their drill and instruction in first-aid and nursing, to bring the medical officer into touch with the wounded with, theoretically, the least amount of discomfort and disturbance to the patient. Amongst the volunteer regimental stretcher-bearers they found an irregular squad of the most incompetent men ever detailed off for such a work. It was not the fault of the men, but rather of the system. Brigade-Surgeon-Lieutenant-Colonel Giles communicated a paper on Training Ambulance Men of Yeomanry. There was no trouble in training yeomen for ambulance work in first-aid and bandaging. It was not until the transport of wounded was reached that difficulty arose. The best method would be a light ambulance cart near the ground that would accommodate itself to the movements of the horse without affecting the comfort of the patient. No regiment should have its efficiency grant unless at the annual inspection it paraded its stretcher section complete, with a regimental medical officer. A grant of 5s. per man should be given for every trained regimental stretcher bearer. Camps for units more than once in three years should be abolished. In brigades the brigadier should enforce stretcher work, which the officer commanding a unit seldom liked to do on account of the hostility of their commanding officers. Each unit medical officer should be gazetted to a department; if in doing his duty he became unpopular he could exchange without losing seniority. There should be one corps on the same lines as the Royal Army Medical Corps, to include all volunteer medical officers, regimental and departmental. In the opinion of Brigade Surgeon-Lieutenant-Colonel Giles it was the province of the regimental stretcher bearer to be within the zone of rifle fire, and it was the accident peculiar to circumstances that might necessitate the bearer company being within that zone. Captain W. Sheen, R.A.M.C. (Vols.), read a paper on the personnel, equipment, and training of medical units attached to volunteer infantry brigades. He advocated a combined unit with the title of field medical company having a transport section. For equipment a combined wagon and tortoise tent should be obtained, constructed to carry four patients lying down. He discussed various items of training, laid emphasis on the importance of water purification, and commented on the too frequent use of tourniquets. A discussion on the three papers followed in which the following took part: Major J. W. Davies, Surgeon-Captain Larking, Surgeon-General Evatt, Surgeon-General Muir, Surgeon-Major J. Arnallt Jones, and Dr. D. Leigh Canney.

Friday, July 31st.

The proceedings of this Section concluded on Friday, July 31st, by the delivery of an address by Surgeon-General Evatt, Principal Medical Officer, Second Army Corps, Salisbury Plain, on the subject of War Work. Surgeon-General Evatt illustrated his remarks by means of diagrams, and though discussion was invited when he had finished speaking, only two members spoke, Major Davies and Surgeon-Major Arnallt Jones. The meeting ended with a few remarks from the President, Inspector-General H. C. Woods, who drew particular attention to the fact that a scheme had been prepared for forming a reserve of civilian medical officers for the navy. He very heartily thanked the Vice-Presidents and the Honorary Secretaries, Fleet-Surgeon John Lloyd Thomas, R.N., Lieutenant-Colonel M. W. H. Russell, R.A.M.C., and Surgeon-Major J. Arnallt Jones for the successful manner in which they had carried through the work of the Section.

Section of Tropical Diseases.

Thursday, July 30th.

Sir Patrick Manson, K.C.M.G., read a paper on Trypanosomiasis, which was followed by a contribution entitled Sleeping Sickness and its Relation to Trypanosomiasis by Dr. C. Christy. Researches on Trypanosomiasis in West Africa by Drs. Dutton and Todd, was communicated by Sir Patrick Manson, and Dr. Christy showed specimens and read a paper upon Tick Fever in Man, from Observations made in Uganda and its neighbourhood. The following took part in the discussion: Dr. C. Castellani (Florence), Dr. L. Sambon, Dr. C. Christy, Dr. G. C. Low, and Captain Leonard Rogers. Papers on hepatic abscesses were read by P. W. Bassett-Smith, Fleet-Surgeon, R.N., who described five cases of liver abscess; by Mr. Cantlie on ten cases of liver abscess, and two cases of pus in the liver not due to hepatic abscess, and by Captain Leonard Rogers on Biliary Abscess of the Liver with Operation.

Friday, July 31st.

Mr. Jonathan Hutchinson, F.R.S., opened a discussion on Leprosy: Its Etiology, Histology and Treatment. The following took part in the subsequent discussion: Dr. H. Marcus Fernando (Ceylon), Dr. Phineas Abraham (London), Sir Patrick Manson (London), Dr. F. M. Sandwith (Cairo and London). The discussion was cut short owing to want of time; those who were prevented joining in the discussion were requested by the President to send in their remarks to the Secretaries of the Section. Mr. Hutchinson described his investigations in South Africa and in India, and said he was more convinced than ever that badly cured fish was the cause of leprosy. He got no support however from any of the speakers. Major Hendley, I.M.S., sent a paper on Lathyrism; Varioloid Varicella in Trinidad was contributed by Drs. Dickson and Lassalle (Trinidad), Dr. H. D. McCulloch took part in the discussion. Dr. G. C. Low (London) and Mr. B. Clarke (Barbadoes) discussed the paper, and gave their experiences of the disease which has for some time been causing a difference of opinion in regard to diagnosis in the West Indies. The photographs of cases shown by Mr. Clarke at the meeting seemed to indicate small-pox to be the illness. Dr. H. Marcus Fernando (Ceylon) read a paper on Malaria and its Prophylaxis in Ceylon. H. D. McCulloch, M.B. (Chief Medical Officer, N.G.S. Railway, India), read a paper entitled A Plea for the Proper Medical Supervision of "Refreshments" purveyed on Railways in the Tropics, with special reference to India, and for better Latrine and Lavatory Accommodation for the travelling Indian Public. Mr. James Cantlie contributed a paper on Plague in Domestic Animals. The Section of Tropical Diseases was well supported, 117 attendances being registered during the sitting of the Section.

ANNUAL MEETING.

THIRD GENERAL MEETING, THURSDAY, JULY 30TH.

Dr. T. D. GRIFFITHS, President, in the Chair.

THE PRESIDENT said no introduction of Mr. A. W. Mayo Robson was needed, as if the members did not know him personally they would know him by name. He had much pleasure in calling upon Professor Mayo Robson to deliver his address.

ADDRESS IN SURGERY.

Professor MAYO ROBSON then proceeded to deliver his address, which was published in the BRITISH MEDICAL JOURNAL on August 1st, p. 229.

Dr. BAGOT FERGUSON considered it a great honour to propose a vote of thanks to Professor Mayo Robson for his very able address. They all acknowledged him as one of the great surgeons of the world, and it was a great privilege to be able to listen to him. The accounts of his success must inspire other men to do their best to emulate his great success. He felt that success in surgery was a personal matter. A great number of gifts were required in order to make a great surgeon; more than were required in order to make a great general. It was no doubt a grand thing to be a great general and to be able to tell of the thousands you had killed or wounded; but it was surely better to be a great surgeon and to tell of the number of lives you had saved. For his own part he considered surgery was the greatest thing in the world, and it followed that the greatest career in the world was that of a great surgeon. If any one doubted that he would ask them to think of the career of Lord Lister. In conclusion he moved:

That the warm thanks of the British Medical Association be given to Mr. A. W. Mayo Robson, Hunterian Professor of Surgery, for his able and eloquent address before the members of the British Medical Association at Swansea.

Mr. SPANTON considered it a great honour, as it was to him a great pleasure, to be asked to second this resolution. That the address had been an eloquent one all of them could testify to, and he could only add it was not only eloquent, but as an historical summary it was thoroughly practical, being devoid of egotism.

Professor MAYO ROBSON having returned thanks, the proceedings terminated.

The Annual Museum

OF

FOODS, DRUGS, INSTRUMENTS, BOOKS, AND SANITARY APPLIANCES.

DRUGS AND PREPARATIONS.

MESSRS. ARTHUR AND CO. (69, Berners Street, London, W.) showed among other things "bromaurum," which is stated to be a direct nerve tonic with a remarkable power of subduing pain of long standing; also "tannopumilio," a compound of pure crystallized digallic acid with limonene from the essential oil of pinus pumilionis. It is recommended as an external remedy for irritation of the skin, such as that arising from profuse perspiration, friction, and sunburn. An antiseptic handkerchief for patients suffering from phthisis was also shown, and in addition tongue-cloths made of rice paper.

The BAYER COMPANY (20, Booth Street, Manchester) exhibited a large number of pharmaceutical products, such as europhen, aristol, heroin, lycetol, iodothyrin, and salophen, reports upon all of which have already appeared in our columns. Another preparation noted was tannigen, an intestinal astringent stated to be specially indicated in intestinal disorders of children.

Messrs. BURGOYNE, BURBIDGES AND CO. (12 and 16, Coleman Street, London, E.C.) showed acoine, a local anaesthetic for ophthalmic, dental and other operations, which was reported upon in our columns of June 3rd, 1899; also the Credé "citrate of silver," for use as an antiseptic in diseases of the bladder and eye. Collargolum, an antiseptic ointment, was also shown, as well as calocreol and xeroform. The latter was noticed in our columns of June 1st, 1901, being introduced as a substitute for iodoform; it is antiseptic, and has neither odour nor taste.

Messrs. J. T. DAVIS and Co. (13 and 14, Water Road, Swansea) had upon view a large selection of surgical instruments and appliances, including aseptic glass hypodermic and serum syringes. The latter has a catch upon the piston, which prevents its being drawn too far out when filling it, or falling out when not in use, which is a common fault in syringes made entirely of glass. The catch is removable for cleaning, and the syringe has, it is stated, been accepted for use by the Pasteur Institute of Paris. It is made in several sizes, and graduated in both minims and on the metrical system.

The DENVER MANUFACTURING CHEMICAL COMPANY (110, Cheapside, E.C.) showed "antiphlogistine," an absorbent designed to be applied for much the same purpose as the old-fashioned poultice. Its basis is said to be a pure dehydrated silicate, which is non-irritating and very supple when warm. It is spread to the thickness of about an eighth of an inch on the affected part, and then clings to the skin, and after 12 to 36 hours falls off in large pieces like a banana skin.

Messrs. FERRIS and Co. (Bristol) showed, among many other things, dispensing cabinets, "Ever-ready" caddies, an improved form of glycerine plaster, vaccination appliances and outfits, and the "Universal elastic bandage," which is of open-wove indiarubber webbing. They exhibited also many pharmaceutical preparations. A large number of ointments, medicated suppositories, pessaries, and bougies were also on view, as well as ambulance outfits for mines and factories. A large number of things, such as urinary test stands, clinical cases for bacteriological use, and pocket sputum flasks were also included in their exhibit.

Messrs. PHILIP HARRIS AND CO. (144, Edmund Street, Birmingham) had a large number of pharmaceutical preparations and surgical instruments on view.

Messrs. C. J. HEWLETT AND SONS (35-42, Charlotte Street, London, E.C.) exhibited a number of drugs and improved pharmaceutical preparations. The former included ichthalbin, a compound of ichthyol and albumin, recommended as an intestinal analgesic, and "acid quinicum pur." which is stated to have a remarkable solvent action upon uric acid and to be useful in the treatment of gout. A preparation of pure urea was also shown: it is stated to be used with good results in tuberculosis. They also showed a hot-water bath for facilitating the application of Unna's pastes, a report upon which appeared in the BRITISH MEDICAL JOURNAL on June 20th last. Other things shown by the firm were a number of antiseptic creams, dusting powders, pellets, and clinical tests for urinary analysis.

Messrs. OPPENHEIMER, SON, AND CO., Limited (179, Queen Victoria Street, E.C.). Besides a number of the bi-palatinoids, for which this firm is well known, "laxoin," a synthetic laxative, which is stated to be effective, painless, palatable, and not to lose its effect by long use, was on view. "Cerettes," neat flexible containers suitable for carrying about small quantities of ointments and similar applications were also shown, as well as concentrated liquors, which are standardized solutions of the active principles of drugs miscible with water in all proportions and forming clear solutions. They also showed "traumatol," or cresylic iodide, a powerful bactericidal agent, "rectones," which are nutrient medicated suppositories, and renoglandin, a concentrated preparation of suprarenal gland.

Messrs. PARKE DAVIS AND CO. (111, Queen Victoria Street, E.C.) had a large exhibit of preparations, such as acetozone, which was noticed in the JOURNAL of December 6th, 1902 and adrenalin, of which they showed a preparation of the chloride in solution (1 in 1,000); chloretone, a hypnotic antiseptic and local anaesthetic, which has been used in insomnia and sea-sickness, and a notice of which was published in the issue of this JOURNAL on February 17th, 1900; mercurol, nargol, and ferrinol were also shown, the latter being a chemical compound of iron with nucleinic acid soluble in warm water and not precipitated by the ordinary iron reagents. A large number of sera and antitoxins were included in the exhibit, as well as antiseptics and a comprehensive line of chocolate-coated tablets; also medicinal elixirs and syrups, the latter including a solution of nuclein. Among digestive products they showed several preparations of "pepsin aseptic," a report upon which appeared in the JOURNAL of July 24th, 1897, and taka-diastase, which received a notice at the same time.

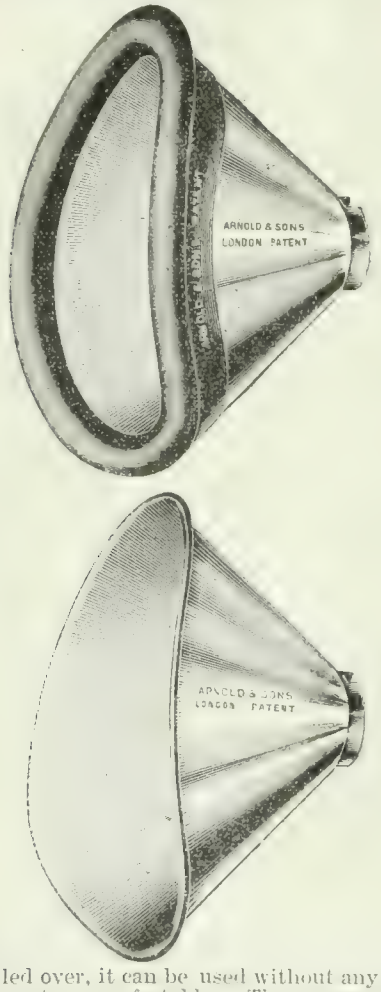
The CHARLES H. PHILLIPS CHEMICAL COMPANY (14, Henrietta Street, Covent Garden) showed Phillips's "milk of magnesia," a hydrated oxide of magnesium, each fluid ounce, it is stated, representing 24 gr. of magnesium hydrate.

WYLEYS, Limited (Coventry) showed their compound glycero-phosphates, ichthyol and glycerine pessaries, cachets of various combinations of drugs, medicated pastils, ointments in flexible tubes for ordinary and ophthalmic purposes, hypodermic syringes and pellets, pink and

white dusting powders, and their "sapolette powder," which was noticed in our columns on December 2nd, 1899. Besides these they had on view a large number of other preparations, such as antiseptic jellies and pellets, emulsions of cod-liver oil and petroleum, standardized tinctures, and liquid extracts.

MEDICAL AND SURGICAL APPLIANCES.

Messrs. ARNOLD AND SONS (West Smithfield, London) displayed several novelties, among others Doyen's raspatories for naso-pharyngeal polypi, and Doyen's forceps for cutting the lower turbinates and polypi in remote parts of the nasal cavity. Also an improved aseptic facepiece for use with any kind of anaesthetic apparatus. It is fitted with a glycerine cushion, but as the metal of which the facepiece is made has



its edges rolled over, it can be used without any pad, and fits well and is not uncomfortable. The screw collar usually supplied with facepieces is dispensed with, and since it is made of metal it is naturally capable of being boiled without damage. It is made in three sizes, and is applicable to forms of anaesthetic apparatus, whether intended for use with either gas or ether.

Mr. N. BLETCHLY (89, Northgate Street, Gloucester) exhibited various forms of boots for deformities of the feet.

DOWN BROTHERS' exhibit comprised a large assortment of surgical instruments, including their new patent noiseless surgical hand motor fitted with ovoid, cutting and smoothing burs for mastoid surgery, circular saws, and bone drills. The instrument is portable, and works with so little friction that practically no difference can be detected when the burs are at work. Other instruments were a craniectome with triangular cutter and guard for the dura mater, designed by Mr. Robinson, of Huddersfield, Cryer's osteotome, and Van Arsdale's saws. These saws are concavo-convex, and made to cut in circles of 2½ in. and 3 in. diameter; it is possible so to combine two or more sections of a circle as to cut out almost any required area of bone. The suture segregator designed by Dr. Rubel, of Baltimore, is said to possess several advantages; it keeps the ends of each ligature together and yet separate from each other, and retains them in their proper order, so that they can be picked up one at a time and tied. Mr. Makins's large spring vulsellum forceps is designed to seize the breast during removal instead of employing the hands of an assistant. Mr. Cuthbert Wallace's bolt and nut is a new mechanical device for the treatment of ununited fractures, and the aluminium sheet and tacks used by Mr. Watson Cheyne for a similar purpose were also shown. Tansini's instruments for hernia consist of two retractors, one for the spermatic cord and the other for the aponeurosis of the oblique muscle, with weighted handle to dispense with the assistant's hands. Among other instruments of interest were various forms of urine segregators. In one, Harris's, the bladder is divided into two separate pouches by means of a narrow blunt instrument passed into the rectum or vagina, and the urine from each ureter collected by means of a special double-way catheter; another was Luys's, in which a thin rubber diaphragm unfolds itself from the end of a double-way catheter and is drawn across the bladder, and the urine collected as before described. Their aseptic furniture included the "Paris Exhibition Model" (Grand Prix) operation table, with several recent patented improvements. It is made of pure white metal throughout, and can be raised and lowered to suit the heights of different operators and the position of the patient. It is, of course, useful to be able to raise the table during a prolonged operation, such as one requiring delicate suturing, and equally useful to be able to lower it when the patient is in the Trendelenburg position. The table is, further, so built that it can be equably warmed throughout, while there is a douching shoot draining into a pail underneath for vaginal and rectal operations. Addenda to the operation table are a new surgeon's stool and wash-hand basin. Other models of operation tables were the "swing" pattern with quadrant bar, and Mr. Jordan Lloyd's portable operation table, which is stowed away in a brown canvas cover, a Trendelenburg frame being supplied with it when desired. Messrs. Down Brothers also showed several different forms of bedside lockers made of enamelled metal throughout. One ingenious variety was provided with a cage for the patient's clothes; the cage could be removed and sterilized bodily with the clothes, and brought back into the ward when required and slid into its place in the locker; these lockers, and also a ward wash-hand basin with a new form of tap, have been supplied to the new Victoria Hospital, Belfast; the wash-hand basin is intended to be wheeled from bed to bed, so that the surgeon may treat his hands antiseptically for each case, the idea being to cleanse the hands in a flowing stream. Messrs. Down Brothers also showed models of portable sterilizers for use in surgeons' bags, and a high-pressure dressing sterilizer, for use with ordinary gas supply or in connexion with a steam pipe.

The HOLBORN SURGICAL INSTRUMENT CO. (26, Thavies Inn, Holborn Circus, E.C.) had upon view a large selection of artery forceps, bone instruments, aspirators, ear, mouth, and throat instruments, obstetric forceps, and various instruments for the treatment of hernia.

Messrs. MAYER AND MELTZER exhibited a selection of their aseptic furniture, including an operation table (Fig. 1) made to the design of Professor Spencer for the gynaecological operation theatre of the University College Hospital. This table can rapidly be placed in the Trendelenburg position by means of the screw gear, and fixed by the side screw. It is made entirely in bronze, and will, it is stated, preserve its appearance better than enamel, which gets chipped and shabby in use. The same firm showed electric examination lamps, with which they fitted the new out-patient department of the London Hospital. These lamps are useful to the throat specialist or general surgeon, and the lens being thrown out of action they can be used for ophthalmic work also. The lantern can be turned in any direction, or lifted out of its socket for use as a hand lamp. It throws a clear disc of light without any image of the filament. The lamp (Fig. 2) is supplied with floor standard, table standard, or wall bracket; also attached to table as shown in the illustration. Amongst other exhibits was a wide-bore regulating ether inhaler, designed by Dr. Probyn Williams. The advantage claimed for it is that the patient remains of a better colour throughout the operation, secretes less saliva, and suffers less afterwards. A new form of chloroform drop bottle, designed by Dr. Hewitt, was shown. It allows the chloroform to be regulated to a drop and prevents leakage when not in use. This firm also exhibited a large selection of throat, nose, and ear instruments,

and a new electric massage apparatus for the tympanum; also several forms of syringes for injection of paraffin wax, for correcting deformities of the nose as used by Mr. Stephen Paget, and some excellent models of the nose and

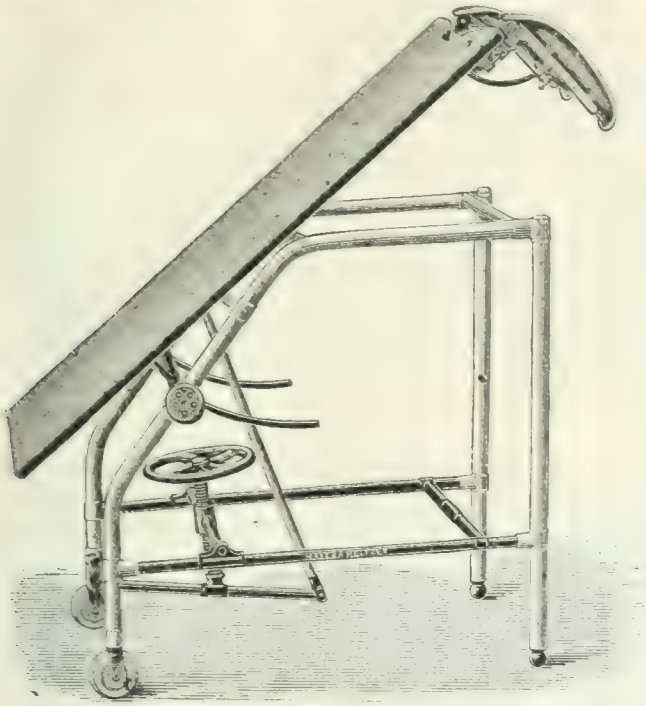


Fig. 1

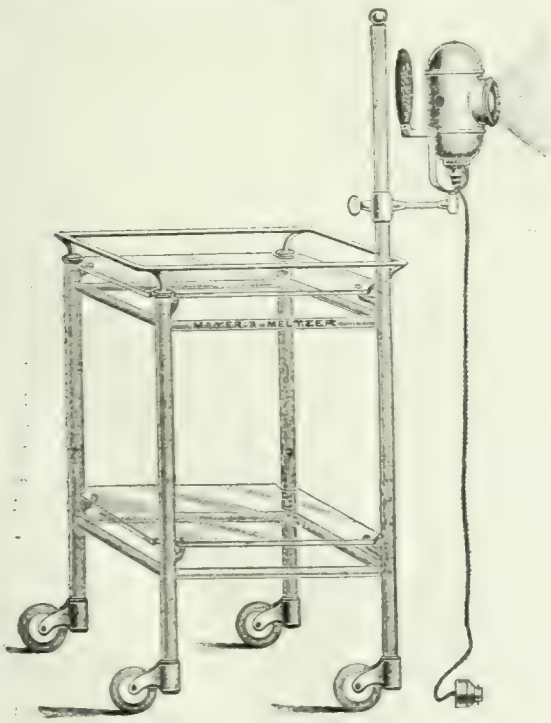


Fig. 2.

throat. In addition to the electric motor designed by Mr. Ballance for mastoid operations, they exhibited a form of hand motor designed by Mr. Hugh E. Jones, of Liverpool. This machine is capable of developing a speed of 1,800 revolutions a minute, without undue exertion on the part of the assistant, and weighs complete in its case 47 lb.

The O'Connor Extension Company (2, Bloomsbury Street, London, W.C.), showed a number of appliances for the lame, and among others Gunthorpe's patent appliances for various forms of talipes, as well as a patent arch support, all of which were noticed in the British Medical Journal of August 16th, 1902. The patent "Extension," which bears their name, was also shown, as well as the O'Connor "Patent Surgical Boot" and a double lacing boot. The latter opens back and front, and is intended for use in cases of paralysis and gout. They also exhibited a new system of boot fitting, intended to meet the requirements laid down in Walsham's *Deformities of the Human Foot*.

Mr. G. H. Zeal (82, Turnmill Street, London, E.C.) had on exhibition a large assortment of clinical thermometers.

Electrical Appliances.

Messrs. Harry W. Cox, Limited, 9, 10, and 11, Cursitor Street, London, W.C., exhibited one of their hospital and *x*-ray coils, and also one of their portable coils fitted with a slide for taking stereoscopic radiographs, which was demonstrated by Mr. Cox the inventor. Among the numerous apparatus shown was a high-frequency apparatus worked from the *x*-ray coil; also a new ultra-violet lamp known as the Kent Cox.

The Dowsing Radiant Heat Company (24, Budge Row, London, E.C.) showed their heat and light lamp apparatus, which depends upon electricity and is intended for the application of high temperatures to rheumatic, neuralgic, and other conditions of like character. The same company showed a Scholder arthromotor, an ingenious apparatus for enforcing passive or active movements. The passive movements, which can be regulated both as to force and rapidity, are communicated by machinery driven by an electric motor. The active movements are made against a pendulum weight which can be adjusted.

The Sanitas Electrical Company, Limited (7A, Soho Square), had upon view electric light baths of various kinds, arranged with incandescent and arc lamps and a projector for additional illumination from outside of diseased parts of the body without the patient being compelled to leave the bath; they also showed vibrators for massage, static machines, and an apparatus for Swedish movements.

Foods.

The Aylesbury Dairy Company (St. Petersburgh Place, Bayswater) showed No. 1 and 2 humanized milk, of which the first is prepared with an amount of proteid suitable for infants of delicate digestion, as well as those under 3 months, while No. 2 has the full percentage of albuminoids. They also showed a whey specially prepared for anaemic patients, "koumiss," and "kephir," a corresponding product, but by many people preferred as more palatable.

The Bayer Company (20, Booth Street, Manchester) showed their "somatose" and various preparations thereof.

Billon's Ovo Lecithin Depot (16, Water Lane, London, E.C.) showed a preparation which is stated to be a pure distaero-glycerophosphate of choline made from the yolk of egg only. The indications for its use are said to be neurasthenia and various forms of deficient nutrition. It can be administered in pills, as a confection for children, or by intramuscular injection.

Bovril, Limited (152, 166, Old Street, London, E.C.) showed their concentrated foods, lozenges, stanoids, essences and various "rations," all of which are well known.

Messrs. Brand and Co. (11, Little Stanhope Street, Mayfair, W.) showed various specialities for invalids and household use, including concentrated beef teas, digestive meat biscuits, invalid mock turtle, savoury meat lozenges and "Brand's Fever Food," composed of essence of beef, cream, and yolks of eggs. It is a jelly specially intended for travellers and settlers in tropical climates where fever is common. Other exhibits shown by them were nutrient powder and beef tea tabules, notices of which have appeared in our columns.

The British Somatose Company (165, Queen Victoria Street, E.C.) exhibited several preparations of somatose including "iron somatose" and "milk somatose"; also a new liquid preparation called "liquid somatose" which is stated to contain 80 per cent. of albumen converted into albumoses. It is a brown fluid with a pleasant meaty flavour; it is sterilized and can be left open for several days without appreciable change.

Messrs. Cadbury Bros. (Bourneville, Birmingham) showed various preparations of cocoa.

Messrs. Callard and Co. (65, Regent Street, London, W.) showed several new foods for diabetes and obesity, including breads, biscuits, and sugarless "marmalades," chocolates and

fruit. Reports on some of these preparations appeared in the BRITISH MEDICAL JOURNAL of November 22nd, 1902. They are guaranteed by the manufacturers to be free from starch and sugar.

Messrs. COSENZA AND CO. (95, Wigmore Street, London, W.) showed Maggi's consomme, a solidified clear soup in an air-tight capsule, Maggi's tonic bouillon, as well as other meat essences.

Messrs. KEEN, ROBINSON AND CO., Limited (Garlick Hill, E.C.), showed their "patent groats" for making gruel for invalids and children; as well as their "patent barley" for the preparation of barley water as a diluent for cow's milk when designed for administration to hand-reared babies.

LIEBIG'S EXTRACT OF MEAT CO. (4, Lloyd's Avenue, London, E.C.) exhibited Oxo, stated to be a fluid extract of beef plus fibrin; also Lemco which is the new name of this Company's original extract of beef. "Fray Bentos ox tongues" and a number of other preserved foods were also shown.

MALTOVA, Limited (London) showed their preparation, which, as shown by the name, is a combination of eggs and malt extract.

The MARMITE FOOD EXTRACT COMPANY (40, Mincing Lane, London, E.C.) showed "marmite," which is a vegetable preparation stated to make an excellent bouillon.

MELLIN'S FOOD, Limited (Stafford Street, Peckham, S.E.) showed food, biscuits, and chocolate, the former being a soluble dry vegetable extract from wheat and barley, which is claimed to be free from starch and cane sugar. Their chocolate is stated to contain a high percentage of Mellin's food, and to constitute a food as well as a sweetmeat.

The MYOSIN ALBUMIN MEAT EXTRACT COMPANY (107, Strand, London, W.C.) showed their preparation mamesin.

HENRY NESTLÉ (48, Cannon Street, London, E.C.) showed Nestlé's Swiss milk, Nestlé's food, and Viking unsweetened milk, all of which are too well known to require description.

The SHREDDED WHEAT COMPANY (6 and 8, Eastcheap, London, E.C.) exhibited shredded whole-wheat biscuits made entirely of wheat, the irritating husk being removed in the process of manufacture, but all other constituents of the grain being left. "Triscuit" was also exhibited. This also is a preparation of shredded wheat, but without any admixture of grease, yeast, flour, or meal. It is stated that in the manufacture it is not touched at all by hand.

VAN ABBOTT AND SONS (Baden Place, Crosby Road, Borough, London, S.E.) exhibited their diabetic breads, biscuits, almond cakes, gluten and meat biscuits; also their "midolia biscuits," which are said to contain 32 per cent. of fat, 46 per cent. proteids, and no sugar, but 13 per cent. of starch. They also showed hypophosphite of lime biscuits for children, who are stated to take them willingly.

VIROL, Limited (152, Old Street, London, E.C.) showed the preparation from which the company derives its name. It is said to be an emulsion of red bone marrow, plus malt extract, eggs, lime, and lemon juice.

MINERAL WATERS.

The APOLLINARIS COMPANY, Limited (4, Stratford Place, London, W.) showed Apenta, Johannis, Johannis lithia, and Johannis potash waters, as well as the ordinary Apollinaris water.

LLANWRTYDD SPA exhibited specimens of their various medicinal waters.

CAMWAL, Limited (Camwal Works, Bristol), exhibited a method of demonstrating the purity and strength of their aërated waters. Amongst the waters shown were soda, seltzer, potash, lithia, and ginger ale, prepared both for drinking purposes and according to the medicinal strength of the *British Pharmacopoeia*, 1885, in the case of the medicated waters which are included in that *Pharmacopoeia*.

HARROGATE.—The exhibits of this northern health resort consisted of large platino-photographs of the fine baths and bathing appliances, including views of the Starbeck baths and the swimming baths. Samples of the various mineral waters found at Harrogate were also shown.

LEAMINGTON SPA. The authorities of this health resort sent a number of photographs, illustrations, and other literary matter with regard to the parks, gardens, pump-rooms, and bathing establishments in that place.

ARABELLA, Limited (2A, Hay Hill, London, W.), showed the Arabella mineral water.

Messrs. C. OPPEL AND CO. (10 and 11, Milton Street, London, E.C.) showed the natural aperient mineral water of Friedrichshall.

BOOKS AND ILLUSTRATIONS.

Messrs. E. and J. GRIFFITHS (High Street, Swansea) had a display of textbooks and works of reference published by Macmillan and Co., London.

Mr. H. K. LEWIS (136, Gower Street, London, W.C.) showed a large number of medical works, including a series of the *Cambridge Natural Science Manuals*, a large number of handbooks relating to various disorders, and a complete set of their "Practical Series," as well as the later volumes of the New Sydenham Society's publications, the issue of which is entrusted to them.

REEMAN, Limited (129, Shaftesbury Avenue), showed a very large number of publications, which included Pringle's *Pictorial Atlas of Skin Diseases*, anatomical charts of the eye, and Jennings's *Manual of Plague*; also Jacobi's *Portfolio of Dermachromes*, reproduced by a four-colour process.

Messrs. W. B. SAUNDERS (9, Henrietta Street, Covent Garden) showed about 150 publications. These included a large number of atlases in illustration of various disorders and morbid conditions, such as Grunwald and Grayson's *Atlas of Diseases of the Larynx*, and Schaffer and Edgar's *Atlas of Labour and Operative Obstetrics*.

Mr. A. R. WAY (Swansea) showed a number of well-known books published by Messrs. Cassell.

MISCELLANEOUS.

The BAYER COMPANY (20, Booth Street, Manchester), had upon view a large number of photographic products, including edinol, a universal developer, and also a new intensifier. They also showed a flash light described as "safe," and a red varnish for backing plates.

Messrs. BROOMFIELD AND CO. (83, Upper Thames Street, E.C.), showed "albene," a refined vegetable fat suitable for cooking and baking purposes, which was reported on in the JOURNAL of October 23rd, 1897. It is free from water, salt, or any admixture, and 13 oz. of it are stated to be equal to 16 oz. of butter or lard. It can also be used as a basis for ointments.

Messrs. J. DEFRIES AND SON (146 and 147, Houndsditch, E.C.), showed an improved Equifex saturated steam disinfector, in which it is impossible for the air exhaust valve to be closed until all air is ejected from the disinfector. They also also showed Pakes's and Barnes's milk purifier, and Major Cummins's sterilizer for excreta on active service. Another exhibit was Dr. Scurfield's ventilation indicator, which shows automatically the percentage of carbonic acid in the air of a room. The Equifex odourless tank wagon for clearing cesspools and gulleys without causing offence was also exhibited, as well as various forms of the Pasteur-Chamberland filters.

Messrs. FELTOE, SMITH (25, Augustus Street, Regent's Park, N.W.) showed their "specialite lime juice cordial" and "specialite lemon squash," also lemon squash crystals.

Messrs. GEORGE GALE AND SONS, Limited (Dominion Works, Birmingham) showed Lawson Tait spring bedsteads designed for ordinary hospital use, military purposes, and asylums. Some of them were fitted with movable curtain arms and detachable mosquito frames for use in hot climates.

JEYES' SANITARY COMPOUNDS COMPANY (64, Cannon Street, London, E.C.) showed a variety of disinfectants, such as "Jeyes' fluid," creolin, lano-creolin, dusting powder, and creolin palatinoids for internal use.

Messrs. JOHN LEGG AND SONS (Swansea) showed among other exhibits the Astro swing radiator specially designed for hospitals infirmaries, and similar institutions.

The LIVERPOOL LINT COMPANY (Mark Street Mills, Liverpool) exhibited a large number of cotton-wool absorbent tissues and protective lints; and "impermiette" bed-sheeting, which may be washed with boiling soap and water, and may be used, it is claimed, for long periods in hot climates without deterioration; it is not injured by chloroform, 5 per cent. carbolic acid, or ammonia; it is suggested as a substitute for jaconette.

The LONGFORD WIRE COMPANY (Warrington) had a display of their various bedsteads with wire mattresses.

Messrs. MCDOUGALL (68, Port Street, Manchester) showed their disinfectants in the form of powders, fluids, and soaps, as well as their speciality "kudo bacteria powder" and "kudo bacteria soap."

NEWTON CHAMBERS AND CO., Limited (Thorncliffe, near Sheffield) had upon view various preparations of izal, including ordinary izal, izal powder, izal soap, and a special form of izal for medical and surgical purposes, as well as lint, wool, and gauze saturated with the same preparation.

The Pure Enamel Bath Company, Limited (Imperial Works, Bromley-by-Bow, London, E.), exhibited baths and other appliances for medical and domestic use, and for sinks, urinals, or vessels liable to contain corrosive fluids. The glaze is hard, of a good smooth surface, and is said to stand all ordinary usage well.

Alexander Riddle and Co. (36 and 38, Commercial Street, London) showed their preparations of lime juice and lemon squash.

Ronuk Limited (83, Upper Thames Street), had on view a number of their sanitary polishes for the wood flooring and other fittings of hospitals and allied institutions.

The Sanitary Wood Wool Co. (26, Thavies Inn, Holborn Circus, E.C.), showed a number of preparations of Hartmann's wood-wool wadding, including sheets, towelettes, and ordinary dressings; also antiseptic sponges, vaccination pads, and infant's napkins.

Messrs. Scott and Bowne (Stonecutter Street, London, E.C.) exhibited their emulsion consisting of cod-liver oil, hypophosphites of lime and soda, and glycerine.

Messrs. Slack and Brownlow (Abbey Hey, Gorton, Manchester), showed "the Brownlow germ filter," made for use both with high and low pressure water systems.

Messrs. Smith and Wade (20, Baker Street, London, W.) exhibited a mica plate static machine, a multinebulizer, physicians' cabinets, and a portable thermo-light.

THE PATHOLOGICAL MUSEUM.

The Pathological Museum consisted of a collection of macroscopic and microscopic specimens, radiographs, and photographs, which reflected great credit on the Museum Committee and the contributors.

Section A consisted of the macroscopic specimens. Diseases of the heart and blood vessels were first illustrated; of more than ordinary interest were specimens showing syphilitic fibrosis of the heart, an arterio-venous aneurysm of the aorta and superior vena cava, and two specimens of cured popliteal aneurysm. Dr. Poynton and Dr. Paine showed a series of specimens of experimental endocarditis and osteo-arthritis, which was perhaps the most important exhibit in the collection. Experimental, simple, and vegetative endocarditis in the rabbit's heart was seen in five specimens, the result of inoculation of the diplococcus described by the exhibitors. Two specimens showed experimental arthritis: the one animal was injected with a diplococcus obtained from the knee-joint of a man suffering from chronic rheumatic arthritis, and developed an osteo-arthritis of the knee which was shown: the other was injected with a diplococcus obtained from a case of rheumatic fever, and arthritis of the shoulder was seen. Diseases of the respiratory system were represented by specimens of perichondritis of the larynx, sarcoma of the lung, and others of interest. Diseases of the digestive system were well represented; among the specimens were particularly to be noted, a large hairball from the stomach shown by Mr. Morton, two specimens of acute intestinal obstruction caused by a Meckel's diverticulum shown by Mr. W. Sheen, a portion of small intestine showing atrophy from sprue by Dr. Bassett-Smith, of Haslar, and a liver showing monolobular cirrhosis with haemosiderin pigmentation by Dr. George Parker. Various morbid conditions of the spleen were shown, among them a spleen removed by operation from a patient with splenic anaemia shown by Dr. R. Salusbury Trevor, death occurring from haematemesis. The genito-urinary system was numerously represented; amongst the most interesting exhibits were a collection of renal calculi removed by Mr. W. F. Brook, a kidney showing multiple anaemic infarcts, from a boy with congenital syphilis, and prostatic adenomata removed by Mr. Elsworth and Mr. Brook. Among the miscellaneous exhibits was a piece of pom-pom shell removed from the chest at the level of the second rib by Mr. Elsworth.

In the Eye Diseases Section was a very beautiful collection, shown by Mr. Henry Juler, of gliomata retinae and sarcomata of the choroid. Mr. Juler's exhibit included also very fine specimens illustrating glaucoma and other conditions. Mr. Frank G. Thomas (Swansea) also showed a similar collection illustrating a variety of conditions; the specimens were beautifully mounted and preserved.

Section B included the microscopic exhibits, on the whole rather disappointingly small in number. Staff Surgeon Bassett-Smith, of Haslar Hospital, showed some highly interesting blood films of sprue and a collection of mounted mosquitos. Dr. Michell Clarke showed sections of the liver and spleen from a case of Banti's disease, and specimens from diphtherial paralysis and alcoholic neuritis. Dr. Poynton and Dr. Paine illustrated microscopically the relation of the specific diplococcus to rheumatic diseases in mitral valve sections, sections through the cardiac wall, the tonsil, a rheumatic nodule, etc., in all of which the organism was seen.

Section C—radiographs, photographs, and drawings—was undoubtedly the feature of the museum. Mr. Noble Smith showed radiographs of a variety of bone and joint lesions; a large number of valuable drawings from the Polyclinic Museum illustrated various rare eruptions, deformities, new growths, and other conditions, among which a coloured photograph of a case of chloroma and portraits of framboesial syphilis were of particular interest. Dr. David Morgan's exhibit of radiographs of a number of Mr. Robert Jones's cases was remarkable; of much value were those of congenital hip displacement showing the results of rectification, and a study of these showed the excellent results anatomically which were obtainable by Mr. Robert Jones's procedure.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

A RARE CASE OF DISLOCATION OF THE HUMERUS (LUXATIO ERECTA).

I observed the patient, a man of middle age, well knit and muscular, walking towards the hospital holding his right arm straight up, with the forearm flexed at right angles and resting upon the head. His face had a pained and puzzled look, and altogether he presented a peculiar appearance, such as I had never before seen.

He presently explained what had happened. He had been riding a young, lively horse on a road beside the railway. Hearing a train coming he had jumped off and held the reins in his right hand. When opposite him the engine whistled, which frightened the horse and caused it to rear up suddenly, thus jerking the man off his feet, and pulling him along the ground as he still kept hold of the reins. After the train had passed and the horse had quieted down the patient rose to his feet, but found he could not bring his arm down to his side without excruciating pain. He therefore held it above his head, led the horse home, holding the reins with his left hand, and then came on to the hospital as described.

The diagnosis of dislocation of the humerus upwards (luxatio erecta) was easily made. Upon measuring from the point of the acromion to the condyle of the humerus on either side I found an increase in length of ½ in. on the injured side, the lengths being 12½ in. and 12 in. respectively. Knowing that such a condition would constitute an exception in the whole realm of dislocations, I made many measurements, and, further, asked the wardsman to apply the tape independently, with the result of confirming this unusual condition of things.

I tried to reduce the dislocation without chloroform, but the pain caused thereby was too great. An anaesthetic was therefore given, and reduction easily followed.

The rarity of this injury, the clear account of its occurrence, and the observation of lengthening in a dislocation are my excuses for publishing an otherwise trifling case.

Geraldton Hospital, N.Q. T. F. Macdonald, M.B., C.M., etc.

ACUTE RHEUMATISM: THREE CASES OF APPARENTLY DIRECT INFECTION.

1. Early in March a patient of mine living in Nantwich asked his brother, who was recovering from an attack of acute rheumatism contracted and treated in a neighbouring town, to come to Nantwich and stay with him for some weeks. About a week after his arrival, my patient (J. T., aged 36) began to feel ill, had slight tonsillitis, followed by an affection of his legs, which appeared to me to be erythema nodosum, and a few days later developed a typical attack of acute rheumatism, which ran an ordinary course. I may say that the brother when he came down here had still remaining excessive perspiration and some stiffness of the joints, and presumably still had some of the rheumatic poison in his system.

2. A fortnight ago I was called to see a patient (aged 22) in a village a few miles away, and found him to be suffering from typical acute rheumatism. I also found at the same time

that his sister was in bed with pains in her joints, and on examination I noted that she had marked rheumatic swelling of both ankles and one knee, and a temperature of 102.5 F. She has since developed endocarditis. The history I obtained was as follows: The brother is a railway porter, and lives in one of the smaller Staffordshire towns. A fortnight before I saw him he was attacked when in Staffordshire with acute rheumatism, and sent for his sister (M. J.) to nurse him. Exactly a week after her arrival she began to feel ill, had slight sore throat, and two days later had pain in her ankles. She and her brother then decided to get to their home as quickly as possible, and there on their arrival I saw them.

3. On June 19th, 1903, I was called to see a young man (aged 19), a grocer's assistant, living in lodgings in Nantwich. I found him to be suffering from a very marked attack of acute rheumatism which has since been complicated with pneumonia. His aunt, who lives in London, came down to help to nurse him. Three days after her arrival she complained to me of her legs causing her pain. On examination I found over the front of the lower part of her legs an urticarial eruption, and on taking her temperature I found it to be 101.5° F. On the next day her ankles were much swollen and acutely tender, and her temperature was 102° F. She has since developed an ordinary attack of acute rheumatism, which has improved greatly under salicylates.

I should be glad to know whether other members of the profession have come across similar cases of apparent infection. The first case I thought to be purely a coincidence; but the occurrence of two other cases so shortly afterwards has made me think that there is strong prima facie evidence that the disease was directly conveyed from one patient to another.

Nantwich. R. T. TURNER, M.D., Ch.B.Vict.

CRESCENTIC BODIES AND "MONONUCLEAR" LEUCOCYTOSIS IN BLACKWATER FEVER.

SEVERAL observers[1] have recorded the association of blackwater fever and the malarial parasite. On March 4th, 1903, I examined the blood of a patient, male, aged 35 years, under the care of Mr. W. C. Hamilton, convalescent from blackwater fever, who had been on the West Coast of Africa since the beginning of 1902. He had a short attack of "malaria" in February, 1902, and an attack of "fever" in February, 1903. He had taken, in all, a few hundred grains of quinine. On February 20th, 1903, on his homeward voyage, blackwater fever developed, with urine like treacle, which became solid on boiling.

On March 4th a blood examination showed a few crescentic bodies, and the following constitution:

Red Cells per Cubic Millimetre.	Haemoglobin Per Cent.	Leucocytes per Cubic Millimetre.	Large Mononuclear Cells.	Large Lymphocytes.	Lymphocytes.	Transitionals.	Polymorphonuclear Cells.	Eosinophiles.
2,420,000	30	25,591	9.9	11.7	9.9	1.0	64.6	2.7
			21.6					
			11.1	15.4	20.8	0.5	49.5	2.4
			26.5					

Index, 0.6. Mast cells, 0. White to red as 1 to 94.

On March 17th the patient had a sharp attack of "malaria." He was not taking quinine at the time, and on administration of 5-gr. doses of the sulphate no haemoglobinuria occurred.

In view of the uncertain origin of this disease, it is of interest to note:

1. The proof of malignant malarial infection.

2. The deficient specific treatment with quinine of the infection when contracted.

3. The absence of any history of dosage with quinine as a factor in the cause of the onset of haemoglobinuria.

It appears that other agencies, for example, physical ones, as sudden alteration of temperature, etc., may well be credited with a share in precipitating its onset.

Recently the statement has been made that, in a blood count, 12 per cent. is a limit above which a large "mononuclear" percentage is diagnostic[2] or strong presumptive evidence[3] of malaria.

I believe that the microscopical distinction between large mononuclear cells and large lymphocytes by routine methods of staining is arbitrary; but, allowing that it is practicable, I may say that the suggested diagnostic value is not borne out in a series of 34 blood examinations in various diseases, as malaria (32.5 per cent.), lymphadenoma (17.3 per cent.), sarcoma of scapula (12.5 per cent.), sarcoma of testes, leukaemia, that I have recently made. It also occurs in trypanosomiasis.[4]

F. BUSHNELL,
Pathologist, South Devon and East Cornwall Hospital, and Public Dispensary, Plymouth.

[1] Allbutt's *System of Medicine*, vol. ii, pp. 745-6.

TREATMENT OF BRACHIAL NEURALGIA.

IN several cases of brachial neuralgia very similar to those described by Dr. Simon in his recent article, I have obtained good results by the local application of the positive electrode of a constant current battery.

One of these cases was of definitely traumatic origin, following a fall from a horse. The injury was on the right side, and wasting of the biceps in particular was very marked. There was also, as in one of Dr. Simon's cases, tingling pain in the course of the ulnar nerve. Electrical stimulation very soon restored the wasted muscles to their normal bulk and enabled the patient to move the arm with comparative ease. The pain proved more lasting, shifting from point to point, but was always relieved for a time after treatment. I have seen one case of what certainly appeared to be a brachial neuritis of rheumatic origin. In this case also there was considerable muscular atrophy and intense pain which had resisted all ordinary treatment. Improvement under the electrical treatment was surprisingly rapid, and permanent.

In both cases the larger (negative) electrode was applied near the upper dorsal vertebrae, while the smaller (positive) one was moved over the painful parts of the shoulder and arm. The current was of just sufficient strength to cause a slight deflection (one or two milliampères) of the needle of a galvanometer, while passing through the limb.

Rest is, no doubt, the chief indication, but there can be no reasonable doubt that mild electrical stimulation may shorten the period of recovery.

Bath. CHARLES J. WHITBY, B.A., M.D.Cantab.

PRELIMINARY NOTE ON THE APPLICATION OF THE CINEMATOGRAPH PRINCIPLE TO THE STUDY OF SERIAL SECTIONS.

AN interesting comparison can be drawn between the pictures on a cinematograph film and a series of sections in a paraffin ribbon. Each picture on the film presents a general resemblance to its neighbours, though differing from them in minute details. The result is a moving picture. In the paraffin ribbon the series presents similar likenesses and differences. What will be the effect of viewing them on the cinematographic principle?

To answer this question I have recently mounted on a clear celluloid film 25 ft. long 700 serial sections from the head and neck of a chick embryo six days old, and the result is extremely interesting and curious, for the impression produced is that of travelling through the embryo. The eye, for instance, appears first as a dot; this changes to a ring, the ring enlarges, then near the periphery another dot appears. This is the lens; it gets larger, takes on its proper shape, then diminishes and fades away; the ring gets smaller, and the eye finally disappears as a dot. The method of mounting is as follows:

The tissue is fixed, stained, and embedded in paraffin in the usual way, and a paraffin ribbon formed in a microtome. As the celluloid film is stainable, and as the subsequent proceedings are rendered easier, the tissue has been stained in bulk.

The "ribbon" is then floated directly on to warm water and stuck on to the celluloid film by means of an albuminate fixative. At first the larger films were tried, in which the pictures are three-quarters of an inch apart, but these have been discarded in favour of the smaller three-eighths of an inch. Now it follows that if the paraffin block from which the sections are cut is exactly three-eighths of an inch wide and has its sides perfectly parallel, then the resulting ribbon will be straight and have its sections exactly three-eighths of an inch apart. Practically they never quite float out to this size unless the water is too hot, consequently the block is cut a shade larger than three-eighths of an inch.

[2] BRITISH MEDICAL JOURNAL, March 28th, 1903, p. 725.
[3] Ibid., September 27th, 1902, p. 965.
[4] Ibid, May 30th, 1903.

Having, therefore, properly indexed the sections, the whole film is dried on a barrel—a cheese box serves the purpose very well—and then the paraffin is dissolved in xylol and the sections fixed on the film by means of a varnish.

Covering is out of the question, and Canada balsam cracks when it is rolled. I have used a French oil varnish which dries perfectly flexile, but is just a little "tacky" and apt to stick. In future better results will be obtained with a gelatine cover. Oil of cloves cannot be used as it destroys the celluloid film.

When thoroughly dry, the film is rolled up and placed in the cinematographic apparatus. Then the sections are projected on the screen by means of the camera, or the working portion of the cinematographic camera is placed on the stage of a microscopic projection apparatus, or even on the stage of an ordinary microscope. Electric illuminations must be used for projections.

The greater the care taken in "indexing" the separate units, the less will be the flicker and the higher the magnification employed. The advantages claimed by this method are:

1. The ease with which a series of sections can be demonstrated to an audience.
2. The unique impression of continuity.

Robert E. Kelly, B.Sc., M.B.Vict.,
Robert Gee Fellow in Anatomy, University College, Liverpool.

REPORTS

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

POPLAR HOSPITAL FOR ACCIDENTS, BLACKWALL, E.

CASE OF HEPATO-BRONCHO-BILIARY FISTULA DUE TO IMPACTED GALL STONES: CHOLEDOCHOTOMY: RELIEF OF SYMPTOMS.

(Under the care of Lewis Smith, M.D.Lond., M.R.C.P., Physician; and Hugh M. Rigby, M.S.Lond., F.R.C.S., Surgeon to the Hospital.)

As there are but few recorded cases of this form of biliary fistula, and because the relief by operation in the following case was so immediate and striking, it seems worthy of publication.

History.—A female patient, aged 50, was admitted into the Poplar Hospital on December 14th, 1902, with the following history:

She had been an in-patient in the Radcliffe Infirmary, Oxford, eighteen months ago, owing to a severe illness which lasted for six weeks. The symptoms, which were acute for the first week after admission, were those of cholangitis, due probably to gall stones, jaundice, pyrexia, and pain in the right hypochondriac region being present. The acute symptoms gradually subsided, and no operative treatment was carried out.

Since leaving the Radcliffe Infirmary she had been in fair health, but from time to time had had attacks of abdominal pain; these occurred usually after food, generally lasted an hour or two, came on suddenly, and went as suddenly. She had noticed that her skin was yellowish on several occasions, but never deeply jaundiced. She had noticed nothing abnormal about her urine or faeces. Her family history contained nothing of special importance. The present illness came on gradually.

For the last three months she had been troubled with pain in the back and right shoulder, not sufficiently severe to prevent her doing her ordinary work. The pain had no special relation to food.

About ten days before admission she had a severe fit of coughing, which resulted in the expectoration of some green fluid with a very bitter taste; since that time she had been troubled with a persistently distressing cough and expectoration of similar fluid. She had kept in bed and lived on milk diet for the last ten days. She thought she had wasted a good deal.

Condition on Admission.—A fairly well-nourished woman looking somewhat prematurely aged. The colour of the face appears normal, but the conjunctivae are a little yellow. The tongue is red and clean. She is not in pain, but complains greatly of cough, which is frequent and distressing. After each fit of coughing she brings up, with but little effort, a drachm or two of dark green frothy fluid expectoration, which she says has a bitter unpleasant taste. She cannot lie down at all owing to this constant desire to cough. There is no pyrexia.

The lungs on examination show well-marked signs of emphysema as evidenced by hyper-resonance with prolonged expiration, rhonchi and *rôles* are audible on both sides. The heart sounds are clear, and the apex beat is heard in the normal position.

The abdomen is flaccid, but examination in the recumbent posture is difficult owing to the incessant desire to cough. The liver can be felt below the costal margin for about two fingerbreadths, and on percussion dullness corresponds with this. There is no increase of liver dullness in an upward direction. Some tenderness is evinced on palpation over its anterior margin and in the gall bladder region, but this is slight and nothing resembling an enlarged gall bladder can be felt. No rub can be felt over the liver region. The rest of the abdomen both to percussion and palpation appears normal.

The sputum was carefully examined, and gave the characteristic reactions for bile, which appeared to be present in considerable quantities.

The urine was normal, and contained no evidence of bile. The stools were normal in colour and consistency.

Progress.—For three weeks after admission to the hospital her condition remained practically unchanged. The amount of expectoration measured daily was found to vary from 20 oz. to 30 oz.; its character was unaltered.

On January 5th, 1903, she began to complain of increased pain in the right hypochondriac region, and it was found on palpation over the liver that local tenderness was more marked. The physical signs in the chest were unaltered.

Nothing further developed until January 17th, when for the first time the stools were found to be pale in colour, but not definitely clay-coloured. The urine was also found to contain a slight trace of bile.

On January 21st the stools were found to be clay-coloured. On January 24th the note was as follows: "Her condition remains mainly unchanged; she is not losing ground, but the cough remains nearly constant, and very trying, while the expectoration of frothy greenish fluid containing much bile persists. The examination of the lungs still shows emphysema, with the signs of bronchitis. There is no area of dullness, nor alteration of breath sounds in the right lower lobe. The liver dullness is not increased in an upward direction. The heart sounds are clear. The cough is much worse when she lies down and she says that when she lies on her left side she coughs up much more fluid. There is some definite tenderness on palpation under the right costal margin. The gall bladder cannot be felt."

January 28th. Slight pyrexia to 100.4° this morning, but there are no altered physical signs to account for it. The epigastric tenderness is less marked. The lung signs are unchanged. The stools are still pale in colour.

February 4th. The general condition is slightly improved, the epigastric tenderness is practically absent. The stools are only somewhat paler than normal. The urine contains no bile. The skin is slightly yellow, but there is a definite icteric tinge in the conjunctivae. The skin is noticeably dry. The amount of sputum containing bile remains unchanged, varying from 20 to 30 oz. per diem, and the cough is still persistent.

February 7th. There is a return of epigastric tenderness to-day, and the stools are quite clay-coloured.

Diagnosis.—The physical signs and symptoms of the case pointed clearly to the fact that a biliary fistula had been established between the liver, lung (probably the right), and bronchus. That this was due to the giving way of the wall of an old liver abscess caused by her first illness at the Radcliffe Infirmary was more than probable. In view of the fact that since her admission into the Poplar Hospital, she had shown signs of some obstruction to the flow of bile through the common duct as evidenced by clay-coloured stools, slight jaundice, and epigastric pain, it was decided that an exploratory operation with a view to relieve this obstruction was clearly justified. It was decided therefore, after consultation, to transfer her to the surgical ward.

Operation.—On February 17th, the patient was anaesthetised with A.C.E. mixture, and the following operation performed by Mr. Hugh Rigby. A sandbag was first placed transversely beneath the lower dorsal region. An incision was then made in the upper part of the right linea semilunaris three and a-half inches in length. The liver came into view on opening the peritoneum. It was enlarged downwards, its edge extended one inch and a half below the costal margin, it appeared congested, and its anterior border was rounded.

The fundus of the gall bladder was seen, but the body of this viscus was concealed from view by the hepatic flexure of the colon, which was adherent to it, and to the inferior surface of the liver. The adhesions were carefully separated; the colon was found to be firmly fixed at one point to the liver to the right of the gall bladder. In separating this the wall of the gut was slightly torn; the opening was immediately closed by two Lembert sutures of silk. The gall bladder, cystic, and common bile ducts were then exposed. The gall bladder was found to be empty, contracted, and its walls thickened and fibrous. The cystic duct was slightly dilated. The common duct was distended to about the size of one's forefinger. Some calculi were felt low down in the common duct behind the head of the pancreas.

An incision 1 in. in length was made in the common bile duct above the first part of the duodenum. A good deal of dark bile escaped, which was quickly sponged away. By means of a finger and thumb the calculi were squeezed up from behind the pancreas and first part of the duodenum, and made to present in the wound in the duct, and were then extracted without difficulty. There were two calculi present. After their extraction a probe could be easily passed down into the duodenum. The opening in the common bile duct was then closed by two rows of sutures, one for cut edges of the wound, and another for serous covering by Czerny-Lembert method. The gall bladder was next sutured by silk to the peritoneum of the wound in the belly wall at its upper part, and the rest of the wound closed by silkworm-gut sutures.

The fundus of the gall bladder was incised and a small drainage tube inserted, but no bile escaped at all from the gall bladder. A gauze drain was passed down to the opening in the common duct through the lower part of the abdominal wound. The calculi were facetted, dark green in colour, and evidently composed of bile pigment and cholesterin. The larger was the size of a marble, the smaller that of a hazel nut.

After-Progress.—Note on February 18th, that is, the day after operation. Patient vomited after the anæsthetic some bile-stained fluid and blood, the cough has almost entirely ceased, and she can lie on her back without much discomfort. Respirations 48, pulse 120, tongue dry. She still coughs up occasionally mucus and bright green bile. The wound was dressed. There was no escape of bile into dressings.

February 20th. Wound re-dressed. There is no discharge from the tube in the gall bladder. The gauze drain was taken out and a fresh one inserted. Some discharge of pus came away from the lower sinus. There is a very slight amount of bile-stained sputum to-day.

February 21st. The cough has almost entirely gone, and the sputum, which is slight, contains no trace of bile. The bowels acted after an enema, and the motions were normal in colour. The patient sleeps well. Pulse 108. No pyrexia. There is still some slight purulent discharge from the sinus leading to the common duct.

February 23rd. Her condition is little changed. There is practically no cough now, no bilious expectoration since February 20th. The discharge from the lower sinus has a distinctly faecal odour. Temperature, normal. Pulse, regular, full.

February 25th. Discharge from the lower sinus is copious; a small tube was inserted in place of the gauze drain.

March 4th. Improvement is maintained, as there has been no discharge from the gall bladder; the tube has been taken out and left out.

March 7th. The discharge from the lower sinus is now bile-stained, but the rest of the wound is soundly healed. The patient has no cough, eats and sleeps well; her urine and faeces are normal. The colour of the skin and conjunctivae has become normal.

The patient was allowed to sit up one month after operation, and with the exception of some discharge of bile from the sinus at the lower part of the abdominal wound, she expresses herself to be in sound health.

REMARKS.—The best article on this subject was published by Courvoisier in 1890, with the results of 24 cases. In 1897 Graham published 2 more cases under his own observation, and in addition, 8 more from the literature, bringing the total up to 34. In the standard works on diseases of the liver and and gall bladder but slight mention is made of this rare form of biliary fistula. The essential conditions on which these cases of hepato-bronchial fistulae depend are: (1) The formation of an abscess in the liver, and (2) the giving way of its wall. Courvoisier considers that the abscess in the liver is usually tropical, although he found in 18 necropsies of his collected cases that 10 were due to cholelithiasis, 6 to echinococci, and 2 to ascarides. From Courvoisier and Graham's account, it appears that when gall-stones are present, the usual sequence of events is: (1) Occlusion of the common bile duct, either partial or complete; (2) suppurative cholangitis with the formation of liver abscess; (3) adhesions of the liver to the diaphragm; (4) adhesion of the base of the lung (usually the right) to the diaphragm; (5) perforation of the liver, diaphragm, and lung, with discharge of bile through the bronchus. It is found that the formation of a pleural effusion is uncommon, but that occasionally the bile may be discharged into the pleural sac, either right or left. In an acute case published by Cayley and quoted by Murchison no calculi were found, but there were multiple abscesses in the liver, depending on suppurative cholangitis, in this case the diaphragm was perforated and bile flooded the left pleural cavity.

The treatment of this lesion must necessarily vary with its cause. It has been found in some of the published cases that the discharge of bile by the mouth tended to cease spontaneously. This occurred in one of the cases quoted by Graham, the discharge entirely ceased for ten years and then recurred. If it is clear that obstruction either partial or complete to the flow of bile through the common duct is the essential factor in the production of the fistula, then surgical treatment is certainly indicated. De Havilland Hall, in a discussion at the Medical Society of London in 1887, advised expectant treatment in these cases unless the condition of the skin, urine, faeces, etc., were clearly indicative of some obstruction to the natural bile path into the duodenum. Surgical treatment is also demanded in cases where there are signs of a collection of bile in either pleural cavity.

If the abscess in the liver is tropical or not directly due to the formation of gall stones, then treatment by surgical means is less clearly called for. The abscess may be small, deep in the posterior part of the liver, and difficult of access.

In our case the sequence of events seems to have been as follows: (*a*) The formation of an abscess in the liver in 1901, probably due to the presence of gall stones in the common duct, with adhesions of the liver to the diaphragm and lung, this condition persisting after the acute symptoms had subsided for eighteen months; (*b*) the rupture of the wall of this old abscess cavity during a severe fit of coughing ten days before the patient came into the hospital, with consequent discharge of bile through the bronchus.

When the patient was first admitted into the hospital the signs of biliary obstruction were not clearly present, and it was not until four to six weeks after admission that the occurrence of clay-coloured stools, slight jaundice, and dryness of the skin, etc., indicated that such a condition existed. It is of interest to note that with the exception of one occasion, the urine was entirely free from bile. It is also remarkable that there were never any physical signs, beyond those caused by general bronchitis, to indicate that such an abnormal condition of affairs existed in the right lung. There is little to say with regard to the actual operative technique, the use of a dorsal sandbag as recommended by Mayo Robson, proved invaluable, and no difficulty was experienced in exposing the common bile duct, removing the calculi, and suturing its wall. It is unfortunate that a fistula discharging bile through the abdominal wound still persists, probably due to the giving way of the sutures in the common duct, but this is a trivial matter in comparison to her previous distressing condition, and the fistula may possibly close later.

[Since the above was written the wound has healed entirely and the patient has left the hospital quite well.]

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REVIEWS.

PHYSIOLOGICAL THERAPEUTICS.

THE fifth volume of SOLIS COHEN'S *System of Physiologic Therapeutics*[1] includes the subjects of Prophylaxis, Personal and Civic Hygiene, and the Care of the Sick, and forms a kind of introduction to the science of medicine. The wide range of inquiry which the work must have necessitated is well shown by the following remarks of the editor:

The discussion of etiology must take into account the psychic as well as the physical characteristics of men; the heredity as well as the constitution of the individual; the intrinsic failures and perversions, as well as the environmental factors, that may disturb mind and body. The artificial conditions of civilization; the diversity, complexity, and strenuosity of the activities of modern life; the reciprocal influences of individuals upon communities and of communities upon individuals render it necessary, alike in the study of personal hygiene and of public health, to consider—at least by allusion—many aspects of sociology, involving questions of economics, of engineering, of manufacturing, of architecture, of pedagogics, of commercial intercourse, of taxation, of municipal government.

Pathology, epidemiology, parasitology, and so much of entomology as concerns the conveyance of disease by insects, must all be considered in regard to the subjects of the present volume; and so also must the care of the sick, inasmuch as it is a primary factor in the restriction of epidemics. Many portions of the work might be studied with advantage by non-medical readers, and the admirably clear manner in which subjects, such as the methods of transmission of disease by animals, are summarized makes the reading easy. In this respect it would be difficult to rival certain sections, such as those on the inoculation of pathogenic organisms through the bites of insects, and on insects as intermediate hosts of parasites. Indeed, whatever may be said of other volumes in Cohen's *System*, it must be admitted, we think, that of those which have yet been published, the present is likely to prove the most attractive to the greatest number of readers. We hold the view—a view which we believe cannot be too strongly urged and promulgated—that knowledge of preventive medicine should not be limited to the medical profession, but that, on the contrary, it should form part of the compulsory education of all classes of the community. The elements of preventive medicine should, we believe, be taught at schools and be inculcated at home by the practical example of the parents. The results actually obtained by preventive medicine, magnificent though they are, will prove small in comparison to the triumphs which are now almost within reach, and surely to be attained when the principles, already proved and tried, become part of general knowledge universally believed and acted on. Parts of the present volume help in this direction. In regard to the care of the poor, the editor says: "The miseries of Lazarus are visited upon the children of

[1] *A System of Physiologic Therapeutics*. Edited by S. Solis Cohen, A.M., M.D. Volumes V, IX, and X. London: Rebman (Limited). 1902-3. (Demy 8vo. Vol. v, pp. 539, 120 illustrations; vol. ix, pp. 570, 84 illustrations; vol. x, pp. 480, 116 illustrations. 12s. 6d. each volume.)

Dives," and, we would add, it is in the interest of Dives and his children to see that the children of Lazarus are not only aided, but instructed how to care for themselves and how to avoid unnecessary misery.

The ninth volume of the *System* is almost encyclopaedic on the subjects—chiefly hydrotherapy, thermotherapy, and balneology—with which it deals. The names of Professor W. Winternitz, and of his two assistants in the hydrotherapeutic portion (Drs. Strasser and Buxbaum), and of Dr. E. H. Kisch, in the balneological portion, are sufficient guarantees for the quality of the work. The translation has been made by Drs. A. A. Eshner and Guy Hinsdale, and the latter, well known as the Secretary of the American Climatological Association, has contributed notes on American springs. Amongst the effects of hydrotherapeutic measures upon special tissues and organs, the changes in the constitution of the blood are of special interest, and the investigations on this subject carried out by Winternitz and his pupils, Strasser and Wertheimer, give peculiar authority to the conclusions arrived at. The question is asked, Can the increase in the number of red and white cellular elements of the blood, following immediately upon hydrotherapeutic influences, be considered a reproduction? This question is answered by Winternitz in the negative. Numerous facts, he says, indicate that the additional cells that gain entrance into the general blood stream after the procedures described have existed preformed in the blood.

> The circumstance that, following the action of heat, the number of erythrocytes appears to be diminished, is indicative of the direction in which is to be sought the explanation for the increase following the action of cold and muscular activity.

The correct explanation, Winternitz believes, is to be found in changes in the circulation, in the action of the heart, in the tone of the vessels, and in the tissue tone. Under favourable circulatory conditions white and red cells are swept out of the organs when they have been stagnating into the general circulation. It can thus be understood how, after the action of cold, the absorption of oxygen and the excretion of carbon dioxide may be greatly increased. The portion of Winternitz's work on sun baths, light baths, etc., is supplemented by an excellent special article from the pen of Dr. J. H. Kellogg, whose writings in this connexion are already well-known. Dr. Kellogg's article includes the whole subject of hot-air therapy. The technical portion of hydrotherapy is dealt with by Dr. Alvis Strasser, and the very important subject of special hydrotherapy in various diseases and morbid conditions is the work of Dr. B. Buxbaum alone. Dr. H. Cushing has contributed an article on saline irrigations, etc. Balneology and crounotherapy, dealt with by Dr. Kisch, are subdivided into Part I, on Mineral Waters and their Uses, and Part II, on the Indications for the Individual Forms of Chronic Disease. Dr. A. C. Peale has contributed an elaborate article on the classification of mineral waters, with special reference to the characteristics and geographical distribution of the medicinal springs of the United States. He has taken great pains in comparing all the methods of classification adopted by different writers on the subject, and, in fact, his contribution constitutes a little treatise in itself. An appendix by the editor includes amongst other things a description of some routine methods in hydrotherapy, etc., in use at the Philadelphia Hospital. An elaborate index of thirty-two pages greatly facilitates reference to the various subjects discussed in this large volume.

The subject of Dr. Tissier's volume on Pneumotherapy and Aërotherapy, the tenth of the *System*, is very extensive, including as it does the effects of hot air, of cold air, of air at increased pressure, and of air at reduced pressure, the phenomena of mountain sickness and divers' paralysis (caisson disease), a description of the various kinds of diving bells, pneumatic chambers, spirometers, and apparatus for inhalations. Even a sketch of the subject from the historic side would be no light undertaking, but the author has included in his present undertaking a historical review, a description of nearly all the apparatus and methods of treatment at present employed, a discussion of the scientific and physiological data on which the various methods of treatment are based, and the indications for these methods in different diseases and morbid conditions. The physiological effects of reduced atmospheric pressure are most carefully discussed, including the blood changes at high altitudes—a subject to which much attention has been devoted of late years, but in regard to which much still remains to be settled. The difficulties of rightly estimating the results obtained by artificial aërotherapeutic and pneumotherapeutic means are immense, and the author has not underestimated them, as the following remarks (p. 101) on the therapeutic uses of immersion in condensed air show:

> In analysing the clinical observations, which are quite numerous, although not very convincing, individual nervous reactions and the element of suggestion must be taken into account. These two factors are never absent, and play an important part in every new therapeutic method. In the case of the condensed-air bath everything combines to exaggerate the effect of the novelty; the mere fact that the patient spends some time in a cabinet that is found only in certain institutions; . . . the multitude of precautions taken to avoid accidents; and, finally, the sudden and—at least so far as the patient is concerned—the unexpected appearance of certain subjective phenomena such as earache and the like.

Even if the reader be not impressed with the results of the therapeutic methods included under pneumotherapy, he must acknowledge that a great deal of information is contained in the present volume, information which medical men are often likely to seek.

CLIMATOLOGY AND HEALTH RESORTS.

Professor de Courcy Ward's translation of Hann's *Handbook of Climatology*[2]—that is, of the portion on General Climatology—should need no special recommendation to bring it to the favourable notice of English readers, for the German original has long enjoyed a unique position amongst textbooks on the subject. We must, however, quote part of the translator's preliminary notice, which best explains the form in which the work now appears:

> The first edition of Professor Hann's *Handbuch der Klimatologie* appeared in 1883, in the *Bibliothek geographischer Handbücher*, edited by Professor Friedrich Ratzel. The second edition, in three volumes, was published in 1897. The first volume of the second German edition is the only one included in the present translation. This concerns General Climatology, and is a finished piece of work by itself. The last two volumes, which deal with Special Climatology, it has been found impracticable to translate. This translation, as it stands, essentially reproduces the original. Numerous references, especially such as will be most useful to English and American students, have been added, and changes have been made in the text in order to bring the discussion down to date. . . . . Some new examples of different climatic phenomena have been added, chiefly from the United States. . . . . Every change that has been made has the full approval of Professor Hann, who has been consulted in regard to all of these matters.

Climatological questions, such as those of local winds and humidity, are of great interest to medical men, and the various kinds of local winds will be found very clearly explained in Hann's work. Mountain sickness and the effects of high altitudes on the blood are likewise considered, but in regard to the blood changes, we note that the observations and writings of many recent observers are not referred to. This whole subject must, however, be regarded as still under discussion. The differences between "city temperatures" and readings obtained simultaneously in the open country near by, which have excited a good deal of discussion, are dealt with. E. Renou many years ago showed the differences between temperatures taken at the Observatory of Paris and those taken simultaneously at Choisy-le-Roi. "As a general rule," says Hann, "it is found that the mean annual temperature of the air in places where there are many buildings is from 0.5° to 1° C. too high. The differences are greatest in the morning and evening, and least at noon." Mendenhall, in the United States, concluded that for measurements of temperature it would be well to put stations near rather than in large cities, and the importance of having such stations outside cities is now we think acknowledged. We may say that the present volume is a good translation of an excellent original, and contains many useful additions and annotations to the original.

Dr. W. Jaworski, Professor of Medicine in the University of Cracow, has drawn up a scheme for the rational constitution and therapeutic use of artificial mineral waters.[3] He describes eighteen main varieties, including alkaline, muriated, muriated-alkaline, sulphated, earthy, lithium, iodine, bromine, and arsenic waters, and also refers to others containing organic compounds, such as salicylates. One of the

[2] *Handbook of Climatology.* By Dr. Julius Hann. Part I. General Climatology. Translated, with the author's permission, from the Second German Edition, with additional References and Notes, by R. de Courcy Ward, Assistant Professor of Climatology in Harvard University. London and New York: Macmillan and Co. 1903. (Demy 8vo, pp. 452. 12s. 6d.)

[3] *Ueber rationelle Zusammensetzung und therapeutische Verwendung der Mineral heilwässer und der Heilbäder für Sommercuren.* [On the Rational Compounding and Therapeutic Use of Mineral Waters and Baths for Summer Cures.] By Dr. W. Jaworski. Berlin: M. Brandt and Co. 1902. (Demy 8vo, pp. 30.)

advantages which he claims for artificial mineral waters is that locality can be more freely selected with regard to its climatic features, and he points out that the climate of a mineral water health resort is often not the best suited for the patient for whom its natural mineral water is indicated. Jaworski also discusses the artificial production of mineral waters for baths.

Dr. Morice's annual publication on mineral waters and health resorts[4] is almost indispensable, not only to those seeking information in regard to the mineral waters and climatic stations of France, but also to those desirous of knowing about French sanatoria and hydrotherapeutic establishments, about the laws concerning the sale and importation of mineral waters, or wishing to consult a list of members of the Mineral Water Commission of the Académie de Médecine, a list of doctors practising at French spas and health resorts, and so on. The plan of the present edition is the same as that of the last, and relatively few alterations have been made.

NOTES ON BOOKS.

The International Congress of Medical Electrology and Radiology.

There has recently been issued a bulky volume containing the transactions of the Second International Congress of Medical Electrology held at Berne in September of last year.[5] The first Congress was held in Paris in 1900. The Berne Congress was under the presidency of Professor Benedikt, of Vienna, and no small measure of the success it attained was due to the indefatigable efforts of Dr. Dubois, the president of the local committee, and of its secretary, Dr. Schnyder. Many interesting papers were communicated by men eminent in the electrical department of therapeutics from almost every country in Europe and from America. Among the more important papers was one by Dr. Dubois on Le Dosage du Courant Excitateur; another by Dr. Albert Weil on Electrothérapie et Orthopédie; another by Dr. Oudin on Les Accidents dus aux Rayons *X*; another by Dr. Montier on Traitement Electrique de Certaines Affections Fébriles; another by Dr. A. Bayliss on The Use of Electricity in America; another by Dr. Bade on Die Bedeutung der Radiologie für die Orthopädie; another by Professor Schiff on Eine neue Methode zur Konstanterhaltung von Röntgenstrahlen; and another by M. Tonta on La Lumière en Thérapeutique. These and many other useful papers were followed by exhaustive discussions which cannot fail to exercise a stimulating influence upon the progress of knowledge in the department of medicine which is concerned with the practical application, in its many varieties, of electricity to the treatment and relief of disease.

THE IRISH LOCAL GOVERNMENT BOARD.

The annual report of the Irish Local Government Board for the year ending March 31st, 1902, is dated March 31st, 1903, so that the statistical information it contains is rather more than a year old, though the report deals with the transactions of the Board up to the date of issue.

This report may be roughly divided into two heads—one relating to the transactions of the local governing bodies created by the Act of 1898, and the other to matters over which the Board was able to exercise direct control. With respect to the former we think the report is misleading, while as regards the latter the members of the Board have done themselves bare justice. There is scarcely anything in their proceedings with which we are not in entire concurrence.

Appointments.

The report opens with an apology for delay, and then proceeds:

> Attention has been directed to certain political differences which have been introduced by some of the smaller bodies into their ordinary business transactions with reference to the appointment of officers and the giving of contracts, but it is only fair to state that these cases have been quite the exception and not the rule.

Our information leads us to believe that the very reverse is the case, and we can only conclude that the paragraph quoted has been prepared "for consumption off the premises." It is impossible to take up an Irish newspaper without finding proof that political and religious questions, the two words being synonymous from one end of the island to the other, govern all the transactions of these local bodies large and small, and that in the case of appointments the fitness of candidates is not seriously considered in 5 per cent. of the elections. When a dispensary or workhouse falls vacant in Ireland, it is futile for any candidate to apply, however high his qualifications, if his religious persuasion does not correspond with that of the majority of the guardians, and when candidates of the same religion apply, the election turns upon their political opinions. In view of the grave defects in primary education past and present in Ireland, we regret to say that we see no prospect of improvement in the intelligence of district councillors and guardians in this respect.

Finance.

To quote further:

> In no other matters have the Councils been more successful than in their financial administration..... They found it possible to effect considerable reduction in their rates, and there seems to be every prospect that..... there will be further reduction in county rates.

Quite true; but with what result? The expenditure on county roads has been cut down until they are in such a condition that those unfortunate ratepayers, including the dispensary doctors, whose business compels them to travel in vehicles other than farmers' carts, do so at the risk of their limbs, in order that district councillors and their constituents may have the boreens leading to their dwellings maintained at the expense of the county. Further, their parsimonious treatment of the Poor-law Medical Service has resulted in a revolt which, however beneficial to the service, will eventually entail a heavy call upon the rates.

Holidays for Dispensary Medical Officers.

We gladly pass from this branch of the report to consider those matters in which the Irish Local Government Board has admirably discharged its duties.

To meet the objections of the guardians to allowing reasonable holidays to the dispensary medical officers, it has induced the Treasury to pay half the salaries of the *locum tenens* up to four weeks. This concession has in many unions been effectual in securing the desired result, though grudgingly as a rule.

Nursing in Union Hospitals.

We commented most favourably at the time upon the general order of July 5th, 1901, respecting the nursing in union hospitals. As we then pointed out it is far ahead of the nursing order in force in England, and in placing the nursing staff entirely under the control of the medical officer and the head nurse it has removed one of the greatest difficulties in the management of these institutions. This nursing order, like the previous one, absolutely prohibited pauper nursing. A recent nursing scandal, which we fear is by no means an isolated case, leads us to believe that the prohibition is in too many cases treated as a dead letter. Careless or incompetent nurses who can obtain pauper labour for the asking are not likely to abandon their privileges without a struggle, and we doubt if pauper nursing will ever be suppressed until the hospitals are entirely separated from the workhouses. If the Viceregal Commission now sitting can see its way to recommend this divorce a great step in advance will have been achieved.

Midwives.

The Board has used its powers to compel the appointment of qualified midwives in many rural districts where formerly the handy woman reigned supreme. That this will result in a great diminution in the terrible death-rate from puerperal septicaemia cannot be doubted.

Drugs and Surgical Instruments.

The Board has issued a drug and surgical instrument list which leaves little to be desired. Dispensary medical officers are now provided with emergency cases if they choose to carry them—furnished with Burroughs and Wellcome's tabloid drugs, and the general list includes all the usual hypodermic tabloids: Thyroid and trinitrine tabloids, together with antidiphtherial, antistreptococcus, and antitetanus serum. In the surgical list all the ordinary instruments for hospital use are provided, also a £6 sterilizer and an

[4] *Annuaire des Eaux Minérales, Stations Climatiques, et Sanatoriums de la France et de l'Etranger.* [Annual of the Mineral Waters, Climatic Stations, and Sanatoriums of France and Foreign Countries.] Par le Dr. G. Morice. 48e Année. Paris: A. Maloine. (Cr. 8vo, pp. 318. Fr. 1.50.)

[5] *Comptes-Rendus des Séances du 2me Congrès International d'Electrologie et de Radiologie Médicales.* (Berne, 10 au 16 Septembre, 1902). Publiés par les soins de Dr. L. Schnyder. London: Williams and Norgate. 1903. (Demy 8vo, pp. 791.)

abundant variety of dressings of all sorts, but a modern operation table is still wanting in most union hospitals, and glass-topped tables are conspicuous by their absence.

Furthermore, the Board has adopted stringent regulations to ensure the supply of pure drugs and good surgical appliances, which have entailed some extra duties upon medical officers, but we believe these duties will be cheerfully discharged in view of the better quantity of the materials supplied.

In order to check waste, which possibly did occur in isolated cases, the duty has been imposed upon medical officers of ordering drugs at frequent intervals and in small quantities, and weighing and measuring the same in order to ensure their correspondence with invoices. Such duties may be very necessary, but medical officers complain, and not without reason, that they are compelled to discharge the duties of apothecaries' assistants and storekeepers without any extra remuneration.

Workhouses.

Since our Commission reported in this JOURNAL upon the condition of Irish workhouses in 1895 a great improvement has taken place in the treatment of the inmates, for which we are entitled to claim some credit. The average weekly cost per head has gone up from 3s. 4d. in 1895 to 4s. 1d. in 1902, Ulster, as usual, showing up worst with 3s. 9½d.

The number of indoor poor has increased considerably, doubtless due to the better treatment of the aged and infirm and sick, who comprise four-fifths of the inmates. The expenditure upon outdoor relief has increased from £178,600 in 1897 to £201,000 in 1902. This is due to two causes. The abolition of divisional rating has removed the anxiety of individual guardians to keep down the rates on their own divisions, and men of the class generally elected dare not refuse relief to their constituents and their constituents' friends and relatives. We are bound to say that the Local Government Board has done its best to check indiscriminate outdoor relief, but hitherto to no purpose; it continues to increase by leaps and bounds.

Infectious Diseases.

Thanks to the prompt measures adopted by the central authority, no case of plague gained access to Ireland, and only thirteen cases of small-pox were notified during the year. In respect to the enforcement of vaccination, Irish guardians show an amount of enlightenment which causes people to wonder at their ignorance in other respects.

Tuberculosis.

On September 16th, 1901, a most admirably-drafted poster was issued to all local authorities, headed "Information for consumptive people, and those who live with them." The information is couched in language which the most ignorant can understand, and has already roused the population to the danger of infection; but, like all other advertisements, if the precepts are not to be quickly forgotten, they must be kept before the eyes of the people, and money expended on an annual issue of these posters would be well spent. We believe in the possibility of stamping out tuberculosis in rural Ireland, where sanitary measures imperfectly carried out have reduced the annual mortality from zymotic disease from 26,500 in 1865 to 2,619, in 1902. We can see no insuperable difficulty in dealing with tuberculosis in the same way. Some beginning has been made by the provision of separate treatment for consumption in seventy-eight workhouses, but of its adequacy in the majority of the seventy-eight we entertain grave doubts.

The Poor-law Medical Service.

No reference is made in the report to the revolt of the Poor-law Medical Service, but we are much mistaken if the next Blue Book will be able to overlook this burning question. Until it appears, we prefer to withhold any comment upon the attitude of the Local Government Board.

There are many other matters of interest in the report which we have not space to notice, but which show how thoroughly progressive the Irish Local Government Board would be, and how much it could do for the welfare of the people, if it had the power, as it has the will.

A BIG FEE.—According to the New York correspondent of the *Daily Mail*, Dr. Adolf Lorenz, of Vienna, who is again in America, will operate on the son of a wealthy American brewer for congenital hip dislocation, for which he will be paid £8,000. The patient, who is nineteen years of age, has never been able to walk.

CANCER RESEARCH FUND.

MEETING OF THE GENERAL COMMITTEE.

THE first annual meeting of the General Committee of the Cancer Research Fund was held on July 30th. Mr. BALFOUR presided, and the large number of members of the Committee present showed that interest in matters had not decreased. The report of the first year's work—a summary of which is given below—was submitted by the Executive Committee, and its adoption moved by Lord STRATHCONA.

In doing so, Lord STRATHCONA said the work of research had now been thoroughly organized, and expressed the opinion that in view of the millions who were interested in its results it seemed remarkable that only 213 persons figured on the list of subscribers. A further appeal to the public, he thought, ought to be successful in getting in the £40,000 or £50,000 which was still absolutely necessary to enable the research to be thoroughly prosecuted. He understood that the report had been approved by their President, the Prince of Wales.

Mr. BALFOUR, rising, confirmed this statement, and said that the Prince of Wales, whose substitute he was that day, had gone through the report, and, had he been able to be present, would have expressed his satisfaction with it.

Mr. BELL seconded the motion, which was then carried.

A vote of thanks to those who had been actively working during the year, proposed by Sir FREDERICK BRAMWELL and seconded by Mr. H. J. STILES, having been carried, Sir WILLIAM CHURCH replied on behalf of the Executive Committee. He said that the difficulties of organizing such a research as that which the two Royal Colleges were directing were very great; but it had been effected, and by the end of the second year he trusted they might have more to show for their work. The need for experimental work and scientifically-prepared statistics was strongly felt by them, and a small farm where animals affected could be kept and watched was greatly required.

VOTE OF THANKS TO MR. BALFOUR.

A vote of thanks to Mr. Balfour was then moved by Sir WILLIAM BROADBENT and seconded by Mr. JOHN TWEEDY, and duly carried. In the course of his speech the mover said that no method of cure which was brought before the Committee with any kind of evidence in its favour would be neglected, but would be made the subject of thorough investigation.

MR. BALFOUR'S REPLY.

Mr. BALFOUR, in reply, expressed his pleasure at the motion, and joined in the general regret that the Prince of Wales had been unable to attend himself. He was not, he thought, going beyond his duty if he stated that the Prince was not content merely to watch proceedings as an outside spectator; on the contrary, he had actively interested himself in the report, and was as zealous as ever in furthering the great work upon which they were all engaged. Speaking for himself, he thought Sir William Church had no reason to apologize for the amount of work shown in the report as already accomplished. The rapidity and breadth of view with which the scheme of research had been organized must be admitted by all to be admirable.

THE PROSPECTS OF GOOD RESULTS.

It seemed to him that many both of the public and the medical profession were inclined to be unduly pessimistic as to what would be the outcome of the research. The inquiry was undoubtedly one of great difficulty, but he thought they were wrong in being discouraged. He would like to remind the audience of the immense difference between medicine and medical science as it was at the beginning of this century and what it was 100 years before. The progress since 1800 had been immense. He saw no reason to doubt that the progress of medicine would be as rapid in the future as it had been in the past. Problems and operations which at one time seemed insoluble and impossible were now matters of daily experience, and it might very well be that in a few years' time they would be looking back with wonder upon the time that such problems as that upon which they were now working seemed impossible of solution. For himself he took comfort and encouragement from the very point which to some seemed a cause of discouragement, and that was the very breadth and sweep of the inquiry they were undertaking. Isolated research by individuals had been going on for years all over the world, but what was wanted was what they were

now trying to effect, and that was the linking up and co-operation of all those who, whether through their work as practical physicians and surgeons or through their scientific attainments as biologists, could help to turn darkness into light and reveal the cause and origin of the disease itself and the cause of its special distribution as regards age, sex, and locality.

The Scope of the Inquiry.

It seemed to him a matter for gratification that those in direct charge of the research had regarded it as a duty not to consider the disease merely as it appeared in man, but to inquire also into its manifestations among the lower animals. The fact that a disease which appeared to be identical with cancer showed itself not only among the higher, but also among the lower, animals, might come as a surprise to many even of the instructed public; but it was a fact which, while it widened the sphere of work, made comparative study possible, and might thus make more easy the acquirement of that knowledge of the cause and course of the disease which, after all, must form the basis of any rational attempt to find a cure. It was true, he said, that the happy inspiration of some fortunate man of genius, in anticipation of such wide generalized search as that to which he had referred, might put them on the track of some conclusive, some effective remedy; but they must not count upon any such happy chance, and, in any case, such a fortunate genius would be greatly aided by the wider scientific generalizations to which the course now entered upon by their Executive Committee must inevitably lead.

Its Spirit.

He had digressed further into the scientific aspect of the matter than he had intended, and further perhaps than was right in the presence of many who were so much more competent to deal with it than he was himself. Speaking more modestly, he might perhaps be allowed to express his gratification at the statement made that no supposed or suggested cure of any sort would be put aside as unworthy of investigation. The vast majority of such cures would doubtless prove valueless, and seeing that so many cures had been proposed as the outcome either of ignorance or the self-interest of those who desired to trade upon that ignorance, it would not be unnatural if trained and scientific practitioners should turn from "cures" with impatience. But undoubtedly the right spirit in which the research should be conducted was not to reject hastily or impatiently anything that had even a prima-facie claim to consideration, but to accord it examination on its merits. He had not the slightest intention personally of expressing any preference for any theory that had been or might be put forward, but undoubtedly the right rule to adopt was that which had directed almost all research since scientific investigation became one of the businesses of mankind, and that was to use hypotheses as a guide for the collection of facts, but to allow no hypothesis to have such primary hold on the mind as to impair the scientific impartiality with which the subject was examined. In conclusion, he desired to impress on the public, so far as his voice could reach it, to come forward in a liberal spirit not too impatient of results, not too anxious to receive a dividend in discovery for every subscription, but anxious to endow that great machinery for research of which they were in charge in a way which, by the accumulated learning and experience of years, would do something to relieve mankind of what was after all one of the greatest curses under which humanity groaned. So far, only 213 persons out of 40,000 who had a direct and close interest in the matter had come forward to help the work on, but he hoped that by the next meeting many more would have come forward, and that the work would have been put upon that sure financial basis which after all was the best guarantee of its eventual success.

When Mr. Balfour sat down, Sir William Church proposed that Sir Henry Howse, who had left the Executive Committee on vacating the office of President of the Royal College of Surgeons, should be elected to the General Committee.

On this proposal being unanimously accepted, the proceedings terminated.

The First Year's Report.

The report itself is a very complete review of the affairs and work of the Fund up to date, drawn up under separate headings by the Secretary, Mr. Frederick Hallett; the General Superintendent, Dr. Bashford; and the Treasurer, Mr. Henry Morris. It contains, however, little of medical interest which can be usefully taken from its context and quoted; and, considering the short time that has elapsed since research work was really commenced, this is only natural. The Treasurer gives an interesting account of the finances of the Fund and of what it is anticipated will be required, while the Secretary gives an equally interesting account of the origin of the Fund and of the steps taken for its foundation. The report of the General Superintendent shows the lines upon which work is being done, and some tables of statistics gathered from various sources. The term "cancer" for the purposes of the research is to be held to include all malignant new growths whether occurring in man or the lower animals, and members of the veterinary profession and of the Agricultural Board are included among the workers. Among animals, 31 cases were identified during the year as true malignant growths, and a series of epitheliomata from horses, cows, and dogs, and some specimens from the latter animal presenting the histological features of rodent ulcer were also examined.

As regards therapeutics, 400 cases had been collected in which electrical treatment of one form or another had been applied, and the report is favourable to the treatment of rodent ulcer by x rays. With regard to other forms of malignant disease, it is stated that it is at present very difficult to estimate the effect of any form of electrical treatment, and that at present no results have been brought forward which establish the efficiency as a curative agent in cases of either sarcoma or cancer of any form of electrical treatment.

Medical Sickness and Accident Society.—The usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on July 24th. There were present Dr. de Havilland Hall in the chair, Dr. J. B. Ball, Dr. F. J. Allan, Dr. M. Greenwood, Dr. A. J. Rice Oxley, Dr. Walter Smith, Dr. J. W. Hunt, and Dr. Fredk. S. Palmer. The amount disbursed in sickness claims has been large, namely, £4,860, but this is nearly £100 less than in the corresponding period of last year, although the amount expected was nearly £200 more. The sickness account is therefore so far nearly £300 better than in 1902; and there is good reason to hope that the whole year will show a corresponding diminution of claims. As no new business is undertaken in the annuity and life assurance branches the figures of these are not very important. In the annuity branch the number of contracts is steadily declining, partly through the death of members holding these benefits, and still more from surrenders. In the life assurance branch the number of contracts is very small, and although but few of these are surrendered, each year's account shows several claims. Hitherto there has been found no divisible surplus either in the annuity or life assurance branches, but at the valuation to be made at the end of the present year a surplus may fairly be anticipated in the life assurance branch. The cash bonuses, amounting in all to over £10,000, which have been given to the members at previous valuations, have arisen entirely from the profits made in the sickness branch of the Society. Notwithstanding the number of sickness assurance companies now keenly competing for this class of business, the Medical Sickness and Accident Society has received during the first six months of this year a larger number of new proposals than in any previous half-year since it commenced operations in 1884. The great economy with which the business is conducted enables the Committee to offer sickness assurance to members of the medical profession on much better terms than they can obtain elsewhere. Prospectuses and all information on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

The Mosquito War in America.—The Committee of the South Orange (New Jersey) Village Improvement Society has been striving for two seasons to exterminate mosquitos. Mr. Spencer Miller, Chairman of the Committee, in presenting a report recently said that, speaking roughly, in 1901, by the use of oil alone, they reduced the mosquitos at least 50 per cent. This year by adding drainage to the oil work they claim to have cut down the supply 75 per cent. They hope another year to reduce the supply 10 per cent. further. The area they have been treating is two miles long and one and three-quarters wide. This year they expended £220; but £2,000 spent at once would drain and fill every wet spot in the town, and the problem would be solved. The Chairman added that a convention would soon be held in New York, which committees and health officials from points within 100 miles of New York would attend to discuss means for a concerted campaign against the pest.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1903.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, AUGUST 8TH, 1903.

THE ANNUAL MEETING AT SWANSEA.

The seventy-first annual meeting of the British Medical Association, though it did not rival in numbers the great gathering at Manchester last year, will always remain a pleasant memory to those who took part in its proceeedings. There could be no mistaking the warmth of the welcome given by the medical profession in Swansea and the neighbourhood, and the arrangements made for the business of the meeting and for the convenience and pleasure of members left nothing to be desired. Owing to the fact that the Representative Meeting was held for the first time this year, the planning of the arrangements caused more than usual anxiety to the local executive officers. That everything proved to work so well must be a source of great satisfaction to the President and to Mr. W. F. Brook, F.R.C.S., and Mr. Frank G. Thomas, the Honorary Secretaries of the Executive Committee.

We referred last week at some length to the interesting and stimulating address with which the President opened the proceedings, but Dr. Griffiths did very much more to ensure the success of the meeting. His unwearying courtesy, geniality, and thoughtfulness placed every one at his ease, and it will not be out of place to add that at its meeting on the last day the Council of the Association added to its resolution of thanks to the President an expression of its appreciation of the interest which the ladies of his family had shown in the meeting and the trouble they had taken to render the occasion pleasant to the members and ladies who visited Swansea last week. The citizens of Swansea also extended a cordial welcome to the Association, and the Mayor lost no opportunity of showing his interest it its proceedings.

A detailed report of the annual Representative Meeting prepared by a special staff of shorthand writers was published in our last issue, and will, we venture to hope, be read by every member of the Association, not excluding those who visited Swansea, for the attendance in the gallery assigned to members who were not Representatives was never large. The meeting got through a great deal of business under the skilful guidance of Sir Victor Horsley, who was called to the chair. A better choice could not have been made, and it is largely owing to his tact and decision that the new departure worked so well. All the Representatives, however, appeared to be fully conscious of the responsible nature of the duties they had undertaken; the attendance was good, the speeches for the most part short, and the whole tone business-like. It was necessary to hold a very long sitting on the second day in order to finish all the business, but in future years some work which this meeting had to do will be much simplified; on the first day, for example, a good deal of time was necessarily spent in discussing, and finally adopting with a few emendations, the standing orders prepared by the Organization Committee. These seemed to work very well, and future meetings will probably be disposed to adopt them very much as they now stand. A certain amount of difficulty was felt in finding the most convenient way of dealing with the reports of the Council and the Medico-Political and Ethical Committees. The course taken by the Chairman, with the approval of the meeting, with regard to Dr. Douglas's resolution will probably form a precedent which will simplify procedure in the future. These reports are, in fact, records of the proceedings of these bodies; they are reports to the Representative Meeting, and, we conceive, ought not to be adopted by that meeting. The simplest plan would seem to be to take a resolution to receive each report and enter it on the minutes of the meeting as a record, and then to take resolutions on matters arising out of the report. This was the course followed on the point referred to above, and its convenience was obvious.

The proposal of the Gateshead Division of the North of England Branch to instruct the Medico-Political and Ethical Committees to inquire into the various aspects of the question of contract practice met with unanimous approval, and the reports of these Committees will be awaited with much interest in the fervent hope that means may be found for stopping a canker which is tending to destroy the independence of the profession. The resolutions proposed by Dr. F. W. Kidd, on behalf of the Leinster Branch, pledging the Association to support the claims of the medical officers of the Irish Poor-law Service to just treatment and reasonable emoluments were heartily approved by the meeting, and Dr. Leonard Kidd, of Enniskillen, the President of the Irish Medical Association, was elected to the Medico-Political Committee, which will find his assistance most valuable, especially in dealing with this matter. The proposal to appoint a standing committee to meet in Scotland and to deal with Scottish business was evidently regarded with some apprehension by not a few Representatives, but the statements made by the Scottish Representatives showing, as they did, that the intention was that the Committee should be advisory and not executive, were reassuring, and the proposal was accepted.

A sketch of the proceedings of the Sections of the annual meeting was commenced in the British Medical Journal of August 1st, and is concluded in this number. It will be seen that a great deal of useful work was done, and this will be still more evident when the detailed reports of the proceedings, the publication of which will be begun in an early issue, are concluded.

Altogether it may be said with truth that the Swansea meeting was a distinct success alike on the scientific, the business, and the social sides.

A SCHEME OF HOSPITAL REFORM.

In a speech recently delivered at the Portland Town Dispensary, Sir H. Burdett sketched out a plan for entirely revolutionizing our present hospital system. Practical men are apt to turn away from such proposals, as sure not to be carried out, and therefore hardly worth considering; but that would in this instance be a mistake. Sir H. Burdett's plan involves changes far too extensive to be adopted to-day or to-morrow; but the ideas underlying it are fermenting in many minds, and the questions which it raises cannot be too soon or too thoroughly discussed.

Putting aside a few minor matters, these questions may be thus stated: (*a*) No part of the funds of any hospital is to be applied to assisting or keeping up its medical school. (*b*) Free medical relief has increased to an extent which is wrong; and, though every person ought to have the right to examination and advice at a hospital, no one should have free treatment except those who are really in need. (*c*) The present out-patient departments ought to be abolished and provident dispensaries substituted for them. (*d*) Besides the present free wards, there should be erected in every hospital a "pay wing," where the patients should pay according to their means, where they might be attended by their own doctors if they wish, and where all medical attendance should be paid for. These pay wings would cost, as he calculates, between a quarter and half a million to erect.

The discussion of these propositions in any way worthy of their importance would demand more space and time than we can give; but at the first glance the question arises, Allowing that the plan, or something like it, was carried out, who is to supervise its execution? This is not a detail that can be passed over or put off for future settlement. It is of the very essence of the scheme; for without efficient supervision there is no item of the scheme that will not do more harm than good. Let us go rapidly through the above headings. (*a*) This proposition is laid down by Sir H. Burdett as though it were self-evident; yet he must know that the connexion of a well-equipped medical school with a hospital is of the greatest possible advantage in providing experts on food, sanitation, and bacteriology, and a practically inexhaustible supply of skilled assistants for its various departments. The hospital may properly pay the school for services rendered, and the relation of the two institutions is in no way affected by the form in which the payment is made. The purpose of the payment, whether it be called "grant," "vote," "subsidy," or by any other name, is to secure the efficiency of the hospital, and thus make the treatment of patients whom it shelters more effective. (*b*) The limitation of free relief is still more evidently a change—a most beneficial change in our opinion—which can only be imposed, on the many hospitals that take a pride in their perfectly free charity, by a body in which they have themselves acted, and by whose decision they have consented to be bound. (*c*) As to the abolition of the present out-patient departments, we can only refer to the vigorous efforts that have been made for the last twenty years and more to replace them by provident dispensaries as a proof that no isolated action can effect any change in that direction. (*d*) Yet more evident is the necessity for some controlling power when we come to so very dubious a proposal as the mixing up with our free hospitals of other wards, nominally a part of them, but managed on purely commercial principles. Can any one fail to see how such a scheme unless most carefully, justly, and impartially supervised would make the present confusion far worse confounded? Even the financial basis of such a scheme which our author pleasantly says he has "fixed" rather say "left floating"—between £250,000 and £500,000, offers opportunities for waste and corruption of which it is to be feared many would be eager to avail themselves.

On the whole, we should say that there are few men acquainted with hospital management who will not cordially agree with Sir H. Burdett that reform is urgently needed, and equally few, we believe, who would not rise from an attentive perusal of his paper convinced that the first step towards such reform is a general council of the various hospitals, and that the agent which would have the best chance of bringing it about would be some such central Board as was proposed by the Charity Organization Society, and to which Sir Henry Burdett has to our surprise been so uniformly opposed.

HONOURS TO MEDICAL MEN IN IRELAND.

IN the list of honours bestowed by the King on the occasion of His Majesty's recent visit to Ireland we note with much satisfaction the names of the Presidents of the Royal Colleges of Physicians and Surgeons of Ireland. Sir Arthur Vernon Macan, President of the Royal College of Physicians of Ireland, is well known to the medical profession as one of the foremost of living obstetricians. He graduated at Trinity College, Dublin, in 1868, and became a Fellow of the Royal College of Physicians in Ireland in 1877. He is King's Professor of Midwifery in Trinity College, and Obstetric Physician to Sir Patrick Dun's Hospital. He was for a considerable time Master of the Rotunda Lying-in Hospital, and he has served with distinction the offices of President of the Obstetric Section of the Royal Academy of Medicine and of the British Gynaecological Society. He was also an Honorary President of the Obstetrical Section of the International Medical Congress held in Berlin in 1890. Sir Arthur Macan has made valuable contributions to the literature of his speciality, and is held in high honour by his professional brethren, not only in Ireland but in the other divisions of the United Kingdom and throughout the world. Sir Lambert Ormsby is also a graduate of the University of Dublin, where he took his doctor's degree in 1877. He was admitted a Fellow of the Royal College of Surgeons of Ireland in 1875, and was elected President in 1902. He was born at Auckland, New Zealand, in 1840, the son of George Owen Ormsby, Surveyor-General of the Colony. Educated at the Grammar School of Auckland, he was articled apprentice to the late Sir George Porter. He is Surgeon to the Meath Hospital and the National Children's Hospital, and has shown great ingenuity in the invention of instruments and apparatus. He is the author of several works, among which may be mentioned *Deformities of the Human Body*, *Surgical Operation Chart*, a second edition of which appeared in 1886, *Lectures on Orthopaedic Surgery*, on *Surgical Emergencies*, on *Diseases of the Rectum*, etc. He is a J.P. for the county of Dublin. We understand that Sir Lambert Ormsby piloted the King on his recent visit through the slums of Dublin. We offer our congratulations to the two worthy representatives of the medical profession in Ireland whom the King has delighted to honour.

DOCTORS AND THE DISPENSING OF DRUGS.

"A VERY nice boy, my lord, but he is not acquainted with drugs, and I know that the prevailing impression on his mind is that Epsom salts means oxalic acid, and syrup of senna laudanum." This was the excuse put forward by the Pickwickian chemist who wished to be excused from the duty of acting as a juryman, and it strongly resembles the excuse upon which Mr. Idris in his speech as President of the Pharmaceutical Conference at Bristol would have medical men excused from the duty of dispensing their own medicines. Mr. Idris thinks that the great majority of medical men are incompetent to dispense accurately, and he would like to see the law altered in such a way as to prevent them even attempting to do so. It is to be hoped that the majority of those whom he addressed already saw eye to eye with their President, for the arguments by which he supported his hypothesis were not convincing. They consisted in the quotation of accidents that have occurred in connexion with dispensing and references to the medical journals. The former comprised some 16 cases in which accidents had occurred in connexion with medicines supplied by medical men, and others which had occurred in public institutions and chemists' shops. Several of the former, however, were not due to mistakes in dispensing, but to

the carelessness of patients who drank liquids which they were intended to use as lotions, and, if precisely the same periods of time be taken, the number of accidents due to mistakes made by doctors or their assistants in dispensing, and the number of accidents due to corresponding mistakes made by qualified chemists appears to be practically the same. No mistakes, of course, ought to be made in such a matter either by medical men or chemists, but if the question of competency could be decided by the number of aggregate mistakes made by the members of both bodies, the doctor-dog should probably be allowed more bites before he was ordered to be destroyed than the chemist-dog; for the number of bottles of medicine made up in doctors' surgeries every day probably far exceeds the number made up in chemists' shops upon prescriptions. As a matter of fact, however, no individual doctor-dog or individual chemist-dog should be allowed a bite at all. For the operation of dispensing is a far simpler one than it suited Mr. Idris to represent it to be, and coroners' juries treat these "misadventures" with undue leniency. Given a prescription which is capable of being read, nothing is easier than to measure out the desired quantities, and mistakes of a character likely to lead the dispensers into the presence of coroners' juries can occur only through the grossest carelessness, such as no amount of instruction or tuition would prevent. If ordinary dispensing were in any way a difficult matter, the "minor qualification" as dispenser, in virtue of which dozens of young men and women receive the testamur of the Apothecaries' Hall every year, would not be allowed to exist: for the practical experience in dispensing demanded is of the most elementary kind. What does demand tuition and experience is true pharmacy, or the preparation of drugs and knowledge of their chemical and physical affinities, and on the neglect of this useful study, some knowledge of which is essential to the correct prescription of remedies, that the medical press has commented of late years. Arguments of the kind we have discussed are not likely to help to bring about the conditions which Mr. Idris would like to see established. These are that the business of prescribing and the business of dispensing should be entirely separated, the educational demands made upon prospective chemists largely increased, and the status of the occupation so raised as to make it a definite and admitted branch of the profession of medicine. There is very much to be said in favour of this ideal from the point of view both of the medical man and the chemist, and possibly also from that of the public, but unfortunately it is an ideal, and one from which in some ways we seem to be getting further and further away. The majority of medical men would probably be glad to be relieved of the work and worry of dispensing if there were any convenient substitute for it, and probably the majority of chemists would prefer to be true pharmacists rather than dispensers of wholesale chemists' drugs and sellers of soaps and scents. It is doubtful, however, whether in this country, where nothing but the operation of natural laws will ever be allowed to limit the number of chemists, and still less that of doctors, in any one locality, this ideal condition will ever become a reality.

OSTEOPATHY.

A Bill making legal the practice of osteopathy, which was introduced last winter into the Pennsylvania Legislature, has recently been defeated. There are twenty-four physicians and two druggists among the members of the House, and it is said that to their efforts the defeat of the measure was mainly due. A notion of osteopathy may be gained from the following description of it, which is given in a pamphlet entitled *Osteopathy Fully Explained*, by D. O., initials which presumably mean "Doctor of Osteopathy." The writer says that "Dr. Still, the founder of osteopathy, saw the great necessity for another department in the healing art. He found in his extensive practice that there were a large class of cases where medicine was useless and where surgery did not apply." He therefore cast about for something that would do what these sciences failed to accomplish, and after a time his efforts were rewarded. A new planet of healing swam into his ken.

> The result of Dr. Still's observations and experimental work demonstrated beyond question that many diseases of the different organs and parts of the body had their cause in a displaced or contracted part, which resulted in an obstruction to the free and natural flow of the fluids and forces from and to those parts, and also that these displacements and contractions could be found and removed, and with their removal nature would restore to perfect health. A slight slip of a vertebra, a contracted condition of the ligaments which bound one of the spinal bones to its fellow, caused an impingement upon the nerves and vessels which were given off from the spinal cord, and as a result the energy from the brain was cut off or obstructed, and the organ supplied by that nerve received only a part of its normal amount of energy and nourishment.

How is an organism thus out of joint to be put right? Obviously by osteopathy.

> Osteopathy puts the entire body in perfect condition. And it does this without exposure, without instruments, and without embarrassment, even to young girls. The cause is seldom in the organs themselves. The nerve centres which control the blood and nerve supply to these parts are located along the spine. And here most of the trouble lies.

To sum up its marvellous virtues in a sentence:

> Osteopathy is fixing what is out of fix, with a full and comprehensive knowledge of the human body.

Is it necessary to add that "conditions that have always been regarded as incurable (and which are incurable, so far as medicine or surgery are concerned) are now readily cured by osteopathy?" By way of commentary on these comprehensive claims, we may quote from the *Osteopathic World* of May, 1903, one or two examples of the system in practice. Counsel is sought in the case of a man who has had stomach trouble for ten years; "every day vomits of clear and very sour liquid containing a thick mucus" (*sic*). About twice a week "a bulging appears about over the pyloric end of the stomach, and slowly passes down the right side to the right iliac region, where it disappears." This vanishing tumour has, it is said, been diagnosed "as cancer, worms, gas, tumour, and floating kidney." A serious feature of the case is that "the dorsal vertebra (*sic*) are all posterior, and the back is very rigid." One might gather from this that in osteopathic anatomy the dorsal vertebrae are normally anterior. At any rate, in the plan of treatment advised, the use of very hot applications to the spine figures prominently, and it is enjoined that "the treatments must be continued until the vertebral lesions are corrected." Elsewhere there is a record of the complicated symptoms produced by a "twisted rib." As an illustration of the statement that osteopathic treatment causes no embarrassment to young girls may be cited the case of a young lady, aged 19, said to be suffering from membranous dysmenorrhoea. The D.O. in attendance states:

> I have examined her carefully and her back is normal, the uterus and ovaries normal, and can find no lesion to account for the trouble.

It would be interesting to know what more embarrassing than this a patient would have to undergo from an orthodox practitioner. In the *Journal of the Science of Osteopathy* for December-January, 1902-3, we hear much of "inhibition" which is defined as "pressure applied at some particular point on the surface of the body for the purpose of lessening the hyperactivity or hyperaesthesia of the immediate or some distant part of the body." Steady "inhibition" over the third and fourth sacral foramina is said to cause complete relaxation, so that an examination can be easily made in cases of vaginismus and curettement can be carried out. The wife of a United States senator is quoted as saying that the founder of osteopathy has "made it possible for woman to escape most of the ills which she has been supposed traditionally to be condemned to suffer." Granting for the sake of argument that there is even a grain of truth in this claim, it is clear that osteopaths, like certain other "paths," use ordinary methods, as far as their knowledge goes, when the case is at all serious.

OVERCROWDING OF THE MEDICAL PROFESSION IN FRANCE.

A French doctor was brought before a police-court recently and sentenced to six months' imprisonment for petty larceny. When asked what had driven him to theft his

reply was, "Hunger." He was dealt with as a first offender, and his friends have, we are pleased to say, established him in a respectable practice in a small town. The case has been used by the *Temps* and other newspapers as a text for disquisitions on the overcrowding of the learned professions in France. France has already, it is pointed out, too many doctors. Some statistics lately published by M. de Lavarenne show very clearly that this is the case. During the twenty-five years, 1876 to 1901, the date of the last medical census published, the number of doctors and *officiers de santé* increased from 14,376 to 17,108. This increase was altogether disproportionate to the growth of population, for while in 1876 the ratio of practitioners to people was 2.90 per 10 000, in 1901 it was 4.08. These figures are still more instructive if we examine the distribution of practitioners throughout the country. In certain regions, especially in the departments of the Basses Alpes, Aveyron, Cantal, Charente, Corrèze, Creuse, Dordogne, Lot et Garonne, Haute Savoie, Tarn et Garonne, which have been greatly impoverished by a series of agricultural crises, the number of practitioners has diminished. On the other hand, in certain prosperous departments the number has greatly increased. Thus in the Bouches du Rhône there were 434 doctors in 1901 as against 370 in 1876; in the Nord 656 as against 456; in the Seine Inférieure 531 as against 412; in Seine et Oise 343 as against 244. The increase shown by these figures is very considerable, but in the Seine department it is far greater. While in 1876 there were 1,606 practitioners, in 1901 there were 3,281, the number having doubled itself in the twenty-five years. Of the 17,108 doctors 9,221 practised in rural districts having a total population of 27,595,528, while there were 7,887 in towns with an aggregate population of 11,366,417. In the towns themselves the distribution of practitioners was very unequal. Paris had 2,892 doctors for its 2,714,068 inhabitants, a ratio of 10.65 per 10,000. The cities of 100,000 to 492,000 inhabitants, with an aggregate population of 2,636,032, had among them 1,875 practitioners, a ratio of 7.4 per 10,000. On the other hand towns of 30,000 to 100,000 inhabitants which together made up a population equal to that of Paris had no more than 1,487 doctors, that is to say, 5.47 per 10,000. The proportion became less as the population of towns diminished. Thus those of 20,000 to 30,000 inhabitants, having an aggregate population of 1,297,058 had 635 practitioners—4.89 per 10,000; and the towns of 10,000 to 20,000 only had among them 1,016 doctors—5.08 per 10,000. In the country the average proportion of practitioners to populations was 3, while in Paris it was 11 per 10,000. From a recent unofficial estimate we learn that the total number of medical practitioners in France in the present year of grace is 18,735, being an increase of 1,627 as compared with 1901.

MUNICIPAL HOUSING ON A SELF-SUPPORTING BASIS.

FROM reports recently presented to the London County Council we learn that up to March 31st of this year the Council has expended in capital account for dwellings for the working classes £1,221,754 17s. 7d. The dwellings include 3,532 tenements, 384 cottages, and 324 cubicles in lodging-houses, and accommodate in all 19,628 persons. The work has been a gigantic one, and the Housing Committee has achieved a great feat in some ten years to have housed and rehoused 20,000 persons in London at a cost of a million and a quarter. Moreover, it is gratifying to learn that all this has been accomplished, not by eleemosynary assistance from the rates, but in a business-like, self-supporting basis, and without any charge, *quâ* housing, on the County funds. Last year Sir W. J. Collins, the Chairman of the Housing Committee, was able to report that for the first time the surplus revenue from rentals enabled the Committee to repay all previous contributions made from rate and also provide for the sinking-fund charges and interest arising on estates in the course of development. It is satisfactory to know that this highly creditable result has been arrived at after making full provision for repairs and renewals, for interest on capital outlay, and for a sinking fund sufficient to extinguish the whole of the capital outlay on land and buildings within a period of sixty years. We are also glad to learn that the additional accommodation which has been provided in the last few years for the labouring classes, especially in the periphery of London, coupled with improved means of locomotion by electric and other trams and workmen's trains, is beginning to make its influence felt upon the congested areas of the inner zone. The new cottages at Tooting have been largely taken up by those previously resident in Lambeth, Southwark, and other crowded areas. The knowledge of this increased supply of better dwellings within easy reach should stimulate congested areas to put in force the by-laws against overcrowding, which have been far too laxly administered in the past. Mr. Long's Housing Bill, recently introduced, will also bring some relief to municipal enterprise in housing the working classes.

THE ANTITUBERCULOSIS CAMPAIGN IN FRANCE.

THE French Minister of the Interior, in view of the increasing efforts made by private initiative for carrying on the struggle against tuberculosis, thinks it well that the Government should have competent advisers as to the means of preventing the disease. He has therefore instituted a Commission whose duty it shall be to take the initiative in recommending to the Government such administrative and legislative measures as appear necessary for the purpose. M. Léon Bourgeois, President of the Chamber, is named President of the Commission. Professor Debove, Dean of the Paris Faculty of Medicine, Professor Grancher, M. Millerand, Member of the Chamber of Deputies, and M. Paul Strauss, Senator, are the Vice-Presidents. The Secretaries are Drs. Auclair, Maurice de Fleury, Lesage, and Savoire. Among the members are Professors Bouchard, Lannelongue, Proust, Chantemesse, Brouardel; Dr. Peyret, Senator; Drs. A. J. Martin, Vaillart, Huchard, Kelsch, Albert Robin, Roux, and Metchnikoff; and M. Duclaux, Director of the Pasteur Institute.

THE IRISH POOR-LAW MEDICAL OFFICERS.

THE Poor-law medical officers of Ireland will, we are confident, feel greatly pleased and strengthened in their determination to have their grievances remedied by the very friendly interest taken in them by their brethren at the annual meeting of the British Medical Association at Swansea. In the first place, at the second Representative Meeting, held in the King's Hall, Swansea, on July 29th (Sir Victor Horsley, F.R.S., presiding), Dr. F. W. Kidd had a most friendly reception, and carried with the greatest unanimity his resolution: "A. That, in the opinion of this meeting, the conditions of the Irish Poor-law Medical Service require amendment in the following respects: (1) That a minimum salary be fixed of £200 per annum for dispensary appointments, and £120 per annum for workhouse appointments, with a reasonable reduction where both appointments are held jointly; (2) superannuation; (3) an annual holiday of at least a month. B. That it be an instruction to the Council of the Association to take such steps as be deemed best calculated to bring about the early adoption of these reforms." When, secondly, in accordance with the new Constitution these resolutions came before the Central Council or Executive body of the Association on July 31st, Professor Byers (President of the Ulster Branch of the Irish Medical Association) supported them very strongly, and said how very grateful the members of the Irish Medical Association were to the British Medical Association and to those connected with the JOURNAL for their most valuable assistance in the present fight to gain their just rights. The Chairman of Council (Mr. Andrew Clark), regarding the matter as an urgent one, referred it for the immediate consideration of the Medico-Political Committee, as a member of which Dr. Leonard Kidd (President of the Irish Medical Association) has been elected. We are sure that Committee will as soon as possible take action in whatever way is deemed most prudent to further the interests of the Poor-law medical officers of Ireland.

MEDICAL EDUCATION IN THE UNITED STATES.

In his presidential address at the recent annual meeting of the American Medical Association Dr. Frank Billings said that in 1867 there were 65 medical schools in the United States. In 1882 this number had increased to 89, and in 1901-2 to 156. The enrolment of students and the number of graduates had also increased, in spite of the fact that the requirements for matriculation and graduation had been increased. In 1882 there were 14,934 matriculated students, and this number had increased in 1901 to 26,417, and in 1902 to 27,501, an increase of about 100 per cent. in twenty years. The number of graduates in 1882 was 4,115: in 1901, 5,444; in 1902, 5,002, an increase of about 25 per cent. in twenty years. It had been estimated that there is an average of one physician to 600 of the population of the United States at the present time. The natural increase in the population, and the deaths in the ranks of the profession, made room each year for about 3,000 physicians, based on the proportion of 1 physician to 600 of the population. With 5,000 or more graduates each year, a surplus of 2,000 physicians was thrown on the profession, overcrowding it, and steadily reducing the opportunities of those already in the profession to acquire a livelihood. To correct the evil, the facility with which a medical degree might be secured in the country must be diminished. There were now 156 medical schools in the United States. Of these, 30 were sectarian, and 126 were so-called regular schools. Fifty-eight were medical departments of universities, of which 24 were State institutions. The relation of the medical school to the university in most instances is a nominal one only. In but few of them was the control of the faculty, or the finances of the medical department, vested in the university proper. In a very few of them the sciences fundamental to medicine were taught in the university. In the majority of these schools these departments were duplicated in the medical department, and were taught by members of the medical faculty. In most instances, too, the teachers of the fundamental branches were physicians who devote but a part of their time to teaching. They taught without salary, or for a nominal one only. Their remuneration was obtained by private practice, to which they must devote their best energies, to the detriment of their value as teachers. The clinical department of these schools was, in most instances, wholly inadequate. The majority of such schools depended on the general hospitals situated near them for the privilege of the use of clinical material. Necessarily, these clinical advantages had great limitations, inasmuch as they could not be fully controlled for the purpose of proper bedside teaching, or for scientific investigation. Some of the medical schools connected with State universities were situated in small cities, in which it was impossible to command an adequate amount or variety of clinical material. The connexion with a university, which many of the schools enjoyed was, therefore, almost valueless in a pedagogic sense. The majority did not differ materially from the private or proprietary schools in their value as teaching institutions. Ninety-eight of the medical schools in the States were private corporations, organized, maintained, and, as a rule, owned by the faculty. If in earlier years these institutions were sources of direct financial profit to the owners, they have ceased to be so now—at least, most of them. The evolution of medicine had made it necessary to extend the laboratory method of teaching. As these schools attempted to teach the whole curriculum, the erection, equipment, and maintenance of the necessary laboratories had so increased the cost of conducting the schools that they were usually no longer self-supporting. The temptation was in such schools to conduct them on a plane which should just comply with the minimum requirements of the various State bodies which regulated medical practice in the several States. They were maintained ostensibly to teach medicine, but in reality for the prestige which a professorship affords the teacher in his private and consultation practice. What was said of the status of clinical teaching of the medical departments of the Universities was true also of the proprietary college. These schools could not hope to improve their present standards. The majority attempted to maintain laboratories and other expensive means of teaching which a modern medical education demanded. But in how many were the laboratories worthy of the name? Three years ago Professor W. W. Keen, in his presidental address, deplored the fact that medical schools received relatively little aid in the form of endowments as compared with universities and colleges of philosophy, art, and theology. Since that time several millions of dollars have been given for medical education and scientific research. The signs of the times point to a brighter future of medicine in America.

"A POT OF BASIL."

In the British Medical Journal of January 31st, 1903, an account was given, under the above title, of the Ocimum Viride, a species of basil which had been alleged to be obnoxious to the mosquito tribe, and a few plants of which were stated by a correspondent of the *Times* to make mosquito nets superfluous. Dr. Prout, Principal Medical Officer of Sierra Leone, at the request of the Governor, recently investigated the claims thus put forward for the plant, and his report, a copy of which appears in the *Times*, gives an interesting account of the ingenious experiments undertaken to settle the matter upon scientific lines. It was investigated from three points of view: (1) Whether the living plant was really obnoxious to mosquitos; (2) whether fresh leaves wers prejudicial to the existence of a mosquito when kept in close contact with it; (3) whether the fumes of burnt basil were fatal to mosquito life. To settle the first point, two identical mosquito cages were prepared and placed opposite to one another, the outlets being left open. In Cage 1 two bananas were placed as food, and also two full-grown basil plants, and in Cage 2 two bananas only. Eleven mosquitos were then liberated in Cage 1, and though free to escape if they chose they remained in it quite lively and happy for a sufficient number of days to show that they were quite indifferent to the presence of the basil. The experiment was repeated a second time with the same result, and it was also noted that strange mosquitos settled on the cage in close proximity to the plants. A third experiment in which young basil plants were substituted for the mature ones ended in the same fashion. The second point, that of the effect of enforced close contact with basil leaves, was settled in the following way. A number of mosquitos were placed in two stoppered bottles, in one of which were basil leaves and in the other rose leaves, food being introduced in either case. After four days in the basil-leaf bottle the mosquitos were found alive but sluggish, while those in the rose-leaf control bottle were dead. A second experiment was then made, hibiscus leaves being substituted for the rose leaves in the control bottle, while a third bottle was added in which mosquitos were confined without leaves of any sort. The result in this case was practically equivalent to that of the first, and showed that close contact with leaves, whether basil, rose, or hibiscus, did not practically make the mosquitos die any sooner then when confined in an empty bottle. To settle the third point, that of the effect of basil fumes, three experiments were made in the following way. In the first, a cage containing seven mosquitos was hung in a room of about a thousand cubic feet, with closed doors and windows. Eight ounces of dried basil were then allowed to smoulder in the room, but as it was found that after an hour the mosquitos were in no way affected eight more ounces were made to burn rapidly. This made the atmosphere so dense and choking that the observer was unable to remain in the room continuously himself, but nevertheless it was not until thirty minutes had elapsed that the mosquitos were found to be in any way stupefied, and even then they recovered quickly when removed to the open air. A second experiment was continued on the same lines with two lots of other mosquitos and for an hour and a half, but although by that time most of them were apparently dead, the majority of them recovered when removed from the dense acrid fumes. In a third trial an

ounce of basil was burnt with a little potassium nitrate in a very confined space, but confinement in it for half an hour had no effect upon the mosquitos beyond making them a little sluggish. These experiments conclusively prove that the value of basil in malarious countries is *nil*, and in the letter in which Sir Thiselton Dyer, of Kew, forwarded the report to the *Times*, he draws attention to the equally fallacious belief which formerly prevailed with regard to the utility of blue gum trees in making malarious countries healthy.

NURSING AS AN OCCUPATION.

THE demand of recent years for the services of skilled nurses in all varieties of sickness has, in accordance with the usual law, produced a corresponding supply. There are, indeed, evidences that the market has become overstocked and that a considerable number who are willing and anxious to work are unable to get occupation. Nursing is pre-eminently work for women, but every woman is not suited for the duties and responsibilities of a nurse. There are few women who do not believe themselves to be gifted with a nursing capacity, and for such a conviction there is considerable justification, because it cannot be denied that nature has endowed the sex with those finer qualities of sympathy, forbearance, and tenderness in greater and more conspicuous measure than man. But what so many women forget is that a nursing instinct, when trained to the dignity and importance of a profession, carries with it certain penalties of self-sacrifice and devotion to duty which become essential elements in the daily task of those who would successfully minister to the sick. The mysteries which, to the uninitiated, surround life in a hospital ward, the more or less becoming garb which the fashion of the day decrees to be a millinery necessity, the widespread impression that the work is ladylike and free from menial necessities, and the possibility that its prosecution may afford opportunities for eventual matrimonial conquest, are among the more important considerations which guide the choice of many women in the adoption of nursing as the work of their lives. To some, we are thankful to know, none of these reasons appeal; they are "to the manner born," and feel themselves so attracted to the work for the work's sake, that they enthusiastically devote themselves to the vocation of their choice with an earnestness that sweeps all else aside in a single-minded desire to achieve as nearly as possible the perfection of skill by laboriously plodding along the pathway, be it rough or smooth, of personal experience. It is painful to admit, but it is incontrovertibly true, that a large number of those now occupied in nursing are totally unfitted for the duties they are called upon to perform. Some are unsuited from lack of refinement and want of education, others from imperfect training, tactlessness and carelessness of method, and others again from feebleness of constitution or infirmity of temper. The following letter affords an amusing example of incompetence. The writer had been attached for some years to a local religious body, and had been sent by our correspondent to a young woman who was suffering from a severe attack of gastric ulceration. The only instructions given her were to administer nutrient enemata at stated intervals, preceded by an ordinary soap-and-water injection. After she had been on duty for three days, the doctor received from her the following report:

Dear Dr. X.,—I have attended this afternoon Miss Y. She appears more bloodless than ever; her respiration resembles that of bad dropsy. The nutrient enema was ejected after three hours without appearance of slightest change, colour, etc. Rectal tube used 10 in. No resistance to injection. I think there is a block of faeces in intestine high. Before it is too late will you let me make a suggestion? That she have on abdomen three hours, occasionally, hot linseed with a little turps, and after two days take 1 oz. castor oil every third day for twelve doses. She has painful spasm and haemorrhoids after soap injection. Is not anaemia the outcome of constipation, doctor? She says for three years she has not had aperient medicine. Please bear with me if I tell you that in the past I have by aperients perforated an ulcer rather than allow death by stoppage, since healing can be found for moving ulcers. I think Miss Y. intends seeing you in the morning. Will you tell her your wishes regarding poultice. I hope to visit in the afternoon.—Yours faithfully,

NURSE Z.

It is to be hoped that throughout the large army of nurses there are not many so ignorant or so presumptuous as Nurse Z., but the existence of even a small minority constitutes a grave danger to the public and an intolerable annoyance to doctors.

THE EFFECTS OF TOBACCO.

SMOKERS may be interested to learn that, according to quite recent investigations which have been brought to the notice of the Vienna Academy of Sciences, the aroma of tobacco and the effects which tobacco produces on the smoker are not, as is commonly supposed, due to nicotine, but to a quite different chemical body, an alkaloid. Dr. Frenkel, the author of the paper submitted to the Academy, states that he observed that the physiological action of tobacco does not correspond to the amount of nicotine which it contains, and he mentions that certain kinds of Havana tobacco which are poor in nicotine exercise a greater effect on the human system than other kinds which are rich in nicotine. These facts induced Dr. Frenkel to examine tobacco to see if he could find the chemical body which really is the cause of disturbing or soothing effects. From different kinds of tobacco—Dalmatian, South Tyrolean, Latakia and others—he extracted a distillate which showed a pronounced opalescence and had a fine tobacco aroma, and treating this distillate with picric acid separated from it a yellow looking salt, a picrate. The further examination of this salt convinced Dr. Frenkel that the aroma and the effects of tobacco arise to a very large extent from the alkaloid, which is characterized by highly volatile properties. If the conclusions which Dr. Frenkel arrived at are proved to be correct, there is reason to hope that smoking will be freed of some of its evil effects, for it may be possible, in contradistinction to the case of nicotine, to remove from tobacco the property which acts deleteriously on the devotee of the "weed."

DIPHTHERIA AND ANTITOXIN.

DR. C. H. PHILLIPS, Medical Superintendent of the Bucknall Infectious Diseases Hospital, has prepared for the information of his authority a statistical return of great value. It brings out very clearly the results obtained by the use of antitoxin during the past three years in 27 hospitals for infectious disease in England and Scotland. He addressed applications for information to 53 such hospitals, but only obtained replies from 29, and of the latter two had not had any cases of diphtheria to deal with at all. The aggregate number of cases of diphtheria treated in these 27 hospitals during the three years was 7,319, and the percentage of deaths only 12.6 per cent. This is a very noteworthy result, and proves in a very conclusive way how great is the value of antitoxin. No variation of type can account for the saving of life, since the statistics extend over three years and are derived from hospitals scattered all over Great Britain. They are the more striking, too, when it is remembered that the cases are all hospital cases, in which delay in admission and adoption of treatment must to some extent necessarily occur. A further point in favour of these results is that they are in no way selected, and that they were not attained by one man to whom special skill might possibly be ascribed, but are the aggregation of the work of at least twenty-seven, and probably a great many more, medical men, since the staffs of most infectious hospitals change with some rapidity. The extent of the diminution of the danger of diphtheria thus shown, and the saving of life which may be thus ascribed to antitoxin and to antitoxin alone, is only duly appreciable when it is recalled that in 1881 the mortality-rate of cases of diphtheria under the care of the Metropolitan Asylums Board was not less than 59 per cent., and that the average percentage of deaths to diphtheria admissions in the hospitals of this Board during the whole seven years immediately preceding the introduction of antitoxin was 35. The conclusion to which Dr. Phillips's study of the question has led him are sufficiently definite and succinct to be capable of quotation almost as it stands. It is as follows: If antitoxin treatment is begun on the first day, recovery may almost be relied on in each case; if on the second, a

mortality of 4 per cent. may be looked for; if on the third, the mortality may be expected to equal 10 per cent.; on the fourth 17; and on the fifth from 25 to 30 per cent. of all cases taken in hand at this distance of time from the commencement of the disease. Besides the general and aggregated results to which reference has been made, the return presents other points of interest, such as the extent to which recourse was had to tracheotomy in the different hospitals, and the minor variations at individual hospitals, from year to year. As regards tracheotomy, this operation was performed 300 times altogether in fourteen hospitals on an aggregate of 3,375 cases; while thirteen hospitals, with an aggregate somewhat less, did not resort to the operation at all. The return, as it stands, naturally does not throw any light on this difference in practice, and it is probably due to personal rather than to any other factors, since there is no particular or constant difference in the mortality percentages of the hospitals which employed tracheotomy and those which did not. Comparing the total mortalities of different hospitals, the limits of variation are about 9 above and 6 below the mean, among the lowest records being Aberdeen, with a percentage of 6.0 on 292, at Goole with the same percentage on 273 cases, Brighton with a percentage of 7.8 on the large number of 1,622 cases, and Worcester with 137 cases but only a percentage of 2.1 deaths. The report also throws some light on the extent to which scarlet fever antistreptococcus serum has got into use, and the opinion formed as to its merits by those who have employed it. About a fourth of the hospitals have not tried it, and of the rest the majority have apparently tried it but ceased to use it. One or two reports only are guardedly favourable to its employment.

PREGNANCY AND ABORTION LATE IN LIFE.

An overlooked miscarriage is a grave matter for several obvious reasons. Dr. Geyl publishes a very complete clinical report of a strange case in which the patient was in her fifty-sixth year, and abortion occurred, very naturally overlooked both by the family doctor and the consultant.[1] The patient had been married for thirty-eight years, and had borne 16 children to term, or at least to a viable uterine age—one was 2 years old. She had also aborted three times; on the last occasion she was over 49 years old. The periods remained very free though regular till the end of her fifty-third year, then they became irregular, yet when they were missed, in March, 1898, the patient was surprised. Nothing was seen until the following June, when profuse haemorrhage occurred, with the ultimate appearance of a fetid discharge and much fever. Neither the family doctor or the patient or her friends suspected abortion. The symptoms became very grave, Geyl was called in and found the uterus soft and large, and the cervix short and flabby, whilst a soft uneven mass occupied part of the uterine cavity. As there was great fetor, he disinfected the uterine cavity by vaporization and removed the uterus a few days later. A mass of granulation tissue developed in the vagina and caused alarm, but it ultimately formed into scar tissue, and the patient recovered. To his astonishment Geyl found that the mass in the uterus was neither a sarcoma nor a carcinoma, but placental tissue. Decidual cells were present in abundance, and Professor Treub, of Leyden, and Dr. Van der Hoeven examined microscopical sections, and pronounced them to be evident products of gestation. Thus the elderly patient's illness was abortion with retention of a piece of placenta, which sloughed after causing great anaemia through haemorrhage. Geyl dwells on reported cases of late pregnancy. He includes Kennedy's, where a woman gave birth to her twenty-second child when she was 63, and continued to menstruate, but quotes it at second hand; whilst Whitridge Williams in his *Obstetrics* gives the reference *Edinburgh Medical Journal*, xxvii, 1085, 1882. Witkowski relates that a servant maid, dreading childbirth, deferred marriage until she was 51, yet became pregnant soon after her wedding. Rodsewich collected 11 cases of delivery in women between 50 and 55 recorded in Russian literature during ten years ending 1881. The possibility of late pregnancy, and above all of consequent retention of placental relics, must be borne in mind in relation to cancer of the body of the uterus in an elderly subject and deciduoma malignum so actively discussed before the Obstetrical Society last June. What has been diagnosed as the former disease may in some cases have been the latter.

[1] *Zentralbl. f. Gynäk*, No. 23, 1903.

THE PREVENTION OF MALARIA IN HONG KONG.

A series of reports and minutes written between the years 1900 and 1903 by Dr. Thomson of Hong Kong[1] show some of the results obtained by that Colony in its campaign against mosquitos. Dr. Thomson on his return from England in 1900 began a research into the prevalence of mosquitos and malaria in the colony of Hong Kong and in the new territory, and, after a careful examination of those districts, made a plan on which were depicted the various areas where mosquitos bred. Many places were found suitable for the breeding of the insects, and of those the nullahs were the worst, one especially above Ripon Terrace passing the end of Nethersole Hospital being heavily infected with mosquito larvae. Other areas, quite close to the Government Civil Hospital, the author thinks supplied *Anopheles* mosquitos for the transmission of malaria from person to person in the hospital, and this is quite consistent with the conditions so often noted in other tropical countries. A large number of external examinations of mosquitos showed that insects of the genus *Culex* greatly predominated, though *Anopheles* were also not uncommon. No note is made as to the numbers of those infected with malarial parasites, and this in the light of the India work on this subject is unfortunate. As a result of the research into the breeding areas, a series of recommendations similar to those advocated by Major Ross in Africa, and by other observers in different parts of the world, were proposed. A second visit to the areas in 1902 showed that there was a distinct improvement, and further work was advised still to better their condition. In 1903 another survey again showed fewer mosquitos, but here it may be noted that Dr. Thomson states that the measures adopted have only been temporary, and to be successful must be continuous till the nullahs are properly drained. It is a pity that no mention is made of any reduction or otherwise in the prevalence of malaria as a result of those measures, and it would be interesting in the future to have this point investigated. But Rome was not built in a day, and Hong Kong is to be congratulated on what it has already done, and the hope may be expressed that it may go on energetically and do much more.

[1] *Malarial Prevention in Hong Kong.* Reports and minutes by J. C. Thomson, M.A., M.D. 1900-03. Hong Kong: Printed at the Victoria Gaol.

OYSTERS AND TYPHOID FEVER.

Dr. Bulstrode's official report on the oysterborne outbreaks of enteric fever which followed certain mayoral banquets last year, although anticipated by full reports by local medical officers of health, will be read with great interest, if for no other reason because it co-ordinates the particulars contained in previous accounts, and gives a complete survey of the evidence on the strength of which these outbreaks were attributed to contaminated oysters from Emsworth. The title of Dr. Bulstrode's report is eminently cautious. It deals with "alleged" oysterborne enteric fever. The conclusion of the matter in the report is almost equally cautious, as will be seen from the following quotation (the italics are ours): "The foregoing narrative of facts would *seem* to establish the strongest possible *presumption* that oysters which had been deposited for a time at Emsworth have caused the outbreaks of enteric fever and other illness which followed the mayoral banquets on November 10th at Winchester and Southampton." A perusal of Dr. Bulstrode's admirable account of these outbreaks would, we venture to think, justify a more confident expression of opinion; and as this is a

matter on which urgent administrative action and not merely an academical decision depends, and as in preventive medicine mathematical demonstrations of causative relationships are seldom if ever attainable, the words "seem" and "appear" which recur in the statement of conclusions in this report might probably have been omitted without sacrifice of accuracy, and with considerable practical gain. That this is so is shown by Dr. Bulstrode's own summary of the facts. Two mayoral banquets occurred on the same day in separate towns several miles apart. In connexion with each banquet similar illnesses occurred, attacking approximately the same percentage of guests and at corresponding intervals. At both banquets those who did not partake of oysters escaped, and all the guests who acquired enteric fever, and approximately all who suffered from other illness did partake of oysters. The oysters in question constituted the only article of food which was common to the guests attacked; and these oysters were all derived directly from the same source. Furthermore, oysters from the same source were at the same time, and in other places, proving themselves competent causes of enteric fever; and, we may add, these oysters were shown to be liable to serious contamination by sewage. The incidence of sickness on those who were guests at the two banquets is an interesting point. At Winchester 62 out of 134 guests suffered from some form of illness. Only two of these did not eat oysters. Ten of the guests had enteric fever, and all these had oysters. At Southampton there were 132 guests. Of these 55 became ill, out of which number 54 took oysters; 11 acquired enteric fever, all of whom took oysters. Dr. Bulstrode's remarks on the importance of epidemiological study of the origin of these outbreaks, and on the undesirability of trusting to bacteriological evidence alone, are eminently judicious. The whole report is an excellent example of careful and exhaustive inquiry, which may serve as a model to other investigators.

PATENT MEDICINES IN GERMANY.

The Federal Council of the German Empire has drawn up a code of regulations regarding the sale of patent medicines in Germany, and has requested the Governments of the several States to issue orders, on the basis of its proposals, to come into force on January 1st next. The State of Hamburg has already acceded to this request, Prussia will shortly do so, and the other Federal States are likely to follow suit. Various well-known "panaceas" are said to be mentioned in the regulations among those which are to be prohibited.

SANITARY LEGISLATION IN CRETE.

Among the laws passed by the Cretan Chamber of Deputies during the session which has just ended were three medical Bills: (1) Compulsory Vaccination; (2) Isolation of Lepers; (3) a Bill dealing with the Organization and Regulation of Hospitals. The Chamber also unanimously passed a resolution in which is expressed their appreciation of the services rendered to Crete by Captain T. H. M. Clarke, M.B., D.S.O., Medical Adviser to H.R.H. the High Commissioner of the Powers in Crete.

MEDICAL NOTES IN PARLIAMENT.

[From our Lobby Correspondent.]

Army Medical Reform. During the consideration of the army estimates on Monday night the vote of £530,000 for the medical establishment came on for discussion, and Mr. Burdett-Coutts called attention to the reform of the army medical department. He complained that considerable changes were effected in 1902 and inadequate opportunity given for discussing them. The changes which had been effected were (1) a wise association of the civil with the military medical element, not only for reform but for the purposes of administration of the service; (2) an increase of pay to the R.A.M.C. which attracted better men and improved the service; (3) an increase in the strength of the service; (4) the granting of study leave and facilities for self-improvement; (5) the introduction of the principle of promotion by merit instead of by seniority; (6) the improvement of the status and pay of orderlies; (7) the formation of a sanitary department; and (8) the recognition of female nursing in military hospitals, and the organization of an efficient female nursing service. He commended these reforms, and argued that they were all due to the exposure of the defects observed during the South African war. One of the greatest lessons of the late war was the necessity for organizing a system of civilian medical aid in case a great war occurred. Such an organization was still wanting, and there was only one way to secure efficiency and economy, and that was to develop in time of peace such a civilian service, to be ready if a war broke out. Not only civilian medical men were wanted, but civilian hospitals organized so as to be ready to go to the seat of war and take over base hospitals, and so free the Army Medical Staff to go to the front. He advocated a system of medical units in connexion with large civil hospitals and medical schools, with staff equipment and training, ready to take the field when called on. Such a scheme was laid before the Secretary of State in 1901. He asked what had become of it? It was an integral part of effective reform, and was a matter of life and death to the army. Mr. Brodrick in his reply said he recognized the service rendered in bringing this matter forward. In order to avoid any stereotyped scheme he had enlisted the aid of leading members of the medical profession who were in closest touch with the medical developments of the day. He was most grateful to the eminent men who had assisted him and who sat on the Advisory Board at a mere nominal honorarium, in order to reorganize the R.A.M.C. Department. The War Office had endeavoured to meet their views as regards pay, numbers, and the increase of leave study. Previous to the appointment of the Advisory Board the number of candidates had not been equal to half the vacancies, but now the numbers had increased, and at the last examination there were 72 candidates for 30 places. The Advisory Board had made a review of the whole of the military hospitals of the kingdom, and the civilian members had always taken part. They were, he hoped, on the eve of important changes in the direction of not treating trifling cases in hospital, and in having better equipment and more scientific structures. He had asked the House for £150,000, which he proposed to entrust to a small Committee of which Sir C. Perry was Chairman, to apportion among the various hospitals with the object of securing their modernization. The organization of an adequate civilian reserve and the definition of their status as regards the R.A.M.C., was to be accomplished, and he hoped it might be completed before the House met again. Mr. Buchanan afterwards said the reforms were due to the critics who pointed out the scandalous mismanagement of the medical arrangements at the beginning of the war, and contrasted the tone in which Mr. Burdett-Coutts's remarks were received now with that which was meted out to him when he first reported what he had seen in South Africa. The vote was then agreed to.

Irish Dispensary Medical Officers. —Last week Mr. Patrick O'Brien asked the Chief Secretary to the Lord Lieutenant of Ireland whether he was aware that the Ballinasloe Board of Guardians failed to procure a medical officer for the Killan dispensary district at the salary of £120 per annum; and, if so, could he say whether any medical men stated to that Board in writing at what salary they would be willing to accept office, and, if so, at what amount; and whether he could say how many vacancies exist at present in the Irish dispensary service, and for what period had each district been vacant; what fees were being paid per week to the temporary medical officers in charge of these districts; how much per week was paid in advertising the vacancies in each union; and how much of the total cost of *locum tenens* fees and advertisements was refunded by the Treasury to the guardians in each case. Mr. Wyndham replied that the vacancy in Ballinasloe Union was created on June 20th. The guardians advertised for a medical officer at a salary of £120 a year. Two gentlemen offered their services at £200 a year. The guardians, however, decided to readvertise at the former salary. There were eight other vacancies; two occurred in November last, the other

six were of very recent creation. Temporary medical officers were usually paid 4 guineas a week. The cost of advertisements was not officially known. Recoupment was made in respect only of approved salary. In consequence of this answer there was a remarkable discussion. Mr. Delany asked whether these vacancies were the outcome of intimidation on the part of the Irish Medical Association. Mr. Wyndham said he did not think intimidation was the proper word to use. There had been speeches made and resolutions passed, suggesting that no medical gentleman should accept an appointment at less than £200 a year. He knew that medical officers in Ireland had a great deal of work to perform, and that their salaries were not high—[Hear, hear]—but for all that he thought their claims would be more deserving of recognition if they abandoned these practices, and awaited the report of the Viceregal Commission which was looking into the amalgamation of unions and other Poor-law questions. Mr. P. O'Brien then asked whether medical men in Ireland had not the same right to protect themselves by combination as other people. Mr. Wyndham replied that he passed no censure upon them. What he said was that their claims would be more deserving of recognition and that they would be more likely to get their demands if, instead of pursuing these practices, they were to await the report of the Commission. This statement was received with some cheers, and the matter then dropped.

Ambulances in the Park.—Mr. Victor Cavendish last week informed Mr. Claude Hay that the St. John ambulances in Hyde Park had been inspected by Sir William Bennett, who reported that they were not only quite as satisfactory as the Metropolitan Police ambulances, but that, owing to their lightness and simplicity, were best suited to the purposes of work in Hyde Park. There were now ambulances at Alexandra Gate, Hyde Park Corner, the Marble Arch, and the police station.

Plague Inoculations in Hong Kong.—Last week Mr. Weir asked the Secretary of State for the Colonies if he would state on what date the system of inoculation with Haffkine's plague prophylactic was brought into operation in Hong Kong, the number of persons inoculated, and how many had since succumbed to plague. Mr. Chamberlain replied that he had no information on the subject, but he would ask the Governor for a report.

The Water Supply of Gosport.—Mr. Arthur Lee asked the Secretary to the Admiralty whether, in view of the fact that the Gosport water supply had been condemned as unfit for domestic use, and on that account forbidden to be used as formerly on board His Majesty's ships, he would state what steps were now being taken to procure a proper supply for the naval establishments situated in the Gosport district, including the barracks occupied by the Gosport Division of the Royal Marines. Mr. Arnold Forster answered that the Admiralty had for some time past been pressing the local authority (the Gosport and Alverstoke Urban District Council) to take action in this matter. The Council had now appointed a Special Committee to deal with the question, and it was understood that action would be taken, if necessary, under the Public Health Act of 1875. It was thought desirable to await the result of these proceedings before considering the advisability of taking independent action.

Space in Schools.—Colonel Bowles asked the Secretary to the Board of Education on what grounds the Board of Education now required a superficial space of 18 sq. ft. per pupil as regards secondary schools, in view of the fact that in the case of elementary schools 15 ft. was allowed. Sir William Anson answered that the requirement referred to was the result of careful investigation, and was made on the recommendation of the best authorities. The requirements of elementary schools and of secondary schools could not properly be treated as being on the same basis.

The Employment of Children Bill was considered on report on Friday in last week, and after several drafting amendments were made was read a third time and sent up to the Lords.

Typhus and Cholera at Quetta.—On Thursday in last week Mr. Schwann asked the Secretary of State for India had any report been received from the chief medical officer at Quetta, or through the political department at Simla, regarding the outbreak of typhus fever amongst the workmen on the Nushki-Seistan railway route and cases of cholera at Quetta; and could some report be presented showing what progress had been made with the earthwork on that desert route, describing the sanitary conditions and the question as to water supply that was likely to affect the construction of the line and the future facilities for traffic such as the Nushki-Seistan railway was intended to offer. Lord George Hamilton answered that a railway was being constructed from Quetta to Nushki, but no proposal for its extension from Nushki towards Seistan had been made or sanctioned. He had no information as to the prevalence of epidemics among the workers on the Quetta-Nushki railway, but he had heard that there was an epidemic of typhus at Quetta and in other parts of Baluchistan. Cholera was also reported near Quetta and at Nushki.

Accidents from Flying Shuttles at Bradford.—Sir Charles Dilke asked the Secretary of State for the Home Department whether his attention had been called to the recent frequency of accidents from flying shuttles in the worsted trade in Bradford, and whether he had any official information showing why the precautions which had reduced the frequency of flying-shuttle accidents in Lancashire appeared not yet to have had that effect on certain branches of the worsted trade, and what steps he proposed to take. Mr. Secretary Akers-Douglas answered that there had been 18 shuttle accidents this year in the worsted trade in the Bradford district, all happily, of a slight character. He was aware that this number indicated a considerable increase on last year, but the figures were apt to fluctuate considerably. Moreover, though all the shuttles in the worsted-weaving districts were well guarded with guards similar to those used in the cotton districts, the differences in the material under manufacture rendered it difficult to make the guards equally effective. The matter would continue to receive the attention of the inspectors.

The Liverpool University Bill.—On Monday this Bill as amended was considered and ordered to be read a third time. The third reading was fixed for Thursday, and as there is no opposition the Bill is quite safe.

The Registrar-General's Report.—On Tuesday, in answer to a question by Mr. D. A. Thomas, Mr. Long stated that as regards the annual report of the Registrar-General, he was informed that it would be issued with very little further delay. The Registrar-General stated that the report had been delayed exceptionally this year on account of the heavy pressure in his office due to the preparation of the census returns, and also to an important change which it had been found necessary to make in the tabulation of deaths. The report of the Medical Officer of the Local Government Board, to which the honourable member referred, had gone to press and would probably be issued within a month. The issue of the report this year had been delayed through the amount of special work which had been thrown on the medical branch in connexion with the recent small-pox epidemic. He was desirous that reports which were presented in dummy should be issued as soon as possible afterwards; but the delay in the present cases was due to exceptional circumstances.

The Motor Cars Bill came on for second reading on Tuesday, and a lively debate ensued. The Bill was read a second time in the end without a division, but this result was only secured by considerable concessions on the part of Mr. Walter Long, who was in charge of the Bill. In the first place, he agreed to require some evidence of fitness and competence from a driver before he was licensed; and, in the second place, he promised to consider before the Committee stage the recognition of a speed limit, and what limit could be proposed. The feeling expressed during the debate was very strongly in favour of a speed limit. The position of medical men using motors was more than once referred to, and the difficulties they might be placed in if a speed limit was adopted. Sir Walter Foster argued against a speed limit as likely, if fixed at over twenty miles an hour, to add to the danger to the public by encouraging all drivers to regard this as the pace sanctioned by law, and, if fixed at a lower speed, as likely to be a check to the progress of invention. He preferred strong penalties for reckless driving to any attempt to define a limit of speed.

Scotland.

THE BALLACHULISH QUARRIERS AND THEIR MEDICAL OFFICER.

ON July 10th the case of the Ballachulish Slate Quarries Company, Limited, who seek to prevent Dr. Lachlan Grant who for some time acted under an agreement with the company as medical adviser to the quarrymen, from further practising in the district, came again before the Court of Session. It has already been stated in the BRITISH MEDICAL JOURNAL that an interdict against Dr. Grant was granted by the Lord Ordinary, whose decision was affirmed on appeal by the Court of Session. Dr. Grant has appealed to the House of Lords, and the company asked that pending the appeal the decree granted by the Lord Ordinary and affirmed by the Court of Session should be executed. Mr. Campbell, K.C., for the company, pointed out that if execution were delayed, Dr. Grant would continue to defy the company, to the detriment of the work at the quarries. Mr. Clyde, K.C., who appeared for Dr. Grant, opposed the motion on the ground that execution before the appeal was decided would inflict a great hardship on the appellant. He pointed out that until the appeal was decided the company could not appoint a doctor in place of Dr. Grant, and dissented strongly from the view that the latter's attitude was the chief or only cause of the strike at the quarries. The Court decided that the company was entitled to have the decree of interdict put into execution, but that it should not be carried into effect until Dr. Grant had had reasonable time to get another place. In their Lordships' opinion two months would be ample time for that, and accordingly they ordained that the execution should proceed at the expiry of that period.

We do not, of course, presume to criticize the finding of the Court from the point of view of strict law, but we do not hesitate to say that it is a striking illustration of the maxim *summum jus summa injuria*. Here is a commercial company which claims the right—and apparently the law allows it—to prevent its employés from choosing a medical practitioner for themselves, although they have to supply the money for his salary. Moreover, it claims the further right of debarring the doctor chosen by the quarriers from practising his profession within its sphere of influence. And the Court awards it and the law doth give it! How the high-handed proceeding now sanctioned by the highest tribunal in Scotland is to be reconciled with the most elementary principles of justice we do not understand. It is to be hoped, not merely for the sake of a hardly-treated professional brother, but in the public interest, that the House of Lords will reverse a judgement that seems to the lay mind simply monstrous as striking at a fundamental right of citizens of a free country. Dr. Grant will, we understand, continue to practise at Ballachulish till the time of grace allowed him has expired. If by that time the legal question has not been finally settled the quarriers will appoint a provisional doctor to attend them. They have issued the following notice:

TO THE MEMBERS OF THE MEDICAL PROFESSION.

We, the Medical Committee, representing the 400 quarrymen of Ballachulish and Glencoe, hereby give notice that we will not accept of the services of any medical officer who is not appointed by ourselves.

ANGUS CLARK, Secretary Medical Committee.

Ballachulish, July 16th.

As showing the state of feeling among the men, we give, in a much abbreviated form, a report of a mass meeting of the Ballachulish Quarriers' Union held on July 16th, which appears in the *Highland News* of July 25th. Mr. M'Laren, who first addressed the meeting, said peace still prevailed in Ballachulish, and the quarries were still idle. As to the cause of this there were different opinions. Some, as they knew, blamed the Committee for the present state of affairs. They knew that was false. Others said that the responsibility rested with Dr. Grant, because he did not meekly submit to the harsh and unjust action of the Quarries Company. For seven months they had stood out protesting against tyranny and oppression, and they were not now going to enter into the same state of bondage as before. Mr. M'Laren related how he called on one of the doctors appointed by the company in the room of Dr. Grant, in order to explain the circumstances to him. For this he was called into the office and soundly rated by the manager, told to go, and that he would be made to suffer for it. Mr. D. M'Millan, who had been working at Cullipool during the last two months, said he would remind them that when Colonel Malcolm addressed them, he did not consent to let them have the appointing of a doctor. That was the chief question that closed the quarries and kept them closed. Were they willing to give up the right of appointing a doctor which they had always exercised—and especially as it was now of greater importance than ever owing to the working of the Compensation Act, that the appointment should be in their own hands, and not in those of the company? He had it on the very best authority that Dr. Gillies, who was appointed to succeed Dr. Grant, was informed that the people of Ballachulish were entirely against Dr. Grant. It was on that assumption that Dr. Gillies was induced to accept the appointment. He knew better now. Mr. Dugald M'Coll, an old quarrier, in very emphatic tones asserted that the company had no business with the doctor. Tremendous cheering followed that statement. He urged the men to stand by their Committee until they should prove themselves false to the charge entrusted to them. Another old quarrier in the body of the hall supported the last speaker's remarks, both as regards the appointment of the doctor and the support of the Committee. Mr. Angus Clark said that on the previous night the Committee had got it in black and white that the company were preparing to make another appointment. He attended the Court of Session when the company sued for interdict against Dr. Grant, and, as he stated at the last meeting, he was able to correct a false statement made by the company's counsel that a number of quarriers were at work. They (the men) were stronger now than they were in January. The company, on the other hand, in spite of legal decisions, was very much weaker, and, if it wished to weaken itself still further, let it do so. The quarriers would suffer much more than they had yet done, and make the company suffer too, before they would submit to be enslaved again. Mr. Peter Mackenzie said that the Committee had the other night been considering a letter written by Colonel Malcolm. He wished to tell them about this letter because it brought a new charge against Dr. Grant—one which they never heard about or suspected—but one which he now thought might serve to throw some light on the otherwise unaccountable action of the directors in dismissing the doctor. The Colonel, in his letter, said that the insurance company with whom the Slate Company insured their men had raised their premium about 50 per cent. more than it was in Dr. Farquharson's time. As regards this he (the speaker) would, in the first place, considering the source whence its came, question the accuracy of the statement. In the next place, he would ask what had Dr. Grant to do with accidents happening in the quarries? How was it in the doctor's power to prevent accidents? He had nothing to do with it, no more than the man in the moon had. When a man was injured, the doctor had to attend, but the cause of the injury was a matter for which the management were responsible, and not the doctor. There were two cases involving compensation under the Act since Dr. Grant came amongst them. All of them knew the men, both of whom were seriously injured, and now they had Colonel Malcolm stating it as a reason for dismissing Dr. Grant that he apparently did what was his duty in certifying that these two men were injured, and consequently the insurance company had to pay compensation. The only inference they as a Committee could draw from the Colonel's letter was this, that the doctor should assist the company in refusing compensation to such as were legally entitled to it. What did they think of that? (This was followed by loud and indignant cries, which continued for some time.) They should take every means to make this as widely known as possible, in order to let the public and the medical profession know the kind of people they had to deal with. He was certain that no respectable doctor could be got to take the appointment if it were known to him that he would be liable to dismissal for honestly doing his duty. But they would have their doctor free of such influences, or they would be crushed. A quarrier in the audience asked if the Committee had taken sufficient steps to make the dispute known to the outside public. Two members of Committee replied that everything was being done to bring the question before the public, and that they were strongly supported by the entire medical press of Great Britain. The dispute was known as far as Australia, from which country several pounds had come to the law fund. Mr. A. Livingstone, from Balvicar,

strongly emphasized the necessity of supporting the Committee. Mr. Donald M'Coll said that some people in the village were very busy trying to work mischief. They should ignore such people. The long and the short of it was that Dr. Grant was not going away, and he added emphatically, "We won't let him go."

Ireland.

The New Royal Victoria Hospital, Belfast: Opening by His Majesty the King.

On July 27th the King and Queen graciously opened the new hospital and made a tour of inspection of the building. They were received at the entrance by the Lord Mayor (Sir Daniel Dixon), who presented the Rt. Hon. W. J. Pirrie, Chairman of the Construction Committee, and Mrs. Pirrie. Mrs. Henman, wife of the architect, presented a bouquet to the Queen. Their Majesties were then conducted to a crimson-covered daïs. To their right were the members of the Construction Committee, of the Board of Management, and of the staff. Mr. W. Crawford, J.P., Chairman of the Board of Management, was then presented to His Majesty, and read the following address:

To their Most Excellent Majesties King Edward VII and Queen Alexandra: The loyal and dutiful address of the Construction Committee, the Board of Management, and the Medical Staff of the Royal Victoria Hospital, Belfast.

May it Please your Majesties,—We beg most respectfully to join with the other public bodies in Belfast in welcoming your Majesties to our city. Knowing the interest your Majesties have always taken in everything tending to the relief of human suffering, we desire to bring to your Majesties' notice some facts in connexion with the hospital. The hospital was the oldest and most important institution of the kind in Ulster. It was founded in the year 1792, and was supported by voluntary contributions. It afforded relief to the sick and suffering not only from the city, but from the whole Province of Ulster. An idea of its beneficent work can be formed when it is stated that during the past year 2,160 intern and 25,918 extern patients were treated in it. It was in its wards that the medical students of the Province of Ulster received the greater portion of their practical training. In connexion with the hospital, and about three miles distant from the city, was the Throne Hospital, situated in extensive grounds and containing 25 beds for convalescent patients, 10 beds for consumptive patients, and 35 beds for children, 520 persons received treatment there during the past year. The accommodation afforded by the old hospital had become quite insufficient for the wants of the city, and to commemorate the Diamond Jubilee of Her late Majesty Queen Victoria the citizens resolved to erect a new hospital, and a sum of over £100,000 was subscribed by them for the purpose. The Construction Committee has now almost finished its labours in the completion and equipment of the hospital, and will be ready shortly to hand it over to the Board of Management for the use of patients. Her late Majesty was graciously pleased to allow the new hospital to be called "The Royal Victoria Hospital," and to grant a supplemental charter to the Corporation authorizing it in future to take that name. It is this new hospital which your Majesties have graciously consented to open to-day, and on behalf of the citizens of Belfast and the province of Ulster, our heartfelt thanks and gratitude for your kindness in coming to perform the ceremony, and for the great honour which you have conferred on the hospital in naming one of the wards after the late Duke of Clarence, whose memory is held in tender affection by all. We sincerely trust that the new hospital will be the means of affording that measure of relief to the poor and suffering, and opportunities for the study of medical science, which your Majesties so much desire and have taken such trouble to encourage.

Signed, on behalf of the Construction Committee,
W. J. Pirrie, Chairman.
Thomas Sinclair.
R. H. S. Reade.
Alex. M'Dowell.

Signed on behalf of the Board of Management,
W. Crawford, Chairman.
J. Davidson, Honorary Treasurer.
J. C. Marsh, Honorary Secretary.

Signed on behalf of the Medical Staff,
J. Walton Browne, Chairman.
Wm. Calwell, Honorary Secretary.

The King who spoke in clear ringing tones replied as follows:

Gentlemen,—I thank you for the loyal and hearty welcome which you tender to the Queen and myself, and for the opportunity which you have given us of visiting an institution which has for me a personal interest because of its association with the name of my beloved mother, and after the proceedings of to-day with the memory of our ever to be lamented son. My previous visits to Belfast have made me familiar with its medical charities, among which this institution has always held a prominent place. It was therefore with much interest that I listened to your noble record of successful work done within the walls of the old hospital, and to your account of the spontaneous generosity of your fellow citizens, which has placed you in a position to carry on that work with increased efficiency in the future. I conclude by heartily reciprocating your hope that the new hospital may be even more successful than the old in the alleviation of human suffering and the advancement of medical science.

The following were then presented to their Majesties by the Earl of Selborne: The Right Honourable Thomas Sinclair, D.L. (member of the Construction Committee), Mr. Robert H. S. Reade, D.L. (Chairman of the Relations Committee); Mr. Alexander M'Dowell (Honorary Secretary, and solicitor of the various committees in connexion with the building of the hospital), Dr. J. Walton Browne (Chairman of the medical staff), Sir William Whitla, J.P. (Senior Physician), and Mr. William Henman (architect).

Mrs. Pirrie then on behalf of the Construction Committee presented His Majesty with a golden key, and asked him to open the new hospital. His Majesty said he accepted the key with great pleasure, and declared the hopital open. A tour of inspection was then made; the "Mrs. Pirrie Ward" was first entered, and the kitchen and lecture room admired. Miss Carlisle was here presented. Passing into the main corridor again their Majesties entered the operating room, where Professor Sinclair, F.R.C.S., was presented, and explained the new furniture. Here, by request, the Matron, Miss Bostock, was presented. Next the gynaecological ward was entered, and Professor Byers was presented. The Queen named this ward the Clarence Ward, in memory of the late Duke of Clarence. The Royal party then retraced their steps, and passed out through the out-patient department, where Mr. McLaughlin, the able and courteous contractor, was presented. Both the King and Queen expressed themselves highly pleased with the hospital; they are reported to have said that it was one of the most beautiful they had visited, and admired the ingenious contrivances for ventilation and the furniture amongst other matters of interest. Excellent seating accommodation had been provided, and several hundred visitors were present. The day was beautifully fine, and so the new building enters upon its new duties under the most flattering and favourable auspices.

The Royal Visit to Cork.

Amongst the public bodies presenting addresses to His Majesty during his visit to the city one of the most important was from Queen's College, Cork. It was presented on behalf of the College by the President, Sir Rowland Blennerhassett, Bart., D.D., LL.D., and the Registrar, Professor Alexander Jack, M.A., D.Sc.

To His Most Excellent Majesty Edward the Seventh by the Grace of God of the United Kingdom of Great Britain and Ireland, and of all the British Dominions Beyond the Seas, King, Defender of the Faith, Emperor of India, may it please your Majesty, we, the President and Members of the Corporate Body of Queen's College, Cork, beg to welcome your Majesty and Queen Alexandra on the auspicious occasion of your Majesty's visit, and to tender to your Majesty our loyal and dutiful homage. The college which we represent, founded under the auspices of your august mother, will be ever associated with her beloved and honoured name. Your illustrious father, His Royal Highness Prince Albert, is known to have taken a deep interest in the great educational movement to which it owes its existence, and we confidently anticipate that under your Majesty's gracious favour it will continue to diffuse the light of learning throughout the province for the special benefit of which it has been established.

We pray that all happiness may attend your most Gracious Majesty and Queen Alexandra now and in years to come, and that your Majesty may be long spared to preside over the destinies of a prosperous, united, and mighty empire.

Rowland Blennerhassett, Bart., President.

On behalf of the Cork Medical and Surgical Society, Dr. Cotter, President, and Dr. O'Connor, Secretary, presented the following address:

To His Majesty the King. May it please Your Majesty:

We, the members of the Cork Medical and Surgical Society, gladly avail ourselves of the opportunity of paying you our homage. We know that your presence amongst us is due to the deep interest you take in the welfare of this country, and to your absorbing desire to promote the prosperity and happiness of your Irish subjects. As members of the medical profession, we have been deeply interested in your philanthropic efforts to secure the better housing of the poor, and to arrest the terrible destruction of human life caused by the ravages of tuberculosis and cancer. It also affords us much pleasure to know that Her Most Gracious Majesty the Queen is equally interested in all movements to eradicate disease and to alleviate suffering and misery. We recognize with profound gratitude the great honour your Majesty has been graciously pleased to confer on our profession by becoming a patron of the British Medical Association. We now earnestly pray that God may bestow on you and

your amiable Consort great happiness and untold blessings, together with a long and prosperous reign.

Signed on behalf of the members,

J. COTTER, M.D., F.R.C.S.I., *President.*
P. T. O'SULLIVAN, M.D., *Retiring President.*
N. HENRY HOBART, B.A., M.B., *Vice-President.*
P. J. O'BRIEN, M.B., *Hon. Treasurer.*
D. J. O'CONNOR, M.A., M.B., *Hon. Sec.*

On behalf of the Cork Branch of the National Association for Prevention of Consumption, Dr. P. J. Cremen (Chairman) also presented an address.

MEDICAL OFFICERS' SALARIES.

A deputation of the Cork Branch of the Irish Medical Association, consisting of Dr. Cotter (President) and Drs. Keating, Ryan, Flynn, Harding, M. Donovan, and P. J. O'Brien appeared before the Cork Board of Guardians on July 30th, with reference to the question of medical officers' salaries. Dr. Cotter, in introducing the deputation and acting as exponent of the views they entertained on the questions they were about to submit, said they were great believers in the good results to be obtained by conferences between parties whose views might be somewhat divergent and whose interests might be more or less conflicting. The deputation laid the following facts before the Board for consideration: (1) That the present salaries of Poor-law medical officers are regarded as inadequate; (2) that a chronic and ever-increasing feeling of discontent exists among the Poor-law medical officers in regard to their pay and prospects: (3) that the agitations among Poor-law medical officers carried on by the Irish Medical Association has now reached such a phase that the demands of those officers cannot be lightly set aside. The full consideration of these points was respectfully urged, and the hope was entertained that the result of the Board's deliberation would be such as to do away with the present condition of unrest and discontent in the Poor-law Medical Service, and thus obviate a crisis which none of them would care to see arise. They did not wish to suggest to the Board what course to adopt, but they were of opinion that a meeting between representatives of the Local Government Board, of the Board of Guardians, and the Poor-law medical officers, to take the whole position into consideration, would be a step in the right direction. Eventually the following was proposed and seconded:

That, having heard the statements of the County Cork Branch of the Irish Medical Association, we wish to record our opinion that many of the district medical officers in Ireland are altogether underpaid, having regard to the heavy cost of living and their diminished revenues from private sources, and with a view to a scale of salaries being agreed on such as would amply reward the medical officers for their useful services and enable them to live with ordinary comfort, as well as discharge their responsible duties with efficiency, we appoint a deputation to accompany the deputation to be appointed by the Irish Medical Association for the purpose of laying before the Local Government Board what we consider the just claims of the underpaid medical officers' additions to their salaries.

A Committee was then appointed to meet the representatives of the Irish Medical Association, and confer on the matter previous to meeting the Local Government Board on the question.

THE LOCAL GOVERNMENT BOARD.

The Local Government Board has intimated, in reference to the case of Dr. McCarthy, who having been appointed to a dispensary at Killoughey, Tullamore Union, has declined to take up the position, that they will hold a sworn inquiry with a view to his removal by sealed order. The position is the result of the present movement to require adequate payment for services. It is regrettable that the Local Government Board has been so ill-advised as to threaten removal by sealed order, which means that Dr. McCarthy would be prevented from holding any appointment under the Board in future. But even this will not stop the agitation, and the Local Government Board ought to know that. Primarily they, and not the guardians, are responsible. They have the power to fix the salary, and if years ago they had listened to the modest appeals of the profession they would not be face to face with to-day's difficulty. The profession will not yield the ground which it has so far gained after years of struggle.

LORD IVEAGH AND THE DUBLIN HOSPITALS.

We take the following semi-official statement from the *Times* of August 3rd:

The Lord Lieutenant of Ireland is commanded by the King to announce that a communication has been received from Lord Iveagh, who wishes to mark their Majesties' visit to Dublin by making a presentation to the Dublin hospitals. Lord Iveagh has given to the King the sum of £50,000 to be divided amongst the Dublin hospitals (Protestant and Catholic alike), and wishes to include in this the National Hospital for Consumption, Newcastle, Co. Wicklow, which is intimately connected with Dublin, and devotes itself to a work in which His Majesty has himself taken a special interest. The King, who is well aware of the pressing needs of many of the hospitals in Dublin, has received this information with great satisfaction, and desires that a representative committee of five gentlemen should be nominated to distribute this munificent gift and to decide which hospitals are to benefit and the amount to be given to each.

This splendid gift will help many hospitals in their time of difficulty, but we hope it will serve also as an example to other wealthy Irishmen. Very little has been done for Dublin hospitals outside small and casual gifts. Considering their poverty, the wonder is that they can do so much.

MEDICAL OFFICER AND CLERICAL CRITIC.

AN APOLOGY FROM THE CLERGYMAN.

UNDER the heading of "Medical Officer and Clerical Critic" we called attention in the BRITISH MEDICAL JOURNAL of July 11th, p. 96, to the fact that at a meeting of the Carlisle Board of Guardians held on June 29th, a letter from the Rev. J. Wilson, Vicar of Dalston, was read which reflected seriously on the conduct of Dr. Doughty, medical officer to the Poor-law authority of that place. The essential circumstances of the case were related in the article to which reference has been made.

We are pleased to say that the matter has been terminated satisfactorily by an apology from the Vicar, which Dr. Doughty has forwarded to us for publication. The letter is as follows:

(*Copy.*)

Dalston, July 23rd, 1903.

Sir,—My attention having been drawn by your solicitors to the fact that, at a recent meeting of the Board of Guardians, a letter of mine containing charges reflecting gravely on your professional conduct was considered by them, and that they unanimously decided that the charges were unfounded, I take this opportunity of absolutely withdrawing any charges or statements made in the letter or elsewhere in any way reflecting on your good name, and expressing my deep regret for having made them.

Yours truly,
(Signed) JAS. WILSON.

Dr. Doughty, Dalston.

CONTRACT MEDICAL PRACTICE.

KIDDERMINSTER MEDICAL SOCIETY AND MEDICAL AID ASSOCIATION.

WE have received the following letter for publication:—

SIR,—I write to inform you at the request of the Kidderminster Medical Society that, after a conference with the Kidderminster Medical Aid Association, the latter Association has agreed to adopt the following new rules:

1. A rule to prohibit canvassing.
2. That the cash reserve fund shall not exceed £300.
3. That they will not admit to the benefits of the Association as public members any persons whose wages exceed £3 per week, also that the minimum contribution for public members of all ages shall in the future be 4d. per month, or 1s. per quarter per member.

In consequence of this agreement the Kidderminster Medical Society has removed the professional disabilities previously imposed upon the medical officers of the Kidderminster Medical Aid Association, and will in future meet them in professional consultation.—I am, etc.,

O. C. PENRHYS EVANS,
Hon. Sec. Kidderminster Medical Society.

BIRTH INSURANCE.—An American Mothers' Birth Insurance Company has recently been incorporated in Massachusetts. It is officered by women, and is constituted for the purpose of paying a sick or disability benefit upon the birth of a living child to any of its members. Its officers serve without compensation, other than the actual expense incident to membership and such service. The circular issued by the company states that by its means the "race suicide" deplored by President Roosevelt may be discouraged. With its aid, it is urged, young people may marry upon a smaller income than otherwise, because they can, by a little foresight and thrift, provide in advance for the expense of the coming family.

SEVENTY-FIRST ANNUAL MEETING

OF THE

British Medical Association.

Held at Swansea, July 28th, 29th, 30th, and 31st.

THE ANNUAL DINNER.

The annual dinner of the Association was held at the Albert Hall, Swansea, on Thursday, July 30th.

The President occupied the chair, and was supported by Mr. Walter Whitehead, Dr. W. Collier, the Mayor, the High Sheriff, President of Council, Mr. Abel Thomas, K.C., M.P., Professor Saundby, Mr. Mayo Robson, Dr. Frederick Roberts, Dr. G. Bagot Ferguson, Surgeon-General Evatt, C.B., Sir John Tyler, Judge Bishop, Professor Adami, Professor Senator, Professor Gluck, Mr. W. Arbuthnot Lane, Mr. J. Heron Thomas, M.P., the Town Clerk, Dr. Dawson Williams, Professor Darier, Mr. Guy Elliston, Professor Cameron, Professor D. J. Hamilton, Sir Robert Morris, Bart., Professor Stirling, and others.

The King.

After dinner the President proposed the toast of "The King," which was most enthusiastically drunk, the company singing "God Save the King."

The next toast was that of "The Queen, the Prince and Princess of Wales, and the Rest of the Royal Family." This was also most cordially received, the company singing "God Bless the Prince of Wales."

Navy, Army, and Reserve Forces.

Dr. W. Collier (President-elect), in speaking of the navy, said he thought our sailors might be regarded as among the best specimens of humanity, ready to go anywhere and do anything that might be required of them. As to the army, he stated that there could be no doubt that in the recent campaign the officers and men of the British army had proved that they possessed the same grit that they had shown in the past. In regard to the reserves, he said it had been proved that given men who were able to shoot, and perhaps to ride, it did not take an excessive amount of drill to turn them into efficient soldiers. In drinking the toast he asked them to remember those old school friends or chums who, when with the reserves, fell fighting for their country. He coupled with the toast the name of Inspector-General Woods.

The orchestra played "Britannia Rules the Waves" and the "British Grenadiers."

Inspector-General Woods, R.N., C.B., C.V.O., responded in suitable terms, and concluded by saying that he thought every man must be prepared in the future to take his part in the defence of the nation.

The British Medical Association.

Mr. Abel Thomas, K.C., M.P., in proposing the toast of "The British Medical Association," said he had seen for years past the effect of the Association upon the whole of the medical procession. In some professions the first consideration was one of fees, but the medical profession's first thought was not what it would put into its pockets, but how it could alleviate the pain of the people generally and cure them of disease. He thought the British Medical Association had succeeded in causing an amount of good fellowship among the profession which helped to keep the members together and ennobled it. There was not a man present that night who was not proud of the position which the British Medical Association had taken up, and the help it had given towards research in every matter connected with the relief of pain and suffering. Under those circumstances he was proud indeed to be allowed to propose this toast.

Mr. Andrew Clark (Chairman of Council) in reply, on behalf the Association, thanked Mr. Abel Thomas for the kind way in which he had spoken of the medical profession, and more particularly the British Medical Association. He also thanked the local authorities of Swansea for the way they had entertained them, and for the way they had arranged for their work, scientific and otherwise. Their thanks were also due to the Local Secretaries, who had worked very hard in order to ensure the success of the meeting, and he thought all would agree that their labours had not been in vain, and that he was right in saying that the present was one of the largest meetings they had had in a comparatively small town like Swansea. In regard to the Association he thought it was to be congratulated on having the King as its patron, and the Prince of Wales as an honorary member. He thought it was quite fitting to the occasion that the Association should meet in that Principality so soon after His Royal Highness became Prince of Wales. He was sorry that His Royal Highness's engagements were such as to prevent him being present during the meeting and receiving his diploma, but that would be presented on a future occasion. The Association itself was started in the year 1832 and, he thought, in the town of Worcester. It then consisted of a mere handful of practitioners. Since that time it had gradually grown, until at the present time it numbered little short of 19,000. Another matter he must allude to was what was called the new Constitution. Some time ago certain members thought the Association was rather old-fashioned, and at their meeting in Ipswich three years ago it was mooted that their Memorandum of Association and By-laws required remodelling, and a Committee was appointed. The result of that was that certain changes had been made, and the first meeting under the new Constitution had been held in Swansea. Notwithstanding what had been prophesied, the Association had not decreased in numbers, and he was glad to say there were more members of the Association now than there were that time last year, and he was sure that those who were present at the first Representative Meeting were satisfied that it was a success. The Divisions had elected something like 150 representatives, and 120 of these met at the two Representative Meetings and transacted a great deal of business for the benefit and advantage of the Association. He hoped in the future that not only would the present number of members be maintained, but that in a few years they might draw in the greater number, if not the whole, of the medical profession in the United Kingdom and the Colonies. On behalf of the British Medical Association he thanked those present for the kind way in which they had received the toast.

Swansea Corporation and Harbour Trust.

Dr. Woodcock said he had the honour of proposing a toast which he was sure they would have great pleasure in accepting with great cordiality, and which would be received with acclamation; it was the toast of "The Swansea Corporation and Harbour Trust." When he was asked to propose the toast he protested that he knew nothing about Swansea. He was then informed that they were going to spend two million pounds on a new dock. He thought that looked like enterprise. He went to the house of his most hospitable host, and in a small book he read that "Swansea retains few traces of antiquity; some of its more picturesque features have been destroyed to make room for the construction of docks." So far he thought the Swansea people were more practical than sentimental. He did not hold with those people who were always going back to the past; he thought it was a much more important thing to know where they were going to than where they came from. He had not gone back very far in his ancestry because he was afraid of coming across somebody who had been hanged or ought to have been. Therefore he thought the passage he had read was rather in favour of Swansea people. He found further that the Castle was founded in the eleventh century, that they had been copper-smelting since the time of Elizabeth, and that they had a charter granted in the time of King John. He thought that was far enough to go back, especially in a Principality where they sang like angels who had not fallen, and spoke the language of Paradise. They knew the story of Horace Smith about a man who was talking to an Irishman about his ancestors—his grandfathers and uncles—and the wonderful deeds they had done for the State, and the Irishman asked, "Are they all living now?" "Oh, no," was the answer, to which the Irishman replied, "Then you're no better than a growing potato, the best part of you is underground." Then he found that in addition to their having made money out of their present docks, they had been providing for the physical and moral improvement of the people; he found that they had a royal institution, a library, a lecture room, and a museum. He thought that showed that Swansea was looking after the mental food for the people. In addition to these places, there were also several benevolent institutions: there was the General Hospital with which their President was so creditably associated, an association for the deaf and dumb, an institution for the blind, a nursing institution, and other places, all of which showed that Swansea had not only commanded success, but that it had also deserved it. He had also been informed that

Swansea was the metallurgical centre of the world. That was something of which they might be proud. He had spoken of the copper smelting in the time of Elizabeth, which reminded him of a story told him by a Lancashire man, who said that he was not very successful, because his father, who was a sentimental fellow, was more interested in Roman halfpennies than in English shillings. It was all very well to have regard to the question of antiquity, but it was more interesting and more effectual to have regard to the prosperity of the people among whom one resided. He sincerely hoped that Swansea would go on prospering. Their favourable impression of Swansea had been created by the generous hospitality of the people generally; they had been entertained most royally, welcomed most warmly, and if every one had had the same experience as himself they had not only found very generous hosts, but very gracious hostesses. He had to couple with the toast the name of the Mayor. When he first saw the Mayor standing by the side of Dr. Griffiths he thought of the words of Tom Hood, who, in speaking of Cunningham, said, "He is a man formed by Nature tall enough to snatch a grace beyond the reach of Art." When the Mayor opened their first meeting so gracefully, he was surprised to find men of such ability, dignity, education, and courtesy carrying out the work of a principality such as Swansea. It was a great advantage when they could have such men to represent the public interest. He thought they would agree with him that they had never been to a place where the Mayor and those associated with him had been more equal to the occasion of discharging the functions which devolved upon them with the dignity and gracious courtesy which had characterized the Mayor of Swansea. He had much pleasure in submitting them this toast.

The company sang "For he's a jolly good fellow."

The Mayor was exceedingly obliged for the very kind manner in which the toast had been proposed, and for the kind reception of it. It had afforded the Corporation the very greatest pleasure to do all they could to welcome the British Medical Association there, and he wished to state publicly that it was most gratifying for them to hear from Dr. Woodcock that, so far as they had gone, the Association was satisfied with its reception at Swansea. On behalf of the Corporation he wished to say that they were most desirous of doing what they could for the interests of the town and public. He was very sanguine that the expenditure which was about to be made in Swansea would increase its trade. He hoped that the Association would pay Swansea a visit before another fifty years had passed, and although by then the present Corporation might have passed away, yet he hoped there would be a Corporation in Swansea that would again welcome the Association.

The President.

Dr. Frederick Roberts next proposed the toast of "The President of the British Medical Association, Dr. Griffiths." He said it was nearly forty-five years ago when Dr. Griffiths and he left Wales to enter upon their studentship in London. Dr. Griffiths had made his mark since then, not only in Wales, where his name was a household word, but in the whole of England and other countries. He certainly deserved the position he now held, and he (Dr. Roberts) wished him health and happiness in the future. Before sitting down, Dr. Roberts paid a handsome tribute to Mrs. Griffiths, the Misses Griffiths, and Mr. Griffiths, junior, who, he said, was a student in Capetown, and he asked the company present to join his name with that of Dr. Griffiths, and to wish him health, prosperity, and happiness in his new home. He asked them to drink most cordially the health of his old friend, "Tom" Griffiths, who had proved himself not only a splendid man in the medical profession, but who had discharged his duties as President of the Association in a way that had never been surpassed by anybody who had occupied that position.

The toast was drunk with much enthusiasm, the company singing "For he's a jolly good fellow."

The President, in reply, asked the company not to accept for gospel all that his friend had said; they must wait until the end of the year before they were in a position to judge of how he had discharged all the duties of President. He proposed a very hearty vote of thanks to Mr. Whitehead for the way in which he had fulfilled the duties of President during the past year. They could not expect that he (Dr. Griffiths) would do as well as Mr. Whitehead had done, who was a great surgeon in a great city, with a world-wide reputation. It was a great ordeal to undertake the duties of President after such a great man, but he would do his best.

Mr. Whitehead, who was greatly cheered on rising, thanked the last speaker for the kind words in which he had referred to him. The Association had been good enough to make him a Vice-President of their noble institution, which had given him great pleasure. He begged to express to the President his gratitude for having made his visit to Swansea one of uninterrupted pleasure. His kindness had exceeded what he ever anticipated. He (the speaker) had had the privilege of attending many annual meetings, but he could honestly say that they had never had an address delivered without notes which was so excellent and far-reaching in its influence as the address which their President delivered on Tuesday night. He thanked them very much for the way they had received him.

The President then proposed that the thanks of the British Medical Association be given to Mr. Brook, Dr. Frank Thomas and Mr. Couch, for the work they had done in organizing the meeting.

The vote was agreed to, and Mr. Brook replied in suitable terms.

Our Guests and Friends from Over the Sea.

Mr. Tatham Thompson proposed the above toast, as he said, with great pride because he thought it should never be omitted on these occasions.

Professor Senator of Berlin and Professor Cameron of Toronto replied.

The President said they could not part without thanking Dr. Koch for the excellent work he had done and without expressing the admiration they had for their German friends.

"God save the King" was then sung and brought the proceedings to a close.

An excellent programme of music was performed during the course of the evening, the violin playing of Dr. Arthur Haydon being much appreciated, as well as the songs sung by Mr. Meurig James, and the glees which were exquisitely rendered by the Tawe Glee Singers.

ANNUAL REPRESENTATIVE MEETING.

We have been requested to make the following corrections in the report of the Annual Representative Meeting published in the British Medical Journal of August 1st:

On page 255, line 11, the words "on active service" should be "on the active list."

On page 256, in the last line but four of the section relating to contract practice, add at the end of the sentence the following words: "And that for the words 'which may desire him to act' (following the word 'Division') should be substituted the words 'which may make application to the Committee that he should act'."

On the same page, in the election of the Medico-Political and Ethical Committees should be stated that, before taking the ballot on the Medico-Political Committee, two of the former members of the Committee, Dr. Major Greenwood and Mr. M. A. Messiter, were unanimously re-elected. Hence, though the meeting elected six members of the Committee, only four places were balloted for.

In the same way in the case of the Ethical Committee, five members were elected by the meeting: Dr. A. G. Bateman, Dr. Elliston, and Dr. Jepson being re-elected unanimously, and Mr. Ballance and Dr. Broadbent being elected as the result of a ballot.

The Dr. Kidd elected as a member of the Medico-Political Committee was Dr. Leonard Kidd, of Enniskillen, the President of the Irish Medical Association, not Dr. Kidd, of Dublin.

BRITISH MEDICAL TEMPERANCE ASSOCIATION BREAKFAST.

The annual breakfast meeting of the British Medical Temperance Association was held under the auspices of the National Temperance League in the lesser Albert Hall on the morning of Thursday, July 30th. About a hundred members and guests were present. Dr. J. A. Rawlings (Swansea) presided, and amongst others present were Dr. T. D. Griffiths, President of the British Medical Association; Sir Victor Horsley, Vice-President of the British Medical Temperance Association; Professor Murdoch Cameron (Glasgow), Surgeon-General Evatt, Dr. Ford Robertson, Mr. W. McAdam Eccles, and Dr. J. J. Ridge. Speeches on the temperance question were made by Professor Cameron, Sir Victor Horsley, Dr. Odell (Torquay), Dr. Griffiths, and Surgeon-General Evatt.

EXCURSIONS AND ENTERTAINMENTS.

A large number of attractive excursions were organized for the members of the Association, and as in previous years, a generous hospitality found expression in garden parties and other entertainments. Unfortunately the weather was not altogether propitious, and this at times somewhat seriously interfered with the excellent arrangements.

On the afternoon of July 28th a garden party was given by Mr. and Mrs. Walters at Ffynone, Swansea; on the following afternoon one was given by Sir John and Lady Llewelyn at Penllergaer, and another by Mrs. Picton Turbervill at Hendrefoilan. At the latter the guests were received on the wide terrace facing south, which commands a fine view of Swansea Bay, the Mumbles Head, and the wooded slopes of Clyne Valley. Numerous small tables were dotted about the grounds for the refection of the visitors, and music was rendered by a military band.

On Thursday afternoon the Mayor of Swansea, Mr. Griffith Thomas, gave a garden party at Sketty Park, the seat of Sir Robert Morris. In view of the threatening weather an immense marquee had been erected to shelter the very numerous guests, but fortunately the rain held off. The band, the vocalists, the operations of a cinematograph, and the presence of the King's Prizeman, Colour-Sergeant W. T. Davies, contributed to the success of the party, to which every guest was personally welcomed by the Mayor. On the same afternoon a garden party was given by Colonel and Mrs. Richardson at the Langland Bay Hotel, to which many of the members of the Association went after leaving Sketty Park. Colonel and Mrs. Richardson received their guests in the picturesque grounds, in which marquees had been erected. Music was rendered by the band of the 3rd Glamorgan Rifle Volunteers, and croquet and lawn tennis were played by some of the visitors.

On Friday afternoon a reception was held on Mumbles Pier by the Directors of the Mumbles Railway and Pier Company.

Among other popular excursions comparatively near at hand were those to the Towy and Bishopston Valleys, to Langland Bay, Caswell Bay, and Oystermouth Castle.

On Friday morning a sea trip promoted specially for ladies by the Swansea Harbour Trustees on the ss. *Brighton* as far as Worm's Head was well patronised. In the afternoon some three hundred members took advantage of another invitation from the same body for a sea trip on the same vessel to Carmarthen Bay. The party left Mumbles Pier at about three o'clock, and proceeded down the north passage of the Bristol Channel, hugging closely the rockbound coast of Gower. The weather was fine, and a very enjoyable afternoon was spent. The Swansea Postal and Telegraph Band was in attendance, and tea and refreshments were provided on board. The party arrived back at the Mumbles Pier at a little before seven o'clock.

Among the most popular of the more distant excursions were the following:

Craig-y-Nos Castle.—On Thursday afternoon the Baron and Baroness Cederström (Madame Adelina Patti) gave a garden party at Craig-y-Nos Castle. An hour's journey by special train took the party to Penwylt Station, which lies on the opposite side of the valley to the Castle, and from there the majority were driven to Craig-y-Nos; others found a short cut across the hillside and over a suspension bridge; and they chose the better part, for they had the pleasure of walking up to the Castle by winding paths through ornamental grounds. The Baroness, who was accompanied by her husband, received all her guests with the most charming courtesy. The principal apartments, full of souvenirs of Madame Patti's brilliant career, were thrown open. As the afternoon was fine the beautiful view from the terrace was enjoyed by those who did not find their way to the theatre, where operatic music was recited. The guests were most hospitably entertained in the ball room, and later found their way back to Penwylt, in carriages or on foot, grateful to the Baron and Baroness for a most agreeable afternoon.

Tenby.—About 150 members of the Association left Swansea on Saturday, August 1st, by special train for Tenby. The train started at 9.30 a.m., but owing to delays on the line did not arrive at Tenby till 12.35 p.m. Among those present were Dr. T. D. Griffiths (President), Dr. Frederick Roberts, Dr. Bagot Ferguson, Sir John Tyler, Professor Gluck (Berlin), Dr. Thomas, Dr. Arthur Haydon, Major Perry, I.M.S. On arriving the party was met by some representatives of the Corporation and local members of the Association at the station and driven in carriages and brakes to the Town Hall, where they were received by the Mayor of Tenby and Corporation. The Mayor in a brief speech said that owing to the lateness of the hour, after welcoming the members and friends to the town, he would at once place them in the care of guides in order that they might see something of the town before luncheon. This was done, and about 200 sat down to lunch at 1.30. During lunch the Mayor made a speech in which he said that he was pleased to see the members and friends for the first time in Tenby, and referred to matters of historical interest in the town, including details of its mediaeval history dating back to 1402, when the Charter was granted. Dr. Griffiths, in responding, returned a hearty vote of thanks to the Mayor and Corporation, and said that the British Medical Association was 70 years of age, and was born at Worcester. He considered that Tenby was one of the choicest places in the United Kingdom, and a great object to see. Dr. Hancocke Wathen proposed the toast of "The Mayor and Corporation of Tenby," to which the Mayor returned a suitable reply. Most of the party then drove in brakes to Manobier Castle, where, after inspecting the ruins, Dr. Haydon gave a few violin solos while they rested in the Castle before returning to Tenby. A few went to Caldey Island by the ss. *Firefly*. Tea was then taken at the Coburg Hotel, and most of the party returned by the 6.35 train to Swansea, after a most enjoyable outing, the weather being fine.

Caerphilly Castle.—About 60 members availed themselves of the Marquis of Bute's invitation to visit Caerphilly Castle, and, though the weather was unpromising during the railway journey, it cleared up before the train arrived at the destination. Some time was spent in examining the ruins, which are well preserved, date from the thirteenth century, and are said to be the only example of a concentric fortress in the country. The old banqueting hall has been roofed over and boarded, and here a sumptuous repast was prepared. Sir S. Lewis, his lordship's representative, intended to preside, but at the last minute was prevented, and his place was efficiently filled by Mr. Corbett, the estate manager. After the loyal toasts, the Mayor of Swansea, who had joined in the excursion proposed "Success to the British Medical Association" in a felicitous speech, to which the Chairman of the Council responded. Dr. Groves proposed and Mr. Parkinson seconded a vote of thanks to the Marquis of Bute, on whose behalf the Chairman responded, and expressed the gratification his lordship felt in entertaining the Association. Most of those present then proceeded to Cardiff Castle, guided by Mr. Evan Jones and Mr. Lloyd Jones, who had organized the excursion, and were well repaid for the extra journey by the inspection of the redecorated castle and the old ruins.

Llandrindod.—Also on Saturday morning about a hundred members of the Association accepted an invitation from the Llandrindod Wells Urban District Council and the members of the profession to visit that important health resort. The party were met at the railway station by the members of a reception committee, including members of the Urban District Council. At 1.30 p.m. a luncheon took place in the Albert Hall, at which Mr. James Edwards, Chairman of the Council, presided, and the toasts of success to the British Medical Association and to the Llandrindod Wells were honoured. Music was given by an orchestra and a prize choir. Subsequently the visitors were driven through the principal parts of the neighbourhood, the pump room and baths being visited.

Other excursions were to the Ilston and Park-le-Breos Valleys on Friday, and to Llanwrtyd on Saturday.

One of the most pleasing of the gatherings representing the lighter side of the annual meeting was the reception by the President of the Association and the Local Executive Council at the Albert Hall on Wednesday evening. The guests were welcomed by Dr. and Mrs. Griffiths, and, almost inconveniently filling the hall, made a pretty spectacle, with bright touches of colour afforded by the ladies' costumes and the academic garb of many of the members of the Association. Music, with solo and glee singing, was provided throughout the whole evening, and the opportunity for the renewal of friendships and pleasant social intercourse was obviously taken advantage of to the full.

On Friday evening an important reception was held by the Mayor of Swansea at the Royal Institution of South Wales, which is the centre for the cult of natural science in the district.

On Thursday night the usual smoking concert arranged by the exhibitors in the Museum took place at the Hôtel

Métropole. An excellent programme was provided, and an enjoyable time was spent. During the evening Dr. J. K. Couch was presented by the exhibitors with a set of Radcliffe Crocker's *Diseases of the Skin*, in recognition of his unfailing kindness and ability as Secretary of the Museum.

On the same evening the ladies accompanying the members of the Association were entertained by Mrs. T. D. Griffiths and the Ladies' Reception Committee at an entertainment given in the Grand Theatre. The play was Sydney Grundy's *Sowing the Wind*, and during the evening refreshments were handed round the dress circle by ladies of the Reception Committee.

INTERNATIONAL MEDICAL GOLF MATCH.

The annual golf match between members of the British Medical Association was played on the links of the Swansea Club. The course is very sporting, and although the weather was showery the round was most enjoyable. It was agreed to make the sides England *v.* the Rest of the World.

England.		The Rest.	
Dr. Grimsdale	0	Dr. Reid (captain)	0
,, Nathan Raw (captain)	1	,, Boyd	0
,, Goadby	1	,, Haultain	0
,, Rutherford	1	,, McKerron	0
,, Pope	0	,, Cameron	0
,, Eddowes	1	,, Storry	0
,, Goodall	1	,, Easterbrook	0
,, Morton	1	,, Carmichael	0
,, Creasy	0	,, Elsworth	1
,, Freer	1	,, Kynoch	0
,, Bronner	0	,, Cattenach	0
,, Murray	0	,, N. Walker	1
,, Morrison	1	,, Jones	0
	8		2

The game ended in favour of England by 8 matches to 2.

THE CONTINENTAL ANGLO-AMERICAN MEDICAL SOCIETY.

The annual luncheon of the Society was held in Swansea, at the Hôtel Métropole, on Thursday, July 30th, and was very successful in every way. Dr. Freeman (San Remo) occupied the chair, and twenty-seven members and their guests were present, including Dr. T. D. Griffiths (the President of the Association), Dr. Frederick Roberts, Mr. Mayo Robson, Mr. Walter Whitehead, Mr. Ward Cousins, Mr. Arbuthnot Lane, Mr. Edmund Owen, Sir Patrick Manson, Professor Adami, Dr. F. Burghard, Mr. Sheen, Professor Herman Senator and Dr. Reinhold Ledermann (Berlin), Dr. H. D. Rolleston, Mr. C. D. Marshall, Dr. Dawson Williams, Dr. Irving Cameron (Toronto), Professor Robert Saundby, Dr. Logan Turner, Dr. Creasy, Dr. Leigh Canney (Assouan), Dr. Michael Foster (San Remo), Dr. Sandwith (Cairo), Dr. Samways (Mentone), and Dr. Leonard Robinson (Paris). The speeches were short, as Mr. Mayo Robson had to leave early to give the Address in Surgery. After the Chairman had proposed the usual loyal toasts, Mr. Edmund Owen in happy speech proposed "The Health of the Society," and said what a good thing it was to learn to know each in this friendly way, and thus become acquainted with colleagues abroad, who would do the best for the patients and even attend to the embalming or burial if necessary. Dr. Sandwith, of Cairo, returned thanks and hoped that the Society would see many of the present company at the International Congress of Tuberculosis to be held in Paris in October, 1904. Dr. Michael Foster proposed the health of the guests, to which Dr. Frederick Roberts replied, saying what pleasure it had given him to be present, and he hoped to make the acquaintance of the remaining one hundred members at the dinner in Paris in 1904, when the Society will be, so to speak, at home with their own *chef*. A vote of thanks to the chair terminated the most enjoyable meeting.

LITERARY NOTES.

In a recent number of the *Westminster Review* Dr. John Knott discusses the medical knowledge of Shakespeare. He says that not many allusions to the anatomy and surgery of the skeleton are met with in the works of the great dramatist. He quotes two or three such references, however—one of which is of special interest. In the *Winter's Tale*, Autolycus calls out that he fears his "shoulder blade is out." Dr. Bucknill's commentary on this passage is an *ex cathedra* pronouncement that "the shoulder blade cannot be dislocated." On this Dr. Knott makes the interesting observation that "as in so many cases where commentators have undertaken to amend Shakespeare, the great poet is quite in accord with the most advanced knowledge of this subject in the present day, while the critic is absolutely wrong." Dr. Bucknill's mistake he attributes to the fact that in the ordinary text-books of the early portion of the last century dislocations occurring at the joint between the shoulder blade and the collar bone were always spoken of as dislocations of the clavicle, as the projecting extremity of that bone produced the resulting deformity. Of muscles as distinct entities in the human framework Shakespeare appears to have had no knowledge whatever; this is not surprising, as the Italian universities were then the only places in which anatomy was systematically studied. Shakespeare's vague use of the terms "nerve" and "sinew" show that he shared the indefinite ideas of his time. Hazy ideas of the circulation had existed among anatomists and physiologists before Harvey was born; and several passages of Shakespeare seem to Dr. Knott to show that Harvey's discovery, which was published after his death, would not have been a startling novelty to him if he had lived. The most definite expression on the subject he finds in *Coriolanus*, in the famous parable of the belly and the other members of the body. The stomach, after describing itself as the storehouse of the food received into the body, says:

> I send it through the rivers of your blood,
> Even to the court, the heart, to the seat o' the brain;
> And through the cranks and offices of man,
> The strongest nerves and small inferior veins
> From me receive that natural competency
> Whereby they live.

"If," says Dr. Knott, "this passage does not indicate a distribution of the pabulum by the circulating fluid to the various tissues of the body, distinctly foreshadowing the outline of what is known at the present day, I cannot suggest any other interpretation." After citing a number of instances of Shakespeare's references to matters connected with medicine, Dr. Knott justly points out that medical knowledge in the strictest sense did not exist in Shakespeare's day. "But when it comes to description of symptoms which may be observed at the bedside of the sick or dying, and which, the human organism being the same then and now, are familiar to every practising physician, we find them recorded by the dramatist with a vivid accuracy which cannot be surpassed." Dr. Knott's paper is an example of the blending of medical knowledge with literary taste which we are always glad to welcome in the members of our profession. Literature of the right kind enlarges and deepens human sympathy, which is apt to become shrivelled and hardened if exposed too exclusively to the dry light of Science.

THE PLAGUE.

Prevalence of the Disease.

India.

During the weeks ending July 2nd and 9th the deaths from plague in India numbered 1,563 and 2,087 respectively. This is a marked increase upon the previous weekly return, when for June 25th the figures were 1,362. In the Bombay Presidency the increase is most serious; the deaths from plague in this Presidency alone amounted to no fewer than 1,563 out of a total of 2,087. In Mysore the deaths from the disease also increased from 122 to 234. During the week ending July 9th the mortality from plague in other provinces and towns was as follows: Bombay City, 86; Calcutta, 15; Bengal, 7; North West Provinces and Oudh, 118; Central India, 5; Kashmir, 2. There has been a very satisfactory decrease in the plague returns from Ootacamund. The increase in plague cannot be ascribed to famine, for those engaged on famine relief works are steadily decreasing in numbers.

Cape Colony.

During the weeks ending July 4th and 11th the plague reports in Cape Colony were as follows:

Port Elizabeth.—Fresh cases, 1 and 2; deaths, 1 and 1; remaining in hospital, 6 and 6.

East London.—Fresh cases, 0 and 1; deaths, 0 and 1; remaining in hospital 5 and 4.

King Williamstown.—Fresh cases, 0 and 0; deaths, 0 and 0; remaining in hospital, 5 and 3.

Queenstown.—Fresh cases, 4 and 3; deaths, 4 and 3; remaining in hospital, 1 and 0. No case of plague in man or animal was discovered in Graaff-Reinet, Burghersdorp, Stockenstrom, or Riverdale.

Mauritius.

During the weeks ending July 23rd and 30th the fresh cases of plague in Mauritius numbered 4 and 12, and the deaths from the disease 3 and 8 respectively.

Hong Kong.

During the month of June there were very heavy rains and the summer heat (average temperature 83° F.) has set in. Coincidentally the number of cases of plague has rapidly fallen. The proportion of Europeans

attacked has been larger lately than earlier in the epidemic. The course of the epidemic may be seen from figures below:

	Cases.	Deaths.	Europeans Attacked.
Week ending May 16th ...	117	99	1
,, ,, 23rd ...	136	123	4
,, ,, 30th ...	123	103	4
,, June 6th ...	136	94	4
,, ,, 13th ...	120	78	12
,, ,, 20th ...	52	47	8
,, ,, 27th ...	54	[illegible]	[illegible]

Simultaneously with the decrease in the number of attacks a decrease in the proportion of deaths has been observed.

During the week ending July 18th 18 fresh cases of plague were reported in Hong Kong, and 9 deaths from the disease.

REPORT OF THE COMMISSIONERS IN LUNACY.

The fifty-seventh report of the Commissioners in Lunacy, which has just been issued, states that there were in England and Wales, on January 1st, 113,964 notified lunatics, being 3,251 in excess of the number on the same day in 1902. The average annual increase in the ten years ending December 31st, 1902, was 2,414, and in the five years ending the same day, 2,398. Thus the increase in 1902 exceeded the annual average increase in the preceding ten years by 837, and that in the preceding five years by 953. The distribution of the 113,964 lunatics is shown in the table given below:

Comparing this with a similar summary in the last report, it is seen that the increase in the numbers of the insane detained in county and borough asylums is very nearly 500 in excess of the total increase of the numbers notified, which implies a corresponding diminution in the numbers resident elsewhere on those of January 1st, 1902. The actual increase in the county and borough asylums was 3,749, in registered hospitals 27, in Broadmoor Asylum 73, in the metropolitan district asylums 62, and the number of patients in "single" care has increased by 22. On the other hand, the returns show a diminution of 291 in those detained in the metropolitan licensed houses, of 177 in the provincial licensed houses, of 24 in naval and military hospitals, of 140 in ordinary workhouses, and of 50 in the number of outdoor paupers.

Classification of Insane Patients.

The returns are made under the three heads of: (1) Private patients, of whom there were on the date mentioned 9,323, inclusive of 323 maintained by the State in the naval and military hospitals, and in Grove Hall, Bow. In this class are 242 patients found lunatic by inquisition who are not dealt with in these statistics. (2) Pauper patients, numbering 10,379, the cost of whose maintainance is defrayed wholly or in part out of the rates. And (3) criminal, of whom 738 are in the Broadmoor Asylum. The private patients (4,238 males, 5,085 females) have increased by 188—that is, precisely the same increase as was recorded for 1901. They have increased in the county and borough asylums by 145, in registered hospitals by 24, in provincial licensed houses by 22, and in "single" care by 22; and have diminished in the metropolitan licensed houses by 1, and in the naval and military hospitals by 24. The pauper patients (47,102 males, 56,692 females) have increased in the county and borough asylums by 3,628, in the registered hospitals by 3, and in the metropolitan district asylums by 62; but against this must be set a decrease of 290 in metropolitan licensed houses, 198 in provincial licensed houses, 140 in the ordinary workhouses, and of 50 amongst outdoor paupers, leaving a net increase of 3,015. The decrease in the number of these patients in licensed houses is mainly due to the opening of the County of London Horton Asylum and the transfer to it of patients from those houses. The criminal lunatics (643 males, 204 females) have increased by 48, of whom 40 are males. The recent extensions at Broadmoor Asylum have served to accommodate these as well as some previously detained in county and borough asylums, which now contain 108 patients of this class, or 24 less than on January 1st, 1902. The total increase in the number at Broadmoor has been 73.

Ratio of the Insane to the Population.

The aggregate on January 1st last gives a ratio per 10,000 of the total population of 34.14 insane, or 1 in every 293 persons. This ratio has steadily increased from the year 1859, when reliable statistics of insanity commence, at which date the ratio stood at 18.67 per 10,000, or 1 to 536. The rise has not been quite regular, and in the years 1900 and 1901 the ratio apparently remained stationary, but in the past year it rose from 33.55 to 34.14 per 10,000, or, in round numbers, from 1 insane person in 298 in 1902 to 1 in 293 in 1903. This increase has been practically confined to the "pauper" class.

Ratio of Admissions.—During the year 1902 there were admitted into single care and into institutions for the insane, exclusive of idiot establishments, 22,851 patients, of whom 2,493 were of the private class, 20,125 pauper and 233 criminal. Patients merely transferred from one institution to another or readmitted on fresh reception order in accordance with Section 38 of the Lunacy Act, 1890, are not included in these admissions. Of the above total, 18,992, or 83.1 per cent., were first admissions. These figures represent a proportion of 6.93 per 10,000 of the population, which contrasts with that of 4.71 in the year 1869. The comparatively small number of admissions into single care, and the slight annual increase in the whole number of those so treated, seems to the Commissioners to justify the inference that there is a growing tendency to send private patients into institutions, apart from the question of an actual increase in the number of the insane. It is among the pauper class that this increase is most to be remarked, and here it is noteworthy that the growth of the asylum population has not been accompanied by any similar increase in the number of insane in workhouses or in receipt of outdoor relief, but rather with a gradual diminution of these latter. On the other hand, the ratio of private patients admitted into care has not altered materially, although in 1902 and in 1901 it has been higher than in any previous year in the decade, namely, 0.76 and 0.75 per 10,000 of population as compared with 0.65 in 1893.

Death and Recovery Dates.—Starting with the period, 1873-1877, when the rate of recoveries to the daily average number

Summary of Insane Patients, January 1st, 1903.

Where Maintained on January 1st, 1903.	Private.			Pauper.			Criminal.			Total.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
In county and borough asylums	799	1,170	1,969	36,335	43,597	79,932*	92	16	108	37,226	44,783	82,009
In registered hospitals (including idiot establishments)	1,876	1,850	3,726	352	203	555	1	—	1	2,229	2,053	4,282
In licensed houses:												
Metropolitan (including one idiot establishment)	668	920	1,588	188	206	394	—	—	—	856	1,126	1,982
Provincial (including one idiot establishment)	505	819	1,324	137	153	290	—	—	—	642	972	1,614
In naval and military hospitals	230	—	230	—	—	—	—	—	—	230	—	230
In criminal lunatic asylum (Broadmoor)	—	—	—	—	—	—	550	188	738	550	188	
In workhouses:												
Ordinary workhouses	—	—	—	5,080	6,184	11,264	—	—	—	5,080	6,184	11,264
Metropolitan district asylums	—	—	—	2,858	2,982	5,840	—	—	—	2,858	2,982	5,840
Private single patients	160	326	486	—	—	—	—	—	—	160	326	486
Out-door paupers	—	—	—	2,152	3,367	5,519	—	—	—	2,152	3,367	5,519
Total	4,238	5,085	9,323	47,102	56,692	103,794	643	204	847	51,983	61,981	113,964

* One hundred and twenty-three of the patients were boarded out from asylums in workhouses under the provisions of the Lunacy Act, 1890, s. 26.

resident was 11.54 per cent., there has been a decline to 9.25 per cent. in the last quinquennium (1898-1902): and the death-rate has similarly fallen from 10.26 per cent. to 9.87 per cent. Unlike the recovery-rate, however, the decline in the death-rate has not been uniform, that rate being lowest in the penultimate of these periods, namely, 1893-7. As every year sees some additions to the chronic and incurable class, this fact must necessarily tend to lower a recovery-rate when based on the numbers in residence. For this reason the Commissioners also give the proportion of recoveries to admissions, which more accurately represents the extent to which recovery takes place in mental disease. It will be found that on this basis the recovery-rate in the first of these quinquennia (1873-7) was 38.78 per cent., rising to 40.11 in the third, and falling to 37.58 per cent. in sixth and last (1898-1902). The Commissioners think this fall in the recovery-rate may also be in great measure attributed to the admission in recent years of more chronic and less hopeful cases, of which they have from other sources abundant evidence. At any period and in any year of the series this recovery-rate has been higher amongst the female patients than amongst the males: whilst, *per contra*, the death-rate of the latter is invariably higher than that of the former.

Age, Sex, and Condition.

The proportion of females amongst the insane notified in this country has always been higher than that of males, both absolutely and relatively to the proportions of the sexes in the general population. Thus, on January 1st, 1903, the notified lunatics of the male sex were in the proportion of 1 to 310 of the general population, the female 1 to 278. The figures show that the proportion between the sexes amongst the insane was almost precisely the same in 1903 as on the same date in 1859. At first sight this would seem to indicate a very marked preponderance of the occurrence of mental disorder in females; but if, instead of dealing with the whole numbers under care, the calculation be limited to those admitted in any year, it will be found that the distribution between the sexes closely conforms to the proportions in the community at large. The lower death-rate occurring amongst the female insane explains the discrepancy, showing that the excess of females in the insane population is mainly a matter of survival.

As regards the age at which insane persons are admitted, nearly one-half (45 per cent.) of those annually admitted into institutions were between the ages of 25 to 44. There is undoubtedly a tendency to send persons of advanced years (that is, 65 and upwards) into asylums. The average for the five years, 1897-1901, for such persons was 948 males, 1,073 females, or a ratio to the population at that age-period of 15.6 and 14.0 per 10,000. These figures may be contrasted with those of previous quinquennia of which particulars are available, namely, 1884 to 1888, males 10.8, females 9.3; 1888 to 1892, males 11.6, females 10.2; 1892 to 1896, males 14.1, females 11.7. This manifest increase in the numbers of the aged admitted is probably directly related to the decline in the number of the insane detained in workhouses or cared for in their homes. The Commissioners think it may be doubted whether such removal of those whose mental faculties are sharing in the decay of advancing years is in many instances really necessary to their comfort and protection.

In regard to marriage, of the whole number admitted annually (on the average of the five years, 1897-1901), the "single" represented 4.7, the "married" 8.6, and the "widowed" 15.4 per 10,000 of the population, in each of these conditions respectively; but at the marriageable ages the "single" far exceed the "married" and considerably exceed the "widowed."

Proportion of First Attacks of Insanity.

Excluding cases of congenital insanity, the yearly average number during the five years, 1897-1901, of patients admitted into institutions in which the attack of insanity was stated to be the first from which the patient had suffered, amounted to 71.9 per cent. of the total admissions, being 74.5 per cent. amongst males, and 69.5 per cent. amongst females.

Causes of Insanity.

The etiological factors in the production of mental disorder are often complex and difficult to classify. On the average number admitted each year during the five years 1897-1901 a "previous attack" of insanity was stated in 16.2 per cent. of the male patients and in 23.1 per cent. of the females; whilst "heredity" was ascertained in 18.8 per cent. of the males and 24.6 per cent. of the females. Alcoholic excess was the assigned cause in 23.1 per cent. of the males and 9.6 per cent. of females. The two sexes approximate as regards the factors of "mental anxiety and worry," which cause was assigned in the 5.7 per cent. of the male sex and 5.9 per cent. of the female; whilst the emotional and moral disturbances of trouble and worry told more on women (8.5 per cent.) than men (3.8); those due to adverse circumstances, pecuniary and otherwise, operated more frequently in men (6.2. per cent.) than women (3.8). "Religious excitement" was the assigned cause in 1.2 and 1.6 per cent. respectively. Of conditions incidental to the female organization alone, parturition, and the puerperal state, accounted for 5.6 per cent., and pregnancy for 1.0 per cent. The so-called "moral" causes prevailed to a larger extent amongst patients of the "private" than amongst those of the "pauper" class, especially in the group of "mental anxiety." Amongst the "physical causes" alcoholic intemperance was a more frequent cause amongst the males of the pauper class, whilst a less marked difference in this respect between pauper and private female patients.

Forms of Insanity.

During the three years 1899-1901 the annual average of patients admitted into institutions for the insane for mania (all forms) was 8,339, and for melancholia (all forms) 5,672, the two together making 70 per cent. of the total admissions. In each of these types the incidence was higher among females, especially melancholia. The dementia group accounts for 12.9 per cent., namely, primary 3.1, secondary 3.8, senile 5.0, and organic 1.0. General paralysis of the insane occurred in 11.1 per cent. of the male and 2.2 per cent. of the female patients. During the five years, 1897-1901, the annual average number of patients admitted with general paralysis was 1,306, the incidence being highest at the age-period 35 to 44 years, when the proportion to admissions was almost double that of the proportion at all ages. The married general paralytics were 10.9 per cent. of the whole number of patients admitted, the "single" and "widowed" being 3.4 and 3.9 per cent. respectively.

Epilepsy and Insanity.

There are about 12 per cent. of the inmates of asylums suffering from epilepsy. The returns of admissions from all classes of institutions show that on an average almost 7.6 per cent. of the cases admitted have this affection, 2.5 per cent. being the rate amongst the "private" class, and 8.2 per cent. in the "pauper" class. As is the case with general paralysis, but to a much less marked extent, the proportion of males admitted with epilepsy exceeds that of females.

Suicidal Propensity.

Of the total number of persons admitted into institutions for the insane nearly one-fourth are known to be suicidally disposed. The percentage proportion based on the yearly average of admissions for the five years 1897-1901 was 23.1, a figure which shows a slight diminution in these cases—the average rate being 26.3 for 1888-92, and 24.7 for 1892-6.

(To be continued.)

ASSOCIATION NOTICES.

ELECTION OF MEMBERS.

Any candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

The Library will be closed until further notice.

Guy Elliston, *General Secretary.*

Dengue in Hawaii. It is reported that an epidemic of dengue has appeared in Hawaii. More than 1,500 cases have occurred, but so far there has been no death from the disease.

SPECIAL CORRESPONDENCE.

MANCHESTER.

Dr. Renaud's Portrait.—Diminished Infantile Mortality in Salford and Preventive Measures.

A PORTRAIT of Dr. Frank Renaud, painted by Mr. Wright Baker, was presented to the Board of Management of the Royal Infirmary at its meeting on July 27th. The Chairman, in accepting the gift from the subscribers, said that Dr. Renaud was appointed Physician in 1848, he became Consulting Physician in 1867, and at a later date became a member of the Board of Management, from which he retired in October last. The portrait will be placed in the Boardroom of the infirmary. Dr. Renaud is well-known as the historian of the infirmary.

The report of the Medical Officer of Health for Salford for 1902 is interesting in many respects, not the least being the following—a decline of the death-rate from 21.7 per 1,000 in 1901 to 19.2 in 1902, the lowest rate ever recorded for the borough. There is also to be noted a great improvement in the rate of infant mortality. Taking infants under the year, the deaths were at the rate of 157 per 1,000 births, as compared with 205 per 1,000 in 1901, and 211 the average of the next preceding five years. An interesting experiment has met with success. In one district—Greengate—"visiting and keeping under observation each newly-born child has produced a considerable amount of information, and has, I believe, proved useful in reducing the infantile mortality. Thus in 1900 the infant mortality in Greengate was 224 per 1,000 births; in 1901 it was 246 per 1,000; and in 1902, when the children were being observed, the rate fell to 178 per 1,000." Not less instructive is some information from the same quarter about how children should be fed. Four hundred and ninety-four infants were watched. Out of that number 374 were reared on the natural food of the mother. There were amongst them 39 deaths, or a rate of 104.3. Sixty-five had other food besides that from the mother. Ten of these died, and the death-rate rose to 153.8. On milk 30 were fed, and 12 died, a death-rate of 400. On other food 25 were fed; 11 of them died, and amongst these the death-rate accordingly is so high as 440 per 1,000.

CORRESPONDENCE.

WILLIAM CADGE MEMORIAL.

SIR,—At a meeting held on July 22nd, at the request of Mr. William H. Day, and attended by some of the professional friends of the late Mr. William Cadge, it was decided to perpetuate his memory in some permanent manner.

It was resolved that either a memorial window or brass, in the chapel of the Norfolk and Norwich Hospital, would be suitable, that subscriptions should be confined to his professional brethren, and limited to one guinea.

Those desiring to participate in the scheme are requested to kindly forward their subscriptions to Dr. Beverley, Norwich.—We are, etc.,

WILLIAM H. DAY,
Chairman of the Committee.
MICHAEL BEVERLEY,
Treasurer.

Norwich, July 24th.

THE INTERNATIONAL MEDICAL MANIFESTO ON ALCOHOL.

SIR,—Dr. Frederick Roberts, in his Address on Medicine, referred to the important international manifesto on alcohol which has been signed by several professors and others at home and abroad. He condemned it and them as going "too far" on the ground that alcohol is, in his opinion, of much service as a medicine in certain cases, and he spoke of the supporters of the manifesto as those "who absolutely and entirely object to the use of alcohol in any circumstances." As Dr. Roberts said he had a copy of the manifesto, may I ask him to be good enough to read it carefully again, and he will see that it makes no reference whatever to the use of alcohol as a medicine, but only as "a beverage." Whatever its value as a drug the two uses are absolutely different, and the more valuable it may be as a medicine the less suitable is it for use as a beverage. It would be of value and a graceful act of reparation if he would acknowledge his mistake.

I may also say that the views of the members of our British Medical Temperance Association on the use of alcohol as a drug are widely different, and I know of no one who "absolutely and entirely objects to its use under any circumstances" except as a beverage, that objection being due to the fact that it is the most destructive agent of life, health, and morals in operation in this country, and "productive of more damage than the accumulated evils of war, pestilence and famine," according to the words of the late Mr. Gladstone. We expect the medical profession, as the champions of preventive medicine, to take up an attitude of decided opposition to the common use of such an agent, the removable cause of these evils. Why a scientific manifesto against alcohol should be resented is not obvious.—I am, etc.,

Enfield, August 3rd. J. J. RIDGE,
Honorary Secretary British Medical Temperance Association.

A COMPARATIVE AND BIOLOGICAL STUDY OF THE NATURE OF CANCER.

SIR,—The very practical suggestions put forward under the above heading in the BRITISH MEDICAL JOURNAL for July 25th and August 3st remind one that in attacking the cancer problem by means of comparative pathology, veterinary work might well be supplemented by necropsies of wild species. The continent of Europe supports no less than thirty-six zoological gardens (many of them of considerable size), yet if any pathological observations are ever made in them, the results of such observations are not accessible to the scientific world. The excellent work recently done by the New York Zoological Society on the lesions produced by the *balantidium coli* in apes and by the *Mischerchen Schleuche* in deer serve as a worthy object lesson to other learned bodies. Were the attention of zoological pathologists similarly directed to cancer research, valuable results might be obtained. Specimens might also be collected in the remoter portions of the world and sent home for microscopic and museum work as opportunity offered. Even embryonic tissues can be safely transmitted for long distances. I have recently examined a foetal white rhinoceros in excellent preservation, though it had been brought from the the interior of Africa. It may here be mentioned that the "cancer age" in rhinoceroses seems to be about thirty years, since I recollect reading a report of a necropsy held on an individual of that age. A triangular elevated patch occupied the middle of the stomach towards the greater curvature, with the apex of the triangle directed towards the pylorus. The surface of the tumour was flattish and abraded: several nodules radiated from it, and the microscopic appearances resembled those seen in human carcinoma. —I am, etc.,

Manchester, Aug. 4th. GRAHAM RENSHAW, M.B.

CONTINUOUS RECTAL ALIMENTATION.

SIR,—Information kindly supplied by Dr. H. D. Rolleston enables me to state that a method almost identical with that which I recently demonstrated at the Swansea meeting of the British Medical Association had been described in 1886 by Dr. J. D. Mackenzie, of Glossop.[1] The chief point of difference is in the mode of regulating the rate of delivery. Dr. Mackenzie, using a tube of small diameter, varies the level of the vessel containing the fluid for injection. The screw-clip which I have employed is perhaps a simpler way of controlling the outflow. The apparatus is also simplified by immersing part of the length of the tube in a basin of hot water, as this obviates the necessity for applying a constant supply of heat to the container. Other modifications of the same method may have been put into practice, references to which would be much valued.—I am, etc.,

Curzon Street, W., Aug. 4th. WM. EWART.

OPHTHALMIA NEONATORUM.

SIR,—The subject of the prevention of ophthalmia neonatorum, discussed at a recent meeting of the Obstetrical Society of London, is a question of much interest and importance to the profession at the present time, in view of the operation of the new Midwives Act; and any teaching on the subject emanating from the Society is bound to carry great influence. The weight of evidence seems to be on the side of employing the Credé method immediately the head is born; and its superiority over any other method, together with its absolute harmlessness, makes one hope that the new Central Midwives Board will, when drawing up the rules for

[1] BRITISH MEDICAL JOURNAL, June 19th, 1886, vol. i, p. 1161.

the use of midwives, insist on this method as an ordinary routine measure. To reduce the number of blind in the country by 10 per cent. would be no small achievement.

In April, 1893, I published in the *Lancet* notes of what threatened to be a severe outbreak of ophthalmia at the General Lying-in Hospital, when I was house-physician there. Briefly it was, that in the first three weeks of that year, 42 per cent. of the children born in the hospital became affected with ophthalmia; the Credé method was then for the first time adopted, and from that date onward not one further case occurred, and the threatened epidemic was cut short. The slight inflammatory reaction in the eyes following the use of the drops passes off in three to four days.

As to the modes of infection, Dr. Cullingworth reported an interesting case of the birth of a living child following Caesarean section, with all the symptoms of ophthalmia present, and he went on to remark that "it was manifest that, whatever the source of infection, it was not the secretion of the maternal passages." I would suggest that in all probability the eyes were infected by the examining finger through the ruptured membranes, conveying purulent matter from the vagina into the uterus, previous to the operation. Feis, of Göttingen University Maternity, reports two cases where children were born with the symptoms of ophthalmia present, but the membranes had been ruptured fifty-four hours in one case, and two or three days in the other, previous to birth, and infection had in these cases undoubtedly been carried into the uterus and to the liquor amnii, by the finger of the medical man in attendance. —I am, etc.,

Wolverhampton, July 27th. WALTER W. HEELAS.

INTESTINAL OBSTRUCTION CAUSED BY ADHERENT APPENDIX EPIPLOICA OF SIGMOID FLEXURE.

SIR,—The case of intestinal obstruction caused by a band recorded by Mr. R. C. Dun in the BRITISH MEDICAL JOURNAL of July 25th is so nearly identical with a case which I reported in the JOURNAL of April 28th, 1900, p. 1022, that I am tempted to give the main points of resemblance. In both cases:

1. The omentum was inseparably adherent to the anterior peritoneum.

2. The band extended from an appendix epiploica of the sigmoid flexure across a single piece, not a loop, of small intestine.

3. The band was not sufficient of itself to produce complete obstruction.

4. Tuberculosis, apparently undergoing "natural" cure, was the cause of the band.—I am, etc.,

Plymouth, July 29th. C. HAMILTON WHITEFORD.

PUBLIC HEALTH ADMINISTRATION.

SIR,—I have read with much interest Dr. Griffiths's address at the annual meeting. I have noticed that the points he raised in regard to public health administration have been taken up and discussed in the daily press.

I am convinced that if the public only realized the importance of this question it would have attention beyond all others; but you must get the public to understand the necessity for reform.

I would suggest that the latter part of the address be printed, and a copy sent to every member of Parliament and to every newspaper. As part of the President's address it would carry weight and draw attention to a state of affairs of which the "man in the street" has no conception.

Once the country grasps the benefits likely to accrue from reform of the Public Health Acts we shall get what we want, but not before.—I am, etc.,

August 3rd. A MEDICAL OFFICER OF HEALTH.

THE TREATMENT OF APPENDICITIS.

SIR,—Dr. Caskie is quite right in his remarks as to the prevalence of this complaint in recent years; but I fear that a continuance of the routine treatment of former years, such as Dr. Caskie's letter suggests, would result in a very much heavier death-rate from the complaint than we have at present.

I think that most men are of opinion that the disease at present is different in type and severity, and should therefore not be judged by our previous knowledge of it. I had an attack three years since, and was treated much on Dr. Caskie's methods, with the result that I was enabled to resume work at the end of about six weeks. Since that time I have had attacks of pain certainly every week, which from time to time compelled me to keep my bed, and I was practically an invalid the whole time. Things came to a crisis a few months back, when I was found to have a peri-appendicular abscess. This was evacuated, and I have since then been in good health again. If I had not had the advantage of surgical aid I doubtless should have joined the majority.

Votaries of the old treatment may say that of course the presence of an abscess would in any case alter their treatment, but in my case diagnosis of abscess was not at all certain, and I know of no disease where symptoms are more misleading, and where they more frequently give a false feeling of security. Undoubtedly surgery is apt to be meddlesome now and again, but I take a necessarily personal interest in suggesting that we older practitioners should at times accept the fact that diseases may, and do, change in type, and necessarily in treatment.

As regards causation, my own case was certainly started by an attack of abdominal influenza a few weeks previous to the first attack.

As regards cigarette smoking I leave the question to be answered by the ladies, many of whom have been victims to the complaint.[1] I enclose my card.—I am, etc.,

August 3rd. A MEDICAL PATIENT.

PHIMOSIS AND CANCER OF THE PENIS.

SIR,—As some emphatic statements have lately been published to the effect that phimosis is a potent cause of cancer of the penis,[1] which I believe convey an erroneous impression, I shall be obliged if you will allow me brief space to justify my contention.

An elongated, tight, phimotic condition of the prepuce is one of the very commonest anomalies, and a large proportion of the male population is affected in this way—often to an extreme degree. If therefore phimosis be, as alleged, a potent cause of cancer of the penis, this particular local variety of cancer should be very common. The fact is, however, that cancer of the penis is one of the rarest forms of malignant disease—less than 4 per cent. of all cancers in men being of this variety. Of 2,669 men with cancer under treatment in the chief London hospitals I have found that only 106 had cancer of the penis; and of 2,891 similar cases in Vienna hospitals Gurlt found only 108 thus affected. If phimosis were really a potent cause of cancer of the penis, how very different would this proportion be.

According to American observers, the negroes of that country are almost universally affected with phimosis, yet among these people cancer of the penis is of even rarer occurrence than in England; thus, Rodman (Philadelphia) has never seen a case in the practice of a lifetime, and the Philadelphia hospital registers for a period of thirty years do not record a single case, although other forms of cancer are common.

The experience at Louisville is similar, for of 207 negro cancer deaths not a single one was due to cancer of the penis. —I am, etc.,

Clifton, Bristol, July 30th. W. ROGER WILLIAMS.

[1] *Polyclinic*, May, 1903.

OBITUARY.

JOSEPH GRIFFITHS SWAYNE, M.D. LOND.,

Consulting Obstetric Physician to the Bristol General Hospital.

WE have to record the death of Dr. Joseph Swayne, at his residence, 74, Pembroke Road, Clifton, at the ripe age of 85. Till quite recently Dr. Swayne had enjoyed fairly good health in spite of his great age, having been able to take drives almost daily when the weather permitted, but in a sudden attack of heart failure he passed away quietly on August 1st.

Joseph Griffiths Swayne was born on October 18th, 1819, in St. James' Barton, Bristol, his father, Mr. John Champeny Swayne, accoucheur to the Bristol Dispensary, living in that house at the time when that part of Bristol now chiefly occupied with factories was the fashionable part of the city. His grandfather was the Rev. J. Swayne, for many years vicar of Pucklechurch. He received his early education at the now extinct Bristol College, an institution started in 1831 to give a high class education under Dr. Gerrard and Mr. Francis Newman, brother of Cardinal Newman. Though of brief existence several subsequently distinguished persons passed through the College, amongst others the Rev. Samuel Wayte, President of Trinity College, Oxford; Professor G. G. Stokes, Augustin Prichard, and Sir Edward Fry. His medical education

was received at the Bristol Medical School, the Bristol Royal Infirmary, where he was a pupil of Mr. Lowe's, Guy's Hospital, and afterwards in Paris. In 1841 he took the diploma of the College of Surgeons and the licence of the Apothecaries Hall, and in 1843 the M.B.Lond. In this he took the gold medal in obstetric medicine and medicine, obtaining honours in the other subjects. Having taken his M.D. he commenced practice in partnership with his father, who had then moved to Berkeley Square, in 1845.

Mr. Swayne was at this time lecturer on midwifery and diseases of women and children to the Medical School, and his son, after a year's teaching anatomy, shared the lectures with his father. It must have been during this period that he prepared a work on anatomy, to be illustrated with engravings on copper, drawn by his own hand, but owing to the publication of a work on similar lines by Ellis, of University College, London, Dr. Swayne put the MS. aside and the work remains unpublished to this day. The etchings show with what care he did his dissections and the beauty of them both for accuracy of anatomy and skill of draughtmanship must cause regret that they never saw the light. In 1850 the dual lectureship terminated and Dr. Swayne continued to discharge the duties alone till 1895 when advancing years caused him, much to his colleagues' regret, to resign the post. In addition to lecturing Dr. Swayne enriched the museum with many specimens, and a large number of beautiful water-colour paintings, for with the brush he excelled his skill with the etcher's needle.

The Bristol General Hospital, then a young and progressive institution of some 20 years determined to appoint a physician-accoucheur, an innovation for a provincial hospital, and Dr. Swayne was appointed in the year 1853. This post he held till 1875 when he was elected consulting obstetric physician. In addition he was consulting physician-accoucheur to the Clifton Dispensary, consulting obstetric physician to the Royal Hospital for Sick Children and Women, and to the St. Augustine's and St. George's Dorcas Society. He was a Fellow and Vice-President of the Obstetrical Society, London, a Fellow of the Gynaecological Societies of London and of Boston, U.S.A., and in 1894, when the British Medical Association visited Bristol under Dr. Fox's presidency, he was President of the Obstetric Section. In 1880-1 he was President of the Bristol Medico-Chirurgical Society, and he had served the office of President of the Bath and Bristol Branch of the British Medical Association. Dr. Swayne's best known work was his *Obstetric Aphorisms*, a publication which has gone through ten editions in this country and been translated into as many as eight foreign languages, including Japanese and Hindustani. In many periodicals in the publications of the societies to which he belonged will be found numerous articles on obstetrics and gynaecology, all written in the clear, good and easily read English which was characteristic of the man. Besides a thorough knowledge of his special branch of medicine, Dr. Swayne was remarkably well read in the ancient literature of obstetrics, and this rendered his help to the staff of reviewers of the *Bristol Medico-Chirurgical Journal* especially useful. If a little inclined to too great length for the capacity of the *Journal* in the review of a book, his criticism always showed he had studied the work given him, and that he had not pronounced an opinion without careful perusal.

In addition to his public appointments, Dr. Swayne was for fifty years engaged in private practice, and though, owing to his age and the increased competition, he in the last few years of that period enjoyed more leisure, his opinion was till his retirement often sought by his colleagues. For many years he enjoyed a large practice in Clifton and Bristol, and for a lengthy period was regarded as the leading obstetric physician of the West of England.

Dr. Swayne was always on the side of advancement in learning. For the medical school he worked especially hard, giving a great deal of time to his lectures, while it is not publicly known how much he contributed to the present building in which the faculty of medicine is now housed.

Reference has been made above to Dr. Swayne's artistic skill. His ability was of no mean order, and many pictures from his brush are much prized by the friends to whom he gave them. He was an excellent judge of others' work, and could pass an opinion on a painting or engraving which was well worth having. Another of his hobbies was music. For many years he was a member of the Bristol Choral Society and the Cathedral Choral Society, and until quite recently a member of the choir of All Saints, Clifton. His connexion with that church began with the formation of the Building Committee in 1863, and of this Committee he was the last surviving member. For a few years he was a member of the Rifle Corps, and rose from the ranks to be a corporal.

In such a long life as his it is not surprising that his memory could recall many interesting events in the history of Bristol. Many were the stories he could recount of the scrapes of medical students of his day, of the practice of blood-letting and other methods of treatment in his early days of practice. Perhaps not the least interesting memory was that of the Bristol Riots in 1831, when he was taken into the neighbourhood of the Mansion House and Bridewell while they were still in flames.

On Dr. Swayne's retirement (after fifty years' work) from the Lectureship of Midwifery he was elected Emeritus Professor, and was entertained by his friends, colleagues, and pupils at dinner at the Clifton Down Hotel, on February 20th, 1895, at which Dr. Henry Marshall presided. He was then presented with a chest of plate containing a large silver tray, a bowl, and a pair of loving cups, engraved with Dr. Swayne's arms and crest. Dr. Marshall's words in presenting this gift may be repeated here as evidence of how highly Dr. Swayne was held in the estimation of his professional brethren:

> He was, indeed, a man of remarkable talent and ability, and with his high personal character he had given great tone and character during his career to the profession of medicine. There was no point in his career more remarkable than his wonderful power of work. In spite of a large practice, which most men would have considered a sufficient claim upon their time, Dr. Swayne stood out as an example of consistent hard work performed. The museum of the medical school would show this from one point of view, for no one individually had contributed so much to it as their guest of the evening. His contributions, whether to the Medical Society or the journals of the day, were both constant and thoughtful, not written for the sake of writing, but simply when he had something to say as a result of genuine hard work. . . . They all, present and absent, respected and esteemed him in every possible way for the long period that he had added lustre to the medical school, and for his practical and indomitable work. His liberality to the school was an additional claim upon their gratitude. Old and young would agree that during the period they had known him character and integrity had been combined with a simplicity which appealed to the hearts of all. There was not one of them who knew him but felt that they had a trusted friend. He had never heard a word said against Dr. Swayne, and the man who could utter such a word he (the speaker) would not care to number amongst his friends.

Dr. Swayne married Georgina, daughter of the Rev. George Gunning, who died in 1865. He leaves one son and one daughter.

The funeral service will be held on Saturday, August 8th, at All Saints Church, Clifton, and the interment at Arno's Vale Cemetery.

JOHN IVOR MURRAY, M.D., F.R.C.S.Edin.

Dr. John Ivor Murray, who died on July 24th at Addison Mansions, W., was the second son of John Murray, W.S., Law Agent to the Church of Scotland. He was born at Lasswade, near Edinburgh, in 1824, and received his preliminary education at the Lycée Saint Louis, Paris. He studied medicine at the University of Edinburgh, where had a distinguished career. In 1844 he gained as a prize in the class of military surgery a commission as assistant surgeon in the army, his work being published and used by Sir John Hall and other medical officers in the Crimean war. As there was no vacancy at the time, Dr. Murray, having become a Licentiate of the Royal College of Surgeons of Edinburgh in 1845, proceeded to China. After an adventurous voyage, in the course of which he made his way through Borneo, he reached Canton, where he was in charge of the hospital during the outbreak and attack on the European Factories in 1846. From Canton he proceeded to Shanghai, where he acquired a large practice. He built at his own cost in 1852 the first hospital for Europeans north of Hong Kong. During this time he was an ardent collector, and enriched several museums, notably the Natural History Museum of Edinburgh. When the Crimean war broke out, Dr. Murray went direct from China to Sebastopol, and was appointed second-class Staff-Surgeon, and acting second in charge of the General Hospital at Balaclava. For his services in the war he received the Crimean medal and Sebastopol clasp, and the Turkish medal. On his return to England in 1856 he took his M.D. degree at his old University, and was admitted to the Fellowship of the Edinburgh College of Surgeons. Dr. Murray was selected to accompany the late Lord Elgin on his embassy to Pekin, but, owing to the outbreak of the Mutiny, his services not being required, he was appointed Colonial Surgeon at Hong Kong, an appointment which he held from 1858 to 1872. He was also

appointed Inspector of Hospitals in 1868 under the contagious diseases ordinance. During those twelve years many important improvements in sanitary matters were effected, the European mortality being reduced from 7.52 to 2.92 per cent. During his Colonial surgeoncy Dr. Murray received from King Victor Emanuel of Italy, in 1867, and from King Carl of Sweden, in 1868, the Order of Merit of the First Class for assistance to scientific expeditions to China, and the thanks of the Imperial and Royal Academy of Vienna for similar services. In 1859, while in Japan, he was asked by His Majesty's Consul to assist him and the Japanese authorities to select a site for the British settlement, and he selected that on which the town of Yokohama now stands. In 1872 Dr. Murray finally returned to England. In 1875, owing to pecuniary losses, he had to return to active work, and settled in Scarborough, where he soon had a large practice, holding the appointments of Honorary Consulting Physician to the Sea-Bathing Infirmary and Cottage Hospital. In 1890 he retired from practice, and spent the remainder of his days in London. He was an ardent Mason, having held office both in China and Scarborough, and was Junior Warden of the Grand Lodge of the North and East Ridings of Yorkshire. Compelled by failing health, he retired to London in 1900, and was elected President for that year for the British Balneological Society. Dr. Murray married, in 1861, the daughter of Dr. Alexander of Wooler. He leaves a widow, two daughters, and four sons, two of whom are members of the medical profession.

WE regret to announce the death of Dr. JAMES WEAVER, which took place at his residence at Southport on August 1st, at the age of 71. He was a native of Oswestry and belonged to an old Herefordshire family. He studied medicine at University College, London, and obtained the Licence of the Apothecaries' Hall in London in 1854. One year previously to this he became L.F.P.S. and L.M.Glasg., and in 1874 he obtained the degree of M.D. from the University of St. Andrews. He entered the Royal Navy, and served as surgeon during the Crimean war, and was also with the British fleet in the Baltic. Dr. Weaver was the Medical Officer of Health for Longton in Staffordshire for a considerable time, and practised in this town for about twenty years. He was also Surgeon to the Longton Cottage Hospital. He went to Southport about twenty years ago. Dr. Weaver wrote many papers on medical subjects, and was the author of a *Practical Treatise on the Cure of Pulmonary Consumption*, which was published in 1874. He was a Freemason and a member of the Committee of the Southport Provident Society. Mr. J. J. Weaver, who is his elder son, is the Medical Officer of Health for Southport, while his younger son is practising as a solicitor in Longton. The funeral took place on Wednesday, August 5th, at Southport.

WITH deep regret we announce the death of Professor EDMOND NOCARD, Director of the School of Alfort. Professor Nocard, who was one of the most distinguished disciples of Pasteur, took part in the Congress for the Cure of Tuberculosis held in London in July, 1901, where he came forward as a strenuous opponent of Koch's theory concerning the propagation of the disease by milk or animal food. Following the results of experiments made by his masters and predecessors, especially Professor Chauveau, Dr. Nocard argued that it was possible to infect cattle by inoculating them with tuberculous products drawn from the human species. Professor Nocard, who began his career as a veterinary surgeon, was the author of several important bacteriological discoveries, chiefly affecting animals. He was in his 54th year.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are Dr. Oliveira Monteiro, Professor of Medicine in the Medical School of Oporto; Dr. Vacher, Mayor of Treignac, formerly Member of the French Chamber of Deputies, author of numerous works dealing with social economy and hygiene, aged 71; Dr. Bele, sometime Senior Surgeon to the Hospital of Maus, aged 82; Dr. Rudolf Trzebitzki, Professor of Surgery in the University of Cracow, aged 41; and Dr. Julien Bouglé, Surgeon to the Paris Hospitals, and one of the editors of the *Archives Générales de Médecine*, aged 35.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

FLEET SURGEON S. KEAYS has been placed on the retired list at his own request, July 14th. His commissions are thus dated:—Surgeon, March 30th, 1878; Staff Surgeon, March 30th, 1890; and Fleet Surgeon, January 3rd, 1899.

Staff-Surgeon ROBERT HILL has been appointed to the *Racer*, for Osborne College Cadet Sick Quarters, August 1st.

THE DEFECTS OF THE NAVAL MEDICAL SERVICE.

MR. GERALD SICHEL, F.R.C.S. (Guy's Hospital), writes: In my letter published in the BRITISH MEDICAL JOURNAL of July 18th I suggested the appointment of an Advisory Board, but since then it has been pointed out to me that the Admiralty have already the advantage of the opinion of such a Board, although not under quite the same name.

I take it that in an important question like this criticism is allowable. In the first place, then, I am sure that the present composition of this Board will never conduce to the thorough reorganization which we desire; the most that can be expected from it is, I fear, only the miserable patchwork makeshift with which, unfortunately, naval medical officers are only too accustomed.

My personal feelings towards those individual members of the Board whom I happen to know are nothing but friendly; four out of the five I have at one time or another met, and have reason to respect. But what I say I say for this reason: we cannot, when we are begging concessions from the Admiralty, expect an entirely impartial opinion from a Board on which the President and Secretary, still on the active list, are the paid servants of the Admiralty itself; and moreover, in spite of their unimpeachably high professional status, I doubt very much indeed whether the three civilian members of the Board are in a position to deal with the all-important disciplinary matters which are such a just cause of grievance to us.

Honest criticism can at all events carry no offence, even to the members of the Board themselves, and if they are really capable of effecting our much desired reforms, then I trust this letter will spur them on to do so quickly, and thus cover themselves with honour and me with confusion.

Personally, I would far rather see the civilian element extended, say by two younger men, and extended, too, beyond the limits of the Medical Board of Examiners to the Admiralty. I would like to see two senior retired naval medical officers and one of the Lords of the Admiralty to complete the Board.

The presence of the retired naval medical officers, as they can hope for no further advancement from the Admiralty, would engender a feeling of confidence, and ensure a proper representation of our disabilities, while the presence of a Lord of the Admiralty would show that the authorities are in earnest.

The first duty of the Board is to institute—as I believe the Army Advisory Board did—an exhaustive inquiry into the conditions under which we work. Until this is done, and until it is certain how far the Admiralty are willing to grant us concessions, but little can be formulated as to our reorganization.

Before ending I must again state my high personal opinion of all the members of the present Board whom it is my privilege to know, but a public board of gentlemen appointed to deal with an important public question must necessarily be open to criticism, which if it is honest cannot always be too appreciatory, although I am sure that each individual member, as far as in him lies, is in the present case honestly desirous of doing his best both by the navy and by the medical profession.

DR. J. H. BRYANT (London, W.) writes: My letter, which was published in the BRITISH MEDICAL JOURNAL of July 25th, has brought me several communications from naval surgeons which stimulate and encourage me to write further on the necessity for reform in this important branch of the public service.

It must appear quite evident to all who take an interest in the Royal Navy Medical Service that the Admiralty do not intend to grant the concessions which are absolutely necessary to render this service popular and efficient, for their hand has been exposed by the promulgation of the scheme for obtaining temporary surgeons (BRITISH MEDICAL JOURNAL, July 18th, page 174), which is nothing more or less than a direct attempt to avoid the carrying-out of the reforms which are so essential. Commissions have also been offered to medical schools in Australia without a pretence of examination.

The war in South Africa was a revelation to this country of the inefficiency of the R.A.M.C., and the necessary reform has followed. What would be the effect of a big naval war? In the words of a naval surgeon, "the deficiencies of the Naval Medical Service will be a scandal to the world." According to the July Navy List, an Order in Council fixes the strength of the Naval Medical Service at 544 surgeons of all ranks, but the actual number on the List is 489, a deficiency therefore existing of 55 surgeons. The number on the active list will continue to diminish, for a sufficient number of candidates of the proper standard will not be forthcoming so long as the present antiquated arrangements are in vogue.

What more striking evidence can be adduced as to the unsatisfactory conditions existing in this service than the fact that the three most successful members of it—namely, the late Director-General, the present Director-General, and the probable future Director-General—have all placed their sons in the executive, and not in the medical branch?

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT-COLONEL J. ARMSTRONG retires on retired pay, July 29th. He was appointed Surgeon, August 5th, 1877; became Surgeon-Major, August 5th, 1889; was granted the rank of Lieutenant-Colonel, August 5th, 1897; and made Brigade-Surgeon-Lieutenant-Colonel, July 20th, 1900. He was in the South African war in 1899-1900.

Captain R. T. BROWN, M.B., is placed on temporary half-pay on account of ill-health, May 13th. He joined the department as Lieutenant, April 25th, 1900, and was made Captain three years thereafter.

Captain T. H. M. CLARKE, M.B., D.S.O., Medical Adviser to H.R.H. the High Commissioner of Crete, recently received the warm appreciation and thanks of the Cretan Chamber of Deputies, expressed by a resolution carried unanimously, for his services to Crete.

The undermentioned Captains to be Majors, dated July 28th: F. J. W. Porter, D.S.O., O. L. Robinson, C. E. G. Stalkartt, M.D., T. W. Gibbard, M.B., C. J. Healy, M.B., H. J. M. Buist, D.S.O., M.B., G. B. Stanistreet, M.B., F. J. Wade-Browne, W. E. Hardy, J. E. Brogden, G. W. Tate, M.B., N. Faichnie, M.B., T. J. Lenehan, M.B., F. M'Dowell, F. W. Begbie, I. A. O. MacCarthy, C. W. Duggan, M.B., J. C. Jameson, M.B. Of these, Captains Porter, Stalkartt, Healy, Buist, Wade-Brown, Hardy, Faichnie, Lenehan, M'Dowell, Begbie, and Jameson served in the recent war in South Africa, other records in the Army Lists being: Captains Healy, Buist, Stanistreet, and Jameson, North-West Frontier of India campaign in 1897-8 (medal with two clasps); Captain Brogden- Chitral campaign in 1895 (medal with clasp), and North-West Frontier of India Campaign in 1897-8 (clasp); Captain Tate—Sierra Leone, 1898-9 (medal with clasp); Captains Lenehan and Begbie—Chitral Campaign, 1895 (medal with clasp); Captain McDowell—North-West Frontier of India Campaign, 1897-8 (medal with clasp); Captain MacCarthy—Nile Expedition, 1898 (British and Khedive's medals); Captain Duggan—West Africa, 1893 (medal with clasp).

The list of successful candidates for commissions in the Royal Army Medical Corps who competed at the recent examination in London is as follows:

	Marks.		Marks.
Gray, A. C. H.	612	Lewis, S. E.	515
Watson, D. P.	569	Harvey, N. D. E.	514
Dudding, T. S.	567	Longley, J. A.	505
Robertson, C. H.	558	Dunkerton, N. E.	497
Ommanney, F. M. M.	566	Hanafin, J. J.	497
Powell, J. E.	566	Osburn, A. C.	497
MacNicol, R. H.	554	Wetherell, M. C.	494
Devers, O.	546	Collins, R. T.	484
Paton, D. D.	545	M'Dowell, W. M.	483
Pallant, S. L.	537	Turner, F. J.	482
Bradley, G. H.	530	Hildreth, H. C.	476
Fawcett, H. H. J.	522	Mackay, G. S.	475
Wright, T. J.	521	Richmond, J. B.	475
Kempthorne, G. A.	520	Tulloch, F. M. G.	475
M'Eutire, J. T.	518	Glanvill, E. M.	471

Lieutenant F. C. Lambert, from the seconded list, to be Lieutenant, August 1st.

The undermentioned Lieutenants are confirmed in that rank: J. G. Bell, M.B., M. G. Winder, J. Gatt, M.D., T. S. Coates, M.B., A. E. B. Wood, M.B., J. C. G. Carmichael, M.B., R. H. Bridges, J. A. W. Webster, J. B. Meldon, R. C. Wilmot, C. W. Holden, H. B. Kelly, M.B., E. M. Pennefather, G. H. J. Brown, M.B., B. H. V. Dunbar, M.D., D. Ahern, D. G. Carmichael, M.B.

Exchanges.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 8s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

Captain R.A.M.C. is willing to exchange with a Captain under orders for tour of service abroad, preferably India, about the end of ensuing trooping season.—Address No. 3,640, British Medical Journal.

A Field Officer, home last trooping season, wishes for an exchange to India.—Please apply to Alpha, Messrs. Holt and Co., 3, Whitehall Place.

A Lieutenant-Colonel R.A.M.C., due for foreign service, probably India, this next trooping season, desires an exchange with an officer recently home.—Address Cyclops, c.o. Holt and Co., 3, Whitehall Place, London, S.W.

Army Medical Reserve.

Surgeon-Major J. Mackay and Surgeon-Captain W. J. Lawrie, having resigned their appointments in the Volunteers, cease to be officers in the Army Medical Reserve.

Royal Army Medical Corps (Militia).

The undermentioned supernumerary officers are absorbed into the establishment, dated August 1st: Captains T. W. G. Kelly, M.D., H. E. Mortis, and J. E. O'Connor, Lieutenants M. A. Cholmeley, and H. Fox, M.B.

Royal Army Medical Corps (Volunteers).

Mr. George Fyfe-Waterson is appointed Lieutenant in the Manchester Companies, July 25th.

Indian Medical Service.

The undermentioned Lieutenants are promoted to be Captains from June 28th: J. D. Graham, M.B., C. A. Sprawson, M.B., M. MacKelvie, M.B., W. Lapsley, M.B., W. H. Cazaly, P. A. Browne, M.B., W. V. Coppinger, M.D., A. Spitteler, M.B., J. C. S. Oxley, H. R. Macnee, L. J. M. Deas, M.B., W. M. Houston, M.B., W. D. A. Keys, M.D., G. J. G. Young, M.B., J. Good, M.B., A. Chalmers, M.B., W. G. Hamilton, S. R. Godkin. Their first commissions date from June 28th, 1900.

The undermentioned Lieutenants, who have arrived at Bombay, are posted to the commands noted: J. H. Murray, Punjab; F. P. Mackie, A. T. Pridham, J. O'Leary, S. R. Christophers, H. Emslie-Smith, and H. R. Dutton, Bengal; H. M. Brown and F. P. Vieyra, Bombay; A. F. Pilkington, P. G. Easton, T. C. M'C. Young, G. A. Jolly, H. C. Brown and C. L. Dunn, Punjab; H. H. Kiddle, C. E. Bulteel, and J. L. Lunham, Bombay; F. C. Rodgers, Madras; G. F. Humphreys, Bombay; C. A. F. Hingston, Madras.

The India Office announces that proposals for improving the pay and general conditions of the Indian Medical Service have been formulated by the Government of India, and that they will shortly be taken into consideration by the Secretary of State for India in Council. It is hoped that the revised terms will be published in September.

Royal Garrison Artillery (Volunteers).

Surgeon-Lieutenant W. Gray, M.D., 4th Durham, to be Surgeon-Captain, July 11th.

Surgeon-Major W. Chalmers-Cowan, 1st Forfarshire, to be Surgeon-Lieutenant-Colonel, July 18th.

Surgeon-Lieutenant W. Hind, M.D. 1st Shropshire and Staffordshire, to be Surgeon-Captain, August 1st.

Royal Engineers (Volunteers).

Surgeon-Lieutenant A. C. Hartley, M.D., 1st Bedfordshire, to be Surgeon-Captain, August 1st.

Volunteer Infantry Brigade Bearer Company.

Surgeon-Captain J. G. Fraser, M.B., 19th Middlesex Volunteer Rifle Corps, to be Captain 5th London Company, and to command, under para. 55A Volunteer Regulations, July 25th.

The following announcement is substituted for that in the *London Gazette* of July 10th under the heading of Sussex and Kent Volunteer Infantry Brigade Bearer Company:—Frederick B. Jefferiss, to be Lieutenant in the West Kent Company, July 11th.

The Volunteers.

Surgeon-Captain R. Jocelyn Swan, 1st Surrey (South London Rifles), has been attached for duty to the 1st Volunteer Battalion the Queen's Royal West Surrey Regiment, Croydon.

Volunteer Rifles.

Surgeon-Lieutenant J. B. Roberts, M.B., to be Surgeon-Captain 1st Nottinghamshire (Robin Hood), June 27th.

Surgeon-Major H. J. Fausset, 2nd Volunteer Battalion the Prince of Wales's (North Staffordshire Regiment), to be Surgeon-Lieutenant-Colonel, July 25th.

Surgeon-Captain W. B. Mackay, M.D., 1st Volunteer Battalion the Northumberland Fusiliers, to be Surgeon-Major, August 1st.

Mr. Harold V. Pryce to be Surgeon-Lieutenant in the 1st Volunteer Battalion the Royal Sussex Regiment, August 1st.

Second Lieutenant R. D. Evans, 1st (Pembrokeshire) Volunteer Battalion the Welsh Regiment, resigns his commission, and is appointed Surgeon-Lieutenant, August 1st.

Surgeon-Lieutenant J. S. Mackay, M.D., 6th (Fifeshire) Volunteer Battalion the Black Watch (Royal Highlanders), to be Surgeon-Captain, August 1st.

Lieutenant J. N. Macmullen, 1st Herefordshire, resigns his commission, and is appointed Surgeon-Lieutenant, August 1st.

Surgeon-Captain J. Strang, M.B., 3rd (Renfrewshire) Volunteer Battalion the Princess Louise's (Argyll and Sutherland Highlanders), to be Surgeon-Major, August 1st.

Volunteer Infantry Brigade.

Surgeon-Major F. J. Knowles, 2nd Volunteer Battalion South Lancashire Regiment, to be Brigade-Surgeon-Lieutenant-Colonel while holding the appointment of Senior Medical Officer to the South Lancashire Brigade, July 11th.

Dispatches from Somaliland and West Africa.

The dispatches relating to the operations of the Somaliland Field Force have been issued as a Parliamentary paper. Brigadier-General Manning includes a report from Major Gough, in which the latter officer brings to notice the names of officers who have "performed exceptionally good work on the occasion of the fight at Daratoleh," among these officers being Lieutenant J. H. Horton, Indian Medical Service.

The *London Gazette* of July 31st contains a dispatch from General Kemball, covering a report from Colonel Morland, Commandant Northern Nigeria Regiment, respecting the operations in Kano and Sokoto. In the course of his report Colonel Morland speaks highly of the services of Dr. W. Langley, Principal Medical Officer.

Australian Commonwealth Horse.

The undermentioned officers are granted temporary rank in the army while serving in South Africa: Captain J. Gillies, Medical Officer 1st Battalion, to be Captain, February 18th, 1902; Lieutenant J. F. Barnard, Medical Officer 2nd Battalion, to be Lieutenant, February 12th, 1902; Captain A. Fullerton, Medical Officer 3rd Battalion, to be Captain, April 2nd, 1902; Captain A. R. Stacpoole, Medical Officer 4th Battalion, to be Captain, March 26th, 1902; Lieutenant G. L. Bell, Medical Officer 5th Battalion, to be Lieutenant, May 22nd, 1902; Captain D. A. Shields, Medical Officer 6th Battalion, to be Captain, May 19th, 1902; Lieutenant G. A. Webster, Medical Officer 7th Battalion, to be Lieutenant, May 19th, 1902: Lieutenant W. J. Healey, Medical Officer 8th Battalion, to be Lieutenant, May 26th, 1902.

Colonel F. W. L. Hodder, M.B., R.P., A.M.S., has been appointed a J.P. for Durban County, Natal. He has been a resident in Natal for some years, and served in the South African war in 1899-1900 as S.M.O. College Hospital, Maritzburg, and later as S.M.O. hospital ships *Nubia* and *Simla*. He was promoted last year for these services, and mentioned in dispatches.

MEDICO-LEGAL AND MEDICO-ETHICAL.

A Medical Referee's Certificate.

At the Aberdare County Court there was heard on July 29th a case which raised an interesting question as to the effect of a certificate given by a medical referee under the Workmen's Compensation Act. It is made plain in the Act itself that the primary object of such a certificate is to settle the question whether the employers must continue to make weekly payments to a disabled workman. It seems, however, that the certificate may also prove to be of value to the employer in cases where death results from an accident. According to the report published in the *South Wales Daily News*, a workman employed by the Powell Duffryn Colliery Company met with an accident in the course of his employment on June 3rd, 1902, by being squeezed against a water tank. A few days afterwards a medical referee appointed under the Workmen's Compensation Act certified that the man had recovered from the injury; but he was unable to do any work and ultimately died. A necropsy showed that he had been suffering from a form of phthisis. A claim having been made for compensation under the Act, it appeared at the trial that the referee had given two certificates, in the first of which (dated October 13th) he had stated that the man was recovering, but was unfit for work, from an illness which was not caused, but which was aggravated by, the injury. In his last certificate, however, he said that

the organic disease was not caused by the injury. It was argued on the part of the workman that the medical referee's certificate was applicable only to cases in which the workman was in receipt of weekly payments. Reference was made to S. 11 of the first Schedule to the Act, which provides that any workman receiving weekly payments under the Act shall submit himself to a medical practitioner appointed in a certain way, "and the certificate of that medical practitioner as to the condition of the workman at the time of the examination shall be given to the employer and workman, and shall be conclusive evidence of that condition." On behalf of the workman it was admitted that the certificate was final so long as there was no change in his condition; but here the death of the patient had made a fundamental alteration. It was argued on behalf of the employers that the certificate was final and conclusive, and another doctor was called who could say from his own knowledge that death had not resulted from the injury.

The learned judge ruled that the certificate was only strong evidence in the employers' favour; but he eventually found as a fact that the death was not caused by the accident, and gave judgement for the employers.

CALLS UPON SHARES.

D. M.—The making of calls upon shares is regulated by the articles of each company. The Companies Acts are silent on the subject, and leave to each company the power to regulate the making of calls. It seems, however, to be clear that a call, in order to be valid, must be a call made strictly in accordance with the articles, and that a call is bad if made by directors not duly appointed, or by a number insufficient to make a quorum, and cannot be enforced against defaulters. To be valid, the resolution making the call must fix both the time and place for payment. In the circumstances, we should advise our correspondent to procure a copy of the memorandum and articles of association (if he has not already procured a copy) from which he may be able to satisfy himself as to the right of the company to make the call in question. We may observe, for his guidance, that a call must be made equally upon all members of the company or upon any particular class of shares. Perhaps the publicity given to his statement in this column may place him in communication with other shareholders; if not, he may obtain the names, addresses, and occupations of all the shareholders from the register which the company are bound to keep and to show to all shareholders free of charge.

PROFESSIONAL ETIQUETTE.

J. R. R. writes: I am devoting my attention to electrotherapeutics and have the necessary apparatus. I desire to intimate this to the profession here. Would I be acting properly if I were to send out a card to the profession in Glasgow after the following style: Dr. R. begs to intimate to the profession that he is prepared to treat their patients for them by the various electrical methods—*x*-rays, light, currents of high frequency, radiant heat baths, electrolysis, faradism, skiagraphy, etc.?

*** There can be no objection to such a circular being sent to the medical profession, but it must be confined to them.

OMAR.—A. has given up practising midwifery, and asks B. to attend the confinement of his patient C., which B. does. C. subsequently desires B. to continue as her ordinary medical attendant and to call in A. for consultation purposes only, when required. What is the duty of B.?

*** If B. attended at A.'s request he is in honour bound to refuse to become the ordinary medical attendant.

DOUBTFUL.—1. A. is a private practitioner, who is also medical officer to an infectious hospital. He attends patients in the public block who cannot afford to have their own doctor in a private ward. B. sent a patient into the public ward suffering from scarlet fever. A. finds the child has chronic enlargement of tonsils, calls on parents and tells them that B. has neglected the child in not suggesting an operation, and offers to remove tonsils in the hospital. The parents agree, and the operation is done while the child is "peeling." A. is at the same time called in to operate privately on another child of the same family for enlarged tonsils and adenoids, taking away the family as patients from B. Is A. justified in making use of his appointment to enlarge his private practice?

*** Assuming the facts to be as stated, A. had no right to call upon the patient or to reflect on B.

2. C., another private practitioner in the town, sends a child suffering from diphtheria into the public block. This child also has enlarged tonsils, which C. has arranged with parents to remove as soon as the child returns home from the hospital. A., without the knowledge or consent of parents or consulting C. in the matter, removes the tonsils in the diphtheria ward. Is A. justified in operating in an infectious ward without parents' knowledge or consent without ascertaining if C. has made any arrangements in the matter?

*** A. had no right to remove the tonsils without obtaining leave from the parents. He must take the responsibility of the circumstances under which he operated. He was not bound to communicate with C.

PRACTICE BY MEDICAL VISITORS AT SEASIDE RESORTS.

A CORRESPONDENT sends us the following complaint: As a general practitioner residing in a holiday resort much frequented by the medical profession, I wish to call attention to the fact that it is hardly correct for a visiting medical man to treat patients when on his holidays if there is a resident medical man in the place; also that if a visiting doctor is called in on an emergency, the proper course is to resign the case as soon as possible into the hands of the resident man.

*** It is certainly undesirable that a medical man should treat patients when on his holidays if there is a resident medical man in the place; but the circumstances may justify his doing so, and may also make it right for him to retain the case under his care.

THE PUFFING OF MEDICAL PRACTITIONERS IN THE LAY PRESS.

A CORRESPONDENT sends us a paragraph headed "A Brilliant Lady Doctor," clipped from the *Manchester Daily Despatch*. It is the sort of paragraph that is very likely to appear when a practitioner has been brought into prominence by attendance upon some notable person, and although we may deplore the bad taste of such publications and do what we can, as the Ethical Committee is doing, to prevent their appearance, it is unfair to suppose that the practitioners mentioned are in any way responsible for them.

ETHICAL.—Our correspondent will probably have observed the disclaimer published on page 283 of the BRITISH MEDICAL JOURNAL, which refers to the paragraph sent by him.

PROFESSIONAL SECRECY.

DOUBTFUL asks: An engine driver comes to consult me about an ordinary catarrhal ophthalmia, but in addition to this I find unequal Argyll-Robertson pupils, absence of knee-jerks, and other slight symptoms of tabes, and possibly early G.P.I., tremulous tongue, nervousness, and some excitability, etc. Apart from this he is quite well and able to do his work. Am I justified in reporting him to the railway company to prevent his working, as he himself does not see any reason why he should not do so?

*** The patient should be told of the danger of continuing his work, and of the desirability of his employers being informed of his condition. If the nature of the communication is explained to him our correspondent may write to the railway company, but he cannot do so without the patient's consent.

WHO IS TO PAY?

E. R. R. C.—The question involved is entirely one of evidence. From the facts placed before us by our correspondent it does not appear that the farmer ever pledged his credit at all. At the most he would only be liable for fees for the first attendance, unless he specifically undertook to continue liability for subsequent treatment.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

THE REGISTRAR-GENERAL'S QUARTERLY RETURN.

[SPECIALLY REPORTED FOR THE BRITISH MEDICAL JOURNAL.]

THE Registrar-General has just issued his return relating to the births and deaths registered in the second quarter of this year, and to the marriages during the three months ending March last. The number of persons married during that period was equal to an annual rate of 11.1 per 1,000 of the population, this rate being 0.4 per 1,000 below the average for the corresponding periods of the ten preceding years.

The births registered in England and Wales during the quarter ending June last numbered 241,778, and were equal to an annual rate of 29.1 per 1,000 of the population, estimated by the Registrar-General at 33,378,338 persons in the middle of the year. The birth-rate during the quarter under notice was 0.6 per 1,000 below the mean-rate in the corresponding quarters of the ten years, 1893-1902. The rates in the several counties ranged from 18.8 in Rutlandshire, 22.3 in Sussex, 23.2 in Devonshire, 23.4 in Oxfordshire, and 23.5 in Dorsetshire and in Westmorland, to 33.2 in South Wales, 33.3 in Staffordshire and in Northumberland, 35.8 in Monmouthshire, and 37.0 in Durham. In seventy-six of the largest English towns, including London, the birth-rate last quarter averaged 30.2 per 1,000; in London the rate was 29.0 per 1,000, while it averaged 30.8 in the seventy-five large provincial towns, among which the birth-rates ranged from 17.2 in Hastings, 18.6 in Bournemouth, 21.0 in Hornsey, 21.5 in Halifax, 22.9 in Bury, and 23.6 in Bradford, to 37.2 in Merthyr Tydfil, 37.4 in Gateshead, 38.2 in St. Helens, 38.6 in Warrington, and 41.2 in Rhondda.

The births registered in England and Wales during the three months under notice exceeded the deaths by 118,184; this represents the natural increase of the population during that period. From returns issued by the Board of Trade, it appears that 145,226 emigrants embarked during last quarter for places outside Europe, from the various ports of the United Kingdom at which emigration officers are stationed. Of these 145,226 emigrants, 50,792 were English, 11,496 Scottish, and 10,518 Irish; while 63,420 others were of foreign origin. Compared with the averages in the corresponding quarters of the three preceding years, the proportion of emigrants to the total population showed an increase of 81.8 per cent. in England, of 97.8 per cent. in Scotland, and of 5.6 per cent. in Ireland.

During the second quarter of the year the deaths of 123,594 persons were registered, equal to an annual rate of 14.9 per 1,000 persons living, this rate being 1.7 per 1,000 below the average in the corresponding quarters of the ten preceding years. The lowest county death-rates last quarter were 11.6 in Surrey, 11.8 in Middlesex, 12.1 in Essex, 12.3 in Berkshire, 12.4 in Sussex, and 12.5 in Kent; the highest rates were 16.4 in Durham, 16.6 in Cumberland, 17.1 in Yorkshire North Riding, 17.6 in Lancashire, and 18.1 in North Wales. In 76 of the largest towns, with an aggregate population of more than 15,000,000, the death-rate averaged 15.3 per 1,000; in 103 smaller towns, containing rather more than 3½ millions of persons, the rate of mortality averaged 14.0 per 1,000; while in the remaining, and chiefly rural, parts of England and Wales, with a population of about 14½ millions, the death-rate was 14.6 per 1,000. In London the rate was 14.7 per 1,000; while among the 75 large provincial towns it averaged 15.6 per 1,000, and ranged from 7.8 in Hornsey, 9.5 in Walthamstow, 9.7 in Willesden, 10.1 in Kings Norton, and 10.4 in Croydon, to 19.5 in Liverpool and in Manchester, 19.7 in Sunderland and in Swansea, 21.6 in Wigan, and 22.8 in Middlesbrough.

The 123,594 deaths from all causes registered in England and Wales during the three months ending June last included 10,088 which were referred to the principal infectious diseases; of these, 2,772 resulted from measles, 2,520 from whooping-cough, 1,454 from diarrhœa, 1,337 from diphtheria, 1,057 from scarlet fever, 635 from "fever" (principally enteric), and 313 from small-pox. The mortality last quarter from scarlet fever was exactly equal to the average; that from small-pox was slightly in excess; while from each of the other principal infectious diseases the mortality was below the average. Of the 313 deaths from small-pox, 49 belonged to Liverpool, 17 to Oldham, 14 to Leicester, 12 to Bradford, 11 to Leeds, and 10 to Manchester.

The rate of infant mortality in England and Wales last quarter, or the proportion of deaths among children under 1 year of age to registered births, was equal to 110 per 1,000, against an average rate of 124 per 1,000. The lowest rates of infant mortality in the various counties were 65 in

Oxfordshire, 73 in Somersetshire, 82 in Gloucestershire, 83 in Westmorland, and 84 in Sussex, in Berkshire, and in Hertfordshire; the highest rates were 123 in the North Riding of Yorkshire, 124 in the West Riding of Yorkshire and in Cumberland, 128 in Nottinghamshire, and 131 in Lancashire. In seventy-six of the largest English towns the mean rate was 115 per 1,000; in London the proportion was 103 per 1,000, while it averaged 120 in the seventy-five large provincial towns, among which the rates ranged from 51 in Bournemouth, 65 in Walthamstow, 73 in Burton-on-Trent, 75 in Southampton, and 70 in West Hartlepool, to 158 in Sheffield, 161 in West Bromwich, 163 in Oldham, 168 in Middlesbrough, and 108 in Burnley.

The mortality in England and Wales last quarter among persons aged between 1 and 60 years was equal to 7.8 per 1,000 of the population estimated to be living at this group of ages, and was 1.1 per 1,000 below the mean rate in the ten preceding second quarters. In the seventy-six large towns the death-rate at this group of ages averaged 8.6 per 1,000, and ranged from 3.8 in Hornsey, 4.6 in Willesden, 4.8 in Kings Norton, 5.0 in Leyton, and 5.2 in Croydon, to 11.4 in Oldham, 11.5 in Manchester, 11.6 in Liverpool, 13.4 in Wigan, and 14.2 in Middlesbrough.

Among persons aged 60 years and upwards the death-rate last quarter was equal to 62.8 per 1,000 of the estimated population at this age-period, being 2.9 per 1,000 less than the average rate in the corresponding quarters of the ten preceding years. In the seventy-six towns the death-rate at this age-group averaged 64.1 per 1,000, the lowest rates being 39.9 in Hornsey, 43.9 in Kings Norton, 44.8 in Walthamstow, and 45.8 in Croydon and in Tynemouth; and the highest rates, 83.8 in Swansea, 84.7 in Bootle, 86.4 in Bury, 87.2 in St. Helens, 88.0 in Wigan, and 91.2 in Rochdale.

The mean temperature of the air was 44.3° in April, 53.6° in May, and 55.8° in June. The amount of rain measured during the quarter was 2.87 in., of which 1.85 in. fell in April, 1.95 in. in May, and 6.07 in. in June.

EPIDEMIC MORTALITY IN LONDON.

[Specially Reported for the British Medical Journal.]

The accompanying diagram shows the prevalence of the principal epidemic diseases in London during the second, or spring, quarter of the year. The fluctuations of each disease, and its relative fatality as compared with that recorded in the corresponding periods of recent years, can thus be readily seen.

Small-pox.—Two fatal cases of small-pox, both belonging to Lambeth, were registered in London last quarter, against 73, 1, and 5 in the three preceding quarters. The number of small-pox patients admitted into the Metropolitan Asylums Hospitals during the quarter was 161, against 325, 42, and 39 in the three preceding quarters; 57 cases remained under treatment at the end of the quarter, against 42, 14, and 13 at the end of the three preceding quarters.

Measles.—The deaths from measles, which had been 346, 571, and 671 in the three preceding quarters, further rose last quarter to 759, but were 119 below the average number in the corresponding periods of the ten preceding years. Among the various metropolitan boroughs this disease showed the highest proportional mortality in St. Pancras, Hackney, Finsbury, Shoreditch, Bethnal Green, Poplar, and Battersea.

Scarlet Fever.—The fatal cases of this disease, which had been 139, 134, and 109 in the three preceding quarters, further declined to 82 last quarter, and were 102 below the corrected average number. Among the various metropolitan boroughs scarlet fever was proportionally most fatal in St. Marylebone, Hampstead, Hackney, Holborn, Bermondsey, and Deptford. The number of scarlet fever patients in the Metropolitan Asylums Hospitals, which had been 2,656, 2,327, and 1,704 at the end of the three preceding quarters, had further declined to 1,614 at the end of last quarter; 2,681 new cases were admitted during the quarter, against 4,084, 4,179, and 2,705 in the three preceding quarters.

Diphtheria.—The deaths referred to diphtheria in London, which had been 244, 317, and 241 in the three preceding quarters, further decreased to 175 last quarter, and showed a decline of 271 from the average number in the corresponding quarters of the ten preceding years. The greatest proportional mortality from this disease was recorded in Stoke Newington, Holborn, Shoreditch, Poplar, Deptford, and Greenwich. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals at the end of June was 781, against 981, 927, and 903 at the end of the three preceding quarters; 1,495 new cases were admitted during the quarter, against 1,972, 2,053, and 1,761 in the three preceding quarters.

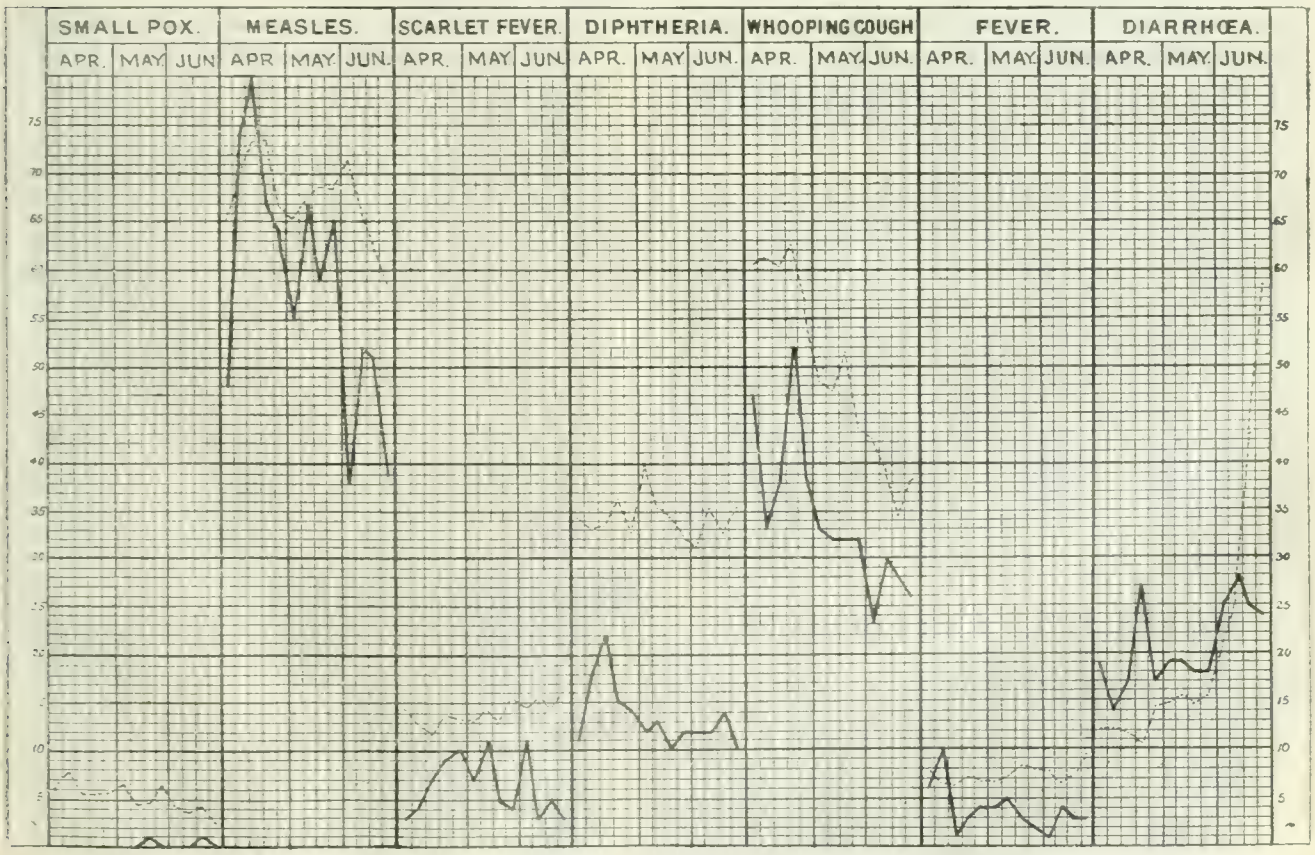
Whooping-cough.—The fatal cases of this disease, which had been 469, 414, and 760 in the three preceding quarters, declined again last quarter to 445, and were 202 below the corrected average number. Among the various metropolitan boroughs whooping-cough was proportionally most fatal in Chelsea, Islington, Stoke Newington, Finsbury, Poplar, Bermondsey, and Battersea.

"*Fever.*"—Under this heading are included deaths from typhus, from enteric fever, and from simple and ill-defined forms of continued fever. The deaths referred to these different forms of "fever," which had been 197, 214, and 91 in the three preceding quarters, further declined last quarter to 49, and were only slightly more than a half of the average number in the second quarters of the ten preceding years. Two deaths from typhus and 1 from simple continued fever were registered during the quarter under notice. The "fever" mortality was highest in Paddington, the City of Westminster, Stoke Newington, Hackney, and Lambeth. The Metropolitan Asylums Hospitals contained 88 enteric fever patients at the end of last quarter, against 359, 210, and 92 at the end of the three preceding quarters: 149 new cases were admitted during the quarter, against 650, 593, and 213 in the three preceding quarters.

Diarrhœa.—The 270 deaths from diarrhœa in London last quarter almost corresponded with the corrected average number. Among the various metropolitan boroughs this disease was proportionally most fatal in Hammersmith, Fulham, Holborn, Shoreditch, Poplar, and Bermondsey.

In conclusion, it may be stated that the 1,782 deaths referred to these

Deaths from Epidemic Diseases in London during the Second Quarter of 1903.



Note.—The black lines show the *recorded* number of deaths from each disease during each week of the quarter. The dotted lines show the *average* number of deaths in the corresponding weeks of the ten preceding years 1893-1902.

principal infectious diseases during the quarter ending June last were more than 31 per cent. below the corrected average number in the corresponding quarters of the ten preceding years. The lowest death-rates from these diseases last quarter were recorded in Kensington, Fulham, the City of Westminster, Hampstead, the City of London, and Camberwell; and the highest rates in St. Pancras, Holborn, Finsbury, Shoreditch, Poplar, and Battersea.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8853 births and 4,158 deaths were registered during the week ending Saturday last, August 1st. The annual rate of mortality in these towns, which had been 13.7, 13.5, and 13.4 per 1,000 in the three preceding weeks, rose last week to 14.4 per 1,000. The rates in the several towns ranged from 3.3 in Hornsey, 5.4 in Leyton and in Handsworth, 6.5 in Plymouth, 6.6 in Bournemouth, 7.6 in Tottenham and in East Ham, 8.1 in Croydon, 8.2 in Kings Norton, and 8.3 in Reading, to 19.9 in Tynemouth, 20.1 in Great Yarmouth, 20.2 in Birkenhead, 20.6 in Sunderland, 21.2 in Liverpool, 24.9 in Bootle, and 25.9 in Warrington. In London the rate of mortality was 13.5 per 1,000, while it averaged 14.8 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 2.0 per 1,000 in the seventy-six large towns; in London this death-rate was equal to 1.6 per 1,000, while it averaged 2.3 in the seventy-five large provincial towns, among which the highest death-rates from the principal infectious diseases were 4.0 in Grimsby and in Tynemouth, 4.1 in Walsall, 4.2 in Sheffield, 4.4 in Rhondda, 4.9 in Stockport, 5.3 in Aston Manor, and 6.0 in Bootle. Measles caused a death-rate of 1.5 in Sheffield and in Merthyr Tydvil, 2.2 in Wolverhampton, in Coventry, and in Stockport, and 2.3 in Ipswich; scarlet fever of 1.0 in Great Yarmouth, and 1.7 in Walsall and in Bootle; diphtheria of 1.0 in Stockton-on-Tees and 1.4 in Reading; whooping-cough of 1.3 in York; "fever" of 1.6 in Grimsby and 1.8 in Rotherham; and diarrhœa of 3.1 in Rhondda, 3.4 in Bootle, 3.9 in Warrington, 4.0 in Tynemouth, 5.3 in Aston Manor, and 6.0 in Birkenhead. Of the 5 deaths from small-pox registered in these towns last week, 1 belonged to Liverpool, 1 to Bootle, 2 to Leeds, and 1 to Gateshead. The number of small-pox patients under treatment in the Metropolitan Asylums Hospitals, which had been 77, 71, and 71 at the end of the three preceding weeks, was 66 at the end of last week; 9 new cases were admitted during the week, against 31, 7, and 12 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital on Saturday last, August 1st, was 1,726, against 1,701, 1,710, and 1,711 on the three preceding Saturdays; 237 new cases were admitted during last week, against 253, 243, and 229 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, August 1st, 934 births and 480 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality, which had been 16.2, 15.2, and 15.4 per 1,000 in the three preceding weeks, fell last week to 14.7 per 1,000, and was 0.3 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 10.8 in Perth, 12.3 in Aberdeen, and 12.4 in Leith to 15.4 in Edinburgh and 18.0 in Greenock. The death-rate from the principal infectious diseases averaged 2.0 per 1,000 in these towns; the highest rates being recorded in Paisley and Glasgow. The 225 deaths registered in Glasgow last week included 4 which resulted from diphtheria, 8 from whooping-cough, 3 from "fever," and 15 from diarrhœa. Three fatal cases of measles and 3 of diarrhœa were recorded in Edinburgh; 4 of diarrhœa in Dundee, 3 in Aberdeen, and 3 in Paisley; and 2 of whooping-cough in Aberdeen and 2 in Leith.

BACTERIOLOGICAL DIAGNOSIS AT NEWCASTLE-ON-TYNE.

DURING the last twelve months there has been a slight decrease in the number of specimens examined in the Bacteriological Diagnosis Department of the University of Durham College of Medicine, Newcastle-upon-Tyne. Some of these examinations have been made for medical practitioners, others by special arrangements for the County Councils of Northumberland and Durham, the Guisborough Combined District Councils of the North Riding of Yorkshire, the Town Councils of Sunderland and West Hartlepool, the Newcastle Royal Infirmary and other public institutions. The total number of specimens examined in the laboratory during the year ending May 31st, 1903, amounts to 938, as compared with 1,009 during the preceding twelve months. The different kinds of examinations carried out were as follows: 513 samples of sputum from suspected cases of phthisis were examined for tubercle bacilli, which were found in 218 cases; 101 specimens of blood were examined from suspected cases of enteric fever by Widal's method, a positive result being obtained in 44 cases; 205 swabs from suspected cases of diphtheria were examined for the bacilli, which were found in 66 specimens; 10 specimens of pus were examined, the pneumococcus was found in 2, streptococcus pyogenes in 3, staphylococcus pyogenes aureus in 4, and the gonococcus in 1; tubercle bacilli were found in 1 specimen of urine, and in 1 of faeces; 8 specimens of anthrax were examined, positive results being obtained in 4; 50 samples of water were examined quantitatively for bacteria.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF LONDON.

THE following candidates have passed the Intermediate Examination in Medicine in Honours as undernoted:

Anatomy.—First class: G. Cockcroft (Exhibition and Medal), Guy's Hospital; P. L. Giuseppi, St. Bartholomew's Hospital; M. L. Hine, Middlesex Hospital; T. B. Layton, Guy's Hospital; G. P. Mills (Gold Medal), University of Birmingham; H. E. Quick, B.Sc., St. Bartholomew's Hospital; J. B. F. Wilson, Yorkshire College. Second class: J. S. Brockless, Guy's Hospital; Josephine Cotpl. nd London School of Medicine for Women; J. B. Dawson, University of Birmingham; T. E. Francis, St. Mary's Hospital; J. Molyneux Hamill, B.Sc., University of Cambridge and St. Bartholomew's Hospital, Janet Elizabeth Lane-Claypon, University College and London School of Medicine for Women; G. W. Lloyd, St. Bartholomew's Hospital; R. H. Mole, B.A., University College, Liverpool; C. O. Stallybrass, Royal Infirmary and University College, Liverpool; C. E. Tangye, B.A., University of Birmingham; J. A. Watt, University College; S. R. Wilson, Owens College; C. Yorke, University College, Liverpool.

Physiology and Histology.—First class: J. M. Hamill, B.Sc. (Gold Medal), University of Cambridge and St. Bartholomew's Hospital; Janet Elizabeth Lane-Claypon (Exhibition and Medal), University College and London School of Medicine for Women. Second class: S. R. Wilson, Owens College. Third class: G. Cockcroft, Guy's Hospital; J. B. Dawson, University of Birmingham; L. F. Hirst, University College.

Materia Medica and Pharmaceutical Chemistry.—First class: Janet Elizabeth Lane-Claypon, University College and London School of Medicine; S. R. Wilson (Exhibition and Medal), Owens College. Second class: J. M. Hamill, B.Sc., University of Cambridge and St. Bartholomew's Hospital; Zillah Mary Scruby, London School of Medicine for Women. Third class: T. F. Francis, St. Mary's Hospital; C. S. van R. Harwood, Westminster Hospital; Eleanor Lowry, London School of Medicine for Women; Helen Irene Moss, London School of Medicine for Women; H. E. Quick, B.Sc., St. Bartholomew's Hospital.

VICTORIA UNIVERSITY.

THE Vice-Chancellor conferred the medical degrees in the Whitworth Hall, Manchester, on July 31st. In his speech he recalled the fact that the new charter of the "Victoria University of Manchester" had passed the Great Seal, and that, although the change is a great one, continuity will be preserved. The Chancellor, Earl Spencer, still holds that office; it is for this reason that the name of the Chancellor is not cited in the new charter. All graduates will remain graduates of the same corporate body of which they are now graduates, and will have the same rights. Convocation also will continue to exercise the same rights as before, with some slight extension. For a time undergraduate members of the University of Liverpool and of the proposed University in Yorkshire, as well as of Owens College, will have the right of proceeding to the degrees on the same terms as at present, and the statutes of the Victoria University regarding examinations will continue in force until expressly altered. The Vice-Chancellor also expressed the satisfaction of those interested in medical education in the city that there is now an immediate prospect of a new infirmary being very shortly erected on the Stanley Grove Estate in Manchester, with adequate facilities for clinical study, and that owing to these increased facilities the proximity of the new infirmary to the College, and the hearty co-operation of the governing bodies, both lay and professional, of the two institutions there will soon be advantages offered for practical medical study in Manchester second to none in any part of the country. Mention was also made of the changes already accomplished in Liverpool, and of the impending changes in the Yorkshire College.

The candidates presented, with their names in alphabetical order, are printed below under the heading Final Examination Part II.

The following candidates have passed the Final Examination in the Faculty of Medicine as undernoted:

Part I.—A. Anderson, Yorks; B. M. Bennett, Owens; J. L. Browne, Univ.; W. Calverley, Owens; A. Cambell, Owens; Catherine Chisholm, Owens; Catherine L. Corbett, Owens; J. B. Dalton, Owens; G. D. Dawson, Owens; D. Elder, Univ.; J. Fletcher, Owens; T. Glover, Owens; A. E. Grisewood, Univ.; W. L. Hawksley, Univ.; W. H. Hey, Owens; P. Hick, Univ.; R. W. Higson, Owens; E. F. Hoare, Univ.; M. Hooper, Owens; E. E. Hughes, Owens; E. Hulme, Owens; L. Hutchinson, Univ.; G. J. Keane, Univ.; L. Kilroe, Owens; C. E. Lea, Owens; T. W. P. Leighton, Owens; J. T. R. MacGill, Owens; H. Mackenzie, Owens; R. N. Porter, Owens; F. G. Ralphs, Owens; W. Rotheram, Univ.; J. S. Rowlands, Univ.; J. L. Schilling, Yorks; W. G. Scott, Yorks; J. Smalley, Owens; J. F. Smith, Owens; P. Talbot, Owens; H. Thorp, Owens; L. Thorp, Owens; T. E. Walker, Univ.; T. W. Walker, Owens; H. W. L. Waller, Univ.; F. J. Walton, Owens; W. D. Wilkins, Owens; A. R. Wright, Owens; J. S. Young, Owens.

Part II.—R. Appleton, Yorks.; A. N. Benson, Owens; G. Binns, Owens; H. M. Birkett, Yorks; A. Boothroyd, Owens; N. Bradley, Univ.; *L. R. Braithwaite, Yorks.; C. H. Bromhall, Owens; H. Buck, Owens; G. G. Buckley, Owens; F. Bullough, Owens; W. H. Canter, Yorks.; L. Clay, Owens; R. Coates, Yorks; †T. Coogan, Owens; E. H. Cox, Owens; J. A. Davenport, Owens; *J. L. Falconer, Owens; E. A. Gibson, Univ.; J. L. Hawkes, Univ.; †H. D. Haworth, Owens; H. E. Heapy, Univ.; W. E. Hewitt, Univ.; G. R. Hitchin, Owens; H. Hodge, Owens; A. Howard, Owens; †C. A. Hughes, Univ; †A. D. Hunt, Univ.; †A. E. Johnson, Owens; S. J. C. Johnson, Owens; G. H. Joseph, Univ.; R. E. Knowles, Univ.; W. G. Lloyd, Univ.; H. Maffin, Yorks; J. D. V. Mather, Owens; C. T. Matthews, Yorks.; H. McManus, Univ.; †D. J. Mulholland, Univ.; R. V. A. Mosley, Yorks.; C. S. O'Neill, Owens; P. Pollard, Yorks.; W. E. Rothwell, Owens; †F. H. Salisbury, Univ.; H. Simms, Owens; †R. T. Slinger, Owens; J. C. Smyth, Owens; †P. K. Steele, Yorks; R. H. Swindells, Owens; F. P. S. Thomas, Owens; H. G. Thompson, Univ.; A. Wharton, Owens; H. Woods, Univ.

*First-class Honours. †Second-Class Honours.

The following candidates have passed the Second Examination in the Faculty of Medicine in the subjects undernoted:

Anatomy and Physiology.—F. Boothroyd, Owens; C. Brown, Owens; T. G. Burnett, Owens; J. S. Crawford, Yorks; J. G. da Cunha, Owens; F. G. Dobson, Yorks; J. F. Edmiston, Univ.; A. W. Howlett, Owens; J. F. McCann, Univ.; S. W. McLellan, Univ.; L. D. Napier, Univ.; T. W. Parry, Univ.; A. L. Walker, Yorks; B. V. Ward, Owens; E. Wharton, Owens; W. A. Wheeldon, Owens; Julia C. White, Owens; T. Whitehead, Yorks.

Materia Medica and Pharmacy.—L. Adamson, Univ.; E. Alderson, Univ.; G. C. Barnes, Univ.; J. P. Bibby, Yorks; N. Bradly, Univ.; H. Coppock, Owens; C. B. Davies, Owens; D. Dougal, Owens; J. F. Dow, Owens; T. B. Eames, Owens; M. L. Farmer, Univ.; P. Ferguson, Owens; Jane A. Fleming, Owens; E. F. S. Green, Owens; V. C. Hackworth, Yorks; J. T. B. Hall, Owens; W. T. Hessel, Yorks; C. Hibbert, Owens; C. G. Howlett, Owens; H. T. Lamb, Owens; T. E. Lister, Yorks; W. O. McKane, Yorks; R. H. Mercer, Owens; G. C. Mort, Owens; R. Ollerenshaw, Owens; G. F. Porter, Owens; A. E. Quine, Owens; C. H. S. Redmond, Owens; W. H. Ross, Owens; G. F. R. Smith, Univ.; F. R. Tickle, Univ.; J. A. Tobin, Univ.; F. D. Walker, Owens; H. G. Ward, Owens; J. S.

Webster, Owens; E. Wharton, Owens; A. W. T. Whitworth, Owens; W. Wilson, Owens.

The examination for the Diploma in Public Health has been passed by W. W. Clemesha, H. Lawrie, A. Ramsbottom, A. B. dos Remedios, F. M. Rodgers.

ROYAL UNIVERSITY OF IRELAND.

The following candidates have passed the First Examination in Medicine:

S. Acheson, Queen's College, Belfast; T. Arnold, Queen's College, Belfast; D. Barry, Queen's College, Cork; R. N. Berman, Queen's College, Belfast; J. H. P. Boyd-Barrett, University College, Dublin; W. Bradbury, Queen's College, Belfast; D. Broderick, Queen's College, Cork; E. B. Brooke, University College, Dublin; T. G. Buchanan, Queen's College, Belfast; J. P. Cahir, University College, Dublin; M. F. Caldwell, Queen's College, Belfast; J. P. Carolan, University College, Dublin; W. F. A. Carson, Queen's College, Galway; D. S. Clarke, Queen's College, Belfast; J. Clarke, University College, Dublin; R. J. Clarke, Queen's College, Belfast; A. J. W. Compton, Queen's Colleges, Galway and Belfast; A. W. Connolly, Queen's College, Belfast; Mary Cowhy, Royal College of Science, Dublin; C. R. Crymble, Queen's College, Belfast; L. J. Curtin, University College, Dublin; J. Devereux, University College, Dublin; E. P. Dewar (Galway), Queen's College, Galway; J. Dewar, Queen's College, Belfast; F. T. Dowling, University College, Dublin; W. Faith, Queen's College, Belfast; E. Forbes, Queen's College, Cork; T. Forde, Queen's College, Cork; J. W. Garry, Queen's College, Galway; W. E. Graham, University College, Dublin; T. J. Hollins, Queen's College, Cork; J. Hughes, Queen's College, Galway; M. F. Huston, Queen's College, Belfast; J. G. Johnston, Queen's College, Belfast; A. H. Joy, Queen's College, Belfast; J. J. Kearney, Queen's College, Cork; R. G. Kevin, Queen's College, Belfast; R. G. C. M. Kinkead, Queen's College, Galway; R. R. Kirwan, University College, Dublin; J. B. Lapsley, Queen's College, Cork; M. Leane, Queen's College, Cork; S. Levy, University College, Dublin; J. E. A. Lynham, Queen's College, Galway; J. S. M'Combe, Queen's College, Belfast; J. P. J. M'Givern, University College, Dublin; A. P. MacMahon, Queen's College, Cork, and University College, Dublin; G. H. Martin, Queen's College, Belfast; R. Martin, Queen's College, Belfast; C. Murphy, University College, Dublin; J. F. Neary, University College, Dublin; P. J. O'Brien, University College, Dublin; P. C. O'Donnell, Queen's College, Cork; W. H. O'Grady, University College, Dublin; P. O'Hart, Charing Cross Hospital Medical School; C. F. X. O'Sullivan, Queen's College, Galway; D. O'Sullivan, University College and Royal College of Science, Dublin; H. H. Prentiss, Queen's College, Belfast; J. P. Quiery, Queen's College, Belfast; D. T. Sheehan, University College, Dublin; J. Sinclair, Queen's College, Belfast; M. Waldron, Queen's College, Cork; M. White, Queen's College, Cork.

Mr. J. J. Kearney passed with second-class honours in Botany, Chemistry, and Experimental Physics, and obtained an Exhibition of £10. Mr. M. F. Huston passed with first-class honours in Zoology and second-class honours in Botany and Experimental Physics, and obtained an Exhibition of £10. Mr. M. F. Caldwell passed with first-class honours in Experimental Physics; Mr. J. S. M'Combe and Mr. F. T. Dowling with second-class honours in Experimental Physics.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

An ordinary comitia was held on Thursday, July 30th, the President, Sir William S. Church, Bart, K.C.B., in the chair.

Admission to Membership.

The following gentlemen were admitted as members of the College: Robert William Dodgson, M.D.Loud., L.R.C.P.; Frank Harwood Jacob, M.D.Lond., L.R.C.P.; George William Falconer Macnaughten, M.D.Edin.; Thomas Howard Morgan, M.D.Edin.; John Alexander Nixon, M.B. Cantab.; Beaumont Albany Percival, M.B.Cantab., L.R.C.P.; Paul Cunningham Edward Tribe, M.B.Lond., L.R.C.P.

Admission to Fellowship.

A by-law admitting Dr. George Francis Angelo Harris, elected a Fellow on April 30th, *in absentiâ*, he being resident in India, having been twice enacted, he was duly admitted to the Fellowship.

Bradshaw Lecture.

The President announced that the Bradshaw Lecture On Tuberculosis of the Nervous System would be delivered by Dr. Trevelyan on November 5th, and that Dr. Caton had been appointed Harveian Orator for 1904.

Diploma in Public Health.

In conjunction with the College of Surgeons, Diplomas in Public Health were granted to the following gentlemen:—J. P. Candler, M.B., B.C.Cantab.; T. Divine, M.B., C.M.Glasg.; H. Hewetson, L.R.C.P., M.R.C.S.; J. C. Hibbert, M.D.Lond., L.R.C.P., M.R.C.S.; F. C. James, M.B.Durh., L.R.C.P., M.R.C.S.; J. Jones, M.D., B.S.Lond, L.R.C.P., M.R.C.S.; W. D. Knocker, M.B.Lond., L.R.C.P., M.R.C.S.; G. J. A. Leclezio, L.R.C.P., M.R.C.S.; J. G. McNaught, M.D., M.S.Glasg.; W. H. Peile, M.D., Dubl., L.R.C.P., M.R.C.S.; M. H. Raper, M.D.Lond., L.R.C.P., M.R.C.S.; M. F. Reaney, M.B.Lond., L.R.C.P., M.R.C.S.; R. Rennie, M.B., Ch.B., Glasg.; N. Robson, M.B., C.M.Glasg., F.R.C.S.Edin.; C. R. Salisbury, L.R.C.P., M.R.C.S.; T. W. Sinclair, M.D., B.S.Melb.; C. F. Wanhill, L.R.C.P., M.R.C.S.

Communications.

Communications were received from (1) The Secretary of the College of Surgeons, reporting certain proceedings of their Council on July 9th; (2) The Worshipful Company of Spectacle Makers, asking the views of the College on a proposal that competency in sight testing should in future form a subject of examination and certification for the diplomas granted by them to opticians; this was left to the Censors Board to inquire into and to report to the College at the next comitia; (3) the Dean of the Faculty of Medicine, University of Edinburgh, reporting the award of the Murchison Scholarship, July, 1903, to Charles John Shaw, M.B. Edin.; (4) Dr. Norman Moore, offering for the acceptance of the College an autotype portrait of Dr. FitzPatrick, which was accepted, and a cordial vote of thanks passed to Dr. Moore for his gift; (5) from the representative of the College in the General Medical Council, on the proceedings of that Council during its session in May last, and at a special session in the present month.

Election of Officers.

The following gentlemen were elected Censors, other College Officers, and Examiners on the nomination of the President and Council.

Censors: Sir Dyce Duckworth, M.D.; Frederick Thomas Roberts, M.D.; David Ferrier, M.D.; William Henry Allchin, M.D. *Treasurer:* Sir Dyce Duckworth, M.D. *Emeritus Registrar:* Sir Henry Alfred Pitman, M.D. *Registrar:* Edward Liveing, M.D. *Harveian Librarian:* Joseph Frank Payne, M.D. *Assistant Registrar:* Oswald Auchinleck Browne, M.D. *Elected Members of the Library Committee:* Samuel Gee, M.D.; Philip Frank, M.D.; William Henry Allchin, M.D.; Archibald Edward Garrod, M.D. *Curators of the Museum:* William Howship Dickinson, M.D.; Henry Charlton Bastian, M.D.; William Cayley, M.D.; John Abercrombie, M.D. *Finance Committee:* George Fielding Blandford, M.D.; James Frederick Goodhart, M.D.; Sir Herbert Isambard Owen, M.D. *Examiners:* Chemistry and Chemical Physics: Henry Forster Morley, D.Sc., F.C.S.; Harold B. Dixon, F.R.S.; Frederick Daniel Chattaway, Ph.D., D.Sc.; Alexander Mitchell Kellas, F.C.S.; John Addyman Gardner, F.C.S., F.I.C. Materia Medica and Pharmacy: Frederick Willcocks, M.D.; Sir Edwin Cooper Perry, M.D.; Walter Essex Wynter, M.D.; Henry Albert Caley, M.D.; Francis Whittaker Tunnicliffe, M.D. Physiology: Robert Arthur Young, M.D.; John Sydney Edkins, M.B.; Leonard Erskine Hill, M.B. Anatomy: Bertram C. A. Windle, M.D.; Robert Howden, M.B. Medical Anatomy and Principles and Practice of Medicine: Samuel Hatch West, M.D.; Percy Kidd, M.D.; John Abercrombie, M.D.; Nestor I. C. Tirard, M.D.; Theodore Dyke Acland, M.B.; George Newton Pitt, M.D.; Sydney Philip Phillips, M.D.; William Pasteur, M.D.; Francis George Penrose, M.D.; John Rose Bradford, M.D. Midwifery and Diseases peculiar to Women: Alfred Lewis Galabin, M.D.; Francis Henry Champneys, M.D.; George Ernest Herman, M.B.; William Rivers Pollock, M.B.; Edward Malins, M.D. Public Health: Part I. Arthur Pearson Luff, M.D. Part II. William Heaton Hamer, M.D. Murchison Scholarship: Lauriston Elgie Shaw, M.D.; Herbert Pennell Hawkins, M.D.

First Conjoint Examination.

A report, dated July 22nd, was received from the Conjoint Committee appointed to consider and report upon any alterations that may be desirable in the regulations for the First Conjoint Examination. After some remarks by Dr. Starling this was received and approved.

Final Conjoint Examinations.

A confidential report by the Visitor and Inspector of the General Medical Council on the Final Examination in Medicine, Surgery, and Midwifery of the Conjoint Board in England, January, 1903, was received.

Report of Director-General A.M.S., on Physical Degeneration.

A report was received from the Committee appointed to consider and report on the question of the alleged physical degeneration of recruits for the army. The Committee suggested to the College that its answer to the Home Secretary's letter be as follows:

"The College has carefully considered the statement of the Director-General of the Army Medical Service, forwarded through the Home Office, and would point out that the information furnished by it is of not such a character as to enable the College to express a decided opinion upon the question of whether there is, or is not, a necessity for an inquiry into the causes of the physical deficiency of those offering themselves as recruits for the army.

"The College is in possession of no means for comparing the condition of the population from whom recruits are drawn at the present time with that which obtained in former years. The figures given in the Director-General's statement show that there has been no increase in the proportion of rejections, and although the numbers of those discharged from the service in 1901-2 are proportionally larger than those in former years, no details are given as to the circumstances under which the increase has taken place; and, indeed, the figures may not be strictly comparable.

"Any investigation which does not take into account the condition of the labouring classes in the great industries of the country must necessarily give a very erroneous impression of the physique of these classes. The increase in the rate of wages in all forms of labour to that extent diminishes the attractions of a military career for those engaged in regular labour, and leads to a proportionally larger number of the 'unemployed' offering themselves for service in the army. It is obvious that the casual labourers of the large towns represent the poorest portion of the population, amongst whom the lowest standard of physique would be found; but the College is not in possession of any evidence which satisfies it that there is any physical degeneration of the urban population generally. Moreover, the fact that the urban death-rate has declined between 5 and 6 per thousand, and now more closely approximates that of the rural population makes it unlikely that such deterioration is taking place.

"The question of what means are available for remedying existing defects in and improving the national health may, perhaps, be briefly summed up as those which tend to diminish poverty. At the same time, the College desires to point out that very great changes in the conditions of life have taken place during the last fifty years, the effects of some of which are not yet determined. Among these should be considered the alterations in character of the food, the compulsory education and confinement in schools of young children, and the altered conditions of female labour in towns. Could an inquiry be made into the present physical condition of the nation it is self-evident that it would be of great value; but one dealing with a portion only of the population would be likely to lead to error. Such an inquiry would naturally include the above subjects, the experiences of the Royal Navy, and other services of the State.

"It hardly comes within the province of the College to state its views with regard to the composition of such a commission as is suggested. If decided upon by the Government, it would be prepared, in conjunction with the Royal College of Surgeons of England, to suggest names, should it be thought desirable to place members of the medical profession on the Commission."

Antityphoid Inoculation.

A report was received from the Committee appointed to consider and report on the practical safety and prophylactic value of antityphoid inoculations. The Committee arrived at the following conclusions:

"After careful scrutiny of the statistics from both official and private sources which have been made available, we are of opinion that not only is a lessened susceptibility to the disease brought about as a result of the inoculations, but that the case-mortality is largely reduced."

"We are further of opinion that with due care the process of inoculation is devoid of direct danger, but that under special circumstances there may possibly be some temporary increase of susceptibility to infection immediately following inoculation; and it is, therefore, desirable that the preparation of the vaccine and the inoculations should be carried out under specially skilled supervision."

Miscellaneous Reports.

Reports were also received (1) from the adjudicators of the Weber-Parkes Prize. The prize was awarded to Dr. Hugh Walsham, and the essay of Dr. Jobson Horne was deemed worthy of a second medal; (2) the quarterly report of the College Finance Committee; (3) the annual report of the Library Committee; (4) the annual report of the Curators of the Museum; (5) the quarterly report of the Examiners for the Licence on the result of the April Examinations.

Moxon and Baly Medals.

On the recommendations of the Council the Moxon Medal was awarded to John Hughlings Jackson, M.D., F.R.S., as having specially distinguished himself by observation and research in clinical medicine, and the Baly Medal to John Newport Langley, D.Sc., F.R.S., of Trinity College, Cambridge, as having pre-eminently distinguished himself in the science of physiology.

Donations to Library.

Books and other publications presented to the Library during the past quarter were received, and thanks returned to the donors.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

A QUARTERLY meeting of the Royal College of Physicians was held on Tuesday, July 21st, Dr. Clouston (President) in the chair.

Loyal Address to King Edward: Reply from Secretary for Scotland

A letter was read from the Secretary for Scotland acknowledging the loyal address presented by the President and Fellows of the College on the occasion of the King's visit to Edinburgh, and announcing that the King had been pleased to receive the address in the most gracious manner.

Introduction of New Fellows.

William Thomas Ritchie, M.D., F.R.C.P.E., and Alexander Dingwall Fordyce, M.B., Ch.B., F.R.C.P.E., were introduced and took their seats as Fellows of the College.

Admission to the Fellowship.

The following Members were admitted by ballot to the Fellowship of the College: Gilbert Alexander Bannatyne, M.D., M.R.C.P.E., Bath; Percy Theodore Herring, M.D., M.R.C.P.E., Edinburgh; Herbert Henry Ernest Russell, M.B.Melb., M.R.C.P.E., L.R.C.S.E., Adelaide; John William Simpson, M.B., C.M., M.R.C.P.E., Edinburgh.

Admission to the Membership.

On a ballot Herbert David Coles, M.D., F.R.C.S.E., Bournemouth, was admitted to the Membership of the College after examination.

Admission to the Licence.

The Registrar reported that since the last quarterly meeting 35 persons had obtained the licence of the College by examination.

Curriculum and Examinations.

The regulations regarding the single licence, and Membership and Fellowship of the College for the ensuing year, and the regulations for the triple qualification were approved.

Recognition of Lecturer.

Dr. James Lamond Lackie, F.R.C.P.E., was recognized as Lecturer on Midwifery and Gynaecology.

Reporting on Morbid Specimens.

It was agreed that morbid specimens submitted by sanitary authorities in Scotland should, subject to the approval of the Council, be received and reported on at the laboratory on the basis of payment of a fee on the scale fixed by the College when an arrangement was entered into between the College and the town.

Donation for Research.

The Treasurer intimated, on behalf of the Council, that a donation of £300, to be held in trust by the College, had been made by a gentleman—who did not wish his name to be disclosed—to meet the expenses of a research on the micro-organisms of the upper respiratory tract, and their influence on the disease of that region.

Appointment of Morison Lecturer.

It was intimated that Dr. John Macpherson, F.R.C.P.E., had been appointed Morison Lecturer for two years (1903-1904).

School of Medicine of the Royal Colleges.

The Secretary laid on the table the annual statement by the Governing Board of the School of Medicine of the Royal College in terms of the Constitution. The report indicated that the number of classes during the winter session, 1902-03, was 41, and during the summer session 1903, 44; and that the number of students during the winter session was 1,244, and during the summer session 1,080, both so far as could be ascertained, as certain lecturers had not made returns.

Election of Representatives on the Governing Board of the School of Medicine of the Royal Colleges.

Dr. Andrew and Sir John Sibbald were re-elected representatives on the Governing Board of the School of Medicine of the Royal Colleges.

Hill Pattison-Struthers Bursary in Clinical Medicine.

The Treasurer announced that the examinations to determine the award of the Hill Pattison-Struthers Bursary for excellence in clinical medicine would commence at the next Final Examination for the Triple Qualification Examinations.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

AT a special meeting of the President and Fellows held on Thursday, July 30th, the President admitted as Licentiates in Medicine and Midwifery the following candidates who had been successful at the Final Professional Examination under the Conjoint scheme with the Royal College of Surgeons in Ireland: W. H. Anderson, J. W. Bell, R. W. Burkitt, J. Clarke, M. Deeny, K. F. Fleury, J. J. Gibney, A. E. F. Hastings, R. W. Hillis, J. P. Lynch, W. Ormsby, C. Robinson, L. P. Stokes.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

AT a meeting of the College held on July 30th, the following gentlemen, having passed the requisite examinations, were admitted Fellows of the College:—N. M. Gavin, L.R.C.S.E.; J. C. Nicholson, L.R.C.S.E.; E. C. Austin, M.R.C.S.Eng.; P. G. A. Bott, M.R.C.S.Eng.; W. H. E. Brand, L.R.C.S.E.; E. H. Brown, L.R.C.S.E.; E. A. Bulmore, M.R.C.S.Eng.; W. Darling, M.B., Ch.B.; F. W. Harlin, L.R.C.S.E.; F. B. Jefferiss, M.R.C.S. Eng.; C. E. Jones-Phillipson, M.R.C.S.Eng.; J. D. Lithgow, M.B., C.M.; T. H. Livingstone, M.B., Ch.B.; E. E. Naggiar, M.R.C.S.Eng.; E. J. O'Neill, M.R.C.S.Eng.; H. M. Peries, L.R.C.S.E.; J. M. Reid, M.B., Ch.B.; A. Sharp, L.R.C.S.E.; H. D. Shepherd, M.B., Ch.B.; T. S. Shepherd, M.B., M.R.C.S. Eng.; G. F. B. Simpson, M.B., Ch.B.; H. Wade, M.B., Ch.B.; and A. Whittome, M.B., Ch.B.

CONJOINT BOARD IN IRELAND.

CANDIDATES have passed the Final Professional Examination as undernoted:

In All Subjects.—Honours in Order of Merit: R. W. Burkit, R. J. B. Buchanan, C. Robinson, L. P. Stokes, J. P. Lynch. Second Pass: J. W. Bell, J. Clarke, M. Deeny, D. C. V. FitzGerald, K. F. Fleury, A. E. F. Hastings.

Completed the Examination.—W. H. Andeson, J. J. Gibney, R. W. Hillis, W. Ormsby.

Miss Marie Holst has passed the Special Examination for the Diploma in Public Health, with honours.

TRINITY COLLEGE, DUBLIN.

THE following have passed the Final Examination, Section B.:

J. G. Wallis, C. J. Coppinger, G. B. M'Caul, H. St. M. Carter, H. Stone, K. R. C. Hallowes, G. A. Crowley, H. E. M'Cready, T. J. T. Wilmot, J. C. Hall, T. C. A. Sweetman, C. J. Wyatt, F. W. Bury, A. W. Goldsmith, H. T. Marrable, C. E. Fawcett, O. J. Parry-Edwards.

HOSPITAL AND DISPENSARY MANAGEMENT.

DUNDEE ROYAL INFIRMARY.

THE 104th annual report of the Dundee Royal Infirmary shows that during the year 1902-3, 3,343 in-patients were under treatment, besides 157 women who were admitted to the maternity ward of the infirmary. Of the total, 3,500, the number discharged as either cured or relieved was 2,725, and unrelieved 266; while there remained under treatment at the end of the year 116 men and 119 women. The deaths numbered 273, or 8.4 per cent. of the admissions, but in 78 cases the patients were already moribund on admission. The daily average number of patients in hospital was 232, and the average number of days each patient was under treatment 24.62, which is slightly higher than in the previous year. The proportion of in-patients to each occupied bed was 14.52 to 1, which is approximately the same as in the majority of general hospitals in London. In the out-patient department, the number of patients treated was 12,941, being about 500 over the number in the previous year. The total attendances amounted to 43,404, the daily average being 141.72. Besides this, a good deal of house visiting was done by the district officers of the institution. The cost per bed was £50 14s. 7d., or about 15s. a bed more than in the previous year. The total expenditure exceeded the income by about £500. It appears that chloroform alone was administered 1,339 times and ether alone only 25 times, while gas was only used 26 times altogether. It is not stated whether there were any deaths during administration of anaesthetics, information which should never be omitted.

GERMAN CONGRESS OF SCIENTISTS AND PHYSICIANS.—The German Association of Scientists and Physicians will hold its seventy-fifth annual meeting this year at Cassel from September 20th to 26th. Among the general addresses promised are the following: Professor Ziehen of Utrecht, on the Physiological Psychology of the Feelings and Affections; Dr. Griesbach of Muhlhausen, on the Present Condition of School Hygiene; Professor von Behring of Marburg, on the Struggle against Tuberculosis. Among the communications to be presented to the Section of Medicine are the following: Dr. Jensen of Berlin, on the Physiological Effects of Light; and Dr. Rieder of Munich, on the Results of the Light Treatment; Dr. Hahn of Vienna, on the Resistance of the Fetus to Maternal Diseases, and the Prevalence of Puerperal Fever in Austria during the last decade; Dr. Bum of Vienna, on the Formation of Callus: Dr. Passini of Vienna, on Anaërobic Bacteria of the Intestine; Dr. Hochsinger of Vienna, on Congenital Stridor and Hypertrophy of the Thymus; and Dr. von Wunschheim of Innsbruck, on Haemolysis in Experimental Infections.

PROFESSOR GUIDO BACCELLI, the distinguished physician of Rome, who at present holds the portfolio of Agriculture in the Italian Government, has been elected a corresponding member of the Paris Académie des Sciences in the Section of Medicine and Surgery in the room of the late Professor Ollier of Lyons.

MEDICAL NEWS.

Her Royal Highness Princess Henry of Battenberg has appointed Mr. Edgar Hoffmeister, M.B., B.C., to be her Surgeon-in-Ordinary.

Medical Magistrate.—Mr. T. M. Murray Lyon, M.D., Mid-Calder, has been appointed to the Commission of the Peace for the county of Midlothian.

Dr. Frederick Mueller, who has for many years been Professor Lorenz's principal assistant, has been appointed Professor of Orthopaedic Surgery at the Milwaukee Medical College.

Dr. Waldemar Bie, whose name is well known in connexion with Finsen's light treatment, has recently qualified as a lecturer on physiology at the University of Copenhagen. The subject of his thesis was the action of light on bacteria.

German Medical Temperance Association.—The German Medical Temperance Association will hold its seventh annual meeting at Cassel on September 23rd. An address on Alcohol as Food will be delivered by Dr. Rosemann of Bonn, and one on the Effects of Large Quantities of Fluid on the Heart by Dr. Keferstein of Göttingen.

Hospital Roof Garden for Consumptives.—The new roof for consumptives at the Philadelphia Hospital was formally opened on July 14th in presence of the Mayor, and many members of the hospital staff. The roof garden is 200 ft. long and 30 ft. wide. Room will be furnished for from 80 to 100 cots.

International Congress on Tuberculosis.—An International Congress for the Study of Tuberculosis will be held in Paris from September 24th to October 1st, 1904. The Congress will comprise a Medical, a Social, and a Technical Section. In the Medical Section the following are the questions proposed for discussion: (1) The treatment of lupus by the new methods: (2) the early diagnosis of tuberculosis by the new methods; (3) comparative study of the different forms of tuberculosis. The Social Section will discuss the following questions: (1) The etiological factors of tuberculosis; (2) the value of the various methods of treating tuberculosis; (3) assurance and sickness societies in relation to the struggle against tuberculosis. The Technical Section consists of a museum in which will be exhibited collections of anatomo-pathological, histological, and bacteriological specimens and preparations; tables of statistics, plans, and designs for the installation of hospitals, sanatoria, and dispensaries; publications of all kinds relative to antituberculosis leagues and associations: and industrial products used in the treatment of tuberculosis. The President of the Congress is Professor Brouardel.

St. Bartholomew's Hospital.—The principal decisions of the Mansion House Committee with regard to this hospital having been noticed in the British Medical Journal at the time at which they were published, it is unnecessary to refer at any length to the full report of the Committee published last week. It may be noted, however, that an analytical summary of all the evidence is attached to the report, and that from a study of it it is obvious that no other decisions than those already published were possible. Only one witness was absolutely in favour of removal of the institution to the suburbs, and he coupled his suggestion with the proviso that a 200-bed hospital should be left on the present site. Sir Henry Burdett thought the only possible alternative to rebuilding on the present site was moving to the contiguous site occupied by St. Luke's Asylum, but wished to see the existing site, if retained, enlarged to 8 acres. The Committee seems to have rather favoured the idea of the St. Luke's site until it came to examine it closely, but then found that it was impracticable in itself, and that even, if possible, it would decrease rather than increase the efficiency of the hospital. Evidence given showed that the majority of patients, both in and out, lived at places within easy access of the hospital, that the tide of population was now flowing to and not from the hospital, and that its removal would leave vacant a larger area of inner London than at present exists anywhere. Expert evidence also showed that the selling value of the site had been greatly exaggerated. As for alleged extravagance in administration, the Committee found that the cost of each bed was actually less than that at the two hospitals which they took for purposes of comparison, Guy's and the London.

Medical Women in Algeria.—The Government of [illegible] is organizing a gratuitous service of female practitioners for the Moslem women who decline to avail themselves of the services of medical men. The Government will supply [illegible] lady doctors with quarters, drugs, surgical instruments, and a certain remuneration. A dispensary for Moslem women has already been established in Algiers, and others are about to be opened in the principal cities of the colony.

MEDICAL VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BIRKENHEAD BOROUGH HOSPITAL.—Junior House-Surgeon. Salary, £80 per annum.

BIRMINGHAM: QUEEN'S HOSPITAL.—Two House-Surgeons, resident. Salary at the rate of £50 per annum.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—Second House-Surgeon and Anaesthetist, resident. Salary, £70 per annum.

BULAWAYO MEMORIAL HOSPITAL.—Resident Surgeon. Salary, £300 per annum.

CANCER HOSPITAL, Fulham Road, S.W.—House-Surgeon, resident. Salary, £70 per annum.

CANTERBURY: KENT AND CANTERBURY HOSPITAL.—House-Physician, resident. Salary, £90 per annum.

CHELSEA HOSPITAL FOR WOMEN.—Clinical Assistant.

HULL AND COUNTY LUNATIC ASYLUM.—Second Assistant Medical Officer, resident. Salary, £150 per annum.

JENNER INSTITUTE OF PREVENTIVE MEDICINE, Chelsea.—Studentship value £150 for research in the Bacteriological Department.

LANCASHIRE COUNTY ASYLUM, Whittingham.—Assistant Medical Officer, resident. Initial salary, £175 per annum.

LIVERPOOL: ROYAL SOUTHERN HOSPITAL.—Junior House-Surgeon. Salary, 60 guineas per annum.

MACCLESFIELD GENERAL INFIRMARY.—Junior House-Surgeon, resident. Salary, £70 per annum.

NEWCASTLE-ON-TYNE: HOSPITAL FOR SICK CHILDREN.—Male Resident Medical Officer. Salary, £100 per annum.

NORTH STAFFORDSHIRE INFIRMARY.—Assistant House-Surgeon, resident. Honorarium, £25 at the end of six months.

SALFORD UNION.—Male Assistant Resident Medical Officer at the Infirmary, Hope. Salary, £130 per annum.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone Road, N.W.—Pathologist.

SHREWSBURY: SALOP INFIRMARY.—House-Surgeon, resident. Salary, £100 per annum.

STOCKPORT INFIRMARY.—(1) Assistant House and Visiting Surgeon. (2) Junior Assistant House-Surgeon. Both resident. Salary, £80 and £40 per annum respectively.

MEDICAL APPOINTMENTS.

Alexander, Victor George, M.B., B.Sc.Edin., Assistant District Surgeon for Johannesburg.

Boycott, A. E., M.A., M.B., B.Ch., B.Sc.Oxon., Gordon Lecturer in Experimental Pathology at Guy's Hospital Medical School, *vice* Dr. E. W. Ainley Walker, resigned.

Brown, F. L. Harman, M.B., C.M.Edin., to be Honorary Medical Officer to the Coventry and Warwickshire Hospital.

Brown, William Brodie, M.B., C.M., Medical Officer and Public Vaccinator for the Western Division of the Parish of Birse, *vice* Dr. Keith, resigned.

Cockle, Walter Ponsonby, B.A., M.D., B.Ch.Dub., Anaesthetist to the Metropolitan Ear, Nose, and Throat Hospital, Grafton Street, W.

Cuff, Archibald, B.A., M.B., B.C.Cantab., F.R.C.S.Eng., Surgeon to the Royal Infirmary, Sheffield.

Fraser, John H. P., M.B., M.R.C.S., Medical Referee under the Workmen's Compensation Acts for Southampton, Winchester, and Romsey, in County Court Circuit No. 51.

Kelly, T. Gordon, B.A., M.D., D.P.H.Lond., reappointed Medical Officer of Health for Market Bosworth Rural District.

Marlow, F. W., M.D., C.M.Trin.Tor., L.R.C.P.Lond., F.R.C.S.Eng., Assistant Surgeon to St. Michael's Hospital, Toronto.

Pardoe, John, M.B.Aberd., F.R.C.S.Eng., Assistant Surgeon to St. Peter's Hospital, Covent Garden.

Poynton, F. J., M.D., F.R.C.P.Lond., Assistant Physician to University College Hospital.

Simpson, Lilian G., M.D.Brux., L.R.C.P.&S.Edin., Assistant Medical Officer to the Camberwell Infirmary, Camberwell, S.E.

Walker, J. W. Thomson, M.B., C.M.Edin., F.R.C.S.Eng., Assistant Surgeon to St. Peter's Hospital, Henrietta Street, W.C.

Worrall, E. S., L.R.C.P., M.R.C.S., Medical Officer in charge of the Radiographic Department, Victoria Hospital for Children, Tite Street, Chelsea.

DIARY FOR NEXT WEEK.

POST-GRADUATE COURSES AND LECTURES.

Post-Graduate College, West London Hospital, Hammersmith Road, W.—Lectures will be delivered at 3.30 p.m. as follows: Monday, Medical Cases; Tuesday, Heart Disease in Children; Wednesday, Suppurative Diseases of the Central Nervous System; Thursday, Surgical Cases; Friday, Discharge from the Ear: Causes and Treatment.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 8s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

Kitchin.—On August 1st, at 107, Thursby Street, Bradford, the wife of James Tyson Kitchin, M.D., D.P.H., of twin daughters.

Lamb.—On July 31st, at 1, Bethel Terrace, Mount Florida, Glasgow, to David Lamb, M.B., C.M., and Mrs. Lamb, a daughter.

MARRIAGES.

Dalgetty—Rogers.—On July 23rd, Arthur Burness Dalgetty, C.M., M.D., D.P.H., of Fordoun, Kincardineshire, N.B., to Katharine Rogers, of Hailey bury and King's Somborne, Hants.

Hamilton—Reynolds.—On July 29th, at Havelock Street Church, Newport (Mon.), by Rev. J. Glyn Davies, Samuel Hamilton, B.A., M.B., B.Ch., to Alice Gwendolen, youngest daughter of the late George Reynolds, of Newport (Mon.).

Macgregor—McOnie.—In the Parish Church, Buchlyvie, N.B., on the 30th ult., by the Rev. John A. Macdonald, Patrick Fraser Macgregor, M.D., son of the late James Macgregor, Rannochlea, Pollokshields, to Margaret Muir, daughter of the late William McOnie, jun., engineer, Glasgow.

Morrison—Matthews.—On Saturday, August 1st, at St. George's Hanover Square, by the Rev. David Anderson, James Morrison, M.D., of 11, Brook Street, Hanover Square, to Henrietta Frances, youngest daughter of the late Mr. H. G. Matthews, J.P., of Southsea.

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TTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

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Strand, W.C., London; those concerning business matters, advertisements, non-"Wavery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the NOTICES to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the EDITOR at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Axiology, London*. The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

QUERIES.

MEMBER would be glad of suggestions for the treatment of a case of oxaluria, with pain along the ureter and kidney. No blood or pus. Digestion good.

SCOLIOSIS would like to know of a good work or chart with special reference to exercises and posture suitable for the treatment of lateral curvature of the spine, also of a practical work upon massage.

DR. ALFRED R. HALL (Freshwater Bay) writes: I shall be obliged if some member who has tried the Nauheim treatment at one of the English health resorts (other than Harrogate, which does not suit) will kindly say if he recommends it. Were the results approximately as good as in Nauheim?

M.O. would be much obliged to any correspondent who could suggest an effectual remedy for flies in infirmary sick wards. All sorts of disinfectants—elder plants, musk plants, etc.—have been used and have been of no avail, the sticky fly cemeteries and fly-catcher bottles so far having given the most satisfactory results, though the cry is "still they come."

M. B. has a patient, aged 40, suffering from chronic Bright's disease of seven or eight years' standing. For some months past he has suffered greatly from rheumatic pains in the muscles of the back of the neck and shoulders, which interfere with his rest when lying down from the rigidity and the pain on the slightest change of position. In the erect position, rotation and other movements of the head cannot be performed on account of the stiffness and the pain caused in the attempt. Salicylates, alkalies, massage, and fomentations have been tried with little or no benefit. He would be grateful for some suggestions for the relief of this painful condition.

PROSTATE asks to be recommended any work from which he could receive assistance in treating the following case: A gentleman, aged 40, had an attack of prostatitis eighteen months ago, which he attributed to a chill contracted after a long day's driving in cold weather. He admits, however, over-indulgence in sexual pleasures in the past and masturbation at school. His chief symptoms now are: (1) Burning painful sensation in the perineum, worse in the mornings (when he has frequent erections). (2) Slight pain or discomfort in same region during micturition and during or after coitus. (3) Diminished sexual desire. (4) Unsatisfactory accomplishment of the sexual act, imperfect erections, etc. Our correspondent has tried, with indifferent results, bladder sedatives, blistering of perineum, anthropores of tannic acid, argent. nit. 1 per cent., hot and cold perineal douching, etc. Any suggestions as to further treatment or recommendation to any works dealing specially with prostatic or sexual diseases would be esteemed.

ANSWERS.

HOME FOR DEFECTIVE CHILD.

INQUIRER.—Our correspondent might address an inquiry to the Stewart Institution for Idiotic and Imbecile Children, near Dublin. Pupils are admitted either free by election, or on payment of £50 a year. The Secretary is Mr. W. McC. O'Neill, 40, Molesworth Street, Dublin.

NOTES, LETTERS, Etc.

THE MICROSCOPIC DIAGNOSIS OF MALARIA.

DR. J. A. L. CALDER (Port Maria, Jamaica) writes recommending the following method of examining fresh blood specimens for malarial parasites: Make a solution of magenta as follows: Magenta, 1 gram; 0.6 per cent. salt solution in distilled water, 2½ drachms; spt. vini rect., 1 drachm; glycerine, 3½ drachms. This is a modification of a well-known formula and is ready for use at once; it will keep well. The finger of the subject having been prepared in the usual manner and pricked, the first drop of blood is wiped off, a drop of the magenta solution is now placed on the pricked spot of the finger and another drop of blood is expressed, thereby mingling with the magenta, the cover-slip is then applied, placed on the slide, and may be ringed with vaseline or not. I have found it advantageous to place a minute drop of the magenta solution on the slide, and on to this to invert the cover-slip so that the drop of prepared blood falls on the magenta. The nuclei of the white corpuscles and the malarial parasites are stained a bright carmine, the healthy cells are unstained; there is a slight deposit of superfluous stain which does not interfere with the result.

The whole process can be completed and a diagnosis made within ten minutes; indeed the quicker it is done the better, as the specimen loses its brilliancy, though it is still workable for a day or two. An oil immersion lens is not necessary, a quarter inch or one-sixth will serve. It must of course be understood that the expression "drop" implies an amount of the stain about the size of a pin's head, and a large pin's head is the best thing to use in applying the stain to the finger and slide.

It is not intended that this method should replace the examination of unstained specimens at leisure, but only for the purposes of rapid diagnosis; it has the recommendation of not being tedious, which is the fault of most methods of examination for malarial parasites, including Major Ross's improved method, and the whole process of contrast staining—eosin and methylene blue—gives such irregular results that they are usually disappointing. I have tried the opposite method, that is, to overstain and then reduce, and have obtained on the whole fairly even results, but this is a long process and requires some practice. The method I adopted is as follows:

The film—on a cover slip—is fixed in alcohol in the usual manner, then immersed in a solution of tannic acid in absolute alcohol or spt. vini rect. (tannic acid 5 gr., alcohol 1 drachm) for ten minutes, then shaken rapidly in water once or twice to remove any free solution from the slip.

Stain with saturated solution of methylene blue until the film is opaque—ten minutes is ample—wash and stain with aqueous eosin (1 in 1,000) for thirty seconds; wash and immerse in a solution of acetic acid (1 in 5), in spt. vini rect., 2 drops of the acetic acid solution to a small watch-glass of spt. vini rect.; this rapidly discharges the blue, and brings out the pink of the eosin; the film must therefore be frequently removed from the solution and held up to the light, when the thin portion of the film begins to show pink it must be washed and examined under the microscope.

Successive portions of the film can be cleared up by reimmersion, but the blue will be entirely discharged from the thinner parts of the film when the thicker gives a perfect stain.

The precautions to be observed are: (*a*) Wash off superfluous tannic acid, as otherwise a skin of methylene blue will be formed over the film; on the other hand, do not more than shake a couple of times through water, so as not to wash the acid out of the film; (*b*) the acetic acid must be mixed with spt. vin. rect., and not with water; (*c*) the film must be overstained with the methylene blue solution; (*d*) I have found 30 seconds' staining with eosin give the best results; there will, of course, be no evidence of eosin on the film until after the reduction with acetic acid.

The tannic acid and acetic acid solutions can be used repeatedly: fresh solutions are not requisite, but fresh stains act best.

If it is desired to keep the specimen, shake a few times in a solution of carbonate of lithia or soda, 1 per cent., and wash in water. Romanowsky's stain, as modified by Major Leishman, I have found very uneven and very unsatisfactory, from the amount of sediment. I obtained my stain from the best makers.

LETTERS, COMMUNICATIONS, ETC., have been received from:

A Mr. A. Allison, Glasgow; Mr. F. Addiscott, London; A. S. Aggrieved; Dr. S. W. Allworthy, Belfast; Dr. E. O. Ashe, Kimberley, C.C. **B** Mr. D. Brown, West Hartlepool; Dr. J. W. Byers, Belfast; Mr. L. A. Bidwell, London; E. C. Baber, M.B., Brighton; Mr. E. Brooke, Margate; Dr. M. Beverley, Norwich; Dr. H. D. Bishop, Hougue-a-la-Perre. **C** J. Clay, M.B., Newcastle-on-Tyne; Messrs. T. Christy and Co., London; Canuck; Country Practitioner; Dr. W. P. Cockle, London; Mr. J. J. Clarke, London. **D** Mr. J. Derham-Reid, Bolton-le-Moors; Dr. D. S. Doughty, Dalston; Dr. T. W. Dewar, Dunblane; Mr. Q. B De Freitas, Georgetown: Messrs. Down Bros., London; Mr. W. Dunbar, Birmingham; Mr. H. R. Dalah, Mazagon. **E** E. R. R. C.; Dr. O. C. P. Evans, Kidderminster; Essex; Dr. W. Ewart, London. **F** Messrs. Frost and Harrison, London; S. B. Figgis, M.B., Brighton; Dr. J. L. Firth, Clifton; Mr. E. Fish, Swansea; Dr. J. Fawcett, London; Sir J. Fayrer, Bart., K.C.S.I., London. **G** Mr. W. Garrett, London; Dr. L. Grant, Ballachulish; Mr. W. L. Goodridge, Windsor; Mr. H. R. Gogay, London; Mr. A. B. Graham, Milngavie; Dr. J. L. Goodale, London; Dr. J. G. Garry, Florence. **H** R. Howd n, M.B., Newcastle-on-Tyne; P. G. Harvey, M.B., Worcester; Mr. S. E. Henson, Hull; Dr. R. S. Hubberstey, Sunderland; Mr. R. W. Hill, Colombo; Dr. A. B. Hall, Freshwater Bay, Isle of Wight; Mr C. T. W. Hirsch, Woolwich. **I** Indian Medical Student; Inquirer; E. Ibotson, M.B., Aberavon. **J** J. L. K.; Dr. R Jones, Woodford Bridge; Mr. M. S. Jevons, London. **L** Dr. J. Lithgow, Cleland; R. Lyon, M.B. London; Dr. D. B. Lees, London **M** Mr. J. G. Murray, London; J. A. C. Macewen, M.B., Glasgow; Medical Officer of Health; Mr. R. W. Murray, Liverpool; Member; Dr. J. J. Macan, Cheam; Mr. D. H. Mehta, Baroda; M.B.; Mr. E. F. Morris, Hereford. **N** Nymph. **O** Mr. G. S. O'Rorke, Nottingham; One Who Has Been There. **P** Dr C. H. Phillips, Hanley; Mr. C. H. G. Prance, Plympton; Mr. A. Pain, Peterborough; Mr S. Paget, London; Patient; F. Porter, M.B., Comrie; Dr. C. B. Plowright, Kings Lynn; Prostate; Mr. W. P. Purvis, Southampton. **R** Mr. H. Rundle, Southsea; Dr. J. J. Ridge, Enfield; G. Renshaw, M.B., Sale; Rural Sanitary Authority; Dr. A. Rivers-Willson, Oxford; Mr. H. Rainsford, Billinghay. **S** Dr. J. F. W. Silk, London; Dr. A. P. Steavenson, Hurworth-on-Tees; A. Spong, M.B., Leeds; Scoliosis. **T** Mr. S. Trist, London. **V** Mr. R. Vincent, London. **W** Mr. H. U. Wood, Brandon; Mr. C. H. Wheteford, Plymouth; Dr. E. A. W. Walker, London; Mr. H. Waite, Leeds; Mr. W. R. Williams, Clifton; Want to Know; Mr. J. F. Woodyatt, Halifax; Dr. A. D. Waller, Sark. **X** X.

BOOKS, ETC., RECEIVED.

Studies in Comparative Odontology. By A. S. Underwood, M.R.C.S., L.D.S. London: Bailliere, Tindall, and Cox. 1903. 5s.

Aids to Infant Feeding. By J. McCaw, M.D., L.R.C.P. London: Bailliere, Tindall, and Cox. 1903. 2s. 6d.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

Eight lines and under	£0 4 0
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An average line contains six words.

Advertisements should be delivered, addressed to the Manager, at the Office, not later than first post on Wednesday morning preceding publication; and if not paid for at the time, should be accompanied by a reference.

Post-Office Orders should be made payable to the British Medical Association at the General Post Office, London. Small amounts may be paid in postage-stamps.

N.B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.

SEVENTY-FIRST ANNUAL MEETING
OF THE
British Medical Association.

Held in Swansea, July 28th, 29th, 30th, and 31st 1903.

PROCEEDINGS OF SECTIONS.

SECTION OF STATE MEDICINE.

J. C. McVail, M.D., F.R.S.E., President.

(Continued from p. 298.)

AN INQUIRY INTO THE RELATION OF VACCINATION TO INFANT MORTALITY AND ACUTE CONCURRENT INFANTILE DISEASES.

By J. M. Mackenzie, L.R.C.P.E.,
M.O.H. Kirkby-in-Ashfield.

The lay mind is largely impregnated with the idea that not only is vaccination injurious to infant life—that is, that vaccination introduces into the infant's system many diseases which, by their manifestation from time to time, mostly in a chronic form, impair the individual's vitality and render life a burden, but furthermore it is believed that the vaccination process in itself is directly contributory to infant mortality. This last impression is the product of the conflict of medical evidence as observed at public inquests over infants dying soon after vaccination. The well-informed, who readily consent to their children being vaccinated, have a lingering suspicion that the process of vaccination has its origin in the barbarism of the past, and although they admit that the evidence in its favour as a preventive against small-pox is overwhelming, they are still imbued with the impression that many infant maladies follow in its train.

The militant antivaccinator, conscious of this state of public feeling, finds his mission in palming off on a too credulous public fables, fancies, and surmises, too often coloured by the individual opinions of a few medical practitioners, who may be for the time being—as, for instance, at public inquests—opposed to the vaccinator.

Medical questions, especially those of a clinical nature, have always been misunderstood by the laity, the educated among them as well as the ignorant, hence the physician, with serene confidence in the value of his art, may well afford to go about "having compassion on the ignorant and those that are out of the way."

One is differently impressed when one finds among the followers of Aesculapius the same heterodox teaching. A few years ago I had posted to me a lecture on infant mortality by one who stands high in the profession as a specialist in public health, originally addressed to a lay body, a municipal corporation, who, it may be presumed, received its statements as incontestable, not falling within the domain of dispute. To my surprise I found that in describing the causes of infant mortality vaccination was given as one. Although unable to find that the writer had any very large experience in the work of vaccination or the treating of infants, yet the bare statement that vaccination was a cause of infant mortality made a far deeper impression on my mind than all the arguments of the antivaccinators I have encountered, and they have not been few.

Engaged as I have been now for several years as a medical officer of health and public vaccinator to a fairly large urban district, I resolved to find out for myself, as far as reliable statistics would allow me, how much truth there might be in the allegation. The material for the task lay ready to hand, even if it involved a good deal of labour in classifying and tracing all the cases dealt with. In the first place, the registrar for the district provided returns showing date of birth, name of child and parent, residence and where born, for the last three years. The vaccinating officer, on the other hand, placed at my disposal his registers showing the number vaccinated and unvaccinated in the urban district for the same period. As medical officer of health, I received weekly returns of all deaths taking place therein, so that material for the inquiry was complete. Obviously, certain exceptions had to be made, so as to remove as far as possible sources of fallacy.

Table A.—*Number of children traced above 1 and under 12 months of age, born, living, and dying, in the Urban District of Kirkby-in-Ashfield from January, 1900, to July, 1902, as ascertained from the Weekly Returns of the Registrar of Births and Deaths.*

Year.	No. Traced.	Normal Series Vaccinated.	No. of Vaccinated Dying before Reaching Age of 12 Months.	Death-rate among the Vaccinated.	No. Unvaccinated.	No. of Unvaccinated Dying before Reaching Age of 12 Months.	Death-rate among Unvaccinated.
1900	329	242	22	9.09	87	13	14.93
1901	398	264	22	8.33	134	22	16.41
1902	260	200	10	5.00	60	10	16.66
Totals	987	706	60	8.49	281	45	16.01

[Those vaccinated, but not born therein, and all those who left the district under 12 months of age, whether vaccinated or unvaccinated, are excluded.]

1. All infants dying under 1 month were not included, inasmuch as it was found that no child was vaccinated under 1 month.

2. All infants, whether vaccinated or unvaccinated, who were not born in the district, were excluded, although such were included in the vaccination and death returns, they were absent from the birth returns, and hence could not be dealt with.

3. All who had left the district, whether vaccinated or unvaccinated, were excluded, as it was impossible to trace what happened to them.

The sifting process, beginning with January, 1900, and ending with July, 1902, left 987 infants to be accounted for whose fate up to the age of 12 months was ascertained in every single instance.

In 1900, 329 infants were accounted for, of whom 242 were vaccinated, and of these last 22 died before reaching the age of 12 months, giving a death-rate of 9.09 per 100; for the same year 87 unvaccinated were traced, 13 of whom died before reaching the age of 12 months, being a percentage of 14.94.

For 1901, 398 were traced, of whom 264 were vaccinated and 134 unvaccinated. Of the 264 vaccinated, 22 died before reaching the age of 12 months, yielding a death-rate of 8.33. Of the 134 unvaccinated, 22 died, a percentage of 16.41.

For 1902, 260 were traced, of whom 200 were vaccinated and 60 were unvaccinated. Of the 200 vaccinated, 16 died before reaching the age of 12 months, yielding a death-rate of 8.00. Of the 60 unvaccinated, 10 died; a death-rate of 16.66.

Taking the death-rate for the three years amongst the vaccinated and unvaccinated, we find the vaccinated yield a death-rate of 8.49 and the unvaccinated 16.01. It will be found on comparison that the death-rate among the vaccinated and unvaccinated varies but little in different years; that is to say, it does not fluctuate. Again the death-rate among the unvaccinated is practically double that among the vaccinated. An explanation of this may be impossible in the limited time at one's disposal, but will be briefly considered further on when discussing the social conditions and neurotic characteristics of those generally found as extremists, antivaccinators included.

As the main object of this paper is to discover any connexion between vaccination and infant mortality, it is necessary to group:

1. The vaccinated according to the age at which vaccination was performed.
2. Deaths among the vaccinated at various ages.
3. Intervals between the vaccinal process and death.
4. Deaths among the unvaccinated at various ages.

For this purpose your attention is briefly directed to the horizontal columns (*a*), (*b*), (*c*), and (*d*) in Table B, p. 350.

Column (*a*) for 1900 shows 43 infants having been vaccinated between 1 and 2 months, 135 between 2 and 3 months, 50 between 3 and 4 months, and 10 between 4 and 5 months, etc.

Column (*b*) for 1900 shows 1 dying between 2 and 3 months, 1 dying between 3 and 4 months, and 4 dying between 4 and 5

TABLE B.—*Showing Number of Children Vaccinated at Various Ages, the Number of Deaths at Various Ages among the Vaccinated and Unvaccinated, and the Number Dying at Various Intervals after Vaccination.*

	Under 1 mon.	1 to 2 mos.	2 to 3 mos.	3 to 4 mos.	4 to 5 mos.	5 to 6 mos.	6 to 7 mos.	7 to 8 mos.	8 to 9 mos.	9 to 10 mos.	10 to 11 mos.	11 to 12 mos.	Totals.
1900.													
(*a*) Number vaccinated	—	43	135	50	10	2	2	—	—	—	—	—	242
(*b*) Deaths among vaccinated classified according to: (*a*) Age	—	—	1	1	4	2	3	2	1	3	1	4	22
(*b*) Interval from vaccination	2	1	2	3	2	4	1	3	3	1	—	—	
(*c*) Deaths among unvaccinated	—	3	—	3	—	—	3	—	3	—	—	1	13
1901.													
(*a*) Number vaccinated	—	22	150	81	5	6		—	—	—	—	—	264
(*b*) Deaths among vaccinated classified according to: (*a*) Age	—	—	—	3	2	1	1	5	4	—	2	4	22
(*b*) Interval from vaccination	1	3	3	1	4	3	2	1	2	2	—	—	
(*c*) Deaths among unvaccinated	—	5	5	2	2	1	3	2	2	—	—	—	22
1902.													
(*a*) Number vaccinated	—	18	79	70	20	11	1	1	—	—	—	—	200
(*b*) Deaths among vaccinated classified according to: (*a*) Age	—	—	—	—	1	3	—	2	1	5	2	2	16
(*b*) Interval from vaccination	—	1	1	3	1	—	3	4	2	—	1	—	16
(*c*) Deaths among unvaccinated	—	5	—	4	—	—	—	—	—	—	—	1	10

months, 2 dying between 5 and 6 months, 3 between 6 and 7 months, and so on.

Referring more particularly to column (*c*), showing the intervals between vaccination and death, we find 2 dying under one month after vaccination, 1 under two months, 2 under three months, 3 under four months, 2 under five months, 4 under six months, 1 under seven months, 3 under eight months, 3 under nine months, 1 under ten months.

Now turning to deaths among the unvaccinated, we find for the same year 3 dying under 2 months, 3 under 4 months, 3 under 7 months, 3 under 9 months, and 1 under 12 months.

It is unnecessary to refer here in detail to 1901 and 1902; a glance at the table will show their relations. Also a glance at the accompanying charts shows the rise and fall of the death-rate among the vaccinated and unvaccinated. Any connexion between vaccination and death should be traced in column (*c*), as it is evident that, if vaccination affects the incidence of infant mortality, it should do so soon after the infants were vaccinated. But what do we find? Three dying under two months after vaccination—one thirteen days from diarrhoea, one from pneumonia, twenty-two days—against 6 above seven and under nine months after vaccination. Again, taking bi-monthly periods, we find above two and under four months after vaccination 5 dying, but above four months and under six months 6 died; so that more die at long intervals after vaccination than at short intervals, and it is therefore difficult to see that vaccination has any influence upon the incidence of infant mortality. Further, it will be seen from the same tables and charts that the death-rate among the unvaccinated, especially in the early months of infant life, is far in excess of that among the vaccinated.

TABLE C.—*Showing the Causes of Death among 706 Vaccinated and 281 Unvaccinated Children.*

Cause of Death.	Number Dying among the Vaccinated. 1900.	1901.	1902.	Totals for 1900-2.	Death-rate per 1,000 Vaccinated.	Number Dying among the Unvaccinated. 1900.	1901.	1902.	Totals for 1900-2.	Death-rate, per 1,000 Unvaccinated.
Convulsions	1	—	1	2	2.83	1	1	1	3	10.67
Pneumonia and bronchitis	7	10	9	26	36.83	5	4	2	11	39.57
Marasmus	2	2	—	4	5.66	3	5	3	11	39.57
Meningitis	2	—	4	6	8.50	1	1	—	2	7.19
Diarrhœa	4	4	2	10	14.16	3	5	2	10	35.59
Laryngitis	2	—	—	2	2.83	—	—	—	—	—
Pertussis	1	1	—	2	2.83	—	1	1	2	7.19
Hydrocephalus	1	—	—	1	1.42	—	1	—	1	3.59
Dentition	1	2	—	3	4.25	—	—	1	1	3.59
Measles	1	2	—	3	4.25	—	—	—	—	—
Tabes mesenterica	—	—	—	—	—	—	2	—	2	7.19
Congenital heart disease	—	—	—	—	—	—	2	—	2	7.19
Erysipelas	—	1	—	1	1.42	—	—	—	—	—
Totals	22	22	16	60	—	13	22	10	45	—

The next item of interest in the comparison of the vaccinated and unvaccinated is seen by glancing at Table C, where the death-rate from various causes is given. To mention only the chief causes:

Bronchitis and pneumonia claim 36.13 per 1,000 of the vaccinated against 39.57 for the unvaccinated.

Marasmus, 5.66 for the vaccinated against 39.57 for the unvaccinated.

Convulsions, 2.83 for the vaccinated against 10.67 for the unvaccinated.

Diarrhoea, 14.16 for the vaccinated against 35.59 for the unvaccinated; and so on.

Having regard to the great difference in the death-rate, it is necessary to give what I consider to be the explanation of this difference. Be it noted that I do not claim that vaccination keeps babies alive, but I suggest that the facts disclosed show it does not kill them.

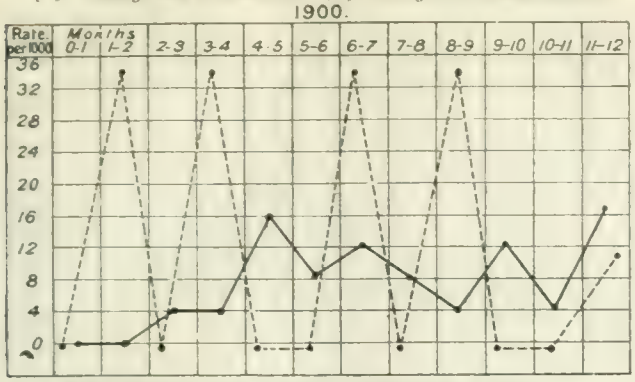
The first thought occurring in one's mind is that the unvaccinated are the unhealthy—the children of poor and ignorant people, who take little care of their offspring—and that the incidence of any disease falls more heavily upon them, and hence would account for the difference in the death-rates. From very intimate knowledge of the social condition of the parents of every child that died I am certain that this is not the explanation. Bearing on this aspect of the question, a factor of the greatest importance in the problem is that 94.4 per cent. of the vaccinations under consideration were performed by the public vaccinator, and that at least 30 per cent. of them were among the very poorest of the poor—the casual labourer, the out-of-employment, the ill-housed, ill-clothed, and ill-fed, the children of young people too early married, with neither means or knowledge for rearing up healthy children. We know that among such infantile mortality is alarmingly high.

On the other hand, two-thirds of the unvaccinated were the children of conscientious objectors, who obtained their certificates of exemption. The antivaccinators in the district are found among the well-to-do of the working classes, the superior artizan, the small shopkeeper, the intelligent, if argumentative, teetotaller. I have often observed that these extremists were of a neurotic type, easily excited against anything that had the appearance of compulsion. There is a nervous tension in their ethical code which bespeaks instability and lowered vitality; their children die, not from want of care and nutrition, but by inherent constitutional defects. In the early years of their married life they had their children vaccinated, and after their death they quickly jumped to the conclusion that it was due to vaccination, and determined there and then, as if with a sacred vow, that no more of theirs should be vaccinated. This tradition passes from mother to daughter, and still their children die, probably in the same proportion.

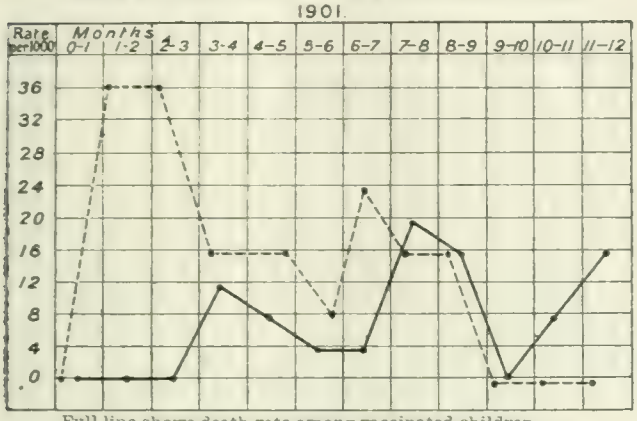
The next point in the explanation, and by far the most important is that the practitioner is extremely discriminating, and does not vaccinate the weaklings—that is, those likely to die within a year. The more care taken in this direction the higher the death-rate among the unvaccinated, as against the vaccinated.

A popular impression, even amongst the profession, is that the vaccinal process acting concurrently with another disease imparts a shock to the infant, thereby accelerating his death. This statement is made with all the more show of authority if the infant is in delicate health. Almost every week instances of this description are reported in the newspapers, whereas as a matter of fact the vaccinal process is remarkably gentle in its onset, ushered in by no shock; there is nothing to be observed corresponding with the rigors of adults or the convulsions of infants at the onset of acute disease, for example, pneumonia.

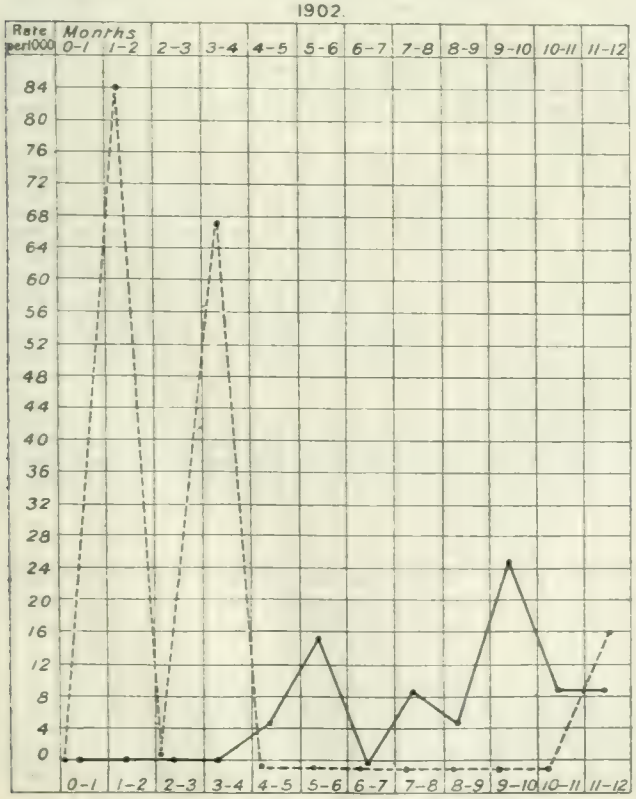
Charts showing at Various Ages the Death-rate per 1,000 (1) Among the Vaccinated: (2) among the Unvaccinated.



Full line shows death-rate among vaccinated children.
Broken line shows death-rate among unvaccinated children.

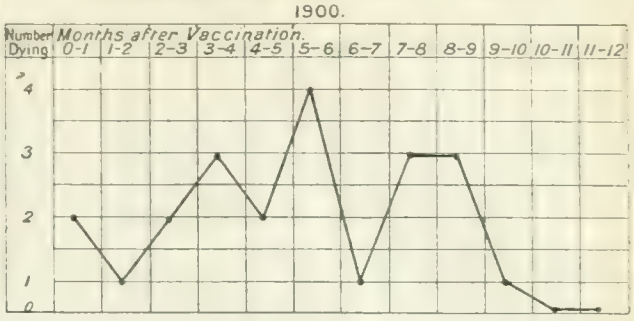


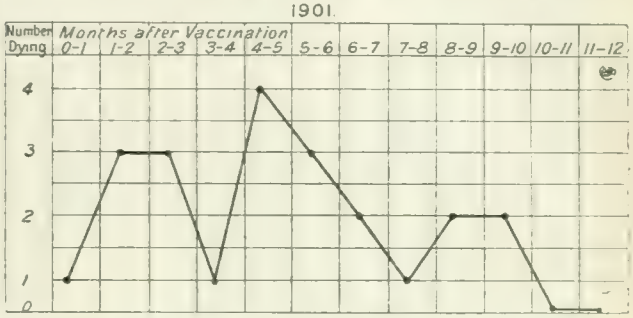
Full line shows death-rate among vaccinated children.
Broken line shows death-rate among unvaccinated children.

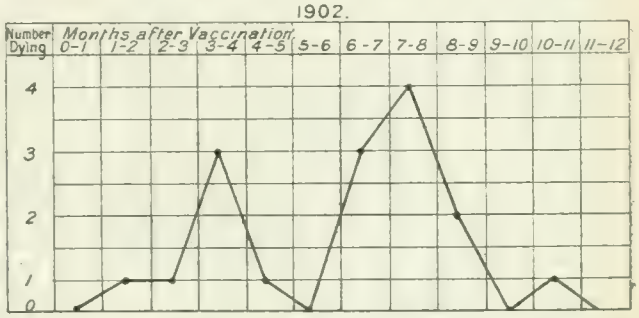


Full line shows death-rate among vaccinated children.
Broken line shows death-rate among unvaccinated children.

Charts showing Number Dying at Various Intervals after Vaccination in the Years 1900, 1901, and 1902.







There is an even, gradual rise of temperature up to 100° or 101° F., with a quickened and full pulse; moreover, be it particularly observed that in delicate children and very young infants the vaccinal process with its accompanying symptoms is milder, and on the whole longer, than in the robust and more advanced in age. Instead of being a danger when running concurrently with other acute diseases, I believe it to be beneficial in many, and to tone down the symptoms of both pathological conditions, namely, the vaccinal process and the acute disease. Let me give a few instances: Beginning with the nearest in relation to vaccinia, let us take small-pox; it is well known that vaccinia running concurrently with the incubation stage of this disease renders the small-pox attack milder, and is altogether beneficial.

Broncho-pneumonia.—A child, E. B., aged 3 months, was vaccinated on October 23rd, 1902. The baby was not particularly robust, but her vaccination was quite justifiable. A cousin, W. H., of the same age, lived next door, the child of antivaccinators. This latter, a boy, was much stronger and more robust. Two or three days after the vaccination of E. B. both children appear to have had influenza, followed by broncho-pneumonia. Under the impression that vaccination would aggravate the disease in the rather weakly baby, I was much concerned as to the issue, knowing full well that if the vaccinated infant died I should be blamed for having vaccinated her, and vaccination would be put down as the cause of her death. The pneumonic attack lasted in both children for about twelve days, and to my great relief I observed that the vaccinated baby stood the attack better than the unvaccinated one. The symptoms were not so acute, the temperature not so high, and recovery was equally satisfactory. The vaccinal process was also affected, the vesicles not so large, the areolae not so acutely inflamed.

The second case was that of an infant, 2 months old, whose mother was anxious to have him vaccinated before he was "shortened." On the fifth day after vaccination he developed acute capillary bronchitis, and for a day or two the baby's condition was extremely critical; that aëration of the blood was seriously interfered with was shown by several attacks of deep lividity. I fully anticipated a fatal issue by the seventh or eighth day, assuming as I did that the vaccinal process

would be then fully developed and aggravate the condition. Not so, however; by that time the pneumonic process began to show signs of improvement; the vesicles were somewhat delayed in their evolution, were small in size with a small areola. I considered that as the vaccinia matured the acute symptoms of the pneumonia subsided, and so saved my patient.

Measles and Scarlet Fever.—Several cases of these diseases running concurrently with vaccination were observed, with no untoward results. In one well-remembered case of measles, during a particularly malignant epidemic in which almost every case developed pneumonia as a sequela, it was observed that an infant whose vaccination ran concurrently with the development of measles, escaped pneumonia and made a better recovery than the others.

Pertussis.—Of all the acute infantile diseases, none is more liable to complicate the vaccinal process than whooping-cough, the reason being that whooping-cough lasts longer than any of the others. It is interesting to observe how, with the development of vaccinia, the paroxysms of whooping-cough disappear—not that the infant's condition becomes worse, the aspect and general state improves. Of course, in a case of whooping-cough complicated by pneumonia, much the same thing happens; I have had very recently a severe case of lobular pneumonia in a child suffering from whooping-cough, and I observed very much the same thing happening; but in both conditions when convalescence is established the paroxysms return. I have had no opportunity of observing the so-called "cures" of whooping-cough by vaccination; nevertheless, I am satisfied that the influence of vaccination on whooping-cough is decidedly beneficial.

Influenza, too, has a moderating influence on the vaccinal process, even though it may excite, as it has done in one well-recorded case, a latent vaccinia. A baby, A. T., aged 3 months, was vaccinated on December 6th, 1901. Three groups of scarifications were made, two of which developed to full maturity, the pocks healed and left good-sized cicatrices. The third scarification never produced any reaction. On April 26th, 1902, the baby contracted influenza from its mother. On April 30th a full-sized vesicle was observed at the very spot where the unsuccessful scarification had been made. This came to maturity with a distinctly-enlarged areola; a supernumerary vesicle was observed, showing that the areola was of more than normal reaction. The cicatrix from the delayed vesicle is more depressed, but not so foveated as the first two. The mother developed broncho-pneumonia of a severe type, the baby's attack of influenza was of a mild type and left no sequela.

Congenital Syphilis.—Four babies were vaccinated at the age of about 3 months who were the subjects of congenital syphilis. Of course, the utmost aseptic precautions were taken, and in three of the cases mercurial treatment in the form of hydrarg. cum creta was begun at once. It was observed that during the vaccinal process the naso-pharyngeal symptoms considerably subsided with the full development of the pocks, returning to their original condition at the end of a fortnight or so. In one case, the mother observed so much improvement that she considered it unnecessary to give the powders of hydrarg. cum creta with which she had been supplied. In some cases the vesicles contained large quantities of serous fluid, and, strange to say, the surrounding areola or inflammatory reaction at the base was much smaller. The pocks were slower in their development, and took longer to scab and heal up. When the scab separated a deep, sharply-cut ulcer is left with a clean base. In at least one troublesome case dressing with antiseptic care sufficed to induce a favourable healing.

Zymotic Enteritis or Diarrhoea. Tuberculosis—local or general—are conditions which I believe to be unfavourably influenced by vaccination. The most careful and conscientious practitioner may find himself suddenly involved during the summer season in the unpleasant position of having vaccinated a baby to find that in two or three days the child has been seized by zymotic enteritis. The suddenness of the collapse often following this state of things is very distressing, and may destroy the young life before much can be done for it. Of the deaths among the vaccinated enumerated in this paper one was of this description, dying thirteen days after vaccination, and I formed the impression from this and other cases that zymotic enteritis, contrary to the other diseases mentioned in this paper, running concurrently with vaccination, is unfavourable.

Tubercle.—I have also on record a well-defined case, aged 7 months, whom I now believe, but did not at the time, to have been the subject of incipient phthisis. The child was vaccinated at his mother's request as she had been told it would improve his condition. During the vaccinal process everything went on perfectly normally and the pocks scabbed and healed within a fortnight. But very soon thereafter the tuberculous condition became more pronounced and he died four months later. Insanitary dwellings, overcrowding and filthy habits are immensely more dangerous to the recently vaccinated than the presence of such diseases as scarlet fever, measles, whooping-cough, and influenza. In small houses with large families of dirty habits with nothing cleanly in the house that either the vaccinated or vaccinator can touch, the utmost care has to be taken so that septic matter may not enter the wound. The Act of 1898 requires that insanitary houses should be reported to the medical officer of health and the vaccination postponed. This is no doubt as it should be, but the reforming zeal of the sanitary authority may be lukewarm; the time taken in putting the house in a safe sanitary condition may be so prolonged that the child may escape vaccination altogether.

Insusceptibility.—The Vaccination Acts have throughout acknowledged the insusceptible, but true insusceptibility must be very rare. Four factors govern it, each of them temporary; first, and most important, potency of the lymph; secondly, the health of the individual; particularly is this the case if the child be vaccinated while in the stage of incubation of any of the exanthemata; thirdly, age; very young infants are less susceptible to successful vaccination than older children; fourthly, and perhaps to a very limited extent the experience of the vaccinator.

Ill-health, particularly anaemia, is a very common cause of insusceptibility for a time; let anaemia be corrected, and the child will soon be successfully vaccinated. I have a case on record (M. E.) three times unsuccessfully vaccinated with active, potent L.G.B. lymph in the summer of 1902. The child was blanched and anaemic, and for a time thereafter treated with iron tonics; when the anaemia disappeared, the child was successfully vaccinated at the first operation.

Eczema and Impetigo.—Both these conditions bring more discredit on vaccination than any disease of which I am aware. An attack of either, however far removed, is sure to be charged by the parents to vaccination. That vaccination excites dormant eczema and impetigo I have no doubt. The two following cases will illustrate this: E. R. and F. W., both the subjects of acute eczema at a very early age, were under my treatment for this complaint, and by the exhibition of Fowler's solution and other tonics made satisfactory recoveries, the skin affection disappearing completely. Two or three months later they were both vaccinated, and to my great annoyance both developed eczema very soon afterwards.

A. W., vaccinated on April 22nd, 1902, was perfectly clear when vaccinated, and remained so until after the healing of the scabs; then impetigo appeared about the neck and groins. She inoculated herself by scratching in several places, particularly on the thighs. Infection spread to other members of the family, who were not particularly cleanly. The vesicles produced by auto-inoculation in impetigo are very difficult to distinguish from vaccinia at certain stages. They scab with an areola and leave a scar. The scar is never foveated and seldom depressed. The members of this family have a romantic recollection of how vaccination spread to them all, whereas in reality it had nothing whatever to do with it.

Let me conclude by asking a question that has often occurred to me: Granted that acute concurrent diseases modify the vaccinal process, tone down the symptoms, and delay the evolution of the pock, does it follow that in these cases it also modifies the protection which vaccination affords?

SECURITY OF TENURE OF OFFICE OF SANITARY OFFICERS.

By JOSEPH GROVES, M.D.,

M.O.H. Isle of Wight.

WHEN Dr. Lloyd Jones, one of the Secretaries of this Section, invited me to read a paper on the security of tenure of office of sanitary officers, I replied that all which could be said on the question had been said; and Dr. Garstang, in his paper read before the annual meeting of the Incorporated Society of Medical Officers of Health in October, 1899, remarked that the reader of a paper in the State Medicine Section at the Cambridge meeting of the British Medical

Association in 1880 apologized for bringing before the Association a matter which had been worn almost threadbare by discussion. But the subject is of such paramount importance to the highest interests of the community, and affects so intimately the well-being of the sanitary officer and the efficiency of his work that constant reiteration, both in season and out of season, is a pressing duty.

Now, what are the circumstances? The country is divided up into sanitary districts administered by the rural and urban district councils and the corporations of boroughs, which are nominally supervised locally by the county councils in the areas in which they are situated, inasmuch as they (the county councils) have power to make representations to the Local Government Board. This useful provision is almost wholly neglected, I may say, while the power to withhold the moiety of his salary paid by the State, if a copy of his annual report is not in the hands of the county council within six weeks of the end of the year—a power never exercised by the Local Government Board—is being made use of to castigate and annoy the medical officer of health, and to diminish his authority and weaken his power for good in the district which he serves.

A characteristic of the present day is a lust of notoriety, and in connexion with local government in the provinces we find the same men members of several administrative bodies, thus forming a kind of official councillor class, who manipulate and control to a considerable extent local affairs. This fact may account in some measure for non-interference by the county councils with the district councils and corporations in sanitary matters, and for the persecution of medical officers of health who are not subservient to the particular members of the district councils whose aim is to dominate those bodies. That such domination is possible is due to there being very little local public opinion apart from imperial party politics and religious sectarianism, and membership of provincial councils, not excluding county councils, is falling more and more into the hands of the less-educated and of those who are prompted to occupy positions which enable them to protect their personal interests. There is, too, a certain timidity, a want of courage, a shrinking from opposition among those members of public bodies who wish to do their duty to the public and to serve their wards or parishes faithfully, and this favours the domination of the individual councillor.

As the sanitary condition of any place in a district may directly or indirectly affect the whole district, so the sanitary state of any district may directly affect the sanitary well-being of the surrounding districts, and, indirectly, of the whole country. The Local Government Board, therefore, representing the country generally, exercises great influence and authority in every district, an influence and authority which are increasingly necessary.

Under the law each sanitary district must have a medical officer of health and one or more sanitary inspectors. The local authority selects these officers, and they cannot be appointed without the sanction of the Local Government Board, excepting in those rare cases in which the whole of their salaries are paid out of the local rates. As soon as they are appointed they receive from the Local Government Board—not from the local authority—their orders. These are very definite. The Public Health Act requires the medical officer of health to write a report annually on the health of his district, and the Local Government Board's orders direct him as to this report. In it, he is told, he is to describe everything which in his opinion either in the present or the future does or may, either directly or indirectly, affect the interests of the public health. He has no choice—even when obedience involves criticism of the acts and methods of administration of his authority, which it often does. He is ordered to direct the inspector in his work, and the inspector is ordered to look to him for direction in his duties, subject to the superior authority of the sanitary authority. The relative positions of the medical officer of health and the sanitary inspector are thus accurately defined—the medical officer of health is the responsible head of the sanitary administration, and the sanitary inspector is his eye and hand so to speak.

The terms of appointment of the sanitary officer are peculiar and most exceptional. Ordinarily in the public service, and even in private life, a man is engaged not for a definite term, unless for temporary work, but for so long as he is competent for his duties, or, as it is phrased, during good behaviour. In this manner Poor-law officers of every degree are appointed, and they cannot be dismissed from office without the sanction of the Local Government Board. But outside London and Scotland the sanitary officer is appointed for a definite term—the sanitary inspector for a year, the medical officer of health with few exceptions for one, two, three, or five years. At the end of the term his appointment ceases, and the sanitary authority may proceed to select another to fill the post, and the Local Government Board, almost as a matter of course, will confirm their choice. The Board will not permit an appointment to be made without its sanction, but that having been given the Board is no longer interested in the officer; it demands only that it shall sanction the appointment of his successor. He has been dropped probably for obeying the orders of the Board, which he is bound to obey, but that does not matter, and he has no redress whatever.

It is evident from extracts from *Hansard* for 1872 made by Dr. Woodford that this extraordinary anomaly was not contemplated by the Legislature, whose intention it evidently was that after the first appointments, the appointments in the public health service should be permanent. Sir Michael Hicks-Beach said, in Committee on the 1872 Bill, that "a five years' officer, like an American President, would be afraid of displeasing those on whom his re-election depended." And it is the opinion of Mr. Alexander MacMorran, the legal expert on the laws which regulate local government, that the Public Health Act, 1875, Section cxci, provides for granting fixity of tenure. He says: "The Local Government Board have power in cases of medical officers of health of urban and rural districts to grant fixity of tenure," and he adds, "it is obvious that great hardships might result from the refusal of the district council to reappoint an officer whose term had expired."

It is common knowledge that such great hardships have resulted in a large number of cases both to medical officers of health and sanitary inspectors from the refusal of district councils to reappoint them. Dr. Garstang, himself a victim, quoted 35 cases of medical officers of health which had come actually under his own notice who had so suffered, and these, of course, form only a small proportion of the total number. For the most part reappointment was refused because the officer had obeyed the orders of the Local Government Board; but there was one case in which the medical officer of health was also Poor-law medical officer. In performing his duties as parish doctor he had given offence, and as he could not be dismissed from his position without the consent of the Local Government Board his employers punished him by depriving him of his public health appointment.

The extent to which this insecurity of tenure of office of the sanitary officer militates against the interests of the community and prejudices the greatest asset which the nation possesses, only the sanitary officer knows. The fear that he may not be reappointed at the end of his term of office constantly haunts him, and however much he may strive to lose sight of it, and however strenuously he may determine, whatever the consequences may be to himself, to act as a high-minded honorable gentleman, still the fact remains that moving bodies travel along the lines of least resistance, and, human nature being what it is, there is necessarily a desire to avoid friction with those placed in authority over you, and a man of generous mind makes undue allowance, perhaps, for ignorance and prejudice. He gets to feel he is the Ishmael of the twentieth century. He has offended so many people by doing his duty he is certain he will not be reappointed, and he asks himself to what good is it all. Well, I may be wrong, but it seems to me as a man of the world that the effect, and more particularly with certain temperaments, must be deterrent. Under such conditions the best possible is not obtained by the community from the sanitary officer.

On March 8th, 1895, Sir Walter Foster, the then Parliamentary Secretary of the Local Government Board, addressed a deputation in the following terms:

> The Board has arrived at a rather important decision, namely, that we consider these appointments for short periods and precarious tenure injurious to the public health. We are at one with you that men holding appointments for very limited periods cannot be expected to discharge their duties in that fearless and thorough manner which those duties require for the safety of the public, and we are anxious to encourage local authorities to give up the system of short appointments. We recognize that these offices are very delicate and difficult, as well as exceedingly responsible, and while a man is elected from year to year by a sanitary authority who may be offended by his zeal for the public health, we feel he cannot discharge his duties in the way they ought to be discharged.

In this utterance the Secretary of the Local Government Board—himself a medical man—eight years ago stated that it was the deliberate opinion, not of himself alone but of the

Local Government Board, that precarious tenure of office was injurious to the public health, and in this opinion every person who is familiar with the question will agree. And, although the case for security of tenure of office may be permitted to rest here—for it could not be made stronger—it is but natural the sanitary officer should view the matter from his particular standpoint, for it is he who fully realizes that, as Sir Walter Foster puts it, in the discharge of duties which are very delicate and difficult as well as exceedingly responsible, in that fearless and thorough manner which those duties require for the safety of the public, he suffers disability of a nature the like of which is unknown to any other person engaged in the public service. As Dr. Francis Vacher forcibly expressed it: "The medical officer of health is an officer appointed *inter alia* to detect and expose the knavery of builders, to tax the rapacity of landlords, to seize and carry off the tainted goods of shopkeepers: yet these builders, landlords, and shopkeepers have absolute power over him, to strip the coat from his back and take the bread from his mouth."

But it is not simply that he may lose his office at the end of the term for which he was appointed, and thereby be called upon to suffer great hardships, but he has frequently to endure insult and persecution. He may be publicly disparaged and belittled and humbled and thwarted in his work, the object being to force him to resign or to bring about his non-election at the end of his term; and, if he be a strong man, he may be constantly threatened with dismissal from his post—a threat to which effect would be given much oftener but for the fear that it might be resented by the people.

That a class of public servants who are doing a great and beneficent work, the value of which to the nation is admittedly incalculable, and for which they receive, speaking generally, altogether inadequate pecuniary remuneration, should be permitted to pursue that work under conditions which are inimical to it, and that they should be allowed to be penalized and persecuted, and to suffer hardships and indignities because they do their best to fulfil their obligations and obey the law, passes comprehension.

Why is it? Undoubtedly the Local Government Board and the Government of the day are primarily responsible, but it is difficult to arrive at the considerations which influence the permanent officials. Since 1895, when Sir Walter Foster gave expression to the views of the Board, which were very much in agreement with those of the health officer, its President has steadily declined to receive any deputation on the subject, and it is only from opinions expressed by individuals from time to time that any idea can be formed.

For example, within the last month a gentleman who has held high office at the Local Government Board, and whose name is at the back of the Security of Tenure of Office of Sanitary Officers' Bill of the British Medical Association, said to me: "You will never get the House of Commons to pass your Bill until you can persuade your authorities to consent to appoint you permanently." Why, the very object of the Bill is to take the power in this matter out of the hands of the local authorities. How many Boards of Guardians could have been persuaded to give security of office to the Poor-law officers? Of course they do not wish the independence increased (and their control over them diminished) of officers who have to report upon their administration of the Public Health Acts. How many authorities since 1895 have applied to the Local Government Board for consent to appoint their medical officer of health permanently?

Another reason I have heard advanced is that sanitary officers would not do their work so well if the tenure of their offices were secure. This would be a valid argument were it true, but some medical officers of health hold permanent appointments, and no one can say they are worked less efficiently on that account; indeed, the effect must be the very opposite. The Poor-law officers of every degree are not less efficient because they cannot be dismissed without the consent of the Local Government Board.

It is said the Local Government Board would never consent to the permanent appointment of medical officers of health receiving small salaries. But if these discharge their duties in a perfunctory manner they are already secure in their office—who ever heard of a medical officer of health being dismissed because of lack of zeal on his part?—and if they do their duty, why should not their appointments be permanent, however undesirable it may be that a medical officer of health should receive a merely nominal salary? In my experience it is the medical officer of health in a small district, who receives a small salary, and is engaged in private practice, who suffers most, and who particularly needs the protection of security in his office. Some of the best pioneer work in the past has been done by men who received only a nominal salary or no salary at all. A former President of the British Medical Association, the late Mr. Barrow of Ryde, was for years medical officer of health of that town without salary, and it was due to his untiring energy and fighting qualities that it was sewered and given an independent water supply.

It is doubtful if there are so many medical officers of health receiving very small salaries as is generally supposed. Dr. Garstang, in the appendix to his paper, gives a list of eighty-four sanitary authorities who pay less than £20. But Dr. Herbert Jones has shown that some of these have the same medical officer of health. He says that of 1,320 medical officers of health, 36 get aggregate salaries of less than £20, and 363 receive less than £50.

I have been told that it is in the minds of some of the permanent staff of the Local Government Board that in the course of evolution of the public-health service great changes may be made, such as have taken place in Scotland, and that, if the appointment of the sanitary officers were permanent, they would have to be compensated for loss of office. One can only hope as a citizen of a wealthy kingdom, which claims to be in the van of civilization, it is not true. It would be contemptible in the extreme if, after the sanitary districts were got into good order, the men who had done the work at so much cost to themselves should be simply sent about their business.

But whatever the cause or the combination of causes which permit the continuation of an anomaly which occasions serious detriment to the interests of the public health, and is a gross injustice to the sanitary officer, I believe the medical officers of health have the whole-hearted sympathy of those of our profession who understand the question. That we have the very practical sympathy of the British Medical Association—the great representative body of the profession—is certain, for they are doing all they know, by promoting a Bill in Parliament at some expense, and by seeking an interview with the President of the Local Government Board. During the preparation of this Bill it was a graceful act of the Incorporated Society of Medical Officers of Health to request the Council of the British Medical Association to include the sanitary inspectors in its provisions. In my opinion it was right and just, for the sanitary inspectors have suffered as we have done, often because they were loyal to their orders and to us; and it has its advantages to them and to us, for it has united our forces by the withdrawal of their Bill.

That the Bill will pass into law is not probable without the assistance of the Government, and that assistance is not likely to be rendered without the sanction of the permanent officials of the Local Government Board. In the meantime, by the kindness of our good friend, Sir Francis Powell, and of those who assist him by backing the Bill, we are keeping before the public the injury inflicted upon the public health and the disabilities of the sanitary officer.

We of the British Medical Association have no choice as good citizens but to continue the agitation by pressing the subject upon the attention of members of Parliament in our respective districts, and upon all those who take interest in public affairs or who can influence public opinion. And in time I have no doubt, if we are true to our responsibilities, we shall succeed in removing not only a burden from our own shoulders, but a menace to the highest interests of our neighbours and that which is a great and serious reproach to England.

THE APPOINTMENT OF A MINISTER OF PUBLIC HEALTH.

By FRANK G. BUSHNELL, M.D.
Plymouth.

MEMBERS of the medical profession including many medical officers of health, the British and Canadian Medical Associations in council, the Sanitary Institute of Public Health, the Manchester and Salford Sanitary Association, the Imperial Vaccination League, the County Council West Riding of Yorkshire, the Institute of Sanitary Engineers, the Workmen's National Housing Association, the Childhood Society, members of Parliament and Medical Societies have considered and expressed approval of the appointment of a Minister of public health.

Such a Minister would act as a leader. The value of a leader is exemplified in science, statecraft, religion, war,

commerce, and indeed in every sphere of human activity. The individual leads the way, others follow in his footsteps; for example, Kaiser Wilhelm, M. Pasteur, Lord Lister, Mr. Joseph Chamberlain, "General" Booth. The importance of the individual and human factor is brought home in Napoleon's famous saying, "Men are nothing, the man is everything."

We have illustrations of the abolition of disease consequent on the adoption of measures suggested by preventive medicine. With the appointment of a Minister this may be expected to occur more and more. For example: The abolition of small-pox in Germany; the abolition of rabies in England; the diminution of sepsis by "Listerism"; the disappearance of leprosy with improved sanitation. Such are mere reminiscences of the possibilities of preventive medicine in the abolition of disease.

Zymotic and tuberculous diseases are recognized as largely preventable. The 62nd Report of the Registrar-General of the United Kingdom for 1899 gives the deaths from zymotic diseases as 89,235, or 2,811 per million of population.

Tuberculous diseases destroyed 60,659, or 10.4 per cent. of deaths from all causes, 1,911 per million of the total population thus arose.

Alcoholism caused the death of 2,871, or 112 per million living among males and 70 among females.

Cancer and malignant disease destroyed 26,325 persons, or 829 per million of all ages and both sexes.

As to the infant mortality, 163 infants under one year of age died in 1899 in every 1,000 of the population in England and Wales. It has increased from 149 in 1871-80, and this implies heavier incidence of disease in infants, with ill-effects in after-life.

There were 82,103 deaths in lunatic and idiot asylums, or 14.1 per cent. of the total deaths in England and Wales.

It is hoped that such a list of mortality figures will set men thinking. It cannot be accepted from any point of view as the ideal of the art of citizen making.

Without being convinced that the national physique is degenerating, as has been argued from the reports of the Inspector-General of Recruiting—from the decline in the birth-rate, from the increase in the death-rate of infants under 1 year old, and from statements made by members of the Royal Commission on Physical Condition in Scotch Schools, yet the most optimistic of us must be impressed with the fact that the health and physique of other countries is said to be markedly improving.

It is claimed by those skilled in vital statistics that one-third of the deaths annually registered are dependent on causes which proper administration of sanitary measures could remove.

It is said that the appointment of another Minister would lessen the individual weight of those that exist. The withdrawal of highly specialized duties from overworked departmental heads cannot be construed into a loss of prestige. It is merely a development in the natural order of affairs. The superintendence of the health of millions cannot be practicable in addition to other vast and onerous duties.

Just as—or even more so than—a municipality and county appoints its medical officer, so should the nation. It cannot expect to be served for ever by other officers, however able and strenuous they are.

Again, it is said that the effective discharge of public health regulations must eventually devolve on local authorities. True, but a Minister would act as the best incentive to proper sanitary progress by many. A superfluity of Ministers is said to exist already. Surely if many have been found good and necessary in the past, we must rely on our experience and appoint another, if indicated.

Again, I am asked if existing arrangements are really sufficient. To this I would answer by a question, Are the preventable diseases diminishing as instinct and science tell us they might? Do medical officers of health of districts of schools or of troops believe that the interests of health are thoroughly guarded? As for a Minister restraining progress, I am sure in the long run the gain to the interests of health by a leader, especially a trained one, would far outbalance "official" tendencies in its narrow sense. Further, looking back on those who have guided us in other matters in the past, can we say from a broad basis of judgement that we should have been better without their services?

It is thought by some that the formation of a ministry would detach sanitary administration from other departments of local government and cause friction with the Local Government Office. However, the appointment of a Minister of Education has, curiously enough, been coincident with the actual unification of education and local government. It may be concluded that it is possible for a Ministry of Health and Local Government Office to co-operate harmoniously, the more so perhaps when we remember that the administration of the public health is combined and included in other countries in State offices of Agriculture, Navy, Education, and Police.

The question of expense is met to a certaint extent by the fact that in a new Health Ministry certain officials are already existent but scattered among many departments; and also that saving of money results from prevention of disease, and in any case cannot be judged from the point of view of £ s. d. The mover of a resolution in favour of a Ministry of Commerce at the recent annual meeting of the Associated Chambers of Commerce, gave it as his opinion that commerce is the foundation not only of the prosperity of the people but of the empire itself. Another speaker said that it was obvious that commerce was its very life. This is indeed an erroneous view. What position would this country have held without its vigorous health, its bodily mental and moral "grit" in the past? Lord Beaconsfield went so far as to say that "the health of the people is really the foundation upon which all their happiness and all their power as a nation depend ..... but if the population of that country is stationary, or yearly diminishes in stature and strength, that country is ultimately doomed." What does Ruskin say? "There is no wealth but life."

The apathetic who expect the world to stand still in its course and present arrangements to suffice must remember that there are numbers who exist under conditions of "sanitary injustice" at present, and without a leader they are helpless.

In the Minister many would see the embodiment of a principle the importance of which is absolute but unrecognized frequently. It is that whatever the demands of complicated modern life makes upon us, whether in crowded communities or rural districts, on land and on sea, in this country or in our great tropical colonies, the natural or physiological laws of health must be obeyed or exact their toll inevitably. The Minister would regulate the balance between the forces of Nature and civilization. The Minister would add weight to the recommendations of local sanitary authorities, would assist those in need of help, would stimulate the apathetic, and would remove such limitations as unduly bound others, would be compelling to those who wilfully neglect their duty. Unnecessary interference would be avoided. The guiding light which would steer the Government barque between the rocks of neglect and interference would be the health requirements of the people based on scientific medicine.

The value of the work done by voluntary effort in this country is, and will be, enormous. This is right. It is said that every great sanitary improvement has been initiated by voluntary or local action, and this is truth.

The Local Government Board was established in 1871 to concentrate in one department of the Government the supervision of the laws relating to the public health, and the relief of the poor and local government.

Its constitution is probably familiar to you, and it may be remembered that it originated partly on the recommendation of the Royal Sanitary Commission (1869-71), who expressed the opinion that, if such a Ministry were established, separate secretariates—one for public health and one for the relief of the poor, would be found necessary. This was not carried out, however, but all administration was concentrated in the hands of one secretariat, and was in fact a continuance of the former Poor-law Office.

The Royal Commissioners had expressed or implied that the new authority would be a "motive power" of no mean degree for promoting sanitary progress. It is impossible to avoid a comparison of such a stimulating plan of action with the policy of the Board in 1888, when it desired to transfer to county councils all the powers which it now has under the Public Health Act of enforcing on defaulting district authorities the performance of their sanitary duties. In 1903 there are yet more county councils without than those with medical officers of health, I learn. It was obviously a premature effort at decentralization. The powers and duties of the Board are those of the Poor-law Board with those of the Privy Council. All the powers and duties of the Home Office in relation to public health, drainage and sanitary measures, local government, local returns, and local taxation. The growth of its duties is steady and continuous. It has legislative powers of making rules, regulations, and orders, and

confirming by-laws. Its administrative control varies considerably; over Poor-law matters it is complete; over municipalities the Board has no direct control. Over sanitary authorities that Board has considerable power; it can force them to carry out sanitary measures to its satisfaction. Other powers have been conferred upon it, and it has certain obligations. In 1888 it received the central control of the county councils, an omen of future expansion as the tide sets in towards local government *pari passu*.

The expanded Medical Department of the Board, the General Register Office, and officers from other departments would well form a basis of the Ministry. Associated with it should be a consulting body of representative or eminent members of the medical profession, for example, the Presidents of the Royal Colleges, a medical officer of health of schools, of factories, of Poor-law patients, prisons, navy and army. A veterinary surgeon, statisticians as the registrar-generals, an alienist, a pathologist, a sanitary engineer, and architect would be most suitable consultants.

Education would be the most powerful engine that a Minister could exert in developing that "health conscience," which is desired in Scotland. The present system is too slow a process in this country, and the most effective way to protect the interests of the general public is to create a strong central department with effective control of local departments. It appears that local authorities when combined overawe even Parliament itself, and Parliament must be supreme.

In a few words, the Ministry would deal with the records of disease, vaccination and revaccination, with outbreaks of epidemics and infectious sickness, with the regulation of injurious trades and industries in relation to health, with the prevention of filth, and with the infant mortality. Hospitals of all kinds, open spaces, gymnasia, swimming baths would all be advised upon; attention would be drawn to deficiencies; the adulteration of food and drugs, analysis of water, etc., would be dealt with; diseases communicable from animals to man, chemical and pathological research as to the causation and prevention of disease of mind and body at home and in our colonies; bacteriological investigations of human and animal morbid conditions, etc., would be supervised.

Education in hygiene would be studied and inculcated as of paramount importance. The returns of the coroners' courts and meteorological observations would be collected. The Home Office might see fit to part with the supervision of the health of workers, prisoners, police, and lunatics.

The Veterinary Department of the Privy Council would well be associated with the Ministry. The Minister would perhaps serve the interest of the public health best if he were not liable to change with every Government. He would be an adviser rather than a participator in the fierce and often unnecessary party strife of politics. Indeed, he might be definitely cut off from the collective responsibility of the Cabinet and be only summoned to the meetings of the Cabinet which had to do with his department. It is in the power of the Sovereign to summon any privy councillor to any Cabinet for any particular purpose and there is no obvious reason why such a course should not be adopted in this case.

In conclusion, I may say that a list of eminent men could be given who advocate the creation of a Ministry of Health. It is difficult, with the present figures at my disposal from other countries, to compare satisfactorily the various National Health Departments, but I may say that Canada and the United States are moving towards such a separate office; Germany, France, and Italy may be said to have already compulsory physical education in their systems of military training.

If I can arrest the attention of this meeting on the central idea of the necessity for Ministers of Public Health presiding over a national organization I am well content. I beg to move:

That this meeting is of the firm opinion that a Minister of Public Health would possess great potentialities for improving the national health, and would eventually benefit it largely. It is further of the opinion that the Council of the British Medical Association should advise that a Government inquiry be made into the advisability of uniting the public health work of various departments into one Ministry under the control of a Cabinet Minister.

Mr. HERBERT JONES (M.O.H. Hereford) sympathized with the object which Dr. Bushnell had in view, but maintained that there was already a Minister of Public Health in the President of the Local Government Board. A fatal flaw in Dr. Bushnell's proposal lay in his suggestion that the Minister of Public Health should hold office irrespective of change of Government. The discussion of the subject was opportune in view of the probable introduction within a short time of a Public Health Bill for England and Wales.

Mr. H. H. TIDSWELL (Chester) said that in the interests of public health he would like to see increased powers given to medical officers of health for the purpose of daily inspection of houses in every town, with the view of preventing the spread of infectious diseases and for the purpose of warning those parents who persistently neglected the health of their children. To carry out this system the medical officer of health should have the power to appoint the general practitioners of different districts to carry out this work, and to pay them according to the work done. It was desirable to make the experience and knowledge of the general practitioner available for the public health service, but not gratuitously as it was at present.

Dr. JOSEPH GROVES (Isle of Wight) said the difficulty was that the Treasury did not grant the Local Government Board sufficient funds to enable it to employ more assistance, and consequently there was always a block of work. The medical department was only one of the departments of the Local Government Board, and it would appear that the reports of this department were considered by the permanent secretaries, with the assistance of the medical officer if considered necessary. He believed that at the moment the greatest amount of good to the public health would be found in security of tenure of office to sanitary officers.

Mr. H. D'ARCY ELLIS (Stourbridge) did not see what advantage was to be gained by the appointment of a Minister of Public Health. He believed he had the honour of being the first medical officer of health who obtained security of tenure. He did not know that the security which he now had made any difference to the good relations existing between himself and the local council; but he did feel that more backing up was required, somewhat on the lines on which he believed the Factory Department was now administered under Dr. Whitelegge, and carried out under the medical inspection of Dr. Legge. As to educating public opinion, he believed that the public were becoming much more alive to the necessity of good sanitary administration, and there was growing up a healthy public opinion which would bear good fruit; he was quite sure that in his own district much more interest was being taken in sanitary questions. Of course, his reports did sometimes bring him and his council to close quarters, especially when inquiries were made from the central department, but these matters were always adjusted by the usual stereotyped reply, and did not always end as satisfactorily as the medical officer of health might desire.

PHYSICAL DEGENERATION IN CHILDREN OF THE WORKING CLASSES:

AN INQUIRY INTO ITS CAUSES AND SUGGESTIONS FOR ITS REMEDY.

By HERBERT H. TIDSWELL, M.R.C.S., L.R.C.P.,
Chester

WHAT is meant by physical degeneration? It denotes a condition of mind and body below the normal standard of development—deficient in vigour, activity, and endurance.

The object of my paper is to draw attention to certain psychological influences which to my mind are responsible for the nervous restlessness and waywardness so characteristic of the children attending the schools under the Education Act. It is not my intention to dwell on such well-known factors of disease as starvation, exposure to cold, improper feeding, want of rest, want of fresh air and sunshine, and insanitary dwellings.

I think no one will deny that the standard of health amongst school children in our large towns is lower than it ought to be. I will not be so rash as to assert that it is ower than it used to be; but it certainly is not so high as it ought to be, considering the advances in all departments of sanitary legislation and the improvements in hospitals and dispensaries for the free treatment of the poor.

It is evident to my mind, as the result of my investigations, that there is some factor having a bad influence on the health of children which did not exist before the new system of education came in force. The children of the working classes of the present day commence school attendance too young. The period of school attendance is much longer and the

course of studies much harder than it was under the old system. The rules of the new system put burdens on the teachers and pupils not easy to be borne with equanimity, while the system of cram is turning children into talking machines and injuring their reasoning powers.

These are powerful factors in producing cerebral congestion. The mind of a child is remarkably sensitive. Harshness and severity, either on the part of a teacher or parent, will destroy the happiness of a child's life, disturb the appetite and digestion, and drive away sleep. A child's anxiety to please a parent or teacher, if unsuccessful or not appreciated, will have the same effect. I know from personal experience that fear may have a paralysing effect on the mental faculties. In my early school days I had a severe master; one day he flew into a temper, and threatened to cane me because I was slow at mental arithmetic. My difficulty was to add 8 and 1 together, but so long as he stood in front of me with his cane I was too frightened to utter a word. I have seen several cases of chorea occur in girls as the result of school worry. It is my opinion that many cases of hysteria and other nervous maladies in young women of ovarian and uterine origin may be traced to over mental strain during school life.

To return to children. It is an axiom that the physiognomy is a certain index of the state of the feelings, for example, when a child is happy and content, his face will show his state of mind. When he is irritable, tired, or overworked, the child's face will bear a pained, weary, haggard, or careworn expression. It is natural to assume that boys and girls are usually glad when lessons are over and they can go and play or return home for dinner.

I have often stood still outside schools to note the expressions of children coming out of school. A few only had a look of joy and happiness. The majority had a sad, careworn, haggard look, suggestive of mental strain. The behaviour of some was so unnatural as to lead me to suppose their brains were highly irritable. I saw one boy take his overcoat, fold it up, and then kick it along the pavement. Did this indicate a healthy state of mind? When I was called upon to treat delicate or nervous children I invariably ordered rest from school for several months which was usually followed by improvement.

Parents have frequently complained of the severity of the school regulations and occasionally of the severity of the teachers. Children's brains are delicate organs and require gentler treatment than they often receive at the hands of their teachers. The cram system of the present day is both demoralizing and degrading and is calculated to render the judgement unstable and capricious and to interfere seriously with the mental equilibrium. The development of the body is seriously retarded by a morbid condition of the cerebro-spinal system. In some schools it is customary to punish children who are late for school by a stroke of the cane on the palm of the hand. I have never seen this punishment inflicted, but I imagine it is greatly dreaded as children take great pains to be in time. I think corporal punishment should be absolutely forbidden in school.

In some towns parents have difficulty in getting permission from the teachers for their children to remain at home in cases of sudden illness: many parents are unable to afford a doctor's fee, and hence cannot obtain a medical certificate. They are often afraid to allow a child to remain at home when ill. I recently met with a sad case of this nature. A poor woman in charge of a little grandson kept him at home from school for a day or two, as he had a violent cough and was very ill. The school attendance officer called and inquired why the boy had not been to school. He was told the reason, but did not think it satisfactory, so he gave strict orders for the boy to return to school. The boy was too frightened to disobey, and went to school, but almost fainted with the effort of getting there, while his cough disturbed the whole class. As his illness became worse the grandmother got alarmed and sent for me. I went to the house at once, and found the boy very ill in advanced consumption; he was treated with the greatest care, but he got gradually worse, and death terminated his sufferings in the course of a few weeks. In another case a boy was attending school for a week while suffering from scarlet fever.

I think I have said enough to prove that the medical aspect of our system of national education is far from perfect, and that it is probably a powerful factor amongst others in the lowering of the standard of national physique—mental and bodily. Few men have the same opportunities as general practitioners of studying child life under the Education Act; they alone and the parents can trace the connexion between mental strain, nervous instability, and disease.

Suggestions for a Remedy.

1. If possible remove the cause of mental strain and abolish the cram system.

2. Let all schools be under systematic medical inspection, let a medical officer be attached to each school, who shall inspect each class as it assembles to detect infectious or other diseases in the early stage, who shall examine the eyesight, the hearing, and general condition of each child and keep a report of the same, who shall visit any pupil at home in case of sudden illness and give certificate to same. A measure of this kind would entail cost, but in the end it would be true economy, it would save a vast amount of suffering and ill-health, and would help to raise the standard of national health.

In conclusion, it may not be amiss to point out that the object of education, before the introduction of the Education Act, was to train boys and girls for their duties in that station of life to which it had pleased God to call them. Whether that is the object under the present system is a question I will not presume to answer. My last words are an earnest appeal to parents. Remember the words of our great poet, Lord Tennyson, "Self-reverence, self-knowledge, self-control. These three alone, lead life to sovereign power." Teach your children this lesson, and they will bless you in after-years.

Dr. Dawson Williams thought that some definition of terms was needed. What was meant by the term "physical degeneration"? Did it mean a progressive degeneration of the race? If so, there was not, so far as he was aware, any statistical evidence that the amount and degree of degeneration in the population was increasing. Theoretically, the proposition involved the assumption that acquired characteristics could be transmitted, and those who accepted the doctrine of Weismann would find great difficulty in accepting that assumption. The practical question appeared to be whether the factors which tended to prevent adequate physical developments could be removed? Whether these factors were more operative at the present time than fifty years ago might be an interesting question from the historical point of view. He hoped that the inquiry into the causes of the defective physical development which existed in many populous districts would not be mixed up with the question of the causes of the decline in the birth-rate. The two matters were distinct. The steps to be taken to safeguard life from the time of conception formed a field of work sufficiently wide, and attention should be given to safeguarding the health of the mother during pregnancy. The food supply of the poorer classes in populous districts differed from the supply thirty or forty years ago in respect particularly of the large increase in the use of preserved foods. Whether the use of starchy foods for infants had increased or not it was undoubtedly excessive, and the condition in which milk reached the infants of the poorer classes was another factor which deserved remedy. He believed that the defects in the diet of infancy and youth caused a condition of defective nutrition which produced not only imperfect physical development, but imperfect or retarded cerebral development, which was the cause of what was called over-pressure.

Mr. J. M. Mackenzie (Kirkby-in-Ashfield) believed that physical degeneration was both acquired and transmitted. School children who left school very healthy soon degenerated when occupied in unhealthy employment. Physical training was greatly needed. Children's homes should be improved, and they should have more recreation and better food. The marriage system must also be looked to. People were allowed to marry who would always produce a stunted and degenerate race.

Dr. John Strachan (Dollar) referred to the great need of medical guidance in the matter of school procedure, holding that it should be the duty of the profession to safeguard the children in regard to the conditions of health of which schoolmasters were not required to have any knowledge. He thought that long confinement in school and at school work, amounting often to eight or nine hours of sedentary work, had a great tendency to deterioration of the physical condition and tendency to disease; and that the effect upon the nervous system of punishment and other terrorism imposed upon children in connexion with school lessons interfered with sleep and tended to injure the mind.

THREE CASES OF EXCISION OF THE CAECUM.*

By F. T. PAUL, F.R.C.S.
Surgeon, Royal Infirmary, Liverpool.

Excision of the caecum is still a comparatively rare operations, less perhaps on account of the infrequency of cancer in this situation than because cases so often come to the surgeon too late for a radical operation.

Since Christmas I have seen six cases. In two no operation was attempted. In one I explored, but found excision impracticable. In the other three the caecum, lower end of the ileum, and all adjacent glands were removed.

The first of these three cases was sent to me by Dr. Forbes, of Bootle. The patient was a man, aged 32, who had been suffering from colicky pains, with flatulent dyspepsia, for the past six months. He was able to continue his work, and, not losing much in general health, as usual paid very little attention to the earlier stages of his complaint. Unfortunately malignant disease of the bowel begins most insidiously. In fact there is no reason why a small growth in the mucous membrane should set up any symptoms at all, and it is not until it has grown large enough to offer some little obstruction to the passage of the alimentary contents that even flatulent dyspepsia occurs. As the obstruction increases colicky pains are introduced, which grow in severity until complete obstruction supervenes, as it does sooner or later in most cases. No blood or mucus were observed in the motions. In caecal cancer these conditions are much less noticeable than when the disease is nearer the anus.

The patient's symptoms were flatulent dyspepsia, colicky pains, increasing constipation, and vomiting after food. They had suggested, as such cases commonly do, some stomach trouble; but careful palpation of the abdomen revealed a movable tumour in the caecal region which was diagnosed as caecal cancer.

On March 8th an incision was made over the growth, and the diagnosis proving correct, the caecum and lower end of the ileum, together with the whole of their attached mesentery, were removed. The ends of the bowel were brought outside and attached to glass tubes, a good 3-inch spur having been formed with a view to the restoration of the continuity of the alimentary canal. The mesentery was unfortunately full of glands enlarged up to the size of a hazel-nut, and in order to make a clean sweep of it the ileo-colic artery had to be ligatured in its main trunk, and perhaps the colica dextra as well; anyway the circulation in the lower end of the divided colon was sufficiently restricted to bring about an unfortunate complication that I have met with before in this operation—namely, sloughing of this part of the bowel.

The loss of the lower end of the colon means, of course, the loss of a considerable part of the spur, and introduces much difficulty in the closing of the artificial anus. This should have been accomplished long ago, but is still in abeyance. However, we must remember that had end-to-end approximation been adopted the case must have terminated fatally, as happened on a former occasion when I united the bowel with a Murphy button. I may say that this is the only part of the bowel in which I have known enterectomy to be followed by sloughing as a result of interference with the circulation, and as it has occurred twice in a limited number of cases it seems not be entirely accidental.

The second of the three cases was admitted into the Royal Infirmary under the care of Dr. Ernest Glynn for intestinal obstruction:

The patient was 53 years old, but looked 63. His symptoms were of the same type, but much more severe in character, and culminated in complete obstruction several days before admission. He was much emaciated, and ought to have been operated on months ago. The abdomen was too much distended for successful examination as to the site of the stricture; but as the large bowel was apparently empty, and as he could retain upwards of three pints injected into the rectum, the obstruction was evidently not in the sigmoid region. Under chloroform some hardness was detected over the caecum, and on cutting down on this region cancer of the ileo-caecal portion of the bowel was found. It was excised as in the last case, and quantities of wind and motion escaped through the tube inserted into the lower end of the ileum. For a few days the man progressed well; then it became evident that the state of exhaustion to which he had been reduced by the prolonged obstruction was more profound than we had anticipated. He continued to waste, and becoming gradually weaker died, simply of exhaustion, three weeks after the operation. My house-surgeon, Dr. Raubenheimer, who managed the after-treatment with great skill in both cases, made a necropsy. He found internal healing perfect. The peritoneum was quite free from infection, and a long spur had been produced for safe clamping, had he fortunately survived for the later stages of the operation to be completed.

The third case I was called to see by Dr. McLeod Ross, of Colwyn Bay.

This patient was a delicate lady, 51 years of age. The preliminary symptoms were of the usual type; but accompanied by more cachexia and less obstruction than one generally meets with. There was a large movable tumour in the caecal region. Dr. Ross had made the diagnosis, and carefully prepared the patient for operation before I saw her. I confess when I did see what a frail, pallid creatures I had to deal with, that I felt much doubt as to the expediency of the operation; but as the dangers and risks for and against had been already explained to the patient, and were appreciated by her, it seemed right to proceed. The parts yielded very readily; hence the operation was carried out with more speed and ease than in the previous cases, and though the glands were considerably enlarged, and the mesentery freely removed, there was no subsequent sloughing of the bowel. The operation caused no serious shock, and the patient was put back to bed with a quiet, steady pulse. The after-treatment was carried out by Dr. Ross. He removed the tubes on the fifth day and subsequently successfully clamped the spur preparatory to the closing operation, which I undertook on May 28th. She is now, June 23rd, practically well.

In connexion with these cases there are a few points of especial interest to which I wish to refer very shortly.

First, as to the diagnosis. I have frequently previously called attention to the fact that most of the cases of chronic stricture of the large bowel that come under my care have been at one time regarded as cases of stomach derangement. Sometimes even when the stricture was in the rectum. This is not much to be wondered at, as the earlier symptoms are dyspeptic in character, and vomiting after food is not infrequent. Later, when colic is marked, the intestinal origin of the mischief should be apparent, though it is often not recognized until obstruction occurs. Blood and mucus in the stools are generally observed when the disease is low down; but when it is in the caecum, if they are equally frequently present it is certain that they are not often observed, so that the recognizable symptoms really depend upon the amount of obstruction offered by the growth, and its detection on palpation.

The next point is in reference to obstruction. This condition when marked has a most unfortunate influence on the subsequent success of the case. Every surgeon must have noticed the anxious state that frequently supervenes for a week or two after even the simplest case of colotomy when there has been complete obstruction of the bowels for several days previously. At first there is a period of relief; then one characterized by foul tongue, absence of all desire for food, elevation of temperature, rapid weak pulse, foul motions, and general depression. If such a condition is difficult to recover from after a simple colotomy, how much more serious it becomes when an extensive enterectomy has been performed. Obstruction more than trebles the danger in colectomy. The location of the tumour is rendered difficult or impossible; the operation is prolonged and impeded, and the chance of infecting the peritoneum increased, in addition to the depressing effect due to the absorption of toxins developed in the bowels during the period of obstruction. To have a fair chance, the surgeon should undertake the resection before obstruction supervenes. Amongst my own cases of colectomy the mortality for several years past has been limited to cases in which obstruction was present, with only one exception, in which death was due to an accidental infection.

Next, as to sloughing of the cut end of the colon. As I have previously stated, I have only met with this in cases of excision of the caecum. It is an occasional result of interference with the circulation owing to extensive removal of the mesentery, and is a strong argument in favour of bringing out the ends of the bowel and establishing a temporary artificial anus.

Another interesting and important point is the value to be attached to enlargement of the adjacent mesenteric glands. For some time I assumed that enlarged glands meant an ultimately hopeless prognosis; but was recently able to report two cases—one after two and a-half years and the other after four and a-half years—in both of which I expected early recurrence, but which were still quite well. The difficulty one has in recognizing a malignant from a simple ulcer in the stomach in some cases is well known. There seems to be as much difficulty in deciding between a septic and malignant infection of the glands in cases of cancer of either stomach or bowel, and the simple fact that the glands are enlarged is not sufficient ground on which to condemn a case as hopeless. In one of these patients Dr. Ernest Glynn examined the glands and found no evidence of cancer in them.

Finally, I have for some time been in want of a good clamp

* Read at the annual meeting of the Lancashire and Cheshire Branch of the British Medical Association.

for removing the spur. I previously used pedicle forceps, but their long handles are a source of inconvenience, if not danger, while their blades are hardly long enough. Messrs. Down Brothers have just made me a clamp, which is much more convenient. It has blades 3 in. long, the ends of which are curved out to run less risk of perforating the bowel. The compressing force of the blades is maintained by a spring, the strength of which is regulated by a screw nut, which can be tightened as required. It is not necessary to keep the clamp *in situ* till it comes away, as it will produce a slough in from 24 to 48 hours.

A CASE OF PURULENT PERICARDITIS OF UNUSUAL DURATION IN A CHILD.

By J. A. COUTTS, M.B.Cantab., F.R.C.P.,
Physician to the East London Hospital for Children.

Purulent pericarditis is far from being a rare disorder in infants and young children. In most instances it occurs as a complication or near sequela of pneumonia, or in association with empyema. Unfortunately, the admitted difficulties of diagnosis are such that only too often the affection is first discovered upon the *post-mortem* table. In spite of these difficulties, it may be safely said that stricter and more repeated examination of the precordium in the later stages of pneumonia and in cases of empyema will frequently prevent a purulent pericarditis being missed. An important point about pericarditis associated with pneumonia or empyema in children is that any demonstrable effusion that takes place is almost certain to be purulent in character. In the present case there was no history of any antecedent pneumonia, and empyema as a concomitant can with certainty be excluded. Amongst other interesting features of the case, then, is the one that it was apparently an instance of a primary and solitary pneumococcal inflammation of the pericardium. But by far the most interesting and noteworthy fact is the one that a child could live for so long a period as seventeen weeks with such a severe and usually rapidly fatal disorder.

E. E., aged 4 years, was admitted into the East London Hospital for Children on November 6th, 1902, under my care. For the past ten weeks the child had been ailing and wasting, with no appetite for food. She wished to lie about, and walked with difficulty, being very easily tired. Since whooping-cough a year ago she has had a slight, dry, hacking cough, which had been worse for the last week. About a month ago the mother noticed that the skin and conjunctivae were yellow, and at the same time the motions were light but not distinctly clayey. Later the bowels were relaxed; the motions—three or four daily—brownish and somewhat offensive. The child complained of "gripes" on going to stool.

Beyond a doubtful phthisical tendency on the father's part there was little to note in the family history. The mother and five other children were all in sound health.

On admission the patient was a small, ill-nourished child, thin, the limbs wasted, and the skin hanging in loose folds along the inner sides of thighs. She was extremely pale, and the mucous membranes were blanched. Her complexion was a dull yellow straw colour, and there was a slight dark flush over the malar bones. The skin was dry, harsh, and desquamating in fine scales, but was quite elastic over abdomen. The fingertips were slightly bulbous and cyanosed, and the ends of the toes were also clubbed to some extent. Her expression was not anxious, and her eyes were keen and bright, with the pupils equal and medium-sized, reacting well to light. There was no icteric tinge remaining on conjunctivae.

The liver was much enlarged with a firm edge running across the abdomen—the lowest level reaching slightly below the umbilicus. This enlargement of the liver gave a rather protuberant appearance to the upper part of the abdomen, but below the umbilicus this last was quite soft and natural. The liver dullness commenced above at the sixth rib. The spleen was not apparently enlarged.

The child's breathing was not quickened and there was no respiratory distress. There was no orthopnoea and she was able to lie on either side with comfort. On examination of the chest there was evident diminution of expansion on the left side. On percussion there was a dull patch over the left front, extending from the supraclavicular fossa into the cardiac dullness below. This dull area was triangular in shape with the apex upwards, and extended laterally from near the anterior axillary border on the left side to the right border of the sternum. Over this area there was marked resistance on percussion, the breath sounds were extremely weak and distinctly bronchial in character, and there were a number of sharp creaky crepitations when the child took a deep breath or coughed, with a doubtful pleuritic creak at times. The dull area was continuous with the cardiac dullness, which extended from one fingerbreadth outside the nipple line in the fourth left intercostal space to one inch outside the right border of the sternum. The note was dull over the third and fourth ribs for about three-quarters of an inch to the right of the sternum. The heart's apex beat was plainly felt in the fifth left intercostal space, three-quarters of an inch outside the nipple line. At the apex the sounds were galloping and weak, and over the base they were muffled but seemed pure. There was no pericardial friction to be heard. The pulse was small and of low tension. Over both lungs, with the exception of the dull area in front of the left, the percussion was normal, the air entry was good, the breathing was vesicular, and there were no added sounds. The child had a frequent, short, hacking cough which sometimes interfered with her rest. Her tongue was furred, but she took nourishment well.

Under the *x* rays, on the screen, there was seen a dark triangular area closely corresponding to the dull area over the left front of the chest. This dark area extended into that corresponding to the heart below, but the right edge of the sternum gave a sharp and distinct line. The heart could be seen extending to a considerable distance to the right of the sternum, and was thought to be unmistakably enlarged.

The question of the case being one of purulent pericarditis was discussed, but such a diagnosis did not commend itself to me. The plainness with which the apex beat could be felt, and the comparative clearness of the cardiac sounds, both seemed to me incompatible with a pericardial effusion of such an extent as to lead to such extensive dullness on the front of the chest. A still more powerful reason against the diagnosis being a correct one was the improbability that a child could live for so long a period as ten weeks with such a severe disorder and present so little evident distress. From an experience of several other cases presenting similar physical signs on the front of the chest I was led to consider the case one of loculated empyema. The position of the apex beat I thought was explainable by there having been some retraction or collapse of the left lung allowing a displacement of the heart to that side. At the same time I considered that there had been some dilatation of the heart owing to the pulmonary obstruction, and to the muscular relaxation consequent on the prolonged illness. Such an interpretation of the symptoms seemed to me more probably a correct one than that of purulent pericarditis.

During her first week in hospital the child remained in much the same condition as on admission. Her tongue became cleaner and she continued to take nourishment well. On November 13th she was given an anaesthetic, and Mr. L. A. Dunn inserted an exploratory needle into the first and second intercostal spaces from the left anterior axillary line, but no pus was withdrawn. The child took the anaesthetic very badly, and became very collapsed; in fact, she nearly died upon the operating table. Under these conditions, of course, nothing further could be then attempted. So confident, however, was I in my diagnosis of empyema that it was arranged with Mr. Dunn that, if the child should later on show any temporary improvement, he would then divide the pectoral muscles and excise a bit of rib near to the sternum to give exit to the pus.

Unfortunately the child never rallied so as to justify the contemplated operation. On the contrary, after the exploration she lost ground rapidly, and her condition became critical in the extreme. Her temperature, which had before remained low, assumed a hectic type. The rest of her history can be very briefly told. She sank into a low lethargic state, taking little or no notice of her surroundings. On December 6th she developed a profuse muco-purulent nasal discharge, and two days later double purulent otorrhoea along with diarrhoea. These last continued until the end. The short hacking cough persisted and disturbed her rest. Her condition of course precluded any thorough or prolonged examination of the chest. On December 16th, however, pleural friction was heard over the base of the right lung. The signs over the left chest remained unaltered, with the exception that the dullness before noted spread slightly beyond the right border of the sternum. The same faint moist sounds were heard at the left border of the dull area along the anterior axillary line. The heart sounds became, perhaps, more dull, but were always distinctly audible at the apex, and the apex beat could always be clearly located in the fifth intercostal space just external to the left nipple line. Towards the end the spleen became enlarged, and could be felt two fingerbreadths below the ribs.

The child died quietly on December 28th, and it is one of the points of interest in the case that death should have been so long delayed, as the child had apparently been *in extremis* for, at any rate, the last three weeks of her life.

Notes of the Post-mortem Examination and Bacterial Report by Dr. Leonard Dudgeon.

The child was somewhat emaciated. The skin had rather a yellowish tinge, but there was no true jaundice. There were no external lesions of the body.

Thorax.—Some anterior mediastinitis was observable on opening the chest. The pericardium was very greatly distended, and was by far

the most obvious feature on removing the sternum. It extended upwards to the second space, an inch and a half to the right of the right sternal edge, and downwards for some considerable extent, forming in this direction regular pockets. The pericardium was thickened, and covered all over by thick lymph, but not in the form of long villi, as one sometimes sees. There were about ten ounces of thick greenish pus, but no blood, in the sac. The pus extended chiefly into the pockets already mentioned. The heart and pericardium weighed nine and a half ounces. The heart muscle immediately beneath the epicardium was pale, but elsewhere appeared to be normal. The cardiac valves were normal, but the mitral and tricuspid orifices were dilated. All the mediastinal glands were enlarged, and one in the superior mediastinum contained thick yellow pus. A small gland also in the superior mediastinal cavity contained a hard calcareous nodule. This last was the only evidence of either recent or past tuberculosis.

Lungs and Pleurae.—The base of the upper lobe and the upper part of the middle lobe of the right lung were consolidated. There was no apparent difference between the various portions of the consolidated area. The rest of the lung was congested. There was recent pleurisy at the right base, but no fluid in either pleural sac. The left lung was congested and the apex collapsed; in fact, the whole upper lobe contained very little air. The right lung weighed ten ounces, but the left only three ounces.

The liver was extremely enlarged, weighed forty-five ounces, and was typically nutmeg, with extreme fatty degeneration. The spleen was enlarged, weighed five ounces and a-half, but nothing else was noticed abnormal to the eye or touch. With the exception that the kidneys and intestines were congested, the rest of the contents of the abdominal cavity were normal. Beyond pus in the middle ear there was nothing abnormal found in the contents of the cerebral cavity.

Bacteriological Report.—Cultures were taken at the necropsy from the pus in the pericardium and also coverslip preparations. A pure culture of an organism was grown on numerous media, and in each case, with its morphological and staining properties, it resembled the pneumococcus of Fraenkel in every particular, but the absolute conclusive test—namely, inoculation—was not employed. This last is to be regretted, more especially when the length of time the abscess must have lasted is considered.

The mistake in diagnosis made in the case is, I would plead, an excusable, if not even an unavoidable, one. The patient was seen by most of my medical colleagues, and, although the question of suppurative pericarditis was considered by each one, empyema was the final diagnosis arrived at by the large majority. My former house-physician, Dr. G. A. Finlayson, entertained the diagnosis of suppurative pericarditis more strongly than any one else, and he urged that he would have entertained it more strongly still if my confidence in the diagnosis of empyema had not discouraged him from doing so. For this change I admit there was some valid justification. It may be claimed, however, that the error in diagnosis made no difference in the result. The operation proposed for the supposed empyema would, if carried out, have equally well drained the distended pericardium. My only regret is that the possibility, or indeed probability, of the child's dying on the operating table was not faced, and the operation performed. In a subsequent case of purulent pericarditis, complicated with empyema, in a child aged 2½ years under my care, the mother was told the danger of the child dying during the operation, and she preferred to encounter this risk for the child, and the operation was performed. Both the empyema and pericardial cavities were opened and drained, and at the time of writing, more than three months after the operations, the child, although very ill, is still living, and with a hope of recovery. This case Mr. R. P. Rowlands and I propose to publish as soon as a definite result is attained. Even in its incomplete state this last case is a justification for operations undertaken under desperate straits, when the true condition of affairs has been plainly put before the parents or friends.

The condition of the last patient at the time of the double operation seemed infinitely more hopeless than that of the one at present in question when the anaesthetic was given and the chest explored. This increases my regret that the risk attending the promotion of anaesthesia was allowed to prevail over all other considerations. Under similar conditions, in future cases, I would feel inclined to counsel rib resection under a local anaesthetic, such as eucaine; but at present I have no personal experience of severe operations apart from general anaesthesia.

The case seems worthy of being recorded on several grounds. In the first place, cases where the pericardium is the primary and sole site of a pneumococcal inflammation must be of extreme rarity. The case, too, with which the heart's apex beat could always be located, and the persistent clearness of the cardiac sounds are very unusual features in cases of pericarditis with such an amount of effusion as existed in the present one. A partial explanation of these last features is, perhaps, to be found in the thick and homogeneous nature of the pus in the pericardial cavity, and in its distribution in the pockets discovered *post mortem*; but such an explanation is far from a satisfactory one. More interesting to me, however, than all the other unusual points in the case is the fact that the child lived for such a prolonged period with a pericardium distended with pus.

In conclusion, I have to acknowledge my thanks to my former house physician, Dr. G. A. Finlayson, and Dr. Leonard S. Dudgeon for their excellent notes of the case and *post-mortem* examination.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

A CASE OF ELEPHANTIASIS: OPERATION UNDER DIFFICULTIES IN UGANDA.

A MHIMA chief was sent to me by the King of Ankole suffering from a huge growth of the scrotum. The mass, which was spheroid, hung between his legs, being equal in size to a large football, and it was impossible for the patient to walk upright. The penis, of which the skin was greatly thickened, had a ridge running along the dorsum marked with evenly-placed, ½ in. deep, serrations of a reddish colour, resembling an immense cock's comb, was quite distinct from, and not buried in, the scrotal mass as is usually found to be the case. The man stated that he had been suffering for nearly ten years, the tumour continuing to increase in size, attacks of fever being very frequent (elephantoid possibly); he suffered also a good deal from epileptic fits.

Having placed him on an operation table consisting of bamboos tied together, and supported on four uprights embedded in the ground, I had the parts thoroughly scrubbed with carbolic soap and perchloride of mercury 1 in 1,000 solution.

For want of a rubber cord to control the haemorrhage, I used a Reliance tourniquet, which I placed beneath the tumour, bringing the ends up the sides, and having crossed them above the penis, brought them round the waist, clipping them together behind the back. All being ready, I proceeded to give him chloroform, but he was a long time becoming unconscious, as the chloroform was rather ancient. The mask used was a tin measure with a piece of lint jammed inside, but it answered very well, as some rust holes in the bottom admitted air. Having instructed a native policeman to keep the pot over the man's mouth, I seized the penis, and inserting the point of a large scissors under the foreskin, cut the sheath right down to the root along the dorsum.

The body of the penis was found to be very much atrophied, and about the thickness of my little finger, but was easily enucleated from its enormous sheath, though, as the administration of the anaesthetic required my attention every now and then, the operation was a little tedious. Having freed the penis, I cut down on each testicle through the diseased skin, which was about 3 in. thick. These, like the penis, were found to be much atrophied, about the size of hazel nuts, with lengthy cords. Having freed and brought up both on to the pubes, a few strokes of the scalpel sufficed to remove the diseased mass.

The numerous vessels being tied, I released the tourniquet, and with a couple of stitches fixed the testicles up to the perineum, covering them in with small flaps left for that purpose. At this point the patient's pulse became very feeble, so I injected 10 minims of liquor strychninae and brandy. After the operation the patient made an uninterrupted recovery, but it was some time before he could be induced to walk upright. Three weeks after the operation the penis was found to have regained its normal size. The mass removed after drainage of serum, etc., weighed 12 lb.

RALPH STONEY,
Medical Officer, Uganda Protectorate.

SUPERNUMERARY NIPPLE.

ON April 27th I attended a patient who was delivered of a healthy male child. On examining her breasts I found the left mamma much larger than the right, with a well-developed nipple and areola in the usual central position, and about 2½ in. directly underneath a second smaller nipple, with a dark pigmented areola. Colostrum with milk was

easily expressed from both nipples, and they became slightly erect with mechanical excitement. The patient informed me afterwards that the lower nipple drained the milk from the upper, and in consequence caused some little inconvenience. It would appear, therefore, that there were not two separate and distinct portions of the mammary gland for each, but that the lactiferous ducts of the whole gland intercommunicated with both nipples. A small supplementary nipple is not an uncommon anomaly, but the development in this case was, I believe, more perfect than in those usually met with.

Belfast. S. W. Allworthy, M.D.T.C.D.

CASE OF SIMULATED PERFORATING GASTRIC ULCER.

On April 15th I received an urgent message to see a girl who was supposed to be dying. On arrival I found the patient, a girl of 18, lying in bed in a state of collapse, cold, practically pulseless, with abdominal expression well marked, and complaining of severe pain in the abdomen.

On examination the abdomen was found retracted, with complete absence of abdominal respiration. On palpation the muscles were hard as boards, and deep pressure caused great increase of pain, which was referred principally to the epigastric and left supraclavicular regions. The history given was that at 6.30 a.m. she had a cup of tea in bed, and when she had taken about half she gave a scream and said, "Oh, my stomach," and then fainted. She was given some brandy, and after a time revived, the condition above described coming on at once accompanied with retching but no vomiting. She fainted twice during the day from pain.

On the 16th her condition had improved, and by the 20th she was practically well except for some tenderness of the muscles and pain on pressure over the left ovary. Treatment consisted in giving nothing by mouth—hypodermic injection of morphine $\frac{1}{3}$ gr. at 9 a.m. and 7 p.m. on the 15th, suppository morphine $\frac{1}{2}$ gr. 3 a.m., hypodermic morphine $\frac{1}{4}$ gr. at 5 a.m. on the 16th. There had been previous attacks of sickness in conjunction with the menses, and the above attack came on on the third day of the flow, which stopped on the fifth day, her usual period lasting seven days. From first appearances it looked like a clear case of ruptured gastric ulcer, and Dr. Michelmore kindly consented to see the case with me.

The points against gastric ulcer were that the previous attacks of indigestion had always occurred before or during the menstrual period, there had never been any haematemesis, and the liver dullness was normal, although when first seen it was too early to expect that to disappear, and the pain was not increased by the dose of brandy which had been given her. When the matter was explained to the relatives they refused further advice, and decided to let things take their course, which happily turned out to be the proper line to adopt. I have not been able to find any mention of such severe gastralgia or ovaritis mentioned in books, and should be glad to hear if it is at all common, as an error in diagnosis might easily lead to unpleasant consequences.

John R. Pollock, M.R.C.S., L.R.C.P.

Tiverton, Devon.

AN AID TO THE LOCALIZATION BY X RAYS OF FOREIGN BODIES EMBEDDED IN THE TISSUES.

While several excellent methods have been devised whereby an object embedded in the tissues can be accurately localized, the surgeon is often in need of some simple method requiring no special apparatus whereby he can rapidly determine, by the use of the fluorescent screen, whether, for example, a broken needle is on the palmar or dorsal aspect of a metacarpal bone.

It has been advised that two views, at right angles to one another, should be taken, but this is not always satisfactory, owing, in the case of the hand, to all the metacarpals being projected together in the view, with the palm at right angles to the screen, giving rather a confused image, while the object, if small, and situated about the centre of the palm, even if at all visible, appears blurred and indistinct.

Another method recommended is to compare the size and sharpness of the image of the embedded body when the hand is turned with its palmar and dorsal surfaces respectively toward the screen, but this plan also often leaves one in doubt, with the flickering and not very brilliant illumination, when using the screen.

As is well known, the relative position of the image of bones and embedded object alters according to whether the part be held directly in front of the point of emergence of the rays or above or below it; and while this is annoying where exact localization is desired, it occurred to me that use might be made of this fact in order to determine the depth of the object in the tissues relatively to the bones.

Owing to the rapid divergence of the rays from the luminous point of the tube, it follows that the shadow of any object not actually in contact with the sensitive surface of the screen will change its position when the screen, carrying with it the object, is moved up and down vertically in front of the tube, and the further the object is from the screen the greater will the apparent movement of the shadow on the screen be.

When, therefore, the embedded object is further from the screen than the bones, its shadow will move with greater rapidity than that of the bones, and thus, when the screen, carrying with it the part to be examined, is raised, the shadow of the object will rise relatively to the bones, and fall when the screen is lowered. On the other hand, when the object is nearer the screen than the bones, the shadow of the bones will rise when the screen is raised relatively to the object, and fall when the screen is lowered. If, then—as in practice one naturally does—we take the bones as our fixed points, the image of the embedded object will rise and fall with the screen relatively to the bones when the embedded object is on the tube side of the bones: and will appear to fall relatively to the bones when the screen is raised, and rise when it is lowered when it is on the screen side of the bones.

We may put the matter shortly, for convenience in working, that, if the shadow of the object rises and falls with the screen, the object is on the tube side of the bones, and when it moves in the opposite direction to that of the screen it is on the screen side of the bones. When the shadow of the foreign body does not move relatively to the bones, it must be close to if not actually embedded in them.

Of course the matter is a perfectly obvious one, but, as I have not seen any mention of it in textbooks or journals, I thought it well to draw attention to it as a simple but efficient means of determining in the tissues the relative depth of foreign bodies to the bones.

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REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

DINORWIC QUARRIES HOSPITAL.

CASES OF HEAD INJURY.[1]

(Under the care of R. H. Mills Roberts, C.M.G., F.R.C.S.Ed.)

Case 1.—R. R., aged 35, admitted October 4th, 1901, in a comatose condition, with bleeding from the nose and mouth. Pupils dilated, no reaction to light; pulse 100, very weak; Cheyne-Stokes respiration. He had been struck by the handle of a crane on the forehead about an hour and a-half before admission. On examination, there was a horizontal lacerated wound or gash about 4 in. long and $2\frac{1}{2}$ in. above the right orbit: a little lower down, at the bottom of the wound, was an extensive impacted fracture of the frontal bone. On manipulating the skull, bony crepitus could be felt and heard. A half-inch trephine was applied to the frontal bone, and with some difficulty the impacted fragment raised and removed. After removing a considerable amount of blood clot, it was found that the dura mater was torn and the brain lacerated. On introducing the finger, a widely-separated fracture was felt at right angles to the horizontal one already described, running downwards and backwards in a line with about the middle of the orbit. Nothing was seen of the middle meningeal artery. The wound having been well cleaned and dried, some chips of bone were replaced, sutured, and a boracic fomentation applied. He regained consciousness the following evening. He made an uninterrupted recovery, and left hospital on November 22nd, 1901. Owing to some dizziness, and perhaps nervousness, he has never resumed his normal work, and now follows the occupation of an insurance agent. He has to a great extent lost the

[1] Read at the annual meeting of the North Wales Branch.

sense of smell, and after any excitement or exertion the parts about the scar are liable to excessive perspiration. These crane accidents are fortunately not common at our quarries, and the one I have just related is the worst I have seen.

CASE II.—W. H., aged 59, was admitted on April 25th, 1892, in a condition of extreme collapse, with bleeding from the left ear and a large haematoma extending across the occiput from ear to ear. His right pulse was very small and scarcely appreciable, and his respirations were 60 to the minute. I thought him moribund. This man, while working in a stooping position had been struck on the back of the head by a stove weighing about 12 or 15 lb. which had fallen from the rock above from an unknown height. For some days there was considerable discharge of what I thought was cerebro-spinal fluid from the left ear, and he gradually got better and made a slow but uninterrupted recovery, leaving hospital on June 6th, forty-three days after admission. His hearing in the left ear had been destroyed. He was not able to work for twelve months owing to dizziness. He still works at the Dinorwic Quarries, and appears all right. I examined his ear several times after the accident—the membrane appeared quite right and I was able to satisfy myself as to where the bleeding came from.

CASE III.—W. H. R., aged 38, admitted May 18th, 1896. This man was working in a sitting position near the edge of a gallery, and was endeavouring to push or move with his feet a large block of slate; instead of moving the block he pushed himself over the gallery, falling a distance of some 45 ft. On admission he was suffering from great shock, and had compound depressed fracture of the frontal bone off the right side, and compound comminuted fracture of the right femur. My friend, Dr. H. Williams, very kindly administered an anaesthetic, while I elevated the depressed frontal bone and fixed his thigh. This man has made an uninterrupted recovery, leaving hospital three months later. He still works in the quarry, and, so far as I know, makes the same wages as he did before the accident. While I was house-surgeon in a provincial hospital a patient was admitted in the usual way by ticket, complaining of headache and drowsiness. There was a vague history of a fall seven or eight weeks before. His drowsiness increased, and he gradually became comatose, and died, I think, about ten days after admission. No diagnosis had been arrived at. At the necropsy a large abscess in left frontal lobe and an old fracture in cribriform plate was found.

CASE IV.—W. J., aged 13, admitted Nov. 7th, 1894, in a state of coma, with bleeding from nose and ears, dilated pupils not reacting to light, with a large scalp wound in occipital region; bone was bare, but no visible fracture. This boy and several others—men and boys—were going up one of the quarry inclines in a truck when the brake controlling the pulley broke. Most of the passengers slipped off the sides of the trucks and only sustained slight injuries, but this boy and a man, who was killed on the spot, were drawn up at terrific force with the truck, which was smashed against the roof of the pulley house. This boy was unconscious for fifteen days, but afterwards recovered rapidly. During the first week his temperature varied from 101 to 102, and pulse from 110 to 120; second week, temperature was subnormal, and pulse 60 to 70. He left hospital, apparently quite well, on January 14th, 1895, and has followed his usual occupation at the quarries until quite recently. He now works as a collier in South Wales.

The cases that I have reported are a few selected examples of serious head injuries where a large superficial area of the skull has met with considerable violence, either by something weighty falling on or striking the skull, or by the patient himself falling down a great height—examples of cause and effect. But apparently the signs and symptoms of the effect are not always so serious as the history of the accident would lead one to expect, as the following two cases will show:

CASE V.—G. F., an old man aged 78, was admitted on August 20th, 1902, with a huge scalp wound 8 in. long in a semicircular antero-posterior direction. Periosteum was torn and covered with small bits of slate. There were also small bits of slate driven into the skull. In cleaning the wound the flap was reflected over the right ear. The old man walked to the hospital and thought nothing of it, though in going up an incline about one hour earlier he had been thrown out of a truck, and turning a somersault fell on his head down a siding, a depth of nine feet. He was with much difficulty persuaded to stay in hospital, and insisted on leaving on the 30th, ten days later, saying he was quite well, and apparently he was. The wound had healed by first intention. He resumed work in a few weeks, and now appears to be as well as ever he was.

CASE VI.—O. T., aged 53, while roofing a building fell between the beams perpendicularly on his head, a depth of 10 ft., on to a slate floor, and was brought to hospital on April 24th, 1901, suffering from a little shock and a contused and lacerated scalp about 2 in. diameter on the middle of the vault. He never showed any sign or symptom of head mischief, but made a rapid recovery except that a piece of scalp about the size of a shilling sloughed, a very unusual occurrence in my experience, showing that the scalp must have been struck and crushed with much violence to lose its vitality. He left hospital on May 20th, and soon resumed work, which he still continues. The majority, however, of fractured skulls at the Dinorwic Quarry are either fissures, guttered or punctured fractures, and are produced by a comparatively small body striking the skull with considerable violence or by the head striking a sharp or pointed object with force. Under these conditions it is not at all uncommon for a man to walk into hospital complaining of a small cut on the head but being quite ignorant of the underlying fracture. As an example the following case may be quoted:

CASE VII.—W. J. was admitted July 27th, 1897, with scalp wound on right side of the head. On examination there was found a fracture about 1½ in. long, with a depression of ⅛ in. He was trephined and bone elevated. Dura mater was torn, and brain lacerated and infiltrated with slate dust, and a small piece of the patient's hat in it. He felt quite well. He never had any symptom of any kind except, perhaps, a temporary slightly-dilated pupil. He left hospital in three weeks quite well; he resumed work shortly, and has worked ever since.

CASE VIII.—H. T., brought to hospital on March 15th, with a wound of left temple, having fallen on a heap of slates. On examination there was fracture with considerable depression. He was trephined and bone elevated. Underneath was a fresh clot about the size of a shilling. This was removed, and, there being no bleeding, parts of the bone were replaced. This boy certainly did suffer from shock, but nothing much. He left hospital quite well on April 21st.

CASE IX.—M. W. was struck with a hammer on October 18th. He did not appear to think much of it—not enough to come to hospital, so he walked to the station, two miles away, and booked to the station that he usually went to. From there he walked home, another two or three miles. In six days I was asked to see him, and did so. On examination he had paralysis of his right arm and leg, and aphasia. There was a small wound on the left side of the head above the ear. He was given A.C.E., and the wound enlarged. There was an extensive depressed fracture. The trephine was applied and the depressed bone elevated. Underneath was a very large clot, parts of which were breaking down into pus. Removing the whole clot was very difficult and tedious, and necessitated the removal with finger and chisel of much bone. The dura mater was torn, but brain pulsation appeared quite normal. After wound had been thoroughly cleaned and dried, a few chips of bone were replaced and the wound closed. This man made a rapid recovery. Paralysis disappeared completely. In a few months he resumed his ordinary occupation of a quarryman, and continues to do it. His speech is quite right, and there is just as much power in right leg and arm as in the left.

REPORTS OF SOCIETIES.

HONG KONG BRANCH OF THE BRITISH MEDICAL ASSOCIATION.—At a meeting of this Branch, held on March 25th, Lieutenant-Colonel F. J. LAMBKIN, R.A.M.C., read a paper on the treatment of syphilis. He described the immense loss caused to the army through this disease, and said that although this had long been recognized no adequate steps had ever been taken to diminish it, and far more attention was paid to diseases such as enteric, which relatively were of much less moment from the point of view of army efficiency. Outside the army the study of the disease had also suffered from neglect, in spite of the great activity that had prevailed during the last 20 years with regard to nearly all other morbid processes. It was admitted that syphilis, once regarded as an incurable disease, was very amenable to treatment, and that mercury given scientifically and for continuous periods is capable of eliminating the disease from the system altogether. The method of its administration, however, was of prime importance, and there was no common agreement as to what this should be. The author pointed out that administration by

the mouth had the double disadvantage—the patient's general health was thereby very liable to be upset, and very few patients, and practically no soldiers, could be depended on to go on taking pills, powders, and potions for months while otherwise continuing their ordinary life. The inunction method had been long established, and was the regulation treatment at the baths of Aix-la-Chapelle, but it was a troublesome treatment to carry out, and could not even be attempted with soldiers unless they were kept in hospital. The method of introducing mercury which the author preferred was intramuscular injection, and this he had adopted exclusively since 1890. Many forms of mercury had been suggested for this purpose, but the one found most satisfactory had been adopted by Colonel Lambkin from Professor Lang of Vienna. It consisted of metallic mercury (1 part), lanolin (2 parts), and carbolized oil or paroline carbol (4 parts); 5 minims of this were injected with a sterilized all-glass syringe having a platino-iridium needle soldered into it. It was essential that the needle should be driven into the muscle itself, a rotatory movement being given to it both during introduction and withdrawal. This injection was comparatively painless, and in only 1 out of some 10,000 injections made by Colonel Lambkin had an abscess occurred. The procedure he had laid down for himself was as follows:—The patient's weight was taken at the beginning of the treatment and at intervals throughout it. The mouth was looked after, a wash being used daily and old stumps extracted. Wine and beer were allowed but spirits forbidden altogether; moderate exercise and plenty of fresh air were also prescribed. As a rule, the injections required to be made once a week, but every case should be treated on its merits, and this was easy, because the amount of mercury administered could be accurately gauged. Amongst other things, the knowledge of the body weight was of great assistance. If it ran down treatment should be stopped for a week. Colonel Lambkin had treated in this way many hundreds of cases with greater success than he ever thought possible. Since he began advocating it, it had been very widely tried and very favourably reported on in successive army Blue Books; but, except in one place, he had never succeeded in getting an official trial made of its merits on a large scale. The latter was brought about at last in Egypt through the influence of a combatant officer, and carried out during 1899, 1900, and 1901. At the end the Principal Medical Officer stated that the result of the trial was to show a most remarkable diminution of admissions and invaliding for syphilis, while on special inspection of the men it was found that only one man who had arrived from England recently with advanced secondary syphilis, was unfit for active service from this disease.

British Guiana Branch of the British Medical Association.—The second quarterly meeting of this Branch was held at the Public Hospital, Georgetown, on July 8th, under the presidency of Dr. J. H. Conyers. The Honorary Secretary read a paper communicated to the Branch by Dr. C. P. Kennard, who was unavoidably absent, on Some Cases of Acute Anaemia, which he could not classify under any of the usual types of anaemia, but which corresponded more closely to pernicious anaemia except in their course, which was fairly acute, and responded well to treatment. The paper was discussed by several members, and on the motion of Dr. Edmonds, seconded by Sir D. P. Ross, the meeting passed a vote of thanks to the author of the paper.—Dr. Fowler exhibited a slide of the blood of a patient containing the trypanosoma parasite, which was obtained from the London School of Tropical Medicine.—Three large uterine fibroids removed recently by abdominal hysterectomy by Dr. W. S. Barnes were shown; the largest weighed 123 oz.

Medical Magistrate.—The name of Mr. William Nettle, M.R.C.S., of Liskeard, Cornwall, has (on the nomination of the Lord Lieutenant) been placed on the Commission of the Peace for the County of Cornwall.

International Congress of School Hygiene.—An International Congress of School Hygiene is to be held at Nuremberg in April, 1902. Among the members of the organizing committee are Professors Hueppe (Prague) and Bergenstein (Vienna). The work of the Congress will include the following subjects: Hygiene of school buildings, hygiene of internal arrangements, hygienic methods of instruction, hygiene of education, hygienic relations between teacher and pupil, diseases and morbid conditions and medical care in schools, schools for defective children, hygiene of school children out of school, hygiene of the teaching staff.

REVIEWS.

SURGERY.

The editors of the *International Textbook of Surgery*,[1] recognizing the steady continuous advance in most branches of surgical work and the recent additions to our knowledge of both military and naval surgery gained in the Spanish-American and Boer wars, have submitted all the contributions included in the original issue to careful and thorough revision. Even after so brief an interval as two years it has been found advisable to improve what in its first edition might have been regarded as a complete and advanced work, by extensive alterations and additions, and thus to adapt it to the fullest requirements of the present day. The chapter on the surgery of the lymphatic system, although it presents a lucid review of much of our present knowledge of this subject, fails to meet the expectations raised by the special reference made to it in the preface, and also by the reputation of its authors. From writers so capable of adding to our scanty stock of information on many pathological and clinical points relating to certain diseases of this system, we were led to anticipate more instruction than is afforded in the inadequate compass of their chapter. Of fifteen pages, four deal with the surgery of the spleen, and two only with swellings, including tuberculous adenitis, of the lymphatic glands. The all-important subject of abdominal surgery has, as might have been expected, received the careful attention of the editors, and many instructive chapters included under this heading have been revised. The list of contributors on different branches of this subject includes amongst many other distinguished authorities the name of the American editor, who in addition to able chapters on the surgery of other regions, presents in the second volume valuable instruction on the technique of abdominal surgery and on acute intestinal obstruction. The chapter on the surgery of the kidney, by the late Dr. Christian Fenger, which has also been extensively revised, will be found a full and instructive contribution on the pathological and the clinical aspects of this wide subject. This, together with the chapter on ureteral surgery by Dr. Van Hook, present a very useful review of the latest developments of this branch of surgical work. The value of the chapter on renal surgery is enhanced by its illustrations, which, though not original for the most part, have been carefully selected from good sources, and are here well and clearly printed. In the revised and extended chapter on naval surgery, originally written by Dr. C. A. Siegfried, whose name is also recorded with regret as that of a deceased colleague, Dr. H. C. Beyer has done much service in rendering this a complete review of the most modern details of surgical technique on board ship, of methods of transport of sick and wounded seamen, and of the equipment of hospital ships. The editors may well be congratulated on the speedy and complete success of their endeavour to attain by international co-operation a textbook characterized by a high and uniform standard of excellence.

In the preparation of his work on *Operative Surgery*[2] Mr. Allingham has evidently imposed upon himself certain conditions which render its scope somewhat different from that of most other books on the same subject. According to the preface, it is intended to be not so much a comprehensive and complete textbook as a book of cursory reference for surgeons in actual practice, and also for those—students we presume—engaged in performing operations on the dead subject. This limitation would in itself necessarily handicap the author of a work on operative surgery in his endeavour to supplement the many full and excellent books on this subject that have recently been published in this country and abroad. Making full allowance for the restricted scope of the work and the difficulty thus incurred in presenting the details of operative surgery in an improved and more attractive form, and at the same time fully recognizing the thorough competence for such a task of so able a surgeon and so experienced

[1] *The International Textbook of Surgery.* By British and American Authors. Edited by A. Pearce Gould, M.S., F.R.C.S., Surgeon to Middlesex Hospital, etc., and J. Collins Warren, M.D., LL.D., Hon.F.R.C.S.Eng., Professor of Surgery in Harvard Medical School, Surgeon to the Massachusetts General Hospital. Second edition. In two volumes. London and Philadelphia: W. B. Saunders and Company. 1902. (Roy. 8vo, pp. 2,087; 977 illustrations. 42s.)

[2] *Operative Surgery.* By Herbert Wm. Allingham, F.R.C.S., Surgeon to the Household of His Majesty the King; Surgeon-in-Ordinary to His Royal Highness the Prince of Wales; Senior Assistant Surgeon and Lecturer on Operative Surgery at St. George's Hospital, etc. London: Baillière, Tindall, and Cox. 1903. (Demy 8vo, pp. 381, 215 illustrations. 7s. 6d.)

and brilliant an operator as Mr. Allingham, we have been forced to the conclusion that this is not a very satisfactory book. No attempt, it is stated, has been made to give lengthy descriptions. This resolution, as the reader will soon realize for himself, has been carried out, unfortunately, in too many instances to such a degree as to render descriptions of operative details unintelligible. For instance, the interscapulo-thoracic amputation of Berger, an operation in four distinct stages and with multiple and complex technical details, is here described in less than twenty lines of large type: excision of the hip by the anterior method in eleven lines; and three methods of excision of the wrist in two pages. Whilst commending the decision not to mention all the operations in surgery, and to dwell mainly on the important points of the best procedures, we cannot overlook the fact that this restraint has led to really serious errors both of omission and commission. The "Hartley-Krause" intracranial operation, now so generally practised for trigeminal neuralgia, is not mentioned, and the brief description of Farabeuf's well-known amputation in the leg, justifies the suspicion that the author has had no means of judging whether this be the best procedure or not in this particular region. The reader may not complain of the greatest possible brevity in anatomical details, but surely he may expect that such condensed anatomy shall be accurate. The dorsalis pedis artery, we are taught, is to be found just to the outer side of the flexor longus pollicis, and the anterior tibial artery in the upper part of the leg, between the tibialis anticus and the flexor longus digitorum. Surely the superior profunda does not come off from the brachial in the middle of the arm, and even if found under such an abnormal condition would not be likely to be mistaken for the main trunk. Very little help is afforded by the illustrations scattered over the pages of this book, in some of which, as in Figs. 18 and 26, the surface lines differ from those described in the text. The way in which Mr. Allingham deals with the names of well-known and distinguished surgeons is rather cruel. It seems as if, in but a small minority of instances, the trouble had been taken to spell an author's name correctly. Diday appears here in print as Didot; the well-known names of Halsted and Farabeuf are altered; the eminent Professor of Surgery at Berne is presented as "Kocker," and a St. Bartholomew's surgeon deceased, but surely not forgotten, as "Skeg."

We have received the first part of a work on the Technical Details of Surgical Operations and Bandaging, which is a recent addition to a series of books edited by Dr. SCHJERNING,[3] on Military Medicine and Surgery. It gives the methods that are practised at the Moabit Hospital in Berlin, and, though rather brief and condensed in some of its descriptions, is, on the whole, a clear and comprehensive review of the latest and most scientific developments of modern surgery. A quite special and marked feature of this book is the clearness and, in some instances, the instructive realism of its illustrations.

In the preface to a comely volume on minor surgery,[4] in the preparation and printing of which evidently no pains have been spared, it is stated by Professor TUFFIER that the object which he and his colleague have had before them has been to impart as clearly and succinctly as possible such elementary instruction in minor surgery as may be regarded as indispensable to the practitioner, the student, and the nurse. In the able and successful fulfilment of this intention, the authors have endeavoured to exclude all that is old and obsolete, and to describe only such practical methods as are based on the teaching of modern science. Surgery, it is pointed out, is no longer guided by empiricism, and, though still influenced to some extent by the teaching of the past, is based mainly on scientific principles. The instruction imparted in this book is very comprehensive, and care has been taken to give a full and clear description of the simplest as well as of the most elaborate and complex technical details of modern surgery. The chapters on the sterilization of instruments and dressings, and on the aseptic preparation of the surgeon and of the patient before operation, are good examples of the thorough and helpful teaching given in this work. The value of this teaching is much enhanced by the liberal provision of excellent illustrations. In one expression of opinion—which, however, does not refer to any strictly technical detail—surgeons in this country will certainly venture to disagree with Professor Tuffier; for, whilst gratefully acknowledging the compliment that English nurses are models with regard to neat and suitable attire, they will be prepared to maintain that there are no good grounds for the suggestion that their medical instruction is not so perfect as their dress.

Dr. HERMANN KAPOSI, in a volume on emergency surgery,[5] following the example set by Lezars and other French surgeons in recent works on what is termed "chirurgie d'urgence," imparts useful instruction to practitioners who, without much experience in operative surgery, and, it may be, under unfavourable circumstances, are suddenly called upon to deal with a patient whose life is threatened by the results of some serious injury or by an attack of acute disease. Dr. Kaposi's surgical teaching, as may be expected, is sound and good, and his work contains much useful information to which reference may be readily and efficiently made in cases of emergency. Though not so full and comprehensive as most other works of a like kind, it seems to contain all that is likely to be required by country practitioners. It fails, however, in one important and, indeed, very necessary element in books of practical surgery; it contains no illustrations.

Dr. ROBERT PROUST, whose little *Manual of Perineal Prostatectomy*[6] is just published, is already well known as an ardent advocate of the perineal route in operations involving a removal of the prostate. There has been a steadily growing feeling among many surgeons who deal with genito-urinary diseases that the perineal operation has never received quite its due measure of recognition. Owing to the advocacy of Goodfellow, Alexander, Dittell and Gossett and Proust, more attention is now being given to the operation and it seems probable that, despite the satisfactory results of the suprapubic method, a certain range of usefulness will be left to the perineal operation. The difficulties of the operation are not inconsiderable, but with the aid of this manual these difficulties should be reduced to a minimum. Every stage in the operation is perfectly illustrated in a series of accurate and helpful figures. The surgical anatomy, the pathology, the indications for operation, and the exact details of every step in the operation are carefully given. We have no doubt that the excellence of this little work will do much to stimulate the interest of surgeons in the perineal method.

The translation, by Dr. GEORG BERG, of Frankfort, of the lectures by Professor GUYON on lithotrity,[7] is extremely well done. The work deals in detail with the various manipulations practised during the performance of the operation. The preparation of the patient, the choice of a lithotrite, the method of its introduction, the modes of seizing the stone, the crushing, the evacuation, and the difficulties met with in the various stages are all discussed in the amplest manner. The chief feature of the work is a series of drawings by Pierre Moreau illustrating every step in the operation. With the help of this little book the difficulties of the operation will be reduced to a minimum, and a wealth of experience is placed within the easy and convenient acquisition of the young unpractised surgeon.

Dr. SCUDDER'S book on the *Treatment of Fractures*[8] is

[3] *Compendium der Operations und Verbandstechnik* [Compendium of Operative Surgery and Bandaging]. By Dr. Eduard Sonnenburg, Geheimer Medecinalrat, Professor der Chirurgie an der Universitat, und Dr. Richard Muhsam, Emer. Assistenzarzt an der Chirurg. Abteilung des Stadtischen Krankenhauses Moabit in Berlin. Eister Teil: Allgemeine Operationstechnik, Verbandstechnik. Berlin: August Hirschwald. 1903. (Demy 8vo, pp. 171, 150 illustrations. M. 4.)

[4] *Petite Chirurgie Pratique.* [Practical Minor Surgery. Par Th. Tuffier, Professeur Agrégé à la Faculté de Médecine de Paris, Chirurgeon de l'Hôpital Beaujon; et P. Desfosses, Ancien Interne des Hôpitaux de Paris. Paris: C. Naud. 1903. (Demy 8vo, pp. 516, 300 illustrations. Fr. 10.)

[5] *Chirurgie der Notfälle: Darstellung der dringenden chirurgischen Eingriffe.* [Surgery of Necessity; Exposition of the Surgical Treatment of Urgent Cases.] Von Dr. Hermann Kaposi, Assistenzarzt des chirurgischen Klinik, Heidelberg. Wiesbaden: J. F. Bergmann, and Glasgow: F. Bauermeister. 1903. (Demy 8vo, pp. 235. 5s. 6d.)

[6] *Manuel de la Prostatectomie Périnéale pour Hypertrophie.* [Manual of Perineal Prostatectomy]. Par le Dr. Robert Proust, Prosecteur à la Faculté. Paris: C. Naud. 1903. (Demy 8vo, pp. 190. 42 figs., 6 plates. Fr. 4.)

[7] *Die Technik der Lithotripsie.* [The Technique of Lithotrity]. Vorlesungen von Professor Dr. Felix Guyon. Mit Ermächtigung des Autors Uebersetzt und Bearbeitet von Dr. Georg Berg, Frankfort-am-Main. Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. 1903. (Demy 8vo, pp. 86; 23 illustrations. 3s.)

[8] *The Treatment of Fractures.* By Charles Locke Scudder, M.D., Assistant in Clinical and Operative Surgery, Harvard University Medical School, etc. Third edition. London: W. B. Saunders and Co. 1902. (Demy 8vo, pp. 485, 645 illustrations. 19s.)

decidedly one of the best of modern works on the subject, and with its full and lucid teaching, supplemented by an abundance of excellent illustrations, will be found by both practitioner and student a useful guide in the management of this class of injuries. In this, the third edition, many parts, particularly the chapters on fractures of the skull and spine, have been thoroughly revised. Several new but not uncommon fractures are described, and a chapter is added on gunshot fractures of bone. This, it must be confessed, does not in any way enhance the value of the work, as it is too concise, and is simply a brief review of recent work on this subject done by Mr. Makins and other surgeons in recent campaigns. The fully illustrated and useful chapter on the employment of plaster-of-paris has been still further improved, and endeavour has evidently been made throughout this edition to explain more clearly and to render more simple the different methods of dealing with fractures. The able chapter by Dr. Codman on the Roentgen rays and their relation to fractures, with its suggestive comments on the dangers as well as the benefits of this method in diagnosis, still forms one of the leading features in this work.

THE BLOOD.

M. Marcel Labbé has written a small book[9] on the physiological aspect of the study of the blood which, whilst intended, like other members of the series, to provide for examination candidates a rapid means of reviewing the recent work on the subject, will provide English readers with an insight into contemporary French views on blood formation and destruction and of the function of the various elements of which it is composed. We find an exposition of the views of such writers as Metchnikoff, Dominici, and other foreign observers, and it is interesting to note the importance attributed to the action of blood enzymes. M. Labbé mentions some ten ferments present within the leucocytic bodies, and we recognize as familiar fibrin ferments, cytase, agglutinins, antitoxic substances, but in addition there are such bodies as the "oxydase," of Abelous and Biarnès, the anticoagulant body described by Duclaux as "thrombase," the fibrinolytic ferment of Leber and Achalme, and other ferments acting on glucose, starch, and fat—the production of which by apparently so simple a structure as a leucocyte being quite startling. To those who cannot accept the arguments in favour of the origin of granular leucocytes from the bone marrow, M. Labbé's opinions on the excessive narrowness of such a view will be most welcome. He holds that in early life all haemopoietic tissues are capable of producing both granular and non-granular leucocytes, but as the age of the individual increases lymphocytes appear to be formed mainly in the spleen and lymphatic glands, and granular cells in the marrow (all from a common type of cell). In pathological conditions, however, as in small-pox, granular leucocytes may form in the spleen, and in lymphatic leukaemia granular leucocytes flood the marrow. In both cases there is a reawakening of a dormant capacity for cell production other than that usually met with in healthy adult life. M. Labbé has not pretended to write an elaborate treatise. He has, however, succeeded in his task of generalizing the more recent developments which tend to support the view that the blood should be looked upon rather as a secretion than as a tissue. To harmonize the cellular and humoral theories of immunity thoroughly we are advised to consider serum as an artificial product existing *in vitro*, and containing all the properties of leucocytes existing *in vivo*. In the main, the volume is an elaboration of this proposition.

A serious review of Dr. R. L. Watkins's *Diagnosis by Means of Blood*[10] is impossible. He has either endeavoured to whip his professional brethren with a satire on the value of the microscopic examination of the blood, or he has compiled a rambling account of his first attempts in the study of disease as revealed by an examination of the blood. A few extracts will convince our readers of the valuelessness of this so-called guide to the examination of the blood. "When fresh blood diagnosis is classified and studied as it should be, it will be found that there are many diseases especially of the chronic variety such as epithelioma, fibroid tumour, etc., that show this adhesive or rheumatic condition in a very marked degree." (P. 55.) "We have germs in a stagnant cesspool, but the cesspool comes first and the germs afterwards. The germs do not cause the cesspools to exist. Neither does the tubercle bacillus cause tuberculosis to exist." (Footnote, P. 81.) "Some weeks ago I examined the blood of Miss Sadie Martinot, the actress." Dr. Watkins then shows her the photograph of Max O'Rell's blood. "Miss M. said 'now if you ever publish that, just place mine alongside of his (I met him in Paris some years ago), and say that this is Max O'Rell's and that Sadie Martinot's.'" Dr. Watkins evidently promised and kept his word, for the photographs appear side by side on p. 163, but with such associations the author might have spared us the reproduction of a portrait of Dr. William Harvey which faces the title page. Satire could have brought a lesson, eccentricity been amusing, but words fail us suitably to condemn the absurdity displayed in this book.

EPIDURAL INJECTIONS.

Various efforts have been made at different times to make use of intradural puncture of the spinal canal, both for remedial and diagnostic purposes. Puncture between the lumbar or lower dorsal vertebrae, followed by the injection of various remedial agents as advocated by Corning, has largely fallen into disuse, whereas puncture by the method modified by Quincke has become recognized as a valuable diagnostic aid; and in some cases—for example, in hydrocephalus and various forms of meningitis—the operation has afforded relief. Dr. Cathelin,[11] by turning his attention to the anatomical relationships of the spinal theca, has found a means of reviving the treatment advocated by Corning, and has shorn the latter's method of much that was objectionable. It is well known that the spinal cord does not reach, in the adult, lower than the first lumbar vertebra, and that the theca formed by the dura mater does not extend lower than the second sacral vertebra. Dr. Cathelin points out that there is therefore left a part of the vertebral canal extending as a considerable space between the end of the theca and the inferior end of the sacral canal. This space is continued upwards as far as the foramen magnum, being limited within by the dura mater, and without by the bony wall of the vertebral canal and the intervening intervertebral ligaments. Traversing this space for varying distances are the spinal roots enveloped in sheaths derived from the dura mater; for the rest, the space is mainly occupied by cellular tissue and a rich plexus of veins. Dr. Cathelin's main point is the benefit to be derived by using this epidural or extradural space as a means of exerting marked effects upon the nerves passing through it, without damaging the spinal cord or exposing the intradural space to the risks of infection. Fluid introduced in this way, he contends, will have no *direct* access to the spinal cord or nerves. The mere introduction of 5 c.cm. to 20 c.cm. of normal saline (7·50 per cent. NaCl) repeated if necessary, has considerable effect upon the spinal roots as they traverse this span. Dr. Cathelin investigated the question most thoroughly, both anatomically and physiologically, and then proceeded to apply the method clinically. He finds it is impossible to produce in man surgical anaesthesia of the lower part of the body, so that this method does not obviate the use of general anaesthetics like chloroform or ether on the one hand, or local anaesthesia by the method of Reclus or Schleich on the other. Dr. Cathelin, however, claims that the method is useful for the relief of sciatica, lumbago, and the painful cases affecting the viscera, in tabes dorsalis, and in lead poisoning. Further, he finds it of great use in the disorders of the urinary passages, more particularly in the enuresis of children, and, in some cases, of adults; to a less extent it is useful in spermatorrhoea, impotence, etc. The method may even be used for the introduction of remedial agents in spinal caries and in syphilitic lesions of the cord. The operation is simple in all but the obese, and in over a thousand applications, while no serious results were met with, success was common. The perusal of this volume is extremely instructive, and after making due allowance for the author's enthusiasm for the new method, we are obliged to admit that he seems to have proved his point, and trust that the same measure of success may be met with by others who have to deal with cases so intractable as to require such heroic measures.

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[9] *Le Sang (Physiologie Générale)*. Par Marcel Labbé. Paris: J. B. Ballière et Fils. 1902. Crown 8vo, pp. 96. F. 1.50.)

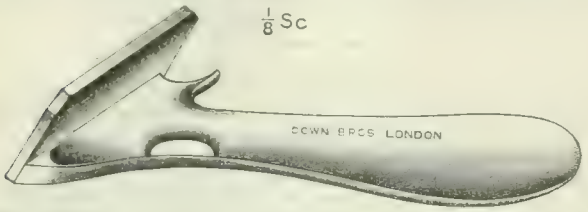
[10] *Diagnosis by Means of the Blood*. By Robert Lincoln Watkins, M.D. London: Sampson Low, Marston and Co.; and New York: The Physicians Book Publishing Company. 1902. (Demy 8vo, pp. 388, 176 illustrations. 21s.)

[11] *Les Injections Épidurales par Ponction du Canal Sacré et leurs Applications dans les Maladies des Voies Urinaires* [Epidural Injections by Puncture of the Sacral Canal and their Applications in Disorders of the Urinary Passages.] Par Dr. Fernand Cathelin. Paris: J. B. Ballière et Fils. 1903. Demy 8vo, pp. 231, 52 illustrations. F. 5.)

REPORTS AND ANALYSES
AND
DESCRIPTIONS OF NEW INVENTIONS
IN MEDICINE, SURGERY, DIETETICS, AND THE ALLIED SCIENCES.

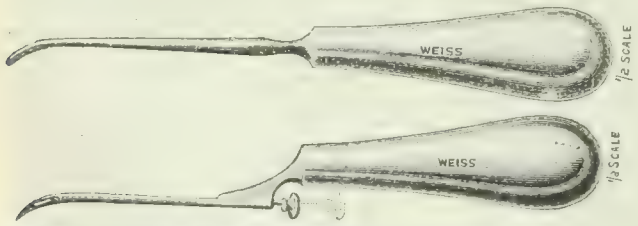
MEDICAL AND SURGICAL APPLIANCES.

A Modification of Roughton's Splint for Pott's Fracture.—Mr. SIDNEY R. SCOTT, B.S.Lond., F.R.C.S.Eng. (St. Bartholomew's Hopital, E.C.), writes: The accompanying illustration, supplied by Messrs. Down Bros., shows a modifi-



cation which I made about a year ago in Roughton's splint for Pott's fracture. Like Roughton's the splint is made of wood, and is shaped for the outer side of the leg and foot, the oval fenestrum being opposite the external malleolus. But instead of the leg and foot pieces being at right angles they form an acute angle equal to four-fifths of a right angle. In treating Pott's fracture it is taught, that after reducing any displacement, the foot should be flexed at right angles to the leg, an extended or everted position of the foot being avoided. To flex the foot so as to form an acute angle with the leg would appear to be even a better plan. For when the ankle is thus fully flexed the wider anterior part of the astragalus occupies the intermalleolar space, and thus presses aside any encroaching fragment which may be separated from the inner malleolus, and also prevents reparative material from narrowing the articular cavity. It was to carry out this principle that this splint was designed. The splint having been evenly padded the limb is fixed to it by strapping, and the tilting of the bottom foot piece maintains not only full flexion of the foot, but also inversion. Massage can be applied as the limb rests on the splint, the knee being well flexed to relax the tendo Achillis, and then, as Pott says, "everything will in general succeed very happily."

Treatment of Fracture of the Patella.—Dr. ASHLEY CUMMINS (Cork) has designed the instrument here illustrated, and



states that he has found it invaluable in the operation for fracture of the patella, by the direct method, because of the great facility with which the wire sutures can be passed. His method is as follows: The solid, curved bradawl is first passed through one fragment of the fracture and then withdrawn. The hollow bradawl, containing a stilette (to prevent the entrance of particles of bone) is then inserted through the passage made by the solid bradawl. The stilette is withdrawn, and the wire inserted about ½ in., and the bradawl drawn out carrying the wire. The method is repeated on the opposite fragment of bone, the other end of the wire being passed ½ in. into the hollow bradawl, which is removed, carrying the wire with it. The fragments of bone are then approximated and fixed in the usual way by twisting the wire. The instruments have been made by Messrs. John Weiss and Son, Limited, 287, Oxford Street, London, W., and Dr. Ashley Cummins finds them very satisfactory.

MEDICAL MAGISTRATE.—The Lord Chancellor has added the name of Dr. John T. Horron Davies to the Commission of the Peace for the Borough of Leicester.

A FRENCH RIVAL TO NAUHEIM: BOURBONLANCY.

BY J. MCGREGOR ROBERTSON, M.A., M.B., F.F.P.S.G., F.R.S.E.

NAUHEIM needs a rival. In the ten years during which I have known it, its prosperity has gone on steadily increasing. During that time, too, the cost to visitors has become very materially greater. Yet, so far as I have been able to perceive, its guests have not profited thereby. Much money has doubtless been spent by the administration in the building of additional bathhouses to accommodate the ever-increasing numbers, in the equipment of a large inhalatorium for nose, throat, and chest affections, and in other ways, and by private individuals in the provision of hotels, villas, etc., to meet the demands for accommodation; but the individual invalid who goes to-day to have a course of its healing waters, enjoys no advantage that he could not have ten years ago. He gets no more now than he got then, but he pays more for it. Indeed he gets less, for the increase in bathrooms and in attendants is less relatively than the increase in visitors; so he finds it more difficult to get his bath at a suitable hour, he has less help from the attendants, and less comfort.

This is not as it ought to be. Nauheim's prosperity rests on a narrow basis. It is the rheumatic, the gouty, but above all, in recent years, the cardiopath, who bear up its prosperity. It is much less indebted than Homburg to the fashionable crowd; it will never be the resort of the mere fashionable visitor. It is stern necessity that drives the thousands to Nauheim, and so long as its magic waters spring foaming into the air, so long will they come from the north, south, east, and west, with panting breath and labouring heart to seek calm and restoration from its bubbling wells. It is right and proper that its park should be well kept, that its parterres should be bright and gay, that the most famous military bands of the empire should be brought to discourse sweet music on the Terrace. But, after all, these things, which are primary to Homburg, are but secondary to Nauheim. Neglect the flower plots, and banish the bands, yet still the cardiopaths of the civilized globe will set their faces annually thitherward. The invalid, therefore, has a claim here to derive benefits from increased prosperity which he has scarcely to the same degree elsewhere. The claim has been neglected. He has derived no advantage. This, it appears to me, is due to sheer bumptiousness and pig-headedness of the administration. "Bah!" I think I hear the ponderous officials of that bureaucracy say; "Bah! you people with hearts, you are bound to come here; you can't help yourselves; Nauheim is unique: it is a water-not-to-be-had-anywhere-else. If you don't come here you will die. Come, then, in your thousands; but since you must come, who is going to take the trouble to make it easy for you, or comfortable for you?" So you pay your money and you get a ticket, and after you have waited an interminable time your number is shouted, and you are shown to a room, and the water, the healing water you have come so far to bathe in, is turned on till a tub is full, and your attendant turns it off again and goes out banging the door to, and making your poor trembling heart jump again. He has shoved a towel into a hot jacketted cylinder, and when you have scrambled into the bath and lain there the ordered time, you may ring the bell, and if your attendant is not busy filling up simultaneously three other tubs in three other separate rooms, he may hurry to your room two or three minutes after you have rung. But it is not his business to help you out of that capacious tub with the high sides. Out of that you must scramble, even as you scrambled in: his only business is to throw the towel over you, give you a pat or two on the back, and rush away to do similarly for the others who have been ringing excitedly for him all the time. You proceed to dry yourself and then to dress, feeling all the time, that if now you could only lie down quietly in bed, how delightful it would be, while that sense of comfort that stole over you in the bath lasts. But you must get home first, and meantime a sharp shower has come on, and there is no droschke available. Nauheim has hardly awakened to the utility of bath-chairs. Ultimately you do get home, either after a chilling wait or breathless with the hurry and struggle with waterproof and umbrella, and you toil up to your room, for "the lift is not working," and drop panting at your bedside to take the hour's rest after the bath which is part of the treatment. You are an ignorant person, nevertheless you wonder how much of the benefit of the bath has remained to

you since you scrambled out of it. Every step of the way back you have been shedding it, you are well aware. Has no one in Germany been clever enough to suggest that that gulf between bath and bed might be bridged? How delicious it would be if you could be hoisted out of that tub, straightway wrapped in hot sheets and swathed in a dry blanket, and then borne gently to your bed, so that none of the virtue of that water might be thrown away. If you have been only to a German spa, you will say that is but a dream, a luxurious dream. But come with me, my friend, come with me to France. In Germany they may have the healing waters, but in France they have the perception, the sensibility, the adaptability. They hustle you through your bath in Germany, in France they conduct you through it as through a religious ceremony. Here, too, you pay, take your ticket, and fix an hour. At the appointed time you are waited upon in your chamber, are gently wrapped in a warm blanket, lifted from your bed, and placed in something like a sedan chair, and tucked round. A hood is raised over your head, the front drops down, and an apron is folded over from your knees to feet, so that you are wholly shut off from the outside world but for a square of gauze in front of your face through which you can see without being seen. Then the handles are fixed to your chair, and the bearers, one in front and one behind, carry you to your bathroom. Here friendly hands are ready to guide you down a gentle flight of steps, guarded by a handrail, into your bath, in which you sit as in an armchair. You may watch your own time if you choose, and ring the bell at your hand when it is up, but that is not necessary. You may safely leave yourself to the attendant, who in due season will come and politely invite you *à monter*, which you do easily with his help and that of the handrail if necessary. At this point your bearers have returned and have your chair ready. They wrap you up from the waist down in very hot linen, putting it close to your skin so that the moisture is absorbed rapidly, then you are enveloped in a warm bath gown (*peignoir*); the moisture is wiped from your face with a napkin, for you yourself remain perfectly passive in their hands. You are then gently assisted into the chair, over which a warm blanket has just been spread. The blanket is then folded over you, the napkin is tucked under your chin, the hood is raised, the front lowered, the apron folded over, and with the same gentle swing with which you are brought down you are carried back to your room, lifted into bed, carefully tucked in there also, and left with a courteous "*au revoir, Monsieur*," to be in a short time taken in hand by the *valet de chambre*, and sponged down before dressing. This is the luxury of bathing, of which a German *Bade-Direktion* knows nothing, but which you will find not merely in a brilliantly fashionable resort like Aix-les-Bains, but even in out-of-the-way bathing resorts in France whose names are hardly known in Paris and are totally unknown in London.

If Nauheim would adopt such methods what a heaven it would be to the gasping, pallid, wheezy cardiopath! But it seems as if the need of such consideration for the sufferers who throng its hotels and pour wealth into its coffers would take many years to dawn upon its slow consciousness, and it seems to me the thought that its waters are unique, that no place can really rival them, that sufferers are compelled to come, however indifferently their comfort is looked after, has something to do with the primitiveness and almost rudeness of the methods as compared with those of a French spa.

So I say Nauheim needs a rival, a French rival by preference. Then, besides bigger bathhouses, Nauheim would wake to the need of more attendants and more attention—much more attention—would alter its taste in bathtubs, would discover the utility of bath-chairs, would insist on transporting from the bath to his bed at least the heart sufferer, if not the rheumatic also, and would, I am inclined to think, make it worth while for one of the multitudinous scientific toilers of the Fatherland to devise some method more up-to-date than the antiquated though comfortable sedan chair. If Nauheim sprudel continues to spout into the air for another half century as it has done to the knowledge of men for three centuries already, it is not difficult to predict what will happen. In all the leading hotels lifts will pass up to open on the roof. From these strong lines will pass to the various bathhouses, to a lift also opening on the roof of each. The patient will be lifted from his bed and tucked into a glorified kind of sedan chair, in which he will be wheeled to the lift, raised to the roof, and then gently swung down a rail to the appropriate bathhouse, to be returned when his bath is over by a similar aërial track. This method will, to the heart-patient of that day, be less of a wonder than was an express train at 80 miles an hour to his grandfather, or the mono-rail to his father.

My search for a rival to Nauheim took me four years ago to Bourbon-Lancy in the Department of Saône-et-Loire. I was led thither by having read a brochure by the then consulting physician of the baths.[1] I was hospitably received at the Etablissement Thermal by the Director, who conducted me over the whole establishment, showing me all the facilities for treatment, and I had a brief interview with Dr. de Bosia. That the facilities for treatment were abundant and the arrangements admirable was quite clear, but it was impossible to come to any opinion of the therapeutic value of the water as a result of a mere flying visit. Various circumstances beyond my control delayed my return on a more prolonged visit till two years ago, when I spent a fortnight there in company of two friends, patients also, one of whom had already spent three seasons at Nauheim, to whose waters he attributed his continued existence. Bourbon-Lancy is reached in $7\frac{1}{2}$ hours from Paris, and might be reached in two hours less if the number of travellers made it worth while. The Bourbonnais line is followed as far as Nevers, then a branch line is taken to Cercy-la-Tour, and another from there to Bourbon. It lies at an elevation of 223 metres.

Bourbon must have been a famous resort in the days of the Caesars, after whom its principal bath was called bain des Césars or bain royal. It was the Romans who enclosed each of the five springs with massive walls, built of blocks of white marble. The walls, which are circular, rise a foot or two above the surface. Those of the chief spring are over 13 ft. in diameter, narrowing as they descend to a depth of some 20 ft. into the earth. All the wells are of similar construction, though varying in diameter and depth. The surface is open to the air, and, leaning over the low wall, one may watch the multitudinous bubbles of gas, great and small, that keep the surface bubbling like a witches' cauldron. This gas, however, is, according to Glénard, nitrogen to the extent of 89 per cent. The following table gives the details of chemical composition and temperature of the three chief springs, according to the most recent analyses, that of Willm, 1891, in parts per 1,000:

	Le Lymbe.	La Reine.*	Descure.†
Carbonate of calcium	0.2018	0.2070	0.2007
,, magnesium	0.0069	0.0072	0.0092
,, iron	0.0026	0.0016	0.0017
,, manganese	Traces	Traces	Traces
,, sodium	0.0112	0.0008	0.0133
Chloride of sodium	1.2841	1.2839	1.2796
Bromide of sodium	0.0077	0.0067	
Sulphate of sodium	0.0506	0.0589	0.0538
,, potassium	0.0901	0.0887	0.0815
,, lithium	0.0035	0.0035	0.0035
Iodides, chlorates, borates	Traces	Traces	Traces
Arseniate of sodium	0.0005	0.0005	0.0005
Silicon	0.0700	0.0686	0.0674
Organic matters	0.0104	0.0031	0.0090
Total solids in 1,000 parts at a temperature of 150° C.	1.7394	1.7290	1.7202
Carbonic acid gas:			
In combination as bicarbonate	0.1961	0.1938	0.1990
Free	0.0425	0.0302	0.0223
Temperature, in degrees centigrade	56.5	52.5	57.7

* After Louise de Lorraine, wife of Henry III.
† Or Cardinale, after Richelieu.

The other springs are Marguerite, or de Valois, after the first wife of Henry IV., and St. Léger, after the ancient church of one of the suburbs of Bourbon. The temperature of the former is 47°, and, while its composition is very similar to the others, it is slightly richer in saline constituents; of the latter the temperature is the same, but it contains less mineral matter.

All the springs are used for bathing. Some of the superabundant water is conveyed to two large circular basins in the same courtyard of the establishment in which the springs rise and there allowed to cool. It is used to reduce the temperature of the baths to the ordered degree.

Le Lymbe, Descure, and especially La Reine, are the waters which are also used for drinking. They are not unpleasant to the taste, somewhat insipid, with a faint suggestion of the chicken or veal broth flavour of the famous Wiesbaden

[1] *Traitement des Maladies Chroniques du Coeur et des Vaisseaux par la Balnéation Thermale chlorurée Gazeuse*, par Le Docteur H. de Bosia.

spring. Descure is very slightly aperient. They are all well borne by the feeblest digestion.

The treatment in regular use at Bourbon consists principally (1) of drinking the water, (2) of full baths, (3) of douches, (4) of mechanotherapy, and (5) of massage.

1. I have already said the spring chiefly used for drinking is La Reine, of which three to four glasses are taken per day (600 to 800 grammes), the first immediately on the patient issuing from the bath and before being carried off, the second half an hour before dejeuner, the third half an hour before dinner. It usually induces and maintains a well-marked diuresis after the first few days. Descure is used if a slightly relaxing effect on the bowels is desired.

2. The full bath is taken in the morning at a temperature of 32° to 38°, and lasts from 15 to 35 minutes. Usually, indeed, the bath is, on the very first day, prolonged to 20 or 25 minutes, the temperature being 33° or 33.5°, and in later baths the tendency is to raise rather than lower the temperature.

3. There is a douche peculiar, so far as my experience goes, to Bourbon—a douche under water (douche-sous-marine). At the end of the ordered time for the full bath the attendant administers this douche to the patient still in the bath. The water issues from a hose-pipe hanging from the wall at the side of the bath. The hose terminates in a flattened narrow nozzle, from which the water issues in a band about 2½ in. or so broad (douche en lame or en lance). This is played upon the patient, the outlet of the pipe being under water as well as the patient. It is played on the extremities mainly, first in front, the patient lying more or less horizontally, perhaps also over the region of the liver, then behind, the patient lying on the face, and up the vertebral column and over shoulders and across the renal region and hips. The water issues with very considerable force, and is usually employed from 1° to 4° higher than that of the bath in which the patient is lying. The duration of the douche-sous-marine is usually five minutes. The sensation produced by it is most agreeable and soothing. It is a species of massage. It is on issuing from the bath that the patient is now enveloped in warm sheets, as already described, and after drinking a glass of water is carried to bed and left to perspire for from 15 minutes to an hour. He is then sponged down with cold water or perfumed spirit.

Another douche is to most patients given in the afternoon. The patient stands in the corner of the douching room, and a hose (douche en lame) is directed on him from the other end of the room at a temperature of 32° to 40° centigrade. It is played upon extremities and up and down the spine only, lasts for two to four minutes, and ends with a dash of cold spray all over and a hot hose at the feet for a few seconds.

4. At some period of the day the patient may have passive movements mechanically carried out in an annexe to the establishment, which is fitted up with apparatus on the model of Max Herz, of Vienna, or a course of massage. In some cases the massage would be given in bed after the morning bath. This part of the treatment is presided over by Dr. Krikortz, to whom I am indebted for repeated demonstrations of the marked therapeutic effects produceable at will by massage at the hands of a master. A patient's day at Bourbon-Lancy is thus fairly full—a full bath, with douche, in the morning, drinking water several times during the day, a séance of massage, and a douche in late afternoon. The course is continued from day to day—with perhaps one day's rest in seven—for three weeks, or, in special cases, four weeks, and is, as usual, followed by an after-cure.

It should be noted that there are also at Bourbon arrangements for the local application of the water or steam, varieties of sitz, douche, and needle baths, and inhalation rooms for pharynx, larynx, eye, ear, etc.

Now, the water of Bourbon-Lancy differs materially from that of Nauheim—so materially, indeed, that it is almost immediately evident that the *modus operandi* of the water at Bourbon cannot be the same as that of Nauheim. Compare the composition for a moment:

	Common Salt.	Chloride of Ca	CO_2 (free).
Nauheim, Spring No. 7 ...	...	1·7	1·26
Bourbon, Le Lymbe ...	...	...	0·04

Temperature of Nauheim, No. 7 ...	... 31° C.
" " Bourbon, Le Lymbe...	... 56°·5

Elsewhere[2] I have shown that the Nauheim water acts (1) markedly on the peripheral circulation, reddening the skin, in spite of a temperature considerably lower than that of the body, and (2) reflexly on the heart, as proved by the marked slowing of the pulse, in spite of a lowered blood pressure, these effects being due to the very pronounced stimulation of the skin by the saline and gaseous constituents of the water. But the very stimulating chloride of calcium salt is absent from the Bourbon water, the quantity of gas is so little that the water newly drawn into a tumbler shows no sparkle, and even a very prolonged bath produces no sign of cutaneous irritation. Rather, indeed, has the Bourbon water a softening and emollient action on the skin due to the bicarbonates being, apart from chloride of sodium, the predominating form of salt present. Again in the progress of the course at Nauheim the temperature of the bath, usually begun about 92°, is gradually lowered to 89° or less, while at Bourbon it is usually begun about 94° and raised as the course proceeds to 96° or even higher. Moreover, the difference in the effect on the skin is marked by the fact that while as a rule the patient feels the bath at Nauheim cold on first stepping into it and in a minute feels comfortably warm, in Bourbon the bath feels pleasantly warm when one steps in, but after 15 or 20 minutes one is disposed to turn on a little hot water to maintain the feeling of comfort. There is no such marked effect on pulse or blood pressure in the Bourbon bath as in the Nauheim bath. In short, pronounced or rapidly produced effects are absent in Bourbon, just as one would expect from a consideration of the character of the water. Any slight increase of pulse-rate or greater fullness of pulse is obviously due, at the outset at least, to the temperature of the water rather than to its saline or gaseous constituents, while in Nauheim they are due to the saline and gaseous constituents, *in spite of* the temperature of the water.

Nevertheless it would be extremely foolish to assert that the barely 0.2 per cent. of saline ingredients of the water was valueless or inert. Valueless I believe they would be in a bath of short duration, but it is just here that one must emphasize the fact that the baths at Bourbon are prolonged, and prolonged as a rule to the comfort and satisfaction of the patient. It would be at this time of day extremely unscientific to assert that, apart from temperature effects, no effect was produced by the prolonged action of such baths, because it was not apparent to the eye or was not discoverable by the finger on the pulse. Those who have scoffed at the possibility of such effects have ignored, with a marvellous disregard of physiological facts, the enormous area of the skin, its great vascular capacity, its vast glandular power, and its closely interwoven sensitive network. A change in any or all of these mechanisms, so small as to be undetectable by such crude methods as those of eye or touch, or even by instruments of precision, such as arteriometer or sphygmomanometer, might yet in its summation over the whole area be of marked therapeutic influence. Without therefore attempting to apportion the amount of effect to be attributed to the temperature and to the chemical constitution of the water, one may state the effect of the bath to be (1) to induce to a greater or less degree a peripheral vaso-dilatation, (2) and an increased transudation from the skin; (3) on the whole they tend to lower the blood pressure by reducing the peripheral resistance; (4) on a normal pulse-rate there is no very obvious effect; at first a slight increase in the beats is likely to be observed. But on an abnormally quick pulse and irritable heart their action is ultimately distinctly calmative. The subjective effect is markedly sedative.

But while the credit of Nauheim may be permitted to stand or fall by the effect of baths alone, the treatment at Bourbon must be considered in its *ensemble*. In such a consideration one must take into the reckoning one other element that appears to me of the utmost importance—namely, the prevailing methods of employing the therapeutical resources of the place, and the degree of medical supervision and control exercised over the patient during the cure. I have already indicated the enormous value to the cardiac sufferer, and to the rheumatic, of the care taken of him at Bourbon, from his bed to his bath and back again. But this same care extended to other details of his treatment, and very notably to his diet. In the system that prevails there, drinking water, bath, douche, passive movements, massage, and alimentary regime are all regulated and combined towards one therapeutical purpose. This is rendered all the more easy of attainment

[2] The Natural and Artificial Mineral Waters of Nauheim: Their Physiological and Therapeutical Effects, and their Employment of Disease by the Schott Method. *Edin. Med. Journal*, 1901.

because the thermal establishment includes hotel as well as bath establishment under the same direction.

In Nauheim, on the other hand, except to those who can afford to go to one of the best hotels, the dietetic problem is a very serious one, so inadequate to this day is the recognition there of the therapeutic value—nay, necessity—of a carefully regulated diet. I am convinced that many, specially among the elderly, who go to Nauheim for relief of symptoms due to commencing, or already considerable, arterio-sclerosis, and in general the type of case associated with high blood pressure, fail to derive the benefit they might because of the lack of sufficient dietetic supervision, or, spite of supervision, because of the difficulty and expense of fulfilling medical requirements in this direction.

At Bourbon, then, I say there is a distinct, indeed an emphasized, recognition of the value to be derived from a systematic combination of the therapeutic resources of the hydro-mineral installation with dietetic measures, such as I have seen rarely equalled and never excelled, which makes this thermal station of enormously greater value to certain kinds of cases than could be deduced from the mere consideration of the degree of mineralization of its waters.

What, then, one might inquire, is the predominating therapeutic purpose? I think it may be put fairly shortly and yet fairly adequately thus: to improve general nutrition, by stimulating tissue change, by hastening the elimination, specially of nitrogenized waste, and by unloading the deep organs, and to lighten the heart's burden by increasing the circulation through the muscular system and the skin.

Thus the waters, when drunk as prescribed, while barely, if at all, acting on the bowels, produce a marked effect upon the kidneys and a slight effect upon the skin secretion, notably increasing the elimination of uric acid and also of urea in the former, the baths provoke an abundant perspiration, besides quickening and augmenting the peripheral circulation, and the temperature and duration of the bath as well as the method of employment of the douche-sous-marine are regulated to accentuate these results. These results are immediate and direct, and secondary to them are a sedative effect on the nervous system and an improved condition of the heart. It is impossible to say that there is any directly tonic effect on the heart, such as is so remarkable a phenomenon of the Nauheim bath. But, at any rate, one immediate effect on the heart of the combined action of the internal and external use of the water is the opportunity of recuperation denied to it so long as contracted arterioles offer excessive resistance to its work, and one secondary effect is the improvement in its nutrition which the cardiac muscle will enjoy, in common with the other tissues, by the increased activity of tissue change and the accelerated waste removal. And here enters the diet element of the cure, one main consideration dictating the selection of food being the avoidance of such as yield to marked extent the tissue toxins. In short, foods are selected which yield as little as possible of the waste substances whose effect is in the direction of vaso-constriction.

This discussion will have made it clear what type of heart case is particularly suitable for treatment at Bourbon.

1. The type of case which, above all others, demonstrates the value of the system adopted at Bourbon is the commencing or early stage of arterio-sclerosis, the condition to which modern French physicians apply the term "présclérose." If such a condition is to be cured it is not by the administration of drugs, but by such a system as is adopted at Bourbon, and the physician who will select such a case to send there will have a revelation of the value of physical agents in the treatment of vascular disorders. While the early case will exhibit the curative effects to the full, nearly all stages of arterio-sclerosis will find in Bourbon a greater or less degree of amelioration, so long as the kidneys are unimpaired. These were the cases supposed to be unsuitable for Nauheim. I do not think this was a correct view, though such cases require a very cautious use of the bath at Nauheim, and unless much more carefully supervised than is customary there, run considerable risks because of that want. By contrast Bourbon shines all the more in this respect.

2. A second type of case suitable for Bourbon is that of recent rheumatic endocarditis in the young subject. My own experience of Bourbon, which, though limited, has been eminently satisfactory, has been mainly of the former type, but the evidence seems conclusive that in this second type, after the usual methodical course of medical treatment and prolonged rest, a course of Bourbon treatment three or six months later is a most useful termination.[3]

[3] See De Bosia, op. cit., and Piatot *La Cure Thermale de Bourbon-Lancy*, Macon, 1903.

3. A third type of case is that of functional disorder of the heart, palpitation, paroxysmal tachycardia, cardiac excitability, specially in comparatively young and nervous subjects. In these the calmative effect of the treatment is said to be very well marked.

4. The number of rheumatic and gouty cases treated at Bourbon is very great, but it is not necessary to do more than mention the fact, my main purpose being to consider the value of the place for cardiac cases.

5. Nor do I think it needful to discuss at length the value of Bourbon for cases of cardiac failure from overstrain, or for cases of valvular disease with deficient or failing compensation. It is quite true that the system I have detailed is capable, by aiding the peripheral circulation, of unburdening the heart, and thus to a certain extent ameliorating its condition. But these are the cases which yield the most brilliant results in Nauheim, just because of the directly tonic effect upon the heart itself of the richly saline and carbonated bath. The patient, therefore, who presented any of the conditions above stated, and who was capable of undertaking the journey from this country, who sought Bourbon rather than Nauheim would be seriously ill-advised.

If we take that great classification of heart maladies so constantly employed by Huchard[4] and his pupils cardiopathies which commence at the heart to finish at the vessels, and cardiopathies which commence in the arteries to finish at the left ventricle, then we might say that while Nauheim, in virtue of its waters, is pre-eminently the place for the former, Bourbon, in virtue of its system, might quite well claim to be pre-eminently the place for the latter. The *cardiopathies artérielles*, to use the French phrase, owing to the ever-increasing tension of life and the ever-increasing luxury of living, are becoming more and more numerous, their detection in the early stage, thanks largely to increasing accuracy in the physical methods of diagnosis, and particularly to clinical methods of detecting increased arterial tension, is becoming more and more easy, while all medicinal methods of treatment have been proved, on the whole, temporary or comparatively a failure. The knowledge of a thermal station where every physical and dietetic resource is combined with marked success to combat these vascular conditions seems to me of great value. That is the reason for the detail into which I have entered in this paper. I set out to seek a rival for Nauheim, it seems to me I have found a complement. Several patients whom I advised to take two or three weeks at Bourbon before proceeding to Nauheim have found the combination attended by the happiest results.

[4] H. Huchard; *Maladies du Cœur et des Vaisseaux*, 1893; *Traité des Maladies du Cœur et de l'Aorte*, 1903; La Médication Hypotensive (Présclérose et Cardiopathies Artérielles), *Revue de Thérapeutique*, July 1st, 1903.

THE AMERICAN MEDICAL ASSOCIATION AND MEDICAL ETHICS.

At the annual meeting of the American Medical Association held in May last at St. Louis, Dr. Elliot Harris, of New York, presented the report of the enlarged Committee on the Revised Code of Ethics, consisting of the special committee and of one delegate from each State. It adopted unanimously the report entitled "The Principles of Medical Ethics of the American Medical Association," and recommended it to the House of Delegates for adoption. In submitting the paper with the title of "The Principles of Medical Ethics," which is to take the place of the code, the Committee offered the following explanation:

> Your Committee has given extended and careful thought to the proposed revision of the Code of Medical Ethics referred to it for consideration. As you will note, on the caption of the report the word "code" has been eliminated, and the expression "The Principles of Medical Ethics of the American Medical Association," adopted as adequately descriptive. In reference to this change, it is proper to say that such action on its part is based on the idea that the American Medical Association may be conceived to occupy some such relation to the constituent State associations as the United States, through its Constitution, holds to the several States. The Committee, for this reason, regards it as wiser to formulate the principles of medical ethics without definite reference to code or penalties, thus leaving the respective States, etc., to form such code and establish such penalties as they may regard to be fitting and proper for regulating the professional conduct of their members, provided, of course, that in so doing there be no infringement of the established ethical principles of the Association. The Committee regards as wise, and well calculated to facilitate the business of the present organization and to promote its harmony, this course, which leaves to the State associations large discretionary powers concerning membership and other admittedly State

affairs. Your Committee has retained to a large extent the phraseology of the existing code while aiming at condensation of expression and a better understanding of some of its statements. The report of the Committee has been reached unanimously, without discussion or distrust on the part of its members, each aiming to formulate a result based on principle alone, and without regard to any past or present disagreements or misunderstandings whatsoever. Such being the case, the Committee invites your candid and unprejudiced attention and action to the results of its labour, feeling that at least some good has been accomplished.

Dr. C. A. L. REED (Cincinnati) seconded the motion for adoption, which was carried without a dissentient vote.

The following is the text of the Principles of Medical Ethics, which the American Medical Association "promulgates as a suggestive and advisory document":

Chapter I.—The Duties of Physicians to their Patients.

Section 1.—Physicians should not only be ever ready to obey the calls of the sick and the injured, but should be mindful of the high character of their mission and of the responsibility they must incur in the discharge of momentous duties. In their ministrations they should never forget that the comfort, the health, and the lives of those entrusted to their care depend on skill, attention, and fidelity. In deportment that should unite tenderness, cheerfulness, and firmness, and thus inspire all sufferers with gratitude, respect, and confidence. These observances are the more sacred because, generally, the only tribunal to adjudge penalties for unkindness, carelessness, or neglect is their own conscience.

Section 2.—Every patient committed to the charge of a physician should be treated with attention and humanity, and reasonable indulgence should be granted to the caprices of the sick. Secrecy and delicacy should be strictly observed; and the familiar and confidential intercourse to which physicians are admitted, in their professional visits, should be guarded with the most scrupulous fidelity and honour.

Section 3.—The obligation of secrecy extends beyond the period of professional services; none of the privacies of individual or domestic life, no infirmity of disposition or flaw of character observed during medical attendance should ever be divulged by physicians except when imperatively required by the laws of the State. The force of the obligation of secrecy is so great that physicians have been protected in its observance by courts of justice.

Section 4.—Frequent visits to the sick are often requisite, since they enable the physician to arrive at a more perfect knowledge of the disease, and to meet promptly every change that may occur. Unnecessary visits are to be avoided, as they give undue anxiety to the patient. But to secure the patient against irritating suspense and disappointment the regular and periodical visits of the physician should be made as nearly as possible at the hour when they may be reasonably expected by the patient.

Section 5.—Ordinarily, the physician should not be forward to make gloomy prognostications, but should not fail, on proper occasions, to give timely notice of dangerous manifestations to the friends of the patient, and even to the patient, if absolutely necessary. This notice, however, is at times so peculiarly alarming, when given by the physician, that its deliverance may often be preferably assigned to another person of good judgement.

Section 6.—The physician should be a minister of hope and comfort to the sick, since life may be lengthened or shortened, not only by the acts, but by the words or manner of the physician, whose solemn duty is to avoid all utterances and actions having a tendency to discourage and depress the patient.

Section 7.—The medical attendant ought not to abandon a patient because deemed incurable, for continued attention may be highly useful to the sufferer and comforting to the relatives, even in the last period of the fatal malady, by alleviating pain and by soothing mental anguish.

Section 8.—The opportunity which a physician has of promoting and strengthening the good resolutions of patients suffering under the consequences of evil conduct ought never to be neglected. Good counsels, or even remonstrances, will give satisfaction, not offence, if they be tactfully proffered and evince a genuine love of virtue, accompanied by a sincere interest in the welfare of the person to whom they are addressed.

Chapter II.—The Duties of Physicians to Each Other and to the Profession at Large.

Article I.—Duties for the support of professional character.

Section 1.—Every one on entering the profession and thereby becoming entitled to full professional fellowship, incurs an obligation to uphold its dignity and honour, to exalt its standing, and to extend the bounds of its usefulness. It is inconsistent with the principles of medical science and is incompatible with honourable standing in the profession for physicians to designate their practice as based on an exclusive dogma or a sectarian system of medicine.

Section 2.—The physician should observe strictly such laws as are instituted for the government of the members of the profession; should honour the fraternity as a body; should endeavour to promote the science and art of medicine, and should entertain a due respect for those seniors who, by their labours, have contributed to its advancement.

Section 3.—Every physician should identify himself with the organized body of his profession represented in the community in which he resides. Reorganization of local or county medical societies, where they do not exist, should be effected, so far as practicable. Such county societies, constituting as they do the chief element of strength in the organization of the profession, should have the active support of their members, and should be made instruments for the cultivation of fellowship for the exchange of professional experience, for the advancement of medical knowledge, for the maintenance of ethical standards, and for the promotion in general of the interests of the profession and the welfare of the public.

Section 4.—All county medical societies thus organized ought to place themselves in affiliation with their respective state associations, and these, in turn, with the American Medical Association.

Section 5.—There is no profession from the members of which greater purity of character and a higher standard of moral excellence are required than the medical; and to attain such eminence is a duty every physician owes alike to the profession and to patients. It is due to the patients, as without it their respect and confidence cannot be commanded, and to the profession because no scientific attainments can compensate for the want of correct moral principles.

Section 6.—It is incumbent on physicians to be temperate in all things, for the practice of medicine requires the unremitting exercise of a clear and vigorous understanding; and in emergencies—for which no physician should be unprepared—a steady hand, an acute eye, and an unclouded mind are essential to the welfare and even to the life of a human being.

Section 7.—It is incompatible with honourable standing in the profession to resort to public advertisements or private cards inviting the attention of persons affected with particular diseases; to promise radical cures; to publish cases or operations in the daily prints, or to suffer such publications to be made; to invite laymen (other than relatives who may desire to be at hand) to be present at operations; to boast of cures and remedies; to adduce certificates of skill and success, or to employ any of the other members of charlatans.

Section 8.—It is equally derogatory to professional character for physicians to hold patents for any surgical instruments or medicines; to accept rebates on prescriptions or surgical appliances; to assist unqualified persons to evade the legal restrictions governing the practice of medicine; or to dispense, or promote the use of, secret medicines, for if such nostrums are of real efficacy, any concealment regarding them is inconsistent with beneficence and professional liberality, and if mystery alone give them public notoriety, such craft implies either disgraceful ignorance or fraudulent avarice. It is highly reprehensible for physicians to give certificates attesting the efficacy of secret medicines, or other substances used therapeutically.

Article II.—Professional services of physicians to each other.

Section 1.—Physicians should not, as a general rule, undertake the treatment of themselves, nor of members of their family. In such circumstances they are peculiarly dependent on each other; therefore, kind offices and professional aid should always be cheerfully and gratuitously afforded. These visits ought not, however, to be obtrusively made, as they may give rise to embarrassments or interfere with that free choice on which such confidence depends.

Section 2.—All practising physicians and their immediate family dependants are entitled to the gratuitous services of any one or more of the physicians residing near them.

Section 3.—When a physician is summoned from a distance to the bedside of a colleague in easy financial circumstances, a compensation, proportionate to travelling expenses and to the pecuniary loss entailed by absence from the accustomed field of professional labour, should be made by the patient or relatives.

Section 4.—When more than one physician is attending another, one of the number should take charge of the case, otherwise the concert of thought and action so essential to wise treatment can not be assured.

Section 5.—The affairs of life, the pursuit of health and the various accidents and contingencies to which a physician is peculiarly exposed, sometimes require the temporary withdrawal of this physician from daily professional labour and the appointment of a colleague to act for a specified time. The colleague's compliance is an act of courtesy which should always be performed with the utmost consideration for the interest and character of the family physician.

Article III.—The duties of physicians in regard to consultations.

Section 1.—The broadest dictates of humanity should be obeyed by physicians whenever and wherever their services are needed to meet the emergencies of disease or accident.

Section 2.—Consultations should be promoted in difficult cases, as they contribute to confidence and more enlarged views of practice.

Section 3.—The utmost punctuality should be observed in the visits of physicians when they are to hold consultations, and this is generally practicable, for society has been so considerate as to allow the plea of a professional engagement to take precedence over all others.

Section 4.—As professional engagements may sometimes cause delay in attendance, the physician who first arrives should wait for a reasonable time, after which the consultation should be considered as postponed to a new appointment.

Section 5.—In consultations no insincerity, rivalry, or envy should be indulged; candour, probity and all due respect should be observed toward the physician in charge of the case.

Section 6.—No statement or discussion of the case should take place before the patient or friends, except in the presence of all the physicians attending, or by their common consent; and no opinions or prognostications should be delivered which are not the result of previous deliberation and concurrence.

Section 7.—No decision should restrain the attending physician from making such subsequent variations in the mode of treatment as any unexpected change in the character of the case may demand. But at the next consultation reasons for the variations should be stated. The same privilege, with its obligation, belongs to the consultant when sent for in an emergency during the absence of the family physician.

Section 8.—The attending physician at any time may prescribe for the patient; not so the consultant, when alone, except in a case of emergency or when called from a considerable distance. In the first instance the consultant should do what is needed, and in the second should do no more than make an examination of the patient and leave a written opinion, under seal, to be delivered to the attending physician.

Section 9.—All discussions in consultation should be held as confidential. Neither by words nor by manner should any of the participants in a consultation assert or intimate that any part of the treatment pursued did not receive his assent.

Section 10.—It may happen that two physicians cannot agree in their views of the nature of a case and of the treatment to be pursued. In the event of such disagreement a third physician should, if practicable, be called in. None but the rarest and most exceptional circumstances would justify the consultant in taking charge of the case. He should not do so merely on the solicitation of the patient or friends.

Section 11.—A physician who is called in consultation should observe the most honourable and scrupulous regard for the character and standing of the attendant physician, whose conduct of the case should be justified, as far as can be, consistently with a conscientious regard for truth, and no hint or insinuation should be thrown out which could impair the confidence reposed in the attending physician.

Article IV.—Duties of physicians in cases of interference.

Section 1.—Medicine being a liberal profession, those admitted to its ranks should found their expectations of practice especially on the character and the extent of their medical education.

Section 2.—The physician, in his intercourse with a patient under the care of another physician, should observe the strictest caution and reserve; should give no disingenuous hints relative to the nature and treatment of the patient's disorder, nor should the course of conduct of the physician, directly or indirectly, tend to diminish the trust reposed in the attending physician.

Section 3.—The same circumspection should be observed when, from motives of business or friendship, a physician is prompted to visit a person who is under the direction of another physician. Indeed, such visits should be avoided, except under peculiar circumstances; and when they are made no inquiries should be instituted relative to the nature of the disease or the remedies employed, but the topics of conversation should be as foreign to the case as circumstances will admit.

Section 4.—A physician ought not to take charge of, or prescribe for, a patient who has recently been under the care of another physician, in the same illness, except in case of a sudden emergency, or in consultation with the physician previously in attendance, or when that physician has relinquished the case, or has been dismissed in due orm.

Section 5.—The physician acting in conformity with the preceding section should not make damaging insinuations regarding the practice previously adopted, and, indeed, should justify it if consistent with truth and probity, for it often happens that patients become dissatisfied when they are not immediately relieved, and, as many diseases are naturally protracted, the seeming want of success in the first stage of treatment affords no evidence of a lack of professional knowledge or kill.

Section 6.—When a physician is called to an urgent case, because the amily attendant is not at hand, unless assistance in consultation is desired the former should resign the care of the patient immediately on the arrival of the family physician.

Section 7.—It often happens, in cases of sudden illness, and of accidents and injuries, owing to the alarm nd anxiety of friends, that several physicians are simultaneously sum oned. Under these circumstances, courtesy should assign the patient the first who arrives and who, if necessary may invoke the aid of some of those present. In such a case, however, the acting physician should request that the family physician be called, and should withdraw unless requested to continue in attendance.

Section 8.—Whenever a physician is called to the patient of another physician during the enforced absence of that physician the case should be relinquished on the return of the latter.

Section 9.—A physician, while visiting a sick person in the country, may be asked to see another physician's patient because of a sudden aggravation of the disease. On such an occasion the immediate needs of the patient should be attended to and the case relinquished on the arrival of the attending physician.

Section 10.—When a physician who has been engaged to attend an obstetric case is absent and another is sent for, delivery being accomplished during the vicarious attendance, the acting physician is entitled to the professional fee, but must resign the patient on the arrival of the physician first engaged.

Article V.—Differences between physicians.

Section 1.—Diversity of opinion and opposition of interest may, in the medical as in other professions, sometimes occasion controversy and even contention. Whenever such unfortunate cases occur and cannot be immediately adjusted, they should be referred to the arbitration of a sufficient number of impartial physicians.

Section 2.—A peculiar reserve must be maintained by physicians toward the public in regard to some professional questions, and as there exist many points in medical ethics and etiquette through which the feelings of physicians may be painfully assailed in their intercourse, and which cannot be understood or appreciated by general society, neither the subject-matter of their differences nor the adjudication of the arbitrators should be made public.

Article VI.—Compensation.

Section 1.—By the members of no profession are eleemosynary services more liberally dispensed than by the medical, but justice requires that some limits should be placed to their performance. Poverty, mutual professional obligations, and certain of the public duties named in Sections 1 and 2 of Chapter III should always be recognized as presenting valid claims for gratuitous services; but neither institutions endowed by the public or by the rich, or by societies for mutual benefit, for life insurance, or for analogous purposes, nor any profession or occupation, can be admitted to possess such privilege.

Section 2.—It cannot be justly expected of physicians to furnish certificates of inability to serve on juries, or to perform militia duty; to testify to the state of health of persons wishing to insure their lives, obtain pensions, or the like, without due compensation. But to persons in indigent circumstances such services should always be cheerfully and freely accorded.

Section 3.—Some general rules should be adopted by the physicians in every town or district relative to the minimum pecuniary acknowledgement from their patients; and it should be deemed a point of honour to adhere to these rules with as much uniformity as varying circumstances will admit.

Section 4.—It is derogatory to professional character for physicians to pay or offer to pay commissions to any person whatsoever who may recommend to them patients requiring general or special treatment or surgical operations. It is equally derogatory to professional character for physicians to solicit or to receive such commissions.

Chapter III.—The Duties of the Profession to the Public.

Section 1.—As good citizens it is the duty of physicians to be very vigilant for the welfare of the community, and to bear their part in sustaining its laws, institutions, and burdens; especially should they be ready to co-operate with the proper authorities in the administration and the observance of sanitary laws and regulations, and they should also be ever ready to give counsel to the public in relation to subjects especially appertaining to their profession, as on questions of sanitary police, public hygiene, and legal medicine.

Section 2.—It is the province of physicians to enlighten the public in regard to quarantine regulations; to the location, arrangement, and dietaries of hospitals, asylums, schools, prisons, and similar institutions; in regard to measures for the prevention of epidemic and contagious diseases; and when pestilence prevails it is their duty to face the danger, and to continue their labours for the alleviation of the suffering people, even at the risk of their own lives.

Section 3.—Physicians, when called on by legally constituted authorities, should always be ready to enlighten inquests and courts of justice on subjects strictly medical, such as involve questions relating to sanity, legitimacy, murder by poison or other violent means, and various other subjects embraced in the science of medical jurisprudence. It is but just, however, for them to expect due compensation for their services.

Section 4.—It is the duty of physicians, who are frequent witnesses of the great wrongs committed by charlatans, and of the injury to health and even destruction of life caused by the use of their treatment, to enlighten the public on these subjects, and to make known the injuries sustained by the unwary from the devices and pretensions of artful impostors.

Section 5.—It is the duty of physicians to recognize, and by legitimate patronage to promote, the profession of pharmacy, on the skill and proficiency of which depends the reliability of remedies, but any pharmacist who, although educated in his own profession, is not a qualified physician, and who assumes to prescribe for the sick, ought not to receive such countenance and support. Any druggist or pharmacist who dispenses deteriorated or sophisticated drugs or who substitutes one remedy for another designated in a prescription, ought thereby to forfeit the recognition and influence of physicians.

NOVA ET VETERA.

TALIESIN'S POEM TO THE "MICROBE."*

The following paper was read by Mr. T. E. Jones, of Llanrwst, at the annual meeting of the North Wales Branch of the British Medical Association:

Maelgwn Gwynedd succeeded his father, Caswallon Lawhir, A.D. 517, in the sovereignty of Gwynedd (North Wales), and in 546 was elected King of the Britons, on the death of King Arthur. He fortified Dyganwy[1] (near Llandudno), and built there a strong castle against the incursions of the Saxons. Early in the 6th century, Elphin, son of Gwyddno Gararhir lord of Cartref Gwadod, in Cardigan, was invited by his uncle, Maelgwn Gwynedd, to spend his Christmas at his court. The two had some dispute about religion and politics, which resulted in Elphin being thrown into prison and detained at Dyganwy in chains. Taliesin, on hearing of the imprisonment of his patron Elphin, went to Dyganwy to Maelgwn's Court, and by the eloquence of his poems (which are still extant) was the means of procuring the release of Elphin from prison, and was also himself admitted to the particular favour of King Maelgwn, who appointed him his chief Bard. Years after this there broke out in this neigh-

* The Poem is copied from the *Mabinogion*, edited by Lady Charlotte Guest.

bourhood a deadly pestilence called in the "Triads" the yellow plague of Rhos (? Fad Felen or Rhos), which was caused by the unburied carcasses of the slain; and whoever went within reach of the effluvia thereof fell sick and died immediately. Maelgwn, to escape contagion, retired to Llanrhos Church, but, happening to look out through the keyhole, saw the plague in the form of a woman, took the disease, and died soon after. Sometime prior to this event Taliesin had composed the following prophetic poem, predicting the manner in which Maelgwn would meet his death. It also describes the "microbe."

E ddaw pryf[2] rhyfedd,
O Forfa Rhianedd[3],
I ddial anwiredd.
Ar Faelgwn Gwynedd.
Ai flew, ai ddanedd.
Ai lyged yn euredd.
A hyn a una ddiwedd,
Ar Faelgwn Gwynedd.

A most strange creature[4] will come from the sea marsh of Rhianedd.

As a punishment of iniquities on Maelgwn Gwynedd.
His hair, his teeth, and his eyes being as gold,
And this will bring destruction on Maelgwn Gwynedd.

The Bard now proceeds to describe the characteristics of the "microbe":

Discover thou what is.
The strong creature from before the flood,
Without flesh, without bone,
Without vein, without blood,
Without head, without feet;
It will neither be older nor younger
Than at the beginning;
For fear of a denial,
There are no rude wants
With creatures.
Great God how the sea whitens
When it first comes:
Great are its gusts
When it comes from the south;
Great are its evaporations
When it strikes on the coasts.†

He now proceeds in describing the "microbe":

It is in the field, it is in the wood,
Without hand and without foot,
Without signs of old age.
Though it be coeval
With the five ages or periods;
And older still,
Though they be numberless years.
It is also so wide:
As the surface of the earth;
And it was not born,
Nor was it seen.
Its course is devious,
And will not come when desired.
On land and on sea,
It is indispensable.
It is without an equal.
It is four-sided:
It is not confined.
It is incomparable:
It comes from four quarters;
It will not be advised.
It commences its journey
Above the marble rock.‡
It is sonorous, it is dumb,
It is mild.
It is strong, it is bold.
When it glances over the land.
It is silent, it is vocal,
It is clamorous.
It is most noisy
On the face of the earth.
It is good, it is bad,
It is extremely injurious,
It is concealed
Because sight cannot perceive it;
It is noxious, it is beneficial;
It is yonder, it is here;
It will decompose,
But it will not repair the injury;
It will not suffer for its doings,
Seeing it is blameless.
It is wet, it is dry.
It frequently comes,
Proceeding from the heat of the sun
And the coldness of the moon.
The moon is less beneficial,
Inasmuch as her heat is less.
One Being has prepared it,
Out of all creatures.
By a tremendous blast,
To wreak vengeance
On Maelgwn Gwynedd.

When Taliesin finished his song Elphin was released from prison.

From the above poem one would think that our ancestors more than 1,400 years ago had some conception of minute organisms as being the exciting cause of infectious diseases.

† The Bard here sees from the ramparts of Dyganwy Castle the tide coming in, the waves breaking into surf on the sand banks of Conwy Bay, producing the appearance described. The same phenomena can be observed there at the present time.

‡ Possibly an allusion to the Cave of Æolus. The contagium of cholera always travels from S.E. to N.W.

REFERENCES.

[1] Dyganwy, from "dy," very; "gan," white; "gwy," water. [2] Pryf, a worm, insect, animalcule, etc. [3] Morfa Rhianedd, an extensive marsh at one time existing north of Llandudno, Rhos, and Colwyn Bay, but now being submerged. [4] Creature, same here as "pryf."

INDIAN REPORTS.

SANITARY REPORT OF THE CENTRAL PROVINCES FOR 1901. THE census of 1901 revealed a great decrease in the population of these provinces as compared with 1891—amounting to 881,483, or 9.2 per cent. The decrease deduced from a comparison of births and deaths year by year is 401,983, showing a difference of 479,500. This difference is attributed to emigration; but is probably due in part to defective registration. The loss of population during the intercensal decade is attributed to famine and pestilence. Two severe visitations of famine occurred in 1897 and 1900, causing great mortality, probably increased emigration, and certainly aggravation of intensity and fatality of epidemic disease, and greatly reduced physique and resistance; 1901 was a healthy year and its statistics give evidence of recuperation. The birth-rate was 28.83 and death-rate 23.46. Both figures are below the average of preceding normal years. Cholera and small-pox were in abeyance, fevers and bowel complaints caused fewer deaths than usual, and there was no indigenous case of plague. Reference is made to the important Conference on Malaria which took place at Nagpur in January, 1902. Practical measures for the prevention of malaria are under consideration. The treatment of snake bite by injection of antivenene has been taken up actively, and suitable syringes and supplies of antivenene have been distributed to dispensaries. Colonel A. Scott Reid took a warm interest in this matter. The results of 36 cases reported by civil surgeons are summarized by Lieutenant-Colonel Quaile, the compiler of the report. Of these 31 recovered and 5 died; but in only a few cases was the snake identified. The occurrence of lathyrism caused by the consumption of a pulse called "teora" has attracted notice, and is at present the subject of investigation. Although the report does not record the execution of any great sanitary projects, it gives evidence of continued and practical attention to sanitary administration and work. The constitution of the Provincial Sanitary Board has been altered. No central meetings are to be held in future, and the work of the Board is to be done "in each district by the Sanitary Commissioner meeting with the Deputy Commissioner, the Chairman of the District Council, and any resident of a municipality, with the Commissioner of Division and Superintending Engineer, a consultative member to be present only when convenient to them or really necessary." This is practically an abolition of the Sanitary Board and a return to the old system of conference between the Sanitary Commissioner on inspection tour and chief local authority.

BY a majority of one vote, the Chelsea Guardians have elected Miss Paine second medical officer of the Chelsea Infirmary.

MICROBIOLOGICAL RESEARCH IN RUSSIA.—On the initiative of the Director of the St. Petersburg Institute of Experimental Medicine a Microbiological Society is in course of formation. It is intended to promote microbiological research in Russia. Branches will be established in the provinces.

AN INFECTIOUS AMBULANCE SERVICE IN BERLIN.—An ambulance service for the transport to hospital of children suffering from infectious diseases has been established in Berlin. There are to be stations in various parts of the city. After the conveyance of a patient the ambulance van will be disinfected.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1903.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, AUGUST 15TH, 1903.

CANCER RESEARCH.

The first annual report of the Cancer Research Fund, presented at the meeting of which an account was given in the British Medical Journal of August 8th, is more an outline of future work than a record of performance. It could not well be otherwise, for during the short time the organization has been in existence the efforts of the founders have necessarily been almost wholly directed to the preparation and laying down of the machinery, the formation of projects, and the arrangement of plans of work. In these circumstances it would not have been surprising if it had been found impossible to start the actual work of research. All the more heartily, therefore, do we congratulate the Committee on the fact that a well-conceived plan of work has been arranged, and investigations in various directions are already in progress. We gather indeed that the campaign might have been pushed even more vigorously had it not been for the want of sinews of war. From the statement of the Honorary Treasurer it appears that of the £100,000 which it was estimated would be required to place the undertaking on a sound financial basis, little more than half has so far been obtained, and only 213 subscribers have hitherto contributed to the Fund. It is earnestly to be hoped than an enterprise of such vast importance to the human race may not be crippled for want of money. The matter is one that particularly concerns men of business and those actively engaged in productive work of any kind, for cancer is at the present day the great destroyer of careers, "th' abhorréd shears" that cut the thread of countless useful lives.

The report of the General Superintendent shows the present position of the inquiry, and the directions in which research is being carried out. Dr. Bashford points out that it is necessary that cancer should be regarded not only from the pathological standpoint of a disease occurring in man alone, but as a part of a general biological investigation. A large number of malignant new growths taken from animals have been microscopically examined with the object of ascertaining whether they are identical with new growths occurring in man. In the majority of the cases examined, no doubt was entertained that the disease was identical. Dr. Bashford says it is probable that in the course of the inquiry the study of malignant new growths in animals will become of great importance. Should this prove to be the case it will be necessary for the Cancer Research Fund to provide itself with a farm where animals can be kept under observation. The experimental side of the inquiry has not been neglected, but it is as yet too early for any deduction to be drawn from the work in progress.

The most interesting part of Dr. Bashford's report is that which deals with therapeutics. He says that the results of the Finsen-light method, high-frequency currents, and *x* rays have been the subject of inquiries addressed to the experts in charge of special departments of hospitals. Reports on the treatment of some 400 cases have been received. The results of the *x*-ray treatment of rodent ulcer are confirmatory of previous experiences. The general consensus of opinion, says Dr. Bashford, is that many superficial rodent ulcers, even if very extensive and of long standing, can be healed completely by means of the *x* rays alone. Recurrences are said to occur in from 20 to 40 per cent. of the cases, but are, as a rule, as amenable to treatment as the primary condition. Complete healing was obtained in 141 out of 216 cases as to which detailed reports were received, showing a proportion of 65 per cent. of successes. As in the majority of cases the disease was inoperable or had already recurred after excision, Dr. Bashford thinks this high percentage of successes very satisfactory. Of the remaining cases improvement was recorded in 43, no benefit was observed in 16, and the disease was aggravated in 3 instances. On the whole the results here indicated are more favourable than those recorded by Dr. Sequeira, Mr. Malcolm Morris, Mr. Dore and other observers who have published their experiences in the British Medical Journal. We cannot help feeling that Dr. Bashford's statistics give a somewhat unduly optimistic impression as to what is to be expected from the *x*-ray treatment in its present state of development. It is evident that in all reports of cases of malignant disease treated by the new methods of which so much is heard at present, the personal equation is a factor of special importance. The utmost caution must therefore be exercised, not only in sifting the reports, but in accurately judging the mental constitution of the reporters.

With regard to forms of malignant growths other than rodent ulcer, Dr. Bashford says it is extremely difficult at the present time to estimate the effects of treatment. We commend the following passage to the attention of our readers: "The results so far brought to our notice do not establish the efficiency of any of these measures [to wit, the Finsen light, high-frequency current, and *x* ray] as curative agents in sarcoma and carcinoma." His conclusion is that at present "when so much activity is displayed in developing electro-therapeutics, it will be well to regard the whole question as still *sub judice*."

These words of caution make it all the more remarkable that certain newspapers should once more have published sensational statements to the effect that Dr. Bashford and his assistant, Dr. Murray, are on the eve of a great discovery. We all hope that this may be the case, but there is not a word in the report to warrant such a statement, and it is simply impossible to believe that a fact of such moment should have been communicated in the first instance to an enterprising journalist. We have inquired into the matter, and found, as we fully expected, that the statements referred to rest on no basis of fact. No such communication was made to the representative of any newspaper, and the report accurately sets forth the present state of the research into the causation and treatment of cancer pursued under the auspices of the Cancer Research Fund. Of the action of the *Daily Express* in giving publicity to what must be characterized as a peculiarly cruel imposition on the public we need say nothing; newspapers of that class do such things because "t'is their nature to." But it is deplorable that a paper of high standing like the *St. James's Gazette* should

apparently without making any attempt at verification, have lent itself to the diffusion of a statement calculated to do infinite mischief. The *St. James's Gazette* had a considerable share in starting the Cancer Research Fund; we venture to hope, therefore, that it will not help to undo its own good work by publishing unfounded statements under such catch-penny headings as "A Great Hope," and "Reported Important Cancer Cure." This is not the first time the same newspaper has offended in the same way. Only a short time ago it startled the man in the street by placards in the largest type announcing a new cure for cancer. On opening the paper it was found that the "cure" of the terrible disease which now claims an ever-increasing number of victims, was—treacle! We have said that the *St. James's Gazette* is a respectable paper; moreover, in regard to medical matters, it has generally given proof of exceptional enlightenment. This makes it all the more important that it should act in the spirit of the maxim *Noblesse oblige*.

THE REFORM OF THE ARMY MEDICAL SERVICE.

WE criticized Mr. Brodrick's scheme for the reform of the Medical Service of the army, when it was first tentatively offered to the profession, with the frankness which is a duty as well as a privilege of true friendship. We were also among the first to recognize that he had profited by the criticism to which his proposals were subjected. Indeed, Mr. Brodrick has shown a readiness, almost unparalleled in the history of the War Office, to leave the deep-rutted road of tradition, and to follow new paths of reform. The result is that the Medical Service of the army, which, owing to the ineptitude of fossilized officials and the prejudices of a military caste had become a by-word and a reproach, has been rehabilitated. As the number and quality of candidates at the recent examination show, the service under the new dispensation is beginning to attract young men likely to do credit to their Corps and to the army, and to render excellent service to the State.

That Mr. Brodrick has, with the help of his advisers—among whom we venture to count ourselves as perhaps not the least influential—succeeded in effecting a genuine, if not yet complete, reform of the medical service of the army, is a fact which cannot be gainsaid. His own statement of the case made in the recent debate on the vote for the medical establishment is substantially accurate. Mr. Brodrick then said that in the changes suggested it was recognized by the Government as highly important that they should not rely on anything that had become stereotyped in the department. In order to avoid this they had enlisted the services of leading members of the medical profession who were in closest touch with modern developments in the science and art of medicine. He added that he had been peculiarly fortunate in the advisers whom he had chosen, and he paid a graceful and well-deserved compliment to them for the valuable assistance they had given. The Secretary of State deserves equal commendation for having allowed himself to be guided by their advice.

As we pointed out when the scheme was first made public, the Advisory Board is in theory nothing more than a Greek chorus whose function it is to offer counsel, which may or may not be accepted by the Secretary of State for War; and there must always be at least the possibility that the Board may in fact be reduced to play this humble part. So far, however, Mr. Brodrick has given effect to its recommendations, and he is justified in stating that the War Office has endeavoured to meet its wishes in regard to an improved scale of pay for medical officers, in regard to an increase in their number, and in regard to granting leave for study to be carried out at a medical college, for which a site has been secured.

On these reforms the Government and the service and the country are alike to be congratulated. Even Mr. Burdett-Coutts has expressed his gracious approbation. That gentleman's approval will doubtless be all the more gratifying to Mr. Brodrick, since his previous utterances on the medical service of the army rather suggested that, as a preliminary to their delivery, he had clothed himself in curses. But the explanation of his change of tone is simple. He now blesses because he is pleased to recognize in the reforms his own offspring, or as he puts it with native modesty, he is naturally the first to admit that they are wise and prudent reforms, because they were all pointed out and argued one by one with instances of what was going on under his own eyes in South Africa in the series of articles which he wrote for the *Times*. We should have thought that Mr. Burdett-Coutts would have been glad to leave those productions in the oblivion into which they had fallen. There are, indeed, some signs of grace in Mr. Burdett-Coutts's reference to the medical officers, for he admits that the failure in the arrangements was not due to any want of scientific attainment on the part of the army doctors. He even claims to have been "tender" about them. They might well pray to be spared any more of his tenderness.

It suits Mr. Burdett-Coutts's present purpose to prophesy smooth things about the medical officers of the army because he wishes to pose as the author of the improvements that have been made in the service. "Codlin's the friend, not Short," might indeed have served as the text of his speech. "Short" may, however, be permitted to recall the fact that long before Mr. Burdett-Coutts discovered in abuse of the medical service of the army a source of notoriety, the British Medical Association and its JOURNAL had contended for the reforms of which he now claims the credit. Over and over again for many years past we called the attention of the War Office to the dangerously undermanned condition in which it allowed the medical service of the army to remain. In season and out of season, with Cassandra-like iteration, we predicted that the medical arrangements of the army must inevitably collapse if we should become involved in a great war. Again and again we pointed out that if the War Office wished to have an efficient medical department it must make the service attractive to young medical men by offering a more generous scale of pay. Incessantly, too, did we urge on the authorities that an essential condition of the efficiency of the medical officer was a sufficient allowance of leave to enable him to keep himself abreast of the ever-advancing wave of medical progress. Mr. Burdett-Coutts came into the field at the eleventh hour with borrowed ideas, and now he puts himself forward as the reformer of the medical service of the army. He may indeed be called a patron of the medical officers, but in the sense of the word as applied by Johnson to Lord Chesterfield, as one who watches the struggles of a drowning man without offering assistance, but as soon as he reaches land encumbers him with help.

Apart from self-glorification, Mr. Burdett-Coutts's chief object seemed to be to call attention to a scheme for the

organization of civilian aid in time of war. That such aid is required is beyond question; but it needed not Mr. Burdett-Coutts to tell us that. Mr. Brodrick's reply showed that such a scheme has been under consideration, and will soon be an accomplished fact. Mr. Burdett-Coutts will doubtless claim the credit of this scheme also, for he took care to inform the House that in February, 1901, "a scheme of that kind, and one upon the lines of which any satisfactory scheme in the future must be founded, was drawn up by a gentleman of great military-medical experience," and laid before the Secretary of State for War. Mr. Burdett-Coutts asks what has become of this scheme. Not being free of the *penetralia* of the War Office, we cannot take it upon ourselves to answer the question. If we may hazard a guess, we should be disposed to say that it has been put into the limbo of useless suggestions and impracticable schemes with which that office, like every other, is deluged, unless it has been more summarily disposed of in the waste-paper basket. We had the privilege of examining a scheme which we take to be that of Mr. Burdett Coutts's

affable familiar ghost
Which nightly gulls him with intelligence;

and we have no hesitation in pronouncing it crude in conception and unworkable in details. It displays such a want of grasp of the conditions under which the care of the sick and wounded has to be carried on in war that we should have believed it to be the production of Mr. Burdett-Coutts's own brain had he not told us otherwise.

On one point we are pleased to find ourselves in agreement with Mr. Burdett-Coutts, and that is as regards the inadequacy of the remuneration paid to the members of the Advisory Board. The duties, if properly performed, are heavy as well as responsible, and to a first-rate man in busy practice necessarily involve a very considerable pecuniary sacrifice. This is certainly neither right nor politic, for neither the honour and glory of the position nor the prospect of a title can always be counted on to attract the right kind of man. As we said when the scheme was first promulgated, "just at present army reform is fashionable, but this will soon pass away, and we imagine that Mr. Brodrick will then not find it so easy as may probably be the case now to find capable men willing to discharge an onerous duty to the State practically without reward." If the Advisory Board is to continue to be a really useful part of the machinery of army medical administration its members must be paid a salary sufficient to make it worth the while of the most competent men to accept the office.

THE INDIAN MEDICAL SERVICE.

Appeals come to us in a steady stream asking that we should do for the Indian Medical Service what it is generally recognized we have done for the medical service of the army. We are at all times willing to champion the cause of our professional brethren in the public services; but in the case of India there has till lately been an insuperable obstacle in the way. We have received a vast amount of correspondence, but the views expressed have shown so wide a divergence of opinion among the members of the service that it has been impossible to put forward any statement that could fairly be said to represent the feelings and wishes of the service as a whole. During the past year, however, opinion in regard to certain matters has crystallized into definite shape, and in dealing with the condition of the Indian Medical Service we have been able to give expression to the views of at any rate a large section of the service. The grievances and disabilities under which they suffer have recently been considered by one of the standing Committees of the British Medical Association. That Committee presented a report at the Annual Meeting held at Swansea, and the report was adopted by the Council. The document itself is published in the Supplement to this issue of the British Medical Journal, p. clxxxviii. It presents the case of the officers of the Indian Medical Service in a plain matter of fact form, without exaggeration or appeal to mere sentiment, and we are sure that no fair-minded person can read it without being convinced that the officers of what used to be considered the best service under the Crown suffer from definite and substantial grievances, of a nature calculated to breed discontent and therefore to impair the efficiency of the service.

We can touch here only on the general heads of the report. The Indian Medical Service, though essentially military, has a civil branch. There are grievances affecting each of these branches respectively, and others which weigh on the whole service. Chief among the general grievances is slowness of promotion. As things are at present no officer can get the promotion which he has a right to expect until he has served for about thirty years. Expressed in terms of money this means that all officers who entered the service over the age of 25—that is to say, most of those now entering—can look forward to a pension of only £500 instead of £700, or possibly £950. It is suggested that all officers should be allowed to complete 30 years' service before compulsory retirement, and that every year's service over 25 should qualify for an additional £40 a year. Another grievance is the inadequacy of the present scale of pay. We have created a class of educated native practitioners, and they not unnaturally get the larger part of the private practice which used to form a substantial addition to an officer's pay. Then the depreciation of the rupee causes a loss of about one-third of the pay as originally fixed. It is urged, therefore, that the pay should be increased proportionately with that of the Royal Army Medical Corps.

Among the grievances of the military branch is the fact that the officers of the Indian Medical Service are practically debarred from the chief military appointment in India, officers of the Royal Army Medical Corps having for some time past invariably been chosen for the post of Principal Medical Officer of the Forces. This is rightly held to be unjust, and it is therefore recommended that the post should be held by officers selected from each of the two services in turn. Again, the constant changes of station to which junior officers are liable, besides costing money which they can ill spare, interferes greatly with their passing the prescribed examination in Hindustani. Until this examination has been passed officers cannot get the pay of their appointment. The remedy suggested is that junior officers should be allowed to remain for at least six months at district headquarters, where they can procure proper teaching in the prescribed language. Another serious disadvantage entailed by their frequent transfers is the expense caused by their not being allowed, as all other officers are, a free railway passage for a horse, although they are required to appear mounted on parade. This is a meaningless, but none the less invidious, distinction, which should be abolished forthwith.

The civil branch has become unpopular of late years owing to the reduction of pay for civil employ, but especially in consequence of the limitation of private fees by Government,

Quite recently the rules on this point have been made more stringent and offensive, so that at the present time no officer can take a fee exceeding Rs.50 (£3 6s. 8d.) for a single visit, no matter at what distance, or Rs.1,000 (£66 13s. 4d.) in the aggregate for repeated visits within the same year without reference to the local government, while fees of Rs.2,000 (£133 6s. 8d.) must be referred to the Government of India for sanction. This kind of legislation can scarcely be called grandmotherly; it is rather that of a fussy maiden aunt who wishes to have an interfering finger in everything. The Indian papers are full of instances of the mean and apparently envious spirit in which Government officials execute these ordinances. The matter has given rise to much justifiable irritation, and it is well known that it has been the cause of the loss to the service of at least one very distinguished officer. It is further pointed out that officers of the I.M.S. do not receive a fair share of honours in proportion to the importance of their work. Lastly, it is urged that the power and position of the administrative medical officers should be improved. The Director-General of the Indian Medical Service should have the rank of Lieutenant-General (as the Director-General of the Army Medical Department now has) with adequate pay, and a seat on the Viceroy's Council with direct access to the Viceroy. In a similar manner the administrative medical officers of the different provinces should have seats on the Provincial Councils, and real control of the appointment of all officers serving under them.

Copies of the report calling attention to these grievances have been sent to the Secretary of State for India and to all Members of Parliament. From several members of the House of Commons, among whom may be mentioned Mr. Digby, Captain Norton, Mr. Arthur Soames, and Dr. E. C. Thompson, promises of help have already been received, and there is good ground for hope that the demands formulated in the report will find extensive support. From the Secretary of State for India the report has had a less sympathetic reception. The Indian Government has never shown a generous spirit in dealing with the medical men in its employment. We understand that Lord George Hamilton was personally approached on the subject, but no promise of redress could be extracted from him. He is reported to have replied that notwithstanding the grievances complained of the service continues to get as many candidates as are required. The moral of this remark lies, as Jack Bunsby would say, in the application of it. It means in plain English that as long as men come forward, things will remain as they are. There is, however, one point which we respectfully submit for his lordship's consideration. When the actual state of the service is known to the rising medical generation, will the Indian Government still get men? There can be no doubt that the popularity of the service has been steadily diminishing of late years, and that it does not now attract men of the kind who formerly shed lustre on it.

Lord George Hamilton should remember what happened to the Army Medical Service, which was practically boycotted when the actual facts as to its condition became known to the young men of the medical schools. The report on the grievances of the officers of the Indian Medical Service has been sent to all the Universities, so that intending candidates may know exactly what they have to expect. The medical profession has fought the War Office successfully, and Lord George Hamilton may take it from us that it is prepared to do battle with the India Office with equal confidence as to the result. We hope, however, that he will not force this conflict upon us, and that the grievances and disabilities of which the officers of the Indian Medical Service legitimately complain may be removed without delay. It would be a serious detriment to our prestige in India if a service with such glorious traditions and with so long a roll of illustrious names were suffered to become a refuge for the destitute.

A CASE OF LEPROSY IN LONDON.

ON Wednesday last (August 5th), at the Royal Eye Hospital, Sir W. J. Collins discovered among his out-patients an Irishman, born in Limerick, who, in his opinion, exhibited symptoms of leprosy, apparently both anaesthetic and tubercular. The man came complaining of his eyes, and he had episcleritis of a form which Sir W. J. Collins stated he had seen in association with leprosy in the Lazar House at Bergen, in Norway. The corneae were not anaesthetic. He had a distinctly leonine physiognomy, and on his left wrist (dorsum) were several tubercles: while his right hand was bluish and anaesthetic, the thenar and hypothenar eminences wasted, and ulnar nerve thickened, and the finger and wrist movements were impaired. He had been treated, he said, at another hospital for paralysis, but it had not previously been suggested to him that he was suffering from leprosy. His age was 52, and he had been for 26 years resident in India; he had had syphilis in India 25 years ago, but was not treated for it for longer than a week. He has a scar on penis. The patient had never had to do with lepers. He had eaten a good deal of "Bombay duck," but not other dried fish. He had had the "Dobey itch" 15 years ago. He first noticed his right arm becoming anaesthetic 7 years ago. We are indebted to Mr. Horford, Senior Clinical Assistant, for these notes.

THE WATER SUPPLY OF MARGATE.

LAST week witnessed the ceremony of formally turning on the new water supply of the town of Margate. The question of water in this town has been a subject of much anxiety to its authorities for some years past, and they have had many difficulties to deal with. One was to find a new supply at all, and another to overcome the short-sighted opposition of many of the inhabitants to any plan which entailed an addition to the existing water rates. Since 1857 the town has drawn its supplies from wells in the chalk within its boundaries, but since that time the town has trebled in size, and the amount of good water which could be obtained from local sources was quite insufficient for the requirements of the population. In summer, indeed, the wells have frequently been pumped below sea level, and the subterranean reserves habitually so exhausted that the water commonly obtained was excessively hard (41 degrees of permanent hardness to the gallon). Apparently there must indeed have been some compensating infiltration of the collecting area by the sea, since the water was not seldom found to contain as much as 159 gr. per gallon of sodium chloride, and to be distinctly brackish. It had therefore long been obvious that something must be done, and the authorities showed no slackness in endeavouring to do it. They lengthened the adits and sank new wells in several likely places within their area, but without material success in increasing the supply. Then they promoted a Bill giving them water rights over Brookend some five miles away, but were successfully opposed by the districts of Westgate and Birchington, which established prior and natural claims over that source. Finally, the idea of going outside the Isle of Thanet altogether for a supply was propounded, but for a long time the authorities were unable to obtain a sufficient majority of votes among the householders to secure the success of any bill. Householders were all loud in their complaints as to the water then supplied, but they included a large number of very small lodging-house keepers, to whom the objections of any primarily expensive scheme seemed insuperable. This difficulty, however, was at length overcome, sanction of Parliament obtained, and the work, which was only begun last October, completed

in the remarkably short space of nine months. The new supply comes from Wingham, fourteen miles away to the south-west, is pumped up from the chalk 132 ft. below the surface, and brought into the town through an 18 in. iron conduit. The country all round the pumping station is purely agricultural, and the subterranean gathering grounds extend to the line of chalk hills running between Dover and Canterbury. The supply of water from this source is so abundant that it is calculated that it will be possible to supply not only all possible requirements of Margate present and future, but also those of 18 villages as well, while later if need be there will be surplus water to sell to Broadstairs and Ramsgate. The analyses show that the new water is of great purity, with only 2° of permanent hardness; the authorities of Margate are therefore to be congratulated on a success to which the co-operation of the medical men of the town in persistently impressing the necessity of good water on their patients, privately and in public, has greatly contributed. It would have been a great pity if anything had occurred to interfere with the prosperity of this town, which, with its broad beach end for trippers and its high cliff end for those who prefer quieter surroundings, is in many ways unique. Its reputation would have suffered heavily if the previous defects in its water supply had become more than a matter of local comment, and its fair fame would have been smirched for years if a certain event, the possibility of which was foreseen by those who had studied the question with adequate scientific knowledge to help them, had come to pass. This was that the heavy pumping at the principal well should draw into the gathering ground infectious matter from a not far distant pond of dirty water, or that leakage should occur in a drain which passed not many feet above one of the principal adits. All such risks, however, are now happily obviated, and this proverbially healthy town, being able to boast of having added to its advantages a perfect supply of water, may be expected to grow in prosperity. The risk that it has escaped is, however, a big one, and on any future occasion that their professional townfellows give themselves the trouble to urge strongly upon the inhabitants the adoption of any sanitary measure, it would be well that the advice should be promptly heeded.

GLANDERS.

We regret to learn that glanders continues to be prevalent among the studs of horse owners in London and Glasgow, and in the latter city not long since a death from this disease occurred in the human subject. We read of certain local authorities in the metropolis enforcing the closure of public drinking troughs, although we have yet to learn that these constitute frequent sources of contagion. Doubtless a prudent horse owner, if requiring to water his horses in the public streets, would use his own bucket and draw the water from a stand pipe, but we are afraid the little extra trouble thereby involved suffices to make horses go unwatered, even in hot weather, when the public trough is closed. Not long ago a deputation from the Glasgow Corporation waited upon Lord Onslow at the Board of Agriculture, and urged the President to strengthen the existing Order under the Contagious Diseases (Animals) Act, so as to secure more prompt recognition of infected horses, and then isolation or slaughter. It is, however, very doubtful whether the compulsory testing with mallein of apparently healthy horses, which have been stabled with diseased ones, could be carried out without resort to legislation. Lord Onslow, we understand, determined to await a communication from the London County Council before giving a final answer to the demands made by the Glasgow deputation. Recently the Public Control Committee presented a report to the London County Council, in which they stated that they had considered the reports of the two departmental Committees which investigated this subject in 1899 and 1902, and were anxious that no time should now be lost in carrying out such of their recommendations as appeared to receive general support. In reference to mallein and its use as a diagnostic and also as a therapeutic agent, the Committee of the Council recalled the fact that the danger of the disease being spread by apparently healthy reacting horses to healthy horses is so slight as to be in practice negligible, and that a horse which has ceased to react to mallein is incapable of spreading the infection of glanders. In view of these premisses, which the Scientific Committee of 1902 established, they state: "We are still of this opinion, and we think that the results of the experiments reported by the Departmental Committee of 1901 do not justify us in asking that it should be made compulsory for owners of studs in which glanders breaks out, to inject with mallein those horses not clinically affected, in order to ascertain whether or not they are free from disease." They therefore consider that the safer course would be to adopt the recommendations of the Departmental Committee appointed by the Board of Agriculture in 1899, and they propose to ask Lord Onslow, the new President of the Board of Agriculture, to receive a deputation in order that they may again urge, as in 1901 when Mr. Hanbury was in office, that the Board should take steps to give effect to the following recommendations: (1) Compulsory notification of glanders by veterinary surgeons; (2) appointment of veterinary inspectors who are not in private practice as veterinary surgeons; (3) that on an outbreak of glanders in a stud all the horses brought within the sphere of contagion should be declared suspicious, and isolated until the veterinary inspector declares them free from infection; (4) compulsory slaughter of all animals showing clinical symptoms of glanders.

THE ADULTERATION OF DRUGS.

In this country the difficulty of obtaining by purchase precisely those commodities, especially foods and drugs, which we may wish to buy, and the uncertainty of the legal processes by which we may from time to time endeavour to enforce our reasonable desire to be supplied with "an article of the nature and quality demanded," have unfortunately been brought home to us by long and painful experience. Nevertheless, to the mind unfamiliar with legal subtleties, some degree of surprise, and perhaps even irritation, is permissible when we see the ease with which the enterprising trader often succeeds in evading what the layman regards as the most unmistakable definitions of his requirements. Cases under the various Acts for checking adulteration usually furnish sad reading for the simple lover of his kind. A sense of novelty therefore is added to the other elements of gratification afforded by such a case as that reported on p. 392, in which it was held that in the eyes of the law the purchaser of Blaud's pills may really claim to be supplied with an article containing a definite quantity of ferrous carbonate. The facts brought out in evidence are sufficiently striking, and the considerations of public health illustrated by the case will present themselves to the medical reader so readily as to make comment needless.

THE EPIDEMIC OF SMALL-POX.

The subsidence of the small-pox epidemic during the past three weeks has not been so universal or so constant as might have been hoped. It is still hanging about most of the larger northern towns, whilst in parts of the Midlands it shows some tendency to spread. A return published for the administrative County of Lancashire shows that there was no very great difference in the total number of cases occurring in the county during the first and second quarters of the year, the latter being only some 31 cases fewer, or 416 against 447. In Newcastle there has been a slight fresh scare without any great foundation, and a curious incident occurred at one of the dispensaries in connexion with the disease. The medical officer of the dispensary found one of the patients suffering from what seemed to him to be small-pox, and sent for the city medical officer of health. The latter confirmed the diagnosis, and informed the rest of the patients waiting, proposing that they should all be vaccinated on the spot before leaving, by way of precaution. The result was a kind of panic, whether due to the neighbourhood of

a small-pox case or to the precaution suggested, is not obvious; but, in any case, patients broke out of the building as if it were on fire, some even escaping through the windows. This is the second incident of the same character that has occurred in this dispensary during the past few weeks. The more recent cases in this town appear to have come from Forest Hall, where there has been a somewhat sharp outbreak, and which now seems to be the chief focus of disease in this county. Further South, one or two new places in Warwickshire seem to be infected, and the same may be said of Leicestershire, where Littlethorpe, for a small place, has had a good many cases. In Lincolnshire, there have been very few cases from first to last; but the town of Spalding is now infected, though not apparently to more than a very limited extent. In Nottinghamshire, Mansfield, Bulwell, Marlpool, and Nottingham itself have all registered cases since our last notice, and this county and Cambridge, as then stated, still constitute the chief danger spots in central England. In Cambridge, what the papers are pleased to call the "mysterious disease" appears to have reached its high-water mark and the tide to be on the ebb. The register now stands at between 130 and 140 cases, with 10 deaths. The dangers of the Cambridge outbreak are illustrated by the occurrence of a case at Weyborne, in Norfolk, in the person of a telegraph boy, one of a holiday party from Cambridge. The Spalding case is also ascribed to the same source. In London the number of cases, which never exceeded some 70 under treatment at one time, had been rapidly diminishing, but this week some 16 cases are reported to have occurred in Brentford and Ealing. The newspaper reports received, contain several references to cases in which conscientious objectors have paid the penalty of their objections in the shape of small-pox, and a striking case is also recounted at Wolverhampton, where 39 out of 40 contacts were vaccinated and escaped the disease; the fortieth being a boy who ran away refusing to be vaccinated, and subsequently went down with the disease. The expense of even a very limited outbreak has been realized by the Blackburn Rural District Council, which has had to pay a bill of £108 15s. for the treatment of four cases in a hospital out of the district. In Wales there have been very few cases for some time past, and in Ireland where the epidemic has practically been confined to Dublin, the outbreak seems to be practically over, though the city is not at present absolutely free. It is not certain, however, that if cases broke out in some of the country areas and smaller towns it would find the authorities as well prepared to deal with it as in Dublin. The Roman Catholics have undoubtedly contributed to the limitation and subdual of the disease since the virtues of revaccination have been urged by their clergy from the pulpit. In discussing the epidemic the *Irish Times* says: "We believe we are right in saying that not a single case of a revaccinated person occurred during the six months. The entire casualty list was practically supplied by unvaccinated patients. No more signal proof of the efficacy of the precaution, which has never been objected to in Ireland, could be afforded." Scotland, equally well vaccinated, tells the same tale, and the disease still fails to obtain any firm footing there.

MINERS' PHTHISIS.

At the request of the Home Secretary an inquiry is being made by Dr. H. S. Haldane, Mr. J. S. Martin, H.M. Inspector of Mines, and Mr. R. Arthur Thomas, manager of Dolcoath mine, into the conditions affecting the health of miners, especially those engaged in rock-drill work. These gentlemen have recently been conducting experiments to ascertain by what means the dust produced by rock-drills may most easily be laid, and an appliance has already been devised which appears to work satisfactorily. With the object of demonstrating the value of the invention, and of discussing useful measures for the prevention of miners' phthisis, Dr. Haldane and Messrs. J. S. Martin and R. A. Thomas invited managers or other representatives of Cornish mines and a few gentlemen of large experience in South Africa to meet at Dolcoath. About thirty gentlemen, including representatives of all the mines in the county, assembled on the mine. The demonstration took place in the 375-fathom level, where the company watched the throwing of fine scattering sprays of water into the air loaded with rock dust, and a subsequent careful analysis showed that no dust remained in suspension in the air. Later in the day there was a lengthy discussion on miners' phthisis. A resolution was passed pledging those present to adopt means to allay the dust which is proving so disastrous to the lives of rock-drillers. We understand, says the *Western Daily Mercury*, that the appliance costs about £6, and that one is sufficient for an "end," while its simplicity removes the fear of its getting out of order. The sprays have been used in Dolcoath mine for several weeks, and working miners there express a strong desire for the employment of the sprays wherever blasting operations are carried on.

THE BACTERIOLOGICAL EXAMINATION OF PUBLIC WATER SUPPLIES.

This subject was recently the subject of discussion by the Battersea Borough Council, and it can scarcely be said that the guidance they received in the absence of the medical officer of health was entirely satisfactory. The water supplied to Battersea had, in consequence of recent floods, become muddy, and was described by the borough analyst as of very bad quality and quite unfit for drinking purposes; and in consequence of this report notices were issued advising the inhabitatants to boil all water before drinking. Judging by the report of proceedings in the local press, it appears that the borough analyst deprecated a further bacteriological examination which had been advised, and went so far as to state that "the utmost such an examination enabled the analyst to say was that the water contained, or did not contain, a large number of micro-organisms, not necessarily injurious or non-injurious." This statement, thus given, is, we think, misleading in several directions. In the first place, specific pathogenic micro-organisms might be discovered, though usually bacteriologists have not succeeded in doing so. They do not, moreover, content themselves, as would appear from the quotation just made, with a mere counting of micro-organisms. In the next place, the presence of certain micro-organisms, like the bacillus coli communis, the bacillus enteritidis sporogenes and streptococci, offer strong presumptive evidence of sewage contamination, stronger probably than that given by the presence of excess of solid matter after storms. And in the third place, both in chemical and in bacteriological examinations, each water has its own standard, and a regular and systematic record of the results of periodical examinations enables one to give a more trustworthy opinion of the potability of a water than intermittent and irregular examinations, whether chemical or bacteriological. The value of a series of bacteriological analyses is, in our opinion, at least as great as that of a series of chemical analyses. In the subsequent discussion on this subject the Battersea analyst stated what was quite correct, that it was not safe to rely on the negative results of bacteriological examination. It is unfortunate that, especially in such an assembly, the assertion should have been made that certain scientific men were misleading the public in regard to this matter; and equally so that the prejudices of antivivisectionists should have been brought to bear as an argument on the same side. The public discussion even of scientific subjects by scientific men may bring science into disrepute when prejudice is created and a one-sided view of facts is presented.

CONTAGIOUS DISEASES IN JAPAN.

At a recent meeting of the Japanese House of Representatives, Dr. S. Yamane, a member of the Independent party, justified that description by a vigorous harangue on the prevalence of contagious diseases in Japan and the indifference in regard to the matter displayed by the Government. Dr. Yamane said that more than 130,000

persons died of consumption every year in Japan, and the number was yearly increasing, while the Government followed the example of our own House of Lords, which, as told in *Iolanthe*, at a national crisis did nothing in particular and did it very well. He went on to say that there was no country in which leprosy was so rife and at the same time so neglected as Japan, where, according to the Home Office returns, lepers numbered 33,059, and their offspring 999,300. Lepers were allowed to sit in the streets and beg. A very small proportion were cared for in charitable asylums under French or English management, but Dr. Yamane contended that the Japanese Government should take action in the matter. Referring next to syphilis, he expressed a fear that the abolition of prostitution might be disastrous to the health of the people. He offered to teach the Government how to check the spread of the disease. We wish he would instruct some other Governments nearer home how to deal with the evil. With regard to trachoma, Dr. Yamane said there were 880,000 sufferers from that disease in Japan, and in at least one district the proper number of conscripts for the army could not be made up if sufferers from trachoma were not drafted into the ranks. He predicted that "the Japanese army would physically collapse if things were to go on in this manner." Dr. Yamane further called attention to the want of a law to deal with plague, which was causing serious commercial loss to Japan. In connexion with this question, he expressed a doubt as to the wisdom of encouraging the use of protective injections of serum. This method of prophylaxis, he said, was encouraged by the Government last year in the face of opposition from the Hygienic Council of the Educational Department. The injection, he stated, was practically a failure last year. The seed of sanitary wisdom sowed by Dr. Yamane appears, we regret to say, to have fallen upon stony ground, for on the conclusion of his speech the House passed to the order of the day. Japan is now a model of enlightenment to the Western world in many things, but the sanitary prophet there as elsewhere seems to be looked upon by the Government with the same feeling as the unjust judge in the Gospel regarded the importunate widow.

CHRISTIAN SCIENCE IN THE PHILIPPINES.

The Attorney-General for the Philippine Islands has, we learn from the *Boston Medical and Surgical Journal*, acted on a request from the Board of Health for information as to whether Christian Science healers could be prosecuted under the laws governing the practice of medicine in the Philippines. The law provides that those who "operate, prescribe, treat, or advise" patients for a fee shall be regarded as engaging in medical practice, and restricts such practice to graduates of medicine who have passed the Board of Medical Examiners, or who registered as practitioners of medicine prior to March, 1902. The Attorney-General quotes extensively from the decisions in various States of the United States relative to the status of Christian Science, which he regards as not finally determined. While the weight of evidence tends to permit the practice of Christian Science in the United States, the Attorney-General states his personal belief that the practice of Christian Science constitutes the practice of medicine, and as such comes under the laws regulating the practice of medicine in the Philippines. He states, however, that this question is one for the courts to decide.

INFANT MORTALITY IN FRANCE.

P. Budin in his report to the Commission de Depopulation on infant mortality[1] gives statistics showing the importance of his subject. In Paris 145 out of every 1,000 deaths are of children under a year old, and in St. Pol-sur-Mer the proportion is as high as 509 per 1,000. During the years 1896-1900 the average annual mortality of children under 1 year in France was 134.434; in fact the proportion of deaths to survivors of the same age was higher for the first year than for any other year below the 91st. The report first discusses the direct medical causes of this mortality. The three most important are infantile diarrhoea, respiratory diseases, and congenital debility. Of these, infantile diarrhoea accounts for far the greatest number of deaths. Out of every 1,000 infants dying in Paris 380 die from diarrhoea, in Rouen 510, in Dijon 584, in Troyes 682. The system of feeding is the most important factor in this result. Of 69 children dying of diarrhoea at Boulogne, 8 only were breast-fed children, 20 were bottle-fed, and to 41 solid food had been prematurely given. The diarrhoea of breast-fed children is caused by excessive and irregular feeding. Bottle-fed children are often enormously overfed, a fault which acts most injuriously in hot weather, when least food is needed. The milk given is often of bad quality, containing bacteria, adulterated, or wanting in cream. The chief cause of death amongst congenitally weak children, especially if they are undersized, is exposure to cold. The feeding of these children requires skill. If too little food is given they become cyanosed and die, if too much they succumb readily to diarrhoea. Coming next to non-medical conditions tending to increase infant mortality, Budin states that the death-rate is abnormally high among illegitimate children and those whose lives have been insured, and also among children of working women who are obliged to entrust them to the care of others, whether paid or unpaid. On the other hand, the mother who feeds her own child at the breast may almost always expect to rear it, in the absence of special risks, such as an alcoholic tendency on the part of the mother, which of course affects the milk. The reduction of an excessive infant mortality is a question of obvious importance in a country which, like France, has a stationary or declining population; and in suggesting remedies, most of which follow directly from the causes to which the excessive mortality is assigned, Budin demands State intervention as well as more intelligent individual effort. Every mother who can do so should be induced to suckle her own child. The importance is urged of mothers bringing the children each week to a doctor to be weighed and inspected. These consultations are of the utmost benefit wherever doctors feel it their first duty to secure that all mothers shall, if possible, suckle their children. Where the mother's milk is insufficient, some sterilized milk may be supplied, but complete artificial feeding should be deferred as long as possible. Budin himself sees about 100 children weekly in this way, and during four years not one under his care has died from diarrhoea. Other suggestions are: (1) That women be not allowed to go to work for a month after delivery, compensation to be given during this time; (2) that a nursing mother be allowed to leave work twice a day to feed her child: (3) that municipalities ensure the good quality of milk sold; (4) that the manufacture and sale of long-tubed bottles be made illegal; (5) the inspection of all children not under the care of their parents; (6) the treatment in hospital of prematurely born children below a certain weight; (7) the prohibition of the insurance of infants.

[1] *L'Obstétrique*, January, 1903.

THE DANGERS OF CREDE'S EXPRESSION OF THE PLACENTA.

Expression of the placenta is a method which has proved of great benefit to countless women in labour, replacing traction on the cord and needless manual extraction. Occasionally it has been asserted that the finger may poke a hole through a thin uterus in a multipara with a thin abdominal wall. A case of much importance has recently been discussed at a meeting of a German society;[1] it may yet prove of interest for medico-legal reasons, since a similar mischance under different circumstances might get a practitioner into trouble. Dr. Schwendener exhibited a uterus illustrating rupture, as he termed it, caused by expression of the placenta. The patient was 32 years of age, and had borne eleven children. The fetus was born spontaneously, and for an hour all went well. The placenta remaining

[1] Vereinigung der Breslauer Frauenaerzte, *Zentralbl. f. Gynäk.*, No. 29, 1903.

firm expression was practised. Directly it was given up symptoms of rupture of the uterus set in. Manual extraction became necessary, and proved exceedingly difficult; the patient died soon afterwards. A hole of the size of a sixpence was detected in the uterine wall, with ragged borders. Ingrowths of decidual tissue were discovered in the muscular tissue of the uterus around the site of the injury. Professor Fraenkel related a case with a similar history, but on careful scrutiny it transpired that the rupture had preceded the unsuccessful attempts at expression. Dr. Baum very reasonably observed that the hole in the thin uterine wall was very unlike the lesion which is understood by the word "rupture," a rent of some length due to pressure from within. It seemed to imply that a finger had been poked into it. Dr. Asch suggested another interpretation of the accident. In multiparae the uterine wall is occasionally very thin at points, almost transparent in fact. This condition is aggravated by the presence of dilated venous sinuses, and a haematoma may lie in the substance of the wall under a point where the placenta adheres. Firm pressure with the hand during Credé's manœuvre might easily burst the haematoma, an accident which would make a hole in the abnormally thin uterine wall. But Dr. Asch doubted if during expression the obstetrician's finger, pushing the abdominal parietes in front of it, could poke a hole through the uterus. Professor Küstner considered that possibly damage, not extending to complete rupture or rather perforation, occurred at the same spot in some previous labour in Dr. Schwendener's case. It is clear that directly or indirectly, as Dr. Asch explained, the finger may inflict sufficient damage during expression of the placenta to perforate the uterine wall, a fact which every obstetrician will do well to remember.

FUNCTIONS OF THE CEREBRAL CORTEX IN THE ANTHROPOID APES.

DR. A. S. F. GRÜNBAUM AND DR. C. S. SHERRINGTON made a report, at a recent meeting of the Royal Society, on their further observations on the physiology of the cerebral cortex of the anthropoid apes, the research being assisted in part by a grant from the Scientific Grants Committee of the British Medical Association. Their extended observations have been on five chimpanzees and one orang-outang. They found that the entire island of Reil is inexcitable under strong faradic currents. No constant movements followed stimulation of the inferior frontal convolution in either hemisphere; only occasionally were movements induced in the larynx, distinguishable from the rhythmical movements of respiration, suggesting either that there is no Broca "speech centre" in these anthropoid brains, or that direct faradization of the Broca speech cortex is inefficient to produce vocalization, or both. In two instances stimulation of the cortex of the facial region elicited protrusion of the tongue, closely followed by forcible closure of the jaws, a faulty co-ordination recalling that leading to biting of the tongue in epileptic seizures. In regard to the recovery of movement in a limb paralysed by ablation of its motor area, if the whole area of the hand and wrist be excised the ensuing paralysis is almost completely recovered from in a few weeks; if the corresponding area in the opposite hemisphere be now removed the similar paralysis similarly recovers, but this second lesion does not produce any return of the paralysis in the first hand; but, on the contrary, this hand is used more freely, presumably from the greater inducement to use it owing to the disability of the second hand. If after the second hand has regained its power the remaining portion of the cortical area for the upper limb first operated on be ablated, there is no return of paralysis in either the first or the second hand. The significance of these results seems then to be that the recovery of hand movement is neither due to the adjacent cortex of the same hemisphere nor the corresponding cortex of the opposite hemisphere taking on the functions of the ablated hand centre. Stimulation of the cortex of the infant chimpanzee yields movements similar to those in the adult, and expressly not choreiform in character.

THE PHYSIOLOGICAL ACTION OF BETAINE EXTRACTED FROM RAW BEET SUGAR.

FROM certain experiments made by Schultzen in 1870 it has hitherto been held that betaïne, even in such large doses as 15 gr., is not poisonous to such animals as rabbits, dogs, and cats. Drs. Waller and Plimmer have, however, recently presented a short communication to the Royal Society in which it is shown that betaïne extracted from raw beet-sugar has a perfectly well-marked, although not very powerful, poisonous action. These observers noticed that syrup made with ordinary beet-sugar had a cadaveric odour suggestive of the presence of choline and betaïne. From the sugar they were able to isolate betaïne in the proportion of about 4.4 grams of its hydrochloride per 1,000 grams, the salt having a melting point of 238° to 239° C. Tested on rabbits and cats in doses of 0.1 to 0.15 gr. per kilogram of bodyweight and given intravenously, fatal doses were found to paralyse the heart, while smaller doses caused a rapid fall of blood pressure. In these respects pure betaïne is not so active as commercial betaïne, but the latter was found to contain a large proportion of potassium chloride more than sufficient to exercise a distinctly depressing effect on the circulation. Raw beet-sugar should therefore be carefully purified.

PRACTICAL INSTRUCTION IN BALNEOLOGY.

IN spite of the attention which has been devoted to the treatment of certain diathetic diseases by hydrotherapeusis during the last few years it is to be feared that a very large proportion of the great body of practitioners are more or less ignorant of the advantages which the watering places of our own country offer in this respect. This is no doubt due in part to a lack of enterprise on the part of the municipalities concerned in bringing the importance of these methods of treatment to the notice of the profession and in inducing medical men to make themselves personally acquainted with our principal spas. On the Continent the authorities of the various health resorts and thermal stations expend a vast amount of energy in familiarizing medical men with the therapeutical and other advantages of their respective sites. Every year a *voyage d'études médicales* is organized in France for the express purpose of enabling practitioners to visit the best-known resorts in a selected area and thus to form a personal opinion on the subject for their own instruction and the benefit of their patients. We have received from Dr. Carron de la Carrière a circular descriptive of the trip for this year and the itinerary is one which is likely to attract a large number of adherents. These trips are not restricted to French practitioners, indeed one object of these excursions is admittedly the instruction of foreign medical men in the special advantages of the national health resorts. Starting from Lyons on September 10th the guests are to be conducted by easy stages through the most popular watering places of the south-east of France, a region which abounds in picturesque sites and mineral springs, hot and cold. The first town *en route* is Salies-du-Salat, not far from which is the charming little station Ax-les-Thermes, at the foot of the Pyrenees, on the borders of that anomalous little republic of Andorra, at an elevation of 2,300 ft. Thence they are to be taken to Ussat and Mont Louis (5,000 ft.), Amélie-les-Bains, Banyuls-sur-Mer, Montmirail, and Mont Pilat (3,800 ft.) It would not be easy to select a more interesting or picturesque itinerary, and the total inclusive cost from start to finish is Fr.350 (£14). Foreign members will be accorded a reduction of 50 per cent. on the railway fares from the frontier station to Lyons, and, as heretofore, the scientific part of the excursion will be in charge of Professor Landouzy. Detailed information concerning the trip can be obtained from Dr. Carron de la Carrière, 2, Rue Lincoln, Paris. Similar enterprise would doubtless go far to overcome the apathy in regard to the merits of our own watering places, and as ladies are admitted to the advantages of the scheme an enjoyable holiday trip might be combined with much instruction.

THE HISTORY OF MEDICINE.

A Chair of the History of Medicine has been established in the University of Maryland. This is said to be the first instance in which a full professorship of this branch of study has been devoted in any American university or medical school, although lectures on it have been delivered in a few schools. There is a society for the study of the history of medicine in connexion with the Johns Hopkins Medical School, where Dr. John S. Billings delivers a course of lectures every year. Some lectures on the subject are also delivered in Albany, St. Louis, and Buffalo.

Dr. Robert Jones, Medical Superintendent of the London County Lunatic Asylum, Claybury, has been enrolled an Honorary Associate of the Order of St. John of Jerusalem, in recognition of the interest which he has shown in the improvement of the nursing of the insane.

Cardinal Oreglia, Camerlengo of the Papal Court, has paid the fees of the physicians who attended Pope Leo the Thirteenth during his last illness. The amounts are said to have been as follows: £800 to Dr. Lapponi, £600 to Professor Mazzoni, and £400 to Professor Rossoni. The new Pope has appointed Dr. Lapponi to be his Physician in Ordinary.

The Home Counties Nature-Study Exhibition will be held, by kind permission, at the offices of the Civil Service Commission (formerly the buildings of the University of London), Burlington Gardens, London, W., from October 30th to November 3rd. Prospectuses, regulations, and prize lists may be obtained from the Honorary Secretary, 20, Hanover Street, W.

Among the eminent persons on whom honorary degrees have been conferred on the occasion of the 500th anniversary of the University of Heidelberg is Sir William Ramsay, F.R.S., Professor of Chemistry in University College, London, and one of the discoverers of argon, who has been created by the Senate a Doctor of Medicine.

We deeply regret to announce the death of Dr. George Balfour, which occurred at his residence at Colinton on Sunday, August 9th. Dr. Balfour was recognized by the whole profession as one of the highest authorities on diseases of the heart, and he was the author of several works on the subject which are regarded as among the classics of medical literature. For many years Dr. Balfour was one of the King's Physicians-in-ordinary for Scotland. He was Consulting Physician to the Edinburgh Royal Infirmary, and was long a most successful clinical teacher. It may be mentioned that Dr. Balfour was the uncle of Robert Louis Stevenson.

We have also to record, with great regret, the death of Dr. William Smoult Playfair, which occurred at St. Andrews on the morning of Thursday, August 13th. Dr. Playfair was born in 1836, and was educated at St. Andrews, and afterwards at the University of Edinburgh, where he took the M.D. degree in 1856. He served in India during the Mutiny, but after a time came to London. He was appointed Obstetric Physician to King's College Hospital, and by his works on his special department of medicine, especially his *Treatise of the Science and Art of Midwifery*, of which the ninth edition appeared in 1898, made his name known throughout the medical world. He had for many years a very large practice, numbering among his patients the Duchess of Edinburgh, the Duchess of Connaught, and the Crown Princess of Roumania. We hope to publish a full obituary notice of this distinguished physician in a later issue.

Anti-Quack Legislation in Canada.—At a meeting of the Ontario Medical Council held on July 8th, Dr. Bray, of Chatham, gave notice of a resolution asking for legislation for the purpose of checking the increasing number of quack doctors.

MEDICAL NOTES IN PARLIAMENT.

Rabies and the Regulations of the Board of Agriculture.—Mr. Channing asked the honourable member for North Hunts, as representing the President of the Board of Agriculture, whether he was aware that the character of the regulations as to the importation of dogs imposed by the Board eighteen months ago had led to considerable smuggling of dogs into this country, and had thus increased rather than lessened the risk of the introduction of rabies; and whether, having regard to the replies of the President of the Board of Agriculture to questions on November 26th and December 4th, 1902, to the effect that there had only been two instances of rabies in dogs imported, and that these cases had been promptly reported by the owners under the previous regulations, he would consider the advisability of reverting to the previous regulations, with such modifications as experience had shown to be advisable? Mr. Ailwyn Fellowes answered that detailed inquiry was now being made by the Customs authorities as to the allegation that a considerable number of dogs were being smuggled into this country. The results of this inquiry would be available very shortly, and we should then be in a position to determine whether any further amendment of the regulations was requisite in order to prevent the risk of the re-introduction of rabies into Great Britain. The regulations to which the honourable member referred were extensively contravened at every point, and their administration was attended with a maximum of friction and difficulty. It was on these grounds that the late President of the Board decided to issue the order now in force.

The Motor Car Bill in its Committee stage produced one of the longest sittings for some years. The House began its work at noon on Friday and sat till nearly 3 a.m. on Saturday morning. The Bill was hotly contested by the motorists at the close of the sitting but will now find its way on to the Statute Book. The speed limit of twenty miles was fixed after an attempt to secure fifteen miles, and the limit of pace in towns and populous districts was fixed at a maximum of ten miles. This will, of course, be lowered in many places by the local authorities. The attempt to examine drivers before licensing them was given up, but the regulations to be made by the Local Government Board will ensure fitness. Mr. Scott Montagu in the early hours of Saturday made a gallant attempt to secure special privileges for medical men going to see urgent cases as regards the speed limit, but his amendment was refused. The Act is to be in force only for three years, and so may be regarded as an experiment. On the report stage the Bill occupied several hours of Monday's sitting, and the age for drivers was raised to 17 years. Mr. Scott Montagu again sought to add words protecting medical men as follows: "Provided always that a medical man driving a motor car or cycle for the purpose of attending a patient in urgent need of his assistance, or a member of a fire brigade attending a fire, shall not be liable for exceeding the speed limits under this Act." Mr. Long, however, spoke strongly against the insertion of the proviso; and Sir Walter Foster, after pointing out that a very large number of medical men desired this protection, said that after the speech of the President of the Local Government Board the amendment could not be pressed, and it was then withdrawn. The Bill was afterwards read a third time amid cheers.

The Gosport Water Supply was again the subject of a question last week by Mr. Arthur Lee, and Mr. Secretary Brodrick stated that the War Department as well as the Admiralty had been for some time past endeavouring to secure an improvement in the water supply in question. The urban district council had now appointed a special committee to consider the matter and an officer of the Army Medical Department was making special investigations.

Irish Poor-law Medical Officers.—On Monday last Dr. Thompson asked the Chief Secretary to the Lord Lieutenant of Ireland if he would explain why the Local Government Board for Ireland had informed Dr. M'Carthy, who recently held for a few days the temporary appointment of medical officer of Tullamore Dispensary, that his conduct in resigning the appointment would be inquired into by a medical inspector, and that, if it was found he had resigned without sufficient cause, he would be prohibited in future from holding any Poor-law appointment; and if he would state under what statute or by-law the Local Government Board had so acted. Mr. Atkinson, in reply, said that Dr. M'Carthy refused to

enter upon the duties of the office to which he had been appointed with the approval of the Local Government Board. The Board therefore requested the guardians to call upon him to take up his duties, and stated that, in the event of his still refusing to do so, an inquiry would be held into the circumstances with a view to his removal from office by a sealed order. The authority for the Board's action in the case would be found in Sections VIII and XVI of the Poor Relief Acts of 1851.

The Irish Poor-law Commission.—Mr. Atkinson, in replying to a further question by Dr. Thompson—whether the Government would next session appoint a Royal Commission to consider the whole question of the administration and working of the Irish Poor-law Service, including the position and grievances of Irish Poor-law medical officers—said that he had nothing to add to the replies already given by the Chief Secretary on this matter.

The Sanitary Condition and Ventilation of the House of Commons.—On Tuesday, on the second reading of the Appropriation Bill, Mr. Wylie drew attention to the recently issued report of the Select Committee on the ventilation of the House. He complained of the delay in the production of the report due to time lost in the reappointment of the Committee, and after reciting and praising the recommendations made, condemned the ventilation and sanitary conditions of the building and said that if it had been under the Factories Act, the representative of the Office of Works would have been summoned to a police court. Sir Walter Foster, who followed, paid a tribute to the excellence of the report and specially urged the adoption of the recommendation (No. 8) for the appointment of a sanitary officer under the Office of Works to superintend the House. He said the building had not only a very large visiting population during the session, but it had constantly a considerable resident population and that all would be benefited by the services of a sanitary expert. He condemned strongly the bad ventilation in the ladies' galleries, and in some of the reporters' rooms, which he said were a disgrace from a sanitary point of view. As regards the Chamber itself, he contended that it was one of the healthiest meeting rooms in the world, and the report of the Committee confirmed this by the results of analyses of the air. The general ventilation of the building had greatly improved in his time, but still required the reforms indicated in the report. Mr. Victor Cavendish, as representing the Office of Works, said that attention would be given to the recommendations of the report and that the first seven would be adopted as soon as possible, namely, (1) the substitution of electric fans for the present exhaust furnaces, (2) the simplification so far as possible of the inlet passage for air and its more thorough cleansing, (3) the use of water screens in place of the present water spray, (4) the adoption of the new improved and more powerful intake fan, (5) the tentative introduction of air beneath members' seats, (6) the more frequent removal and cleaning of the matting on the floor, and (7) the placing of the whole cleaning operations under one authority. The Board of Works had great confidence in the official who superintended the building and did not favour the appointment at present of a sanitary officer.

The Drainage of Barracks and Hospital at Walmer.—Mr. Harwood asked the Secretary to the Admiralty on Tuesday if the Admiralty intended that the sewage from the marine baracks and the hospital at Walmer should continue to be discharged crude into the sea unless the Walmer District Council established an improved sewage system; and would he explain why the Admiralty had refused to bear the cost of relaying the drain pipes on its own property. Mr. Pretyman answered that the position as between the Admiralty and the Deal Council was as follows: The Admiralty looked to the Council, as the sanitary authority within whose district the marine barracks were situated, to provide an efficient drainage system, and until that was done the Admiralty drainage must of necessity go into the sea as hitherto. The refusal of the Admiralty to bear the cost of relaying the barrack drains was due to this work being rendered necessary solely through the omission of the council to make proper provision in their drainage scheme for dealing with the Admiralty property. The council have been repeatedly urged to revise their scheme in such a way that it would take the sewage from the Admiralty property without the necessity of relaying the drains, the cost of which they at present wished to put upon the shoulders of the Admiralty. The Admiralty had endeavoured to meet the council in a generous spirit, and had offered to relieve them of a portion of the expenditure to the extent of £1,450, including £500 for reconnecting the house drains, provided the council would bear the remainder, namely, the cost of relaying the main barrack drains, estimated at £1,600.

The Remuneration of Witnesses in Criminal Cases.—Mr. W. F. Lawrence asked the Secretary of State for the Home Department, on Tuesday, whether he had considered the report of the Departmental Committee on the Remuneration of Witnesses in Criminal Cases; and, if so, whether he proposed to take any steps to carry out its suggestions at an early date. Mr. Secretary Akers-Douglas answered that the report of this Committee was now under his consideration, and he hoped to be able shortly to make an order, under 14 and 15 Vict., c. 55, s. 5, giving effect to the principal recommendations of the Committee.

The Lead Poisoning Rules.—Sir Charles Dilke asked the Secretary of State for the Home Department if he was in a position to state when the final award in respect of the lead poisoning rules would be published. Mr. Secretary Akers-Douglas replied that the formal arbitration upon the Lead Poisoning Rules had been closed, and it was hoped that the new rules would have been promptly published. In view, however, of the fact that a scheme of insurance which was contemplated was somewhat detailed the umpire gave an undertaking that the persons interested should have an opportunity of considering, before it came into operation, the probable effect of the scheme. Unfortunately a difficulty had arisen in respect to a meeting for the purposes of such consideration, but the umpire, notwithstanding the approach of the recess, would press the matter on as strenuously as possible.

The Salaries of Irish Dispensary Surgeons.—Dr. Thompson asked the Chief Secretary to the Lord Lieutenant of Ireland, on Monday, why the Local Government Board had refused in several instances recently to sanction an increase of salary granted to dispensary doctors by Boards of Guardians. Mr. Wyndham answered that every application for an increase of salary received the careful consideration of the Local Government Board, and in any case in which the Board refused to sanction an increase the reasons were fully communicated to the Board of Guardians concerned. If the honourable member would give a reference to the particular case in which he was interested, the reasons upon which the Board's decision was based would be ascertained.

Medical Officers in Nigeria.—Mr. Churchill asked the Secretary of State for the Colonies whether he would state how many medical officers and veterinary surgeons were serving with the Northern Nigeria Force during the month of June last; and what were the total casualties of that force in action in the months of April, May, and June. Mr. Secretary Chamberlain answered that the establishment of the medical department in Northern Nigeria consisted of 27 medical officers, of whom, owing to the absence of the remainder on leave, there were about 18 usually in the Protectorate. Their duties included attendance on both the military and the civil officials. The Kano-Sokoto expeditionary force was formally broken up in March, and the small body of troops which had since been in the field had been engaged in the pursuit of the ex-Sultan of Sokoto. He had no information as to the number of medical officers or veterinary surgeons attached to this small force. In answer to the second part of the question, the casualties in action during April, May, and June were 3 British officers slightly wounded: 1 British non-commissioned officer severely wounded; 4 Native rank and file killed, 4 severely wounded, and 77 slightly wounded. These included an engagement the date of which was not precisely known, and might have been early in July.

The Compulsory Notification of Phthisis.—The Police and Sanitary Committee, in their report, call attention to the Sheffield Corporation Bill, in which it has passed a clause providing for the compulsory notification of phthisis, which has not hitherto been allowed. This decision was arrived at after the Committee had evidence before them that a voluntary system of notification had been in operation in the city for some time, and that the Corporation had the means and intention of dealing with all cases that might be brought to their notice.

REPORT OF THE COMMISSIONERS IN LUNACY.

(Concluded from page 336.)

Lunacy and the Law.

Discussing the suggestions recently made that the provisions of the law should be so enlarged and varied as to admit of much wider differentiation of treatment in accordance with modern medical ideas, and that mere notification to the Commissioners should supersede certification and the intervention of the judicial authority in a considerable proportion of cases, the Commissioners point out that in the agitation for fuller freedom of action and greater legal elasticity, there is danger lest the causes which led to the present restrictions be forgotten or overlooked. Prior to their imposition, the condition of the insane was a disgrace to civilization. The enactments which the public conscience demanded to correct this state of things had to a large extent remedied the evils which were brought to light, but human nature remains very much what it was, liable, as judicial and other records show, to an ignorant want of perception or a careless disregard of personal suffering, a selfish greed, an impulsive or deliberate resentment of trouble given or annoyance caused.

In these circumstances the Commissioners do not think that it would be wise to remove or greatly relax the safeguards provided for the preservation of personal liberty, and the watchful supervision by an impartial outside authority of those persons whom mental disorders compel to be treated otherwise than in their own homes, and under the eye of their own relations.

The extent to which, in their judgement, this might properly and safely be done is shown in the clause which was inserted by the Lord Chancellor, after reference to the Commissioners, in the Lunacy Bill introduced into the House of Lords, in 1900, and which was as follows:

26.—(1) If a medical practitioner certifies that a person is suffering from mental disease, but that the disease is not confirmed, and that it is expedient, with a view to his recovery, that he be placed under the care of a person whose name and address are stated in the certificate for a period therein stated, not exceeding six months, then during that period the provisions of Section cccxv of the principal Act shall not apply.

2. The certificate must not be signed by the person under whose care the patient is placed.

3. Where a medical practitioner signs any such certificate he shall, within one clear day after signing it, send a copy of it to the Commissioners, and the Commissioners may visit the patient to whom the certificate refers.

4. The person who receives a patient under any such certificate shall, within one clear day after receiving the patient, give notice to the Commissioners of his reception, and if the patient dies, or the residence of the person receiving him is changed, within the period mentioned in the certificate, shall within two clear days give notice of the death or change of residence to the Commissioners.

5. He shall also, within two clear days after the expiration of the period mentioned in the certificate, or if he ceases to have the care of the patient, at an earlier date, then within two clear days after that earlier date, send a report to the Commissioners stating whether the patient recovered, and, if not, in what manner he was dealt with when the person making the report ceased to have the care of him under the certificate.

6. If default is made in sending any notice or report required by this Section, the person in default shall be guilty of a misdemeanour, and be liable to a penalty not exceeding fifty pounds.

7. No person shall under this Section receive more than one patient at the same time.

8. After the expiration of the period mentioned in the certificate, another certificate under this Section in respect of the same patient shall not be given within two years from the date of the expiration.

The Commissioners think that Clause 7 might be modified by permitting more than one patient to be received, with their consent; that Clause 8 might be varied by the substitution of six months for two years; and that permission might also be given for the reception of voluntary boarders into single care, just as they are at present received, upon their own application, into hospitals and licensed houses. This would enable persons who are capable of exercising volition and are desirous of subjecting themselves to treatment, being suitable for residence under such conditions, to avail themselves, without difficulty or more than nominal formalities, of medical or other care in its simpler and less restrictive form, and in private houses as well as in institutions.

The Commissioners have, however, no doubt that both in the course which was embodied in the Bill and in that above indicated there should be immediate notification to them with power to visit whenever it should appear to them to be desirable, and to vary or determine the residence under the conditions of these new enactments whenever they considered it necessary.

In either case the working of the enactments would need to be carefully watched, for although in Scotland the Lunacy Law already permits the treatment for six months without certification of persons suffering from acute or non-confirmed insanity, its success or otherwise can only be matter of conjecture, as there is no provision for notification to the Lunacy Commission, and there can therefore be no official knowledge of the number of persons undergoing such treatment, or of its character or results.

Examination of Patients at Police Courts.

The Commissioners regret that it is still necessary for them to renew their protest against the practice of subjecting persons who have committed no crimes but are suffering from disease to examination at police courts instead of at their own homes or the workhouse in order that they may be certified and given the benefit of medical treatment. This course is highly prejudicial to the recovery of patients, and constantly originates the delusion that crimes have been committed, and that seclusion in an asylum is the punishment of imprisonment consequent thereon. Examinations of this kind are quite unnecessary, as is shown by their avoidance in the majority of cases in which certification takes place, and their inadvisability leads the Commissioners no alternative but to continue to press for their entire disuse.

Fire at Colney Hatch Asylum.

Referring to the fire which occurred in temporary buildings at the Colney Hatch Asylum, it is pointed out that these buildings were erected in 1895 by the Asylums Committee of the London County Council, with their very reluctant consent, and with the official approval of the Secretary of State, given in pursuance of their advice.

The Commissioners state that they will in future refuse their sanction to the erection of buildings of this inflammable character, and will use every endeavour to have the occupation of those which are already in existence determined at the earliest possible period.

Zymotic Diseases in County and Borough Asylums.

Apart from dysentery and diarrhœa, no cases of zymotic disease occurred during the year in 35 out of 82 institutions. This limitation has been mainly due to the prompt recourse to isolation and other prophylactic measures, for which credit is due to the management of these institutions. Influenza has not been so prevalent as in former years. It occurred in 16 asylums, the outbreaks being fairly considerable in 9 of these. In four asylums there were cases of small-pox. Vaccination of the inmates and staff promptly checked the spread of the disease. Cases of scarlet fever occurred in 18 asylums, nearly one-half of those attacked being nurses or attendants, who in 4 asylums were the only victims. Diphtheria attacked 2 patients and 2 nurses in the West Sussex Asylum, and its importation was traced to a patient admitted with the disease. The case of a male attendant at the Carmarthen Asylum is the only other instance of this disease during the year in any asylum.

Asylum.	Average Number of Patients Resident.	Total Deaths.	Deaths from Dysentery (Colitis) and Dirrhœa.	General Mortality per cent.	Proportion of Dysenteric and Diarrhœal Deaths to Total Deaths per cent.
Bexley Heath.	2,079	250	30	12.1	12.0
Colney Hatch..	2,490	238	29	9.5	12.2
Claybury ...	2,398	223	22	9.3	9.8
Hants	1,096	114	21	10.4	18.4
Worcester ...	1,180	116	18	9.7	15.5
West Ham ...	749	136	16	18.1	11.7
Banstead ...	2,453	252	14	10.2	5.5
Hanwell ...	2,544	222	14	8.7	6.3
Wakefield ...	1,741	183	13	10.5	7.1

Cases of erysipelas, mostly sporadic, occurred in 20 asylums. Cases of typhoid fever occurred in 22 asylums, and in 10 of these members of the nursing staff or attendants were attacked, as well as the insane patients. In 2 asylums the only cases were of an attendant in each. The disease had

only prevailed to any large extent in 1 asylum, and that the recently-opened one at Winwick, near Warrington. The table on page 383 shows the total number of deaths from diarrhoea and dysentery in a few of the asylums where they most prevailed. They include in some instances cases returned under the head of "colitis," "enteritis," etc., which were not entered in the registers of dysentery and diarrhoea.

In the county and borough asylums of England and Wales in 1892, the proportion of deaths from tuberculous diseases to deaths from all causes was nearly 17.0 per cent.; in the general population in 1900 it was 10.4 per cent. (63rd Annual Report of Registrar-General); whilst for the same periods in asylums these deaths were equal to 18,203 per million, or nearly ten times the mortality amongst the population generally, which (in 1900) was reckoned at 1,899 per million.

The deaths referred to phthisis amounted during the year to 1,348, and those to other forms of tuberculosis to 115, the total number of inmates resident being 80,371, and the deaths from all causes 8,619. The tuberculous death-rate was higher than in 1901, being 18.2 per 1,000, as against 15.8 in that year; the proportion to total deaths being 17.0 per cent., as compared with 15.8 per cent.

AVERAGE WEEKLY COST.

The average weekly cost of maintaining the patients in the county and borough asylums for the year ending March 31st, 1902, exclusive of building repairs, additions and alterations, was as follows:

	s.	d.
In county asylums	9	11½
In borough asylums	10	6¾
In both taken together	10	0¼

This is a reduction of 4d. per head per week on the average weekly cost of the previous year.

EPSOM COLLEGE.

PRESENTATION TO THE TREASURER.

AT the last meeting of the Council of Epsom College the Governors paid a graceful and well-deserved compliment to their Treasurer, Dr. Holman, whom they presented with an illuminated address expressive of their gratitude for the excellent and unwearied work he had done for the College throughout a long series of years, and also with an enlarged photograph of himself to be hung on the walls of the Council Room as a permanent memorial of the services he had rendered. The following is the text of the address:

To Constantine Holman, M.D., Treasurer of the Royal Medical Benevolent College.

We, your colleagues on the Council of the Royal Medical Benevolent College, desire to take the present opportunity, when we have just celebrated, under the presidency of His Royal Highness the Prince of Wales, the most successful festival dinner that the College has ever had, of expressing our sense of the great and valuable services you have rendered to the College for so many years, for sixteen of which you have held the important office of Treasurer.

We are sensible of the amount of time and work which have been so ungrudgingly given by you, and to which the College so largely owes its present satisfactory position.

We desire to offer our best thanks for all that you have done and are doing, and to express our hope that you may long be spared to us and to the College.

The address was signed by the President of the College and by all the members of the Council.

In asking Dr. Holman's acceptance of these tokens of the esteem and veneration in which he was held by all connected with Epsom, Sir Joseph Fayrer, the Chairman of Council, referred to the long period of his association with the College: to the arduous nature of the duties he had been called upon to perform, and the difficulties he had to overcome; to the success which had attended his financial administration; and to the universal esteem in which he was held, not by the members of the governing body only, but by every one who was concerned in the welfare of the institution.

In his reply, Dr. Holman acknowledged that the success of Epsom College was a question which had lain very near his heart since the day when he first became a member of Council. During the long period of his treasurership he had constantly endeavoured to promote the interests both of the school and of the charity. As regards the school, he thought he might safely say that it had been an unqualified success, and was now firmly established as one of the important public schools of the country. The charity still required assistance, and, though Dr. Holman declared his gratitude to those who had throughout all his years of office responded so ungrudgingly to his repeated appeals for help, he indicated that even greater liberality would be acceptable, and would enable him, ere his day was quite done, to realize some of the still unfulfilled dreams for a wider scope to the charitable side of their work which he had for long cherished. He expressed his keen sense of appreciation of the kindness of his colleagues, and assured them that the address which had just been handed to him would ever remain one of his most valued possessions. He was now retired from the Council of the British Medical Association, on which he had served for upwards of 40 years, and the greater leisure thus acquired would enable him to devote himself more energetically than ever to the affairs of Epsom College.

We who know the devoted service rendered for many years by Dr. Holman to the British Medical Association naturally feel a peculiar gratification in seeing his work in a different though cognate sphere so well appreciated. Throughout his public career Dr. Holman has worked with absolute unselfishness, and with the most strenuous endeavour for the benefit of his professional brethren. Under his wise management the most important of our medical charities has been carefully nursed to a condition of comparative financial stability, and Epsom College has taken a high place among the public schools of the country. By their recognition of their Treasurer's single-hearted efforts to promote the efficiency and prosperity of the admirable institution which they govern, the authorities of Epsom College have honoured themselves as well as Dr. Holman.

LONDON COUNTY SCHOLARS.

THE Technical Education Board of the London County Council has published the reports of its medical officers—Drs. Leslie Thorne Thorne and May Dickinson Berry—on their physical examination of the county scholars elected during the year 1902-3, and from this report the table below has been compiled. It shows the number of deviations from the normal noted, and requires very little explanation. The heart abnormalities noted are all definite lesions, and not merely haemic murmurs. Visual acuity was judged by the army standard, and the figures indicate the number of cases in which vision was inferior to this standard. The figures against "Urine" shew the number of cases in which albuminuria was found to be present. The spine figures refer to crooked backs, and "Nervous System" covers cases of bad stammering.

Defects Noted.	Total Males. 443.			Total Females. 310.			Total Defects.
	348 Juniors.	72 Intermediates.	23 Training School.	247 Juniors.	29 Intermediates.	34 Training School.	
Lungs	2	0	0	0	0	0	2
Heart	30	4	1	2	1	0	38
Spine	0	1	0	28	1	0	30
Colour vision ...	8	2	0	0	0	0	10
Visual acuity ...	71	31	2	39	9	9	161
Hearing	72	23	2	9	1	0	107
Adenoids ...	20	5	0	1	0	0	26
Tonsils	103	29	3	10	4	0	149
Urine	52	18	3	06	4	4	117
Nervous system	3	3	0	0	0	0	6
Miscellaneous ...	2	0	1	4	0	0	7
Totals	363	116	12	129	20	13	653
Percentages ...	104 %	161 %	50 %	52 %	68 %	38 %	85 %
		105 %			52 %		

It can scarcely be said that this return presents a very pleasant picture of the physical development of the cleverest young people in the public schools of the administrative County of London. Without discussing the table at great length, one or two salient points may be noted. The girls, curiously enough, are much less physically imperfect than the boys, having among them only 52 per cent. of defects against 105 per cent. among the boys. In other words, supposing the defects in each sex to have been as far as possible equally distributed among individuals, every boy had more than one, while every other girl scholar was free from any physical defect at all. This is a curious result, because the number of crooked backs among the junior girls points to

weak muscles, and shows that they do not get as much physical exercise as they ought. The number of cases of albuminuria—over 18 per cent. of all the scholars—is also remarkable. The vision defects noted in 21 per cent. of all the pupils are comprehensible and point to the necessity of better lighting of schools and more careful attention to the height of desks and forms.

Perhaps the most curious point of all is the large amount of deafness shown to exist. It is well known that deafness is one of the chief retarding influences in school life and progress, so that if deficiency in hearing exists in 14 per cent. of the most successful pupils of the year, what must the percentage be among the unsuccessful majority? The very great difference in this respect between the boys and the girls almost suggests that the same tests cannot have been applied, and in this connexion it may be remarked that it would make appreciation of a future report easier if the sections on the two sexes were drawn up in exactly the same form and covered precisely the same ground.

THE PREVENTION OF CONSUMPTION.

Devon and Cornwall.

A special meeting of the governing body of the Devon and Cornwall Sanatorium for Consumptives at Didworthy, South Brent, was held on August 7th at Plymouth. The Secretary read the report, which stated that during the last three months one patient had died. Those then under treatment were progressing satisfactorily. There were then no patients in bed. Five would be leaving on August 17th and two on August 27th, after completing three months' treatment. With one exception, all seven cases were either cured or the disease had been arrested, and the patients would be able to return to work. Appended to the report was a statement showing that the patients had gained an average of from 3 to 4 lb. in weight every week. The Chairman remarked that the increase in the weight of the individual patients afforded striking proof of the benefit which they were deriving. The business before the meeting was to consider a scheme for the extension of the institution by the addition of a dining hall for thirty patients and of sleeping rooms for fourteen. The present accommodation was for sixteen patients.

Mr. C. King produced and explained his plans of the proposed extension. He said a large number of applications for the admission of patients had had to be refused, and the Committee felt the necessity of providing further accommodation without incurring any considerable cost. The proposed new buildings would be constructed of wood, cased with uralite, and covered with suitable material. They would not be of a temporary character, but ought to last, if painted periodically, for forty or fifty years. It was intended to provide five double rooms for ten patients, and four single rooms. In view of further extensions, he had designed a dining hall for forty or fifty. If necessary, the shelters could be increased on the same lines as those now proposed. The estimated cost of the work, including construction, electric lighting, and heating, was £947.

The Chairman proposed that the extensions recommended by the Subcommittee should be proceeded with immediately, at a cost, including furniture, of £1,200 or thereabouts. The Committee looked to the public to bear a large share of the expenditure, but they were willing to face the responsibility of increasing the overdraft for the sake of giving the very great additional benefit of extended accommodation. Their present ideal was not to stop until they had 60 beds, that being the number which could be worked most economically.

Mr. Lopes said that if the work were carried out it was possible that more difficulty would be experienced in obtaining money than if an appeal were made in advance for the purpose. Many institutions of the kind were crippled by running into debt. With the report presented of the valuable work being performed by the sanatorium they had a very strong case on which to base an appeal. If the public failed to respond, it would be no fault of the Committee that the accommodation was not extended.

The resolution was then altered, and proposed by the Chairman in the following terms:

> That the extension of the sanatorium in accordance with the scheme presented by the Extension Subcommittee be approved and proceeded with at a cost, inclusive of furniture, of £1,200 or thereabouts, so soon as an appeal has been made for subscriptions, and a substantial amount has been received towards the extension.

This was unanimously agreed to.

Durham.

The fourth annual report of the General Committee of the Society for the Prevention and Cure of Consumption in the County of Durham, held at Stanhope Sanatorium on June 13th, 1903, stated that the Committee had continued to disseminate knowledge whereby the disease might be stamped out: (1) By addresses and lectures to various public bodies and general audiences, (2) by distributing throughout the county nearly 2,000 copies of the Society's pamphlet on "Consumption, its Prevention and Cure." The sanatorium continued to act as an isolation hospital, and the treatment there taught the patients and their friends how to prevent the spread of the disease. In addition to the boroughs of Sunderland and Gateshead, Jarrow had adopted voluntary notification. The Committee regretted, however, that the County Council and the local authorities, with the exception of four, had not yet given them that practical support which the importance of the question demanded. The Committee urged again upon sanitary authorities that the time was now fully ripe to take another step forward. Although voluntary notification, by-laws against spitting in public places, and the strict supervision of the milk supply, if adopted, would do much good, yet perhaps the most important of all means of prevention was the establishment of homes for advanced cases of the disease. Such homes were absolutely necessary if the disease was to be stamped out. They should be provided by the sanitary authority to avoid the stigma of the workhouse, and they need not be far from towns. Friends should be allowed to visit the patients, and the cost—equivalent to a rate of about 1½d. in the £—would be amply repaid by the lives saved. As regards the cure of consumption another good year's work had been done at the Stanhope Sanatorium. During the year the beds were increased from 18 to 30 by the completion of the new wing in July, 1902, which accommodates 9 female patients, and by the addition, in November, 1902, of a new window to each of the two north-east rooms in the main block, thus allowing space for an extra patient in each room. During the year 79 patients were discharged after being treated for from 4 to 56 weeks. Of these 41—32 males and 9 females—showed signs of consolidation only, while 38—21 males and 17 females—had cavities in their lungs, and several of the cases included under the consolidation cases had extensive disease or were complicated with laryngitis. The majority of women patients were serious cases. The average stay of each patient was 15.3 weeks, and the average gain in weight by each patient was 18 lb.; one patient put on 45½ lb. in twenty-five weeks. During the three years the sanatorium had been open, out of 170 cases discharged after treatment, 100 were still at work, 20 were at home, 2 had been readmitted to the sanatorium, and 48 were dead. The results obtained were exactly what were anticipated at the outset—namely, that the vast majority of those admitted in the early stage recover so satisfactorily that they were able to return to some years of employment, although their average stay in the institution had been from three to four months only; while of those admitted in an advanced stage the majority died within a year or two of their discharge, and only a minority returned to useful work for any length of time. An outdoor colony for patients leaving the sanatorium was still a desideratum. No death had yet occurred in the institution. Almost all the patients improved, and did so as rapidly in the winter as in the summer.

West Wales.

At a meeting of the General Committee of the West Wales Branch of the National Association for the Prevention of Consumption, held recently at Carmarthen, Sir John Williams, M.P., in the chair, the Sites and Building Committee reported in favour of the acceptance of a site for a sanatorium at Allt-y-Mynydd, offered by Colonel Davies Evans, Highmead (Lord-Lieutenant of Cardiganshire). The General Committee after some discussion adopted the report. The site selected possesses all the requirements of a sanatorium. It has a south-westerly aspect and is at an altitude of 800 ft. above sea level. It is three miles to the south-west of Llanybythr station. It was decided to ask four well-known firms to submit plans, estimates, and specifications for a movable sanatorium for 20 patients, and for two small annexes in which eight patients who could pay two or three guineas a week for their maintenance and treatment, could be accommodated.

The Hon. Secretary reported as to ways and means. He went on to say he thought that now they had secured a site they could confidently appeal to the County Councils,

District Councils, Town Councils, Boards of Guardians, owners of works and collieries, railway companies, manufacturing establishments, landowners, and the general public for their support. Lady Drummond and Mrs. Davies-Evans had taken the initiative in promoting a bazaar and fancy fair for the three counties, to be held at Carmarthen next year. He understood that her Royal Highness Princess Christian, hearing from Lady Drummond of this benevolent movement, had expressed a willingness to come down and open the bazaar. That would not only do them a great honour, but would act as a stimulus to everyone in the three counties to do their utmost to make the event a success. They wanted in round figures £5,000 to build and equip the sanatorium, and £1,500 a year to keep it up.

Sir John Williams in the course of a discussion observed that they might make what laws they liked, people would expectorate, and sick people must expectorate. Therefore that might make it advisable to have a removable building. Whether this treatment effected a permanent cure was an undecided question. That it was valuable there was no doubt whatever, but they must bear in mind after a person had been there three or four months he went back and might absolutely forget the rules of life that were inculcated in him at that building, and then have a relapse or return to the same condition as before. That, of course, would happen. The effect of this method of treatment would be that it would cure a large number of cases, do some good in others, but there were cases in which nothing could be done. But it would do more. It must in time become a very effective educational movement so far as hygiene was concerned. He looked upon that as one of the most important matters connected with it, and a knowledge of the laws of health as far as open air was concerned would permeate all classes from the highest to the lowest. An impression was abroad that the method of treatment was going to cure all cases, and it was well for the public to know that nothing of the kind would happen.

Ireland.

Lord Iveagh's Gift to Dublin Hospitals.

The Corporation of Dublin has passed a unanimous vote of thanks to Lord Iveagh for his gift of £50,000 to Dublin hospitals, and notice has been given of an intention to confer upon him the freedom of the city.

We have reason to believe that the Lord Lieutenant has nominated the following gentlemen to act as a committee of distribution: The Right Hon. Lord O'Brien (Chief Justice of Ireland) (Chairman), Right Hon. Jonathan Hogg, Charles Martin, D.L., J. Todhunter Pim, and Colonel Addison (on behalf of Lord Iveagh).

Small-pox in Dublin.

It is very satisfactory to learn that no case of small-pox has been reported in Dublin since July 12th; 455 cases in all were treated, and of these 33 died. The sanitary authorities under Sir Charles Cameron are to be congratulated on the result, especially when the ravages of former outbreaks are remembered. The process of stamping out has been necessarily expensive, and a certain amount of hardship has attended it; but the pestilence has been got rid of for the present. The guardians of the North Dublin Union have passed a vote of thanks to Dr. Edgar Flinn, Local Government Board Inspector, for his services in helping to stop the spread of the disease.

Health Conditions in Belfast.

The monthly report of the Medical Superintendent Officer of Health for the month June 14th to July 18th shows that 283 cases of zymotic disease have been notified with a very high death-rate of 58, or 1 in 4.8. It is probable that the exclusion of measles, diarrhoea, and whooping-cough, from the list of notifiable diseases accounts for this apparently very high mortality. There were 95 cases of typhoid fever, 84 of simple continued fever, and 51 of scarlet fever. The total number of births was 1,211, and of deaths 638; deaths from phthisis, 104. The annual death-rate from all causes was 18.6. Regulations with respect to dairies, cowsheds and milkshops, and by-laws for the prevention of expectoration in public places were adopted at the monthly meeting of the City Council.

The Granard Case.

When the inquiry at Granard Workhouse was resumed last week by Dr. Smythe, the Local Government Inspector, further evidence was given. Rev. Father Egan, on the advice of his solicitor, declined to give evidence. Rev. Father Connolly deposed that he entirely disagreed with the decision of the Local Government Board regarding the nuns. He had been agitating for the suspension of Dr. Kenny to bring the want of harmony to an end. Father Connolly admitted writing the letters for Dr. Maguire. In cross-examination he said he could not say whether Masterson, a guardian, accused Dr. Kenny of perjury. Witness's feelings in the matter were well known, but he declined to say whether he let them be known in his sermons and lectures. He declined to say whether he made use of the words "French infidel." He declined to say whether he stated that the people should pray that he should be done away with. None of the expressions were made use of. He wrote the reports for Dr. Maguire, but did not disguise his handwriting.

Mr. J. Masterson, the Chairman, thought the statement of a guardian that Dr. Kenny's conduct towards the nuns was hellish, blackguardly, and ruffianly was rather strong, but he must endorse it.

Had you any arrangement with Father Connolly about Dr. Kenny's suspension?

The question is rather a delicate one, and I would prefer not to answer it.

Inspector: You need not answer it, but you know the inference that will be drawn by those who read the evidence I am taking down.

Mr. Masterson said he understood the inference that could be drawn, but he declined to answer.

SPECIAL CORRESPONDENCE.

LIVERPOOL.

Proposed Abolition of Fees in the University.—The Opening of the University.—New Infectious Diseases Hospital.—Recent Appointments at the Samaritan Hospital.

A proposal has been brought forward by the Lord Mayor of Liverpool that all the classes and instruction in the University of Liverpool should be made free, and that in place of fees the University should receive the proceeds of a rate of a penny in the pound levied by the Corporation. If this remarkable proposal should be adopted Liverpool will be the first city in the United Kingdom to provide free university education. The Lord Mayor's letter, addressed to the Corporation, has been referred by that body to the Finance Committee for consideration.

The first meeting of the Council of the University of Liverpool was held recently. It was agreed that an inaugural ceremony, to celebrate the opening of the University, should be held in St. George's Hall in October, and a Committee was appointed to make arrangements.

The City Council has accepted a tender for a new hospital for infectious diseases, to be erected at Fazakerley, in accordance with the plans and specification prepared by the Corporation Surveyor. The cost of the building is to be £121,475, and the furniture will cost about £5,000. The hospital is to be capable of accommodating from 300 to 350 patients, and the annual outlay is estimated at about £15,000, or £50 per bed.

The two vacant posts of Surgeon to the Samaritan Hospital for Women have been filled by the election by the Committee of Dr. Alexander Stookes and Dr. John Joseph O'Hagan. Dr. Stookes has been Assistant Surgeon to the hospital since its formation, and is also one of the medical officers to the Lying-in Hospital.

SYDNEY.

Sydney Meat Supply.—A Public Abattoir.—Treatment of Inebriates.—Female Sanitary Inspector.—The Bubonic Plague.—Typhoid Outbreak at Balmain.

During the year 1902 the number of visits of inspection of meat was 4,164, but only three prosecutions took place. The City Health Officer, in response to an inquiry by the Lord Mayor, stated that the only explanation which can be offered with regard to this apparent disproportion, is that diseased meat was found under circumstances which warranted prosecutions only in three instances. In further explanation it is pointed out that the whole meat supply of Sydney is inspected before it enters the butchers' shops at all, and frequent inspections of butchers' shops have made those tradesmen particularly cautious with regard to offering

bad meat for sale. It is not an infrequent occurrence for a butcher to send to the City Health Officer stating that unsound meat is on his premises and requires condemnation. The City Health Officer is also of opinion that the best proof of the quality of the Sydney meat supply is the absence of complaint from the public. This condition of the matter is particularly satisfactory when the exceptionally untoward conditions affecting the grazing industry of the State, primarily due to the protracted period of drought, are considered.

In a recent report Mr. Nesbitt, the Town Clerk of Sydney, has referred to the position of the City Council in relation to a public abattoir. The City Council considers that for the preservation of the public health and the furnishing of a proper meat supply to a large city like Sydney, the cattle saleyards, the abattoirs, and the inspection and sale of dead meat should be under municipal authority. The Council has represented this to the Government, and in asking that the propriety of municipal control over the abattoir should be recognized, it points out that, provided it can obtain the necessary power to borrow the money for the purpose, it is willing to build a proper abattoir (which shall be subject to the approval of the Board of Health) and a meat market, and undertake the entire financial responsibility of their management. Under the Public Health Act the Council has the power to construct abattoirs wherever it pleases, subject to the approval of the Board of Health, but without authority from Parliament to borrow it is unable to raise the necessary funds to carry out the work. With full control of the abattoir as well as of saleyards, each within a reasonable distance of each other, the Lord Mayor has no doubt they could be managed economically, and with much better results generally than is possible under the present system.

According to a return recently prepared at the instance of the Attorney-General, 577 males and 497 females have been convicted of drunkenness three or more times at the metropolitan and suburban police courts during this year. When the present Licensing Act came into operation, in 1882, there were in the metropolitan district 848 hotels for a population of 248,231, being one hotel for every 283 persons. At the present time there are 788 hotels for a population of 478,500, or one hotel for every 697 persons. As regards the treatment of inebriates, the Attorney-General states that it is proposed to utilize the buildings in course of erection at Long Bay as a penitentiary for women. The Government hopes to be able to devise some method by which female dipsomaniacs can be treated there. There is also an inebriates' retreat in course of erection at Milson Island, on the Hawkesbury River, these buildings being specially prepared for males. Both of these institutions are being provided under the conditions of the Inebriates Act passed in 1901.

The City Council some time ago appointed a lady as a sanitary inspector. This was regarded at the time as an experiment, but the results have proved the wisdom of the appointment. Her duties consist in visiting and reporting on all places of business in which females are employed, and she is required to visit periodically and to exercise supervision over the sanitary conveniences for females which exist in the city. She also visits dwellings in which deaths from infantile diarrhoea have occurred, and advises housewives as to the sanitary maintenance of their homes. The lady has been attending the advanced sanitary classes at the Sydney Technical College, and at the recent examinations she was placed first in the pass list in each of the courses, thus winning the gold medal presented by the Metropolitan Water Supply and Sewerage Board to the student of the sanitary engineering classes at the Sydney Technical College obtaining the highest honours in the final year in sanitary engineering; it is looked upon as the "blue ribbon" of the sanitary classes in Australia.

Some plague-infected rats and mice have been found in a store in the lower part of the city close to the site of the former outbreak of the bubonic plague. Large numbers of rats have been examined from different parts of the city, but, with the exception of two from Wolloomooloo, no others have been found to be infected with plague. Active measures are being taken both by the City Council's Health Committee and the Board of Health to prevent the spread of the infection to human beings, and so far they have proved successful. Dr. Ashburton Thompson is of opinion that the present outbreak is the result of a fresh infection introduced from an outside source, and not due to any latent disease amongst the rats, as a very close watch has been kept upon the rats for many months past without any trace of the disease being found in them.

Two rather serious outbreaks of typhoid fever have occurred in the suburbs of Sydney in the course of the last few weeks. At Balmain an outbreak has occurred in one of the higher parts of the suburb, where the sewerage is perfect, and considerable difference of opinion exists as to the exact cause. Dr. Stokes, the Assistant City Health Officer, has reported on the epidemic, and thinks the local municipality to blame for neglecting to enforce the regulations for the maintenance of sanitary conditions in back yards, and for a perfunctory performance of the work of disinfecting premises after infectious diseases. There is only one sanitary inspector for a very large district, and it is manifestly impossible for him to cover thoroughly all the ground. This disease still continues to be very prevalent in many country districts.

HONG KONG.

Report of the Government Bacteriologist for the Year 1902.

The *Hong Kong Government Gazette* of June 5th contains the first annual report by Dr. William Hunter, Government Bacteriologist. For many years local medical practitioners have felt the urgent need for a bacteriologist to whom they could refer in cases of difficulty requiring special bacteriological skill; it is a matter of the greatest satisfaction, therefore, to know that there is now a special department in Hong Kong where all kinds of bacteriological examinations can be carried through. The report is of the highest interest, and of the greatest value to those interested in tropical diseases. The work has been greatly hindered through the loss by shipwreck of the whole of Dr. Hunter's bacteriological apparatus, and also by the fact that no special building has yet been erected for this department, though a site has now been fixed upon, and a building will soon be erected. In March the pathological work at the Government Public Mortuary was, at the request of the Principal Civil Medical Officer, taken over by Dr. Hunter, and the report deals largely with the cases there examined. At the public mortuary a regular system of *post-mortem* and bacteriological examinations on rats was instituted; assistants in this work were at first Japanese, then later Chinese trained in Western medicine at Hong Kong College of Medicine for Chinese. "During the year," Dr. Hunter reports, "2,816 human bodies were examined at the public mortuary. These figures, I understand, represent a number of necropsies larger than in any previous year since the institution was established. Further, I am sure that these figures are probably unique. I know of no institution where, given suitable accommodation, apparatus, and assistance, greater scope would be afforded for pathological and bacteriological research." "In addition to the routine *post-mortem* work there have been 117,839 rats examined bacteriologically, approximately 400 rats examined daily during the year. Of these 2,015 were found to be infected with plague."

Under the heading of Causes of Deaths, we find that of 39 cases of small-pox examined at the public mortuary the majority occurred in young children and were of the confluent type of small-pox. Tuberculosis accounted for the death of a large number—151. The majority of cases occurred in children or young adults. In the general miliary forms the lesions were of the most pronounced character, pathological changes being present in all the internal organs to such a degree as is scarcely ever seen in Europe. Two cases of tuberculous pericarditis were found, typical minute miliary nodules being scattered over the serous surfaces of the pericardium. Numerous tubercle bacilli were found in these nodules in each case. Eleven cases of tuberculous enteritis and 3 of tuberculous peritonitis occurred.

Five cases of aneurysm were met with, all of them being of the saccular form. It may be noted that atheroma is very prevalent amongst the Chinese. Dr Hunter says that in almost every adult after the age of 20 or 25 one will, if carefully looked for, find patches of atheroma in the aorta and other more peripherally situated vessels.

There were 14 cases of appendicitis. In several instances the vermiform appendix had been rounded off in a ball-like fashion containing in its interior pus from which pure cultures of B. coli commune were obtained.

In all cases (20 in number) of rupture of the spleen the spleen showed previous pathological changes and was more brittle than normally. In hardly a single instance were there any signs of external violence.

During 1902 a very severe outbreak of cholera occurred in Hong Kong, and Dr. Hunter had the opportunity of examining

379 cases in the public mortuary. From a chart showing the number of cases each week during the epidemic, it is seen that there was "a sudden advent of the disease and a more or less sudden disappearance," the appearance of the disease being coincident with a rise in the temperature and its disappearance with a fall in the temperature. The epidemic began approximately about the beginning of April, and was present more or less continuously until the month of October. Frequently the women who died were pregnant. In such cases the fetus was always examined, but, apart from such pathological changes as would be produced by intoxication, nothing was found. No cholera-producing micro-organisms were ever found present in the fetus.

Of 473 cases of plague examined, the results were as follows:

Pestis bubonica:	Right femoral bubo	82
	Left femoral bubo	81
	Right axillary bubo	56
	Left axillary bubo	33
		252
Pestis septicaemia		204
Pestis pneumonica		17
Total		473

Dr. Hunter, from a study of these cases in regard to the types of the disease and the ages of the patients, concludes:

1. The first case was septicaemic in type.

2. The epidemic was mainly established by the prevalence of the bubonic type of the disease.

3. The epidemic was prolonged chiefly by the continuance of the septicaemic type of the disease.

4. Pneumonic types were most frequent at the commencement of the epidemic.

5. The bubonic type was most frequent during the middle of the epidemic.

6. The septicaemic type was most frequent towards the end of the epidemic.

7. The pneumonic type was most prevalent amongst young children.

8. The bubonic and septicaemic types were mostly found between the ages of 20 and 40.

9. After the age of 40 the number of cases of plague diminished rapidly.

Of a total of 117,839 rats examined, 2,015 were found infected with plague. The paths of infection in the rat are numerous. The skin: the mere rubbing of plague material on the shaved abdomen of the rat is sufficient. The mouth, the throat, and the nose are frequently sources of infection. In these cases one frequently has evidence of infection of the nearest lymphatic glands—for example, of the neck. In other cases it is not difficult to trace the infection by way of the alimentary canal. The stomach and small intestine show marked swelling, oedema, and haemorrhagic infiltration. The intestinal follicles and mesenteric glands are the seat of great oedema and blood extravasation. The glands may even reach the size of a pea, and they contain enormous masses of plague bacilli.

Further, infection may take place by way of the lungs setting up what is called an "aspiration pneumonia." This may either be patchy or affect the whole lobe of a lung, and the consolidated patches always show great haemorrhagic infiltration. The parts are always choked with plague bacilli. The method of infection in these cases is certainly direct from contact with other rats dead from plague or plague-infected material. It is a well-known fact that the dead body of a rat is usually devoured as food by other rats. Examination of fowls and dogs gave negative results, but in mice and cats several were found to have the plague infection. The circumstances under which the cats became infected were carefully gone into, with the result that Dr. Hunter has no doubt that they were infected by plague-infected rats.

Dr. Hunter described the *post-mortem* appearances in cases of beri-beri very fully. During the year 149 necropsies were made upon the bodies of persons dead from this disease. All forms of this disease are met with, but for general purposes we speak of a dropsical form and an atrophic form.

In the dropsical form on superficial examination, the dead body of a case of beri-beri is frequently characteristic, a cyanotic, swollen face with protruding eyes, foaming mouth, and swelling of the veins of the neck are frequently met with. On section a characteristic appearance is the great infiltration of the subcutaneous tissues with serous and mucoid-like fluid. The pericardium is often distended with fluid, which may reach enormous quantities. The fluid is of a clear yellow colour. The heart is enlarged, sometimes enormously, and there is usually dilatation of the right ventricle with contraction and thickening of the left. The cardiac muscle is frequently in a condition of fatty degeneration. On opening the heart, enormous quantities of extremely dark red fluid blood escapes. On allowing it to stand for a few minutes freely exposed to the air, it becomes of a brighter red colour and begins to clot. As is generally now accepted, this peculiarity on the part of beri-beri blood is accounted for by the fact of the presence of an excess of CO_2. The aorta, arteries, and veins are frequently the seat of extensive atheromatous degeneration. The lungs are as a rule oedematous and emphysematous. The emphysema may be so extreme as completely to cover the pericardial sac. Hydrothorax is frequently present and is often bilateral. In the abdomen there is usually a certain amount of hydroperitoneum. The fluid as in the other cavities is clear, yellowish and viscid in character. The slatey-grey colour, the thickened walls and swelling of the intestinal mucous membrane are quite characteristic. In a few cases punctiform haemorrhages may be present either in the serous or in the mucous membranes. The liver is generally enlarged, with increased specific gravity and weight. This is mainly due to venous hyperaemia and the presence of an increased amount of fibrous tissue. The pancreas is usually fibrous. The kidneys are congested and slightly cirrhotic. Occasionally nephritis or haemorrhage is present. The spleen is very variable in size, and is, in the majority of cases, fibrous. It is much congested. The brain and spinal cord are usually infiltrated with serous fluid. They are firm on consistence and hyperaemic. To recapitulate, one may say that the main changes met with are dropsical accumulations, venous hyperaemias, and general fibrotic accumulations in the various internal organs. In the liver and spleen this fibrotic change is usually well marked by the occurrence over the capsule of these organs of localized whitish-grey thickenings, which ramify and branch in a tree-like fashion. This peculiar form of capsular thickening is met with in other diseases, such as chronic malaria, etc., but in beri-beri it is usually peculiarly well defined. In atrophic cases the appearance of the dead body is one of anaemia. The dropsy is absent, and the body appears usually in a state of extreme emaciation. The conditions of the heart and other internal organs are in correspondence with those in the dropsical form, only there is the absence of fluid accumulation. In a few instances microscopical preparations have been made of the organs, muscles, and nerves of cases of beri-beri, but the results have not so far been completed. The routine bacteriological examination of dead and living cases of beri-beri has been carried out in a few cases, but so far the results have been unsatisfactory.

CORRESPONDENCE.

CONSERVATIVE SURGERY IN SHAKESPEARE.

SIR,—In your "Literary Notes" you refer to an article by Dr. Knott in the *Westminster Review* on the medical knowledge of Shakespeare. I have not yet read this paper to see what quotations are given, but I do not remember that any one has alluded to the poet's foreknowledge of modern "Conservative Surgery." In Richard II. Act V, Scene III, the Duke of York impresses on Bolingbroke the importance of eradicating a foul sin lest it may lead on to others and says in illustration of this:

> This fester'd joint cut off, the rest rests sound;
> This let alone, will all the rest confound.

Now, if resection of joints had been a common operation in the Elizabethan Age the example would have been a very natural and even trite one, but I believe it is one of only recent date, at least its common practice I know is quite modern.—I am, etc.,

Hampstead, August 10th. SAMUEL WILKS.

THE LATE PROFESSOR NOCARD.

SIR,—The announcement you made in the BRITISH MEDICAL JOURNAL of August 8th regarding the death of Professor Nocard, of the great School of Veterinary Medicine at Alport, must come as a great shock to all who knew this genial and gifted investigator. You recall the fact that Professor Nocard was present at the Tuberculosis Congress in London. Some of us recollect that Nocard was also present this year at the inauguration of the new Laboratories for Tropical Medicine and Biology in the sister College of Liverpool, and how the speech made by Nocard at the luncheon given by Sir Alfred

Jones stood out amongst many good speeches as one of the best, and showed the speaker not only to be a master of the facts he was dealing with, but one who could use and did use his knowledge for the prevention of disease, both in animals and man. His vivid summary of what purely scientific investigations had done for the benefit of commerce in distant lands formed a striking part of an extremely interesting discourse.—I am, etc.,

Manchester, August 11th. WM. STIRLING, M.D.

PROFESSORSHIPS AT THE MEDICAL SCHOOLS.

SIR,—The medical schools in the metropolis having now become affiliated with the University of London, the next step is to elevate the various lecturers in the schools to the dignity of Professors. The public append great importance to members of the profession who have acquired the name of "Professor," and so far the medical staffs of King's College and University College Hospitals have enjoyed the monopoly of the distinction.

There ought, however, under the new régime, to be Professors of Surgery, Medicine, Ophthalmology, Dermatology, etc., at each metropolitan medical school. It has always seemed an anomaly to me why a lecturer at either of the Colleges named should be called, and call himself, "Professor," and a lecturer at any of the other medical schools, giving the same lectures and doing the same work, should have no academic title. In fairness to those concerned this question of "professorships" should now be adjusted.—I am, etc.,

Wimpole Street, W., August 12th. PERCY DUNN.

EXCURSIONS AT ANNUAL MEETINGS.

SIR,—Last year at Manchester I was one of a small band who went to an excursion to which 120 were invited; this year I was again a member of a smaller band who went to Llandrindod from Swansea.

On our arrival there we found the District Council at the station, but instead of 100, the number invited, only 23, I believe, turned up. It was really pitiful, after the extensive and sumptuous preparations for our entertainment, to see so disappointing a gathering; it certainly must have damped the enthusiasm of our hosts.

The number of members attending the Swansea meeting was 600; the excursions on Saturday were for 600, with an extra for those who could not get tickets for the other excursions; but as a very large number return from the meeting, some on Thursday evening and some on Friday, and a good number on Saturday, it is apparent that, even when those who are accompanied by ladies are reckoned, the excursions in late years have been on too lavish a scale, and consequently those who invite Sections of the meeting are sadly grieved to find their invitations, if not ignored, very feebly responded to. The list for all excursions on Saturday should be closed on Thursday evening and the figures wired to the locality at once, so that the requisite preparations may be made for a specific number.

The hospitality so ungrudgingly given to the Association in the districts it visits should be accepted by the Association in a similar spirit, and it behoves local Committees either to restrain this enthusiasm or to see that the invitations to excursions confirmed and ratified by that Committee should be duly responded to, or the result in some years may be that we shall find our invitations on a very modest and noncommensurate scale.—I am, etc.,

Is-y-Coed, Portmadoc, Aug. 9th. W. JONES-MORRIS.

RIVER AND SEASHORE POLLUTION AS IT AFFECTS SHELLFISH.

SIR,—As this question was again brought forward at the Swansea meeting, may I ask you to be good enough to publish the following?

I cannot agree with Dr. Lloyd Jones (as reported in the BRITISH MEDICAL JOURNAL) that the Mumbles people are immune to typhoid fever. I have had a few cases (4 in 2½ years) amongst the village population, but have failed to trace either case to oyster eating. I have had no case amongst the residents.

The fishermen eat oysters, both raw and cooked, freely, thinking nothing of eating 120 raw oysters at a sitting. Since the scare last winter they have eaten more than ever, yet they live and thrive.

The cases of poisoning (or infecting) by oysters usually occur at banquets and in private houses, not where the oysters are opened by fishermen. Now, the majority of people cannot tell a live oyster from a dead one, nor can they open an oyster easily; hence an oyster with its "mouth" already open is chosen before one where the shell resists the knife—that is, people are prone to select a dead one rather than a live one. What wonder if they get ptomaine poisoning?

Again, a fisherman told me he sometimes opens at his stall as many as 1,700 oysters a day. Amongst these he sometimes comes across an apparently healthy oyster, but on closer inspection he finds a small bladder, which if opened emits a foul smell; experience has taught him to look for this condition, and when he finds it he rejects the oyster.

I attribute nearly all the trouble to ignorance of oysters on the part of the general public and to ptomaine poisoning. Bacillus coli is often a normal inhabitant of the intestines. Bacillus typhosus does not always cause typhoid fever if it enters a host.

I have myself eaten a number of Mumbles oysters of late years without any ill effects.

I admit the drainage should not run over the oysters, and I am hopeful that the Oystermouth Urban District Council will soon carry it further to sea.—I am, etc.,

Mumbles, August 10th. F. DE COVERLY VEALE, M.B.Viet.

A MINISTRY OF HEALTH.

SIR,—In view of the weighty utterances at the British Medical Association annual meeting on the subject of a Minister of Public Health in the addresses of the President and on Medicine, I ask permission to adduce reasons, briefly, that such an appointment and such creation of a ministry of health is compatible with co-operation between the proposed ministry and the Local Government Office, and with local unity of general—including sanitary—government.

1. The appointment of a Minister of Education has been coincident with local unification of general and educational management. The appointment, moreover, is justified in its results apparently.

2. In Belgium, Canada, and the United States the control of public health administration is vested in the departments of Agriculture and Navy; in France in that of the Interior, as in Austria; in Denmark in that of Justice; in Germany in that of Police and Education; and in Sweden in a Medical Council. It is clear, then, that State administration of public health services is not necessarily incorporated in Local Government (Central) Offices (Palmberg and Newsholme's *Public Health and its Applications*, etc.).

From other considerations it seems that a ministry of health, working in harmonious co-operation with other departments, would strengthen State control and guidance, where necessary, in local administration of health measures.—I am, etc.,

F. BUSHNELL,
Joint Secretary, Devon and Cornwall Branch Association for the Prevention of Consumption; and Honorary Pathologist, South Devon and East Cornwall Hospital,
August 7th. Plymouth.

"NURSING AS AN OCCUPATION."

SIR,—Being a nurse, I read, with much amusement, the letter quoted in an article, bearing the above title, in last week's issue of the BRITISH MEDICAL JOURNAL. While agreeing that such a display of ignorance and impertinence must be a great annoyance to the doctor in charge of the case, may I suggest that if medical men are content to trust their patients to any woman posing as a "nurse," without inquiring as to her qualifications for the work she undertakes, they must bear some, at least, of the blame for the resulting danger to the public? A medical man refuses to meet an unqualified practitioner in consultation, why then should he not think it equally derogatory to employ an unqualified nurse, or to attend a case where such a person is engaged? It is true, that there is no State registration for nurses, but the certificate of three years' training at a recognized hospital is a guarantee against ignorance and incompetence, and before being employed a nurse should be required to produce such a certificate, or, if she received her training before three years was the recognized minimum, she should furnish evidence from the doctors under whom she has nursed of her capacity and experience. We are told that this "nurse" had been "attached for some years to a religious body," but not the all-important fact, at which hospital and for how long she was trained. I do not think any nursing institution would accept the fact of a candidate's having been "attached to a religious body" as the equivalent

of three years' hospital training. Those of us who are against State registration for nurses, argue that character, earnestness of purpose, and personal suitability for the nursing profession are beyond the scope of registration, and that a certificate of three years' training at a good hospital is sufficient evidence of capacity. Even if the lay public are ignorant of what, in the absence of State registration, is generally held to constitute a fully-trained nurse, surely it is the medical man's duty to protect his patients from the ignorance and incompetence of the "quack nurse" by refusing to recognize untrained and uncertificated people?—I am, etc.,

August 9th. A HOSPITAL SISTER.

OBITUARY.

FREDERICK LORD, L.R.C.P., L.R.C.S.EDIN.,

Southsea.

FREDERICK LORD, who died at Southsea on August 5th, was born at Northfleet, Kent, the son of a schoolmaster. Before going to Edinburgh for his regular medical studies he took a course of pharmacy at Boston, Lincolnshire, and the knowledge of drugs and dispensing there gained was later of the greatest use to him in his practice. He entered the University of Edinburgh in 1872, and almost at once became a favourite with his fellow-students. Although always more or less delicate in health, he was nevertheless a most successful runner, especially in mile races. He became Secretary of the University Athletic Club, and did much during his time at College to maintain the high position held by Edinburgh in the Inter-University and other athletic contests. He did not, however, on this account neglect his medical studies. He acted for a time as one of the *post-mortem* clerks at the Infirmary, and took the prize at one of the midwifery classes in 1875. He took the L.R.C.P.Edin. and L.R.C.S.Edin. in 1876.

After a voyage to India as a ship's surgeon, and an assistantship at Forest Hill, he settled in practice at Southsea, where for more than twenty years he had carried on a considerable private practice, in addition to appointments to a number of important clubs.

In 1895 he conceived the idea of founding the Portsmouth Medical Union, and its continued success is largely owing to his energy and zeal. He was an active member of the British Medical Association, and was elected President of the S.E. Hants District of the Southern Branch in 1900. He held the Librarianship of the Portsmouth Medical Library from its foundation.

For the annual meeting of the British Medical Association, held at Portsmouth in 1899, he did a large amount of useful work as President of the Printing and Publishing Committee, which included the issue of a unique historical Guide Book to the neighbourhood. He was much interested in photography, and was active in promoting and supporting the Local Amateur Photographic Society.

Dr. Lord was always a staunch friend, and his genial manner and upright professional conduct won for him the confidence and affection of all his colleagues.

His funeral was attended by a large number of his professional neighbours, a striking evidence of the high esteem in which he was held. He will be greatly missed at the local medical meetings, and his death leaves a gap which will not easily be filled.

Dr. J. WARD COUSINS has sent us the following tribute to his departed friend: Dr. Lord was a skilful surgeon and a very intelligent practitioner, and was one of the founders of the Portsmouth Medical Union, which has done much to promote professional courtesy and concord. He took also a prominent part in connexion with the visit of the British Medical Association to the locality in 1899, and it was mainly due to his editorial labours that the local committee were enabled to place the attractive "Guide to Portsmouth and Southsea" in the hands of the members who were present at the meeting. Many copies were afterwards applied for by members of the Association who were prevented from attending. Dr. Lord was an enthusiastic photographer and assisted in the foundation of the local Photographic Society, and its marked success has been greatly due to his persistent efforts. When a young man he was a well-known athlete and a very fast runner, and he carried off a large number of cups and valuable trophies at various times. The writer of this short notice had the privilege of his friendship for many years, and can bear testimony to his kindly disposition and honourable character, and also to the esteem in which he was held by all his medical friends in Portsmouth. The funeral took place at Southsea on August 8th, and around his grave a large number of his sincere friends were gathered, with many of his professional colleagues, who will all ever entertain towards him the kindest recollections. Dr. Frederick Lord was only 53 years of age, and he leaves behind him a wife and four children to mourn their inestimable loss.

WILLIAM BURNS MACDONALD, M.A., M.B., C.M.,

Dunbar.

BY the sudden and unexpected death of Dr. W. B. Macdonald, of Dunbar, at the age of 45, a large district has been been bereft of one who, by his high character, his honourable conduct, unfailing kindliness and courtesy to rich and poor alike in the discharge of his multifarious duties, had earned for himself the designation of "a man greatly beloved."

About a year ago Dr. Macdonald had a bad fall from his bicycle, which resulted in concussion; he remained unconscious for forty-eight hours, and was incapacitated for two months, when, although complaining a good deal of headache and languor, he resumed work. Finding himself unequal to the strain, he was persuaded to take a long sea voyage. Accordingly in November he set out on a yachting cruise round the world, and, with the exception of a few days at Fiji, he enjoyed excellent health, and appeared to have entirely regained his former vigour. On leaving Gibraltar, however, on the homeward run, cerebral symptoms manifested themselves; he arrived off Cowes in a comatose state, and, without regaining consciousness, passed away on board the R.Y.S. *Valhalla* on Sunday morning, August 2nd.

The whole circumstances were peculiarly sad. Dr. Macdonald's cheery letters had given rise to the expectation that within a very few days he would be back completely restored, and a great reception awaited him, when, alas! the startling message came that he was no more.

Dr. Macdonald was a son of the manse. He came of good Highland stock, who were prominently identified with the great disruption movement of 1843, and he loved to talk of his Highland home.

Educated at the Edinburgh Academy and University he graduated in Arts before commencing his medical curriculum, in which he had an exceptionally brilliant career. He was medallist and first prizeman both in practice of medicine and practical pathology, besides obtaining six first-class and six second-class honour certificates.

He graduated M.B. and C.M. with honours in 1882, and then undertook the duties of *locum tenens* at the Rio Tinto mines at Huelva, Spain, where, among his other duties, he had charge of a large hospital, in which he performed successfully a good number of both major and minor operations. On his return to Scotland he was assistant for some time to the late Dr. Moffat at Falkirk in a very extensive practice, and then for three years practised at Lossiemouth. In 1887 he took over the practice of Dr. Napier in Dunbar, where his worth was soon appreciated. He held the appointments of Medical Officer and District Medical Officer of Health to the Parish Councils of Dunbar, Innerwick, Spot, and Oldhamstocks, Army Medical Officer during annual militia training, Surgeon-Major Army Medical Reserve, Admiralty Surgeon, and Surgeon to the Oddfellows, etc.

Dr. Macdonald was not only a practitioner of exceptional skill, but a man of wide reading and high culture. He was a good linguist, fond of travel, and had seen much of the world. A man of singularly gentle, winning, and kindly disposition, he had greatly endeared himself to all who knew him. One of the most unselfish and warm-hearted of men, he frequently said he liked best to go to the homes of the very poor, and these had the same patience, care, and skill bestowed upon them as the most influential patients in his wide practice, and not a few found in him not only a medical adviser, but also a true friend.

The funeral took place on Wednesday last at Dunbar, a service being held in the parish church, the vast congregation there assembled being visibly affected. All the public bodies were represented, business was entirely suspended, and the town bell tolled. The remains, borne from the church by a military party, were laid to rest amid such signs of emotion as are rarely seen.

Dr. Macdonald leaves a widow and three children, for whom the greatest sympathy is felt.

With much regret we announce the death of Dr. John Tatham, formerly Physician to the Brompton Consumption Hospital, which took place at Lowfields, Burton-in-Lonsdale, Lancashire, at the age of 69. Dr. Tatham studied medicine at the Middlesex Hospital, where he gained many prizes, and held the appointment of House-Surgeon. After pursuing his professional studies in Paris, he was for some time Resident Physician to the late Lord Holland. Dr. Tatham was an M.D.St.Andrews, and F.R.C.P.Lond., and was for several years Physician, and subsequently Consulting Physician, to the Brompton Consumption Hospital, and did much useful work there on the Board of the hospital. He contributed on hygiene and climate to medical and other journals, and hospital reports. He was a man of genial disposition, and will be greatly missed by a large circle of friends.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

HOSPITAL SHIPS FOR THE NAVY.

It will be remembered that some time ago the hospital ship *Maine* passed into the hands of the Lords of the Admiralty. She was fitted and equipped as a hospital with all the modern requirements of skilled surgery and hospital treatment by the committee of American ladies in Great Britain, and during the war in South Africa was most usefully and successfully employed by the military medical authorities. After the declaration of peace she was taken over by the naval authorities, and for the most part since has been used with much advantage for the conveyance of sick officers and seamen from the Mediterranean to the great naval hospital at Haslar. The Lords of the Admiralty have, it is stated, determined to furnish the navy with other hospital ships, one of which is to be built forthwith.

ROYAL ARMY MEDICAL CORPS.

Exchanges.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 3s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

A Major R.A.M.C., having probably two years in England from January next, would exchange to India about Christmas with an officer who had done about two years of his tour there.—Address No. 3,739, British Medical Journal.

A Lieutenant-Colonel R.A.M.C., who expects to be ordered abroad early next year, wishes to exchange with an officer recently home.—Address, "Sey-Woon," c.o. Holt and Co., 3, Whitehall Place, S.W.

A Field Officer R.A.M.C., for India this trooping season, wishes an exchange, home or colony.—Please give particulars, Field, c.o. Messrs. Holt and Co., 3, Whitehall Place, London.

Erratum.—In the list of successful candidates for the Royal Army Medical Corps which appeared in the British Medical Journal of August 8th, the name "O. Devers" should be O. Ievers.

IMPERIAL YEOMANRY.

Mr. William S. G. Kidd, late Surgeon-Captain 1st Scottish Horse, to be Captain Scottish Horse, March 30th, 1903.

Surgeon-Captain J. Anderson, M.B., from the 5th (Perthshire Highland) Volunteer Battalion the Black Watch (Royal Highlanders), to be Lieutenant Scottish Horse, March 30th, 1903.

Mr. James A. Taylor, M.B., to be Surgeon-Lieutenant Scottish Horse, March 30th, 1903.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Captains J. McG. Robertson, M.B., and A. Moyes, M.B., the Glasgow Companies, to be Majors, August 8th.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

Surgeon-Lieutenant R. A. Nesham, 1st Northumberland, to be Surgeon-Captain, August 8th.

VOLUNTEER RIFLES.

Surgeon-Lieutenants R. J. Morris, 1st Volunteer Battalion the King's Own (Royal Lancaster Regiment), and R. Fielding Ould, M.D., 4th Volunteer Battalion the King's (Liverpool Regiment), are promoted to be Surgeon-Captains, August 8th.

Surgeon-Captain W. G. Brett, 1st Volunteer Battalion the Dorsetshire Regiment, resigns his commission, August 8th.

VOLUNTEER OFFICERS' DECORATION.

This decoration has been conferred upon the following officers: Surgeon-Lieutenant-Colonel A. T. Wear, 1st Newcastle-on-Tyne Royal Garrison Artillery (Volunteers); Surgeon-Major W. S. Symes and Surgeon-Captain W. Moxon, 2nd Volunteer Battalion the Sherwood Foresters (Nottinghamshire and Derbyshire Regiment); Surgeon-Lieutenant-Colonel J. W. Martin, M.D., 1st (Hallamshire) Volunteer Battalion the York and Lancaster Regiment; Surgeon-Major W. Pooley, 2nd Volunteer Battalion the Lancashire Fusiliers.

PROMOTION AND PENSIONS IN THE INDIAN MEDICAL SERVICE.

India writes: In the British Medical Journal of July 4th, in the article entitled "Indian Medical Service Promotion and Pensions," attention is drawn to the fact that a number of administrative appointments have been abolished. In Bengal alone the number has been reduced from thirteen to six. The same economy has, of course, been practised in other Presidencies. For instance, not many years ago there were three Principal Medical Officers in Burmah; this number was subsequently reduced to two, whilst early in 1902 one of the remaining two was abolished; so that at the present time there is but one Principal Medical Officer for the whole of Burmah, and this in spite of the fact that Burmah has increased so much in military importance that it has recently been found necessary to convert it into a lieutenant-general's command. In the above-mentioned article it is pointed out how the reduction of administrative appointments has already considerably lengthened the period a medical officer has to serve before he can hope to be promoted to an administrative appointment, and in fact renders it almost impossible for a man who enters the service over 25 years of age to obtain a pension of more than £500 a year, but its effect upon the junior ranks has not been stated. It used to be no unusual thing for a medical officer of less than two years' service to obtain "pucca" (substantive) medical charge of a regiment. Now, however, the block in the senior ranks, caused by the reduction of the number of administrative appointments, prevents regiments from falling vacant as frequently as of old. Consequently a medical officer at the present time has often to serve four or even five years before he obtains "pucca" medical charge of a regiment, and therefore not only loses Rs. 50 a month, which he would obtain if in substantive charge, but is also far more liable to undergo the frequent expensive changes of station which are so hard on the younger members of the service. Again should an officer wish to avail himself of privilege leave to which he may be entitled, he will only draw his pay of rank whilst on leave or Rs. 100 a month less than he would draw if he had substantive medical charge of a regiment. On the other hand, should an officer after a few years' service enter civil employment he finds a similar condition of affairs. The senior officers instead of obtaining an administrative appointment after about twenty-five years' service remain in their civil appointments, until obliged to retire by the age limit. The result of this is that it may be three or four years after entering civil employment before an officer can become "pucca" in civil, and this affects him even more than his military *confrère*, for not only like his military brother does he lose Rs. 50 a month, because he has no substantive charge, but until he becomes "pucca" in civil, his service in civil employment does not reckon as service towards the furlough pay of £500 a year, which is now almost the only remaining attraction of civil employ.

INDIAN MEDICAL SERVICE.

The following is the list of candidates for commissions in His Majesty's Indian Medical Service who were successful at the competitive examination held on August 3rd and following days:

	Marks Gained of a Possible Total of 5,100.		Marks Gained of a Possible Total of 5,100.
R. Kelsall	3,729	E. T. Harris	3,159
J. H. Burgess	3,646	C. J. Brierley	3,118
C. H. Brodribb	3,599	R. F. Steel	3,097
J. M. C. A. Macmillan	3,448	G. W. Maconachie	3,064
C. A. Gill	3,361	J. B. D. Hunter	3,061
W. E. J. Tuohy	3,285	A. C. Ingram	3,046
G. F. I. Harkness	3,253	A. W. M. Harvey	3,031
F. T. Owens	3,242	E. W. C. Bradfield	3,024

Forty-one candidates, of whom 23 had University degrees, competed for 16 appointments. Twenty-nine were reported qualified.

A GENERAL HOSPITAL FOR THE UNITED STATES ARMY.

There is said to be a hope that the incoming Congress may be persuaded to provide for the construction of a great modern military hospital in or near Washington, such as was proposed to the last Congress. The Surgeon-General of the United States Army will exhibit to the responsible committees of both Houses plans and specifications of an institution adapted to the needs of the service to be established at Washington or elsewhere. It is estimated that a general hospital equal to the needs of the service and capable of great educational usefulness in connexion with the army medical school could be built for £50,000.

The temporary rank of Captain in the army granted to temporary Lieutenant M. Taylor is dated July 2nd, 1902, and not as stated in the *Gazette* of September 9th, 1902.

ASSOCIATION NOTICES.

BRANCH MEETINGS TO BE HELD.

East Anglian Branch.—Preliminary announcement.—The autumn meeting of the East Anglian Branch will be held at Sudbury, Suffolk, on Thursday, September 10th. The Cambridge and Huntingdon Branch has accepted the invitation of the East Anglian Branch to be their guests at this meeting. Any member wishing to read a paper or show cases or specimens is requested to communicate as soon as possible with B. H. Nicholson, Honorary Secretary, East Lodge, Colchester.

A Naval Surgeon Drowned.—The body of Surgeon W. A. Illingworth, R.N., was found in the sea on August 12th at Portsmouth. He had been missing for a week, and is believed to have fallen into the water while getting in a boat to cross Portsmouth Harbour at night.

A Campaign against Weeds.—Believing that weeds growing in the city streets and on vacant lots furnish shelter for microbes and filth of all kinds, and are also the cause of certain forms of asthma and hay fever, the Health Board of Denver has organized a battalion of men armed with scythes and mowing machines to exterminate such plants.

UNIVERSITIES AND COLLEGES.

EDINBURGH UNIVERSITY.

THE following is the official list of passes at the recent professional examinations for degrees in medicine and surgery:

First Professional Examination.—A. D. Anderson, J. L. Annan, Marion H. Archibald, M.A.; J. C. Ashton, E. Banks, C. B. Baxter, C. S. Baxter, J. H. Bell, A. E. Bennee, J. H. Bennett, Mary F. Bignold, F. H. Bradley, J. A. Brand, E. A. Brummitt, T. Buchan, T. Burrell, L. A. P. Burt, J. A. R. Cargill, R. J. Chapman, F. M. Chrystal, C. H. Corbett, D. Cotterill, T. Craig, H. C. D. Cross, F. W. M. Cunningham, G. H. Dart, S. K. Datta, B.A.; Margaret E. Davidson, T. Derrick, P. S. Dias, C. A. A. Dighton, Joanna M. F. Drake, G. L. Duncan, J. Eaves, L. T. Eden, R. Edwards, J. Letitia D. Fairfield, S. B. Faulkner, E. M. Figaro, T. Y. Finlay, W. S. Forbes, P. J. Garvey, D. Geddis, G. H. R. Gibson, J. B. Gibson, M.A.; Grace H. Giffen, J. Gilmour, I. M. Grant, J. G. Greenfield, A. R. Gunn, H. F. G. Hall, J. K. Hamilton, F. G. Harper, Hester M. Henderson, A. F. Hewat, M. Heyns, J. K. A. Hofmeyr, J. H. Horne, T. J. Hughes, R. L. Hutton, S. Jackson, R. H. Jamieson (with distinction), T. A. Johnston (with distinction), G. G. Jolly, S. W. Joubert, Beatrice Kippenberger, J. G. de Kock, D. Lees, G. L. Little, J. Lorimer, T. Lyon, A. M. Macarthur, D. M'Cracken, A. Macdonald, I. C. Mackenzie, Ada J. Macmillan, D. J. M'Rae, S. E. Malherbe, J. A. Manifold, F. W. Michael, G. G. Middleton, A. F. W. Millar, A. P. Mitchell, J. Muckart, J. J. H. Nelson, Katharine B. A. Nelson, F. H. Nixey, C. F. Pattie, G. R. Pillai, W. J. Porteous, D. H. Rai, B.A.; G. Raubenheimer, G. J. Reidy, Barbara Richardson (with distinction), C. L. D. Roberts, A. N. Robertson, D. Robertson, E. Sharpe, F. F. S. Smith, Dorothy W. Stevenson, A. E. Tait, K. R. Tampi, B.A.; R. A. Taylor, M.A.; C. H. Tewsley, D. Thomson (with distinction), W. Thomson, W. W. Thomson, V. F. Usher, A. M. Vlok, Helen M. Wakefield, J. C. B. Williams, G. S. Williamson, J. Wilson (with distinction), Maria P. Winning, W. A. Wyllie.

Second Professional Examination.—D. C Alexander, A. C. Alport, W. Anderson, G. S. Banks, D. M'F. Barker, W. J. E. Bell, J. W. Bingham, E. J. Black, C. E. Blair, R. A. Blake, G. Britto, Elizabeth H. Brook, J. W. Cairns, T. Campbell, H. M. Cargin, N. S. Carmichael, Marjorie Duake Cohen, Agnes M. Cowan, F. W. Cragg, A. B. Darling, H. A. Edwards, H. F. Fenton, C. N. Finn, J. F. Gallagher, J. A. Glover, M.A.; J. M. Grant, J. Green, E. J. C. Groves, J. A. Gunn, M.A.; J. T. Gunn, R. W. D. Hewson, R. M. Liddell, J. A. Loughridge, F. J. Luck, J. B. Mackenzie, M. Mackinnon, A. C. M'Master, R. W. D. Macrae, W. Magill, Ada E. Miller, F. C. Mills, H. B. Morris, H. Mowat, R. E. Moyes, E. B. Munro, R. E. U. Newman, H. J. Norman, C. R. O'Brien, D. H. Paul, J. L. Pearce, D. E. C. Pottinger, G. Raffan, T. E. Roberts, J. R. Robertson, W. L. Robertson, H. Sauzier, A. Simpson, S. A. Smith, W. T. Smith, W. B. Tannahill, R. B. Thomson (with distinction), F. J. G. Tocher, A. Todrick, J. H. du Toit, W. H. Welsh, F. P. Wernicke, Marian E. Wilson. Old Regulations; Grace H. Giffen, R. W. Telford.

Third Professional Examination.—D. J. Anderson, W. F. Archibald, G. G. Bartholomew, W. S. M. Brown, H. C. Buckley (with distinction), V. T. Carruthers, E. A. Elder, J. J. M'L. Falconer, L. Gavin, O. M. Gericke, A. G. Glass, A. M. Gloag, W. Godfrey, D. Golding, H. V. Goldstein, V. R. Gorakshakar, W. Jarvis, F. Jung, S. W. S. Leary, A. P. G. Lorimer, S. A. M'Clintock, J. MacKenzie, Amy M. Mackintosh, A. Malseed, M. M. Mamourian, J. B. Mears, V. Moralejo, J. Morris, D. S. Murray, W. Patton, W. J. D. Robertson, J. Robinson, B.Sc.; L. H. Skene, C. J. Smith, R. A. L. van Someren, A. Stephen, M.A.; G. Stewart, H. M. Thompson, R. S. E. Todd, M.A., B.Sc.; Rose C. Townend; Helen R. Vickers. Pathology only: H. Ferguson, C. Rose Greenfield, A. E. C. Rees, B.A.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN Ordinary Council was held on Tuesday, August 4th; Mr. John Tweedy, President, in the chair.

Issue of Diplomas.

Diplomas of Membership were issued to 120 candidates found qualified at the late examination. The Diploma in Public Health of the two Colleges was granted to 17 candidates.

University of Birmingham.

This University was added to the list of Universities whose graduates may present themselves for the Examinations of the Fellowship without first becoming members of the College under Paragraph 2, Section IV, of the Regulations for the Fellowship.

Loan of Museum Preparations.

Facilities were offered to the University of London for holding the examinations in Pathology of the University at the College instead of the Examination Hall, with the object of preventing the injury likely to be caused in course of time to the museum specimens by removal from the College premises. The loan of museum specimens to the Army Medical Department for examination purposes was renewed for another year.

Redecoration of the Museum.

It was decided that Rooms Nos. II and III of the Museum should be repainted during the vacation. This will necessitate the closure of the entire museum from August 8th until October 1st, 1903.

Report of the Finance Committee.

The balance of income over expenditure amounted this year to £2,004. This is less than the exceptional amount realized in the preceding year; but it must be borne in mind that the "extraordinary expenditure" has amounted to £342, and that the "special expenses of the museum" have exceeded the normal amount by some £400. Against these causes of additional expense must be set the reduction effected under the head of the "laboratories." But, having regard to all the circumstances involved, the Committee is well satisfied that on this occasion the balance has reached the sum of £2,000—a margin which it has from time to time suggested should be kept in view as the standard excess of income over expenditure. During the year the investments of the College have been increased by the purchase of £500 Local Loans 3 per cent. Stock, and a sum of £1,000 has been placed on deposit with the bankers of the College with the object of accumulating a sufficient sum to redeem the land tax on certain portions of the College premises.

Board of Examiners in Dental Surgery.

Mr. Sidney Spokes, M.R.C.S., was elected a member of the above Board.

Report from the Committee on the Physical Disability of Recruits for the Army.

A report was submitted, at the request of the Home Office, on the above subject.

General Medical Council.

A vote of thanks was passed by the Council to Mr. Bryant for his services as the representative of the College on the General Medical Council.

The consideration of a letter from the President of the General Medical Council in regard to the character of certain preliminary examinations was postponed until October.

First Professional Examination, etc.

A report of the Committee appointed by the two Colleges to consider the above, was entered on the minutes, but postponed for discussion until October.

Donation to the Library.

The thanks of the Council were passed to Professor Retzius, of Stockholm, for his presentation to the Library of the following works: Thirty tracts by Professor Retzius himself or in collaboration, and 11 volumes of his own and his father's works, including *Anthropologia Suecica* and the *Anthropology of the Finns*, and his edition of Johannes Muller's letters to Anders Retzius.

Date of Next Council Meeting.

The date of the next Council meeting was fixed for Thursday, October 15th, 1903.

OWENS COLLEGE MEDICAL SCHOOL.

THE annual statement regarding the Medical Faculty of Owens College has just been issued, and from it we gather that during the academic year 1902-3 the total number of students in this department was 357 (including 9 women students). The following figures show the numbers graduating and qualifying at the Universities and Licensing Boards, also those preparing for these qualifications: For Victoria University for the First Examination 25 passed Part I and 20 Parts I and II. For the Second Examination 52 passed one part and 5 both parts. For the Final Examination Part I 44; Part II, which means the number taking M.B. and Ch.B., 39, and for M.D. 9, of whom 5 are commended for their dissertations. For the Diploma in Public Health 4. For the University of London 6 took the Preliminary Scientific (M.B.), 4 the intermediate M.B., 2 B.S., and 2 M.D. For the primary Fellowship of the Royal College of Surgeons of England 5, and for the Final 1. For the Conjoint Examination 9 completed the Final, 15 a part of this Examination. For the Second Examination 9, and for the First Examination Part I 9, Part II 27, Part III 8. For the Apothecaries' Hall 14. Licentiates in Dental Surgery 15.

MEDICO-LEGAL AND MEDICO-ETHICAL.

"BLAUD'S PILLS."

ACCORDING to a report which appears in the *Times* of August 8th, Parkes Drug Stores (Limited), of High Street, Camden Town, were summoned before Mr. Mead for selling on June 5th at their branch establishment in Holloway Road iron tonic pills (Blaud's formula) which were deficient in ferrous carbonate to the extent of 78.5 per cent.

Mr. Bramall prosecuted for the Islington Borough Council; Mr. Bonsey (instructed by Mr. Kirby) was counsel for the defence.

Mr. Bramall said that Blaud's pills were a common specific for poorness of blood, but unless they contained 20 per cent. of ferrous carbonate they were of little or no value as medicine. In this case 1s. 4d. was paid for a bottle of the pills, and the analysis showed that they only contained 4.3 per cent. of ferrous carbonate. Some of the carbonate had, however, oxidized through long keeping or defective manufacture—turned practically to rust—but giving credit for this rust the original ferrous carbonate could not have exceeded 8.4 per cent., or a deficiency of 60 per cent.

Inspector Ward gave evidence as to the purchase. He paid 1s. 4d., and said that he could get genuine Blaud's pills in similar quantity for from 6d. to 10d. at other shops.

Dr. Teed, public analyst of Islington, said that in the current edition of the *British Pharmacopoeia* iron pills were described. This formula was practically the same as the formula for Blaud's pills, which appeared in the addenda of a previous edition of the *British Pharmacopoeia*. Apparently that formula was copied from the French *Codex* of 1866, the editor of which obtained it from a formula contributed by Dr. Blaud himself to *Le Bulletin Général de Thérapeutique* of 1831. This journal was the official organ of the French Academy of Medicine. The formulas varied in detail, but essentially they were the same, for all stipulated that Blaud's or iron pills should contain 20 per cent. of ferrous carbonate.

Mr. John Humphrey, editor of the *Pharmaceutical Journal*, said that he was a pharmaceutical chemist, and had studied the history of Blaud's pills. Dr. Blaud was a French physician, and he discovered that iron as a carbonate could be assimilated by the blood. The quantity of ferrous carbonate which he found necessary to make a pill was 20 per cent.—the nature of the packing was immaterial.

Mr. James Ince, of Alfred Road, Acton, for 14 years lecturer to the Pharmaceutical Society, gave similar evidence.

Mr. Bonsey said it was expressly stated on the label of the bottle that the pills were not made in accordance with the formula in the *British Pharmacopoeia*.

Mr. Mead: But you call them Blaud's pills.

Mr. Bonsey: We say that no formula exists for Blaud's pills; and, further, that the pills we sold are a proprietary medicine, and, as such, protected by the Act.

Mr. Mead held that the purchaser of Blaud's pills was entitled to get pills made in accordance with the formula for iron pills of the *British Pharmacopoeia* or the Blaud pills of the French *Codex*.

Previous convictions under the Food and Drugs Act having been mentioned, Mr. Mead imposed a fine of £50, with £10 10s. costs.

REFUSAL TO PAY FEES.

Exceptional Case.—A. and his partner attended the case of a patient who had injured his right leg; after four days the wife said that she had been told that the leg was broken; their services were dispensed with, and B., a former medical attendant, was called in and took charge of the case. After another four days A. received a letter declining to pay his fees on the ground that he had blundered over the case, and had caused much pain and extra expense; he has had no communication from B.

*** We should advise our correspondent, if he is quite sure of his position, to put the matter in the hands of a solicitor, and insist upon being paid his fees. If the patient was dissatisfied with the treatment, he acted within his rights in dismissing his medical attendant and obtaining the services of another, and we do not see that B. acted improperly by taking charge after A. had been dismissed.

NEWSPAPER PUFFS.

Fair Play.—Is not "fulsome" rather strong language to apply to the editorial statement that "the vacancy could not be better filled?" We agree with our correspondent, however, that it would be better if editors of local newspapers refrained from any comment, favourable or otherwise, upon the candidates for medical appointments.

COURTESY CALLS.

Enquirer.—The rule is, except in large towns, that new comers should call upon the resident practitioners, who should return the call within a reasonable time.

S. P. H.—It is stated by the company referred to that they no longer canvass for members for their medical department, and information has been received from several quarters that this is the case.

HOSPITAL AND DISPENSARY MANAGEMENT.

WEST NORFOLK AND LYNN HOSPITAL.

On Thursday, July 30th, a new operating theatre at the West Norfolk and Lynn Hospital was opened by the Countess of Leicester. The cost was defrayed by public subscriptions in the neighbourhood, their Majesties the King and Queen heading the list with a handsome donation. A letter from Sir Dighton Probyn, wishing success to the hospital on behalf of their Majesties was read by Colonel Seppings, the chairman.

The Countess of Leicester was received by the chairman and members of the weekly Board associated with whom were the members of the medical and surgical staff and Mr. Bruce Clarke, who had come down to deliver an address on the occasion. The architect (Mr. Green) and Colonel Seppings handed a silver key of the new theatre to the Countess of Leicester, who unlocked it and declared it open for use. The guests, among whom were many of the leading county families, went round the hospital and inspected the wards and the new theatre, and then adjourned to a large marquee to hear an address by Mr. Bruce Clarke. After recounting the leading features in the history of the hospital since its foundation in 1833, Mr. Clarke dwelt on the necessity of an operating theatre fitted with all modern appliances. He pointed out that our own countryman, Lord Lister, had shown that blood-poisoning was a preventable disease; that it was introduced from outside, and did not depend on anything that was circulating in the body of the individual before his injury was inflicted or his operation performed. A theatre like the one the Countess of Leicester had just opened not only conferred benefits on the patients of the hospital, but on the whole neighbourhood, as it enabled the surgeons to carry out a higher standard of work, and add greatly to their surgical experience. He concluded by stating how much pleasure it gave him to come to Lynn and assist at the opening of the new theatre, more especially because his father had been a member of the weekly Board of the West Norfolk and Lynn Hospital, and he himself had been born within a few miles of the place where the hospital now stood.

After Mr. Bruce Clarke's address, Colonel and Miss Seppings entertained the company in another tent, where tea and other refreshments were served.

THE WARNEFORD ASYLUM, OXFORD.

The report of the Medical Superintendent of the Warneford Asylum, Oxford, Dr. James Neil, for the year, 1902, shows that 33 patients were admitted, 15 men and 18 women, 5 of whom were return cases, 6 transfers from other asylums, and 2 voluntary boarders. The latter both left again during the year, the one being recovered, and the other considerably improved. Besides these, 15 other patients were discharged "recovered," 1 as not improved, and 7 transferred to other asylums. The deaths were 7 in number. The average number of patients under treatment was 94, and the ratio of recoveries to admissions, excluding those transferred from other asylums, was 53.6, and the percentage of recoveries to admissions since the asylum was opened in 1845 now equals 33.6 per cent. It is to be remembered, however, that in asylum phraseology a patient remains "recovered" so long as he does not return to the same asylum. The report of the Commissioners in Lunacy is favourable, and, after analysing the payments received from patients, they add "It is evident that the Hospital is not disregarding its functions as a charitable institution." In this connexion it may be noted that the asylum, of which the chief source of income is the Warneford Trust Estate, is intended for the benefit of patients from the professional and educated classes whose friends are not in a position to pay the fees of ordinary private asylums. Its trust income has shrunk of late to the extent of £300. The Treasurers are Barclay and Co., Oxford.

WEST SUSSEX COUNTY ASYLUM.

The report of the West Sussex County Asylum for the year ending March 31st, 1903, refers to the first completed year's work since the erection of the new blocks for 200 women and 100 men. The statistical return, the accounts, and the report of the visiting committee all cover different periods; so the report, as a whole, is less valuable than it otherwise would be. The medical superintendent's report shows that 282 patients were admitted, and that on the 31st December, 1902, the total number under treatment was 728. Of these, 511 belonged to West Sussex, and 217 were boarders from other counties or private patients. Of deaths during the year there were 53, while 48 patients were discharged as recovered, 33 as relieved, and 42 as not improved. The average number of patients under treatment was 699, and the average gross cost a head for each week 11s. 9½d., including, apparently, all charges except interest on cost of buildings, etc. In 34.39 per cent. of the cases admitted heredity appeared to play a part in causing the onset of mental disease, while in 12.4 per cent. intemperance seemed to be the probable cause. In one of the several lunacy tables given the recoveries during 5½ years would seem to equal 12.24 per cent. of the admissions. As elsewhere, however, cases are only counted as "relapsed," and therefore deducted from the "recoveries" when they are readmitted into this particular asylum. So the real history of these recovered patients is unknown.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

THE NOTIFICATION OF INFECTIOUS DISEASES BY TELEPHONE.

In a recent issue of the *Glasgow Herald* Dr. T. Colvin urges upon the Health Committee of the City the importance of allowing preliminary notification of infectious cases by telephone and the prompt removal to hospital of all cases thus notified. There should be no difficulty in at once making the necessary arrangements for carrying out this suggestion if it is not already done. Indeed, we believe that an inquiry addressed to the health departments of the majority of our great towns would show that to some extent it is already in operation. If medical practitioners are willing to notify cases through the telephone much time can thus be gained; and as the practitioner is the guardian of the health of the families attended by him, he is by this means fulfilling the highest ideal of his work. If medical practitioners are willing to notify promptly, every sanitary authority should, as the guardian of the public health, be equally willing to make arrangements for the prompt reception of such notifications, and for the immediate removal of patients not efficiently isolated at home. It is only by such prompt removal that the utility of hospital isolation can be realized, and the expense of hospital administration recouped in the public interest. There are no Sundays and no Saturday afternoons in efficient sanitary administration, any more than in the work of the family physician; in both instances the necessary arrangements must be made to prevent any evil consequences arising from delay.

THE SALE OF BREAD.

A Correspondent draws attention to the "grave danger to the public health" constituted by the sale of bread "side by side with many deleterious and obnoxious articles in places that are utterly unfit" for the exposure of food. It is notorious that bread is occasionally exposed for sale in oil shops, greengrocers' shops, "in parlour windows, and in juxtaposition with old clothes and even marine stores." Happily the number of instances of sale under such circumstances is on the decline, but they are still too numerous, and we quite agree with our correspondent that the sale of bread under such conditions is objectionable, although it is impossible to point to instances of disease being spread in this way. Some pressure may be brought to bear by sanitary inspectors to ensure the more judicious placing of bread exposed for sale in miscellaneous shops; but we look rather to an improved standard of public taste than to legislative enactments to remedy the present evils in this direction. Already there are indications of improvement. The instances in which a greengrocer's and a fishmonger's business are combined or in which an oilman sells bread are declining in frequency. The selling of butter and of tea and coffee in shops distinct from those engaged in general grocery is another indication in the same direction, though there is no reason, if proper arrngements be made, why a grocer should not with perfect sanitary propriety be able to sell all the miscellaneous goods coming within his province. Classification and scrupulous cleanliness are, however, necessary if this is to be done without offence.

THE USE OF ANTISEPTICS IN FOOD IN NEW SOUTH WALES.

The Government of New South Wales is to be congratulated on the regulations which, acting on the advice of Dr. Ashburton Thompson, have been made under the Public Health Act of 1902. Section LXXXVI of this Act places upon the Board of Health the duty of regulating the use of chemical drugs for the preservation of food. The section is so worded that the Board cannot either forbid the use of any particular preservative or the mixture of preservatives with any particular food. This difficulty has been got over by permitting the use only of "one one-thousandth of a grain per pound," which is for practical purposes tantamount to unconditional prohibition. Read in this way all preservatives are forbidden to be mixed with milk and cream intended for consumption as such. This goes slightly further than the proposals of the Departmental Committee on Food Preservatives in this country, besides being already in operation instead of being merely a pious opinion. The Public Health Act of New South Wales, it may be added, requires that all foods which are mixed with preservatives shall be legibly labelled with the nature of the preservative, and with the proportion in which it is present. The list of preservatives given in the schedule and the amount permitted, with the exceptions already indicated, are as follows: Of sulphurous acid not more than 1½ gr., of salicylic acid or benzoic acid not more than 1 gr., and of boric acid not more than 10 gr. per pint of liquid or per lb. of solid food. In the following foods none of these antiseptics must be mixed, save in the proportion of $\frac{1}{1000}$ gr. per lb. or per pint: Milk, including condensed milk, canned and bottled foods, jams and fruits, aërated waters and temperance drinks, fresh fish, vinegar, sauces, and pickles. The same rule applies to cream "for consumption as such," boric acid up to 10 gr. being apparently allowed for clotted cream, and sulphurous acid and boric acid for preserved fish and flesh, except bacon and ham.

It is clear that the Board has exercised great care and discretion in issuing its regulations. Acknowledgement is made of the use made in framing the regulations of the report of the Departmental Committee of the English Local Government Board, and it is pointed out in a semi-official document that those who in respect of this report have fixed their attention exclusively on the formal recommendations with which

it concludes have but an imperfect notion of the opinions and advice the Committee really entertained and gave. Thus, while the English Local Government Board will probably not adopt similar regulations based on its own report for several years to come, the Board of Health of New South Wales has promptly acted in the interest of the public health in a manner on which its responsible advisers can be heartily congratulated.

GUARDIANS AND MIDWIFERY ATTENDANCE.

ESSEX, who is a district medical officer, writes to say that he was one evening called out by a stranger to attend his wife in confinement. He found a woman in labour who had been recently married. The labour was long and difficult, necessitating his attendance throughout the night, and in the morning the patient was delivered by forceps of a stillborn child. When convalescence ensued and our correspondent paid his last visit, and asked the patient for his fee, she told him she had no means and could not pay. Application was then made by the doctor to the guardians for them to pay him the usual fee for such a case. This they declined to pay, giving as a reason that they had no power to do so. A long correspondence ensued with no satisfactory result, and "Essex" asks what he ought to do, as he still believes that the guardians have the power to pay him for his attendance on this case.

*** We question whether the guardians have the power to pay any fee for this case. Our correspondent attended the patient at the request of her husband, and we do not understand that the question of his being paid by the guardians was ever discussed, or even ever thought of, till the patient was convalescent and the fee could not be obtained from her. Under such circumstances, if the guardians paid for her attendance they would be paying her husband's back debts. This would be very unusual and probably illegal. The only legal claim our correspondent has is on the husband of the patient.

SALARY OF MEDICAL SUPERINTENDENT OF ISOLATION HOSPITAL.

M.O.H. writes: Can you kindly tell me what you consider the lowest salary that should be accepted by the medical superintendent of a 10-bed isolation hospital for a district of 15,000 inhabitants. The Board have decided on a yearly salary, not fees. The medical superintendent would not supply drugs, but would dispense. The hospital is one mile and two-thirds from the centre of the town. As the matter is to be decided within a week, a reply by letter, if possible, would be a great convenience.

*** The question is a very difficult one to decide, so much depending on local circumstances. In a hospital with 120 beds known to us a salary of £150 is given. For a smaller hospital like the above £25 per annum might be asked *plus* additional fees, when more than two visits a week are required on the average throughout the year.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8,257 births and 4,139 deaths were registered during the week ending Saturday last, August 8th. The annual rate of mortality in these towns, which had been 13.5, 13.4, and 14.4 per 1,000 in the three preceding weeks, fell last week to 14.3. The rates in the several towns ranged from 5.1 in Burton-upon-Trent, 5.3 in Hornsey, 5.7 in Coventry, 6.2 in Smethwick, 6.8 in Leyton, 7.1 in Barrow-in-Furness, 7.4 in Bournemouth, and 7.6 in Swansea, to 21.0 in Wigan, 21.5 in Burnley, 22.7 in Ipswich, 23.8 in Grimsby, 24.3 in Sheffield, 24.8 in Birkenhead, and 26.6 in Bootle. In London the rate of mortality was 13.0 per 1,000, while it averaged 14.9 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 2.5 per 1,000 in the seventy-six large towns; in London this death-rate was equal to 1.7 per 1,000, while it averaged 2.8 in the seventy-five large provincial towns, among which the highest death-rates from the principal infectious diseases were 5.2 in Walsall and in Newport (Mon.), 6.3 in Warrington, 6.7 in Wigan, 8.3 in Sheffield, 8.6 in Bootle, 8.7 in Birkenhead, and 10.3 in Grimsby. Measles caused a death-rate of 1.6 in Sheffield, 2.2 in Stockport, and 2.3 in Ipswich; diphtheria of 1.1 in Nottingham, and 1.8 in Wallasey; whooping-cough of 1.1 in Sheffield, 1.2 in Rochdale, 1.4 in Reading, and 1.5 in Newport (Mon.); "fever" of 2.4 in Grimsby; and diarrhoea of 4.2 in St. Helen's, 4.6 in Rotherham, 5.0 in Wigan, 5.3 in Sheffield, 5.5 in Warrington, 6.9 in Bootle, 7.1 in Grimsby, and 8.7 in Birkenhead. Of the 8 deaths from small-pox registered in these towns last week, 1 belonged to Birmingham, 1 to Liverpool, 1 to Manchester, 2 to Halifax, 1 to Leeds, and 2 to Newcastle-on-Tyne. The number of small-pox patients under treatment in the Metropolitan Asylums Hospitals, which had been 71, 71, and 66 at the end of the three preceding weeks, was 48 at the end of last week; 4 new cases were admitted during the week, against 7, 12, and 9 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital on Saturday last, August 8th, was 1,771, against 1,710, 1,911, and 1,726, on the three preceding Saturdays; 216 new cases were admitted during last week, against 243, 229, and 237 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, August 8th, 971 births and 478 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality, which had been 15.2, 15.4, and 14.7 per 1,000 in the three preceding weeks, fell again last week to 14.6 per 1,000, and was 0.3 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 11.3 in Paisley and 11.6 in Aberdeen to 19.0 in Leith and 20.3 in Greenock. The death-rate from the principal infectious diseases averaged 1.8 per 1,000 in these towns; the highest rates being recorded in Leith, Glasgow, and Greenock. The 237 deaths registered in Glasgow included 4 which resulted from measles, 4 from whooping-cough, 5 from "fever," and 21 from diarrhoea. Two fatal cases of scarlet fever and 2 of diphtheria were recorded in Edinburgh; 4 of diarrhoea in Dundee, 3 in Edinburgh, 3 in Leith, and 3 in Greenock.

HEALTH OF IRISH TOWNS.

DURING the month ending Saturday August 8th, 1,088 births and 1,221 deaths were registered in six of the principal Irish towns, being a mean average for each week of 407 births and 305 deaths. The mean annual death-rate of these towns, which had been 21.6, 17.6, and 14.3 per 1,000 in the three preceding weeks, went through the following variations in the month: 13.9, 15.6, 14.9, and then jumped up to 21.5 per 1,000. These numbers are respectively 0.2, 2.2, 1.2, and 7.2 per 1,000 over the mean rates during the same period in the seventy-six English towns. The death-rates ranged in these six Irish towns during the month from 5.1 in Limerick and 9.7 in Waterford in the third week, to 23.9 in Londonderry and 26.0 in Limerick in the fourth week. The death-rate from the principal zymotic diseases in the six principal towns averaged during the month 2.8 per 1,000, against 0.55 in the preceding fortnight. The highest rate, 7.6, was reached in Londonderry, while Waterford broke its five-week record of no deaths from zymotic disease by 1 death, due to diarrhoea, in the first week, but has since regained its position. From small-pox only 4 deaths were registered in all Ireland during the month, all of which occurred in the Dublin area; while 20 deaths altogether were ascribed to enteric and 4 to scarlet fever. In Belfast there has been a big jump up in deaths from diarrhoeal diseases, to which 39 fatalities have been ascribed during the past fortnight. The latter period has also seen a rapid variation in the calculated annual mortality, from all causes, which has risen from 5.5 to 26.0 at Limerick, and from 9.7 to 17.5 at Waterford. It is to be remembered, however, that the first-named town has a population of only some 38,000, while that of the latter is under 27,000. In towns of this size, of course, a very small addition to the actual number of deaths makes an apparently violent fluctuation.

MEDICAL NEWS.

THE LONDON HOSPITAL.—The sum of £2,656 8s. 10d. has been handed to the Hon. Sydney Holland, Chairman of the London Hospital, as the proceeds of the ball given in aid of this hospital at the Royal Albert Hall in June by the committee of ladies under the presidency of the Countess of Derby.

COSSHAM MEMORIAL HOSPITAL.—The first meeting of the trustees appointed by the court for the carrying out of the testamentary wishes of the late Mr. Handel Cossham, M.P., for Bristol East, was held on August 6th, the Lord Mayor of Bristol in the chair. The scheme which is to be carried out at once, and has been approved by the Court of Chancery, involves an expenditure of £23,300 for building and furnishing, and the remainder of the money left by the testator, £80,000, is to form an endowment for the charity. The object of the latter is to erect, establish, and maintain a general hospital for the treatment and relief of sick and injured persons of both sexes. The site is on the top of Kingswood Hill, and the building will face south and west. The grounds, which are several acres in extent, will be used by patients, and still leave ample space for a kitchen garden sufficient to supply the needs of the hospital. The accommodation will be for forty-four patients.

A VOLUNTEER NURSING MOVEMENT IN PHILADELPHIA.—The Philadelphia School for Nurses, a branch of the Philadelphia Supply and Medical Dispensary, has organized a volunteer movement for the nursing of the sick poor. A complete system of training in the care of the sick has been established wherein all the essential facts pertaining to practical helpfulness in the sickroom are presented in a brief yet careful way. Over one hundred young women, representing the best families of Philadelphia, are enrolled in the volunteer organization. This part of the work is under the direction of thoroughly trained and competent nurses of wide experience in home nursing and hospital methods. The work as a whole is practically an introduction of the scientific and modern methods of the hospital into the homes of the poor. So important are the results that a movement has been set on foot to establish throughout the Southern States schools which shall minister to the needs of both the white and coloured races. Some large gifts are already available for establishing separate institutions for this purpose, and one has already been organized in Alabama for coloured young women. It is also intended to establish in connexion with the school in the mountain districts a sanatorium which shall receive nervous patients and persons who are predisposed to tuberculosis.

MEDICAL VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BIRKENHEAD AND WIRRALL CHILDREN'S HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

BIRMINGHAM GENERAL HOSPITAL.—House-Physician, resident. Salary at the rate of £50 per annum. Appointment for six months.

BULAWAYO MEMORIAL HOSPITAL.—Resident Surgeon, Salary, £500 per annum.

CANCER HOSPITAL, Fulham Road, S.W.—House-Surgeon, resident. Salary, £47 per annum.

CANTERBURY: KENT AND CANTERBURY HOSPITAL.—House-Physician, resident. Salary, £50 per annum.

CLAYTON HOSPITAL.—Junior House-Surgeon, resident. Salary, £80 per annum.

DOUGLAS: NORLE'S ISLE OF MAN GENERAL HOSPITAL.—Resident House-Surgeon. Salary, £80 per annum

HULL CITY AND COUNTY LUNATIC ASYLUM.—Second Assistant Medical Officer, resident. Salary, £150 per annum.

JENNER INSTITUTE OF PREVENTIVE MEDICINE, Chelsea.—Studentship value £150 for research in the Bacteriological Department.

LANCASHIRE COUNTY ASYLUM, Whittingham.—Assistant Medical Officer, resident. Initial salary, £175 per annum.

LANCASHIRE COUNTY ASYLUM, Winwick, Warrington.—Assistant Medical Officer, resident. Salary, £150 per annum.

MACCLESFIELD GENERAL INFIRMARY.—Junior House-Surgeon, resident. Salary, £50 per annum.

NEWCASTLE-ON-TYNE: HOSPITAL FOR SICK CHILDREN.—Male Resident Medical Officer. Salary, £100 per annum.

NORTHAMPTON GENERAL HOSPITAL.—Honorary Dental Surgeon.

ST. PETER'S HOSPITAL FOR STONE, Henrietta Street, W.C.—House Surgeon; resident. Salary at the rate of £100 per annum.

STOCKPORT INFIRMARY.—Junior Assistant House-Surgeon; resident. Salary at the rate of £40 per annum.

WILLESDEN ISOLATION HOSPITAL.—Medical Superintendent. Salary, £400 per annum.

MEDICAL APPOINTMENTS.

BIRKBECK, Henry C. L., M.B., Medical Referee under the Workmen's Compensation Act for Bridgwater, Chard, Langport, Taunton, Wellington, and Williton, in County Court Circuit No. 57.

BRUCE, R. T., M.B., M.S.Edin., Certifying Factory Surgeon for the Thame District, Oxford.

BULGER, M. J., M.D.Dub., B.Ch., District Medical Officer of the Islington Parish.

CAMPBELL, Peter, M.B., Certifying Factory Surgeon for the Newport District, Fifeshire.

FERGUS, Wm. J. Brereton, M.B., B.Ch., B.A.O.R.U.I., Assistant House-Surgeon and Visiting Surgeon to the Stockport Infirmary.

GODWIN, G. L., L.S.A., District Medical Officer of the Worksop Union.

HARRATT, T. T., M.R.C.S., L.R.C.P.Lond., Certifying Factory Surgeon for the Eye District, Sussex.

HART, J. H., M.R.C.S., L.R.C.P., Assistant Medical Officer of the Wandsworth and Clapham Union Infirmary.

HOWARD, T., M.B., Certifying Factory Surgeon for the Portland District, Dorset.

HUTCHINSON, J. R., M.B., Ch.B.Vict., Resident Assistant Medical Officer of the Chorlton Union.

LAWSON, T. C., M.R.C.S.Eng., District Medical Officer of the Bourne Union.

LEMARCHAND, Arthur W., M.R.C.S., L.R.C.P., Medical Referee under the Workmen's Compensation Act for Barnstaple, Bideford, South Molton, and Torrington in County Court Circuit, No. 57.

MCCLINTOCK, J., L.R.C.P. & S.Edin., District Medical Officer of the Church Stretton Union.

MCLAUGHLIN, J., M.D.(R.P.), Lieutenant-Colonel R.A.M.C., Recruiting Medical Officer at Bradford.

ROBERTS, R. L., M.D.Lond., M.R.C.S., Certifying Factory Surgeon for the Ruabyn District, Denbighshire.

TIBBETTS, T. M., M.B.Lond., M.R.C.S., District Medical Officer of the Dudley Union.

TUXFORD, Arthur W., M.B., L.R.C.P., M.R.C.S., D.P.H., Resident Medical Officer to the Baguley Sanatorium, near Manchester.

DIARY FOR NEXT WEEK.

POST-GRADUATE COURSES AND LECTURES.

Post-Graduate College, West London Hospital, Hammersmith Road, W.—Lectures will be delivered as follows: Monday, 8 p.m., Surgical Cases; Tuesday, 5 p.m., Peripheral Neuritis; Wednesday, 4 p.m., Medical Cases (Medical Wards); Thursday, 5 p.m., On Some Diseases of the Stomach; Friday, 5 p.m., Skin Cases.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 2s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

CLARKE.—On August 5th, at Mena House, Horley, Surrey, the wife of S. Arathoon Clarke, M.R.C.S.Eng., L.R.C.P.Lond., of a son. (Indian papers please copy.)

CORBEN.—On August 7th, at The Grove, Caldicot, Mon., the wife of Charles Corben, M.R.C.S., etc., of a daughter.

COUTTS.—On August 7th, at 50, Wallwood Road, Leytonstone, the wife of F. J. Coutts, M.D., B.S.Lond., of a daughter.

REYNOLDS.—On August 3rd, the wife of B. Gore Reynolds, M.R.C.S Eng., L.R.C.P.Lond., "Silverhowe," College Park, N.W., of a son

WALKER.—At Las Acacias, Durazno, Republic of Uruguay, South America, on June 23rd, the wife of Herbert J. Walker, M.B.Edin., M.D., Uruguay, of a daughter.

MARRIAGES.

GILMOUR—RUTHERFORD.—On August 6th, at the Crichton Memorial Church, by the Rev. Thomas Rutherford, M.A., Minister of Dunkeld (uncle of the bride), assisted by the Rev. John Paton, D.D., Minister of St. Michael's, Dumfries, John Rutherford Gilmour, M.B., F.R.C.P.Edin., Medical Superintendent of Scalebor Park Asylum, Burl-y-in-Wharfedale, near Leeds, to Dorothy, youngest daughter of James Rutherford, M.D., F.R.C.P.Edin., J.P., Crichton House, Dumfries.

JAMESON—HODDER.—On July 15th, 1903, at All Saints, Bellair, Natal, by the Venerable Archdeacon E. Hammick, M.A., Frank Walton, Borough Engineer, Maritzburg, third son of the Honourable R. Jameson, M.L.C., J.P., to C. Kathleen, only daughter of Colonel T. W. L. Hodder, M.B., J.P., Army Medical Staff, retired.

MCLAREN—WILKINSON.—At Capetown on July 13th, Thomas D. McLaren, M.B., Ch.B., District Surgeon, Herschel, third son of the late John R. McLaren, M.A., Edinburgh, to Ada Wilkinson, M.B., Ch.B.Ed., of New Zealand.

ROBINSON—HOEF.—On August 4th, at the British Embassy Church, Paris, by the Rev. P. S. Mesny, Leonard Robinson, M.D.Edin., M.D.Paris, son of the late S. H. Robinson, Esq., of Ghoosery Howrah, Bengal, to Victoria, daughter of Monsieur and Madame David Hoef, of Melun (Seine and Marne), France. (Indian and Australian papers please copy.)

WAKLEY—BARRON.—On Saturday, August 8th, at St. Mary Abbot's Church, Kensington, by the Rev. Prebendary R. Digby Ram, M.A., Vicar of Hampton-on-Thames, assisted by the Rev. G. A. Lewis, M.A. Vicar of Thornton Heath, cousin of the bridegroom, and the Rev. H. H. Lowe, M.A., Thomas Wakley, only son of Thomas Henry Wakley, F.R.C.S., and grandson of the late Thomas Wakley, M.P., to Gladys Muriel Barron, eldest daughter of the late Norman Barron and of Mrs. Norman Barron, of Elberton, Gloucestershire, and granddaughter of the late Dr. G. B. Barron, J.P., of Southport.

WOOLLEY—SCOTT.—On July 29th, at Holy Trinity Church, Weston-super-Mare, by the Rev. T. J. Sewell, Vicar of Lynsted (cousin of the bridegroom), assisted by the Rev. J. Dawson, Vicar of the Parish, Thomas Fisher Woolley, M.R.C.S., L.R.C.P., of Ansty, near Leicester, son of the late William Francis Woolley, J.P. of Stafford, to Jessie Vallance Thomson, youngest daughter of William Scott, R.N., of Plymouth.

DEATH.

TANNER.—On August 8th, at Ben Rhydding, Yorkshire, Esther (Ettie), the beloved wife of John Tanner, M.D., of 19, Queen Anne Street, London, W., suddenly, at last, after a long and distressing illness, aged 57 years.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aetiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

A. G. would like to know where he could get practical instruction in light treatment without having to pay the full fee necessary to become a student of the London or other hospitals.

J. C. would be glad of information as to the water supply of Vienna, especially as to whether the water is reasonably good and safe to drink.

CONVALESCENT would be glad to hear of a convalescent home on south-east coast where a young working man would be received on payment of a few shillings a week.

SOMNOFORM AND NITROUS OXIDE.

SWANSEA would like to learn the experience of country practitioners in the use of these gases for teeth extraction in a country practice. (1) Is somnoform as safe? (2) Which would they recommend in a country practice? (3) What are the dangers? (4) What is the best apparatus? (5) Any other information would be gratefully received.

ANSWERS.

A. S. A.—The treatment referred to is recommended for a variety of disorders, but is chiefly indicated for the relief of sprains, stiff joints, and muscular rheumatism. It is a legitimate and useful form of treatment, but ought to be carried out under the direction and supervision of a qualified medical man.

THE PLAGUE OF FLIES.

M.O.—In regard to our correspondent's question as to an effective remedy for the plague of flies in sick wards, a correspondent writes that at the Poplar and London Hospitals it has been found that small electric fans keep off flies. They cannot settle on patients in a wind. He remembers it was a burn case, where the flies were a most intolerable nuisance, where they first called these fans in aid, with excellent result. The doctor would perhaps settle how near to the patient the fan should be placed, but, of course, the nearer the more effectual it is in keeping the flies away.

CULTURES OF BACILLI.

WE advise our correspondent to apply to Herr Dr. Kral, 1, Kleiner Ring, II, Prague, Austria.

MUSCULAR RHEUMATISM IN CHRONIC BRIGHT'S DISEASE.

Dr. J. STENSON HOOKER writes: In reply to "M.B.." I would suggest his patient trying some electric light baths, followed by electric massage. I should be glad to give him further particulars of this treatment.

OSTEOARTHRITIS.

WIGWAM.—Our correspondent will find the observations of Dr. F. J. Poynton and Dr. A. Paine in the BRITISH MEDICAL JOURNAL, vol. ii, 1902, p. 1414, and vol. i. 1902, p. 79. A good summary of the literature is to be found in Fritz Meyer's article, *Zeit. f. Klin. Med.*, Bd. xlvi. p. 311. See also a monograph by Menzer, reviewed in the BRITISH MEDICAL JOURNAL, vol. ii. 1902, p. 1348.

TREATMENT OF CHRONIC PROSTATITIS.

M.R.C.S. writes: In answer to the query of "Prostate," I recently read the *Pathology and Treatment of Sexual Impotence*, by Victor Vecki, M.D. (London: Rebman, Limited). I think "Prostate" may get some help from the book. (A review of the book appeared in the BRITISH MEDICAL JOURNAL of February 8th, 1902, p. 340.)

DR. JAMES MACMUNN (Finsbury Pavement, E.C.,) writes: "Prostate might refer to Taylor on venereal diseases, or to Hyde and Montgomery or to Bang's or Morrow's systems as the best books. There are many other books, yet I find them all unsatisfactory on the treatment of chronic prostatitis. This disease is best treated by pressure combined with hot followed by cold rectal douching carried out by a double channel instrument described by me (see *The Medical Press*, February 8th, 1893,) and sometimes by the daily use of Petersen's bag, or by massage. Blistering the perineum, and cold perineal douching I always find to increase the symptoms. The counter irritation should be applied to the groins and inside of the thighs, and hot baths gradually made cold, should be substituted for the cold douching. Anthropores are very objectionable. As a means of curing the mucous membrane, the use of steel sounds, gradually increased to a full size, and the application of argent. nit. up to 60 gr. ad. 5j. may be required. Sometimes adrenal extract and eucaine combined do good. Bodily exercise gradually increased greatly contributes to cure, and spite

general opinion, I find occasional gentle horse exercise of marked benefit. The blood stream is diverted to the surface and the concussions the gluteal regions receive relieve the abnormal sensations. "*Festina lente*" is, however, the best proverb and in those treating such troubles to adopt. Belladonna suppositories with, or without iodoform, or ichthyol are good.

NOTES, LETTERS, Etc.

ST. FRANCIS HOSPITAL FOR INFANTS.

DR. RALPH VINCENT (Harley Street, W.) writes: I have received a circular-letter from Mellin's Food, Limited, in which the St. Francis Hospital for Infants is referred to. Reference is also made to statements occurring in the speeches of Dr. Henry Ashby and myself on the occasion of the opening of the hospital. The general tenour of this document may lead some members of the profession to think that the hospital is in some way connected with the use of the preparation known as Mellin's food. I therefore desire to prevent any misconception on this matter. It has never been used in the hospital.

ESPERANTO.

MR. H. BOLINGBROKE MUDIE, Honorary Secretary of the London Esperanto Club, writes: On my return from a most delightful stay with the French Esperantists at Le Havre, I found a letter from an eminent medical gentleman making the following suggestion: That you should be so good as to insert in the next issue of the BRITISH MEDICAL JOURNAL a notice requesting all medical gentlemen willing to receive correspondence in Esperanto to notify the fact on Churchill's circular, which has just been issued. I regret that I did not receive the suggestion in time to see Messrs. Churchill first on the subject, but I trust you will be able to do us this service.

THE TREATMENT OF CONSUMPTION.

R. J. DULBERG (Manchester) writes: I have received so many letters in response to my preliminary note in the BRITISH MEDICAL JOURNAL of August 1st relating to the treatment of consumption by the administration of raw carrot, that it is absolutely impossible for me to reply to all my correspondents individually. I have done so in all cases where the inquirers have mentioned some special reason for writing to me, and none has touched me so painfully as the pathetic appeal of several fellow practitioners to help them in the treatment of members of their own families. May I ask those who have received no replies to excuse my apparent discourtesy? I am not yet in a position to say more than I said in my note, not having finished the investigation upon which I am engaged, and the results of which I will make known at the proper time. But is it not a sad commentary on the much vaunted open-air treatment of phthisis that there are medical men still eagerly looking out for a cure of this fell disease?

TREATMENT OF CONGENITAL PHIMOSIS.

MR. J. F. WOODYAT, M.R.C.S., L.R.C.P. (Halifax) writes: Since making my last communication to the BRITISH MEDICAL JOURNAL on this subject I have modified the operation I described. The modified operation is easy to perform; after it the glans is always left covered by prepuce, and there is absolutely no deformity or oedema left. I have had no experience of the operation of dilatation, but in extreme cases of stenosis I cannot conceive that dilatation alone would cure. Whether dilatation or cutting the stricture is the best method of treatment I must leave to the profession, but I hope both methods will be fairly tried, and the barbarous operation of circumcision given up altogether for congenital cases in infants. In cases of old standing, when the mucous membrane of the prepuce is tough and where it is necessary to cut it away from the glans, circumcision will have to be performed, but in these cases I would advise leaving the healthy skin and only cutting away the diseased mucous membrane. The operation as I now perform it is as follows: Hold the penis between the left thumb and forefinger; retract the prepuce as far as it will go; then cut the stricture on either side (and not on the dorsum as I first suggested) with a pair of sharp pointed scissors held in the right hand. The cuts need not be extensive, but must go well into the submucosa. The prepuce is now separated from the glans and smegma removed. Each incision is now stitched, one suture being all that is necessary for each wound, but the suture must be introduced so as to join the commencement of the cut to the termination, thus making what was a longitudinal incision into a transverse one. After the operation no dressing is required, and the prepuce may be left covering the glans. For a few days it is advisable to retract the prepuce and clear away any discharge there may be around the corona.

A DRUG RASH.

DR. J. A. WILSON (Glasgow) writes: For a patient who complained of abdominal pain some powders containing calomel and opium were prescribed. On the second day thereafter a scarlatiniform rash appeared on the chest and the forearms, and the hands became swollen. The powders were stopped and in two days the rash disappeared. Then they were started again, and the rash disappeared. Over the chest it was distinctly scarlatiniform and it could be traced in lesser degree over the feet, but the forearms and hands were most severely affected. These were swollen and the fingers were stiff and tense. A punctiform vesicular rash developed into blisters between the fingers. In a few days after the powders had been again stopped the rash had died away. She informed me she had had the same experience some years before, after taking chlorodyne. Opium being common to both occasions was probably the cause of the skin disturbance.

THE D.P.H. EXAMINATION OF THE CONJOINT BOARD.

RURAL SANITARY AUTHORITY.—My recent experience may be of service to those medical men registered before January 1st, 1890, who think of taking the D.P.H. of the English Conjoint Board. Ten years ago I passed Part I. of this examination, and as the post of medical officer of health for our district was likely to be vacant before long I determined to get this diploma, thinking by doing so I should stand a better chance of obtaining this post, which, by the way, is in a rural part of the country, and worth £35 per annum. I commenced reading twelve months ago, devoting three hours a day to the subject, and to make, as I thought, assurance doubly sure I took out a three months' course of postal tuition, at the same time obtaining as much practical work as was possible. My original intention was to have presented myself in January last, but as there was no immediate prospect of the post becoming vacant, and although it was most inconvenient and self-sacrificing to spend three hours a day on this particular subject, especially as I was so busy otherwise, I determined to defer the examination until July, so as to make sure of passing. I was rejected! Why? I cannot possibly imagine, for I was a veritable encyclopaedia of public health, knowing all my books almost word for word. My tutor on two or three occasions told me that I would have no difficulty whatever in passing. I am nearly 40 years of age, and have been qualified over 16 years; so you will see this is not the cry of some young medical student, who too often imagines the examiners, and not the examinee, is at fault. There must be something wrong with the examination when a man reads for Part II. only, for twelve months, devoting three hours a day to the subject, and is then rejected. As a result of this experience I would strongly advise those men who were registered before 1890 and are seeking a D.P.H. to choose some other Board unless they wish to run the same risk.

APPENDICITIS AND CIGARETTE SMOKING.

MR. HENRY J. WESTON, M.R.C.S., L.R.C.P. (Lewisham Union Infirmary), writes: With reference to the point raised in a letter from Dr. William A. Caskie (of Glasgow) in the BRITISH MEDICAL JOURNAL for August 1st that appendicitis might be caused or partially accounted for by the over-indulgence in cigarette smoking, I should like to mention that of the cases we have had in here, some of which were operated upon, a large proportion (if not half) have occurred in females, which I presume would hardly support his suggestion, since it is not usual for females of the lower classes to indulge to any large extent in cigarette smoking.

A COMPARATIVE AND BIOLOGICAL STUDY OF THE NATURE OF CANCER.

MR. I. J. E. RENSHAW (Ashton-on-Mersey) writes: In reply to Dr. Graham Renshaw's letter, published in the BRITISH MEDICAL JOURNAL of August 18th, may I draw attention to the fact that zoological pathologists are alive to the question of malignant disease. Dr. Renshaw will find good work has been done by Dr. Woods Hutchinson recently and published in London. With respect to the white rhinoceros I hope Dr. Renshaw will publish the notes of his dissections.

LETTERS, COMMUNICATIONS, ETC., have been received from:
A Messrs. Arnold and Sons, London; A. G.; Anvions; Messrs. Armour and Co., London. **B** Dr. J. H. Bryant, London; Dr H. R. Brown, Maldon; Mr. Burdett-Coutts, M.P., London; Messrs. L. Bulteaux and Co., London; Dr. F. Bushnell, Plymouth; Mr. E. C. Bousfield, London; Mr. L. A. Bidwell, London; W. C. Burns, M.B., Bury; Mr. E. Brooke, Margate; W. B. Bell, M.B., Liverpool; Dr. E. R. B wen, Bargoed; Sir J. Blyth, Bart., London; Mr. E. J. H. Budge, Barry. **C** Dr. E. Cautley, London; Dr. A. J. Crawford, Wanganui; Mr. J. T. Clarke, Perak; Dr. J. Charles, Stanley; Mr. W. M. Chowning, Minneapolis; Convalescent; Dr. F. H. Crowdy, London. **D** Dr. E. Duke, Hove; Dr. T. W. Dewar, Dunblane; Dr. J. T. H. Davies, Leicester; Dr. J. Dulberg, Manchester; Mr. H. A. C. Davidson, Coupar Angus. **E** Enquirer. **G** Mr. A. B. Graham, Milngavie; Dr. L. Grant, Ballachulish. **H** Dr. W. M. Harman, Winchester; Hon. Sidney Holland, London; Hospital Sister; G. J. B. Hope, M.B., West Ayton; Dr. J. Haddon, Denholm; Dr. J. S. Hooker, London; Hakim. **I** Mr. O. Ievers, Eastbourne; India. **J** Mr. W. Jones-Morris, Portmadoc; Dr. R. Jones, Woodford Bridge; J. C. **K** Dr. F. Knight, Swansea; Dr. W. M. Kelly, Worthing. **L** Dr. A. W. W. Lea, Manchester; Dr. H. Lankester, Lynton. **M** M. N.; Mr. H. May, Birmingham; Dr. J. J. Macan, Cheam; Messrs. Mayer and Meltzer, London; J. F. D. Macara, M.B., Durness; Mr. J. MacMunn, London; Mr. H. B. Mudie, London; M.R.C.S.; H. T. Mursell, M.B., London; J. McPherson, M.B., Salina Cruz; Dr. A. Macfadyen, London; Dr. C. D. Muspratt, London. **N** Mr. W. Nettle, Liskeard. **Q** Quaeritur. **R** Dr. A. Robertson, Glasgow; Dr. E. A. Roberts, London; Mr. I. J. E. Renshaw, Ashton-on-Mersey; Dr. J. B. Ronaldson, Ennerdale. **S** Dr. J. A. Shaw-Mackenzie, London; Sandy; P. S. Sturrock, M.B., Dunfermline; M. K. Souttar, M.B., London; Swansea; J. R. Stocker, M.B., Glasgow. **V** F. de C. Veale, M.B., Mumbles. **W** Mr. F. E. A. Webb, Cambridge; W. Wright, M.B., Birmingham; Sir S. Wilks, Bart., London; Mr H. J. Weston, London; Dr. J. A. Wilson, Glasgow; Miss L. B. Wilson, Minneapolis; Would-be Barrister; Dr. W. C. Wilkinson, Preston, Victoria.

BOOKS, ETC., RECEIVED.

Physical Chemistry. By Dr. Ernst Cohen. Authorized translation from German by Martin H. Fischer, M.D. London: George Bell and Sons. 1903. 6s.

Bradshaw's Dictionary of Mineral Waters, Climatic Health Resorts, Sea Baths, and Hydropathic Establishments, 1903. London: Kegan Paul, Trench, Trubner and Co. 1903. 2s. 6d.

The "Handy" Hotel Guide for the United Kingdom. London: Hotel and General Advertising Co. 2d.

De l'Examen de l'Œil au Point de Vue de l'Aptitude au Service Militaire. Par Dr. Barthelemy. Paris: A. Maloine. 1903. Fr.5.

L'Extirpation du Cancer du Sein. Par Dr. Mériel. Paris: A. Maloine. 1903. Fr.4.

Traité d'Analyse Chimique Quantitative. Par Dr. Blas. Paris: A. Maloine. 1903. Fr.6.

Transactions of the Dermatological Society of Great Britain and Ireland. Vol. IX. London: H. K. Lewis. 5s.

A Monograph of the Tsetse Flies (Genus Glossina, Westwood) based on the collection in the British Museum. By E. A. Austen. London: British Museum (Natural History). 1903. 15s.

Serum Therapy, Bacterial Therapeutics, and Vaccines. By R. T. Hewlett, M.D., M.R.C.P., D.P.H. London: J. and A. Churchill. 1903. 5s.

Lessons in Disinfection and Sterilization. By F. W. Andrewes, M.A., M.D., F.R.C.P., D.P.H. London: J. and A. Churchill. 1903. 3s.

Grundriss der Tungenchirurgie. Von C. Garrè und H. Quincke. Jena: Gustav Fischer. 1903. M.3.

The Essentials of Practical Bacteriology. By H. J. Curtis, B.S., M.D., F.R.C.S. London: Longmans, Green, and Co. 1903. 9s.

An Atlas of Illustrations of Clinical Medicine, Surgery, and Pathology. Compiled for the New Sydenham Society. Fasc. XVII. London: H. K. Lewis. 1903. 21s.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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N.B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.

SEVENTY-FIRST ANNUAL MEETING
OF THE
British Medical Association.

Held in Swansea, July 28th, 29th, 30th, and 31st 1903.

PROCEEDINGS OF SECTIONS.

SECTION OF NAVY, ARMY, AND AMBULANCE.

Inspector-General Henry Charles Woods, C.V.O., C.B., M.D., R.N., President.

THE WATER SUPPLY FOR LANDING PARTIES AND NAVAL BRIGADES.

By Staff Surgeon J. Falconer Hall, R.N., M.B.

Owing to the many sudden and unexpected calls on H.M. navy for landing parties in all parts of the world, it is necessary to be always ready to meet such emergencies, and as the water supply for a landing party is of vital importance to its success, I shall try to deal shortly with that subject.

In every landing party a certain number of men under a petty officer should be told off to attend to the water supply, and their sole duty would be to attend to its purification and transport. The men landed must be taught what has aptly been called "water discipline." It is quite easy to tell the men the frightful risks they run from drinking impure water, but it is much more difficult to prevent them, and to get them to have a little patience until a sound supply is procured.

In peace time the bluejackets and stokers ought to receive instructions on the subject of water supplies; this could with advantage be added to the lessons in first aid they receive. It is difficult to train the men in water discipline on board ship, as there is a plentiful supply always procurable, but by the captain's orders this could be done, the men being restricted to a certain quantity per day. In peace time it seldom happens, in exercising landing parties, that the men are absent from their ships for more than a few hours, and during that time no water is allowed to be drunk except what is carried in their water bottles, but the time is so short that no man ought to suffer the least from thirst. The men's water bottles should be filled every morning, and should be full when they start on the march, and not half empty as often happens. The water bottles should be inspected by some officer before starting. The men ought to be taught to economize the supply in their water bottles, in case of any accident with the main supply.

Quantity.—For drinking and cooking 6 pints per day ought to be the minimum, and in hot climates this should be increased to at least 9 pints, and transport should be arranged to allow of this quantity. One will now consider the various methods of water purification. The choice of water will greatly depend on the part of the world where the landing takes place, on general principles the safest waters to use are (1) spring, (2) deep wells (over 50 ft. deep), and (3) rivers clear of town pollution. These qualities of water are many times unattainable, and the only water procurable has to be used; for example, in China the wells were not safe as they were suspected to be poisoned. If possible do not take water from near an old camping ground, as it is almost certain to be contaminated. In some countries rain water might be collected on a tarpaulin, but the amount collected in most cases will hardly compensate for the trouble of carrying the tarpaulin. Rain water is also difficult to store as it contains numerous micrococci and spores of fungi, and if stored for long, in tanks or casks, they get coated with foul matter which rapidly putrefies.

1. *Distillation* is undoubtedly the best method of purifying water, but this is next to impossible to do while on the march; at a standing camp, however, it may be possible. During the stay of the Naval Brigade at Tientsin in 1900 all the drinking water used by them was distilled. A naval engineer converted some of the oil refiners into water distillers, and as the result there were no cases of typhoid or dysentery, and very few cases of diarrhoea. Several forms of distillers have been suggested for armies in the field, but these are all complicated and liable to get out of order, and greatly increase the transport. If the Naval Brigade is landed, say for the protection of a town or village, and not far from its parent ship, the best method of supplying water would be for the ship to distil, and send the water ashore for the men.

Distilled water, if it gives no haze with a few drops of nitric acid and silver nitrate, may be considered quite safe; if a haze should be present, it means the presence of chlorides, and probably other impurities from a leak in the distiller.

2. *Boiling.*—The next best method is to boil the water, but this requires time, and in some countries fuel (wood, coal, petroleum) would have to be carried. (In the Navy coal would have to be carried if no wood is available). The simplest boiler would be a cylindrical one slung on light wheels with a tray underneath for a fire, and light shafts, the apparatus being easily pulled by one man. The Russians have a boiler fitted on a light cart pulled by a pony in which water is kept continually boiling, and tea or beef added so that the troops can have tea or soup on the march without delaying the advance. In China the Russians picked up wood as they marched, and carried no stock of fuel. The Swiss have similar boilers. Mess tins might be used to boil the water in, but the drawback to them would be the quantity of fuel required, and unless very carefully watched the water might only be heated, and not boiled. Boiled water has the drawback of being tasteless and unaërated. If once boiled it is practically safe, and if repeatedly boiled it is absolutely safe. Boiling gets rid of temporary hardness, sulphuretted hydrogen, various iron salts, and renders organic matter harmless.

3. *Filters.*—Filters are often of the greatest use, but only if proper precautions are used. The only practically safe filters for active service are the Pasteur-Chamberland and the Berkefeld, but these have many disadvantages. The Pasteur-Chamberland is an excellent filter; the filtrate is entirely freed from all suspended matter, bacterial organisms and spores, and so is practically sterile. Its disadvantages are its size, its fragility, and its liability to get choked up, as it acts mechanically, and also its very slow rate of filtration. The Berkefeld filter is more convenient for field service, especially in the form supplied for that purpose. Its disadvantages are its liability to get clogged up if muddy water has to be filtered, and the filtering cones require careful handling, as they are easily broken. The greatest drawback, however, is that under certain conditions typhoid bacilli may grow through the filtering medium, and pass into the filtrate; this is most likely to happen if the filter is used intermittently. To make quite certain that the filtrate is pure, the candle must be sterilized at least every third day.[1] The service pattern has a cone 6 in. long by 2½ in. wide, and an output of 58 gallons per hour. The junction of the cone and the metal cap requires special notice, otherwise there may be a leakage of unfiltered water into the discharge pipe. All the remaining forms of filters are practically useless for procuring a pure water free from typhoid and cholera germs. However, as they are useful in getting rid of suspended matter and in purifying the water to a great extent, they are worthy of notice.

In a standing camp the ordinary field service filter will be useful, but it ought to be remembered that it requires about three days before it is in working order, and that the slime on the top must not be disturbed otherwise the filter will not act nearly as efficiently. When the surface layer gets too thick and impermeable it should be removed very carefully. The bactericidal and mechanical action of the surface layer is augmented by the gelatinous film which forms on the surface of the sand granules.

During the advance to Peking from Tientsin a junk or sampan was fitted up as a water-supply boat. Large earthenware jars or kongs were procured, and field service filters made of these as seen in Fig. 1.

No. 1 was used as a settling tank, and had a basin at the bottom which could be pulled up so as to get rid of the mud deposited. The water was allowed to deposit most of the mud, and then 6 gr. per gallon of alum added to bring down the rest. The upper two-thirds was siphoned into the next filter and so on until No. 8 was reached, when the water was quite clear. It was then boiled and placed in storage tanks. All kongs had lids. No well water was allowed as probably poisoned, and the Pei Ho water was like pea soup to begin with, full of mud and organic matter. Four men attended to the boat and the coolies who pulled it, and as the process could go on during the whole day, there was a plentiful supply at night for the Naval Brigade and enough to fill their water bottles in the morning.

Mouth filters are useful; but the carbon block in them must be sterilized, or they may become a source of infection from organisms growing through the block.

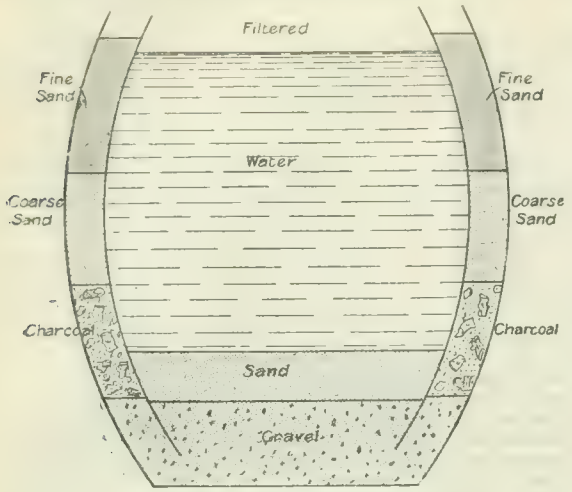


Fig. 1.—Section of Filter.

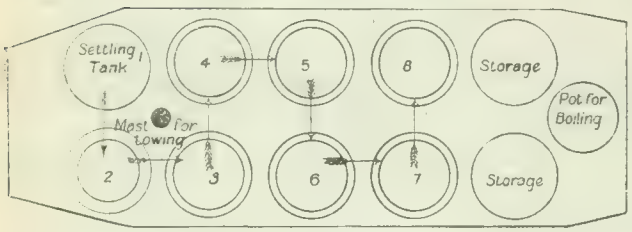


Fig. 2.—Plan of Water Boat.

4. *Chemical Methods.*—Many chemical methods have been suggested and employed; the more important I shall just touch on.

(i) Alum. This acts most efficiently when calcium carbonate is present in the water, as it forms the sulphate, and this with the bulky precipitate aluminium hydrate entangle the floating particles and carry them to the bottom. Alum was used to purify the Pei Ho water in China in 1900, the Nile campaign in 1884-5, and the Indus water in 1868 with good results.

(ii) Porter-Clark process. Lime water is added, which combines with the carbonic acid and forms insoluble carbonate of calcium. This by softening the water renders it less palatable.

(iii) Sodium or potassium permanganate. This oxidizes organic matter, and removes the smell of hydrogen sulphide and offensive odour of cask water, and if manganic oxide is formed it will carry down suspended matter with it. The yellow colour is due to peroxide of manganese, and is not dangerous to health. Alum may be used as well, and may carry down the peroxide. A teaspoonful of permanganate is put in at a time to 3 or 4 gallons of water, stirring all the time, until a permanent red tint is got, and then allow the water to stand for a quarter of an hour before use. Drawback, water not very palatable.

(iv) Bromide method of Staff Surgeon Schlumberg. 0.6 gram of bromide added to each litre of water renders it safe to drink after five minutes. The taste of bromide is removed by adding 0.095 gram sodium hyposulphite and 0.04 gram anhydrous sodium carbonate to each litre treated with the bromide. This method was used in the Soudan in 1898, and water so treated remained sterile for seven days. It is, however, complicated to carry out.

(v) Calcium hypochlorite has also been used, but is unsatisfactory as it does not remove typhoid bacilli.

(vi) Euchlorine. This is an unsatisfactory method.

(vii) Parkes and Rideal. Sodium bisulphite was used 15½ gr. to the pint. This helps to quench the thirst as well, and may be used as lozenges, or tabloids added to water, useful for scouts. The weight and time required are against this method if large quantities of water have to be purified.

(viii) Mineral acids well diluted, such as sulphuric and nitrohydrochloric relieve thirst, and help to purify the water, but the trouble of transport is against their use.

(ix) Citric and tartaric acids may also be used, but merely as thirst quenchers.

(x) Opium is used in India to reduce the thirst.

Method of Conveyance.—In emergency landing parties where no water carts are to be requisitioned, barrels or breakers slung on poles and carried by two men will have to be used. These must be throughly cleaned before starting, and the bungs must fit tightly. In the West Coast kerosene tins are often used to carry water.

Skins and canvas water holders, as used in India, keep the water nice and cool from evaporation, but they want to be thoroughly kept clean, and only pure water put into them. If following the course of a river a water boat would be the best method, a canvas tank inside the boat being used to hold the water.

In conclusion, undoubtedly under active service conditions boiling the water is the best method to get it pure and free from typhoid or cholera germs, but if this cannot be done the Berkefeld filter should be used; but its candle must be sterilized once a day. The chemical methods are practically useless, as for the most part they cannot destroy active bacilli, and are too complicated for the men to understand and carry out thoroughly.

REFERENCE.

[1] Major Horrocks, BRITISH MEDICAL JOURNAL, June 15th, 1901, p. 1471.

A SURGEON'S NOTES WITH THE NAVAL BRIGADE, CHINA.

By Fleet Surgeon LLOYD THOMAS, R.N.,
H.M.S. *Excellent* Naval Gunnery School, Portsmouth.

THE Naval Brigade was composed of 535 officers and men all told, consisting of 19 naval and 7 marine officers, with 509 men.

The naval officers were made up of a post captain in command, 3 lieutenants, 5 midshipmen, 1 warrant officer, 2 medical officers, 1 paymaster, and 1 chaplain. Five other executive officers were variously employed—2 on the British General's staff as A.D.C. and Russian interpreter respectively, 1 as river transport officer, and the 2 remaining attached to the 4-inch guns, which, however, did not reach Pekin.

The 509 men were made up as follows:

Marines	300
Seamen, with 4 12-pounders, ammunition party (chiefly stokers), and pioneers	179
Medical, including stretcher party	30

There were some 110 camp followers, chiefly Japanese.

The medical staff will be seen to consist of 1 staff surgeon, 1 surgeon, 2 sick-berth stewards, 2 privates of Marines as assistants, and a stretcher party of 24 men to 12 stretchers, with 2 second-class petty officers in charge of these latter.

The above were drawn from 7 men-of-war and the Wei-hai-Wei detachment of Royal Marines, and all were landed at Tientsin on the morning of July 30th, after a 44-mile sea and river journey, which started the previous afternoon.

PRELIMINARIES.

Four days were spent in Tientsin whilst final arrangements were being made for the campaign with the China Expeditionary Field Force, under General Gaselee, commanding the British troops.

Two mules were requisitioned from the army, and three were at once supplied, together with an Indian driver, a petty officer being placed in charge.

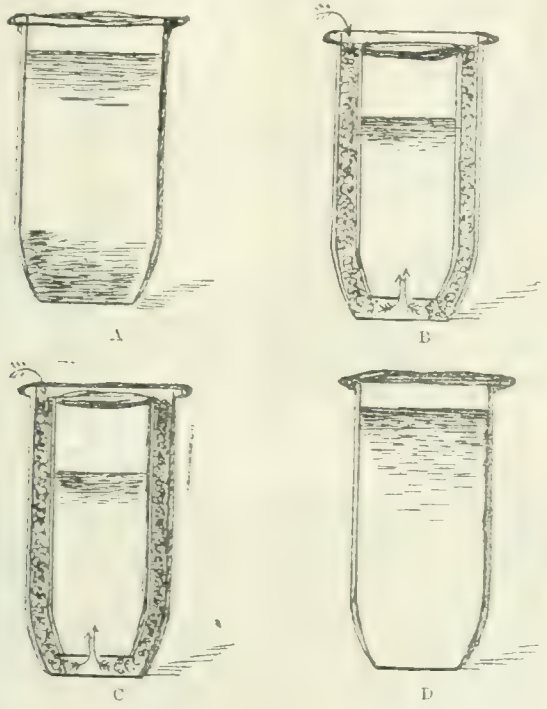
The naval field service chests were arranged pannier fashion, one on each side of a mule, whilst bandages, ready dressings, and emergency medical comforts were packed in two "service yellow painted bags" (the size of a man's kit bag), one on each side of another mule. Further appliances were arranged in a baggage cart and by turns in two junks flying the red cross—"the medical junks." The holds of the medical junks were divided into six compartments, the four foremost ones being given up to water filtration, and the remainder to medical stores. The stores were arranged to supply a period of eight days at the rate of 10 per cent. sick and wounded; at the end of the eight days the army stores were to be drawn upon. A first field dressing was supplied to every officer and man, and directions given as to its use on parade. Waterproof labels were procured to attach to sick and wounded men on being sent to the base or field hospitals. Berkefeld filters were obtained from the army ordnance stores.

A naval base hospital under a staff-surgeon R.N. had been established at Tientsin, and this was replete with stores, both naval, and from sources philanthropic, Red Cross, etc. The latter supplied various concentrated foods, for example, Valentine's meat juice, etc., also medicines in tabloid form, the most useful being perchloride of mercury for antiseptic lotions, also quinine. Light web bandages and vulcanite trays were likewise in abundance, in short all one could desire for field service with a moving column was obtainable. This hospital was in touch with us by river as far as Tungchow, and the army medical junks were available for men requiring removal to the base.

Whilst on the march it was arranged that we should use the army field service hospitals, and at Peking the army were also to receive our serious cases.

Water.

The supply of wholesome water being a fundamental sanitary necessity, no pains were spared to provide practical means for a reasonable supply of it: and seeing that all foreigners in Tientsin boiled and filtered all water before drinking, an elaboration of this system was aimed at, and to this end large eathenware pots (locally known as kongs), glazed externally, and capable of holding about 36 gallons, were obtained. They were disposed of in junks, and the process of filtration may be thus described, with the help of the accompanying sketch.



A is a kong which received the water direct from the river, and when filled alum was used to throw down the lime by forming calcium sulphate and aluminic hydrate, which in its passage carried down both suspended mineral and organic matter to a most astonishing degree. Whilst rock alum lasted it was found sufficient and more economical to pass a lump through the water in the partly-clenched fist.

B consisted of a little kong with a smaller one inside it, which had a hole in its bottom like a flower pot. The space between these two was packed with bits of brick and vegetable charcoal, which latter was in plenty. The surface water from A was baled into the interspace in B, and, when it had completely percolated through into the inner pot, it was lifted into C, where it was treated exactly as in B, for this was only a second filtration.

D was a single kong like A, and received filtered water from C. This was now ready for boiling.

All these kongs were systematically emptied of débris, but were never upturned, the water being transferred from one to the other by an extemporised ladle made out of a tin washhand basin rigidly suspended by galvanized wire like a scales pan.

So as to make the process of filtration continuous, the kong D was constantly emptied and the water boiled in two large iron cauldrons which were procured in Tientsin, supplemented by the ordinary domestic kettle. On the march, however, use was made of a large and lightly constructed iron dish, shallow and shaped like a skimming dish, but with a rounded bottom. This was a native utensil, and always obtainable in the deserted villages and Chinese camps passed *en route*. Their thinness and shape, with large bottom area, rendered them eminently useful for rapid boiling where fuel was scarce. Lastly, ships mess-kettles were used; these are made of tin, are oblong in shape, and flat-bottomed, and are generally used on board to hold tea, soup, and grog. This boiled water was, whenever practicable, subjected to the Berkefeld filter, and, added to its other virtues, we may here suggest the value of this filter as an aërator. This water being ready for use was stored in boats' breakers. We found that this stored water was very fetid, and I suggest as causes the facts, first, that whilst the water was boiling and still giving off H_2S from the sewage it contained, it was for want of time hurried into the breakers, the woodwork of which absorbed the gas. Secondly, the breaker surface, being moist, absorbed any other foul gases from the surrounding atmosphere. Permanganate of potash was found very efficacious in lessening the smell.

As Tientsin had been in a state of siege and was full of troops alum was scarce, but we secured all that was available from shops and hospitals, and we had already drained the ships of their supply.

For water we were chiefly dependent on the river, although that from the native wells was also used.

The river water was thick and of a dirty yellowish-brown colour. It was softer than the well water, and contained large quantities of solid mineral, vegetable, and animal matter in suspension, as it drained many towns and villages and frequently contained numbers of Chinese dead. Bacteria were also suspended, and these would not be entrapped by our filtration process in the junks as they are reputed to be in the Berkefeld filter.

There was no reliable supply of rain water for drinking purposes during the march.

Wells and Well Water.

The wells were numerous and deserve remark, for, neglectful as the Chinese are in sanitary matters, their wells prove the exception to the rule. Every village has wells, which were frequently passed on the march. For a distance of about 8 ft. around the well the ordinary road was built upon with stone slabs, gradually rising to about 2 ft. at the centre. On this elevation stood the well mouth, built of substantial masonry, about 3 ft. high. The well varied in depth from 20 ft. to 25 ft., and for about its upper two-thirds it was steined with bricks. It will thus be seen that the risk of percolation around the well mouth was reduced to a minimum because any dirty water near the mouth would drain away from the well.

We never emptied a well, and therefore did not tap sources of impurity below the ordinary water level. The water was brought to the surface by a bucket attached to a long rope at the end of a pole for leverage. This was hard from lime and magnesia salts, but it was clear, cool, and brisk from air, and had the great advantage of being ready to drink after boiling only. Very frequently, however, there was no time for this, and then the Berkefeld filter was our best safeguard. Poisoning of the wells had been suspected, but I know of no instance.

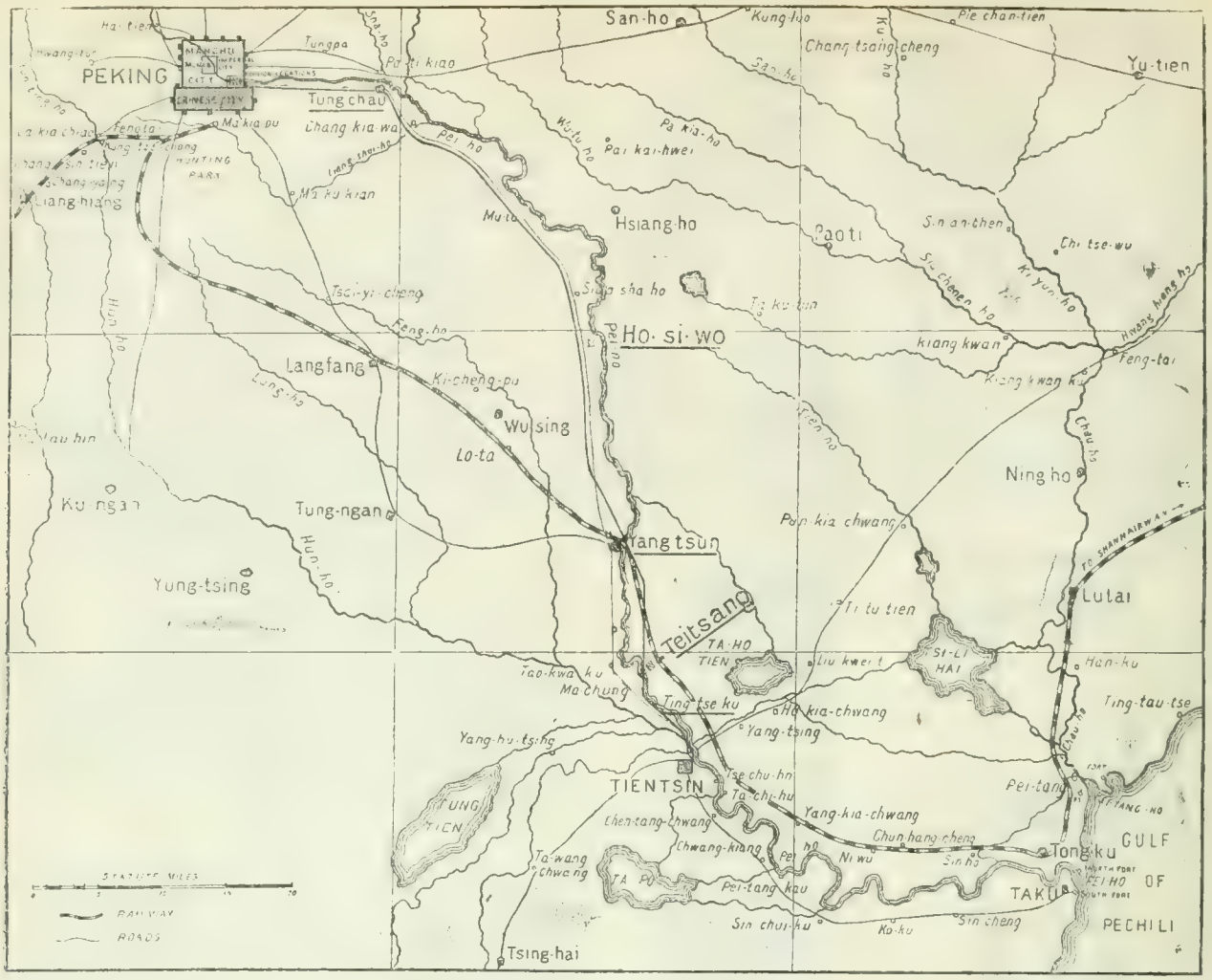
The Journey.

Peking is reached either by road or river from Tientsin; the Chinese use the former in winter, and the latter in summer.

The river route is 130 miles, and the road 75 miles.

The naval brigade being divided into an infantry section of marines and an artillery section of seamen, with four 12-pounders, it may be said the former marched the entire way with their own stretcher party, baggage, and camp followers, while the latter proceeded by junks, except for the first section, Tientsin to Peitsang, and the last section from Tung Chow to Peking.

The march was begun on August 3rd from Tientsin at 3.30 p.m., and after marching for five miles (and including the native city), the open was reached, and after another mile, Tse-Ku Arsenal, close to the river, where camp was pitched between it and the road. The guns, which had come by river, were here disembarked. On August 4th General



Map showing line of march of Naval Brigade.

Gaselee arrived with the British force, and on the next day the Allied forces were in action. At 2.30 a.m. on August 5th the Japanese were in action on the left flank, and shortly afterwards the French and our own marines were engaged. At 4 a.m. the naval guns came into action, and soon firing became general. As a result of the shelling the Chinese retreated at 8.30 a.m. (with their countless red and white banners). During this action four large shells, from heavy Chinese guns, fell immediately in the rear (some 30 yards) of the naval gun position, but, owing to defective fuses, they fortunately did not explode, but harmlessly buried themselves in the earth. At 11 a.m. a general advance upon Peitsang was made, and in a short time the Chinese trenches were passed, and found to contain large numbers of dead in and around them. These trenches appeared to be very strong, being on modern lines and deeply dug out of the road. By 3.30 p.m. Pietsang, which was in flames, was reached, and the brigade joined the British forces. The Allies encamped here for the night on low-lying ground close to the river. On this march of seven miles the road was in a very bad condition for the 12-pounders, one of which capsized. The junks, however, arrived the following morning, and the guns were placed on board, where they remained until Tung Chow was reached.

Peitsang was already occupied by the Japanese, and they had established their head quarters on the opposite bank while the main body was pursuing the enemy. The casualties for the day among the Japs were 40 killed and 200 wounded; British 4 killed and 21 wounded.

On August 6th the British left Peitsang at 4 a.m. for Yangtsung (a distance of about fifteen miles), leaving a small force behind to guard a bridge of boats which formed part of the high road between Tientsin and Peking, and by which we had crossed the river. At 11 a.m. a halt was called at Chai-tin-sin, and here the naval brigade awaited the arrival of the junks with the guns, which were later in arriving owing to the tortuousness of the river. At 4.50 p.m. the march was resumed, and Yangtsung reached at 7.30 p.m., where the Allies had already encamped below the railway bridge. Here it was learnt that the Allied forces had been considerably engaged with the Chinese, and that the British and Americans had carried the position. A large number had been wounded, British casualties consisting of 50 wounded and 7 killed, while the Americans lost 73 wounded and 8 killed, chiefly owing to the fact that the Chinese were firing from the top of the railway embankment upon the Allies who were marching along the road, between the river and railway. The day was excessively hot, but rain fell as Yangtsung was reached.

August 7th was spent in camp to rest the men; but it proved a heavy one for the medical officers attending to the wounded, all of whom were military. A number were sent down to the base hospital, Tientsin, from here by river. On this day the Marines were ordered to join the 1st Brigade under General Stuart, and the naval surgeon was detailed for duty with them.

On August 8th camp was struck at 8.30 a.m., and the march resumed. The Peiho was recrossed at 10 a.m. by a bridge of boats built by the Russians about a mile above the railway bridge, which had been blown up in places. A halt was called from 11.30 till 4 p.m., close to the river, to wait for the junks. Tsai-Tsun was reached at 7.30 p.m., after an intensely hot march, cooled slightly at its close by rain.

Early in the morning of August 9th (4.30) the junks advanced with the guns and their crews, as opposition was feared at Ho-Si-Wo. Large columns of Japanese and Russians were advancing on either bank. The marching and junk-

towing continued till 11 a.m., when we halted at a ferry where the road comes down to the river.

The heat was intense, and many cases of sunstroke occurred—British Marines 54, Americans 40 to 50, Welsh Fusiliers 40. The naval medical junk was in great demand, and the soda-water stores which were on board proved of great service in restoring the worst cases; the junk remained behind to render assistance. The march was resumed at 3.30 p.m., and Ho-Si-Wo was reached at 5.30 p.m., after a most trying forced march along a heavy road of about twelve miles in all.

No opposition was met with from the enemy. Leaving behind a force of 200 Allied troops at Ho-Si-Wu, the march was continued at 7.30 a.m., August 10th, the Naval Brigade and guns proceeding by junk, not halting till 9 p.m. The British Cavalry and Artillery reached Matao the same night, covering a distance of twelve miles from Ho-Si-Wo. The heat was intense and seven artillery horses died from this cause. Chang-chai-wan was reached on the afternoon of August 11th, being about eight miles below Tung-Chow. On the afternoon of August 12th, the force reached Tung-Chow, the junks not arriving till 2 a.m., August 13th.

The Japanese occupied the city while the Americans encamped outside the city walls to the south-west. The guns having been landed from the junks, the last stage of the journey was entered upon at 4.30 p.m., August 13th. Three guns only were taken, the fourth being left to defend Tung-Chow. The course was outside the city wall to the south-west and a very hot march was tempered only by a light breeze. There were more casualties from the sun, and here a sergeant of Marines, who had been carried five miles, died. At 7 p.m. a violent thunderstorm, accompanied by heavy rain, came on and continued all night. The force halted at a temple, Pal-i-kau, and bivouacked for the night. The next day, August 14th, the Naval Brigade marched along the banks of the river Uliang-Ho, but, owing to the heavy state of the roads, there was much delay from dragging the guns along. More than one overturned, and to assist the mules 100 men were told off to each gun; 180 Chinese who had been captured below Tung-Chow were impressed into this work. By sunset the naval guns and artillery were within one and a-half mile of Peking. The heat continued intense, and in heavy rain with no cover whatsoever, the brigade called a halt for the want of horses to drag the big guns along. At 2 p.m. on this day the British column had entered the south-east gate of the Chinese city and shortly afterwards, the primary object of the expedition, namely, the relief of the Legations, was accomplished.

On August 15th the march on Peking by the Naval Brigade was resumed at 4 a.m., the heavy guns being left behind until horses could be sent to drag them in. At first we were ordered to rendezvous at the Temple of Heaven, but this order was cancelled, and by noon the Naval Brigade was encamped on the top of the wall, over the S.E. gate, with the naval guns in position.

The Marines proceeded to the Tartar city, and there remained.

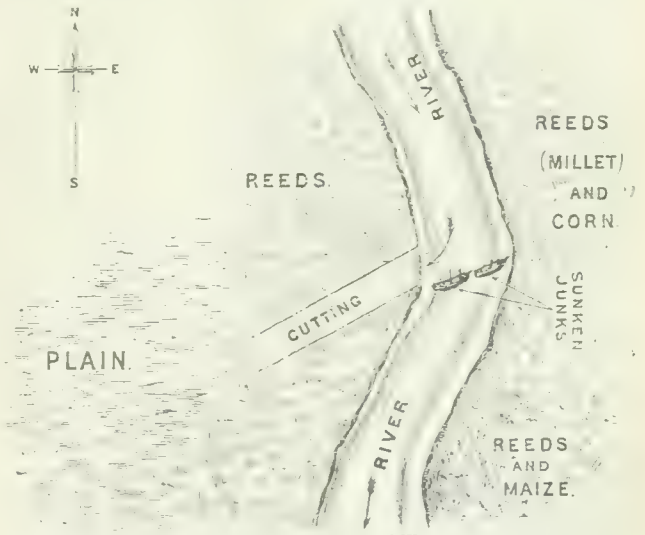
These last two miles of the road outside the city were made well-nigh impassable by the heavy downpour of the previous night. Canals, moats, and tributaries had all joined together, and both roads and plains were under water. This short distance was very populous, and as the roads were normally the repository for refuse and sewage the men walked knee deep through a foul-smelling cesspool, and inside the city, towards the Temple of Heaven, these conditions were intensified. Absence of paving stones at short intervals made the progress of the guns extremely difficult.

No rain fell for many days afterwards, but the roads and streets remained in the same indescribable condition of filth with effluvia from sewage and Chinese killed.

There is little to note after reaching Peking. For the first week sniping was a daily occurrence, and everyone went about armed. Escorts were necessary when sending patients to the military hospital, which was situated in the Tartar City, 2½ miles from the naval camp. The weather continued very hot, and after August 17th there was a considerable rainfall, only five fine days intervening. On August 31st, at 7 a.m., the Naval Brigade commenced the return journey toward the fleet. Owing to recent heavy rain the road was in places covered by three or four feet of water, and ten hours were occupied in marching 17 miles. Tung-Chow was reached about 6 p.m. Junks were in waiting, and the guns having been put on board the journey by river was begun shortly afterwards and continued back to Tientsin, which place was reached at 10 a.m. on September 3rd. The Brigade returned to the various ships on that day and the following one.

The River Pei-Ho.—This river is navigable as far as Tung-Chow for junks and light draft boats. It afforded, therefore, an excellent route for the 12-pounders and ammunition, and, with the exception of the distances named under the heading "The Road," this was the way selected. A current of about three and a half knots had to be contended with, and innumerable shallows and banks had to be circumvented, and this duty was carried out by native boatmen and tow-path men from Tientsin. Speaking generally, the river was narrow with well defined banks, but occasionally, where the plains were very low, there was a widening out of the stream so as to form a shallow lake. Throughout its course it wended through very rich and largely cultivated territory: the crops came down to the very water's edge and in many places made it difficult to find a path for towing. Countless villages and some large towns were passed en route. Beyond Nature's obstacles in the shape of river-bends, banks, and the current, there was not any obstacle to our progress. It would appear that the enemy had lost one of their greatest opportunities, strategically speaking, when they failed to dam or obstruct the river. A few sunken junks would have been most effectual and a block easily accomplished. Indeed such a block in the river would have been insurmountable, and, where time was of so much importance as it was in the forwarding of our 12-pounders, inevitable failure would have been the result.

The diverting of part of the stream had been contemplated, and this upon a very extensive scale, but the project did not reach completion. At Ho-Si-Wo (about halfway between Tientsin and Peking), and at a point where the river bank was fairly high and substantially hard, a "cutting" had been made at a slight bend in the river on its right bank; this "cutting" was about 50 ft. wide by 25 ft. deep, and had been extended inshore about a hundred yards, and at that distance the progress had been suddenly arrested. The "cutting" was directed at an angle of 45° pointed with the stream. It will be seen that all that was now needed consisted in sinking a junk or two on the side of, and in, the stream immediately opposite the "cutting," so as to divert the current thus:



Pei-Ho River at Ho-Si-Wo.

It had been intended to extend this cutting some 50 yards further, when it would have reached an open plain, so that the river could have been drained readily at the expense of an inundation in a country whence, for the moment, all had fled. Ho-Si-Wo had fallen into the hands of the Allies so suddenly that picks, spades, and baskets, etc., were all left behind in this "cutting," as we found on arrival. The river was not in full flood. The "cutting" was not open at the river bank.

Speaking generally, good camping ground was available both during the march and for the more lasting lines of communication along the river bank, with water in plenty and good bathing; the latter of inestimable value for both men and horses, especially when marching. The canal at Tung-

Chow was a source of much danger, it being stagnant and laden with the refuse and drainage of this large city, and at this time there were a great number of dead bodies in the canal also. The heat was tropical, and the stench and foul air very great in consequence. The city wells were used for drinking water, and here the bathing consisted chiefly of being soused with well water.

THE ROAD.

Briefly: In dry weather the soil, which is alluvial, is very friable, dust and sand puddles are the consequence. At the time of this expedition the roads could not be deviated from on account of the crops. After rain the conditions are obviously reversed, and the result is a condition of inundation or quagmire preceded by a sticky and heavy road. Although the country is flat, the high crops of Indian corn, reaching some 17 ft. in height, make it impossible to see any distance. At Peking the wall was not visible until we were within a distance of two miles.

In spite of the compact vegetation obstructing the passage of air and hindering body surface evaporation, there was no sign of decaying vegetable matter on any land traversed; and although the soil was alluvial in origin and annually disturbed in its entire area no one suffered from malaria, which is probably explained by the lateness of the rainy season and absence of puddles for the mosquitos to breed in.

The ponies used for transport came from Japan and gave much trouble, as they were all entire and out of hand; they were insufficiently fed and the heads of the coolie gangs were totally inexperienced in the work: one was a cane and umbrella mender by trade and came from Nagasaki "on spec." The coolies received many ugly wounds and bruises from the vicious animals, and many of the latter were shot on account of heat and because they were out of control.

Camps.—These were incidental, or temporary. At Peking the naval section was on top of the wall east of the Chinese city with the 12-pounders, and supported on the right by our Indian troops, whilst the Russians were on the left. This encampment was much exposed to sun and rain, and we had only straw-matting shelters which were arranged with the buttresses of the wall as a lean-to. The wall's roof was of large brick slabs, with grass and weeds as an undergrowth, and as the surface was always flat any rain remained as puddles. With the exception of some four small canvas tents captured from the Chinese the officers fared the same as the men. The latrines were arranged on either side of our camp, and we did not suffer from their presence, earth being freely used night and morning. The marine section was located inside the Tartar city, at Coal Hill (immediately adjacent to the Imperial city) on a slight eminence and under cover of a temple; their neighbours being the French and Russian troops. Our sick while on the march had cover arranged for them with straw matting, and the stretchers were used for cots. At Peking both sections sent serious cases of sickness to the army hospital. For camp the army had issued a very serviceable waterproof sheet to each man and officer, and this was of the greatest value. The last night of the march was a memorable one: as, after an all-day very heavy march, with much heat, it rained incessantly all night on a camping ground where there was no semblance of shelter.

The suffering caused by mosquitos was very considerable, and many of our men had crops of irritable ulcers on the body, and more especially near the ankles from scratching, and these made the wearing of boots a serious problem very frequently. In the cities, particularly Peking, the flies were so numerous during the daylight that it was practically impossible to remain quiescent, and the exhaustion caused by these standing sources of irritation can hardly be realized, and materially interfered with the progress of the sick in hospitals, where it became necessary both day and night to guard from these pests with curtains, and these, as is known, affect the movement of air.

Climate.—Speaking generally, this is said to be temperate during the summer and followed by a rainy season, whilst the winter is very cold and stormy with much snow. This year the "rainy season" did not exist, and during the expedition the heat was tropical, the temperature ranging from 89° to 104° in the shade. The nights were never cold but there was a marked cool period—3.30 to 4.30 a.m. The heat might therefore be called continuous, day and night. There was a considerable amount of radiation due to the dryness of the soil and to its sand. During the advance of the brigade the sun's rays fell on the heads and backs of the men this because of the direction marched, namely, N.W. by N. During the very early hours the rays would fall on the nape of the neck and right temples, whilst about 4 p.m. and after the effect was the opposite. Both heat and light were reflected from the earth, largely due to the sand in the soil, with the obvious effects of heat and glare in the eyes. There was no shelter, no wind, and a cloudless sky.

The Air.—This was hot, dry, and, whilst marching, laden with animal and vegetable impurities, and suspended mineral matters in the form of dust from the troops tramping (like the dust from carpet beating) and not due to wind. The want of motion in the air itself to cool the body surface was seriously felt. The absence of air moisture made the heat less relaxing, and, when inactive, more easy to bear.

The failure of the rainy season was unprecedented, and although we were spared the hardships of camping out on wet grass and marching in mud knee deep—as a rule—still we missed the many blessings which rains bring, amongst these a pure drinking water supply and a cool atmosphere. On three separate nights we had very heavy rain whilst on the march.

Rations.—Tinned beef and mutton with ship's biscuit was very frequently replaced by bread and fresh provisions, and we nearly always had boiled maize and vegetables. At Pekin fresh food was the rule, with a rum ration, all supplied by the army; our men were very averse to the latter, and it certainly was unpalatable owing to a marked metallic taste which does not obtain in ship's rum. There was an issue of jam from the army, and this is undoubtedly an invaluable addition for its antiscorbutic, thirst quenching, and supporting properties.

Having arrived at Peking, the canteen of the American army appeared inexhaustible, and its varied food supply was the greatest boon to all of us with its preserved fruits of every description.

The emergency ration consisted of brawn in 1 lb. conical tins. The quantity I consider too great when it is remembered that once open it should be forthwith eaten, for it becomes unfit for food if the heat is great, and in any case a half-empty tin takes up the same space as a full one, and this is a matter of no small consequence where every square $\frac{1}{2}$ in. tells; besides, the shape of the tin is an awkward one and makes a bulky packet. I would recommend that the meat be reduced to one half pound quantities, this to be distributed in two tins of a flat shape.

Beef extracts, milk, etc., were served out to men who were not necessarily on the sick list wherever occasion so required; these in addition to the daily ration.

CROPS AND LAND PRODUCE.

Wheat is very extensively cultivated in the low country to the north and east of Peking. This is sown in the autumn, and lies dormant under the snow until that melts in the spring time; the crops sprout up rapidly when the snow disappears, and the harvest takes place in June. The amount of grain grown in this neighbourhood is far from sufficient for a district which is so thickly strewn with villages and towns, to say nothing of the close proximity of Peking and a market of no mean size at Tientsin, which city numbers close on one million people.

A large quantity of grain is annually imported, chiefly from Manchuria.

Rice.—The amount grown is of no account, and therefore has to be imported from other districts. The same applies to tea.

Indian Corn.—This is a most valuable product and used boiled or roasted, but its greatest use is as flour for corn-bread or cake. It is cultivated on an elaborate and extensive scale. The route of march by road and waterway was lined and surrounded by thick crops of maize which grew to the height of 15 or 17 feet. At the time of which we write, the crops were ripe and everywhere ready for the sickle. The stalks of the maize are chopped (chopped straw), and these, mixed with similarly-chopped stalks from millet, are mixed with dry autumnal grass and artemesia. This mixture makes excellent fodder, and is stocked in large quantities.

Millet.—These are of three kinds, namely, panicum miliaceum, panicum vulgare, and pencillaria spicata. These cereals make excellent flour for bread, and this is almost exclusively used by the natives. In quantity it takes the next place to Indian corn, and like it, has a twofold use, the stalks making up fodder, the grain flour.

Castor-Oil Seeds.—The castor-oil plant is very abundant, and ripens with the cereals. It is cultivated as food and not as

medicine, and when the oil is expressed the seeds are mixed with the millets and beans, and pressed into huge cakes called "bean cake," which makes excellent food for cattle, and has the great advantage of being readily stored and packed for other provinces.

Legumes.—These were numerous, and amongst them were cajanus indicus and cicer arietinum. These peas and beans make nutritious food with rice, and are invaluable in "bean cake" for cattle.

Succulent Vegetables, etc.—Sweet potato, wild artichoke, water melons, pumpkins, turnips and onions were abundant.

The corn, millets, and castor-oil plant are all sown immediately the wheat has been collected in June, and are ready for the harvest in October. It is obvious that this year the harvests were lost to the country folk, and this would naturally be followed by want or famine.

To the Allied forces the existence of the Indian corn proved the greatest blessing, for it made up one of our most valued of foods when boiled, whilst the other products were of the greatest service for the horses and mules. This year, also, all the above were fit for food in August, and were fully ripened by September.

The farming and laying out of the land generally was worthy of the most cultured agriculturist. The land was always drained towards rivers or a rain-formed gully, and the crops laid out with great care, and at measured distances, to avoid choking; whilst the hardier crops (Indian corn and millet) were so arranged as to protect the more delicate; and the maize crops were frequently found to form protected patches of various areas. All this in view of violent sand and wind storms, which occur not infrequently. We did not experience any such storm while marching.

At the outset of the campaign water-melons and pumpkins had been forbidden by order of the general officer commanding, because, it was asserted, of danger from cholera and diarrhoea. This order was cancelled, and I consider very wisely so, too, on the first day of the march. The ordinary edible, sweet water-melon, it may be mentioned, represents something like 97½ per cent. of water, and our men—indeed, everyone—found immediate salvation from eating these during some of the forced marches, which were made under very enervating and thirst-provoking circumstances. Large fields of melons were positively devastated during some marches, leaving the ground cleared as if a swarm of locusts had passed over their favourite pasture in Egyptian soil. The men must be accredited with choosing the ripe from the unripe fruit, and I am not aware that anyone suffered from over-indulgence in this particular, and this I attribute to the fact that, with the skin acting freely, the fluid ingested in the form of melon was again quickly eliminated by the skin and lungs, and the quantity of fibre might almost be ignored. To the exhausted, with parched throat, the melon was ready to hand, and was at once palatable, cool, and harmless.

Vegetation.—Willow trees grew in great abundance along the river route and in the vicinity of wells, whilst pines, firs, and oaks were met with near ancient palaces, shrines, or temples, and under the shelter of these close-stunted grass would be found, although never in great quantity, extent, or quality to be of use for grazing cattle. Wild artemesia was very common as an undergrowth.

Cattle, etc., for Food.—For obvious reasons the rearing of cattle is nearly impossible after the manner pursued in Europe, and beef was an unknown quantity from local sources. Again, the alluvial plains and the want of grazing land precluded the very existence of sheep for mutton. Pigs were very common, but they were known to be such dirty feeders that pork was considered as out of the list of food. Pigs, like dogs, in China live to a large extent by eating the flesh of dead human beings who have been recently interred; and where infanticide is common, the bodies of dead children are usually thrown into the rubbish heap and there left for the pigs and dogs. On the march towards Peking the sole inhabitants of the towns and villages passed through consisted of pigs and dogs, and the gruesome spectacle of the pig tearing and eating the flesh of dead Chinamen and horses was met with over and over again.

Ducks, geese, and fowls are very abundant in China, but as all these were readily transported, they were, of course, not found on the route of march.

Eggs and milk. The former are always buried by the Chinese, and are not considered edible until gaseous changes in their composition have occurred. Milk is never used as an article of food, and can only be obtained where foreigners live, and where they specially arrange and superintend a dairy.

Clothing.

Both sailors and marines were landed in summer kit—namely, white drill with straw hat and helmet respectively. Before starting all were ordered to be in khaki, and in the cases of the officers and marines (who were not already so provided) an outfit was purchased from the stores of the American army at Tientsin, whilst the sailors used, variously, tea and coffee to colour their whites.

As far as Tung Chow it was possible to draw on either the junks or baggage carts for a change of garments, but after that place the waterproof sheeting and blanket were carried by the owner.

Boots.

These were chiefly of the ankle pattern amongst our own troops; the exception being sometimes made by the Indian army, who wore a native shoe or sandal. The sailor suffered much more from feet trouble than the marine, although he walked less than half the distance, and the reason is not hard to explain. The sailor never wears footgear if he can avoid it, and when he is suddenly called upon to make a long march, there is danger of crippling. The well-recognized cause of corns—intermittent pressure on one spot—doubtless explains the sore feet question. Moreover, the sailor sometimes indulges in fancy boots or shoes, and the most dangerous shape probably is that which has for its object the appearance of small feet, and this has a high heel; the toes are cramped and the sole's surface suffers uneven pressure. Until the uniform pattern of boot with a broad, low heel is made compulsory these troubles will remain. Rigid and practical measures which will ensure the consistent use of a rational boot appears to be the remedy, and where discipline is so catholic as it is in the navy, healthful results would be a certainty. The majority of the boots among our men had been so mutilated by cutting and excising that they were often unfit to wear; the cutting gave temporary relief at the expense of producing a fresh chafe. New boots were obtainable at Peking in our camp.

The *Russians* wore a black leather substantial top or legging boot, which covers the calf of the leg; this is of pliable leather and roomy withal, with a large flat heel.

The *Japanese* have a similar unlaced boot, but some three inches shorter in the leg and less serviceable in quality, of leather, and being more cramped for room, with a higher and a more pointed heel; briefly, the boot is more flimsy than the Russians.

The *Germans* have a strong leather unlaced boot like the Russians, but only halfway up the leg, and in build it resembles the Russian boot.

The *Americans* wear laced ankle boots of a lighter weight than our troops, with leggings made of stout canvas of a khaki colour, laced up at the sides, and reaching up nearly to the knee; these have flaps over the instep of the foot against dust, and a strap under the arch of the foot. This legging is of much support at the ankle, and being pliable, makes a very useful garment, and stands rough work in dry and wet weather.

The *French* (marine infantry) have loose blue drill trousers and ankle boots without gaiters.

British Troops.—Bluejackets: Laced ankle boots with short canvas gaiters. Marines: Laced ankle boots, no leggings or puttees. Welsh Fusiliers: Laced ankle boots and puttees. Indian Army: Laced ankle boots (occasionally native shoes) and puttees. The Hong Kong and Chinese Regiments: Laced ankle boots and puttees.

Notes.—The Russian and German boots appeared eminently serviceable, and they have the great advantage of being almost universally worn in both countries, and for that reason the men are habituated to their use. I am of opinion that whatever form of foot or leg dress the man is accustomed to, consistent with anatomical conformation and movement in peace time, and where he earns his bread by physical labour, the same boot will serve him in the field. The Japanese prove to us how, by their strict regard to the uniform use of the military pattern boot, they have overcome what would appear insurmountable, in a race accustomed to wear what is known as a "stilt clog" (like the English patten) during early life.

Head Dress.

Helmets.—As so much sun heat was experienced, the head dress will be considered in the sense of a protector from the sun's rays and light. There probably was never before such a variety of head dresses in any campaign, and it will be

remembered that the general officer commanding, in his home dispatches, commented on the helmets (in consequence of the great prevalence of sunstroke) as follows: "Men much exhausted by heat, especially our Marines; many cases of sunstroke which, in cases of Marines, largely due to unsuitable helmets." (Telegram.) The rank and file of the different nations had for head dresses as follows:

Japanese.—A peaked cap, like the obsolete Marine officer's forage cap, made of stiff material and standing clear of the crown of the head, with ventilation holes in the sides, and a white cover and linen flap falling over the nape of the neck.

Russians.—A stout soft cap, the same design as the above, but with a larger and an overhanging crown covered with coarse white canvas.

Germans.—There were two distinct styles of head gear in use. The troops who took part early in the campaign wore a light singly plaited Leghorn straw hat, turned down except at one side, which was turned up at a right angle. This hat was obviously a makeshift, and was so thin and flimsy that it could give no appreciable protection for the head or nape, whilst any utility was quite done away with on the upturned side. The last arrived troops wore a khaki helmet which was light and having a shape like half an egg shell, cut in its long diameter. These had the appearance of being worn at the back of the head, and although ugly, appeared to effect the object in view of shading the eyes, temples, and nape of the neck. It had no ventilators, and like the French helmet offered a great surface, and therefore resistance to the wind or rapid movements.

Americans.—Light brown felt slouch hats, with stiffer felt for its wide brim, and this turned down; the crown was generally pinched up to a sharp angle in the length of the hat—like a house roof. It had two small holes on each side as ventilators. No puggarees.

French.—The helmet is less flat or mushroom shape than the German; it covered the temples and the nape of neck and shaded the eyes. It appeared much too large for the head, and this was probably due to the dome being at some distance from the head-piece, for ventilation. It was light but ugly.

British Troops.—Royal Navy: Officers—service helmet covered khaki. Men—straw hats with brims turned down. The officers of H.M.S. *Terrible* wore service straw hats the same as their men. Marines: Service helmets khaki colour. Officers and men of H.M.S. *Terrible* wore a black patch on one side of the helmet as a distinguishing mark, and in addition nearly all wore their helmet bags, covered khaki, over their helmets, with the running string tucked in closely under the brim. To effect this, a part of the bag close to its mouth had been cut away and a new running string arranged. This cover enclosed the metal mushroom top on the dome and so precluded the egress of heated air. The Marines who had landed with the first expedition towards Peking were minus puggarees. It will be observed that there was a considerable variety in the head gear of the Naval Brigade.

Indian Troops.—The officers wore a thick, large-brimmed pith helmet, mushroom shaped, but lengthened behind considerably. It covered the ears and temples and shaded the eyes, and there was free circulation for air around the head between the headpiece and the dome. The whole was covered with quilted khaki linen, and the inner surface of the brim was dark green in colour. Dimensions, shape, and lightness made this a very good and serviceable head dress, and it probably was the best amongst all others. It had no puggaree. The men of the Indian contingent wore a khaki turban formed of a puggaree bound round a cone-shaped cup.

Welsh Fusiliers.—Officers and men wore khaki helmets with puggarees.

Marine Helmets.—The pattern does not appear to be always the same with the Marines, but a fair specimen is here described from a helmet used by one of the Naval Brigade: A heavy cork helmet lined with a waterproof material, covered with white canvas, and it has a white puggaree. The dome is shaped like a sugar loaf, and has a metal mushroom top which unscrews, and this is perforated for ventilation. The dome slopes downward rather suddenly, especially at the sides, and is therefore close to the head, but this slope is more gradual before and behind. The top of the dome is 5 in. high from the riband streak, which has the head piece on the corresponding part inside. This headpiece is leather lined and made of cork covered with stout waterproof material. For 5½ in. in front and behind respectively the helmet dome is separated from the headpiece by a perforated rim of cork, which is about ¼ in. thick only and meant for ventilation. At the sides there is no such fixing, and the temples are close to the dome. The brim is 1½ in. deep at the sides, 2½ in. in front, and 3¼ in. behind. Its shape is seldom twice the same, but most frequently it is pointed in front, but squared and curved upwards behind. It is lined with blue or green waterproof cloth. A curb-chain chin stay lined with leather completes this head dress, which is of substantial manufacture and proof against rain.

This helmet fails to attain the desired end in many ways. It is heavy; it presses on the head, and is too close to the hair at the sides, and here, too, there is no room for ventilation; the brim throughout is never deep enough, and offers no shade to the eyes, temples, and very little for the nape of the neck. It will be seen that it offers a small surface to wind or rapid movements, points highly desirable, but it does this at the expense of being insufficient against sun. The service chin stay is not a practical one for field service, as the chain is heavy and cumbersome, whilst its lining is inefficient, and it is most desirable that there should be no chance of the helmet falling off during rapid movements in high grass or underwood. The helmet suffers from a too severe amount of "cutting down"; in other words an attempt at smartness has been made, whilst the real value of the dress as a shade has been disregarded to a very great degree. The same may be said of the helmet used by the Royal Welsh Fusiliers, but to a lesser extent. They have a useful-looking puggaree, but I did not once see it used for the nape of the neck—its obvious purpose.

The Hair.—I consider that in view of the hair being a very great protector to the skin of the scalp, men should be forbidden to indulge in a "short crop" when landed for shore work in hot climates: cleanliness and smartness would probably rail against such a prohibition, but our experience is that the dust can be got rid of out of thick hair, and water is generally plentiful. The results, I am of opinion, cannot be overestimated. Just before we left Tientsin for the march, I saw that most, if not all of the men, had cut their hair quite close, whilst some had shaved their beard.

The Eyes.—Up to the present no provision has been made for protecting the eyes from the glare, heat, and dust. Radiated or reflected heat or light are now recognized among the most potent factors of sunstroke on account of the contiguity of the brain to so sensitive an organ as the eye, and the time may not be far distant when our soldiers and sailors will be provided with a shade in the form of a goggle, inconvenient as such impedimenta would be except when in actual use.

DISEASES.

Diseases numbered 15 per cent. of the total strength, or 2.21 men sick per diem for the whole period. Of these 9 per cent. were bowel complaints, embracing enterica, dysentery, and diarrhoea.

Enteric Fever.—Five cases, with 1 fatality at Tung-Chow on August 26th. This man was one of the ammunition party left behind at Tung-Chow with the guns. The second was a private of marines sick at Pekin; the remainder developed on the return journey and were left at Tientsin base hospital.

Dysentery.—Twelve cases, 1 fatal, in a private of marines at Tung-Chow, where he had been left for duty. Eight cases were in marines who had been left behind to garrison Ho-Si-Wo. Three only occurred among the seamen class. Five of the cases were sent by river to the Tientsin Base Hospital.

My personal observation went to prove that this trouble was due, in nearly all cases, to drinking bad water. With all the care that one bestows in trying to educate bodies of men as to the detail of water drinking, it is nigh impossible to control the impatience and carelessness which belongs to this class. The handiest water to hand is usually their choice, and during our march it was no unusual spectacle to see the gunnery officer imploring his men to stop drinking, and by turns severely rebuking them for using doubtful water—this as a rule to no purpose. It is strange but no less a fact that our men invariably had a good "pull" at the water-bottle after "falling in" and whilst waiting for the order to march; this in the earliest hours of the morning. Should the march continue towards noon, it can be readily imagined how nearly impossible it becomes to deter them from rashness where thirst is to be assuaged. Every precaution was, I am aware, taken for the filtration and boiling of water by the surgeon in charge, but I am also sure that in many cases, and for the foregoing reasons, the labour was in vain.

The well water here (Ho-Si-Wo) was said to be "good" but brackish; "good," that is to say, because it was cool, clear, and possibly crisp by comparison with the boiled water. The river water, we well knew, abounded in every form of pollution, both animal, mineral, and vegetable.

To accentuate the case of foul-water drinking, I may quote a late messmate's experience. He was in charge of a body of men who were driven into such sore straits on one occasion with the first brigade towards Peking that, after personally admonishing his men for rushing into the river Peiho and drinking its waters, he soon found himself beside the men "lapping up" what, for the moment, was his salvation. Seven weeks later the poor fellow died of enteric at Wei-hai-Wei.

The term dysentery is very loosely used by soldiers and sailors, and a simple diarrhoea is constantly graced with the more high-sounding title of the two.

Diarrhoea.—Thirty-one cases. Of these cases 20 occurred among the Marines: and 18 out of this number were at Ho-Si-Wo. The symptoms were of sudden onset and began with abominal cramps; sometimes vomiting, purging, anorexia, and lassitude. The tongue was always thickly coated, and there was much thirst. There was no fatality.

The condition took the form of a gastro-intestinal inflammation, and I am disposed to think that this was due chiefly to mechanical irritation of the mucous surfaces of the stomach and intestines, from the presence of solid matters which have been ingested in a condition of suspension in various vehicles: for example in water (more especially river water), we have fine particles of sand, marl, or clay; whilst in the air (from dust) mechanical irritants: these find their way per oram, and may be vegetable or mineral in their origin. To water chiefly, and secondly to food, I ascribe the causes of nearly all these cases.

Indian corn was largely consumed by the men, either boiled or baked, and it was also very frequently eaten raw; in every case a large amount of the husk would be swallowed, and here at once is a mechanical irritant.

The food generally was quite different from what we had all been accustomed to on board, and the sudden change brought about gastric and other troubles. Then again we slept in the open; most men had cholera belts but not all, and the early morning temperature of the air was always low.

Putting aside the larger question of pathogenic organisms—as these are more associated with enterica and dysentery—we must still allow for the dissolved minerals, such as lime and magnesia, and, also, for common salt, as found in brackish water, for it will be only the question of the quantity taken to get medicinal results.

The 31 cases on the sick list do not by any means represent the numbers who suffered from this affliction. Nearly every one—officers and men—suffered from the "gripes," with six or seven stools during the 24 hours.

This began at Tientsin, and was rife amongst us two days after we had landed. We all lived under similar conditions of food and water, and we slept under cover and in comfort at Tientsin.

At Tientsin it has long been considered that the drinking water produces diarrhoea amongst the new comers, and this was said to be due to the suspended particles of clay and marl. The residents, however, become inured to this complaint, and secure immunity from further attacks.

It can be readily understood that any one of these cases may turn out to be due to a specific poison and have serious consequences. It is not to that class of cases that I here refer, but to such cases as are amenable to rational treatment with simple remedies and diet. And the simplicity of the course adopted alone tends to show that the bare removal from the intestinal tract of the mechanical irritant is wanted and no more. Castor oil is too bulky for transport in field supplies, otherwise I am of the opinion that it is *the* remedy at the outset. We relied on the following course: Diet of beef tea or meat juice given often and in small quantities, with milk (1 tin to 3 pints of water) during twenty-four hours: bicarbonate of soda (gr. 30) and powdered ginger (gr. 15) thrice daily, and, if required, the portable pil. plumbi c opio (gr. 5) night and morning. In a few cases brandy (3 oz.) during a day, where prostration and a weak pulse required it. The suffering was due to exhaustion from want of assimilation of food on the one hand, and of direct irritation producing pain, in a large mucous tract, on the other. The symptom—diarrhoea—was itself a way of cure by ridding the bowels of the irritants, whilst bland and nourishing food replenished the system.

Where the urgent service of large bodies of men is required this complaint becomes a very serious one, and a preventive remedy is the one to look for, although the conditions exacted would be nigh impossible. If the purely mechanical irritant theory is accepted, then the remedy consists in restricting the drinking water to that only which has been carefully filtered. There remains to be elaborated a system which I frequently inspected in the Russian lines, and one which is certainly deserving of emulation. A boiler holding about 36 gallons of water and in shape like that of an ordinary small railway engine, and having a similar funnel, is placed on a cart capable of being drawn by a stout pony or mule. The funnel is collapsible. A fire is readily lighted with wood, and as the boiler metal is not very thick and the surface subjected to the fire heat considerable, the water boils quickly. The Russians being great tea drinkers, I invariably met with that beverage and not boiled water. Well-water was used by them whilst marching. The advantages of this contrivance are obvious: portability and therefore an ever-ready supply. The same nation had also a portable oven for baking bread or corn cake. What we did as to drinking water is referred to under that head.

Sunstroke.—Twelve cases, which represent such sick as were placed on the sick list proper because they were incapacitated for an appreciable period. These do not include transient cases, for on August 8th no less than 37 men fell out from amongst the marines and their stretcher and ammunition party, whilst on August 9th 54 of our men were temporarily incapacitated. Of the total cases 2 ended fatally.

The term "sunstroke" is more applicable to this form of insolation, inasmuch as it is due to the direct sun's rays as opposed to the more universally fatal form of heatstroke where moisture exists in the air, and which is common in parts of India and in the narrow and landlocked parts of the Red Sea. This sunstroke might conveniently be termed the cerebro-spinal variety, seeing that the heat fell on the head, the back of the neck, and the spine, and accordingly affected the skin, soft tissues, and bones of those parts.

Symptoms.—One saw a trembling, staggering, weeping man, with injected conjunctivae and a skin hot and perspiring, or hot and dry; in the former case the skin was acting freely from the exercise, and in the latter it would appear as if the sweat induced by the like exertion had ceased and the skin's surface found no fresh supply of moisture in the surrounding air. The man complained of his head, and in most cases fainting followed, then nervous twitching, and frequently complete unconsciousness. These signs followed each other in rapid succession, and where unconsciousness did not supervene a period of sleep—half an hour or so—brought relief, and the man continued the march.

Treatment.—Bearing in mind the two types of cases—namely, (*a*) where the senses remain, and (*b*) where unconsciousness exists, the treatment becomes one of simple rational conduct, and should aim at recovering the balance of the body temperature.

Water was the treatment *par excellence*, and in the cases (*a*) this could be introduced into the circulation both by the stomach and by the skin, whilst in cases (*b*) the body surface only remained to be treated, and when close to the river the man was partially immersed close to the bank, or the head and body douched on the bank, whilst the legs dangled in the stream. This lowering of the surface temperature and diluting of the blood by way of the skin had, generally speaking, miraculous and rapid results, and the first sign of recovery was the desire for drink and the return of power to perform the act, but here there was a second danger from the poor fellow's reckless disregard as to the source of the water, and the handiest water was obviously the foul river.

Whilst the excessive sun heat remained greater than is consonant with the preservation of the nerve currents, it is reasonable to suppose that the topical application of water to the head and body generally, and, when practicable, by the stomach, are the best restoratives. I would incidentally remark that in England, as is well known, horses are stinted of water during exercise or sweating, whilst in India and other hot climates the opposite conditions obtain, and this without harm. Briefly, the treatment may be summed up in two words—the application of water to the whole body surface and its ingestion by the stomach where the patient is conscious, and in the other type water *ad lib.* to the body, only avoiding suffocation by drowning.

The immediate after-treatment consists of simple, bland restoratives in the shape of beef-tea and small quantities of

brandy. In the naval junks some ice was obtainable, and the few bottles of iced aërated water proved most beneficial.

A few lines may not be out of place regarding the march, August 8th and 9th, a distance of between nineteen and twenty English miles, with typical Chinese roads. The forces left camp at Yang-stun at 8 a.m., the marines being brigaded with the army proper and leading, the naval section following, and marching until 11 a.m., when a halt was made until 4 p.m. March and arrive at Tsai-tsun (close to the river) at 7.30 p.m. During this afternoon our men are saved by water melons; 37 men "fell out" on account of heat. On August 9th naval section proceed by junks and along river bank, leaving Tsai-tsun at 4.30 a.m., and reach Ho-Si-Wo at 7.30 p.m. On account of the tortuous course of the river the junks traversed about forty miles on August 8th and 9th. About noon on the 9th the junks had halted at a river bend near the road (some fifteen or twenty yards distance), and between the hours of 1 and 3.50 p.m. the Allied forces passed this spot, and it was here I witnessed the most disastrous results to our troops and those of the United States. Our medical junk was in great demand, with its filtered water and medical stores, whilst our bluejackets, medical staff, chaplain, indeed all, were busily employed. Our marines had fifty-four men of all ranks fallen out, whilst most of the walking officers suffered distress. All our stretchers were in use, and as some of the stretcher party had sunstroke, these were carried in them or in the Indian dhoolie (a covered stretcher). Some thirty men and two native officers of the Indian contingent were *hors de combat*, whilst the Welsh Fusiliers and American troops, who fell out, numbered some 80 men. And here was the river, with room for them all, and the space between the road and the water offered some shelter, for the high cornflower stalks here had not been trodden down. The troops in front of us had made a clean sweep of all water melons in the vicinity. Most of the men were in a truly pitiable condition. The Americans had roomy ambulance wagons employed along the road. Our army surgeons had their arms full all along the line of march, and their stretchers were in great demand. To have adequately provided for the carriage of so vast a number of helpless men was not possible, and so they were helped and half dragged along by their comrades. The effects of the water were truly remarkable, and after sitting on the bank —most of them knee-deep in the water—and when all had been ministered to, the vast majority rejoined the march, whilst those of our men who could not march were put in the junks, and went on by the river to Ho-Si-Wo. All of us were in camp by 7.30 p.m. The conditions which brought about the above painfully-disastrous results were as follows: The marching of large bodies of men is always slow, and all these troops were necessarily hampered by the accoutrements (belts, slings, bags, bottles, rifles, etc.) peculiar to war time. Moreover, the conditions of climate were of a unique nature. The march had a direction nearly due north. The road was heavy from sand puddles and irregularities, with much dust from baggage carts and the tramping of many feet. This dust was full of animal and vegetable débris, which was inhaled.

The air was dry and hot (reaching 104° F.), and the sun's rays fell all day, for the most part, on the temples, the nape of the neck, and the spine. The eyes suffered from the glare and radiated heat from the sandy soil, and there was no shelter. There was no movement of air to cool the body surface. Added to the above the act of marching and, especially with all the fighting impedimenta, increases the amount of body heat. The safety valve here consisted in the dryness of the air, which permitted of the escape of heat products by the skin and lungs, and to this chiefly do we ascribe our fortunate immunity from deaths.

Lieutenant-Colonel MICHAEL WILLIAM HORNSBY RUSSELL, R.A.M.C., said it might not be out of place to point out the process of purifying the water used eighteen years ago on service. In the Nile Expedition of 1884-5 the following was the routine in the stations or the river bank. A water boat and special crew were told off, the boat was taken into mid-stream twice or thrice daily, and the water was collected, thus avoiding any backwaters or possibility of shore pollution. The water was then poured into large zeers, the suspended matter precipitated with alum, the clear water was then siphoned off into Soyer's boilers, where it was boiled. It was then poured into fresh zeers, in which it was stored, under a sentry, for distribution. He merely made the remark so that it might not be supposed that care of the drinking water was an entirely new procedure on field service, as he found many people appeared to think.

Deputy-Inspector-General H. M. ELLIS, R.N., thanked Fleet Surgeon Lloyd Thomas for his valuable paper. He believed that there was no previous instance where so many bodies of troops belonging to different countries had served together. This afforded opportunity for comparing the incidence of diseases, such as sunstroke and dysentery, relative to the methods employed by the different countries in their dress and accoutrement, and in the purification of drinking water. He missed in Fleet Surgeon Lloyd Thomas's paper any expression of opinion as to the relative proportion of disease among the different nations. In regard to the water discipline of troops, it was impossible for civilians who had never felt the stress of battle to realize the overwhelming temptation that came over troops, whether officers, medical officers, or men, when they felt that they were almost dying of thirst. In camp such discipline was comparatively easy. He was sure Surgeon-General Evatt and other officers present who had experienced war would agree with him.

Surgeon-Major ARNALLT JONES, M.D., congratulated Fleet Surgeon Lloyd Thomas on the excellence of his paper, which to a volunteer surgeon was of as much interest as it would be to their regular brethren. He asked Fleet Surgeon Lloyd Thomas his opinion as to the physique, power of endurance and resistance to disease of the British soldier and sailor as compared with those of the Allies in China.

Surgeon-General EVATT thought Fleet Surgeon Lloyd Thomas's paper very practical and valuable, and spoke of the American system of extra food supply in addition to rations in the field.

Dr. LEIGH CANNEY said he would like to couple some remarks on that part of Fleet Surgeon Lloyd Thomas's paper dealing with protection of drinking water, with the paper of Staff Surgeon Falconer Hall on the same subject. The facts shown by Fleet Surgeon Lloyd Thomas as to the reduction of the incidence of typhoid and dysentery in the Peking expedition by their method of boiling water were very interesting—though it should be observed that the methods in force were rather too dependent upon accidental utensils, fuel, etc. Staff Surgeon Falconer Hall's paper on the point was rather more seriously lacking in any substantial evidence of a really practical, rapid method of serving sterile water. He also had not referred to the education of officers and men, training in technique, etc., which were absolutely essential to success. He would remind Fleet Surgeon Lloyd Thomas with regard to his supposed difficulty of training men in water discipline, that an officer of H.M.S. *Jupiter* informed him (Dr. Canney) that he made it compulsory for a Naval Brigade in South Africa, using only scratch fuel and ordinary kettles, to use nothing but boiled water for drinking purposes. It was a "crime" to evade this rule. In 70 men during six months' march he stated there were two instances of "crime." He observed it would have been far easier to have carried this out with the rapid sterilizers he (Dr. Canney) had proposed, carrying their own fuel (petroleum) and food drinks (tea, soup, etc.).

Fleet Surgeon LLOYD THOMAS replied to the points raised in connexion with his paper.

SOME NOTES ON A MOUNTED BEARER COMPANY.

By Lieutenant-Colonel H. HATHAWAY, R.A.M.C.

SUITABLE wheeled transport is the first requirement for ambulance that is expected to keep up with mounted corps.

The following is a description of a cart that I have invented and submitted to the Government of India for approval: A light platform on strong springs over four wheels; the sides of the cart hinge down, and with cushioned seats that let down from the middle of platform form comfortable sitting accommodation for three cases on each side—Irish car fashion. A double awning cover is supported on uprights in centre of the platform: this arrangement allows stretchers to be loaded from the sides of the cart without any obstruction: the sides and seats are hinged up when stretcher cases are carried. It will thus be seen that the cart is constructed to carry six sitting cases, three on each side, or two lying down cases on stretchers or a lying down case on the stretcher on one side and three sitting cases on the other.

When stretchers are loaded in the cart they are locked by the handles, when not in use the stretchers are rolled up and

carried between the turned up seats in the middle of the cart. Lockers underneath the platform carry the necessary equipment. Lying-down cases can readily be examined and attended to from the sides of the cart, let down, without shifting the stretchers.

Requirements of a Mounted Bearer Company, consisting of Eight Cart Detachments.

	Detail.	No. of Carts. 1	4	8	Remarks.
1. Establishment	Medical Officers	Nil	1	2	
	Sergeant R.A.M.C. or Hospital Assistant in India	1	1	2	
	Orderlies including a N.C.O. drawn from Cavalry Regiments	5	20	40	The M.O.'s will further thoroughly instruct orderlies in first aid to wounded.
2. Transport ...	Special ambulance carts	1	4	8	See diagrams on this page.
	Horses	7	26	52	Six per cart, coming from regiments with detachments. Remainder from M.O.'s and Sergeant R.A.M.C. or hospital assistant with wheeled transport of brigade.
	Personal transport for establishment				
3. Equipment ...	Surgical haversacks	2	8	16	See Appendix I for contents.
(a) On orderlies	Belts for drugs, braces, and pouches	1	1	2	See Appendix II for contents.
	Canvas water bags (bags to be boiled frequently)	2	9	16	Containing two quarts boiled water carried on Ds of saddle.
(b) In cart ...	Stretchers	2	8	16	Fariss's rigid pattern.
	Water tank under right side of platform	1	4	8	Aluminium to contain 2 gallons detachable water.
	Medical comforts in locker under left side platform	1	4	8	Vide Appendix III for contents.
	Surgical necessities in locker under left side platform	1	4	8	Vide Appendix IV for contents.
	Extra blankets	4	8	16	Strapped on seats.
	Carriage lamps for candles	1 2	8	16	Also used for operations.
(c) On horses ...	Harness, drivers' sets, pairs	3	12	24	One set traces remain on cart, another spare set carried under cart. All horses to have drivers' saddles.
	Riding saddle and bridle	1	1	2	For Sergeant R.A.M.C. See Appendix V.
	Operating case			1	
	Picketing gear	6	24	48	
	Forage for horses				According to number of days absent from wheeled transport of brigade.
	Food for man				

Note.—The lockers and water tank are protected by locking tail-board, which lets down to form table.

To summarize the arrangements: The sick or wounded whose condition permits them to ride use saddle support on their own horses (this saddle support was described in my last article). The more severe cases who are not fit enough to ride

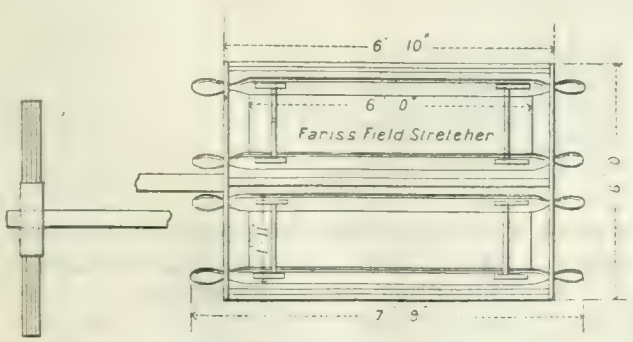


Fig. 1.—Plan of cart showing stretchers ready for use.

or who have lost their horses by wounds or otherwise, are given sitting accommodation in the cart. If unable to sit up, they lie on stretchers in the cart. The detachments of the carts are formed of five men, including one commissioned officer taken from each squadron of cavalry: they must all have been carefully instructed in first aid to wounded in accordance with regulations.

A single cart with its detachment forms the peace footing establishment for a squadron of cavalry, but when mobilization for war takes place a similar cart detachment is, in addition, drawn from each squadron, and is grouped with detachments from other squadrons and regiments to form the mounted bearer company of cavalry brigade, the whole under

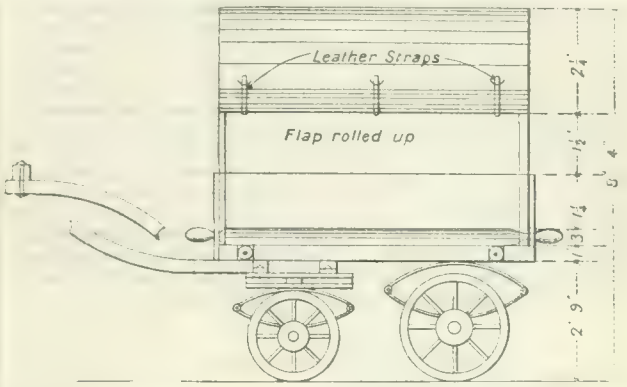


Fig. 2.—Side elevation with side removed. Stretcher ready for use, and seats *folded*. Hood at its maximum height, with flaps rolled up.

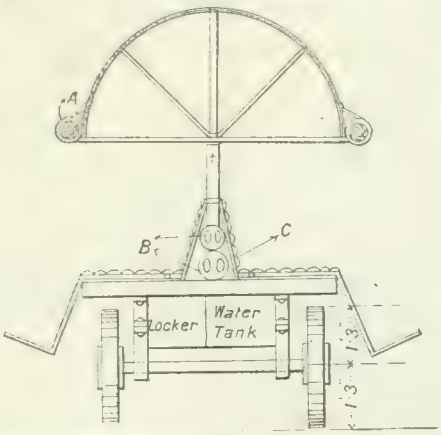


Fig. 3.—End elevation showing seats ready for use. A, Flaps rolled up. B, Stretchers rolled up, and placed between backs of seats. C, Bottom and back seats padded. To seat six wounded men.

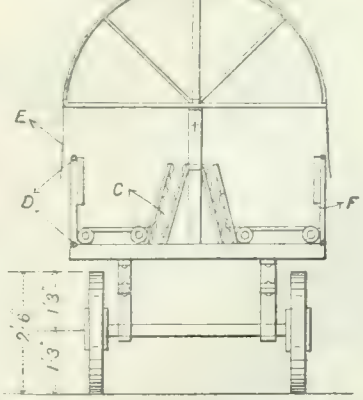


Fig. 4.—End elevation showing stretcher ready for use and seats folded. C, Bottom and back seats padded. D, Hinges. E and F, Hood and side flaps lowered. To carry two wounded men lying down.

selected medical officers, each of whom has a non-commissioned officer of the R.A.M.C., who looks after the medical

and surgical equipment, and takes directions as to patients' diets, etc. The horses of the detachment must all be broken to double harness, for they draw the carts in pairs. One pair of horses would be in yoke and another pair brought along by one man of the mounted detachment. Two other men of the detachment would be mounted, and the fifth man would ride in the cart and attend to occupants; if the cart were full up he would ride the spare horse, six horses being allowed for each cart and detachment of five men.

It is unnecessary to have mounted bearer companies established in peace time, for they are only groups of cart detachments; the only necessity therefore is to keep a sufficient number of men in each squadron of cavalry for two such cart detachments, always thoroughly instructed in first aid to wounded. Beyond this and being able to ride nothing more is expected of them, for they hand their patients over to the field hospitals for nursing at the first opportunity, and for this reason it is unnecessary to employ men of the R.A.M.C. on mounted bearer company duty. One non-commissioned officer only is required to find the surgical instruments, and look after their condition, and to act as steward as regards diets for patients.

If it is considered that too large a number of fighting men would be withdrawn from regiments for ambulance work the strength of regiments must be increased for this purpose, and employment would often be given to good men who, after enlisting, are found to be unable to shoot straight.

APPENDIX I.

Contents of Surgical Haversack.

Chloroform in drop bottle, 4 oz.
" spare " 4 oz.
Iodoform 4 oz. } In dusting tins with covers.
Acid boracic, 6 oz. }
Sp. ammon. aromat, 2 oz. in case.
Brandy, 4 oz. in case.
Hypodermic syringe }
Morphine tabloids } 1 in aseptic case.
Pestle and mortar }
Measure glass, 1.
Tourniquet, Esmarch, 1.
" webbing, 4..
Wire arm splint, 1.
Cane-jointed arm splint, 1.
Candle lamp with dark shutter, 1.
Scissors dressing, 1 }
Forceps " 1 }
Probe ... ... 1 } In metal case.
Director ... ... 1 }
Spatula ... ... 1 }
Needles in case 6 }
Ligatures, catgut in glass tube }
" silk and silkworm gut } contained in vulcanite case.
" suture }
Bandages, woven salalembroth, 2 doz.
Gauze cyanide, 2 packets.
Wool " 2 packets.
Knife clasp, 1 (for cutting splints, etc.).
Pins (safety), 2 doz., in metal box.
Pins, ordinary, 2 doz.
Enamel dressing trays nest, 3.
Plaster tape, 6 yds.
Tally books, 2 yds.
Contained in Willesden canvas bag with webbing sling.

APPENDIX II.

Contents of Belts of Drugs.

Hypodermic syringe, 1 ... ... }
Tabloid hypo. strychniae, 2 doz. ... ... }
" atropinæ, 2 doz. ... ... } In metal case with pestle
" cocaini, 2 doz. ... ... } and mortar and collec-
" digitalinæ, 3 doz. ... ... } tion of hypodermic pre-
" ergotin, 2 doz. ... ... } parations as enumer-
" hyoscinæ, 1 doz. ... ... } ated.
" morph. and atropin, 2 doz. }
" pilocarpinæ ... ... }
Tabloid aloin. co, 3 doz.
" bromid. co., 3 doz.
" ammon. chlor. co., 4 doz.
" cubebæ co., 2 doz.
" antifebrin, 4 doz.
" ferri et arsen. co., 4 doz.
" pepsin bismuthi and strych.. 4 doz.
" pil. hydrarg. col. and hyos., 4 doz.
" chloral hyd.. 4 doz.
" colchici co.. 2 doz.
" hazeline, 2 doz.
" ipecacuanhæ gr. v, 4 doz.
" " sine emetin, 4 doz.
" " co., Dover's, 4 doz.
Soloid plumb c. opio, 2 doz
" pot. permang., 2 doz.
Tabloid mag. carb. co., 2 doz.
" hydrarg. iodidi vir., 6 doz.
" opii gr. ½, 4 doz.
" plumbi c. opio, 4 doz.
" pepsin bismuth.. 4 doz.
" phenacetin, 6 doz.
" quininæ sulph. gr. v, 6 doz.

APPENDIX III.

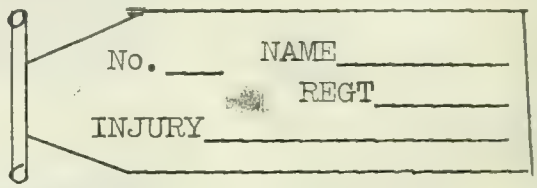
Contents of Locker containing Medical Comforts.

Brandy bottles, 2.
Arrowroot, 1 lb.
Brand's essence mutton, 20 tins.
Milk, Nestle's, 1 doz. tins.
Enamel feeding cups, 2 with covers.
Spoons, tea, 2.
Etna stove, 1.
Methylated spirit flask, 1.
Carriage candles, 2 doz.

APPENDIX IV.

Contents of Locker Containing Surgical Necessities.

Assorted splints, wire, 6.
" " cane jointed, 6.
Triangular bandages, 1 doz.
Salalembroth woven bandages, 4 doz.
" gauze, 4 packets.
" wool, 4 packets.
Iodoform, 4 oz.
Boracic acid, 1 lb.
Tape, 12 yds.
Safety pins, 4 doz. in metal box.
Ordinary pins, 8 doz. in metal box.
Stout scissors, 1.
Stethoscope, 1.
Tally books, 4. New pattern like a luggage label with safety pins for attaching.



Plaster Paris tins, 2 lbs., 2.

APPENDIX V.

Surgical Operating Case Carried on Saddle of N.C.O.R.A.M.C.

Tabloid morph. hypodermic. gr. ⅙, 10 doz.
" acid. carbolic. B. and W., 10 doz. } For antiseptic solutions.
" hyd. perchlor. B. and W., 10 doz. }
Iodoform dusting box, 4 oz., with cover.
Boracic acid dusting box, 4 oz., with cover.
Chloroform in drop bottle, 4 oz., in case.
" " spare bottle, 6 oz., in case.
Ether in stoppered bottle, 4 oz., in case.
Sp. ammon. aromat. bottle, 6 oz. in case.
Pestle and mortar, 1, for tabloids.
Hypodermic syringe, 1 aseptic pattern.
Exploring needle, 1.
Thermometer, clinical, 1.
Sterilized catgut in glass tube, 6 doz. strands.
Rubber stopper, contained in vulcanite case.
Assorted sterilized silk, 6 doz.
And silkworm gut in do., 6 doz.
Safety pins, 2 doz. in metal box.
Ordinary pins, 8 doz. in metal box.
Ribbon adhesive plaster 1 in., 6 yards.
Boric wool, 1 packet.
Cyanide gauze, 1 packet.
" woven bandages, 1 dozen.
Webbing tourniquets, 2.
Esmarch tourniquet, 1.
Tait's artery forceps, 6.
Dressing forceps, 1.
Dissecting forceps, 1.
Sims forceps, 1.
Bullet forceps, 1.
Tongue forceps, 1.
Scalpels, 2.
Amputating knives, 2.
Bistoury, curved, 1.
Scissors, straight dressing, 1.
Probe, long, 1.
" short, 1.
Aneurysm needle and director, 1.
Butcher's saw, 1, spare blade.
Needles, assorted, in metal case, 2 doz.
Catheters, metal No. 7, 1.
" gum elastic, Nos. 1, 2, 5, 7, 9, 12.
Retractors, 2.
Metal case for instruments, 1.
Trays fitting on outside of case, 2.
Whole in leather case to fit on saddle.

POVERTY OF ATTRACTION FOR MEN TO BECOME STRETCHER BEARERS, AND THE CONSEQUENT INEFFICIENCY OF THAT SECTION.

By G. ARBOUR STEPHENS, M.D., B.S., B.Sc.Lond.,
Surgeon-Captain, 3rd Glamorgan Rifle Volunteers.

I THINK it may be taken for granted that the army admits its need of, even though it may not fully appreciate, the medical officer. The admission of its need is a matter of instinct;

while to be able to appreciate is a matter of education. As, however, the position of the medical officer is due to necessity rather than appreciation, his appointment may be looked upon as permanent. What applies to the regular army is also applicable to the voluntary.

The value of the medical officer depends: (1) upon his own personal attainments; (2) upon the material at his disposal. The former is outside the pale of discussion, and it is therefore with the latter I have to deal.

However good a surgeon or physician a man may be, without help, it need hardly be said, he is helpless. What is the nature of that help which renders his services available? In the R.A.M.C. the men are supposed to be specially trained for the work. What with their drill, and instruction in first aid and nursing, they are able to bring the medical officer into touch with the wounded, with theoretically the least amount of discomfort and disturbance to the patient. In the R.A.M.C.V., especially when composed of medical students, we ought to find a most proficient band of helpers. Amongst the Volunteer regimental stretcher bearers what do we find? An irregular squad of the most incompetent men ever detailed off for such a work. It is not the fault of the men, but rather the absurdity of the system.

Under this system all recruits must put in their two years' company drill and firing exercises to become efficient for the benefit of the corps funds. From each of the eight companies two men are told off for ambulance work. Each company officer naturally retains his best men, with the result that the two worst are the ones selected. If these men are poor and incompetent for what they volunteered, what must they be for what they are deputed? If a smart young fellow volunteers with the object eventually of joining the ambulance section, the attractions of the firing prizes allure him from his former noble purpose. If an incapable applicant for ambulance honours enters the corps under similar conditions, the medical officer fortunately does not see him: his ambition has long previously evaporated. Yet one other hope remains for the ambulance section, namely, those who are tired of the company work, and think they might as well have a shot at the ambulance before they clear out.

Such is the material at the disposal of the Volunteer regimental officer. These men he is supposed to educate in the mysteries of anatomy, physiology, minor surgery, stretcher drill, and nursing—in twelve lessons. For I take it, that a regimental ambulance man to be of any service must know something of these subjects. Good men, even, would scarcely be considered very competent at the end of such a course. Consequently the stretcher section under the regimental medical officer is of absolutely no use whatever. There are about 223 volunteer regiments, which number multiplied by 16 gives us the total volunteer ambulance strength as 3,568—a sheer waste of red and blue serge.

Supposing it were possible to attract good men, the question arises, What should be done? (1) To train them properly: (2) to keep them efficient. They might learn elementary anatomy and physiology as well as stretcher drill; but it is very difficult to learn minor surgery and nursing without clinical experience. For men in the ordinary walks of life such clinical experience is unobtainable, and consequently the so-called training is absurd. What person, wounded in battle, would care to be mauled about by any volunteer stretcher bearer?

Even did we expect less of the stretcher bearers, what is there to attract good men? Always to the rear of the regiment picking up the dust, the last into camp, the last to get their quarters allotted them, and no thanks nor prizes.

With such help, the regimental medical officer can hardly be expected to produce many good results. In case of accident he has to do the lifting, nursing, operating, and dispensing, for dispensers I believe are not even mentioned in the volunteer regulations. And even doing all these with that patriotic cheerfulness which is so characteristic of the volunteer officer, his name is not even considered when any local army or militia appointment is vacant, preference being given to one who does not waste his time in volunteering.

I have been foolish enough to try to get up a cycle-ambulance section in connexion with our cyclist company, but without success; and from what Surgeon-Captain Edmunds, of the 26th Middlesex cyclists, wrote me this may be fortunate, for their cycle-ambulance has degenerated into a carrier of their mess plate or something else belonging to their mess.

TRAINING OF VOLUNTEER BEARERS AND THE POSITION OF REGIMENTAL MEDICAL OFFICERS.

By Brigade-Surgeon Lieutenant-Colonel Peter Broome Giles, F.R.C.S.,

Welsh Border Volunteer Infantry Brigade.

Training Ambulance Men of Yeomanry.

There is absolutely no difficulty or difference in training Yeomen for ambulance work in first-aid and bandaging; at least, that is my experience—and it has been a fairly extended one—at the Volunteer Ambulance School of Instruction, in which, though no Yeoman team has ever come out first, they generally have run fairly well up, and at times have been excellent.

It is not until the transport of wounded is reached that any divergence or difficulty occurs, and that must, and will, arise until some suitable means of removing the wounded yeoman is established. I hope that section (*d*) of the seventh part of this paper may be considered sufficiently useful and practical to obviate some of the difficulty which prevails at present.

In the meantime the Yeomanry medical officer will do best who, in training his two men per troop, teaches wagon drill for ambulance wagons and country carts thoroughly.

Training of Volunteer Brigade Bearer Company.

(*a*) Organisation.
(*b*) Establishment.
(*c*) Discipline.
(*d*) Drill.
(*e*) Instruction.
1. First aid and bandaging.
2. Transport of wounded.
3. Hospital duties.
4. Tent pitching.
5. Cooking.

(*f*) Equipment.
(*g*) Clothing.
(*h*) Field practice.
(*i*) Promotion.

(a) In training volunteer brigade bearer companies it is well to start from the actual position they occupy: at present the Volunteer Bearer Company occupies and does the dual duties of the second and third line of medical assistance, or a great deal more than the bearer companies of the Royal Army Medical Corps, and the consensus of opinion of those best qualified by experience in the field seems practically certain that in future the Royal Army Medical Corps will amalgamate the present second and third lines of medical assistance into one, and so constitute an efficient brigade medical unit, instead of at present having the bearer company and field hospital two separate brigade medical units. Certainly everything is in favour of the change and absolutely nothing against. The first thing is:

(b) The establishment must be raised from 63 to 100, a quartermaster, and three additional medical officers added. First, it is a matter of expediency, because at present volunteer bearer companies cannot exist upon the fullest grant their present establishment can obtain. Secondly, because in volunteer brigades, when in camp, not only has the bearer company to perform its normal duties as the second line of medical assistance, but it has also to administer to the hospital and attend the sick detained or admitted, and so on. An establishment only suitable for the second line of assistance adds to its obligations the whole of that of the third line of medical assistance. First, the *modus vivendi* of a volunteer bearer company under present regulations requires rent to be paid for headquarters. I paid out of my own pocket for the uniform of my bearer company; I paid £5 a year rent for use of headquarters, and a *per capita* allowance to the regimental band. I have always obtained nearly the highest possible grant for efficiency and proficiency for the medical officers, sergeants, and company, and yet ends have never met; how then can the officer commanding, who now has to pay £35 rent, live, unless either the establishment or grant is increased? At least that is my deduction after 13 years' practical working of a company up to its full establishment. I have always objected to cadge from the public, and maintain it is the nation which should provide the actual living wage for establishment.

(c) Discipline.—No body of men can exist satisfactorily unless discipline is preserved; the higher the standard of

discipline the better the company. It is frequently said, There is no discipline in the volunteers because there is no method of punishment; or, How do you punish your men? My answer is, Our men seldom require punishment; our discipline is *esprit de corps*.

I began my volunteer life as a private in the "Artists" (20th Middlesex R.V.), which then had, and from what I saw of them in brigade in 1901 still maintains, a perfect *esprit de corps*, and on those lines I have worked the thirty years I have held a commission; certainly in the bearer company it has worked most admirably. If I find a man has not what we may be vain enough to style our standard of *esprit de corps*, he goes. That there is good discipline generally amongst volunteer corps is absolutely proved by the little crime charged against them whilst on active service in South Africa.

On parade or duty in every detail one cannot—provided one is not fussy—be too rigid; off duty make friends with your men, explain your plans; your non-commissioned officers will soon repress and correct any "bounderism." Never pass over a fault, but correct by explaining what should have been done, even if it has to be repeated time after time; remember how true is the saying, "The weakest link of the chain is its real standard of strength."

Never let a dirty unshaven or an improperly clothed man off, nor overlook unpunctuality on duty. Be most careful how you select your non-commissioned officers, and remember a sergeant who has self-respect will be respected by the men, and in the present day of section commanders, the sergeant has a great influence either for good or evil. Be careful in field practice that the No. 4 of each squad is as good as you can get; it is when isolated from the superior that a youngster's fitness to command comes to the front.

Lastly, but certainly not least, the officers must know their work; nothing detracts from the discipline of a bearer company more than the fact that the officers are often dependent upon the non-commissioned officers for the drill of the company. I have known many officers after two years or longer service know no more drill than when they began, the reason being because they were too proud or too idle to fall in with a squad and practically learn. There is no doubt that directly a medical officer is appointed, he should be placed in a squad and learn his squad and company drill; if he does not he rarely does much good.

(d) Drill.—Squad and company drill must be understood before any attempt is made at stretcher drill: in fact no company until it is conversant with forming, changing ranks, forming from column into line, and ceremonial should commence the technical drill, and both at company and stretcher drill only the words of command of the provisional book of 1902 and the manual should be used. It may seem idle to insist upon this, but practically I hardly ever find either Bearer companies, or regimental stretcher bearers into which peculiarities of word of command have not crept; I am inclined to attribute this to the fact that the volunteer medical officers are deficient in their drill, and use words of command of their own, and the non-commissioned officers are prone to imitate.

It may read well enough that the precision of the drill yard is a thing of the past, and not required upon active service; still if this precision is not taught and acquired in the piping times of peace, there can only be one result—that is, slackness at home, disaster on service.

(e) (1) *Instruction.*—All instruction must be that of the manual; the manual is a work compiled by those who know the wants and requirements of the service, and are cognizant of the average abilities of those who have to practically utilize this instruction. Volunteer medical officers seldom sufficiently appreciate that in their teaching, and are too prone to teach their own ideas, and what is above the heads of the average of those they are appointed to teach. How frequently I am told when examining on the manual, "Lieutenant or Captain taught us quite different," and it is certainly most unfair to men who will be examined on the manual for A.F.E. 596 to teach from other first-aid books.

(2) Instruction in taking care to keep out of fire while approaching, succouring, and transporting the wounded cannot be commenced too early; the duty of all stretcher-bearers is to help the wounded, not to run into almost certain death without at least taking all care to expose themselves as little as possible. It is better for one stretcher-bearer to wriggle up to the wounded man, and if possible withdraw him to a position of comparative safety, than that the stretcher-bearers themselves should be put out of action; for every stretcher-bearer rendered *hors de combat* is not only an encumbrance, but lessens the already too small available existing *personnel*. I have no hesitation in laying this most positively down, because the national disregard to danger is quite, if not more than, normal in the medical department; and I have heard time after time in the late war of the wilful waste of skilled life due entirely to this inherited natural bravery.

Again, the sooner men are taught that men who can walk need not be carried distances upon a stretcher, but such cases should accompany the more severely wounded to the rear in case by accident they did become actually incapacitated.

(3) Hospital duties are best taught after men have obtained E 596 in a winter's course, and should be specially attended by all non-commissioned officers; here again the manual standard.

We have just increased our work for the advanced classes at the Volunteer Ambulance School, and, in reply to the syllabus I submitted to the Director-General and to the Principal Medical Officer, Home District, I have received the following replies: "The course of instruction as arranged seems to be thoroughly practical, and Sir Wm. Taylor thinks that the lectures and demonstrations for the advanced class should prove of great value to the non-commissioned officers and men attending them."

This syllabus was compiled from thirty years' experience as a regimental medical officer, with a bearer company, and at the Volunteer Ambulance School of Instruction, and are especially useful to corporals going up for their sergeants (p) A.F.E. 624.

(4) Tent pitching is also a part of instruction that must not be neglected, as it is constantly required; and hospital marquees raised by regulation, and not by rule of thumb, are quite different performances.

(5) *Cooking.*—No company can live in health unless their food is properly cooked; also in volunteer camps the field hospital must more or less be dieted. Regulation says they are non-dieted, and that is all right for cases detained, but for cases admitted, the system breaks down. You can't have rations brought all hours of the day to the hospital, or you are always in a mess; then there is no quiet; besides, drink is smuggled in, so there is the only alternative—to diet and charge the cost pro rata per diem to the regiments of the sick.

I have always made a great feature of cooking in our bearer company, and have four cooks always ready to become sergeant cook, and during our month's camp, 1900, no two days was the diet the same, and that when I had sent the sergeant cook out with the Rhodesia field hospital. All our men get a pint of good soup at 6 a.m. each morning, and also at bed time if they like; it certainly sticks to them better than early coffee.

(f) Equipment.—All bearer companies should be fully equipped by the Government; it is a great mistake to buy privately; agitate until you get what you want, or, rather, what is required for efficiency, as it is only by demonstration and use that men learn anything. But ambulance wagons, panniers, and medicine chests specially furnished by the amateur are an abomination, and only teach all ranks to look for what they never will have on service.

(g) Clothing.—Great care should be taken that the working clothes are serviceable and easy. I have always worked a regulation boot scheme, with three pairs of woollen socks, grey flannel shirts, and seen that the feet were attended to previously to camp. Next to colic there is nothing knocks the stuffing out of a soldier more than sore feet. The dress uniform cannot be too well or smartly cut, and should be used as little as possible, and all clothing should be given into store yearly to be overlooked. I only used to serve out the best in June, and call it in after camp.

(h) Field practice should be commenced as soon as possible: it breaks the monotony of the lecture room and the drill ground, and it develops the man. Signalling and cycling members are more than useful: in my own opinion all should be able to read a little from flag-wagging (semaphore) and generally the instruction that can be picked up from a short course in a drill hall is sufficient. Having recruited from all sorts and conditions of men there should be those who can dig. Let them make field ovens, and send out some wounded with a little blank, and let them search for wounded by sound of fire. Send the medical officers and non-commissioned officers who have the best ideas of locality or rather who are born poachers, and they will soon master the nature of the ground, and go round instead of crossing ridges, and at the end when the wounded are all brought in, correct, and

explain faults. In a short time if this game is played honestly and correctly a real good bearer company will result.

(*i*) *Promotion.*—Lay hands suddenly on no man; examine and promote only the best men who have self-respect, and, therefore, are respected. To confirm men as sergeants after six months is childish. A sergeant major—a most prettily decorated bird—20 years old, of one year in the ranks as a combatant, five months in a bearer company, came to our field hospital at Aldershot for a dose of chloral. I happened to be at hand, and my sergeant compounder, thinking him rather green, applied to me. I asked, "How big a dose do you want?" He replied, "Oh, I think an ounce will do, and if you will let me have another I will give it in an hour's time. If this was the sergeant-major what were the medical officers?

The Position of the Volunteer Regimental Officer.

(*a*) I have no shadow of doubt that at the best it is ambiguous, good as your fellow officer may be, and few have had as good as I had, and I did my level best to do my duty all round, joined in everything, still there was a vague but certain difference.

(*b*) Faults on the part of the volunteer medical officer. If a good chap he is too prone to consider that private friendship to a brother officer or officers should override the exigencies of the service, is apt after a time to get slack, because though the officers' mess may be a perfect club, he finds practically for a man of his age and training there is so little to do. Frequently if he does his duty examining recruits, and does reject those he honestly believes to be unfit, officers not personal friends begin the cry, the doctor has a "down on my company," and it is honesty *v.* unpopularity. Again, when he does get stretcher bearers to train he is seldom satisfied, but wants these men always as "his bearer company!" and resents when either the men do not turn up if he is present, or, if they do turn up, going, as they should after his course of instruction is completed, back to their companies. How often do we hear the regimental medical officer's complaint, "Well, I took all the trouble to train them, and then because they were smart they got promoted and reverted to their companies," which is just as I interpret the idea of regimental stretcher bearers—namely, that practically quite half should be fresh men each season.

Also how seldom is it that the medical officer can drill his men correctly, and that simply because, first, he so rarely knows his drill himself, can seldom give detail, certainly cannot correct mistakes, and therefore gives most peculiar and original commands, and is at the mercy of his non-commissioned officers, who, from their familiarity with company drill, more easily go just a shade better than their officer. Again, in big cities in which camps are a more recent creation, and those generally only for the medical officer's unit (this must be so in branches other than infantry), particularly when the camps are fixed for bank holidays or week ends, the medical officer has contrived cases of medicine good enough for private patients, entirely neglected the regulation equipment, and so spends as long over his sick parade as he does at home with his private patients, and wishing to stand well with his comrades in his unit, is often too tender-hearted, and so offends the company officers, who believe their non-commissioned officer's version that Jones is a "skrimshanker:" and I regret to say the non-commissioned officer very often is right.

(*c*) *Faults on the Part of the Combatant Officer.*—The medical officer often is considered solely in the light of Captain or Major So-and-So's friend, a good fellow, no doubt, but what do volunteers want with doctors? Either naturally or put up to it by his non-commissioned officers, thinks each recruit rejected a slight to the company, and as it can't be wiped out in blood, is the frequent cause of a "down on the doctor."

Either naturally or put up to it by his non-commissioned officers, resents the two men per company being trained for regimental stretcher bearers, saying "his men" come for drill in "his company," not to learn stretcher work, quite oblivious as to illness or casualties till they happen, when he damns the doctor because he has not men and stretcher bearers ready.

Suggestions as to Betterment.

(*a*) A regulation that no regiment gets its efficiency grant unless at the annual inspection it parades its stretcher section complete and the regimental medical officer.

(*b*) That a grant of 5s. per man be given for every trained regimental stretcher bearer holding A.F.E. 596.

(*c*) Abolish camps for units more than once in three years; in brigades the brigadier can enforce stretcher work, which officers commanding units seldom like to do on account of the hostility of their officers commanding companies.

(*d*) Gazette each unit medical officer to a department when, if in doing his duty he gets unpopular, he can exchange without losing seniority.

4. The desirability of having one corps, on the same lines as the R.A.M.C., to include all volunteer medical officers, regimental and departmental.

(*a*) *The Evolution of the Volunteer Medical Service.* This evolution has been quietly but steadily going on for years. First the company medical officer, then the unit medical officer, then the Volunteer Medical Staff Corps, then in 1889 the brigade system with a senior medical officer, in 1890 the brigade bearer company, then converting the Volunteer Medical Staff Corps into R.A.M.C.V., then the abolition of compound rank in the brigade bearer companies, and most recently the formation of brigade bearer companies in companies of R.A.M.C.V.

(*b*) *The Attitude of the Regimental Medical Officers.*—There is no doubt that if one takes the consensus of opinion of all regimental medical officers of units, that is, artillery, engineer, infantry, and R.A.M.C.V., that the majority are in favour of a department, the obstacle is the fact that medical officers of units which are never brigaded—as in artillery and engineers—are strongly, but not so much as they were, in favour of the regimental system, as they have to a great extent joined their units as men join a club, and it is not until these officers can see that it is better to have a powerful department rather than private clubs that matter can be altered.

(*c*) *The Advantages of a Department.—Esprit de corps*, an actual service in which all of the various branches would see the advantage of encouraging, as against the more narrowed lane of vision of a unit, a body that could and would act for the betterment of its members, and which would be strong enough to demand and obtain the respect it merits, and would be in line with the R.A.M.C., and would allow of medical officers transferring from corps to corps, which for various reasons is often desirable.

A mode of attaining the departmental system. The union of all branches of volunteer medical officers, and as a volunteer medical officer is gazetted to a unit let him at the same time be gazetted a R.A.M.C.V., and take his seniority from that, and be able to exchange as a combatant officer, can without losing his seniority. This would throw open the senior medical officers of brigades to the medical officers of all units.

5. The rôle of the stretcher bearer, whether regimental or bearer company, within the zone of rifle fire.

(*a*) It is the province of the regimental stretcher bearer to be within the zone of rifle fire that is the positive voice of the regulations, that they should keep within touch of their units, and never go any distance to the rear and never beyond the collecting station: the regimental stretcher bearer is *per se* a combatant who has received instruction how to render first aid and how to transport his wounded companion to comparative safety; he is not protected by the Geneva Convention, and directly he gets his wounded companion to a place of comparative safety he should leave him and return to the fighting line. Regulations for Medical Services, Part I, Pars. 280, 281, 282, lay these duties down fully.

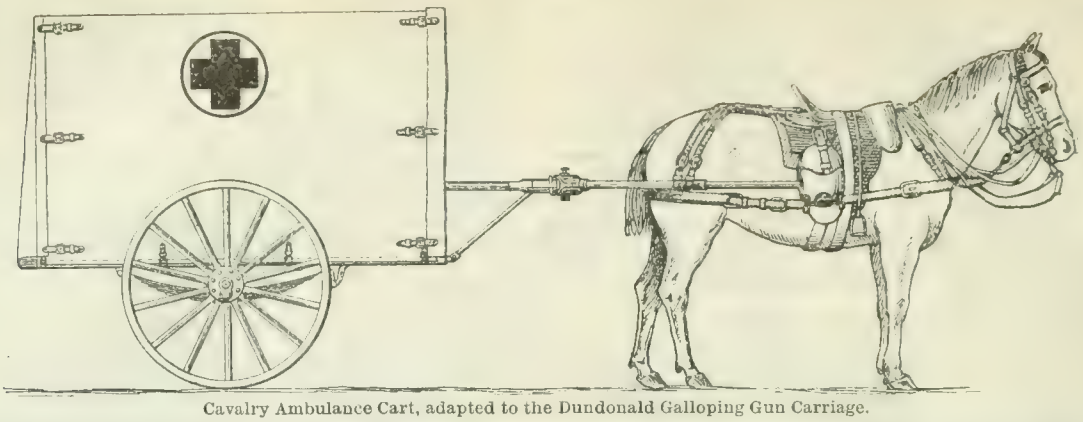
(*b*) It is the accident peculiar to circumstances that may necessitate the bearer company being within that zone. The bearer company is protected by the Geneva Convention, and therefore theoretically should not have its collecting station anywhere near a position of strategy. That the stretcher sections must be within the zone of rifle fire is almost a *sine quâ non*; it cannot be avoided, because their duties are to succour, to transport, and after the fight is over to carefully and exhaustively search the locality for wounded.

6. The duties of a medical officer in charge of a regimental unit on field service—

(*a*) Are laid down fully in Army Medical regulations, part I., paras. 175-206, 271-282.

(*b*) Major Sleman, who was senior medical officer of the C.I.V., has suggested to me the importance of medical officers attached to fighting units being able to promptly select cases from those who parade sick which must go to the field hospital and which have a reasonable chance of being admitted there.

7. The best methods of dealing with the wounded of mounted troops in war:



Cavalry Ambulance Cart, adapted to the Dundonald Galloping Gun Carriage.

(a) The question of transport as it is. The wounded can either be transported:

1. Riding and supported.
2. In panniers.
3. In carts and wagons.
4. Carried in front of a trooper over the saddle.

1. Riding and supported either by another trooper or by means of straps and cords is very slow and unsatisfactory.

2. Panniers are exceedingly difficult to load and really require two to balance.

3. In carts or wagons much better, but can rarely be obtained when cavalry can act with advantage.

4. Carried in front of another trooper; this may be suitable for Victoria Cross competitions and has often been of use, but it is certainly unworthy of a place in the transport of the 20th century.

Stretchers slung above the back of animal or carried upon a horse is possibly the very worst way of bringing the wounded to the rear for:

1. All saddles are difficult under the best of circumstances to keep a good position and all have a decided tendency to gall and give sore backs, and as day by day in the field the animals get thinner and thinner so does the difficulty of keeping the saddle in a proper position increase, and also of keeping the back withers and flanks free from wounds.

2. It is extremely difficult to load wounded into pannier or litter, it is much more so to load with stretchers raised on the saddle above the level of the horse's back, and quite impossible to keep the saddles thus loaded in their places, and if not kept in their proper places the wounded are precipitated out.

3. Animals loaded this way are very apt to fall, and if shot are an extra source of danger to the wounded.

It has long occurred to me that the best method would be a light ambulance cart near the ground that would accommodate itself to the actions of the horse without either affecting the comfort of the patient, or capsizing and in the patent galloping gun of the Dundonald type I think even if I have not secured absolute perfection, I have at least gone a very long step in a forward direction. This gun carriage was very highly tried and approved of and was fitted to the Colt quick firing machine gun, it limbers and unlimbers practically instantaneously and will not capsize even if the horse falls or is killed.

This immunity is given by the peculiar construction and arrangement of the limber and increased by the peculiar construction of the harness.

It has also very great advantages in lightness of construction and strength, and is so adapted that it can go without capsizing wherever cavalry can.

As far as I can calculate the ambulance cart complete to carry two recumbent patients, with an attendant, the latter's seat can, if required, take an extra patient lying or sitting, with water barrel and surgical bag and splints, and weighs 160 lb.

The diameter of the wheels are 3 ft., the height of the frame or bottom of cart 1 ft. 9 in. from the ground level.

The floor of the cart unloaded is kept parallel by a bent crutch, and when in motion by the joint of the limber.

The carriage of the ambulance cart is an oblong hollow steel frame 6 ft. 6 in. long by 5 ft. wide, divided into three compartments—the outer ones 1 ft. 9 in., and the inner 1 ft. 6 in., covered with steel wire 2-in. netting from each end, and from the union of the outer with the inner division steel rods are erected 4 ft. high, and joined by curved steel heads at each end, and by three steel rods laterally, that is to say, these three straight steel rods run the whole length—6 ft. 6 in.—from where the upright common end and the curve commences, one on each side, and one at the highest part of the curve, the side ones are used to roll the canvas and flies up when the wagon is not loaded. Steel wire lattice also is used between these uprights to divide the compartments and strengthen the cart.

The centre compartment also has a wire lattice diaphragm floor raised 1 ft. above the level of the floor of the cart, giving a space of 6 ft. 6 in. by 1 ft. 6 in. by 1 ft. This is utilized in the front for a water tank, and will easily hold 1 gallon.

The remainder of the space—5 ft. 6 in. by 1 ft. 6 in. by 1 ft.—will be utilized for surgical appliances, bandages, and splints. Above this diaphragm or floor is a space—6 ft. 6 in. by 1 ft. 6 in. by 3 ft. 6 in.—upon which a stretcher bearer can sit or lie, and which, if there are many wounded, an extra one can be placed either lying or sitting, and the attendant will ride a spare horse.

There is a cot contrivance of raw hide ropes and buckles which fastens round the patient and to the sides of the cart to keep him or any fractures or injury specially steady. These cots can be taken out and the wounded loaded and lifted and lowered on them when there is ample time, or when time is urgent the patients can be loaded and lowered over the wheel after the method of two or three bearers.

When the patient is loaded down comes the canvas side-fly, which has the Geneva Cross similar to any other ambulance wagon, and the wounded are thus protected.

The horse is limbered to and away they can go at a gallop. If the horse falls or is shot the cart will not capsize, and all required is another one.

SUGGESTIONS REGARDING THE PERSONNEL, EQUIPMENT, AND TRAINING OF MEDICAL UNITS ATTACHED TO VOLUNTEER INFANTRY BRIGADES.

By WILLIAM SHEEN, M.S., F.R.C.S.,

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I.—PERSONNEL.

THE medical unit attached to a volunteer infantry brigade should combine the functions of a bearer company and field hospital, and this I believe is considered by many the best arrangement for the regular R.A.M.C. For such a unit I suggest the title Field Medical Company (F.M.C.) of the R.A.M.C. (Vols.). It should consist of four medical officers, a quartermaster, one sergeant-major as instructor, and 100 non-commissioned officers and men. This is exclusive of a transport section which might be recruited of a strength equivalent to the transport obtainable, but not to exceed twenty men under a transport sergeant. In South Africa the Imperial Yeomanry Field Hospital and Bearer Company worked as one unit with success and to their mutual advantage. Their transport section was recruited in England, only native drivers and two civilian conductors being added in South Africa.

Selection of Recruits.—Great care should be exercised. Do not take every man who reaches the minimum physical

standard. It took seven months before our bearer company was got up to full strength. A superior class of men of good intelligence should be sought for. The standard they reached at school should be ascertained, and they should be able to read, write, and spell well. It is better to have young men, and the "old soldier" should, as a rule, be avoided. The following, amongst others, make good recruits: chemist's assistants, clerks, better-class artizans, fitters and apprentices to mechanical trades, telegraphists, carpenters, wagoners, and sail-makers. Care should be taken to have efficient cooks. Get men with a diversity of occupations, so that the *personnel* of the unit may be able to turn its hand to anything. We have eleven medical students in our company, and they are turning out excellent members, and work well with the other men; one has obtained non-commissioned rank.

Cyclists, Signallers, and Band.—A portion of the *personnel* should be trained as a cyclist section, and others should be trained as signallers. Buglers, of course, are required, and a band or a share in a band should be one of the later ambitions of the company.

2.—Equipment.

The equipment which our Bearer Company has so far received from the authorities consists of stretchers, kneecaps, surgical haversacks and water-bottles, old rifles for splints, one pack-saddle and pair of cacolets, and saddlery for two horses. We understand that a wagon is en route (June, 1903).

Tent Wagon.—A most useful article of equipment for a Volunteer medical unit is a combined wagon and tortoise tent. The tent forms the hood of the wagon, and is pitched with the wagon underneath: a separate hood must be provided for use with the wagon in the field. Such a tent can be pitched or struck in 20 minutes. The Cardiff detachment of the 3rd Volunteer Battalion Welsh Regiment has possessed a tent wagon for eight years, and it has proved of great value, not only in camp, but for practice on field days and for displays. Such a second wagon should be obtained as soon as the finances of the company permit, and it might be made to partly pay for itself by hiring it out as a civil ambulance—a much-needed vehicle in many localities. I regard it as an essential improvement of the army ambulance wagon that it should be made to carry four patients lying down on stretchers. The excellent wagons which the Imperial Yeomanry Bearer Company were furnished with for use in South Africa were so constructed, and as an example of their usefulness I may cite the fact that the ten ambulance wagons carried forty lying down and forty-six sitting cases thirty-three miles from Rhenoster River to Kroonstad in the Orange River Colony in one journey, a record in sick convoy work. Many who inspected these wagons in South Africa considered them to be the best they had ever seen: they carried nominally four lying and two sitting, or two lying and eight sitting, or fourteen sitting cases, but as you have heard, they were able to do more than this. Since that time they have been further improved, and a detailed description of the latest pattern, with drawings and diagrams, will be found in the Imperial Yeomanry Hospital Reports.[1] To such a wagon could easily be added as hood a tortoise tent to accommodate twelve to twenty patients.

Stretchers.—Our company has received the new pattern stretcher with hood, and I have one here in case some present have not seen it. The additions are the hood, side handles, and the four leather covered pads, which last are sent down rolled up in the pillow. The hood and side handles are excellent additions. The hood makes it impossible to close the stretcher neatly, and the cords which fasten the hood should be bound at the ends, otherwise they unravel. For practice the hood should be left off at first. The leather pads fasten on to the sides of the stretcher and steady the patient and prevent his rolling off when on the stretcher in the wagon. Leather slings are supplied, not the tanned web, "latest pattern" of the 1899 "Manual." They are more durable but far less comfortable. This stretcher weighs 38 lbs. without pillow or pads.

Further Equipment.

A water cart is a useful addition to the equipment, also a field filter. Any hired cart will do for a general service wagon. If the conjoint wagon and tortoise tent is obtained no other tent will be required; otherwise a tortoise tent is necessary. A pair of field medical panniers, a fracture box and an antiseptic case should be provided for demonstration purposes. For actual use in camp and on field days, the Field Companion, and a Congo case, fitted up according to instructions, are the best; the following should not be forgotten: tooth instruments, catheters, glycerine, collodion.

Among minor articles of equipment, I would mention spades, pickaxes, oval camp kettles, water boiler with cover and tap, nosebags and picketing gear, red-cross flags 4 ft. square, two lamps one red (a red lamp is the best night designation of a medical body), portable stove, folding operating table and two small folding tables, basins, jugs, bucket, can, half a dozen folding beds with blankets.

Head Quarters.

These should be as near to the drill hall as possible. A small house may be taken and occupied by the sergeant instructor. The two lower rooms are used for company purposes, and should communicate by folding doors so as to be capable of forming one lecture room. Another small room will be required as a store room.

Finance.

The articles I have mentioned are articles of permanent equipment quite apart from the equipment drawn on proceeding to camp. They must be provided by degrees, money being obtained firstly by public subscription, and secondly, by the Bearer Company taking part in military displays part of the profits of which come to the company. A public meeting was held in Cardiff which Surgeon-General Evatt kindly addressed, and as a result of this meeting and an appeal by circular which preceded it, we obtained nearly £200. Losses in connexion with displays, due to bad weather, may be provided against by insuring the expenses.

Uniform.

Two khaki suits should be provided for the men; khaki serge with laced knickers and khaki drill with trousers. They thus have a change in camp if they get wet. The blue uniform should only be obtained when funds permit.

3.—Training.

Ideals.—What should be the ideals of a volunteer medical unit? (1) To be able to render medical assistance in time of war, (2) to render in peace medical assistance to the combatant force to which it is attached, particularly (*a*) in camp, (*b*) on field days, (*c*) at ceremonial parades, dealing with emergencies in crowds when the military guard the streets, (3) by teaching the men first aid and ambulance work to furnish more useful citizens.

Hospital Orderlies.

If the recruit of good intelligence, whom I have already alluded to, has been obtained, there should be a possibility of realizing these ideals. The principal difficulty with volunteers lies in the training of men to be male nurses, or hospital orderlies as they are called, the ordinary annual camp of a week's duration not being sufficient. I suggest that arrangements should be made with local hospitals for the local members of the R.A.M.C. (Vols.), to have a course of training in ward work for a fortnight or longer. Such a course should only be made permissible to men who have undergone thorough preliminary instruction, and would, though short, be invaluable in fitting them for orderly duties.

Changes in the "Manual."

The *Manual for the R.A.M.C.* should be looked upon as a guide, its teaching explained and amplified, and its drill varied to suit circumstances. There is a tendency to too rigid adherence to the *Manual*. A new edition is promised "in due course." With regard to Section 1, which deals with "Training of the men in first aid and nursing," I am quite ignorant as to what changes are impending, but I make the following suggestions for instruction additional to that in the present *Manual*, and I should give such additional instruction to my volunteer medical unit. In the anatomical part there should be a word or two about the lymphatics; it would enable the men to understand buboes, axillary abscesses, and the like. More detail of germ action is required; what conditions favour their increase and how they can be destroyed: inflammation should be noted as the result of germ action in wounds and its cardinal symptoms given. Asepsis and aseptic methods should be alluded to. The germ causation of certain specific diseases should be noted. The men should be instructed in the methods of water purification, and taught that epidemic diarrhoea, typhoid, and dysentery are conveyed by water contaminated by the stools of patients suffering from these diseases. Boiling should be laid most stress upon as a means of sterilizing water; some efficient form of field filter,

such as the Berkefeld, should be described and figured, and methods of purification by the improvised camp filter and by alum indicated. Scurvy should be alluded to and its prevention by fresh food, fruit, and limejuice explained. Lightning stroke should receive notice. The duties of a nurse before, during, and after an operation should be described.

Arrest of Haemorrhage.—Far too much stress has been laid in first aid manuals on the application of tourniquets.[2] Haemorrhage can almost always be arrested by pressure on the bleeding spot. The usual result of a tourniquet applied by a partially skilled hand to a conscious patient is to constrict the veins and not the arteries and patients bleed to death from this cause. In shell wounds the tearing nature of the injury closes the vessels, while an aneurysm is the usual result of a bullet wound of a main vessel. In not one of 342 cases of bullet and shell wounds admitted off the field into the Imperial Yeomanry Field Hospital was a tourniquet required.[3] When used a tourniquet should be of the flat rubber band variety; I would do away with all screw tourniquets from army medical equipment.

Bullet and Shell Wounds.—The structure of modern small arm ammunition, the kind of wounds produced by bullet and shell, their complications and the usual treatment adopted should be outlined to the men.

Feet.—The care of the feet in marching and the treatment of blisters and sore feet should be taught; this will be good for the men and indirectly for others.

Drills and Exercises.—Certain alterations of the drill to bring it to the present Aldershot pattern we have ascertained; others can be made by a comparison of the *Manual* with *Infantry Training 1902*. There is, I think, an opening for the publication of a *Manual for Training Men of the R.A.M.C. Vols.*, which should contain certain general hints; a scheme for arrangement of lectures, with time table; squad and company drill, and the various special drills and exercises comprehensively arranged, so that the reader is not referred to *Infantry Training*, together with the duties in mounting and relieving guards and sentries. Such a book would supplement the excellent *Volunteer Surgeon's Guide*, a new edition of which I am glad to hear from Major R. R. Sleman is completed, its publication only awaiting the appearance of the new volunteer regulations. With regard to detail, loading and unloading stretchers with three bearers should be as frequently practised as with four. Opening and closing hoods must be done by Nos. 2 and 4. With the hood included it is easier to carry the closed stretcher by one than both handles. All parts of the drill should be equally practised; a dummy horse can be used for cacolet drill, and two sticks stuck in the ground will do to represent the rear end of a wagon. Improvised methods should be taught, and the men encouraged to think and act for themselves. Practice should be on broken ground; the supposed wounded should be scattered in all directions; the load should be carried some distance, so that the importance of properly adjusting slings may be appreciated.

Typical Field Day.

Let me give you a short sketch of a Saturday afternoon field day for our unit. Such a field day might be held alone on the first occasion, and on a second in association with a combatant force. On a previous evening a special lecture should be given to the men, in which the medical organization in time of war should be explained, from regimental stretcher bearers to base hospital, and the share which their particular unit would take indicated. The methods of moving wounded off the field and getting them to the field hospital are then detailed and the general scheme of the supposed operations on the field day explained by means of a map. The ground for working over should be fixed, permission for using it obtained if necessary, and it should be gone over by one of the officers previously.

The men, who carry haversacks and filled water bottles, meet the tortoise tent wagon, water cart, and store cart at the rendezvous. In the store cart are: A pair of field medical panniers (or some equivalent equipment specially ordered and arranged for such a conjoint unit as this "field medical company"); field companion; folding operating, and two small folding tables; camp kettles; water boiler; basins, bucket, can, towel, soap, and nail brush (the last six mentioned might be made so as to fit into one receptacle); spades, pickaxes, field filter, blankets. In the ambulance are the stretchers, surgical haversacks and filled water bottles, Red Cross flags, knee caps, old rifles, tent fittings. The following may be taken in addition: Folding beds, portable cooking stove, lantern, and matches. Forage and picketing gear must be provided. The various parties are detailed for patients, stretcher bearers, collecting station and hospital tent; signallers are at the two last. The bugler may be at the collecting station, but the men should be reminded that bugles are not likely to sound in actual warfare. Red Cross flags mark the collecting station and hospital tent and the route between them.

The officers should carry whistles and give their commands by signal as far as possible.

The patients are distributed by an officer and occupy a limited area. (Even with this restriction I have known a patient, though energetically searched for, lie undiscovered in a sand "burrow" for three-quarters of an hour.) Each is provided with a filled-up specification tally. The officer in command of the stretcher squads will indicate the zone supposed to be under fire to his men. On reaching this the stretcher squads halt under cover, and the Nos. 4, carrying haversacks and water bottles, go forward and search for wounded. On finding a wounded man the No. 4 drags him into cover if possible, and then acts according to the nature of the injury, fetching the remainder of his squad forward only if necessary.[4] The stretcher should be placed on the most level piece of ground near the patient. Broken ground, and if possible a ditch, should intervene between the squads and the wagon. Supposed wounds might be marked on the skin with a dermatograph, and I suggest that a practice first field dressing, which could be put together again after use, should be carried in the pocket of each of the patients. The wounded walk, or are carried to the collecting station, where the lying-down cases are loaded into the wagon, the others sitting in the wagon or walking to the hospital tent. The signaller at the collecting station signals to the hospital tent the number of the wounded and the nature of the wounds. Meanwhile the hospital tent has been pitched, the operation and other tables got out, and the necessary instruments and dressings prepared. If permissible, fuel is collected, and a field kitchen dug, and water boiled in the boiler and camp kettles. Or the portable stove may be used. As the wounded are brought in they are sorted out and the details of any operations required are explained and exemplified as far as possible. Splints are applied and dressings renewed.

The horses of the water-cart and store-cart are taken out and picketed. Opportunity for watering and feeding the wagon horses is given after the wounded are brought in. If there is a Transport Section, its men should attend to these duties.

The water which has been boiled can be used for making the men's tea. They bring their food, or it is provided for them. It is well to get men who intend to attend this practice to give in their names two or three days beforehand.

Subsequent to the practice another lecture should be given explaining what has been done and pointing out defects. The varying conditions of warfare are explained to the men: how at one time it may be advisable for the wagons to work separately between the firing line and the field hospital without the formation of a central "collecting station"; how when the force is advancing as well as fighting the wounded are carried in the ambulance wagons until the force camps for the night; how when the force does not advance the field hospital becomes a stationary hospital for the time being; how in mountain warfare wagons are useless and are replaced by doolies and cacolets.

Miscellaneous Suggestions.

Just a few miscellaneous suggestions in conclusion. Ceremonial should not be neglected. The inculcation of smartness and strict discipline make for better control of the men, and so are of practical value. All promotions should be by examination; in that way and by prize competitions a spirit of emulation should be fostered amongst the men. *Esprit de corps* is further encouraged by smoking concerts, displays and the provision of a recreation room. A "Company Year Book" should be distributed containing names of officers and N.C.O.'s; promotions and appointment during the past year; any honours gained, or special events taken part in, by the company or individual members; where orders are to be found; probable date and place of annual camp; requirements for efficiency; dress regulations; company prizes; hints on saluting, etc. By the co-operation of neighbouring companies such a book might in time develop into a periodical like the highly successful *Annual* of the Glasgow Companies of the R.A.M.C. (Vols.). The transport section, cyclists and signallers, should receive similar medical train-

ing to the other men. The cyclists will be useful as messengers and for carrying additional dressings or appliances. A good cycle stretcher has yet to be designed. Ambulance dogs are undoubtedly useful,[5] and enthusiasts will always be found in the company who will take a special interest in training them. Umbrella shelters for wounded are excellent, the principal objection to them being the extra weight to be carried that they entail.

I thank you for listening to what I know has been a very fragmentary paper and I hope that some of the points I have raised will be thought worthy of discussion.

At the conclusion of his paper Captain Sheen exhibited drawings of a new ambulance wagon made by H. A. Hamshaw, of Leicester, and constructed to carry six patients lying down on stretchers.

REFERENCES.

[1] *The Imperial Yeomanry Hospitals in South Africa.* Edited by The Countess Howe. Vol. ii. By C. Stonham, C.M.G. London: Arthur L. Humphreys. [2] Correspondence in *Lancet*, vol. i. 1903: W. G. Spencer and others. [3] Private communication from Mr. C. Stonham, C.M.G., and *Imperial Yeomanry Hospitals in South Africa*. Vol. ii. [4] The Brigade Medical Unit. By Brigade-Surgeon-Lieutenant-Colonel Giles. BRITISH MEDICAL JOURNAL. Vol. ii, 1902, p. 1032. [5] See vol. ii of the *Annual* of the Glasgow Companies of the R.A.M.C. (Vols.), p. 30.

Surgeon-Major J. W. DAVIES said that instruction could only be carried out with the aid of a sergeant-instructor. The whole company should be trained as stretcher bearers.

Surgeon-Captain ARTHUR ERNEST LARKING, M.D., said the only way to get together a good stretcher squad was to enlist men specially for ambulance work. The permission of the officer commanding the battalion was necessary, and also the consent and co-operation of the company commanding officer. The regimental medical officer must initiate the movement to obtain stretcher bearers and make it known that he wanted recruits, because nobody else would obtain them if he did not. He thought sooner or later that it would be found necessary to pay regimental medical officers on account of the expense entailed in going to camp, providing a *locum tenens*. An advertisement had already appeared for a medical officer to take position of medical officer to an infantry brigade on Salisbury Plain. This showed which way the wind blew. The idea of detailing two men per company only was erroneous. In the King's Regulations it stated at least two men per company. He failed to see how it was possible for a regimental medical officer to know his drill if stretcher bearers were not provided for him to drill. He objected to the idea of Brigade-Surgeon Giles that, after men had obtained the stretcher-bearer badge they should go back into the company. Finally, he considered the great objection in giving up the regimental medical officers and going over to the R.A.M.C. (Vol.) was the question of changing uniform and the consequent expense. He thought each battalion ought to have a small bearer company as a separate unit, and they should wear the same uniform as the battalion.

Surgeon-General EVATT said that it had been decided that volunteer I.B. bearer companies were not R.A.M.C. volunteers; also that a medical officer R.A.M.C.V. transferred to a regiment could continue to wear his R.A.M.C.V. uniform.

Surgeon-General MUIR experienced great gratification in hearing that the Manchester R.A.M.C.V. under Lieutenant-Colonel Coates was so efficient, as he had had the opportunity of watching the growth of that corps when P.M.O. of the N.W. District a few years ago.

Surgeon-Major ARNALLT JONES said the position of the Volunteer Regimental Bearers was unsatisfactory. Personally he had the approval of his commanding officer to enlist men directly into the bearer section of his battalion, and so he did not come in conflict with officers commanding companies by having to demand two men from each company. There were drawbacks to that course, however, as in the event of resignation of a successful regimental medical officer, the company he had created might disappear through the loss of his personal influence; another drawback was the matter of expense, it was a heavy tax on the purse of the medical officer. Men to be encouraged to attend drills had to be entertained in various little ways, which of course meant money, and all that did not improve discipline. Volunteers should be paid. The country had no right to expect so much sacrifice of time and money from the volunteer, and things did not seem likely to go right till the militia ballot was enforced, from which ballot all trained and efficient volunteers should be exempt. When the guns began to shoot there would be no difficulty in getting volunteers: but to be of use to the country when it was in trouble, they should be made efficient and prepared in the piping times of peace.

Dr. LEIGH CANNEY said that as a civilian he would like to refer to the very serious question that had been raised by several officers of both volunteer and regular armies of need for payment in some form of volunteer officers, in order to meet the serious expenses incurred by them, which had a retarding effect on civilian doctors volunteering to assist the military forces of the country. Surgeon-General Evatt had stated how impossible it would be for the regular army to hope to enter at all effectively on war on any large scale without the strong support of the civil military forces. Surely the country should no longer make those heavy financial demands on civilian medical men so patriotically devoting their services to the State. Would it not be desirable at once to form a commission representing both volunteer and regular forces to decide that point, and advise the country on the point. He would suggest some system by which volunteer medical officers, who, being qualified on January 1st of each year, were willing to place their services at the disposal of the country in case of war arising during a stated period, say of six months or twelve months to come, should receive a retaining fee for that period, adequate to cover some of their financial losses, possibly amounting to £40 to £50 per annum.

Captain SHEEN, in replying, expressed the thanks of the meeting to Surgeon-General Evatt for his valuable remarks. He recognized and sympathized with the difficulties under which the regimental medical officer laboured. He was surprised to hear from General Evatt that he (Captain Sheen) did not belong to the R.A.M.C. (Vols.). The men of the Welsh Volunteer Brigade Bearer Company were, in the first instance, supplied with shoulder straps bearing that designation, but these had recently been changed to straps bearing the lettering "R.A.M.C. Welsh V." He thanked Surgeon-General Muir for his kind suggestion that the paper should be published in the journal for the R.A.M.C., but explained that its publication had already been arranged for in the BRITISH MEDICAL JOURNAL.

Surgeon-Captain STEPHENS, in reply, said that Surgeon-General Evatt stated that if volunteer medical officers did their duty, they would not court popularity with their combatant *confrères*, but reject a large number of men: did they do so, then no volunteer regiment would be up to strength, and the chance of getting regimental bearers would be reduced to a minimum. Reference was made to the pay of volunteer medical officers, which was *nil*, and yet for the same money they were to act as recruiting officers as well. Brigade-Surgeon-Lieut.-Colonel Giles stated that volunteer regimental bearers must know more than regular bearers, yet at the same time he suggested they should be changed every six to twelve months. The success of the volunteer medical officer was not to be measured by popularity, for his friend, Surgeon-Major Arnallt Jones, who was a popular officer, had just stated it cost him £20 to £30, and he was also liable for £60. Men—and good men—were what they required, and till a form of compulsion came in the work would and must be satisfactory.

REMARKS ON THE MILITARY MEDICAL SERVICES.

SURGEON-GENERAL EVATT gave a sketch of the evolution of the Regular, Militia, and Volunteer Medical Services in peace and war from the Crimean period, through the unification period up to the present day, with suggestions as to the future developments of the military medical services in all its branches.

Surgeon-Major J. W. DAVIES said that the great want in the Volunteer Bearer Company was an increase of establishment to 110 men with a quartermaster and sergeant instructor, and camp instructor of at least fourteen days.

Surgeon-Major ARNALLT JONES said he expressed the gratitude of the Volunteer surgeons present to Surgeon-General Evatt for his interesting and instructive address, and referred to his valuable services to Volunteer medical aid by inducing the students of the great medical schools to join the Volunteer bearer companies, so forming the nucleus of civil aid in war.

Inspector-General WOODS (President of the Section), in concluding the work of the Section, asked the members to take note that a scheme of reserve civilian medical officers had been formed for the navy. He also wished to express his thanks for the valuable work rendered to the Section by the Vice-Presidents and by the Honorary Secretaries, Fleet Surgeon Lloyd Thomas, Lieutenant-Colonel Russell, and Surgeon-Major Arnallt Jones.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

HAEMORRHAGE INTO THE BURSA PATELLAE.

Two cases were published last year in the British Medical Journal of the above condition, one by Mr. Heath on May 3rd, and one by Mr. Leslie Jones on August 30th; a third case came under my notice recently.

An Egyptian soldier stationed in Khartoum fell from a horizontal bar on to his knee, and he says he fell with it on a stone. Ten weeks after he was sent up to Cairo, and his condition was then as follows: No external scar or trace of bruise; left knee swollen and semiflexed, and presented the signs of a chronic synovitis of the joint without much effusion.

There was no fluctuation anywhere, but there were two irregular thick transverse ridges across the patella suggesting callus thrown out after a fracture, but they extended beyond the lateral limits of the patella; the patella also seemed much broader than the other, illustrating in another region what is so often noticed in the scalp—a blood effusion feeling like bone and suggesting a fracture.

I thought it must be a case of tuberculous disease of the knee-joint from its chronicity, appearance, and from its dating from an injury.

As no improvement followed by immobilization, strapping, etc., I made a 6-in. incision vertically over the patella, and came down on the bursa over the periosteum thickened to the extent of ¼ in. and extending laterally beyond the patella, and on incising I found that it was filled with an old extravasation of blood adherent and more or less organized in the angle between the anterior and posterior walls of the bursa. Towards the centre the organization was less advanced, and in the middle a small cavity containing old blood. The patella was healthy, and the same size as that of the opposite leg.

I dissected out the bursa, aspirated the joint aseptically through the wound, sewed up the wound, and put on a straight back splint with rectangular foot-piece. The small quantity of fluid withdrawn from the joint was clear, and there was no evidence of tuberculous disease anywhere about the joint.

The wound healed by primary union, but a collection of blood in the cavity from which the bursa had been dissected had to be aspirated (one ounce), and perhaps the reason of his getting a haemorrhage into the bursa at all lay in the fact that he bled uncommonly easily. However, the occurrence of an extravasation of blood into the bursa patellae seems sufficiently frequent to merit some mention in students' textbooks in order that it may be diagnosed at the time when it occurs, and to prevent the condition later on being mistaken for tuberculous disease or a fracture of the patella.

J. B. Christopherson, M.A., M.D.Cantab., F.R.C.S.,
Surgeon attached to Egyptian army; late Surgeon Seamen's Hospital Society.

REPORTS

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

KIDDERMINSTER INFIRMARY AND CHILDREN'S HOSPITAL.

ILEO-CAECAL INVAGINATION DUE TO POLYPUS: GANGRENE OF INVAGINATED INTESTINE: ENTERECTOMY: RECOVERY.

(By J. Lionel Stretton, M.R.C.S., L.R.C.P., Senior Surgeon to the Hospital.)

History and State on Examination.—A healthy young woman, aged 25, was suddenly seized with excruciating pain in the abdomen. When first seen (on the morning of April 2nd) she was crying out with pain, her expression was anxious, and she had vomited. The abdomen was distended, and the pain was not localized. There was increased tenderness in the right iliac region, but no distinct tumour could be felt. The bowels had acted the night before. The temperature was normal, and the pulse-rate 100. She was put on small doses of belladonna, and hot fomentations were applied to the abdomen. Later in the day an enema was administered, and produced a good result. The tenderness in the right iliac region became less, and a lump could now be felt. In spite of the most forcible persuasion no operation was permitted, although it was repeatedly pointed out that this offered the only chance of saving her life. The vomiting recurred occasionally, and the enemata, which were constantly repeated, always brought away solid faecal matter. There was no blood or mucus. At the end of a week, on April 9th, consent was given for operation. The condition then was much the same.

Operation.—Under ether, an incision 4 in. long was made at the outer edge of the right rectus. The mass was found to be an intussusception of the ileo-colic variety. It was impossible to reduce it and the portion of invaginated intestine was consequently resected. The ends were approximated by simple suture. First a layer of interrupted sutures passing through the whole of the coats and outside these a layer of interrupted Lembert sutures. The portion of intestine removed was in an advanced state of gangrene and consisted of about 8 in. of the ileum, the apex of the invagination consisting of an intestinal polypus. The operation from the commencement of anaesthesia lasted under an hour. During this time the patient became very collapsed. She was transfused with two pints of saline solution and mxx liq. strychr. were injected hypodermically.

Progress.—Her after-progress was uneventful. She gradually recovered from the shock and was up and about in three weeks' time.

Remarks.—It appears, from a discussion at the Clinical Society on May 22nd last, that this condition is a rare one and the successful removal of the invaginated intestine has only twice been accomplished. Its rarity, therefore, makes it worthy of record. It also supports the advisability of exploration in acute abdominal troubles of an obscure nature. In this case there was an absence of the classical symptoms and in spite of the advancing local mischief her general condition at first improved and then remained stationary. An apparent improvement is no proof that the trouble has disappeared.

REVIEWS.

THE SURGERY OF THE PANCREAS.

Of late years diseases of the pancreas have attracted considerable attention on the part, more especially, of surgeons, owing to the fact that the physical signs and symptoms are so obscure and contradictory that a real explanation of their cause has not been defined until, owing to the urgency of the symptoms, exploratory laparotomy had been performed. Körte, in Germany, has already produced a monograph on the subject, and various American writers have made large contributions to it; now we have a much less ambitious but extremely valuable contribution from Mr. Mayo Robson and Mr. Moynihan, entitled *Diseases of the Pancreas and their Surgical Treatment*.[1] A short introduction is given dealing with the anatomy and physiology of the gland, and this is followed by chapters dealing with injuries of the pancreas, pancreatic calculi, cysts, and growths. In these domains the authors have given firsthand information and a considerable number of references to descriptions of cases from foreign literature. But it is with the subject of pancreatitis that the writers have information of the highest value to impart and the reader will find in Chapter VII, dealing with chronic pancreatitis, much that is very important. It is a curious fact that with the advances made in our conception of the principles underlying the symptoms of cholelithiasis, especially with respect to the part played by bacterial infection, whether following on or preceding the formation of stones, so little attention should have been paid to the possibility of infection travelling along the pancreatic ducts. Perusal of this volume will, however, open up to the reader a fresh vista, for it is clearly shown that there is every justification for applying the principles used to explain hepatic disorders to the problems met with in a study of the pathological changes of the pancreas. Pancreatitis is considered under three headings—acute, subacute, and chronic—and the authors take great pains to show how such diagnosis may be made, the difficulties of the task being, however, fully admitted. It is a familiar experience in most hospitals that

[1] *Diseases of the Pancreas and their Surgical Treatment.* By A. W. Mayo Robson, F.R.C.S., and B. G. A. Moynihan, M.S. (Lond.), F.R.C.S. Philadelphia and London: W. B. Saunders and Co. 1902. (Demy 8vo, pp. 293, 23 illustrations. 12s.)

during the year several cases are admitted for recurrent attacks of abdominal pain, associated with jaundice and symptoms of dyspepsia. Such cases have been operated upon for the relief of impaction of biliary calculi, in some cases stones have been found and removed, in others no stone has been discovered. In some of these cases the head of the pancreas has been found to be enlarged, and the surgeon has closed the abdomen with the fear that the pancreas was the seat of malignant disease; we can remember two such cases at least in which, after laparotomy, neither stone nor enlargement of the pancreas was found or noticed, and considering the careful exclusion of the common cause of cirrhosis of the liver, the opinion expressed was that the cases were really examples of Hanot's hypertrophic cirrhosis of the liver. For a proper understanding of these cases we are greatly indebted to the above writers, as well as for a means of treatment which, though in comparative infancy, deserves consideration and fair trial. It is well known that the intervals between the attacks in these cases may be lengthy months, and even years—so that because, after practising cholecystotomy and drainage, or liberating the adhesions round the gall bladder (cholecystendysis) all symptoms disappear, we cannot, admit until the treatment has had a longer trial, that the authors of this book have said the final word. They record 24 cases operated on in this way; in 21 cure resulted; of the remaining 3 one died shortly after the operation, and the other two a few months later. Full details are given of 8 of the cases; the intervals during which the patients were known to be free from the attacks varied from six weeks to about three years. The writers further admit that cholecystotomy and drainage in cases of gall cholelithiasis—a very common accompaniment of chronic pancreatitis—is preferable to cholecystenterostomy, and that even the former operation may fail to relieve the morbid condition met with in the pancreas. We are a little puzzled by some of the statements made: for example, it is not clear what the authors mean when they speak of "chronic pancreatitis, at first hypertrophic but later cirrhotic;" the antithesis fails because the conditions mentioned may or may not be opposed to one another. Reference is made to Sahli's test of the entrance of pancreatic juice into the intestine, by the administration of salol, which is split up by the action of the pancreatic juice and carbolic acid and salicylic acid are said to occur in the urine; it is our experience that the administration of carbolic acid is usually followed by the appearance of pyrocatechin or its isomer hydroquinone, and not the acid itself. The writers affirm that haemorrhage, associated with jaundice from impacted gall stones, is much less serious than that associated with the jaundice of pancreatic disease; this is apparently to be traced to the action of some body liberated from the pancreas capable of reducing the number of the blood platelets of the circulating blood, and of leading to the excretion in the urine of some body capable, by a special method, of being separated in a crystalline form. The writers, however, are not yet convinced of the value of this sign, which, if met with only in cases of gall stones and chronic pancreatitis, would prove of most valuable help. We have endeavoured to give some idea of the scope of this work, which is well worthy of careful study by all interested in this difficult part of clinical investigation, for it appeals to both physician and surgeon. The writers dedicate their work to the surgeons of America in recognition of their efforts, and we do not hesitate to say that the volume itself is a most worthy offering and a fitting monument to the writers' own industry in the investigation of a difficult subject.

REPORTS AND ANALYSES

AND

DESCRIPTIONS OF NEW INVENTIONS

IN MEDICINE, SURGERY, DIETETICS, AND THE ALLIED SCIENCES.

MEDICAL AND SURGICAL APPLIANCES.

Nest-Spring-Reels for Silk and Catgut Ligatures with Portable Sterilizer and Container.—W. Blair Bell, M.D.Lond., M.R.C.S.Eng. (Aigburth) writes: These reels (shown in Fig. 1) are made of thin perforated spring metal with a broad slit down the whole length. They allow for the contraction of the silk when boiled, and yet keeps it gently on the stretch. The silk is wound in a single layer round the smaller reel first; this is then slipped into the larger reel, and the winding continued in the same way, just tightly enough to make the outer reel gently grasp the inner, the slits corresponding.

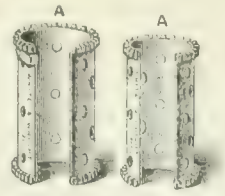


Fig 1.

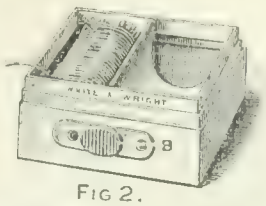


Fig 2.

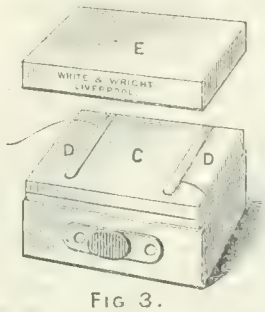


Fig 3.

The winding is best done by fixing the silk at a distant point, and winding towards the point of fixation. The two reels together hold at least ten yards of thick silk, so that one reel alone might hold sufficient. Two sets of reels are contained in each appliance for different-sized silks. The container when loaded is closed first by the inner lid C, with spring slits DD, through which the silk passes; and finally by the outer lid E. The slide B is then opened, and the whole apparatus boiled in an ordinary sterilizer, after which the water is emptied out through the slide holes and the slide closed. A modification of this appliance is made for catgut. There is no slide B, and the reels fit an ordinary Mayo Robson sterilizer. The outer lid E is so fitted that the container can safely contain the reels with the sterilized gut in spirit, without leakage, when carried in the surgeon's bag. The whole is nickel-plated, and measures about 3 by $2\frac{3}{4}$ by $1\frac{1}{2}$ inches. Messrs. White and Wright, of 93, Renshaw Street, Liverpool, have made this appliance for me, and it can be obtained from them.

LONDON COUNTY COUNCIL.

PUBLIC CONTROL DEPARTMENT.

We have received the annual report of the Chief Officer of the Public Control Department of the London County Council which bears date July, 1903. The report covers the year April 1st, 1902, to March 31st, 1903. We give a full abstract of the parts of the report which have a direct interest for the medical profession.

Coroners' Inquests.

The powers and duties of the Council in relation to coroners' inquests chiefly consist in the appointment of coroners and payment of their salaries, in the settlement of their districts, in the regulation and payment of the costs incurred in connexion with the holding of inquests, and in providing and maintaining courts for the purpose.

Inquests held in 1902.—7,729 inquests were held in the County of London during the year 1902, which is at the rate of 1.6 inquests per 1,000 of the estimated population, 4,553,512. The number of inquests held in London during the past five years were: 1898, 7,479; 1899, 8,271; 1900, 8,027; 1901, 7,932; 1902, 7,729.

Cases Reported to Coroners.—During 1902 there was a decrease of about 40 in the number of cases reported to coroners. The cases in which coroners decided that inquests were unnecessary numbered 2,061, or 160 in excess of the number in 1901, so that the number of inquests held declined to 7,729, a decrease of 203. In more than one half of the inquests held, namely, 3,706, a verdict of "death from natural causes" was returned, and in the majority of these cases an inquest may have been unnecessary. The average cost of holding an

inquest in London in 1902 was about £2 10s., excluding the salary of the coroner, and the 3,706 inquests, where the verdict was "natural causes," cost the county about £9,265. If the Council's scheme for the amendment of the law as to the holding of inquests had been adopted, says the chief officer of the department, much of this sum would have been saved.

Necropsies.—The number of necropsies made was 4,033, a reduction of 206 on the number held in 1901. The lowest proportion of necropsies to inquest cases occurred in the East End of London, while the highest was in the Westminster and South-Western districts. The variation may, it is suggested, be due more to the personal views of the coroners than to any exceptional difference in the cases dealt with. The question of necropsies as made by the ordinary medical practitioner has engaged the attention of the Committee and the Council during the year, and in July last the Council passed the following resolution:

That coroners be informed that in the opinion of the Council it is desirable that necropsies in inquest cases of a special nature should be entrusted to a specially-skilled pathologist.

It had always, the report states, been felt that in special cases the services of a specially-skilled pathologist should be available, and since 1893 such skilled pathologists as Dr. Creighton, Dr. Luff, Dr. Pepper, and the late Dr. Bond, etc., have been occasionally called in by coroners. In June, 1903, Dr. L. Freyberger undertook to make toxicological analyses in poisoning cases in succession to Mr. Womack, who had decided to give up the work, and Dr. Freyberger, being a skilled pathologist, subsequently also undertook to make necropsies and give evidence in inquest cases of a special nature at the fee named in the Act—namely, two guineas. London coroners were accordingly apprized of this fact, and his services were requisitioned by several of the coroners. Complaints were, however, subsequently received by the Council that in the South-Western and the Westminster districts an erroneous interpretation was being put by the coroner on the words "in inquest cases of a special nature," and that Dr. Freyberger was being called in in ordinary cases as a pathologist to the detriment of the ordinary medical practitioner. The Committee went very thoroughly into the question, and received deputations from St. Thomas's Hospital and the South-West London Medical Society. After careful consideration of their statements and those of the coroner and Dr. Freyberger, it was felt that to some extent the objections raised by the medical profession would be met by a panel of names being drawn up, after consultation with the principal London hospitals, from which coroners could select pathologists for special inquest cases, on the understanding that in cases where this course was adopted the medical practitioner should also be called to give evidence in every case in which the coroner was of opinion that such evidence was material to the inquiry. A preliminary list of such pathologists has been forwarded to coroners, and is as follows:

Preliminary List of Pathologists Who are Willing to Undertake Post-mortem Examinations and give Evidence in Inquest Cases of a Special Nature.—Broadbent, J. F. H. (St. Mary's Hospital), 35, Seymour Street, W.; Byrne, Peter Kevin, M.D., M.R.C.S., L.R.C.P.Lond. (London Temperance Hospital), 40, York Place, Portman Square, W.; Creighton, C., M.D., Great Ormond Street, W.C.; Daniel, P. L., F.R.C.S. (Charing Cross Hospital), 5, Devonshire Street, Portland Place; Dawson, Bertrand, M.D., (London Hospital), 110, Harley Street, W.; Freyberger, Ludwig, M.D., M.R.C.P., M.R.C.S., 41, Regent Park Road, N.W.; Hosford, John Stroud, M.R.C.S., L.R.C.P. Lond. (London Temperance Hospital), 20, St. James's Place, St. James's Street, S.W.; Perkins, J. J., M.D., F.R.C.P. (St. Thomas's Hospital), 41, Wimpole Street, W.; Russell, A. E., M.D.Lond., M.R.C.P. (St. Thomas's Hospital), 107, Palace Road, Lambeth; Salaman, R. N., M.D. (London Hospital), London Hospital, E.; Scott, Sydney R., L.R.C.P.Lond., F.R.C.S. (London Temperance Hospital), 62, Belsize Park Gardens, Hampstead, N.W.; Smith, Lewis, M.D. (London Hospital), 7, Wimpole Street, W.; Smith, W. R., M.D. (Professor, King's College Hospital), 74, Great Russell Street, W.C.; Trevor, R. S., M.D. (St. George's Hospital), 21, Fitzgeorge Avenue, West Kensington; Voelcker, Arthur Francis, M.D. (Middlesex Hospital), 101, Harley Street, W.; Whipham, T. R., M.D. (St. George's Hospital), 11, Grosvenor Street, W.; Young, Robert A., M.D. (Middlesex Hospital), Middlesex Hospital Residential College, Cleveland Street, W.

—All the inquests during the year were held in coroners' courts or public buildings, and no inquests were held in public-houses.

Deputy Coroners.—During the year the following appointments of deputy coroners have been made by the London coroners, and the appointments have been approved by the Chairman of the Council in accordance with the Coroners Act, 1892:

District.	*Deputy Coroner.*
Western	Mr. S. I. Oddie.
South-Western	Mr. R. H. Wellington.
South-Eastern	Mr. H. B. Sewell.

Salaries.—The salaries of coroners may be revised every five years at the instance either of the Council or the coroner, having regard to the average number of inquests held by any such coroner during the five years immediately preceding. During 1902 the salaries of the coroners for the Western and Southern districts became liable to revision. The average number of inquests held in the Western District during the quinquennial period was 3,754, which gave an annual average of 750⅘, and calculated at the basis of 30s. per inquest produced a salary of £1,126 4s., which the coroner, Mr. C. L. Drew, agreed to accept. The revision of the salary of Mr. G. P. Wyatt, the coroner for the southern district, has not been agreed. The salary of the new coroner for Southwark (Dr. F. J. Waldo) has also not yet been agreed. The Council offered Dr. Waldo a salary on the basis hitherto adopted in that district; but this basis Dr. Waldo has declined to recognize, and has appealed to the Home Secretary under the provisions of the 23 and 24 Vict., cap. 116, which deals with coroners' salaries.

Districts.—Mr. John Troutbeck, coroner for Westminster, was on July 1st, 1902, appointed coroner also for the South-western district at a salary of £798 4s. 2d., in succession to the late Mr. A. Braxton Hicks, who died on May 17th, 1902. By this joint appointment a saving of nearly £400 was effected, and the arrangement is found to work satisfactorily. On December 16th, 1902, Mr. H. R. Oswald was appointed coroner for the South-eastern district at a salary of £943 10s. per annum, in the place of Mr. E. A. Carttar, who died on November 4th, 1902.

Costs of Inquests.—A table is given showing the expenditure for the nine years 1894 to 1902, inclusive. The gross reduction in cost for the year was about £1,300, and of this about £500 is due to the decrease in the number of inquests held, £153 to a decrease in salaries, while a decrease of 1s. 7d. in the average cost of disbursements per inquest accounts for the balance of over £600. The decrease reduces the average cost of inquests to £3 15s. 9d., which is less than it has been since the payment of jurymen began in 1898.

In addition to the expenses above referred to, agreements have been entered into by the Council with various borough councils for the provision of coroners' courts, at annual rentals amounting during 1902 to £1,130. The Council also has itself erected six courts, involving an annual maintenance charge of about £170 for their up-keep, and a capital expenditure of about £18,000. Calculating the interest on capital at 3 per cent., and adding the amount paid as rents to borough councils, it will be seen that the cost for courts during the year was about £1,840. This figure, added to the amount of disbursements and salaries, gives a sum of about £31,136 7s. as the actual costs of coroners' inquests during 1902, which is a reduction of about £1,188 7s. 10d. on the previous year's figures.

Coroners' Law Amendment.—The following series of recommendations were confirmed by the Council in January, 1895, and subsequently submitted to successive Lord Chancellors and Home Secretaries, but no attempt has been made by the Government to obtain an amendment of the law. It has not been possible for the Council itself to introduce a Bill, as any legislation must be by a general Act applicable to the whole country:

(*a*) That in no case should a death be registered without production of a certificate of the cause of death, signed by a registered medical practitioner or by a coroner after inquiry.

(*b*) That a medical practitioner in attendance should be required, before giving a certificate of death, to personally inspect the body and identify it as the body of the person he has attended; and should include in his certificate a statement pointing to the absence or accident, poison, violence, or criminal neglect; and that the coroners be required to hear evidence from representatives of the families of the deceased whenever it is alleged that death has been caused by accident.

(*c*) That a form of certificate of death should be prescribed, and that in giving a certificate, medical practitioners should be required to use such form.

(*d*) That medical practitioners should be required to send certificates of death to the registrar instead of handing them to representatives of the deceased.

(*e*) That it should be made a penal offence to bury or otherwise dis-

pose of a body without an order from the registrar stating the place and mode of disposal, which order, after it has been acted upon, should be returned to the registrar who issued it.

(*f*) That it should be made an offence to retain a body unburied or otherwise legally disposed of beyond a period not exceeding eight days, except by permission of a magistrate.

(*g*) That the certificate should be endorsed by the burial authority, with the date of interment or disposal and the place where the body is buried, and returned to the registrar by the burial authority.

(*h*) That when the medical practitioner is unable to certify, he should be required to report direct to the coroner. Relations, friends, and others having cognizance of suspected cases should also be required to report them to the coroner.

(*i*) That every case of death after surgical operation should be reported to the coroner with a view to preliminary inquiry, and, if necessary, the holding of an inquest.

(*j*) That medical investigators should be appointed—

1. To inquire into causes of all uncertified deaths, assisted by qualified and responsible inquiry officers.
2. To examine the body in all such cases, and make a necropsy where necessary.
3. To report the result to the coroner sitting in court, who will then decide as to necessity for holding formal inquest.
4. To give evidence at inquest and act as medical adviser to the coroner.

(*k*) That London should be divided into districts so arranged as to give approximately equal amount of work, and that coroners be paid by salary not dependent on the number of inquests held.

(*l*) That franchise districts should be abolished.

(*m*) That a court or courts should be provided for each district, with a coroner, clerk, inquiry officers, and other necessary officials as in police courts.

(*n*) That one or more medical investigators should be attached to each court, and be paid by salary.

(*o*) That the office of deputy coroner should be abolished as unnecessary in London.

(*p*) That inquests should be held and evidence taken by the coroners in all cases where the reports of the medical investigators show further inquiry to be necessary, and in all cases of violent or suspicious death.

(*q*) That viewing the body by a jury should no longer be obligatory.

(*r*) That the number of jurymen should be reduced to one-half of the present number, that is, to not less than six or more than eleven.

(*s*) That in cases involving subsequent criminal proceedings, such as murder or manslaughter, or other criminal offence, the coroner should have full power to bind over all witnesses.

(*t*) That proper records of all cases dealt with by the court, whether inquests be held or not, should be kept as records of the county.

(*u*) That the court should have jurisdiction in cases where the body is lying in the district to which it is attached, except in cases of accidents, etc., where more than one death has taken place, when the jurisdiction shall be with the court for the district in which such accident, etc., occurred.

(*v*) * * That coroners' juries shall be summoned by *rota*.

Failing any immediate prospect of a statutory amendment the Committee considered during the year whether any improvements could be effected in the existing system that might help to check the expenditure on inquests, which had increased from £22,326 17s. 9d. in 1994 to £32,324 14s. 10d. in 1901. The increase was mainly due to three causes—

(*a*) Increase in the number of inquests held.
(*b*) Cost of providing proper coroners' courts.
(*c*) Payment of jurymen.

A reduction of at least 50 per cent. in the number of inquests would probably follow the appointment of medical investigators as suggested by the Council.

At present the amount of a coroner's salary depends almost wholly on the number of inquests held, and the law therefore offers every inducement for holding an inquest whenever possible. In some districts the salaries have risen to such an extent that it appeared desirable to devise some reasonable limitation, and on July 1st, 1902, the Council passed the following resolution:

That the salaries of newly-appointed coroners continue to be calculated on a basis of 30s. per inquest, until the salary reaches £1,350, but that no salary be fixed or increased above that amount unless the average number of inquests held would on a basis of 21s. per inquest produce a higher salary.

Uncertified Deaths.—Death certification is included in the resolutions already set out, but during the year the high rate of uncertified deaths in some parts of London has been under consideration. The Committee has urged the Registrar-General to put into operation such of the Council's recommendations relating to death certification as can be adopted without further statutory powers, and more particularly that he should impose upon all sub-district registrars the duty of communicating with the coroner before registering the death and issuing the certificate of burial in all cases not properly certified by a registered medical practitioner.

Bread Act.

The Act relating to the sale of bread (3 Geo. IV., ch. 106), which operates within ten miles of the Royal Exchange, requires—

(*a*) That all bread shall be sold by weight.

(*b*) That in every shop where bread is sold, scales and weights or other weighing appliances, shall be fixed in some conspicuous place on or near the counter.

(*c*) That scales and weights shall be carried in every vehicle in which bread is carried for sale, other than a vehicle drawn by hand.

Fancy bread is, however, exempted from the operation of these provisions.

No executive authority is appointed by the Act, but the Council's inspectors of weights and measures are instructed to enforce the provisions of the Act so far as they can do so in connexion with their other duties. 11,964 inspections at bakers' and other premises were made by the inspectors during the year, 49 persons were cautioned in writing by the Council, and 190 prosecuted for infringements of the Act. In all these latter cases convictions were obtained and penalties imposed amounting to £176 1s.

The Bread Acts not only deal with the manner in which bread shall be sold, but also with the ingredients used in its manufacture, but the Council has only concerned itself with the weight of bread. The present law is admittedly defective and unsatisfactory both to the public and to the trade, and the Committee has waited for a long time for some common expression of opinion from the trade to enable it to submit to the Council proposals for an amendment of the law which would be acceptable to the trade, and therefore have a reasonable chance of becoming law. But agreement between any considerable portion of the trade appears to be impracticable; one section is quite willing to agree to proposals dealing with bread sold over the counter, but is averse to the application of similar proposals to bread delivered to purchasers' houses, although the weakest point in the law is that it practically affords no protection to the purchaser who has his bread delivered at his house, and who consequently suffers a serious deficiency in its weight.

Another serious defect is that there is no penalty for giving short weight. The Acts provide that bread shall be sold by weight without prescribing what that weight shall be, and although the custom of the trade is to nominally make the bread into loaves of 2 lb. and 4 lb., in practice the loaves are frequently of considerably less weight. The public are thereby defrauded and the fair-dealing members of the trade more or less injuriously affected.

In the Weights and Measures Bill introduced by the Board of Trade into the House of Commons in 1888, clauses were inserted to require traders, under a penalty of £2, to sell bread in loaves of 4 lb. and 2 lb. in weight; to empower inspectors of weights and measures or other special officers to weigh any bread sold or kept for sale; and to provide a penalty of £2 for any loaf so weighed and found deficient. Owing to trade opposition the clauses were struck out in Committee.

Section xxxvi of the Glasgow Corporation and Police Act, 1895, provides that all bakers and dealers in bread shall impress in large and distinct figures on every loaf made or exposed for sale the imperial weight of such loaf, and a penalty of £2 is provided for every loaf of deficient weight, unless the deficiency can be proved to be due to the loaf having been kept more than forty-eight hours. This requirement is understood to work satisfactorily in Glasgow, and to afford the necessary protection to the bread consumers of that city. The following suggestions, based upon the Glasgow Act, would, if carried into law, probably afford the necessary protection to London bread consumers:

1. All bread (with the exception of fancy bread as hereinafter defined) to be sold in loaves of a weight of not less than 1 lb., 2 lb., 4 lb., or 6 lb. imperial standard respectively.
2. The weight of such loaves to be impressed thereon in large and distinct figures.
3. A penalty to be provided—
   (*a*) For selling loaves of short weight, except it be proved that the deficiency is entirely due to the loaves having been kept for forty-eight hours or more.
   (*b*) For selling loaves of bread otherwise than as prescribed.
4. Fancy bread to be defined to be bread made up into rolls, twists, or other shape, each of which does not exceed 1 lb. in weight.
5. Loaves to be defined to be bread made up into any shape of a weight of 1 lb. or more.
6. Inspectors of weights and measures to have power to test the weight of loaves either when in a shop for sale or in course of delivery to customers.

SHOP HOURS ACTS, 1892-5.

These Acts deal with the hours of employment in shops of young persons, male or female, under the age of 18 years, and restrict the weekly period of employment to 74 hours, including meal times. Employers are also required to exhibit in a conspicuous place on the premises a notice of the provisions of the Acts, so as to enable the young persons employed to avail themselves of the protection afforded by the Acts. The definition of "shop" in the Acts includes wholesale and retail shops, markets, stalls, warehouses, licensed public-houses and refreshment houses of any kind. There was some doubt as to whether hotels were included in the definition, but by a decision in the High Court in the case Savoy Hotel Company *v.* London County Council hotels were held to be "shops" within the meaning of the Acts. About 25,000 premises in London employ young persons, and therefore come within the purview of the Acts. The Acts are enforced by a staff of 9 inspectors, 6 male and 3 female, who during the year ended March 31st made in all 125,573 inspections. Each inspector has a district allotted, and every "shop" is to be visited at least once a year. Premises where infringements have been found, or which in the opinion of the inspector should be kept under special observation, are visited more frequently; 9,324 irregularities were reported, 688 of which were cases of excessive hours of work, and 8,636 cases of non-exhibition of the notice card setting forth the provisions of the Act. In 57 cases legal proceedings were taken, resulting in 52 convictions and the imposition of penalties amounting to £85 7s. 6d. Three cases were dismissed, and two withdrawn; 1,060 written cautions were sent by the Council, and the remaining irregularities were dealt with by oral cautions by the inspectors. Since the appointment of the inspectors in 1899 the number of cases of serious overemployment has steadily declined, and during last year there were only 167 cases of employment of over 80 hours a week as compared with 212 in 1901 and 249 in 1900. The rigid enforcement of the Acts has brought to the notice of employers the necessity for shorter hours, and there appears to be also little doubt that it has been beneficial in other ways to young persons. The tendency now appears to be for shopkeepers generally to adopt one or other of the early closing movements, thus minimising the probability of over-employment. On the whole the Acts have been successful in London, and have been productive of few cases of hardship. When, however, such cases arise, the facts are communicated to the Industrial Law Indemnity Fund, who afford assistance to the young person if dismissal occurs as a consequence of the Council's enforcement of the Acts.

SEATS FOR SHOP ASSISTANTS ACT, 1899.

The active section of this Act is as follows:

In all rooms of a shop or other premises where goods are actually retailed to the public, and where female assistants are employed for the retailing of goods to the public, the employer carrying on business in such premises shall provide seats behind the counter, or in such other position as may be suitable for the purpose, and such seats shall be in the proportion of not less than one seat to every three female assistants employed in each room.

It has been enforced very successfully by the Shop Hours inspectors in connexion with their work under the Shop Hours Acts, no extra staff being employed. Only in seven cases was it found necessary to take legal proceedings, when six convictions were obtained, and penalties amounting to £8 10s. were imposed; 173 written cautions were sent by the Council, and it was found that in most cases due attention to the requirements of the Act has since been given.

EMPLOYMENT OF CHILDREN OUT OF SCHOOL HOURS.

This subject was first brought to the notice of the Council by the School Board, who urged that by-laws limiting and regulating school-child labour should, if possible, be framed by the Council. Subsequently the Home Secretary appointed a Departmental Committee, at which evidence as to the need of reform in connexion with school-child labour was given on behalf of the Council, and that a report was issued by the Departmental Committee making certain recommendations for the regulation of child labour. These recommendations have been incorporated in the Employment of Children Bill, which is at the present time before Parliament, having been amended by the Standing Committee on Trade. The principal provisions of the Bill are as follows:

By-laws may be made by local authorities—

1. Prescribing a minimum age for employment.
2. The hours between which employment is illegal.
3. The limit of hours, daily or weekly, or may prohibit altogether child employment in any specified occupation.
4. Prohibiting street trading by persons under 16, except subject to certain conditions, or subject to the holding of a licence granted by the authorities, and by by-law may regulate the street trading of such persons so licensed.

Employment of child labour between 9 p.m. or 6 a.m., or such other hours as may be fixed by by-law by the authorities, is prohibited.

Street trading by persons under 11 years is prohibited.

The employment of children in occupations likely to be injurious is prohibited.

The by-laws have to be confirmed by the Secretary of State.

Penalties—

Not exceeding 40s. on employer for first offence, and not exceeding £5 for second or subsequent offence.

A like fine on parent or guardian who conduces to the offence.

Not exceeding 20s. for persons infringing by-laws as to street trading (first offence); and in the case of a child, for a second or subsequent offence, to be sent to an industrial school: if not a child, to a fine of not exceeding £5.

INFANT LIFE PROTECTION ACT, 1897.

This Act requires that parents who undertake the care of (*a*) more than one infant under the age of five years for a longer period than forty-eight hours for hire or reward, or (*b*) a single infant under the age of 2 years, in consideration of a lump sum payment of not exceeding £20, shall notify the local authority of the fact. Notice is also required to be given to the coroner of the death of any infant subject to the Act. During the year under review 139 notifications have been received, 129 being in respect of the keeping of two or more infants, the remaining 10 relating to adopted infants. There were also 194 other dwellings under inspection at the end of the previous year, or which again came under inspection, making in all 333 dwellings in which during the year nurse infants have been kept. The inspectors are required to satisfy themselves as to the proper maintenance of the infants, and to give any necessary advice and directions as to such maintenance. During the year 2,672 visits have been made. The majority of the infants were reported to be kept under satisfactory conditions, and the foster mothers to have proved satisfactory nurses. The total number of deaths was 63 out of 1,001 infants, which gives a death-rate of 6 per cent. The mortality was greatest in the latter months of 1902, due mostly to diseases on account of the respiratory organs. The deaths from epidemic diarrhoea were exceptionally low, probably on account of the cold summer. During the three summer months no death occurred from this cause in the district south of the Thames. Inquests were held in 7 cases, and a verdict of death from natural causes was returned in each case. Nine infants were removed to workhouses, as they were kept under conditions dangerous to health. The work of tracing persons who may be infringing the Act is entrusted to two male inspectors; 41 infringements were discovered last year, 8 cases formed the subjects of legal proceedings. Convictions ensued in each case, and fines and penalties amounting to £39 2s. were imposed. The remaining infringements were dealt with by written cautions.

Amendment of the Act.—The question of the administration of this Act, and its inadequacy to protect sufficiently the life and welfare of infants placed out to nurse for hire or reward from the special danger to which illegitimate nurse infants are subject, has been from time to time under the consideration of the Council. Special legislation for the protection of nurse infants followed a report by a Select Committee of the House of Commons, "appointed to inquire as to the best means of preventing the destruction of the lives of infants put out to nurse for hire by their parents." Under the Infant Life Protection Act, 1872, no person was permitted to keep more than one nurse infant under 12 months of age without being registered for the purpose by the local authority, and although this Act effected some good, it never fully protected infants placed out for hire, and particularly failed to control cases where single infants were adopted for lump sum payments. The defects of the Act were frequently brought to the notice of the Government, and in 1890 the Home Secretary on the urgent representations of the Council introduced an amending Bill. This Bill was referred to a Select Committee of the House of Commons, who after hearing evidence reported adversely to it, and it was dropped. In 1896 this Bill was again submitted to Parliament at the instance of the Council by the Earl of Denbigh, and was referred to a Committee of the Lords, who took a large quantity of evidence. This Committee did not approve the Bill but substituted one of their own, which they reported to

the House. This Bill, in a somewhat modified form, was reintroduced in the following session, and became the Infant Life Protection Act of 1897, which came into operation on January 1st, 1898.

The principal alterations effected by the measure were to raise the age of infants coming under the protection of the Act from 12 months to 5 years, and to provide that where any infant was adopted for a lump sum payment of not exceeding £20, notice should be given to the local authority. Failure to comply with this requirement enables a Court of Summary Jurisdiction to order the removal of the infant to a workhouse, and to direct the forfeiture of the whole or part of the adoption money. Practically this was no penalty at all, as in the cases taken by the Council the enforcement of this section relieved the offender of the care of the infant, while it was impossible to recover any portion of the money paid for adoption.

This section is the most serious defect in the Act. People who undertake the maintenance of infants for weekly payments are obviously interested in the life of the infants, and the law has hitherto been sufficient to protect such infants. With infants adopted for lump sum payments, often miserably insufficient for the purpose, the profit upon the transaction is dependent upon the length of the infant's life. These infants are therefore in need of the fullest protection the law can provide, and yet with regard to them the Act is almost futile. To what extent such infants come to an unnatural end it is impossible to say, but there is serious reason for thinking the number must be considerable. Returns prepared by the Commissioner of Police show that in 1870 the dead bodies of 276 infants were found in the metropolitan police area, and in 1895 231 bodies. These figures suggest that annually about 250 bodies of infants are found in the metropolitan police area. It may be pointed out that the trade in nursing infants as disclosed by advertisements and in other ways is out of all proportion to the number of infants that come under the supervision of the Council.

The Council has already made representations to the Home Secretary as to the inadequacy of Section v. It is also considered desirable that further powers of inspection should be given to local authorities, as the present powers are limited to the inspection of premises of people who notify the keeping of infants. A large number of persons are known to the Council's inspectors to advertise regularly for the care and adoption of nurse infants, yet never come under the Council's inspection as having nurse infants in their care. It is difficult, the report says, to believe that these people do not at some time or other have the custody of one or more infants. Their advertisements would be discontinued if they brought no return, but the powers of inspection are insufficient to enable the Council's inspectors to properly deal with such cases. Such powers should include the inspection of lying-in houses, the keepers of which are frequently suspected of keeping infants for hire or reward, and are known to be a medium for the adoption of infants, and to benefit to a considerable extent in the moneys paid for adoption.

The Act should also give the Council powers of enforcing the provisions of the Prevention of Cruelty to Children Act, 1894, in respect of acts of cruelty to infants under the supervision of the Council's inspectors. At the present time the Council can only pass such cases on to the Society for the Prevention of Cruelty to Children, but such a power would enable cases to be dealt with without the delay which the present system necessarily involves.

A Bill prepared by the Association of Poor-Law Unions in England and Wales to amend the Act was introduced into Parliament in 1901. The proposed amendments to be effected by the Bill were as follows:

1. To extend the provisions of the Act to cases where single infants are kept.
2. To make the Act apply to all infants adopted for lump sum payments, irrespective of the amount of the premium.
3. To increase the age of infants subject to the Act from 5 to 7 years.
4. To enable the local authority to order the removal of any nurse infant from the care of an unfit person or from unsuitable premises (the present law only enables this to be done when the health of infants has become endangered).
5. To provide a penalty for a breach of Section v (the present law only entails liability to forfeiture of the premium, a punishment which it is very difficult to enforce).

The Lords Committee in 1896 came to the conclusion that it would be very undesirable to extend the provisions of the Act to the taking of a single nurse infant. The Public Control Committee concur in this view. Many persons of considerable practical experience who gave evidence before the Lords Committee were strongly of opinion that it was undesirable to apply the Act to single infants kept for weekly or periodical payments. The view was taken that many respectable people could be found to take one infant who would resent inspection and discontinue keeping, and that the application of the Act to such people would only make it more difficult for societies engaged in female rescue work to find suitable homes for infants. The experience of the Council's inspectors is that so far as London is concerned no harm results from the limitation of the law in this direction, and it is obvious that where only one infant is taken in this way, the transaction is not by way of business, as is the case where two or more infants are regularly kept.

With regard to the raising of the age of infants affected by the Bill from 5 to 7 years, it may be urged in favour of the age provided by the Act—namely, 5 years—that at that age children come under the observation, and, to some extent, under the supervision, of the executive of the School Board, and so far as the Council's experience goes, no good reasons have been found for making any alteration in the limit of age.

The amendments of the Act which appear to the Control Department desirable may be summarized as follows:

1. Additional powers for more adequately safeguarding the lives of adopted infants. This could probably best be effected by repealing Section v (the adoption clause), and substituting a clause to
   (*a*) Raise statutory age of adopted infants from 2 to 5 years.
   (*b*) Make the Act apply to all cases of adoption irrespective of the amount of premium.
   (*c*) Require that notifications as to the adoption of infants shall contain particulars as required by Section 11, and in addition requiring any person adopting a nurse infant to notify any change of address.
   (*d*) Prohibit the retention or reception of more than one adopted infant without written sanction of the local authority.
   (*e*) Prevent the transference of an adopted infant without consent of local authority.
   (*f*) Provide a similar penalty for breach of section as is imposed for offences against other sections of Act.
2. Further inspectorial powers in order to bring under supervision:
   (*a*) Persons who systematically advertise or answer advertisements for the care or adoption of nurse infants.
   (*b*) Lying-in houses whose keepers should be required to keep a register containing particulars of all infants born in such houses, and the name and address of the person to whose care each infant is transferred.
3. Power to local authority to enforce provisions of Prevention of Cruelty to Children Act in respect of acts of cruelty to infants coming under the Infant Life Protection Act.

Smoke Consumption.

The Public Health (London) Act, 1891 (Sections xxiii and xxiva), makes it an offence to use in premises used for trade purposes, a furnace so constructed as not to consume its own smoke, or to use a furnace so negligently that the smoke arising therefrom is not wholly consumed. Section xxivb declares a chimney (not being the chimney of a private dwelling house) sending forth black smoke to be a nuisance within the meaning of the Act.

Sections xxiii and xxiva, however, are so crippled by qualifying words that it is very difficult to obtain convictions under them. The only provision that appears to be really valuable is Section xxivb, and probably this is the only part of the smoke sections of the Act which is enforced in London. Smoke of other colour, however, when it is discharged in considerable volume may cause very serious nuisance. Moreover, the present statutory procedure involves much unnecessary delay. Two successive formal notices have to be served before any liability to penalties is incurred, so that for a time nuisance can be continued with impunity.

Under this Act the Council has no direct control over smoke nuisance, the duty resting with the various metropolitan borough councils. Under Section 100, however, the Council has a general power of acting in default, and the Council's coal officers have therefore been instructed to report any nuisance from black smoke of serious duration. Evidence of 7,149 cases of smoke nuisance has been furnished by the Council to the various borough councils.

No borough council has, during the past year, been declared in default, but a large amount of nuisance has been observed in Poplar and Stepney. It was found, however, that steps were being taken in both boroughs, and eventually the abatement of the more serious nuisances was secured.

East London also suffers serious nuisance from factories on the east bank of the river Lea, just outside the county boundary. Sections cviii and xci of the Public Health Act, 1875, as applied by Section xiv of the Public Health (London) Act, 1891, empower a borough council to take legal proceedings

where nuisance is experienced in London from premises outside the county. As Poplar is the borough chiefly affected, the borough council was urged to exercise its powers, and it has commenced the necessary legal proceedings.

Smoke Nuisance from Private Houses.—Smoke from domestic chimneys continues almost unregarded. Several attempts have been made to deal with the problem of domestic smoke. In 1881-2 a Smoke Abatement Committee carried out a series of tests on domestic grates, and some of the grates tested gave fair results. In 1887 an abortive attempt was made in the House of Lords to bring domestic smoke under legislative control. Little more appears to have been done until last year, when the Coal Smoke Abatement Society carried out some tests at Westminster in room lent by His Majesty's Commissioner of Works. Only a few grates were tested, but some of them largely reduced the smoke. The Society subsequently memorialized the Council to carry on the tests on a more extensive scale, and this memorial is now under consideration.

The report also deals with smoke nuisance from railway locomotives and from locomotives on highways.

DISEASES OF ANIMALS ACTS, 1894-6.

These Acts have for their object the suppression of contagious diseases in animals, and are supplemented by orders, passed by the Board of Agriculture, dealing with specific diseases of animals, disease-infected areas, and with measures to be taken for the suppression of outbreaks of disease.

The Council is the local authority under the Acts for the county of London except as regards foreign animals, and has appointed the Public Control Committee the Executive Committee for enforcing the Acts. The outdoor staff consists of 11 veterinary inspectors, and 2 officers who superintend the conveyance, slaughter and destruction of diseased animals at knackers' premises. The veterinary inspectors are all qualified veterinary surgeons in private practice, and are remunerated by fees.

The reported cases of contagious disease among animals in London during the past year were as follows:

Anthrax.—2 horses and 1 bullock, all of which died.

Glanders.—1,572 horses, of which 1,519 were slaughtered by order of the Council, 16 by order of the owners, and 37 died whilst suffering from the disease. Compensation amounting to £4,292 was awarded in respect of 1,482 animals.

Swine Fever.—Three outbreaks. Twenty-two swine were killed by order of the Board of Agriculture as diseased or having been exposed to infection.

Glanders.—This disease, which during the last eleven years has destroyed on an average 1,300 horses in London a year, is also a serious menace to human life. It is dealt with by the Glanders or Farcy Order of 1894, which requires notice to be given of every case of disease, and gives local authorities permissive power to order the slaughter of glandered animals, subject to the payment of compensation of not less than £2, or not exceeding one-fourth the value of the animal immediately before it became diseased. Should the animal prove not glandered, the compensation payable is the full value of the animal immediately before it was slaughtered.

The Council's veterinary inspectors are instructed to take all the measures in their power to free their districts from glanders, to keep all suspected stables, and all stables in which disease had existed within 56 days under observation, to visit such stables fortnightly and carefully examine the horses therein, and especially horses that may have been in contact with diseased horses.

Of the 1,572 cases of glanders reported in London during the past year 267, or nearly 18 per cent., were diagnosed solely by the use of mallein, and in these cases one-quarter value has been awarded. Mallein has also been employed to aid diagnosis in 450 cases where the external symptoms were not sufficiently marked to enable the inspectors to certify the animals to be diseased, but in these and in the reported cases with distinct clinical symptoms, the minimum compensation has been awarded.

The figures for the past year compare favourably with those of the previous year, and show a decrease of 285 or 15 per cent. in the number of reported cases.

Experience has conclusively proved that the present law is inadequate to enable local authorities to cope successfully with glanders, and that, if the present heavy loss of equine life from this malady is to be diminished, further powers are absolutely essential. Horse-owners and various local authorities, including the Council, have made repeated representations to the Board of Agriculture to this effect.

A departmental committee, appointed by the Board of Agriculture in 1899, made a series of recommendations, with which the Council is in agreement, for strengthening the law as to glanders. The Board, however, deferred giving effect to these recommendations pending the result of experiments bearing on the communicability of glanders by a second departmental committee (consisting of four professional experts), appointed early in 1901. The experiments of this second departmental committee were concluded last year.

Two distinct sets of experiments were instituted, with a view to ascertaining whether an apparently healthy horse which reacts to mallein is capable of spreading the infection of glanders under ordinary circumstances—

1. While reacting.
2. After ceasing to react.

For the purposes of the experiments, a number of reacting horses, and horses which had ceased to react, were respectively turned for a considerable time into two separate buildings with several healthy horses. The experiments included the periodical testing of the originally healthy horses, and ultimately the slaughter and necropsy of all the animals, followed by cultural and inoculation tests.

The result of the first experiment indicated that only one of the healthy horses became infected, and the Committee are of opinion "that the danger of the disease being spread by apparently healthy reacting horses while at work is so slight that in practice it might be neglected."

The second experiment was entirely negative in result, and the report states "this experiment therefore indicates that a horse that has ceased to react to mallein is incapable of spreading the infection of glanders."

In July, 1901, the then President of the Board of Agriculture (Mr. Hanbury) intimated in answer to the Council's representations that he could hold out no hope of any change being made in the law until inquiries which were then being conducted by the Board were concluded. Those inquiries were the investigations of the Special Departmental Committee above referred to, and these experiments having been concluded and reported to the Board the time is opportune for the Council to again make its suggestions to the Board for an Amended Glanders Order. The appointment of these successive Departmental Committees shows that the Board is alive to the weakness of the present law, and in the annual report of the proceedings of the Board for the year 1901 the chief veterinary officer states:

It is quite certain that the law as it at present stands in this country will require to be amended before any reduction will be made in the disease in this country.

Rabies.—No case of rabies has been reported during the past year, and the metropolis has now been immune from rabies since 1898. The precautionary measures adopted by the Council for preventing the reintroduction of the disease are still rigidly enforced.

Every reported case or suspected case of rabies is inquired into, and a necropsy made by one of the Council's veterinary inspectors. Whenever the inspector is of opinion that the dog was rabid, or in the event of any person or animal having been bitten by a suspected rabid dog, a further examination is made on behalf of the Council at the Royal Veterinary College, or the Brown Animal Sanitary Institute. During the past year necropsies have been made in 28 suspected cases, in 8 of which further experiments were conducted, but in no case was any evidence of rabies found.

The Council's regulations as to the control of dogs made under the Rabies Order of 1895, which are enforced by the police, still continue in operation.

The Board of Agriculture with a view to minimizing the risk of infection being conveyed into this country have passed an Order requiring the detention of imported dogs for a period of six months on premises in the occupation and under the control of veterinary surgeons. Under this Order performing dogs are also subject to stringent regulations as to detention and supervision at their places of exhibition. In London the police report to the Council any infringement of the conditions of the licences, and every precaution is adopted to prevent the dogs escaping supervision.

A BABIES' DIRECTORY.—We learn from the *New York Medical Journal* and the *Philadelphia Medical Journal* that, in conformity with the latest plan of the department of Health in New York city, a card index has been made containing the names of 25,000 babies under 6 months of age, with the address of the child and also the name and address of its parents. It is expected that within a short time the number will reach 50,000. All infants, rich and poor alike, are to be indexed. The Babies' Directory will before long include all children born since August, 1902. The summer corps of the health department is now ready to start on its work of investigating and gathering statistics as to the health and condition of the infants thus far tabulated.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1903.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, AUGUST 22ND, 1903.

THE IMMIGRATION OF UNDESIRABLE ALIENS.

The report of the Royal Commission on Alien Immigration is a very interesting document, but most readers will rise from its study with a feeling of some discontent. Allowance must, of course, be made for the extreme difficulty of the subject, its manifold bearings, and the impossibility of obtaining precise evidence on many important points; nevertheless, it is difficult not to feel that the beliefs of the Commissioners who conducted the inquiry and heard all the evidence should have been expressed in more decisive terms on many aspects of the question.

As to the extent to which the inrush of foreigners interferes with the labour market, the reader is practically left to draw his own conclusions. He is, however, to some extent invited to believe that as far as the skilled trades and skilled labour are concerned the interference is not very great, but that in other directions the native labourer is undersold, while the small retail shopkeeper is displaced by a foreign competitor of the same class. It appears also to be admitted that a great deal of labour not commonly classed as skilled is, owing to the presence of the humbler and less civilized class of immigrants, carried on under conditions which are undesirable in themselves apart from the fact that native labourers are excluded.

As to the extent to which the alien increases the tax of the poor-rate payer, the Commissioners have apparently formed an opinion, but they leave it to be deduced from some indifferently summarized statistics. So far as we can gather it would appear that the number of aliens who seek Poor-law relief is not out of proportion to the total alien population, but that the case would be very different were it not for the voluntary work at present done by the Jewish Board of Guardians.

On some other points which have been disputed the conclusions of the Commissioners are more clearly expressed. Thus, they state that immigration has immensely increased during the last 20 years, that the excess is chiefly due to the influx of Russian and Polish Jews, and that the invasion under existing circumstances is likely to continue. They are opposed to the creation of any difficulties to the settlement in this country of foreigners in general, but while no attempt in their opinion should be made altogether to exclude aliens of the classes mentioned, they consider that their immigration should be discouraged and provision made for expelling any who belong to or who join the criminal and allied classes. The greatest evil which in their mind can with certainty be ascribed to the presence of immigrant aliens is the overcrowding which they cause in certain districts in London, and the consequent displacement of the native population. For this reason they favour the introduction of regulations to prevent immigrants crowding into any district they please.

As regards the effect of alien immigration upon crime and the expenses caused to the ratepayer by carrying out the laws respecting it, the Commissioners appear to have been convinced that the number of criminal aliens is disproportionate to the total number, and that the largest amount and worst forms of prostitution are due to their presence. Hence they recommend that all aliens who, within two years of their arrival, are proved or can reasonably be supposed to belong to those classes shall be liable to expulsion from the country on an order from a court of summary jurisdiction, at the expense, if need be, of the owners of the ships which brought them over. The same recommendation is made regarding those who have no visible or probable means of support, or who become a charge upon the public funds for any reason except ill-health.

It is, however, with the question of the physical conditions of the immigrants on their arrival and the overcrowding to which they are said to give rise that we are more directly concerned. As to the former, the conclusions of the Commissioners are far more reassuring than might have been expected. In a general way they are convinced that aliens on arrival are rather healthier as a rule than the working classes in England, and that except from one port—Libau—they arrive in a fairly clean condition. On this point Dr. Williams is quoted as saying that the health of the immigrants was fairly good, and that he had not detected many cases of infectious disease amongst them. The evidence of those who receive aliens upon landing was still more positive. It was stated, for instance, that only one case of sickness had occurred amongst the many thousands of immigrants who had been received in the Shelter erected for them. In view of these facts it is natural, perhaps, that the Commissioners should have limited their medical recommendations to one, namely, that the port medical officer should be empowered to debar, if he thinks necessary, any immigrant from landing who is found to be suffering from infectious or loathsome disease, or mental incapacity, the shipowner in such case being compelled to convey him back to the port of embarkation.

With regard to overcrowding, however, and the recommendations which are made in respect of it, the report is far less satisfactory. As to the existence of extreme overcrowding in quarters favoured by immigrants, the Commissioners entertain no doubt, and whole districts exist from which the native-born labourer has gradually been altogether ousted. These results appear to be due primarily to the inevitable tendency of aliens, ignorant of English, to flock towards centres which are occupied by their compatriots, and in which the standard and style of life resemble in some degree that to which they have been accustomed; and secondarily to the fact that when arrived there they find it possible to remain because alien landlords buy up house property and turn out the native occupants in favour of aliens. It pays them to do this because the aliens are quite indifferent to the extent to which they are herded and huddled together in their dwellings, and thus the aggregate rents obtained are infinitely greater than could be obtained from more particular tenants.

The Commissioners appear to consider that the overcrowding is to some extent due to lack of energy on the part of the authorities of Stepney and other localities in exercising the powers they enjoy with regard to abuses of

this character under the ordinary laws. It is scarcely surprising, however, that these authorities should have quailed before the flood with which they have had to deal; nor do the recommendations of the Commissioners appear likely to help them in the future to any material extent.

These recommendations include the formation of a new Government department—an immigration department—one of the functions of which is to be to receive representations from the authorities of areas that they are overcrowded, and that the overcrowding is due to aliens. If satisfied, it will be the duty of the department to declare such area "closed," and give notice to all aliens on their arrival that they must not enter it, while if they do enter it within two years of their arrival the authorities of such areas will have power to turn them out. Aliens on their arrival are to say where they intend to live, and if they cannot do so they are to do so as soon as they have found a place of residence, and they are then to be registered and give notice of change of address.

It is obvious that even to attempt to carry out these recommendations would require an enormous staff, and to many they will seem utterly impracticable. Once the alien has got ashore who is to track his after movements, and how is the parish official to prove that this or that particular alien has arrived in the country within two years or less?

It is only fair to say that two of the Commissioners dissent from this recommendation, as they consider it neither practical nor practicable, and it is also to be noted that the Commissioners as a body admit that none of their recommendations will have any direct effect upon the inrush of aliens from Europe in general and the South-Eastern countries in particular. They express a hope, however, that "undesirables" may in some degree be deterred from coming over by the knowledge that machinery exists for their expulsion if they prove themselves objectionable, and that shipping companies may become more cautious as to the class of immigrants which they import. These possible advantages, however, are very remote, and in view of the fact that the report, read as a whole, confirms nearly everything that has ever been said against the inrush of aliens, it is much to be regretted that the suggestions made for stemming the tide should be of so weak and incomprehensive a character.

It is therefore all the more satisfactory to be able to note that an association[1] of a very influential character has recently been founded for the purpose of ensuring that the whole question shall meet with adequate treatment. Most English people will be inclined to wish it success, for, with emigration societies actively engaged in exporting to new colonies as many of the best of the true British stock as they can catch, and immigration from the east continuing unchecked, the outlook is not reassuring for those who set some store on the preservation of the characteristics which have hitherto been regarded as the source of England's strength. The object of the society, however, is not to exclude immigrants altogether, but to see that we receive the best and not the worst samples, and that none of them come over in such numbers as to render it impossible to really absorb them into the nation, or under such conditions as shall lead to the ousting of the native labourer from his chances of making a livelihood.

[1] The Immigration Reform Association, 31, Essex Street, Strand, W.C.

THE FOOD FACTOR IN EDUCATION.

REFERENCE was made in the BRITISH MEDICAL JOURNAL of July 11th, in an article on Dr. Clouston's address, to the short debate on physical education which had taken place in the House of Lords. We had not then space to refer to some remarks which Sir John Gorst had made in another place. Unfortunately the remarks were made in the course of a speech on the repeal of the registration duty on corn—a subject by which most people are apt to be bored. He said that, "If the House at the present time would realize the true condition of the children who go to their schools, they would be perfectly appalled at the degeneracy which is coming upon the people. The condition of the people of this country, and especially the condition of the rising generation, is such that, unless something be speedily done to improve it, we must make up our minds that this country will degenerate in physique."

Alarming as is this statement, it is satisfactory to find that the gravity of the question is now becoming manifest to those responsible for the welfare of the country. When a statesman who has such exceptional opportunities of knowing the facts as Sir John Gorst asserts that our school children are showing serious signs of degeneration, there can be no doubt on the part of any one that it is time to seek out carefully, and as far as possible to remedy, the cause of an evil which, if unchecked, must inevitably bring about a gradual decline in the prosperity of the nation.

There can be little doubt that one of the chief causes of this degeneracy in young people is to be found in the insufficient food on which it seems to be expected that the hard work of school life should be performed. The evil affects school children in all classes of society, although in the speech from which extracts have been quoted the reference was no doubt to those attending the primary schools. The question with regard to these latter is very difficult, and the problem would not be solved by the offer of meals supplied from charitable sources, even if these could be given more generally. The children being day scholars, taking their food in their own homes, pride often prevents them from partaking of free meals even where these are offered and much wanted. We know, indeed, of a case of a school in a very poor district in which the provision of a free breakfast was given up in consequence of the few children who were willing to admit that they were in need of it. In fact, it is a task for the Legislature to devise a means by which Board School children may be sufficiently fed, and this involves political considerations into which it is not the province of the JOURNAL to enter.

The case is very different when those in control of the school are directly responsible for the feeding of the children. In these circumstances there is no excuse for the diet being other than sufficient in quantity and suitable in quality. We have before us as we write the last report of one of our great orphan asylums, which contains a table of diet for 200 children, apparently published without the least idea of its insufficiency. The table shows that on no day do the children receive more than one solid meal, while twice in the week neither meat, fish nor eggs are given at all; the diet in this case would appear also to be as unappetizing as it is unsatisfying.

It must be admitted that in many similar institutions the conditions are not much better, and from inquiries which have been made it seems that in the minds of the managers of such charities very erroneous ideas prevail as

to the quantity and quality of food necessary to keep children in good health, not only physically, but morally and mentally. The case of these children is exceptionally hard for, unlike those in public schools, they have neither the means nor the opportunity of purchasing food outside and have perforce to content themselves with that supplied to them. At the same time children in upper and middle class schools have much to complain of and any one who read some diet tables published in the British Medical Journal of April 4th, 1903, must have been struck by the remarkable contrast between the number of solid meals considered requisite for children in Continental schools as compared with those usually given in schools in this country. The fact is that the whole question of the value of diet in education has been hitherto insufficiently studied in England. The importance of the matter is better understood in the United States, and, as the result, the school children in that country, are incomparably better fed than here or, perhaps it may be said, than anywhere in Europe.

The diet tables published in a work entitled *Practical Dietetics*, by Professor W. Gilman Thompson, of Cornell University, conclusively prove the superiority of the diet in American schools. Two points to which Professor Thompson calls special notice are worthy of the greatest attention. He points out that children digest quickly, and that the intervals between meals should therefore not be too long. This fact is very frequently lost sight of. Further, in addition to an ample supply of animal food, he insists on the necessity for a good allowance of fat, which is especially necessary for the formation of young tissues. The skim milk and bread and scrape so common in English schools must be the cause of great mischief to the growing youth.

It is disappointing that the average English parent takes so little interest in the feeding of his children when once they have left the paternal roof. When a father has placed his son in what is considered to be a good house in a public school, he thinks that he has done his duty, and that it is for the schoolmaster to do the rest. It is remarkable that a man who in other respects may be a good man of business, and who understands in business affairs that a man must be carefully looked after when his interest is in direct opposition to his duty, should fail to observe that this very condition obtains in the case of the head of the boarding house in which his son is an inmate.

It is not to be doubted for a moment that the assistant masters in our public schools are for the most part gentlemen and men of honour, and that scarcely one of them would knowingly allow the boys under his charge to be insufficiently fed. Nevertheless, meat and butter are costly, and ends must be made to meet, and so a system has gradually grown up under which a sparse diet in these—the more expensive articles of food—has been considered to be "good for boys." The individual master, as before said, never dreams that he may be injuring his boys in this way; he was himself brought up on a similar regimen, and he thinks of no other. The boys, knowing that their food is similar to that in other houses at other schools, consider that it would be unmanly to complain. It is upon the parent that the duty rests to ensure that his child is fed in such a way as to enable him to reach the highest possible physical and mental development.

The remedy lies with the parents, but with the Englishman's characteristic disinclination to do anything which is contrary to established custom, they do not move, and it will, we suspect, be difficult to do anything. Individual action is we suspect quite out of hope. The whole influence of the boy himself with his father would be exerted against it. He would be delighted to have more pocket money to spend at the tuck shop, but he would hate to be made conspicuous, as he would be if it were known that his father had asked for an ampler school table. The parents must be educated, and the only people who can undertake this education are the members of the medical profession individually and collectively. If, then, the parents can be stirred to common action, and will insist that the diet tables of our schools shall be revised to meet modern scientific views of what is requisite, there can be no doubt that the change will be made. The whole matter is one of national importance: from the highest to the lowest our children are badly fed as compared with those of other great nations; in the race of life the well-nourished will generally beat the half-starved. The degeneracy in physique of the rising generation referred to by Sir John Gorst is best to be combated, there is every reason to believe, by an intelligent employment of the food factor.

SOCIAL ORIGINS.

Mr. Andrew Lang has taken the opportunity which, as editor of his cousin Mr. Atkinson's little work on *Primal Law*, he found ready to his hand, to give a general survey of the subject of *Social Origins*,[1] and to put forth his own latest views thereon.

His book will have interest, of course, for anthropologists, and in a less degree for some other classes of readers, medical men, sociologists, and pastoral breeders; to most others the subject is rather repulsive than otherwise. But it has occupied the attention of several acute and thoughtful minds, as those of McLennan, Maine, Fison, Crawley, Howitt, and that of Andrew Lang himself, who has returned to it again and again with fruitful pertinacity.

Mr. J. Jasper Atkinson was a landowner in New Caledonia, where he studied the vanishing peculiarities of the Melanesian savage, and among these the phenomena of "avoidance." He gives a very striking description of the severe extent to which, in New Caledonia, the avoidance of brother and sister used to be carried, a severity almost incredible, for all intercourse by speech or sign was absolutely prohibited from a very early age, nor might they mention each other's names. Twins, if of different sexes, were put to death, apparently as a punishment for antenatal breach of the law. "It is curious that the instinctive natural affection between two so nearly related did not seem to be quenched by these strange restraints."

Atkinson treats sexual jealousy as the most powerful motive in the genesis of society. Disbelieving the existence of the primitive horde, with its "communal marriage" or promiscuous intercourse, he starts from the analogy of such mammals as we know best in their natural condition, for example the wild white cattle of our own country, and conceives an incestuous patriarch, surrounded by a female group of daughters, granddaughters, sisters, etc., who expels from the family any male offspring as soon as they arrive at puberty and become objects of his jealousy. Thus a herd of young males would be formed, who would, with that attachment to locality notable in almost all the lower animals, haunt the outskirts of the family area, until ultimately, the prowess of the patriarch declining, parricide

[1] *Social Origins* By Andrew Lang, M.A., LL.D. *Primal Law*. By J. J. Atkinson. London: Longmans, Green and Co. 1903. (Demy 8vo, pp. 330, 10s. 6d.)

or expulsion would result in the instalment of a successor. We cannot follow in detail the stages by which Mr. Atkinson conceives that this bestial state of affairs is gradually developed into something more human and humane; but we may say that, granting his premisses, as many would be ready to do, we can see in the supposed subsequent stages at least no greater difficulty than we find in any of the rival theories. Thus the origin of marriage by capture is well accounted for; any young male permitted by the patriarch, under some peculiar circumstances to remain in the family, could procure a wife for himself only in that way. Hence, too, exogamy naturally follows. On the genesis of sexual avoidance Andrew Lang seems to think Atkinson's explanation, that it was originally based on sexual jealousy, decidedly the best; and there is a great deal to be said for the theory.

Mr. Lang's prolegomenon on social origins comprises about two-thirds of the book, which, after all, is by no means a large one. The greater part is occupied with brief notices of the diverse theories, and often mutually destructive arguments, of other workers in the field. The totem system is much discussed, and a special theory of its origin is ventilated. "The names of relationships, to a great extent suggestive of status, seniority, and mutual duties and services in the community," furnish one source of possible knowledge of primitive custom. But some such terms have, linguistically, other sources. Thus "*Wife*, in Cree," says Lord Avebury, "is *part of myself*," *dimidium animae meae*, one flesh. "In Choctaw, *husband* is *he who leads me*, indicating the old-fashioned theory of wifely obedience. *He who kicks me* would suffice in some civilized quarters," adds the author.

"I myself," says he, "use the word *totem* only of the object which lends its name, hereditarily, to a group of kin." And his suggestion is that the name by which each family group, or little community, was known to its (usually unfriendly) neighbours would be ultimately acquiesced in, and adopted by, it. Names, obviously developed from nicknames, are, for example, nowadays applied to many of the bands of the great Dacotah or Sioux nation. In our own country, and in France too, there are plenty of instances of something analogous. We may cite two which the author does not mention. Herefordshire farmers used to call themselves "white-faced-uns," from the characteristic of their cattle; and Wiltshiremen do not reject or resent their sobriquet of "moonrakers." In an early social stage the moon might have become the totem of the Wiltshireman and ultimately the father of a lunar race.

The subject is not one which lends itself readily to the usual literary graces of the author; and parts of the book are rather hard reading; but here and there it is illuminated by flashes of characteristic humour.

LORD SALISBURY'S ILLNESS.

WE have received the following note relative to Lord Salisbury's illness from Viscount Cranborne, M.P.: Lord Salisbury has been far from well for some months. At Whitsuntide, in consequence of a chill, weakness in the action of the heart and in his circulation became very marked, and he was dangerously ill. The crisis, however, passed, and he gradually became stronger until a small accident last week brought the adverse symptoms back again. All sorts of evils, of course, follow on the feeble circulation, but the nervous prostration, which on several occasions has become acute, constitutes the most serious element in his illness. Two or three days ago Lord Salisbury made a distinct step in advance, but since then no favourable change has been recorded.

MATTERS REFERRED TO THE DIVISIONS.

WE wish to direct special attention to the SUPPLEMENT published with this week's issue of the BRITISH MEDICAL JOURNAL, for it contains a large amount of matter which is of great interest not only to members of the Association, but to all members of the medical profession of this country. It will serve to give our readers an idea of the work for the promotion of the interests of the profession and for the public welfare which is being done by the Association. In this work, every member, through his Division, can take an active part, and it is to afford him the means of knowing the facts and forming a judgement on them that this full statement of the matters which have been referred to the Divisions for their consideration is published. We would therefore most earnestly urge every member to read, mark, learn, and inwardly digest the contents of the SUPPLEMENT. They are unavoidably of a somewhat solid character, and will thus require not merely reading but close study; but it will, we think, be admitted that they are of sufficient importance to deserve serious attention from every one who wishes to do his duty to his profession and to himself. It is not for us in the present stage of affairs to express an opinion on the questions which the Divisions are asked to consider. Our duty for the time goes no further than to call attention to the various matters set forth in the SUPPLEMENT. The Medical Acts Amendment Bill, which has been carefully drafted by the Medico-Political Committee, is directed mainly to the reform of the constitution of the General Medical Council, to the establishment of a State examination qualifying for registration, to amendments in the existing regulations for registration, to improvement in the penal procedures of the General Medical Council, and to the prevention of frauds and abuses in regard to registration, to medical practice, to the use of the names of registered practitioners in advertisements, etc. The resolutions concerning the Vaccination Acts are the outcome of a conference between the Public Health and Medico-Political Committees. The result of their deliberations was embodied in the six resolutions which are printed in the SUPPLEMENT, p. cxcvii. At a special meeting of the Council of the Association held in February last, it was ordered that these resolutions should be sent to the President of the Local Government Board. At the same time the President was asked to receive a deputation of the Association which should address him upon the amendment of the Vaccination Acts on the lines laid down in these resolutions. The Government, however, did not find it convenient to deal with the subject of vaccination this session, and continued the Act of 1898 for another year. For this reason doubtless the President of the Local Government Board did not think it necessary to receive the proposed deputation. The question will, however, have to be faced next year, and it is of the highest importance that, when the time comes, the opinion of the Association should be given with no uncertain sound. Divided counsels at a critical moment in the struggle for improvement in the vaccination laws would be fatal to the cause, and injurious to the prestige of the Association. The remaining matter referred to the Divisions is a resolution passed by the Representative Meeting at Swansea. It will be seen that the Divisions have a considerable amount of work before them, and this week's SUPPLEMENT gives every member the means of helping in the work. It is hoped therefore that Secretaries will call their Divisions together at an early date, and in due course forward the decisions arrived at to the General Secretary, 429, Strand, London, so that they may be classified and the real opinion on these important matters ascertained, with a view to further action being taken. In the SUPPLEMENT will also be found the text of the Rules, drawn up by the Central Midwives Board, and approved by the Privy Council.

THE INDIAN MEDICAL SERVICE.

The Indian Medical Service has, we note with the greatest satisfaction, found a powerful champion in Sir Michael Foster. In the debate on the Indian Budget on August 13th the distinguished member for the University of London called attention to the increased prevalence of plague in India, and urged the Secretary of State for India most seriously to consider what measures could be taken to lessen this grave danger not only to India but to the whole world. He went on to point out that it was of the utmost importance that the Indian Medical Service should be of the very highest character, and that the very brightest intellects should be attracted to that wonderful field of medical inquiry. But there was considerable dissatisfaction in the medical service, both military and civil. When he spoke to his young friends of a great future in India they replied in their familiar language, "Not good enough." Sir Michael Foster mentioned the report of the Indian Medical Service, which was adopted by the Council of the British Medical Association, and published in the Supplement to the Journal of August 15th. He said he would refer only to three points in that report. First, there had been no increase in the pay of the service, although there had been in the Royal Army Medical Corps, in view of the increased cost of medical education and other considerations. Expenditure in this direction would be money well invested. Then members of the civil medical service were allowed to engage in private practice, which was a very good thing for the service as well as for them, as a good deal of the service work was of a routine character. During the last ten years or so, however, certain regulations had been in force which were galling to the medical profession. When a member of the civil medical service attended a native nobleman or gentleman, not only was there a tariff of fees, but in each case charge had to be laid before a lay officer, very often of inferior rank. That was regarded by the profession as a stigma. Again, the noble lord had referred to important sanitary measures, yet the medical department of human activity was not represented on the Viceroy's Council. If these defects were remedied, it would remove a notable bar to the recruiting of bright intellects for the service. We earnestly hope that Lord George Hamilton will listen to these warnings, and that he will not allow the Indian Medical Service to be ruined by mistaken parsimony or official pedantry. India is, to use Sir Michael Foster's phrase, a pathological country which offers an unrivalled field for research. A truly enlightened Government would do all in its power to attract men of the highest attainments and full of scientific zeal. The Indian Government, or the officials who represent it, when it does not actually discourage research, seems to take a special pleasure in placing every possible obstacle in the way of workers. No wonder young men with any professional ambition say such a service is "not good enough." Nor will it be "good enough" till the Government treats its medical officers fairly, and does not wear them out with the sickness of hope deferred or disgust them by foolish restrictions and vexatious interference.

THE LIVERPOOL SCHOOL OF TROPICAL MEDICINE AND TRYPANOSOMIASIS.

The Liverpool School of Tropical Medicine has decided to dispatch a trypanosoma expedition to the Congo Free State next month. The expedition has been arranged with the co-operation of the Government of the Congo Free State, who approached the Committee of the School in the matter over twelve months ago. The Congo Free State have behaved most generously in the matter of contributing funds towards the expenses of the expedition. The objects of the expedition are: First, to report to the School, and through it to the Congo Free State Government, on the sanitary conditions of Boma, Leopoldville, and other important centres to be visited, and to make recommendations for the improvement of existing sanitary conditions; secondly, to continue the investigation of trypanosomiasis, human and animal, commenced in the Gambia by Dr. Dutton 1901, and continued for the past twelve months in the Gambia and Senegal by Dr. Dutton and Dr. Todd, including the occurrence and distribution of trypanosoma in the Congo, the carriers of the parasite, and the relation of trypanosoma to sleeping sickness. Ample opportunities for observing sleeping sickness will be afforded to the expedition whilst in the Congo. As the investigations will necessitate the examination of the blood of wild animals, the Congo Free State is making arrangements for the expedition to participate in drives of big game up country, and generally is facilitating their work in every manner possible. The expedition consists of Dr. J. E. Dutton, who is in charge, Dr. J. L. Todd, and Dr. C. Christy. Dr. Dutton was a member of the Southern and Northern Nigeria expedition of the Liverpool School, 1899-1900, the leader of the Gambia expedition, 1901-2, and of the Senegambia expedition of the School, 1902-3. Dr. Todd was a member of the latter expedition. Dr. Christy was a member of the Commission of the Royal Society appointed to investigate Sleeping Sickness in Uganda and Central Africa, and has had large tropical experience. The expedition will start for the Congo by the steamship *Albertville*, every facility for travel having been placed at their disposal by Sir Alfred Jones, K.C.M.G., Chairman of the School, whose interest in West Africa and the Liverpool School of Tropical Medicine is well known. The expedition has been equipped by the School in the best manner possible.

MALARIA AND MOSQUITOS.

In a letter which appeared in the *Times* of August 17th Major Ronald Ross gave some interesting extracts from a letter addressed to him by Major Penton, R.A.M.C., D.S.O., Principal Medical Officer of the Soudan. The letter records the results which have already followed the antimosquito campaign commenced less than a year ago by the Suez Canal Company at Ismailia. Major Penton says: "As the prevention of malarial fever is of the utmost importance to us in the Soudan, I have recently paid two visits to Ismailia to study on the spot the measures which, on your recommendation, are now being enforced for the destruction of mosquitos. The results have been remarkably successful. The town is practically free from mosquitos, which only a short time ago were very abundant. Mosquito-nets can almost be dispensed with, for one can now sleep without being bitten, as I found from personal experience. The operations you recommended are in full swing. Two marshy swamps to the north-east of the town have been filled up with sand, and a third, the largest, will shortly be dealt with. It will be drained by a pipe 22 cm. in diameter, to convey away the water. Other marshes to the south of the town have been filled up. At my last visit I saw a gang of 180 workmen busily employed in filling up pools, mowing the coarse grass and undergrowth, and clearing the numerous small channels or branches in connexion with the main canal. The foreman of works informed me that when the men first commenced operations they were much worried with swarms of mosquitos towards evening, but that now they scarcely saw any. Coincident with the destruction of mosquitos and other larvae, malarial fever at Ismailia this year shows a most striking improvement. All medical officers employed there are agreed upon this. Statistics show that up to the present it is the healthiest year on record. Dr. Pressat informed me that from January 1st to June 30th of this year there were only 3 cases of malarial fever in hospital, against 52 for the same period last year, and that throughout Ismailia there were 569 cases of fever from January 1st to May 30th, 1902 (an average year), against 72 for the same period this year. It is more than probable, moreover, that many of the cases were relapses from previous infection. Bearing in view the remarkable diminution in malarial fevers that has attended the present operations against mosquitos, it is more than probable that when they are completed, malarial fevers will have practically disappeared." Major Ross thinks there is no doubt that similar measures could easily be taken in the majority of tropical towns in our possessions.

TRAINED NURSES FOR PASSENGER SHIPS.

The outline of a scheme which is being put forward for the supply to all passenger ships of the services of a "fully-trained certificated lady nurse," has been sent to us with a request for the expression of an opinion thereon. At present it appears to be merely a suggestion to form an "association of lady nurses" for this purpose, but it would doubtless become an actuality if it met with encouragement from steamship managers and other persons. By way of evoking such encouragement a letter is being circulated in which it is proposed that a nurse shall be supplied to each passenger liner in return for a small retaining fee, her services being at the disposal of all passengers who need them, irrespective of class, and that she should act under the orders of the ship's doctor, have a uniform supplied her by the company, and be allowed two months' leave of absence for every year's service. A point in the scheme which must at once strike any man of business is that it is not stated what remuneration the nurse employed is to receive for her services. There is no suggestion that the companies should pay for the work done otherwise than by supplying board, lodging, and uniform; and since the services of the nurse are to be at the disposal of all passengers alike, it is obvious that no fees for services rendered can be depended on from those who need and receive them; finally since the proposed association only asks for "a small retaining fee," it does not appear probable that this body intends to make itself responsible for her adequate remuneration. Who, then, is to pay the "lady nurse?" Without definite and satisfactory information on this point, the proposal cannot be commended, for a scheme which proposes to supply skilled labour without providing for the direct and adequate remuneration of those who furnish it can scarcely be said to be sound. Apart from this drawback there is a good deal to be said in favour of a proposition to put a medical man on board ship in as favourable a position for grappling with disease and injury among those entrusted to his care as he would be on shore; it is only natural that a desire to take steps in this direction should exist. The number of invalids who are to be found on board ship is very large, apart from cases of unexpected illness, sea sickness and conditions due to this cause. Large numbers of invalids, for instance, annually return from India, the West Coast of Africa, and other tropical places, and doubtless any company which was known to provide trained nursing attention as well as medical care and advice for the benefit of passengers would have its ships sought out by those who for various reasons are obliged to travel by sea in spite of feeble health. The conditions of life on board ship, however, are so different to anything met with on shore that the post of nurse would be a trying one to fill, and it is fairly certain that the managers of the Association would in the majority of cases be unable to foretell who out of any given batch of candidates for such appointments would prove a desirable sea-going nurse. On the whole, therefore, though we admit that the idea is excellent, we are not disposed to express approval of any plan until we receive evidence that it has been considered in a very much more detailed fashion than appears at present to be the case. Furthermore, from the point of view of nurses it may be noted that those who happen to have had experience in the matter testify that the nursing of serious cases of illness on ordinary passenger ships is an exceedingly exhausting and laborious task.

DOCTORS AND THE DISPENSING OF DRUGS.

The *Pharmaceutical Journal* has taken amiss some remarks which we ventured to make last week on the subject of doctors and dispensaries. Our contemporary does not appear to have paid Mr. Idris the compliment of studying his address so carefully as we did, and appears to be surprised that we should have commented unfavourably on some of the arguments by which in his able, but unconvincing, and in some points, injudicious address, he endeavoured to support its main thesis, which, briefly, was that doctors' surgeries or dispensaries ought not to be allowed to exist. By way of proving this point and the incompetence and disqualifications of medical men for dispensing, Mr. Idris, in our opinion, exaggerated the difficulties of a very simple art and bolstered up his position by an array of cases in which doctors had poisoned their friends or patients either by intention or by accident. The number of legal inquiries held in consequence of mistakes made in doctors' surgeries which Mr. Idris had collected, was 16, and by way of comparison he gave a list of corresponding accidents which, whether fatal or not, had occurred in chemists' shops. The introduction of matters of this sort was in any case a mistake in judgement, because such cases simply prove unpardonable carelessness on the part both of certain "competent" chemists and of certain "incompetent" doctors or their assistants, and nothing else. If, however, comparisons are made, they should be made with scrupulous fairness. Now Mr. Idris's list of doctors' mistakes covered a space of 53 months, whereas that covered by the chemists' errors was only 46 months, a shorter time by some 15 per cent. Besides this, in the doctors' list, out of the 16 cases mentioned, 4 were not cases of error in dispensing, but of accident due to mistakes made by patients. The real number of doctors' mistakes, therefore, was 12 in 53 months; while the number of chemists' mistakes was 10 in 46 months, all of them due to definite errors in dispensing. The *Pharmaceutical Journal* says the number was only 7, but Mr. Idris was good enough to send us an advance copy of his address in which the cases are definitely numbered by himself in what we take to be his own writing. The numbers to be compared, therefore, are 12 cases in 53 months, and 10 cases in 46 months, the ratio between which is that of 21.7 to 22.6 per cent.; between these figures in such a connexion there is, as stated in our note, practically no difference. Our contemporary, in endeavouring to make another point, prints the term "minor qualification" with a capital "M," and declares that there is no such examination. It surely cannot be ignorant that there is such an examination and a very popular one too, though it is officially known as the "assistants' examination." It may or may not be desirable that a substitute for dispensing practice should be found; but that substitute can only come into being either when the average patient grows sufficiently rich to pay for medicines as well as for advice, or sufficiently sensible to understand that he is not necessarily being neglected if no medicine at all is prescribed for him, or until qualified chemists become so cheap that medical men can have the benefit of their services at no greater expense than that to which they are at present subjected. Meantime it is absurd to argue that the average medical man is incompetent to dispense his own drugs, and almost equally so to endeavour to establish a comparison between the qualifications required in a person whose work is limited to making up practically the same medicines for the same doctor every day of his life, and those required in a man who opens a shop and announces himself as a pharmaceutical chemist and ready to dispense medicine for all the world. As we have said before, there is much to be said for the separation of dispensing from medical practice, but the time is not yet ripe for such a change. And we may add that attacks on the dispensing doctor made in the tone adopted by Mr. Idris are not likely to advance the cause which he professes to have at heart.

MANCHESTER ROYAL INFIRMARY.

The managers of the Manchester Royal Infirmary have received from the Queen Victoria Commemoration Fund of Manchester a sum of over £13,000, a gift from those citizens who in 1897 and subsequently subscribed to provide a memorial of the close union "between the sympathies of Queen Victoria and the sentiments of her subjects." This sum represents the balance of the sum subscribed *plus* interest and less the amount paid for the statue of Her late Majesty the Queen, which stands in Piccadilly opposite the infirmary. The statue cost £5,525. This handsome balance has now been transferred to the managers of the Royal Infirmary "towards supplementing the cost of providing the increased accommodation required

by the infirmary." The subscribers also expressed the hope that the Board of Management of the infirmary would appropriate their contribution to designing some portion of the new buildings at Stanley Grove specially as a permanent memorial of Queen Victoria.

TRUTH ON VACCINATION FEES.

Our esteemed contemporary, *Truth*, is hardly as convincing as usual in some comments made by it last week as to the fees paid to their vaccinators by certain unions. In these unions the fees paid seem, if the figures given are correct, to have increased in the aggregate to an extent which is certainly noteworthy, but it is scarcely logical to found upon that fact a statement that the Vaccination Act of 1898 has been an extremely good thing for public vaccinators, or to conclude that the scale of fees paid is extravagantly high. The work of a public vaccinator has been very materially altered by that Act, and it would be difficult to say whether his position as a general rule has been improved or the reverse, nor would it be very easy to determine whether the relative cost of each operation of vaccination is now greater or less than it used to be. A comparison of the aggregate amount paid in any particular locality in any two years would not settle the matter, even if an allowance were made for natural increase or decrease of population. In every town there are numerous factors which influence the number of vaccinations performed in any one year quite irrespective of the number of births. The figures are liable to fluctuate wildly in all places except those in which vaccination and revaccination are both constantly popular, and such fluctuation is of course especially liable to occur in towns where antivaccinators have obtained a following and in which small-pox subsequently appears. Under these circumstances the figures at once jump up, for, in spite of the antivaccinators, the populace then rushes to obtain the protection which it has up to that time neglected. And well is it for the ratepayers that this should be the case, for though the fees paid may then seem abnormally high in comparison with years in which vaccination has been neglected, the cost of vaccination is nothing in comparison with that of an unchecked or even very limited epidemic. The latter is enormous, as a great many local authorities have discovered during the last six months. If the Vaccination Act of 1898 has increased the expenses of the ratepayers at all, it is not because the scale of fees is unduly high, but because it invented the conscientious objector, and to some extent encouraged the antivaccinator, and in this way it has increased the liability of every town to have the expense and worry of an epidemic thrust upon it, and has greatly augmented the difficulty of dealing with the disease when present. If the public vaccinator does get more in the aggregate, one year with another, than formerly, it is because the ratepayer is allowed to carry out what is really a duty to himself and his fellow townsfolk in very luxurious fashion, that is to say, instead of having to attend for vaccination at a public station, he now can, and does, summon the vaccinator to his private house. Luxuries of this sort, if the House of Commons is good-natured enough to allow them, naturally have to be paid for. *Truth* is also incorrect with regard to the shilling which is allowed to the vaccinator for children registered within his district. This allowance is only made for children who reach the age of 4 months, and not then unless they are still in the district and the question of their vaccination has not been disposed of by some other person than the public vaccinator: these two conditions reduce very materially the number of shillings paid. Nor can this fee be justly called one for which no service is rendered. When a child has reached the age of 4 months and has not been vaccinated the public vaccinator has to call upon the parents or guardians and offer vaccination, and in many instances he may have to repeat his call several times. As he is otherwise paid only by fees for vaccinations actually performed, he would but for this shilling fee get nothing for this work at all, since many parents either refuse vaccination altogether, or when pressed in this way have the operation performed by their own medical man. It is not to be forgotten, moreover, that only successful vaccination is paid for, and that every successful five-shilling vaccination entails at least two visits, one for the operation and the other to ascertain the result, and that, as vaccination not uncommonly does not "take" the first time, the average number of visits represented by the fee is certainly greater than two. *Truth*, therefore, is certainly right in supposing that the medical profession would resist any lowering of the fees; but it is scarcely justified in ascribing such resistance to an undue regard to its own interests. The medical profession is remarkable for being the one body in the world which habitually occupies itself in cutting off the branches upon which its individual members are seated; and if it were a profession which ever allowed its own interest to come before that of the public, assuredly it would not urge vaccination or other sanitary measure whatever.

CURES FOR ALCOHOLISM.

A correspondent has sent us a cutting or rather a whole page from the *Daily Graphic* which is given up to a blatant advertisement of the Keeley Cure in the guise of illustrated letter-press. The cutting which is headed "Inebriety can be cured: Canon Fleming's report" is four columns long, and consists of the usual sensational statements which Canon Fleming and the institute which he patronizes accept as "evidence." The fallacious character of such evidence was fully exposed in our columns last year. It would probably influence no one but for the fact that it is godfathered by a highly respectable clergyman. This curious association of a Canon of the Church with a business, which though bedecked with some of the airs and graces of philanthropy yet confines its benevolence to those who are ready to pay well for it, would do much more harm to the public and much more good to the private purse of the institute's proprietors but for one or two saving clauses. One is that the reverend Canon's name appears so constantly in the same connexion that many newspaper readers probably assume, uncharitably—and we have no doubt quite incorrectly—that his advocacy of the cause of Keeleyism is not entirely altruistic. Another is that, apart from such an assumption, there have been so many exposures in recent years of clergymen—innocently, but foolishly—extending their support to entirely unworthy objects that the value of clerical testimony in matters capable of ordinary demonstration is largely discounted by every one. As a matter of fact, no one has recourse to Keeleyism or any other form of treatment for inebriety until he or she has had good cause to recognize the error of their previous habits, and to appreciate the need for reform. It may very well be that Keeleyism or any other treatment adopted as the result of this conviction may form the starting point of permanent reformation, for to convince the patient of the need for strong action and of his inability to cure himself without assistance is half the battle. It is quite possible, therefore, that the Keeley Institute and many of its analogues may be able to claim truthfully that they have effected many cures. The sort of testimony, however, upon which the world is asked to believe in its virtues appears simply futile to those who are accustomed to weigh the statements made to them. For instance, about a third of the cutting under notice is given up to the "testimony" of a patient, an opium drinker and still under treatment in the institution, and to that of a father in respect to his narcomaniac daughter, who, judging by the context, can only just have returned home. The rest of the article consists of this sort of thing: "I shall never forget the beautiful witness borne by a fine young clergyman," etc., and "how his face shone with joy as he told the story of his restoration and cure." Another testifier was "a handsome grey-haired clergyman in the prime of life." These and "a bright little gentleman," "a rosy-cheeked gentleman, aged 53," a "tall, dark gentleman," and "a man of magnificent physique," all proudly disclosed the stories of their former debased existence in a way which, if it proves any-

thing at all, proves that they were still neurotics of a very pronounced type. If Canon Fleming wishes to render effectual assistance in the fight against intemperance, he should obtain the life-histories of the first five hundred patients of the institute since the day they left it, from their immediate relatives, and publish the results duly verified. The testimony of the patients themselves is worthless. The patients themselves are weak-minded, and their friends are ready to grasp at any straw which offers hope of permanent cure or even temporary relief from the misery entailed by the presence of a drunkard or narcomaniac within the family circle; and of this fact the fullest advantage, it is to be feared, is not uncommonly taken. No one can fail to have been struck by the enormous number of advertisements of cures and so-called inebriate homes where only "voluntary patients are received" which figure in the magazines and newspapers of the day. Many of the homes are conducted on perfectly sound lines; but in regard to many others this is certainly not the case, and those who run them are totally unfitted for their task. Quite recently an instance came under our notice of a man of good position who came to the conclusion that he was drinking too much beer, and by way of breaking himself of the habit entered a much-advertised "home." A day or two afterwards, craving for his usual stimulant, he asked for a glass of beer. This was refused, and instead of beer he was given half a tumbler of whisky, a course of treatment which was repeated again and again. The result was that at the end of his period of treatment he returned home thoroughly cured as a beer toper, but in the worse position of being a whisky drinker; his case therefore is now far more hopeless than when he entered on this unfortunate course of treatment. Such instances may not be common, but it is quite certain that, under present circumstances, inebriates and their friends are liable to become the prey of any charlatan who has money to advertise a so-called "cure," or impudence enough to open a "home" or institution. This should not be the case, and it is a matter to which the attention of Parliament should be directed. Every inebriate home or allied establishment should be registered by the authority of the place in which it is situated, and should be liable to supervision. The owner should be obliged to get a licence, and no licence should be issued to any person who is not in a position to show that he is really capable of providing and administering efficiently the treatment which he offers. Furthermore, these licences should not be permanent, but annually renewable.

MISSED LABOUR: FETUS 441 DAYS IN UTERO.

Dr. Hagmann of Stuttgart has recently published an interesting article on Retention of the Fetus in the Uterine Cavity beyond the Natural Term of Pregnancy.[1] For obstetrical and forensic reasons the subject is of high importance. In the unpublished case which he records the patient was 39, and had been six times pregnant. On January 16th, 1900, she aborted at the third month, and placental relics had to be removed. The next period occurred on February 16th, and lasted seven days. Pregnancy soon became evident, and there was unusual sickness, with bad headache. On October 17th the patient had to take to her bed owing to an attack of acute nephritis, the urine was four-fifths albumen, and the pulse and temperature high. On the next day the patient declared that she felt the fetal movements stop with a sudden jerk. They were never felt afterwards, but uterine contractions were marked for several days. After suitable treatment the nephritis subsided. The uterus became a little smaller, but the patient felt very ill; she had been for many years subject to pendulous abdomen, and the complication caused extreme discomfort. On April 2nd, 1901, 440 days after the cessation of the last period, she was admitted into the Marien Hospital, Stuttgart, and on the next day the fetus, which had been clearly definable throughout, was removed by Caesarean section, with its placenta. The latter hardly bled at all when detached. The uterine cavity also contained fetid brown fluid, and was washed out with a 1 in 1,000 sublimate solution, followed by artificial serum. A strip of iodoform gauze was passed into the uterine cavity, the lower end being pushed into the vagina; then the long incision in the anterior uterine wall was closed with nine deep and five serous sutures. The left ovary, being the seat of a small tumour, was removed. The patient's recovery was rather slow, but she ultimately left hospital in good health. The fetus was a female, 16 in. long, breech-presenting, and altogether much distorted by pressure. The placenta, considerably modified, was carefully examined. Fifteen other cases of missed labour, besides that of Oldham, are described by Dr. Hagmann, who carefully analyses them, and adds a general sketch of the pathology and clinical aspects of the subject.

[1] [illegible] Früchte in Uterus (Missed Labour.) *Monatsschr.* [illegible] Heft, p. 803.

FRENCH ANTI-ALCOHOL CONGRESS.

The first meeting of the French National Antialcohol Congress will be held in Paris in the last week of October under the presidency of M. Casimir-Périer. Among the members of the Committee of Patronage are M. Chaumié, Minister of Public Instruction and Fine Arts; M. Bérenger, Senator and Member of the Institute of France; Professor Brouardel; M. Paul Deschanel, Deputy and Member of the French Academy; Dr. Debove, Dean of the Medical Faculty of the University of Paris; and Dr. Lancereaux, President of the Académie de Médecine. The aim of the Congress is the organization of all available forces against the abuse of alcohol. The General Secretary of the Congress is M. Riémann, 18, Rue de la Cerisaie, Paris, to whom all communications on the subject should be addressed.

THE PROFESSIONAL EARNINGS OF BERLIN DOCTORS.

The *Berliner Tageblatt* has lately made an inquiry as to the professional earnings of barristers and medical practitioners, and the result is interesting. Of the members of the medical fraternity practising in Berlin in 1902, 30.9 per cent. had a yearly income less than £150; 17.3 per cent. had from £150 to £250; 27.8 per cent. had an income of £250 to £500; 7.5 per cent. had between £500 and £750. Of the barristers, on the other hand, only 10 per cent. had an income less than £150; 12 per cent. had from £150 to £250; 50 per cent. from £250 to £500; and 12 per cent. had from £500 to £750. To make the comparison more accurate it should be stated that while in the case of the barristers only incomes earned by the practice of their profession are reckoned, in that of the doctors the income from private means as well as that earned by the practice of their profession is counted. Our Berlin contemporary rightly thinks those figures highly significant, and advises young men to study them attentively before choosing a profession.

A FRENCH COMMITTEE ON MORALS.

An Extra-Parliamentary Committee has been formed in connexion with the French Ministry of the Interior for the study of questions relative to the regulation of public morals. Among the members of the Committee, in addition to the heads of the medical services of the army, navy, and colonies, are Drs. Balzer, E. Besnier, Brissaud, Brouardel, A. Fournier, Grancher, and Landouzy.

MALARIA INVESTIGATION IN INDIA.

It is announced that Dr. S. R. Christophers, who was associated with Dr. Stephens in the investigation as to malaria conducted on the West Coast of Africa and in the Indian cantonments, has been notified by the Indian Government that the medical authorities desire him to proceed at once to India, with the view of his again taking up special work

relating to malarial infection. Dr. Christophers is, it is stated, leaving almost immediately to enter upon his duties.

At a meeting of the County Magistrates for the Weymouth Division on August 12th Dr. Macpherson Lawrie was elected Chairman of the Bench.

It is announced that Dr. Nicanor J. Insignares, a member of the medical profession, has been appointed Minister of Public Instruction of the South American Republic of Colombia.

Professor E. von Leyden, the distinguished clinician of Berlin, celebrated the fiftieth anniversary of his reception *in nostro docto corpore* on August 11th. The subject of the thesis which he presented for his degree was acute articular rheumatism.

The value of the estate of the late Mr. William Cadge of Norwich is £110,163 3s., including personalty of the net value of £104,362 17s. 10d. Among the bequests are £5,000 to the endowment fund of the Norfolk and Norwich Hospital, and £1,000 to the Royal Medical Benevolent College, Epsom.

On the occasion of the recent celebration of the 500th anniversary of the foundation of the University of Heidelberg, the Medical Faculty conferred the honorary degree of Doctor of Medicine on M. Henri Dunant, of Geneva, the founder of the Red Cross Society. On the same occasion the Vice-Rector, Professor Czerny, was made a Privy Councillor of the First Class with the title of "Excellency."

Dr. Aldo Castellani, who was a member of the original Commission which proceeded to Uganda to investigate sleeping sickness, has, it is announced, received an appointment to a Professorship in Pathology and Bacteriology which has just been instituted by the Government of Ceylon to meet the needs of the island.

The British Association for the Advancement of Science will hold its seventy-third annual meeting at Southport on September 9th and following days, under the presidency of Sir Norman Lockyer, K.C.B., F.R.S. Professor Johnson Symington, M.D., Professor of Anatomy in Queen's College, Belfast, is President of the Section of Anthropology.

MEDICAL NOTES IN PARLIAMENT.

[From our Lobby Correspondent.]

The Indian Medical Service.—In the course of the debate on the Indian Budget on Thursday in last week, Sir Michael Foster, after referring to the alarming increase of plague in India and the greater severity of the disease, urged on the Government that this increase was a matter of profound importance to India, and a danger to the whole world, and he drew the attention of the Indian Secretary to the consequent desirability of maintaining the high standard of the Indian Medical Service. He regretted that there was considerable dissatisfaction in the medical service, both military and civil. Young medical men did not regard the service with favour, and he specially directed Lord George Hamilton's attention to the report issued by the British Medical Association, detailing certain wants of the Indian Medical Service. Sir Michael Foster said he would only refer to three. First, there had been no increase of pay, although there had been in the R.A.M.C., in view of the increased cost of medical education and other considerations. Then members of the civil medical service were allowed to engage in private practice, which was a very good thing, as a good deal of the service work was of a routine character. During the last ten years or so certain regulations had been in force of a galling character to the medical profession. When a civil medical officer attended a native gentleman, not only was there a tariff of fees, but in each case the charge had to be laid before a lay officer, very often of inferior rank. Again, as regards sanitary measures, he argued that the medical profession ought to be represented on the Viceroy's Council. The removal of these defects would get rid of a bar to the recruiting of the brightest intellects for the service.

The Irish Constabulary and Medical Attendance.—On more than one occasion last week Dr. Thompson called the attention of the Chief Secretary to this subject. He first asked if he was aware that a circular issued from the office of the Inspector-General of the Royal Irish Constabulary, dated July 20th, 1903, forbade the medical attendants of the constabulary calling in consultation any other medical man or specialist under any circumstances, and if so, would he cause the instant withdrawal of the circular. Mr. Wyndham replied that the circular merely recited a rule which had been in operation for upwards of thirty years. The rule in no way prevented sick members of the force from employing medical men other than the police medical attendants. It merely pointed out that such medical assistance could not be paid for from public funds. It was not proposed to withdraw the circular. Dr. Thompson asked whether it was not a fact that a constable, when suddenly overtaken with severe illness called in medical assistance, he was expected to pay for it out of his own pocket. Mr. Wyndham said that in case of an accident on duty a constable received an allowance in respect of medical aid. Dr. Thompson on a subsequent day recurred to the circular, and asked for its withdrawal in the interests of the constables, but Mr. Wyndham adhered to his previous reply. Dr. Thompson also asked the Chief Secretary to the Lord Lieutenant of Ireland if, in view of the fact that Irish Poor-law medical officers had power to call in consultation, in the case of severe illness of a poor person, any physician or surgeon they might desire, he would explain why the same discretion was not permitted to medical attendants of the Royal Irish Constabulary. Mr. Wyndham answered that no proper analogy could be drawn between the two services. In the case of medical attendants on the Constabulary the cost, estimated at about £13,000 in the current year's estimates, was defrayed by the State. It was also to be borne in mind that in Great Britain, in the large majority of local county forces, the police had to provide their own medical attendance, and in no case where such was supplied did it include attendance for the man's wife or family as in Ireland.

Vivisection and the Supply of Dogs.—Last week Sir John Rolleston asked the Secretary of State for the Home Department whether he was aware of the source from which the dogs were obtained which were used by vivisectors for experiments; and, if not, would be cause inquiry to be made as to this. Mr. Secretary Akers-Douglas answered that he had no information as to the sources—no doubt many and various—from which dogs were obtained for the purposes of experiments: and he did not think that any good purpose would be served by attempting to make inquiry on this subject.

Deficient Infirmary Accommodation in Bristol Union.—Mr. Herbert Samuel asked the President of the Local Government Board whether his attention had been called to the infirmary accommodation in the Bristol Union, resulting in the occasional crowding of over 750 sick people in wards in two workhouses certified for 450, and the exclusion of cases of a mild lunacy type, which had consequently been treated at a greater cost in the Bristol Lunatic Asylum; and whether, seeing that the old infirmary wards were condemned by the inspectors in 1898, and that plans for a new infirmary had been prepared, he would say what steps he proposed to take in the matter. Mr. Long answered that his attention had been called to the need for further accommodation for the indoor poor of the Bristol Union, and he had for some time past been in communication with the guardians on the subject. He had pressed them to submit a complete scheme for the provision of the necessary accommodation, and was now expecting to hear from them on the subject.

Irish Poor-law Medical Service.—Last week Dr. Thompson asked the Chief Secretary to the Lord Lieutenant of Ireland whether, in view of his public statement that the officers of the Irish Poor-law service had grievances which required to be remedied, he would reconsider his decision, and either appoint a Royal Commission to consider them or else enlarge the scope of the Viceregal Commission now sitting so as to allow these matters to be investigated and reported upon.

Mr. Wyndham replied that he had nothing to add to the statements already made on these matters. The complaints of the medical officers could not be advantageously considered until after the Government had had an opportunity of considering the report of the Viceregal Commission.

The Irish Medical Association and Poor-law Officers.—Dr. Thompson asked the Chief Secretary to the Lord Lieutenant of Ireland if he had received any reports showing that the Council of the Irish Medical Association had intimidated its members against doctors outside the Association seeking Irish Poor-law medical appointments; and, if so, whether he would lay them upon the table. Mr. Wyndham answered that reports or regulations purporting to have been issued by the various local branches of the Irish Medical Association contained the following amongst other paragraphs: "That henceforth no medical man shall apply for or accept any dispensary appointment at a smaller remuneration than £200 per annum, or workhouse appointment under £120 per annum, unless both be held conjointly, when the minimum salary shall be £300 per annum. That in the event of any position being taken in violation and contrary to the foregoing regulations, no member of our Association shall recognize, do duty for, or meet in consultation the offender. Such an offence on the part of a member of our Association shall entail instant and ignominious expulsion." It was not proposed to lay these reports, which had been circulated throughout Ireland, upon the table of the House.

The R.A.M.C. and South African War Medals.—Colonel Lockwood asked the Secretary of State for War whether he was aware that in the Eastern District or Command of the 20 warrant officers, non-commissioned officers, and men of the Royal Army Medical Corps entitled to both war medals for South Africa, some with as many as six clasps, only two had received both decorations, and of the remaining 18 only two had received the Queen's medal; and, if so, would he state how many of each of these medals had been awarded to the Royal Army Medical Corps in other districts or commands. Mr. Secretary Brodrick answered that the information required would entail a minute examination of the medal rolls by the staff concerned, and he did not think his honourable and gallant friend would willingly throw this unnecessary labour upon the Department. The distribution of medals was expedited by every means, and any individual case brought to notice would be inquired into.

The Sewage of Buncrana.—In reply to a question put on Thursday in last week by Mr. O'Doherty, Mr. Wyndham stated that an inquiry was held by an inspector of the Local Government Board into an application for a loan of £1,700 for a sewerage scheme at Buncrana. The necessity for a proper sewerage system was established, but as the Board was unable to approve of the council's scheme it declined to recommend the loan. A fresh scheme having been adopted by the council, an application was made in May last for a loan of £3,000. A local inquiry was held in the following month, and as a result the plans, etc., of the scheme were returned to the council for amendment in order to provide for filtration of the sewage before its discharge into the tide. The council had since referred the question to its engineer and to the Buncrana Public Health Committee.

Cases of Poisoning in Maryborough Prison.—Dr. MacDonnell asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been called to the case of poisoning in Maryborough Prison, and to the fact that the medicines required for the use of the inmates were under the charge of and dispensed by a person without medical qualification, and, if so, whether he would consider the advisability of appointing a duly qualified pharmaceutical chemist to this prison. Mr. Wyndham answered that the honourable member doubtless referred to the occurrence of January last in Maryborough Prison. On that occasion a number of persons became ill from the effects of hellebore powder inadvertently placed in their food. The powder, which was not a scheduled poison, was not kept in the prison as a medicine, but in the general stores as an insecticide for use on the prison farm. No permanently injurious results followed, and the use of the powder had since been discovered. All medicines for the use of inmates of the prison were under the charge of the medical officer, who dispensed them. It was not considered necessary to give him the assistance of a pharmaceutical chemist.

Qualified Nurses for Workhouse Infirmaries.—Mr. Talbot asked the President of the Local Government Board on Thursday in last week whether he could give an assurance that no action would be taken with regard to the recognition of qualified nurses for workhouse infirmaries until full opportunity had been given for considering the objections taken to such appointments. Mr. Long answered that he could assure his right hon. friend that no action would be taken without due consideration of all representations made in connexion with the report of the Departmental Committee.

Ages of Marriage. Mr. Long informed Mr. D. A. Thomas, in answer to a question last week, that the mean ages of marriage in the groups of years from 1867 were: 1867-70 (4 years), 28.0 men, 25.7 women; 1871-5, 27.9 men, 25.7 women; 1876-80, 27.9 men, 25.7 women; 1881-5, 28.0 men, 25.7 women; 1886-90, 28.3 men, 26.0 women; 1891-5, 21.4 men, 26.2 women; 1896-1900, 28.4 men, 26.2 women. In 1867-70 more than 30 per cent. of the people married did not state their ages, but that there had been a gradual improvement in the statement of ages, until in 1900 only about 1¼ per cent. did not state their ages. For these and other reasons, however, comparisons between the average ages at marriage in the earlier years with those in the later years cannot be regarded as altogether trustworthy.

Vivisection for Purposes of Justice.—Last week Mr. Moss asked the Secretary of State for the Home Department whether a judge of the High Court had in any, and, if so, in what case or cases, exercised the power conferred on him by Section XII of the Cruelty to Animals Act, 1876, by ordering experiments to be made on living animals for the purposes of justice in a criminal case. Mr. Secretary Akers-Douglas answered that the only case of this nature of which he had any record was one in which a Scotch judge made an order in 1883 with the view of ascertaining the nature of a poison alleged to have been dispensed by mistake.

The Session, which closed on Friday in last week, has not been remarkable for any special legislation affecting the medical profession. Some Acts have been placed on the Statute Book of considerable interest from a sociological point of view, such as the Employment of Children Act, the Licensing Acts Consolidation and Amendment Act for Scotland, and the somewhat small Housing measure which passed in the last days of the session. In the Expiring Laws Continuance Act was included this year the Vaccination Act, which recognises the conscientious objector, and so, any review of the effects of this measure as regards the prevalence of small-pox, has been postponed to another session, and possibly to another Parliament. The Addenbrooke's Hospital Bill became law on August 11th, and on August 14th, the day of prorogation, the United Kingdom was given a new University under the Liverpool University Act, and the medical profession will thereby be enriched by one more licensing authority, and the General Medical Council reinforced by a representative of the new university. The Bills introduced by private members which related to medical and sanitary matters were not lucky in obtaining high places in the ballot held at the commencement of the session, and consequently have had little or no chance of passing their stages, though some, such as the Poor-Law Superannuation Ireland Bill, were persevered with to the very last day of the session. The feature of the year which was of most interest from a medical point of view consisted in the opportunities given by the new system of printed answers to questions for obtaining information in detail on many sanitary and medical subjects. These columns have borne witness throughout the session to the great number of matters connected with public health, Poor-law administration, the medical services, both civil and military, and medical sociology, both in the United Kingdom and the empire generally, which have by this convenient method been brought under the notice of the Government and the House.

The Prorogation. Parliament was prorogued on Friday afternoon shortly after 2 o'clock till Monday, November 2nd. There were over thirty members present, and a session which has not conduced to raise the House of Commons in public esteem, ended in an appropriate manner without the usual reading of the King's speech. The Speaker had not been supplied with a copy, and so it had to be taken as read!

Ireland.

Queen's College, Cork.

The report of Queen's College, Cork, for the session 1902-3 has just been published, and the President, Sir Rowland Blennerhassett, gives the following account of the session:

The number of students attending the College during the session was 186 matriculated and 4 non-matriculated. The number of new students was 58. Of these 49 came from the Royal University of Ireland, 5 from other colleges and universities, and 4 were non-matriculated. The number of first year medical students registered with the Medical Council shows that Queen's College, Cork, occupies, with Trinity College, Dublin, the second place as regards numbers. This increase in the numbers in Cork is the more remarkable, because there has been at the same time a diminution in the total number of such students in all Ireland. During the session the work that has been done in the College has been solid, and the conduct of the students generally has been satisfactory. Towards the close of the session—on June 6th—the ordinary visitation held every three years took place. Lord Justice Holmes presided at it. He stated to the visitors some of the more pressing needs of the College, and gave an account of the work done since the last visitation three years ago. The condition of the College was fully investigated, and a satisfactory state of things was disclosed. The statements made by Professor Corby and Professor Ashley Cummins concerning the facilities which Cork offers for clinical teaching merit the careful consideration of all interested in the spread of scientific medical education in Ireland. It was my duty to point out to the Visitors the urgent necessity which exists for the foundation and endowment of a Chair of Pathology. This important science is at present taught by Dr. Moore, who devotes his whole time to it, and is a most conscientious and capable teacher. Dr. Moore, however, receives no salary. The remarks which I addressed to the Visitors received their emphatic concurrence.

The Salaries of Dispensary Doctors.

A deputation from the Cork Branch of the Irish Medical Association attended a meeting of the Finance Committee of the Cork Board of Guardians on August 13th for the purpose of supporting the statements made before the Guardians on July 30th by Dr. J. Catter. The members of the deputation were Drs. J. Catter, H. Corby, J. J. Harding, J. J. Keating, J. Ryan, P. J. O'Brien, and C. Donovan. Having heard several members of the deputation on the subject of the necessity for increasing the salaries of the dispensary medical officers of the union, the Committee resolved:

That in the opinion of our Committee the medical officers are entirely underpaid, and we recommend the Board of Guardians to fix the salary of medical officers of over ten years' standing at £170 a year, with yearly increments of £10 each until the salaries reach £200. We further recommend that officers under ten years' service be each paid a salary of £140 with similar increments until it reaches £200. All future appointments to be made at present salaries with increment of £10 until they reach £200, provided the Local Government Board pay the usual proportion of salaries.

A member of the Committee in moving the adoption of the report gave notice of motion that its terms be carried out in future, but as a resolution had been recently passed that no increase of salaries should be given to any officers for twelve months it was necessary to have that rule rescinded before this new motion could be dealt with. The member intimated that he would give notice of motion to have the old rule rescinded.

The Granard Dispute.

Arising out of some observations recently made in the House of Commons by the Chief Secretary for Ireland, Dr. Kenny has addressed the following letter to the Local Government Board. It was read at the last meeting of the guardians.

Having read the pronouncement of the Chief Secretary for Ireland in the House of Commons, I feel it is incumbent on me to explain that in any action I have taken in my endeavour to reform the nursing arrangements in Granard Union Hospital and infirm wards, my only anxiety and purpose has been to ameliorate the condition of the sick and helpless poor. No one regrets more than I do that if, in the discharge of this duty, unintentional offence has been given to any of those engaged with me in the work of the hospital. It has ever been my aim to work harmoniously with all my fellow officials in the administration of the Poor-law Medical Service.

The Chairman: That is an apology to a certain extent. Mr. Dawson: Well, we will ask him for more. I propose that we call upon Dr. Kenny to apologize, and ask the Bishop to let the nuns back. Mr. Gavigan: He cannot apologize any better unless he goes down on his knees to each member. On the advice of the Chairman Mr. Dawson withdrew his motion, and the letter was marked as read.

Poor-law Medical Officers.

At a meeting of the Ballymena Board of Guardians on August 8th, the relieving officer, according to the *Belfast News Letter*, reported that he could not find a doctor in Ballymena who would act as *locum tenens* for Dr. Currie under 4 guineas per week. In connexion with the same subject, Dr. W. R. Davison wrote the guardians, pointing out that the struggle was not one between the Ballymena Board of Guardians and the doctors of the Ballymena Union, but between the Poor-law medical officers as a body and the conditions of a service which they contended was out of date and very unfair to them. A long discussion ensued on the subject, and ultimately Mr. MacAuley handed in notice of motion for that day fortnight to rescind the resolution passed by the guardians on July 25th, granting Dr. Currie four weeks' leave of absence. Dr. Alexander Duncan, Medical Officer of Glenwherry Dispensary, wrote requesting three weeks' leave of absence, dating from August 24th, and stating that Dr. Jos. Stewart of Harryville would act for him. Mr. M'Kenna proposed that Dr. Duncan be granted three weeks' leave of absence from August 24th, provided that Dr. Stewart or any other qualified man, not a dispensary medical officer, acted as his *locum tenens* at the rate of 2 guineas per week. Mr. Logan seconded the motion. Mr. MacAuley proposed as an amendment that Dr. Duncan's application be granted, provided that Dr. Stewart, or any other properly qualified medical gentleman, acted as his *locum tenens* at the rate of 2 guineas per week. Mr. Cainan seconded the amendment, which was carried, twelve voting for and four against. At the meeting of the Cookstown Board of Guardians on August 8th, Mr. John B. Gunning-Moore, D.L., presiding, a communication was read from Dr. Harris (Stewartstown), which stated that he withdrew his agreement to the Board's terms for doing temporary duty, and substituted the following scale:—£1 1s. per day or part of a day and car hire; consultations, difficult midwifery and surgical cases between 8 p.m. and 8 a.m., £1 1s. per mile travelled and car hire; between 8 a.m. and 8 p.m., £1 1s. per each two miles travelled and car hire. The Chairman remarked that the fees mentioned were surely higher than the doctor would charge for private practice. It was mentioned that a night call to Coagh, where the adjoining dispensary in the union was situated, would mean a fee of over 5 guineas. The letter was marked "read." At the weekly meeting of the Omagh Board of Guardians on August 8th, Mr. George Murnaghan, M.P., presiding, a letter was read from Dr. A. M. Love, Drumquin, asking the Board to allow him three weeks' leave of absence, and stating that Dr. C. J. Johnston, Drumquin, would act as his *locum tenens*. Mr. Culgin pointed out that the doctor did not state the fee. Mr. O'Kane, J.P., said there had never been any friction about the fees at Drumquin, and he thought that Dr. Love should be given the holidays, because half of the substitute's fee was paid by the Local Government Board, and even if it were £4 4s., the Board would only be charged £2 2s. The Chairman pointed out that a fortnight was the usual period given to doctors for vacation. Mr. O'Kane said that doctors were entitled to a month's holidays in the year. The Chairman: Oh, no; you can give them a month, but you cannot give them more. It was agreed that Dr. Love should be granted two weeks' leave of absence on the understanding that he was to procure a substitute at £2 2s. a week.

THE PREVENTION OF CONSUMPTION.

Ireland.

Belfast.—Mr. Robert Brown, Honorary Secretary of the National Association for the Prevention of Consumption (Ulster Branch) has addressed a letter to the *Belfast Evening Telegraph* advocating the establishment of a municipal sanatorium. He points out that there are probably 4,000 cases of consumption in Belfast. Of these, about 1,000 would probably prefer to stay at home; 1,000 are probably advanced cases, for whom nothing can be done except keep them where they will not prove a source of infection to their family and neighbours. If we give these three months to live, on an average 250 beds will be enough for all. A sanatorium with 500 beds, with an average treatment of three months, would deal with the remaining 2,000 cases, and the disease would be effectively coped with. A country house, with simple wooden verandahs about it, such as have proved in England, at the Forster Green Hospital, and at Rostrevor, better for the patients than any elaborate building, should not cost more than £25 per bed, or a capital outlay of £12,500. Each

patient would cost at the outside 20s. per week, or £25,000 per annum. The 250 incurables would cost half that sum, or, say, for the whole fight with the disease, £40,000 per annum. This, says Mr. Brown, is a large sum, but well worth spending for a few years to stamp out a disease from which, in its various forms, the city is losing 1,500 per annum of its inhabitants in the flower of their life. At £200 each they represent an annual loss of £300,000. If the working men of Belfast would insist on this scourge being stamped out it could and would be done. The old Royal Hospital would do very well for an isolation hospital for incurables. It is not an ideal situation, but it is immediately available, and if the ideal site is looked for, it may be ten years before it is found. Meanwhile the disease goes on unchecked. It is a very great advantage that the Royal Hospital is central, and the dying patient can see his family frequently. There is no risk whatever of the disease spreading from it to the surrounding houses. The patients' sputum would be destroyed, and that is the sole danger. As to the proposal to have shelters for consumptives in a walled-off part of the Ormeau Park, Mr. Brown thinks this arrangement is worth a trial. Care would be taken of their sputum while they are there. These patients are going about through the city spitting everywhere, and to get them where they can be watched for even a portion of the day would be a great gain.

UNITED STATES.

New York.—Commissioner Folks, of the Department of Public Charities, New York, has officially recommended the Board of Estimate and Apportionment to request the Board of Health to select a site for a sanatorium for consumptives at the earliest practicable moment; that when the use of such site has been secured steps should be taken for the establishment of a sanatorium; that an appropriation of £6,000 be made, to cover the cost of selection of site and maintenance during the remainder of the current year, and that an issue of bonds to the amount of £80,000 be authorized for the construction by the trustees of a suitable sanatorium. The Commissioner's recommendations were accompanied with a report on the general subject to the mayor. In it is stated that a sanatorium which would accommodate 500 patients could be established for £81,400, and that the estimated expense of maintenance would be about 4s. 2d. a day for each patient. It is believed, however, that if sufficient land were provided to permit dairying, poultry-raising, and fruit and vegetable growing, a considerable income might be had from these sources. The Commissioner deems it important that the hospital should be situated as near the city as possible, and he is convinced that a satisfactory site can be procured within fifty, and probably within forty, miles of New York. Thus it would be possible for the relatives and friends of the patients to visit them at a comparatively small expenditure of time and money—a consideration which it is believed would have an important influence upon the willingness of patients to go to the sanatorium. The Board of Aldermen has, we learn from the *Boston Medical and Surgical Journal*, already expressed its approval of the project, but should the Board of Estimate and Apportionment decide to adopt the recommendations mentioned, it is quite possible that there may be considerable difficulty in securing a suitable site for the hospital. After the passage of the Act which authorized cities of the first class to select and purchase sites for sanatoriums for consumptives, the Committee on Tuberculosis of the Charity Organization Society waited on the President of the Board of Health, and requested him to exercise the power and authority conferred by the law upon his department. Opportunity for action was promptly afforded, 95 acres of land being offered in Orange County, at a point said to be an admirable site for the hospital, the scheme of which had been carefully mapped out. The plan fell through, however, as opposition immediately developed from a sporting club which owned territory adjacent to the proferred tract. The influence brought to bear upon the Legislature was strong enough to secure the working through of a Bill which added to the restrictions on the establishment of such hospitals the consent of the county and local supervisors. In the City Tuberculosis Infirmary on Blackwell's Island there were on July 1st 391 patients.

A FOREST SANATORIUM.—It is said in the American journals that a syndicate of New York and Chicago specialists has purchased 5,000 acres of land in Itasca County, Minnesota, on which it is intended to erect a sanatorium. The site is in the centre of a thickly wooded pine tract.

LITERARY NOTES.

WE learn with regret that the *Quarterly Medical Journal* (Sheffield) has ceased publication with the August number.

The *Gaulois* states that not long ago there was found in one of the bookstalls of the quays in Paris a work entitled *De l'état actuel de la médecine et des Médecins en France*, by "Franck de Sombec." The name at first sight does not seem to have any special significance, but the *Gaulois* affirms that "Sombec" is an anagram of Combes, and that in fact the author of the book is no less a person than Dr. Emile Combes, now Prime Minister of France.

The *Gazette Médicale de Paris* thinks it likely M. Paul Bourget is writing a novel in which hospital life—and, presumably, death—will figure largely. The distinguished author has recently been attending the clinical lectures of the physicians of the Hôtel-Dieu, especially those of Professor Dieulafoy, with whom he is on terms of intimate friendship. M. Bourget has also been shown all the details of the working of the hospital, and the most interesting cases. As he diligently took notes of all he saw and heard, the evidence of his design is considered to be convincing.

The Medical Publishing Company of America, an organization composed exclusively of members of the medical profession has, says the *Boston Medical and Surgical Journal*, acquired from the Medical Critic Publishing Company, the monthly journal *The Medical Critic*. Dr. Albert Warren Ferris has been appointed editor in the place of Dr. Frederic R. Sturgis, who recently resigned. Dr. M. W. Curran continues as managing editor. Encouraged by the financial success of the monthly, which has secured a large amount of advertising, the new company announces that, beginning with October 1st, it will publish a daily, to be known as *The Daily Medical Journal*, "which will unite energy and enterprise with a conservative regard for the ethics which should govern our profession, as well as the absolute independence which has characterized the policy of *The Medical Critic*." The proposed daily journal will consist of six pages, each 12 by 15 in., and made up of four columns, and it is stated that the necessary equipment to print 100,000 copies each day has already been purchased.

Dr. Austin Flint has recently gathered his minor contributions to medical literature into two volumes of about 500 pages each. These republications do not include the larger works, the *Physiology of Man*, in five volumes, issued first 1866-74, and in a second edition in 1875; the *Manual of Chemical Examination of the Urine in Disease*, of which the sixth edition was published in 1884; the *Textbook of Human Physiology*, of which the fourth edition appeared in 1888. Dr. Flint's contributions began in 1855, and in this collection all are again reprinted as an offering to "those to whom he is bound by ties of relationship and friendship."

Dr. Karl von Klein, of Chicago, is said to be compiling a medical dictionary which will include all medical terms in every language.

Argentina Medica is the name of a new medical journal published at Buenos Aires under the direction of Dr. Julio Mendez. It is well printed and illustrated. The scientific contents are solid if not very brilliant contributions to the sum of medical knowledge.

"An Indian Medical Student" writes in reference to an abstract of a paper by Professor Jardine, which recently appeared in this column:

> I have not had the opportunity of reading Professor Jardine's contribution on labour among primitive people in the *Glasgow Medical Journal*. I see you refer to that contribution in the BRITISH MEDICAL JOURNAL of July 25th. On page 204 of that number we have the following: "By a few the erect position is maintained all through labour. Those who are delivered standing walk about between the pains, but cling to a stake, a limb of a tree, or a rope, or clasp their arms around the neck of a friend." That this position was once known in India is evident; as Maya mother of Siddhattha—better known to the world as Buddha—and wife of Suddhodana, King of Kapilavasta,[1] was delivered of her son in this manner. The Nidanakatha, or introduction to the "Commentary on the Birth Stories,"[2] gives the story thus (I quote from Professor Fausboll's text as translated by Professor Rhys Davids): "When she came to the monarch sal-tree of the glade, she wanted to take hold of a branch of it; and the branch, bending down like a tree heated by steam, approached within reach of her hand. Stretching out her hand, she took hold of the branch, and then her pains came upon her, and the people, drawing a curtain round her, retired. Standing, holding the branch of the sal-tree, she was delivered. That very moment the four pure-minded Maha-Brahma angels came... saying, 'Be joyful, O Lady!'

[1] The ancient kingdom of Kapilavasta lies between the rivers Rapti and Rohini, and corresponds to the modern district of Gorakhpur, in the United Provinces.

[2] Compiled by an unknown writer, the limiting dates being B.C. 3 to A.D. 6

a mighty son is born to thee.'" I might add that I have come across in the Lahore Museum fragments of Græco-Buddhist sculptures, most of them very ancient, depicting the scene described above.

Dr. Feckenham, the last Abbot of Westminster, like many of his Benedictine brethren, gave a considerable amount of attention to medicine. Among his papers are some notes, dated 1567, on the use of the Bath waters, which have recently been published in a Benedictine periodical, the *Downside Review*. The Cambrai Manuscript from which the following extracts are taken bears the name of "Dr. Johnson, of Amsterdam, 1654." An earlier owner was "Dorothi Hoskins," whose name appears with the date 1630. We give the notes as they were written by the old Westminster monk:

PRESCRIPTIONS AND RULES TO BE OBSERVED AT THE BATHE.

When you come to Bathe after your journeynge reste and quicte your bodie for the space of a daye or ii and see the fachion of the Bathe houses and after what sort others that are there doo use the same.

If it be not a fayre clere daie go not into the openne but rather use the water in a bathinge vessell in your chamber as many men doe.

The best tyme of the day to goe into the Bathes is in the morninge an houre or halfe an houre after sonne rysinge or thereaboute in the most quyett tyme, and when you shall feel your stomake well and quiett and that your meat is well digested and have rested well the night before. But before you go into the Bathe you must walke an houre or halfe an houre at the leste in your chamber or elsewhere.

You must alwayes go into the Bathe wth an emtie stomake and so remayne as longe as you are in it, except greate necessitie requier the contrary and then take some little suppinge is not hurtfull. Let your taryenge be in the Bathe accordinge as you may well abide it but tarie not to longe in anye wise at the first although you maie well abide it that your strength at noe tyme mai faile you.

You maie tarrie in the crosse bathe an hower and a halfe at a tyme after the firste bathinge at one tyme halfe an hower or iii quarters of an hower. But in any wise tarrie at no tyme untill you be faynte or that your strength fayle you.

And iff at any time you be faynte in the bathe then you maie drinke some ale warmed wth a toste or any other suppinge or grene ginger or yf nede be aqua composita methridate the bignes of a nut Kernell at a tyme either by itselfe or mixed wth ale or other liquor. As longe as you are in any of the Bathes you must cover yor heade verye well that you take no colde thereof for it is very perillous to take any colde in your heade in the bathe or in anie other place duringe your bathinge time. When you come forthe of any of the bathes se that you cover yourself very well and drie of the water from your body wth warme clothes and then put on a warme sheet and a mantell or some warme gowne for the takinge of coldes and soe goe straight waie to yo warmed bedd and sweat there iff you can halfe an hower, and wipe of the sweat diligentlye. And after that you maie sleep awhile but you muste not drinke anythinge untill dynner tyme except you be verie faynte and then you maie take a little sugar candye or a few reasons or a little thynne brothe but small quantytie to slake yor thirste onelie because it is not good to drinke or eate by and by after the bathe untill you have slept a little yf you cane.

After that you have sweat or slepte ynoughe and be therebie delivered from the heat that you had in the bathe and in your bedd then maie you rise and walke a little and so goe to yor dynner for by mesurable walkinge the evell vapours and wyndeues of the stomake that are taken in the baths be dryven awaie and utterlie voided. After all this then goe to yor dynner and eate of good meats but not very moche that you maie rise from the table with some appetite so that you coulde eate more yf you would and yete you muste not eat to little for decayinge of your strengthe.

Let your breade be good sweate wheate and of one daies bakinge or ii at the moste and yor meate well boyled or roasted and specialiie let theis be your meates mutton veale chicken rabbet capon ffessannt partriche or the like.

You maie eat also freshe water fishe so it be not muddy as eeles and the like; refraine all salte fishe as ling habdyne &c. Avoide all fruyte and raw herbes: salletts and the like avoyde.

Apparrell yor bodye accordinge to the coldnes of the whether and the temperature of the airs but in any wise take no colds And yf yiu will bathe agayne in the after noone or after dynner then make a verye light dynner as a couple of potched eggs a caudle of some thynne brothe with a chicken and then after iii or 2 howers yor dynner so taken you maie bathe agayne and in any wise tarrye not so long in the bathe as you did in the forenoon.

Messrs. Chatto and Windus will shortly publish a book on Christian Science, by Mark Twain, who during the last few years has given much attention to the subject.

CONTRACT MEDICAL PRACTICE.

A CLUB PATIENT!

DISGUSTED writes: In the course of my work as surgeon to the largest Friendly Society in the district (950 members) I was summoned to attend a member, whom I have since discovered to be a prominent house and estate agent, an ex-major of Volunteers, a J.P., and to have been thrice mayor of this town! He lives in a beautiful house in one of the best parts of the town. *Verb. sap.* And what am I to do? He is treasurer of the Society, and if I resign in protest, I shall merely be told, truly enough, that there are plenty ready to fill my place.

THE PLAGUE.

PREVALENCE OF THE DISEASE.

INDIA.

DURING the week ending July 16th and 23rd the deaths from plague in India numbered 2,284 and 2,290 respectively. In the city of Bombay the deaths from the disease amounted during the week ending July 23rd to only 70, but in the Bombay Presidency generally they stood at 1,751 out of the total of 2,290 recorded. The Western Presidency is therefore by far the most seriously affected district, the whole of the rest of India showing some 539 deaths from plague only. Of the 539, half the number occurred in Mysore State, where, as in Bombay, the epidemic seems to be steadily reviving. In the Punjab, where the plague raged so virulently during the winter, the deaths from the disease during the weeks ending July 16th and 23rd amounted to only 118 and 55 respectively. In the North-West Provinces and Oudh not a single death from plague was recorded during the two weeks in question. Up to July 21st there had been 10 cases and 7 deaths from the disease at Ootacamund.

CAPE COLONY.

During the weeks ending July 18th and 25th the plague reports in Cape Colony were as follows:

Port Elizabeth.—Fresh cases, 1 and 0; deaths, 2 and 0; remaining in hospital, 3 and 3.

East London.—Fresh cases, 1 and 1; deaths, 1 and 0; remaining in hospital, 4 and 4.

King Williamstown.—No cases, no deaths; no cases in plague hospital.

Queenstown.—Fresh cases, 1 and 0; deaths, 0 and 0; remaining in hospital, 1 and 1.

Plague-infected rats continue to be found in all the above-mentioned towns. At Graaff-Reinet, Burghersdorp, Stockenstroom, and Riversdale no plague in man or animals was discovered during the two weeks in question.

SYDNEY.

Although for several weeks past some rats and mice infected with the plague bacilli have been found in the city and one of the suburbs, no case of the spread of the disease to man has been reported until July 23rd, when a youth, 16 years of age, residing in Leichhardt, was found to be suffering from the disease, and was removed to the Coast Hospital. It has been ascertained that he works in the city as a machinist, but no rats have been found on the place of business in which he is engaged, and his home is said to be perfect from a sanitary point of view, so that the exact mode of infection has not so far been traced. The attack is pronounced to be a mild one.

MAURITIUS.

During the weeks ending August 6th and 13th the fresh cases of plague in Mauritius numbered 17 and 15, and the deaths from the disease 14 and 12 respectively.

HONG KONG.

During the week ending August 8th 9 cases of plague were recorded in Hong Kong, and 9 deaths from the disease.

CHILE.

In Valparaiso cases of suspected plague were reported in the city on July 17th, causing other countries on the Pacific coast to adopt quarantine precautions against Chilian ports.

NEW CALEDONIA.

A telegram dated "Sydney," July 20th, states that an epidemic, supposed to be plague, has appeared at Pam, New Caledonia. Twenty-five natives up to that date had succumbed to the disease.

ASSOCIATION NOTICES.

ELECTION OF MEMBERS.

ANY candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

THE Library will be closed until further notice.

GUY ELLISTON, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

EAST ANGLIAN BRANCH.—Preliminary announcement.—The autumn meeting of the East Anglian Branch will be held at Sudbury, Suffolk, on Thursday, September 10th. The Cambridge and Huntingdon Branch has accepted the invitation of the East Anglian Branch to be their guests at this meeting. Any member wishing to read a paper or show cases or specimens is requested to communicate as soon as possible with B. H. NICHOLSON, Honorary Secretary, East Lodge, Colchester.

A DOCTOR DECORATED.—Dr. Broomhead, Chief Surgeon of the Haslingden Ambulance Association, has received the special South African medal of the Order of St. John of Jerusalem, on the recommendation of Dr. Trimble, Deputy Commissioner of the North-Western District of the Association. Dr. Broomhead was one of the founders of the Haslingden Corps, which furnished twenty-four men for service on the field of war in South Africa.

SPECIAL CORRESPONDENCE.

ADELAIDE.

Annual Meeting of the South Australian Branch.—Income Tax.—Necrology.—Morgan Thomas Bequest.—Sanitary Regulations.

THE annual meeting of the South Australian Branch was held on June 25th, when the report revealed a flourishing state of affairs: a new code of by-laws was adopted, after which the retiring president (Dr. A. A. Hamilton) delivered a vigorous address, and vacated the chair in favour of Dr. Melville Jay, who presided at a very pleasant dinner in the evening.

It is proverbial that all good citizens look forward cheerfully to the annual date for contributing their quota to the Treasury through the medium of the income tax, but this year a fresh edict of the Commissioner of Taxes has caused some consternation in the ranks of the profession. We are now assessed not only on the amount of our actual incomes received, minus certain expenses incurred in making that income, but also on our book debts. It does seem a trifle hard to have to pay a tax on income earned but yet not received, and an attempt has been made to draw some conclusions as to what is the practice in England from the article in the BRITISH MEDICAL JOURNAL of April 11th, p. 860. There it mentions that from the gross receipts "entered as having been paid," certain deductions might be made, but as later on it states that bad debts can be deducted, it is difficult to reconcile a bad debt with the expression receipts "entered as paid": possibly this is an error. Twenty years ago the Colony had only a revenue tariff, and neither income nor land tax had been imposed, but now the State of South Australia is being taught how inestimable are the blessings of protection, as illustrated by progressive income land and taxes, and probate duties.

Two deaths have recently occurred in the ranks of the profession here. Dr. James Phillips, a veteran who qualified some sixty years ago, was a well-known and much esteemed practitioner on North Terrace in former days. Dr. Walker, of Port Pirie, was a brilliant graduate in arts of this University before its medical school was established. Having gained the South Australia scholarship of £200 per annum for four years he was enabled to study at Edinburgh, where he also had a distinguished career. Unhappily he succumbed to phthisis at the age of 35.

I mentioned in my last letter that the late Dr. Morgan Thomas had bequeathed the residue of his estate to the Public Library, Museum, and Art Gallery, the amount being estimated at £30,000. The executors have since found that this figure will in all probability be more than doubled, the estate having been sworn at over £90,000. It is a singular fact that on the demise of this eccentric individual, who, except for dining every day at a leading hotel, might be said to have contracted almost miserly habits, not a single penny was found to be owing by the estate. The deceased did not even possess a cheque book, nor did he leave behind him any memorandum of his investments.

The City Council have recently put into force a by-law dealing with the habit of expectorating on to the pavements, and inflicting fines for its non-observance. I do not assert that this habit is unknown amongst other nations than the Australian, but possibly it is more noticeable, and therefore more objectionable, in our dry climate, where all classes spend so much of their leisure time out-of-doors, and where the main streets are always lined with the unemployed, apparently engaged in expectoration tournaments. A similar new by-law in Melbourne also deals with the habit of dropping orange peel or banana skins on the pavement.

CORRESPONDENCE.

THE INTERNATIONAL MEDICAL MANIFESTO ON ALCOHOL.

SIR,—I am away on my holiday, and in the meantime endeavour as far as possible to cut myself adrift from everything relating to the medical profession, even denying myself the pleasure of reading the BRITISH MEDICAL JOURNAL. Moreover, I thought I had done for ever with my "Address on Medicine" after having inflicted it upon a much-enduring audience at Swansea. My attention has, however, been called by a friend to Dr. Ridge's letter in the JOURNAL of August 8th criticizing some of my remarks concerning alcohol in this address, and I hasten gladly to perform the "act of reparation" which he so courteously asks for by drawing special attention to the fact that the "International Medical Manifesto" makes no reference whatever to the use of alcohol as a medicine but only as a "beverage." I may state that I did not really regard or speak of the supporters of this manifesto as those "who absolutely and entirely object to the use of alcohol in any circumstances," though I acknowledge that the context seems to imply such a connexion. What I did actually say was that, "with all due respect to the opinions and statements expressed in that manifesto, I think those who signed it have gone too far, and I regret that I cannot altogether agree with them." To this expression of my views I still adhere, though it is merely an individual opinion, which may be worth little or nothing.

Dr. Ridge states that the views of the members of the British Medical Temperance Association on the use of alcohol as a drug are widely different, and he knows of no one who "absolutely and entirely objects to its use under any circumstances." Let me assure him, however, that such bigoted individuals do exist, as I can affirm from personal experience of sharply conflicting opinions on the point at consultations.

I venture to think that my remarks on alcohol in the address were, on the whole, strongly in favour of the promotion of "temperance reforms" of all kinds, so far as they are practicable. I have not the slightest intention, however, of entering into any controversy with regard to the alcohol question, and this is my last word on the subject.

As I am writing, may I ask you to be so good as to correct an error, no doubt due to my fault, in the report of my observations when proposing the toast of my friend, the President, at the annual dinner? His son, whom I coupled with Dr. Griffiths in the toast, is described as a "student" in Cape Town. As a matter of fact he has settled there as a "medical practitioner," after a most distinguished career at University College and Hospital, as well as at the University of London.—I am, etc.,

Scotland, Aug. 13th. FREDERICK T. ROBERTS.

EXCURSIONS AT ANNUAL MEETINGS.

SIR,—The work of the arm-chair critic is always easy, provided only he lets figures alone. It is true, as Dr. Jones Morris states, that 600, or, to be accurate, 612 members and guests attended the Swansea meeting. He ignores the fact, however, that there were accompanying these as many as 307 ladies, making a total of 919.

The Saturday excursions were arranged for 500, not 600, as Dr. Jones Morris will see upon reference to the *Daily Journal* published during the meeting.

While recognizing that one, if not the chief function, of the local general secretary is to receive the kicks when things go wrong, we may be allowed to point out that in the matter of arranging excursions he finds himself in this dilemma: Should he provide for too small a number, he incurs the wrath of disappointed members who fail to obtain tickets: while should he provide for more than is required, he runs the risk of making lifelong enemies of those whom he has persuaded to offer hospitality. And, finally, no matter how nicely he may make his calculations, they are sure to be upset one way or the other by the weather.

No one was more grieved than ourselves that the response to the Llandrindod invitation was so poor. Throughout the whole of Friday we were in frequent telephonic and telegraphic communication with the organizers of the entertainment, and suggested in the evening that the excursion should be cancelled as only 10 had taken tickets. The sporting reply was that the lunch would be held if only one turned up. As a matter of fact, we ascertained that upon the weather showing signs of improvement 25 actually put in an appearance.

The local Executive Committee were in precisely the same boat, not more than half the tickets for brakes, special trains, etc., provided in connexion with other excursions during the week being taken up.

Dr. Jones Morris's suggestion might, perhaps, to a certain extent meet the difficulty. The way, however, in which he could most effectually assist the labours of the local general secretaries of next year's meeting would be by supplying, not less than six weeks beforehand, a detailed and reliable forecast of the weather.—We are, etc.,

W. F. BROOK,
F. G. THOMAS,
Honorary Local Secretaries of the 71st Annual Meeting.

Swansea, Aug. 18th.

PHYSICAL DEGENERATION IN CHILDREN OF THE WORKING CLASSES.

Sir,—I wish to explain an error which has occurred in giving my address, "Chester," in the British Medical Journal of August 15th. My remarks in my paper on Physical Degeneration amongst the Children of the Working Classes refer to Cardiff only. I was in practice there nearly four years, but left there permanently early in June. I must ask you to give publicity to this correction lest my remarks might be taken to refer to the schools of Chester.—I am, etc.,

New Brighton, August 15th. H. H. Tidswell.

OPERATIONS ON THE TEMPORAL BONE.

Sir,—Those who were present at the discussion on the technique of operations on the temporal bone, Section of Laryngology and Otology at Swansea, will remember that it was asserted that Professor Stacke had stated in conversation that he no longer used the protector which he formerly employed and which I considered a very useful adjunct to our armamentarium. This surprised me very much, and I therefore wrote to him and received a reply, in which Professor Stacke definitely states that he still uses his protector as before and is constantly impressed by its utility.

I do not desire to take up more of your space about a matter which is only of interest to those who were present at the Section where the statement was made. For them, however, the removal of the misapprehension must be important.—I am, etc.,

Edinburgh, Aug. 15th. P. McBride.

FELLOWSHIP OF THE ROYAL COLLEGE OF SURGEONS, EDINBURGH.

Sir,—With reference to my application made to the President and Council of the Edinburgh College of Surgeons, which appeared in the British Medical Journal of July 18th, will you allow me to say that I am still without a reply to my letter, but the clerk of the College has acknowledged its receipt. Many correspondents have written to me on the subject, hoping that I may succeed in obtaining the admission of women to the Fellowship Examination; but what we want is active help in a movement which has been long delayed.

Dr. Savill has put the case very tersely in the Journal of July 25th.—I am, etc.,

Charles Frederick Knight, M.D.

Edinburgh, August 18th.

SMALL-POX IN DUBLIN.

Sir,—The cases of small-pox in Dublin during the recent epidemic numbered 255, not 455, as stated in the British Medical Journal of August 15th; 1,402 "contacts" were brought to the "Refuge," and many of them detained there for fourteen days. Some 80 detained developed small-pox and were at once removed to the small-pox hospital. With two exceptions, the patients were of the humblest class of society, and the epidemic was practically confined to the poorer parts of the city lying north of the river which intersects it.—I am, etc.,

Charles A. Cameron,
Dublin, Aug. 18th. Medical Officer of Health.

PERINEAL PROSTATECTOMY.

Sir,—In dealing with cases of prostatic hypertrophy during the past few months, I have on several occasions been asked if I had seen the description of the new operation by Rydygier. An account of the operation in question appeared in the Epitome of the British Medical Journal of January 24th, and the operator's original description appeared in the *Centralblatt für Chirurgie* of October 11th. From these accounts it would appear that Rydygier, having found that it is not always possible, in performing intracapsular enucleation or resection, to remove the entire prostate without lacerating the floor of the prostatic urethra, has, within the past two years, discovered that the integrity of that canal may be readily preserved by leaving a thin layer of prostatic tissue surrounding it, the rest of the prostate being removed with resulting relief of the urinary obstruction.

With this I have good reason to entirely agree. Rydygier, however, has, with others, overlooked much of the prostatic surgery which preceded the introduction of the claims of castration as a remedy for prostatic hypertrophy. The operation he describes has been practised for at least nine years. It formed one of the aspects of the perineal operation which experience had brought to light up to 1894. There may exist published accounts of it by others. I here quote two, from papers published by myself in the year referred to and more recently.

British Medical Journal, October 29th, 1898, p. 1314:

In most of the cases in which I have performed prostatectomy I have been able after opening the prostatic capsule to "shell out" the masses of prostatic tissue by the finger, aided by some such instrument as a periosteal rugine and an occasional snip with scissors. In one or two instances, however, the prostatic tissue has been too tough and firmly adherent to bladder and urethra to be thus enucleated without risk of tearing the bladder. For these cases I have had made gouge-cutting forceps, which, however, vary so little from other forms of such forceps that it is perhaps unnecessary to figure them here.

Lancet, July 7th, 1894, page 32. In a note accompanying woodcuts of the forceps referred to occurs the following:

I have lately had made by Messrs. Hilliard and Sons a pair of gouge-cutting forceps, the use of which considerably diminishes both the time required for removing the prostate and the risk of wounding the mucous floor of the bladder or urethra in those cases in which the prostatic tissue is unusually tough and adherent. With the guiding touch of two fingers in the bladder and the forceps in the perineal wound it is comparatively easy to "nibble" away the prostate as close up to the mucous wall as may be necessary without risk of perforation and without much expenditure of time.

As mentioned in the British Medical Journal quoted, and in the *Lancet*, the urethra is defined by the usual device of placing a bougie in it. I may mention that I ultimately discarded the gouge forceps for curved scissors with the addition of haemostatic clamps where necessary. Also that in some cases the suprapubic cystotomy has been omitted, though as a rule I prefer to combine it with the perineal enucleation.

The formulation of the claims of castration in 1895 marked an epoch in the surgery of the prostate, and to surgeons who, like Cabot,[1] Mayo Robson,[2] myself, and others, comparatively early found cause to express doubts as to the efficacy of castration as a remedy for prostatic hypertrophy, the subsequent course of events has been calculated to prove of interest. The recent enthusiastic return to the practice of prostatectomy has occurred under circumstances which have undoubtedly placed recent converts at a disadvantage. In the first place, the claims of castration turned into a new channel the attention of all but the few who continued the practice of prostatectomy, the result being that much of the surgery of the prostate more immediately prior to 1895 has apparently passed unnoticed, or has been forgotten. In the second place, the subsequent collapse of the invaluable *Index Medicus* has vastly increased the difficulties besetting the worker desirous of learning the position of matters in a given field of surgery. The record of prostatic surgery in the past decade is not continuous. It presents a hiatus, the unrecognized existence of which must be held to account for the fact that the profession has had presented to it within the past three years at least five rediscoveries of operations on the hypertrophied prostate already well known to a proportion of its members. It will be within your recollection that in the autumn of 1901 a correspondence took place in the Journal over the claims of one operator who believed he had originated two different operations, both of which were hailed as familiar by a number of operators who had practised them. Since then two other operators have announced new operations, one of them in the Journal. Both gentlemen have been so unfortunate as to overlook previous records of the operations in question. I have by me private correspondence with them on the subject, and should not trench on your space regarding the fifth, Rydygier's, but with the wish to draw attention to the very real difficulty at present in the way of obtaining full information as to recent developments in prostatic surgery. That difficulty would appear to account for Rydygier's having overlooked not only the two previous references to the operation he describes which I have quoted above, but, as a perusal of his original article shows, the whole of the independent work on perineal intracapsular enucleation done by Goodfellow, Alexander, and myself in the precastration period, and continued subsequently.—I am, etc.,

Glasgow, August 15th. Jas. H. Nicoll.

[1] *Ann. of Surgery*, 1896.
[2] British Medical Journal, 1897.
[3] Ibid., 1898.

PRACTICAL INSTRUCTION IN BALNEOLOGY.

Sir,—I was very pleased to read your article in the British Medical Journal of August 15th, relative to the above subject in which I am much interested, and as I was so delighted with last year's charming and instructive trip to the inland

watering places and health resorts organized by the *Voyages d'Etudes Medicales* in the Vosges district, I have been stimulated to repeat my educational holiday next month in the Eastern Pyrenees, arranged by my friends Dr. Carron de la Carrière and Professor Landouzy, who so admirably and comfortably conducted and instructed the international party of over one hundred medical men, many of whom were accompanied by their wives.

Permit me, however, to correct a statement made in your article, namely, "that the trip starts from Lyons on the 10th September"; it should have said that the trip starts from Toulouse on that date, and finishes at Lyons a fortnight later, visiting each day the most popular watering places which abound in the south-east of France.

As I have a few descriptive circulars sent me by Dr. Carron de la Carrière I shall be pleased to forward a copy to any member who may wish to join this most enjoyable and instructive holiday, and shall at the same time be pleased to give any further instructions which may not be found in the very comprehensive programme, of which you have, with the above exception, given a very satisfactory description.—I am, etc.,

Ealing Common, W., August 17th. BOYD JOLL.

OPHTHALMIA NEONATORUM.

SIR,—The interesting note by Dr. Heelas on the above subject in the BRITISH MEDICAL JOURNAL of August 8th, 1903, includes a reference to "the modes of infection." While on the one hand the causal factors of this affection may vary, so too do "the modes of infection" and the resultant necessary treatment.

An adequate differential diagnosis can alone be based upon a competent bacterial investigation of each individual case. That 42 per cent. of the children born in the hospital became affected with ophthalmia indicates a high percentage; rendering it probable that some of the cases were due to a neonatal, rather than an intranatal origin. Ballantyne in his classic work on *Antenatal Pathology and Hygiene*, in illustration of the fact that gonococcic infection is not the sole cause of conjunctivitis neonatorum, quotes Bond[1] as reporting a case in which the eyes, umbilicus, vulva and skin glands, of a newborn infant, all seemed to have been affected by septic matter from an old lacerated cervix uteri during labour.

Ballantyne suggests further, the action of an antenatal factor in the production of ophthalmia neonatorum, in the fact that "the eyes have been infected before the passsage of the child through the vagina, for the eyes may show at, or a few hours after birth, changes which point to the second stage of ophthalmia" being present.

It may be added that the application of too potent a solution of perchloride of mercury may defeat the object of the intended remedy, and induce a conjunctivitis neonatorum of marked intensity.

Diversity of infection, as well as a varied "mode of infection," be it antenatal, intranatal, or neonatal in character, point to the necessity of comprehensive antiseptic measures! These will include vaginal disinfection, both before and during labour; as well as the application of the Credé method, and other forms of prophylaxis which have proved so beneficial in saving the sight of the infant after birth.—I am, etc.,

Cheltenham, August 15th. H. CRIPPS LAWRENCE.

THE POETICAL MICROBIOLOGY OF PLAGUE.

SIR,—In the BRITISH MEDICAL JOURNAL of August 15th you publish a poetical description, written by a contemporary Welsh bard Taliesin, of the "microbe" of a plague which occurred 1,400 years ago in Wales. Perhaps the following quotation from Defoe's work on The Great Plague in London of 1665 may interest your readers as showing that, more than 300 years ago, there were Englishmen who also entertained somewhat poetical theories with regard to the same "microbe."

> I have heard, it was the opinion of others, that it (the plague) might be distinguished by the party's (that is, patient's) breathing upon a piece of glass, where, the breath condensing, there might living creatures be seen, by a microscope, of strange, monstrous and frightful shapes, such as dragons, snakes, serpents and devils, horrible to behold. But this I very much question the truth of; and we had no microscopes at that time, as I remember, to make the experiment with.

—I am, etc.,

A. SHAW MELLOR, M.B.

Westbourne Street, Hyde Park, W., August 14th.

[1] *Virginia Med. Semimonthly*, xxi, 1074. 1895.

CONSERVATIVE SURGERY IN SHAKESPEARE.

SIR,—In the BRITISH MEDICAL JOURNAL of August 15th you publish a letter from Sir Samuel Wilks à propos of the surgical knowledge of Shakespeare. Quoting the lines beginning

> This fester'd joint cut off . . . . .

from *Richard II*, Sir Samuel suggests that this might refer to the modern operation of resection of a joint.

Surely, however, it is more reasonable to suppose that Shakespeare used the word "joint" in the same sense as that in which the modern butcher uses the term. I take it the housewife, ordering a "joint" for dinner, would be astonished if she received only the bare articular ends of the bones.—I am, etc.,

Guy's Hospital, S.E., Aug. 17th. STANLEY HODGSON.

HUMAN AND BOVINE TUBERCULOSIS.

SIR,—As bearing on the suggestion of Dr. Nathan Raw on "tuberculosis," in the BRITISH MEDICAL JOURNAL of March 14th, 1903, p. 596, the experience of this country is, I think, of interest.

The inmates of the hospitals are almost entirely adults. Phthisis pulmonalis is fairly common, and I think increasing in amount. Other forms of tuberculous disease are most decidedly rare. With one doubtful exception of a suspicious case of knee-joint, I am not sure that I have seen, in more than six years, a single case of joint, bone, skin, gland, or peritoneal tuberculous infection in this country; that is to say, among between 20,000 and 30,000 cases. The veterinary surgeon of Perak informed me some time ago that out of many necropsies on cattle, he had not once met with a case of tuberculosis.

The absence—or, any how, rarity—of tuberculosis among cattle is probably explicable by the absence of the stall-fed beast. If the non-pulmonary forms of tuberculosis in man are due to infection from cattle, the absence of tuberculosis in cattle will explain the absence in this country of the non-pulmonary forms in man.

Scheube recognizes the extreme frequency of tuberculosis of lungs among the natives of India, while joint tuberculosis is certainly less commonly seen in Indian hospitals than in English ones. Skin tuberculosis is said by Scheube to be rare in the further East. It is also comparatively rare in India.

It would be interesting to know if in Egypt, where Dr. F. C. Maddon says there is an "extraordinary prevalence of surgical tuberculosis," there is any or much tuberculosis amongst cattle, as, if the disease is common amongst cattle there, it might be looked on as a sort of control to what seems to be Scheube's, and is certainly my experience of the tropics.—I am, etc.,

J. TERTIUS CLARKE,
District Surgeon, Lower Perak and Batana Padana, Federated
July 17th. Malay States.

CASE OF SIMULATED PERFORATING GASTRIC ULCER.

SIR,—In the case under the above heading, reported by Dr. Tiverton in the BRITISH MEDICAL JOURNAL of August 15th, it seems highly probable that there actually was a perforation (the most favourable variety), and the ordinary recovery under the judicious treatment employed. I can recall a very similar case in which the abdomen was opened, and a small perforation found on the upper and anterior part of the stomach, with practically no extravasation of contents, and protected somewhat by old adhesions. It was the opinion of those who saw the condition that recovery would likely have ensued without any operation. Cases are recorded in which perforation, followed by recovery under medical treatment, has been proved by *post-mortem* examination after subsequent perforation. So that the patient's easy recovery does not forbid the diagnosis of perforation.

The points mentioned in this case against perforated gastric ulcer are not nearly so strong as the clinical facts in favour of it, and it seems to me worth while to at least suggest the alternative to Dr. Tiverton. It is possible the future history of the patient may some day throw light on this important association of symptoms and be recorded.

One point with regard to the liver dullness, mentioned by Dr. Tiverton to be "normal, although when first seen it was too early to expect that to disappear." If it was normal throughout, then it proves nothing either for or against perforation. But it is hardly precise to write about its being "too early to expect that to disappear." The disappearance

of liver dullness may be practically instantaneous, if a large amount of gas escape from a perforation in stomach or bowel. I have recently had a case of perforated intestine in which this was exemplified—malignant disease of the large bowel. In any case the alteration of liver dullness is always an early symptom, and the earlier the more reliable. It is true the gradual disappearance of the liver dullness can be watched, when leakage of gas is steadily and gradually taking place, but the "fallacy of the distended abdomen" must ever be guarded against, whenever, later on in the case, the least paralytic distension of the bowels occurs; and for this reason it is true to say that the alterations in the liver dullness are the most important, if present at all, of the earliest symptoms. I am, etc.,

Glasgow, August 17th. R. O. Adamson, M.D.

OBITUARY.

WILLIAM SMOULT PLAYFAIR, M.D., LL.D., F.R.C.P.,

Emeritus Professor of Obstetric Medicine, King's College, London.

Dr. W. S. Playfair, whose death on August 13th was announced in the last issue of the British Medical Journal, had been in failing health for some time. Last year he underwent a severe surgical operation, and a few months ago he was struck down by apoplexy in Florence. From this he recovered sufficiently to be brought home by easy stages, and about the end of July he reached his native place, St. Andrews, where he intended to pass the remainder of the summer. He was unable to take exercise, and was wheeled about in a bath chair, but seemed fairly well. Recently he became worse, and for some days before his death he had been unable to take nourishment.

Dr. Playfair came of a well-known St. Andrews family. He was a brother of the late Lord Playfair and of Sir Robert Lambert Playfair, K.C.M.G., for many years British Consul at Algiers. His father, Dr. George Playfair, was Inspector-General of Hospitals in Bengal; his grandfather, Dr. James Playfair, was Principal of the University of St. Andrews from 1800 to 1819. His uncle, Sir Hugh Lyon Playfair, was for many years Provost of St. Andrews, and to him, it is said, that ancient city is indebted not only for many modern improvements, but also, according to the *Times*, for the revival and firm establishment of the Royal and Antient game of Golf, to which it owes so much of its present popularity.

Dr. Playfair was born at St. Andrews in 1836, and after receiving his early education in his native city, graduated in medicine at the University of Edinburgh in 1856. Intending to follow in the footsteps of his father, he got an appointment as Assistant-Surgeon in the Bengal Army, served in Oude during the Mutiny, and in 1859-60 was Professor of Surgery in the Medical College of Calcutta. After seven years in India he left the service and returned home, and in 1863 at the age of 27 settled in London. He was appointed Professor of Obstetric Medicine at King's College, and Obstetric Physician to King's College Hospital. He held his chair for a quarter of a century, retiring in 1898. He soon acquired an extensive practice, and had among his patients their Royal Highnesses the Duchess of Edinburgh, the Duchess of Connaught, and other august ladies. The Crown Princess of Roumania showed her gratitude for his professional services by procuring for him the insignia of a Grand Officer of the Crown of Roumania.

His distinction in his special department of practice was recognized by the Universities of Edinburgh and St. Andrews, which conferred on him the honorary degree of LL.D., and by the American and Boston Gynaecological Societies, which made him an honorary Fellow. These honours were well deserved, for Dr. Playfair was undoubtedly one of the foremost obstetricians in this country. His *Treatise on the Science and Practice of Midwifery* has passed through nine editions and has been translated into several foreign languages. He was also the author of a *Handbook of Obstetric Operations* published in 1865; of the article, Diseases of the Womb, in Quain's *Dictionary of Medicine*; and of the article on the Systematic Treatment of Functional Neuroses in the *Dictionary of Psychological Medicine*. Dr. Playfair was also the author of a monograph entitled *Systematic Treatment of Nerve Prostration and Hysteria*, in which he brought the Weir-Mitchell treatment before the medical profession in this country. He was co-editor with Professor Clifford Allbutt of a *System of Gynaecology*, which appeared in 1896. He further contributed many papers to the Obstetrical and other societies, and to the medical journals. All his more important writings are marked by clearness of exposition and an ease of style which make them very readable.

On his retirement from his professorship at King's College Dr. Playfair was appointed Emeritus Professor of Obstetric Medicine; he was also Consulting Physician for Diseases of Women and Children to King's College Hospital and to the Evelina Hospital for Children. He was also at various times Examiner in Midwifery at the Universities of Cambridge and London. He was a Past President of the Obstetrical Society of London.

In 1896 his name came conspicuously before the public in connexion with an action for damages brought against him by a patient for an alleged breach of professional confidence. The case is famous in the annals of the law courts for the interest of the issue tried, but mainly for the enormous damages given against him by the jury. The verdict was for £12,000, but on a motion for a new trial it was intimated that a settlement had been arrived at. The amount agreed upon was £9,200. Opinions were greatly divided about the merits of the case, but not the slightest stain was left on Dr. Playfair's professional character. His leading counsel in the case was the late Sir Frank Lockwood, who took the result much to heart. It was not long before Sir Frank's death, and his health was already undermined. He declared that the trial marked the beginning of his decline as an advocate, and that he would be remembered only as the counsel against whose client the heaviest damages on record had been given.

Dr. Playfair married, in 1864, Emily, daughter of Mr. James Kitson, of Leeds, by whom he had one son and three daughters, who survive him.

The funeral, which was private, took place at St. Andrews on the afternoon of August 15th, in the new cemetery, where Lord Playfair and Sir Lambert Playfair also lie buried. Before the burial a service was conducted by Canon Winter in the Episcopal Church. The chief mourners were Mr. Nigel Playfair, Lord Playfair, Dr. Ernest Playfair, Sir James Kitson, Major-General A. L. Playfair, Captain Playfair, and Colonel William Playfair. Among others present were Mr. Arthur Playfair and Professor J. B. Pettigrew.

GEORGE WILLIAM BALFOUR, M.D., F.R.C.P.E.,

LL.D. Edin. & St. And., F.R.S.E., etc.

The death of this highly-distinguished physician was announced in the last issue of the Journal. For upwards of twelve months Dr. Balfour's health had been indifferent; his condition had latterly became complicated with pleuro-pneumonic and other chest symptoms of a most grave character. Before any indications of an immediately alarming nature had occurred Dr. Balfour seemed to be labouring merely under an attack of cold, thought to have been contracted while on a professional visit to the country. Matters, however, gradually assumed a more serious aspect, with occasional intervals of relief, which with the natural good spirit he all along manifested, encouraged the hopes of recovery, but a somewhat sudden accession of extreme weakness took place within the last ten days of his life, and terminated in a fatal result on Sunday, August 9th.

Dr. Balfour was in his 81st year. His father was a clergyman of the Church of Scotland, and was minister of Colinton, where Dr. Balfour spent his boyhood. He studied in Edinburgh and Vienna, and before taking his degree and licence in Medicine had obtained the Membership of the Royal College of Veterinary Surgeons in 1843. In 1845 he became Licentiate of the Royal College of Physicians of Edinburgh, of which body he was in 1861 elected Fellow. In 1845 he graduated as M.D. of St. Andrews University, and in 1884 the degree of LL.D. was conferred upon him by the University of Edinburgh, while that of St. Andrews followed in 1896. Among his appointments he had held that of Senior Physician to the Royal Infirmary of Edinburgh, where he was Consulting Physician up to the period of his decease. He had been Physician to the Royal Hospital for Sick Children, the Royal Dispensary, Chalmers Hospital, Leith Hospital, and other institutions. He was the author of *An Introduction to the Study of Medicine*, *Clinical Lectures on Diseases of the Heart*, *The Senile Heart*, and was translator and editor for the New Sydenham Society of *Caspar's Handbook of Forensic Medicine*.

Besides the high professional estimation in which he was held by his medical brethren, Dr. Balfour's genial manner, his general information, his natural humour, and his store of anecdotes gained for him a large and admiring circle of friends in a social capacity. He was a favourite member of the famous Aesculapian Club of Edinburgh, where his presence

was ever welcomed as one of its leading spirits. His tastes were simple, but always cultivated, and he admired and took a considerable interest in flowers. No man was more arduous and indefatigable in the pursuit of his profession, while his inquiring and reflective turn of mind led him to collect a vast amount of facts and observations on which it was always a pleasure and an advantage to his friends to hear him talk. He was clear and perspicuous in his method of description, and as a teacher his instructions were always imparted with vigour and precision. Withal he was of a modest and retiring disposition; open and straightforward in his manner, but always with a kindly heart.

Dr. Balfour leaves a widow and grown-up family. Three of his sons have followed his profession, and one of them, Dr. Harry Balfour, while serving in South Africa, was present during the siege of Ladysmith. His memory, whether as a companion or as a medical adviser, will long be cherished by all who had the pleasure of his friendship or acquaintance.

AN OCCASIONAL CORRESPONDENT writes: If it was hard to believe that Balfour had passed the four-score years, it is harder still to realize that he is gone. It seems but yesterday when he suddenly, without warning, gave up work, sold his house and his carriage, and retired to the lovely suburb or country village of Colinton, where his youth was spent. He was young-looking, active, with a lithe upright figure and a light step. He walked well, and in no way posed as an old, or even as an elderly man. His intellect was as strong, and his interest in everything—medical literature, politics, theology—as keen as ever. During his long and tedious illness he kept up his spirits and courage, and faced the inevitable end which he knew was near with the same gallant spirit with which his famous nephew, Louis Stevenson, faced his lifelong struggle with disease. As a physician Balfour will be remembered for the originality of his early work in the treatment of acute chest diseases. While venesection and antimony were the chief factors in the routine treatment of pneumonia, he, alone and a young man, promulgated the heresy that heroic treatment was unnecessary and harmful. Hughes Bennett fought the battle, but Balfour's work had sounded the onset, and his writing and teaching were far in advance of his time. His great clinical lectures on the diseases of the heart, and his original and epoch-making book on the senile heart established him as the chief consultant in Scotland in difficult heart cases. In spite of a somewhat grim manner, in spite of being absolutely void of all tricks and artifice, the best practitioners in Scotland sent their heart cases to Balfour, and the patient who had once consulted him consulted him again. It was said, possibly with some truth, that Balfour did not greatly care whether or not he "upset the coach." To cure his patient, or to put him in the right road, was his chief concern. As a clinical teacher Balfour was admirable; better at the bedside than in the lecture theatre. In the theatre he was too apt to read his lecture, and make it a systematic one. At the bedside he was perfect, and the student who could stand an occasional jeer and really tried to learn found him a real master. A valued adviser in the Council of the College over which he was once President, a Librarian who knew about books, as a man he was simple, honest, and sincere, absolutely truthful; he may sometimes have given offence, but not intentionally. He expected the truth from others, and hated any attempt at sham or pretence, especially if he thought there was self-seeking. He could tell a good story, and enjoyed hearing others. He was in the very inner circle of the sober professional society in which the heads of the medical profession in Edinburgh have delighted for nearly 150 years. His retirement and death have left a blank which in some of our hearts will not be easily filled.

WE regret to record the death of DR. JAMES RILEY GREENWAY, of Tunbridge Wells, which occurred as the result of an accident on August 8th. While standing on the platform of the South-Eastern and Chatham Railway Company's station at Tonbridge, he was seen to stagger and fall backwards against the tender of the engine of a passing train, and then to slip between the footboard and the platform. The train which was travelling at the rate of about ten miles an hour, was immediately stopped. The deceased gentleman was not unconscious when he was lifted on to the platform, but rapidly became so. He was taken by train to Tunbridge Wells and then on to the General Hospital, where he died very soon after admission. Death was caused by a fracture of the skull. It transpired at the inquest that the deceased had been in bad health for some considerable time, and that he had suffered from giddiness, insomnia, and asthma. Those who saw the fatal fall were unanimously of the opinion that it was purely accidental and due to a temporary attack of giddiness. Dr. James Riley Greenaway was a retired medical practitioner, and at the time of his death was 67 years of age. He became L.F.P.S. and L.M.Glasg. in 1860, and received the degrees of M.B. and C.M. from the University of Aberdeen in 1874. He obtained the degree of M.D. in 1875.

IT is announced that Dr. J. A. REARDON, Assistant Surgeon in the service of the Straits Settlements, died recently.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are Professor Immanuel Munk, the distinguished physiologist of Berlin, aged 51; Dr. Karl Maydl, Professor of Surgery in the Czech University of Prague, aged 50; Dr. Herbet, quaestor of the French Chamber of Deputies; Dr. Chalot, Professor of Clinical Surgery in the Medical Faculty of Toulouse; Dr. J. Bouquet, Inspector-General of the Sanitary Council in Egypt; Dr. Ladreit de la Charrière, Physician-in-Chief of the National Institute for the Deaf and Dumb, Paris, founder of the *Annales des Maladies de l'Oreille et du Larynx*, and author of numerous articles on deafness, diseases of the ear, and deaf-mutism in the *Dictionnaire Encyclopédique des Sciences Médicales*; Dr. Christian Karl Hoffmann, Professor of Physiology, Zoology, and Comparative Anatomy in the University of Leyden, aged 62; and Dr. Sigmund Fuchs, Professor of Physiology in the Vienna High School of Agriculture, aged 43.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ARMY MEDICAL REPORT FOR 1901.

APPENDICES.

THIS report was reviewed in the BRITISH MEDICAL JOURNAL of May 23rd, p. 1240. Attached to it are appendices containing matters of interest which deserve further notice.

Appendix No. I is a report on the Progress of Hygiene for the year 1901-2, by Major R. H. Firth, R.A.M.C.; a review of all the important legislative measures of the years under notice is given, and some of the questions at present prominently before the medical profession are considered.

In Appendix No. II. by Colonel W. F. Stevenson, C.B., R.A.M.C., and Lieutenant-Colonel W. Dick, F.R.C.S., R.A.M.C., a table is given of the operations performed at the Royal Victoria Hospital, Netley, during the year 1901-2, and notes on the cases of chief interest. The total number of operations was 421. There were 13 cases of liver abscess operated on with 4 recoveries. Five of these cases gave a definite history of dysentery: in 4 no cause could be ascribed; in 2 the abscess followed enteric fever, in 1 debility, and in 1 Mediterranean fever. A case of empyema is of interest; the patient was shot in the neck with a Lee-Metford bullet in December, 1900, the wound of exit being at the back of the right shoulder. When operated on in May, 1901, the wound of entrance persisted, and from it pieces of necrosed rib were extracted; the wound did not heal, and in the following August a large quantity of pus was evacuated from the right pleural cavity; all wounds healed fairly rapidly, and the man was discharged well in October. Five amputations of the thigh for gunshot injuries were all successful. During the year as many as 104 officers and men had the radical cure for hernia performed (in an unusually large percentage suppuration occurred); the material employed for the buried sutures had been salmon gut, and stitch sinuses were troublesome in some cases; lately silk has been employed with much more satisfactory results. A large number of nerve injuries were received into hospital during the war, but the greater proportion of them improved greatly under electricity and massage; 3 cases were investigated to see what the injury to the nerve was, but in none were the nerves severed; in one those affected appeared normal; in another, that concerned was bound down by adhesions and was freed without any resulting benefit; in the third, the musculo-spiral appeared thickened, and the man improved under constant application of the battery and massage.

A case of bullet wound of the head is recorded in which

the petrous was shattered; pieces of necrosed bone were removed with temporary benefit, and subsequently an abscess in the temporo-sphenoidal lobe evacuated: the man however died, and at the necropsy the ventricles were found full of pus, and there was also a large collection at the base of the brain around the cerebellum.

Another case of chronic abscess of the brain following a depressed fracture of the cranial vault was successfully treated by evacuation and drainage. A varicose aneurism in Scarpa's triangle was dealt with satisfactorily by ligature of the femoral artery: a traumatic aneurism of the posterior tibial was not so satisfactory: the artery was found and ligatured, but severe recurrent haemorrhage took place later in the day, and the limb was amputated through the femoral condyles.

A large number of gunshot injuries to bones were skiagraphed, and the writers of the report state that these "hardly bear out the statements made by some authorities regarding the 'humane character' of the modern rifle bullet." In many the damage was extreme, especially in the case of the femur and humerus: when the range was short the comminution was very great and non-union frequently resulted. Stereoscopic radiographs were found very useful in fractures and in cases of foreign bodies. The Mackenzie Davidson rotatory mercury break is highly spoken of, and a much higher voltage can without danger be employed with this than with any other break available. Several excellent radiographs for stereoscopy accompany the report.

Appendix III consists of a very complete medical history of the China Field Force, 1900-1901, compiled under the orders of the principal medical officer of the force. The first two sections are concerned with the composition of the force and the physical geography and medical topography of the country. With regard to Shanghai, it is stated that the success of the Municipal Council "in their efforts to convert a town, naturally exposed to every conceivable sanitary disadvantage, into one of the most healthy places in the East is a triumph of modern hygienic science." The Municipal Council is composed of six Englishmen, one American, and one German, while an English medical officer of health has control of the sanitation. North China proved a healthy country for troops to serve in: the diseases most prevalent were chest diseases and venereal complaints, while in the earlier phases of the campaign there was a good deal of dysentery, but throughout the whole there was comparatively little enteric fever. The German troops, however, suffered considerably from the latter both at Tientsin and Peking. Mumps was prevalent at times amongst the native troops and followers, and there were 5 cases of small-pox. Twenty-six was the total number of cases of enteric among the British troops, with 10 deaths; the smallness of this number was in part explainable by the relatively small number of British in the force, and by the fact that those who wintered in North China were men of maturer age than usual. Malarial fevers occurred mostly in men who had contracted them in India or Hong Kong: dysentery was chiefly of a mild type. Two cases of abscess of the liver were operated on; 1 with multiple abscesses ended fatally, the other was successful; in neither was there a dysenteric history.

Venereal disease was much more prevalent among the native troops than is the case when the regiments are serving in cantonments in India: the type was generally mild. Many of the native troops suffered from respiratory troubles, pneumonia was common and very fatal, and bronchitis was also common and very persistent.

During the winter the British troops, with an average strength of 636 at the principal stations in the province of Chi-li, had a daily average percentage of sick of 4·84, so that the health was good: at Wei-hai-wei and Shanghai the record was not so good, but still fair.

Twenty-two cases of wounds received in action were transferred from the field hospitals to the British General Hospital. Two were penetrating wounds of the chest, 1 of the knee-joint, and 1 of the same not penetrating the joint, 3 of the hip or thigh, and 10 of the upper limb: the rest were cases of multiple wounds. In both cases of chest wound pneumonia and pleurisy supervened: in the first case the condition cleared up: in the second, a shell-wound case, empyema followed: ultimately both did well. The case of penetrating wound of the knee came to the general hospital six weeks after the injury: following an exploratory operation, secondary haemorrhage took place from the popliteal artery, and the man died almost immediately. In the native general hospital there were 65 cases of gutshot wounds: all the penetrating wounds of the chest had healed before admission, and there were no abnormal physical signs to be detected.

Two very serious explosions of gunpowder occurred. In the first, a party of troops was engaged in destroying Chinese gunpowder; there were 36 casualties, 29 being fatal. The second occurred while junks laden with gunpowder were being brought into Tientsin: one officer also received severe injuries from the premature ignition of gunpowder which he was ordered to destroy. He made a good recovery.

The section of the report dealing with the water supply is of much interest. Purification was carried out by treating it with alum and permanganate of potash and by boiling as much of it as possible. Berkefeld filters were found of comparatively little use, as they so soon became choked. Most of the water was obtained from wells. These wells were specially cared for: their surroundings were cleaned, and in some instances they were enclosed and covered in. At Wei-hai-wei the only drinking water used was obtained from a condenser.

The issue of rations was on a liberal scale, and in order to encourage the drinking of boiled water special issues of tea and sugar were continued throughout, and other special issues of meat, cocoa, butter, and bacon were given out when the climatic conditions were severe or when the troops were engaged.

The medical comforts sent out were of good quality and most liberal in quantity, so much so, that after five monthly shipments had been received further shipments were stopped because of the abundance of the supplies in hand.

The supply of clothing was ample, and its abundance contributed largely to the health of the men.

Generally speaking, the equipment of the force was excellent, and the high level of health maintained is evidence of this. In the field the working of the medical service was satisfactory. The field hospitals had to be much separated up to provide for the separate units: in mobility they compared favourably with those of the allied forces. During the winter both field and general hospitals were housed. The hospital ships were the *Maine*, the *Carthage*, and the *Gwalior*, the *Maine* fitted out by a number of American ladies, the *Carthage* by the Government, and the *Gwalior* entirely equipped and maintained by the Maharajah of Gwalior.

THE LONDON VOLUNTEER CAMP AT SEAFORD.

A new camping and manœuvring ground for the London volunteers has this year been discovered at Seaford, the pleasant little seaside town on the Sussex coast. The 2nd, 3rd, and 5th London Brigades went there this year for their annual week's training, and pitched their camp in two large fields north-east of the town, close to Blatchington Manor, the owner of which, Mr. Lambe, not only allowed the use of his land, but gave every facility for making the week interesting, instructive, and pleasant, and the neighbouring landlords were equally good in allowing their land to be used for the manœuvres.

One of the difficulties of the annual camps has always been the limited size and the distance of the manœuvring ground, but at Seaford there is ample room in the immediate vicinity of the camp, and thus the men are saved a tiring march in the morning and evening. It was at first intended that the brigades should work together for at least two days out of the week, but the brigadiers decided that small bodies could be worked in a manner more calculated to instruct the men, and consequently the available ground was divided up into three sections, one of which was allotted to each brigade daily.

In each brigade there was a good muster of the bearer company, and it was an excellent opportunity for training the men in their camp and manœuvre duties: the brigade-surgeons, therefore, took advantage of this, and kept them well employed. The weather was perfect, so that their actual services were not in demand to any great extent—a very different condition of affairs from last year at Yarmouth, when, owing probably to the bad weather, there were a large number of sick in the hospital marquees all the time, and some had to be sent into the town hospital for treatment. Pretty much the same work was done in each brigade, and during three days they were kept in camp, and after about two hours' squad and stretcher drill were practically exercised in their duties in connexion with the treatment of supposed maladies and injuries in the hospital marquee, and the uses of the contents of the field panniers and fracture box were also demonstrated. On the other days they went out with the brigade and established field hospitals and dressing stations

at suitable places, being each accompanied by its ambulance wagon. In addition to the bearer companies each regiment had its own medical officer, and they had a specially good opportunity of learning their camp duties, particularly in regard to the sanitary arrangements, as the field was handed over just as it was, and water had to be laid on, refuse pits dug and kept sweet, and latrines dug and attended to. Unfortunately at the present time the office of regimental stretcher bearer does not seem very popular, and comparatively few regiments have their proper number—2 per company; the result was that but few of these men were in camp, and it is to be hoped this will be remedied another year. On the whole there seemed a general opinion that the Seaford camp was the best these brigades have attended.

ARMY MEDICAL STAFF.

SURGEON GENERAL W. S. M. PRICE is placed on retired pay, August 11th. He entered the service as Assistant-Surgeon, September 30th, 1864, became Surgeon, March 1st, 1873; Surgeon-Major, September 30th, 1876; Brigade-Surgeon, November 7th, 1889; Surgeon-Colonel, February 27th, 1895; and Surgeon General, December 1st, 1898. He was in the Afghan war of 1878-80, including the operations in the Bazar Valley and the engagement at Deh Sarakh (medal), and in the Nile Expedition in 1884-5 with the Korti Field Hospital (medal with clasp, and Khedive's bronze star). He was appointed Honorary Surgeon to the Governor-General of India, January 1st 1900.

Surgeon-Major-General THOMAS NORTON HOYSTED died at Sidcup on August 12th, aged 68. His commissions were as follow: Assistant-Surgeon, September 28th, 1855; Surgeon, February 4th, 1871; Surgeon-Major, March 1st, 1873; Brigade-Surgeon, October 23rd, 1881; Surgeon-Colonel, April 3rd, 1886; Surgeon-Major-General, March 28th, 1892. He retired from the service, January 11th, 1894. His war record comprises: The Chinese war, 1857, including the capture of Canton (medal with clasp); the Indian Mutiny campaign, 1858, in the last advance into Oude and capture of Fort Amcetie (medal); and the Afghan war, 1878-9, including the storming of the Peiwar Kotal (medal with clasp).

ARMY MEDICAL SERVICE.

SURGEON-GENERAL ARCHIBALD HENRY FRASER died at Slough on July 5th. He was appointed Assistant Surgeon, February 21st, 1851; Surgeon, January 26th, 1858; Surgeon-Major, February 21st, 1871; Deputy Surgeon-General, September 18th, 1877; and Surgeon-General, October 14th, 1884. He retired from the service, May 18th, 1887. He was in the Indian Mutiny campaign in 1857-8, and was at the action at Murree, and with the Delhi Field Force from October to December, 1857 (medal). He was also in the Afghan war in 1880, and was mentioned in dispatches. He was appointed Honorary Physician to Queen Victoria (an appointment subsequently continued to King Edward), October 14th, 1884.

ROYAL ARMY MEDICAL CORPS.

COLONEL R. EXHAM, C.M.G., retired on retired pay, August 19th. Appointed Assistant Surgeon, April 1st, 1871, he became Surgeon March 1st, 1873; Surgeon-Major April 1st, 1883; Brigade-Surgeon, April 1st, 1891; and Colonel, November 20th, 1899. During the recent war in South Africa he was Principal Medical Officer Natal Field Force and Section Lines of Communication, and took part in the defence of Ladysmith and in operations in Orange River Colony, was several times mentioned in dispatches, and made a Companion of the Order of St. Michael and St. George.

Major R. J. MCCORMACK, M.D., retired on retired pay, August 19th. He was appointed Surgeon, August 2nd, 1884, and Surgeon-Major, August 2nd, 1896. During the South African war in 1899 to 1900 he was Principal Medical Officer at the Base, Durban, and was at the defence of Ladysmith, being several times mentioned in dispatches.

Captain P. J. R. NUNNERLEY, from half pay, was placed on retired pay, July 26th. He joined the department as Surgeon, August 1st, 1885, and was placed on half pay, July 26th, 1898. He was with the Burmese Expedition in 1886-7, and has the Frontier medal with clasp.

MEMORANDUM.—The grant of the temporary rank of Surgeon-Captain in the army to Surgeon-Captain (temporary Surgeon-Lieutenant in the army) H. N. A. TAYLOR, M.D., 3rd Volunteer Battalion the Essex Regiment, which was notified in the *London Gazette* of May 8th, bears date December 30th, 1902, and not as therein stated.

Lieutenant-Colonel M. D. O'CONNELL retired on retired pay, July 25th. His commissions are thus dated: Surgeon, August 4th, 1878; Surgeon-Major, August 4th, 1890; Lieutenant-Colonel, August 4th, 1898. He had charge of a General Hospital during the recent war in South Africa. [A subsequent *Gazette* gives the date of the retirement of this officer as August 15th, and not as stated in the *Gazette* of August 14th.]

Colonel J. D. EDGE, M.D., C.B., has been appointed Principal Medical Officer, Cape Colony.

Lieutenant-Colonel W. L. CHESTER, who is serving in the Bengal Command, is appointed to officiate as Principal Medical Officer, Rawal Pindi District.

EXCHANGES.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 3s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

A MAJOR R.A.M.C., having probably two years in England from January next, would exchange to India about Christmas with an officer who had done about two years of his tour there.—Address No. 3,739, BRITISH MEDICAL JOURNAL.

A LIEUTENANT-COLONEL R.A.M.C., who expects to be ordered abroad early next year, wishes to exchange with an officer recently home.—Address, "Sey-Wood," c.o. Holt and Co., 3, Whitehall Place, S.W.

A LIEUTENANT-COLONEL, R.A.M.C., would like an exchange to stay at home over this trooping season: he is warned for India; or would exchange to a colony for short or part time.—11, Rose, c.o. Holt and Co.

A MAJOR, R.A.M.C., due home from India towards the end of this trooping season, wishes to exchange with an officer coming home in the early part of the season.—Apply to Major, R.A.M.C. Mess, Bangalore.

ROYAL ARMY MEDICAL COLLEGE.

CAPTAIN C. F. P. FOWLER, R.A.M.C., is appointed an Assistant Professor, *vice* Major W. H. Horrocks, M.B., R.A.M.C., who has vacated that appointment, July 29th.

CHANGES OF STATION.

THE following changes of station amongst the officers of the Royal Army Medical Corps have been officially reported to have taken place during the last month:

	From.	To.
Lt.-Col. F. J. Jencken, M.B.	Aldershot ...	Longmoor.
Major H. A. Haines, M.D.	Leicester ...	Sheffield.
,, A. O. Fitzgerald	Gldn Hill Fort	Portsmouth.
,, R. H. Hall, M.D.	Cork	Kilworth.
,, W. H. Starr	Dover	Canterbury.
,, G. Bent	Chester ...	Warwick.
,, A. P. Blenkinsop	—	Salisbury Plain
,, A. Wright	Portsmouth ...	Gosport.
Captain T. J. Leneham, M.B.	Bombay ...	Dublin.
,, F. R. Buswell	Parkhurst ...	R.A.M. Coll.
,, F. A. Symons, M.B.	Aldershot ...	,,
,, T. H. J. C. Goodwin, D.S.O. ...	Woolwich ...	,,
,, D. J. Collins, M.B.	Cork	,,
,, J. B. Anderson	Shorncliffe ...	,,
,, A. E. Master, M.B.	—	,,
,, G. Dansey-Browning	Alton	,,
,, E. S. Clark, M.B.	Dublin	,,
,, K. M. Cameron, M.B.	Woolwich ...	,,
,, C. K. Morgan, M.B.	Aberdeen ...	,,
,, J. P. Silver, M.B.	Devonport ...	,,
,, J. M. Buist, M.B.	Hounslow ...	,,
,, H. A. L. Howell	Chatham ...	,,
,, D. Lawson	Netley	,,
,, E. B. Steel, M.B.	Chester ...	,,
,, H. E. Staddon	Bulford ...	,,
,, S. J. C. P. Perry	Fermoy	,,
,, C. F. Wauhill	Dover	,,
,, L. Addams-Williams	Bulford ...	,,
,, M. MacG. Rattray, M.B.	Dover	,,
,, J. G. Berne	Salisbury Plain	,,
,, J. S. Gallie	Belfast	,,
,, F. J. C. Heffernan	York	,,
,, A. J. M. Cuddon-Fletcher ...	Aldershot ...	Scots Guards.
Lieutenant R. B. Black, M.B.	Salisbury Plain	Egyptian Army.
,, W. F. Tyndale, C.M.G. ...	Netley	Hounslow.
,, J. Mackenzie, M.B.	,,	Salisbury Plain.
,, H. J. Crossley	,,	Dover.
,, R. B. Ainsworth	,,	Portsmouth.
,, B. L. V. Foster	,,	Salisbury Plain
,, W. E. J. Harding, M.B. ...	,,	Dover.

The undermentioned Lieutenants on probation are posted to the stations specified: J. G. Bell, M.B., Aldershot; M. G. Winder, Curragh; T. S. Coates, M.B., Netley; A. E. B. Wood, M.B., Netley; R. H. Bridges, Aldershot; J. Gatt, M.D., Curragh; J. C. G. Carmichael, M.B., Netley; J. B. Meldon, Aldershot; R. C. Wilmot, Aldershot; C. W. Holden, Curragh; J. A. W. Webster, Aldershot; W. B. Kelly, M.B., Curragh; G. H. J. Brown, M.B., Netley; E. M. Pennefather, Curragh; B.V. H. Dunbar, M.D., Netley; D. G. Carmichael, M.B., Netley; D. Ahern, Curragh.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

CAPTAIN J. OLDERSHAW, M.D., 1st Cheshire and Carnarvonshire, resigns his commission, August 15th.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

LIEUTENANT J. D. NOBLE from the Gordon Volunteer Infantry Brigade Bearer Company, to be Lieutenant in the Aberdeen Company, August 15th.

VOLUNTEER RIFLES.

SURGEON-LIEUTENANT H. P. A. BLUMBERG, 3rd Volunteer Battalion the King's (Liverpool Regiment), to be Surgeon-Captain, August 15th.

Surgeon-Lieutenant J. M. DUNCAN, M.B., 3rd Volunteer Battalion the Lincolnshire Regiment, to be Surgeon-Captain, July 4th.

Surgeon-Lieutenant C. A. CORKE, 2nd Volunteer Battalion the Worcestershire Regiment, to be Surgeon-Captain, August 15th.

VOLUNTEER INFANTRY BRIGADE BEARER COMPANY.

LIEUTENANT F. KELLY, M.D., from the Royal Army Medical Corps (Volunteers), the Aberdeen Company, to be Lieutenant in the Gordon Company and to command, under para. 55A, Volunteer Regulations, August 15th.

THE PAY OF MAJORS OF THE R.A.M.C. IN INDIA.

A MARRIED MAJOR writes: Your leading articles on the Army and Indian Medical Services, and the report on the latter service in the SUPPLEMENT, lead me again to draw the attention of the profession to a substantial grievance of the R.A.M.C. This is that although Majors on the Home and Colonial Establishments receive under the New Warrant an increase of pay of 3s. 6d. a day, in India there has been no increase for them. Captains have received a considerable increase and Lieutenant-Colonels a small increase, but the Indian Government has ignored the claims of the Majors. As the rupee is worth but 1s. 4d. the increased cost of living and of family remittances falls heavily on these officers, who are mostly married and with children in England. The average pay of a Major R.A.M.C. including allowances is £550 a year, in India R. 800 a month or £640 a year, an apparent improvement, but in England one receives in addition travelling allowances when on journeys with a liberal scale of baggage paid for by the Government, while in India there is no allowance and the baggage scale is about one-half, also one draws field allowance while in camp or on manœuvres at home or in a colony, while in India one has not only no allowance but has to provide one's own tent, and moreover pay for all transport except on the railway. As practically every Major spends five years in India in that rank, he

reaps during those years absolutely no benefit from the new and liberal scale of pay and is therefore discontented and a bad servant of the Indian Government. The R.A.M.C. is hopeful of the future, but the pay of Majors in India should be increased in proportion with the increase drawn under the new Warrant elsewhere than India.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel P. H. Benson, Madras Establishment, is granted the temporary rank of Colonel from June 2nd, while officiating as Inspector-General of Civil Hospitals and Sanitary Commissioner, Burmah.

The Indian Army Nursing Service is to be known in future as "Queen Alexandra's Military Nursing Service for India."

Lieutenant John Hewett Ferris died at Poona on June 15th. His commission dated from July 26th, 1902.

THE DECAY OF THE INDIAN MEDICAL SERVICE

Scrutator writes: Surgeon-General Scott-Reid's speech at this year's Indian Medical Service dinner was excellent as far as it went. It was a very necessary corrective to the fulsome and misleading praise of those officials on the active or retired list, who year by year paint the service and the Indian Government in such roseate hues for the benefit of possible candidates. It is charitable to suppose that such utterances are made in ignorance, and not from an electioneering point of view. For many years the Indian Medical Service has been rapidly deteriorating, and has been trading on its old reputation. It is now called a service, but is without a head, without organization, divided against itself, and far behind modern requirements.

It is a Deteriorating Service from the Point of View of the Military Section of the Indian Medical Service.—Most of the important principal medical officerships formerly held by the Indian Medical Service in Bengal and the Punjab have been absorbed by the Royal Army Medical Corps, and the remainder are menaced by the same fate. An undue proportion of billets (excepting medical charge of native regiments) is now held by the Royal Army Medical Corps, and for several appointments, notably sanitary ones, Indian Medical Service officers are not eligible.

From the Indian Medical Service (Civil) Point of View.—The action of the Indian Government in curtailing fees. The great reduction and in many cases the entire cessation of private practice, owing to the large number of Civil practitioners, European and native, who have in late years arisen everywhere. The increasingly frequent transfers.

From Both Military and Civil Sides.—The increased expense of living, and the fact that the pay of the service is very much what it was forty years ago. The pay is now considerably below that of the Royal Army Medical Corps; the pensions are by no means what they used to be; since 1889 the four extra pensions of £100 a years have ceased. The thirty years' service pensions of £700 are not now available to the majority of Indian Medical Service officers. Most men join older than was previously the cases, owing to the longer curriculum, and will be retired under the 55 years age limit before they can complete thirty years' service. The above facts point to deterioration, and bode ill for the future of the Indian Medical Service.

The Indian Medical Service has no Head.—The Director-General is the nominal head, but military medical officers are in no way under him. Civil medical officers are still heads; they are subject to their local governments, and by no means always in accordance with the Director-General's wishes. Surgeon-General Scott-Reid noted the derogatory position occupied by the Director-General with reference to Government, and it is nothing short of scandalous. From these facts it is by no means clear what useful purpose the Director-General serves in the Indian Medical Service Indian Government economy. The P.M.O. H.M. Forces in India is with certain restrictions the head of the military Indian Medical Service, but the conditions are such that it is difficult for him to act fairly towards them, or as he doubtless would were he in full command. It is interesting in this connexion to note that although technically eligible, no Indian Medical Service officer however distinguished has ever obtained the position of P.M.O. H.M. Forces in India, nor similarly has a military Indian Medical Officer ever attained to the dignity of head of his own service as director-general. The Indian Government perpetuates this ill-defined, dual control, paralysing efficiency, and keeping alive that notorious friction at headquarters which has for many years laid the medical services in India so open to attack and to ridicule.

No Organization and the Service is Divided against Itself.—From the foregoing facts both statements are evident, but in addition, and following the example of their superiors, the military and civil sections are, from opposing interests, hostile to one another. One strong reason for this is the constant supersession of military medical officers for P.M.O. ships by men without military experience, who have passed their careers, often for over twenty-five years, in peaceable and lucrative civil appointments, accumulating fortunes and seniority. On the other hand, military medical officers are very rarely appointed to civil administrative posts; the exceptions to this are so few and far between that "they prove the rule." Formerly, reciprocity was the rule, now, as I said before, it is very exceptional, except at the expense of the military side.

The Service is not up to Modern Requirements.—This is manifest, and will be still more clearly understood after a visit to a regimental native hospital. The antediluvian equipment and organization are disgraceful to every one concerned—the retention of the regimental system, a system scarcely worthy of the name, not in accord with that of the rest of the army, which only exists in cantonments in time of war and even in camps of exercise is found unworkable—yet the Indian Government, in spite of representations, and owing, I think, to that Oriental conservatism which pervades Indian institutions and official, retains it.

This is a sad picture of the Indian Medical Service, for many years the best medical service in the world. It has perhaps served its purpose, and like many another Indian institution must make way for younger and more up-to-date organizations.

I think the only remedy for all this is one military medical service, with one head and one system for the whole army, black and white. The establishment of an Indian civil medical service distinct from the military. This latter is an urgent necessity, both from the point of view of the undermanned army and from the fact that India is too large, and the rapidly expanding claims of an awakening civil population too vast to be dealt with by the Indian Medical Service as at present constituted. Even were this possible, it is not desirable. The claims and aspirations of the crowd of practitioners whom the Indian Government have forced into existence might be partially met by establishing this service, the Director-General and his staff would in it find ample scope for their energy and ambition without trenching on the military medical service.

PAY OF CIVILIAN MEDICAL PRACTITIONERS.

A Royal Warrant, recently issued, amends the Pay Regulations in some particulars and includes the following substitution for Article 375: "When a detachment of Our Army is not within reach of any officer on full pay of our Royal Army Medical Corps, of any officer of our Army Medical Reserve, or of a Militia medical officer on full pay, or of a retired military medical officer or Militia medical officer in receipt of pay under this Our Warrant, a civilian qualified to practise medicine and surgery may be engaged by the commanding officer to render medical attendance to the officers and men belonging to the detachment, and to other persons entitled thereto at the public expense, at the undermentioned yearly rates (which include the cost of medicines), calculated as laid down in Article 378: If there are less than 10 persons, £5; if there are 10 persons or more, for every complete 25, or portion of 25, provided that the total emoluments for all services, exclusive of the examination of recruits, shall not in any instance exceed £1 for any one day, £10."

THE DEFECTS OF THE NAVAL MEDICAL SERVICE.

A Naval Medical Officer writes: I am much surprised at the remarks of Dr. J. H. Bryant in the British Medical Journal of August 8th, and it is a pity that he did not make himself more conversant with the matter when he accuses the Admiralty "of a direct attempt to avoid carrying out essential reforms" by obtaining temporary surgeons. He evidently does not know that such surgeons would only be employed in case of war or national emergency: were the Admiralty to employ all the temporary surgeons on its list at the present moment, it would be necessary to enter no others: there is not a single temporary surgeon employed. He is also quite incorrect in saying that "commissions have been offered to medical schools in Australia without a pretence of examination." No Australian medical man is entered without first passing a proper examination. Mr. Gerald Sichel has now found out that there is a Consultative Board, although he wrote that no such thing existed, but he now considers it necessary to vilify that Board, of the working of which he can know nothing. It has become a kind of fashion to abuse the navy, which is on the whole perhaps not a perfect but a very desirable service, and I should think that these gentlemen, in the fearfully overcrowded state of the profession on shore, would scarcely earn the gratitude of the profession at large.

MEDICO-LEGAL AND MEDICO-ETHICAL.

INJURY IN A GREVILLE BATH: ACTION AND DAMAGES.

The *Yorkshire Daily Post* of August 11th contains a report of an action brought by Mrs. Bocquet against the Harrogate Corporation, with whom the Medical Electric Thermic Generator Company and Mr. A. E. Greville were associated as third parties. The claim was for damages for injuries received through the alleged negligence of the defendants while the plaintiff was in an electric bath.

The facts of the case, as explained by the plaintiff's counsel, were that the plaintiff, suffering from neuralgia, was recommended to go to Harrogate to try the waters, and was there recommended by Dr. Black to have electric baths, and went to the Corporation baths for that purpose. She noticed that the bath was called the Greville bath, and on that account expressed some fear of the treatment, because a year or two before she had had a similar bath in London and had been burned. The nurse in charge, however, reassured her, stating that the bath had every modern improvement, and that there was therefore no danger. In the bath she was packed with lint, but presently, accordingly to her counsel's statement, she complained of being burned and further lint was applied. The night after the bath she discovered that a blister which had been produced by the bath had broken. The sore was dressed the next day by the nurse, who told her to say nothing to Dr. Black; but it got worse, and presently she called in Dr. Williams, who considered a consultation necessary, and one was held. She continued under his treatment until August 25th, suffering much pain. On that date she went to Inverness, and at Holbeck Junction, where platforms were changed, she had to be carried down the luggage lift. At Inverness she again placed herself under treatment, but the wound, which was inflicted on July 20th, was not healed until September 3rd. In October she returned to London, and placed herself under her own doctor, being unable to attend her business for four months.

The plaintiff, being called, her evidence confirmed the statement of her counsel.

On behalf of the defendants, counsel admitted the warranty of the bath and the responsibility of his clients if the injury were really caused in the bath as stated. Dr. J. G. Black, of Harrogate, called on behalf of the plaintiff, stated that on July 25th he had examined the wound, which had been skilfully dressed: it was about 1 in. long and ¾ in. broad; the dressings applied were suitable, and he ordered them to be continued; the appearance of the wound was consistent with the statement that it was caused by a burn, but it might also have been caused in some other way. He did not see how any one could have been burned in the Greville bath. Apart from the patient's statements, he had seen nothing to indicate that she had been burned.

Dr. Neville Williams, who attended the plaintiff from August 15th to the 25th, said the history of the case as he heard it was consistent with a burn. He was unable to ascribe it positively to a burn because he did not see it for three weeks after the alleged accident. The wound might have been caused in various ways, but from what he had heard he would say it was due to a burn of some sort.

Dr. J. M. Moir, of Inverness, stated that in his opinion the symptoms were not inconsistent with a burn, and he was confirmed in that view by the evidence he had heard given in court by Dr. Black.

For the defence, amongst a number of witnesses Annie Hoare stated

that she had attended two thousand bathers in the Greville bath, and, except on this occasion, nothing had been suggested against her. She admitted that the plaintiff was reluctant to take the bath but denied that she had complained of heat during it, nor did she complain of the burn until three days later, and the witness did not believe that it was caused by treatment at the bath.

Miss Playfair, of Glasgow, stated she had been present when the plaintiff took the bath, and that she made no complaint but expressed herself as comfortable.

Dr. W. M. C. Watson believed that the appearance of the wound was consistent with excoriation. He had been asked to see it by Dr. Black, and was led to understand that it was due to a burn. He assumed that it was so on the statement of the plaintiff.

Dr. Newton Clark, stated to be a retired practitioner, described the wound as being in a protected situation. In reply to the judge, who asked him whether it did not strike him as remarkable that neither the nurse, nor Dr. Black, nor Dr. Watson had ever suggested that the wound had not been produced in the bath, he replied that his evidence was one of opinion only.

Mr. Greville, patentee of the bath and solicitor by profession, admitted having addressed to the plaintiff a letter in which he stated that a lady who had previously brought an action against his company had got a farthing damages but had had to pay £300 towards its costs. This letter, counsel said, was untrue, discreditable, and written only to frighten the plaintiff.

The judge, in summing up, remarked that if it were impossible, as now suggested, for the bath to have caused the injury, it was singular that the plaintiff's story was not discredited at the time either by the nurse or the doctors. In the case to which Mr. Greville had referred, Mr. Greville well knew that his company had had to pay the lady in question nearly £300, and by stating that the lady had had to pay his company that sum he had told an absolute lie.

The jury found for the plaintiff with £250 damages, and judgement was given accordingly, being entered against the third parties for the amount that the Corporation had to pay by order of the court.

PROSECUTION OF AN UNREGISTERED CHEMIST.

AT the County Buildings, Glasgow, on August 6th, Sheriff MacKenzie on the bench, Richard Jones Owen, we learn from a report which appeared in the *Glasgow Herald* of the following day, was charged at the instance of the Registrar of the Pharmaceutical Society of Great Britain with having, he not being a duly qualified registered chemist, sold on July 29th twopennyworth of laudanum in his shop. He pleaded not guilty.

Mr. Morrison, S.S.C., Edinburgh, who prosecuted, stated that respondent had represented to Mr. Hill, who was to be called as the first witness, that he was a duly-qualified medical practitioner, and he had cited Mr. Owen as a haver to produce the certificate of his appointment as such.

Mr. J. L. Mackie, writer, agent for the respondent, assured the Court that his client would not found his defence upon the qualification referred to.

After hearing a prolonged debate on the question, his lordship ruled that as Owen was the respondent in the case, and therefore could not be used as a witness for the prosecution, he could not be questioned in the manner proposed by Mr. Morrison in the event of his saying he had not the certificate.

Mr. Rutherford Hill, Assistant Secretary to the Pharmaceutical Society, stated that he called at respondent's shop to investigate a complaint against him. The sign on the outside wall of the shop was "Chemist. H. Slogie. Druggist;" on the lintel of the door were the words "M'Ewan and Co.," while on the door of a small consulting room was a brass plate bearing the name "Dr. Owen" in large letters. Respondent said his full name was Richard Jones Owen. Witness asked him if he was a duly-qualified medical practitioner, and he replied that he was. Witness told him that he had failed to find his name on the register of medical practitioners, and in response to that statement respondent said he had been in the army and also in Australia, and had in consequence allowed his name to lapse from the *Medical Register*, adding that he would take steps to have his name restored. Witness explained to him that if he could prove to him that he was a duly-registered practitioner there could be no prosecution against him. Respondent showed him a *Medical Directory* for 1898, and pointed out an entry there of the name of Richard Jones Owen, 128, Farmworth Street, Liverpool, as qualifying in 1861. He said that entry referred to him. He then showed witness a sealed certificate bearing the name of a register of the General Medical Council, and indicating that the person named on the certificate had been registered in January, 1862. He said that was his certificate as a medical practitioner. Witness made inquiry at the Registrar of the General Medical Council, and received the following reply:

"July 23rd, 1903.

"Referring to your letter of 22nd inst., investigation shows that in 1890 Richard Owen, who alleged himself to be Richard Jones Owen, fraudulently obtained restoration to the *Medical Register* by assuming the latter name, and, the circumstances having been examined, his name was erased on May 28th, 1890. The address then given was 128, Farmworth Street, Liverpool, and the assumed qualification M.R.C.S.Eng., 1861; L.S.A., 1861. I believe that a prosecution was impossible owing to his leaving the country.—Yours, faithfully,

"H. E. ALLEN, Registrar."

The address pointed out by respondent to witness in his consulting-room as his at one time was the same as given in the letter just read. He was satisfied respondent had not a medical qualification. Witness produced the register of qualified chemists and druggists, which did not contain the name of Owen. Respondent said he had qualified to enter for the modified examination of the Pharmaceutical Society. He claimed to have been an assistant at the time of the passing of the Act, to have been three years at the business, and to have been then 21 years of age. Witness found, from an old list of candidates for the modified examination, that one named Owen had gone up in 1871, and failed to pass. Although the name was Owens, the address was the same as given by respondent to witness on calling at his shop. In consequence of those investigations, witness took steps to have a purchase of poison made at respondent's shop. On August 4th he made an analysis of the contents of a small bottle handed to him by a Mrs. M'Kellar. It was labelled laudanum, and contained 16 gr. of opium, or several fatal doses.

In the course of his cross-examination witness was shown a blue document, and asked if it did not bear that respondent had passed in chemistry and materia medica. Mr. Hill said that it did not show anything.

Does it not show that he has only a modified examination to pass to qualify to sell any poison?—I do not know anything about this. It certainly has nothing to do with the pharmaceutical qualifications.

It is a certificate admitting him to a final examination, and giving him a triple qualification for Scotland. Do you know that?—It is simply an admission to a medical examination.

By his Lordship: It is not a qualification of any kind.

Joseph Tait, assistant to the previous witness, corroborated Mr. Hill's evidence in regard to the contents of the bottle purchased. Respondent asked witness what, in his opinion, should be the proportion of opium in half an ounce of laudanum. Witness replied that it should be 10 gr.

Mrs. Helen M'Kellar spoke to making the purchase on behalf of Mr. Hill. Respondent, she said, asked her what the laudanum was for, and witness replied that she sometimes used it for cleaning purposes. Respondent said that, as she was a stranger, he had some doubts as to whether he should supply her, adding that he would not mind selling as much as 2s. worth of laudanum if he knew the person.

Andrew Melville Stewart corroborated.

Respondent, giving evidence in his own behalf, said he had had two qualified assistants in his shop, and that the incident described occurred while he was without one. He had passed the examination in materia medica, and had only the modified examination of the Pharmaceutical Society to pass to enable him to dispense poison.

In cross-examination, respondent was asked why on one occasion he had taken the name of Owens. He replied that in Wales people whose name was Owen sometimes called themselves Owens.

Mr. Morrison: You have heard the evidence of Mr. Hill, and I wish to know if you admit that you showed him a certificate from the Registrar under the Medical Acts, and claimed in consequence that you were entitled to sell poisons?

Respondent: I do not claim anything of the kind.

His lordship thought that Mr. Morrison need not pursue the question further.

Mr. Morrison: I think you now admit you have no qualification to sell poison?

Respondent: No registered qualification.

The Sheriff said he had no hesitation in finding the charge proven, and, imposed a fine of £5, including expenses, with the alternative of twenty-one days' imprisonment.

AN ACTION FOR FEES.

ON July 19th, Mr. Commissioner Bray, K.C., sitting with a special jury at the Liverpool Assizes, heard a case in which Dr. Joseph Dawson Crawford, of Rodney Street, Liverpool, sued the executors of the the late John Westmoreland for the sum of £838 in respect of fees and money expended by the plaintiff on behalf of the deceased. Mr. Taylor, K.C., and Mr. D'Arcy appeared for the plaintiff, Mr. Shee, K.C., and Mr. Thomas for the defendants.

From a report of the case published in the *Liverpool Mercury* of July 30th it appeared that the action was brought for fees in respect of attendances and consultations from the year 1895 up to 1901 upon and in respect of Mr. Westmoreland and his wife. Mr. Westmoreland died in 1901, and no payment of any kind during the years named was made. The deceased was the proprietor of a number of large hotels. His will had been been sworn at between £70,000 and £80,000. It appeared that amongst the items in the bill there were 113 attendances at half-a-guinea, ten guineas for an operation, while the plaintiff charged eight guineas a day for his attendances upon Mr. Westmoreland at Southport. In certain instances the plaintiff had himself paid a consultant out of his own pocket. A bill for £1,030 in respect of attendances upon Mrs. Westmoreland during the same period had been paid by her executors without any questions.

A number of medical witnesses were called, who proved that the fees charged by the plaintiff were reasonable.

Certain other medical witnesses having given evidence for the defendants to the contrary effect, the jury found a verdict for the plaintiff for £999 17s. 6d. Judgement accordingly, with costs.

HOW TO QUALIFY FOR CORONERSHIP.

BIRK.—Candidates for a coronership would do well to read Jarvis on the Office of Coroner and the various Acts of Parliament relating to this office. A knowledge of the common law is also very desirable, and may be obtained from any standard textbook on that subject. In the country local candidates have a great advantage, as they are often well known personally to the electors. With regard to the proportion of medical men and lawyers among the present coroners in England and Wales, solicitors have the advantage, but in the metropolis and large towns there is a growing tendency to prefer medical coroners, especially when the latter are also barristers.

APPOINTMENTS TO CORONERSHIPS.

WOULD-BE-BARRISTER wishes to know: (1) Whether in appointments to a coronership a preference is given to medical men who are also barristers? (2) Who appoints coroners, and where such appointments are usually advertised? (3) What salaries do coroners usually obtain? (4) Whether there are other appointments where preference would be given to medical men, who are also barristers *caeteris paribus*.

*** (1) Yes, in London and large towns. (2) In the case of the county coronerships the county councils, and in borough coronerships the town councils; in the case of special liberties the appointment is often made by the Crown, or in accordance with customary usage; in the medical and lay press. (3) In large towns the salary of the coroner varies from about £800 to £1,500 per annum, in all other cases it is usually small, as it is calculated on the number of inquests held annually. (4) In all appointments where legal knowledge as well as medical was required, a medical man who was also a barrister would have an advantage.

THE Czech Society of Hygiene offers a prize of 200 crowns for the best essay on the evil effects of tobacco, especially in the form of cigarettes.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF LONDON.

The following candidates have passed the Intermediate Examination in Medicine.

Entire Examination.—First Division: H. Ainscow, Owens College; W. A. E. Dobbin, University College, Cardiff; H. Hudson, Owens College; F. C. H. Powell, King's College; W. H. Trethowan, Guy's Hospital; S. Upton, St. Bartholomew's Hospital; Helen Volckman, London School of Medicine for Women. Second Division: E. Alban, Guy's Hospital; A. Ball, University College; J. L. Barford, King's College; B. H. Barton, St. Bartholomew's Hospital; A. W. Berry, Guy's Hospital; J. F. Blackett, University College, Bristol; R. Brown, University College; A. C. Bryson, Westminster Hospital; W. E. Burrows, B.Sc., Middlesex Hospital; G. P. C. Claridge, St. Mary's Hospital; L. Colebrook, St. Mary's Hospital; Emily Susan Cooke, London School of Medicine for Women; E. T. H. Davies, St. Mary's Hospital; C. C. A. De Villiers, Guy's Hospital; H. R. Evans, University College; C. Fletcher, Westminster Hospital; J. N. Glaister, University College; H. Gooch, London Hospital; S. L. Graham, University College; L. W. D. Griffiths, London School of Medicine for Women; T. M. Hardy, University College, Sheffield; R. F. Hebbert, St. Thomas's Hospital; H. G. M. Henry, University College, Sheffield; W. L. Holyoak, St. Mary's Hospital; Annie Wainwright Hyatt, London School of Medicine for Women; W. A. James, University Colleges, London and Cardiff; Edith Anne Jones, London School of Medicine for Women; H. T. Jones, University College and Middlesex Hospital; T. E. Jones, University College, Liverpool; W. H. Jones, St. Bartholomew's Hospital; A. M. Jukes, St. Bartholomew's Hospital; E. C. Lowe, Guy's Hospital; P. F. McEvedy, Guy's Hospital; I. C. Maclean, St. Thomas's Hospital; C. B. McNeile, Middlesex Hospital; E. W. Matthews, King's College; Dorothea Clara Maude, London School of Medicine for Women and Oxford Physiology School; W. H. Miller, Guy's Hospital; P. S. Mills, Guy's Hospital; W. A. Milner, University College; E. H. Bardens, St. George's Hospital; H. R. Prentice, St. Bartholomew's Hospital; A. Randle, University College; M. B. Reichwald, St. Bartholomew's Hospital; J. E. H. Roberts, St. Bartholomew's Hospital; H. B. Scargill, Yorkshire College; D. R. C. Shepherd, Middlesex Hospital; D. P. Sutherland, Owens College; Ida Clare Tengely, London School of Medicine for Women; R. E. Thomas, University College, Bristol; H. F. Vandermin, Guy's Hospital; H. F. Warner, London Hospital; H. B. Whitehouse, St. Thomas's Hospital; T. F. Wilson, Guy's Hospital; A. W. G. Woodforde, St. Bartholomew's Hospital; A. J. M. Wright, University College, Bristol; W. Yorke, University College, Liverpool.

Excluding Physiology.—Second Division: J. F. Broughton, University College; Elisabeth Mary Gibbon, London School of Medicine for Women; G. M. W. Hodges, University College; S. H. J. Kilroe, Owens College; Ethel May Magill, London School of Medicine for Women; J. E. Middlemiss, Yorkshire College; Emily Helen Morris, London School of Medicine for Women; W. O. Sankey, St. Thomas's Hospital.

Physiology Only.—Second Division: A. Barber, St. Bartholomew's Hospital; H. J. Brewer, St. Mary's Hospital; L. F. Cope, St. George's Hospital; E. V. Dunkley, St. Thomas's Hospital; A. H. Gifford, King's College; P. C. P. Ingram, Guy's Hospital; L. Llewelyn, London Hospital; Mary O'Brien, London School of Medicine for Women; Bessie Weld on Symington, London School of Medicine for Women; J. A. Torrens, St. George's Hospital; A. G. Tresidder, London Hospital; Ruth Ellen Western, London School of Medicine for Women; D. Wilson, St. Thoma's Hospital.

SOCIETY OF APOTHECARIES OF LONDON.

Pass List, August, 1903.—The following candidates passed in:

Surgery.—H. H. Clarke (Sections I and II), Cambridge, Liverpool, and St. Bartholomew,s Hospital; A. N. Collier (Section II), Manchester; M. B. Dawson (Section II), Middlesex Hospital; F. Hansen, Copenhagen; J. M. King (Sections I and II), University College Hospital; N. O. Roberts (Section I), Cambridge and St. Mary's Hospital; A. C. Stark (Sections I and II), Westminster Hospital.

Medicine.—A. H. Falkner (Section I), Cambridge and St. Mary's Hospital; F. Hansen (Section I), Copenhagen; A. C. Stark (Sections I and II), Westminster Hospital.

Forensic Medicine.—R. H. Cooper, Manchester and Charing Cross Hospital; A. H. Falkner, Cambridge and St. Mary's Hospital; F. Hansen, Copenhagen; S. Northwood, Birmingham; A. C. Stark, Westminster Hospital.

Midwifery.—H. H. Clarke, Cambridge, Liverpool, and St. Bartholomew's Hospital; H. R. Grellet, Guy's Hospital; F. Hansen, Copenhagen; K. R. Jay, Royal Free Hospital; P. A. Pettavel, Lausanne; A. C. Stark, Westminster Hospital.

The diploma of the Society was granted to H. H. Clarke, A. N. Collier, J. M. King, and A. C. Stark.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

MILK ANALYSIS.

The following circular to local authorities for the purpose of the Sale of Food and Drugs Acts, 1875 to 1899, has just been issued by the Board of Agriculture:

"The fact that samples of milk referred to the Government Laboratory under the provisions of the above Acts are invariably sour when received has occasionally given rise to inquiries, by magistrates' clerks and others concerned with the working of the Acts, as to the practicability of making a satisfactory analysis of sour milk, with a view of substantiating or disproving an allegation that the milk has been mixed with water, or that fat has been abstracted from it. It therefore appears desirable that the Board should state that, except in a limited number of exceptional cases to be hereafter referred to, there is no practical difficulty in accurately inferring the composition of the milk when fresh from the analysis of the milk when sour. The change which takes place in a sample of milk kept from contact with air, as in a bottle nearly full of the sample, and fitted with a good sound cork sealed with wax, is, as a rule, comparatively slight. The causes and nature of this change have been carefully studied by many observers, and they have been found to be perfectly definite in character. Without going into details concerning the fermentative changes to which milk is liable, it may be stated that the changes which affect the analysis, and, therefore, the inference to be drawn from the results, are concerned with the non-fatty solids only, and more particularly with the milk sugar. The milk sugar gives rise, either proximately or remotely, to a variety of products, the most important of which are lactic acid, ethyl alcohol, and acetic acid; but it can be shown that the only quantitative determinations which need be made in order to determine the loss in the non-fatty matter by keeping are the proportion of alcohol, reckoned as proof spirit, and the amount of free volatile acid, together with the ammonia derived from the alteration of the casein, or proteid substance, in the milk. The slight alterations in weight consequent on the hydrolysis and conversion of lactose into lactic acid, and the formation of certain so-called by-products of alcoholic fermentation, are partly positive and partly negative in direction, but their joint effect is too small to have any appreciable influence on the result. The entire correction, which of course is always additive, in the case of a properly-preserved sample from three to six weeks old is fairly constant, and may be said to range from 0.2 to 0.3 per cent. In a few cases it has been found to be as low as 0.1 per cent., and in very exceptional cases, as in badly-secured samples or in bottles only partially filled, it has risen to 0.7 or 0.8 per cent. If the fermentation has passed into the butyric acid stage, the amount of free acid is greatly increased, and, owing to the separated casein, it is sometimes impossible to get the sample into a proper and uniform condition for analysis. In such cases the Government Laboratory declines to proceed with the examination. Such a result, however, practically never happens in the case of samples which have been properly taken and kept by the inspectors pending the appeal to the Government Laboratory."

WORCESTERSHIRE COUNTY COUNCIL AND VACCINATION.

The following resolutions have been passed by the Worcestershire County Council: That primary vaccination be made compulsory (as under the present Act); that revaccination at about the age of 12 be made compulsory in the same way; that no certificate of vaccination be recognized which does not comply with the requirements of the Local Government Board as to the number, area, and size of the vaccination cicatrices; that sufficient facilities should be provided for obtaining a ready supply of glycerinated calf lymph; that the carrying out of the vaccination laws should be transferred to county councils.

VACCINATION IN ST. HELENA.

In the annual report on St. Helena the state of the public health is described as follows:

"The Acting Colonial Surgeon reports that during the year under review there was a considerable increase in the number of enteric fever cases and in digestive diseases. The increase in enteric fever is accounted for by the fact that this disease broke out in epidemic form at the camp at Deadwood, where about 4,000 Boer prisoners were encamped. The disease was brought into the island by the prisoners, and spread more or less all through the island.

"The steady increase in digestive diseases after the arrival of the Boer prisoners is attributed to the following causes:

"Articles of diet, such as fish, vegetables, etc., which the natives had been accustomed to live on, were at famine prices on account of the abnormally great demand for such articles by the troops and prisoners. The natives, therefore, very often had to resort to tinned food, which they had never been accustomed to. This, the Acting Colonial Surgeon points out, was a fertile cause of dysentery and diarrhœa.

"Vaccination appears to have been carried out universally. During the year nearly 400 persons underwent the operation with very satisfactory results."

WITHHOLDING OF NOTIFICATION CERTIFICATES BY MEDICAL OFFICERS OF HEALTH.

Anxious asks whether, under the following circumstances, the medical officer of health can withhold a notification certificate, and so prevent the notifier from receiving his fees. He notified six cases early in the year, and has now received a fee for two cases only, the medical officer of health having doubted his diagnosis and withheld four certificates.

*** The medical officer of health has no authority to withhold the certificates. If the certifier was of opinion that the four patients in question were suffering from a notifiable infectious disease, and unless he had subsequently expressed a wish to withdraw the certificates, he is entitled to the fees and can sue for their recovery. It might, however, be inadvisable for obvious reasons to do this. In cases of doubtful diagnosis a consultation between the medical officer of health and the certifying practitioner ought to be held. The cases in which the medical officer of health is justified in refusing to pass on a certificate for payment on the ground of *mala fides* must be very rare. We are of opinion, however, that the practitioner best consults his own interest as well as that of the district in which he lives when he withdraws a certificate, if after further watching the case he has altered his opinion. This contingency does not appear to have arisen in the above instance.

THE DUTIES OF SANITARY INSPECTORS.

G. P. writes that the sanitary inspectors in his district, both urban and rural, go up to the bedroom of people who have been notified to the M.O.H. as suffering from infectious disease and put questions to them, and one of them gives advice to scarlet fever patients or their guardians as to inunction with an oil which he leaves for them. "G. P." wishes to know if the sanitary inspectors have any right in the bedroom of a patient, and how, if not, he is to act in order to prevent it?

*** Presumably the inspectors in question are acting on the instruction of the M.O.H., and we should therefore advise a consultation between "G. P." and that officer as to the limits of their interference.

These limits have in our opinion been exceeded when materials for injunction are distributed. It is also inadvisable that they should enter the sickroom, and this should be forbidden. *Per contra*, it is necessary in the public interest that (*a*) all necessary inquiries as to the source of infection should be made, and (*b*) investigation should take place as to whether the means of isolation provided are sufficient. Under the first head an interview with the patient himself is often most valuable especially in enteric fever, but it ought to be delayed until the family doctor's consent can safely be given. Under the second head a visit to the bedroom door, in order to ascertain its relationship to other rooms, etc., may be necessary. The circumstances clearly indicate the desirability of an understanding between "G.P." and the M.O.H. 'G.P." will be in a strong position in refusing permission to the sanitary inspector to go upstairs, if he certifies that the means of isolation are sufficient, and instructs the guardian of the patient to furnish all information which may throw light on the source of infection.

THE NOTIFICATION OF INFECTIOUS DISEASES BY TELEPHONE.

In the British Medical Journal of August 15th we quoted a statement from the *Glasgow Herald* implying that in that city preliminary notification of infectious cases by telephone was not practised, and recommending that this should be done. On this, we remarked that "there should be no difficulty in at once making the necessary arrangements for carrying out this suggestion, if it is not already done." We are glad to learn from a communication received from Dr. James Hamilton that, as we suggested above, this plan is already in practice in Glasgow. The original statement must therefore have been made under a misapprehension, which a communication to the medical officer of health would have cleared up better than a communication to the local press.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,996 births and 4,544 deaths were registered during the week ending Saturday last, August 15th. The annual rate of mortality in these towns, which had been 13.4, 14.4, and 14.3 per 1,000 in the three preceding weeks, rose again to 15.7 per 1,000 last week. The rates in the several towns ranged from 6.9 in Reading, 7.1 in Hastings, 7.4 in Kings Norton, 8.1 in Wallasey, 9.7 in Barrow-in-Furness, 9.8 in Smethwick, and 9.9 in Northampton to 21.4 in Hanley and in Bolton, 21.6 in Salford, 24.6 in Grimsby, 25.9 in Bury, 26.6 in Sheffield, 27.5 in Bootle, and 28.9 in Birkenhead. In London the rate of mortality was 14.2 per 1,000, while it averaged 16.4 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 3.1 per 1,000 in the seventy-six large towns; in London this death-rate was equal to 2.3 per 1,000, while it averaged 3.4 per 1,000 in the seventy-five large provincial towns, among which the highest death-rates from the principal infectious diseases were 5.3 in Aston Manor, 5.4 in Bury, 5.8 in Hull, 6.7 in Salford, 7.6 in Ipswich, 7.9 in Grimsby, 10.0 in Sheffield, 10.1 in Birkenhead, and 13.7 in Bootle. Measles caused a death-rate of 1.4 in East Ham, 1.5 in Sheffield, 1.7 in Leicester, 2.2 in Middlesbrough, and 6.1 in Ipswich; diphtheria of 2.5 in Hanley and 3.0 in Great Yarmouth; whooping-cough of 1.1 in Oldham, 1.2 in Sheffield, and 1.5 in Newport (Mon.); and diarrhoea of 4.5 in Bury, 4.6 in Hull, 5.1 in Salford, 7.1 in Sheffield, 7.9 in Grimsby, 9.6 in Birkenhead, and 12.9 in Bootle. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. Two fatal cases of small-pox were registered in Liverpool, and one each in Leicester, Oldham, and Newcastle-on-Tyne, but not one in any other of the seventy-six large towns. The number of small-pox patients under treatment in the Metropolitan Asylums Hospitals, which had been 71, 66, and 48 on the three preceding Saturdays, had further declined to 45 on Saturday last, the August 15th; 9 new cases were admitted during last week against 12.9 and 4 in the three preceding weeks. The number of scarlet-fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1,758, against 1,711, 1,726, and 1,771 at the end of the three preceding weeks; 215 new cases were admitted during the week, against 229, 237, and 216 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, August 15th, 944 births and 505 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 15.4, 14.7, and 14.6 per 1,000 in the three preceding weeks, rose again last week to 15.4 per 1,000, but was 0.3 per 1,000 below the mean rate during the same period in the seventy-six large English towns. The rates in the eight Scotch towns ranged from 12.2 in Edinburgh and 13.4 in Dundee, to 17.6 in Paisley and 18.8 in Greenock. The death-rate from the principal infectious diseases averaged 2.1 per 1,000 in these towns, the highest rates being recorded in Leith and Greenock. The 247 deaths registered in Glasgow included 4 from measles, 8 from whooping-cough, and 24 from diarrhoea. Three fatal cases of scarlet fever, 2 of whooping cough, and 2 of diarrhoea were recorded in Edinburgh. Five deaths from diarrhoea occurred in Dundee, 4 in Leith, 4 in Greenock, 3 in Aberdeen, and 3 in Paisley.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, August 15th, 501 births and 305 deaths were registered in six of the principal Irish towns, the deaths being the same in number as the mean number of the preceding four weeks, and the births 4 over the corresponding mean. The mean annual death-rate of these towns, which had been 15.6, 14.9, and 21.5 per 1,000 during the preceding three weeks, fell suddenly to 13.7 per 1,000, this number being 2.0 under the mean rates during the same period in the seventy-six English towns. The death-rates ranged in these six Irish towns from 18.7 in Dublin and 19.2 in Belfast to 7.8 in Waterford and 8.2 in Limerick. The death-rate from the principal zymotic diseases in the six towns averaged for the week 2.5 per 1,000, against 2.8 per 1,000, which was the mean of the preceding month. The highest rate, 4.2, was reached in Belfast, that of Waterford, 3.9, being also high, especially as this town has only once in the past two months registered any deaths from zymotic disease at all. The zymotic death-rate throughout the country is a good deal higher than it was about a month ago, but 6 deaths from enteric, 23 from diarrhoeal disease, 1 from scarlet fever, 4 from measles, 8 from whooping-cough, and 1 from diphtheria, nevertheless complete the whole record.

MEDICAL NEWS.

Body-snatching in Australia.—A Reuter telegram states that sensational allegations of body-snatching have been made at Adelaide, South Australia, and the matter has been mentioned in Parliament. It is suggested that a number of high medical officials are implicated.

The late Dr. Walter Reed.—It is proposed to commemorate by a memorial the important services in the investigation and the suppression of yellow fever rendered by the late Major Walter Reed, M.D., of the United States Army. Several Committees in different parts of the States have already been formed for the promotion of the scheme.

Cardiff Infirmary.—At the ordinary monthly meeting of the Cardiff Infirmary the reception was announced of a cheque for one thousand guineas for the endowment of a bed in the women's ward of the infirmary, to be called "The Rhondda Valley" bed. The cheque was forwarded by Mrs. Williams of Miskin, and was understood to have been collected in equal thirds by Mrs. Williams, Mr. Jenkins, and Mr. Watts Morgan.

Sanitary Congress in Italy.—A national sanitary congress is to be held at Milan in 1905, on the occasion of the exhibition which is now being organized. The work of the Congress will be divided among the following sections: Sanitary Assistance; Public Hygiene; Clinico-Scientific and Therapeutic; Medical Jurisprudence and Accidents to Workmen; Professional Interests.

The Society for the Study of Disease in Children.—The following were elected officers and members of the Council for the session of 1903-1904, at the annual general meeting held on July 23rd: Council: J. Ford Anderson, M.D.; Charles W. Chapman, M.D.; Henry J. Curtis, B.S.; Herbert L. Carre-Smith; Clinton T. Dent, M.C.; Charles N. Gwynne, M.Ch. (Sheffield); Edmund Hobhouse, M.D. (Brighton); Henry R. Hutton, M.B. (Manchester); Robert Hutchison, M.D.; Francis Jaffrey; Charles John Macalister, M.D. (Liverpool); Alexander Morison, M.D.; Robert H. Parry (Glasgow); J. Porter Parkinson, M.D.; George Pernet; Henry Betham Robinson, M.S.; Sidney Stephenson, C.M.; Sidney B. Smyth, M.B. (Belfast); Harold J. Stiles, C.M. (Edinburgh); Frederick Taylor, M.D.; James Taylor, M.D.; J. W. Thomson Walker, C.M.; Richard H. A. Whitelocke, C.M. (Oxford); Alfred W. Wills, M.D. Honorary Treasurer: R. Clement Lucas, B.S. Honorary Secretaries: George Carpenter, M.D.; Theodore Fisher, M.D. (Bristol); George A. Sutherland, M.D.

Sanitation in Manila.—The reports of the medical officers of the United States army serving in the Philippines show a steady decrease in the death-rate of the city of Manila as a result of the work of the medical service. The death-rate of Manila for the first quarter of the last four years has decreased steadily from 46.80 per 1,000 of the population for the first quarter of 1900 to 22.7 for the first quarter of 1903. It must be remembered that Asiatic cholera and bubonic plague had previously gained a foothold in the islands, and that the existence of a large unvaccinated population in the provinces meant a constant introduction into the city of the infection of small-pox. Cases of plague, cholera, and small-pox have occurred in Manila during the present year, but the precautions taken by the Board of Health have prevented the outbreak of any epidemic. "The sanitary results obtained in the last four years through American control have been accomplished," says Dr. Munson, "despite the naturally insalubrious location of Manila, and its total lack of sanitation under the former sovereignty, which from the level site interfering with drainage, the many foul canals ramifying through the city, the absence of any sewerage system, and the existence of an impure and insufficient water supply, and many old unhealthful habitations, have created sanitary problems of the greatest difficulty. The Board of Health, therefore, has been unable to turn previously existing methods and conditions to sanitary advantage, and has found it necessary not only to develop entirely new plans of improvement, but at the same time to combat the results of conditions inherited from the Spanish administration. The mixed character of the inhabitants, with their prejudices, superstitions, and largely primitive habits of life, has also been a constant obstacle in sanitary work."

Yellow Fever in Havana.—Dr. Barnet, the Acting Chief of the Sanitary Department, announces that only three cases of yellow fever have entered Havana harbour this year. Of the three fever-stricken persons, all of whom came from Mexican ports, one died and another was discharged as cured.

The Hop-picking Mission Committee.—The object of this Committee is to deal with the social and medical needs of the army of hop-pickers which annually invades Kent during the hop season, some thirty or forty thousand strong. Among them are numbers of women and children, and as the army is recruited from the poorest parts of London, there is naturally at times a good deal of sickness among them. To meet this the committee divides the hop district into divisions and establishes at each centre a trained nurse who acts as a district nurse during the season. Besides this, coffee stalls and open reading rooms are fitted up and everything possible is done to raise the standard of life, physical and moral in these temporary camps. Five pounds pays the out-of-pocket expenses of a nurse or other worker, since no salaries are paid to any one, free service being given by all. The Secretary and Treasurer is the Rev. Francis Oliphant, Teston Rectory, Maidstone.

MEDICAL VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BIRKENHEAD AND WIRRALL CHILDREN'S HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Resident Surgical Officer. Salary, £100 per annum.

BULAWAYO MEMORIAL HOSPITAL.—Resident Surgeon, Salary, £500 per annum.

BURY INFIRMARY.—Junior House-Surgeon, resident. Salary, £90 per annum.

CAMBRIDGE LUNATIC ASYLUM.—Second Assistant Medical Officer, resident. Salary, £120 per annum.

CANCER HOSPITAL, Fulham Road, S.W.—House-Surgeon, resident. Salary, £7 per annum.

CANTERBURY: KENT AND CANTERBURY HOSPITAL.—House-Physician, resident. Salary, £90 per annum.

CHORLEY: RAWCLIFFE HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

CROYDON INFIRMARY.—Resident Medical Superintendent and Dispenser. Salary, £130 per annum.

DOUGLAS: NOBLE'S ISLE OF MAN GENERAL HOSPITAL.—Resident House-Surgeon. Salary, £82 per annum.

GLOUCESTER GENERAL INFIRMARY.—Assistant House-Surgeon, resident. Appointment for six months. Salary at the rate of £90 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Honorary Radiographer.

HULL CITY AND COUNTY LUNATIC ASYLUM.—Second Assistant Medical Officer, resident. Salary, £150 per annum.

LEITH HOSPITAL.—House-Physician, Assistant House-Physician. House-Surgeon, Assistant House-Surgeon, Surgeon for Outdoor Department. Appointments for six months.

LIVERPOOL INFIRMARY FOR CHILDREN.—House-Surgeon, resident. Salary, £100 per annum.

MANCHESTER CHILDREN'S HOSPITAL.—Junior Resident Medical Officer. Appointment for six months. Salary at the rate of £80 per annum.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon. Appointment for six months. Salary at the rate of £70 per annum.

STAFFORD: STAFFORDSHIRE GENERAL INFIRMARY.—(1) House-Surgeon, resident. Salary, £120 per annum. (2) Assistant House-Surgeon, resident. Salary, £80 per annum.

WAKEFIELD: CLAYTON HOSPITAL AND WAKEFIELD GENERAL DISPENSARY.—Junior House-Surgeon, resident. Salary, £80 per annum.

MEDICAL APPOINTMENTS.

MacCORMAC, Henry, M.B., Ch.B.Edin., House Physician to the City of London Hospital for Diseases of the Chest, Victoria Park, E.

MUNRO, Hugh Lennox, M.B., Ch.B.Edin., House Surgeon, Royal Infirmary, Lancaster.

PHILLIPS, Llewellyn, M.D., B.C., M.R.C.P., F.R.C.S., Professor of Clinical Medicine in the School of Medicine at Cairo, and Second Physician to Kasr el Ainy Hospital.

THOMPSON, Joseph Henry, M.B., Ch., B.A.O., R.U.I., Junior Assistant House-Surgeon to the Stockport Infirmary.

DIARY FOR NEXT WEEK.

POST-GRADUATE COURSES AND LECTURES.

Post-Graduate College, West London Hospital, Hammersmith Road, W.—Lectures will be delivered as follows: Monday, 3.30 p.m., Medical Cases (Medical Wards); Tuesday, 5 p.m., Electro-Therapeutics; Wednesday, 4 p.m., Surgical Cases (Surgical Wards); Thursday, 5 p.m., Tobacco Amblyopia; Friday, 5 p.m., The Selection of Anaesthetics, General and Local.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 8s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

ADAMS.—August 5th, at 135, Woodbridge Road, Ipswich, the wife of Frank Adams, Surgeon, of a son (Frank Webster).

GAMGEE.—On the 12th Aug., at 28, Rotton Park Road, Edgbaston, Birmingham, the wife of Leonard Gamgee, F.R.C.S., of a son.

HAY.—At Nelson Cottage, Lynmouth, on Tuesday, August 11th, the wife of M. B. Hay, M.R.C.S., L.R.C.P., of a daughter.

MARTINEAU.—On the 15th August, at 8, Eaton Road, Hove, Brighton, the wife of Alfred John Martineau of a son. (Indian papers please copy.)

MURRAY.—On the 16th instant, at Apsley, Stockport, the wife of Robert A. Murray, M.D., of a daughter.

MARRIAGE.

OLVER—SQUIRE.—On August 13th, R. S. Olver, M.R.C.V.S., L.R.C.P., of St. Austell, to Georgina R. W., daughter of Mr Lovell Squire, of St. Austell.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aetiology, London*. The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

R. C. F. would like to know what is the best form of disinfector for disinfecting clothing in a small union workhouse.

HAKIM will be obliged if any of our military readers can advise (1) as to the best books to read for the "lower standard" examination in Hindustani; (2) as to the scope of the examination; (3) whether one is expected to be able to write in both the Urdu and Nagiri characters; and (4) the gratuity allowed on passing the examination.

PRACTICE IN CALIFORNIA.

M.R.C.S.E., L.S.A.LOND. writes: I have been advised that California, particularly in regard to San Francisco and Los Angeles, offers an excellent field for the man with British qualifications. Information from any of your readers possessing knowledge or experience of the State would be of value, perhaps, to more than myself.

EXTENSION FOR FINGERS AFTER BURNS.

DR. C. STENNETT REDMOND (Manchester) writes: I have under treatment a child aged 3 years, who sustained a very severe burn of palm of right hand and anterior surface of four fingers. Cicatricial contraction threatens, which I am combating by a dorsal splint, padded, double thickness, to the end of the metacarpus, and the fingers hyper-extended and fixed down by rubber plaster, so far with success; but, as a splint cannot be kept on for ever, it has occurred to me that a glove could be made having whalebone splints fixed on the back of the glove, and extending to the end of each finger, to be worn at night, and the fingers kept hyper-extended, while left free during the day. As the idea may not be original, I shall be much obliged to any fellow member who can inform me whether such an appliance has been suggested previously, and, if so, with what result, and where it can be had.

MOTORS.

EQUUS asks to be recommended a book which explains to a novice the mysteries of the motor car. He proposes soon buying a car, but before purchasing he wants to know as much as possible about the mechanism.

MOTOR has for several years carefully watched the motor movement, and has been the owner of a tricycle and bicycle as well as the user of a low-powered Benz car. He recently had a long ride in a modern high-powered petrol car, which was fairly satisfactory, but he considers that only steam cars such as the American locomobile are within reach of the pockets of most medical men in the country. They seem out of fashion just now, and the objections urged are the frequent necessity of filling the water tank, which for a country round of ten to twenty miles is of no account; the wastefulness of petrol, which to one who has to keep one or more horses is also immaterial, and the weak construction making repairs frequent. On the other hand it appears to "Motor," after his experience with petrol cars, that a steam car could be more easily understood and managed by a gardener, that the time required in getting up steam is more than counterbalanced by the absolute quietness during stoppages, and that a car without noise and smell is less likely to be a source of annoyance to one's patients. These cars can now be bought at the price of a horse and cart, and "Motor" thinks the experiences of others might be useful to brother practitioners as well as himself. He also believes that steam cars are not so capricious as those driven by petrol, and that a breakdown is more likely to be the result of wear and a matter of replacement, whereas petrol cars give trouble with short circuits, low temperatures, etc. The chief drawbacks to the modern efficient petrol car are its smell, vibration, the shocks on changing gear, dust, and difficulty in getting underneath the engine, as also the necessity for a professional chauffeur.

ANSWERS.

INHALER.—If our correspondent will write direct to Professor Carlo Ruata, University of Perugia, Italy, we have no doubt he will obtain the information which he requires.

TREATMENT OF CHRONIC PROSTATITIS.

MR. T. FAGGE (Llanfairfechan, North Wales) writes: I think "Prostate" (whose query appeared in the BRITISH MEDICAL JOURNAL of August 8th, page 348) will find the patient's urine very acid, and would suggest citrate of lithia with mag. sulph. as a gentle aperient. Other alkalies may be given if required. Also belladonna with glycerine as a suppository, and draughts of cold water to keep the urine less acid. The specific gravity of the urine is probably high.

THE WATER OF VIENNA.

DR. JOHN PATRICK (Dennistoun, Glasgow) writes: I am glad to be in a position to answer the query of "J. C." in the BRITISH MEDICAL JOURNAL of August 15th, page 395. The Vienna water is excellent, and perfectly safe to drink; it is rather hard, but has a very pleasant flavour. The water supply is abundant; it is brought from the Schneeberg, a very high snow-capped mountain 20 miles from the city. My knowledge is derived from a winter spent there six years ago, when it happened that the small colony of Scotch doctors was almost entirely a teetotal party, to whom the quality of the water was important.

THE F.R.C.S.EDIN. EXAMINATION.

THALASSA.—Our correspondent would probably find the following books sufficient for his requirements:—In surgical anatomy: Article on Surgical Anatomy in *Quain's Anatomy*, Appendix, tenth edition (London: Longmans, Green, and Co., 1896, 6s. 6d.); and Anatomy in its Surgical Aspect, as found in *Gray's Anatomy*, fourteenth edition, edited by T. Pickering Pick (London: Longmans, Green, and Co., 1897, 36s.); or Cunningham's *Anatomy*, second edition (Edinburgh and London: Young J. Pentland, 1896, 25s.). In public health: *The Theory and Practice of Hygiene*, by Notter and Firth (London: J. and A. Churchill, 1896, 24s.); *Practical Sanitation*, by G. Reid, fifth edition (London: B. Griffin and Co., 1899, 6s.); *The Elements of Vital Statistics*, by A. Newsholme, third edition (London: Swan Sonnenschein and Co., 1899.).

DANGERS OF THYROID FEEDING.

H. R.—(1) The administration of thyroid preparations in unsuitable cases or in excess is liable to be attended with tremor, nervous excitability, even reaching the condition of mania and tachycardia. Alarming and even dangerous attacks of heart failure may supervene; this has been noted particularly in the case of obese subjects who have taken thyroid tabloids upon their own initiative and without medical advice. It will be remembered that Mr. Walter Edmunds has succeeded in producing all the symptoms of exophthalmic goitre in lower animals by the use of thyroid extract.

(2) The common spurge is known as "wartweed" in certain localities, particularly in the Fen District, and the expressed juice is applied to warts and also given internally. Its stimulant qualities are much less than those of chelidonium (celandine) or thuja (arbor vitæ), which are much more commonly employed for the purpose. Warts have a remarkable faculty for disappearing, even when "charmed," and in our correspondent's case may have vanished *proprio motu*.

NOTES, LETTERS, Etc.

ST. FRANCIS HOSPITAL FOR INFANTS.

MELLIN'S FOOD, LIMITED, write: In reference to Dr. Ralph Vincent's (Harley Street, W.) letter published in the last issue of your valuable JOURNAL, we should be obliged if you would allow us a few lines of your space in which to emphatically disclaim any wish to imply a connexion between the hospital in question and our preparation. We should equally regret, with Dr. Ralph Vincent, any misconception on this point, and should be obliged if you would allow us the opportunity of guarding against the same by inserting this in your columns.

THE FEBRILE CONDITION AFTER LABOUR.

DR. M. KNOX SOUTTER (Highbury, N.) writes: The practice of douching with an antiseptic fluid after labour I always find useful, not only as a protective against autoinfection, and infection from without when properly applied, but as being extremely refreshing to the patient. It is, however, extremely necessary, when it is not done by oneself, to see what syringe or douche can is used for the purpose. It is an extremely common practice for the nurse to use her own syringe, or one borrowed from a friend of the patient, or an old one used by the patient on a previous occasion. This is dangerous, as infection may be conveyed in this manner from another individual, or from the infected condition of the syringe itself. One case of puerperal fever I had was traceable to a syringe loaned from a relative in the country who had used it for enemas when suffering from an illness. This is the point I wish particularly to impress: the extreme danger of using the same syringe (the ordinary Higginson) for the purpose, both of giving enemata and douching. It is extremely common, even among uniformed nurses. The construction of the syringe in itself, with its rectal and vaginal pipes, the latter fitting over the former, lends itself to the almost natural mistake of using it for both purposes. It is also often noticeable in these syringes that the solution being used is sucked backwards into the syringe, and so when used for enemata its interior is soiled. The bone nozzle must necessarily become soiled, and only boiling could possibly clean it from rectal contamination. During the douching period the syringe should be kept in an antiseptic solution always. A new syringe should be insisted upon for each confinement, and the nurse impressed not to use it for giving enemata. Another point I have noticed several times with regard to the substance used for douching. In several cases where I was using perchloride of mercury solution, feverish symptoms occurred, which I felt sure were neither due to a contaminated syringe nor autoinfection, and the symptoms immediately abated upon discontinuing the perchloride.

CIRCUMCISION.

DR. R. E. FOOTT (Wood Green, N.) writes: There are a few points in favour of circumcision being done in babyhood, which I have not seen pointed out in the BRITISH MEDICAL JOURNAL. When the boy is 2 or 3 years old inflammation is often set up from smegma getting pent up, and then it is a bigger and more serious operation for him to undergo. Again, when he is old enough to go to school, he is not so likely to contract the habit of masturbation if this operation has been done. When a surgeon in the army I had to inspect soldiers for gonorrhœa and syphilis, and was much impressed by the length of their prepuces, and the filth collected under them. In some cases I had to send them away to wash before anything could be seen. This state of affairs no doubt assists in the absorption of syphilitic virus, and very likely the reason why a hard sore is generally on or near the corona glandis. If the glans is always uncovered it is not so sensitive, it is cleaner, and no smegma or other dirt can collect to cause irritation.

APPENDICITIS: A SUGGESTED REASON FOR ITS INCREASE.

DR. H. TEMPLE MURSELL (Johanesburg) writes: The short note in the BRITISH MEDICAL JOURNAL of June 27th bearing the above title, by Mr. J. Kellett Smith, F.R.C.S., is most suggestive and interesting. The frequent occurrence of appendicitis here in Johannesburg is one of the local medical facts that strike the newcomer most forcibly. I am unable at the present time to obtain any statistics upon the point, but there is not the slightest doubt that the incidence of appendicitis in proportion to the population is far greater here than at home. The type of case, too, is as a rule more virulent, is frequently fulminating, and imperatively demands surgical intervention more often than in England. When one bears in mind the fact that practically the whole population here exists upon frozen meat or upon tinned meat, Mr. Kellett Smith's suggestion that this is a most important cause of appendicitis receives considerable support. Undoubtedly in this town for some reason or other fermentative processes in the intestine of a pathological character are of very common occurrence, manifesting themselves by diarrhœa and flatulent distension, and can hardly fail to have considerable influence upon the incidence of appendicitis, and upon the virulence of the type that one so commonly observes.

D.P.H. EXAMINATION OF THE CONJOINT BOARD.

M.R.C.S., L.R.C.P.Lond., D.P.H., writes: As a recent successful candidate for the Diploma of Public Health granted by the English Conjoint Board, it may be of some service to "Rural Sanitary Authority" if I may be allowed to point out to him that mere book knowledge, however conscientiously acquired, is by itself not sufficient to satisfy the examiners at either the London or the Cambridge Boards. If your correspondent attaches himself to a good public health laboratory either in London or in one of the larger provincial centres, or works for some time under a medical officer of health who devotes himself entirely to his duties, he will find no difficulty in satisfying the examiners, who are eminently fair and conscientious in the discharge of their duties. I have always found that men who steadily work in a school which lays itself out for the preparation of public health candidates are usually successful at the London or Cambridge Public Health Examination, while others who read in the country without such guidance are frequently unfortunate at the Examining Boards.

LETTERS, COMMUNICATIONS, ETC., have been received from:
A Dr. R. O. Adamson, Glasgow; Mr. A. Athinson, London. **B** Birk; Dr. E. R. Bowen, Bargoed; Messrs. Burroughs, Wellcome, and Co., London; Mr. L. A. Bidwell, London; Mr. G. Burchett, London; Dr. F. Bushnell, Plymouth; Mr. E. J. Burrow, Cheltenham. **C** Mr. A. S. Cooke, Stroud; Mr. A. Clark, Ballachulish; Mr. J. T. Clarke, Perak; Dr. G. Carpenter, London; Mr. H. B. Carlyll, Cambridge; Dr. J. S. Cameron, Leeds; Sir C. A. Cameron, C.B., Dublin; Dr. L. Cole-Baker, Southsea. **D** G. F. Da Costa, M.B., Kingston, W.I.; Mr. H. P. Dunn, Londo n, Mr. W. Drinkwater, Bicester; Disgusted: Mr. J. R. U. Dewar, Edinburgh; Diplomate in Public Health. **E** Ethics; Equus. **F** Dr. R. E. Foott, London; Mr. F. T. Farge, Llanfairfechan. **G** G. P.; G. H. **H** Dr. S. P. Huggins, London; S. Hodgson, M.B., London; J. Hamilton, M.B., Glasgow; Dr. W. H. Hawkes, London. **J** J. E. H. D; B. B. Joll, M.B., London; Dr. R. Jones, Sandown, I. of W.; J. M. D.; Mr. F. S. Jackson, Aberdovey. **K** Dr. C. F. Knight, Portobello. **L** Mr. J. Lorimer, London; Dr. H. C. Lawrence, Cheltenham; Dr. J. M. Lawrie, Weymouth; Mr. W. F. Letts, London. **M** Motor; Dr. G. H. Masson, Port of Spain; Dr. J. E. Milne, Aberdeen; A. S. Mellor, M.B., London; Mr. D. H. Mehta, Baroda; Dr. N. E. Mackay, Halifax; J. D. Malcolm, M.B., London; M.R.C.S.E., L.S.A.Lond.; Mr. A. B. Molland, London; Married Major; M.R.C.S., D.P.H., L.R.C.P.Lond.; Mr. J. Meldrum, Bridge of Weir; Dr. P. McBride, Parkhill; Mr. B. Matthews, London; Medicus. **N** Dr. J. T. Necch, Halifax; J. H. Nicoll, M.B., Glasgow. **P** R. Parker, M.B., Liverpool; H. R. Phillips, M.B., Penzance; Miss K. Penn, Scorrier; J. Patrick, M.B., Glasgow. **Q** Mr. R. H. Quine, Manchester. **R** Mr. E. A. Roberts, London; Mr. C. S. Redmond, Manchester; Dr. F. T. Roberts, Musselburgh; R. C. T.; Reader; Dr. J. Reid, London. **S** Surgeon; Mr. M. K. Soutter, London; Scrutator; Mr. E. S. Smith, London; Mr. N. E. Sargant, London; Mr. A. P. Stinson, London; Sane and Insane; Sigma. **T** Mr. H. H. Tidswell, New Brighton; Temperantia in Omnibus Rebus; Thalassa. **W** W. S.; Dr. J. R. Williamson, Miraj; Mr. J. W. Wood, Spalding; Mr. S. W. Wilson, Wolverhampton. **X** X Rays.

BOOKS, Etc., RECEIVED.

The Midwives Act, 1902, and the Teaching of Midwifery to Students of Medicine. By W. J. Sinclair, M.A., M.D. Manchester and London: Sherratt and Hughes. 3d.

Handatlas der Anatomie des Menschen. Bearbeitet von W. Spalteholz. Dritter Band, 2 Abtheilung. Leipzig: S. Hirzel. 1903. M 13.

Tratamiento Curativo de la Tuberculosis Pulmonar. Por Dr. A. S. Herrero. Madrid: Administración en casa del Autor. 1903.

The Case for a Ministry of Health. By F. Scott, F.C.A. London and Manchester: John Heywood.

Practical Guide to Surgical Bandaging and Dressings. By W. J. Smith, F.R.C.S. London: The Scientific Press. 2s.

Progressive Medicine. Edited by H. A. Hare, M.D., assisted by H. R. M. Landis, M.D. Vol. ii. London: Rebman Ltd. 1903. 10s.

St. Kilda and its Birds. By J. Wiglesworth, M.D., F.R.C.P. Liverpool: C. Tinling and Co. 1903.

International Clinics. Edited by A. O. J. Kelly, A.M., M.D. Vol. ii. London: J. B. Lippincott Co. 1903.

Paton's List of Schools and Tutors. Sixth annual edition, 1903. London: J. and J. Paton. 1s. 6d.

*** In forwarding books the publishers are requested to state the selling price.

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SEVENTY-FIRST ANNUAL MEETING
OF THE

British Medical Association.

Held in Swansea, July 28th, 29th, 30th, and 31st 1903.

PROCEEDINGS OF SECTIONS.

SECTION OF DISEASES OF CHILDREN.

William Arbuthnot Lane, F.R.C.S., President.

DISCUSSION ON THE PATHOLOGY AND TREATMENT OF CHOREA.

I.—D. B. Lees, M.D., F.R.C.P.,

Senior Physician to the Hospital for Sick Children, Great Ormond Street; Physician to St. Mary's Hospital.

Dr. Lees said: Our subject to-day is the pathology and treatment of that common disease of childhood which is so inadequately and incorrectly described by the name "chorea." Inadequately, for there is much more than abnormal muscular movement in this malady. Incorrectly, for whatever else a choreic patient may do, there is a total absence of any rhythmic movement which might fairly be described as "dancing." It is most unfortunate that the name should wholly misrepresent the disease. Perhaps, when the pathology is completely understood, a better name may be invented. Meantime let us define our subject by excluding all varieties of hysteria, all forms of habit-spasm, and all irregularities of movement resulting from gross cerebral lesions, such as athetosis and "post-hemiplegic chorea." And in this section we neglect the rarer chorea of adults and of old age, and concern ourselves only with the so-called "chorea" of childhood.

The most obvious fact in chorea is disorderly muscular movement, spasmodic, clonic, irregular, involuntary, with imperfect control and co-ordination. If we observe carefully the distribution of these involuntary movements, we find that it is precisely the muscles over which we have most voluntary power that are most affected in chorea—the muscles of the face, those of the tongue, and those of the hands and arms. These are the muscles which specially express emotion—by grimace, speech, and the movements of the hands and arms which naturally accompany eloquent or excited speech, especially in the more emotional races. It is precisely these muscles which are most affected in chorea; the face, tongue, and hands are much more implicated than the proximal parts of the upper limbs, the upper limbs more than the lower, and the lower limbs more than the muscles of the trunk.

Respiration, over which we have a real though limited control, is affected much more than the action of the heart, over which we have no voluntary power whatever. The heart's action may, indeed, be irregular in chorea, but it is much less so than the respiration, and the heart often works steadily enough while the breathing is quite irregular. Choreic movements are often more pronounced on one side of the body than on the other, and in slight cases they may be limited to the limbs of one side. Choreic movements cease when the patient falls asleep, and recur when he wakes.

These facts, taken together, indicate unmistakably a disorder of the brain, and specially of the motor centres. In the Rolandic area of the cortex much space is allotted to the movements which are specially under voluntary direction and control—to the face, hand, and arm—less to the lower limbs in proportion to their size, and comparatively little to the muscles of the back and of the abdomen. The relative affection of the different muscular movements in chorea corresponds to the cortex arrangement.

It is clear that in chorea these centres are in an abnormally excited state, for if you ask a choreic child a question, its hands will often reply before its mouth. Place the child at rest, with its arms and hands outstretched on the bed, and wait for a quiet interval when the choreic movements have ceased, or are at all events much diminished. Then ask the child a question, however simple, its name, or the number and names of its brothers and sisters. Usually the choreic movements recur at once in the hands, often before the reply is uttered, or if they have not previously ceased, they become very rapidly much more violent. It seems that the outgoing impulse to the speech centre finds the adjoining centres of the motor area abnormally excitable, and overflows into them. Sometimes the choreic movements follow so quickly after the question that it almost seems as if the ingoing auditory impulse had reached them directly.

Similarly, if the child squeezes an object firmly with one hand the other hand usually becomes more decidedly choreic. In a case of hemichorea, a strong squeeze with the unaffected hand brings out additional movements in the choreic hand, while a squeeze with the affected hand produces little or no effect on the other. This seems to indicate clearly that the hand centre in the cortex on the one side is more excitable than that on the other.

The motor centres are not only irritable, they are also weak. This weakness may be obvious from the first, but it is apt to become greater as the irritability subsides. The grasp is feeble, and the weakness of the whole upper limb may be so great as to deserve the name of paresis. When the hands and arms are outstretched, the child standing or sitting, there is usually a slight flexion of the wrist, apparently due to loss of tone of the special extensors,* and the voluntary extensor effort of the common extensor of the fingers slightly overextends the first phalanges. It may be impossible for the patient to walk, to stand, to rise from the recumbent position, almost impossible even for him to lift one leg over the other.

In a severe case the weakness of the tongue and lips is great, so that feeding is difficult, and speech becomes too great an effort. The laryngeal muscles may share in this weakness. But often there seems to be something more than mere weakness of the muscular mechanisms involved in speech, for, though these muscles are never completely paralysed in chorea, speech may be altogether lost for weeks or even for months. I have seen several cases in which speech was impossible for six or eight weeks, and one case in which it was absent for eight months. This child made at last a complete recovery, and she was subsequently in the same ward for another but slighter attack of chorea, in which her speech was not impaired. In such cases it is impossible to resist the belief that the motor speech centre is itself affected. Thus we have an indication that the muscular movements and weakness are not the only evidence of a disorder of the brain in chorea. This inference is often confirmed by the very first attempt at conversation with a choreic child, for even the most kindly question will sometimes provoke an emotional storm. The child begins to cry without any obvious cause; this may pass away quickly, or the crying may become violent. When it has ceased he cannot tell you why he cried, and he will sometimes acknowledge that there was nothing to cry for. Such attacks may be accompanied by great excitement, and even by hallucinations of vision; they then fairly deserve to be called maniacal. In the absence of emotional attacks there is often a listless vacant look on the face of a choreic child which in health was alert and intelligent. This may be due in part to weakness and loss of tone of the facial muscles of expression, but it is probably also the result of a mental dullness caused by the disease; for mental dullness and loss of memory are often obvious enough. The answers to the very simplest questions in mental arithmetic are often absurdly wrong; and when the child is asked to repeat the alphabet, one or two letters are frequently omitted. Alterations, also, in temper and disposition are often complained of by the mothers.

Whether there is impairment of the sensory activities of the brain, general or special, it is difficult to say. Choreic children are not often definitely hyperaesthetic, and marked anaesthesia is not a symptom of chorea, though it may occur in older children who are also hysterical. Possibly there is sometimes a general lowering of sensibility.

Thus it is clear that in chorea much more than the Rolandic area of the cortex is affected, and it is probable that the whole brain suffers more or less. Is the cord affected also? If so, its affection is overshadowed by that of the brain, as in tuberculous meningitis. But one phenomenon is observed which may indicate an extra irritability of the spinal ganglion cells—an increase in the briskness of the

* Dr. Beevor showed, in the Croonian Lectures of this year, that no obvious contraction of the extensors of the wrist can be detected until the extensor of the fingers has to overcome a resistance of at least 3 lb., but the choreic hand seems to indicate a loss of at least a normal tonus.

knee-jerks and a tendency to a prolonged extension of the knee when the patellar tendon is struck. Possibly also the atonic condition of the wrist extensors may be of spinal origin.

Are the peripheral nerves affected? Choreic children sometimes complain of flying pains in the limbs, away from the joints, which may possibly be neuritic. In some cases of chorea the knee-jerks cannot be obtained, though it is not certain that this is really a symptom of the disease, or how, if a symptom, it is produced. And the occasional occurrence of slight optic neuritis, mentioned by Sir William Gowers, must also be remembered. It may be added that choreic children often suffer from constipation; the cause of this is uncertain.

In chorea, then, there seems to be a disorder of the whole cerebral cortex, probably of the whole brain, possibly of the nervous system in general, sufficient to produce very definite symptoms, and often lasting for a long time. Yet the disorder is not a destructive one: it usually ends in complete recovery. The pathological changes are, therefore, if organic, of slight intensity, and it seems probable that the morbid state may be largely due to a toxaemia. Yet the fact that the symptoms may be very definitely localized suggests that the cause cannot be simply a toxaemia; there must be something focal as well. The changes found *post mortem* in the brains of the few cases which end fatally have been mainly confined to the vascular system—hyperaemia, dilatation of vessels, perivascular leucocytes, thromboses, and slight haemorrhages. Alterations in the nerve cells have also been found by several observers. A recent investigation of two fatal cases by modern histological methods by Dr. Reichardt of Chemnitz[1] showed small haemorrhages, irregularly scattered, with collections of leucocytes, chiefly mononuclear, and dilatation of vessels, with perivascular small-celled infiltration, in many parts of the brain, in varying amount. No changes were detected in the ganglion cells, but there were areas of fatty degeneration of nerve fibres: in the spinal cord the parts most affected were the root fibres and the anterior and lateral horns, and the posterior columns—the anterior and lateral tracts were free. Cultures from the fluid of the cerebral ventricles of the first case gave no result, but "staphylococcus aureus" was obtained from the heart blood. In the second case there were "streptococci" in the cardiac valves, and a few colonies of "staphylococcus albus" were obtained from the brain.

If we look for clinical evidence of a morbid blood-state in chorea, we find that it is frequently accompanied by manifestations of the toxaemia which we call "rheumatism." Any of the ordinary rheumatic phenomena in a child may accompany chorea—tonsillitis, arthritis, erythema, nodules, cardiac dilatation, endocarditis, pericarditis, pleurisy. The most frequent of these is cardiac dilatation, for in chorea, as in rheumatism, the left ventricle is almost always too large, the left border of the heart extending beyond the left nipple line, often as much as one finger-breadth, and the first sound being feeble. The next commonest is a systolic apex murmur: whether this is always due to valvulitis is uncertain, but in many cases it is so undoubtedly. In almost all fatal cases of chorea recent vegetations are found on the mitral valve. A fairly frequent evidence of rheumatism is the rheumatic nodule, single or multiple. The neighbourhood of the various joints, also the tendons of the hands and feet, the occiput, and the vertebral spinous processes ought to be carefully examined for nodules in all cases of chorea. The other manifestations of rheumatism must also be borne in mind, and special care should be taken not to overlook a pericardial rub.

With regard to the relations of rheumatism and chorea, I may repeat what I wrote in my article on rheumatism in Allchin's *Manual of Medicine*: "The relationship between the two affections needs further elucidation, but the more carefully they are studied the more intimate it is found to be. Choreic symptoms of slight intensity are common in children suffering from acute or subacute rheumatism; and when there is no definite chorea there may sometimes be seen the tendency to emotional disturbance the causeless and transient fits of crying which are so often observed in chorea. The onset of a severe chorea frequently follows two or three weeks after the occurrence of symptoms which, though slight, were definitely rheumatic. During an attack of chorea undoubted symptoms of rheumatism may manifest themselves. Many cases of chorea which have apparently at the time no connexion with rheumatism suffer from an attack of that disease a year or two later. After making allowance for possible coincidences, the conclusion is irresistible that there is some very close connexion between the two diseases, and that in many cases chorea must be looked upon as a definitely rheumatic symptom."

I draw special attention to the fact that chorea is often the first of a series of rheumatic attacks. If this be ignored, and the relationship of the two diseases be based simply on the precedence of rheumatism, the connexion of the two will inevitably be understated. It occurred to me that it would be worth while to investigate carefully the amount of subsequent rheumatism occurring within a few years after an attack of chorea in children who had had no rheumatism previously. Dr. Batten was good enough to investigate this point in the out-patient department of the Hospital for Sick Children.[2]

He found in 115 cases of chorea that whereas the percentage of previous rheumatism was stated to be only 32.2 per cent., three years later so many of them had subsequently suffered from rheumatism that the percentage rose to 43.5, and three years later still it had risen to 53.2, so that the lapse of six years had increased the percentage by 21 per cent. And this is below the truth, for after the lapse of six years as many as 38 of the 115 children could not be investigated. If the same proportion of these missing ones had become rheumatic, the percentage would be increased, not by 21, but by 28 per cent. This added to the cases of "previous" rheumatism would give a total percentage of 60 per cent.

And even these figures are probably too low. When we remember that pain and swelling of joints, which alone constitute the ordinary idea of "rheumatism," are slight and infrequent in the rheumatism of childhood, and that its sole and yet conclusive manifestation may be a subcutaneous nodule, or a small patch of erythema, or a dilated heart with a soft mitral murmur, one sees that statistics which are to represent fairly the relation between the two diseases must be made with the greatest care. All the points mentioned by Dr. Cheadle in his Harveian lectures must be borne in mind. For these reasons many published statistics on the connexion of chorea with rheumatism greatly understate the facts.

The clinical evidence is in reality very strong, and we turn with interest to the excellent work of Drs. Poynton and Paine on the bacteriology of rheumatism to learn whether they can throw light on the pathology of chorea. I need not remind you that these observers, by a series of investigations, have isolated from the tissues in cases of fatal rheumatism, and also from the blood of rheumatic patients during life, a diplococcus which they have been able to cultivate, and which when injected intravenously into rabbits has produced in them all the symptoms of a violent rheumatism in a child, and that a recent subcutaneous rheumatic nodule, excised with aseptic precautions two hours after death, at once immersed in a suitable medium and cultivated for forty-eight hours in an incubator, was found to contain an exuberant growth of this organism without the presence of any other. In my judgement these results are decisive.

Accepting then the fact as now demonstrated that rheumatism is a disease caused by a diplococcus, and remembering its close clinical connexion with chorea, we ask with interest whether this diplococcus is also responsible for the production of chorea. The evidence on this point is as yet scanty, but it is extremely suggestive. One of the rabbits injected with a culture of this diplococcus obtained by incubating pericardial fluid from a fatal case of rheumatism, developed symptoms remarkably resembling chorea in a child—clonic, irregular, involuntary, spasmodic, muscular movements, especially of the forelimbs and of the face, with a condition of "nervousness" such that it started at any sudden noise. This rabbit was killed, and diplococci were found in the lymphatic sheath of the vessels in the pia mater and in the endothelial cells of the blood capillaries penetrating the cortex of the brain.

A second fact is this. Dr. Poynton cut sections of the brain of a fatal case of chorea which had been preserved for three years, and found diplococci in the cortex itself, also in profusion in the mitral valve. These, however, were not cultivated, so that it is not proved that these were the rheumatic diplococci. Yet if we take these two facts together, and remember that Dana, Apert, Wassermann, and others have isolated a diplococcus from the brain in fatal cases of chorea, it becomes more than probable that before long the demonstration will be made complete. Fatal cases of chorea are happily uncommon, and it will require some time before the point can be proved.

[1] *Deutsches Archiv für klinische Medicin*, 1902, p. 504. For this reference I am indebted to my colleague, Dr. Batten.

[2] *Lancet*, 1895, ii, p. 1195.

But if it has been shown that these diplococci are almost always found in the heart in fatal cases of rheumatism, and if they have actually been found in the blood during life, it seems certain that they must often reach the cerebral circulation. If their presence in the pial vessels and the cortex is the cause of chorea, we must look upon this disease as a microbic invasion of the brain, as in tuberculous meningitis. Why the result is so different in these two diseases must depend upon a difference in the virulence of the microbe, and the different measure of resistance on the part of the phagocytes and other defensive mechanisms. In this respect some recent observations by Drs. Poynton and Paine are of interest. They found that in the arthritis of rheumatism the fluid effusion is usually sterile; that the diplococci are present in the synovial membrane of the inflamed rheumatic joint, but that they are there seized upon by the phagocytic cells, and that the diplococci contained in these cells are so much devitalised that they can no longer be cultivated.

Why the rheumatic diplococci should cause chorea in children and not in adults; why some rheumatic children should become choreic and others not; and why girls should be choreic three times as frequently as boys, must depend upon differences of individual power of resistance. Even if the actual presence of the micro-organisms cannot be demonstrated in the cerebral blood vessels and membranes in fatal cases of chorea, it is still possible that the "irritable weakness" of the cortical cells may be due to poisoning by their toxin, just as the toxin of the diphtheria bacillus selects certain parts of the central nervous system. If the toxin alone is the active agent the analogy would be with diphtheria; if the organisms themselves are present in the cerebral membranes the analogy would be with tuberculosis. A similar doubt exists with regard to the dilatation of the left ventricle caused by rheumatism—is it always due to the presence of the diplococci in the cardiac muscle, or may the toxin alone be sometimes effective? The decision of this question must be left to future research.

Are we then to say that chorea is "cerebral rheumatism"? Yes, if we add "in the great majority of cases." But we must not make the statement absolutely, for other microbes and other toxins may perhaps affect the cortical cells in the same way as the rheumatic diplococci and their toxin, just as the bacillus coli and the bacillus enteritidis of Gaertner may produce a continued fever resembling that caused by the typhoid bacillus; and, to say nothing of "senile chorea," the disease known as Huntingdon's chorea is found to be caused by multiple organic sclerotic changes in the cortex. It is even possible that the sudden emotional disturbance caused by fright may in some way disturb the nutrition of the cortical cells in a susceptible brain in a way similar to the altered nutrition caused by the rheumatic toxin. Sir William Gowers reminds us that throughout the animal kingdom the emotion of alarm has a direct effect on the motor centres essential to the safety of the animal alarmed. Cases of chorea really caused by fright in the absence of rheumatism are rare, but they probably exist; the difficulty is to prove the absence of rheumatism.

I desire then to maintain that every case of chorea, however mild, ought to be looked upon as presumably rheumatic. And when we remember the danger of untreated rheumatism in a child, and the heart disease which it so frequently causes, we see how great an injury one may do to a child by neglecting a slight chorea. Many a mitral stenosis in later life, with its distressful years and its premature death, might have been averted if the practitioner who attended the case of slight chorea in childhood had treated it vigorously as rheumatic.

If, then, in the majority of cases chorea means a brain infected with rheumatic diplococci, surely the treatment which cures rheumatism ought to cure chorea. Yet it is not the general experience that much has been effected in this way. May not this be because the doses given have been too small? If one wishes to cure a cerebral syphilis, large doses of iodide must be employed. Acting on this idea, I have lately given to cases of acute chorea large and frequent doses of sodium salicylate, to which invariably has been added twice the amount of sodium bicarbonate. This addition of alkali I think of great importance, from more than one point of view. In a considerable number of cases this treatment has produced a very rapid improvement. The plan is certainly deserving of further trial in acute chorea. Success seems to depend upon the amount given daily, a further improvement sometimes following each increase of the dose. That the improvement is not due merely to the rest in bed, nursing, and feeding has been proved in some cases by allowing three or four days to elapse before administering medicine. Some cases grow worse if left untreated, others improve slightly.

The dose of sodium salicylate for a child of 6 to 10 years should be at first 10 gr., with 20 gr. of sodium bicarbonate. After two or three days the quantities should be increased to 15 gr. and 30 gr. respectively. After two or three days more they may, if necessary, be increased to 20 gr. and 40 gr. These doses should be given every two hours during the day, and every three hours during the night, ten doses in the twenty-four hours. Thus the total amount of salicylate given at first is 100 gr. daily, increased to 150 gr., and finally to 200 gr.

A careful watch must, of course, be kept for any symptoms of salicylate poisoning, and especially for a peculiar deep inspiration simulating the "air-hunger" of diabetes. If this occurs the medicine must be immediately given up, for it is a sign of danger. It is, however, a rare phenomenon. There is some reason for thinking that it is really an acid poisoning. The similar air-hunger of commencing diabetic coma may sometimes be arrested by large and frequent doses of alkalies, and the only fatal case of salicylic air-hunger that has come under my own observation had taken the salicylate without any additional alkali. Air-hunger began to show itself in one case which I treated with aspirin instead of salicylate, without alkalies, and disappeared when the drug was omitted. It seems to me very important that each dose of salicylate should be accompanied by twice as much bicarbonate.

The unpleasant symptoms sometimes caused by salicylates in adults, the deafness and noises in the ears, the headache, the mental symptoms and delirium, are exceedingly rare in childhood. Occasionally vomiting is troublesome, but it may usually be overcome by suspending the treatment for a few hours and then beginning again with a smaller dose, which should be gradually increased. Pulse failure occurring during the employment of salicylates, both in children and in adults, is generally not due to the remedy, but is caused by an acute rheumatic dilatation of the left ventricle—a common, but usually overlooked, phenomenon in rheumatism. Careful observation of the position of the border of the left ventricle, as ascertained by accurate light percussion, should be made daily. As to any general "depression" from the salicylate, in children it is usually quite absent; indeed, it has been remarkable how much brighter and more lively the patients have become during the treatment. It should be added that the large doses of bicarbonate do not impair appetite or disturb digestion in rheumatic children, and that, in spite of them, the urine often remains acid for a considerable time. Albuminuria is not caused by the treatment above advised.

Every choreic child should, I think, be kept for a time completely at rest in bed, however mild the chorea may be. If there is much tendency to excitement, restlessness, or emotional attacks, complete isolation is very helpful. A cot with padded sides is necessary in severe cases, and the most careful and efficient nursing is essential. It may be needful to give in such cases hypnotic drugs, as chloralamide, chloral, or bromide, the first night or two, to secure sleep, but in many cases these can be avoided if large doses of salicylate and bicarbonate are used. The diet at first should be of milk only.

In acute cases this treatment is often very successful. The time at my disposal will not allow me to give details of cases, but I will briefly mention one as an illustration.

J. S., aged 7 years, was admitted into St. Mary's Hospital on July 3rd, suffering from general chorea of moderate severity. She was kept in bed for six days without any medicine. During this period her chorea became distinctly worse. On July 9th, the movements being more choreic than on her admission, 15-gr. doses of sodium salicylate with 30 of bicarbonate every two hours during the day and every three hours during the night were ordered; the total daily dose being 150 gr. of the salicylate and 300 of the bicarbonate. This treatment was continued for six days. Some vomiting was caused by this abrupt introduction of very large amounts of salicylate, and three or four doses were omitted in consequence. On July 15th, after six days of this treatment, the inspiration seemed to be abnormally deep, and the salicylate was stopped entirely, while the bicarbonate was continued. But already the choreic movements had very much diminished. On July 18th hardly any could be seen, and on July 22nd the child was perfectly quiet, except that there were very slight movements in the fingers when she was spoken to.

It is usually advisable to begin the treatment with smaller doses, which often cause no vomiting at all, but in this case a large initial dose was purposely employed, as a test, and the result was most remarkable.

I could give other cases almost as striking as this, and now feel confident that this is the most successful treatment for acute chorea.

In chronic cases one would not be surprised if the effect of this (or any other) treatment is less certain, for even though the microbes may be destroyed and their toxin neutralized, the cortical cells may possibly remain for some time in a condition of irritable weakness. It is not always possible at once to get rid of an effect by removing its cause. Where the cortical centres have been severely affected, time may be an essential factor in their recovery. Prolonged rest and the gradual introduction and increase of the stimulus of voluntary action may be necessary. Yet even in chronic cases I have seen remarkable benefit. For instance, in a case treated recently by 10 gr. of salicylate and 20 gr. of bicarbonate every three hours improvement to a certain extent resulted, but not a complete cure. Large doses of liq. arsenicalis were given for a few days, but no good result followed. Then the salicylate and bicarbonate were given again in larger doses, 15 gr. and 30 gr. respectively, and very soon the chorea had ceased entirely.

I shall leave to subsequent speakers the discussion of other forms of treatment in chorea. Arsenic, in large doses for a short time, sometimes produces distinct improvement, but if its use is continued for more than a week there is danger of producing arsenical neuritis. Dr. Eustace Smith has recently advocated the employment of large doses of ergot. Dr. John Thomson, of Edinburgh, tells me that he has had good results with antipyrin. I say nothing of aids to convalescence, such as massage, the cold douche, and the administration of iron and of other tonics. What I desire to urge is that every case should be looked upon as presumably rheumatic, should at first be kept in bed, and treated vigorously as for rheumatism.

II.—Henry Ashby, M.D.

Physician, Manchester General Hospital for Children.

Dr. Ashby said: I agree with Dr. Lees that the rheumatic toxin is the most important factor in the production of chorea, but I am not inclined to the belief that all cases of chorea are rheumatic. Chorea is exceedingly common in overgrown, anaemic girls in whom there is no evidence of rheumatism or of heart disease, and I do not think that in this class of case salicylates are of much use. The bacteriological evidence is most important and ultimately the question of the rheumatic origin of all cases of chorea will be finally settled by this means. The observations of Dr. Lees on the treatment of chorea by large doses of salicylates are very important. I confess I am somewhat frightened of such doses as he recommends. I am inclined to think that more moderate doses of some 40 to 60 gr. daily are likely to do all the larger doses will, and with less risk. Antipyrin in moderate doses is certainly useful in acute cases. Arsenic is of doubtful value and in large doses almost certainly harmful. After all, rest in bed and careful dieting are the most important essentials in the treatment of chorea.

III.—Theodore Fisher, M.D., M.R.C.P.,

Physician to Out-patients, Bristol Hospital for Sick Children.

Dr. Fisher said: The few remarks which it has occurred to me may be worthy of bringing forward in connexion with this discussion deal chiefly with the question of the frequency of serious cardiac lesions as a sequel of chorea. After two years or more had elapsed from the time of the onset of the acute attack Osler looked up 140 cases, and found in 72 signs of organic disease. Osler mentions also Stephen Mackenzie, who in 33 cases, which were examined after the lapse of two years, found 60.6 per cent. affected with cardiac lesions, and Donkin, who in 44 cases found 18 similarly affected at the end of the same time.

I have traced 53 cases of chorea that have been under my own care, but have excluded all those in which the time of onset of the chorea was not more than three years before the time of examination. Of these 53 cases, 32 presented no murmurs, with the exception in a few instances of a pulmonary murmur probably due to anaemia. Murmurs obviously due to organic disease were heard in 18 instances, and with these must be classed 2 cases which had died obviously of cardiac disease, making 20 in all in which serious cardiac lesions were or had been present. In the 53rd case a systolic murmur was audible at the apex and another at the base. The nature of the apical murmur was somewhat doubtful. It may or may not have been due to anaemia from which the girl to some extent suffered. Of the murmurs obviously due to organic disease, 9 were presystolic, 8 mitral systolic, and in 1 to-and-fro aortic murmurs were present.

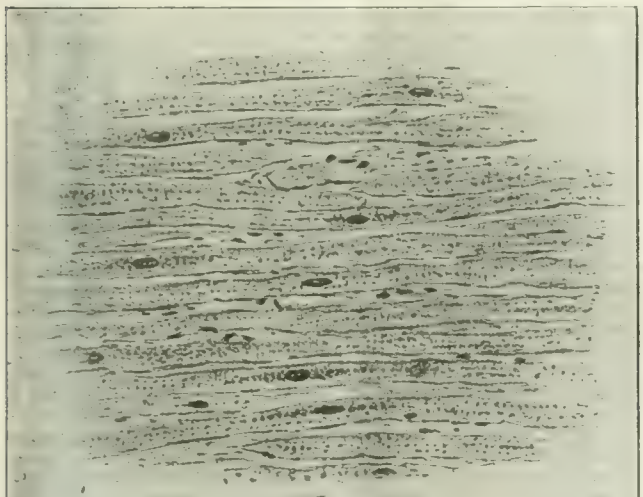
In passing it may be mentioned that the fact that in only 9 cases a presystolic murmur was audible is a point of some interest. Inflammation of the mitral valve, if it result in permanent defect, almost invariably by degrees produces stenosis of the mitral orifice. Puckering of the mitral valve cusps, allowing regurgitation only, may almost be described as a myth. It is scarcely necessary to remark, however, that a stenosed mitral orifice, with very few exceptions, allows regurgitation, and the systolic murmur due to this regurgitation may not uncommonly be the only murmur heard. Possibly in some of the 8 cases in which only a systolic murmur was heard mitral stenosis may have been present, but that nothing more than dilatation of the left ventricle, in which the mitral orifice shares, need exist in such instances, was shown by one of the fatal cases. A girl aged 11 years, who had been seen by me at the Bristol Children's Hospital suffering from chorea, died in the Bristol Royal Infirmary seven years later of cardiac disease. The heart was found to present general dilatation, as well as hypertrophy. It weighed 14 oz., but no deformity of any of the valves was present, although, as sometimes happens after rheumatism, the small granulations of the early endocarditis had become organized, and still lined the margins of all the valves, those of the right side of the heart as well as those of the left. The only other noteworthy feature was the presence of some pericardial adhesions at the apex of the left ventricle. Unfortunately I was away at the time of the necropsy, and had no opportunity of examining the cardiac muscle, but there can be little doubt that in such a case the main disease was in the heart wall.

Osler mentions that in 17 of his cases functional disturbance was present, and in some of these, murmurs which were thought to be probably secondary to anaemia were heard. No murmurs, however, may be present after chorea, and yet obvious weakening of the heart may be present. In at least 4 of my cases in which no murmurs were audible, this weakening of the heart, judging from what the boys or girls said of their capacity for exertion, appeared to be definite. This was all the more noteworthy because some of the cases in which murmurs due to obvious organic disease were present gave little or no indication that dyspnoea was present during active exercise. One boy, aged 14, with a well-marked presystolic murmur, was stated by a healthy-looking elder brother to be a better runner than himself, and another boy with a loud, harsh, systolic murmur used to go for long cycle rides with his father.

A point to be considered in connexion with the frequency of cardiac lesions following chorea is the occurrence of rheumatism. Of the 32 cases in which no murmurs were heard in only 6 cases a history of definite rheumatism or of pain in the joints could be obtained, whereas in the 20 with cardiac lesions rheumatism had been present in 8. Osler's statistics on this point are very similar. Another question to be considered is whether repeated attacks of chorea are more likely to result in damage to the heart than one attack. Curiously enough, of 14 of my cases that had only one attack, 7—that is just half—had cardiac lesions, whereas in some in which attacks had been frequent the heart remained healthy. Thus the heart remained healthy in one case where there had been six attacks of chorea, and in another where there had been seven. In 15 of Osler's cases in which there had been three or more attacks, the heart remained healthy. A fact which also seems to me to be noteworthy is that of the 20 cases with permanent cardiac lesions, in 13 I examined the heart when the patient was suffering from the first or only attack of chorea, and in only one of those no apical murmur was to be heard.

Some of these last-mentioned details seem to suggest that if the heart escapes during the first attack of chorea it is not likely to suffer during any subsequent attack. It is necessary, however, to consider in this connexion the importance of murmurs heard during the acute stage of chorea. Murmurs are frequently heard both at the apex and at the base. The basic murmur, which was present in 23 of my cases when they were first seen, is not uncommonly described as haemic, and an associated systolic apical murmur may be considered to be of the same nature. It is not necessary, however, to conclude that these murmurs, when heard in cases of chorea, have any connexion with anaemia. A loud pulmonary murmur can certainly occur when there is no anaemia, and may be so loud that, when conducted to the right of the sternum, it may be mistaken for an aortic systolic murmur. Not long ago I was calling upon a medical

friend, who took the opportunity of telling me that he had a case of dyspnoea, of sudden onset, in which I might be interested. On examination of the chest a loud and widely-conducted basic systolic murmur was found to be present, which my medical friend thought was aortic. Considering, however, the murmur to be pulmonary, not aortic, and believing as I do in Dr. Foxwell's explanation of the pulmonary systolic murmur, I thought the main abnormal condition of the heart was dilatation of the right ventricle. A few days later a necropsy proved that my suggestion was correct, and that the aortic valve and aorta were quite healthy. In another similar case, where a strong healthy sea captain was seized with sudden dyspnoea, and a loud basic murmur was audible, after death the aortic valve was found free from disease and the cause of the cardiac failure proved to be a gumma of the septum ventriculorum. Pulmonary systolic murmurs present in cases of chorea are with little doubt an indication of some dilatation of the right side of the heart, and systolic apical murmurs generally an indication of dilatation of the left side. The dilatation may as reasonably be attributed to the action of micro-organisms or of toxins upon the heart muscle as to anaemia. Opportunities of examining the cardiac muscle in fatal cases of chorea in which pericarditis is absent are not common. Recently, however, I have had such an opportunity. Microscopical sections of the cardiac muscle stained with sudan III and haematoxylin displayed very definitely the presence of fatty degeneration of widespread character. Commonly, fatty degeneration, especially that associated with anaemia, affects some muscular fibres more than others; but in this case, although in none the degeneration was extreme, every fibre in all the sections examined was dotted throughout with small granules of fat, the distribution being for the most part uniform, except that in many fibres the fat granules were most numerous in the neighbourhood of the ends of the muscle nuclei.



Microscopical section of the heart muscle from a fatal case of chorea. Fat granules (stained with sudan III) are scattered through the muscular fibres, and in places are most abundant in the neighbourhood of the muscle nuclei.

It should be added that whether a systolic apical murmur heard during the acute stage of chorea be allowed or not to be due to a toxic condition of the cardiac muscle causing dilatation of the heart, it is interesting to note that in many instances the murmur disappears. This happened in 12 of my cases. In most of those, it is true, the systolic murmur was not very well marked, but in 3 it was described as high-pitched. Curiously enough, however, in another case, one of those included in the 20 with cardiac lesions, the girl was examined a few weeks after she had recovered from her first attack of chorea, when a high-pitched systolic murmur which had been present was found to have disappeared; yet when the girl was examined nearly seven years later a loud and widely-conducted systolic murmur was audible. There had, however, been another attack of chorea.

Osler's large number of cases gives a higher percentage of serious cardiac lesions following chorea than my own; but Donkin's series gives results approximately similar. Osler's cases show a percentage of just over 50 per cent. of cardiac lesions, Donkin's, however, only a fraction over 40 per cent., and mine a fraction under 40 per cent. The smaller number of cases of Stephen Mackenzie, however, gives as high a percentage as 60.6. Roughly, perhaps, we may say that about half the patients who suffer from chorea will be found within a year or two to be suffering from cardiac disease, which can be detected upon auscultation. It should be borne in mind also that in a few cases in which no murmur can be heard the heart has probably been weakened by disease of the myocardium.

In considering the probability of heart disease following chorea, it is well to remember, however, that when there is no history of rheumatism the likelihood of damage to the heart is comparatively small. It appears, also, that if no signs of affection of the heart can be detected during the first attack of chorea the heart will probably not suffer during any subsequent attack.

It must not be concluded, however, that apical murmurs heard during the first attack are necessarily permanent. Systolic murmurs will disappear, and it is scarcely necessary to add that the dull diastolic sound so commonly heard over the hearts of children temporarily enfeebled from various causes must not be considered as the precursor of a presystolic murmur, though, of course, in later years in some instances a presystolic murmur will be found to be present.

IV.—William Ewart, M.D., F.R.C.P.,

Physician, St. George's Hospital, and Belgrave Hospital for Children.

Dr. Ewart said: I think that the hesitation I share with many in prescribing large doses of salicylates, in the absence of obvious rheumatic symptoms, might be best overcome if Dr. Lees could supply evidence that they availed to curtail the duration of the attack. The frequent occurrence of slowing of the heart's action is an argument for avoiding overdoses. May not some of the good results noted have been due to the anodyne effects of the large doses of sodium bicarbonate? The efficacy of carbonic acid in relieving spasm and nervous distress is well known, whether the gas be inhaled, injected into the rectum, or disengaged in the stomach from its watery solutions or its salts. I have long discarded the combinations with the salicylates of the alkaline bicarbonates in large and frequent doses in rheumatic fever, because of the danger of setting up permanent gastric dilatation from the constantly recurring distensions with carbonic acid gas. I prefer to use potassium citrate, and invariably administer the iodide also, as suggested by Dr. R. Caton.

V.—G. J. Crawford Thomson, M.D.,

London.

Dr. Thomson asked why large doses of the salicylates should not be given as soon as the patient came under observation, just as in rheumatic fever, in order to get the patient quickly under the full influence of the drug.

VI.—F. J. Poynton, M.D., F.R.C.P.

Assistant Physician, University College Hospital and Hospital for Sick Children, Great Ormond Street.

Dr. Poynton said: It is chiefly upon the pathological aspect of this question that I wish to speak a few words. I think we must maintain a philosophical attitude of mind in the study of chorea and recognize that positive facts are of greater value than negative, for there are great difficulties in such a study, because of the rarity of fatal chorea and because it is a condition which is liable to be considered from one point of view, either by the neurologist as a nervous disease or by the bacteriologist with the aim of obtaining cultures. It is difficult to get both points of view studied, and the cases in which this has been done are comparatively few.

From the bacteriological standpoint it has to be remembered that the chorea may be itself on the decline at the time of death, which may be caused by pericarditis. The brain also is an enormous organ to investigate satisfactorily with a $\frac{1}{12}$ objective.

I think a careful examination of the pia mater is very important. Strips of pia mater carefully dried, stained, and cleared, enable one to trace the capillary blood vessels, and to detect exudation from them or the presence of micro-organisms. The advantage of the method is this. All bacterial evidence points to rheumatism as producing numerous focal lesions, and sections are liable to baulk us by

missing the very area we wish to study. The use of these films and films from the cerebral cortex affords some means of obviating this difficulty.

For my own part, I am inclined to attach especial importance to the pia mater in this condition both from the frequency of headache in chorea, and from the analogy of this membrane to the other serous membranes. I picture to myself, as Dr. Lees, a condition somewhat resembling tuberculous meningitis, which we must admit may, though a far more fatal disease and an entirely different order of infection, leave extraordinarily little evidence of its presence. It has been said, I believe by a distinguished pathologist, that the finding of a single miliary tubercle is a sufficient guarantee of the occurrence of tuberculous meningitis. If such may cause death, it may well be that in chorea there is almost constantly some affection of the pia mater, in the sense that micro-organisms get a foothold there, and set up transitory changes, such as rheumatic fever so often does. Nor does this view exclude the cerebral cortex, for, just as the cortex is very grievously damaged in tuberculous meningitis, so I imagine, in a different manner and in a lesser degree, is it probably damaged in chorea. The infective view of rheumatic fever necessitates, I think, a broader view of the amount of the nervous system implicated, such as Dr. Lees has clearly outlined in his introduction. It points to the cord as well as the brain being implicated, and supports the view of the older Triboulet that the nervous system is widely affected. We have, perhaps, been led to look too much for local vascular lesions rather than general changes in these cases.

Such facts as we have at present I would briefly tabulate thus:

1. Micro-organisms of the streptococcal group have been isolated from rheumatic fever.
2. They have been isolated from the cerebro-spinal fluid and brain itself in chorea.
3. They have been demonstrated in the pia mater and brain.
4. Involuntary movements of a peculiar type have been recorded by Paine and myself and F. Meyer as resulting from intravenous inoculation of rabbits with such micro-organisms.
5. Identical bacteria are found in other rheumatic lesions in man, and are capable of producing the lesions of rheumatism in animals.
6. Chronic leptomeningitis has been noted in chorea by Dana.
7. The lesions found after death in acute chorea are such as one could explain on the view of an infection. I mean the minute thromboses and haemorrhages, occasional embolism, degenerative changes in nerve cells, and perivascular exudation commented upon by Dr. Lees.

These are, I admit, scanty and imperfect facts, but very suggestive ones. It would be a valuable contribution to our knowledge to have a detailed examination of the brain, in a series of cases of chronic rheumatic chorea. This is a difficult matter, but the finding of multiple focal lesions such as have been discovered in Huntingdon's chorea would add further evidence.

How much of chorea is due to the focal lesions, and how much to the poisons of rheumatism is at present a matter of speculation. I hold, however, to the view of chorea being an infection of the nervous system comparable to the infection of the nervous system in tuberculous meningitis rather than that of the nervous system in diphtherial paralysis.

Though in entire agreement with Dr. Lees as to the association of rheumatism and chorea, I would not go so far as some, and say it is always rheumatic. Remarkable cases of chorea after erysipelas, during tuberculous meningitis, and after measles, which I have met, make me very cautious on this point. As regards rheumatic fever and chorea I hold the view that one micro-organism is the cause.

VII.—EDMUND CAUTLEY, M.D., F.R.C.P.,
Physician, Belgrave Hospital for Children.

DR. CAUTLEY said: I have never yet met with a case of hyperpyrexia in chorea. Certainly if it occurs at all it is very rare. This may be urged as an argument against the view that chorea is "cerebral rheumatism," even though modified by the words "in the great majority of cases." In the worst cases, those in which there was much insomnia and excessive movements, I have obtained very good results by the frequent administration, every two or three hours, of small doses of chloral hydrate.

VIII.—GEORGE CARPENTER, M.D.,
Assistant Physician, North-Eastern Hospital for Children; formerly Physician, Evelina Hospital for Children.

DR. CARPENTER said: I wish to ask Dr. Lees his explanation of "air hunger," and whether he has made any observations upon the blood in cases developing this symptom. I have found that sodium salicylate in excessive doses induces destruction of the red blood corpuscles in some instances. I have seen one instance of fatal hyperpyrexia in a choreic child, aged 3 years. I desire to call attention to the danger of arsenical multiple neuritis in unwatched cases, and I have seen several cases of shingles in those treated by arsenic. Albuminuria may also be produced. I do not regard arsenic as of much value in the treatment of chorea, and trust more to antipyrin. The latter drug sometimes produced measly and urticarial eruptions. The urine must be watched, for antipyrin in some cases gives rise to considerable albuminuria.

IX.—MICHAEL O'SULLIVAN, M.B., F.R.C.S.,
Physician, Children's Hospital, Temple Street, Dublin.

DR. O'SULLIVAN said: During the period of my connexion with a children's hospital in Dublin I have had under my care 54 patients suffering from this disease. Forty-one of those were girls, whose ages varied from 5 to 12 years (the latter being the limit of age for admission of girls to hospital), and of boys there were only 7, whose ages were from 5 to 10 years (the high limit for boys). The onset of the disease was, in a number of cases, ascribed to fright, such as being attacked, but not injured, by a dog, or in different other ways. The spasmodic and involuntary movements supervened after two or three days in most cases. On examining into the previous history of these children I found in most of them a rheumatic history of some sort. In some there was an account of rheumatism in the parents, which, so far, had not shown itself in some of the children. In others there was a distinct history of the patient having had a genuine attack of rheumatism, and others complained of growing pains, which I consider are closely associated with a rheumatic tendency. Again some of the patients had rheumatic attacks during the progress of chorea. I have found the prevalence of organic heart murmurs more frequent in those cases of chorea which were preceded by rheumatism or accompanied by it than in those with no such history. On admission of choreic patients to hospital I have often observed rough well-marked murmurs over the mitral area which must have preceded the chorea for some time. Of the various cases I have had under my care 50 per cent. had well marked organic murmurs, very few of which disappeared with the disease. I have, however, seen two undoubted cases of mitral regurgitation which got quite cured as the choreic symptoms passed away. Patients who have been without murmurs on admission have, however, often developed them during the progress of the disease, and these generally pursued the same course as the others. The lesion I have found most common in those cases of heart disease is mitral regurgitation.

The various symptoms of chorea are too widely and thoroughly known to require recounting. There is one item which I have never seen mentioned by any author, and I myself have commonly observed in cases of chorea, and that is the large size and more or less flabby condition of the patients tongues. I may say I rarely see patients without that condition of tongue. I had once a peculiar case of chorea (temporary) under my care. This was an attack which followed a rather prolonged administration of nitrous oxide gas, and lasted only about an hour. This patient was a girl 17 years of age.

The duration of an attack of chorea varies with its severity, and as to the fact whether it is accompanied by cardiac trouble. In my experience the duration of mild attacks is about three weeks, and the most protracted I have seen is six months. Recurrence of the disease I have found pretty usual, and it generally supervened between two to twelve months after the previous attack. Cardiac trouble is more usual in recurrent cases. The termination of the choreic movement is practically always in recovery, but some muscular weakness may remain for a time. I had another peculiar case under my care in which the movements were very violent, the patient tossing herself about in all directions, and making violent contortions with all the facial muscles. She could hold nothing in her hand, and could not speak a word, although she made many efforts. In addition mentally she was a pronounced type of idiot. This girl, aged 9 years, left the hospital after about four months'

treatment, almost perfectly cured, both mentally and physically.

The treatment which I adopt in almost every case is a combination of rest to mind and body; to prevent children learning lessons, and removing them from surroundings which might be too exciting, and capable of giving rise to frights and emotions. Warm baths are very useful, and easily digested nutritious food is absolutely necessary. Patients who are very violent should have their beds padded, and should be carefully watched that bedsores may not occur.

With regard to medicinal treatment, I may say arsenic is practically the only drug I use. I prescribe it in 10 to 15 minim doses from the beginning, well diluted with water, and given during meal times. This occasionally disagrees with the stomach, and should then be discontinued for a time, when it will generally be found that the gastric disturbance will not recur on the readministration of the drug. In severe cases I prescribe chloral, and have on occasions given chloroform by inhalation. When chorea is complicated by rheumatism I always advise sodium salicylate.

X.—J. R. Logan, M.B.,

Physician, Infirmary for Children, Liverpool.

Dr. Logan said: Although shingles occurs in choreic patients taking arsenic, it is not always due to the drug, and may depend upon some trophic influence of the affected nervous system. I have seen well-marked herpes zoster in a child, with chorea, who was not taking arsenic.

Reply.

Dr. Lees, in reply, drew attention to the necessity for sufficiently large doses of salicylate in the treatment of rheumatism and chorea. If the dose were too small, the desired results would not be obtained, and if the dose were too rapidly reduced there was the greatest probability of relapse. He related cases in illustration of this. He had seen one fatal case of hyperpyrexia in a choreic child.

THE RELATION OF THE THYROID GLAND TO MARASMUS.

By Professor John Ruhrah,

Baltimore, U.S.A.

The pathology of infant life has been to a certain extent a very much neglected field, and I feel positive that a rich harvest awaits the workers who will be painstaking enough to study both in the ward and in the deadhouse. In most places the necropsies on infants are hastily done, and the record frequently made in the report, "Nothing abnormal noted." As a matter of actual fact regarding many organs during infancy there are few who know normal from abnormal or who can tell from a microscopical examination what the microscope will reveal. There are, I am sure, clinical entities with well-marked lesions which are waiting to be described.

As you all know, one frequently sees an infant sicken and die without diagnosis during life, and no adequate explanation after the necropsy has been made. Many of these cases come under the head of marasmus, and it was with the intention of trying to throw some light on this interesting condition that especial care was taken with our necropsies on infants. The following brief report, which I hope will stimulate others to undertake similar studies, is based on about eighty-five necropsies. The first twenty-three have been carefully tabulated by my colleagues, Dr. Stokes and Dr. Rohrer and myself, and while the remainder have not been tabulated they have been studied, and the conclusions reached from the first twenty-three remain unchanged.

It is a curious fact that the most characteristic lesions of marasmus, excepting the wasting of fat and muscles, while known for many years, is not mentioned in any of the text-books on the diseases of children. This lesion is a wasting of the thymus gland which will be described later.

Parrot, in 1877, called attention to the disease which he called athrepsia, the so-called wasting disease of infants, known also as marasmus, simple atrophy and atrophia primitiva infantum. The term inanition, also used, should be restricted to those acute cases of starvation which have a typical course and characteristic symptoms.

There are two conditions in which we see atrophy in infants—the primary cases, where the cause is as yet unknown and those following definite pathological conditions, or the secondary cases. The dividing line cannot at this time be definitely drawn. All cases occurring in the course of the easily recognized diseases may at once be placed in the group of secondary cases, those following tuberculosis or syphilis for example. Clinically most cases are seen in infants which have had improper food and care. Some authors would also place these in the list of secondary cases. They would place under the head of primary atrophies only those where the assimilation was at fault: or in other words, those cases receiving proper care and a physiologically correct diet. This is, we think, a division practically useless; and for the present until we have definite information the cases should be divided, on a pathological basis, into those where there are lesions of definite diseases, and those where there are no special and constant lesions except the wasting of the muscles and the body fat, and as we shall see of the thymus gland as well.

The more important contributions to the pathology of the condition are as follows:

Baginsky thought that the disease was due to an atrophy of the mucous membrane of the intestine, and that it was owing to this condition that absorption was interfered with, and hence the atrophy. He estimated the amount of nitrogen ingested and that excreted, and found that the amount of nitrogen absorbed in these atrophic infants was 50 per cent. below the normal. Similar anatomical studies were made by Fenwick.

Since that time many investigators have disproved this anatomical statement. In the majority of cases the changes observed were due to the stretching of the intestinal wall by distension with intestinal gases, and also partly in many cases due to *post-mortem* changes.

Bendix found that Baginsky's estimate concerning the nitrogen was exaggerated; and Heubner and Rubner, as the result of experiments carried out in a somewhat different manner, formulated the idea that there was sufficient food taken and absorbed, but that the trouble was due to the auto-intoxication from the decomposition of food in the intestinal tract. Czerny is of the same opinion, but holds that the intoxication is of an acid nature. The French writers regard the condition as an infection or an intoxication due to a subacute or a chronic infection of the intestinal tract. Marfan has more recently stated that the condition is due to a lack of, or a lessened activity of the nutritive ferments; this in turn being due to the intestinal infection.

We may safely assert, I think, that the trouble is not due to the amount of food ingested nor to the amount absorbed from the intestinal tract, but that it is due to mal-assimilation of the food material in the body.

Whether the thymus gland has anything to do with assimilation or not we are not prepared to say, but it is certain that the thymus gland bears a direct relation to the state of the nutrition of the body. It increases in size until about the second year, when it remains stationary, growing relatively smaller when compared to the size of the growing body. At puberty, when the body growth is largely over, it begins to atrophy and at about 25 years of age, when the body has attained its full growth, it is gradually replaced by fatty and connective tissue.

Herard, at a subsequent date Friedleben, and more recently Mettenheimer, have pointed out the relation of the size of the thymus to the state of nutrition of the body. Of this there can be no doubt, as it rests on a firm basis of trustworthy observation. The function of the thymus is as yet unknown, and the limited time at my disposal prevents my even mentioning the observations and theories concerning it.

The thymus gland weighs about 12 grams at birth. Histologically, it consists of a connective-tissue framework, holding up a parenchyma consisting of a cortex and medulla, which are similar in structure, but the cortex contains normally many more cells than the medulla. The parenchyma consists of a network of endothelial cells resembling the reticular spaces of the lymphatic structures. This space is filled with lymphoid cells, and also with a few neutrophilic and eosinophilic leucocytes, and with a few giant cells. Here and there in the structure are little islands of epithelial cells with a peculiar concentric arrangement not unlike that found in the concentric bodies of an epithelioma. These are the so-called Hassall bodies or corpuscles. They are the remains of the epithelium, which forms the principal part of the thymus gland during embryological development.

Our studies cover 18 cases of marasmus. The average weight of the gland was 2.2 grams. Excepting the terminal infection, the atrophy of the thymus was the only lesion found in any of the necropsies. The changes in the

gland consisted in a great atrophy. Histologically, the fibrous capsule of the gland is thicker than normal, and the trabeculae are also greatly thickened, and the increased interlobular tissue frequently cuts the lobules up into irregular masses. Sometimes there is more fibrous tissue present than there is lymphoid structure. In well-marked cases there is more reticular tissue present than lymphocytes and leucocytes. In most of the cases there was an increase in size and a hyaline degeneration of the Hassall bodies.

The state of the nutrition of infants may be estimated by a microscopical examination of the thymus. In those of normal infants the structure of the thymus is unaltered, and the differentiation between cortex and medulla is plainly visible. In moderate atrophy the cortex and medulla are not easily distinguished, while in severe atrophies the changes mentioned above are plainly seen.

In secondary atrophy the change is one of degree, and we found in our cases the average weight of the thymus to be 3.41 grams.

We tried the administration of the thymus gland tablet in cases of marasmus, and as far as could be determined there were no changes produced by the use of the gland in the dried form. We arrived at the following conclusions:

1. Atrophy of the thymus gland is always found in cases of infantile atrophy.

2. The condition of the thymus is an index of the general nutrition of the infant.

3. The state of the nutrition in infants may be estimated by a microscopic examination of the thymus at necropsy.

Dr. F. J. POYNTON asked Professor Ruhrah's opinion upon a remarkable condition in children. Roughly, the symptoms were (1) enlargement of the thymus, even giving rise to a dullness behind the manubrium, (2) paroxysmal cough, (3) sudden death. These cases had been long recognized, but whether or not the symptoms were dependent upon the condition of the thymus was uncertain. He did not remember any relation between the size of the thymus and the condition of the body in these cases. They were very dangerous cases, and he raised the question because he would like to hear the experience of Professor Ruhrah in this matter.

Dr. H. ASHBY asked the writer of the paper for any observations he had made on "thymus death." In some of these cases the infants were well nourished and perfectly healthy, without any signs of rickets. Death occurred suddenly, and at the necropsy an enlarged thymus was found.

Dr. W. EWART, in connexion with the mode of causation of so-called "thymus death," called attention to the probability that the enlargement of the gland was not the only cause. Some other factor, such as pulmonary congestion or gastro-intestinal distension, of a more sudden nature, must be admitted. But the chief factor was, in his estimation, the individual cardiac weakness, which, in the adult, showed itself in the tendency to fainting and to sudden death.

Dr. GEORGE CARPENTER was no believer in the condition of thymic asthma or of sudden death from an enlarged thymus. He had seen cases of enlarged thymus which did not produce any symptoms. He had also seen cases of tuberculous disease of the thymus which produced mediastinal tumours diagnosed during life, and which did not induce thymic asthma or sudden death. An enlarged thymus was a well-known physiological condition of infancy, and it did not produce clinical symptoms. He had no doubt in his mind that thymic asthma and sudden death in some cases were due to post-nasal catarrh, sometimes in association with adenoids, a condition which was not recognized and which he drew attention to. He called attention to a fact that should be widely known that digital examination of the naso-pharynx produced in some instances a cough indistinguishable from whooping-cough, and that it also produced spasm of the larynx. His firm conviction was that so-called thymic asthma and sudden death from the thymus were in many instances in reality due to spasm of the larynx, which in the fatal cases did not relax. Thymus death was often death from laryngismus stridulus, and the sooner this was recognized the better. More attention should be paid to the naso-pharynx and thymic asthma would be a less fashionable explanation.

Dr. R. B. MCVITTIE asked if the atrophic conditions of the thymus were, in Professor Ruhrah's experience, in any way associated with syphilis. In the cases which he had seen of sudden death, which would be likely to be attributed to what was called thymic asthma, the children were always very stout. It seemed to him most probable that they were cases where the heart was likely to be constitutionally feeble and easily stopped by some comparatively trivial circumstance, such as laying the child down after a full meal.

Dr. THEODORE FISHER said the position he had always taken up was that in cases of sudden death the children were better nourished than those dying of chronic disease, and a normal thymus was consequently thought to be enlarged. He thought, in most of the cases, death was due to laryngismus stridulus, though evidently the case mentioned by Dr. Ewart would not come under that heading.

Dr. RUHRAH, in reply, said that as regarded thymic asthma and thymus death he had had no personal experience. There were undoubted cases of thymus death, but he was inclined to think that some of those reported were due to other conditions, and that the normal thymus seemed unusually large, as the atrophied thymus was the one with which most of them were familiar. In one case which he observed the child died rather suddenly with convulsions and oedema of the lungs. Quite a large thymus was found, but about a quart of potato salad was found in the intestinal canal. His investigations were undertaken with the idea of throwing some light on the pathology of marasmus, with hopes of finally finding some therapeutic measures of value.

THE AGE FOR OPERATING IN CLEFT PALATE.

By R. W. MURRAY, F.R.C.S.,

Surgeon, David Lewis Northern Hospital, Liverpool: late Surgeon, Liverpool Infirmary for Children.

THERE is a considerable difference of opinion amongst surgeons as to the most suitable age for operating for cleft palate. Some delay operating until the child is between 3 to 6 years of age; others, again, operate during the first few weeks of life.

The object of this note is to express my own opinion upon the subject, in the hope that others present who hold similar or different views to mine may be induced to do the same. In the case of a child born with a cleft palate there can be no doubt, from a purely theoretical point of view, that the sooner the cleft is closed the better; at the same time, "it is often wise to effect a compromise between that which is theoretically most desirable and that which is practically most advantageous, things being as they are." The main object with which an operation for the closure of a cleft of the palate is undertaken is that the powers of speech may thus be rendered more perfect than they otherwise would be. If the operation is postponed until the fourth or sixth year of life, the child has then learned to talk, and necessarily to talk badly, a habit once acquired very difficult to overcome completely. At the same time, it must be remembered that the defective power of articulation in these cases depends upon other factors than the mere gap in the palate. I would particularly draw your attention to the fact that, if the cleft involves the bones of the hard palate, articulation will never be perfect, even though the child has been operated upon early in life, and the operation successfully performed. For example, if a child has a simple hare-lip, the alveolar margin and the palate being perfectly formed, the subsequent powers of speech will be in no way affected. But if as well as a hare-lip there is a slight notching in the alveolar margin (not, of course, amounting to a cleft palate), then, however early and however perfectly the deformity of the lip may be operated upon, the child will always talk with a lisp. The same holds good in regard to the posterior structures of the palate. If the cleft involves the whole of the soft palate, but does not include the hard palate, then, provided the cleft is closed before the child has learned to talk, there will be no noticeable defect of speech in after-years. But if, on the other hand, the bones of the hard palate are involved, then, in spite of an early and successful operation, there will be a permanent defect in articulation, though this defect will not necessarily be directly proportionate to the amount of the bony deformity.

The explanation, I believe, is that when the cleft involves the hard palate or alveolar margin, this defect in development is not limited to the structures of the mouth but also includes the nasal chambers, which are so largely concerned in the production of the voice, and therefore the imperfect articulation so characteristic of persons born with a cleft of the hard palate persists even though an operation for the closure of the cleft has been successfully performed. As further confirmation of this view that the cleft in the palate is not entirely responsible for the nasal character of the articulation, one has only to remember that from time to time we see children who speak as if there was a cleft of the

palate, but on examining the mouth the only defect noticeable is that the palate is very highly arched, thus encroaching upon the nasal chambers. I believe this to be the explanation of the defective articulation in these cases, a condition which one could not hope to remedy by any operation upon the highly-arched palate. If then it is true that, provided a cleft of the soft palate is closed before the child has learned to talk, the result, so far as speech is concerned, will be perfect, it necessarily follows that the operation for the closure of such a cleft should take place somewhere between the time of birth and say the end of the second year, always provided, of course, that the health of the child will permit of it. For my own part, I have no hesitation in saying that within this age limit the later the operation is performed the better.



Fig. 1.—R. W., aged 3 months, wide alveolar cleft.

I know there are surgeons who hold different views, and who advocate and practise closure of the cleft during the first few weeks of life; in fact, in a case of hare-lip and cleft palate they operate upon the palate before operating upon the lip. In my experience this is a mistake, for every one will surely admit, other things being equal, the older the child the easier the operation, and, so far as a cleft of the soft palate only is concerned, I am convinced that a perfect result as regards articulation may be obtained provided the operation is performed about the end of the second year, and nothing better than this can be hoped for by operating during the first few weeks of life. On the contrary, during the first few months of life the tissues are so friable and the amount of material out of which to make a soft palate with so scanty, that after paring the edges there is very little soft palate or uvula left. This is a matter of considerable importance, for I believe the ultimate result in respect to articulation largely depends upon a good and freely movable soft palate.

When, as is usually the case, there is a complete cleft both of the lip and of the palate, I operate upon the lip when the child is about 3 or 4 weeks old, and delay operating upon the hard and soft palate until about the end of the second year. It it quite remarkable how the closure of the lip influences the subsequent growth of the hard palate. I have noticed in a large number of cases where at the time of the hare-lip operation the gap in the alveolar margin of the palate has been considerable, that several months after the closure of the lip the alveolar gap has practically disappeared. This is to my mind a strong argument in favour of delaying the operation upon the palate, for the narrower the cleft, the easier the operation and the greater the probability of success. In this class of case, however, where the hard palate is involved, the subsequent powers of articulation, for reasons I have already mentioned, will always be somewhat defective. If, on the other hand, the soft palate only is involved, the prognosis is much more hopeful. I know of several children upon whom I operated for cleft of the soft palate before they could talk, and these children now articulate quite naturally, it being impossible to detect from their speech that they ever had cleft palates.

I would emphasize the importance of training these children after operation to articulate correctly; they have the greatest difficulty with the "s" and the "th," and the plan I usually adopt is to get the mother to teach the child some nursery rhyme as "Seesaw, Margery Daw," and ask the child to repeat it to me from time to time.



Fig. 2.—R. W., aged 4 years; alveolar cleft completely closed.

Mr. Arbuthnot Lane said that he operated as early in life as possible—indeed, he preferred the day after birth. He gave the following reasons for this procedure: (1) That the naso-pharynx was sooner exposed to the influence of the mechanical factor upon which its development depended; (2) that the operation was much easier at this age and more certainly successful, because of the absence of teeth and the much greater flap obtainable; (3) the child being in good condition it repaired well, and it displayed no irritation or annoyance whatever because of the operation.

Dr. H. Ashby asked the President for his experience in tracing in after-years the progress in articulation of those infants operated on during the first few weeks of life. There could be no doubt that those operated on when 5 or 6 years old talked with a nasal twang for many years, and required long training.

Dr. F. J. Poynton wished to know if the risk to life was not a real factor in operating upon a child under a week old. This was a most vital point. A dead child with a palate closed was a tragedy. The operation was a decorative, not a vital one. He would like to know from Mr. Murray and Mr. Lane if the dangers to life were not a reality in the first week of life.

A DISCUSSION ON CONGENITAL DISLOCATION OF THE HIP.

I.—By F. F. Burghard, M.S.Lond., F.R.C.S.,
Surgeon to King's College Hospital and the Children's Hospital, Paddington Green.

Although the subject of congenital dislocation of the hip has been one of much interest to the profession ever since the publication of the work of Hoffa and Lorenz, there has

been an increased activity in the matter within the last two years, which is largely due, no doubt, to the use of the *x* rays, whereby results can be accurately checked and vague general statements replaced by precise observations. Extended experience leads me to confirm the view that I enunciated in a paper read before the British Medical Association in 1901, that certain cases are more suited for one method and certain for the other, and that careful discrimination is needful to ensure success in treatment.

Into the question of the etiology of the affection I shall not go; I shall deal only with the treatment, more especially those particular forms which aim at securing a true cure of the dislocation.

Anatomical Changes Met with in Congenital Dislocation.

In order to arrive at a just conclusion as to the best method of treatment, it is essential to bear in mind the changes that occur in the joint, and therefore, in the first place, it will be well to mention briefly the various anatomical changes met with.

The most pronounced and invariable change, and one that is present from the earliest period of life, is found in the acetabulum; it is also of primary importance in the treatment of the affection. Instead of being the normal hemispherical cup looking downwards, outwards, and forwards, it is a shallow triangular depression looking almost directly outwards and with its apex directed upwards. Moreover, its upper margin, which in the normal joint plays a prominent part in retaining the head of the bone in the acetabulum, is very defective, and is quite incapable of exerting any retentive function. It is this shallowness of the acetabulum that renders easy the reluxation that so often occurs after an apparently successful reduction of the dislocation.

Another point of the highest practical importance, and one that does not seem to have hitherto attracted its due amount of attention, is the arrangement of the capsule of the joint and the changes that different portions of it undergo. It serves to explain a number of cases in which the "bloodless method," although apparently successful at the time, fails eventually, and dislocation recurs a few days or a few weeks after the operation. An examination of museum specimens and an extended experience of the open operation has impressed upon me the great importance of this anatomical factor. Attention was first called to the matter by Hoffa,[1] and its importance has been more recently emphasized by Bradford[2] and Nicholls.[3] The following account, translated from Hoffa's well-known work on *Orthopaedic Surgery*, puts the matter concisely.

"The capsule rapidly undergoes alterations in shape and assumes a somewhat hour-glass form. Starting from the posterior edge of the acetabulum it passes over the head of the bone, over which it is accurately applied, so that the outline of the head can be seen clearly beneath it. It then runs forwards and downwards and becomes firmly adherent to the acetabulum, so as to make with this flattened cavity a narrow pouch, the so-called 'acetabular pocket' of Lorenz, from which the ligamentum teres, when present, emerges to reach its insertion into the head. This lower portion of the capsule thus forms a sort of diverticulum which only communicates with the upper spacious capsular cavity, in which lies the head of the bone, by an isthmus, the so-called *rétrecissement* of Bouvier. This narrowing is really caused by the passage of the ilio-psoas tendon across the capsule at this spot. It is not in this form only that the capsule undergoes changes; its consistence also alters. The entire anterior and inferior portion becomes abnormally thickened, so that the portion lying like a lid over the acetabulum becomes exceedingly dense and unyielding. In this the various capsular bands, and especially the Y-ligament, play an important part."

These changes in the structure and arrangement of the capsule have a twofold action in preventing a true cure of the dislocation. In the first place it may be impossible to cause the head of the bone to pass beneath the lid formed by the anterior part of the capsule and lie truly in the acetabulum without some open operation accompanied by detachment of the capsule from the acetabulum. In the second place this capsular lid may become interposed between the head of the bone and the acetabulum in cases in which the bloodless reduction is apparently successful, and this will lead to such an unstable joint that reluxation will readily recur. That this is the true explanation of some of the failures of the "bloodless method" I have been able to assure myself when practising the open operation; it has apparently been possible to reduce the dislocation by manipulations, but examination by the finger in the wound has shown that the head of the bone has merely been made to lie over the acetabulum, the thickened anterior wall of the capsule forming a dense partition between them. In other words the case is one of spurious reduction.

Nicholls and Bradford[4] state that in some cases "the capsule may not be attached to the rim of the acetabulum, but may form a small globular sac about the head of the femur, attached to the external surface of the ilium. Or a diverticulum lined with synovial membrane may extend into the apex of the acetabulum from a globular sac of this kind. In this connexion a very interesting case is reported by H. Morestin,[5] and shows what the ultimate result of an untreated dislocation may be. The patient was a man of 40 who had a unilateral congenital dislocation of the hip, for which he had never had treatment of any kind. He limped badly, but could and did walk long distances without pain or fatigue. The limb was 7 cm. shorter than its fellow, and was slightly flexed and adducted. The interesting point was that a perfectly stable joint had been formed by natural processes alone. Dissection showed that a new joint had been formed above and behind the normal acetabulum, and that all the movements of the normal joint could be performed by it, though to a limited degree. A thick ridge of bone had been thrown up, starting from the anterior inferior iliac spine and crossing the outer surface of the ilium to the great sacro-sciatic notch; from this a dense capsule passed to the head of the femur, and it is important to note that between the two bony surfaces there were definite traces of the true capsule that had become interposed at an early period of life—as must happen in some of the cases treated by the "bloodless method"—and had become partly absorbed by pressure.

Nor are the changes that occur in the femur of inferior importance. Foremost among these is the increase that occurs in the angle made by the long axis of the neck of the femur with the transverse axis of the femoral condyles. In the normal subject this angle varies between 15 and 25 degrees, but in every case of congenital dislocation it is increased, and may be as great as 80 or even 100 degrees. This torsion of the femoral neck generally takes place in the forward direction, so that, when the head is properly in the acetabulum, the entire lower limb is rotated more or less strongly inwards according to the extent of this so-called "angle of femoral torsion." It is said that this torsion may be so extreme in adults as to require an osteotomy to remedy it. Personally, I have only found it very marked in three cases; in two it yielded to well-applied traction and movements, but in the third case—which is still under treatment—the torsion is very extreme, being, as nearly as I can judge, quite 90 degrees. These three cases are all young children.

Another very important change in the femur is the alteration in the angle made by the neck with the shaft. The normal angle is about 120 degrees, varying between 110 and 140. In cases of congenital dislocation, however, it undergoes diminution, and may be as small as 90 degrees. The diminution is slight before the child begins to walk, and its degree is to some extent proportionate to the length of time that has elapsed after the child has learnt to walk.

The changes in the head of the bone itself are rarely marked except when the dislocation has persisted untreated for years. In early life the head is rather diminished in size, and its general outline is somewhat pyramidal from flattening of its inner aspect against the outer surface of the ilium, but it is only when the dislocation has lasted for several years that the irregular mushroom-shaped head described in the textbooks is seen.

The alterations in the ligamentum teres are various. As a rule it is absent altogether; when present it is always elongated and often very thin.

The changes that take place as growth progresses are not constant either in kind or in degree. The most important alteration—and one that is very common as far as my experience goes—is a change in the anatomical variety of the dislocation; that is to say, a dislocation which in early life is a true dislocation upwards becomes, as life advances, a dislocation upon the dorsum ilii. When this occurs there is the characteristic loose joint, the extreme waddle in walking, and increased shortening. The acetabulum always gets shallower as the child gets older, and at the age of 16 I have found it

[1] Hoffa, *Lehrbuch der orthopaedischen Chirurgie*, Stuttgart, 1893, p. 501.
[2] E. Bradford, *Boston Med. and Surg. Journ.* October, 1900, p. 415.
[3] E. H. Nicholls and E. Bradford, *Amer. Journ. Med. Sci.*, 1900.
[4] E. H. Nicholls and E. Bradford, *Amer. Journ. Med. Sci.*, 1900, p. 629.
[5] *Bull. et. Mem. de la Soc. Anat. de Paris*, 1901, 6me serie, tome iii, p. 612.

barely perceptible to the finger when the joint was cut down upon. It invariably remains, however, as a shallow but quite definite depression throughout life. The diminution in the angle made by the neck of the bone with the shaft increases, and the head assumes the typical mushroom form. The anterior portions of the capsule become still more shortened and thickened. It will thus be seen that there is a definite reason for the admittedly great want of success in the treatment of cases that have been allowed to reach some age before the affection is taken in hand. At the age of puberty the anatomical changes are so advanced that it may be mechanically impossible to get the head of the bone into the normal position in the acetabulum. The usual result of untreated cases is a large, loose, sliding joint between the head of the femur and the outer surface of the ilium, with its concomitant deformity, although the case reported by H. Morestin[6] shows that a perfectly stable, though imperfect, joint may occasionally arise even without treatment of any kind.

The form of dislocation met with in practice varies somewhat according to the age at which the patient comes under notice. It seems to be the general impression that there is a true dorsal dislocation in the majority of cases, the head of the femur moving freely over the outer surface of the ilium. This is no doubt the case in the older children—those, for instance over six years of age; but in my experience the common form of dislocation seen in young children, and probably the almost universal form at a very early age, is a true dislocation upwards beneath the anterior superior iliac spine, the so-called "supra-cotyloid" form. This form of dislocation is, however, an unstable one, and, as age advances and the weight of the body increases, it is apt to become transformed into the common dorsal dislocation, the head passing on the dorsum of the ilium. There is yet a third form that is occasionally met with: here the head of the bone passes upwards and backwards, and occupies a position above and behind the normal acetabulum intermediate between the two varieties just described. This variety is very unstable indeed, and soon becomes transformed into the true dorsal form. There is much less interference with the normal gait when the dislocation is directly upwards, and it is these cases that are often overlooked.

The Methods at Present in Vogue for the Reduction of the Dislocation.

I shall confine myself to the measures at present employed, and I shall also deal only with those that aim at the reduction of the dislocation, without wasting time on the question of apparatus and orthopaedic appliances. It may fairly be said at the present time that all cases of a suitable age should be submitted to some form of operative treatment, and that those who are over that age will probably get on better without apparatus than with it: there seems to be no really satisfactory apparatus in use, nor, indeed, does it seem likely that such a thing could be designed.

In discussing the question of the methods employed for the reduction of the dislocation, the foremost place, at any rate on the ground of priority, belongs to the operative procedure commonly known as the "Hoffa-Lorenz" method, which is still practised by so well-known an authority as Professor Hoffa, or at all events was advocated by him so recently as the Thirteenth International Medical Congress held at Paris in 1900.

The Hoffa-Lorenz Operation.

The steps of the operation are briefly as follows: The patient is anaesthetised, and full extension is made until the trochanter is nearly on a level with Nélaton's line. While full extension is maintained, an incision is made parallel with the anterior margin of the great trochanter, and ¼ in. in front of it and commencing at its upper angle.

The fascia lata is fully opened up, the gluteus medius and minimus are retracted, and the capsule of the hip-joint is opened by an incision made upon the neck of the bone whilst the assistant, who still keeps up extension, abducts and rotates out the limb in order to facilitate this. The capsule is slit up right to its insertion into the rim of the acetabulum, and, if this does not allow the head of the bone to come well up into the wound, the incision in the capsule is made T-shaped by a second incision parallel to the anterior intertrochanteric line. The finger is then introduced into the acetabulum, which is deepened with a gouge or a sharp spoon. Hoffa lays stress on the new acetabulum being made circular, with deep and overhanging edges, especially above. This new acetabulum is fashioned, partly by deepening the old one and partly by gouging away bone from its upper and outer rim. The head is now replaced in the acetabulum, chiefly by traction, and if necessary is trimmed until it fits it.

The wound is left open, and is packed with gauze. Outside this a plaster-of-paris spica is applied, while the assistant maintains the extension and also keeps the limb in a position of abduction and slight inward rotation. The child is finally placed in a Phelps's box.

The limb is kept up in plaster for three or four weeks, at the end of which the child has electrical treatment and gymnastic exercises daily, with special attention to the performance of abduction movements.

There are several objections to this method, any of which are sufficient to put it out of court as a routine treatment for congenital dislocation. Indeed, Hoffa himself realizes this, and only advocates the operation for cases in which Lorenz's "bloodless method" has failed, or for children beyond the age at which the latter method is likely to be successful. The great objection is the risk of ankylosis which is likely to follow the extensive interference with the joint surfaces; this risk is still further increased by Hoffa's plan of leaving the wound open and stuffing it with gauze. This latter procedure, which Hoffa advocates in order to minimize the risk of sepsis, I believe to be quite unnecessary, but even without it the risk of ankylosis is necessarily great. Whenever both articular surfaces are denuded of their cartilaginous covering, especially in a young child, ankylosis, generally of a severe type, is almost certain to follow even in spite of vigorous passive movement: and although Hoffa makes light of this risk, the experience that I have had of two cases in which I have done the operation, and of several others that I have seen in the practice of others has convinced me that the operation is not one to be resorted to if anything else can be done. Its results can practically never be perfect; the new acetabulum is a partly artificial one, and some shortening must therefore persist, while the position in which the limb is put up and the impossibility of making a really deep and sufficient acetabulum out of the thin pelvic bone must encourage reluxation. Skiagraphs of apparently successful operations of this kind show that this does indeed happen. Reluxation is still further encouraged by the early period at which it is necessary to abandon the splint and have recourse to passive movement in order to avert ankylosis.

Author's Method.

In order to overcome the difficulties presented by this operation, and at the same time to ensure the true reduction of the dislocation, I have been in the habit for some years past of practising an operation that combines to some extent the more important features of the "bloodless method" with the certainty of the open operation. The real merit of Lorenz's so-called "bloodless method" is not that it is bloodless—for that is its weak point—but that it calls attention to two facts that must receive adequate treatment if success is to be obtained. The first fact is that the chief obstacle to reduction, as far as the muscles are concerned, lies in the shortening of the adductors, and the second is that after reduction the only stable position for the limb in the majority of cases is one of extreme abduction. These two important points I utilize in the following operation.

At a preliminary sitting, under full anaesthesia, the adductors are either fully stretched or are divided with a tenotome: the procedure in fact is so far similar to the "bloodless method" which will be described immediately. If reduction is effected by these means well and good; the limb is then put up as in Lorenz's method, and the results are checked by skiagraphy. Should reduction by these means fail, or should reluxation occur, the hip-joint is exposed at a second sitting, a week later, by an incision from just below the anterior superior iliac spine in the interval between the sartorius and the tensor fasciae femoris, and the capsule is exposed as for excision and slit up fully, the head of the bone protruded, and the finger introduced into the acetabulum: the ligamentum teres, if present, is cut away. The head of the bone is now guided into the acetabulum by the finger already introduced into it by manipulations closely resembling those in the "bloodless method," and when this is accomplished it will generally be found that the limb spontaneously assumes a position of marked abduction and of outward rotation, although the latter position is not at all constant; indeed, where the angle of femoral torsion is very great there will be rotation inwards. As a rule I divide the tendon of the ilio-psoas

[6] Loc. cit.

obliquely with a pair of blunt-pointed scissors introduced into the wound, as I have found it a powerful agent in inducing relaxation.

The exact method of incising the capsule is not of much importance: latterly I have made it parallel to the long axis of the neck of the femur and over the head of the bone made prominent by rotating the limb outwards. This has the advantage that the incision is in the lax portion of the capsule and allows the thickened anterior portion lying over the acetabulum to be more easily defined. It is this latter portion of the capsule that offers the greatest obstacle to reduction; the finger passed through the narrow slit-like opening between it and the upper edge of the acetabulum will ascertain whether there is room for the head to pass into position, and if not, a way must be made for it by detaching the capsule from the acetabular rim sufficiently to allow of its passage. It is always well, however, not to detach the capsule too freely from the rim of the acetabulum as the various bands in that situation are powerful agents in preventing the head of the bone from slipping out of place. No attempt whatever is made to deepen the acetabulum or to shape the head of the bone afresh. There has been no difficulty in getting the head of the bone into the acetabulum in any of the cases operated upon by this method; its exact position is determined by the finger in the wound, and there can be no mistake. In order to maintain the head of the bone in position—which is really the hard part of the procedure—a portion of the lax capsule above the acetabulum is excised by an elliptical incision and the cut edges are brought together with stout catgut sutures. The capacity of the capsule is thus diminished and the joint is rendered 'more stable. The deeper tissues are finally approximated with catgut sutures and the skin wound is closed without drainage. The operation can be done through an incision about 3 in. in length, and there is practically no bleeding; if more room be required it is easy to curve the incision outwards above and to detach part of the origin of the tensor fasciae femoris from the iliac bone.

All that now remains to be done is to put up the limb in a suitable immobilization apparatus. At first I employed a modification of Croft's plaster-of-paris splint, so designed that the wound could be inspected at any time without disturbing the parts, but more recently I have simply put up the limb in a plaster spica, taking in the knee. The Croft's splint was used to avoid the risk of suppuration beneath a fixed plaster bandage; but, as such a thing has never occurred in any of my cases, the ordinary plaster spica is now applied from the first, and allowed to remain undisturbed for three weeks, when it is removed with a Gigli's saw under anaesthesia, the stitches taken out, and a fresh spica applied. An *x*-ray photograph is taken at the same time, and, should the head of the bone be found to have slipped out of place, the wound is opened up and reduction again effected.

The position in which the limb is put up in the first instance depends entirely upon the position of maximum stability. In all cases there is one position in which the limb remains without reluxation occurring, and this is the position chosen. It is nearly always the fully abducted position, generally with some outward rotation but often with inward rotation. I have had cases in which the only stable position was that of full extension and rotation inwards.

The after-treatment corresponds almost exactly to that for the "bloodless method" except that it takes rather a shorter time. The results will be discussed in connexion with those of the latter method.

LORENZ'S "BLOODLESS METHOD."

This after all is the method that at present holds the field and is on its trial. Until it was brought forward there was hardly any attempt made to deal systematically with congenital dislocation; since its introduction, however, many hundreds of cases have been treated, and time enough has now elapsed and the operation has been practised by a sufficiently large number of surgeons to allow some idea of its true value to be arrived at.

For some reason it does not seem to have been at all frequently practised in England; while surgeons in Germany, France, and America have been treating large numbers of cases, and a voluminous literature has accumulated there upon the subject, there are few references to it in English medical journals, and little mention of it in the textbooks. The operation is as follows:

The patient is fully anaesthetised and the adductor muscles are first fully stretched or torn through subcutaneously by striking them repeatedly with the ulnar border of the hand while the limb is forcibly abducted. At first the abduction obtained is limited, but as the rupture of the muscles goes on it increases until the limb is abducted through 90 degrees. During this the assistant steadies the pelvis, pressing down the sound side of the pelvis. Should there be much shortening, horizontal traction upon the limb may be made to bring the trochanter down to the level of Nélaton's line, but this is rarely necessary.

When the parts have thus been fully stretched, reduction of the dislocation is effected by vertical extension, that is, traction upon the limb flexed at right angles to the pelvis. At the same time direct pressure is made over the great trochanter, and, as the extension is reaching its full limit, the limb is carried outwards, that is, abducted through a right angle. By these manœuvres the head of the bone is made to pass forward over the posterior lip of the acetabulum—an event marked by a loud and characteristic click—until it lies over the acetabular depression. In order to fix the head here the limb is put up in a position of abduction, carried if necessary as far as 90 degrees, and at the same time hyper-extended and rotated slightly inwards. In this position it is kept for four or five months by a plaster spica that does not take in the knee; at the end of this time a second spica is applied after the limb has been brought into a position of moderate abduction combined with a slight degree of flexion and this is kept on for another four or five months, during which time the child is encouraged to walk as much as possible, so that the pressure of the head of the bone against the acetabulum may deepen and develop the latter.

DISCUSSION OF THE VALUE OF THE FOREGOING METHODS.

This difficult subject has been aided somewhat by the *x* rays. It is now easy to be exact in speaking of the results of treatment, and it is no longer possible to speak of a case as "cured" when a radiograph shows that the head of the bone is out of place. To this latter category must undoubtedly be relegated a large number of the "cures" of past years. In future no case can be considered "cured" unless a radiograph shows the head of the bone in a normal acetabulum, which itself has undergone development and is practically indistinguishable in shape and size and position from its fellow. I could show several cases in which the gait is practically perfect and which most observers would pass as true cures, but in which a radiograph shows the head of the bone above and behind the acetabulum. In speaking of cures among my own cases I mean true cures in the anatomical sense of the term.

For convenience, the results obtained by any of the foregoing methods of reduction may be divided into three groups; the first is the true anatomical cure in which the affected joint is indistinguishable from the sound one; the second is the group of "improvements" in which the joint, though not anatomically correct, is nevertheless stable; the gait is markedly improved, and the lordosis is absent, although shortening persists. Here the head of the bone usually makes for itself a new acetabulum, partly out of the old one and partly out of the ilium above and behind it. Finally, there is the group of failures in which the head of the bone resumes its position on the dorsum ilii, where it slips about as before. By some writers these three groups have been classified as (1) reposition; (2) transposition; and (3) recurrence.

Great divergence of opinion exists among writers as to the proportion of cases to be allotted to the first two of these groups. There should be no possibility of doubt as to the question of a true radical cure now that radiography is so universally applicable. A glance at a radiographic print will show the difference between a true and a partial cure. When the cure is a true anatomical one the head of the bone lies in the centre of the acetabulum; however small or ill-developed the cavity may be, the clear space denoting the Y-cartilage in the acetabulum can always be seen, and the centre of the globular head should be directly opposite that. The Y-cartilage is the most reliable landmark in determining whether the head of the bone is in its normal position; the others may be fallacious, owing to the position in which the limb is put up. Should the centre of the head lie above the Y-cartilage it is certain that the head, although possibly lying to some extent in the acetabulum, nevertheless does not do so entirely, and that the new joint surface is formed partly at the expense of the old one and partly from the outer surface of the ilium.

It will be obvious from what has gone before that there are fewer difficulties in the way of a true reduction of the dis-

ocation if the attempt be made after opening the joint than if it be made by the "bloodless method," and that therefore in order to prove their case the advocates of the latter must be able to point either to better results or to diminished risk. The first and most serious difficulty peculiar to the bloodless method is the covering-in of the acetabulum by the anterior part of the capsule or "the capsular hymen" that has already been referred to more than once. If the slit-like opening into the acetabulum be too small for the head of the femur to pass through—as in my experience it often is—it is absolutely impossible to obtain true reduction by any mere manipulations: nothing short of an open operation will do. And the chances of the surgeon being confronted with this difficulty must increase with the age of the child, for, as we have seen, the obliteration of the acetabular cavity by the thickened anterior part of the capsule tends to increase as the patient's age advances, so that, even if reduction could be effected at an early age, it may be mechanically impossible by manipulation later on in life. From this it follows that, if Lorenz's method is to be adopted, it should always be done as early as possible after the child has become sufficiently clean to allow the necessary plaster bandages to be worn.

Another drawback that must have struck those who have had much practice with the "bloodless method" is the difficulty of being sure when the head of the bone is in the acetabulum. This point does not seem to have attracted the attention it deserves, for the difficulty is a very real one, even in experienced hands. It is true that the head of the bone gives a loud click as it passes over the posterior rim of the cavity, but it is easy, as I have repeatedly proved when performing the open operation, to obtain both the loud characteristic click and the stable limb without the head of the bone being in the acetabulum at all; what happens, at any rate in some cases, is that the head rides forwards over the posterior acetabular rim, and then jumps to a position above and behind the joint where it is held in an apparently stable position by the extreme abduction that is being practised at the same time. In other cases there is already a shallow ridge of bone thrown out to bound the new acetabulum, and it is this that the head of the femur jumps, and it is into the newly-formed false joint that the head is reduced, being held in a stable position by jamming it against the ilium by the extreme abduction. This also I have actually verified more than once upon the operating table.

Hallopeau[7] presented to the Anatomical Society of Paris the dissection of the left hip of a child 2½ years old, who died of broncho-pneumonia thirteen days after an attempt to reduce a congenital dislocation by the "bloodless method," and he sums up his observations by saying "It would therefore have been quite useless to expect a bony point of support from the bloodless reduction of this dislocation."

It is common experience that great improvement follows the open or the bloodless method in the majority of cases provided that the patient is of a suitable age. The question of the durability of the improvement, however, or, in other words whether a false joint formed as a result of the operation is permanently stable or not, is one upon which little reliable information is at present forthcoming. The reason for this is that in the first place the operation—bloodless or open—has hardly been practised long enough to allow of its ultimate results being accurately gauged, and, moreover, attention is chiefly devoted to the "cures," while, in the second place, patients are very apt to pass from the surgeon's notice after a time; it is hardly likely that they would keep themselves under observation from early childhood to adult life, as is necessary if the true permanence of the "improvement" is to be tested. It is a point to which particular attention must be directed in the future.

And now, having pointed out the anatomical difficulties that lie in the path of true success with the "bloodless method," let me turn to the "cures" claimed for it by those who practise it. Here we meet with a most extraordinary discrepancy in results and some considerable vagueness in language. Thus, Lorenz[8] says that half of his cases are unsatisfactory from the anatomical point of view, and are to a certain extent failures. This he attributes chiefly to alterations in the neck of the femur, rendering it impossible to get the head of the bone in place without putting the limb in a position incompatible with ability to walk. He says, however, that even these cases are much improved by the new and stable joint. As to the anatomical cures, he remarks: "In many cases the acetabular cavity enlarges and deepens concentrically, so that we can look upon it as a true anatomical restoration of the joint. In the majority, however, the acetabulum enlarges eccentrically by a new formation of bone along its upper border, beneath which the head of the bone remains firmly applied." These latter cases clearly fall into the second group outlined above, and of course cannot be looked upon as true anatomical cures.

Nové-Josserand,[9] a disciple of Lorenz, gives his experience of 50 cases thus treated which were under observation for periods varying from seven to twenty-one months. According to him there were 36.3 per cent. of what he calls "reductions," 53.6 per cent. of "transpositions," while in the remaining 10 per cent. the operation either failed entirely or was abandoned. He also points out that reduction occurred in 44 per cent. of the unilateral cases as opposed to 39 per cent. in the bilateral cases. It would appear from Nové-Josserand's paper that he implies by the term "reductions" true anatomical cures, but from remarks that occur during a description of the cases of reduction we may fairly conclude that such is at any rate not invariably the case. Thus he says in one part: "The affected side differs in a few details from the healthy one, even in cured cases. Thus the new joint is rather more lax and the head of the bone is more prominent in Scarpa's triangle. The leg may be longer than its fellow from inclusion of the cotyloid ligament between the head and the acetabulum." This seems certainly to point to some defect in true reduction.

On the other hand, Kirmisson[10] states that reduction is very difficult to obtain by Lorenz's method, and goes so far as to say that Lorenz himself, "after having radiographed his patients, has recently admitted that reduction does not take place." He also quotes other surgeons of eminence who have failed to get good results by this method. Thus Kölliker, of Leipzig, published the results of 64 cases out of which he only obtained reduction in 2. He also says[11] that Hoffa, Petersen, Mouchet, and Broca are of opinion that the reductions are quite exceptional. To illustrate the divergence of opinion he goes on to say that Kummell claims 16 per cent., Rédard 37 per cent., and Joachimsthal 73 per cent. of reductions, while Müller claims 70 per cent. in unilateral and 25 per cent. in bilateral cases. As a further illustration of this may be quoted a letter from Muirhead Little,[12] in which he says that Hoffa states there are 95 per cent. of reluxations, while Schede (quoted by Petersen) only succeeded 13 times in 102 cases, Codivilla 4 in 66, and Kummell in 5 per cent. Bottini[13] also gives it as his opinion that true cure rarely if ever results. Hagopoff[14] quotes Hoffa as obtaining only 21.2 per cent. of success, and Schede (German Surgical Congress, 1899) only 6.3 per cent. Rédard [15] gives the following results tested by radiography: Unilateral cases 43, cures 14; transpositions 26, failures 3; bilateral cases 7, cures 2. All the cases were under 7. In some of the transpositions the functional results were almost as good as the true cures.

At the German Surgical Congress held in 1899, much doubt was cast by many of the speakers, not only on the true nature of the cure but also on the supposed superior safety of the "bloodless method." To the latter point we shall come immediately. In the meanwhile, it suffices to say that a large number of competent observers doubt that a true cure is obtained otherwise than exceptionally. It is no argument against this view to assume that the operator has not seen Professor Lorenz at work, and is therefore not familiar with the steps of the operation. There is nothing at all mysterious about the procedure, and any one of intelligence can practise it; it has, moreover, been done by a large number of surgeons who have seen Lorenz operate. For myself I may say that I have tried it now in 30 cases, and that in only 1 has there been a true permanent reduction.

As to the question of the relative safety of the various methods. It is true that Hoffa, in giving the results of his experience of the Hoffa-Lorenz operative method, says that he had 7 deaths in 248 cases directly traceable to the operation. These, however, were all from faulty asepsis in the earlier cases, and in the last 132 cases there has been no death. Indeed, the question of risk from the open operation that I

[7] *Bull. et Mém. de la Soc. Anat. de Paris*, 1902, 6me série, tome iv.
[8] *Comptes Rendus du XIIe Congrès International de Médecine*. Paris, 1900. Sec. de Chir. de l'Enfance, p. 28.
[9] *Revue Mensuelle des Maladies de l'Enfance*, tome xix, p. 245.
[10] Ibid., tome xvii, p. 169.
[11] *Rev. d'Orthop.*, May, 1903.
[12] British Medical Journal, January 24th, 1903, p. 225.
[13] Quoted by Ghillini, *Münch. med. Woch.*, April 2nd, 1901, p. 540.
[14] *Gaz. Hebd. de Méd. et de Chir.*, March 17th, 1901, p. 253.
[15] *Gaz. Hebd. de Méd. et de Chir.*, November 7th, 1901, p. 1067.

have described above may be dismissed as trivial. The operation is easy; there is no shock even in the youngest subjects; the operation is practically bloodless, and occupies only a short time. On the other hand, the list of accidents[16] that may be laid to the credit of the "bloodless method" is a large one, although no fatality has occurred in connexion with it as far as I know.[17] Thus there may be severe shock: the femur may be fractured at either end or in the shaft; a very large haematoma may require incision and drainage; oedema of the limb may occur, or severe lymphangitis; the sciatic nerve has been known to have been permanently paralysed. Thus the "bloodless method" is by no means free from risks, even in very skilled hands, and I venture therefore to suggest that at any rate it should not be advocated to the exclusion of other and more precise methods.

My own practice is to make a careful trial of Lorenz's method, in the first instance, in all cases under 5 years of age, and to check the results by radiography. If this does not show a true anatomical cure, I proceed to open the joint and deal with the dislocation in the manner already described; and so convinced am I of the freedom from danger that I do not hesitate to reopen the wound and reduce the dislocation afresh should it be found during the course of treatment that the head of the bone has escaped from the acetabulum; I have done this on two occasions with perfectly satisfactory results. Occasionally I try the Lorenz manipulations a second time if the patient be quite young—say under 3 years of age—and if the joint be quite mobile and with little shortening, as these cases are most suited for Lorenz's method. When, however, the child is near 5 years of age, and one careful attempt has failed, I do not waste time further, but open the joint at once. When the child is over 5 the chances of success by manipulation are much less, and I rarely spend much time over it. The manipulations are used here more as a preliminary to operative interference, and I would advise that, unless the head of the bone clearly goes into the acetabulum during them, time should not be consumed in an attempt that is almost certain to be futile, but that the open operation should be performed in about a week's time.

Bilateral cases are admittedly difficult to treat by manipulation. I believe that much time will be saved and much more good will be done by performing an open operation upon both sides at an interval of, say, three months.

There remains the question of the limits of age at which the various methods should be practised. I have already said that Lorenz's method will probably prove most successful in quite young children, and that after 5 the better plan is to prefer open operation. How late in life the operation is likely to be successful I do not know. Successful cases have been reported in children of 15 or even older, but we have no reliable information as to the exact nature of the cure. I myself have had two perfectly successful cases in children, one of whom was 9¾ and the other 10½ at the time treatment was commenced.

My own results I may summarize as follows: Lorenz's "bloodless method" I have tried in 30 cases; in only one of them was a perfect cure obtained, and this case was a child under 3 years of age. In the remaining 29 some were submitted later to an operation, but all of those who for any reason were not, were very much improved as to gait and general usefulness, two or three of them being so much improved that they would, in the absence of radiography, have easily passed for cured. The only accident that has occurred to me in performing this method was a partial separation—or rather, a mere loosening, for the radiograph showed no separation—of the lower epiphysis of the femur in one case. This did not interfere at all with the progress of the treatment. I have performed the open operation that I have already described in 13 cases. In 9 the cure has been perfect, and the children are now walking about quite well; in 3 the head of the bone has escaped and has formed a new acetabulum above and behind the old, but the joints are quite stable—in other words, these are transpositions; 1 case is still under treatment; and in no case has there been complete failure. I do not therefore recommend the open operation as an infallible cure for these cases; but as a method that is safe and at the same time more likely to produce a precise result than mere manipulations. At the worst, if it fails to cure, it gives a result as good as the latter.

[16] See Schlesinger, *Münch. med. Woch.*, March 19th, 1901, p. 461, and Muirhead Little, BRITISH MEDICAL JOURNAL, January 24th, 1903, p. 235. According to the latter, even Lorenz has had 18 fractures in 450 cases, and 3 of permanent sciatic palsy.

[17] Mr. Openshaw, however, quoted a fatal case in the discussion that followed the reading of this paper.

CONCLUSIONS.

The following conclusions are drawn from the foregoing considerations:

1. That all cases should be checked by radiography, and that no "cure" should be spoken of that is not a true anatomical cure.
2. That all cases of congenital dislocation under 14 years of age should be submitted to treatment. In the great majority improvement will result, while in some a true anatomical cure is brought about.
3. That in all these cases Lorenz's manipulations should be tried in the first instance. Even should they fail to effect reduction they facilitate any subsequent procedures.
4. That the prospect of a cure by Lorenz's "bloodless method" is in direct proportion to the youth of the child, and that after the age of four years there is little hope of a true cure by its means.
5. That in any case the chances of a true cure by the "bloodless method" are not very great.
6. That an open operation should be done whenever a radiograph shows that the "bloodless method" has failed to reduce the dislocation, except perhaps in the case of a very young child—under 3 years—in whom the manipulations may be repeated.
7. That with the open operation no fear need be entertained of shock, bleeding, or sepsis.
8. That under no circumstances should the joint surfaces be remodelled.
9. That an open operation is more calculated to result in a cure as it enables the surgeon to ascertain beyond a doubt when the head of the bone is really in the acetabulum.
10. That the open operation is especially suited for cases over 4 years of age and for those of bilateral dislocation.
11. That after the operation the limb should be put up in the position of maximum stability; in the majority of cases this will be similar to Lorenz's position. The limb should be put up in plaster of paris immediately and the casing should take in the flexed knee; this is essential in order to ensure stability of the head of the bone.
12. That all tense structures should be stretched or tenotomized as a preliminary measure a week or so previously to the open operation. The after-treatment is practically identical with that of the Lorenz method.

II.—NOBLE SMITH, F.R.C.S.,

Senior Surgeon, City Orthopaedic Hospital.

Mr. NOBLE SMITH showed radiographs of 4 cases, one double in a girl aged 6, one single in a girl aged 11½, one single in a girl aged 12, and another single in a young lady aged 17½. These cases had been operated upon by Lorenz's method since he had seen Professor Lorenz operate in this country. In all these cases a fairly good result had up to this time been attained, although one had still to wait to see what the ultimate results would be. As regards the comparative value of the two forms of operation, he (Mr. Noble Smith) held an open mind, and so long as he could obtain good results, as in the cases shown, he would be content to depend upon operation without opening the joint. In this respect he was in accord with Mr. Burghard. He felt personally much indebted to Dr. Lorenz, because since seeing him operate he found he had succeeded far more satisfactorily than he had done when depending upon Lorenz's written description. He had operated on other cases but these four were the only ones in which he had obtained radiographs of the conditions before and after operation. He had said that the results were fairly satisfactory, but he must add the words considering the ages of the patients. In the child of 6 the period of six months had elapsed, and he had removed the splint, and had found the joints working quite well, but still held in a very flexed and abducted position; this partial fixation was doubtless beneficial as regards the ultimate perfection of the joints. In the child aged 11½ the position was very good, but it appeared from the radiograph that the head of the femur had become detached; he did not think that this would prevent a good result. In the case of 12 years of age a perfect position appeared to have been attained. In the girl of 17½ he had preceded the operation by many months of stretching and extending the joint. He had succeeded even in this case in placing the head of the femur in a natural position, but there had been a great tendency for the head to slip backwards, and the radiograph showed that the

head was behind the acetabulum, but at the same time there was no tendency for that head of bone to pass upwards. He thought he had succeeded since then in replacing the head perfectly. Mr. Noble Smith also referred to another case of double displacement in a girl aged 6, in whom he had no difficulty in reducing one joint, but on the other side he had not been able to obtain a perfect result, because the head of the femur could not be placed sufficiently forwards. However, he thought that practically even under such circumstances a good result might be anticipated.

III.—R. C. Dux, F.R.C.S.,

Surgeon, Liverpool Infirmary for Children.

Mr. Dux said: My experience of Lorenz's bloodless method has been limited to 4 cases. The first of these was reduced, some two months before Professor Lorenz's visit to this country, and the position obtained was not completely satisfactory. I learned much from watching Lorenz himself, and studying his methods of manipulation and subsequent fixation—particularly did I learn the importance of thorough stretching of the anterior part of the capsule of the joint after the reposition of the head. It is, of course, too early to say what the ultimate result in these cases may be. Undoubtedly improvement is generally evident when the child first begins to walk; it has yet to be proved whether such improvement is permanent. I have found that the employment of thin aluminium strips, incorporated with the plaster casing, materially diminishes its weight, and enables the patient to get about more readily.

IV.—Robert Jones, F.R.C.S.,

Surgeon, Royal Southern Hospital, Liverpool.

Mr. Robert Jones said: I believe that more than one way exists for the cure of congenital hip, and that the same method will not suit all. More good will come from a study of the causes of failure than from the most carefully compiled statistics. For years we have tried methods which have yielded an occasional success, such as extension and abduction in abduction frame, osteotomy of the neck to correct anteversion, manipulations for reductions, and various forms of operation procedure. Neither the Hoffa nor the Lorenz modification appeals to me, as stripping a joint of its cartilage and whittling the head of the femur directly makes for an ankylosing arthrodesis. The essential difference between the methods of Paci and Lorenz is in the recognition by Lorenz of the rudimentary character of the acetabulum and the necessity of enlarging it by direct pressure of bone. In support of the probability of this occurring I may mention that in a boy aged 17, in whom I exsected the head of the femur for a traumatic dislocation, I found an excellent attempt at the formation of a joint. Until the visit of Lorenz I had no idea of the thoroughness of his manipulations, and I at once saw why so many failures had occurred in this country. Since his visit I have operated on 38 cases, 34 of which were reduced, as confirmed by palpation and *x*-ray photographs, most of which are now shown. In 4 cases the neck of the femur was fractured and the shafts transposed anteriorly. These were only complications, and with an increase of experience I think they should not occur. The causes of failure in reduction were folds of capsule between the acetabulum and femoral head, sometimes constriction of the capsule, the importance of which was overrated, anteversion of the neck, and instability of the articulation, due either to a faulty head or rudimentary acetabulum. Of immense clinical importance is the question, Can these defects be recognized clinically? In reply, I think that on completion of reduction one can prognose whether it will be permanent or not. If the hip in the act of being reduced gives the sensation experienced in the reduction of a traumatic case, and if there is stability after reduction, the prospects are good, and the prospects are moderate in those cases where reduction becomes stable after stretching the anterior portion of the capsule by prolonged extension of the abducted hip. Failure may safely be prognosed when the femur slips out of joint on the slightest provocation. In this last variety, exploratory incision is called for to correct soft structure obstruction, or to correct anteversion of the femoral neck. Anteversion can be diagnosed by radiography, as well as by palpation. If operation is done I strongly advocate incision after the dislocation is reduced, and, if anteversion exists, the performance of osteotomy of the shaft of the femur, the neck being held in position by pins as recommended by Schede and Bradford. The statistics of the open and bloodless methods are in the hands of the two greatest authorities, Lorenz and Hoffa, about 50 per cent. of cures. This is sufficient proof that there is considerable overlapping, and that the majority of cases operated upon by Hoffa would be simply manipulated by Lorenz. I agree with Mr. Burghard that it is best not to denude the cartilage, but in the worst cases, where operation is most called for on account of anatomical misfits, how is the head to be retained short of excavation? In view of the diverse opinions, I intend to persevere with the Lorenz method as a routine, operating only in the exceptional case, and after a sufficient lapse of time shall form my own conclusions with regard to final results.

V.—A. H. Tubby, M.S.,

Surgeon, Westminster Hospital.

Mr. Tubby said: With reference to the method of forcible reduction according to Lorenz's method we have not at present any means by which we can be quite sure that when the head of the femur appears to have been reduced into its proper place there is no infolding of the capsule or interposition of the capsule between the bones owing to the action of the tense ilio-psoas. In fact it seems to me that the data on which an estimation of the condition of the parts may be made, both before and after reduction, are somewhat vague. Neither tactile examination nor the use of the *x* rays can be relied upon to tell us exactly what the true state of affairs is. I have not had the opportunity of seeing Lorenz operate, but I am far from being satisfied that an entirely successful method of treatment has been found, even for young children. The risks are not inconsiderable. Fractures of the thigh, tearing of the sciatic nerve, rupture of the femoral artery, and gangrene and death have occurred. In fact it seems to me that the risks of this forcible procedure are as great if not greater than those appertaining to the open method, which may be summed up by the word "sepsis." Doubtless while each case should be treated on its merits, it is well, as far as possible, for every surgeon to adopt a line of treatment which promises to him the best results. I have been successful, so far as the certain reduction of the dislocation is concerned in recent cases, by first exsecting a portion of the adductor muscles, and of the sartorius and tensor vaginae femoris, and then placing the limb or limbs in full abduction and extension for six weeks. Then the joint was opened by the anterior method and the resistant parts of the capsule divided, and by manipulation the head was reduced. The incision in the capsule was closed by suture, and the edges of the skin wound brought together and the limb placed in full abduction and retained there in plaster-of-paris. I intend to treat a number of suitable cases in this way, and shall be happy to report on them in three years' time. Indeed, I feel that such a course is imperative in the present condition of treatment of congenital displacement of the hip.

Reply.

Mr. Burghard, in reply, thanked the speakers for giving their valuable personal experience. He regretted that the subject had been brought up so soon after the visit of Professor Lorenz had attracted special attention to the matter, so that sufficient time had scarcely elapsed for much reliable information to have been gained. He trusted that in a few years' time there would be another opportunity of contrasting the later results of the various methods of treatment. What was wanted for the true elucidation of this very difficult question was not an advocacy of one method to the exclusion of all others, but a series of cases by careful observers who were not concerned to advocate the method, but to state the facts. The question as to the permanence of the results must be the point to which attention should be directed most particularly in the immediate future. He still held strongly to the view that no one method was likely to succeed in all cases.

SPLENOMEGALY IN INFANTS AND YOUNG CHILDREN.

By George Carpenter, M.D.,

Assistant Physician, North-Eastern Hospital for Children; formerly Physician, Evelina Hospital for Children.

Enlargement of the spleen is not an uncommon manifestation in early childhood, and it is frequently found enlarged in infancy. The clinical material which has passed through my hands during the last few years at the Evelina and the North-Eastern Hospitals for Children comprises 348 cases in

whom the spleen was enlarged, as determined by palpation, from all causes during the first twelve years of life, cases such as are commonly found in out-patient hospital practice, and which have not been selected.

For convenience of description, I have arranged the cases in charts (vide Chart 1). In this chart each horizontal line

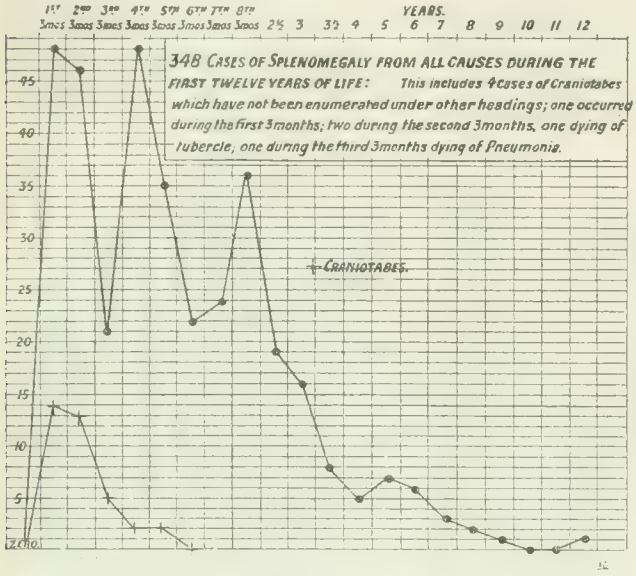


Chart 1.

denotes one case, and each period of time which has been selected for examination comprises three months, and is bounded by a vertical line; thus during the first two years of life eight three-monthly periods will be noted. After the first two years of life the periods of time have been extended to six-monthly intervals for the following two years, and to yearly intervals after that time.

A study of this chart shows that during the first six months of life cases of splenomegaly are very frequent indeed. By the ninth month there is a great diminution, and the number has decreased by more than half. This diminution, however, is followed within the next three months by a very rapid rise up to the first year, the number increasing to as many as that met with during the first three months of life. A fall in numbers next occurs, and when the eighteenth month is reached cases are about as numerous as at the ninth month of life. Then there is a steady rise in the numbers, which about equal that of the fifteenth month, and from that period to the fourth year there is a steady fall in numbers, and by that time cases are becoming uncommon.

In this chart three large pinnacles of splenic enlargements are depicted—a lofty pinnacle during the first three months, which maintains its height for the following three months; an equally high pinnacle at the twelfth month; and a well-marked pinnacle but of less altitude at the second year. Splenic enlargements are very numerous, therefore, during the first two years of life, amounting to something like seven-ninths of the total number of my cases.

Chart 2 comprises 57 cases of undoubted syphilis associated

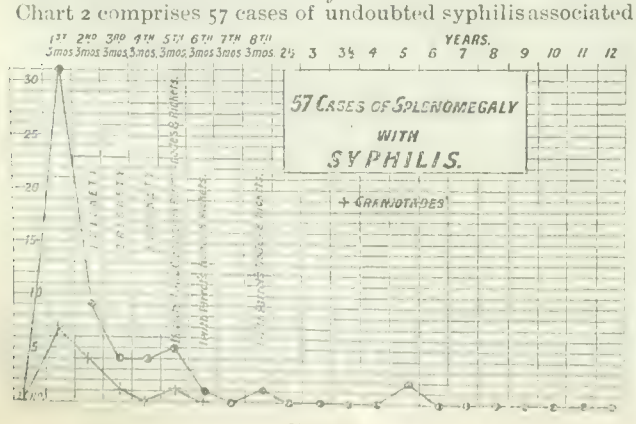


Chart 2.

with enlargement of the spleen. The cases have been arranged on a similar plan to that adopted in Chart 1. It will be seen that the top of the syphilitic pinnacle is within the first three months of life, and that by the ninth month the number of cases has very greatly diminished but remains more or less steady for the following six months, and that from the eighteenth month onwards undoubted cases of syphilis with splenomegaly are quite uncommon. It is interesting to note that 4 of my cases in which the spleen was enlarged attended the hospital for cauliflower-like condylomata ani, namely, 2 at 5 years of age, 1 at 13 months old, and 1 at 15 months old without other evidence of syphilis. In the vertical columns the number of these cases that were rickety also is indicated. They amount to 10 instances, and out of 15 cases 9 were rickety.

There were 3 cases of cranial osteophytes (Parrot's nodes), all of these cases being rickety likewise, and in 1 case craniotabes was associated. The number of cases with craniotabes in this series is also indicated. It will be noted that craniotabes is most usually encountered during the first six months of life.

In Chart 1 all the cases which had craniotabes are denoted by a double broken line and the same feature is prominent, namely, that craniotabes is most frequently met with during the first six months of life.

In my experience splenic enlargements in children up to 6 months of age may be estimated to occur in about 40 per cent. of indisputable syphilitic infants.[1]

Passing now to Chart 3, there are there represented 60 cases with enlargement of the spleen and chronic "snuffles,"

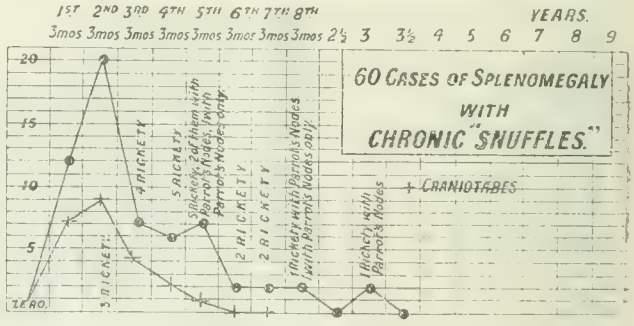


Chart 3.

and over one-third of these cases were associated with craniotabes. Here the same feature is prominent, that craniotabes is most common during the first six months of life. Of these 60 cases, 23 were rickety, the majority being decidedly rickety, and of these rickety children 2 were very rickety and 4 among them had Parrot's nodes. There were also 2 cases of Parrot's nodes that were not rickety.

A doubtful sign of congenital syphilis, when taken alone, is perhaps of no great value; but when two or more doubtful signs occur in conjunction, the balance of evidence is then strongly in favour of a positive diagnosis.

Chart 4 concerns 30 cases of splenomegaly wherein syphilis could not be excluded by reason of the family history or of

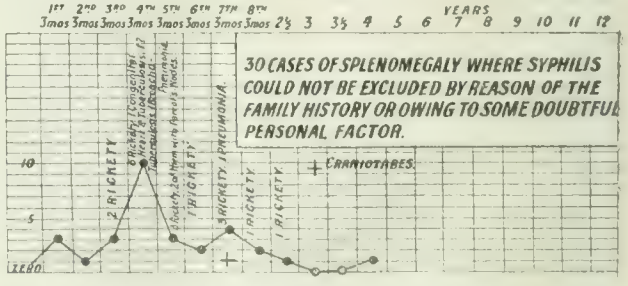


Chart 4.

some doubtful personal factor. Of these cases, 17 showed some signs of rickets, and the bulk of them were definitely rickety and one was very rickety. Two of the rickety cases had Parrot's nodes. There was but one case of craniotabes among them, and that was a very late example, namely, during the twenty-first month of life.

If the obvious, the probable, and the possible cases of

syphilis be added together, the total amounts to but 147 cases, 201 short of the total number of enlarged spleens.

I propose next to deal with several physical signs which are frequently associated with splenic enlargements, and are therefore of more than passing interest, and to which I have in times gone by devoted some study; I refer to craniotabes, cranial osteophytes, and chronic "snuffles."

It will be noticed that I have purposely in the charts not set any specific value to the two former signs, so that the issue may not be confused, but attention has been drawn to these conditions, and the number of cases suffering from them has been duly noted in the charts.

In regard to craniotabes, the remarks which I am now about to make in reference to the etiology of this manifestation are the outcome of a study of 238 cases of that condition.[2]

These cases did not comprise instances of thinning of the skull bones in the neighbourhood of the cranial sutures and the fontanelles, but were examples of thinning of the cranial vault away from the sutures. I have already pointed out elsewhere that the parietal bones are those most commonly involved, and the frontal bones rarely suffer, and then only in association with other cranial bones. The most prolific period of the condition is during the first four months of life, and it is very uncommon from the ninth month onwards, and by the sixteenth month it is a rarity. During the first six months, or what I will term the active syphilitic period of life, it is very common, and during the active rickety period it is quite uncommon; and when the children are most rickety that is the least likely time to find it. If a line of cases of craniotabes be drawn in chart form step by step with a line which denotes the syphilitic cases among them, it will be noted that the syphilitic line follows the craniotabic with great fidelity. A common combination with craniotabes is chronic "snuffles." Craniotabes and chronic "snuffles" may be the only indications of the syphilitic taint, and I have on numerous occasions proved the truth of the suspicion by an examination of other children of the family, or of the parents, or by being previously acquainted with the fact that one or other of the parents was syphilitic.

Infants wasted from dietetic errors are not in my experience craniotabic; indeed it is surprising how hard the skulls are of some of these infants.

There is one other point, craniotabes sometimes readily responds to mercurial treatment, at others that is not the case. Craniotabes may recover, and rickets if associated with it may persist and increase. The presence of craniotabes in an infant should in my opinion excite a strong suspicion of syphilis.

Cranial osteophytes (Parrot's nodes) are not infrequently associated with an enlargement of the spleen, about half of the cases in my experience. In a series of observations which I made on this condition, I found 57·5 of the cases were undoubtedly syphilitic. Seeing the difficulty of detecting syphilis at the period of life at which these nodes are usually to be found, so high a percentage of syphilitic cases is very striking. Rickets is not an essential factor in the production of Parrot's nodes, for these may be occasionally produced when rickets is absent or but slightly marked. The majority of patients, however, are more or less rickety, and some are very rickety. The condition is usually encountered during the first two years of life, being very rare under 6 months of age. I found it associated with chronic "snuffles" in a quarter of the cases. In three instances out of forty I observed craniotabes in association with Parrot's nodes. Occasionally the condition is combined with periosteal nodes elsewhere, namely, in the long bones or in the phalanges. Antisyphilitic treatment in my experience has had no effect upon them, with one or two exceptions I can call to mind, and the peculiarity of the skull when once contracted may be detected with more or less use at puberty, though time tends to tone down the condition.

I am in favour of the view that Parrot's nodes are a syphilitic manifestation, and the condition always excites in my mind the strongest suspicion of that complaint.

Of 11 cases dealt with here, 3 will be found in Chart 2 in syphilitic children, one of them being craniotabic. Six will be found in Chart 3 associated with chronic "snuffles" and splenic enlargements, and 2 will be found in Chart 4, which deals with doubtful cases of syphilis.

Chronic "snuffles" is a very important condition in infancy. It is usually admitted that infants are liable to coryza; indeed, many infants are introduced into the world with a non-specific cold in the head. Such troubles are of short duration usually, though they may recur. Chronic "snuffles" or a chronic cold in the head is quite another matter. It is the long duration that distinguishes the complaint from the simple affection. In a certain proportion of nurslings it is possible in such cases to feel the posterior nares and exclude congenital adenoids, but in others it is impossible to make a digital examination. In older children, the subjects of chronic "snuffles," adenoids are not infrequently to be felt, but it is equally true that they are not infrequently absent. I am under the impression that chronic naso-pharyngeal catarrh is conducive to adenoids, and certainly the detection of congenital adenoids does not exclude syphilitic coryza.

The points of interest about the condition, to my mind, are the facts that (1) chronic "snuffles" undoubtedly occurs with great frequency in congenital syphilis; that will be readily admitted by all; (2) that chronic "snuffles" and craniotabes have, in my experience, frequently been found associated; (3) that chronic "snuffles" and enlarged spleens are, as my figures demonstrate, not infrequent associates, with sometimes craniotabes in addition (vide Chart 3); (4) that some cases of chronic "snuffles" are associated with adenoids, and that it is not always possible to say that the adenoids are the primary condition. That in a certain proportion of the cases which can be successfully examined digitally the naso-pharynx is quite free from adenoid growth; (5) that chronic "snuffles" is not always attended by a discharge from the anterior nares. The discharge is apt to trickle down the posterior pharyngeal wall and give rise to a reflex cough; (6) that chronic "snuffles" when occurring alone may be of doubtful import, but when found associated with craniotabes or splenic enlargements, or Parrot's nodes, or a combination of these or other condition suspicious of syphilis, the balance of evidence is in favour of its being a syphilitic manifestation.

In Chart 5 the same plan of recording cases has been adopted, and this chart deals with 131 cases of splenomegaly

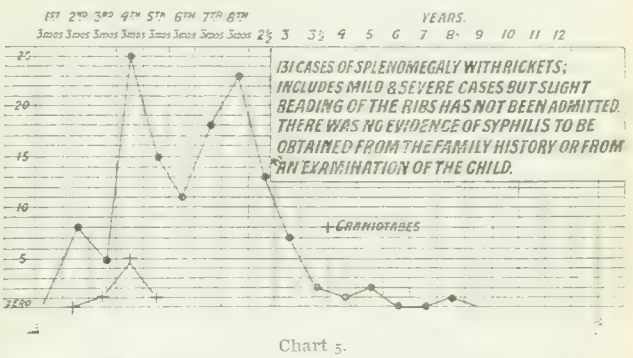


Chart 5.

associated with rickets, in which there was neither family history nor evidence on the person of syphilis. Of the rickety cases it must be admitted at once that splenic enlargements are much more frequently met with in those who are undeniably rickety than in those who are only slightly so. In 6 cases only were the children very rickety. The existence of rickets, however, in cases of splenomegaly is more frequent than the chart gives credit for. As has been mentioned already examples of rickets have arisen in the cases enumerated in Charts 2, 3, and 4. The total number with rickets would be 180, just a trifle over half the number of cases dealt with. Rickets is therefore slightly more in evidence than syphilis. At the utmost I can only arrive at a total of 147 cases of syphilis, whereas 180 children were rickety.

A study of this chart shows two strongly-marked periods during this (the rickety) age, namely, at and about the first and second years of life. For a reason which is not quite obvious there appears to be a decline of rickets about the eighteenth month of life. Rickets is certainly most common in the first and second years of life. Cases begin to develop rapidly at the ninth month onwards, and to decline rapidly after the third year. Chart 5 also demonstrates how uncommon a feature craniotabes is during the rickety age, and how uncommon it is in the apparently-free-from-syphilis cases. It will be noted that in a certain proportion of cases rickets occurs at from three to six months of age. In the absence of periosteal extension up the shafts of the bones it is difficult to separate the rickety joint from the syphilitic. Such

enlargements occurring during the syphilitic age may possibly have been syphilitic, though they have been counted as rachitic; on the other hand, it will be seen that there were no cases of this condition during the first three months of life.

Chart 6 is a composite chart which comprises all cases of splenomegaly denoted by a thin line as in Chart 1. It com-

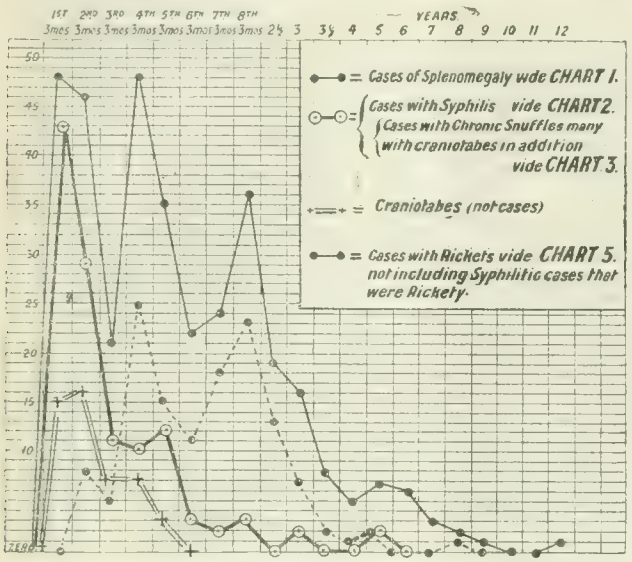


Chart 6.

prises cases of syphilis in Chart 2 united with cases of chronic "snuffles," many with craniotabes, shown in Chart 3. These syphilitic cases are represented by the deep black line. Cases of rickets are represented by a broken line, and have been taken from Chart 5. Chart 6 also indicates the number of all these cases that had craniotabes, and these are represented by a double line. In this composite chart the 30 possible cases of syphilis depicted in Chart 4 have not been included. It will be remembered, however, that 17 of these 30 cases showed signs of rickets, the bulk of them being very definitely rickety. From this it would appear that all cases occurring within the first three months of life are probably syphilitic. During the next period of three months the great majority are certainly syphilitic, a few are possibly rickety, and 6 out of 46 cases cannot be accounted for. During the next three months still the majority of cases are syphilitic, and there is but one case in which there is evidence neither of syphilis nor rickets. By the twelfth month syphilis has still further decreased and rickets still further increased. In 3 cases only is there evidence neither of syphilis nor rickets. By the fifteenth month in 4 cases only was there evidence neither of syphilis nor rickets, and rickets is a little more in evidence than syphilis. By the eighteenth month syphilis is not a strong feature but rickets is pronounced. Four at least, however, cannot be accounted for. By the twenty-first month the majority are rickety, the remainder are syphilitic or are possibly so. By the second year the majority are rickety, and but 3 only cannot be accounted for. By two years and a-half syphilis amounts to a suspicion in one case only. All are rickety except 6, which does not include the suspicious case, and 3 cannot be accounted for. By the third year there is trifling evidence of syphilis, and rickets is the more prominent of the two; 2 cases could not be accounted for. By three years and a-half 2 were rickety and three could not be accounted for. By the fourth year 1 was rickety, and 1 was doubtfully syphilitic, and 1 could not be accounted for. It further appears that during the rickety age, namely, from the ninth month to the third year of life, many more cases are associated with rickets than with syphilis. During the first four years of life the majority of cases can be included either under the headings syphilis or rickets.

There is a close connexion in the chart between the rickety curve and the splenic curve, though not quite so intimate as that between the early syphilitic and the splenic, and the connexion between the two is much closer between the latter half of the rickety period than during the first half. If the rickety cases in Charts 3 and 4 were added, the connexion between the rickety and splenic curves would be more intimate still, and the syphilitic would sink somewhat by reason of the loss of Chart 3. It will also be seen that syphilis for the first fifteen months of life is not an unimportant factor, though by the eighteenth month the zero line is closely approached, and syphilis does not apparently materially affect the result after that period.

Splenic enlargement, however, is not a necessary associate of rickets; indeed, many cases of advanced rickets are free from enlargement of the spleen, and the great majority of rickety children have no splenic enlargement.

Chart 7 deals with 66 cases of splenomegaly in which there was evidence neither of syphilis nor rickets. The diseases

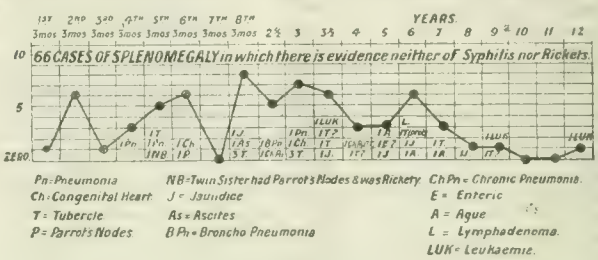


Chart 7.

with which the enlargements were associated have also been recorded in many instances.

It is rare to find the spleen enlarged in general tuberculosis by reason of masses of tubercle within the organ. A tuberculous spleen like hardbake is rare, and tubercle in the spleen in quantity is uncommon. A grey or yellow tubercle here and there in the organ, with perhaps one or two in the capsule is the common thing, and the enlargement of the spleen when it is present in these cases has appeared to me to be mostly due to causes other than general tuberculosis.

The three cases of ague were imported from North Carolina.

I would call attention to the not infrequent association of catarrhal jaundice with splenic enlargement. This organ, like the liver, appears to become temporarily engorged in this disease. It will be noticed that one of the cases in this group had Parrot's nodes, and another had a twin sister who was rickety and had Parrot's nodes.

There are, therefore, two important conditions of ill-health which are frequently associated with splenomegaly in infants and young children—namely, (1) syphilis, (2) rickets, and there is (3) an undetermined cause or causes. At least two of the known conditions which accompany splenomegaly are admittedly in a high potential state during the first two or three years or more of life. Omitting the undoubted direct influence of syphilis in the production of splenomegaly—for it occurs in syphilitic fetuses—rickets is very prevalent at this period of infantile life-history.

Whether the alterations in the blood which induce rickets are capable of producing at the same time the splenic enlargements which undoubtedly arise in rickety subjects is not quite obvious, for the spleen is not usually increased in size in that disorder; and when enlarged the size of the spleen is in no sense, as it is in syphilis, a measure of the rickety cachexia. Nor is anaemia a necessary part of rickets. I have frequently observed very rickety children without any evidence of anaemia. Further, I have seen decidedly rickety and anaemic children develop splenic enlargements while under observation. I have also observed enlargement of the spleen where there had been rickets, but where that condition had disappeared. I have also seen rickety children with enlargement of the spleen become more rickety, while the spleen diminished greatly in size. Splenic enlargement in rickety children is possibly, therefore, an epiphenomenon.

Rickets is not a disease the main feature of which is characterized by passive deprivation of the lime salts alone, but a strong feature of rickets is the active overgrowth of the cartilaginous growing ends, undue activity in the production of the scaffolding suited to a good building, with the subsequent deposition of jerry-built walls.

This undue activity at the growing ends suggests an irritant—whatever may be the explanation for a deficient deposit of lime salts and undue softness of the bones—of an irritant which is probably manufactured in the intestines, and is carried by the blood stream to the skeleton.

Perhaps syphilis, which by reason of the state of ill-health which it produces is undoubtedly favourable to the occurrence of rickets, may be answerable for the production of some of

the tardy splenic developments which occur in rickety infants. Thus one child under my care was very anaemic and very rickety and had craniotabes. The craniotabes disappeared and gave place to Parrot's nodes and an enlarged spleen, the child being rickety the while.

An explanation is still required for the undetermined cases which are free from syphilis as far as it is possible to exclude that disease, and which are certainly not rickety.

The prevailing characteristic of the first two or three years of infant life is dietetic errors and gastro-intestinal disturbances. Defective hygienic environment among the poor is common to all ages of childhood, and is not peculiar to infancy, but unsuitable feeding and bowel troubles are the special characteristics of this age, of an age when the spleen is so prone to enlargement, of an age when rickets is so common. It may well be that intestinal auto-intoxication, in the absence of other channels of septic absorption, or other causes for ill-health in the shape of previous severe illness, or by mineral or other poisoning, may be held responsible for splenomegaly. That continued bowel troubles in infants are provocative of rickets is undoubted, so too are they of splenomegaly, but the association ends there, for the poison which produces rickets does not appear to be the same as that which produces splenomegaly or of that which produces anaemia. These several conditions are associated by reason of the time of life at which they happen to be prevalent, but I take it that they are due to a diversity of causes, all of which, however, emanate from the bowels. As I previously remarked, it appears to me that splenic enlargement in rickets is an epiphenomenon.

But in this group also there are difficulties in the way of excluding syphilis. Thus I have seen a pallid snuffling infant, with marked craniotabes which was cured by mercury, some months later while still under mercurial treatment and still very anaemic but without leucocytosis, it developed a large spleen, and it was free from obvious rickets. It subsequently became fat and rosy-looking when arsenic was added to its medicine. The spleen nevertheless remained unchanged. A year later the spleen was normal. Arsenic, cod-liver oil, and iron had been taken in the meanwhile. Here are other examples. Twin infant sisters had greatly enlarged spleens. One of these was non-rickety, and syphilis could not be detected. Anaemia became extreme, without leucocytosis, and she died. The other twin was a little rickety, lost its anaemia, became more rickety the while, and developed Parrot's nodes, the spleen still remaining full large. In another set of twin-infant sisters in whom there was evidence neither of rickets nor syphilis, in one of them the spleen was enormously enlarged, while that of the other was quite natural. The feeding and environment of both were identical. I have also seen splenic enlargements under similar hygienic conditions in young children of the same family.

The Blood.—Children with splenomegaly are often not obviously anaemic. Their colour ranges from a doubtful pallor through varying gradations to a milk-and-water hue, with a bluish tinge about the lips, or to a lemon-yellow appearance. Petechiae and bruises are not uncommon in the very severe cases, and these often herald a fatal termination, but not invariably. Some of these severe cases are the subjects of lichen urticarius, a not uncommon complication of splenomegaly, and I have in them sometimes noticed the occurrence of haemorrhages into the urticarial lesions. Oedema of the extremities and occasional albuminuria were noted in some of the fatal cases.

The cases can be conveniently classified under several headings:

1. Cases of deficient haemoglobin. The haemoglobin was deficient, and ranged from 82 per cent. to 47 per cent. The red corpuscles were increased in quantity from 100 per cent. to 140 per cent. The colour index ranged from 0.4 to 0.7. The ratio of white corpuscles to red varied between 1 to 1,300 and 1 to 480. Polymorphous leucocytosis was also seen on one or two occasions. The films were normal.

2. Cases where the haemoglobin was deficient and the red corpuscles were reduced in number. Sometimes the red corpuscles varied in size, and poikilocytes were seen, together with granular degeneration of the red corpuscles and polychromatophilia. Normoblasts and megaloblasts were occasionally seen. The white corpuscles were not increased in number, but an occasional myelocyte was observed.

3. Cases similar to No. 2, and also some with more advanced changes in the red corpuscles, in which there was polymorphous leucocytosis of varying degree, and sometimes it was very extensive. It was not common to find much more than about 10 per cent. of myelocytes.

4. Two cases in which the haemoglobin was very low—namely, 13 per cent. and 18 per cent., and in which the red corpuscles were greatly reduced in number, namely, to 19 per cent. and to 55 per cent. Microscopically, many nucleated red blood corpuscles were seen together with megaloblasts. Microcytes, macrocytes, and poikilocytes were found and polychromatophilia. There was polymorphous leucocytosis in the first case, 1 white to 66 red corpuscles, and a few myelocytes were seen in the other.

5. I have two examples of leukaemia in young children—one was lymphatic and the other splenomyelogenous. In both forms the haemoglobin was greatly reduced and also the red corpuscles. In the former the red corpuscles were unchanged, in the latter the films showed poikilocytes, macrocytes, and microcytes, and numerous normoblasts, and megaloblasts, and karyokinesis. In the former the lymphocytes were 99.18 per cent., mainly the small lymphocytes. The polymorphonuclear leucocytes were greatly diminished. A few eosinophiles and myelocytes were seen. Dr. McCaw, of Belfast, has recently reported a case to the Society for the Study of Disease in Children in a non-rickety and non-syphilitic infant 18 months old. The lymphocytes reached 99.2 per cent., and a few nucleated red corpuscles were seen. In the spleno-myelogenous infant the myelocytes amounted to 21.4 per cent. of the leucocyte count, the large and small lymphocytes to 31.5 per cent., and the polymorphonuclear to 46.5 per cent.

The fact that the spleen is very ready to enlarge during the first two years or more of life is sufficiently obvious, but the part played by the enlarged organ in these cases of splenomegaly does not seem very clear.

Anaemia may be extreme, and yet there be no splenic enlargement, and, on the other hand, quite an appreciable enlargement of the spleen is frequently associated with a very mild form of anaemia. Nor does an inquiry directed to the supposed physiological functions of the spleen in correlation with the known pathological conditions of the blood assist in the inquiry. The *post-mortem* findings are equally unsatisfactory, as there is nothing characteristic about the enlarged organ, whether it be in the case of a syphilitic or not. Interstitial changes and gummata are great rarities, and then are usually found after 2 years of age. Aside from the fact that an enlarged spleen appearing during the first six months of life, even when taken alone, is very suggestive of syphilis, splenic enlargements as such appear to me to be of no great clinical moment, though they may point to syphilis, their importance lies in the associated condition of the blood, and without an examination of this it is impossible to form an opinion as to the future prospects of the infant.

The liver is enlarged in the great majority of the cases of splenomegaly. Sometimes this is quite trifling, but it often keeps pace with the size of the spleen—that is, it is one, or two, or three or more fingers below the costal margin in the nipple line. It is sometimes much more below the costal margin than the spleen is in front of it. Induration of the organ in the first few months of life suggests syphilitic infiltration, and when there is jaundice and bile-free stools from birth there is congenital malformation or destruction of the bile ducts, which may be syphilitic. Ascites may be a prominent feature. In later childhood induration of the liver with splenomegaly suggests cirrhosis of the liver. Enlargement of the liver, combined with splenomegaly from catarrhal jaundice; chronic heart disease, congenital and acquired; lymphadenoma, leukaemia, lardaceous disease, and ague are not uncommon.

The Lymphatic Glands.—A trifling enlargement of some of the accessible lymphatic glands is not uncommon.

Prognosis.—This depends upon the condition of the blood. A great reduction in the haemoglobin and in the number of the red cells, especially if there be great changes in them in size and form, is not hopeful. Leucocytosis, apart from its association with a mild form of anaemia, especially if it be in considerable amount, renders the outlook less promising. At all times such children are liable to succumb to bronchopneumonia. In pernicious anaemia the preponderance of megaloblasts over normoblasts is of bad omen. The changes in the blood characteristic of leukaemia appear almost invariably to point to a fatal termination.

Treatment should be preventive, the provision of proper food, and a hygienic environment. Rickets and syphilis require appropriate treatment. The anaemia should be dealt with by fresh air and good food and the correction of bowel complaints. Of drugs, iron and arsenic were used, as also the inhalation of oxygen over prolonged periods, and they certainly appeared to do good in many cases. Haematogen has also proved of some benefit, but I have not seen any advantage derived from bone marrow.

Appended are a few illustrative cases. I have to express my indebtedness to Dr. David Nabarro for his valuable assistance in working out the blood changes in the bulk of these cases.

D. S., aged 7 months, ribs beaded, ankles ridged. Spleen 1½ finger and liver 2½ fingers below costal margin. "Snuffles" ever since birth

more or less; no adenoids. Haemoglobin 60 per cent.; red corpuscles, 7,000,000 per c.mm., 140 per cent.; colour index 0.43; white corpuscles, 9,000 per c.mm., ratio 1 to 780; films normal; no nucleated red corpuscles; leucocytes normal; the infant died some three weeks later, its death being preceded by some gastric disturbance.

E. S., aged 3 years. Rickety; spleen 2 fingers below costal margin, and liver large but not hard; no history of syphilis; she is somewhat bronzed about her abdomen; jaundice at the age of 2 years; has recently been in the hospital with pneumonia; not anaemic-looking. Haemoglobin 82 per cent.; red corpuscles, 6,600,000 per c.mm., 132 per cent.; colour index 0.62; white corpuscles 12,400 per c.mm.; ratio 1 to 532.

D. S., aged 1 year 11 months. Decidedly rickety; no evidence of syphilis; bottle-fed; spleen 1 finger, and liver 2 fingers below the costal margin; a little pale, but this is not a marked feature. Haemoglobin 62 per cent.; red corpuscles, 6,500,000 per c.mm., 130 per cent.; colour index 0.5; white corpuscles 5,000 per c.mm.; ratio 1 to 1,300.

P. C., aged 2 years 1 month. Not rickety but pot-bellied; not syphilitic; accessible lymphatic glands shotty; spleen 1 finger and liver 2 fingers below the costal margin; accessible lymphatic glands shotty; anaemic; three small bruises front of left shin. Haemoglobin 47 per cent. to 48 per cent.; red corpuscles, 6,000,000, 120 per cent.; colour index 0.4; white corpuscles, 10,200 per c.mm., ratio 1 to 588; films show nothing abnormal; six weeks later it was a better colour, but it was sick in the morning and its bowels were relaxed, and it was thought to be losing flesh. The spleen was smaller.

W. W., aged 6 months. Beaded ribs, wrists plus and ankles plus; chronic "snuffles," a discharge from the nose, and "child crowing:" spleen, one finger, and liver half a finger below the costal margin; haemoglobin 75 per cent., red corpuscles 5,500,000 per c.mm., 110 per cent.; colour index 0.7, white corpuscles 11,300 per c.mm, ratio 1 to 490. The films look normal, the white corpuscles are not increased, excess of lymphocytes present.

L. S., aged 10 months. Beaded ribs, wrists plus; craniotabes, right parietal bone; bottle-fed; "snuffles" now and when she was born a little; spleen, two fingers, and liver just below the costal margin; glands in the groin shotty, a trifle pale, "sick at everything." Haemoglobin 56 per cent., red corpuscles 5,400,000 per c.mm., 108 per cent.; colour index 0.52, white corpuscles 7,200 per c.mm., ratio 1 to 750.

I. D., aged 1 year 4 months. A little rickety perhaps; three stillbirths; bottle-fed; thin and bad-tempered; spleen one finger and liver half a finger below the costal margin, pale. Haemoglobin 60 per cent., red corpuscles 5,217,000 per c.mm., 104 per cent.; colour index 0.6, white corpuscles 10,800 per c.mm., ratio 1 to 480; films normal.

L. F., aged 1 year 3 months. Not rickety, and no evidence on the person of syphilis, but four children were born dead, all before this one; "thrush," but not to the calves; a good deal of post-nasal catarrh, but nothing to be felt digitally; pale, but not specially so; the erythrocytes are normal in size and shape, but display a well-marked central pallor. There is no leucocytosis; differential count; small lymphocytes 22.6, large 8.0, total 30.6; polymorphonuclear 69.0, eosinophiles 0.4, total 100. The child made two or three attendances, and improved somewhat; it then developed pneumonia (?), and no further attendance was made; it probably died.

L. C., aged 2 years 7 months. Rickety; well-marked parietal osteophytes, but no evidence of syphilis otherwise; a very suspicious history, however. Spleen 1 finger and liver 2½ fingers below the costal margin; accessible lymphatic glands normal. Feeding bad. Very pale. Haemoglobin 28 per cent.; red corpuscles, 3,200,000 per c.mm., 64 per per cent.; colour index 0.44; white corpuscles, 4,000, 40 per cent.; ratio 1 to 310; films; reds vacuolated, very variable in size, especially macrocytes present; no polychromatophilia; no great poikilocytosis; no nucleated reds. White corpuscles: Large hyaline corpuscles unusually large, oxyphilic; fine (polymorphonuclear) 21.7 per cent., equals 872 per c.mm.; coarse (eosinophilous) 2.4 per cent., equals 96 per c.mm.; mononuclear (small lymphocytes) 51.9 per cent., equals 2,076 per c.mm.; large hyaline, 18.8 per cent., equals 772 per c.mm.; basophilic, fine, 0.5 per cent., equals 20; coarse (*Mastzellen*) 1.5 per cent., equals 60 per c.mm.; myelocytes, all finely oxyphilic, 3.5 per cent., equals 150 per c.mm.

E. V. K., aged 1 year 4 months. Rickets is not a marked feature. Twin to I. K., who died (see I. K.). Lips a little pallid. Spleen 3 fingers and liver 2 fingers below the costal margin; accessible lymphatic glands a little enlarged; fundus oculi normal, but pale. Haemoglobin 42 per cent.; red corpuscles, 3,400,000 per c.mm., 68 per cent.; colour index 0.6; white corpuscles 6,500 per c.mm., ratio 1 to 523; films, nothing abnormal, no nucleated red corpuscles and no myelocytes. Eighteen days later, under arsenic, she was better, and the spleen was not so tender; a tendency to Parrot's nodes was now noticed. Five months later the tendency to Parrot's nodes had grown into distinct parietal bosses, with an intervening groove. She was not anaemic, but very decidedly rickety; the spleen was a fingerbreadth less in size. Haemoglobin 84 per cent. to 86 per cent. Red corpuscles 5,000,000 per c.mm., 100 per cent.; colour index 0.85; white corpuscles, 10,000 per c.mm., ratio 1 to 500; differential count (1,000): small lymphocytes 49.5 per cent.; large lymphocytes 15.5 per cent.; polymorphonuclear 34.7 per cent.; eosinophiles 0.7 per cent.; basophiles 0.1 per cent., no myelocytes. Was seen three months later, and was then "still further improved."

H. C., aged 10 months. Obviously rickety; craniotabes right parietal and right side of occipital bones; no evidence of syphilis; bottle-fed; spleen 1 finger and liver ½ finger below the costal margin. Haemoglobin 75 per cent.; red corpuscles, 3,800,000 per c.mm., 76 per cent.; colour index 1; white corpuscles, 11,300 per c.mm., ratio 1 to 336; greatly improved under cod-liver oil and haematogen.

W. C., aged 1 year 2 months. The chest was pinched-in a trifle below the nipple level, otherwise no evidence of rickets; no evidence of syphilis; twin sister was healthy and had no splenic enlargement; spleen 4 fingers below the costal margin, reaching close to umbilicus, and liver 2½ fingers below the costal margin; accessible lymphatic glands a trifle enlarged; fundus oculi normal; pale complexion; sallow. Haemoglobin 50 per cent.; red corpuscles, 4,100,000 per c.mm., 82 per cent.; colour index 0.6; white corpuscles, 8,200 per c.mm., ratio 1 to 500; films, no abnormal corpuscles seen; no myelocytes; proportions of leucocytes apparently unaltered (normal).

M. B., aged 2 years 5 months. Not rickety; pot-bellied and chest pinched-in below the level of the nipples, and may therefore have been a trifle rickety; spleen 1 finger and liver 3 fingers below the costal margin; accessible lymphatic glands a trifle enlarged; pale. Haemoglobin 58 to 59 per cent.: red corpuscles, 4,800,000 per c.mm., 96 per cent.; colour index 0.6; white corpuscles, 10,800 per c.mm., ratio 1 to 444; films normal.

G. W., aged 1 year. Rickety a little; no history or evidence of syphilis; breast-fed. Analysis of mother's milk by Dr. Pakes. Total solids 5.83, fat 2.39, sugar 2.40, proteid 1.12, spleen 1 finger below the costal margin, feels rather hard; accessible lymphatic glands shotty; very pale, a lemon-yellow colour; two purpuric spots in front of right ankle. Haemoglobin 13 per cent. to 14 per cent, red corpuscles, 950,000 per c.mm., 19 per cent.; colour index 0.7, white corpuscles 14,400 per c.mm., ratio 1 to 66 films; red corpuscles all sizes and shapes; some megaloblasts with polychromatophilia; white corpuscles all kinds, (?) myelocytes; there were no pathogenic germs in the milk. He was ordered arsenic; the following day he developed diarrhoea and sickness, and the next day he died.

R. S., aged 5 months. Ribs distinctly beaded, wrists plus and ankles plus; extreme craniotabes at the posterior part of the right parietal bone; "snuffles" when born, which "lasted up to three weeks ago"; has a frequent cough due to discharge at naso-pharynx; spleen 1 finger below the costal margin, and liver 1 finger also; a trifle pale. Haemoglobin 60 per cent., red corpuscles 2,950,000 per c.mm., 59 per cent., colour index 1, white corpuscles 36,500 per c.mm., ratio 1 to 80: films look normal; red corpuscles in rouleaux; white corpuscles considerably plus. Ordered haematogen; he attended for a short time and was better.

W. T., aged 1 year. Very rickety; craniotabes right parietal bone; "snuffles" ever since birth; premature child at 7½ months; spleen normal; very anaemic; treated by mercury. In spite of mercury spleen found to be enlarged six weeks later, and Parrot's nodes were commencing. He was then very pale. Spleen 2 fingers and liver 3 fingers below the costal margin. Haemoglobin 50 per cent., red corpuscles 4,100,000 per c.mm., 82 per cent.; colour index 0.6, white corpuscles 25,000 per c.cm., ratio 1 to 164; films, blood platelets apparently increased. Four months later he was admitted into hospital with broncho-pneumonia, and the blood was again examined. Haemoglobin 50 per cent., red corpuscles 4,500,000 per c.mm., 95 per cent.; colour index 0.52, white corpuscles 11,800 per c.mm., ratio 1 to 380; films, red corpuscles vary somewhat in size; no nucleated red corpuscles; white corpuscles normal, (?) few myelocytes. The spleen was still enlarged.

I. K., aged 1 year 2 months. Not rickety; twin sister of E. V. K., who was rickety and had cranial osteophytes; rather depressed bridge to nose; wasted: spleen 4 fingers and liver 3 fingers below the costal margin; accessible lymphatic glands palpable; very pale, milk-and-water appearance. Haemoglobin 16 per cent. to 18 per cent., red corpuscles 2,750,000 per c.mm., 55 per cent.; colour index, 0.33, white corpuscles 16,000 per c.mm., ratio 1 to 172; films, a few myelocytes; many nucleated red corpuscles, especially megaloblasts, some with mitosis; polychromatophilia, microcytes, macrocytes, and poikilocytes. Was treated with arsenic, but did not improve, and died twenty-six days later; crepitations were heard at both bases before death. *Post mortem:* Stomach extremely contracted, capacity ½ oz. Lungs, broncho-pneumonia; spleen large, weighed 3¾ oz., normal in appearance; marrow of femur red, soft, and jelly-like.

S. B., aged 1 year 4 months. He is rickety, but this is not a marked feature; abdomen rather pot-bellied; spleen 2 fingers and liver 1 finger below the costal margin; accessible lymphatic glands a trifle enlarged; pale decidedly; the gums round the two lower central incisor teeth are reddened; petechiae all over. Haemoglobin 50 per cent.: red corpuscles, 3,144,500 per c.mm., 63 per cent.; colour index 0.8; white corpuscles, 17,950 per c.mm., ratio 1 to 175; films; the red corpuscles vary much in size; some poikilocytes; granular degeneration of red corpuscles; polychromatophilia; nucleated red corpuscles present; an occasional myelocyte seen; ordered haematogen, and improved under it.

E. M. R., aged 1 year 2 months. Very rickety; Parrot's nodes; chronic "snuffles" (adenoids); the post-nasal examination gave her a cough like whooping-cough, and after the coughs she was puffy about the eyes; trace of albumen in the urine; accessible lymphatic glands shotty; optic discs probably too white; spleen 3 fingers and liver 2 fingers below the costal margin; pale. Haemoglobin 40 per cent.; red corpuscles, 3,400,000 per c.mm., 68 per cent.; colour index 0.6; white corpuscles, 17,000 per c.mm., ratio 1 to 200; differential count; small lymphocytes 38.5, large lymphocytes 16.3, polymorphonuclear 42.4, eosinophiles 2.1, basophiles 1.0. Twenty nucleated red corpuscles were seen while counting 370 white corpuscles; there were a few megaloblasts. He developed epistaxis, and died nearly a month after the first attendance; there was no change in the spleen; arsenic and cod-liver oil were given.

L. P., aged 3½ years. Neither rickety nor syphilitic; became pale 5 weeks previously, suddenly; spleen from 2 to 3 fingers and liver 2 fingers below the costal margin; no obvious enlargement of lymphatic glands anywhere; extreme pallor, mucous membranes pale; a few bruises on the legs; a trace of albumen. Haemoglobin 15 per cent.; red corpuscles 1,568,000 per c.mm., 31 per cent.; colour index 0.5, white corpuscles 130,000 per c.mm., ratio 1 to 12; fresh films show red corpuscles in roulcaux, no microcytes or poikilocytes; differential count of 4,000 leucocytes; small lymphocytes (mainly) and large lymphocytes together 3,967 equals 99.18 per cent., polymorphonuclears 19 equals 0.48 per cent., eosinophiles 5 equals 0.12 per cent., myelocytes (1 eosinophile myelocyte) 9 equals 0.22 per cent.; one nucleated red corpuscle was seen while counting 4,000 leucocytes. Necropsy: Lymphoid infiltration of the liver in the portal canals; spleen 4 oz., normal in appearance; kidneys enlarged and leucocytal infiltration; tuberculous intestinal ulceration and caseating mesenteric glands.

H. P., aged 1 year. Neither syphilitic nor rickety; bottle-fed; wasted and anaemic; petechiae; spleen 4 fingers and liver 2 fingers below the costal margin. Red corpuscles 2,900,000 per c.mm., white corpuscles 48,000, ratio 1 to 60; differential count: small lymphocytes 23.3 per cent., large lymphocytes 8.2 per cent., myelocytes 21.2 per cent., polymorphonuclears 46.7 per cent., eosinophiles 0.6 per cent.; films: poikilocytes, microcytes, and macrocytes, normoblasts and megaloblasts, karyokinesis.

References.

[1] *Syphilis in Children*, by Dr. Carpenter, p. 50. [2] Ibid., pp. 74, 78.

Dr. Edmund Cautley asked what Dr. Carpenter meant by splenomegaly. Did he include all cases in which the spleen could be felt? It certainly seemed so, judging by the fact that such a large number of cases had come under Dr. Carpenter's notice, and that no less than 163 were infants under 1 year of age, and as many as 220 out of the total 348 were infants under 18 months of age. Dr. Cautley suggested that the spleen was so easily felt in infants under 6 months on account of anatomical peculiarities, and in infants from 6 to 18 months on account of rachitic deformity, that it might readily be supposed to be enlarged. He noted, also, that of the 57 cases associated with syphilis, 31 were infants under 3 months of age, and that of 60 associated with chronic snuffles, 32 were infants under 6 months. He thought that undue weight was laid on snuffles in out-patient practice as a sign of syphilis, and he regarded craniotabes as rarely due to syphilis, and commonly caused by errors in diet. In his experience the craniotabes described by Elsässer was very rare. It did not follow that a spleen, felt as enlarged in an infant, was of serious import from a diagnostic or prognostic point of view.

ON THE UTILIZATION OF INFANTS' MILK DEPOTS.

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The problem of infant feeding is so many-sided that it is with great diffidence I venture to bring any question relative to it before you. My only excuse must be the fact that a movement is going on of which the ultimate extent is at present not to be estimated, but that its development will be rapid and widespread seems almost certain. It is the movement in the direction of the general establishment of milk dépôts for infant feeding.

This question involves a matter of direct interest to those who have to practise among the children for whom the dépôts are primarily intended. Those who have to treat the children of very poor and very ignorant parents, or the children of mothers whose employment necessitates a certain amount of child neglect, have to face continually certain difficulties which infants' milk dépôts are designed to overcome. For the wealthier classes no such difficulties exist.

When the mother is able and willing to feed her child herself, these difficulties of treatment are minimized, for natural feeding and maternal care are the normal preventives of infantile mortality. But it is impossible to be blind to the fact that hand-fed infants form an increasing proportion of the whole infant population. The chief difficulties met with in feeding such children among the poor arise from bad milk supply, ignorance, and lack of facilities for the proper preparation of food. Broadly speaking, as we all know, they are associated with the use of improper bottles, contaminated milk (contamination occurring both in transit and at home), and milk substitutes.

We are, as a profession, agreed that cow's milk forms the only practicable basis for hand feeding, that it should be pure and fresh and not over-treated either chemically or by cooking, and that the simpler the bottle and teat the better. I do not know what method of meeting these requirements on a large scale can be devised better than this system of infants' milk dépôts. It is recognized by public health authorities that such a system eliminates all the many dangers arising from contamination by carelessness either in transit or at home, both of which—and especially the latter—have been proved to be fertile causes of infant mortality, and that it prevents the use of the many abominable milk substitutes that one constantly sees in the infants' dietary. Moreover, it has always been successful in those towns in this country where it has been tried, and there is a very large experience of its success abroad.

No system of diminished impurity of the fresh milk supply will get over the difficulties of home contamination and carelessness, and those arising from the use of milk substitutes and impoverished milks among a certain class. The system of "certified milk" proposed by Dr. Coutts is very desirable so far as the ordinary milk supply for infant feeding is concerned, but it does not meet the special needs of those among whom infantile mortality from bad hand feeding reaches its highest point.

For these the "dépôt" seems to be the only practical method. It has been pointed out in the Journal that an extension of the system on a large scale seems likely to occur. This is particularly imminent in those centres of population where there exists a crowded poor class having a high infantile mortality.

This is a matter which I think deserves our attention at this Section, for the future relation of the profession to these dépôts is a question of great importance. There are certain objections to leaving the matter entirely in the hands of either public or private individuals other than medical practitioners.

It has been pointed out, notably by Dr. Peyroux, that there is a danger of the encouragement of hand feeding at the cost of maternal responsibility under the usual conditions of management of such dépôts. What I wish therefore to bring before you is that it is our duty to lend all our influence and assistance in counteracting this as well as other dangers in the use of milk dépôts. To say that any system of hand-feeding of children, whether "percentage" and other scientific methods, or the simpler methods used in milk dépôts, is as good as natural feeding is to be a contributory to child slaughter. Professor Rotch, who is probably the best living authority on the cow's milk feeding of children, himself said in this Section last year that no method yet devised was equal to that of Nature.

Other objections have been raised from time to time to the establishment of infants' milk dépôts, as, for instance, that the method of feeding is not an ideal one. I do not think we need worry about that when the most scientific methods are said by their authors not to satisfy this condition. Infantile mortality among hand-fed children, so far as it may be diminished by careful feeding, is the matter requiring our immediate attention. The method of milk dépôts has been proved in practice to bring the mortality of children fed in them down to what has been estimated to be the minimum mortality of children under 1 year old. It has attained this maximum success, though it has had to contend with the adverse condition arising from its therapeutic use in infantile disease, and has not yet been very largely used for its more legitimate purpose as a substitute for bad hand feeding. A still more important objection from a medical standpoint is the loose way in which milk has sometimes been distributed by these dépôts without the accurate observation of the infants and a knowledge of their requirements which systematic medical advice and supervision alone could give.

I will not enter into the political questions involved in municipal enterprise in establishing milk dépôts. That is a matter for the Section of State Medicine. As members of a profession to whom a certain amount of responsibility attaches in regard to this matter of infant feeding, our desire should be to remove the difficulties in the way of careful feeding among the very poor and ignorant; and if milk dépôts offer, as they seem to do, the practical solution of these difficulties, we need not mind who furnishes them. We must remember that milk supply is a matter coming under the public health authorities, and that whoever furnishes milk dépôts, their sanitary control must remain with these bodies. But the haphazard use of milk dépôts by all and sundry members of the population should be unhesitatingly condemned by us. I consider that the infants fed in them should require this form of feeding, and they should be under medical advice and observation. There is little doubt that the usefulness of

this system has been to some extent minimized by the absence of this factor; for had they been in all cases established with the co-operation of practising members of the profession, their sphere would have been extended among the class for whom they are most urgently necessary, and many of the objections raised to them would have been eliminated.

How is this medical supervision of the infants to be secured without affecting the control of the dépôt by the health authorities, and how are we to secure milk dépôts where they are most wanted? To secure effective results they must be placed where they are wanted, and they must be used where they are placed. It is obviously only by the co-operation of the various interests that these results can be achieved, and it is for this co-operation that I think we should work.

The plan which has been carried out in Lambeth has led to a satisfactory development so far as that district is concerned. At a meeting of the Medical Committee of my hospital, I proposed resolutions, which were unanimously adopted, approving of the principle of infants' milk dépôts, and pledging the staff to do what they could to induce parents to use such a dépôt if it were established by the borough council near the hospital. This attitude was approved by the Committee of Management, and communicated to the Lambeth Borough Council in the form of a petition. Dr. Priestley, the Medical Officer of Health, then obtained similar promises of support from St. Thomas's Hospital and the York Road Lying-in Hospital, which are both close to the Waterloo Road Children's Hospital.

With these pledges of support from institutions dealing with a very large number of necessitous infants the success of a dépôt in their immediate neighbourhood is already assured, and the borough council has decided in favour of the establishment of a dépôt. This course may readily be followed up in some of the more crowded and poorer districts of Lambeth by pledges of support from the local medical societies or any Branch of the British Medical Association, the members promising that they will encourage their poorer patients to use a special infant's milk dépôt where hand feeding is necessary.

As I have said it does not matter to us as a profession where the funds come from to furnish the dépôts. That is a matter for local opinion. There is no doubt that the action of the Local Government Board auditors in disallowing the expenses of the Battersea milk dépôt will soon lead to a clear decision as to the powers of district councils in this matter, but where the district council does not care to undertake the work itself there is no reason why, having once obtained the support of the medical profession in the district, it should not afford information and facilities to charitable bodies on the one hand, or contractors on the other hand to enable them to carry out this necessary work in the districts where it will be most useful. As a mere matter of personal opinion I believe this to be so important a branch of preventive medicine that, properly guarded against abuse by the co-operation of medical practitioners, it should be undertaken by the municipal authorities. That such dépôts would be also of great advantage to us as practitioners in securing a definite method of feeding infants under 1 year of age carefully and exactly is undeniable in relation to the class for whom we want it. Moreover, their educational influence as to the care required in feeding children would not be the least of their advantages. Example is better than precept, and I anticipate better results from the milk dépôt than from the feeding leaflet.

I have therefore brought the matter before you as a broad suggestion of the way in which this question may be approached.

All I can claim for the suggestion is that such a method of co-operation would largely remove the objections that have been raised to the establishment and use of infants' dépôts by showing that the infants fed in them were under medical supervision, and that they were believed to be necessary and useful by the medical men in the districts where similar resolutions to those I have mentioned are adopted. It is a confusion of interests which prevents this work being done, and it is a co-ordination of interests which seems to me, as far as medical interests alone are concerned, likely to help towards its accomplishment.

Dr. EDMUND CAUTLEY said that the question raised by Dr. Lister was of both economic and political importance. He objected to the scheme on the ground that it tended to pauperize the poor, to render them less likely to carry out their proper duties to their children, and because there could be no guarantee that the particular milk would suit the particular child. To carry out the scheme efficiently would require a resident medical officer at the dépôt, constant modification of the food, and systematic weighing of the infants. Even if the scheme were a success, he feared it would then lead to an increase in the neglect of suckling, and ultimately prove injurious. It was by no means accepted as an axiom by experts in this country that percentage feeding was the best system for the artificial feeding of infants. He thought it quite the wrong way of attacking the question of infant feeding among the poor. The mothers should be taught, and, in his own experience, they would learn, if they wished to rear their children. If they did not, the scheme proposed would have little or no effect. The most that municipal authorities should do was, in his opinion, to secure a proper supervision of the milk supply, and to provide a clean good milk, which could be obtained by the very poor on a written order from a medical man.

DISCUSSION ON TUBERCULOSIS IN CHILDREN: ITS RELATION TO BOVINE TUBERCULOSIS.

I.—NATHAN RAW, M.D., M.R.C.P.Lond.,
Physician, Mill Road Infirmary, Liverpool.

DR. RAW said: The relation of tubercle bacillus to the many and varied diseases which attack children is not yet thoroughly understood, but I am inclined to think it plays a much more prominent part than we are disposed to believe. What concerns me most in the study of this most difficult problem is, To what extent are these tuberculous lesions produced by cow's milk?

Professor Koch, the greatest authority on tuberculosis, holds the view that human and bovine tuberculosis are separate and distinct diseases, and that bovine tuberculosis could not be conveyed to the human.

With the latter part of this statement, I beg in all humility to differ from Professor Koch, and I will endeavour to lay before you my reasons for believing that bovine tuberculosis is frequently conveyed to children by means of milk, and is the cause of a considerable mortality.

Now it must be admitted that the great body of experimental evidence is in favour of Koch's first contention that the two diseases are distinct, and that it is almost impossible to produce a general tuberculous infection in cattle by inoculating them with human bacilli from sputum. But it does not necessarily follow that because human bacilli have a low virulence for cattle that therefore bovine bacilli have only a slight pathogenic power for man, especially when we consider that bovine bacilli are not only virulent for cattle but for various other animals, such as the rabbit, horse, dog, pig, and sheep. It therefore appears reasonable to suppose they would be virulent to man, since it is a fact that "all the disease-producing bacteria that are common to all the domesticated animals are also pathogenic to man" (McFadyean). In short, Koch argues that bovine tuberculosis, being a distinct disease from human tuberculosis, cannot produce the human variety in the body.

With this view I agree, but I am of opinion that man is attacked by two distinct varieties of tubercle, one conveyed by infection from one person to another, the other by receiving into the body bovine bacilli in milk or meat.

During the last few years I have had under observation over 2,000 cases of phthisis pulmonalis, and I have been particularly impressed with the fact that the tuberculous process is nearly always confined strictly to the lungs. The patient usually gives a history first of cough, then of expectoration; the disease often progresses to death, and the necropsy reveals destructive lesions of the lungs and nothing more. Out of these cases of phthisis pulmonalis I have only seen the glands and the joints affected in 8 cases, and in the late stages one sees the intestine and peritoneum involved. Phthisis pulmonalis is essentially a disease of young adult life. It is rare to see it as a primary affection under the age of 12, the great majority of deaths taking place between the ages of 30 and 40, as my table will show. On the other hand, strumous or tuberculous joints, enlarged glands, spinal disease, and abdominal tuberculosis with tabes mesenterica, are essentially diseases of infancy and childhood, and are only rarely seen in adult life. I have given particular attention to the clinical manifestations of these various tuberculous

affections, and it is rare to see a patient with enlarged glands, strumous joints, or spinal disease develop true phthisis pulmonalis. In fact, clinically they appear to be antagonistic to each other, attacking the body at quite different periods of life, and exhibiting generally opposite symptoms. There are at the present time 118 cases of phthisis pulmonalis in the hospital, and in no case is there any other gross tuberculous lesion present which would certainly be the case if they were all caused by one identical bacillus which would be free to be conveyed all over the body.

Again, I have had the opportunity of seeing over 500 necropsies on cases of tuberculosis, and I have noticed that even the lungs are attacked by two distinct varieties of tuberculosis—one of a slow and insidious nature, the other rapid and acute, and generally associated with tubercle in other parts of the body. If one compares the appearances seen in cattle dying with tuberculosis with those of children dying of tabes mesenterica and abdominal tubercle, the almost exact counterpart is seen: in fact, as Creighton observes, there is an exact mimicry of disease.

From these general clinical and pathological observations I am inclined to think that primary intestinal tuberculosis, tabes mesenterica, and other tuberculous affections of the serous membranes in children are probably bovine tuberculosis conveyed by milk, and are not related to human tuberculosis, although the bacillus of Koch is found in them all, and is indistinguishable.

Tabes Mesenterica.

Now let us take first of all tabes mesenterica. By this disease we mean what is popularly called "consumption of the bowels," and is one of the most common forms of abdominal tuberculosis in children.

Infants and children suffer from tuberculosis of the intestines and glands, but it is perhaps more common before the age of 2 years than afterwards. In 103 consecutive necropsies of children dying of tuberculosis at the Manchester Children's Hospital, there was tuberculous ulceration of the intestine in 62, cheesy mesenteric glands in 71, and both ulcers and cheesy glands in 55, tuberculous glands without ulcers of intestine in 7. Ashby states that in at least 70 per cent. of children dying of tuberculous disease of the mesenteric glands was present, and in rather more than 55 per cent. tuberculous ulceration was associated with it, and, he wisely says, primary tuberculosis of the intestine is suggestive of infection by means of tubercle bacilli taken in milk from a tuberculous cow. The figures at the Great Ormond Street Children's Hospital, London, are as follows: In 254 tuberculous children examined *post mortem*, 151, or 59 per cent., showed cheesy mesenteric glands, and Dr. Still found that in 29 per cent. of cases of tuberculosis in children, primary infection had taken place through the intestine. Woodhead records 127 cases of fatal tuberculosis in children, with involvement of the mesenteric glands in 100.

My own experience of this affection coincides with these figures, and of 273 cases which I have diagnosed clinically as tabes mesenterica, only 38 have come to necropsy.

I grant it is extremely difficult to exactly diagnose the onset of tabes mesenterica, and it is not to be assumed that a great many of the cases of diarrhoea, wasting, and general inanition in children are tuberculous, as they certainly are not; but I believe that tabes mesenterica is a great deal more common than is generally supposed, and, what is more, a great number of children who receive a mild infection, which is confined to the mesenteric glands, recover absolutely. I have seen this frequently in the hospital, where enlarged palpable mesenteric glands have slowly subsided, and under proper treatment the child has quite recovered. In 5 cases in which I have opened the abdomen during life for hernia and other abdominal disorders I have seen the mesenteric glands much enlarged and apparently cheesy, with sometimes nodules on the peritoneum, yet these children were not suspected of being tuberculous, and they all left the hospital well. Many other surgeons and physicians will be able to confirm this point. Assuming these mesenteric glands to be tuberculous, the question arises, How do the tubercle bacilli find their entrance?

This difficult problem cannot be proved like an ordinary scientific experiment, since it is impossible to inoculate the human being, and I sincerely hope it will never be attempted. But by carefully considering all the known facts bearing on the question, we ought to be able to find an answer which in all human probability will be approximately accurate.

I claim your indulgence when I attempt to lay before you all the evidence which I can in support of my view that tabes mesenterica is caused by bovine tubercle bacilli in milk.

If we consider for a moment the remarkable diminution in human phthisis during the last fifty years, amounting to over 45 per cent., we should naturally expect that other forms of tuberculosis would have fallen in the same ratio were they all caused by the same bacillus. But this is not so; on the contrary, the death-rate from abdominal tuberculosis in children, as shown by Sir Richard Thorne-Thorne, has greatly increased, amounting to over 20 per cent, and, what is more significant, tuberculosis in English cattle is rapidly increasing.

Veterinary authorities, such as Nocard, Bang, Dollar, and McFadyean, agree that about 20 per cent. of dairy cattle suffer from tuberculosis, and recent official figures from different parts of England show that in London dairies 25 per cent., in Edinburgh 40 per cent., Midlothian 23 per cent., Durham 19 per cent., and Yorkshire 25 per cent. of the cows are tuberculous.

If, however, every tuberculous cow produced milk containing living tubercle bacilli, the whole community would be in danger: but it is now generally admitted by experts that only cows with a tuberculous affection of the udder are really dangerous, and the percentage of such cases is very small, only amounting to 2 or 3 per cent.

It is my custom at the infirmary to carefully inquire into the milk history of all children admitted with abdominal tuberculosis, and the usual history is as follows. Child fed on the breast for a few months, afterwards cow's milk, which is generally bought in halfpennyworths or pennyworths at the milkshop. I have made most careful inquiries during the last five years, and I have never seen a case of tabes mesenterica which had not been fed for some weeks or months on cow's milk. This I consider a most significant fact.

With a view to excluding infection from parents or family at home I have made a most careful inquiry on this point, and of the 34 deaths only one child had a phthisical parent, so that the probability of infection in this direction is extremely small.

Now it is argued by some observers that the tubercle bacilli are not primarily introduced into the body through the mesenteric glands, but that these become affected later on from some other part. If this is so, I ask, How is it that adults suffering from phthisis do not become affected in the mesenteric glands in the same way? It is a fact that they rarely do so, and it is very unusual to see the mesenteric glands affected in phthisis pulmonalis, except as a late affection following secondary intestinal ulceration.

The next link in the chain is the clinical history of a case of tabes mesenterica. In a Poor-law infirmary we often see the child from the commencement of the illness—chronic intestinal catarrh with diarrhoea of offensive yellow stools, with perhaps streaks of blood, a general wasting, and distension of the abdomen. I have examined very carefully several such cases, and have invariably found the chest quite healthy in the early stages of the illness. As the disease slowly progresses, and the atrophy and wasting consequent on the diseased mesenteric glands continues, the general tuberculous symptoms are more pronounced, the temperature becomes hectic, the child begins to cough, and on examination the lungs are found to be tuberculous, and the child invariably dies. The point I wish to make is this. The infection commences in the mesenteric glands from the intestine, slowly spreads to the retroperitoneal glands, then through the diaphragm to the glands in the posterior mediastinum, and finally to the lungs. If the child lives long enough the brain may be affected too. At the necropsy this process has been corroborated again and again, and I have a case where there was extensive caseation of the mesenteric, retroperitoneal, and portal glands, and only a few grey tubercles at the base of both lungs.

In nine cases the lungs have not been attacked at all, the disease being confined to the abdomen. If we compare the course of this infection with that seen in the calf which is fed on tuberculous milk, we see an exact mimicry of the disease in every detail. The direction of the lymph stream would certainly be strongly in favour of infection from the intestine to the thoracic organs.

Passing from the clinical to the bacteriological side of the question, we know that if the various tuberculous lesions in the body are carefully examined the bacillus of Koch is usually found, and, in my opinion, this has led to error in assuming that we were dealing with one bacillus. Koch has

shown, I think conclusively, that human and bovine tuberculosis are distinct diseases, but the bacillus of both is morphologically identical and cannot be distinguished under the microscope.

On the other hand, the cultures of the two diseases are different, and Professor Ravenal affirms that "the tubercle bacillus from bovine sources has in culture fairly constant and persistent peculiarities of growth and morphology by which it may be differentiated tentatively from that ordinarily found in man."

From a recent case of tabes mesenterica I made cultivations of the mesenteric gland on blood serum with glycerine, and to my surprise the growth exactly corresponded to bovine tuberculosis or *Perlsucht*. Again from a strumous knee-joint I made a cultivation from the interior of the joint, with an exactly similar result.

I also inoculated two young heifers with the tuberculous material from a case of advanced hip-joint disease and advanced disease of the knee-joint. They both got thin and wasted, and after four months were killed.

At the necropsy there was found in each animal an extensive involvement of the mesenteric glands but no affection of the viscera. Tubercle bacilli were found in the glands of each heifer.

The experiments recently reported in the BRITISH MEDICAL JOURNAL by Macfadyen and McConkey are most interesting, and show that active tubercle bacilli are present in a large number of cases not suspected of being tuberculous.

"The experiments have shown that in the non-tuberculous cases, virulent tubercle bacilli were present to the extent of 25 per cent. The tubercle bacilli, it appears from these experiments, are present much more frequently in the mesenteric glands than ordinary necropsies would lead one to suppose." This evidence strongly supports the view that I have for a long time held: that a great many children receive a mild infection of mesenteric tuberculosis through cow's milk, and recover absolutely, the infection getting no further than the glands.

We have all seen cases of tuberculous peritonitis completely recover after opening and draining the abdomen, and nothing more. So far no satisfactory explanation of this result has been given.

My opinion is that it is a localized bovine tuberculosis which has died out, and that relief of the fluid is sufficient to cure the patient.

Taking all these facts into consideration, I am of opinion that bovine tuberculosis is very virulent for children, and is accountable for tabes mesenterica and other varieties of abdominal tuberculosis; in fact, I believe it to be more virulent for children than human tuberculosis.

In arriving at this conclusion I lay great stress on the fact that, out of nearly 300 cases of tabes mesenterica observed during the last twelve years, I have never known one to occur in a child which had been fed strictly on the breast, the whole of them, without exception, having been reared on cow's milk for some considerable period.

Scrofula.

We all know now that scrofula, so-called, is nothing more or less than tuberculosis of the lymphatic glands, but is it human tuberculosis?

I must confess to a difficulty in understanding how it is that these local tuberculous lesions such as enlarged glands in the neck, pulpy joints, and caries of the spine should generally develop in childhood, and in the majority of cases recover and never be heard of again. For it must be admitted that these cases rarely develop tuberculosis of the lung exceptin the process of a general infection.

Out of over 2,000 cases of phthisis I have only seen enlarged cervical glands in 5, and although one occasionally—but very rarely—sees phthisis pulmonalis follow operation on these glands, it might be explained by direct extension of the deep cervical lymphatic glands to the apex of the lung. How many scores of strong, healthy, vigorous children and adults do we see who have suffered from tuberculous glands in the neck with never a symptom in after-life. Surely these people cannot be classed as tuberculous; they have suffered from a mild infection of tubercle bacilli, which was in all probability bovine in origin and absorbed from milk.

I was particularly impressed when attached to the Dundee Royal Infirmary with the number of strong, healthy, vigorous children from the country districts in Forfarshire who were brought to the hospital suffering from enlarged glands and strumous joints. In many cases general constitutional treatment, with change of air—for change of air means change of cow—produces a cure, or, if necessary, remove the glands or diseased joint, and the child becomes fat, and makes a perfect recovery.

The most reasonable theory is that scrofulous glands in the neck are produced by the absorption of tubercle bacilli in milk through the tonsils and pharynx, and is, as a rule, a purely local affection. This view is supported by feeding experiments on animals. If pigs are fed on tuberculous milk they invariably develop enlarged tuberculous glands of the neck and throat which on inoculation produce bovine tuberculosis in cattle, and tuberculous lymphatic glands from the human when injected into calves have produced a general tuberculous infection. This is strong presumptive evidence of their being bovine in origin.

If this view is correct it would help to explain the occurrence of acute general tuberculosis occurring in those suffering from an unhealed focus, such as a gland, a strumous joint, or a psoas abscess, for we are all aware of the danger of operating on a caries of the spine, a tuberculous bone lesion, or removal of glands, lest a general blood infection should follow. If we observe closely this acute general tuberculosis we find it closely resembles that seen in cattle, affecting chiefly the serous membranes and the lungs, a condition which rarely accompanies phthisis pulmonalis.

Tuberculous Meningitis.

It is often a matter of perplexity to the doctor to explain the onset in a previously healthy child of an attack of tuberculous meningitis. Sometimes it is confined to the brain, at others it is part of a general infection. Perhaps it is a bovine tuberculosis, as we have all seen necropsies where there has been no other discoverable evidence of tubercle. There is also much evidence to suggest that acute miliary tuberculosis is also bovine in origin. I have mentioned a few points briefly with the object of having the opinions of others on this difficult and absorbing problem, and I conclude by expressing the opinion, based almost exclusively on clinical and pathological evidence, that human and bovine tuberculosis are distinct varieties of disease, as shown by Professor Koch, but that the human body is susceptible to both, and especially to bovine tuberculosis in the early periods of life.

The two diseases are so rarely seen together in the human that there seems to be some ground for presuming that they are antagonistic to each other, and that bovine tuberculosis may possibly confer an immunity against human tuberculosis. If this opinion should prove correct, I venture to submit that it would reconcile the conflicting opinions which have been so frequently expressed during the last two years on this most terrible of all diseases.

II.—W. ARBUTHNOT LANE, F.R.C.S.,
Surgeon, Guy's Hospital; President of the Section.

MR. LANE said: I should like to insist on the importance of recognizing that either local injury or disease predisposes to infection. The glandular enlargement, so often seen in children, is much too readily assumed to be tuberculous. Many other causes give rise to it.

III.—DOUGLAS A. REID, M.D., M.R.C.S.,
Medical Officer of Health, Tenby.

DR. REID said: Until the meeting of the British Congress on Tuberculosis in 1901 it was an accepted creed that bovine and human tuberculosis were one and the same disease and that it could be transmitted through meat and milk from cattle to the human subject.

Then came the bomb-shell of Professor Koch, exploded with great suddenness and with far-reaching effect throughout the civilized, and particularly the medical, world. The eminent professor in starting a new creed used words that will be memorable throughout the ages. "I should estimate the extent of infection by the milk and flesh of tuberculous cattle and the butter made of their milk as hardly greater than that of hereditary transmission and I therefore do not deem it advisable to take any measures against it." Inasmuch as the theory of hereditary transmission has now been practically abandoned this must be read to mean that bovine tuberculosis cannot be transmitted to man. Dr. Nathan Raw has advanced a third creed, which somewhat adds to our difficulties in coming to a conclusion in the matter. If there is a "variety of bovine tuberculosis that can be conveyed by milk from tuberculous cattle" then we are right, and the Government is right and the National Association is righ in warning the public to avoid

tuberculous meat and milk, and Professor Koch is wrong in advising a contrary procedure.

But while experiments and investigations are going on, who can say positively where truth can be found? What has become of the French doctor who inoculated himself with bovine tubercle? It is not my intention to occupy your time with opinions of my own on this subject, but, by the courtesy of Dr. Crombie, I am enabled to contribute some facts and statistics connected with India that may be of value when we come to weigh the evidence for and against the different views that have been advanced. Dr. Crombie submitted a report to the Secretary of State for India on the Congress on Tuberculosis at Berlin in 1899, which was published in the report of the Sanitary Commissioner with the Government of India for that year. This publication is not easily available, and Dr. Crombie has very kindly obtained for me a copy of that part of his report bearing upon tuberculosis in India. It must be borne in mind that a large number of persons die in India without any medical attendance whatever, and therefore in some parts only of the country can statistics be obtained, and one part is in the North-West Provinces. Here during the year 1897 the cause of death was verified in 15,116 cases by means of the medical staff and a professional agency which voluntarily supplied the required information. Of these 15,116 deaths, 40 only were from tubercle of the lung—6 children and 34 over the age of 16 years. There were no deaths among children from tabes mesenterica or tuberculous meningitis. The 6 children who died were all under 18 months. The experience of all medical men in India is that, in contrast with that of Europe, diseases of the chest, and phthisis among them, take quite a subordinate place in the sickness and mortality of India, and that the tuberculous diseases of children are exceedingly rare among the civil population. Dr. Crombie further reports: "With regard to tuberculous diseases among children, all authorities are unanimous as to their rarity. Taking strumous enlargement of the cervical glands as the commonest and most obvious form of tuberculous infection in children, Chevers says that he never saw a case in a native of the plains of India." And other authorities confirm this. Tuberculous meningitis is, however, met with in India, but less frequently than in Europe. Tabes mesenterica is certainly very rare among the civil population. Chevers says that he never admitted a case to hospital. Morehead does not mention it as occurring in the large Byculla schools at Bombay, neither do Webb and Fayrer as regards the Calcutta schools, and the contemporary accounts of the health of the children (mostly Indo-Britons) at the Madras orphan asylums are silent with regard to it. It was at one time, however, apparently very prevalent among the children of European soldiers serving in India. From 1880 to 1883 inclusive there were 162 admissions and 86 deaths from tabes mesenterica among European children in India, while only 3 prisoners and 5 native soldiers were so affected. In 1896 there were no cases in the native army or gaols of India.

Tuberculous disease of the hip-joint is exceedingly rare. Dr. Crombie never saw a case, nor have any of the medical officers whom he has questioned. From the very interesting statistics in Dr. Crombie's report it is not clear that the great immunity of residents in India, both native and European, so conspicuous in childhood, is extended in an equal degree to adults, at least as regards the conditions under which our soldiers and prisoners live.

The causes of lesser prevalence of tuberculosis in India are given by Dr. Crombie as follows:

1. The comparative infrequency of bovine tuberculosis in India.

2. The native habit of boiling all milk before using it. No native of India knowingly drinks a drop of unboiled milk.

3. The exclusion of beef from the food of a large proportion of the native population. To the Hindu it is an abomination. Stall-fed beef is unknown in India, even in the large towns.

4. The flesh of the goat is almost exclusively used by Mohammedans, that of the sheep by Europeans. The goat is one of the animals most "refractory" to tuberculosis. Goat's milk is also much used by the natives.

5. The open-air occupation of the natives.

6. Abstinence from alcohol.

7. The native of India converts all his butter into "ghi" by a process of boiling and skimming, which must destroy any tubercle bacilli it may contain. The European in India eats raw butter.

8. Children in India have this additional advantage over European children (in India) that their mothers almost without exception suckle them until they are 2 or 3 years old.

9. The comparative infrequency of the diseases which seem most frequently to predispose to tuberculosis—namely, measles, scarlatina, and whooping-cough—which, when they do occur, are milder than in Europe (Ewart).

The inference to be drawn from the preceding facts is that where the flesh and milk of bovine animals is not much used by the people, and especially where cow's milk, except in a boiled state, is not used for the feeding of children, tuberculous diseases are extremely rare, and that this affords evidence against Professor Koch's contention.

On the other hand, we have to face the statement, which I suppose we must accept as a fact, that a very large number of milch cows are tuberculous and that the number so affected is increasing. As an increasing number of British mothers refuse to suckle their children we ought to find more tabes mesenterica and tuberculous peritonitis among the children. Dr. Raw says it is so, and this I was not certain about, having no reliable statistics to guide me.

In the town in which I live the milk supply comes from some twenty-five farms outside the borough boundaries, and therefore not under the ken of the medical officer of health. There is no regular and systematic inspection of the cowsheds and dairies, nor of the cows that supply the milk. Probably many of the cows are tuberculous. One would, therefore, expect to find a considerable number of cases of tabes and tuberculous peritonitis amongst the children in the town. But the official records show that in thirty-one years only four deaths have been certified from tabes mesenterica and two from tuberculous peritonitis. During the same period eighteen deaths have occurred from tuberculous meningitis. It is possible that the pure sea air and the bright sunshine may have destroyed the bacillus and that some of the children are brought up on milk that has been boiled, though I am inclined to doubt if great care is taken in this respect. I know also that among the poorer classes (where one generally finds tabes) the mothers suckle their children for long periods. The number of those brought up by hand is comparatively small and some of them are fed on the popular farinaceous foods with a very small proportion of milk.

IV.—John Mackenzie, L.R.C.P.,

Medical Officer of Health Kirkby-in-Ashfield.

Dr. Mackenzie said: I cannot accept that all the tuberculosis found in children is due to milk infection. The children of the poor are often breast-fed. The mothers believe that whilst they suckle their children they will not conceive again. The milk is kept in the homes of the poor under conditions that greatly encourage tuberculous infection, if it should be otherwise present in the house. Tuberculous meningitis I have often observed to be due to disease of the middle ear. The enlargement of cervical glands may be due to scarlet fever, diphtheria, and septic sore throat. Hence we must not rush to the conclusion that all large cervical glands are tuberculous.

V.—Theodore Fisher, M.D., M.R.C.P.,

Physician to Out-patients, Bristol Hospital for Sick Children.

Dr. Fisher said: I think Dr. Nathan Raw takes too extreme a view. I do not, of course, deny the possibility of primary abdominal infection, or that such infection is sometimes of bovine origin, but that infection through the respiratory tract is far in excess of that through the alimentary tract my own experience seems to leave no shadow of a doubt. Statistics may be quoted of the relative frequency of infection of the bronchial and mesenteric glands from Germany, France, and America, which present the matter in a different light from that given by Dr. Raw. In my experience the primary or only focus of infection is, in the great majority of instances, in the bronchial glands. Extension of infection from the mesenteric to the bronchial glands must be extremely rare. I can mention cases showing that tuberculous peritonitis and other forms of acute or subacute tuberculosis of abdominal organs may occur where the only caseous focus is in a single bronchial gland hidden within one lung.

VI.—W. Langford Symes, M.D.,

Physician, Orthopaedic Hospital of Ireland.

Dr. Symes said: I wish to ask Dr. Raw what he actually means by tabes mesenterica. Dr. Raw quotes 273 cases of tabes. There are three forms of abdominal tuberculosis usually seen—namely: (1) Tuberculous peritonitis, of two or

three kinds; (2) tuberculous ulceration of the bowels: (3) tabes mesenterica where the glands alone are affected. This latter is in reality the rarest of all kinds, and the use of this term frequently gives rise to misunderstanding.

VII.—EDMUND CAUTLEY, M.D., F.R.C.P.,
Physician, Belgrave Hospital for Children.

DR. CAUTLEY said: In one point I agree with Dr. Nathan Raw, namely, that probably the bovine bacillus gives rise to a different form of tuberculosis to that produced by the human bacillus, and that children are subject to both kinds of infection. I differ from him in regarding infection by the bovine bacillus as of comparatively rare occurrence. It is with the greatest regret that I hear Dr. Raw perpetuating that unfortunate name, "tabes mesenterica." It has led to endless confusion, and, on the grounds of scientific precision, should be omitted from the nomenclature of the tuberculous affections. I am still more astonished to hear him quoting Sir Richard Thorne-Thorne's statistics of tabes mesenterica in support of his views. Time after time it has been pointed out that these statistics are absolutely valueless. They were taken from the Registrar-General's reports, and it is well known that in those reports all cases certified as deaths from "consumptive bowels" are included under the heading of tabes mesenterica. This is absolutely misleading, for almost all cases so certified are nothing more or less than cases of marasmus due to diarrhoea and vomiting, from unsuitable feeding, and ending in death. I am not inclined to accept the statements of veterinary surgeons that about 30 per cent. of English cows are tuberculous. Such a statement may be true of highly-bred pedigree stock and of old milch cows kept under unsuitable conditions, and yet be absolutely inaccurate of younger cows kept in healthy country surroundings. Even accepting it as true, the result is probably based on the reaction to tuberculin, and does not indicate that the milk is likely to be infective. The fact that many children get a mild infection and recover is to my mind an argument of no value in favour of the views of Dr. Raw. The liability to infection by the human bacillus is enormous in the conditions under which the very poor live, and the milk may be infected by the human as readily as by the bovine bacillus. From the experience of a large hospital practice for many years I have derived the impression that tuberculous meningitis diminishes in frequency in proportion to the increased use of cow's milk in infant feeding. Certainly the proportion of such cases has very much decreased in my experience under such conditions. I regard condensed milk as a potent factor in the etiology of tuberculous affections, by lowering the vitality of the child, and rendering it more susceptible to infection by the human bacillus. As to infection via the alimentary tract in opposition to infection through the pulmonary system, I should like to quote the result of 27 necropsies on cases of tuberculous meningitis.[1] In 25 instances the state of the mediastinal and mesenteric glands was noted, and in no less than 23 were one or more of the mediastinal glands caseous. In 4 out of these 23 the mesenteric glands were also caseous, but in none were they the only ones involved. On the whole, it seems to me that up to the present we have no justifiable grounds for concluding that tuberculous milk is a serious source of infection.

VIII.—GEORGE CARPENTER, M.D.Lond.,
Assistant Physician, North-Eastern Hospital for Children; Late Physician, Evelina Hospital for Children.

DR. CARPENTER said: Certain cases of tuberculosis are, in my opinion, primarily abdominal. If infection of the lungs takes place in these cases, it is probably secondary, and by way of the thoracic duct. Other channels of ingress are, however, much more usual avenues of infection. In a case of enteric fever with an intestinal ulcer and enlarged mesenteric glands, I found both tubercle and typhoid bacilli in the glands. This proves conclusively that primary infection of the glands can occur. Dr. Raw has not called attention to a well-known occurrence in these cases of a sound mucous membrane with advanced caseous disease of the mesenteric glands. I object to the loose term tabes mesenterica, a nomenclature which should be abandoned. I have in a large experience only seen two cases of glandular disease which could be fairly called tabes mesenterica. The common clinical state is a mixed condition of tuberculous peritonitis, tuberculous ulcers, and caseous mesenteric glands, which can be detected as fixed abdominal lumps. I should like Dr. Raw to say what he really means to convey by the term tabes mesenterica. I think that many cases of dyspepsia in infants and young children are unwarrantably described as cases of tabes mesenterica. Are Dr. Raw's experiences clinical or pathological? I call attention to the importance of making a combined rectal and abdominal examination in doubtful cases. It is possible in this way to determine the presence of tuberculous peritonitis. Dr. Raw has spoken of abdominal section in these cases. I consider abdominal section unjustifiable, and all that is necessary in some cases of ascites, when there is considerable distension by fluid, is the simple operation of paracentesis abdominis, preferably by Southey's trocar and cannula. Abdominal section should only be undertaken when there is pus in the abdomen or for the relief of intestinal obstruction. Dr. Raw has stated that he has never seen a case of abdominal tuberculosis which has not been fed on cow's milk. My experience is somewhat different, as I have met with two primary cases in breast-fed infants. In one of them the appearance was that of simple chronic peritonitis. The false membrane could be stripped off the intestines, leaving a polished surface, and it was not until a microscopical examination was made of this membrane that its tuberculous nature was recognized—it was crowded with tubercle bacilli.

[1] *Reports of the Society for the Study of Diseases in Children* vol. ii, p. 53, 1902.

IX.—W. MCADAM ECCLES, F.R.C.S.,
Assistant Surgeon, St. Bartholomew's Hospital.

MR. ECCLES said: I wish to emphasize the remark which fell from the President that, from a surgical point of view, there seems to be much evidence that there is a lesion prior to the infection by the tubercle bacillus. I think that there might be direct infection through the blood stream, without involvement of the cervical glands, of both meninges and of joints. So many children suffer from lesions of the tonsils and nasopharynx that it would seem possible, even probable, that bacilli in milk may be arrested and imprisoned here, and become directly absorbed. In tuberculous peritonitis, if there is no secondary infection, recovery would seem to be the rule, and therefore the question of a primary tuberculosis of the abdomen is important from a point of view of prognosis.

REPLY.

DR. NATHAN RAW thanked the members of the Section for their criticism of the points raised in the paper, and read a letter from Professor Madden (Cairo) supporting his view that children in Egypt were not often attacked with tuberculous glands or abdominal tubercle owing to the general custom in Egypt of suckling the children up to the age of 2 years. He was strongly of opinion that tubercle spread from the abdomen to the lungs in children a great deal more frequently than vice versa. He concluded by affirming the view that human and bovine tuberculosis were different species of tuberculosis, and that the child was more susceptible to bovine than human infection, and that the general mode of infection was by the ingestion of tuberculous cow's milk.

BRITISH MEDICAL BENEVOLENT FUND.—In its report for the year 1902 the Committee of the British Medical Benevolent Fund records another year of active work, being the 68th that has elapsed since the institution of the fund. It has adhered to its plan of passing all legacies, etc., to the annuity department, and so far as this branch of the fund is concerned the year's work was entirely satisfactory. The invested capital was increased by the sum of £340, and the number of annuitants brought up to 115 persons, amongst whom the sum of £2,291 10s. was divided. The grant department, however, which depends entirely upon the annual subscriptions and donations received, was a source of anxiety throughout the year, for, owing it is believed to the stress of the war, the amounts received from these sources diminished. Although, therefore, it was found possible to relieve 152 applicants at a cost of £1,503 10s., this was only effected by using up the whole of a sum of £200 which had been set aside for emergencies. The Committee expresses its obligations to the Council of the British Medical Association for consenting to act as collectors for a year. It needs only a glance at the details given of the circumstances and former position of each annuitant and applicant relieved to convince any one of the great utility of this fund, of which the Treasurer is Dr. Samuel West, of 15, Wimpole Street, and the Secretary, Mr. W. E. Sargant, St. Bartholomew's Hospital.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1903.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, AUGUST 29TH, 1903.

THE WET SUMMER AND THE PUBLIC HEALTH.

The present summer, like the last, has been characterized by an unusual proportion of rainy days. Unlike last summer, there has been during July and August of this year a succession of severe rainstorms, which have not only cooled the air and prevented the dissemination of dust, but must also have had a great influence in scouring the surfaces of the streets and in freeing them, as well as back yards, courts, etc., of most of their decomposable organic débris. The difference between the two summer quarters up to the end of the eighth week of the quarter may be gathered from the fact that the rainfall in these eight weeks of 1903 amounted in London to 8.84 in., as compared with 3.48 in. in the corresponding weeks of 1902. In 1902 frequent comparatively slight showers occurred: in 1903 there have been also falls of rain of almost tropical severity. What will be the relative effect of these two varieties of wet summers on the diarrhoeal death-rate will be an interesting subject for inquiry when the present quarter is past.

It is unfortunate that a wet summer—which to most men is a source of sorrow and regret—should, to those medical officers of health whose lot is to work in our great centres of population, be the occasion for unmixed rejoicing. They know that with a cool summer the infantile mortality and the total death-rate for the year will be greatly lowered. That this is so is plain from a comparison of metropolitan deaths from diarrhoea in the first eight weeks of the summer quarters of 1900 and the present year respectively. In the former the rainfall in eight weeks was 3.34 in. and the deaths from diarrhoea 1,811; in the latter the rainfall in eight weeks has been 8.84 in., and the deaths from diarrhoea 656. One observer, after an exhaustive statistical inquiry into the subject,[1] concludes that not only have "the towns with the lowest diarrhoeal mortality the greatest rainfall and the lowest temperature, and vice versa;" but that "the incidence of diarrhoea follows more closely the rainfall than the mean temperature of the air." So great does he deem the influence of meteorological conditions that the suggestion is made that "if accurate and continuous meteorological observations were kept in every town, we should be able to arrange the towns in the order in which they should appear *re* diarrhoea, and contrast this with the actual position of each town; or, in other words, might calculate a series of meteorological factors of correction, although this is an unnecessary refinement."

[1] *Public Health*, December, 1899, Dr. Newsholme.

These remarks bring out the point that a portion of the diarrhoeal mortality of a town may be regarded as inevitable, due to the natural forces indicated above, and a portion evitable caused by insanitary conditions. It may be doubted whether if our towns more nearly approached the ideal condition, the former causes could be regarded as strictly inevitable. Whether it be that diarrhoea is spread chiefly by the access to food of flies or of dust, or by both of these, and in part also by milk contaminated at the dairy, it is still true that the operation of these avoidable causes may be minimized by replacing the deficiency of rainfall by municipal and other forms of scavenging. Dr. Hope at Liverpool has emphasized the importance of having a water supply in cities for public cleansing purposes which shall be free and unstinted. He instances the wet summer of 1891, with a diarrhoeal mortality of only one-fourth of that in 1895, in which upwards of 900 million gallons of water were distributed in Liverpool by rain, which were absent in 1895. The moral, then, for the hygienist is not to rest contented with a lucky wet summer, but to emphasize in season and out of season the importance of efficient municipal scavenging and swilling of our streets and lanes, the equal importance of the daily removal of house refuse and other accumulations of refuse, and of domestic cleanliness in every respect, and the imperative necessity for an urban supply of milk which is lean at its source, thoroughly cooled, and not exposed to contamination in transit or after it reaches the homes of the poor.

The wetness of the present summer raises the interesting question whether we may not be at last on the point of emergence from the cycle of dry seasons which we have had for over a dozen years. The average annual rainfall in London in the fifty years 1853-1902 was 23.7 in. Since 1886 the annual rainfall has only in three years exceeded this average, and the average annual rainfall during these sixteen years has been 22.3 in., 1902 having the lowest rainfall (19.5 in.), except 1898, when it was 18.9 in.

Along with this cycle of dry years there has been the coincident epidemic prevalence of diphtheria; and if we may judge from the experience of London in 1857-63, the disappearance of the cycle of dry years will be followed by the sinking of diphtheria into a place of relative insignificance. Drs. Longstaff and Gresswell and other observers have noticed a similar relationship between the epidemic prevalence of scarlet fever, erysipelas, and other septic diseases and years deficient in rainfall. What may be the exact nature of this relationship is as difficult to state as it is in regard to diphtheria. Whether it implies that the micro-organisms have an extra-corporeal phase of life, or merely that the dust of dry years mechanically favours the convection of infective material, or whether flies or other forms of life which are more active and numerous in dry warm years act as intermediaries in conveying infection, must still be regarded as subjects for speculation and for investigation. But the great principles of cleanliness here also possess the utmost importance. If rain the natural scavenger fails, other means must be devised for cleansing the surfaces of our streets, for attacking the breeding places of insects and preventing their multiplication, and so on. A wet summer and its influence in minimizing infective diseases may therefore teach us many practical sanitary lessons, and enable up to prepare for the years in which Nature's scavenger is not so plentifully available—holiday makers think, alas! too plentifully—as during the present year.

THE PUBLIC DEBT TO THE HOSPITALS OF LONDON.

In the final volume of Mr. C. Booth's great work on *Life and Labour in London* will be found a very short section headed "Hospitals and Nursing," which will well repay perusal and careful meditation. Mr. Booth says most correctly that "it is not as charities, but as public institutions, that the hospitals make their appeals." They serve the public, in fact, in three directions, chiefly (1) as places where every species of disease and injury can be treated, and more especially such as do not admit of home treatment; (2) as schools of medicine and surgery; and (3) as a training ground for nurses. The two last-mentioned functions of hospitals give, in Mr. Booth's opinion, a valid claim on the part of our hospitals to pecuniary support from the public, in return for what he justly regards as public services, since the improvement of the science and art of medicine is an addition to the happiness and strength of the nation, and the training of nurses for service among the sick of a district enables the authorities of that district to send into every house a woman who is (in Miss Nightingale's words quoted on p. 155), "a great civilizer of the poor, training, as well as nursing, them out of ill-health into good health, out of drink into self-control, but all without preaching, without patronizing, as friends in sympathy." On these grounds Mr. Booth thinks that a public grant should be made to the hospitals, to be administered, of course, by a public body, which would exercise some amount of control over both medical education and over the management of each hospital.

We recognize fully the friendliness and the equity of Mr. Booth's suggestion. It is true that medical education is one of the great functions of our hospitals; and it is also true that this function, little regarded as it is by the public—nay, often decried or made light of, as only interesting "the doctors"—is really of even greater public importance than is the medical treatment of the inmates of the hospital: since every member of the public from King to pauper is benefited by the one, while only the hospital patients benefit by the other. And most true it is that medical education is at present left in London with little assistance from the public, while the education of other professions is assisted by splendid endowments; and in other countries and in the provinces the medical profession itself has its share in institutions richly endowed either from public or private funds. That this state of things presses heavily on the London hospitals we need not say.

We hear of one hospital after another which has been obliged to assume the management and the accompanying financial risks of its medical school—not in any hope of making the school pay in the present condition of medical education in London, but because the alternative is to abandon the school, and this alternative involves the loss of all the services which the school renders to the hospital, in providing it with resident officers, clerks, dressers, etc., the still greater loss of prestige which the loss of a school brings with it; and more than all, perhaps, the loss of that stimulus to good and zealous work which (as every one knows who knows hospitals from within) the presence of a body of students imparts to the physicians and surgeons. Where the school has not been directly incorporated in the hospital, the governors have, in cases known to us, felt obliged to come to its assistance by using the funds entrusted to them for the relief of the poor, conceiving that this employment of those funds is legitimate. There are those who question the legality of such an expenditure; but up to the present time we have not seen that any one has taken steps to decide the point.

For our own part, it seems abundantly clear that such expenditure is not only legitimate, but inevitable, unless Mr. Booth's proposal should be realized in practice—and the difficulties in the way of its realization are evident enough. Nor are we quite certain that it would be universally acceptable to the hospitals. Public assistance necessarily involves some amount of public control; and although the hospital governors would no doubt have some representation on the controlling body, yet the introduction of a foreign element, having the power of the purse, would much alter the present constitution of these self-governing institutions.

THE USE OF AËRATED WATERS.

Whatever the stage of civilization man has reached, he has always made for his use some beverage more or less artificial in its mode of production, and having certain physiological effects, out of which arise more or less complex moral and physiological questions. If man were made merely to "bask and batten in the woods," a draught of Adam's ale might be all that he would care for or find necessary to quench his thirst. The circumstances of our practical and social life, however, alter the case. In recent years there has been an enormous increase in the manufacture of aërated waters, made to imitate the various natural sparkling or so-called mineral waters, first made artificially by Priestley, who, when residing near a Leeds brewery, impregnated water with "fixed air" or carbonic acid. Thus one product of fermentation became the parent of that numerous class of beverages known as effervescing or non-alcoholic. Priestley may thus be said to have been the founder of the mineral water industry. He set forth his views in Directions for Impregnating Water with Fixed Air in order to Communicate to it the Peculiar Spirit and Virtues of Pyrmont Water and other Mineral Waters of a Similar Nature, in a tract published in 1772, and sold for 1s. He speaks of Pyrmont water containing "fixed air," "a great antiseptic principle administered in a great variety of agreeable vehicles." The original idea was that these waters should be most useful in preventing scurvy during long sea voyages.

Dr. Hamer, the Assistant Medical Officer of the London County Council, has published some remarkable statistics which show that nearly half of the water estimated to be consumed for drinking purposes in the metropolis is in the form of aërated waters. In ten years the increase has been, in the words of Dominie Sampson when he saw the laird's library, "prodeegious." The number of bottles of aërated waters sold in London increased from 150,000,000 in 1892 to 500,000,000 in 1902. In forty years the number of manufacturers of aërated waters in London has quadrupled (401 in 1861, 1,756 in 1901), while the number of brewers has increased only slightly (from 3,006 to 3,406). The annual consumption of aërated waters in the United Kingdom is calculated to be about 3,600,000,000 half-pints. The average consumption of these fluids by the Londoner per head—man, woman, and child—is about a quarter of a pint a day. Even that is only ninety pints per year. Taking the

consumption of beer as 31 gallons a head of the population per annum, it is obvious that there is plenty of leeway to make up ere the aërated waters have much effect on the beer trade, and it is an old proverb that "a stern chase is a long chase." Probably, too, this great consumption of aërated water is not unassociated with the inroads of whisky as a beverage, diluted, as it so frequently is, with some aërated water, natural or artificial.

There is little ground, therefore, for hope that this enormous consumption of gas-charged waters is due to their displacing beer or other alcoholic beverages; nor is their consumption to be taken as an index of our increasing sobriety as a nation. The increase may be more safely ascribed partly to improvements in manufacture leading to reductions in price, and to such beverages being thus brought within the reach of a larger class, and partly to a popular belief that, by using mineral waters, there is less chance of contracting zymotic diseases. On this point such information as exists is reassuring, for, so far as it goes, it bears out the more or less generally accepted idea. Thus Abba found that aërated waters inhibited the action of certain bacteria which are occasionally present in natural water. Cholera bacilli, it has been stated, are destroyed in from half an hour to three hours.

In places therefore where the purity of ordinary water as regards the waterborne germs of zymotic disease is open to suspicion, there would appear to be some advantage in using aërated water. As regards other germs, however—the effect of which, if any, upon the human system is but ill understood—ordinary tap water would appear to be at least as free, if not much freer, from them than much of the aërated water now put upon the market. The best manufacturers, no doubt, take great and successful pains to procure water of high initial purity, and adopt adequate precautions to avoid its after-contamination during the processes which it undergoes. This, however, is not the case with all, so in view of the importance which the trade has now attained, it is eminently desirable that it should be brought under control by the authorities on lines corresponding to those adopted in Italy several years ago.

THE ROYAL COMMISSION ON THE SOUTH AFRICAN WAR.

Elsewhere we publish, practically in full, the part of the Report of the Royal Commission on the South African War which relates to the medical service of the army. The general impression which it conveys is that the system, like the rest of the army, was based on the supposition that the grim actualities of war would never have to be faced. As one witness put it, "the medical service was overworked, undermanned, and underorderlied." Many of the orderlies were untrained privates brought in as makeshifts, and naturally inefficient. Surgeon-General Sir W. Wilson says that the officers whom he had did all that was possible, but they were far too few. He had been supplied with *personnel* to look after two army corps—say, 80,000 men—and he had not enough to look after even that number; but instead of that, they had 250,000 men to look after, besides camp followers. The work was scattered all over half a continent. The testimony of Lord Roberts is of special importance. He expressed the opinion that the medical department suffered under, perhaps, greater disabilities than the other army departments. It was very far from being prepared for expansion, and yet, within a few months, it was called upon to provide officers, non-commissioned officers, orderlies, and nurses for an army three or four times the size of that for which its establishment had been estimated as sufficient. It had been calculated that it would be enough to arrange for medical aid for 4 per cent. of the troops employed in war, whereas it turned out that the calculation should have been for 10 per cent. Nevertheless, had it not been for the sudden outbreak of an epidemic, which was inevitable in war, the department would, in all probability, have proved equal to the occasion. The fact that the outbreak should have reached dimensions with which they were unable to cope was due rather to the arduous character of the operations and the nature of the lines of communication than to want of efficiency and zeal on the part of the medical officers and the assistants. It was impossible, under the circumstances, to give the medical supplies precedence on the railway, and to bring up reinforcements of *personnel*. In a word, the Army Medical Service broke down for a short time under the strain of circumstances against which adequate provision had not been made. What happened was indeed exactly what had been foretold by the British Medical Journal for years before the war; but we could not wake the War Office, to which, as to the lotus eaters in the land wherein it seemed always afternoon, every suggestion of reform was mere weariness. To our minds the real cause for wonder is that the service did not collapse utterly under the difficulties which it had to face, not the least of which was the storm of unfair, ignorant, and malicious criticism poured upon it by irresponsible persons eaten up by the zeal of self-advertisement. We could have wished that the Commissioners, instead of mildly hinting that all was not for the best in the best of all possible services, had definitely indicated the undoubted defects and shortcomings which existed, and fixed the responsibility for them on the right shoulders. The military authorities sowed the storm and reaped the whirlwind. A large measure of blame must also be attached to the keepers of the public purse, to whose shortsighted parsimony the undermanning and shortcomings of the service were mainly due. We propose to consider the Report in detail in a future issue.

THE INDIAN MEDICAL SERVICE.

Reference was made in the last issue of the British Medical Journal to the part taken by Sir Michael Foster in the debate on the Indian budget in advocating the redress of the grievances complained of by the officers of the Indian Medical Service. Sir Michael was supported by Dr. Edward Thompson in a vigorous speech, of which he has kindly supplied a full report. Dr. Thompson considered that he should fail in his duty if he did not support the contention of the distinguished member for the University of London in the references made by him to the condition of the service, especially as he had been asked by the British Medical Association to direct the attention of the Secretary of State for India to the matter. The grievances pointed out in the memorandum submitted by the Council were very real, and if not remedied would to a certainty destroy the efficiency and popularity of that hitherto favoured service. It would, he thought, be generally admitted that the officers of the Indian Medical Service had a long and favourable record of honourable and useful service as men of science and as skilful physicians and surgeons, and it would be a great reproach to the Government if the service were permitted from easily preventable causes to fall below the high standard of efficiency it had hitherto maintained. These grievances, if not remedied quickly, must have a deterrent effect on intending candidates. The medical profession had a most powerful organization in the British Medical Association, and this body had begun to move in the matter. Although he wished to utter no threats, he was convinced from what he knew to be taking place that the medical schools throughout the country would be advised to inform their students that the Indian Medical Service was not one which it was advisable in present circumstances to enter. After summarizing the grievances and disabilities as set forth in the memorandum published in

the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of August 15th, p. clxxxviii. Dr. Thompson proceeded to say that if the reforms suggested were carried out in their entirety the Indian Medical Service would be restored to its former high standard of usefulness. If, on the contrary, the Indian Government continued the system of pin-pricks which was gradually destroying the popularity of the Service, and undermining its power for good, the authorities might rest assured that the Indian Medical Service would fail to attract candidates of the right kind. The noble lord who had administered so effectively other departments of the State as well as the India Office, would be well advised if he imitated the example of the present much-abused Secretary of State for War, who, if he had done nothing else—and Dr. Thompson ventured to say he had done much excellent work in his present office—had placed the medical service of the army in a position which it never occupied before under any War Secretary, and had given it an organization which would enable it to discharge its great responsibilities either in war or peace. Let the Indian Government, he concluded, go and do likewise for the Indian Medical Service, and the result would be correspondingly satisfactory.

INTERNATIONAL CONGRESS OF HYGIENE.

IT may not be inopportune to remind our readers that the eleventh International Congress of Hygiene and Demography will be held at Brussels from September 2nd to September 8th, under the patronage of the King of the Belgians and the Honorary Presidency of His Royal Highness Prince Albert. The President is Mr. M. E. Beco, General Secretary of the Ministry of Agriculture; the General Secretary, Dr. Felix Putzeys, Professor in the Medical Faculty of the University of Liége. The Honorary Secretary of the British Committee is Dr. Paul Moline, 42, Walton Street, Chelsea, S.W. Previous meetings of the Congress have been held at Paris in 1878, Turin in 1880, Geneva in 1882, The Hague in 1884, Vienna in 1887, Paris in 1889, London in 1891, Buda-Pesth in 1894, Madrid in 1898, and Paris for the third time in 1900. It is claimed, however, by Dr. de Vaucleroy that the first of the series of International Congresses of Hygiene was that held at Brussels in 1852 under the honorary presidency of M. Rogier, then Belgian Minister of the Interior and the actual presidency of Dr. Vleminckx. A list of the sections and a programme of the work of each was published in the BRITISH MEDICAL JOURNAL of January 31st, 1903, p. 282. Among the hygienists who will take part in the proceedings, the United Kingdom will be represented by Professor Sheridan Delépine (Manchester), Dr. H. S. Purdon (Belfast), Dr. Legge (Home Office), Dr. Arthur Newsholme (Brighton), Sir Patrick Manson, Major Ronald Ross, Professor W. J. Simpson, Dr. Tatham of the Registrar General's Office, Mr. Gilbert J. Fowler, Superintending Chemist of the Sewage Works, Manchester; Dr. Rideal, Vice-President of the Society of Public Analysts; Mr. E. H. Osborn, of the Home Office, and Miss Adelaide M. Anderson, Principal Lady Inspector of Factories, Westminster.

THE ROYAL PORTSMOUTH HOSPITAL.

THE Royal Portsmouth Hospital has been spending a good deal more than its income for some years past and the position of its affairs appears to be critical. The financial support accorded to it during this time has not been less than formerly, but the general progress in medicine and surgery and the reputation of its staff have naturally led to great increase in the number of persons applying for its assistance. This call the authorities have gallantly attempted to meet, and have accordingly from time to time increased the accommodation provided. The nett result, therefore, is that though the income of the hospital has not actually decreased, and has to some extent been augmented, its relative diminution in proportion to work done has for some time past been great. As a means of extricating it from its present difficulties and of putting its finances for the future upon a surer foundation, two schemes have been suggested, and if the local newspapers are correct their relative merits are being keenly disputed. One of these is a proposal to open the old disused Admiralty Lock Wards as wards for paying patients, and the other is a frank proposal to throw the hospital upon the rates for support. As regards the former proposal it may be said that paying wards attached to general hospitals supported by voluntary contributions are open to numerous objections, of which one only need be mentioned in the present connexion. This is that though the patients pay, the wards themselves commonly do not, and become a drain on rather than an addition to the resources of a hospital even when the medical staff of the hospital is prepared to throw in its service to such patients for the benefit of the institution. Patients who can afford to pay remunerative charges are somewhat exacting in their requirements, and in most places do not apply for admission in sufficient numbers to keep special wards full. At Portsmouth there may possibly be local circumstances which would lead to an unusually large number of persons capable of paying four or five guineas a week applying for admission for treatment in special pay wards; but they certainly would not do so unless such wards were specially prepared for their reception, and it sounds as if it would cost a good deal of money to make disused Admiralty Lock Wards attractive. Even, therefore, if such local circumstances really exist, and their continuance is assured, the scheme seems of doubtful value. The other scheme—that of throwing the hospital upon the rates for support—appears equally unhappy. That the rates in that case would be very greatly increased is the concern of the ratepayers, but it may be taken for granted that the patients and the poor in general would also suffer very materially in many directions by the change; and amongst other things admission to the hospital would probably become much more difficult of attainment, and the whole tone of the place would be lowered. It seems difficult to believe that either of these desperate remedies can really be necessary to keep going the principal hospital of a town like Portsmouth; and that, if the methods of collecting money for its benefit were overhauled, the hospital would not in a few years find itself emerging from its difficulties, and income and expenditure more reasonably approximated. An examination of the published accounts suggests that, though the supervision of expenditure is adequate, sufficient attention is not paid to what is quite as important a matter, and that is the business of bringing the existence of the hospital and its needs home to the people. No hospital nowadays can flourish unless the whole machinery of fund-collection is well arranged and kept constantly at work. This certainly does not appear to be the case at Portsmouth, for the sums at present received from the working classes are much lower than at most towns, and ridiculously small, considering that at the dockyard alone there must be some 8,000 or 10,000 workmen in receipt of good wages. It also appears that the old guinea subscriber's in-patient ticket is still in use. This is a matter to which attention should at once be given. The average cost of every in-patient in this hospital is about £4 10s., so it is scarcely business-like to confer on every subscriber of £1 1s. the right to put it to an expense of more than four times that sum. One point should be constantly brought before the wage-paying and the wage-receiving classes respectively: that is, that in default of adequate voluntary support, resort to the rates will be inevitable, paying wards notwithstanding; to the wage-payers this will mean increased rates, and to the wage-receivers much decreased benefit from the existence of a hospital at all.

PATENT MEDICINES.

IT is stated that the Board of Inland Revenue has given notice that after the end of this year stamp duty will be exacted in respect of all compound drugs sold to the

public under a title without a formula explaining their composition being thereto attached. This is no new regulation, but simply an extension of the sense in which the regulations have hitherto been read, so as to cover the sale of things which, without definitely claiming to be patent or proprietary medicines, are sold under such titles as "liver pills," etc. The new reading may possibly add a few shillings to the revenue, and may possibly also trouble to a slight extent herbalists and barrow vendors of cheap drugs; otherwise it is not likely, nor probably is it intended, to dissuade the public, rich or poor, from dosing itself with drugs of unknown composition, so long as it pays His Majesty's Government for the privilege. At this distance of time it is not easy to say whether the tax on patent medicines was ever advocated or defended on other than fiscal grounds, but the time has come when the question of the trade in patent medicines should be reviewed from the point of view both of its effects upon the public revenue and of its effects upon the public health. To some extent these two interests may be regarded as opposed, since it is possible to maintain that the public would indulge less freely in patent products if their virtues did not enjoy the pseudo-guarantee of a Government stamp. With or without a stamp, however, people will always dose themselves with patent medicines; and, so long as they confine themselves to simple remedies for more or less trifling complaints, there is no reason why the public revenues should not get some profit out of the transaction, even if patients get none. It is more than questionable, however, whether all patent medicines are innocuous and whether the profit to the revenue is nearly as great as it should be, and whether the whole trade might not be put upon a much more satisfactory footing. Enormous fortunes are made by the proprietors of secret remedies or preparations which are sold as such, and the Government stamp upon them does not represent an adequate percentage of the profits of their sale. The cost of the manufacture of such remedies relatively to the price at which they are sold is as a rule ridiculously small, and quite out of proportion to that obtained in any other trade or manufacture. This profit is truly an "unearned increment," since it results simply from trading on that human weakness which leads the public now, as it did thousands of years ago, to take everything *ignotum pro magnifico;* so far as the success really represents work, it represents the work of skilful and profuse advertising only. Increase of the stamp duty would simply mean increase of the price to the public, but it would not be impossible to devise some means of obtaining for the revenues a greater share of the profits out of the pocket of the manufacturer himself, as for instance by imposing a stamp duty on all advertisements that appear elsewhere than in the columns of the press or as leaflets in magazines, etc. A heavy tax, for example, might very well be put on hoarding advertisements of patent medicines, especially on those which disfigure the country along the sides of the principal railways. There are a great many patent medicines, however, of which the sale as such ought not to be permitted at all: in short, it should be made impossible to sell them without a full statement of their contents in language which would be comprehensible by every one. Many of them depend for their virtue, or at all events for their popularity and potency, simply on the fact that they are disguised alcohol in the strongest form. The majority of those who buy them, either for themselves or for others, are in entire ignorance of this fact, and there is not the slightest doubt that the sale of alcohol in this apparently innocent form results in enormous harm. There is ample room, therefore, for the study of the patent medicine question both by temperance and fiscal reformers.

HERNIA AN ACCIDENT.

A most important and far-reaching judgement was recently given in the case of an appeal against an order of the Court of Appeal under the Workmen's Compensation Act, 1897. The decisions of the County Court and the Appeal Court were set aside, and it was held that a rupture caused by excessive straining in a man engaged in carrying on his ordinary avocation was an "accident" within the meaning of the Act and entitled the sufferer to compensation. Lord Macnaghten, in delivering judgement, brushed aside the notion that the element of "fortuitousness" was essential to constitute an accident within the meaning of the Act. He said: "If it meant exactly the same thing as accidental the use of the word was superfluous. If it introduced the element of haphazard, an element which was not necessarily involved in the word 'accidental,' its use, he ventured to think, was misleading, and not warranted by anything in the Act." The vista of possibilities opened up by this judgement is a long one. If we are now to take the view expressed by Lord McLaren in a somewhat similar case in the Scotch Court of Session, that a "physiological injury," suffered by a workman in the reasonable performance of and as the result of his work, is an accident within the meaning of the statute, then it behoves medical men, and especially those engaged in factory and workshop practice, to take notice of this deliverance. In a wide sense it has sometimes been asserted that all death is accidental, and there is some basis for the generalization if we are to class "physiological injuries" and internal mishaps in the accidental category. If a hernia be an accident, what of a detached retina? What is to be said of cerebral embolism? What, indeed, of the accidental reception into the system of an infective bacillus by reason of working in contact with an infected fellow labourer? Truly the recognition of these "physiological injuries," independent of "fortuitousness" or external circumstance, will give rise to some confusion and evoke not a little casuistry.

HOSPITAL DISTRIBUTION IN LONDON.

From information which has been received lately from various quarters it appears that a plan advocated in the British Medical Journal in the early part of the year is likely to be carried out. This was that King's College Hospital should be removed from its present cramped site in a neighbourhood which has of late years become largely depopulated, to a quarter in which a future would be assured for this hospital worthy of its past. The question, it appears, has been thoroughly examined by a Committee of persons unconnected either with King's College itself or with its hospital, and the report received, which is entirely in favour of removal, has now been adopted by two out of three bodies whose consent is necessary before any more active steps can be taken. The bodies which have approved of the scheme of removal are the Council of King's College itself and the Managing Committee of the hospital, and the third body whose consent must be received is that of the Governors. It can scarcely be doubted that this consent, for which it is understood application will be made within the next two months, will be eventually forthcoming. Some little opposition, however, is to be anticipated, since at the last annual dinner of the hospital the Chairman, Viscount Dillon, expressed himself as entirely opposed to the idea of removing the hospital to any other situation. The scheme of removal, it is understood, meets with the entire approbation of the medical staff, and from the point of view of the general public there can be no doubt whatever that it is one the fulfilment of which is in every way to be desired, since the hospital now lies in the very middle of that congested hospital area in which, as we showed in the Journal of January 17th, 1903, there are 7 general and 13 other hospitals with a total of 3,732 beds. Whether the neighbourhood which was first considered, and which we originally discussed, will eventually be chosen remains to be seen, but if this proves to be the case there can be little doubt that the £300,000, to which it is estimated the expenses of removal will amount, will be readily forthcoming. Once the transfer is completed and the hospital freed, as it should be, by the public from all expenses connected therewith, the outlook for the institution both as a hospital and a medical school will be decidedly promising. Few of its old subscribers and supporters are likely to desert it in its new quarters, and in the midst of a large area, where great hospitals are conspicuous by their absence, it will

gain a host of new supporters in addition. Besides this, the existing site, limited as it is in area, must be of considerable value, and the profit from its sale, in addition to the unexpectedly large residue which the hospital has lately received from the Storks estate, should do not a little to put its regular income more on a level with that of other hospitals of corresponding importance.

UNDERFED CHILDREN IN BOARD SCHOOLS.

ACCORDING to the recently issued annual report of the Joint Committee of the London School Board on underfed children, 194 of the London schools have systematically provided meals for underfed children during the past year 1902-3, as compared with 184 in 1901-2, and 170 in 1900-1, but it is suggested that the number of such schools was really over 194, because some who undertook and carried through this function, as has apparently been ascertained, did not furnish any report to the Committee. Allusion is made in the report to the continued difficulties encountered by the Board in enforcing the rule that in every necessitous school a sub-committee of managers and teachers should be formed to select the children believed to be underfed and to make provision for supplying them with meals. The avowed object of the Committee is that both no needy child should go underfed, and what is perhaps but little less important that none should receive food who were not really in want. In 1901-2, 20,085 children belonging to 184 schools were fed on an average for a period of one to five lunar months; in 1902-3 the number was 22,206 from 194 schools, and the period from one to twenty-three weeks. In 1901-2 46,619 meals were given weekly on an average, and in 1902-3 54,572. Whether or not it is a proper duty of such a public body as the London School Board to provide food for children not of the pauper class is a matter on which difference of opinion may not unreasonably exist, but it is certain that normal cerebral development, and *a fortiori* a satisfactory mental culture, are impossible in growing children who do not receive a fair amount of nourishing food. And inasmuch as the children of the State are compelled by law to submit to attempts to educate them there would seem to be a show of argument that the necessary conditions of nutrition should be supplied them without unnecessary humiliation.

WORKHOUSE NURSING.

THE reform of workhouse nursing has again been the subject of correspondence in the *Times*, and it may be usefully considered in connexion with a discussion on the same subject which took place on the occasion of the Northern District Poor-law Conference in July. One of the letters in the correspondence referred to is from the matron of a workhouse, and though a well-drafted epistle, it exhibits a curious lack of comprehension of the factors that enter into the subject, and of the real aims and meaning of the proposals of those who are urging on the question of reform. There is some trace in it, moreover, of that spirit of jealousy at the growth of new authority based upon special knowledge and special duties which not seldom retards reform. There is a certain tendency in some quarters to argue that because many workhouse and workhouse infirmary patients are old, and their diseases chronic, they require nursing of an inferior and less educated character to that provided for patients in ordinary hospitals. This contention, however, is based upon at least two errors, one of which is forgetfulness of the fact that in nursing, as in everything else, a little knowledge is a dangerous thing, while the other error is with regard to the patients commonly treated. Many of them it is true are "chronics," but many more are young children and adults whom accidental injury or sickness has forced into "the house," and it is true economy to take every step possible to restore all such as rapidly as possible to the ranks of the self-supporting classes. So far, therefore, from an inferior class of woman being permissible, it is probable that the women employed in workhouses as nurses should, if possible, be of a superior class to those in ordinary hospitals, for the healthy light of publicity beats less strongly on a workhouse ward, and the nursing is subjected to less constant supervision. The main discussion, however, centres round the plans which should be adopted to fill an admitted gap in our Poor-law system. Those who have been, and still are endeavouring, to effect reform consider that the suggestion put forward by the Departmental Committee of the Local Government Board last year aims in practice, if not in theory, at filling up the nursing staff of infirmaries with women with showy titles but no real training. They further believe that its adoption would not only amount to a complete abandonment of real reform within the workhouses, but that it would also lower the standard of nursing throughout the whole country; for these "qualified nurses," after a year's nominal training in a "minor school," would be free to impose themselves upon the public with their title of "qualified nurse," in competition with women who had been really and thoroughly trained at great expense to themselves. It is urged by the Workhouse Nursing Association that no nursing should be recognized as adequate which is based upon less than three years' training, and it is suggested that the proper solution of the question is the creation of a nursing department in the Local Government Board. Such a department would provide for the training of nurses in the "major schools" mentioned in the report or elsewhere, and hold the nurses when trained at the disposition of any guardians who chose to apply for them, they thereafter being entirely under the control of such guardians. This question is not one in which we are very directly interested, but we expressed our opinion as to the dangerous nature of some of the suggestions put forward by the Committee in a review of its report in the BRITISH MEDICAL JOURNAL of December 20th, 1902; and the counter suggestion of the Workhouse Nursing Association seems perfectly feasible, and one which would probably result in time in a service of sufficient prestige to attract the best class of nurses. The discussion at the Northern Poor-law Conference was of different character; it followed an able address upon the subject of nursing reform by Miss Bertha Ann Webb, M.B.Lond., and was for the most part intelligent and sympathetic. It is, however, noticeable for some remarks made by Mr. Jenner Fust and Mr. James Lowrie. The former is reported as having said that "he hardly liked to venture on a discussion of the relative position of the matron of a workhouse and the superintendent nurse, and he did not think it possible to lay down any general regulations," and that "certificates should carry only a record of her training and not her character." The latter said that "they were all agreed that they should have the best of trained nursing, well-trained, well-educated girls, well up to the mark, well able to converse with the matron, and argue with the doctor." Both these gentlemen, we believe, are Inspectors of the Local Government Board, and if their remarks are correctly reported, and are a fair illustration of the general knowledge of the department on the subject, its mental attitude towards the question, and its administrative ability, it is scarcely remarkable that the proceedings of the Departmental Committee last year should have resulted in a report which has been generally condemned.

FRANCE AND LEAD POISONING IN PAINTERS.

THE reports of a Commission appointed by the French Chamber of Deputies[1] have recently been presented by M. J.-L. Breton. They deal with the comparative covering and colouring powers of lead carbonate and oxide of zinc, and are the outcome of a semi-public agitation consequent upon: (1) Knowledge of the large amount of lead poisoning in painters in France; and (2) certain representations that had been made as to the possibility of replacing carbonate of lead as a pigment by zinc white. As far back as 1785 the chemist Guiton de Morveau advised the substitution of zinc for lead. The suggestion was shortly afterwards acted upon by M. Jean Leclaire, who, beginning life as a working house painter, rose to be one

[1] Reports of a Commission charged to examine the Bill dealing with the Employment of Lead Compounds in the Painting of Buildings, etc. Presented by M. Jules-Louis Breton, Chambre des Députés. 1902-3.

of the largest employers of labour in France. The firm known as Jean Leclaire, Paris, has never used any other white paint than that made from zinc oxide. The subject in due course attracted the attention of M. Lacrosse, the Minister of Public Works, and in August, 1849, he issued a decree that in future only zinc white should be used in painting public buildings. To this instruction effect was never given. The matter has been discussed by several Commissions, but it is only since the renewed interpellation in the Senate of February 4th, 1902, that the question has received due attention. According to Dr. Laborde there are 30,000 persons engaged in paint works, one way and another, in Paris; of these 1,500 are said to have suffered from plumbism, and 150 to have died from lead poisoning. In July, 1902, the use of white lead was forbidden in certain processes of internal decoration, and for three years lead compounds were not to be used in the external painting of buildings. It has hitherto been maintained that for external use zinc is inferior to lead, but out of 107 replies received from bridge and other engineers 73 were favourable to the exclusive use of zinc either for internal or external painting, while 32 stated as the result of their experience that for external purposes zinc white had not sufficient solidity. It is interesting to know that while in France Morveau proposed to replace lead by zinc, on English chemist, Atkinson, of Harrington, near Liverpool, took out a patent in March, 1786, for zinc white for painting public buildings. The supplementary report of the Commission, 1903, contains the evidence given by one of the largest manufacturers of white lead in France, master painters, working men painters, and trade union secretaries, etc. The proposal to replace lead by zinc as a pigment while receiving the support of many of the working painters was opposed by the white lead manufacturers. The opinions of railway and marine engineers are embodied in the report, and while these opinions are divided, there is, on the whole, a remarkable agreement as to the equality of zinc with lead in regard to covering power, endurance, and freedom from becoming black on exposure. Zinc is dearer, and is not so easy to manipulate as lead. It requires, therefore, greater care on the part of the mixer of the pigment, and a greater amount of skill and attention on the part of the painter. Although zinc white is dearer than lead, it covers a greater area, and in the end is just as cheap. As an indication of the change that is coming over France in regard to this question, some of the large manufacturers of white lead are now beginning to produce zinc white instead. It would appear, therefore, as if the suppression of the use of white lead for painting purposes was in France an accomplished fact. While the question is principally a commercial one, it also concerns art. Decorations of an artistic nature undergo alterations in the course of time—changes that are due to the oil, with which the pigments have been mixed, becoming oxidized or affected by the sulphur in the air. The painters of the Renaissance period are said to have renounced the use of oil. By certain fixed resins and oil of turpentine a liquid varnish can be made which is capable of replacing oil, which dries in from five to six hours, and which resists longer the decomposing influence of atmospheric agents.

SCHOLARSHIP AND MEDICINE.

Professor Thorndyke, of Columbia University, New York, as we learn from the *Journal of the American Medical Association*, has traced the careers of 5,283 college graduates (1840-1900) who were elected to the Phi Beta Kappa, membership of which is a recognized mark of scholarship. His object was to learn whether any given profession is gaining or losing in attractiveness to the type of men represented by membership in this fraternity. In the first place Professor Thorndyke finds that there is a remarkable uniformity in the percentage of Phi Beta Kappa men entering the leading professions—namely, from 64 to 68 per cent. for 1840-1900. The percentages entering the various professions have, however, been far from constant; thus the number taking up law was nearly twice as large in 1890-4 as in 1840-60. There has also been considerable variation in the number that have taken up teaching as a profession. The Phi Beta Kappa man was "three times as likely to become a clergyman in the middle of the century as he is to-day." The ministry has lost steadily in its attractiveness to this kind of man, and this loss has been uniform throughout the United States. It is interesting to note that Professor Thorndyke's statistics show that medicine has not been a popular profession with what he calls scholarly graduates. From 1840-85 the percentage ran from 8 to 4; from 1885 to 1894 7.5 and 7 per cent. entered medicine. He suggests that the gain after 1885 is due to the advance of medicine to the dignity of a science, and to the introduction into the colleges of elective courses in science. Professor Thorndyke is moved by the facts which he has collected to make the following prediction: "The future will probably witness a steady gain in medicine, a slight gain in teaching, a rapid but unstable gain in law, and a continued decline in the ministry." At the present time law and teaching get the larger share of the scholarship of the United States, as represented by the careers chosen by the members of Phi Beta Kappa. Our contemporary, however, believes that the indications point to a steady increase in the number of scholarly men choosing medicine for the field of their life-work. In this country, while it is true that graduates of the older universities are entering the medical profession in larger numbers than before, we doubt whether men of a scholarly mind are greatly attached to medicine. It is certain that the old type of the scholarly physician is all but extinct.

ACTINOMYCOSIS OF THE ABDOMINAL WALL.

An instructive case of this form of actinomycosis was recently reported at a meeting of a medical society in Munich, by Max Dentler.[1] The patient was a farm servant, a woman aged 52, accustomed to work in a cow-shed. For two years she had been subject to abdominal pains, and for five or six months before the report was read she had a severe attack of colic and diarrhoea, followed by obstinate chronic constipation. A fortnight after the attack she was struck in the abdomen by a calf, and a swelling developed on the right of the hypogastrium, and gradually grew larger. Soon the skin broke in the umbilicus, and also at a point a little below to the right of the median line; a greenish pus free from faecal odour escaped from the broken points. The patient, a big countrywoman, became extremely emaciated. The entire right side of the abdominal walls below the umbilical level, from the loin forwards, was infiltrated; the deposit extended to the left anteriorly, but did not reach the corresponding loin. The deposit was ill-circumscribed, and not very tender. The sound, passed into either orifice representing the breaking-down of the deposit, could be made to enter several cavities of irregular size, but not into any organ nor into the intestinal canal. An incision was made in the middle line, and much thick yellow pus escaped, holding in suspension hard lumps of a yellowish colour. The actinomyces were discovered on microscopic examination. Potassium iodide and arsenic were administered internally. The benefit was only temporary, as the deposit soon began to extend, therefore Amann, who tended the case, made two free incisions. As on the first occasion, the exposed parts were scraped and swabbed with tincture of iodine. For two months all went well, the suppuration ceased, and the infiltration slowly diminished, whilst the wounds granulated and then cicatrized completely save at some points. The genital tract seemed free from disease, and there was no trouble in defaecation. Max Dentler doubted whether the prognosis was favourable, although steady diminution of the infiltration was proceeding when the case was reported. The primary seat of infection could not be detected; most probably the germ passed through the ileo-caecal region of the alimentary canal into the parietes after adhesions had developed. We trust that the after-history of this case will be published. Max Dentler is right in his guarded prognosis, for his case closely

[1] *Monats. f. Geburtsch. u. Gynäk.*, vol. xvii, Supplementary Number, 1903.

resembles another published in the BRITISH MEDICAL JOURNAL[2] by Dr. H. W. Webber, of Plymouth. A girl of 14 developed symptoms of actinomycosis of the abdominal walls after an attack of typhoid fever. Sinuses formed discharging pus, which was found to contain the mycelium of actinomyces. Potassium iodide was given for several weeks in gradually-increasing doses, but without much benefit. In November, 1901, the sinuses were explored under chloroform, one extended towards the region of the vermiform appendix. They were curetted, and the patient was treated with small doses of potassium iodide for about six weeks. The abdominal induration disappeared and the sinuses closed, but last January she came again under observation with cough and cachexia. The sputum contained granules of streptothrix actinomycotica and motile bacilli. Death occurred at the end of March. Dentler notes that in Illich's 421 cases of actinomycosis, the disease arose in the intestinal tract in 89; in most instances the caecum or appendix is the seat of infection, caused as a rule by awns of barley swallowed with the food: in one case the foreign body found its way into the ovary. Straw and ears of corn have also been known to introduce the germ in question into the bowel; but there seems no reason to believe that meat from infected cattle has ever set up the disease in man.

DOUBLE CONSCIOUSNESS AND "DISAPPEARANCE."

THE motive of that weird story the Strange Case of Dr. Jekyll and Mr. Hyde is rarely long without a present day illustration. The metropolitan police, according to a report in the *Standard*, have recently restored to her friends a girl not quite 16 years of age who usually living at Clacton had lately "disappeared" from a village near Chelmsford where she had been staying for some weeks with an aunt. It appears that she wandered from this village on Monday of last week and in the evening of the same day arrived at the Convent of St. Mary, Eldon Street, Finsbury, some thirty miles away, and requested admission. On being questioned she gave so disconnected an account of herself that it was considered advisable to communicate with the police. At the police station she seemed equally unable to give a connected account of her doings and she was persuaded to go for the night to the house of a missionary at Stoke Newington. On the following day telegrams were sent to her relatives at Clacton, to her aunt near Chelmsford and to local tradesmen in Clacton. A telegram to her father in the name she "thought" was her own was returned "not known" and a telegram to her aunt had the same fate. One of the Clacton tradesmen, however, being aware that the daughter of a customer was absent from her home, brought the facts to their knowledge, and eventually, on the fourth day of her lapse of memory, the father arrived in London and identified his daughter. Many even more remarkable instances of loss of personal identity are recorded and well authenticated above and beyond those quite ordinary occurrences of epileptic persons who after an attack have moved from place to place, often over considerable distances without being in any real sense conscious. Among such are instances of prolonged lapse of memory which cannot with certainty be connected causally with a post-epileptic state. A case was recorded by Charcot of a man who had had repeated losses of consciousness not definitely epileptic, and during a period of two years had had several wandering attacks lasting several hours. At the end of that time he had one which lasted eight days. On a particular day he was busy with his ordinary employment in Paris; on the evening of that day he lost consciousness, at any rate of his ordinary personality; eight days later he suddenly "woke up" in a strange town which proved to be Brest. He had no knowledge of what had passed in the interval; he was in a well-kept general condition, and he had spent £8 of his employer's money. A still more curious case which was investigated by Dr. Weir Mitchell and other competent authorities is that recorded by Professor James in his *Principles of Psychology*. An American clergyman, after taking £100 from the bank to pay for a piece of land, got into a tramcar and then, as it seems, lost his identity. Two months later, in a town 300 miles away, a man known as Brown, who six weeks before had opened a small stationery shop, suddenly "woke up" and asked where he was. His name he said was Bourne and not Brown; he knew nothing of shopkeeping; he could remember nothing of his actions since he had entered a tramcar, as it seemed to him, on the previous day. During the six weeks nothing had occurred to associate him with his previous life or to indicate that he was not in a normal mental state. For a long time nothing was ascertained about his actions during the fortnight between entering the tramcar and opening the stationery shop. But after three years he was placed in the hypnotic state, when he immediately answered to the name of Brown, and said that he had heard of Bourne, but did not know that he had ever met the man. He also failed to recognize his wife. On being questioned he explained how he had passed the unaccounted-for fortnight; one afternoon he had been in Boston; a night was spent in New York, and ten days had been passed in Philadelphia, at first in an hotel, but mostly in a boarding-house. At this place, after the interval of years, he was quite clearly remembered as a quiet man, not at all eccentric. The only confusion of the two existences was that once during his shopkeeping life he gave an address at a religious meeting in which he, as Brown, referred to an incident that had occurred in his life as Bourne. What the causal nature of the psychical change in these cases is cannot at present be definitely stated. Charcot believed that the change in his case was closely allied with post-epileptic automatism, and in Professor James's case there was a history of "spells of unconsciousness," lasting a few minutes, and also one of recurring headaches. The practical indication of the effect of hypnotism in his case is not without importance, and it is conceivable that under corresponding conditions this agency might be of service medico-legally; but, on the other hand, it is well recognized that it is an agent not to be employed indiscriminately or in a light spirit. It is possible, also, that in the somewhat analogous condition of the loss of memory after accidents producing unconsciousness—a loss extending, it may be, over several hours immediately preceding the accident—hypnotism might similarly be of service. The theory that the defect of memory depends on the necessity for a certain time to elapse before events have produced in any degree a permanent impression on consciousness would, however, hardly seem to coincide with the theory of its employment.

MAGISTRATES AND THE CONSCIENTIOUS OBJECTOR.

THE conscientious objector has figured somewhat largely in the newspapers of late and his fate has been a hard one. On the one hand Dame Nature in the form of small-pox has accorded him much fuller recognition than he would desire by selecting him for attacks whenever she has had an opportunity of paying him this compliment during the epidemic in the north, and on the other a large number of stipendiary and other magistrates have refused to recognize his claim to his title at all. Hence much sickness, heart burning and abuse of magistrates in antivaccinist camps. The law requires that the conscientious objector shall satisfy the magistrate that he really is one before exemption is accorded to him, and in view of the tactics adopted it is not surprising that magistrates should occasionally be somewhat hard to convince that the scruples alleged are really conscientious and not merely the result of prompting. Battersea, for instance, is placarded with addresses to the people in which untruthful statements are made as to the dangers of vaccination, and exact directions are given as to how to obtain exemption. The parent is told that when he goes before a magistrate he must simply say he has a conscientious objection and decline

[2] A Case of Abdominal Actinomycosis, BRITISH MEDICAL JOURNAL, vol. ii, 1902, p. 1588. Further Notes on a Case of Abdominal Actinomycosis, BRITISH MEDICAL JOURNAL, May 9th, 1903, p. 1084.

to be drawn into any further exposition of his views. Few magistrates are likely to be convinced by a bare statement of that character and many would be prejudiced against any objector who adopted the attitude described. It is stated that in this union the guardians propose to resist payment of the legal expenses incurred by their vaccination officer, but such an attempt to evade the duty directly imposed upon them by statute is sure to fail and will simply increase the ratepayers' expenses. A case which bears upon the point was reported in the *Standard* in the middle of this month. In this the High Court issued a mandamus against the Wellingborough guardians, calling upon them to show cause why they should not pay the legal expenses of their vaccination officer. In the course of the proceedings it was shown that for years these guardians had endeavoured to evade the performance of the duties imposed upon them. They had been compelled by a writ of mandamus to appoint a vaccination officer, but appointed one who did not endeavour to carry out the Acts, and he was in consequence dismissed by the Local Government Board. A Mr. Reach was then appointed, and proved himself an active and successful officer in spite of the difficulties which the guardians threw in his way. The guardians, for instance, were strongly represented in court whenever vaccination summonses were heard, and the Chairman of the Board of Guardians, a local pillar of the antivaccination party, acted as presiding justice when the cases were heard, and even, it was alleged, censured the vaccination officer from the Bench for bringing proceedings at all, although compelled to make the orders for which application was made. It seems strange that honourable men who disapprove of the law should seek positions in which they are obliged to administer it, and, as far as judicial functions are concerned, it almost seems as if the Lord Chancellor should either relieve such persons of their duty altogether, or restrain them from the exercise of their function in cases in which they are actively interested.

RATS.

The close association of rats with the spread of plague has directed attention anew to these destructive rodents, and especially to the migratory kind—*mus decumanus*—which has, in the struggle for existence, practically extinguished *mus rattus*. The former, or brown rat, has, indeed, become a destructive plague on its own account, and so bold as almost to make nests inside men's Sunday hats; an association has therefore been formed to deal with it on scientific and systematic lines. This body, whose full title is Association Internationale pour répandre la notion des dégâts causés par les rats,—is the outcome of a resolution brought forward at the International Naval Exhibition held in Copenhagen in 1902. In an extremely interesting monograph on the Migratory Rat[1], Herr Emil Zuschlag, the President of the Association, gives a good account of *mus decumanus* and how the rodent has been dealt with in Denmark, where its ravages have called for energetic action. In that country, the destruction of rats has been systematically carried out, and the subject has engaged so much attention that an international exhibition of apparatus for their extermination was held in Copenhagen in 1901. It has been found in practice that the payment of a small sum (ten öre, a little more than our penny) for every dead rat delivered has answered well. For the destruction of rats on board ship, the Clayton apparatus (sulphurous acid generator) or burning sulphur has been successful. With regard to the International Association we have referred to, its central offices are in Copenhagen, and any one desirous of knowing more about the Society will receive all details from the Secretary, Professor Peter Oesterby, 16, H. C. Orstedvej, of that city. As far as the Port of London is concerned, according to a daily paper, no less than 186,000 rats had been accounted for up to December 31st, 1902, as a result of the efforts of London dock companies and ship owners; 89,611 were killed in 1902, and 69,355 of these were destroyed on board ships in the docks.

[1] *Le Rat Migratoire et sa Destruction Rationelle.* Par Emil Zuschlag. Translated from the Danish by Professor Oesterby. Copenhagen. 1903.

A SWEET GIRL MULTIGRADUATE.

Miss Mary C. Lowell, M.D., of Boston, is said to be the only woman in the world who is entitled to practise the professions of medicine and law by virtue of the possession of degrees in those faculties. She was the first woman Assistant Superintendent of the Maine State Hospital for the Insane. After holding this position for five years she visited the hospitals of various European capitals. The love of study prompted her to elect a course in law, and it is said to be her intention to obtain two more degrees—Bachelor of Jurisprudence and Master in Chemistry.

Dr. Robert Koch, who is still pursuing his researches in Bulawayo, has obtained an extension of his leave of absence till the beginning of January next.

Mr. R. Fox Symons, M.R.C.S., L.R.C.P.Lond., D.P.H. R.C.P. and S.I., Acting Medical Officer of Health for the Transvaal, has been appointed by the Lieutenant-Governor Inspector-General of Health of the Transvaal. The appointment dates from August 1st, 1903.

In the Germanic Museum at Nüremberg there has recently been placed a large medico-historical collection of medals. A considerable number of them were purchased at a sale held not long ago at Amsterdam.

Madame Gaussel has been appointed *Chef de Clinique* in the Obstetrical and Gynaecological Department of the University of Montpellier. This is, we believe, the first time an appointment of such importance has been conferred on a woman in France.

It is stated in several newspapers, apparently with authority, that Dr. Marmorek, of the Pasteur Institute, Paris, will shortly make known the discovery of a new curative treatment of consumption which he has been testing for six years, and now regards as perfected.

Signor Pietro Cartoni, a wealthy Italian landowner, who has lost two beloved children from consumption, has offered 1,000,000 lire for the erection, outside the walls of Rome, and the partial endowment of a great sanatorium for consumptives. Signor Cartoni has further announced his intention of bequeathing everything he possesses to further the prevention of consumption.

It is with deep regret that we have to announce the death of Professor W. H. Corfield, which took place on August 26th at Marstrand in Sweden, whither he had gone for a course of special treatment. Dr. Corfield had been in failing health for two or three years, and his appearance was that of a dying man. Some months ago, however, he revived to a surprising degree, and his friends hoped that he would be fully restored to health. Unfortunately this improvement, which he himself attributed to a form of vibration treatment, proved but temporary. Dr. Corfield was in his sixtieth year. He was a graduate of Oxford, where he took a first class both in mathematics and in natural science. He was Professor of Hygiene in University College, London, and Consulting Sanitary Adviser to His Majesty's Office of Works. He was the author of several works on sanitary subjects, perhaps the most popular being *Disease and Defective House Sanitation*, which was published in 1896, and translated into French, Italian, and Hungarian. Dr. Corfield was an enthusiastic angler, and had a large collection of works dealing with that form of sport. He had also a fine collection of woodcuts by Thomas Bewick, and one of rare books in artistic and curious bindings, which he was fond of showing to persons interested in such things. We hope to publish a full obituary notice in a later issue.

REPORT OF THE ROYAL COMMISSION ON THE SOUTH AFRICAN WAR.*

THE Report of His Majesty's Commissioners appointed to inquire into the military preparations and other matters connected with the war in South Africa, which has just been issued, deals among other things with the medical service of the army. The Commission consisted of the Earl of Elgin as Chairman, with eight colleagues: Lord Esher; Field-Marshal Sir Henry Norman; Sir George Taubman-Goldie; Sir John Edge; Admiral Sir John Hopkins; Sir John Jackson; Lord Strathcona, the High Commissioner for Canada; and Sir Frederick Darley, a distinguished Australian judge. The Secretary to the Commission was Mr. Bernard Holland. The Commissioners were directed by the reference "to inquire into the military preparations for the war in South Africa, and into the supply of men, ammunition, equipment, and transport by sea and land in connexion with the campaign, and into the military operations up to the occupation of Pretoria," and to report their opinion upon these matters. After recalling the fact that a Royal Commission was appointed in 1900 to inquire into the Care and Treatment of the Sick and Wounded in the South African Campaign, the Commissioners state that after considering the report of the Hospitals Commission, they have seen no good reason to induce them to reopen the general inquiry. They have, however, considered it their duty to make some inquiry into the *personnel* and equipment of the Royal Army Medical Service as tested in the war.

The Medical Establishment.

The establishment of medical officers, exclusive of India, was fixed by a Committee in 1888 at the number of 514. This establishment remained practically unchanged up to the outbreak of the South African war, the number estimated for in 1899-1900 being 540. This establishment was fixed on the principle that, with the addition of 99 civil surgeons, it would provide for—

1. Colonial garrisons.
2. Two army corps and one cavalry division, and
3. Three general and seven stationary hospitals on lines of communication.

If the two army corps and their accessory troops were sent abroad, it was assumed that the home military hospitals would be entirely depleted of their regular staff, and that the void would be filled, so far as necessary, by civilians. The 99 civil surgeons who were to accompany the army corps were to be obtained when the occasion arose; they were not registered beforehand, so that the War Office had no claim, as of right, upon any individuals.

The strength of the Royal Army Medical Corps on October 1st, 1899, amounted to 3,707 of all ranks, of whom 2,429 were in the United Kingdom, 318 in South Africa, and the rest in other colonies. There were also 1,009 men belonging to the corps in the reserve. The establishment of non-commissioned officers and men of the Army Medical Corps was calculated on the peace requirements of the military hospitals existing in the United Kingdom and the colonies. Surgeon-General J. Jameson stated that the establishment was not even equal to peace requirements, because while the army had increased during the years preceding the war the strength had not been increased in a corresponding ratio. He said that he had often made representations at the Army Board, but that the answer given was that "the trained soldier is the only man you cannot purchase in the open market, and that all the money was wanted for trained soldiers." In the case of medical officers, indeed, the strength, it is stated, had actually been diminished in the process of cutting down estimates, and while the army had increased their number had decreased. When the South African war broke out what happened was as follows. The whole, practically, of the Army Medical Corps *personnel*, officers and men, was exhausted in supplying the First Army Corps and in manning the base hospitals and stationary hospitals which, in consequence of the great area over which the operations were spread, were much in excess of the number calculated in 1888. When, therefore, the troops equivalent to the Second Army Corps followed, there were no longer any officers or men of the regular service to supply them fully, and assistance had to be obtained, in an increasing degree, from civilian sources, both to supplement the Medical Corps in Africa, and to fill their places in the home hospitals, where thousands of invalids from Africa soon began to arrive. It was stated that the first five Divisions were completely supplied with regular medical *personnel*, and the Sixth Division was mostly so supplied. Colonel W. Johnston, of the Army Medical Service, said "that at the time when the expedition first went out, it was never expected that more than an army corps would be required, and therefore we spread our butter too thickly; we put all our best men to the front." Thus, so far as they were supplied by the Army Medical Corps, the stock of really trained non-commissioned officers and men was exhausted in the first few months of the war. Altogether, up to the end of the war nearly 8,500 men had been sent out by them, but it was pointed out that "barely a quarter of those men were really trained Army Medical Corps men." Surgeon-General Sir W. Wilson said "the mass of attendants were not trained, we trained them in the hospitals out there." In addition to these were the nurses belonging to the Army Nursing Reserve, trained women who had signed a contract to serve either abroad or at home, in time of a national emergency, of whom over 800 were sent from home; there were 2,300 men supplied by the St. John Ambulance Brigade, trained in first aid to the wounded but not in nursing, and there were certain local hospital and ambulance corps in South Africa. The Commissioners attempted to obtain from witnesses an idea of the percentage of medical strength which a force in the field should contain, in order that it might be properly served. Such an estimate must, naturally, depend much on the circumstances of each war, the climate, and the character of the fighting. It was stated by a civilian witness, Professor Ogston, who had studied the statistics of other modern wars, that about 5 per cent. of the strength of a force ought to be connected with the Army Medical Department. Colonel E. M. Wilson, of the Royal Army Medical Corps, agreed with this view, though Surgeon-General J. Jameson thought that, under favourable conditions, a percentage of $2\frac{1}{2}$ would be sufficient. This latter percentage was that upon which the strength of the medical service, relatively to an army corps, was based in the calculations of the War Office previously to the war, and including voluntary and outside assistance of every kind, the actual medical strength during the war seems to have been from 3 per cent. to 4 per cent. of the total forces.† It was, as the Royal Hospitals Commission pointed out in its report, impossible, in a war conducted over so large an area, to secure that the medical *personnel* should be always distributed in proportion to the needs of particular localities, or of particular occasions. Such an occasion was the outbreak of enteric at Bloemfontein, where after rapid marching a vast number of cases had to be coped with. Surgeon-General Sir W. Wilson pointed out that the diversion of most of the First Field Force to Natal left the Army Medical Corps far too weak on the Cape side to provide for the need of the further troops coming out. He said:

> The ordinary establishment was far too small. It was big enough to build upon the Natal side, and it was very fair there; they had a good, strong framework of regular service; but on the Cape side, where all the difficulties came in, and where we had to go away hundreds of miles from the lines of communication, and where our transport failed, it was a long way too small—out of all proportion.

The Testimony of Military Witnesses.

The military witnesses, to whom questions were addressed on the subject, spoke well, and some very highly, of the zeal and energy of the Army Medical Service, though some of them pointed out that the service was often shorthanded, and that the orderlies, many of whom were mere untrained privates brought in as makeshifts, were not always good. Sir Ian Hamilton, while praising their devotion to duty, expressed the opinion that the army medical officers were too much shackled by the dread of infringing regulations. One witness said that "the medical service was overworked, undermanned, and under-orderlied." General Kelly-Kenny said that "the medical services were gradually brought up to a state of efficiency and sufficiency." Naturally the experience of these witnesses

* London: Printed for His Majesty's Stationery Office, by Wyman and Sons, Limited, Fetter Lane, E.C. And to be purchased, either directly or through any bookseller, from Eyre and Spottiswoode, East Harding Street, Fleet Street, E.C., and 32, Abingdon Street, Westminster, S.W.; or Oliver and Boyd, Edinburgh; or E. Ponsonby, 116, Grafton Street,

†The Royal Hospitals Commission (page 10) states that at the end of March, 1900, the total force then engaged was about 207,500 men, and that there were then about 800 medical officers, including civil surgeons, 6,000 hospital subordinates, and 800 nurses in the country. In July there were to a force of 224,000 men about 1,000 medical officers, 7,000 subordinates, and 900 nurses. Of the 1,000 medical officers, about 400 belonged to the Royal Army Medical Corps, the rest were civil surgeons.

differed according to the different parts of the area of the war which they saw. It was more easy for medical arrangements to be complete in Natal, with reference to which Sir F. W. Stopford spoke very highly, than under great pressure on the Modder River or at Bloemfontein, or with a flying column in the Transvaal or Orange country. In any criticism made upon the Army Medical Service in the field in South Africa, it had to be remembered that the task set to them far outstripped the largest expectations which had been formed before the South African war, with regard to what was expected from this as from other of the departments of the army. Surgeon-General Sir W. Wilson said:

The officers I had did everything that was possible; they were few in numbers. For instance, I had been supplied with personnel to look after two army corps, say, 80,000 men, and we had not enough to look after that number even; but instead of that, we had 250,000 men to look after, besides camp followers. The work was scattered all over half a continent, and I really do not think that any one at home knows the amount or the greatness of the task.

Lord Roberts, with reference to the same point, said:

I think the medical department suffered under, perhaps, greater disabilities than the other army departments. It was very far from being prepared for expansion, and yet, within a few months, it was called upon to provide officers, non-commissioned officers, orderlies, and nurses for an army three or four times the size of that for which its establishment had been estimated as sufficient. It had been calculated that it would be enough to arrange for medical aid for 4 per cent. of the troops employed in war, whereas it turned out that the calculation should have been for 10 per cent. Nevertheless, had it not been for the sudden outbreak of an epidemic, which is inevitable in war, the department would, in all probability, have proved equal to the occasion; and that the outbreak should have reached dimensions with which we were unable to cope was due rather to the arduous character of our operations and the nature of our lines of communication than to want of efficiency and zeal on the part of the medical officers and the assistants. It was impossible, under the circumstances, to give the medical supplies precedence on the railway and to bring up reinforcements of *personnel*.

The Testimony of Civilian Medical Men.

The Commissioners, however, feel bound to call attention to some evidence received from some eminent civilian medical men who had experience in South Africa. Professor Ogston said, with regard to the men employed as orderlies, that although there was no lack of zeal and devotion, many of them were quite untrained, and that most of them were "absolutely ignorant of anything like what was required for attending on the sick. They were utterly unaware how to deal with a sick man . . . . and hence, in spite of all their goodwill, they failed from the want of this training." They were, he said, not accustomed by their previous discipline to the discouraging work of attending on the sick, and knew nothing about disinfectants.

Sir Frederick Treves, referring to the officers, stated that in his opinion the Army Medical Service at that date suffered from "over-organization." The system, he said, "is full of an enormous number of safeguards apparently based on the impression that the officer put in charge of a hospital is likely to be incapable, and that his incapacity will be minimized by restrictions of all sorts." He urged that the whole service needed emancipation from forms and clerical work and decentralization, so that the medical officers might have both more time to practise their profession, and acquire greater initiative. Evidence to the same effect was given by Mr. Fripp. It was alleged that before the war the Army Medical Service only, as a rule, obtained the less able youths who were entering the profession, and it was pointed out that after they had joined the service they had no opportunity of practising in civil hospitals, but were confined to ill-equipped military hospitals, in which the cases were of a restricted class, where the standard of comfort was lower than in a workhouse infirmary, and to which the soldiers themselves were unwilling to go.

Surgeon-General Jameson considered that the officers entering the Army Medical Service were "very much superior" on the average, to those entering the civil profession. He admitted, however, that for some years before the war, in consequence of want of status and insufficiency of pay in the service, it was difficult to obtain candidates. "There were no examinations held at all for some time, because there were no candidates." He also said that the average army surgeon got in time of peace "very little surgical experience," and that the military authorities had never before the war considered any system for arranging that the Medical Staff should obtain opportunities of practising in civil hospitals. It was obvious that very insufficient practice can be acquired by army medical men if in peace time they are restricted to practise in the army itself, that is, within the limits of a body of young men who have passed a medical examination, and who are not so much exposed to the risk of accidents requiring surgical operations as are the workers in many trades. It was stated that the rapid progress of surgical science in modern times made constant practice necessary. Professor Ogston said:

Our operations nowadays are pieces of very high art which a man acquires by daily training, weekly training. He comes to use his fingers like a conjurer uses his, and does things with his hands that have become a habit with him to do, but which at first are a little difficult and require technical skill, and if a man has not that daily practice he may know the theory most perfectly, he may be a most able and intelligent man, and yet he will not do such good technical work as the, perhaps, less able man who has had this practice.

Comparison with Other Armies.

The attention of the Commissioners was called to the fact that in point of opportunities of acquiring skill the British system had long been inferior to that of some foreign countries, that, for instance, of Germany, where not only are the military hospitals much larger and better managed, but where every medical man in the army can, at short intervals, apply to be admitted to the practice of civil hospitals. In Russia, civilian patients are admitted into the military hospitals. In this country there appears to have been an isolation of the Army Medical Service from the main body of the profession and the main stream of professional life, which had deleterious effects. The explanation given by the army medical officers is that under the system before the war the establishment of medical officers allowed was so small that they could not be spared if they wished to study in civil hospitals. The answer has always been—"We have not enough men; we cannot spare you."

It would not, of course, be possible that the country should maintain in peace a medical army staff which could meet unassisted the emergency of a great war, and there can be no doubt that in the event of such a war a sufficient number of civilian medical men can be obtained. But, if only with a view to our constant small expeditions, it is desirable that the officers of the Army Medical Corps should have opportunity of maintaining their professional skill at least on a level with that of the average surgeon in civilian practice. It should be considered, also, whether arrangements, such as those existing in Germany, should not be made in time of peace with medical men of experience in ordinary practice to secure their services on occasions which shall be declared to be national emergencies. It was pointed out that, under the purely voluntary arrangements in the late war, the supply of high-class civilian consultants fell off very much towards the end of the war. Mr. Fripp was not in favour of keeping lists of doctors who would be ready to serve in war, but he thought that better devised steps should be taken to secure the right men than were taken in the late war.

Mr. Fripp alleged that the officers of the Army Medical Service did not understand the treatment of enteric.

They do now that they have had an enormous experience, but they did not understand how even to write its name down in the slightest cases, because they called it simple continued fever, unless it had very marked symptoms; and they allowed that man with simple continued fever to go about and infect other people, and the other people so infected may have the acutest enteric.

A point of some importance is that no professional dentists were attached to the Army Medical Corps in the field.

Sanitary Organization.

The attention of the Commissioners was called by Lord Roberts and other officers to the hiatus which at the time of the war appeared to exist in the army system with regard to sanitary matters, such, for example, as the selection of healthy sites for camps or water supply. These matters are supposed to fall within the province of the Army Medical Corps, but often have been by no means properly attended to. Surgeon-General Jameson said that "If sanitation had been understood, not alone by our own officers, but by the rank and file and the military officers, commanding officers, I think it would have saved thousands of lives," and some striking evidence upon the same point was given by Professor Ogston. This witness called the Commissioners' attention to the fact that the German Army Medical Corps have an elaborate system for testing the water supply wherever troops arrive, and closing impure sources, but that in South Africa almost nothing of the kind was done. In other matters, such as the regulation of camp latrines, he contrasted unfavourably the British system with the German. These statements were confirmed by General Sir Charles Warren, who said

From the purely medical point of view, the skill, zeal, and devotion to duty of our medical officers during the war is beyond all praise. From the sanitation point of view there is much to be desired. It never seems to be clear whether a camp is located according to strategic requirements or not, or to what extent the question of sanitation is to be considered. The result is there were grave defects in the position of many of our camps. The duties of medical officers ought to be more clearly defined, and their responsibilities laid down.

After calling attention to specific instances of disregard of sanitary considerations, he added:

In the open plains the mounted troops frequently occupied the best ground before the infantry came up, and the infantry were bivouacked where horses had been. I have always found that in such cases there is sickness. I am convinced that typhoid fever does not belong of necessity to an army in the field: its presence is usually a sign of neglect of some kind. Wherever real sanitary precautions are taken, typhoid fever is at once reduced to a minimum. If there had been efficient sanitary regulations in our army, and if they had been attended to, I think that three-fourths or four-fifths of our losses from typhoid fever would have been avoided. I consider that our regulations have been retrograde in late years. It is impossible that a Provost-Marshal can look after such matters. His duty ought to be to look after others, and see they do their duty, and not do the duty himself. The whole sanitary service requires recasting. It ought to be automatic, so that on starting a camp or bivouac anywhere things should go straight.

Lord Roberts thought that there ought to be a special service of sanitary officers. He gave as an instance of the need of this that he found hospital tents pitched upon one of the chief sources of water supply at Bloemfontein. In the opinion of one civilian witness, the result of the system before the war was that "there is a general shirking of taking any responsibility of that kind, taking any initiative, and daring to do anything that is not already laid down in the regulations." Consequently, even when a site was obviously unhealthy, he considered that officers in the Army Medical Service would hesitate to take the necessary steps.

Surgeon-General Sir W. Wilson desired, like Lord Roberts, that special sanitary experts should be attached to the army on the ground that their opinion would have "greater weight than of the ordinary practitioner." He even desired for this purpose "men of European reputation, whose opinions cannot be set aside"—a somewhat large requirement.

It was suggested by Sir Charles Warren that the sanitation of camps and bivouacs should be jointly in the hands of the medical officers and Royal Engineers, and that their responsibility should be defined. He considered, also, that when there was an outbreak of fever, the officers concerned should be liable to be tried by court-martial unless they could show that they had taken all precautions.

Army Medical Equipment.

Evidence as to medical equipment was also taken both from army medical officers and civilians. The attention of the Commissioners was called by the official witnesses to the fact that till the year 1897 the medical equipment "was very obsolete, some of it dating back to the Crimean war. In that year a committee inquired into the matter, and in the result of their report it was thoroughly revised and brought up to date." "It would," said Colonel Gubbins, "have been a perfect scandal if we had gone out with the equipment as it was before."

There appears, say the Commissioners, to have been a difficulty before the war in obtaining proper accommodation for storing medical instruments and drugs. All medicines had to be kept in damp cellars of the Herbert Hospital, and to a great extent became useless, until a ward in the hospital was devoted to their storage. "The instruments were suffering and the medicines were perishing." Surgeon-General Jameson, who was then Director-General of the Army Medical Service, said that he had made frequent representations with regard to this matter, but that the necessary funds were not conceded, apparently for the same reasons as those which led to retrenchments in regard of the medical *personnel*. It is, however, probably true, as Colonel Gubbins pointed out, that, in a country like this, where almost everything can be obtained rapidly, it would be a mistake to store up great reserves either of articles like medicines or of those like hospital beds. He said:

Medical supplies are perishable articles, and as to ordnance supplies, we might not go to war for twenty or thirty years, when they would be obsolete. I may mention as an instance that there was a pattern bedstead brought out in the time of the Crimea called the "Macdonald." We have got it in our hospitals still, and we cannot get rid of it. I worked a table out some years ago to determine, judging by the normal waste, when we should get rid of it, and I think we found that it would take 1,100 years to work off the present stock.

Surgeon-General Sir W. Wilson, who was Principal Medical Officer in South Africa from the beginning to the end of the war, said that the surgical instruments used in South Africa were "very good," and that the medical officers were supplied, as a rule, with the most modern class of instruments. He said that there was never any deficiency of medical supplies in South Africa, although difficulties of transport made it impossible sometimes to get them to the front. The dressings were the best "that ever accompanied an army in the field," and the medicines were made up in the most compact form possible. He also said that "we were well up to the times in the medicines and drugs." He mentioned, however, in his evidence one serious shortcoming—namely, the non-provision of pyjamas in which to clothe wounded men. He said: "When a man comes in, at present there are no clothes for him, although he may be deluged with blood, but, according to the regulation there are no clothes to put him into." This defect was at first met by the Red Cross Committee, and pyjamas were subsequently supplied by the Ordnance Department.

The evidence of the civilian medical men who had experience in the war left, on the whole, a less favourable impression of the medical equipment than that of the official witnesses.

Professor Ogston said that "the quantity and quality of the equipment prepared and supplied to the hospitals, field hospitals, and bearer companies were defective, and generally they were antiquated and badly organized," and he considered that the "whole system of drug supply had not been adequately thought out."

Sir Frederick Treves said that the supplies furnished by the Medical Department "were certainly antiquated, and we were carrying about with us instruments which I should have thought would only be found in museums." He could not say that the equipment was "entirely antiquated," but it was below the level of that usual in civil practice. The instruments in many cases were very inferior to those used in civil life. He also said:

We took about medicines that were in bottles in the most cumbrous form, and that had been in the bottles for twenty years possibly. It is really a serious complaint; we had to drag this useless chemist's shop all over the country, packed up in the most ludicrous and extravagant way. Tabloids, or any such concentrated preparations as are used now, would have put the whole outfit into a twelfth part of the space.

He said also, "the present outfit is, of course, cumbrous beyond expression." Sir Frederick Treves also said:

The equipment of the field hospital, of course, is based upon certain tabulated forms, and it is supposed to be quite complete in itself, and the result is this, that in the many journeys we had to make in Natal up to the Tugela and back again we were dragging with us, I suppose, what amounted to tons of useless material. Every field hospital is hampered by a theoretically complete outfit, which has to be dragged to and fro all over the country, and it is an immense burden. We were dragging about things that under no circumstances would have to be used in South Africa, for example. The outfit of the field hospital is suitable for any climate in the world, from the Polar Regions to the Equator; it is an exceedingly elaborate outfit; it is complete on paper, and that has to be dragged all over the country.

He suggested that this difficulty might be partly met in the field by having advanced medical depôts containing the supplies which were needed and no other. Another civilian witness, Mr. Fripp, considered that, generally speaking, the instruments and appliances of the Army Medical Service in South Africa were "quite adequate," though they were at first "old fashioned." He thought that "surgery is a very secondary matter in the part that our "medical profession ought to play in war nowadays," and that the rough surgery necessary after a battle did not require any elaborate instruments. He attached far greater importance to the prevention of disease. He said that the Army Medical Service did not understand the "enormous practical advantage of having steam disinfectors at each hospital, a modern article of medical equipment." The witness was the first to take out this apparatus. Colonel Gubbins said that at the beginning of the war there was a good reserve of hospital marquee tents, but that the present hospital tent is an "atrocious pattern," and could not be worse. According to Professor Ogston the tent accommodation on Modder River was quite inadequate, and he suggested that, as in the German army, some movable huts for hospital purposes in the field should have been provided. With regard to ambulance wagons the same witness stated that those sent out were not suitable to South Africa. "They were old wagons ... and not the best ... They jolted and were old-fashioned." He thought they were not nearly so good as those used in the Russian and German armies, and were even inferior compared with the Cape wagons. Sir Frederick Treves said, "The Boers had good ambulances, but

an English ambulance is hardly fit to transport the sick; it is impossible for a well man to sit in it almost, when it is moving rapidly." He said that the English ambulances were only suitable for a country with good roads, and that no light carts had been provided which could go rapidly across country to pick up a wounded man, or could follow a cavalry column. Surgeon-General Sir W. Wilson denied that the Boers had better ambulance wagons than the British, and said that one ambulance wagon, Mark 5, was a good one. He said that there was at first a deficiency of light vehicles and that "the situation was saved" by a gift of tongas sent from India, and by the use of Cape carts captured from the enemy. Ambulances of a useful kind were sent from Canada and Australia. Both in respect of ambulances and other equipment, the Colonial medical arrangements impressed witnesses favourably.

Conclusions.

The Commissioners conclude as follows:—

The evidence may perhaps be said to leave the impression that the Army Medical Service as a whole had not, either as regards *personnel* or equipment, been maintained at the high standard which in so vital a matter is essential. We do not mean by this any reflection on the devotion or ability of individual members, nor do we overlook the improvements in equipment to which Sir W. Wilson and Colonel Gubbins have testified. But the service was weak in numbers, and the opportunities of gaining experience in the practice of modern methods were denied—while it seems clear that, at any rate in the early part of the war, perhaps owing to accumulations of stores at home, medical supplies were not always of the newest pattern, and parts of the equipment were comparatively antiquated.

We are glad to learn that in the last two years much energy has been devoted to improving this service. In order to consider the necessary steps and to assist the Secretary of State an Advisory Board has been created. Some of the most eminent civilian medical authorities have given to it their voluntary services and much of their time. Sir Frederick Treves expressed his belief that the Army Medical Service would be made "the finest service in the world in time" when reforms in contemplation could be carried out.

It will no doubt be recognized that in a matter of this importance there should be no hesitation in sanctioning all requisite expenditure, especially in the matter of improved training of medical officers and the proper equipment of military hospitals. The Commissioners desire to call attention to the statements of Mr. Fripp and Sir Frederick Treves with regard to the unsatisfactory condition into which these hospitals had been allowed to fall in this country.

THE ANNUAL REPORT OF THE METROPOLITAN ASYLUMS BOARD FOR 1902.

The Annual Report of the Metropolitan Asylums Board is a volume of more than local interest. There is, so far as we are aware, no other report dealing with the work of a large hospital authority which contains statistics of such far-reaching importance and based on such an extensive basis of experience. The name of the Board gives a very limited idea of the scope of its work, which includes not only the care of the insane and the infectious sick, but the training of boys for the Royal Navy, the training of feeble-minded children, the cure of children suffering from ringworm and ophthalmia (the twin curses of the Poor-law "barrack" schools), the care of children needing seaside air, and of children under remand from the police-courts. The magnitude of its operations may be judged by the fact that in 1902 the Board had 6,655 beds devoted to imbecile patients, 5,378 to fever patients, 3,200 to small-pox, and 2,034 to training ship (boys) and children's schools and homes. It is not unlikely that ere many years elapse the open-air sanatorium treatment of phthisis will be added to the multifarious duties of the Board. Such an extensive organization cannot be carried on without money, and in the last financial year the Board levied a precept on the constituent parishes and unions of the metropolis of 6¼d. in the £, as compared with an average of 5¾d. for the past five years. The permanent staff of the Board on the last day of the year amounted to 4,844, and the inmates to 10,971.

The report of the Hospitals Committee is, from a medical standpoint, the most interesting part of the volume.

Fatality of Different Infectious Diseases.

The statistics of fatality of each infectious disease, classified according to age and sex, are of increasing value year by year. The fatality of scarlet fever cases has now become 3.45 per cent. of those treated in the hospitals. This is the lowest figure hitherto reached except in 1898 and 1899. In 1879 it was as high as 15.3 per cent. The fatality of diphtheria was 11 per cent., having declined from 30.4 per cent. in 1894. The enteric fever fatality was 15.5 per cent., which is not far removed from the average for a long series of years.

Length of Residence of Patients in Hospital.

Of the scarlet fever patients treated to recovery or death in the Board's town hospitals during 1902, the average residence was for each patient 62.6 days, varying from 49.4 days in the Eastern Hospital to 74.3 days in the South-Western Hospital. This difference is remarkable, and calls for further investigation. It is very doubtful if any greater freedom from "return cases" can be shown to accrue from the longer detention in certain of the hospitals of the Board. Some declaration to this effect, if it be the fact, seems to be necessary to justify the increased expenditure involved in such protracted detentions in hospital.

In diphtheria there is even greater variation in the average duration of stay in hospital. It only amounts to 32.3 days in the Fountain Hospital, and 48.5 days in the Western Hospital, but is 60.6 days in the Brook Hospital, 61.3 days in the South-Eastern Hospital, and 64.3 days in the Eastern Hospital. These variations, as stated in the report of the Statistical Committee, are "very remarkable." We have looked in vain in the reports of the medical superintendents of the different hospitals for explanation of the enormous differences shown by the above figures. Are the majority of the cases of diphtherial paralysis to be found in the three last hospitals, thus explaining the necessity for protracted stay in hospital? Or is it (we believe not) that the difference is accounted for by the exclusive establishment in the three last-named hospitals of a bacteriological standard of freedom from infection? Diphtheria is a disease in which there is much more to be said in favour of protracted hospital treatment than for scarlet fever, as the late occurrence of paralysis constitutes a dangerous complication. We must not therefore be supposed to be suggesting that the protracted stay in hospital shown in some of the above figures may not be necessary. But if so, has the short stay in the other hospitals been found to be followed by a larger proportion of cases of paralysis, or by an excess of instances of "return" infection? We are struck with the lack of co-ordination in the medical statistics, and with the necessity for a central medical bureau in the Board, in which divergencies of medical administration might be corrected, a general policy decided upon after consultation with the medical superintendents, and some measure of uniformity of action secured.

Small-Pox.

The statistics given in the report as to the recent small-pox epidemic, although they reveal no new facts, strengthen the case for vaccination and revaccination. Of 9,659 small-pox cases admitted during the years 1901-2, 6,945 were vaccinated, the fatality among whom was 7.3 per cent.; in 436 cases vaccination was doubtful, the fatality among these being 39.2 per cent.; while 2,278 were unvaccinated, and the fatality among these was 33.1 per cent.

During the epidemic there were, under 10 years of age, only 134 vaccinated cases and two deaths; 33 doubtful cases, of whom 6 died; and 1,274 unvaccinated cases, of whom 442 died—a percentage of 34.7.

Under 20 years of age, there were 1,297 vaccinated cases, of whom 25 died—a percentage of 1.9; 106 doubtful cases of whom 21 died—a percentage of 19.8: and 1,893 unvaccinated cases of whom 392 died—a percentage of 31.27.

The diminution after the age of 20 years in the protective power afforded by infant vaccination is shown by the rise in the fatality rate from 4.7 in vaccinated cases between 20 and 25 years of age to 18.07 in cases between 35 and 40.

The contrast between the number of vaccinated and the number of unvaccinated children attacked is very striking, but is absolutely in accordance with all experience of epidemic small-pox. It has already been pointed out that only 134 vaccinated children under 10 years of age were admitted, amongst whom the mortality was at the rate of 1.4 per cent. only. Of unvaccinated children under ten years of age, 1,274 were admitted amongst whom the mortality was at the rate of 34.7 per cent.

Two hundred and seventy-six patients were stated to have been successfully revaccinated. In 93 cases the vaccination cicatrices afforded presumptive evidence of the operation

having been successfully performed. In all but 5 cases it had been performed upwards of ten years previous to the attack of small-pox, in 69 cases upwards of fifteen years had elapsed. Of these 93 cases, 3 died; in one case revaccination had been performed thirty-seven years, in one thirty-six years, and in the third case twenty-four years before the attack of small-pox. In 47 cases the evidence of revaccination was uncertain, but capable of interpretation in the affirmative. Five of these cases died; two had been revaccinated thirty-six years before the attack of small-pox, one twenty-five years and one twenty-three years, and one fifteen years before. In 136 cases the appearance of the vaccination cicatrices afforded no evidence of the revaccination having been successfully performed; 19 of these cases died.

MEDICAL APPENDICES.

A valuable part of this report is the special medical reports which are annually appended. The present report contains an original investigation into the nitrogen exchange in diphtheria and scarlet fever, by Drs. H. W. L. Barlow and G. M. Crawford, and some miscellaneous clinical papers.

CONTRACT MEDICAL PRACTICE.

AT a meeting of the Friendly Society's Council held recently at Springburn, Glasgow, reported in the *Springburn Advertiser*, the question of the formation of a medical council was discussed. As far as can be gathered the work of such council would be to engage the services of a medical man to fulfil the medical requirements of members of the society and their families, and afterwards to superintend the working of this arrangement. Some doubt was expressed at the meeting as to whether one medical man could do all the society work of the district and as to whether the services of a medical man could be obtained at all. In the course of a discussion on this point the secretary said that the trend of medical conferences was in the direction of doctors being compelled to sever their connexion with Friendly Societies. In reply to this statement Mr. Paterson (a councillor) asked how in that case the council could get a doctor, and stated that in his opinion the tendency was in the opposite direction; he did not think that there was any desire on the part of medical men to smash Friendly Societies; on the contrary, they wished to secure Friendly Society work at what was a fair rate of remuneration for their labour. On this the Chairman quoted a statement, said to have been made some twelve years ago by a medical man, to the effect that in a short time the medical profession would be debarred from having anything to do with Friendly Societies. Mr. Holding, another councillor, said he did not believe such a state of things would ever come to pass.

As a comment on these remarks it may be safely stated that there is no desire whatever on the part of medical men, either as individuals or as a body, to break up Friendly Societies. On the contrary, it is in the interest of all alike that members of the working classes should have facilities offered them for providing for themselves while in good health the medical attendance which they may at any moment require.

What, however, medical men do object to, and rightly so, is the attempts that have been made in various localities to force them to work at rates which no longer correspond either with the wages received by the working classes or with the expenses of modern medical life.

They also object to working for societies which endeavour to make a profit out of their labour other than that which is its legitimate outcome namely, the health and relief from suffering of those for whom their services are required. The sums received by the medical attendants of a club should be the full sums paid by its members for medical attendance and medicine, *minus* a reasonable percentage to cover the administrative expenses of the medical fund.

About the only other point of general application in connexion with clubs and Friendly Societies to which medical men object is the admission to the benefits of the medical departments of such associations of members who are well-to-do people and fully able to pay ordinary medical fees. The attitude of the profession on this point has been misrepresented as a desire to dictate to Friendly Societies on the general management of their affairs; but this is not the case. They simply object to the extension of the benefits of what are specific contracts, by which they agree to sell their labour to the clubs, to persons other than those for whom those benefits were originally intended.

As regards the amount that a club ought to pay a medical man for each member under his care, it is believed that this should in no case be less than 1d. a week per member, or 4s. a year, and in many places club managers have recognized the justice and advantage of paying a higher sum. Local conditions necessarily affect such questions largely, but there is good reason to suppose that where the fees are fixed at less than 4s. a year, either an element of charity, which the working classes are far too independent to desire, must enter into the arrangement; or a medical man, if he accepts less than this rate, must take so many patients in order to make a livelihood that he cannot always attend to all of them in a thoroughly efficient manner. Some club managers persist in trying to beat down medical men below what are remunerative rates, but this is a short-sighted policy, and not in the real interest of the working classes. Medical men as a body object to it because the scamped work in which "sweating prices" must necessarily result lowers the whole tone of the profession. If the working classes desire charitable medical assistance they can get it, but the majority of them desire neither charity nor scamped work, and they should not allow their leaders to endeavour to bargain for medical attendance at less than fair market rates.

The alternative plan to that of entering into contracts with medical men engaged in ordinary general practice is that of engaging the entire services of a medical man to attend upon all club patients. This, however, works out no more cheaply to the individual member, and in most places in which it has been tried it has not proved satisfactory. The best class of medical men will not accept such positions, and even if the clubs succeed in attracting a good man, he commonly soon resigns, for he finds that he cannot do all the work required of him in what he considers a satisfactory manner. Between, the resignations of good men and the dismissals of obviously inferior ones, therefore, the medical staffs of such institutions are in a state of constant change, which is greatly to the detriment of the interests of the members. Probably the most satisfactory plan from the point of view of members of Friendly Societies is that in which the managers obtain the agreement of all the general practitioners in a town to take, if requested, a certain number of club patients on their books—some more, some less—and then leave the members free to select their own medical attendant from the list, only premising that they shall not change doctors except at stated periods.

AMERICAN YELLOW FEVER EXPEDITION.

IN the early part of 1902 Dr. George E. Beyer, Professor of Biology in Tulane University, and Dr. O. T. Pothier, Pathologist to the New Orleans Charity Hospital, with Assistant Surgeon Herman B. Parker, were sent by the Surgeon-General of the United States Army as an expedition to study yellow fever, especially its etiology, in either Mexico, Central America, or South America. The expedition began work at Vera Cruz on May 12th, 1902, and continued till near the end of October. Examinations of material brought from Mexico were prosecuted in the United States up to the date of the report, February 17th, 1903. The report was issued in March, 1903. The conclusions reached are, we learn from an analysis of the report given in the *New York Medical Journal*, as follows: 1. Bacteriological examination of the blood of persons with yellow fever during life, as well as of the blood and organs immediately after death, in uncomplicated cases, is negative. 2. The mosquito known as *Stegomyia fasciata*, when allowed to suck the blood of a yellow fever patient after the lapse of forty-one hours and a half after the onset of the disease, and subsequently fed on sugar and water for twenty-two days and an hour and a half, can, if permitted to bite a non-immune person, produce a severe attack of the disease. 3. *Stegomyia fasciata* contaminated by sucking the blood of a yellow fever patient, and then killed, cut into sections, and appropriately stained, presents with regularity a protozoon parasite, *Myxococcidium stegomyiae*, that can be traced through a cycle of developments from the gamete to the sporozoite. 4. *Stegomyia fasciata* fed on the blood of a person with malarial fever, on normal blood, or artificially does not harbor the myxococcidium.

As regards the question whether or not *Stegomyia fasciata* is the only means of transferring the disease, the report says: "To prove a negative assertion, conditions must be supplied to produce the disease at will or under constant conditions. In the whole history of the disease such data, to this date,

are wanting. When one instance occurs and can be repeated, the new factor can then be taken into consideration." The name *Myxococcidium stegomyiae* is given tentatively to the sporozoon, though its classification among the *Haemosporidia* is "based entirely upon practical considerations of convenience rather than upon a conviction of its exact position," since its schizogonic cycle has not yet been observed.

Though the subject of the conveyance of mosquitos by ships was not studied in detail, owing to lack of facilities, some interesting observations were made. It was found that wooden water tanks were more likely than iron ones to be contaminated, owing to the fact of their being less carefully cleansed, also that the well of the carpenter's grindstone was a favourite place for the breeding of mosquitos. Advice is given as to the screening of rooms in which yellow fever patients are placed.

THE PREVENTION OF CONSUMPTION.

The Open-air Treatment of Consumption in London.

The annual report of the Committee of Management of the Victoria Park Hospital for Diseases of the Chest states that during the past year 927 in-patients were admitted as new cases, against 966 in 1901. In the out-patient department 9,837 new cases were under treatment, compared with 9,678 new cases in the year previous. The actual attendances in the out-patient department, which in 1901 amounted to 62,931, rose in the year that has just ended to 65,125. It was found advisable, from a medical point of view, to retain in-patients for a longer period. While 35,835 in-patients had been admitted into the wards of the hospital since its foundation, no fewer than 659,912 had attended the out-patient department for the same period. Plans had been prepared for a building for the nursing staff at an estimated cost of about £8,000, towards which about £1,100 had been received. The provision of a nurses' home would allow of 200 more patients being admitted annually. Thanks to the kind generosity of Dr. E. Clifford Beale and his brother, Mr. James S. Beale, two shelters had been placed in the grounds of the hospital for the use of the patients, and these already had proved valuable adjuncts to this method of treatment.

The following is a report on open-air treatment from January 1st to December 31st, 1902: During the past year 353 cases of consumption were treated in the hospital, during the whole or part of their stay, by open-air methods. The patients were divided into three classes: (1) Balcony patients who spent the whole of the twenty-four hours in the open air, living and sleeping on the balcony. (2) Class B. Patients who were in the open air from 7.30 a.m. to 5 p.m., with the exception of their meal times; these patients only took half an hour's exercise. (3) Class A. Patients who are in the open air from 6.30 a.m. till 7 p.m., with the exception of meal times: they took four hours' exercise daily. (1) Balcony Cases: Number of cases, 26: 16 improved in temperature, 2, however, only temporarily. Of these 16 cases the temperature in 13 fell to (practically) normal at night, and remained so while under observation. The highest night temperature which showed permanent improvement was 102°. The average duration of treatment required to bring down the temperature was three weeks. In 2 cases the permanent fall did not occur for nine and eleven weeks respectively. As regards cough and expectoration, 14 were unchanged, 11 improved, and only 1 was worse. As regards physical signs, 11 improved, 8 were unchanged, and 6 were worse. As regards general condition, 19 improved, 1 was unchanged, and 6 were worse. As regards weight, 5 lost weight, 3 were not weighed (owing to their serious condition), 2 gained over 2 st., 4 gained over 1 st., 7 gained over ½ st., 5 gained (but under ½ st.) (2) Class B. Of 134 patients treated under Class B, 98 improved in general condition, 29 remained unchanged, and 7 became worse. In weight, 35 gained over 7 lb., 68 gained (but under 7 lb.), 23 lost, 8 were unchanged. As regards cough and expectoration, 52 improved, 56 remained unchanged, 7 became worse; the remainder were not reported upon. As regards temperature, 50 improved, 64 remained unchanged, and in 20 it became worse. In physical signs 32 improved 77 remained unchanged, 17 got worse, and the rest were not reported upon. (3) Class A. Of 192 patients of this class, 173 were improved in general condition, 17 were unchanged, and 2 were worse. In weight, 182 of them gained, 78 gained over ½ st., 10 gained over 1 st., 94 gained (but less than ½ st.), while 4 remained unchanged, and 6 lost in weight. As regards physical signs, 92 remained unchanged, 61 improved, 7 lost; and of the rest there is no definite report on the progress. As regards cough and expectoration, 99 improved, 52 remained unchanged, 11 got worse, and of the remainder there is no definite report. As regards temperature, 84 improved, 96 remained unchanged, 14 became worse.

Cardiff.

A conference of Glamorganshire and Monmouthshire butchers and others was held at Cardiff at the end of July for the purpose of considering the serious loss sustained in the purchase of animals affected with tuberculosis and other diseases. The Mayor (Alderman E. Thomas) presided.

Mr. Cornwall (Penarth) proposed a resolution to the effect that in consequence of the serious loss sustained by butchers purchasing cattle, sheep, pigs, and calves which, on being slaughtered, were found to be affected with tuberculosis or other disease, and therefore unfit for human food, the representatives of the Butchers' Associations of Cardiff, Newport, Swansea, Neath, Aberavon, Mid-Rhondda, and Barry were of opinion that the time had arrived when all cattle of not less value than £8 per head, calves and pigs £1 10s., and sheep £1, sold either by public auction or private treaty in Glamorganshire or Monmouthshire should be guaranteed by the vendor free from tuberculosis or any disease and that steps should be taken to enforce the demands of the allied associations. Mr. Cornwall complained bitterly of the way in which the Government had treated the butchers and of the loss of reputation through no fault of their own. He knew of no trade that had the disadvantages of theirs or that was dealt with so unfairly. In nearly every other trade a warranty was given with the goods, and the butchers asked the farmer to give them a guarantee that the cattle they bought from him were free from disease.

Mr. Pinnell (Newport) seconded the proposition. He urged that it was a national question, and said that the butchers wanted to be above suspicion.

Mr. F. B. Thomas (Tonypandy) contended that the ultimate remedy would be compensation for confiscation, but in the meantime the butchers were entitled to a guarantee. He also pointed out the necessity for co-operation throughout the whole of Wales.

Mr. Docker (Cardiff) moved an amendment to the effect that a subcommittee consisting of representatives of the retail butchers, farmers, auctioneers, and dealers should be appointed to consider the resolution proposed by Mr. Cornwall, and report to a future meeting.

Eventually the resolution was withdrawn, and the amendment was unanimously adopted. A committee was appointed.

Cheshire.

At a recent meeting of the Cheshire County Council, Mr. J. J. Evans, in moving the adoption of the Public Health Committee's minutes, directed attention to inquiries made by Dr. Vacher respecting the laundry arrangements of various consumption sanatoria. Dr. Vacher had stated that the sending of the personal linen of consumptive patients to their own homes to be washed by their relatives and friends seemed to be open to objection, and he suggested that it would be better if the managers of the sanatorium at Delamere Forest and of St. Anne's Home, Bowdon, could make other arrangements for having the patients' linen washed. Dr. Vacher further stated that sending linen from a sanatorium for consumption to a general laundry used by the public was also open to objection, and added that it would be better if the managers of the Heswall Sanatorium could arrange for all their washing being done on the premises. Mr. Evans said it would be well if the public would take notice of this so that in private houses where there were consumptive people the greatest pains would be taken as to how the washing was done. A great deal of infection was spread, not only in consumption, but scarlet fever, measles, etc., through the careless way of washing clothes.

The Vice-Chairman (Mr. Beeley) referred to an uncontemplated effect of the inclusion of consumption among notifiable diseases. He said some six hundred persons in incipient consumption were formerly sent to hospitals at Southport and Buxton, but persons suffering from this disease were now, in consequence of recent action, not admitted. These poor people had no open-air hospital to go to, and what were they to do to obtain treatment?

Dr. Hodgson said notification was necessary in order to find these consumptive patients out. The next thing was to provide for them. No greater necessity existed in Cheshire than the provision of a consumption sanatorium, and it ought to

receive early attention. Mr. Crossley had set them an example in Manchester. Dr. Hodgson did not know any man who would give £70,000 for a myth or mystery, and when he saw business men who had struggled hard to make magnificent fortunes by their industry planking down great piles of money through a belief in science in this way, he was profoundly thankful they had got that far. He did not know anything more urgent. Some of the best spots in Cheshire were now taken up, but the best available spot now had caught the eye of Mr. Sandbach, and would, he hoped, be soon utilized. One of the greatest things needed was to not only give attention to the patients themselves, but protect other people. Many people contracted this disease and died through inadvertence. The only remedy was the notification of cases to the public authority and the provision of a sanatorium.

The Clerk (Mr. Potts) bore out a statement by Dr. Hodgson that the county council was now empowered to provide hospital accommodation for patients suffering from pulmonary tuberculosis under the Isolation Hospitals Act.

Glasgow.

Writing to the *Glasgow Herald* on the care of advanced consumptives, Dr. Alex. Robertson says that the difficulty relates to the great body of the working classes. Separate accommodation had been, or was about to be, made in the parochial hospitals of Glasgow for the very poor; and it was satisfactory to know that steady and successful efforts were in operation to have the consumptives in the slums and generally more densely populated districts removed to these establishments. But when working men in average circumstances, or members of their families, suffered from phthisis in the stage referred to, with few exceptions they were not admitted into any of the Glasgow infirmaries. Having usually no other resource, there was nothing for it but to stay at home till death put an end to their sufferings. From time to time attention had been directed to the necessity for isolating those patients in the public interest, and it had been urged that there should be a special hospital for them, supported by the public rates. This proposal was lately brought before the Branch Council of the Association for the Prevention of Tuberculosis, and also the Health Committee of the Town Council.

At the outset the inquiry suggested itself, Would the contemplated hospital at all fully serve the object intended, namely, the removal of the infectious cases from among their healthy neighbours? There could be no doubt that many of the sufferers would gladly enter it, knowing that they would be comfortably cared for during the terminal period of their disease. But it was equally certain that many others would decline to become inmates of an institution in which there would be always a pervading feeling of hopelessness. Besides these cases, belonging socially, for the most part, to the middle grade of operatives, there were those in still better circumstances, occupants of three and four apartment houses, very many of whom would also resolve to stay at home till the end came, and their relatives would often prefer it too. Where a separate bedroom could be given to the patient, and the locality was not confined, there was no great need of removal.

An objection to the isolation hospital which would be felt by the patients and their relatives whose homes were at a considerable distance from it would be the difficulty of seeing each other as often as they would wish. The desire for frequent interviews naturally increased as the end drew near. This, of course, would not apply to those whose dwellings were not far distant.

But a corporation hospital was not the only alternative open to them. There was no serious difficulty in providing separate wards for the cases under consideration in connexion with the three infirmaries of Glasgow. They might be erected on a convenient part of their respective grounds if there were room for them, but, if not, suitable sites would be found within a few minutes' easy walking from the main buildings. With ordinary precautions, no fear of the disease extending from these branches need be entertained.

Were two wards built, a male and a female, with accommodation in each, on an average, for 20 patients, there would be provision for 120 cases. Assuming that on the whole their individual residence would be four months, 360 patients would be cared for annually. Deducting the poor and those who, for various reasons, would elect to stay at home, the number of beds named might perhaps suffice for the great body, if not for the whole, of the remainder that required isolation in the interest of the public.

The advantages of infirmary wards were briefly—(1) The patients would readily go into them, knowing they would have the newest and most approved methods of treatment, under skilled and experienced physicians and nurses, and that their disease might possibly be checked in its progress, if not cured. (2) Special wards being connected with each of the three infirmaries, the patients would for the most part be nearer their own homes and more accessible to their relatives than if they were gathered into one hospital. This would be of considerable importance in cases that were about to terminate fatally. (3) Students would have fuller opportunities of becoming acquainted with the varied symptoms of the disease; at present they were more limited. They would also learn the "open-air" methods of treatment, as they would see them in constant operation. (4) No cases of phthisis would be retained in the general wards of the infirmaries. Though, owing to the small number of these cases admitted, and the measures of disinfection in use, the risk of infecting other patients was not great where the air space was abundant, yet it would scarcely be maintained by any physician that, even with otherwise perfect arrangements, the apprehension of it could be altogether dismissed from the mind.

As the chief reason for the isolation of advanced consumption was the protection of the general public, it seemed only just that the community as a whole should bear the additional cost that would be incurred in the erection and maintenance of separate wards. It would not be great, as, in accordance with the preceding suggestions, the increase in the number of beds would only amount to 120 for Glasgow. These being, as advised, parts of the infirmaries, the addition to the general administration would be small. Whatever the expense proved to be in the first instance, it might be expected to diminish gradually in amount, for, through the isolation of existing cases, in all probability the production of new ones would steadily become less.

Co-operation would be required between the managers of the infirmaries and the Town Council. The latter would provide the necessary funds; the former would care for the patients. If combined action were approved probably a joint committee would be appointed. Acting for the public good, as both Boards did, there should be no difficulty in arriving at an arrangement mutually satisfactory.

With regard to the treatment of consumptive patients in their own homes, recently the Health Committee of Glasgow appointed a special medical assistant to Dr. Chalmers, whose duty it was to visit the homes of the phthisical cases reported to them, and inquire into the conditions in which the disease had arisen. This was an important measure, and it was to be hoped that all public dispensaries, as well as the parochial services, would heartily co-operate with this Committee, so that the general information regarding these cases might be as complete as possible. In connexion with this measure, Dr. Robertson believed that the services of one or two trained nurses could be utilized with great advantage. Under the direction of the chief medical officer of health they would visit the homes of such patients as he might direct, and show them and their relatives how to disinfect sputum, instruct regarding open windows, advise as to the position of the patient's bed, besides giving them counsel on other matters of a general kind related to the disease, where it seemed desirable. The nurse should pay a second visit after two or three days to see if the instructions were being carried out. Further, in many cases spittoons and disinfectants should be supplied at cost price, or even gratis. There need be no delay in carrying out such home methods of treatment and prevention. Obviously, considerable prudence and tact would be required by those engaged in the work. When a family doctor was in attendance no action on the part of the health officer or nurse would probably be required. But the great majority of the class under consideration—those, namely, who applied at the public dispensaries—would not be under the charge of a medical man. Dr. Robertson learnt that no friction had arisen in connexion with the visits of Dr. Chalmers's medical assistant.

A Healthy Colony. Sir A. Hemming, in his annual report on Turk's and Caicos Islands, says: "There are no hospitals, asylums, or reformatories in the dependency. In case of need a suitable building in an isolated position is provided for the treatment of infectious diseases, which happily are of rare occurrence. The building has been required once in the past eight years, and then only for treatment of two patients landed from a vessel in the harbour."

Ireland.

Belfast District Lunatic Asylum.

Dr. W. Graham, the medical superintendent, has just issued the annual report for the year 1902, containing also the financial tables up till March 31st, 1903. One hundred and sixteen males and 151 females were admitted during the year, and the total numbers under treatment were 575 males and 622 females; the total number of deaths were 46 males and 33 females; 1,004 patients were in the asylum on December 31st, 1902. The gross expenditure was a capitation cost of £24 2s. 2d. Sir George P. O'Farrell, M.D., Inspector of Lunatics, draws attention to the fact that nothing else has as yet been done to provide suitable and sufficient accommodation for the cases which need special treatment; the recent and acute cases in the parent or old asylum cannot be said to be treated under conditions which are most favourable to their recovery or to the amelioration of their mental trouble; the normal accommodation is for 692 in all the departments, the actual number resident is 993. He urges that the plans of the new asylum buildings should be now designed and laid down as a whole. "If the general scheme of the asylum is not now prepared the new institution will be nothing better than a congeries of patchwork buildings." Sir G. P. O'Farrell concludes with a high commendation of the pathological work of Dr. R. A. L. Graham, assistant medical officer. The medical superintendent, besides giving a full record of the year's work, discusses briefly but in a highly interesting and popular manner some of the problems connected with lunacy. In 1880, 250 per 100,000 of the population of Ireland were under medical treatment for insanity; in 1901, the figures had increased to 487 per 100,000. A growing mental enfeeblement, not coming under any of the usual divisions of a classification of mental diseases, had been noticed, and so it is evident that insanity is increasing seriously. Beyond all reasonable doubt insanity is a physical disorder, and is the result of unhealthy conditions of living; it increases as we descend the scale of culture, and its most frequent victims are generally those in whose lives there is little variety and few intellectual interests. Seventy per cent. of the patients that enter our asylums bear upon their bodies evidences of total disregard of the ordinary laws of cleanliness. From these premisses Dr. Graham argues that one of the prime necessities of the times is the inculcation of hygienic principles, and this object will be best attained through education. Disorders of the mind as well as of the body are thus prevented.

Mullingar Guardians and their Medical Officers.

According to the *Irish Times*, the Board of Guardians of Mullingar Union at their meeting of last week refused to grant Dr. Daly, Multyfarnham, and Dr. O. P. Kerrigan, Castletown, their annual leave unless they provided *locum tenentes* at a remuneration of 3 guineas a week, all the doctors having refused to act as substitutes for less than 4 guineas a week, the scale fixed by the Medical Association.

At the meeting on August 22nd, which was presided over by Mr. N. T. M'Naboe, Co.C., chairman, Dr. Kerrigan wrote informing the Board that he was temporarily incapacitated from the discharge of his duties, and forwarded a certificate from Professor Kennedy, Dublin, to the effect that it was absolutely necessary that he should have complete rest for at least a month. Dr. Bowan (Tyrrellspass) was acting temporarily for him.

Mr. Garigan: Is he to get leave?

Chairman: Yes; provided that he gets a substitute at 3 guineas a week.

Mr. M. Ronan said he would not be a party to giving a *locum tenens* 4 guineas a week.

Mr. C. Lennon: Look at the question in this way. Why should not the doctors try to squeeze the ratepayers as well as everybody else. Show me any profession or trade that is not trying to squeeze the last penny out of the ratepayers. It was a divine decree in the Old Law to honour the physician. We are bound to keep the doctors, and in the case of life or death of a poor person it is not right to speak about a guinea of a difference.

Mr. Lennon added: This opposition looks as if there is a league against the doctors; and I must say it is a petty business altogether.

At this stage there was considerable excitement, and a number of guardians accused Mr. Lennon of being bought over.

Mr. Lennon: You must admit that the doctors give value for their guineas.

Mr. Garigan: I see a good many dying, in spite of all the guineas.

Mr. Ronan: No one can dispute the right of the doctors to organize, but if you agree to what is called a petty thing for the doctors now, what guarantee have you that they will not have an increased demand in a few years' time?

Mr. Shanahan referred to the many hardships a dispensary doctor has to undergo in the discharge of his duty.

After some further discussion it was decided to adhere to the resolution to pay the *locum tenens* 3 guineas a week.

Medical Officers' Fees.

At the weekly meeting of the Nenagh Board of Guardians, on August 20th, Mr. Thomas O'Brien presiding, a letter was, we learn from the *Dublin Express* of August 22nd, read from Dr. Keogh, Ballina, stating that he was unable to procure a substitute to act for him for less than £4 4s. a week. The Chairman said there was a resolution on the books that each doctor could go on leave for a month if a substitute was obtained at £3 3s. a week. There was also a second resolution that where a substitute could not be got for less than £4 4s. the medical officer be only granted one week's leave of absence. Mrs. Powell gave notice that she would move that all previous resolutions on the books in reference to the payment of medical officers' substitutes be rescinded, and that in future they be paid at the rate of £4 4s. a week.

LITERARY NOTES.

Messrs. Smith, Elder and Co. announce for publication this day (August 28th) a new work by Dr. Ransome, author of the *Treatment of Phthisis*, entitled the *Principles of Open-air Treatment of Phthisis and of Sanatorium Construction*. Besides setting forth the need and the advantages of sanatoria with details of their construction, the book will include an essay on the pure-air treatment of phthisis in the home.

Messrs. W. B. Saunders have the following books in preparation: *A Textbook of Operative Surgery*, for students and practitioners, by Warren Stone Bickham, M.D., Assistant Instructor in Operative Surgery, Columbia University, New York; a *Textbook of Clinical Anatomy*, by Daniel N. Eisendrath, A.B., M.D., Professor of Clinical Anatomy in the University of Illinois, Chicago; a *Textbook of Diseases of Women*, by Barton Cooke Hirst, M.D., Professor of Obstetrics, University of Pennsylvania; a *Textbook of Obstetrics*, by J. Clarence Webster, M.D., F.R.C.P.E., Professor of Obstetrics and Gynaecology in Rush Medical College; a *Thesaurus of Medical Words and Phrases*, by Wilfrid M. Barton, A.M., M.D., Assistant to Professor of Materia Medica and Therapeutics, and Lecturer on Pharmacy, Georgetown University, Washington, D.C., and Walter A. Wells, M.D., Demonstrator of Laryngology, Georgetown University, Washington, D.C.; and a sixth edition of a *Manual of the Practice of Medicine*, by A. A. Stevens, A.M., M.D., Lecturer on Physical Diagnosis, University of Pennsylvania.

The *Journal of the American Medical Association* says that one of the Emerson anecdotes that came out during the recent celebration of the one hundredth anniversary of the Concord philosopher's birthday is a striking illustration of aphasia. Emerson lost the power of speech as the result of a brain lesion, though he retained much of his thinking power. A contributor to the June number of the *Atlantic* illustrates his aphasic condition by relating the story told by Emerson of a carriage ride during which it rained: "After a while the —the—the—the—How do you call what stores up water till it is suddenly—suddenly—what shall I say? Not squeezed out?" "A sponge?" his hearer suggested. "No, no," with the sweetest of smiles and a sweeping motion of the hand up to the sky. "The clouds, perhaps?" was the next suggestion. "Yes, the clouds began to roll up and threaten rain. I had forgotten to take with me my—my—my—By the way, what is it that people always borrow and never return?" "Umbrella?" was suggested. "Yes, umbrella," and so on with other lacunae in the conversation. There is a sadder illustration in the story of Emerson going to look at his lifelong friend Longfellow in his coffin, and with the tears streaming down his cheeks, muttering, "I don't know his name; but he was a great soul."

The Extermination of the Mosquito.—Dr. Stiles, who it is said has discovered a parasite which he believes to be capable of destroying mosquitos by millions, is about to put the efficacy of the destroyer to the test at Cape May or some other place in New Jersey where mosquitos are prevalent. The investigation is undertaken at the request of Professor Smith, State Entomologist of New Jersey, who has helped Dr. Stiles in his search for a parasite suitable for the purpose.

ASSOCIATION NOTICES.

COUNCIL.

NOTICE OF MEETING.

A Meeting of the Council will be held in the Council Room of the Association, at 429, Strand (corner of Agar Street), London, on Wednesday, the 21st day of October next, at 2 o'clock in the afternoon.

August, 1903. Guy Elliston, *General Secretary.*

ELECTION OF MEMBERS.

Any candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

The Library will be closed until further notice.

Guy Elliston, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

East Anglian Branch.—Preliminary announcement.—The autumn meeting of the East Anglian Branch will be held at Sudbury, Suffolk, on Thursday, September 10th. The Cambridge and Huntingdon Branch has accepted the invitation of the East Anglian Branch to be its guest at this meeting. Any member wishing to read a paper or show cases or specimens is requested to communicate as soon as possible with B. H. Nicholson, Honorary Secretary, East Lodge, Colchester.

SPECIAL CORRESPONDENCE.

BERLIN.

Overcrowding of the Medical Profession.—Jubilee of Professor von Leyden.

The medical department of the Prussian "Cultus-ministerium" has just published statistics relating to the year 1901, from which it appears, that in that year Prussia had 17,097 doctors, 1,099 dental surgeons, and 20,009 midwives. Charlottenburg, a residential suburb of Berlin, headed the list as regards the proportion of doctors to the population: the proportion was one doctor to every 483 inhabitants. Next came Schöneberg, likewise a fashionable Berlin suburb, with 1 doctor to every 658 inhabitants. The city of Berlin itself took the third place with 1 doctor to every 790 inhabitants. Other towns and country districts followed with decreasing numbers, the lowest being Gumbinnen, where the proportion was 1 to 4,301 inhabitants. That this congestion of medical men in and near Berlin does not mean an easy competence for the rank and file of the profession, but rather a fierce struggle for existence, has long been known. Nevertheless the numbers of medical students at the universities show no decrease, but the reverse, and, the degree once taken, it seems as though the attractions of Berlin (the intellectual as well as political capital of the Empire) proved almost irresistible. A few months ago Professor Kammerer of the Charlottenburg Technical College—in the course of his rectorial address—spoke with the deepest regret of the foolish contempt for manual labour, so general in Germany, which he said was nourished rather than repressed by the present school curriculum. The result is an overcrowding of the so-called learned professions and the production of a class of educated paupers. This term is no exaggeration. It represents an ugly truth which cannot be ignored. In the late *cause célèbre* against the notorious quack, Nardenkötter, some sad facts came to light. When Nardenkötter bethought himself of engaging a qualified doctor in order to hide his malpractices under a legal cloak, no fewer than seventy applied for the post, and the defendant's counsel attempted to explain this disgraceful competition by dire necessity. The numbers proved, he said, that in the medical proletariat hunger often raised its voice above professional honour.

Professor v. Leyden, the distinguished Berlin clinician, has just celebrated the fiftieth anniversary of the day on which he took his doctor's degree, in Pontresina, where he is taking a holiday. Congratulatory letters and telegrams came from far and near. From the German Empress; from the Prussian "Cultus-minister," Dr. Studt, conveying a message from the Emperor and announcing the bestowal of a high Prussian decoration; from Count v. Bülow, the Imperial Chancellor, with special recognition of Leyden's efforts in the struggle against tuberculosis. The Berlin Medical School renewed Leyden's doctor diploma. Amongst the visitors staying in and near Pontresina there is, as usual, a large contingent of "Berliner," and these joined in the presentation of beautiful garlands and other floral decorations, and transformed Leyden's hotel rooms into a fragrant bower. Nor did the Engadiners themselves lag behind. Addresses and flowers were presented by the parish authorities and "Cure Society" (Kurverein) of St. Moritz, and the Upper Engadine Medical Society elected Leyden an honorary member of their body.

CORRESPONDENCE.

MEDICAL ACTS AMENDMENT BILL.

Sir,—Now that this Bill is definitely before the profession, I trust that the Divisions will very carefully consider every clause. I would particularly draw attention to Clause 34 (Penalty for Concealment of Identity of Practitioners). This would in no way affect consultants, but in my opinion would be most disastrous for general practitioners. It would make it impossible to employ an assistant, or *locum tenens* except under the most intolerable restraints. To be compelled to paint the name of an assistant or *locum tenens* over his business premises can scarcely commend itself to any practitioner. At the present time the appearance of an assistant's name alongside that of the principal would make many of the public imagine that the former had been taken into partnership, and an unworthy assistant would be enabled to involve his principal in serious liabilities; the constant changing of names, which would inevitably occur, would scarcely tend to do a practice good, not to speak of the difficulty, if not impossibility, of practically carrying into effect such a regulation.

The only object of this clause is to prevent the carrying on of a medical practice without the name of the principal being known to the public, as is done at certain "medical halls" and chemists' shops. No doubt for the protection of the public and profession it is necessary that such practices should be restrained; but where the name of the principal does appear it is quite unnecessary for the public to know the name of every assistant or *locum tenens* the principal employs. If improper assistants are employed the principal can always be held responsible. The history of this clause I do not know, but I have always opposed it on committees. I should think it must have been originally drafted by a consultant.—I am, etc.,

Hackney Road, N.E., Aug. 22nd. Major Greenwood.

Sir,—I have read with care (as you suggested in your note of the week) this Bill as drafted by the Medico-Political Committee of the British Medical Association, and I think that it is a praiseworthy attempt to legislate upon an extremely difficult subject.

There is, however, an important omission, as it seems to me, in the context of the Bill. Its provisions, as far as I can understand them, apply to men alone. Are women to be excluded from registration as medical practitioners? Surely this result was not one intended by those who drafted the document. The fact that they use the word "person" militates against this assumption. Yet throughout the Bill the use of the male gender—"he," "his," and so forth—implies that men alone are eligible for its qualifications. If women are included under the title of "persons," why not definitely say so? I shall not approve of any Bill that leaves this injustice to the sex unremedied.

There is a printer's error on page cxcvi, column 2, fourth line from the bottom; for "deaths," read "dentist."—I am, etc.,

August 23rd. X.

Sir,—A small addition to the Medical Acts Amendment Bill would remove a notorious and long-standing grievance. Clause 21 deals with registration after passing a State final examination. Add to that clause "and such registration shall confer the title of 'doctor.'"

Diploma holders would then be placed in a fair position, and the public would no longer be puzzled by the registered medical practitioner, to whom they have gone for medical assistance, telling them that he is not a doctor. If desired the actual degrees or diplomas can be easily shown, as "Dr. Jones, L.S.A.," "Dr. Brown, M.D.," or even "Dr. Smith, F.R.C.S."

There is no suggestion here of conferring a degree, but of legalizing the use of the word "doctor" according to its dictionary meaning and its present accepted use by the public.—I am, etc.,

Barking Road, E., Aug. 24th. PERCY ROSE.

OPHTHALMIA NEONATORUM.

SIR,—No one will refuse frankly to express appreciation of the advantages which English medicine has derived from German medical science and practice, especially during the last quarter of a century or more; but those who have been brought frequently into contact with German professors and lecturers, and have had to devote considerable time to German medical literature, must admit that on the practical side the German professional mind is not altogether without its limitations. In England we have occasionally failed to recognize this fact, and we have sometimes gone to the limit, or beyond it, in the direction of making ourselves ridiculous by adopting, without due criticism and consequent modifications, German methods which were not obviously suitable to English social conditions, and did not appeal to English practical common sense. Instead of trying all things and holding fast that which was good, we have occasionally with simple faith accepted and applied to our fundamentally different social conditions methods and principles which became positively harmful in practice, or, containing only a spirit of truth in things essentially false, did not stand the test of experience, even in Germany.

This tendency of our Germanophiles to imitate without analysis and criticism, without regard to such considerations as popular ethics, tradition of personal freedom, and differing social conditions and organization, comes out very strongly in the recent discussion on ophthalmia neonatorum at the Obstetrical Society of London. With regard to the opinions of a younger generation of obstetricians and ophthalmologists, I would not misspend a single holiday hour; their sense of proportion and width of view will be stimulated in their development by the professional and social consequences of mistakes in other than hospital practice. But when men of eminence as obstetricians and of light and leading as teachers of midwifery begin to speak in support of the general application of the Credé process in this country, and only discuss in detail such trifles as the particular chemical substance to be employed, the situation becomes more serious. Such proceedings are disconcerting, to say the least, to those who, like myself, hold the firm conviction that the Credé prophylaxis is blundering practice on the mere physical side, and that its general application to the infants of the poorer classes in this country would entail moral and social consequences for which the process would not be sufficient compensation, even if it were the best way of preventing a portion of the blindness which we all deplore. The remarks of Dr. Cullingworth are specially worthy of attention. He makes reference to the rules prepared by the Central Midwives Board, and hints at the possibility of their containing "a satisfactory injunction with regard to the disinfecting of the child's eyes." But Dr. Cullingworth and a few others know, and the whole medical profession would have known if the proceedings of this Statutory Board had not been kept secret, that the rule as it stands is innocuous if slightly absurd from the practical point of view, and that it has already in all except the merest formal sense been approved by the Privy Council. It could only be modified now by influential official persons who are not members of the medical profession. This surely cannot be the ground of Dr. Cullingworth's "sincere hope," nor ought a solution of the difficulty so obtained be satisfactory even to the lay members of the Central Midwives Board. If such a modification could be so effected there would be room for despair as to the efficient administration of the Midwives Act could we not confidently rely upon that reserve antagonistic force, "the contempt and ridicule" of the medical practitioners, and the disgust and indignation of the people of England.

It was seriously proposed by some important speakers at the Obstetrical Society to recommend the application of the Credé prophylaxis to cases in other men's practice, and to enforce it throughout England and Wales in the practice of the sort of midwives with which we are apparently still to be afflicted for a generation. The operation of the rule is to be partial, not impartial. Poverty is to be the sad qualification for the moral and physical assault. Every poor woman who cannot afford to employ a doctor must see her infant start life with unnatural tears and conjunctivitis, and she and the simplest and purest-minded of her female relations must be initiated by an ignorant midwife into the mysterious workings of venereal disease. The medical practitioner will be called upon to explain to the clergyman the meaning of this new and distressing practice, and the clergyman will smooth the way of its introduction by explanations and illustrations of "the sins of the fathers" to the Bible-women and social workers of the rural or urban parish; while the "social evil" will be discussed with fresh interest and unction at the P.S.A. "for men only" in the city chapel. "Rip your brothers' vices open, strip your own foul passions bare."

All the socio-ethical agencies will have to be brought into action, for the popular resistance to compulsory vaccination will have been mere child's play to the alarm and the storm of disgust and indignation which will spring up when the truth begins to dawn upon the people that they are receiving their first formal lesson in "Zolaism"; and that, though silent and inarticulate, the cry and the principle are nevertheless: "Down with Reticence; down with Reverence," and down with social Common Sense!

It may be objected that my comparison is unfortunate, and that if the Credé process is as well justified as vaccination on medical grounds, it ought to be made compulsory. But I am speaking of it now only as an infringement of personal liberty, which in the same class in Germany has not as yet found clear and firm expression, and objecting to sweeping away the social barriers to the diffusion among even our young women of a knowledge of evil things which, in my estimation, would be a social calamity.

Let us see now what the argument in favour of compulsion derived from the German example amounts to, and what are the grounds for anticipating a diminution in the amount of blindness in this country as the direct result of the Credé prophylaxis. Who was Credé, and why should we adopt his heroic treatment? Credé was, for a considerable portion of his professional life, professor of midwifery and diseases of women in the University of Leipzig. His name is familiar to English students of midwifery because of its association, by the persistence of his countrymen and our usual humility, with the method of "expression" which was practised in Dublin a hundred years before Credé's time. But from a perusal of his writings, and from conversation with men who knew him well, it is hardly possible to conclude that Credé possessed the sort of genius which brings a new evangel of physical healing, or works out a social revolution.

What is Leipzig, where Credé received his inspiration and proceeded to stamp out ophthalmia neonatorum or gonorrhoeal conjunctivitis? Leipzig is a *Welt-stadt* containing half a million of inhabitants. Besides having to bear its due share of the consequences of social evils like all great cities, Leipzig suffers from a combination of social circumstances almost peculiar to itself. It is the head quarters of an army corps, and has a garrison of 6,000 men; it is the seat of the law courts of the German Empire (*Reichsgericht*), and swarms with celibate lawyers and their dependents; it possesses one of the largest and most frequented of the German universities, with 3,500 students of all the faculties; it is the centre of the book trades, and in addition to the usual contingent of commercial men visiting a great business city, it attracts a polyglot business crowd from the uttermost parts of the earth; and, relevant to the subject under consideration perhaps the most important of all, the modern equivalents of its ancient fairs (*Messe*) bring together twice a year a polyracial promiscuous mass of men, numbering many thousands, and hailing chiefly from countries of the East, where some at least of the Ten Commandments are permanently in abeyance. Fortunately for Leipzig it is not a great seaport.

Considering the amount of venereal disease in a community such as this, there may be much to be said for Credé's prophylaxis, severe as it is; but what can be said for its importation into England and Wales, and its blind application without modification to urban and rural communities constituted on a radically different social and political basis, and pervaded with such different moral principles as to make comparison with the foreigner difficult or impossible?

Dr. Cullingworth frankly refers to the possible "contempt and ridicule" of the medical profession in England. But surely a proceeding which is likely to obtain such a

reception from the medical profession must have some elements of the ridiculous, if not of the contemptible, in it; and if this be so, is it not a strong reason why Dr. Cullingworth, and the members of the Central Midwives Board who agree with him, should make a radically searching examination of the ground on which their opinions rest? It is conceivable that they may be wrong.

Leaving the medical practitioners of England and Wales, who are free agents, to act according to the dictates of their knowledge and common sense, let us try to imagine the registered midwife carrying out a regulation which compelled her to apply the Credé process to every child born under her supervision. As I wish to be serious I shall say nothing about the suggestion—nay, rule—that she must attend to the eyes as soon as the *head* is born.

What is to be the disinfectant? Perchloride of mercury, unless it is in strong solution and used copiously, cannot be relied upon as a germicide for the gonococcus; but in any strength likely to be proposed it is certain to set up conjunctivitis. A 2 per cent. solution of nitrate of silver would be a better application in medical hands, but in some German clinics it is considered too strong, and I find that in Göttingen, for example, they have reduced the solution to 1 per cent. Accidents with even such a weak solution, and splashing of the tender face of the newborn, produce appearances which sometimes require explanation, so in Leipzig they now use acetate of siver.

All admit that the *Einträufeln* is not an easy thing for a midwife to do; and as a matter of fact the pupils, although in residence for training for six months at least, only do it under supervision, that is to say, with assistance.

Again, suppose the conscientious midwife with her paraphernalia in the presence of an irrational male parent who expressed his emotions in the usual eloquent terms, and refused his consent to the operation, as an injury to his new born child, and an insult to himself and to his class. What could the midwife do? Act the part of Dogberry, and withdraw? Suppose a midwife, riding on the top of her commission from the Midwives Board, were to insist upon producing conjunctivitis against a parent's express objections, and suppose the parent brought an action against the midwife for assault on his child, what then? Would not the Central Midwives Board find that they required an Act of Parliament, making the foreign fad compulsory among the lower classes, before they could discipline a midwife who refused? And if the Board went the length of suspending a midwife who refused to do that which might bring legal penalties upon her, and the suspended midwife brought an action in the High Court against the Midwives Board, what then? It would be surely better not to begin than to have such a fearful looking to of Dogberryism and *reductio ad absurdum*.

But it may be argued that ophthalmia neonatorum is such a serious cause of blindness that the prophylactic treatment ought to be rigorously enforced against ignorance and prejudice. On the score of causing blindness the prophylaxis is supported by exaggeration, to say the least. Take as an example the letter of Dr. Heelas in the BRITISH MEDICAL JOURNAL of August 8th, the last contribution to the discussion which I have seen. To say that at the General Lying-in Hospital they had for even a short time 42 per cent. of ophthalmia must be misleading to the cursory reader. It cannot surely be implied that 42 per cent. of the mothers were suffering from gonorrhoeal infection. It simply means, of course, that the infection was conveyed from one child to another owing to careless nursing. Strict supervision and discipline, with perhaps some dismissals, would have served the same purpose as Credé's process, and it would have been more just and less cruel. There have been "epidemics" of vulvo-vaginitis among the little children of filthy villagers in certain parts of Europe; would the staff of the General Lying-in Hospital have initiated suitable prophylaxis? *Infandum!*

In the discussion at the Obstetrical Society, opinions varied as to the proportion of cases occurring in the routine practice of public institutions, but I venture to think the figures were all too high. At the Manchester Maternity Hospital the disease is practically unknown. There was no case among the 200 infants born within the hospital last year, and no case was sent to the children's department by the hospital midwives, who attended over 1,300 cases more. I have just learned from the head midwife of the midwifery department in Leipzig that there were 5 cases among the 1,458 children born in the Frauenklinik last year; this was, of course, in spite of the prophylaxis by acetate of silver. This suggests a comparison between an English and a German city of the same size. At other university lying-in hospitals which I have been visiting, and in the provincial Hebammen-Lehranstalt here in Hanover, I am assured on every side that in the clinics where some form of prophylaxis is employed, and among the cases of confinement at the patients' homes, where it is seldom used, the disease is extremely rare. *Colossal selten* was the colloquial expression used to indicate the state of matters by an assistant in a university clinic which is situated in a town of 150,000 inhabitants. My point here is that the danger is exaggerated by the advocates of Credé's process. But I can only hint at the evidence; it could be extended indefinitely, and is overwhelming.

But the Credé prophylaxis as carried out by our midwives would not be even the best way of preventing blindness. In every case the "drops" would produce a certain amount of inflammation, and in a proportion of the cases of genuine specific inflammation the disease would continue to spread, and it would be mistaken by the midwife for the inflammation produced by the process. Medical aid would then be called in too late, just as used to be the case when the midwife might, and did, act as quack without fear of consequences.

Remember that our midwives, though under control, will still for long be the worst trained and the most ignorant in Europe. If blindness among the children of the poor is to be prevented, nothing must be left to the discretion of the midwife. She should be required to be watchful, and on the slightest sign of inflammation about the infant's eyes to send at once for medical assistance, or at least get the case attended to.

Everybody knows that even genuine gonorrhoeal ophthalmia of the newborn, when promptly, energetically, and judiciously treated, seldom or never leaves any permanent ill-effects. Why, therefore, should any infants, except those affected, be tortured by irritants applied in a coarse and ignorant fashion, unjustified by appearances or even suspicion arising from maternal signs, on the mere off-chance that one in a hundred may suffer from the disease? It does not appear quite rational practice.

But Dr. Cullingworth knows very well that the relation between midwife and medical practitioner, which I am suggesting as the most effective as well as the most humane method of preventing blindness, is exactly that which is laid down in the rules of the Midwives Board which have already received the sanction of the Privy Council, except for what is usually assumed to be a mere formality. Why the arrangement agreed upon should not be loyally adhered to and given a trial I do not understand.

Several references were made at the Obstetrical Society to the need for further information and discussion. It might be well if the subject were discussed in the medical societies throughout the country early in the season for meetings which is too rapidly approaching, for the subject is of interest to the general practitioner fully as much as to the specialist. Might I suggest to certain young obstetricians and oculists that in view of discussion they should think out the social, moral, and political aspects of compulsion, which seem to have received no consideration whatever? There is the citizen's as well as the doctor's rights and privileges to be considered and safeguarded in a question of this kind.

To the slavish imitators of German methods, who would make it the duty of the midwife to apply prophylaxis in all her cases, I should just like to say, in conclusion, that they will not find much comfort and support from the actual practice in Germany. Whatever theories may be inculcated and practices learned in the schools for midwives, as a matter of fact the Credé process is not compulsory on the midwives anywhere. The testimony is the same without exception at all the universities and midwives' institutes. The midwives are allowed to use their own discretion. The actual practice is that in suspicious cases they obtain medical advice, and never, or hardly ever, venture themselves to apply any sort of chemical to the eyes of the newborn infant. So "Science" does homage to Credé within the hospital, and practical common sense prevails outside. With regard to the practice of our midwives among the poorer classes of women in town and country, we may be content for the present to imitate the actual German system to a large extent; when we have successfully insisted upon our midwife pupils residing for six months within a lying-in hospital, it will be soon enough to consider how much further we are to go upon the German model.—I am, etc.,

Hanover, Aug. 20th. W. J. SINCLAIR.

DOCTORS AND THE DISPENSING OF DRUGS.

Sir,—I am sorry to know you are of opinion that I made a mistake in judgement in publishing a list of mistakes in dispensing.

I agree with you that "if, however, comparisons are made, they should be made with scrupulous fairness," and I trust you will allow me to point out that I have tried to do so. Also, that the published mistakes cover identical periods, and that I stated in my address:

> I believe that the following list fairly represents the number and nature of the reported mistakes in doctors' surgeries, public institutions, and chemists' shops published since 1898. . . . It will be observed that fatal results are reported in all the published accounts of mistakes in doctors' surgeries, and that in the list of mistakes in chemists' shops, two cases without fatal results are included and one doubtful case. It should also be noted that in two of the fatal cases in chemists' shops the chemist combined the functions of both prescriber and dispenser.

Allow me to add that nothing was further from my mind than any idea of "attacking the dispensing doctor." I honestly tried to put the facts fairly, and I have no interest in the matter beyond, as stated in my address, trying to promote "greater respect for the noble profession of healing, greater usefulness of the pharmacist, and, above all, greater safety of the public."—I am, etc.,

London, N.W., August 26th. T. H. W. Idris.

EXCURSIONS AT ANNUAL MEETINGS.

Sir,—I regret that my letter in the British Medical Journal of August 15th should have elicited such a reply from the Honorary Local Secretaries of the seventy-first annual meeting at Swansea.

I certainly never intended any kind of reflection on those gentlemen, whose unceasing energy and urbanity during the meeting I was repeatedly a witness of, and therefore the slight display of annoyance evinced in some phrases of their letter is quite as uncalled-for as it is incorrect.

Their reply only strengthens what I tried to bring forth in my letter: (1) That the excursions of late years were too lavish; and (2) that they did not fill; and they express regret and some explanation with regard to the concrete case I brought forward—namely, Llandrindod; and it is certainly a grain of comfort that my suggestions for the future meet with some amount of approval from them.

Their figures for the excursions are taken correctly from the *Daily Journal*. Mine are also correct, taking the *Excursion Guide of the Seventy-first Annual Session. Swansea, 1903*, which was before me, as my basis.

My sole object in writing was the welfare of the annual meetings, fearing that the facts adduced might have a restraining influence on the hospitality of future meetings; and it is far from my wish to enter into a dissertation on the duties and responsibilities of honorary local secretaries; although probably the fact that I have attended the majority of the meetings of, and have been officially connected with the Association since 1879, affords me some advantages over those whose functions now cease.—I am, etc.,

Is-y-Coed, Portmadoc, Aug. 24th. W. Jones-Morris.

THE VALUE OF THE NEW "COLD" LAMP IN CYSTOSCOPY.

Sir,—I often speculate as to how many of us who use the cystoscope understand that damage is unconsciously done by unskilful manipulation. I do not suppose that it is realized that not infrequently the mucous membrane of the posterior wall low down is scorched by keeping the beak applied to the wall, instead of in the middle of the bladder.

It may be said, What matter if the bladder is a trifle scorched? the patient may not experience much discomfort. True, but the evil does not end there. Patients often want a second opinion, and the cystoscopist who examines that bladder within the next four weeks sees evidence of careless manipulation in the shape of an ulcer, a redness, or a scar, and his diagnosis is thereupon often stranger and more at fault than that of his predecessor.

May I point out that for nearly a year a "cold" lamp has been placed on the market which can be burnt at a brilliant white light in the open air, with the beak held between the fingers for fifteen seconds without discomfort? This means that the "cold" lamp when chilled by the water in the bladder is safe to do no harm in skilled hands, and the damage done by the ignorant is reduced to a minimum.

But let any one burn the older-fashioned "hot" lamp in the air, holding it between his fingers for four seconds. I think the resultant scorch will prove a valuable lesson to him to try the "cold" lamp and to keep that in the centre of the bladder rather than to press it against the wall.—I am, etc.,

Savile Row, W., Aug. 20th. E. Hurry Fenwick.

THE ANTIVIVISECTIONIST PROPAGANDA.

Sir,—Some months ago the British Medical Journal had several articles on Mr. Stephen Coleridge's methods of trying to repress vivisection. I do not know what success he had, but I should fancy very little if he is obliged to resort to such discreditable devices as sending to ladies such a production as the enclosed illustrated Catalogue of apparatus used in physiological research. It was received by my wife yesterday evening, and not unnaturally she shut it up in disgust and handed it to me. Cannot something be done to prevent such literature being sent to ladies? In the case of a nervous woman the sight of such illustrations might lead to very serious results.—I am, etc.,

August 22nd. Member.

NURSING AS AN OCCUPATION.

Sir,—Your correspondent, "A Hospital Sister," holds that "it is the medical man's duty to protect his patients from the ignorance and incompetence of the 'quack nurse' by refusing to recognize untrained and uncertificated people." But, in the present unorganized condition of nursing, training and certification are very elastic terms, and may refer to a course of six weeks in a special hospital as well as to one of three years in a large general hospital.

Surely it is time that the minimum standard of nursing education should be defined by authority, and that nurses who are endorsed by their training schools, and who have given proof that they have attained to this standard, should be enrolled in a register issued under the authority of the State.

Your correspondent says that "character, earnestness of purpose, and personal suitability are beyond the scope of registration." But the training schools would scarcely retain for three years the services of probationers who did not give evidence of these qualities. On the other hand, it is possible to possess every desirable virtue, and yet to be a very unsafe person from a nursing standpoint. Presumably "Nurse Z," whose letter was recently quoted in the British Medical Journal, and who had been "attached for years to a religious body," was most estimable from the personal standpoint. Nevertheless her ignorance and presumption made her an exceedingly dangerous attendant for the sick, and it is inconceivable that any professional authority after testing her knowledge would have conceded her the right to describe herself as a trained nurse.

Again, your correspondent will scarcely contend that the qualities to which she alludes are not equally requisite for medical practitioners, yet I doubt if she would venture to urge the repeal of the Medical Acts on the ground that personal qualities are not registrable, or to assert that the effect of these Acts has not been to raise the standard of medical education, to further the efficient care of the sick, and the honour and dignity of the medical profession. Why then should we not suppose that the passage of a Nursing Act, defining a minimum standard of nursing education, and regulating the calling of nursing, should be equally fruitful in good results?

The fact that the registration of nurses is already in force in Cape Colony, Natal, New Zealand, and in four of the United States, and that other countries are working to obtain it, is proof that the need for such a system is widely felt. Recently Miss Isla Stewart, Matron of St. Bartholomew's Hospital, put the registration question thus: "With it will not dawn the day of perfection; it is merely a step—a big step—in the way to that most illusive and impossible of conditions. It will help the best and exclude the worst, and what can one ask more?"—I am, etc.,

London, W., Aug. 19th. Margaret Breay.

MEDICAL MEN AND MIDWIVES.

Sir,—I have every sympathy with the State in endeavouring to secure adequate nursing during parturition, but will they at the same time provide a suitable fee for doctors (registered medical practitioners) who are supposed to be at the beck and call of the "certified midwives" when they find they are in

trouble? In an ordinary way we take the rough with the smooth, but I fear there may be a large proportion of the former under the new conditions, and very likely no fee at all, but we shall be expected to attend for humanity's sake as usual: that is all very well when one gets any credit from it, but even supposing that a certified midwife could so easily make out a presentation, by the time the doctor was sent for it would be very possibly too late to take the usual measures. Consequently the doctor would be blamed for the inevitable result, let alone the fact he had done it for nothing.—I am, etc.,

August 24th. NOT A CHARITABLE INSTITUTION.

THE VACCINATION ACT.

SIR,—You have inserted many letters about the Vaccination Act and the fees paid to public vaccinators, but none of your correspondents have mentioned one important fact. Whilst the fees paid for successful vaccination are higher than under the old Act, the work is greatly increased. But in addition to the vaccinating the public vaccinator has another duty, and that is to send out notices to all those on the list supplied to him by the vaccination officer. I do not know what the experience of others may be, but I find I vaccinate very few of these, and that when I call I am met at the door by a blank refusal, and the remark that "their own doctor will do their child." For this we receive only a shilling fee. No self-respecting man can like this, and I have always thought that the higher fee paid for vaccinating was intended somewhat as a compensation for this very unpleasant part of his duties.—I am, etc.,

BRIAN RIGDEN,
Canterbury, Aug. 23rd. P.V. for Canterbury.

OBITUARY.

PROFESSOR NOCARD,

Member of the Paris Academy of Medicine.

EDMOND ISIDORE ETIENNE NOCARD, of the Veterinary School of Alfort, whose death has already been announced in the BRITISH MEDICAL JOURNAL, was born at Provins on January 29th, 1850, and was therefore in his 54th year. He entered the Alfort School in 1868, and rose by successive steps to be *chef de clinique*, Professor of Internal Pathology, Professor of Contagious Diseases, and Director. An ardent disciple of Pasteur, he gave himself wholly from 1890 to the end of his life to bacteriological studies, collaborated with Dr. Roux, and became head of a department in the Institut Pasteur. In 1882, when tetanus was still looked upon as a nervous affection, Nocard regarded it as a communicable disease. His experimental inoculations gave negative results, but this did not shake his conviction that the disease was parasitic and contagious, and soon the discovery of the tetanus bacillus confirmed his hypothesis. In 1884 he studied and classified actinomycotic tumours in animals; recently at the Academy of Medicine he expressed the opinion that the group to which these affections belong is more complex than clinicians generally believe, and he suggested that actino-bacillosis, a condition simulating actinomycosis, should find a place therein. Between 1885 and 1899 appeared his researches on the bulbar lesions of rabies, on anthrax, its etiology and treatment, with a refutation of allegations as to accidents due to anthrax vaccination, on nodular peribronchitis and on peripneumonia in bovine animals, and on the true nature of contagious mammitis in horned cattle. In addition to all these must be mentioned his work on tuberculosis, which of itself would have been sufficient to establish a scientific reputation of the highest order. Beginning in 1883 he applied the method of Ehrlich to the diagnosis of local tuberculosis; in 1885 he published the results of his investigations on tuberculosis in the horse and the ox, and in 1886 those of researches on the tuberculosis of birds. On the basis of his scientific researches and his veterinary experience, he firmly believed that tuberculosis was essentially the same disease in man and in animals of every species and that it was communicable from one to the other. Those who took part in the Congress on Tuberculosis held in London in 1901 will remember with what energy he defended this view against the doctrine put forward by Koch. The most important part of his work has been collected into volumes, of which the following may be mentioned: *Les Maladies Microbiennes* (1898), *La Tuberculose des Animaux Domestiques*, and *La Rage* (1894). In a lecture delivered at an agricultural meeting held in March of the present year, he announced that he was on the eve of publishing what he believed to be the rational method of treating aphthous fever.

Professor Nocard was a member of the Council of Hygiene for the Seine Department, of the Society of Biology, of the French Agricultural Society, and General Secretary of the Central Society of Veterinary Medicine. He was also a member of our own Royal Agricultural Society. In 1886 he was elected a member of the Académie de Médecine in succession to Bouley. In 1892 he received the decoration of Officer of the Legion of Honour. Distinctions were showered upon him by foreign Governments. He was a Commander of the Order of Leopold of Belgium, of that of SS. Maurice and Lazarus of Italy, and of the Medjidieh.

Professor Nocard was buried with military honours. The pall-bearers were the Presidents of the Académie de Médecine, of the Central Society of Veterinary Medecine, and of the Central Association of Veterinarians, and by MM. Metchnikoff, Barriér, Vassilière, Lépine, and Chauveau. At the grave-side speeches were delivered by M. Chauveau, representing the Minister of Agriculture; Dr. Yves Ménard, delegate of the Académie de Médecine; M. Chenal, representing the General Council of the Seine; Dr. Bloch, Vice-President of the Society of Biology; Dr. Moissan, Vice-President of the Council of Hygiene; Dr. Roux, Assistant Director of the Pasteur Institute; M. Hollard, of the Society of Practical Veterinary Medicine; the Director of the Alfort School; the President of the Central Society of Veterinary Medicine; the Director of the Veterinary School of Brussels; Captain Petrides, of the Greek Army; and by representatives of the Central Association of Veterinarians, and of the pupils of the deceased Professor.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

STAFF SURGEONS E. J. MORLEY, F.R.C.S., H. W. MACNAMARA, J. H. WHELAN, M.D., P. P. J. COOLICAN, E. R. DIMSEY, D.S.O., J. K. MCDONNELL, M.D., and H. MEIKLE have been promoted to be Fleet Surgeons, August 21st. Their previous commissions are dated: Surgeons, August 21st, 1883; Staff Surgeons, August 21st, 1895. Fleet Surgeon Whelan served with the Royal Marine Battalion at Suakim in 1884-5, and had medical charge of an expedition to the Lama Forest country, East Africa (medal with clasp and Khedive's bronze star). Fleet Surgeon Dimsey was with the expedition sent against the King of Benin in 1897, including the capture of Benin city (mentioned in dispatches, medal with clasp, and appointed Companion of the Distinguished Service Order). Fleet Surgeon McDonnell took part in the expedition sent against King Koko, of Nimby, on the River Niger in 1895 (medal with clasp); in the same year he landed with troops dispatched to punish Mburuk, a rebellious chief, resulting in the capture of his stronghold, M'weli (inscription added to Africa medal); and was with the expedition against the King of Benin in 1897, and at the capture of Benin city (clasp). The other officers mentioned above have no war record.

The following appointments have been made at the Admiralty: CYRIL J. MANSFIELD, M.D., Staff Surgeon, to the *President*, additional, temporary, August 17th; JAMES BRADLEY, M.D., Staff Surgeon, to the *President*, for three months' hospital study, August 19th; CHARLES W. SHARPLES, Fleet Surgeon, to the *President*, for temporary service at the Royal Navy Rendezvous, September 7th; GEORGE A. DREAPER, Staff Surgeon, to the *Fox*, and EDMUND CORCORAN, Staff Surgeon, to the *Boscawen*, for Portland Sick Quarters, August 22nd.

THE DEFECTS OF THE NAVAL MEDICAL SERVICE.

MR. GERALD SICHEL (Guy's Hospital) writes: "A Naval Medical Officer," in the BRITISH MEDICAL JOURNAL of August 22nd, appears to consider that because the medical profession is overcrowded I ought not to have made public the disabilities from which medical officers in the navy suffer. He might just as well contend that because of this overcrowding we ought not to interfere with the sweating of their medical officers by clubs and Friendly Societies. It is just on account of this overcrowding that whether the Admiralty carry out reform or not, they know that presumably they can always rely on a certain number of candidates at their entrance examinations. If "A Naval Medical Officer" and their Lordships are satisfied with some of the overplus of an overcrowded profession whatever the quality, when by carrying out the reforms I have outlined they could make the navy an attractive profession for men with the higher qualifications, I can safely leave it to your readers to judge whether they, or Dr. Bryant and myself, are the true friends of the navy and the profession.

I am sorry that "A Naval Medical Officer" thinks it necessary to use such a strong term as "vilify" when referring to my criticism of the Consultative Board. I simply said, and I say again, that unaided they will, in my opinion, be unable to solve satisfactorily the questions with which they will have to deal.

He further says I can know nothing of the working of this Board. This is perfectly true, and what I complain of. Even "A Naval Medical Officer" admits that the Service is not perfect, and under the circumstances I consider that until the deliberations of this public Board, appointed to consider a matter of public interest, are made known through the medium of the public or medical press, I have every right as an independent medical man and taxpayer to express my strong disapproval of the Admiralty's method of dealing with the profession. I stated—and the correctness of this statement is not, I see, questioned

—that the first duty of such a Board is to institute an exhaustive inquiry into the conditions under which we work. I would ask "A Naval Medical Officer" has this been done?

It is to be regretted that Service conditions necessitate "A Naval Medical Officer" writing anonymously, but there is one passage in his letter which enables me to make a very shrewd guess at his identity. I would point out that my letters have been written from a strong sense of duty, and as the result of personal experience and conviction. I am glad to notice that although he abuses my methods, "A Naval Medical Officer" is unable to contradict a single one of the statements which I have advanced in support of my contention that the Naval Medical Service requires thorough reorganization.

ROYAL ARMY MEDICAL CORPS.

Majors E. H. L. Lynden-Bell, J. Riordan, R. H. Firth, R. R. H. Moore, A. E. Tate, C. E. Faunce, and H. J. Wyatt to be Lieutenant-Colonels. August 4th. Their previous commissions bear date: Surgeon, August 4th, 1883; Surgeon-Major, August 4th, 1895. Their war records are as follows: Lieutenant-Colonel Lynden-Bell: Burmese expedition, 1885-6 (medal with two clasps); Lieutenant-Colonel Riordan: Burmese expedition, 1885-6 (medal with clasp); North-West Frontier of India campaign in 1897-8 with Tirah expeditionary force (medal with two clasps); Lieutenant-Colonel Tate: Burmese expedition, 1886-9 (medal with two clasps); Chitral campaign, 1895 (medal with clasp), and South African war, 1899-1901, including relief of Kimberley, battle of Paardeberg, and numerous actions in various parts of the country; Lieutenant-Colonel Faunce: Nile expedition, 1884-5 (medal with clasp and Khedive's bronze star), and South African war, 1899-1901 (mentioned in dispatches); Lieutenant-Colonel Wyatt: South African war, 1899-1900.

Colonel W. McWatters retires on retired pay, August 26th. He was appointed Assistant Surgeon, October 2nd, 1865; Surgeon, March 1st, 1873; Surgeon-Major, October 2nd, 1877: Brigade-Surgeon, December 27th, 1891; and Surgeon-Colonel, May 7th, 1896. He was in the Afghan war in 1878-80 (medal), and with the Hazara Expedition in 1891 (mentioned in dispatches, medal with clasp).

Major G. T. H. Thomas, F.R.C.S.Edin., retires on retired pay, August 26th. He joined as Surgeon, February 3rd, 1883, and became Surgeon-Major twelve years thereafter. He served in the South African in 1899-1900, and has the Queen's medal with two clasps.

Captain G. E. Hughes retires from the service, receiving a gratuity, August 26th. Appointed Lieutenant January 30th, 1892, he became Captain, January 30th, 1895.

Lieutenant W. C. Stevenson, M.D., resigns his commission, August 26th. He was appointed to the department, June 27th, 1901. He was in the South African war, 1902.

Major E. J. Lawless, on having relinquished his temporary commission for service in South Africa, is granted the honorary rank of Major in the army, and retains his uniform, August 7th.

Exchanges.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 5s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

A Lieutenant-Colonel R.A.M.C., who expects to be ordered abroad early next year, wishes to exchange with an officer recently home.—Address, "Sey-Woon," c.o. Holt and Co., 3, Whitehall Place, S.W.

A Major, R.A.M.C., due home from India towards the end of this trooping season, wishes to exchange with an officer coming home in the early part of the season.—Apply to Major, R.A.M.C. Mess, Bangalore.

A Lieutenant-Colonel R.A.M.C., under orders for India about December next, requires an exchange to remain at home another year or so.—Address, "Parbine," c.o. Messrs. Holt and Co., 3, Whitehall Place, London, S.W.

A Major ordered to India, expecting to sail about Christmas, wants to exchange to remain at home till next trooping season.—Address "Serratus," care of McGrigor, 25, Charles Street, St. James's, London.

ARMY MEDICAL RESERVE.

Lieutenant W. J. Reid, Sherwood Foresters Volunteer Infantry Brigade Bearer Company, to be a Surgeon-Lieutenant, August 26th.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel T. J. H. Wilkins, Madras Establishment, is confirmed in the appointment of Principal Medical Officer, Burmah Command.

PAY AND PENSIONS IN THE INDIAN MEDICAL SERVICE.

Sardam writes: With reference to the article on pay and pensions of the Indian Medical Service in the British Medical Journal of July 18th, I would invite your attention to a hardship which Indian Medical Service officers who elect to join the Gaol Department are at present suffering under. By an order of the Government of India they are debarred from reverting to ordinary military employ, hence they are debarred from promotion to rank of Colonel (P. M. O.) carrying the higher pay and pension. Such officers are, therefore, under present rules, absolutely incapable of attaining the higher pension. The pay of the Gaol Department is, on the whole, about on a par with that of Indian Medical Service officers in military employ, but the work is, of course, infinitely harder, although the life is more settled. I think this is hardly a reasonable arrangement, the more so as in no other department of civil employ open to Indian Medical Service men, such as civil surgeoncies, sanitary, chemical examiners, etc., are they so debarred from reverting and being promoted to a principal medical officership. Further promotion to the Inspector-General of Prisons is not limited to medical officers in gaol employ (the present Inspector-General, Madras, was a civil surgeon). Under these circumstances I think you will concur with me that it would be only a very reasonable concession if the Inspector-General of Prisons carried with it the same higher pension as does promotion to a principal medical officership. This would make an increase of the administrative posts carrying higher pension open to senior officers of the Indian Medical Service—an increase the necessity for which has already being remarked on in the article in the Journal of date referred to.

AMBULANCE SURGEONS HONOURED.

The number of ambulance men sent out by the Bolton Corps during the South African and China wars was 137, the largest number, we believe, of any provincial town. His Royal Highness the Prince of Wales, as Grand Prior of the Order of St. John, has conferred the special medals (issued for meritorious service during the South African war) on Dr. Johnston and his colleague, Dr. Hilton Thompson, of the Bolton Corps St. John Ambulance Brigade. The medals are awarded them for "service in the cause of humanity." Forty of these medals are granted in the kingdom for services rendered during the mobilization of men for the late war. The recipients are entitled to wear the medal on military uniforms, as it is a King's medal. The Admiralty is said to be entertaining the idea of forming an Auxiliary Royal Naval Sick Berth Reserve, to consist of ambulance men.

MEDICO-LEGAL AND MEDICO-ETHICAL.

CANVASSING FOR CLUB PATIENTS.

A correspondent writes to complain that the Bournemouth Provident Association appears to contemplate canvassing for members, and asks us to say what is the difference between a group of medical men canvassing for patients, and the same action if performed by an individual, or we presume by a medical aid society?

*** Assuming the facts to be as stated, we confess we can see no difference, and unless medical men are willing to forego canvassing in provident associations promoted by themselves, it will be impossible in our opinion for the General Medical Council to condemn canvassing in other cases.

A QUESTION OF LIABILITY FOR FEES.

Reader asks for information on the following points: He was sent for by the manager of a mill to attend one of the workmen there who had been injured in an accident. He attended to the patient and was informed by him that the millowners would pay for the doctor. The manager has since left and is now in America, and the millowners on being applied to denied liability. He desires to know: (1) Whether the firm is liable; (2) the best course to be taken if, being liable, the firm refuse to pay; (3) also whether as medical officer of health he is obliged to give factory proprietors notice before making an official visit to inspect premises.

*** 1. It is to be feared the firm is not liable, unless they had authorized their manager to act for them in cases of accidents in sending for a doctor. Otherwise the manager only would be personally liable.

3. The medical officer of health is not bound to give notice before inspecting factories in his district. He may demand admission at any time between 9 a.m. and 6 p.m., and if refused may apply to a magistrate for an order.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

BACTERIOLOGICAL DEPARTMENT, CAMBERWELL.

The report of the Bacteriologist for the Borough of Camberwell, Mr. E. C. Bousfield, for the year 1902-3, shows that the aggregate work for the year increased, but that the number of throat swabs examined for diphtheria slightly decreased in correspondence with some decline in the prevalence of diphtheria. Of 234 throat specimens examined, the results were positive in 111 cases, negative in 113, and doubtful in 10. The examination of sputa for tubercle proved bacilli to exist in 22 cases, while in 76 the result was negative. The blood reaction of 36 cases of suspected typhoid was ascertained, with positive results in 13 cases, negative in 21, and doubtful in 2.

Milk was also examined for tubercle, and in 4 out of 36 samples the B. tuberculi were found. Mr. Bousfield points out that the milk from a single tuberculous cow may infect the whole supply from a dairy, and shows that the mere knowledge that samples are being taken renders dairymen more careful about their cows. He recommends his Council to include by resolution under Sections LVIII and LXXI of the London Health Act, 1891, tuberculosis as one of the diseases affecting milk.

The report includes some interesting charts illustrating the fluctuation of population, rateable value, and diphtheria mortality in Camberwell during the last fifty years. Among other things these charts shows that a fall has occurred in the last seven years in the curve of the death-rate from diphtheria, which is quite out of proportion to the decline of the notification curve. This fact, Mr. Bousfield points out, is due to the introduction of antitoxin: and it is the more remarkable because, as he says, the number of notifications is greatly diminished owing to bacteriological examinations. The real decline in the mortality-rate, therefore, is even larger than that shown. In conclusion, Mr. Bousfield suggests that a fee of one shilling should be allowed to the medical attendant for each swab sent from a primary case of diphtheria when the diagnosis is positive, believing that it would lead to the discovery of those otherwise unrecognized cases which keep epidemics alive.

THE DEATH-RATE IN ONE-APARTMENT HOUSES IN GLASGOW.

Dr. A. K. Chalmers has recently published an inquiry into the death-rate of one-apartment houses in Glasgow based on the census returns of 1901, which deals with this important subject in a suggestive manner. He first of all makes the point clear—a point too little understood or remembered—that variations in a death-rate may arise from circumstances not related to sanitation at all. In connexion with this he discusses the question of age distribution of the one-apartment population, which might theoretically explain the whole of the difference between the death-rate of these and larger dwellings. He is unable to make accurate

correction for this source of error, but gives reasons for believing that it does not materially vitiate results.

In one-apartment dwellings in the entire city the death-rate was 32.7 as compared with 19.5 for Glasgow as a whole. It varied in five districts of the city from 25.4 to 41.2, the death-rate for the entire population of these five districts varying from 13.7 to 31.1 per 1,000. It is clear, therefore, that these one-apartment houses must manifest conditions which differ greatly among themselves. Taking the statistics of the entire city, the following table brings out the essential points of the comparison between dwellings of different sizes:

Houses of	Death-rate per 1,000 from All Causes.	Zymotics.	Phthisis.	Respiratory Diseases.
One apartment	32.7	7.4	2.4	7.6
Two apartments	21.3	4.5	1.8	4.6
Three apartments	13.7	1.9	1.2	2.4
Four apartments and upwards	11.2	1.0	0.7	2.0

There is a uniform excess in one-apartment houses of death-rate from the different causes which is most significant. When we attempt to analyse the causes of the excessive mortality shown in the preceding table, the task is one of great difficulty. No doubt closeness of aggregation bears a great part in it. Vitiated air and the greater facility for the spread of infection must be potent influences. The one apartment imposes physical restrictions in which it must be more difficult to comply with the demands of healthy existence than in houses of larger size: and this difficulty is greater precisely among those who by education and training are least fitted to engage in the struggle that is demanded.

The fact cannot, however, be lost sight of that the excessive death-rate is not solely and probably not chiefly due to the occupation of one-apartment dwellings. The occupation of such dwellings is a useful index, connoting certain social circumstances which are even more important than sanitary circumstances. Persons do not live in these apartments by choice. They have fallen to this level, or failed in the struggle of life ever to get above it. There is the same fallacy as occurs when the mortality of coal-miners is compared, for instance, with that of tailors. Liberal deduction must be made for the fact that coal-miners must be robust before choosing such an occupation, and that they necessarily leave it for more sedentary work when they cease to be robust. Similarly it is the poverty-stricken who live in one-apartment dwellings, and the one factor contributing to their high death-rate more probably than any other is deficient food. Personal infection, however, bears an important part in the problem, as shown by the fact that the zymotic death-rate is four times, the death-rate from phthisis twice as high, and from respiratory diseases three times as high as in dwellings containing three apartments.

ARSENIC IN SWEETS AND FOODSTUFFS.

ACCORDING to the *Times* of August 25th, Mr. Otto Hehner, public analyst, reporting to the Isle of Wight Council, states that in one sample of sweets submitted from that council's district he found a notable trace of arsenic. They were small chocolate-coloured sugar cubes, containing about one-fifteenth of a grain of arsenic per pound. The sweets were not coated with chocolate, as might be inferred from their colour, but with a mineral colour, oxide of iron, which almost invariably contained arsenic, and which was an altogether improper substance to use even when it was pure. "Whether this arsenic could produce poisonous effects," continued Mr. Hehner, "unless the sweets were consumed in very large quantities appears to me doubtful, but it is evident that circumstances might readily occur that might lead to a charge of murder against perfectly innocent persons if the sale of such compounds were permitted. As I have found arsenic in several other food materials coloured with oxide of iron, such as bloater paste, anchovy sauce, and chocolate powders, I have ventured to draw the attention of the Royal Commission on Arsenical Poisoning, which is still collecting evidence, to the above case, and hope that steps will be taken to prevent the use by manufacturers of food stuffs of oxide of iron as a colouring agent."

CERTIFICATION OF PAUPER LUNATICS.

SABERTON, a district medical officer, writes that he has to meet a certain J.P. in reference to the certification of pauper lunatics, and as he has had serious difficulties with some of these cases in the past, he is apprehensive of further difficulties in the future. He asks whether the Lord Chancellor would in any such case be the "appeal body."

*** Our correspondent should remember that when called upon by a magistrate to certify the mental condition of a pauper lunatic, he is not then acting in his official capacity as a district medical officer, but as a private medical practitioner called upon by a magistrate to give him the requisite medical assistance. Should he in any such case find it impossible to get the provisions of the Lunacy Act complied with, we consider that the proper course would be for him to forward a statement of the facts of the case to the Lunacy Commissioners, and to abide by any instructions he may receive from them. Their office is 66, Victoria Street, S.W.

HEALTH OF WANDSWORTH.

DR. CALDWELL SMITH, the Medical Officer of Health, estimates the population of Wandsworth for 1902 as 245,803. The birth-rate was 26.3 and the death-rate 13.4 per 1,000. The infant death-rate is returned as 126, and the usual tables of vital statistics are incorporated in the report. Some thirty pages of the report are devoted to the small-pox outbreak which affected Wandsworth less than most metropolitan districts. In reference to diphtheria on the Hyde Farm Estate, which has since its construction been liable to this disease, Dr. Smith reports 28 cases, and attributes the prevalence of the disease to "houses built upon a wet soil which contains a large portion of organic matter ... the germ existing in the superficial layers of the soil. It is probable that the infection is conveyed to the mouth by the hands of children playing with this soil, and consequent infection from person to person." Twenty-two cases of typhoid were traced to eating shellfish (14 to oysters), but it was impossible to trace the source of the oysters. Dr. Smith reports specially upon cancer, upon the water supply, and upon housing the working classes.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 9,096 births and 4,548 deaths were registered during the week ending Saturday last, August 22nd. The annual rate of mortality in these towns, which had been 14.4, 14.3, and 15.7 per 1,000 in the three preceding weeks, was again 15.7 per 1,000 last week. The rates in the several towns ranged from 4.0 in Hornsey, 4.9 in King's Norton, 6.9 in Reading, 7.0 in Stockton-on-Tees, 7.1 in Barrow-in-Furness, 7.9 in Derby, and 8.6 in Willesden and in West Bromwich, to 21.3 in Hull, 21.8 in Newcastle-upon-Tyne, 22.1 in Liverpool, 22.6 in Bolton, 23.5 in Wigan, 25.5 in Sheffield, 26.3 in Middlesbrough, and 32.6 in Bootle. In London the rate of mortality was 14.4 per 1,000, while it averaged 16.3 in the other seventy-five large towns. The death-rate from the principal infectious diseases averaged 3.5 per 1,000 in the seventy-six large towns; in London this death-rate was equal to 2.6 per 1,000, while it averaged 3.8 per 1,000 in the seventy-five large provincial towns, among which the highest death-rates from the principal infectious diseases were 6.5 in Liverpool, 6.6 in Middlesbrough, 6.8 in Norwich, 7.1 in Warrington and in Salford, 8.2 in Hanley, 9.2 in Wigan and in Hull, 9.8 in Aston Manor, and 10.3 in Bootle and in Sheffield. Measles caused a death-rate of 1.2 in Blackburn, 1.4 in Sunderland, 1.5 in Sheffield and in Merthyr Tydfil, 1.6 in Stockport, in Warrington, and in Middlesbrough, 2.0 in Aston Manor, and 3.0 in Ipswich; whooping-cough of 1.1 in Oldham and 1.7 in Wigan; and diarrhœa of 5.0 in Birkenhead, 5.4 in Bury, 5.5 in Grimsby, 6.4 in Norwich, 6.7 in Wigan, 7.9 in Aston Manor, 8.2 in Hanley and in Sheffield, 9.2 in Hull, and 10.3 in Bootle. The mortality from scarlet fever, from diphtheria, and from "fever" showed no marked excess in any of the large towns. One fatal case of small-pox was registered in Gateshead, and one in Newcastle-on-Tyne, but not one in any other of the seventy-six large towns. The number of small-pox patients under treatment in the Metropolitan Asylums Hospitals, which had been 66, 48, and 45 on the three preceding Saturdays, rose again to 52 on Saturday last, August 22nd: 13 new cases were admitted during the week, against 9, 4, and 9 in the three preceding weeks. The number of scarlet-fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1,795, against 1,726, 1,771, and 1,758 at the end of the three preceding weeks: 225 new cases were admitted during the week, against 237, 216, and 215 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, August 22nd, 903 births and 493 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 14.7, 14.6, and 15.4 per 1,000 in the three preceding weeks, fell last week to 15.1 per 1,000, and was 0.6 per 1,000 below the mean rate during the same period in the seventy-six large English towns. The rates in the eight Scotch towns ranged from 12.8 in Greenock and 13.5 in Edinburgh, to 10.4 in Paisley and 17.2 in Dundee. The death-rate from the principal infectious diseases averaged 3.0 per 1,000 in these towns, the highest rates being recorded in Glasgow, Dundee, and Paisley. The 232 deaths in Glasgow included 3 from measles, 2 from diphtheria, 4 from whooping-cough, and 5 from "fever." Three fatal cases of diphtheria, 2 of whooping cough, and 2 of "fever" occurred in Edinburgh. Two deaths from whooping-cough, and 2 from "fever" were registered in Dundee. Of the 65 fatal cases of diarrhœa, 38 occurred in Glasgow, 8 in Dundee, 6 in Edinburgh, 5 in Paisley, and 3 each in Aberdeen and Leith.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, August 22nd, 563 births and 348 deaths were registered in six of the principal Irish towns, the births being 62 over those recorded in the previous week and the deaths 43 in excess. The mean annual death-rate of these towns, which had been 14.9, 21.5, and 13.7, per 1,000 during the preceding three weeks, rose to 19.2 per 1,000, this number being 3.5 over the mean rates during the same period in the seventy-six English towns. The death-rates ranged in these six Irish towns from 9.3 in Waterford and 15.0 in Belfast to 23.3 in Dublin and 27.7 in Londonderry. The death-rate from the principal zymotic diseases in the six towns averaged for the week 3.2 per 1,000, against 2.5 per 1,000 in the preceding period. The highest rate, 10.1, was reached in Londonderry and is explained by 4 deaths ascribed to diarrhœa, 1 to diphtheria, 2 to whooping-cough and 1 to typhus fever. No deaths were recorded from small-pox in any part of Ireland, but there was a second death from typhus in Galway. One death in Belfast was ascribed to measles, and 2 to enteric, but no deaths were recorded in any part of Ireland from scarlet fever.

MEDICAL NEWS.

AUTOMOBILES.—The fifth annual motor car trials organized by the Automobile Club are to be held this year from September 18th to 26th, both days inclusive, and it is understood that 130 cars have been entered, each of a different make. The object of these trials is to test reliability and not speed, and as a matter of fact stringent regulations are laid down to prevent any attempt at fast driving. Every car will have to complete a distance of 1,000 miles, and during the whole period of trial will be under the continuous observation of an official of the club. Every repair or even minor adjustment required during the trials will be noted, and marks awarded even for such points as absence of dust raising or the reverse. The result, therefore, should be to put those who desire to purchase cars for business purposes rather than for pleasure in possession of much useful information.

MEDICAL VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BARNWOOD HOUSE HOSPITAL FOR THE INSANE, Gloucester.—Junior Assistant Medical Officer, resident. Salary, £150 per annum.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Resident Surgical Officer. Salary, £100 per annum.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES.—Clinical Assistant. Appointment for three months. Honorarium at the rate of 52 guineas per annum.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—House-Surgeon, resident. Salary, £160 per annum.

BURY INFIRMARY.—Junior House-Surgeon, resident. Salary, £90 per annum.

CAMBRIDGE LUNATIC ASYLUM.—Second Assistant Medical Officer, resident. Salary, £120 per annum.

CARLISLE: CUMBERLAND INFIRMARY.—Resident Medical Officer. Salary, £80 per annum.

CHARTHAM: KENT COUNTY ASYLUM.—Third Assistant Medical Officer, resident. Salary, £140 per annum.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Resident House-Physician and Surgeon. Salary, £120 per annum.

CHORLEY: RAWCLIFFE HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

COLCHESTER: ESSEX AND COLCHESTER GENERAL HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

DEWSBURY AND DISTRICT GENERAL INFIRMARY.—House-Surgeon, resident. Salary, £100 per annum.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—(1) Medical Officer for Casualty Department. Appointment for six months. Salary at the rate of £100 per annum. (2) House-Surgeon, resident. Honorarium of £25 at completion of six months' service.

GLOUCESTER GENERAL INFIRMARY.—Assistant House-Surgeon, resident. Appointment for six months. Salary at the rate of £30 per annum.

HOSPITAL FOR DISEASES OF THE THROAT, Golden Square, W.—(1) Senior Clinical Assistant, (2) Anæsthetist.

HOSPITAL FOR SICK CHILDREN, Great Ormoud Street, W.C.—Honorary Radiographer.

LIVERPOOL: WEST DERBY UNION WORKHOUSE AND HOSPITAL.—Assistant Medical Officer, resident. Salary, £120 per annum.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Assistant Resident Medical Officer. Honorarium at the rate of 50 guineas per annum.

METROPOLITAN HOSPITAL, Kingsland Road, N.E.—(1) Casualty Officer, (2) House-Physician, (3) House-Surgeon, (4) Assistant House-Physician, (5) Assistant House-Surgeon. Appointments for (2), (3), (4) and (5) for six months. Salary, £150 per annum for (1) and at the rate of £40 per annum for (2) and (3), and £20 for (4) and (5).

MANCHESTER CHILDREN'S HOSPITAL.—Junior Resident Medical Officer. Appointment for six months. Salary at the rate of £80 per annum.

PRESTON ROYAL INFIRMARY.—Assistant House-Surgeon, resident. Salary, £90 per annum.

SALFORD ROYAL HOSPITAL.—Junior House-Surgeon. Appointments for six months. Salary at the rate of £70 per annum.

SHEFFIELD ROYAL INFIRMARY.—Junior Assistant House-Surgeon, resident. Salary, £70 per annum.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon. Appointment for six months. Salary at the rate of £70 per annum.

STAFFORD: STAFFORDSHIRE GENERAL INFIRMARY.—(1) House-Surgeon, resident. Salary, £120 per annum. (2) Assistant House-Surgeon, resident. Salary, £80 per annum.

WAKEFIELD: CLAYTON HOSPITAL AND WAKEFIELD GENERAL DISPENSARY.—Junior House-Surgeon, resident. Salary, £80 per annum.

WEST HAM AND EAST LONDON HOSPITAL, Stratford, E.—Junior House-Surgeon, resident. Salary, £75 per annum.

MEDICAL APPOINTMENTS.

EASTON, H. A., M.R.C.S., L.R.C.P., Medical Officer to the No. 4 District of Croydon Union, *vice* Dr J. G. Deacon (deceased).

GROVES, Henry Charles, L.R.C.P. and S.I., Medical Officer of Health to the Monmouth Rural District Council.

KING, Arthur, M.B., C.M., D.P.H., R.C.P.I., reappointed Medical Officer of Health to the Watford Urban District Council.

MORRIS, Sylvanus Glanville, M.D.Edin., Surgeon to the Lockets Merthyr Collieries, Mardy, Glam., *vice* Benj. Griffiths, M.D. (resigned).

RAYMENT, E. W., M.B., C.M., Medical Officer of Health to the Pewsey Rural District Council.

SIMON, D. Ap., M.B., Ch.B., District Medical Officer and Public Vaccinator for the Western District of Llandilofawr Union, *vice* S. Glanville Morris, M.D. (resigned).

SOLTAU, Henry, L.R.C.P. and S.E., L.F.P.S.Glasg., Superintendent and Secretary of the Medical Missionary Association.

DIARY FOR NEXT WEEK.

POST-GRADUATE COURSES AND LECTURES.

Post-Graduate College, West London Hospital, Hammersmith Road, W.—Lectures will be delivered as follows: Monday, 4 p.m., Surgical Cases (Surgical Wards); Tuesday, 5 p.m., Surgical Cases (Lecture Room); Wednesday, 5 p.m., Bacteriology in Gynæcology; Thursday, 5 p.m., Rectal Fistula; Friday, 5 p.m., Medical Cases (Medical Wards).

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 8s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

CHAVASSE.—On August 24th, at Matlock House, Sutton Coldfield, Warwickshire, the wife of Howard S. Chavasse, M.R.C.S.Eng., L.R.C.P.Lond., L.S.A.Lond., of a daughter.

LORRAIN-SMITH.—August 19th, at Westbourne, Windsor Avenue, Belfast, the wife of J. Lorrain-Smith, of a son.

WHALLEY.—August 21st, at Brooklyn Street Lane, Roundhay, Leeds, the wife of Edgar Whalley, M.R.C.S.Eng., L.R.C.P.Lond., of a daughter.

MARRIAGE.

WILLIAMSON—MACKICHAN.—On Thursday, August 20th, at the United Free Church, Bombay, by the Rev. Dr. Mackichan, father of the bride assisted by Revs. R. MacOmish and Alex. S. Crichton, John Rutter Williamson, M.D., of Miraj, Bombay Presidency, sixth son of D. Williamson, Esq., J.P., C.C., Surrey, England, to Edith Eliza, elder daughter of Rev. Dr. Mackichan, LL.D., M.A., Principal of Wilson College, Bombay, and Vice-Chancellor of the University of Bombay. [American and Colonial journals please copy.]

DEATH.

CORFIELD.—On the 26th inst., at Marstrand, Sweden, in his 60th year, William Henry Corfield, M.D., of 19, Savile Row, London, Sanitary Adviser to His Majesty's Office of Works.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London*. The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

H. A. will be obliged to any member who has had to treat Malta fever sent to England for information as to the length of time the temperature kept up, or information as to the treatment by drugs, etc., found useful.

COUNTRY PRACTITIONER would be glad to hear of another practitioner who has dispensed with horses and gone in for motor car. He wishes to know whether in a large country practice where three horses are required a motor car could be used winter and summer and horses dispensed with. What car can be relied upon and probable cost? He has a motor bike, but he wishes a machine that can be used in all weathers.

ANSWERS.

THE SOUTH AFRICAN MEDAL.

TOWN GUARD should apply to the Adjutant-General, War Office, Pall Mall. A claim form will be sent to him which he will be asked to fill in and return, supplying at the same time the name of some officer who can testify to the correctness of his statements.

COACHMEN AND COCKADES.

J. F. T.—In the BRITISH MEDICAL JOURNAL of January 12th, 1895, p. 113, Mr. G. Ambrose Lee (Bluemantle), of the Heralds' College, stated that the opinion given by that College is that the privilege appertains and is confined to the naval and military services, including the militia, yeomanry and volunteers, but that every officer, whatever his rank, as long as he holds Her Majesty's commission, has a right to mount, in the person of his servant, a cockade. The reply evidently alludes to the military cockade only. The civil cockade may be worn by all magistrates placed on the Commission of the Peace by the Lord Chancellor. It is an open question at present whether those who are magistrates by virtue of their being chairmen of district councils, and thus magistrates by Act of Parliament, are entitled to use the cockade during their term of office.

SAL POLYCHRESTUM.

DR. F. W. MENZIES.—Sal polychrestum, otherwise known as Glaser's sal polychrest., is in reality potassium sulphate mixed, probably, with some sulphite. Christison, in his *Dispensatory*, 2nd edition, 1848, says it is much more soluble than sulphate of potash, and it crystallizes from a state of solution in rhombic prisms, the primitive form of that salt. Both the substance itself and its solution have a sulphurous odour. Dr. Duncan (*Edinburgh Dispensatory*) states that "it represents the effects of sulphurous mineral waters." It is used as a purgative in dyspepsia and chronic skin diseases. Dose, ½ to 1 drachm. The substance has fallen into disuse of late. Further information can be obtained from Pereira's *Materia Medica*, vol. i, and from the *United States Dispensatory*, 15th edition, p. 1187.

ADMISSION TO THE BAR.

LEX.—To become a barrister it is necessary to become a member of one of the Inns of Court. They are four in number—Lincoln's Inn, Middle Temple, Inner Temple, and Gray's Inn—and the fees payable at each are about the same, except that Lincoln's Inn is slightly more expensive, and Gray's Inn a little cheaper than the others. When the Inn has been decided upon the candidate must get a form of recommendation signed by two barristers of five years' standing, and he must himself sign a statutory declaration that he labours under none of the disabilities there scheduled; he must also pay entrance fees to the amount of about £40, and deposit either £100 as a security for commons, etc., which will be returned to him on his "call," or, if a university man, he may furnish a security to this amount, in the shape of a bond given by himself with two respectable householders as sureties. He must also pass a simple preliminary examination in (*a*) English language and history, (*b*) Latin language, unless he is a member of a university or has passed one of certain other qualifying examinations. After completing these preliminaries the candidate becomes a member of his Inn. He must now, before being "called," keep twelve terms, and as there are only four terms in the year, three years must elapse from the time of his entering the Inn before he can be "called." To keep a term it is necessary to dine six times in the common hall of the Inn during that term, but if a university man the candidate need dine only three times. Two professional examinations must also be passed—one in Roman law and the other in the various branches of English law, namely, equity, common law, the law of personalty and realty, and the principles of evidence (procedure and criminal law), there is also an examination in constitutional law (English and colonial) and legal history. The chief books to be read are the follow-

ing:—On Roman law: *Sandar's Institutes of Justinian.* On procedure and evidence: *Indermaur's Manual of Practice* and *Stephen's Digest of the Law of Evidence.* On criminal law: *Harris's Principles of the Criminal Law*, with *Warburton's Leading Cases.* On constitutional law and legal history: *Dicey's Law of the Constitution, Anson's Law and Custom of the Constitution, Carter's Outlines of English Legal History*, and *Thomas's Cases on Constitutional Law.* As the particular heads of English law and equity set for the examination vary from time to time, the books to be read on these subjects must necessarily depend on the time when the examination is taken. The books named above should be read in any case. After passing these examinations and keeping twelve terms the candidate is entitled to his "call," but it is necessary to get a Bencher of the Inn to propose it formally. The fees payable on being "called" amount to nearly £100.

MOTORS.

DR. B. DUKE (Clapham Common, S.W.) writes in answer to the query of "Equus" in the BRITISH MEDICAL JOURNAL of August 22nd: *Motors and Motor Driving*, by A. C. Harmsworth, published by Longmans (price, I think, 9s. at Army and Navy Stores), will explain the mysteries. It is one of the Badminton Library Series.

B. F. P. writes: "Motor" (in the BRITISH MEDICAL JOURNAL of August 22nd) is not quite right when he says that only locomobile steam cars are within the reach of the average medical man. A new locomobile, two-seater, costs £190. There are several petrol two-seaters on the market at £150—for instance, the "Humber." I have driven a two-seater "loco" for two years, managing it entirely myself. The constant filling with water becomes irksome. The cost of fuel in excess of that of a petrol car may be ignored, as it is so small a proportion of the whole running cost. I have reduced my repair bill by a large percentage by fitting plain bearings to the engine in place of balls. The balls were constantly breaking. I have run over 800 miles with my own bearings without making a single adjustment. The set of four cost me 30s. I would strongly advise "Motor" not to trust a steam car to a gardener. It is a dangerous as well as a very delicate instrument; Steam at 180 lb. and petrol gas at 40 lb. cannot be controlled by rule of thumb. Constant intelligent watchfulness is a *sine qua non.* For delicacy I find priming the greatest trouble. One drop of oil in the tank will practically ruin the running. An oily or soapy hand thrust into the tank may totally disorganize the whole behaviour of the engine. Sooty rain water is a terror for priming. For reliability, as far as ultimately getting home is concerned without the help of a horse, there is nothing to equal the steamer. Barring an absolute smash one can always get along somehow. The steamer is odourless and soundless, and its running can only be compared to that of a swiftly running boat. It will climb any hill, and is a constant source of joy to a man with a turn for practical mechanics. But don't trust it to the gardener. Rudyard Kipling makes a torpedo chief engineer say, "It takes seven engineers to run a steam car."

PETROL writes: In the BRITISH MEDICAL JOURNAL of August 22nd "Motor" gives his experiences of a Benz car, and compares it with an American steam car, but he does not mention whether he himself has tried the cheap steam car. Having myself used a Benz for some 6,000 miles, I can pretty well understand the troubles and drawbacks mentioned by "Motor." This type of car is now happily obsolete, and I should say that any petrol car of 1903 with a good two-cylinder engine such as the "Aster" governed motor, would be free from the waste of a steam car, and as a mere touch starts the engine there is no use in keeping the engine throbbing at a patient's door. I have myself used one of these cars for 2,500 miles, and after the old trouble of turning the fly wheel and altering mixtures and all the curious tricks to which the heavy, slow-running engine and belt are subject, the modern two-cylinder petrol machine has so charmed me that I find it difficult to speak of it without enthusiasm. Several friends of mine have steam cars of the cheap type, and would be only too pleased to accept a very low offer if any one can be found to take them off their hands. If a man is willing to give £500 to £800 for a good steam car, by all means go in for steam, but if say £350 is the limit, a really good British car with a French 12-horse power double cylinder engine can be got considerably under that price. An intelligent labourer has attended to my cars, and in some 10,000 miles of motoring I have practically never been stranded or required skilled assistance for repairs.

THE LOWER STANDARD EXAMINATION IN HINDUSTANI.

CAPTAIN ROBERT J. BLACKHAM, R.A.M.C. writes: In reply to "Hakim's" query in the BRITISH MEDICAL JOURNAL for August 22nd:

1. The best books for this examination are (1) Naragaw Dass's *Help to Candidates for the Lower and Higher Standards in Urdu;* (2) Jowahir Singh's *Urdu Guide;* (3) Colonel Ranking's *Selected Manuscripts for the Urdu Examinations;* (4) Jowahir Singh's *Aid to Candidates.* The first of these books contains about enough for this examination and no more. Jowahir Singh's book is much fuller and quite sufficient for the higher standard. The book of selected manuscripts published by Colonel Ranking of the Indian Medical Service, who has been Secretary of the Board of Examiners in Oriental Languages at Calcutta for years, is indispensable. The manuscripts are well-lithographed copies of manuscripts actually set at various examinations. Jowahir Singh's *Aid to Candidates* is a book published at my suggestion, and consists of the pieces of English prose for translation into Urdu given at examinations for many years past, with a vocabulary and copious notes.

2. The scope of the examination is (1) translation from the *Bagh of Bahar*, printed in the Persian character into English. This book is a series of quaint fairy tales containing most words and phrases used in colloquial Urdu; (2) translation of a piece of ordinary English prose into fair Urdu; (3) conversation in the vernacular on ordinary military, medical, or general matters with an educated native of India; (4) translation at sight of an arzi or petition written in the Persian character.

3. Candidates are only required to read and write the Urdu, or rather Persian character. The word "Urdu" signifies a mixture, and, as "Hakim" will find, Hindustani is simply a mixture of Sanscrit, Hindi, and Persian, which has evolved a grammar of its own.

4. The gratuity for passing the examination is Rs. 80, equivalent to £5 6s. 8d. sterling. It hardly ever pays for the *munshi*, or teacher, as good men ask Rs. 20 per mensem and half the reward.

Preparation for the examination takes at least three months, so the candidate is practically invariably out of pocket.

The books can hardly be obtained from an English bookseller, so I would recommend "Hakim" to communicate with Munshi Jowahir Singh, Royal Horse Artillery, Munshi, Umballah Cantonment, India, from whom he can obtain all the books he requires and any further information. This *munshi* prepared me for the higher standard in Urdu, and I can recommend him strongly to any candidate.

NOTES, LETTERS, Etc.

APPENDICITIS.

DR. ARTHUR WATSON (Leamington Spa) writes: Interested in the letter of Dr. Caskie, I have no doubt whatever of one principal cause of appendicitis, namely, the cooking of various foods in vessels enamelled inside. Inspection of any of them, after much use, reveals a number of dark spaces whence the enamel has chipped off under heat and safely traversed the intestines of the family, it is to be hoped, for I doubt not the upper bowel at any rate gets most of the detached speculae along with the food. The suggestion is not new. Long ago I gave away all such utensils of my household, explaining to the recipients my reason.

THE TREATMENT FOR CONSUMPTION.

DR. WM. WHITELAW (Kirkintilloch) writes: The most of botanical authorities, orthodox and quack, are eloquent on the deobstruent properties of carrots. Good old Neligan says: "Carrot-root, when boiled, forms one of the most nutritive of our esculent vegetables. In medicine it is used as an external application in the form of poultice to stimulate foul, indolent, and gangrenous sores; it corrects the fetor and promotes the separation of the sloughs." In Barton and Castle's *British Flora Medica* will be found this paragraph: "Margraf directs the recent roots (of the carrot) to be cut, well washed, and beaten into a pulp; the juice of which is to be expressed through a sieve and inspissated to the consistence of honey, in which state it may be used at table instead of sugar, and is well adapted for infantile consumptive coughs, and for worms." The result of Dr. Dulberg's investigation will be waited for with as much interest by some people as that of Mr. Chamberlain's fiscal inquiry.

AN AUTHENTICATED CENTENARIAN.

A CORRESPONDENT of the *Dundee Advertiser* has been investigating the case of Mrs. Alexander Milne, of Montrose, whose age was given on March 9th as 102 years. In the issue of August 25th it is stated that the marriage and baptismal registers of the parish of Fordoun have been examined, with the result that her father, James Coutts, is shown to have been married to Rachel Hepburn on January 2nd, 1795. The entry for March 24th, 1801, is: "James Coutts, subtenant in West Carnhey, had his daughter Jean baptized. Witnesses were David Milne, etc." Her sister Margaret was baptized June 25th, 1803, taught a dame's school in Fordoun, and became chargeable to that parish on January 2nd, 1874, when her age was given as 70 years. She died in 1886.

LETTERS, COMMUNICATIONS, ETC., have been received from:
A Alpha. **B** Mr. W. F. Brook, Swansea; Miss M. Breay, London; Mr. L. A. Bidwell, London; T. A. Buck, M.B., Ryde; C. W. Budden, M.B., Liverpool; B. F. P. **C** Country Practitioner; Dr. D. J. I. Chowry-Muthu, Wells (Somerset); Dr. J. H. Crawford, Bradford; Mr. R. F. Chance, Manchester. **D** Dr. B. Duke, London; Messrs. Down Bros., London. **E** Mr. F. Elvy, Broadwindsor. **F** Fairplay; Mr E. H. Fenwick, London; Mr. E. L. Freer, Birmingham; F.R.C.S.Ed., D.P.H.Lond. **G** Mr. J. F. B. Gallard, Chadwell Heath. **H** Mr. E. C. Hadley, Dudley; Mr. G. C. Hall, Ilsley. **K** D. H. Kyle, M.B., St. Andrews. **L** Mr. L. F. Lovell-Keays, East Hoathley; Lex. **M** A. McLennan, M.B., Cove; Mellin's Food, Limited, Manager of, London; Mr. S. L. C. Moudy, London; Dr. O. Murray, Aberdeen; F. N. Menzies, M.B., Seole; Mr. E. F. Morris, Hereford; Mr. W. H. Martindale, London; Medical Requisites Company, Manager of, Manchester. **N** Not a Charitable Institution. **O** One in Doubt. **P** H. J. Pechell, M.B., Molteno, C.C.; Petrol. **R** R. A.; A. Rose, M.B., Horwich; Dr. J. Reid, Bandon; Mr H. Rundle, Southsea; Mr. B. Rigden, Canterbury; Mr. C. Rolleston, Dudley; Mr. P. Rose, London; F. Riley, M.B., Sale. **S** Messrs. Smith, Elder, and Co., London; Sardam, Dr. J. Strachan, Dollar. **T** Mr. J. F. Taylor, Leyton. **U** Dr. A. R. Urquhart, Perth. **V** Vidua. **W** Dr. W. Whitelaw, Kirkintilloch; Dr. A. Watson, Leamington; Dr. W. Watkins-Pitchford, Pietermaritzburg; Mr. A. J. Woolrych, Burton-on-Trent; **X** X.; X. Y. Z.

BOOKS, ETC., RECEIVED.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. No. 5: Specificity of Antivenomous Sera. By Captain G. Lamb, M.D., I.M.S. Calcutta: Government Printing Office. 1903. 4d.

The Exact Science of Health based upon Life's Great Law. By Robert Walter, M.D. Vol. i. Principles. London: Kegan Paul, Trench, Trübner, and Co., Limited. 10s. 6d.

The Decline in the Birth-rate of New South Wales and other Phenomena of Childbirth. An Essay in Statistics by T. A. Coghlan. Sydney: William Applegate Gullick. 1903.

Klinisches Jahrbuch. Unter Mitwirkung der Herren Professor Dr. M. Kirchner und Dr. Naumann. Herausgegeben von Professor Dr. Freih. v. Eiselsberg, Professor Dr. Flügge, Professor Dr. Freih. v. Mering und Professor Dr. Werth. Elfter Band. Drittes Heft. Jena: Gustav Fischer. 1903. M. 4.50.

The Religious Sense in its Scientific Aspect. By Greville Macdonald, M.D. London: Hodder and Stoughton. 1903.

In the Land of the Moor. By J. Johnston, M.D. Bolton: Tillotson and Son. Limited.

*** In forwarding books the publishers are requested to state the selling price.

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EDUCATIONAL NUMBER.

SESSIONS 1903-1904.

THE ADVANTAGES AND DISADVANTAGES OF THE PROFESSION OF MEDICINE.

The choice of an occupation for life, or, as it may be, the recognition of a vocation, is, in the majority of cases, an anxious process, alike to the neophyte who is about to enter on his novitiate of professional life, and even more to those to whom his happiness and future usefulness are of the first concern. The cause of this anxiety is the difficulty of arriving at a momentous decision on evidence which is usually not in clear perspective, often misunderstood, sometimes insufficient, and always more or less embarrassing in its rival claims. The profession of medicine, like every other, has its advantages and its disadvantages, and those who entertain the idea of entering it should weigh for themselves the one against the other so that they may know what they have to expect. For the more definite their idea of the life they will have to lead the more accurately will they, their parents and guardians, be able to judge of their fitness for it, and the more surely will they be able to avoid the stones of stumbling that will bestrew their path. The idea of fitness should certainly have as its foundation considerations of physical constitution, and control of what are familiarly known as ways and means, as well as considerations of intellectual capacity, aptitude, and liking for the study of natural objects, and qualities of character such as diligence, perseverance, patience, and moral strength. With the object of helping young runners about to enter on the race of life to avoid making a mistake in a matter of such vital importance as the choice of a profession, we now lay before them a dispassionate statement of what lies before one who adopts medicine as a career—the work he will be called upon to do, the rewards he may fairly look for, the sacrifices he may have to make, and the disappointments that may fall to his lot. It must be understood that we speak here of the man of average abilities, with no particular advantages in the way of money or influence, who will take up medicine for a livelihood, and will expect a fair return for the time and money spent on his education.

The Profession from the Physical Standpoint.

Although few can hope to make a fortune by the practice of medicine, the profession has this great advantage—that none of its members who are able and willing to work need starve. Apart from this broad consideration, the advantages and drawbacks of the medical profession as far as the bodily well-being of its members is concerned are different in the case of the medical student and in that of the practitioner. The health of the student tends to suffer, if he be keen and diligent, from the magnitude, variety, and difficulty of his work, and, in some cases, from the number and severity of the examinations which he has to pass; but, given a fair constitution, and considering the opportunities for open-air recreation now within general reach, and the fact that he may have at least three months' holiday in the year, these risks may probably be disregarded. The risks to the health of the practitioner arise mainly from the incessant nature of his work; except for two or three weeks' holiday in the year he is actually never off duty, day or night, weekdays or Sundays. He must have what Napoleon called the "two o'clock in the morning courage"—that is to say, he must be in possession of all his faculties and ready to cope with any difficulty, even when called up in the middle of the night. And he may have unpleasantly frequent opportunities of displaying this readiness. The life of a general practitioner is indeed one of the constant meeting of emergencies in which, although a kind of tolerance is developed, the continuous strain gradually wears out the strongest. He is much more exposed to infection than most people, and his bodily resistance is often at a low ebb from irregularity in meals, exposure to inclement weather, and fatigue. On the other hand, the active life of a practitioner who likes his work is itself a sure safeguard againt *ennui* or worse; the open-air life of a country doctor is almost as healthy as that of an agricultural labourer, and the medical man knows how to preserve his own health by taking precautions against infection or by the treatment of various ailments.

The Profession from the Financial Standpoint.

The adoption of medicine as a profession has generally a more immediate influence on the purse of the candidate's relatives than on his own. In pursuing it the one advantage of the average healthy man in this relation is that it will bring a practically assured livelihood; he will live among people who are either being born, or struggling more or less successfully to live, or about to die, and at every stage he will find that there is a demand for services, such as he alone can render, which should result in an income of, say, £400 or £500 a year. There are a few who become what a business man would consider moderately rich by the exercise of their profession, but probably not 1 per cent. of all practitioners in this country achieve this financial success. The pecuniary disadvantages of medicine as a profession are the prolongation and costliness of the period of training, and the more or less lengthy time of waiting, with expenditure going on, after qualification before any considerable income is received. Perhaps a more serious drawback is the large amount of what may be called the working expenses, including house, carriage, and dress, in proportion to the gross income of the man in active practice, so that the chances of being able to save, even to the extent of the return of the original capital, are in not

a few cases slight; while reasonable provision for old age, after family expenses are met, is too often a practical impossibility. What, however, is at once the glory of the profession and one of its most serious drawbacks from a financial point of view is that the true doctor is working, year in year out, to reduce the incidence of disease in general, and so is directly helping to destroy the sources of his income. One bearing an honoured name in the profession said some years ago that enteric fever was worth perhaps a steady hundred a year to many a town and country practitioner, not counting the "luck of epidemics," and yet many of them had striven hard to do away with this source of income, thereby often offending not the poor but the rich, to whom they had to look for the principal part of their livelihood. On the one hand the medical man, unlike the manufacturer, who can employ his thousands of helpers and reap a financial harvest through the work of each, with but few exceptions must gather every grain of corn for himself. On the other hand a medical man's standard of success, whatever it is, is certainly not—to his honour be it said—the magnitude of his professional income.

THE PROFESSION FROM THE INTELLECTUAL STANDPOINT.

The profession of medicine has to do with facts rather than words; it is based on an advancing science, and, therefore, on the one side brings unfading freshness and interest to its devotees, and on the other, seeing how little time they can find for study and thought, has an awkward knack of leaving its followers far behind. But with an effort in the opposite direction they will find that its intellectual results, the fruit of experience, increase in value to the end. During the student life proper there is not only a vast, though to a great extent unconscious, acquisition of knowledge, and that of a most widely useful kind, but there is an even more valuable training in scientific method, in observation and in reasoning on facts observed. There is, moreover, in fairly well-endowed persons a marvellous development of certain of the senses, particularly those of touch, sight, and hearing. All through the active life of practice the mind is kept healthy and vigorous by the exercise of the powers of judgement with a minimum of emotional bias. Yet so much time is spent with unhealthy people that there is a tendency to consider all persons more or less morbid. The man who sees the wide bearings of natural phenomena as well as those of disease—in other words, who is a naturalist as well as a pathologist—will probably be saved from the danger, which certainly exists, of falling into grooves of thought and action. It is, moreover, not the least subjective advantage of medicine that in every case the absolute truth may be the aim, giving liberty to its members to look at all sides of a question with freedom from trammels of creed or party.

THE PROFESSION FROM THE ETHICAL STANDPOINT.

It is probably a penalty of the individualistic and private nature of medical practice that doctors are proverbially sensitive and jealous in their professional relations with each other. This is merely to say that medical practitioners are made of the same clay as other men. Apart from this relish of humanity it may truly be said that in no walk of life are there greater possibilities of the highest development of character. The readiness to render assistance whenever and by whomsoever it is needed, irrespectively of any other consideration; the assuagement of human sorrow as well as the mitigation of physical suffering; the courage which never shrinks from meeting infection or from incurring necessary responsibility; the perseverance which refuses to yield to the enemy until the end is obviously nigh; the generosity, discretion, cheerfulness, patience, and sympathy which are attainable by the followers of the healing art, when they are realized, are beautiful in themselves and in their effects. The sympathy of medical practitioners is not so much an emotion as a motive; it is not indeed a sentiment expressing itself in cries and tears but a sympathy manifesting itself in active effort for the relief of the sufferer who is in need of help. The doctor, in the words of Matthew Arnold, "sees life steadily and sees it whole." From the side of the candidate, having regard to the debt which the medical man (in virtue of his choice alone) owes to humanity it should never be forgotten that he will be placed in a position of marvellous confidence and the most delicate trust which it will need all his strength of mind and will, all his tact, and all his sense of honour to sustain worthily. Habits of reticence, of self-control, of disinterestedness, are doubtless of slow growth, but the germ of them should be clearly visible in every one who would aspire to be a priest of medical science and a brother of the healing craft.

THE PROFESSION FROM THE SOCIAL STANDPOINT.

The medical man has little time for the culture of social amenities, and his work is so individualistic that as compared, say, with the clerical profession, a part of whose daily duty it is to cultivate them, his average social status is not high. On the other hand his general influence is of the widest character, probably the widest of all, and although he has not yet gained any marked political influence, his special knowledge and trained faculty of dealing with facts have already given him a certain indirect power in the State, and must give him increasing importance as civilization advances. A proof of the social value of a medical training, and of the way in which it fits men for leadership among their fellows may be found in the number of medical practitioners who have done good service to the country and achieved fame for themselves in the work of practical administration in new territories added to the Empire. Sir William MacGregor, Sir George Robertson, Sir John Kirk, General Leonard Wood (formerly Governor of Cuba, and the future Commander-in-Chief of the United States Army), and many others could scarcely have done the work for which they will always be held in honour unless they had been doctors. The foundation of our Indian Empire was to some extent laid by surgeons, and it has since been extended almost as largely by the lancet of the medical officer as by the sword of the soldier.

CONCLUSION.

To sum up the whole matter the medical profession affords a fairly certain means of livelihood with unrivalled opportunities for that development of the faculties which, as Goethe said, is a duty of the highest importance for every man; moreover it opens a field for the exercise of his faculties in which he will have the sense of doing good with more certainty, perhaps, than in any other. Carlyle, who had no particular reverence for medical science, bore witness to the nobility of the profession in the following words, which all who are thinking of joining our ranks will do well to ponder:

"He that can abolish pain, relieve his fellow mortal from

sickness, he is indisputably usefullest of all men. Him savage and civilized will honour. As a Lord Chancellor under one's horsehair wig there might be misgivings, still more so, perhaps, as a Lord Primate under one's cauliflower, but if I could heal disease I should say to all men and angels without fear 'En! Ecce!'"

THE PORTALS AND PROSPECTS OF THE PROFESSION.

Having made up his mind to enter the medical profession by some as yet uncertain avenue and at some time, whether near or far, the intending student must consider which avenue is the avenue for him—when the question of the time of his entry will very largely resolve itself. Happy at this stage is the man who has relatives or disinterested friends to advise him at each step, or who, in default of these, is able to procure advice at each parting of the ways. Any candidate may easily, through mere ignorance, either choose a portal which is so difficult to get through that time and energy that might more profitably be used in some other direction are wasted in disheartening efforts, or he may select one which, he finds when it is too late, does not lead far enough to satisfy his legitimate ambition. If such mistakes are to be avoided the advice of some one who knows the ground thoroughly is almost indispensable. Nothing can take the place of counsel of this kind, but to those who have no such adviser the following remarks, it is hoped, may be useful.

The Question of a Degree.

Whether the candidate is to aim at taking a University degree or be content with a qualifying diploma is perhaps the first question to be answered. Formerly the problem was one in which the *res angusta domi* formed a large factor, but now that local universities are springing up on every hand, the accidental difficulties in the path of a would-be undergraduate are becoming wonderfully less, so that the problem has now become simpler, and indeed little more than an abstract question. Though the obligatory medical curriculum is the same for all students, the value of the qualifications which give the right to practise varies according to the estimate in which they are held by the profession and the public respectively. If a candidate looks forward to a career as a consulting physician, he must necessarily obtain a degree in medicine from a recognized university, and become a Member of the Royal Colleges of Physicians of London, Edinburgh, or Dublin, according to the part of the United Kingdom in which he proposes to practise. If he wishes to devote himself to surgery, he need not take a degree, but he must obtain the Fellowship of one of the Royal Colleges of Surgeons. In other spheres of practice a diploma in medicine, surgery, and obstetrics is sufficient. There can be no doubt, however, that the possession of an M.D. degree gives a practitioner a decided advantage in the eyes of the public, and on this account the desirability of obtaining one must be urged on every student.

Requirements of General Education.

The next step is to pass a preliminary examination in Arts recognized by the General Medical Council, if a certificate of having passed such an examination either before leaving school or subsequently is not already held. The main lines of the route for those seeking to enter the medical profession have been laid down by the General Medical Council, and the requirements of that body will be found set forth in detail at p. 506. Whatever preliminary examination is selected it is important that the precise requirements demanded of candidates should first of all be ascertained, for valuable time may be lost if these are not exactly complied with. The matriculation examination of the University of London is somewhat more exacting than the other preliminary examinations; with some exceptions, however, it is essential for the London University degrees (these exceptions are given in detail at p. 511), and as it will serve for most, if not all, of the other medical diplomas, and for many degrees, it may safely be chosen in place of any other Preliminary Examination.

The Choice of a Medical School.

Apart from considerations of locality and expense, the question of what school should be chosen is probably decided on two factors—the eminence of the staff and the size of the hospital. In regard to the former it is right to point out that the reputation (it may be world-wide) of the consulting staff should have no influence on the decision, as they, with few exceptions, take no part in the work of teaching in the school. The same remark applies in less degree to the senior members of the acting staff, as they, being presumably engrossed with many affairs outside the school, leave the greater part of the teaching to their younger colleagues. With regard to the size of the hospital, it must suffice to say that a large number of beds is not necessarily an unmixed advantage, as more food for thought and more time for calm observation may sometimes be obtained if the number is not excessive. The chief consideration, however, which is apt to be overlooked is that the teaching and opportunities for training in the subjects of medicine proper, surgery, and obstetrics, including gynaecology, should be of the best. Given this then, any special facilities for obtaining an extensive knowledge of the preliminary sciences, such as chemistry, botany, zoology, and physics, are heartily to be welcomed as providing a good mental training. The former is essential; the latter, however desirable, must occupy a subsidiary position. The choice of a school may in some instances be modified by the chance of or success in obtaining entrance scholarships, and it may be well to remember that in the event of wishing from any unforeseen circumstances to change the medical school in the middle of the curriculum, the only difficulty that is likely to arise would be from having previously paid what is known as a "composition fee" to a particular hospital.

Cost of Medical Education.

In counting the cost of the educational period of the medical life the manifold helps which are available in regard to expense should not be ignored. There are entrance scholarships at nearly all the schools and there are besides other pecuniary aids peculiar to individual schools (having perhaps their highest development at the present day in the Scottish Universities); in addition to these there is a goodly number of what may be called open scholarships and prizes. For the ordinary man the cost of medical education resolves itself into the cost of the hospital training and the cost of living during the five years of the curriculum. The composition fee for all the necessary classes at most schools, including hospital practice, may be taken as something between £125 and £150; the precise figures may be obtained for the different schools in the

succeeding pages. The cost of living is greater in London and in the older universities of England than at the newer provincial universities, or at those of Scotland and Ireland. Speaking generally, the entire cost may be taken as something between £600 and £1,000, the precise figure varying both with the particular place of study and with the individual student's habits, mode of life, and success in passing examinations.

The Stage of Professional Education.

Having passed the preliminary examination, and having actually commenced medical study at one of the recognized schools, no time should be lost in obtaining registration as a medical student by the General Medical Council, as the regulation five years' curriculum is usually held to date from the day of registration, and delay may thus mean compulsory lengthening of the already long probationary period. Such registration is not required by the Royal Colleges of Physicians and Surgeons of England and some other qualifying bodies, but it is by most, and the student would be well advised not to omit this step, whatever his objective may be. Valuable and individualistic advice in regard to the curriculum may be obtained by all new students at the schools from their respective Deans, and further on will be found some observations in regard to the course of professional training which have a general application. If the advice so acquired be diligently followed, medical qualification becomes, except for accidents, almost an automatic process; the difficulties will be there, but the way will at least be plain.

An Intermediate State.

After a qualification to practise has been obtained there is usually a more or less prolonged transitional stage between the medical student and the established medical practitioner. This period may most advantageously be used in gaining experience by serving as house-physician, house-surgeon, or casualty medical officer, in a hospital, working as assistant to a busy practitioner, or, like Ulysses, seeing the manners and customs of many men by travel as ship's surgeon or otherwise.

The Prospects of the Profession.

The particular line a man will follow in his life work will to a large extent depend on his opportunities, and to some extent on his aptitudes. If he can afford to wait and has the necessary equipment then he will probably develop into a physician or surgeon, or a specialist in a more limited sense. If his tastes lie in the direction of general practice then he will be wise to distribute his interests and energies over the whole field of medicine impartially. Operative surgery, which in a town may usually be delegated to others, is, to a considerable extent, a necessity in country practice—and the country practitioner, placed far away from professional assistance, is without doubt the general practitioner in his highest development.

Besides general and consulting practice other opportunities for good work and a fair income are the Public Health Service—dealing with that increasingly important subject, preventive medicine, and having a most intimate relation with the social well-being, prosperity, and future development of the nation and empire. The navy, the army, and the Indian Medical Service all offer certain attractions, not the least of which is the certainty of a fair pension at the end of a relatively short term of service. The Colonial Service, the Prison Service, lunacy appointments, and resident Poor-law appointments also offer advantages which are not to be obtained by the general practitioner, but they have mostly some compensating limitations. Particulars of all these spheres of practice will be found in the following pages. For the few, teaching appointments in the medical schools may be obtained which often carry with them opportunities for original research.

The Waiting Time and Some of its Dangers.

The most trying time of the medical man's life from the beginning of professional study onward is probably while he is waiting for practice. It is then that he may be tempted to allow himself to be farmed by the commercial combinations known as Co-operative Friendly Societies; here it is therefore that he should be most vigilant and strenuous in detecting and avoiding that which is evil or even doubtful. For the young consultant waiting for practice teaching posts, private tuition, various sorts of literary work, may help to provide a sufficient income. For the man who starts as a general practitioner without buying a practice or a partnership, or who has no private income, there are Public Health appointments, Poor-law appointments, including that of public vaccinator, certain workmen's clubs, and other similar means of obtaining an introduction to practice. A public appointment, indeed, is often of very great value, even though it bring in no immediate pecuniary advantage. But the waiting time is at the best a trying time, affording abundant opportunities for the practice of the virtues of patience and courage.

Conclusions.

It is a sound principle on which to act that the newly qualified man should associate himself in as cordial a manner as possible with the established medical men in the district by attending the local meetings of the British Medical Association, joining the local medical society, or in some other way of showing himself friendly. He should strictly follow, to the best of his knowledge and ability, the recognized etiquette of the profession, for he may be assured that it has a deeply rooted principle working for the general good, while for his real success nothing, in the end, will help more than a faithful adherence to the spirit of the old rule "Do as you would be done by."

THE MEDICAL CURRICULUM.

The course of professional training through which a student who desires to enter the medical profession must pass is, under existing regulations, essentially the same in all cases. The universities and medical corporations differ from each other rather in the severity of the various examinational tests which they impose than in the subjects of study, which are laid down by the General Medical Council, and are broadly the same for all. The minimum period of study after registration as a medical student is five years, whether the curriculum be passed in England, Scotland, or Ireland, and whether the student is seeking a university degree or a college diploma. Although in the case of the universities the minimum period of study is the same as that for a diploma, some students find, as a matter of fact, that it is necessary to spread their work over a longer period. Before, therefore, deciding upon a university course the intending student should carefully

consider the regulations and requirements, and for his guidance in this respect we give in the following pages particulars of the regulations of the various Examining Boards. When the student has decided upon the degrees or diplomas to which he aspires, and has selected the medical school which he desires to attend, he should communicate with the Warden or Dean, who will give him all necessary advice in regard to the mode of entrance, registration, and the details of the best way to prepare for his several professional examinations.

Before he can profitably begin his course of medical study, the student must have passed one of the recognized Preliminary Examinations in Arts, a complete list of which can be obtained from the Registrar of the General Medical Council (299, Oxford Street, W.) or from the Registrar of the Branch Council in Scotland or Ireland (48, George Square, Edinburgh, or 35, Dawson Street, Dublin). Care should be taken in the selection of the Preliminary Examination, for in the case of the student seeking a university degree the particular Preliminary Examination laid down by that university must be passed. Thus, for example, the student who has passed the first-class College of Preceptors or the Junior Oxford or Cambridge Local Examination in the required subjects can register as a medical student, and having completed his curriculum obtain the diplomas of L.R.C.P.Lond. and M.R.C.S.Eng., but he will not be admissible to the examinations for the degrees of the University of London. A list of recognized preliminary examinations will be found at p. 506, but the student intending to study in London will find it advantageous to pass the University of London Matriculation Examination, the regulations for which have been recently much modified so as to give a wide choice of subjects, thus adapting the examination to all reasonable requirements. Immediately after passing the required Preliminary Examination the student should enter at the medical school he has selected, and register his name at the office of the General Medical Council, after which he begins to count the compulsory five years of study.

By a recent regulation the Royal Colleges of Physicians and Surgeons do not now require that a student shall have been registered by the General Medical Council before admitting him to their examinations, but he must have passed a Preliminary Examination recognized by the Examining Board in England, and go through a five years course of medical study. Notwithstanding this new regulation, we advise the student not to neglect registration with the General Medical Council, since he may later seek other diplomas, under the regulations of which registration is necessary.

Under former regulations it was the almost universal custom for students to begin their professional studies in October; but under the alterations recently made in the curriculum there is now no special advantage in beginning in October. At some of the medical schools, indeed, arrangements have been made whereby the student may with advantage enter upon his medical course in the summer session and commence the study of chemistry, physics, and pharmacy, if he has passed a Preliminary Examination early in the year.

It is not necessary or desirable that we should enter into a comparison of the details of the adaptation of the curriculum to the requirements of the various Examining Boards. The following account of the curriculum suitable for the examinations for the diplomas of L.R.C.P.Lond. and M.R.C.S.Eng., given by the Conjoint Examining Board of the Royal Colleges of Physicians and Surgeons will, we hope, prove useful to the student as an example of the general course required for entrance into the profession. With slight modifications in detail the course of study will be found suitable for the degrees of the University of London, since the curriculum and examinations of the Conjoint Board have now been brought much more into line with those of the universities than was formerly the case. Broadly speaking there are three stages with three examinations in the student's career: the first is devoted to elementary science, the second to anatomy and physiology, and the third to the purely professional subjects of medicine, surgery, and midwifery, and their special branches.

The First Examination includes chemistry and physics, elementary biology, and practical pharmacy. Pharmacy, however, may be passed separately and, indeed, may be taken at any stage of the curriculum. Generally speaking, the whole of the student's first year is devoted to the study of the subjects of the First Examination, which is usually passed in three parts: (1) Biology, at the end of the winter session in March; (2) Chemistry and Physics, at the end of the summer session in July; (3) Pharmacy, which may be passed during the first year or be postponed. The First Examination of the Conjoint Board may be passed before entry at a medical school, but only if the student has taken courses of instruction in biology, chemistry, and physics at a science school specially recognized for the purpose, and if the Preliminary Examination has been passed previous to this year of study one year of the five may be counted. Except under very special circumstances, therefore, the student should pass a preliminary Examination in Arts before he begins his science work, and should take care to attend lectures and laboratory instruction in Biology, Chemistry, and Physics at a properly-equipped and recognized institution, such as a medical school. In the metropolitan medical schools the students of the first year, except those proceeding to the University of London degrees, generally attend lectures on anatomy and dissect whilst engaged in their science study, a plan which has the advantage of permitting them to see the applications of biology, chemistry, and physics to the study of more professional subjects, and of allowing them to enter for the Second Examination six months earlier than they can if they devote their first year solely to science at a purely science school. The student should always endeavour to complete the First Examination within his first year of study, since he must attend at a recognized medical school and hospital for four years subsequent to passing it. Before admission to any part of the First Examination a certificate of attendance at a recognized institution on a course of instruction in the subject or subjects for which the student desires to present himself must be produced.

After passing the First Examination the student proceeds to the study of the intermediate medical subjects—anatomy and physiology. The regulations require him to attend, at a recognized medical school, a course of lectures in anatomy (six months), a course of lectures in physiology (six months), a course of practical physiology (six months), and to have dissected during two winter sessions or for not less than twelve months during regular sessions. The earliest time at which he can be admitted to the Second Examination is twelve months after completing the First Examination, or if he has passed the First Examination before entering at a medical school, after two winter and

one summer sessions (that is fifteen months) of attendance at a recognized medical school. The student who has followed the usual course and has entered at a medical school in October and completed the First Examination at the end of his first year will therefore devote the whole of his second year to anatomy and physiology, and pass the Second Examination at the end of his second summer session. He will find it greatly to his advantage to have begun anatomy and dissecting during his first year, as is the practice in the metropolitan medical schools, for one year is a short time to devote to the study of two such important subjects as anatomy and physiology. Many students, indeed, require six months longer, and additional time taken at this stage either prolongs the course or curtails the time which should be devoted to purely professional studies. In the case of those seeking the University of London degrees, two years of attendance at a recognized medical school are required after passing the Preliminary Scientific Examination instead of one year.

Having passed the Second Examination, the student begins the systematic practical study of disease by attending the out-patient rooms, at the bedside, in the operating theatre, and in the *post-mortem* room of the hospital, although, if he is wise, he will have taken the opportunity, from time to time during the earlier part of his course, of paying occasional visits to the wards and out-patient and *post-mortem* rooms. If he has been industrious, and has passed all examinations without mishap, he now has two and a-half or three years to devote to the uninterrupted study of the more purely medical subjects. The Third or Final Examination cannot be passed before the end of five years from the date of registration, nor till after the expiration of four years from the date of passing the First Examination and of two years from the date of passing the Second Examination. The subjects of this examination may be taken at once, or it may be passed in three parts. One subject of the Final Examination, however—namely, midwifery—may be taken before the rest of the examination at the end of four years of study and not earlier than one year after the date of passing the Second Examination. It is important that the student should pass each examination at the prescribed time, otherwise he will be delayed in obtaining his diploma until the lapse of the required time from the date of passing his earlier examinations, or will find it necessary to encroach upon the time which should be devoted to the more important practical subjects of his profession.

Space will not permit us to enter here into full particulars of the lectures and other work which the student must attend during the last two or three years; for this information we must refer him to the official regulations, outlines of which are given below. Speaking generally, however, he must attend lectures in medicine (six months), surgery (six months), midwifery (three months), pathology, including pathological histology and bacteriology (three months), pharmacology and therapeutics (three months), forensic medicine (three months), public health (three months) together with systematic practical instruction in medicine, midwifery, and surgery, operations on the dead body, attendance on the practice of a recognized hospital (two winter and two summer sessions), *post-mortem* demonstrations (twelve months), and clinical lectures on medicine and surgery (nine months). The student is also required to attend clinical instruction in ophthalmic surgery, insanity, and diseases of women, and to act as clinical clerk and surgical dresser for not less than six months each, and to attend twenty labours. Instruction in vaccination and the administration of anaesthetics and attendance at a fever hospital are also necessary.

REGULATIONS OF THE GENERAL MEDICAL COUNCIL

IN REGARD TO THE REGISTRATION AND EDUCATION OF MEDICAL STUDENTS.

The regulations of the General Medical Council as to registration, preliminary examination, and professional education must be followed by all medical students seeking to obtain degrees or licences to practise from the universities or medical corporations of the United Kingdom.

PRELIMINARY EXAMINATION.

1. Subject to such exceptions as the Council may from time to time allow, every medical student shall, at the commencement of his studentship, be registered in the manner and under the conditions prescribed by the Standing Resolutions of the Council.

2. No person shall be registered as a medical or dental student who has not attained the age of 16 years; and for the purpose of ensuring the observance of this regulation, every applicant for registration in the *Students' Register* shall be required to produce satisfactory evidence that this age has been attained.

3. No person shall be allowed to be registered as a medical student unless he shall have previously passed a recognized Preliminary Examination in the subjects of general education.

4. It shall be delegated to the Education Committee to prepare and issue from time to time a list of Examining Bodies whose examinations fulfil the conditions of the Medical Council as regards general education.

5. Testimonials of Proficiency granted by Educational Bodies, according to the subjoined List, in Clause 7, shall be accepted, the Council reserving the right to add to or take from the list.

6. A Degree in Arts of any University of the United Kingdom, or of the Colonies, or of such other Universities as may be specially recognized from time to time by the General Medical Council, shall be considered a sufficient testimonial of proficiency.

The student must make application for registration on a special form, to be had on application to the several qualifying bodies and medical schools.

The *Students' Register* is kept by the Branch Registrars, namely, in England, Mr. H. E. Allen, B.A., LL.B., 299, Oxford Street, London, W.; in Scotland, Mr. James Robertson, 54, George Square, Edinburgh; in Dublin, Mr. Richard J. E. Roe, 35, Dawson Street, Dublin.

7. The following is a list of examining bodies whose examination in general education are recognized by the General Medical Council for 1903 as qualifying for registration as medical or dental student:

I.—University Examinations held in the United Kingdom.

A.

Final Examination for a Degree in Arts or Science of any University in the United Kingdom.

University of Oxford:
Junior Local Examinations. Certificate to be endorsed as fulfilling the Council's requirement.
Senior Local Examinations. Certificates to be endorsed as fulfilling the Council's requirements.
Responsions. Certificate to be supplemented by others showing that the required mathematical subjects have been passed.
Moderations. Certificates to include the required subjects.
University of Cambridge:
Junior Local Examinations; Certificate to be endorsed as fulfilling the Council's requirements.
Senior Local Examinations; Certificates to be endorsed as fulfilling the Council's requirements.
Higher Local Examinations; Certificates to include the required subjects.

Previous Examination: Certificates to include the required subjects.
General Examination: Certificates to include the required subjects.
Oxford and Cambridge Schools' Examination Board:
Lower Certificate Examinations: The required subjects to be passed at one time.
Higher Certificate Examinations; Certificates to include the required subjects.
University of Durham:
Examination for Certificate of Proficiency; the required subjects to be passed at one time.
Senior Local Examinations: Certificate to include the required subjects.
University of London:
Matriculation Examination: Certificate to include the required subjects.
Victoria University:
Preliminary Examination; Certificate to include the required subjects.
University of Birmingham:
Matriculation Examination: Certificate to include the required subjects.
University of Wales:
Matriculation Examination; the required subjects to be passed at one time.
Universities of Scotland:
Preliminary Examination of the Joint Board of Examiners of the Scottish Universities for Graduation in Medicine and Surgery; the required subjects to be passed at one, or not more than two, examinations.
Preliminary Examination of the Joint Board of Examiners of the Scottish Universities for Graduation in Arts or Science; Certificates to include the required subjects.
University of St. Andrews:
Final Examination for the Diploma of L.L.A.
University of Dublin:
Principal Public Entrance Examinations: the required subjects to be passed at one time.
Examinations for the First, Second, Third, or Fourth Year in Arts; Certificate to be signed in the approved form by the Medical Registrar of the University.
Royal University of Ireland:
Matriculation Examination: Certificate to include the required subjects.

II.—Government Examinations held in the United Kingdom.

Scottish Education Department:
Leaving Certificate Examinations, passes in Lower Grade: the required subjects to be passed at one, or not more than two, examinations.
Leaving Certificate Examinations, passes in Higher Grade or Honours; to include the required subjects.
Intermediate Education Board of Ireland:
Middle Grade Examination: the required subjects to be passed at one time.
Senior Grade Examination; Certificates to include the required subjects.
Central Welsh Board:
Senior Certificate Examinations: Certificates to include the required subjects.

III.—Examinations by Chartered Bodies held in the United Kingdom.

College of Preceptors:
Examinations for First-class Certificate; the required subjects to be passed at one, or not more than two, examinations.
Preliminary Examination for Medical Students; the required subjects to be passed at one time.
Educational Institute of Scotland:
Preliminary Medical Examination; the required subjects to be passed at one time.
Royal Colleges of Physicians and Surgeons in Ireland:
Preliminary Examination; the required subjects to be passed at one time.

IV.—Examinations held out of the United Kingdom.

University of Malta:
Matriculation Examination.
University of Calcutta:
First Examination in Arts.
University of Madras:
First Examination in Arts.
University of Bombay:
Matriculation Examination.
Punjab University:
Intermediate Examination in Arts.
University of Allahabad:
Intermediate Examination in Arts.
Ceylon Medical College:
Preliminary Examination.
University of McGill College, Montreal:
Matriculation Examination.
University of Bishop's College, Montreal:
Matriculation Examination.
College of Physicians and Surgeons of the Province of Quebec:
Matriculation Examination.
Universities and Colleges of the Province of Ontario:
Departmental Arts Matriculation Examination (conducted under the direction of the Provincial Education Department).
University of Manitoba:
Preliminary and Previous Examinations.
University of New Brunswick, Fredericton:
Matriculation Examination.
University of Mount Allison College, New Brunswick:
Matriculation Examination.
College of Physicians and Surgeons of New Brunswick:
Matriculation Examination.
Dalhousie College and University, Halifax, Nova Scotia:
Matriculation Examination.
Provincial Medical Board of Nova Scotia:
Preliminary Examination.
Newfoundland Medical Board:
Preliminary or Matriculation Examination.
University of Melbourne:
Matriculation Examination.
University of Sydney:
Matriculation Examination.
First Year Examination in Arts.
Senior Public Examination.
Entrance Examination for Medicine and Science.
University of Adelaide:
Senior Public Examination.
First Year Examination in Arts.
University of Tasmania:
Senior Public Examination.
University of the Cape of Good Hope:
Matriculation Examination.
University of Otago:
Preliminary Medical Examination.
University of New Zealand:
Preliminary Examination for Medical Students.
Codrington College, Barbadoes:
Examinations qualifying for a Degree in Arts at the University of Durham.
Foreign Universities in Europe:
The German Abiturienten-Examen of the Gymnasia and Real-gymnasia: examinations entitling to the French Diplomas of Bachelier ès Lettres and Bachelier ès Sciences, and other corresponding Entrance Examinations to the Universities in Europe.
Egyptian Government:
Examination for the Secondary Education Certificate.

*** (*a*) No Certificate from the Indian and Colonial bodies in the foregoing Section (IV) is accepted unless it shows that the examination has been conducted by or under the authority of the body granting it, includes all the subjects required by the General Medical Council, and states that all the subjects of examination have been passed at one time, and copies of the form of the required certificate are supplied by the Registrar of the Council for the purpose.

(*b*) In the case of natives of India or other Oriental countries, whose vernacular is other than English, an examination in a classical Oriental language may be accepted instead of an examination in Latin.

PROFESSIONAL EDUCATION.

The period of professional study between the date of registration as a medical student and the date of the Final Examination for any diploma which entitles its holder to be registered under the Medical Acts must be a period of bonâ fide study during not less than five years.[1] The course of professional study and examinations must include the following subjects:

(i) Physics, including the Elementary Mechanics of Solids and Fluids, and the Rudiments of Heat, Light, and Electricity. (ii) Chemistry, including the principles of the science, and the details which bear on the Study of Medicine. (iii) Elementary Biology. (iv) Anatomy. (v) Physiology. (vi) Materia Medica and Pharmacy. (vii) Pathology. (viii) Therapeutics. (ix) Medicine, including Medical Anatomy and Clinical Medicine. (x) Surgery, including Surgical Anatomy and Clinical Surgery. (xi) Midwifery, including Diseases peculiar to Women and to Newborn Children. (xii) Theory and Practice of Vaccination. (xiii) Forensic Medicine. (xiv) Hygiene. (xv) Mental Disease.

The first four of the five years must be passed at a School or Schools of Medicine recognized by any of the Licensing Bodies; but (*a*) the first year may be passed at a University or Teaching Institution recognized by a Licensing Body and approved by the Council where the subjects of Physics, Chemistry, and Biology are taught; and (*b*) a graduate in arts or science of any university recognized by the General Medical Council, who has spent a year in the study of Physics, Chemistry, and Biology, and has passed an examination in these subjects for the degrees in question, is held to have completed the first of the five years of medical study provided that he has registered as a medical student with the General Medical Council. It is also to be noted that a student who has previous to registration attended a course or courses of study in one or all of the subjects, Physics, Chemistry, or Biology, in any university, school of medicine, or teaching institution recognized by any of the licensing bodies, may without further attendance be admitted to examination in these subjects, provided always that such course or courses shall not be held to constitute any part of the five years' course of professional study.

The General Medical Council recommends the Licensing Bodies to require that the fifth year should be devoted to clinical work at one or more public hospitals or dispensaries, British or foreign, recognized by any of the medical authorities mentioned in Schedule (A) of the Medical Act (1858), provided that of this year six months may be passed as a pupil to a registered practitioner possessing such opportunities of imparting medical knowledge as shall be satisfactory to the medical authorities, and that no qualification in Medicine ought to be granted without evidence of clinical instruction in infectious diseases.

[1] For the purpose of this requirement the close of the fifth year may be reckoned as occurring at the expiration of fifty-seven months from the date of registration.

REQUIREMENTS AS TO THE SUBJECTS OF GENERAL EDUCATION TO BE INCLUDED IN THE RECOGNIZED PRELIMINARY EXAMINATIONS IN ARTS.

Subject to the conditions indicated in the foregoing list, Clause 7, the Preliminary Examinations recognized by the General Medical Council are required to include the following: (*a*) English (Grammar, Paraphrasing, Composition, questions on English History and Geography). (*b*) Latin (Grammar, Translation into English from unprescribed Latin books, Translation into Latin of a continuous English passage, and of short idiomatic English sentences).[2] (*c*) Mathematics (Arithmetic, Algebra, including easy quadratic equations; Geometry, including the subject-matter of Euclid, Books i, ii, iii, and simple deductions). (*d*) One of the following subjects:—(*a*) Greek (Grammar; Translation into English from unprescribed Greek books; Translation into Greek of short idiomatic English sentences); or (*β*) a Modern Language (Grammar; Translation into English from unprescribed books; Translation of a continuous English passage, and of short idiomatic English sentences.)

UNIVERSITIES (INCLUDING THEIR COLLEGES AND MEDICAL SCHOOLS), SCHOOLS OF MEDICINE, AND RECOGNIZED SCIENTIFIC INSTITUTIONS AT WHICH MEDICAL STUDY MAY BE COMMENCED IN THE UNITED KINGDOM.

I.

University of Oxford
University of Cambridge.
University of Durham (including the Durham College of Medicine and the Durham College of Science, Newcastle-on-Tyne).
University of London (including the following Medical Schools and Colleges: St. Bartholomew's Hospital, Charing Cross Hospital, St. George's Hospital, Guy's Hospital, King's College, London Hospital, St. Mary's Hospital, Middlesex Hospital, St. Thomas's Hospital, University College, Westminster Hospital, London (Royal Free Hospital) School of Medicine for Women, Bedford College, Royal Holloway College (Royal College of Science).
Victoria University (including Yorkshire College, Leeds; University College, Liverpool; the Owens College, Manchester).
University of Wales (including University College of Wales, Aberystwyth; University College of North Wales, Bangor; University College of South Wales and Monmouthshire, Cardiff).
University of Birmingham.
University of Aberdeen.
University of St. Andrews (including University College, Dundee).
University of Edinburgh.
University of Glasgow (including Queen Margaret College).
University of Dublin (including Trinity College).
Royal University of Ireland (including Queen's College, Belfast; Queen's College, Cork; University College, Dublin; Queen's College, Galway).

II.

Bristol: University College.
Sheffield: University College.
Edinburgh: School of Medicine of the Royal Colleges, Surgeons' Hall School, Medical College for Women.
Glasgow: Anderson's College, St. Mungo's College, Western Medical School.
Dublin: Catholic University Medical School, Royal College of Surgeons' Schools of Surgery.

III.

Bradford: Technical College.
Brighton: Technical Day College.
Bristol: Merchant Venturers' Technical College.
Cambridge: Girton College, Newnham College.
Cheltenham: Ladies' University College.
Derby: Technical College.
Dublin: Royal College of Science for Ireland.
Exeter: Royal Albert Memorial College.
London: Birkbeck Institute, East London Technical College, Central Technical College, Westfield College, Battersea Polytechnic Institute (day classes).
Nottingham: University College.
Plymouth: Municipal School of Science (advanced day classes).
Preston: Harris Institute.
Reading: Reading College.
Southampton: Hartley College.

THE ENGLISH UNIVERSITIES.

UNIVERSITY OF OXFORD.

THERE are two degrees in Medicine (B.M. and D.M.), and two degrees in Surgery (B.Ch. and M.Ch.), which under favourable circumstances may be obtained in six or seven years from Matriculation.

B.A. DEGREE.

The degrees of B.M. and B.Ch. are conferred only on candidates who have taken the B.A. degree, for which residence for three years within the University is necessary; the examinations, however, for the degrees in Arts and Medicine may be passed in any order, provided the subjoined regulations are complied with.

The degree of B.A. may be obtained in either of the following ways:

(*a*) By passing Responsions (or one of the examinations which are accepted as equivalent), Moderations, a Scripture Examination, or, in the event of a candidate objecting, an examination in some substituted book; and the Final Pass School in three subjects, two of which may be the same as two in the Preliminary Examination in Natural Science.[1]

(*b*) By passing Responsions; an additional subject in Responsions, the Scripture Examination; some of the Preliminary Examinations in the Natural Science School,[1] or the Preliminary Examination and the School of Jurisprudence, or the Honour School of Mathematics in the First Public Examination; and one of the Final Honour Examinations.

Responsions and the additional subject may be passed before a candidate is a member of the University;[2] Moderations and Scripture can be passed in the fourth term: the Final Pass School may be taken any time after Moderations: a Final Honour School may be taken at the end of the third or within the fourth Academical year, that is twelve or sixteen terms respectively; the Preliminary Examinations of the Natural Science School may be taken as soon as Responsions have been passed.

DEGREES IN MEDICINE AND SURGERY.

To obtain the degrees of M.B., B.Ch., the following examinations must be passed:

Preliminary.—The preliminary examination in (1) Mechanics and Physics, (2) Chemistry, (3) Zoology, (4) Botany, of the Natural Science School.[1]

Professional.—There are two professional examinations held twice a year at the end of Michaelmas and Trinity terms. The subjects of the first B.M. examination are Organic Chemistry, Human Anatomy, Physiology, Materia Medica and Pharmacy. Candidates who have previously obtained a First or Second Class in the Final Examination in Physiology or Chemistry are exempt from further examination in those subjects. The first examination may be passed at any time after the preliminary. The second examination may be taken at any time after the first. It comprises the remaining subjects of the medical curriculum, namely, Medicine, Surgery, Midwifery, Pathology, Forensic Medicine, and Hygiene. Pathology may be offered either with or without the other subjects.

D.M. Degree.—A B.M. who has entered his thirty-ninth term is admitted D.M. on presentation of a dissertation approved by the appointed professors and examiners.[3]

M.Ch. Degree.—An examination for this degree is held in June. The candidate must have entered his twenty-seventh term.

Fees.—University: B.A., £7 10s. B.M. and B.Ch., £14. D.M., £25. M.Ch., £12. Every Master of Surgery, being otherwise duly qualified, is entitled without further payment of fees, to supplicate for the Degree of Master of Arts, and every Master of Arts, being otherwise duly qualified, is entitled without further payment of fees to supplicate for the Degree of Master of Surgery. Also an annual fee to the University of £2 for the first four years, reduced to £1 when the B.A. is taken. College fees (varying in amount) on taking degrees and for the first four years of membership. Tuition fees, £21 to £30. The cost of living for the four University terms cannot be stated at less than £120.

Scholarships, etc.—The several Colleges grant scholarships of £80 a year tenable for four years in Natural Science, Chemistry, Physics, and Biology, and also exhibitions. Particulars can be obtained on application to the College tutors. A Radcliffe Travelling Fellowship of £200 a year, tenable for three years, is conferred annually. Candidates who have been placed in the First Class in any Final Examination in the Natural Science School, whether they have taken the degree of B.M. or not, are eligible.

TEACHING.

Preliminary Examination.—Courses of lectures and demonstrations on Elementary Mechanics and Physics, on Inorganic Chemistry, on Animal Morphology, and on Botany are given at convenient periods, and are open to members of the University intending to proceed to a medical degree.

Degree of B.A.—The Course of Instruction for the Final Honour Examination in Physiology consists of lectures and practical work, and extends over two years. It is intended

[1] The four subjects of the Medical Preliminary Examination are four of the subjects in the Natural Science Preliminary, and can be commenced directly after passing Responsions.

[2] Membership is constituted by Matriculation, and by becoming a member of a College or Hall, or a non-collegiate student.

[3] The regulations for Graduates who took the degree of B.M. previous to 1886 differ slightly.

[2] In the case of natives of India or other Oriental countries, whose vernacular is other than English, an examination in a Classical Oriental Language may be accepted as equivalent to an examination in Latin.

for students who have passed the Preliminary Examination in other subjects.

First B.M.—The instruction in Human Anatomy is by lectures and demonstrations; the dissecting room is open daily, and dissection may be continued during the vacation. The course of instruction in Physiology consists of a course of lectures extending over three full terms, a course of practical instruction in Histology during three terms, and a course of Elementary Physiological Chemistry, with practical laboratory work during two terms. Instruction in Organic Chemistry is given in the Chemistry Department.

Second B.M.—Lectures on Materia Medica and practical instruction in Pharmacology are given during the summer term, and clinical lectures and tutorial instruction and demonstrations in Physical Diagnosis in Regional Anatomy are given in each term at the Radcliffe Infirmary. Lectures on Pathology and practical instruction in Bacteriology and Pathological Histology are given in Michaelmas and Hilary Terms in the new Pathological Laboratory.

Elementary instruction in Medicine and Surgery is given by the Lichfield Clinical Lecturers at the Radcliffe Infirmary.

UNIVERSITY OF CAMBRIDGE.

Bachelor of Medicine (M.B.) and Bachelor of Surgery (B.C.).

A student proceeding to this degree must (1) reside in the University during the required portion of each of nine terms, (2) pass (or obtain exemption from) the Previous Examination, (3) pursue medical study for five years.

There are three examinations for the degree of Bachelor of Medicine. They are partly in writing, partly oral, and partly practical. The examinations take place twice in the year, in the Michaelmas and Easter terms.

The First Examination is divided into two parts: 1. Chemistry and other branches of Physics; 2. Elementary Biology. These two parts may be taken together or separately. Before admission to this examination the candidate must have passed (or obtained exemption from) the Previous Examination. He must also produce certificates of diligent attendance on a course of lectures in Chemistry, and of practical instruction in Chemical Manipulations.

The Second Examination includes Human Anatomy and Physiology. Before admission to this examination the student must have passed both parts of the First Examination, must have practised dissection during six months, and must produce certificates of diligent attendance on a course of lectures on each of the following subjects: 1. Human Anatomy; 2. Physiology.

The Third Examination is divided into two parts, called the First part and the Second part respectively. Before presenting himself for either part, the student must have passed the Second Examination. The First part includes: (1) Pharmacology. (2) General Pathology. The Second part includes: (1) Principles and Practice of Surgery, (2) Midwifery and Diseases Peculiar to Women. (3) Principles and Practice of Physic. The student, before admission to the First part, must produce certificates of attendance on one course of lectures in each of the following subjects: (1) Pharmacology, and (2) General Pathology; he must have attended the practice of a recognized hospital for six months. In the Second part the student may present himself for examination in any two or in all of the Sections 1, 2, and 3. A student who satisfies the examiners in two of the sections may be exempted from further examination therein; but his name shall not be included in the list of successful candidates until he has satisfied the examiners in the remaining section. The candidates are informed of the result, but their names are not published. Before admission to the Second part a candidate must produce evidence that he has completed the five years' course of medical study and obtained certificates of diligent attendance on one course of lectures in each of the following subjects: (1) Principles and Practice of Surgery, (2) Midwifery, (3) Principles and Practice of Physic, (4) Medical Jurisprudence; he must also have attended the Medical and Surgical Practice of a recognized hospital (with clinical lectures), including certain special hospitals and asylums, during three years at least. All candidates must also produce certificates of attendance during three months on (1) practical instruction in Pharmacy and Dispensing, (2) clinical instruction in Fevers at a general or special hospital, (3) proficiency in Vaccination from an authorized vaccinator appointed by the Local Government Board, (4) of having attended twenty cases of Midwifery, (5) of having at a recognized hospital acted as Dresser or House-Surgeon for six months, as Clinical Clerk or House-Physician for six months, and as *Post-mortem* Room Clerk.

Act for M.B.—After these examinations have been passed, an Act must be kept in the schools in the following manner: The Regius Professor of Physic assigns a day and hour for keeping the Act, of which public notice has to be given eight days before. The candidate reads a thesis, composed by himself, on some subject approved by the Professor; the Professor brings forward arguments or objections for the candidate to answer, and examines him orally on questions connected with his thesis, as well as on other subjects connected with medicine of a more general nature.

B.C.—As the Third Examination includes operative and clinical surgery, the degree of Bachelor of Surgery is conferred upon candidates who pass it without further examination and without the Act. The degree of B.C. is thus a registrable qualification in Medicine, Surgery, and Midwifery.

Doctor of Medicine (M.D.).

This degree may be taken by an M.B. of three years' standing, or by an M.A. of four years' standing, who has been engaged in medical study for five years at least. In the latter case certificates of attendance on lectures and hospital practice for the M.B. must be produced, and the examinations for the M.B. must be passed. In either case the candidate keeps an Act by reading an original thesis upon which he is examined, and writes a short extempore essay upon one of four topics (at his choice), relating severally to Physiology, Pathology, Medicine, or State Medicine.

Master in Surgery (M.C.).

This degree is granted to a candidate who has completed all that is required for the degree of B.C. at least two years previously; the candidate is either (1) examined in Pathology, Surgery, Surgical Anatomy, and Surgery Operations, the examinations being both written and practical; or (2) submits books or writings constituting original contributions of merit to the science or art of surgery.

Dates, Fees, etc.

The dates of examinations are announced early in the Michaelmas and Lent terms. Each candidate pays £2 2s. to the Registrary of the University on giving notice of his intention to offer himself for either part of the First or Second, and £3 3s. for either part of the Third Examination for M.B., but any student who has been exempted from further examination in two of the sections in the Second part shall be required to pay a fee of £2 2s. on admission or readmission to examination in the remaining section. He pays £3 3s. before that for the M.C. Schedules defining the range of subjects in the First M.B. Examination, and of the Pharmacology and General Pathology in the Third Examination; also schedules for the necessary certificates, and a list of the schools of medicine and hospitals recognized by the University, may be obtained on application to the Registrary of the University, the Registry, Cambridge.

UNIVERSITY OF LONDON.

Under the revised regulations of the University of London, the degrees obtainable in the Faculty of Medicine are those of Bachelor of Medicine and Surgery, and Doctor of Medicine, and Master of Surgery.

All students of the University, it is to be remembered, are divided into two classes, Internal Students and External Students. An Internal student is one who, having matriculated at the University or otherwise obtained registration as undergraduate, is pursuing a course of study approved by the University in a School or Schools, or under one or more of the teachers of the University. An External student is an undergraduate who is pursuing his education in some other way.

The standard of education required from those who present themselves for degrees, whether as internal or external students, will, as far as possible, be the same; but the regulations which affect them differ to some extent. The information which hereinafter follows applies to those who propose to proceed to medical degrees as internal students, and who have not yet commenced their work. Those who propose to study elsewhere than at one of the constituent schools of the Faculty of Medicine of the University should obtain the regulations which apply to them from the External Registrar, and special inquiry should also be made by those who have passed one or more of the various examinations at some period anterior to the issue this year of the revised regulations, or who have reason to believe that they are entitled upon any ground to exemption from examination on some particular

subject, or to abbreviation of the intervals between examinations.

It may be stated here, however, that under no circumstances whatever can a degree after examination be granted to any one in less than three years after the date at which he passed the matriculation examination or obtained registration in some other way, and that External students of the Faculty of Medicine must pass not less than five years in professional study subsequent to matriculation, that four of those years must be passed after the Preliminary Scientific Examination at one of the numerous places of study at home and abroad recognized by the University, and that one year at least of those years must be passed at one of the schools situated within the United Kingdom.

The normal course of an Internal student of medicine will be as follows: After matriculation he will pursue approved courses of instruction in Chemistry, Physics, and Biology, and will then at the end of his first year go up for the Preliminary Scientific Examination. This passed, he will spend the next two years on approved courses of Anatomy, Physiology, and Pharmacology, and will then, at the end of his third year as a medical student, present himself for the Intermediate Examination. The next two years he will devote to approved courses of instruction in Medicine, Surgery, Midwifery and Diseases of Women, Pathology, Forensic Medicine and Hygiene, and then at the end of his fifth year he will be entitled to present himself for the final examination for the M.B., B.S. degree, success in which will entitle him to registration as a qualified practitioner. This five years' course, however, is liable to be prolonged by failure at any stage, as there is a minimum space of time fixed between passing one examination and attempting the next.

The Matriculation Examination (see Note p. 511) will take place three times in each year—namely, in the middle of the months of January, June (or July), and September. Application for admission to it must be made on a special form about six weeks beforehand, and must be accompanied by a certificate showing that the candidate will have completed his 16th year at the date on which the examination commences. It will be a written examination, but the examiners will not be precluded from putting viva voce questions to candidates if they should think fit. To pass the examination candidates must show a competent knowledge of five subjects, of which one must be English (one paper of three hours), and another elementary mathematics (two papers of three hours each). The other three may be selected from any of those in the following list (one paper in each selected subject), but one of them must be a language—Latin, Greek, French, German, Arabic,* Sanscrit,* Spanish,* Portuguese,* Italian,* Hebrew,* Ancient History, Modern History, Logic, Physical and General Geography, Geometrical and Mechanical Drawing, Mathematics (more advanced than in the compulsory examination), Elementary Mechanics, Elementary Chemistry, Elementary Biology (Botany), Elementary Biology (Zoology),* Elementary Physics, Heat, Light, and Sound, Electricity, and Magnetism. Candidates who desire to be examined in the subjects against which an asterisk is affixed must give at least two months' notice. The names of the successful candidates will be published in two lists, a first division and a second division. Communications concerning this examination must be addressed to the Principal of the University.

The Preliminary Scientific Examination will take place twice in each year, commencing on the third Monday in January and on the second Monday in July. It will consist of two papers in chemistry, two in biology, and two in physics, and there will be a practical examination in each subject not exceeding three hours in any one subject, and examiners will also be at liberty to test candidates viva voce. A student may present himself for examination in each of the three subjects, separately or in all at the same time, and those who fail in one or more subjects may offer themselves for examination in these subjects, either separately or together, at any subsequent examination. It will be a pass examination only, and the list of successful candidates will be published in the alphabetical order of their names.

The Intermediate Examination in Medicine will take place twice a year, commencing on the third Monday in January and the first Monday in July. Candidates must have passed the Preliminary Scientific Examination at least two years previously. The subjects of examination are Anatomy, Physiology, and Pharmacology. In Anatomy there will be two papers, Dissection, and an oral examination. In Physiology, two papers and a practical examination not exceeding six hours in length, which will include the preparation and identification of histological specimens, and the performance of simple experiments illustrating points in physiology and elementary physiological chemistry. In Pharmacology there will be one paper and an oral examination, which may include recognition of Materia Medica specimens. It is a pass examination, and the names of the successful candidates will be published in alphabetical order, but any subjects in which a candidate may have distinguished himself will be appended to his name if he has passed in all the subjects at one time. Candidates who have failed in one subject only at this examination may offer themselves for re-examination in that subject, if permitted to do so by the examiners. Three scholarships, one of the value of £40 in Anatomy, another of the same amount in Physiology, and one of £30 in Pharmacology may be awarded by the examiners to any candidate who, having passed the whole of the examination at one time, has been awarded marks of distinction in one or more subjects; as a rule, no candidate will be allowed to receive the income of more than one scholarship at the same time.

The Final M.B., B.S. Examination will take place twice a year, commencing on the last Monday in October and on the first Monday in May. No candidate will be admitted to this examination unless he has completed the course of study prescribed in the schedule or within two academic years from the date of passing the Intermediate Examination in anatomy and physiology.

The subjects of the examination are Medicine (including Therapeutics and Mental Diseases), Pathology, Forensic Medicine and Hygiene, Surgery, and Midwifery and Diseases of Women. The subjects may be divided into two groups, one of which shall comprise Medicine, Pathology, Forensic Medicine and Hygiene; and the other Surgery, Midwifery and Diseases of Women. Either group may be taken first at the option of the candidate or the groups may be taken together. The examination in Medicine will consist of (*a*) two papers, each of three hours' duration, (*b*) a viva voce examination on cases, (*c*) an examination of a patient with a written report thereon, and (*d*) an oral examination on the whole subject. In Pathology there will be a paper, a viva voce, and a practical examination in clinical diagnosis, while in Forensic Medicine and Hygiene there will be a paper and an oral examination.

In Surgery there are (*a*) two papers each of three hours' duration, one on Surgery and the other on Surgical Anatomy and Pathology, (*b*) a clinical examination on cases, and (*c*) an oral examination on Surgical Pathology, (*d*) another on Surgical Appliances and Surface Marking. In Midwifery and Diseases of Women there will be one paper and a viva voce. Only candidates who show a competent knowledge of all the subjects comprising a group will be passed. There will be no separate examination held for honours, but in the list of successful candidates the names will be divided into an honours list and a pass list, in each of which the names will be placed in alphabetical order. Only those, however, who have passed the whole examination at one time will be entitled to a place in the honours list. In this list the subjects in which they have distinguished themselves will be appended to the names of the successful candidates. The examiners will be empowered to recommend the award of a University Medal to the candidate who has most distinguished himself in the whole examination.

A diploma under the seal of the University, constituting a licence to practise, will be delivered to each candidate when he has passed in both groups of the examination.

DOCTOR OF MEDICINE.

The examination for the degree of Doctor of Medicine will be held twice in each year commencing on the first Mondays in December and July. Every candidate must have passed the examination for the M.B., B.S. of this University. Candidates may present themselves for examination in one of the following branches: (1) Medicine, (2) Pathology, (3) Mental Diseases, (4) Midwifery and Diseases of Women, (5) State Medicine; and if they wish, may pass also in another branch at a subsequent examination. Candidates for Branches 1 to 4 who have taken honours at the M.B., B.S. examination in the subject in which they present themselves for the M.D. degree, or who, subsequently to taking the M.B., B.S., have conducted a piece of original work approved for the purpose by the University, or have had special experience approved by the University, may present themselves for the M.D. examination one year after taking their Bachelor's degree. Other candidates must show that they have taken

the degree of M.B., B.S. not less than two years previously; and as regards candidates in Branches 1 to 4, that subsequently to taking that degree they have held for at least six months a resident or non-resident medical hospital appointment, or that they have been in qualified practice for not less than five years, while candidates in Branches 2 and 3 must show that they have held in the one case a pathological and in the other an asylum appointment. In each branch there will be (1) two papers on the special subject of the branch; (2) a Clinical Examination; (3) an essay to be written on one of two given subjects connected with the branch. In Branch 1 there will also be a paper on Pathology, and in Branches 2, 3, and 4 a paper in Medicine, while in Branch 2 a Laboratory Examination will be substituted for the Clinical Examination held in the other branches.

Candidates in Branch 5 (State Medicine) must show that they have taken the degrees M.B., B.S. not less than two years previously, and that subsequently to taking those degrees they have had (1) six months' practical instruction in an approved laboratory; (2) six months' practical instruction from a medical officer of health, of which three must not coincide with the laboratory work, and three months' practice at a hospital for infectious diseases. The interval between passing the M.B., B.S. and proceeding to the M.D. State Medicine may be reduced to one year, subject to conditions corresponding to those affecting Branches 1, 2, 3, and 4. The examination will consist of two papers in State Medicine (including Hygiene and Forensic Medicine), one paper in Medicine, an essay to be written on one of two subjects of State Medicine, and a practical examination extending over two days, one of which will be devoted to laboratory work, and the other to practical examination in, and reporting on, subjects which fall within the outdoor duties of a medical officer of health; a viva voce is also possible.

Master of Surgery.

The examination for the degree of Master in Surgery will take place twice in each year, commencing on the same dates as the foregoing, and the general regulations already quoted with regard to the M.D. will practically apply to it, surgery being substituted for medicine. The examination will consist of (1) two papers on Surgery (one of which may be a case for commentary); (2) an essay to be written on one of two subjects which may be selected from any branch of surgery; (3) two papers on Surgical Pathology and Surgical Anatomy; (4) a Clinical Examination; (5) operations on the dead body; (6) a viva voce at the discretion of the examiners. Competent knowledge in every subject of the examination must be shown in order to pass.

For the M.S. Degree and all branches of the M.D. a candidate is at liberty to forward a thesis or copies of published works embodying the result of independent research in the subject in which he presents himself for a degree and also any printed contributions to the advancement of professional knowledge published either separate or conjointly. If the examiners consider such thesis or works of sufficient merit they are empowered to exempt a candidate partly or entirely from examination in the subject to which such work refers. They also have power to award a University medal to the candidate who at the examination in any branch passes with most distinction.

Fees.

For the Matriculation.—£2 and £1 on re-examination in any one subject, and £2 for more than one.

Preliminary Scientific Examination.—£5 for each entry to the whole examination, and £2 for each subject when less than the whole examination is taken at one time.

Intermediate Examination.—£10 for each entry to the whole examination, and £5 for re-examination in one subject.

M.B., B.S. Examination.—£10 for each entry to the whole examination, and £5 for examination or re-examination in either group.

M.D. and M.S. Examinations.—£20 for each entry.

Note.—The following persons may obtain registration as Internal or External students on presentation of documentary evidence as to their condition and a payment of £2: Graduates or such British, Colonial, and foreign universities as are approved by the Senate for that purpose, and those who have passed all the examinations required for a degree in those universities, also women who have obtained Tripos certificates granted by the University of Cambridge, and women who have obtained certificates showing that, under the conditions prescribed by the Delegacy for Local Examinations at Oxford, they have passed the Second Public Examination of that University or have obtained honours in the Oxford University Examination for Women in Modern Languages, and students who hold the Scotch School Leaving Certificate, having passed on one and the same occasion, in the Higher or Honours Grade in all the subjects required by the regulations for the Matriculation Examination, and those who hold the Zeugniss der Reife from a Gymnasium or Realgymnasium within the German or Austrian Empire, or the Maturitäts-Zeugniss of a Swiss Gymnasium or Oberrealschule, or the Eidgenossische Maturitäts-Zeugniss of Switzerland. Their standing as students will date from the Matriculation Examination immediately preceding the date on which their registration was complete.

UNIVERSITY OF DURHAM.

The University of Durham grants six degrees in the Medical faculty—M.B., M.D., B.S., M.S., B.Hy., D.Hy. The degrees of M.D., B.S., and M.S. are granted only to M.B. graduates of the University. The degrees B.Hy. and D.Hy. are granted under certain conditions to graduates in medicine of recognized Universities (see pp. 549-50). The University also grants a diploma in Public Health. These degrees are open both to men and women. It is hardly necessary to say that every student intending to attend the University of Durham College of Medicine, Newcastle-on-Tyne, would do well to pass the necessary examination in general knowledge and qualify himself to obtain the degrees of the University.

Degree of Bachelor of Medicine (M.B.)

Preliminary Examination in Arts.—In addition to the Certificate of Registration, a candidate must (*a*) pass the Preliminary Examination in Arts for the degree in Medicine of the University of Durham, or hold a certificate of having passed one of the following examinations: (1) The first Public Examination for the Degree of B.Litt. of the University of Durham: (2) the First Public Examination in Arts of the University of Durham; (3) the University of Oxford Moderations; (4) the University of Cambridge Previous Examination: (5) the University of Cambridge General Examination; (6) the Matriculation Examination of the University of London; (7) the Durham Senior Local Examination (First Class); (8) the Oxford and Cambridge Senior Local Examination; (9) the Oxford and Cambridge Joint Board Examination (Higher Certificate); or (*b*) be a graduate in Arts of any University in the British Empire. Particulars as to the Preliminary Examination of the University of Durham can be obtained from the Rev. Henry Ellershaw, M.A., Secretary of the Examinations, the University, Durham, to whom the fee (£1 10s.) is payable.[1]

The Preliminary Examination in Arts is held thrice yearly, in January, March, and September. The next examination will be commenced on September 22nd, 1903.

Curriculum.—The curriculum extends over five years, of which at least one must be spent in attendance at the University of Durham College of Medicine, Newcastle-on-Tyne, and in the clinical practice of the Royal Infirmary there. First and second year students (dating from registration) are not required to comply with the regulation regarding attendance on hospital practice. Students are recommended to carry out the curriculum on some such plan as the following:

First Winter: Anatomy, Dissections, Chemistry, Physics, Elementary Biology. First Summer: Practical Chemistry, Practical Physics, Elementary Biology (if not attended during the Winter).

Second Winter: Anatomy, Physiology, Practical Physiology, Dissections. Second Summer: Practical Histology, Practical Pharmacy, Materia Medica, Therapeutics, and Pharmacology.

Third Winter: Medicine, Surgery, Hospital Practice, with Clinical Lectures, Public Health. Third Summer: Pathology, Practical Pathology, Medical Jurisprudence, Hospital Practice, with Clinical Lectures, Practical Midwifery.

Fourth Winter: Medicine, Surgery, Midwifery and Diseases of Women and Children, Practical Midwifery, Regional Anatomy, Hospital Practice, with Clinical Lectures. Fourth Summer: Operative Surgery, Ophthalmic Surgery, Practical Midwifery (if not previously attended), Hospital Practice, with Clinical Lectures.

Fifth Winter: Infectious Diseases, Hospital Practice, and Clinical Lectures, Practical Midwifery (if not previously attended). Fifth Summer: Clinical Lectures, Mental Diseases, Operative Surgery (if not previously attended).

Professional Examinations.—There are four professional examinations conducted in writing, practically, and viva voce, each held twice a year (April and September). *First Examination:* Elementary Anatomy and Biology, Chemistry, Physics. *Second Examination:* Anatomy, Physiology, Materia Medica, Therapeutics, and Pharmacology. *Third Examination:* Pathology, Medical Jurisprudence, Public Health, and Elementary Bacteriology. *Final Examination:* Medicine, Clinical Medicine and Psychological Medicine, Surgery and

[1] Candidates from Indian Universities must have passed a Matriculation Examination at one of the Indian Universities, and will have to reside for one academic year at the University of Durham College of Medicine at Newcastle-on-Tyne before presenting themselve for the M.B. Degree Examination, in accordance with the regulations on pp. 68 to 71 of the *Calendar*. If the Matriculation Examination at the Indian University did not embrace Latin and either Persian or Sankrit, then it will be necessary for the candidate to produce evidence that he has passed in Latin and one of those subjects, or in Greek, within twelve months of his presenting himself for the examination for the Degree in Medicine.

Clinical Surgery, Midwifery and Diseases of Women and Children. The *Calendar* of the University of Durham College of Medicine, Newcastle-on-Tyne, contains synopses of the subjects of the examinations and examination papers. Applications for further information should be addressed to Professor Howden at the College. A candidate who has passed the First and Second Examinations of the University will be exempt from the First and Second Examinations of the Conjoint Board in England. Candidates who have completed part of their curriculum elsewhere may pass their First, Second, and Third Examinations *previously* to entering at the College of Medicine, Newcastle-upon-Tyne.

DEGREE OF DOCTOR OF MEDICINE (M.D.).

A candidate for this degree must have been engaged in practice for at least two years subsequent to obtaining the degree of M.B. in the University of Durham and must satisfy the University as to his knowledge of Greek. The candidate is required to prepare an essay, which must be type-written, based on original research or observation, and is subject to examination on the topic of his essay. For particulars as to the degree of M.D. for medical practitioners of fifteen years' standing, without curriculum, see page 546.

DEGREES IN SURGERY.

Bachelor of Surgery.—A candidate must have passed the examination for the Degree of M.B.(Dunelm), and have attended courses of lectures on Operative Surgery and on Regional Anatomy. He is required to perform operations on the dead body, and to show practical acquaintance with the use of surgical instruments and appliances.

Master in Surgery.—A candidate must have obtained the degree of B.S.(Dunelm) at least two years previously, and have been engaged in practice for that period. The subjects for the examinations are Principles and Practice of Surgery, Surgical Pathology, Surgical Anatomy, Surgical Operations, Clinical Surgery.

DEGREES IN HYGIENE (B.HY., D.HY.).

For the regulations as to the degrees, see pp. 549-50.

FEES.

Preliminary Arts Examination for Degrees, £1 10s. First, Second, and Third Professional Examinations (M.B.), each £5. Final (M.B.), £10. Examination for the degrees of M.D., B.S., and M.S., each £5, in addition to a payment to the University of Durham for each degree of £6 6s.

VICTORIA UNIVERSITY.

Colleges.—The Colleges of the Victoria University were—until independent charters were granted in July last to the Victoria University of Manchester and the University of Liverpool—Owens College, Manchester; University College, Liverpool; and the Yorkshire College, Leeds.

Preliminary.—A candidate for the Preliminary Examination[1] is examined in: (1) Latin; (2) Elementary Mathematics; (3) Elementary Mechanics; (4) English Language, including Grammar and Composition; (5) *One* of the following: i. Greek; ii, French; iii, German; iv, Italian; v, Spanish. Candidates may, by special permission of the Board of Studies, substitute any other modern language for either of the subjects named under (5). Candidates who propose to present themselves in Italian or Spanish, or in a modern language not included in the list, must give notice to the Registrar on or before March 1st in the year in question. Candidates who fail in Mechanics only may pass in it separately afterwards.

Matriculation.—Before matriculating, which consists in signing the University Register, candidates must produce proof that they are registered students of a College of the University, or of a medical school recognized by it.

DEGREES OF BACHELOR OF MEDICINE AND OF SURGERY (M.B., CH.B.).

Curriculum and Residence.—Five years must be spent in study at a recognized medical school subject to registration as a medical student; of these five years, two at least must be passed in a college of the University, and one of these two years must be subsequent to passing the First M.B. Examination.

First M.B. Examination.—Candidates must have attended during at least one year courses of lectures and laboratory work in each of the subjects of the examination—namely: Part I. (*a*) Physics; (*b*) Chemistry. Part II. Biology (Animal and Vegetable Morphology, Physiology, and Laboratory work). The two parts may be taken together or separately.

Second M.B. Examination.—Candidates must have attended winter courses in Anatomy and Physiology, and a summer course in Materia Medica and Pharmacy, must have dissected for two winter sessions and one summer, and must have had practical instruction in Physiology and in Materia Medica and Pharmacy. The subjects of the examination are: (1) Anatomy; (2) Physiology; (3) Materia Medica and Pharmacy; (3) may be passed separately.

Final M.B. Examination.—Candidates must produce certificates of having attended, in a recognized medical school, courses of instruction in all the subjects of the examination, which are: Part I. (*a*) Pharmacology and Therapeutics, (*b*) General Pathology and Morbid Anatomy, (*c*) Forensic Medicine and Toxicology and Public Health. Part II. (*d*) Obstetrics and Diseases of Women, (*e*) Surgery, (*f*) Medicine (including Mental Diseases and Diseases of Children). The two parts may be taken separately, and any one of the subjects of Part I. may be deferred and taken with Part II.

DEGREE OF DOCTOR OF MEDICINE (M.D.)

A candidate must have obtained the degree of M.B. at least one year previously. He must present a printed dissertation, and may be examined on any subject connected therewith.

DEGREE OF MASTER OF SURGERY (CH.M.)

A candidate must have obtained the degree of M.B. at least one year previously, must have been engaged in the study of Practical Surgery in the interval, and have held a surgical appointment for not less than six months in a hospital or other public institution. He must also produce certificates of having attended special courses in Operative Surgery, Bacteriology, and Ophthalmology.

FEES AND DATES OF EXAMINATION.

Preliminary examination, £2; re-examination after failure, £1. First, Second, and Third M.B. Examinations, each £5; re-examination after rejection, £2. M.D., £10. Ch.M., £5 on examination, and £5 on the conferring of the degree.

The Preliminary Examination is held in June and September. The First M.B. Examination is held in June and also in September. The Second and Final M.B. Examinations are held in March and July, and that for the Ch.M. in July.

UNIVERSITY OF BIRMINGHAM.

THE University of Birmingham confers the degrees of M.B., Ch.B., M.D., Ch.M., and also a B.Sc. in the subject of Public Health. The course for the Bachelors' degrees extends over five years from the date of registration with the General Medical Council. As a rule, the first four of these years must be spent in the University, but the Senate has power of recognizing attendance at another University as part of the attendance qualifying for these degrees, and of recognizing examinations passed at such other Universities as exempting from the examinations in Chemistry, Physics, and Comparative Anatomy. In the case of such students at least three years must be spent in attendance upon classes at the University. The fifth year may be spent at any other school or schools of medicine recognized by the University.

DEGREES OF BACHELOR OF MEDICINE AND BACHELOR OF SURGERY.

The student must have passed either the Matriculation Examination of the University or one of the following examinations, which will be accepted in lieu thereof, *for the present*. (*a*) The Previous Examination of the University of Cambridge. (*b*) Responsions of the University of Oxford. (*c*) The Matriculation Examination of any other University in the United Kingdom. (*d*) The leaving Certificate (Higher) of the Oxford and Cambridge Boards. (*e*) The Oxford or Cambridge Junior Local Examinations (First or Second Class Honours). (*f*) The Oxford or Cambridge Senior Local Examination (Honours). (*g*) The College of Preceptors Examination for First-class Certificate. Matriculation Examinations are held in June and September in each year, the Regulations for which may be obtained from the Registrar.

[1] It has been arranged that the Preliminary Examination—later to be called the Matriculation Examination—shall be held as heretofore in September, and shall be conducted as a joint Examination by the Victoria University of Manchester and the University of Liverpool, together with the Yorkshire College. The Yorkshire College, Leeds, is associated with the Victoria University of Manchester until October, 1904, or until a charter is granted establishing a university in Leeds.

First Examination.—Chemistry and Physics. One year's lectures with practical work.

Second Examination.—Anatomy, Comparative Anatomy, and Physiology. Two winters' and one summer's dissections with lectures in Anatomy; one winter course of lectures and practical Comparative Anatomy; one winter course and two summer courses of lectures and practical work in Physiology.

Third Examination.—Pathology and Bacteriology. One course of lectures and practical work during the winter session, with a practical course during the summer session.

Fourth Examination (at the end of the fourth year).—Forensic Medicine, Toxicology, and Public Health.

Final Examination.—Medicine, Surgery, Midwifery, Gynaecology, Therapeutics, Mental Diseases, and Ophthalmology. Attendance on General Hospital for a year after the passing of the Fourth Examination, also attendances at Fever Hospital, Lunatic Asylum, Vaccination, courses of Ophthalmology, Medical and Surgical Anatomy, and Operative Surgery.

Degrees of Doctor of Medicine and Master of Surgery.

Candidates for either of these Degrees will be required to comply with one or other of the following regulations: (A) A candidate may present a Thesis, embodying original observations in some subject embraced in the medical curriculum and approved by a Board of medical examiners to whom the Thesis will subsequently be submitted—on the report of which Board the Degree will be awarded or withheld. The candidate will be examined on the subject which he has chosen for his Thesis, and the examiners may require to see the notes of original observations on which the Thesis is based. (B) A candidate may pass a general examination (written and practical) in Medicine or Surgery, according to the Degree desired, and, in addition, to show special proficiency in any one of the following subjects to be chosen by the candidate:

For the Degree of M.D.—(*a*) Infectious Diseases, (*b*) Diseases of the Chest, (*c*) Diseases of the Abdomen, (*d*) Nervous Diseases, (*e*) Diseases of Children, (*f*) Midwifery, (*g*) Pathology, (*h*) Bacteriology, (*i*) Medical Jurisprudence and Toxicology, (*j*) Public Health, (*k*) Mental Diseases, (*l*) Diseases of the Skin.

For the Degree of M.Ch.—(*a*) Regional Surgery, (*b*) Gynaecology, (*c*) Ophthalmology, (*d*) Diseases of the Ear, Nose, and Throat.

Degree in Public Health.

For the Regulations for Degree and for the Diploma in the same subject see p. 548.

Fees.

Matriculation, £2: First Examination, £4; Second, £4; Third, £2; Fourth, £2: Final, £4. The composition fee, £85, is inclusive and payable in four annual instalments—namely, £25, £25, £15, and £20 at the commencement of each year. This fee covers all the courses necessary for the degrees of this and other Universities and the ordinary qualifications of the Licensing Boards.

Entrance Scholarships.—Sands Cox, 40 guineas awarded to the candidate who obtains the highest marks at the June Matriculation Examination. Sydenham Scholarships, one or more annually, restricted to orphan sons of medical men, elected by the Council, on the recommendation of the Medical Faculty, 40 guineas.

The Winter Session begins on October 5th, 1903, and terminates on March 26th, 1904.

The Summer Session commences on April 18th, 1904, and terminates on June 30th, 1904.

Further particulars may be obtained by application to Professor Windle, Dean of the Medical Faculty, at the University.

UNIVERSITY OF LIVERPOOL.

Medical Faculty.

Students may now enter for the degrees of the University of Liverpool, or may study for the degrees and qualifications of the various other licensing bodies. The conditions as to the degrees of the University of Liverpool are for the present the same as those of the Victoria University (see p. 512).

Medical School Buildings.—The older buildings have during the past six years been almost entirely replaced by spacious and well-equipped class rooms and laboratories for the practical study of all the important scientific subjects which form the basis of medicine.

Medical Research has also been endowed with several new laboratories in which students can pursue research work after graduation.

All the laboratories and class rooms are situated close together, communicating with one another, and are made up of four large blocks of buildings which form one side of the College quadrangle.

The most recent additions are the Johnston Laboratories for Experimental Medicine, Bio-Chemistry, and Comparative Pathology, and the Hartley Laboratory and Museum of Botany.

The departments of Physiology and Pathology are accommodated in the large block provided by the generosity of the Rev. S. A. Thompson-Yates, in 1898.

The Anatomical Department is situated in a separate block and has a complete suite of rooms, including a large and well-stocked museum, and a well-lighted dissecting room on the upper floor, measuring 70 ft. by 40 ft.

Hospitals.—Students may take out their clinical work at the Liverpool Royal Infirmary, the David Lewis Northern Hospital, the Royal Southern Hospital, or the Stanley Hospital. Particulars as to fees, appointments, etc., may be obtained from the Secretaries of the Medical Boards of these institutions.

The practice of the Lying-in, Eye and Ear, Women's, Children's, Dental, and Skin Hospitals is also open to students of the Faculty of Medicine.

Fellowships and Scholarships.—Fellowships, Scholarships, and Prizes of over £700 are awarded annually. (*a*) A Holt Fellowship in Pathology and Surgery, of the value of £100 for one year, is awarded annually by the Medical Faculty to a senior student possessing a medical qualification. The successful candidate is required to devote a year to tutorial work and investigation in the Pathological department. (*b*) A Holt Fellowship in Physiology, awarded under similar conditions, of the value of £100 for one year. (*c*) A Robert Gee Fellowship in Anatomy, awarded under similar conditions, also of the value of £100 for one year. (*d*) An Alexander Fellowship for Research in Pathology of the annual value of £100, renewable. (*e*) A Johnston Colonial Fellowship in Pathology and Bacteriology (£100 a year, renewable). (*f*) A John W. Garrett International Fellowship in Physiology and Pathology (£100 a year, renewable). (*g*) An Ethel Boyce Fellowship in Gynaecological Pathology (£100 a year, renewable). (*h*) Two Lyon Jones Scholarships, of the value of £21 each for two years, are awarded annually—a Junior Scholarship, open at the end of the first year of study to Liverpool University students in the subjects of the first M.B. Examinations, and a Senior Scholarship, open to all students in the school at the end of the second or third year of study, in the subjects of Anatomy, Physiology, and Therapeutics. (*i*) The Derby Exhibition of £15 for one year is awarded in Clinical Medicine and Surgery in alternate years. Students may compete in their fourth and fifth years. In 1903 the subject will be Clinical Medicine. (*j*) The Torr Gold Medal in Anatomy, the George Holt Medal in Physiology, the Kanthack Medal in Pathology, the Robert Gee Book Prize, of the value of £5, for Children's Diseases, and numerous class prizes are awarded annually.

Entrance Scholarships.—Four Robert Gee Entrance Scholarships, of the value each of £25 for one year, are offered annually for competition. The holder is required to take out the Science Course for the University Degeee in Medicine.

Communications should be addressed to the Dean, Professor Benjamin Moore, M.A., D.Sc., the University, Liverpool.

Liverpool Dental Hospital and School of Dental Surgery.—The courses of systematic instruction are given in the University buildings, five minutes' walk from the Dental Hospital. The two institutions are now closely associated, and the management of the curriculum is in the hands of a Joint Committee. At the Dental Hospital recent alterations have been made, and, as it now stands, this school offers advantages to students which are not excelled anywhere. The ground floor of the building contains the following: Extraction room with all needful appliances; anaesthetic room specially reserved with every convenience; and large waiting room for patients. The first floor has a large Board room and a very comfortable students' room set apart exclusively for the use of students. The whole top floor of the building has been thrown into one fine, airy, and well-ventilated operating room. This room will accommodate upwards of thirty operating chairs, which are of the "Morrison pattern," and each of which has a special electric light (canting pendant) suspended before it. In the basement a very convenient workroom has been fitted up, containing the necessary requirements, and there are

commodious lavatories for students. A new Laboratory for practical mechanical work has also been constructed, so as to meet the requirements of the curriculum. It is adequately furnished with all the modern appliances of a dental workshop. A skilled Dental Mechanic has been engaged, and students are able to undertake at the hospital the whole of their training in Mechanical Dentistry. The times of the lectures at the University are arranged to meet the convenience of students, thus allowing the maximum time for attendance upon Dental Hospital practice. The staff of the hospital includes seven honorary Dental Surgeons, a Demonstrator, two House-Surgeons, and a Curator. Fees for two years' hospital practice, £21. Apprenticeship: A limited number of apprentices are admitted annually, fees for three years, £105. Further information may be had from the Warden, Mr. W. H. Gilmour. The various Medical and Dental lectures are given at the University of Liverpool. The Anatomical department has been removed to a new building, comprising a spacious Dissecting Room and a Museum which contains an excellent collection of skulls illustrative of human and comparative dental anatomy. Fees: The composition fee for all lectures is £50, in one payment on entrance, or in two equal instalments (one-half on entrance and the remainder within twelve months). The fee for general hospital practice is £10 10s.

School of Tropical Medicine.—Courses of instruction are given in Tropical Diseases, particulars regarding which may be obtained from Mr. A. H. Milne, B 10, Exchange Buildings, Liverpool.

Public Health Department.—This is located in a separate building known as Ashton Hall, in which full courses of instruction are given to D.P.H. students.

School of Pharmacy.—Complete courses of instruction are provided, adapted to the requirements of candidates preparing for either the Minor or Major examinations of the Pharmaceutical Society of Great Britain.

Prospectuses and further information may be had on application to the Dean of the Medical Faculty, University of Liverpool.

THE ENGLISH COLLEGES.

THE Medical Corporations in England are the Royal College of Physicians of London, the Royal College of Surgeons of England, and the Society of Apothecaries of London. The two Royal Colleges now co-operate to hold a series of examinations, on passing which the candidate receives the diplomas of Licentiate of the Royal College of Physicians (L.R.C.P.), and Member of the Royal College of Surgeons (M.R.C.S.). The Society of Apothecaries grants its diploma separately.

CONJOINT EXAMINING BOARD IN ENGLAND.

A candidate who desires to obtain the Licence of the Royal College of Physicians of London and the diploma of Member of the Royal College of Surgeons of England is required to pass three professional examinations, and to produce evidence of having passed through a stated course of instruction at a recognized medical school. The full period of five years must be spent in professional study after passing the required Preliminary Examination, of which six months may be spent at an institution recognized by the Board for instruction in Chemistry and Physics, or one year may be spent at an institution recognized by the Board for instruction in Chemistry, Physics, and Biology. The candidate must pass an examination in subjects of Preliminary Education before entering the medical school (see page 506). For institutions from which certificates are accepted by the Conjoint Board see p. 541.

FIRST PROFESSIONAL EXAMINATION.

The examination consists of three parts: (1) Chemistry and Physics, (2) Practical Pharmacy, (3) Elementary Biology.

A candidate may take this examination in three parts at different times, or he may present himself for the whole at one time, *or he may take Practical Pharmacy at any time during the curriculum.*

A candidate is required to produce evidence of having received instruction in each of the above-mentioned subjects. A candidate referred in any part or parts will not be admitted to re-examination for three months. If referred in Chemistry or Biology he must produce evidence of further instruction. A candidate who produces evidence of having passed an examination for a degree in Medicine on any of the subjects in this examination at a university in the United Kingdom, India, or a British colony will be exempt from examination on the subjects in which he has passed.

SECOND PROFESSIONAL EXAMINATION.

The subjects of this examination are Anatomy and Physiology, and both must be passed at the same time. A candidate must have passed Parts I and III of the First Examination at least nine months (one winter and one summer session) earlier, and have attended during two winter sessions and one summer session (or fifteen months during the ordinary sessions) at a recognized medical school lectures on Anatomy, Physiology, and a course of Practical Physiology and Histology, and have dissected for twelve months during the ordinary sessions. If rejected, a candidate, before being admitted to re-examination, must continue his studies for not less than three months.

THIRD OR FINAL PROFESSIONAL EXAMINATION.

This examination consists of three parts: Part I. Medicine, including Medical Anatomy, Pathology, Practical Pharmacy,[1] Therapeutics, Forensic Medicine, and Public Health; Part II, Surgery, including Pathology, Surgical Anatomy, and the use of Surgical Appliances; Part III, Midwifery and Gynaecology.[2] The examination may be passed at one time or in each part separately. Evidence of attendance at courses of instruction in the subjects of the three parts must be produced, and also of attendance on twenty labours. The candidate must have passed the Second Examination two years previously, and have spent five years in professional study subsequent to passing the required Preliminary Examination. A rejected candidate must produce evidence of further instruction during three months.

All applications with reference to the examinations for the Licence of the Royal College of Physicians of London and for the diploma of Member of the Royal College of Surgeons of England should be addressed to the Secretary, Examination Hall, Victoria Embankment, London, W.C. (telegraphic address, "Conjoint," London), from whom also synopses of some of the subjects can be obtained.

REGULATIONS FOR COLONIAL, INDIAN, OR FOREIGN CANDIDATES AND UNIVERSITY CANDIDATES.

A person holding a Colonial, Indian, or foreign qualification which entitles him to practise in the country where such qualification has been obtained, is after a course of study and examination equivalent to those required by the Regulations of the two Royal Colleges, admissible to the Second and Third or Final Examinations, without any interval. Members of an English, Scotch, or Irish University are under certain conditions eligible for admission to the Third or Final Examination two years after passing at their University the subjects included in the First and Second Examination of the Board.

A Doctor or Bachelor of Medicine or Surgery of an Indian, Colonial, or foreign University recognized for the purpose, who shall have passed at his University in the subjects of the First and Second Examinations, will be eligible for admission to the Third or Final Examination two years after passing in the said subjects.

FEES, DATES, ETC.

First Examination, £10 10s. Re-examination, Part I, £3 3s., Parts II, III, each £2 2s. *Second Examination*, £10 10s. Re-examination, £6 6s. *Third Examination*, £21. Re-examination, Part I, Medicine, £5 5s. Practical Pharmacy, £2 2s. Part II, Surgery, £5 5s. Part III, Midwifery and Diseases of Women, £3 3s. Members of an English, Scottish, or Irish University, £5 5s.; for the diplomas, £36 15s.

The examinations are held in January, April, July, and October. A book of questions set at the several examinations is published annually and can be obtained from Messrs. Taylor and Francis, Red Lion Court, Fleet Street, London, E.C.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

Licentiates.—Candidates for the Licence are now subject

[1] Candidates who have previously passed in Practical Pharmacy will not be re-examined in that subject at the Third Examination.

[2] Candidates may present themselves for examination in Midwifery and Diseases of Women at any time after the completion of the fourth year of professional study at a medical school, and not less than one year after the passing of the Second Examination, on production of the required certificates.

to the regulations of the Conjoint Examining Board in England.

Members.—The Membership of the College is granted after examination to graduates in Medicine of recognized Universities, or to Licentiates of the College, being above the age of 25 years, who do not engage in trade, do not dispense medicine, and who do not practise in partnership. Under the provisions of the Medical Act of 1886 the diploma of Membership is not registrable at the present time as a primary qualification, and is therefore granted only to persons already registered, or who have passed the Final Examination for the Licence.

The examination, which is held in January, April, July, and October, is partly written and partly oral. It is directed to Pathology and the Practice of Physics, and is conducted by the President and Censors. Candidates under 40 are examined in Latin, and either Greek, French, or German. Candidates over 40 are not so examined, and the examination in Medicine may in their case be modified under conditions to be ascertained by application to the Registrar. The fee for the Membership is £42, but if the candidate is a Licentiate the fee is the difference between what he has already paid and £42. In either case £6 6s. is paid before examination.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Membership.—Candidates who registered on or after October 1st, 1884, are now subject to the regulations of the Conjoint Board.

Fellowship.—The Fellowship of the College of Surgeons is granted after examination to persons at least 25 years of age who have been engaged in professional studies for six years. There are two examinations—the first in Anatomy and Physiology, which may be passed after the third winter session: the second, chiefly directed to Surgery, which may be passed after six years of professional study. Candidates must pass the Final Examination of the Examining Board in England and be admitted Members of the College before admission to the Second Examination for the Fellowship, except in the case of Graduates in Medicine and Surgery of not less than four years' standing, of universities recognized by the College for the purpose.

Fees.—At First Examination: £5 5s. At Second Examination: £12 12s. Diploma fee: Members, £3 3s.; non-Members, £13 13s. Further information can be obtained on application to the Secretary, Examination Hall, Victoria Embankment, London, W.C.

SOCIETY OF APOTHECARIES OF LONDON.

The examinations are Primary and Final. The Primary Examination is held quarterly, on the first Wednesday, and on the Monday and Thursday in the same week, in the months of January, April, July, and October. The Final Examination is held monthly.

Primary Examination.—This examination consists of two parts: Part I includes (*a*) Elementary Biology; (*b*) Chemistry, Chemical Physics, Practical Chemistry; (*c*) Pharmacy. A synopsis indicating the range of the subjects in the examination will be sent with the regulations on application. This examination may be passed any time after registration as a medical student. No professional studies commenced before registration will be recognized as part of the medical course. Should the candidate not succeed in passing in all the subjects of the examination, he will be referred only in the subject or subjects in which he fails. Part II includes Anatomy, Physiology, and Histology. This examination cannot be passed before the completion of twelve months' Practical Anatomy, with demonstrations. These subjects cannot be taken separately except in the event of the candidate having previously passed in one. A schedule of the Primary Examination, to be obtained of the Secretary, must be signed by the Dean of the Medical School or other authority. Candidates will be excused any or all the subjects of the Primary Examination on producing evidence that they have passed equivalent examinations before an examining body recognized by the Society. Candidates referred in Anatomy will be required to produce evidence of further work in the dissecting room before being admitted to re-examination.

Final Examination (Sec. I).—This examination consists of three parts. Part I includes: The Principles and Practice of Surgery, Surgical Pathology, Operative Manipulation, Surgical Anatomy, Instruments and Appliances. Part II includes: (*a*) the Principles and Practice of Medicine (including Therapeutics, Pharmacology, and Prescriptions), Pathology, and Morbid Histology; (*b*) Forensic Medicine, Hygiene, Theory and Practice of Vaccination, and Mental Diseases. Part III: Midwifery, Gynaecology, and Diseases of Newborn Children, Obstetric Instruments and Appliances. Sec. I of the Final Examination cannot be passed before the expiration of 45 months after registration as a medical student, during which time not less than three winter sessions and two summer sessions must have been passed at one or more of the medical schools connected with a general hospital recognized by the Society.

Final Examination (Sec. II).—This examination consists of two parts: Part I, Clinical Surgery; Part II, Clinical Medicine and Medical Anatomy. This examination cannot be passed before the end of the fifth year.

Information as to the details of the course of study required may be obtained on application to the Secretary, Court of Examiners, Apothecaries' Hall, Blackfriars, E.C. The Examination offices are open from 10 to 4, Saturdays 10 to 1.

Fee, £21.—Primary Examination, £5 5s.; Final Examination, £15 15s.

THE SCOTTISH UNIVERSITIES.

It will be convenient to give the regulations for Edinburgh in detail, and then briefly to indicate points of difference as regards the other three Universities.

UNIVERSITY OF EDINBURGH.

The following regulations apply to all who began their studies after October 1st, 1892.

Four degrees in Medicine and Surgery are conferred—namely, Bachelor of Medicine, Bachelor of Surgery, Doctor of Medicine, and Master of Surgery. The degree of M.B. is not conferred separately from Ch.B., and vice versa, but M.D. and Ch.M. are separable.

Preliminary Examination.

This must be passed before beginning medical study: the subjects are: (1) English;[1] (2) Latin, Translation and Parsing, Prose, Composition, Grammar, and Sentences; (3) Elementary Mathematics, Arithmetic,[2] Algebra, and Geometry, Euclid, Books i, ii, and iii (or their equivalents with easy deductions); (4) Greek (Translation, Sentences, and Grammar), or French, or German. [One paper will be set in French and one in German. The papers will be of a lower standard than those set in these subjects in the Arts and Science Preliminaries. The time allowed for such paper will be three hours. The papers will comprise questions in grammar, translations, a piece of English for translation, and some short sentences.]

Excellence in one or more subjects will in some measure compensate for deficiency in others. The examination is conducted by a Joint Board of the four Universities, and will be held from September 28th to October 2nd, 1903, and from March 25th to April 1st, 1904, and these dates apply to all the Scottish Universities. The standard of examination corresponds pretty nearly to the certificate of the Scotch Education Department, or the Lower Certificate of the Oxford and Cambridge Schools. Candidates are required to pass in all the necessary subjects at one or not more than two examinations. The examinations of a large number of bodies are taken as equivalents of the Preliminary; these will be found on pages 484-486 of the *University Calendar* (Regulations of the Joint Board of Examiners). The fee is 10s. 6d. each time, and is to be sent with the schedule to Mr. T. Gilbert, the University Clerk, not later than September 18th, 1903, and March

[1] In English no set books are prescribed, nor is a general knowledge of the life and works of the greater authors expected of candidates, but one or two questions may be set, giving an opportunity to candidates to show a knowledge of famous literary works. The historical questions will not be confined to any one period, but will cover the whole of British History, and will be set in such a way as to give an opportunity to candidates who have confined their studies to a single period to show their knowledge. A single three hours' paper will be set, containing an Essay, a Paraphrase, two questions on History, two on Geography, four on Grammar (including correction of sentences, parsing, analysis of sentences, and derivations), two of a literary and general kind. Eight answers will be required. The Essay, the Paraphrase, one answer on History, and one on Geography, will be compulsory.

[2] *Arithmetic* (including Vulgar and Decimal Fractions, Proportion, Percentage, Square Root, Simple Interest); *Algebra* (including Fractions, Factors, Square Root, Equations of the First Degree, Simultaneous Equations of the First Degree, Easy Quadratics, and problems leading to the above Equations).

1st, 1904.[3] The schedules can be had on and after September 8th, 1903, and February 15th, 1904.

REGISTRATION.

The student must register within fifteen days after the commencement of medical study. There is no fee. Forms and information may be had from Mr. James Robertson, 54, George Square, Edinburgh, or at the office of the Faculty of Medicine.

PROFESSIONAL EDUCATION.

The course extends over five years. During the first four the student must attend Elementary Botany, Elementary Zoology, Physics, Practical Chemistry, Practical Physiology, Practical Pathology, and Medical Jurisprudence and Public Health during courses of not less than 2½ months each; Practical Anatomy during two courses of not less than 5 months each; Chemistry, Anatomy, Physiology, Pathology, Surgery, Materia Medica and Therapeutics, Medicine and Midwifery, and the Diseases of Women and Infants, during courses of not less than 5 months each. During the fifth, or final year, he must be engaged in clinical study for at least 9 months, and must attend a 9 months' course in Clinical Medicine and Clinical Surgery. In all, before graduation he must have attended, for at least three years, a hospital which accommodates not fewer than 80 patients, and possesses a distinct staff of physicians and surgeons, and he must have acted as clerk in the medical, and dresser in the surgical wards of such a hospital. He must have had approved opportunities of studying at a hospital *Post-mortem* Examinations, Fevers, and Ophthalmology. He must have had a course of Operative Surgery. Every candidate must attend one of the three following courses: (1) A six weeks' course of clinical instruction in the Diseases of Children; (2) a course of instruction, of at least 18 meetings, in diseases of the Larynx, Ear, and Nose; (3) a course of clinical instruction in diseases of the skin, of not less than 20 meetings. He must have attended a course of 25 meetings on Practical Pharmacy, a course on Mental Diseases, been properly instructed in Vaccination by a certificated public vaccinator, have attended 12 cases of labour, or had 3 months' attendance at a lying-in hospital, and have personally conducted 6 cases. Certificates for these various courses must attest regular attendance and due performance of the work of the class. The fees vary from 1 to 4 guineas for each class, and the total minimum cost in class, examination, and other fees for the M.B. and Ch.B. may be set down as £150. Two of the five years' course must be taken in the University of Edinburgh. For students beginning their course in winter there may be given the following minimum curriculum for the degrees of M.B. and Ch.B., with suggested order of study and examination:

First Winter Session: Chemistry, Practical Chemistry, Physics,[4] and Anatomy (Lectures), Examination in Chemistry, Practical Chemistry, and Physics. First Summer Session: Elementary Zoology or Elementary Botany, Examination in Elementary Botany and Elementary Zoology.

Second Winter Session: Practical Anatomy, Physiology, Practical Physiology, Surgery,[5] Hospital and Clinical Surgery after Christmas.[5] Second Summer Session: Practical Physiology, Practical Materia Medica, Practical Anatomy, Hospital and Clinical Surgery.

Third Winter Session: Materia Medica, Practical Anatomy, Anatomical Demonstrations, Clinical Surgery (with Dressership), Hospital, Examination in Anatomy, Physiology, and Materia Medica and Therapeutics (the last may be postponed to the end of the following summer). Third Summer Session: Practical Pathology, Clinical Medicine, Hospital, Examination in Materia Medica and Therapeutics (if not previously taken).

Fourth Winter Session: Pathology, Medicine, Midwifery, and Diseases of Women and Children, Clinical Medicine (with Clerkships), Hospital, *Post Mortems*, and Dispensary, Examination in Pathology. Fourth Summer Session: Forensic Medicine, Public Health, Ophthalmology, Diseases of Children, or Larynx, Ear, and Nose, or Skin, Hospital and Clinical Medicine, Dispensary, Mental Diseases.

Fifth Winter Session: Clinical Medicine, Hospital, Fevers, Vaccination, Practical Midwifery.

Fifth Summer Session: Operative Surgery, Examination in Surgery and Clinical Surgery, Medicine and Clinical Medicine, and Midwifery, Forensic Medicine and Public Health.

PROFESSIONAL EXAMINATIONS.

These are four in number, and the first three may be taken in sections as indicated above.

First.—Botany, Zoology, Physics, Chemistry, taken any time after the full specified course in these subjects.

Second.—Anatomy, Physiology, Materia Medica, and Therapeutics, at the end of the third Winter.

[3] A student whose native language is not English may substitute his own language for either French or German, and may substitute any other classical language for Latin or Greek.

[4] Three months' course.

[5] Or in Third Winter Session.

Third.—Pathology.

Final.—Surgery, Clinical Surgery, Medicine, Clinical Medicine, and Midwifery, Forensic Medicine and Public Health at the end of the fifth year.

Failure in one subject does not involve failure in the other subjects of that division. Candidates must be 21 years of age before admission to the degree of M.B. and Ch.B.

Examination Fees for M.B. and Ch.B.

	First Time.	Re-entry.
	£ s. d.	£ s. d.
Preliminary	0 10 6	0 10 6
First Professional	6 6 0	
Any two Subjects of Ditto ...	3 3 0	
Second Professional	6 6 0	£1 1s. each time for each subject.
Anatomy and Physiology ...	4 4 0	
Materia Medica, etc.	2 2 0	
Third Professional	4 4 0	
Final	6 6 0	

DEGREE OF M.D.

The candidate must be M.B. and Ch.B. of Edinburgh, must have been engaged for one year in the medical wards of a hospital, or at scientific work at a recognized research laboratory, or in the military or naval medical services, or for at least two years in general practice, and must be 24 years of age. He must write a thesis on a subject not exclusively surgical, and he will be examined in Medicine, and in some of its special departments. The fee is £10 10s., and the re-entry fee £5 5s.

DEGREE OF CH.M.

The candidate must be M.B. and Ch.B. of Edinburgh, have worked one year in the surgical wards of a hospital, or been engaged in scientific work, or in the military and naval medical services, or for at least two years in practice not confined to medicine. He must be 24, must submit a thesis on a subject not exclusively medical, will be examined on Surgical Anatomy, Operations on the Dead Body, Clinical Surgery, and some of its special departments. The fee is £10 10s.

For further details the student is referred to the *University Calendar* (published by Mr. Thin, South Bridge, Edinburgh, price 3s., post free 3s. 6d.), or the *Medical Programme*, price 2d., also published by Mr. Thin, or to the Dean of the Faculty of Medicine, University of Edinburgh.

REGULATIONS FOR GRADUATION OF WOMEN.

When granting recognition to medical schools or teachers for the medical instruction of women, the University Court *requires that the classes shall not be mixed classes, except on special cause shown.*

The University Court has recognized the Medical College for Women, 20, Chambers Street, Edinburgh, as a medical school whose course of instruction qualifies for graduation in Medicine (but see p. 532). Every candidate must produce evidence of having satisfied the conditions with respect to the preliminary examination and registration as medical students, and will be examined in all the subjects necessary for graduation by the Examiners of the University in which she takes her degree. All students not matriculated students of the University attending this school for purposes of graduation must, at the commencement of each year of such attendance, enter their names in a book to be kept in the University for that purpose, paying a fee of the same amount as the matriculation fee paid by students of the University, and having, in respect of such payment, a right to the use of the library of the University.

UNIVERSITY OF GLASGOW.

The regulations are essentially the same as those given above for Edinburgh.

PRELIMINARY EXAMINATION.

The dates of the next two Examinations are the same as those given under Edinburgh. Fees, 10s. 6d. each time. Names to be given in and fee paid by September 7th, 1903, and March 4th, 1904, to the Assistant Clerk, Matriculation Office. The extent of the Examination will be found under Edinburgh.

REGISTRATION.

Printed form of application may be had from the Assistant Clerk at the Matriculation Office, and this must be

transmitted to Mr. James Robertson, Scottish Branch Registrar, 54, George Square, Edinburgh.

Professional Education.

The minimum cost is about £148, and the course is the same as at Edinburgh.

Fees, etc.

The total examination fees for M.B., Ch.B., are the same as for Edinburgh, but are differently distributed. The fee for the First and Second is £6 6s., and for the Third and Fourth £5 5s. each. In the event of a candidate being rejected in any of these he may be admitted once to re-examination without payment of further fee, but for a second and for each subsequent re-examination a fee of £2 2s. is charged.

For further details the student is referred to the *Glasgow University Calendar* for 1903-4, published by James Maclehose and Sons, 61, St. Vincent Street, Glasgow, price 3s., post free 3s. 6d. (see also p. 532).

Queen Margaret College, which provides a course of instruction for women, is now an integral part of the University. (For course of study, etc., see p. 533.)

UNIVERSITY OF ABERDEEN.

The regulations are essentially the same as for Edinburgh.

Preliminary Examination.

The next Preliminary Examination will be held on precisely the same dates as are given under Edinburgh, and the subjects are the same. Names must be intimated, and the fee (10s. 6d.) paid ten days previously, to the Secretary of the Medical Faculty, Marischal College.

Professional Education.

The candidate before admission to his Final Examination must produce certificates to the effect that he has attended for at least three years the medical and surgical practice of a general hospital: attended courses in clinical medicine and clinical surgery of not less than nine months each; attended courses in mental diseases and in practical pharmacy; and the out-practice of a hospital, or the practice of a dispensary: that he has acted for a period equal to a winter session both as a Clinical Clerk and Surgical Dresser, that he has attended no fewer than twenty-five necropsies, and taken part in some: that he has attended for not less than three months a fever hospital of at least forty patients, and has had a three months' course on Disease in Children, and the same in Ophthalmology. The total minimum cost for M.B. and Ch.B. is about £125.

The fees for Professional Examinations are: First, Second, and Third, each £5 5s.: Final, £7 7s.

Further information will be given by the Secretary of the Medical Faculty, or will be got in the *University Calendar* for 1903-4, published by the University Press, Limited, Aberdeen; price 3s. 6d., or post free 3s. 10d.

UNIVERSITY OF ST. ANDREWS.

United College, St. Andrews; University College, Dundee.

Preliminary Examination.

The dates of the next two examinations are September 25th, 1903, and March 25th, 1904. Fees, 10s. 6d. each time. Examination schedules to be returned, filled up, and fees paid by September 12th, 1903, and March 9th, 1904, to the Secretary of the University.

Registration.

Printed forms may be obtained from the Secretary, and must be sent to the Scottish Branch Registrar.

Professional Education.

The United College, St. Andrews, offers classes in the subjects of the first two years of the medical curriculum; University College, Dundee, for the full period of five years.

Bursaries and Scholarships.

United College, St. Andrews.

A list of Bursaries and Scholarships open to competition during session 1903-1904 may be obtained on application to the Secretary of the University.

The Bursaries are allocated in the order of merit, the most valuable ones being given to those students who obtain the highest marks in the Preliminary Medical Examination, and who are prepared to take two *annimedici* at the United College, St. Andrews.

University College, Dundee.

A list of Bursaries and Scholarships open to competition at this College during Session 1903-4 may be had by applying to the Secretary of the College.

Fees, etc.

The total fees for M.B. and Ch.B. are the same as for Edinburgh (22 guineas). The fee for the First Division is £6 6s., and is payable in two instalments of £3 3s. The fee for the Second, Third, and Fourth Divisions of the Professional Examinations are respectively £6 6s., £4 4s., and £6 6s., and are payable in instalments at the rate of £2 2s. for each subject. A fee of 10s. 6d. is charged to all candidates who, having been previously registered, present themselves for re-examination in any one subject.

Degrees of M.D. and Ch.M.

The regulations and fees for these will be found under Edinburgh.

THE SCOTTISH COLLEGES.

The three medical corporate Colleges in Scotland—the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Faculty of Physicians and Surgeons in Glasgow—now co-operate to hold a series of examinations, after passing which the student is presented with the diplomas of all three Colleges. Each College grants its single qualification only to persons who already possess another and opposite qualification (see below).

CONJOINT EXAMINING BOARD IN SCOTLAND.

A candidate who passes this series of examinations is granted the diploma of each of the co-operating bodies, and is entitled to register the three diplomas under the Medical Acts, and to write after his name—L.R.C.P.Edin., L.R.C.S.Edin., and L.F.P.S.Glasg.—qualifications which are recognized by the army, navy, and other public services.

Preliminary Examination.

The Educational Institute of Scotland conducts special preliminary examinations in Edinburgh and Glasgow for the Colleges. The next examination will be held on September 10th, 11th, and 12th, 1903, and names must be in, and fees paid by September 5th. Full particulars may be obtained from Alex. Mackay, Esq., LL.D., 40, Princes Street, Edinburgh, Treasurer of the Institute. The entire examination must be passed at one period. A cheque on a private account will not be received in payment of fees. The Preliminary Examination may be passed before any of the Boards recognized by the General Medical Council. A list is given on pp. 119 and 120 of the *Edinburgh Medical School Calendar* for 1902-3 (E. and S. Livingstone, Edinburgh. Price 2s.; post free, 2s. 3d.).

Professional Curriculum.

The course of study after registration as a medical student must occupy not less than five years, and comprise five winter and five summer sessions; but graduates in Arts or Science of any recognized University, who shall have spent a year in the study of Physics, Chemistry, and Biology, and have passed an examination in these subjects for the degrees in question, shall be held to have completed the first of the five years of medical study. Professional studies commenced before registration will not be recognized, except in the case of Physics, Elementary Biology, Chemistry, Practical Chemistry, and Practical Pharmacy. The fifth year must be devoted to practical clinical work, and six months of this year may be spent as a pupil of a registered practitioner,

The following order of study is recommended as conforming generally to the sequence of examinations, but is not imperative:

First Summer: Physics, Elementary Biology. First Winter: Chemistry, Practical Chemistry, Junior Anatomy, Dissections. Second Summer: Histology, Dissections. Second Winter: Anatomy, Dissections, Physiology. Third Summer: Pathology, Materia Medica, and Hospital Practice. Third Winter: Surgery, Hospital Practice, with Clinical Surgery. Fourth Summer: Midwifery and Gynaecology, Medical Jurisprudence and Public Health, Hospital Practice, with Clinical Surgery. Fourth Winter: Medicine, Hospital Practice, with Clinical Medicine. Fifth Summer: Hospital Practice, with Clinical Medicine, Insanity, Practical Midwifery, Eye Diseases. Fifth Winter: Hospital Practice, Dispensary, Fevers, Vaccination.

Students are also recommended to study in the fifth year the following subjects: Operative Surgery, Diseases of Children, Ear and Throat, Skin.

Professional Examination.

During the five years of the professional curriculum the student has to pass four examinations. Each examination is held six times in each year, four times in Edinburgh and twice at Glasgow, and a candidate may present himself at

either place. An interval of not less than three months must elapse between the passing of any two successive examinations, and an interval of two academic years must intervene between the passing of the Second and of the Final Examination. Candidates may enter for all the subjects of an examination at one period, or may enter for any division of subjects. If the latter a higher percentage is exacted. Schedules showing the course of study followed must be submitted before the examinations to one or other of the Inspectors of Certificates: In Edinburgh, Mr. James Robertson, solicitor, 54, George Square; in Glasgow, Mr. Alexander Duncan, B.A., LL.D., Faculty Hall, 242, St. Vincent Street, to whom all inquiries as to professional examinations should be addressed.

First Examination.—This examination may be passed at any time after registration as a medical student by any candidate who has attended the obligatory courses. The examination consists of three parts: (1) Physics, (2) Chemistry, (3) Elementary Biology, and each division may be taken separately.

Second Examination.—This examination may be passed at any time after the end of the second year by a student who has attended courses of Anatomy, Physiology, and Dissection for six months each. The subjects of the examination are: (1) Anatomy and (2) Physiology, including Histology. A candidate may pass in one subject while failing in the other.

Third Examination.—The student must have attended a course of Pathology and of Materia Medica before presenting himself for this examination, the subjects of which are (1) Pathology, (2) Materia Medica and Pharmacy. It may be taken in three divisions, or at one time, or at any time after the end of the third year; but the subjects must be entered for together.

Final Examination.—The student must be 21, and may not pass this examination till the end of the fifth year. The subjects are: (1) Medicine, including Therapeutics, Medical Anatomy, and Clinical Medicine; (2) Surgery, including Surgical Anatomy, Clinical Surgery, and Diseases and Injuries of the Eye; (3) Midwifery and Diseases of Women and of Newborn Children; (4) Medical Jurisprudence and Hygiene. Candidates may also be examined on Diseases of Children, Diseases of the Ear and Throat, Insanity, Vaccination, etc. The examination may be taken in divisions at different times or all at once.

TABLE SHOWING THE FEES FOR THE CONJOINT EXAMINATIONS IN SCOTLAND.

The Figures signify Pounds Sterling.

	Whole Examination.	Re-entry for all Divisions.	Re-entry in one or two Divisions.	Entry for one Division.	Re-entry for one Division.
Preliminary	1	½	--	—	—
Professional First	5	3	2½	2½	1
,, Second ...	5	3	2	—	—
,, Third	5	3	2	—	—
,, Final ...	15	5	4 5—	6	2

The total minimum cost for Lectures and Examination Fees for the Conjoint Examinations is about £152.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

Licence.—The Licence is only granted as a separate qualification (in Medicine) to persons (of either sex) who already possess a recognized British, Irish, Colonial, or Indian qualification in Surgery. A candidate, who must not have been rejected within three months by any Licensing Board, is subjected to written and oral examination in Medicine, Clinical Medicine, Materia Medica, Midwifery, and Medical Jurisprudence. The fee for the examination is £15 15s.; it is held on the first Wednesday and succeeding days of each month except September and October. A special examination can be obtained on showing cause, and paying £5 5s. extra. Eight days' notice must be given by all candidates to the Secretary of the College, from whom further particulars can be obtained.

Membership.—The candidate, who must be a Licentiate of a College of Physicians, or graduate of a British or Irish University, and 24 years of age, is examined in (1) Medicine and Therapeutics, and in (2) one of the following subjects chosen by him: (*a*) One or more departments of Medicine specially professed; (*b*) Psychological Medicine; (*c*) General Pathology and Morbid Anatomy; (*d*) Medical Jurisprudence; (*e*) Public Health: (*f*) Midwifery; (*g*) Diseases of Women. Further particulars as to other formalities can be obtained from the Secretary. A candidate 40 years of age and ten years in practice *may be excused* any part of or all the examination by the Council. The fee paid by a Licentiate of the College is £21 if licensed prior to August 1st, 1876; if subsequently, £15 15s. Fee for others, £31 10s. The examination is held quarterly (October, January, April, and July), and application must be made a month previous to the date of examination.

Fellow.—A Member, aged 25, and of at least two years' standing, may be elected a Fellow; he pays £56 10s. (including stamp duty). Women are not yet admitted to the Membership or Fellowship. Under certain exceptional circumstances a practitioner of standing has been and may be elected to the Fellowship of the College without examination.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

Licence.—The Licence is only granted as a separate qualification (in Surgery) to persons (of either sex) who already possess a recognized British, Irish, Colonial, or Indian qualification in Medicine. A candidate, who must not have been rejected by any other Licensing Board in Surgery within three months, is examined on one day by written papers, and on a subsequent day orally, on specimens in the wards of a surgical hospital, and may be required to operate on the dead body. The fee is £15 15s., of which £10 10s. will be returned to unsuccessful candidates, and is payable to Mr. James Robertson, Clerk to the College, 54, George Square, Edinburgh, from whom further particulars may be obtained, and to whom eight days' notice must be given. A special examination can be obtained on showing cause. The fee is £20, of which £10 will be returned to candidates remitted on examination.

Fellowship.—A candidate must have the diploma of the Royal College of Surgeons of Edinburgh, England, or Ireland, or of the Faculty of Physicians and Surgeons in Glasgow, or the surgical degree of one of the universities of Great Britain and Ireland, must be 25 years of age, and must have been engaged in practice for two subsequent years at least. Candidates who are Licentiates of the Edinburgh Colleges are examined in Surgery, Surgical Anatomy, including Clinical and Operative Surgery, and one optional subject, and in other subjects not adequately included in the examination passed elsewhere. The optional subjects embrace (*a*) Surgery in any of its Ophthalmic, Aural, Laryngeal, Cerebro-spinal, Dental, Abdominal, Gynaecological, Orthopaedic, Venereal, or Genito-Urinary branches; (*b*) Advanced Anatomy; (*c*) Advanced Physiology; (*d*) Surgical Pathology and Morbid Anatomy; (*e*) Midwifery: (*f*) Medical Jurisprudence. The examinations are written, oral, and practical. Three weeks' notice must be given to Mr. James Robertson as above, from whom full particulars as to certificates required (among others two from Fellows of the Colleges, of whom one must reside in Edinburgh) may be obtained. The fee is £30 to those who hold the diploma of Licentiate of the College, and £45 to others (no stamp duty is payable on the diploma). Registered practitioners, aged not less than 40, and who have been in practice for not less than twenty years, and who have distinguished themselves in their profession, may under special circumstances be elected without examination. Women are not admitted to the Fellowship.

FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

Licence.—The Licence is only granted as a separate qualification to candidates who already possess a recognized British, Irish, Colonial, or Indian qualification in Medicine. Candidates are examined in Surgery (including Clinical Surgery) and Surgical Anatomy. The fee is £15 15s. The examination is held quarterly. Further particulars can be obtained on application to Alexander Duncan, B.A., LL.D., Faculty Hall, St. Vincent Street, Glasgow.

Fellowship.—Every candidate must be qualified for two years, and aged 24. The ordinary mode of admission to the Fellowship is by examination and subsequent election. The subjects of examination are either (*a*) Medicine (including Clinical Medicine, Medical Pathology, and Therapeutics); or (*b*) Surgery (including Clinical Surgery, Operative Surgery, Surgical Anatomy, and Surgical Pathology); and one of the following at the option of the candidate: (1) Anatomy, (2) Physiology, (3) Pathology, (4) Midwifery, (5)

Diseases of Women, (6) Medical Jurisprudence, Surgery, in one of its following branches, (7) Ophthalmic Surgery, (8) Aural, Laryngeal, and Nasal Surgery, (9) Dental Surgery; Medicine in one of its following branches, (10) State Medicine, (11) Psychological Medicine, (12) Dermatology. Four examinations are held annually (January, April, July, October). Fourteen days' notice must be given. The fee is £30 unless the candidate desires to qualify to hold office, when it is £50. In the case of a Licentiate of the Faculty, £25 and £15 respectively.

Four Fellows may be elected in each year "in virtue of distinction," and without examination. They must not be less than 40 years of age, and ten years qualified.

THE IRISH UNIVERSITIES.

UNIVERSITY OF DUBLIN.

The University of Dublin grants two degrees in Medicine (M.B. and M.D.), two in Surgery (B.Ch. and M.Ch.), and two in Midwifery (B.A.O. and M.A.O.). A candidate for any one of these degrees must be a graduate in Arts and have passed the Previous Medical Examination.

The following schools, in addition to the School of Physic, are recognized by the Board of Trinity College—the Schools of the Royal College of Surgeons in Ireland, the Schools of the Catholic University.

Previous Medical Examination.

This examination is divided into three parts: (1) Physics and Chemistry, (2) Botany and Zoology, (3) Anatomy, Practical Histology, and Physiology. The three parts may be taken together or passed at separate examinations. The examinations are held in November, January, May, and June.

Degrees in Medicine.

The following conditions must be fulfilled in order to qualify for the degrees in Midwifery (B.A.O.), Surgery (B.Ch.), and Medicine (M.B.): The student must be of B.A. standing, and his name must be for at least five (academic) years on the books of the Medical School, reckoned from the date of his matriculation. He may carry on his Arts course concurrently with his Medical course, and he need not have taken his B.A. before presenting himself for his Final Medical Examinations, but he cannot have the Medical degrees conferred without the Arts degree. The following courses must be attended:—Lectures: Winter Courses: Systematic Anatomy, Descriptive Anatomy, first year; Descriptive Anatomy (with Dissections), second year; Applied Anatomy (with Dissections), Chemistry, Surgery, Physiology (two courses), Practical Physiology, Practice of Medicine, Midwifery, Pathology. Summer Courses: Practical Chemistry, Practical Histology, Botany, Zoology, Materia Medica and Therapeutics, Medical Jurisprudence, and Hygiene, Operative Surgery, Practical Pathology. Term Courses: Physics (Michaelmas, Hilary, and Trinity Terms). The student must attend three courses of nine months' attendance each on the Clinical Lectures of Sir Patrick Dun's or other metropolitan hospital recognized by the Board of Trinity College. One year at a recognized London or Edinburgh hospital or two years at a recognized county infirmary or recognized Colonial hospital previous to the commencement of their metropolitan medical studies may be allowed, on special application to the Board of Trinity College, to count as equivalent to one year spent in a recognized metropolitan hospital. The following examinations must be passed: The Previous Medical or Half M.B. Examination and the Final Examination. The Final Examination is arranged as follows: First Part:—Section A.: Applied Anatomy (Medical and Surgical), paper; Applied Physiology, viva voce: Materia Medica and Therapeutics, paper and viva voce. Section B: Medical Jurisprudence and Hygiene, paper and viva voce; Medicine, paper and viva voce; Surgery, paper and viva voce: Pathology, paper and viva voce. Section A. may be passed in any part of the fourth year, provided the corresponding curriculum shall have been completed, and must be passed before B. can be entered for: Section B. not before Trinity Term of the fourth year. Examination for both Sections are held in November, January, or February, and May or June. Liecat fee £5, to be paid on entering for A. Second Part:—Midwifery, paper and viva voce; Gynaecology, paper and viva voce; Obstetrical Anatomy, paper. Medicine—Clinical Medicine; Mental Disease, paper. Surgery: Clinical Surgery, Operations, Clinical Ophthalmology. Both Sections of the First Part must be passed at least one term before any section of the Second Part can be entered for. One section of the Second Part must be passed in Trinity Term of the fifth year or subsequently; the other two in any part of the fifth year if the corresponding curriculum be completed. Subject to this provision the sections of the Second Part may be taken in any order. Liecat fee £5, to be paid when entering for whichever section the candidate takes first.

Degree of M.D.—The candidate must have passed all the qualifying Examinations in Medicine, Surgery, and Midwifery, and have taken, or have been qualified to take, the degree of B.A. three years previously. He must read a thesis before the Regius Professor of Physic.

Degree of M.Ch.—The candidate must be a B.Ch. of not less than three years' standing, and have been engaged in practice for two years. Graduates of ten years' standing may be given a special examination.

Degree of M.A.O.—The candidate must have passed the qualifying examination in Medicine, Surgery, and Midwifery. The examination is specially directed to Obstetrics and Practical Gynaecology.

University Diplomas.

The University grants diplomas in Medicine, in Surgery, and in Obstetric Medicine. A candidate must have completed two years in Arts and five years in medical studies.

Diploma in Medicine.—The medical course and examination are the same as for the degree of M.B., excepting that attendance is not required on lectures on Botany and Zoology, and that the candidate is not examined in these subjects.[1]

Diplomas in Surgery and in Obstetric Science.—The examination and courses necessary for these diplomas are the same as for the degrees of B.Ch. and B.A.O. respectively.

Fees.

Matriculation, 5s.; M.B., B.Ch., B.A.O., £17; M.D., £13; M.Ch., £11; M.A.O., £5; L.M., L.Ch., L.A.O., £11.

A schedule containing recommendations respecting the five years' medical curriculum can be obtained on application to the Registrar of the School of Physic in the University of Dublin.

ROYAL UNIVERSITY OF IRELAND.

The University confers the following: Medicine—Bachelor of Medicine, M.B.; Doctor of Medicine, M.D. Surgery—Bachelor of Surgery, B.Ch.; Master of Surgery, M.Ch. Obstetrics—Bachelor of Obstetrics, B.A.O.; Master of Obstetrics, M.A.O. Sanitary Science—A Special Diploma. Mental Diseases—A Special Diploma.

The course for these degrees must be of at least five medical years' duration; but graduates in Arts or Science who have spent a year in the study of Physics, Chemistry, and Biology, and have passed an examination in these subjects for the degrees in question, will be held to have completed the first of the five years of medical study.

Students who commenced their medical studies after January 1st, 1892, must furnish evidence of having been registered by the General Medical Council, as Students in Medicine, for at least 57 months, before being admitted to the M.B., B.Ch., B.A.O. Degrees Examination. No one can be admitted to a degree in Medicine who is not 21 years of age. All candidates for these degrees, in addition to attending the lectures and complying with the other conditions to be from time to time prescribed, must pass the following examinations: The Matriculation Examination (information as to which may be obtained from the *University Calendar*. (Dublin: Alex. Thom and Co. London: Longmans, Green, and Co. Price 2s. 6d.: by post, 3s. Extracts can be obtained: Arts, etc., 4d.: Medicine, 2d.), the First University Examination, the First Examination in Medicine, the Second Examination in Medicine, the Third Examination in Medicine, the M.B., B.Ch., B.A.O. Degrees Examination.

The course of medical studies is divided into five periods of one medical year each, during which periods the students must attend such courses of lectures and hospital instruction, respectively, and comply with such other conditions as the Senate shall from time to time order.

When a student has fully completed the course of medical studies prescribed for any year, he may proceed with the

[1] A diplomate in Medicine, on completing his course in Arts, and proceeding to the degree of B.A., may become a Bachelor of Medicine by attending the lectures on Botany and Zoology, passing the Previous Medical Examination in those subjects, and paying the degree fees.

studies assigned to the year next following without passing the corresponding examination.

There must be an interval of at least one medical year between the passing of one examination and the being admitted to the examination next subsequent. But the Senate may, under special circumstances, allow a candidate to present himself for his following examination within a less interval.

The Senate may allow any candidate who so desires to present himself for the Third Examination in Medicine, and for the M.B., B.Ch., B.A.O. Degrees Examination at the same examination period, provided that an interval of three medical years shall have elapsed from the time of passing the Second Examination in Medicine, and provided that such candidate shall have completed the entire course of studies, etc., prescribed for the five years of the medical curriculum.

First Examination in Medicine.—Candidates may present themselves for this examination after an interval of one academical year from the time of passing the Matriculation Examination, provided they have already passed the First University Examination and completed the First Year of the Medical Curriculum. Candidates at this Examination must answer in the following subjects: Natural Philosophy: Systematic Chemistry; Botany; Zoology. The Examination in each subject consists of three parts: (*a*) A Written Examination; (*b*) an Oral Examination; (*c*) a Practical Examination, except in Chemistry, in which the Practical Examination forms part of the Second Examination in Medicine. Special importance is attached to the practical part of the Examination. The subjects are: Natural Philosophy; Chemistry; Organic Chemistry; and Botany and Zoology. Schedules are given in the *Calendar*.

Second Examination in Medicine.—Candidates may present themselves for this examination after an interval of one academical year from the time of passing the First Examination in Medicine, provided they have completed the Second Year of the medical curriculum. The subjects are: Anatomy; Physiology; Practical Chemistry. Schedules may be found in the *Calendar*.

Third Examination in Medicine.—Candidates may present themselves for this examination after an interval of one academical year from the time of passing the Second Examination in Medicine, provided they have completed the third year of the medical curriculum. The subjects are: Anatomy, Physiology, Materia Medica, Pharmacology, and Therapeutics.

M.B., B.Ch., B.A.O. Degrees Examination.—Candidates may present themselves for this Examination after an interval of such period, not being less than one academical year from the time of passing the Third Examination in Medicine, as the Senate may from time to time prescribe, provided they have completed the entire medical curriculum. This Examination consists of three parts: (*a*) Medicine, Theoretical and Clinical, including Therapeutics, Mental Diseases, Medical Jurisprudence, Sanitary Science, and Medical Pathology; (*b*) Surgery, Theoretical, Clinical, and Operative, including the use of instruments and appliances; Surgical Anatomy, Ophthalmology and Otology (candidates at this examination must exhibit reasonable proficiency in the use of the Ophthalmoscope and Laryngoscope), Surgical Pathology; (*c*) Midwifery and Diseases of Women and Children. All candidates must enter for and go through the entire examination, but a candidate may be adjudged to have passed in any of the foregoing parts in which he satisfies the examiners. Upon completing satisfactorily his examination in all three divisions, the candidate, in addition to the parchment diploma recording his admission to the M.B., B.Ch., B.A.O. Degrees, will receive a certificate of having passed a qualifying examination in the subjects of Medicine, Surgery, and Midwifery.

Honours.—Special examinations for honours are held in connexion with these examinations.

M.D. Degree.—Candidates may present themselves for the examination for this degree after an interval of three academical years from the time of obtaining the M.B., B.Ch., B.A.O. Degrees; but in the case of candidates who have obtained a degree of the University in the Faculty of Arts an interval of two academical years shall be sufficient. Candidates at this Examination must answer in the following subjects: (1) Medicine; (2) Pathology. The Examination in each subject consists of: (*a*) A Written Examination; (*b*) an Oral Examination. In addition every candidate must diagnose at the bedside at least three medical cases and prescribe treatment. He must also write detailed reports on at least two cases to be selected by the examiners, and discuss the questions arising thereon.

M.Ch. Degree.—Candidates may present themselves for the examination for this degree after an interval of three academical years from the time of obtaining the M.B., B.Ch., B.A.O. Degrees; but in the case of candidates who shall have obtained a degree of the University in the Faculty of Arts an interval of two academical years shall be sufficient. Candidates at this Examination must answer in the following subjects: (1) Surgery, Theoretical and Practical, including Ophthalmology and Otology; (2) Surgical Pathology; (3) Surgical Anatomy and Operative Surgery, with the use of surgical instruments and appliances. As far as practicable there will be a Written and an Oral Examination in these branches, and, in addition, every candidate will be required to diagnose at the bedside at least three surgical cases, and prescribe treatment. He must also write detailed reports on at least two cases, to be selected by the examiners, and discuss the questions arising thereon.

M.A.O. Degree.—Candidates may present themselves for the examination for this degree after an interval of three academical years from the time of obtaining the M.B., B.Ch., B.A.O. degrees: but in the case of candidates who shall have obtained a degree of the University in the Faculty of Arts, an interval of two academical years shall be sufficient. Each candidate must furnish satisfactory evidence that since graduating in Medicine he has (1) had personal charge of at least twenty cases of labour, and (2) attended during a period of three months the practice of a Clinical Hospital for Diseases of Women, where at least six beds are in constant occupation, or in a special ward of a General Hospital where such cases only are treated, and containing at least six beds in constant occupation. Candidates at this examination must answer in the following subjects: (1) Midwifery; (2) Diseases of Women and Children; (3) Pathology; (4) the Use of Instruments and Appliances. The examination in each subject consists of (*a*) an Oral Examination, with practical illustrations, including use of instruments and appliances; (*b*) a Written Examination; (*c*) a Clinical Examination, as far as practicable.

Exhibitions and Scholarships.—The following Exhibitions may be awarded annually by the Senate: At the First Examination in Medicine, two First-class of £20 each and two Second-class of £10 each. At the Second Examination in Medicine, two First-class of £25 each and two Second-class of £15 each. At the Third Examination in Medicine, two First-class of £30 each and two Second-class of £25 each. An Examination for a Travelling Scholarship in the Faculty of Medicine, value £100, is held in October. The subjects are, in rotation, (1) Anatomy and Histology, and (2) Physiology and Pathology. Candidates who have obtained the M.B., B.Ch., B.A.O. Degrees, either in the year of the Scholarship Examination or in the year immediately preceding, are alone eligible. Dr. Henry Hutchinson Stewart Medical Scholarships are awarded as follows: (1) One Scholarship of the annual value of £10, tenable for three years, for competition in the subjects of the Second Examination in Medicine. (2) One Scholarship is of the annual value of £50, tenable for three years, for competition among medical students of not more than two years' standing, for proficiency in the knowledge of Mental Diseases. In October, 1903, there will be offered for competition among the graduates in Medicine of the University one Medical Studentship, tenable for two consecutive years, of the annual value of £200.

Fees.—The fees for the various examinations are as follows: Matriculation, £1; First Examination in Medicine, £1; Second Examination, £1; Third Examination, £1; M.B., B.Ch., and B.A.O. degrees, £10; M.D. degree, £5; M.Ch. degree, £5; and M.A.O. degree, £5.

THE IRISH COLLEGES.

CONJOINT EXAMINING BOARD IN IRELAND.

THE diplomas of these two bodies are now granted upon terms and after examinations settled between the Colleges.

Preliminary Examination.—Examinations in general education, which fulfil the requirements of the General Medical Council, are accepted by the Colleges (see pages 505-7). The Preliminary Examination of the Colleges is held in spring and autumn, and seven clear days' notice must be given to Mr. Greenwood Pim, Secretary of the Committee of Management,

Royal College of Physicians, 6, Kildare Street, Dublin. Preliminary Examinations for the commencement of medical study of the Royal Colleges of Physicians and Surgeons for Sessions 1903-1904 will be held on Monday, September 21st, and following days, and Monday, November 2nd, and following days, 1903. Prospectus can be had on application.

Professional Examinations.

There are four Professional Examinations:

The *First Professional Examination* may be passed not earlier than the end of the first winter session. It consists of two Parts: I, Chemistry and Physics; II, Biology.

The *Second Professional Examination* consists of two Parts: I, Anatomy; II, Physiology and Histology.

The *Third Professional Examination* may be passed not sooner than the end of the third year of medical study. It consists of three parts: I, Pathology; II, Materia Medica, Pharmacy, and Therapeutics; III, Public Health and Forensic Medicine.

Candidates are recommended to present themselves at the same time in all the subjects of each of the above examinations, but may present themselves in one or more of the specified divisions separately, provided they have completed the curriculum as far as concerns the subject or subjects in which they present themselves.

The *Final Professional Examination* may be passed not sooner than the end of the fifth year of medical study. A candidate may present himself in all the subjects at one time, or in one or more in the following groups: (*a*) Medicine, including Fevers, Mental Diseases, and Diseases of Children; (*b*) Surgery, including Ophthalmic and Operative Surgery; (*c*) Midwifery, including Diseases of Women and Newborn Children, and the Theory and Practice of Vaccination. A student at or after the end of his fourth year may present himself in any one of the Groups I, II, or III, provided he has completed his curriculum as far as concerns the group in which he presents himself. But one of these groups must be deferred till the end of his fifth year.

Four complete years of Medical Study must be attended as a recognized Medical School after passing the First Professional Examination and before completing the Final Examination.

Curriculum.

The curriculum, as above stated, extends over five years, and its general arrangement can be gathered from the subjects of the examination which are arranged to test the student's progress. Full details may be obtained on application to the Secretary as above.

Fees.

Preliminary Examination, £2 2s., except in the case of matriculated pupils of the Royal College of Surgeons, who pay £1 1s.; re-examination, £1 1s. First Professional Examination, £15 15s.; Second, £10 10s.; Third, £9 9s.; Final, £6 6s: Re-examination fee, £1 1s. for each subject, with a maximum fee of £3 3s., except in Medicine and Surgery at the Final Examination, for each of which the re-examination fee is £2 2s.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

This College continues to issue its Licence in Medicine and the Licence in Midwifery to registered medical practitioners whose names appear on the *Medical Register* of the United Kingdom.

Licence in Medicine.—The subjects of examination are: Practice of Medicine, Clinical Medicine, Pathology, Medical Jurisprudence, Midwifery, Hygiene, and Therapeutics.

Licence in Midwifery.—The candidate must produce certificates of having attended a course of lectures on Midwifery, and of having attended Practical Midwifery and Diseases of Women, for six months, at a lying-in hospital or maternity recognized by the College; or, where such hospital attendance cannot have been obtained during any period of the candidate's course of study, of having been engaged in Practical Midwifery under the supervision of a registered practitioner holding a public medical appointment, the certificate in either case to state that no fewer than twenty labour cases have been actually attended. A registered medical practitioner of five years' standing is exempted from the examination by printed questions.

Fees.—Fee for the Licence to practise Medicine, £15 15s. Fee for examination for the Licences in Medicine and Midwifery, if obtained within the interval of a month, £16 16s.—to be lodged in one sum.[1] Fee for special examination for the Licence to practise Medicine, £21. Fee for examination for the Licence to practise Midwifery, £3 3s. Fee for special examination for the Licence to practise Midwifery, £5 5s. The admission fee, less the sum paid to the examiners, will be returned to rejected candidates. The examinations for these licences are held in the week following the first Friday in February, May, and November. Notice must be given, and the schedule transmitted at least four days before the first Friday in each of the above months to the Registrar of the Royal College of Physicians of Ireland, Kildare Street, Dublin, from whom further information can be obtained. A special examination can be obtained under conditions which can be ascertained from the Registrar.

Membership.—The examinations for the Membership are held in January, April, July, and October.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

The Licence.—Candidates who hold registrable surgical diplomas including the licence of the Apothecaries' Society of London, granted since October, 1886, are admitted to examination without further evidence of study, but candidates who hold medical qualifications only, including the L.S.A. granted before October, 1886, will be required to produce certificates of two courses of lectures in Anatomy and Dissections, one course of Practical Physiology, one course of lectures in Surgery, and one course of Operative Surgery.

Subjects.—Candidates are examined in Surgery, Clinical Surgery, Operative Surgery, Surgical Appliances, and Ophthalmic Surgery. The examination is partly written, partly viva voce, and partly practical. The fee is £26 5s., of which £5 5s. is retained by the College if the candidate be unsuccessful. The fee for a special examination is £31 10s.

Diploma in Midwifery.—A diploma in midwifery is granted after examination to persons possessing a registrable qualification. Candidates must produce evidence of (*a*) attendance on a course of lectures on Midwifery and Diseases of Women and Children in a recognized school; (*b*) attendance on six months' practice of a recognized lying-in hospital or recognized dispensary for lying-in women and children, and (*c*) of having conducted at least thirty labour cases. The fee for the examination is £15 15s., of which £5 5s. is retained by the College if the candidate is unsuccessful.

Fellowship.

A candidate for the Fellowship must make application to the President and Council to be admitted to examination, and, if the Council decide to entertain the application, it must lie on the table for at least a fortnight for consideration before it is put to the Council for approval. All the required evidences of study or qualification, fees, and testimonials as to character must be submitted previously to its being so considered, and the candidate will then, if approved by the Council, be admitted to the next Sessional Examination or to a Special Examination if granted by Council, at such date as the President may fix. In order that these regulations may be carried out, candidates are required to enter their names with the Registrar at least one month before the date of examination.

Periods of Examination.—Sessional Fellowship Examinations commence, as far as arrangements permit, on the third Mondays in February, May, and November. Special Examinations may be granted at other times by the Council if it sees fit, on sufficient cause being shown.

Grades of Examination.—Candidates for the Final Fellowship Examination are divided into two grades: (1) Licentiates or graduates in surgery of less than ten years' standing, (2) Licentiates or graduates in Surgery of more than ten years' standing. Students not either Licentiates or graduates in Surgery are permitted to present themselves for the Primary Examination under Grade 1 at the end of their third winter course of dissections.

Grade 1.—Candidates are required to pass two Examinations—Primary and Final. But candidates may present themselves for the Final Examination immediately after passing the Primary part, provided they have complied with the necessary regulations. The subjects for the Private Examination are: (*a*) Anatomy, including Dissections; (*b*)

[1] Any candidate who has been rejected at the examination for the Licence in Medicine loses this privilege, and will be required to pay the full fee of £3 3s. for the Licence in Midwifery.

Physiology and Histology; those for the final are: (*a*) Surgery, including Clinical and Operative Surgery; (*b*) Surgical Pathology.

Grade 2.—The subjects of examination are: (*a*) Surgical Anatomy, (*b*) Surgery, including Clinical and Operative Surgery, (*c*) Surgical Pathology.

Fees.—Grade 1: For Licentiates of the College—for Primary Examination, 15 guineas; for Final Examination, 10 guineas. For Licentiates in Surgery of other licensing bodies—for Primary Examination, 25 guineas; for Final Examination, 15 guineas; for Students of the College, Primary Examination, 5 guineas; Final Examination, 20 guineas; for Students of other licensing bodies, Primary Examination, 10 guineas; Final Examination, 30 guineas. *Grade 2:* Licentiates of the College, 25 guineas; Licentiates in Surgery of other licensing bodies, 40 guineas. Extra fee for Special Examination, 10 guineas. In case of rejection, 10 guineas in addition to the special fee, if such has been paid, is retained by the College, and is not allowed in the fees for re-examination. In the case of Fellowship candidates who fail to present themselves for the examination at the time fixed, without having previously given at least a week's notice of their withdrawal, five guineas of the fee is retained by the College.

Regulations and entrance forms can be obtained from the Registrar at the College, Stephen's Green West, Dublin.

APOTHECARIES' HALL OF IRELAND.

The Licence of this Hall is granted to students who can present certificates of having fully completed the course of study as laid down in the curriculum. The diploma of the Apothecaries' Hall of Ireland entitles the holder to be registered as a practitioner in Medicine, Surgery, and Midwifery; also with the privileges of the Apothecary Licence.

There are four professional examinations, the total fees in connexion with which amount to 21 guineas. Ladies are eligible for the diploma.

Candidates already on the *Register* will receive the diploma of the Hall upon passing an examination in the subjects which are not covered by their previous qualification and on paying a fee of 10 guineas; if Medicine or Surgery be required 2 guineas extra will be charged.

The fees payable for each examination are as follows: First Professional, £5 5s.; Second, £5 5s.; Third, £5 5s.; Final Examination, £6 6s.

If a candidate gives three clear days' notice of inability to attend, he may present himself at the ensuing examination without any further fee.

A candidate is allowed for each professional examination which he has completed at any other Licensing Body, except the Final. If he has passed only in some of the subjects in a given examination, he has to pay the whole of the fee for that examination.

The fees for re-examination are: For each subject, £1 1s., excepting in the subjects of Chemistry, Pharmacy, Surgery, Medicine, Second Anatomy, and Ophthalmology, the fees for which are £2 2s. each.

The fee for Final alone £15 15s. when the other examinations have been taken elsewhere.

All examination fees are to be lodged in the Sackville Street Branch of the Royal Bank of Ireland to the credit of the Examination Committee.

Applications and schedules, together with bank receipt for the fee, must be lodged with the Registrar, Apothecaries' Hall, 40, Mary Street, Dublin, fourteen clear days before the first day of examination.

There are four Examinations, First, Second, Third, and Final. The first three are held quarterly on the third Monday in January, April, July, and October; there are only two finals in January and July. The First Examination includes Biology, Physics, theoretical and practical Chemistry, with an examination at the bench. Pharmacy is put down in this examination, but it may be taken at any of the first three examinations. Candidates holding a pharmaceutical licence are exempt from this subject. Osteology (First Anatomy) is also a subject of the First Professional Examination.

The subjects for the Second Professional are: Anatomy of the whole body (the examination in this subject is practical), Materia Medica, and Therapeutics, Physiology, and Practical Histology.

The Third Examination consists of Pathology, Materia Medica if not taken at Second Examination, Medical Jurisprudence, Hygiene.

The Final Examination includes Medicine, oral and clinical: Surgery, including operations clinical and oral; Clinical Ophthalmic Surgery, Midwifery, and Gynaecology. Written papers are required on all these subjects.

Candidates who desire to obtain the Letters Testimonial of the Apothecaries' Hall of Ireland, must, before proceeding to the Final Examination, produce evidence of having been registered as a medical student for fifty-seven months; also of having attended courses of instruction as follows:

One course each (winter course of six months) of the following: Anatomy (lecture), Chemistry (theoretical), Midwifery, Practice of Medicine, Physiology or Institutes of Medicine, Surgery Dissections, two courses of six months each.

Courses of three months.—Materia Medica, Medical Jurisprudence, Chemistry (practical), Practical Physiology and Histology, Operative Surgery, Physics, Clinical Ophthalmology, Biology, Clinical Instruction in Mental Disease, Pathology, Vaccination.

Medico-Chirurgical Hospital, twenty-seven months to be distributed, at the student's own discretion, over the last four years of his study. The candidate may substitute for nine months in this hospital attendance six months as a resident pupil. He will be required to present a certificate of having taken notes of at least six medical and surgical cases recorded under the supervision respectively of a physician and surgeon of his hospital.

Three months' study of Fever—which may be included in his twenty-seven months' Hospital Attendance—in a Hospital containing Fever Wards, and having taken notes of five cases of Fever—namely, either Typhus, Typhoid, Scarlet Fever, Small-pox, or Measles.

Six months' practical Midwifery and Diseases of Women during the winter or summer of the third or fourth year at a recognized lying-in hospital or maternity.

Three months' practical Pharmacy, in a recognized Clinical Hospital or a recognized School of Pharmacy, or a year in the Compounding Department of a Licentiate Apothecary or a Pharmaceutical Chemist.

Each candidate before receiving his diploma must produce evidence that he has attained the age of 21 years.

Each candidate must produce evidence of having before entering on Medical Studies passed a Preliminary Examination in General Education recognized by the General Medical Council, and of having been registered by that Council as a Student in Medicine. Certificates of Medical Study will not be recognized if the commencement of the course to which the certificate refers dates more than fifteen days prior to such registration, except in the subjects of Physics and Biology. This registration is not undertaken by the Hall, but the student must apply to the Registrar of the General Medical Council that he may be so entered.

The details of the course of education required and syllabus of the Examinations will be supplied on application to the Registrar, at 40, Mary Street, Dublin.

NOTES ON MEDICAL SCHOOLS AND COLLEGES.

LONDON AND THE LONDON UNIVERSITY.

THE reconstruction of the University of London is now complete so far as Medicine is concerned, the constituent schools of its Medical Faculty being the twelve general hospitals of London to which medical schools are attached, and the staffs of these hospitals and schools, together with representatives of some of the special hospitals, constituting the teachers and members of the Faculty. There is now therefore a direct and organic relation between the leading hospitals of London and the University such as has never existed before, and the effect of this reconstitution or reconstruction cannot fail to be very far-reaching in a great number of ways.

A FORECAST.

One early result, which seems as inevitable as it is desirable, is that there will be co-ordination of effort among several, at any rate, of the smaller schools, for instruction in some of the studies comprised in the earlier part of the medical curriculum; and further, that machinery will come into being by which the incomparable clinical material to be found in London will be more thoroughly utilized than has ever hitherto been the case. What effect the relation now

established will have upon the comparative popularity in the schools of the degrees of the University and the diplomas of the Colleges, as qualification for admission to the *Register*, remains to be seen. It appears probable, however, that the University road will be more constantly pressed upon the student's notice as the right one for him to follow if he wishes to do the best that he can for himself. In whatever estimation the non-medical degrees of the University may have been held, it is indisputable that, as far as qualifying degrees are concerned, the Bachelorship of Medicine of the University of London has long been recognized as the best evidence of mental ability and solid work with which a young medical man can arm himself. But the paths towards it have in some respects been so beset with traps that many men, to whom the examinations themselves would have presented no insuperable difficulty, have been led to seek plainer routes to the goal of a diploma entitling them to admission to the *Register* of qualified medical practitioners. Under the new regulations things are improved, and though the standards are in no respect lowered, the candidate is less hampered in his progress by red tape. This improvement, plus the great advantage of the new machinery for education which it is believed will be called into existence, is likely to restore to London that popularity as a place of early not less than of advanced medical study, of which various circumstances have to some extent deprived it during the past few years. It may thus be anticipated that before long London, in spite of the springing up of local universities, will again be in the position to which its greatness entitles it of being the Mecca of all those who wish to learn the best in the best possible way.

Changes in the Regulations.

The chief modifications in the regulations are as follows: There are now only two inevitable subjects in the Matriculation Examination, and these are English and Elementary Mathematics, one paper being set in the former subject and two in the latter. The three other subjects, out of the five in which proficiency must be shown, may be chosen from a list of some twenty-two branches of study, the only proviso in respect of them being that one of the three selected must be a language.

Although, therefore, the individual paths that lead through it are not less slippery than formerly, the portal is a wide one, and is open to men whose early training has been conducted in very various ways. Exemption, moreover, from examination may now be claimed by graduates of certain other Universities, and by those in possession of certificates from a large number of other bodies both at home and abroad. The Preliminary Scientific Examination may now be taken up in three sections, and is a pass examination only. The General Intermediate Examination, commonly called the First M.B., is divided into three sections; but though they must primarily all be taken together, failure in one section will not entail re-examination in all three. Honours and three scholarships may be obtained at this examination by those who are successful in all three of its divisions at one time, but there will be no separate examination for them. The M.B. will no longer be given by itself, but the examination for it must be passed conjointly with that for the B.S. The subjects of the examination are now divided into two groups, each of which can be taken separately. There is now only one University medal at this examination which represents the old final M.B.; and though honours can be obtained, "pass" or "honours" will depend on one and the same examination. It is perhaps in the examinations for the higher degree of M.D. that the greatest change is evident. They are now of a much more practical and definite character than was formerly the case, and on this account the number of men who in the future will rest content with the Bachelorship of Medicine is likely to diminish. There are now five branches in which the candidate for an M.D. can present himself for examination, these being pure medicine, mental diseases and psychology, pathology, midwifery and diseases of women, and State medicine. Papers are to be given at each examination on medicine as a whole, but the main stress will fall upon the candidate's knowledge of the special branch which he has chosen. A University medal may be awarded in each branch.

Choice of a School.

The following notes as to the various medical schools will be found useful. The courses which they provide are all essentially the same, and in all of them the arrangements made are such as to meet the requirements of students of every class; of those who are aiming at the diplomas of the Conjoint Board and Apothecaries' Hall, not less than of those who have the degrees of the London University in view, while special facilities are given to men who have commenced their professional education at the older Universities. Little guide can be given in these columns as to the choice of one school rather than another, since such choice must depend largely on personal factors. In a general way, however, it may be said that while to the student of the day it may be almost a matter of indifference to what school he belongs, there is often a certain advantage in after-life in having been an alumnus of one of the more celebrated schools.

St. Bartholomew's Hospital Medical School.

The Hospital contains 744 beds.

Appointments.—Clinical Clerks to the Physicians and to the Physician-Accoucheur, and Dressers to the Surgeons and in the Casualty Department are chosen from the students. Clerks and Dressers are also selected from the students to attend in the out-patient rooms, in the special departments (Ophthalmic, Orthopædic, Gynæcological, Laryngological, Aural, Dermatological, Electrical, and Dental), and in the *post-mortem* room. Chief Assistants and Clinical Assistants are selected from qualified men and appointed yearly, to help in the special departments just named. Ten House-Physicians and ten House-Surgeons are appointed annually. During their first six months of office they act as "Junior" House-Physicians and House-Surgeons, and receive a salary of £25 a year. During their second six months they become "Senior" House-Physicians and House-Surgeons, and are provided with rooms by the hospital authorities, and receive a salary of £80 a year. A resident Midwifery Assistant and an Ophthalmic House-Surgeon are appointed every six months, and are provided with rooms and receive a salary of £80 a year. Two Assistant Anæsthetists are appointed annually, and receive salaries of £120 and £100 a year respectively. An Extern Midwifery Assistant is appointed every three months, and receives a salary of £80 a year.

There is a residential college within the precincts of the Hospital.

The ground—10 acres in area—provided for the use of the members of the Students' Amalgamated Clubs, is at Winchmore Hill, within easy reach of the Hospital.

Special classes for students preparing for the Preliminary Scientific and other Examinations for the M.B., M.D. of the Universities of London, Oxford and Cambridge, and for the higher surgical degrees at the same Universities, including the M.S.Lond., First and Second F.R.C.S., M.Ch.Oxon., and M.C.Cantab. Special laboratory instruction for the D.P.H. of Cambridge, Oxford, Durham, and London is also given.

Entrance Scholarships.—Five Entrance Scholarships will be awarded after an Examination to be held on September 21st, 1903, and following days. The subjects of examination and conditions of eligibility for these Scholarships are: (1) Two Scholarships, value £75 each, in no fewer than two nor more than three of the subjects—Chemistry, Physics, Botany, Zoology, Physiology, and Anatomy, limited to students under 25 years of age who have not entered to the medical or surgical practice of any London medical school. (2) One Scholarship, value £150, in not fewer than three of the following subjects—Chemistry, Physics, Botany, Zoology, and Physiology, limited to students under 21 years of age who have not entered to the medical or surgical practice of

any London medical school. (3) The Preliminary Scientific Exhibition of £50 will be given for the second best examination in the same subjects and under the same conditions as (2). (4) The Jeaffreson Exhibition in Mathematics, Latin, and one other language—Greek, French, or German—and of the value of £20. The value of the Scholarships and Prizes is nearly £800 annually.

Communications must be addressed to W. D. Harmer, Esq., M.C.Cantab., Warden of the College, St. Bartholomew's Hospital.

CHARING CROSS HOSPITAL MEDICAL SCHOOL.

The Charing Cross Hospital and Medical School, situate in the very centre of London, are easily accessible from all parts They are within three minutes' walk of the Royal Dental Hospital of London. The Lectures are at hours to suit both General and Dental Students. The Hospital and Convalescent Home at Limpsfield contain 230 beds, and extensive additions to the Hospital are now being built which will increase the number of beds by 70 during the course of the coming year. Over 2,000 cases pass through its wards each year, and some 22,000 out-patients and casualties are treated. There are Special Departments for Midwifery, Diseases of Women, of Children, of the Skin, Eye, Ear, Throat, Nose, and Teeth, for Orthopaedic cases, X Ray, and for Electrical Examination and Treatment.

Appointments.—In the Medical School Demonstratorships and Assistant Demonstratorships, when they fall vacant, are open to students of the school, and carry honoraria. The Curator and Pathologist is appointed annually, and receives £100 a year. Medical, Surgical, and Obstetric Registrars to the Hospital are appointed annually, the two former of whom receive £40 a year each, with luncheon in the Hospital. Six House-Physicians, six House-Surgeons, and two Resident Obstetrical Officers are appointed each year on the recommendation of the Medical Committee, after competitive examination. They are provided with board and residence in the Hospital. Assistants to the Roentgen-ray and to the Electrical Departments are appointed every six months. They receive an honorarium of 12 guineas, with luncheon at the Hospital. Clinical Clerks, Dressers, and Surgical Ward Clerks are appointed in all the general and special departments of the Hospital. Arrangements can be made for students who have not entered for the entire medical curriculum to hold the posts of Clerk and Dresser. Every student holds in turn the appointment of Pathological Assistant, and assists at the Necropsies. The above appointments are open without any additional fee.

Entrance Scholarships.—Five Entrance Scholarships, of the respective value of 100 guineas (Livingstone Scholarship, founded in memory of the late Dr. Livingstone, a former student of this school), 60 guineas, 55 guineas (Huxley Scholarship, founded in memory of the late Professor Huxley, a former student of this school), 40 guineas, and 30 guineas, are open to students commencing their medical curriculum. Three of these (100 guineas, 60 guineas, and 40 guineas) are open to all general students,[1] one (55 guineas) is reserved for the sons[1] of medical men, and one (30 guineas) is open to Dental students only. All these Scholarships are awarded annually at the commencement of each winter session, after a competitive examination in the following groups of subjects: (1) English, including Language, History, and Geography; (2) any two of the following four languages—Latin, Greek, French, and German; (3) Mathematics, including Arithmetic, Algebra, and Geometry; and Mechanics, including Statics and Dynamics; (4) Inorganic Chemistry and Experimental Physics, including Acoustics, Heat, Magnetism, Electricity, and Optics; and (5) Animal and Vegetable Biology. No candidate may offer himself for examination in more than three of the above groups of subjects, the selection of the groups being left to the candidate. Students who join in the summer session have the same privileges as regards scholarships, medals, and prizes as those who join in October of the same year. The value attached to each group of subjects is 1,000 marks. No credit will be given for any paper in which the candidate obtains less than one-fifth of the total marks. Candidates must be under 25 years of age on the first day of the examination. In the first three groups the subjects, as regards extent and the authors selected, will be the same as those chosen for the Matriculation Examination of the University of London in the June immediately preceding; in the fourth and fifth, the same as those for the Preliminary Scientific Examination of the same University. Candidates must give notice to the Librarian of their intention to compete, and of the groups in which they offer themselves for examination, on or before Saturday (10 a.m.), September 19th, 1903. The examination will commence at the School on Monday, September 21st, at 9 a.m., and will continue during the two following days. The successful candidates will be required to enter forthwith for their complete medical education at the Charing Cross Hospital.

[1] Those who enter for their entire medical education.

One Epsom Scholarship, giving a free education, is, each winter session, placed at the disposal of the Royal Medical Benevolent College at Epsom, to be competed for by foundation scholars who have passed the Preliminary Scientific M.B. Examination of the University of London.

Two University Scholarships, of the value of 72 guineas each, are open to students from the University of Oxford who have passed the first M.B. Examination, to students of the University of Cambridge who have passed the second M.B. Examination, and to students of the University of London who have passed the Intermediate Examination in Medicine, and who have not entered at any London Medical School. Subjects: Anatomy and Physiology, including Histology. The examination for these Scholarships, which will be partly practical, will be held at the school on September 22nd and 23rd. Candidates must give notice to the Librarian of their intention to compete on or before Monday (2 p.m.), September 21st, 1903. The successful candidates will be required to enter forthwith at the Hospital for the completion of their curriculum.

Fees.—The composition fee for general students is 110 guineas; for dental students, 54 guineas; and for University students 72 guineas.

Further information may be had of the Dean, Mr. Herbert F. Waterhouse, Charing Cross Hospital Medical School, Chandos Street, Strand, London, W.C.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL.

The Hospital contains 351 beds, of which 205 are devoted to Surgical and 146 to Medical cases.

Appointments.—The following paid appointments, amongst others, are open to students after they have held house office: Two Medical Registrarships, each at £200 per annum; Surgical Registrarship at £200 per annum; Curatorship of the Museum at £200 per annum; Assistant Curatorship at £100 per annum; Obstetric Assistantship, Resident, at £50 per annum; two Demonstratorships of Anatomy, each at £50 per annum; the post of Senior Anaesthetist at £50 per annum; the posts (2) of Junior Anaesthetists, each at £30 per annum. Dresserships to the Surgeons and Clinical Clerkships to the Physicians are open without fee to all students of the Hospital. A large number of House Office Appointments, which may be held for six, twelve, or eighteen months, are open without fee to every perpetual student of the Hospital, and are made strictly in accordance with the merits of the candidates.

Instruction.—Great attention is made by members of the staff to individual teaching. A number of Special Courses are given in which the requirements of University and other Examinations receive careful attention. The following may be cited as examples: (1) Elementary Bacteriology, (2) Advanced Bacteriology, (3) Clinical Pathology, (4) Systematic Pathology, (5) Histological Pathology and Morbid Anatomy, (6) Operative Surgery, (7) Public Health, (8) Tropical Diseases. Special Test Examinations and Classes are held by members of the staff for all examinations.

Entrance Scholarships—in Arts £100, in Science £100, in Anatomy and Physiology £50—are awarded at the commencement of each winter session. The William Brown Exhibition, of the value of £100 per annum (tenable for two years), is awarded by examination to a perpetual pupil of the hospital every second year. The William Brown Exhibition of £40 (tenable for three years), is awarded by examination to a perpetual pupil of the Hospital every third year. Other prizes to the value of £200 are awarded annually to the students of the Hospital.

The School possesses an Amalgamation Club, with well-fitted Reading, Smoking, and Luncheon Room, on the Hospital premises. Students have the advantage of a well-filled Library of Medical and Scientific Books, which is kept thoroughly up to date. A Register of Accredited Apartments, and a List of Medical Men and others willing to receive

St. George's men as boarders, may be seen on application to the Secretary.

Fees.—The composition fee is £150.

Further information may be obtained from the Secretary of the Medical School.

Guy's Hospital Medical School.

The Hospital contains 582 beds in constant occupation; an additional 50 beds have been recently opened on the medical side of the Hospital. Thirty-one beds are set apart for diseases of the eye, and 40 for the most urgent and interesting medical cases, which form the subjects of the weekly clinical lectures. There is a special ward of 32 beds for the reception of cases of diseases of women and for cases of difficult labour. Beds are also allotted to the Throat and Ear Departments, and a small additional ward for children will shortly be opened.

Appointments.—All appointments are given without extra payment, and according to the merits of the candidates, as determined by a committee of the medical staff. Eight Assistant House-Physicians, 8 House-Physicians, 24 Assistant House-Surgeons, 8 House-Surgeons, and 2 Ophthalmic House-Surgeons are appointed annually. The House-Physicians and House-Surgeons hold office for six months each, and receive free board and lodging in the college, as also do the Resident Obstetric Assistants, of whom 8 are appointed annually, each holding office for six months. Every student is provided with rooms and commons in the hospital during the period of his "take in" as Dresser. In addition to the Clerkships and Dresserships in the medical and surgical wards, students are appointed to the posts of clinical assistant, dresser, or clerk in the special departments of ophthalmology, laryngology, gynaecology, dermatology, otology, electricity, anaesthetics, and dentistry. More than 130 additional appointments have been added to the list of those annually open to students of the Hospital, the majority of them being in the special departments.

The College, fronting the east gate of the Hospital, provides accommodation for 60 resident students. It contains a dining hall, reading rooms, library of general literature, and gymnasium for the use of the residents and of the members of the Clubs' Union. The athletic ground at Honor Oak Park is reached from the Hospital in 20 minutes.

Scholarships, Prizes, etc.—Two Entrance Scholarships in Arts. One of the value of £100 open to candidates under 20 years of age, and one of £50 open to candidates under 25. Subjects: English, Latin, Arithmetic, Algebra, Euclid, and either Greek, French, or German. Three Entrance Scholarships in Science: One of £150 and one of £60, open to candidates under 25, and one of £50 to University students who have completed their study of Anatomy and Physiology. Subjects: Anatomy, Physiology, Chemistry, Practical Chemistry, Biology, and Physics. These examinations begin on September 22nd; names must be sent in on or before September 14th. Junior prizes for general proficiency, £20, £15, £10; Arthur Durham prizes for dissection, £15, £5: Hilton prize for dissection, £5; Michael Harris prize for Anatomy, £10; Sands Cox Scholarship for Physiology, £15 for three years: Wooldridge Memorial prize for Physiology, £10; Beaney prize for Pathology, £34; Treasurer's gold medal in medicine, Treasurer's gold medal in surgery, and the Golding-Bird gold medal and scholarship for Bacteriology (£20) are awarded annually after competitive examination. The Gull Studentship in Pathology and the Beaney Scholarship in Materia Medica, of the annual value of £150 and £31 10s. respectively, are awarded without examination to enable research to be carried on in these subjects.

Special classes are held for the Preliminary Scientific and Intermediate M.B. Examinations of the University of London and for the First and Final F.R.C.S.Eng.

Special teaching is also provided to meet the requirements of the Universities of London, Oxford, and Cambridge in General Pathology and Pharmacology.

Fees.—For particulars of new scheme for payment of composition fees apply to the Dean.

King's College Medical Faculty.

The Hospital contains 220 beds in daily use.

Appointments.—Resident Medical Officers, Clerks, and Dressers are chosen from the students, and the former have rooms and commons free. Two Sambrooke Registrarships, Medicine and Surgery, of the annual value of £50 each, are open to students in higher appointments of the Hospital. Clinical assistants are appointed in the Ophthalmic, Ear, and Throat Departments.

Entrance Scholarships.—1. Two Warneford Scholarships, for the encouragement of previous education, each £100 value; subjects of examination—Mathematics, Classics, Divinity. 2. One Sambrooke Exhibition, of £100, open; subjects of examination, Mathematics, Elementary Physics, Inorganic Chemistry, Botany, and Biology. 3. Rabbeth Scholarship, value £20, in July, for best evidence of early scientific training. 4. Two Scientific Exhibitions, open, given annually, in October, by the Clothworkers' Company, value £60 and £40, for proficiency in any four of the following subjects: Mathematics, Mechanics, Physics, Chemistry, Botany, Geology, Mineralogy, and Zoology will be open to all candidates who are under the age of 19. 5. Medical Entrance Scholarship, of £50, instituted for students who propose to take their degree at Oxford, Cambridge, or other British University, having already passed the examination of that University in Biology, Chemistry, and Physics.

During the curriculum Scholarships and Prizes of the value of £300 are open to matriculated students.

For conditions of scholarships and subjects of examinations apply to the Dean, Medical Faculty. Examinations commence September 26th.

The Dean of the Medical Department, Professor W. D. Halliburton, attends daily (Saturdays excepted) at King's College for the purpose of seeing students and their friends. Any letters addressed to the Dean during the vacation will receive early attention.

Fellowship Examinations of the Royal College of Surgeons.—Special classes for the Final Examinations are held, and a special prospectus regarding these classes will be forwarded on application to the Dean.

University of London.—A special class for the Matriculation Examination will commence on September 28th. Classes for the science subjects are held by the Professors of the Science Faculty of King's College, and students avail themselves of their laboratories.

Fees.—The composition fee is £135.

Athletic Club.—All students are entitled to the privileges of the Athletic Club, which manages a large recreation ground of the College at Wormwood Scrubbs.

London Hospital Medical School.

The Hospital contains nearly 800 beds.

Appointments.—Among the salaried appointments open to students are those of Medical Registrar, Surgical Registrar (2); Medical, Surgical, and Obstetric Tutors, Receiving-room Officers, and Medical, Surgical, and Ophthalmic Clinical Assistants, and Senior Dressers to Out-patients. There are also 5 Resident House-Physicians and 6 Resident House-Surgeons, 2 Accoucheurs, and 2 Emergency Officers. In addition there are numerous Assistantships and Clerkships, and Dresserships in the various departments.

Scholarships and Prizes.—The following is a list of scholarships and Prizes: *At Entrance:* Price Scholarships in Science, £120; in Anatomy and Physiology, £60; Entrance Scholarships in Science, £60 and £35; Epsom Scholarship, £126; Buxton Scholarships in Arts, £30 and £20. *After Entrance:* Anatomy and Biology Scholarships, £20: Anatomy and Physiology Scholarship, £25; Letheby Prize, Senior, £20; Letheby Prize, Junior, £10; Scholarships in Clinical Medicine, Surgery and Obstetrics, £20 each: Duckworth Nelson Prize, £10: Hutchinson Prize, £40; Sutton Prize, £20: Sir Andrew Clark Prize, £26; Anderson Prizes, £9; Out-patient Dressers' Prizes, £60; Practical Anatomy Prizes, £10.

A special course for the D.P.H. will commence at the beginning of the winter session.

Special classes for the Preliminary Scientific and Intermediate M.B.Lond., the Primary and Final Fellowship, and other examinations are held. Those for the Final F.R.C.S. will commence on September 22nd.

Fees.—The composition is 120 guineas. A reduction of 15 guineas is made to sons of medical men.

New Buildings.—The new Departments of Bacteriology, Public Health, Chemistry, and Biology, the new Pathological Institute at the Hospital, and the new Out-patients and special Departments are now completed and in full use. New Students' Rooms have been added, and a Garden and Five Courts opened for the use of the members of the London Hospital Clubs Union.

Information may be obtained from the Warden, Mr.

Munro Scott, at the London Hospital Medical College, Mile End, E.

ST. MARY'S HOSPITAL MEDICAL SCHOOL.

The Hospital at present contains 281 beds. The new wing, the ground floor of which, comprising the new out-patient department, was opened in 1898, is now approaching completion. This will add to the Hospital 81 new beds, and will include additional Operating Theatres, a new Clinical Laboratory, Clinical Theatre, and an *x*-ray Department. The situation of the hospital in the centre of the residential districts of Paddington, Bayswater, and North Kensington renders it especially convenient to students who wish to reside in the immediate vicinity, and a register of approved lodgings is kept in the office of the Medical School.

All clinical appointments in the Hospital are free to students of the Medical School, the term of office in each case being of four months' duration, and the Resident Medical Officers are chosen by competitive examination. Six House-Physicians, six House-Surgeons, four Obstetric Officers, and two Resident Anaesthetists are appointed each year, and receive board and residence in the hospital.

Entrance Scholarships in Natural Science.—One of £145, one of £78 15s., two of £52 10s., and two of £63 (open to students of any British University), are awarded annually by competitive examination in September.

The Laboratories.—The Physiological Department comprises a Lecture Room specially constructed for practical demonstrations, separate laboratories for Physical Physiology, Chemical Physiology, and Histology respectively, and smaller rooms for research work. Demonstrations on Chemistry and Physics are given in the Chemical Lecture Theatre in conjunction with the systematic lectures, and a laboratory is provided for the study of Practical Chemistry, Inorganic and Organic. The classes in Bacteriology and Pathological Histology are held in the Laboratory Class Room which accommodates 56 students. During the past year the Bacteriological Laboratory has been enlarged and entirely refitted. Provision is made for instruction and research in Chemical Pathology for which a special laboratory is available under the direction of the Lecturer on Pathological Chemistry.

Special Tuition.—In addition to systematic courses of Lectures and Demonstrations, special tuition is provided for the Intermediate and Final Examinations of the Universities of Oxford, Cambridge, and London without additional fees.

Preliminary Scientific Course.—Special classes, including Lectures and Laboratory Work, are held throughout the year.

The composition fee for students is £140 if paid in one sum, or £145 if paid in four instalments. University students who have completed their examinations in Anatomy and Physiology are admitted on payment of a composition fee of 60 guineas (£63) paid in one sum, or 65 guineas (£68 5s.) if paid in two annual instalments. University students, prior to completing their examination in Anatomy and Physiology, pay an annual fee of 25 guineas (£26 5s.). Separate courses of Lectures, Laboratory Work, or Hospital Practice may be taken.

The School Calendar and full information can be obtained from the Secretary, St. Mary's Hospital Medical School, Paddington, W.

MIDDLESEX HOSPITAL MEDICAL SCHOOL.

The Hospital contains 340 beds. A new wing containing 40 beds and special research laboratories is entirely devoted to patients suffering from cancer. It offers unrivalled opportunities for the study of this disease, both in its clinical and pathological aspects.

Appointments, etc.—Eighteen Resident appointments are open annually to competition among pupils of the Hospital. The officers reside and board in the Residential College free of expense. There are two Casualty Medical and two Casualty Surgical Officers appointed annually. Six House-Surgeons are appointed every year at intervals of two months, after examination; the six House-Physicians are also appointed annually at similar intervals; they must have a legal qualification, or hold a Broderip Scholarship. An Obstetric House-Physician (qualified to practise) is appointed every six months. Non-resident Physicians' Assistants are appointed in the various out-patient departments. In the out-patient department the appointments are: Dresser to the Assistant Surgeon and to the Dental Surgeon, Clerk to the Assistant Physician, Dresser to the Ophthalmic Surgeon, Clerk in the Department for Diseases of the Skin, Clerk in the Department for Diseases of Women, and Dresser to the Throat and Ear Department. There are also Extern Midwifery Clerks and *Post-mortem* Clerks. The appointments are so arranged that every student may during his course hold all the Out-patient and In-patient Clerkships and Dresserships. Each student must have held an out-patient clerkship and dresserships before being eligible to hold in-patient clerkships or dresserships. No student can be appointed to any office until he has passed the Second Examination of the Examining Board in England, or its equivalent. Clinical Assistants are appointed in the Children's, Ophthalmic, Skin, and Throat and Ear Departments.

Entrance Scholarships.—Two Entrance Scholarships, value £100 and £60, are open to all gentlemen commencing their medical studies in May or October, 1903. The successful candidates must become general students of the school. Examination on September 22nd, 23rd, and 24th. Candidates must send in their names to the Dean, stating the three subjects they select, on or before September 16th.

University Scholarship.—An annual Entrance Scholarship, of the value of £60, is open to students of the Universities of Oxford and Cambridge who have completed the curriculum for or passed the examinations in Anatomy and Physiology. Subjects: Anatomy and Physiology, including Histology. The examination takes place on September 22nd and 23rd. Application to be made on or before September 16th. Students joining the school in the previous May are eligible to compete for the Entrance and University Scholarships in that year.

The Freer Lucas Scholarship is annually awarded on the nomination of the head master to a pupil of the Royal Medical College, Epsom, who has passed the Preliminary Scientific M.B. Examination.

Fees.—The composition fee is 135 guineas.

Further information may be obtained from Mr. J. Murray, the Dean.

The Residential College is situated in Cleveland Street, W., and has its frontage in the Hospital Garden; it accommodates about 30 students. Warden, Dr. R. A. Young, B.Sc.

ST. THOMAS'S HOSPITAL MEDICAL SCHOOL.

The Hospital contains 602 beds. It is built on the system of separate pavilions, which are connected by a covered and an open-air corridor. The Hospital and School are situated along the banks of the Thames between Westminster and Lambeth Bridges, an open-air terrace running the whole length of the buildings facing the Houses of Parliament. The two large Operating Theatres are now undergoing alterations by means of which the Hospital will contain two Children's Wards and four Operating Theatres. One of the wards and two of the theatres are already in use. A Clinical Laboratory is provided, in which all the more difficult methods of diagnosis, bacteriological, chemical, and microscopical, are carried on under the direction of a Superintendent.

The Clinical Lecture Theatre is reserved entirely for the delivery of Clinical Lectures and Demonstrations. Its position in the heart of the Hospital makes it easy for the lectures to be copiously illustrated by patients from the wards and out-patient rooms. Provision is made also for the exhibition of lantern slides, where patients may not be available. The Theatre has also been specially adapted for ophthalmological, laryngological, or microscopical demonstrations. Throughout the academical year Clinical Lectures are delivered here on Medicine, Surgery, and the various special branches of study. The Department for Out-patients has been rearranged, and now consists of a series of rooms, among which are two large, well-ventilated Clinical Theatres provided with ample sitting accommodation, so that large numbers of students are enabled to follow closely the practice and teaching of the assistant staff.

The new Casualty Department comprises a spacious receiving hall which runs the whole length of the department, and from which on the one side open out the male and female sorting and waiting rooms, on the other a large number of smaller rooms for the examination and treatment of patients. Isolation rooms for infectious cases are placed outside the lodge door. The whole department is tiled in light colours, efficiently lighted and completely fitted throughout on the most modern lines. The ventilation is on the Plenum system. In connexion with it are provided an Accident Ward of 20 beds for the reception of urgent male cases, a small but complete operation theatre, and two isolation wards. During the twelve months ending December 31st, 1902, the number of patients admitted into the hospital amounted to 6,991. In

the same period 20,261 out-patients have been treated, and in the maternity department 1,941 women have been attended at their own homes. Casualties to the number of 100,321 attendances were treated during the same period.

The *School Buildings*, which are separated from the Hospital by a quadrangle containing a lawn tennis court for the use of the residents, comprise numerous theatres, laboratories, and class rooms, and are well adapted for the modern teaching of large bodies of students in the subjects of the medical curriculum. A large library and reading room and a very complete museum are open to all students from 9 a.m. to 5 p.m. The new club premises, opened in 1894, contain a dining room and smoking and reading room supplied with daily and illustrated weekly papers, and a gymnasium. A cloakroom with lockers, and a lavatory with bath rooms are in the main school building. Students are thus able to spend the whole day at the school, all meals being obtainable at a moderate tariff, and they are further provided with facilities for exercise and recreation. A ground of more than nine acres in extent is provided at Chiswick. It can be reached in forty minutes from the hospital; it is admirably adapted for football, cricket, lawn tennis, and athletic sports. It is provided with a pavilion where refreshments can be obtained.

Scholarships.—Three entrance Scholarships will be offered for competition in September, namely: One of £150 and one of £60, in Chemistry and Physics, with either Physiology, Botany, or Zoology at the option of candidates, for first year's students; one of £50 in any two of the following subjects: Anatomy, Physiology, Chemistry, for students who have completed their examinations in Anatomy, Physiology, Materia Medica, and Pharmacy for a medical degree in any of the Universities of the United Kingdom, and have not entered as students in any London medical school. Copies of the examination papers of last year may be obtained on application to the Medical Secretary. Applications must be sent in not later than September 15th, with a certificate of birth and of Preliminary Examination, and with a notification of the choice of optional subject. Numerous scholarships, prizes, and medals are open for competition throughout the whole career of a student, including a Fellowship of £100 given by the Salters' Company for research in Pharmacology.

Appointments.—All Hospital appointments are open to students without charge. A Resident Assistant Physician and a Resident Assistant Surgeon are appointed annually at a salary of £100 each with board and lodging. Two Hospital Registrars, at an annual salary of £100 each, are appointed yearly. The tenure of these offices may be renewed for a term not exceeding two years. An Obstetric Tutor and Registrar is appointed each year at an annual salary of £50. Four House-Physicians, two House-Physicians to Out-patients, four House-Surgeons, four House-Surgeons to Out-patients, two Obstetric House-Physicians, two Ophthalmic House-Surgeons, and eight Clinical Assistants in the special departments are appointed every three months and hold office for six months if recommended for re-election. Clinical Clerkships and Dresserships to the in-patient and out-patient departments are available to the number of 400 each year.

Fees.—The Entrance Fee for First or Second Year's Students is 20 guineas; for third year's students 10 guineas. The Annual Composition Fee is 30 guineas. For Preliminary Scientific Students the fee is 16 guineas. Extra charges are made for materials required in practical courses.

University Examinations.—Special Courses of Instruction for the Preliminary Scientific and Intermed. M.B.Lond., for the Oxford and Cambridge Examinations, and for the Primary and Final F.R.C.S. are held throughout the year. St. Thomas's Hospital is one of the Medical Schools of the University of London.

Lodgings.—A register of approved lodgings is kept by the Medical Secretary, who has a list of local medical practitioners, clergymen, and others who receive students into their houses.

Further information may be obtained on application to Mr. Rendle, the Medical Secretary, St. Thomas's Hospital, Albert Embankment, S.E.

University College, London: Medical Faculty.

The Hospital contains 188 beds, all of which are available for clinical instruction and study.

Appointments.—Eight House-Physicians, six House-Surgeons, twelve Obstetric Assistants, Out-Patients Physicians' and Surgeons' Assistants, Clinical Clerks, Surgeons' Dressers, from among the students without extra fee. The House-Physicians, the House-Surgeons, and four Obstetric Assistants reside in the Hospital, receiving free board and lodging.

Entrance Scholarships.—The Bucknill Scholarship of £30 a year for four years, and two Exhibitions of the value of 60 guineas each, are offered for competition in September to gentlemen who are about to commence their first winter's attendance. The subjects are Chemistry, Physics, Botany, and Zoology. Two Exhibitions of the value of 80 guineas each are offered for competition in September, the subjects of the examination being Anatomy and Physiology. Only one of these Exhibitions will be awarded to a student who has received his Anatomical and Physiological instruction in University College. The Bucknill Scholar is not eligible for these Exhibitions. The examinations for the Scholarship and Exhibitions will take place at the College on September 22nd and 23rd, 1903. Notice of intention to compete must be given to the Secretary, on or before September 19th, at the office of the College.

Other exhibitions and prizes of the annual value of about £500 are given in the Faculty of Medicine.

Fees.—The composition fee is 150 guineas, or if paid in three yearly instalments, 155 guineas.

Information respecting the College may be obtained from the Dean, Professor Sidney Martin, M.D., F.R.S., the Sub-Dean, Professor Thane; or the Principal, G. Carey Foster, F.R.S.

Westminster Hospital Medical School.

The Hospital contains upwards of 200 beds.

Appointments.—A Medical and a Surgical Registrar are appointed annually, each with a salary of £40. Two House-Physicians, two House-Surgeons, two Assistant House-Surgeons, and a Resident Obstetric Assistant are appointed for six months, after examination, and are provided with rooms and commons. An Assistant House-Surgeon, after six months' service, becomes House-Surgeon for a further period of six months. Clinical Assistants to the Assistant Physicians and Assistant Surgeons, and to the officers in charge of special departments, are appointed from among qualified students. Every student must perform the duties of Out-patient Dresser for four months, and afterwards hold the office of In-patient Dresser for four months. He is also required to serve two terms of four months each as Clinical Clerk to In-patient Physician. Two Pathological Clerks are appointed every four months to assist in the *Post-mortem* Room. No student is eligible as an In-patient Dresser or Clinical Clerk until he has passed the Second Examination of the Conjoint Board, or an equivalent examination. Clerks and Dressers in the Special Departments of Hospital Practice are periodically appointed. So far as vacancies permit, students of other hospitals are admitted to In-patients' Dresserships or Clerkships.

Scholarships.—The following Scholarships are offered for competition during the year 1903-4: *In September, 1903:* Three Scholarships in Arts, £60, £40, and £30; Scholarship in Arts for Dental Students, £20; two University Scholarships in Anatomy and Physiology, £40 and £30; Two Natural Science Scholarships, £60 and £40; Free Presentation, open to pupils of Epsom Medical College. *In April, 1904:* Two Scholarships in Arts, £60 and £40; two University Scholarships in Anatomy and Physiology, £40 and £30; Two Natural Science Scholarships, £60 and £40.

Fees.—The composition fee is 110 guineas.

Further information can be obtained on application to the Dean at the Westminster Hospital Medical School, Caxton Street, Westminster, S.W.

London (Royal Free Hospital) School of Medicine for Women.

The Hospital contains 170 beds, all of which are available for clinical instruction. There are separate departments for Obstetrics, Diseases of Women, Diseases of the Eye, Throat, and Ear, Skin, and classes for instruction in Anaesthetics, Bacteriology, etc., in addition to the ordinary Clinical Lectures and Demonstrations and Tutorial Classes. Students also attend the practice of one of the Fever Hospitals of the Metropolitan Asylums Board, and receive special instruction in Lunacy at one of the hospitals under the Asylums Board of the London County Council; they are also admitted to the practice of 13 special hospitals.

and Medical Registrars, Anaesthetists, Medical Electrician, Curators af the School and Hospital Museums, and Clinical Assistants and Demonstrator in various subjects are open to students after qualification.

Scholarships.—An Entrance Scholarship value £30, and the St. Dunstan Medical Exhibition value £60 a year for three years, extendible to five years, are offered for competition at the end of September in each year. The Bostock Scholarship, value £60 a year for two or four years, is awarded by the Reid Trustees on the result of an examination held in September by the University of London. The holder of the Scholarship must enter the London School of Medicine for Women. The Stuart Mill Scholarship, value £30 a year for four years, the John Byron Bursary and two Mackay Prizes, value £20 each, the Helen Prideaux Prize of £50, the Mabel Webb Research Scholarship of £30 for two years, together with many other scholarships and prizes, are offered on sundry conditions. Various Missionary Societies also offer scholarships on certain conditions, and assist ladies who wish to go to India as medical missionaries.

The Course of Study includes preparation for the whole course required by the University of London, the Royal University of Ireland, the Conjoint Boards of Scotland and Ireland, and the Society of Apothecaries, London; also for the greater part of the course required by the University of Durham and the other Universities of England which admit women to their degrees, and the University of Glasgow. Special classes are held in preparation for the Preliminary Scientific Examinations of the Universities of London and Durham.

School Buildings.—The entire School has been rebuilt and greatly enlarged. The Laboratories are large and well-lighted, and are fully equipped for the Preliminary Scientific and Intermediate M.B. work required by the University of London. There are also a large Library and a Common Room for the use of the students, and sets of chambers to accommodate seventeen students.

Fees.—University of London, Preliminary Science Course, £30; course for Intermediate and Final M.B., £125. Composition Fee for course of study for other qualifications, £135.

COOKE'S MEDICAL SCHOOL, LONDON.

The School is prepared to admit to its supplementary work all who may wish to join the same, but in regard to its curriculum work it does not receive more than half a dozen students in the course of the year; these have special advantages both as regards anatomy and physiology. The fees, we are informed, are but slightly in excess of current charges.

By decision of various Examining Bodies, gentlemen rejected at their Anatomical and Physiological Examinations can get "signed up" from this school for the three months' supplementary work they are required to put in before re-examination.

The operations of Surgery are performed on the dead body. Such courses are recognized for army promotion, for the Indian Medical Service, etc.

The School possesses a good collection of anatomical models, physiological and chemical apparatus, and gentlemen preparing for the higher examinations (F.R.C.S.Eng., M.B. Cambridge, Oxford, London, etc.) receive special instruction in the more difficult subjects.

PROVINCES.

THE medical schools in England, outside London, which give instruction in the full medical curriculum, are those of the Universities of Oxford, Cambridge, and Durham (University of Durham College of Medicine, Newcastle-on-Tyne); the Victoria University; Owens College, Manchester; the University of Liverpool; and the Yorkshire College, Leeds: the University of Birmingham (Mason University College); University College, Bristol; and University College, Sheffield (School of Medicine).

The opportunities for obtaining a good knowledge of the Preliminary Sciences, and of Anatomy and Physiology at the Universities of Cambridge and Oxford are unsurpassed; the staffs of teachers are distinguished, and the laboratories are most completely appointed. Instruction in Clinical Medicine, Surgery, and Midwifery is given by the University Lecturers and by the Physicians and Surgeons of the Park Hill Infirmary at Oxford and of Addenbrooke's Hospital, Cambridge; but it is the rule for Oxford and Cambridge men, after spending three years at the University, and passing the necessary examinations, to proceed for the remaining two years to London or some other large town, where the opportunities for gaining clinical experience are greater. At many of the London schools special arrangements—as to which full particulars can be obtained on application to the respective Deans—are in existence to meet the case of students from the Universities joining under these circumstances. At some of the schools they are placed on the same footing in regard to obtaining the appointments of House-Physician and House-Surgeon as students who have attended the hospital throughout. As the circumstances of the various schools are liable to vary from time to time, special inquiries should be made on this point, which after-experience will show to be of great importance.

The arrangements and appliances for laboratory and other practical instruction at Owens College, Manchester; at the University of Liverpool; at the Yorkshire College, Leeds; University College, Sheffield; and at University College, Bristol, are most complete, having in each case been recently increased and improved. At Birmingham the medical school is a Faculty of the University, and is provided with all the most modern facilities for instruction in science, while the great hospitals afford excellent opportunities for clinical work and a very unusual number of resident appointments in proportion to the present size of the school.

The Medical School of the University College of South Wales and Monmouthshire at Cardiff gives instruction in all the subjects of the medical curriculum belonging to the first three years.

GENERAL AND QUEEN'S HOSPITALS, BIRMINGHAM.

The practices of these Hospitals are amalgamated for the purpose of clinical instruction under the direction of the Birmingham Clinical Board, by whom all schedules will be signed and all examinations conducted.

The Hospitals have a total of upwards of 400 beds; 6,000 in-patients and 80,000 out-patients are treated annually.

Appointments open to Past Students.—At the General Hospital: One Resident Medical Officer, salary £70 a year; a degree in Medicine is necessary. One Resident Surgical Officer, salary £100 a year; must be F.R.C.S. One Resident Pathologist, salary £100 a year. Two non-resident Casualty Assistant Physicians, salary £50 a year. Two non-resident Surgical Casualty Officers, salary £50 a year. Two non-resident Anaesthetists, salary £50 a year. Five House-Surgeons, office tenable for six months, £50 a year. Three House-Physicians, tenable for six months, £50 a year. One Resident Medical Officer at the Jaffray Branch Hospital, salary £150 a year. One Resident Assistant at the Jaffray Branch Hospital (post vacant early in April, July, October, and January), tenable for three months. At the Queen's Hospital: Three House-Physicians (posts vacant in February, May, and November, tenable for twelve months, at a salary of £50). Three House-Surgeons (posts vacant in February, May, and November, tenable for twelve months, at a salary of £50). One Obstetric and Ophthalmic House-Surgeon (post vacant in May and November, tenable for six months, salary £20, with board and lodgings, etc.). One Resident Dresser (post vacant on the first day of January, April, July, and October, tenable for three months); candidates must previously have attended all their lectures, etc., and need not be qualified. At the City Workhouse and Workhouse Infirmary: Five Resident Medical Officers. At the Birmingham General and Branch Dispensaries: Eight Resident Surgeons. At the Birmingham Lunatic Asylums: Five Assistant Medical Officers. At the City Fever Hospitals: Three Assistant Medical Officers. At the Children's Hospital: One Resident Surgical Officer; one Resident Medical Officer. At the Birmingham and Midland Eye Hospital: Three Resident Surgeons. At the Orthopaedic and Spinal Hospital: Four Clinical Assistants (non-resident). At the Ear and

(non-resident). There are also four non-resident Poor-law appointments in the gift of the Board of Guardians.

Besides the above-mentioned positions in institutions in the city of Birmingham, there are numerous resident appointments in the Hospitals in the immediate vicinity which are open to the students of the Birmingham Medical School, such as the West Bromwich Hospital: the Guest Hospital, Dudley: the Warneford Hospital, Leamington: the Kidderminster Infirmary: the Worcester General Infirmary: and the Walsall and District Hospital. Most of the above positions are at the present time occupied by past students of the School.

Clinical Prizes.—The following prizes will be given annually: Senior Medical Prize, for students during their "final" year, to the value of £5 5s.; Senior Surgical Prize, ditto, £5 5s.; Junior Medical Prizes, for students before the commencement of the "final" year, to the value of £3 3s.; Junior Surgical Prize, ditto, £3 3s.; Midwifery Prize, for students during their "final" year, to the value of £4 4s.

University College, Bristol: Faculty of Medicine.

The lectures and instruction given in the Faculty of Arts and Science of University College, Bristol, are adapted to the various Preliminary Examinations, including the Preliminary Scientific Examination of the University of London; and students can complete in Bristol the entire course of study required for the medical and surgical degrees of the University of London, the diplomas of the Royal College of Physicians of London and the Royal College of Surgeons of England, and of the Apothecaries' Society of London, and for the Examinations for admission to the Royal Navy and the Indian Medical Services, and the Royal Army Medical Corps.

Students of the College are admitted to the Clinical Practice of the Bristol Royal Infirmary and the Bristol General Hospital conjointly, and consequently both these institutions are open to all students.

The Infirmary and the Hospital comprise between them a total of 470 beds, and both have very extensive Out-patient Departments, Special Departments for the Diseases of Women and Children, and of the Eye, Ear, and Throat, besides large Outdoor Maternity Departments and Dental Departments. Students may also attend the practice of the Bristol Royal Hospital for Sick Children and Women, containing 104 beds, and that of the Bristol Eye Hospital, with 40 beds. The total number of beds available for clinical instruction is therefore 614. Very exceptional facilities are thus afforded to students for obtaining a wide and thorough acquaintance with all branches of Medical and Surgical work. Each student has the opportunity of personally studying a large number of cases and of acquiring practical skill in diagnosis and treatment.

Appointments—Royal Infirmary: House-Physician, House-Surgeon, Junior House-Physician, and Junior House-Surgeon: Clinical Clerks and Dressers, also Ophthalmic, Obstetric, and Pathological Clerks are appointed. The Dressers reside in the Infirmary in weekly rotation. *General Hospital:* House-Surgeon, Assistant House-Surgeon: Assistant House-Physician, and Casualty House-Surgeon; Clinical Clerks, Dressers, and Obstetric, Ophthalmic, and Pathological Clerks are appointed. The Dressers reside in the Hospital in rotation free of expense.

Scholarships and Prizes.—(1) University Entrance Scholarships, £50. (2) Lady Haberfield Entrance Scholarships, £30 (about), after examination in subjects of general education. (3) Martin Memorial Pathological Scholarships, two of £10 each. (4) Tibbits Memorial Prize, value 9 guineas, for proficiency in Practical Surgery. (5) Committee Gold Medal for fifth year Students for general proficiency. (6) Committee Silver Medal for the same. (7) Augustin Prichard Prize, value about 7 guineas, for proficiency in Anatomy. (8) Henry Clark Prize, value about 11 guineas, for general proficiency. (9) Crosby Leonard Prize, value 7 guineas, for proficiency in Surgery. (10) Suple Surgical Prize, a Gold Medal and 7 guineas in money. (11) Suple Medical Prize, a Gold Medal and 7 guineas in money. (12) Henry Marshall Prize, value about £12. Dresser's Prize. (13) H. M. Clarke Scholarship, value £15, for proficiency in Surgery. (14) Sanders Scholarship, value £22 10s., for general proficiency. Prizes and certificates are also awarded in the various classes of the College.

Fees.—The composition fee for the College courses is 65 guineas (or 70 guineas in two instalments). Dental Composition Fee, 55 guineas.

Clinical and Bacteriological Research Laboratory.—This Laboratory has been established with the view of enabling medical men in the West of England to obtain reliable information and reports upon pathological material, to assist them in the clinical investigation of cases presenting obscure symptoms, and to afford them the opportunity of personally carrying out investigations.

of the Medical Faculty, Professor E. Markham Skerritt, University College, Bristol.

Yorkshire College, Leeds (Victoria University), Department of Medicine.

Clinical instruction is given at the Leeds General Infirmary, which has over 440 beds in constant use, and includes gynaecological and ophthalmic wards and a large new out-patient department. The Ida Semi-convalescent Hospital attached to the Infirmary has over 40 beds. The West Riding Lunatic Asylum at Wakefield is also open for the study of Mental Diseases. Students can in addition attend the practice of the Leeds Public Dispensary, the City Fever Hospitals (100 beds), and the Hospital for Women and Children.

Appointments.—Senior Anaesthetist, £50. Five Anaesthetists, £25 each. The Resident Medical, Surgical, and Casualty Officers, each at £100 per annum. The Resident Ophthalmic Officer at £50 per annum. A Resident Obstetric Officer at £50 is attached to the Gynaecological ward and an extensive external maternity department. A Resident Medical Officer is appointed every six months for the Ida Hospital (honarium £25). Six House-Physicians, each holding office for six months, and four House-Surgeons holding office for twelve months. Physicians' Clerks and Surgeons' Dressers are appointed for six months: Ophthalmic and Aural Dressers, Gynaecological Ward Clerks, Gynaecological Out-patient Clerks, Maternity Clerks, Assistant Physicians' Clerks, Laryngological Clerks, and Assistant Surgeons' Dressers, Assistant Ophthalmic Surgeons' Dressers, Dressers in the Casualty Room, *Post-mortem* Clerks, and Laboratory Assistants for three months. A Pathological Curator (£120 per annum) has charge of the new pathological laboratory. Appointments are also open to students at the Leeds Public Dispensary (three Resident Medical Officers, with salaries commencing at £80), at the Hospital for Women (House-Surgeon, honorarium £120, and Anaesthetist £25), and at the West Riding Asylums.

Entrance Scholarships.—The Yorkshire College awards annually a Scholarship in the form of a free admission to the lectures and classes covered by the composition fee. Candidates must have passed the First (Scientific) Examination of the Victoria University, or the Preliminary Scientific (M.B.) Examination of the London University. The subjects of the examination are those included in the above examination. The Infirmary also awards a scholarship of the value of 40 guineas in the form of a free admission to the clinical teaching of the Infirmary. The subjects of the examination are: (*a*) Latin, (*b*) Elementary Mathematics, (*c*) English Language (including an essay), (*d*) English History, and (*e*) one of the following languages: French, German, or Greek.

Fees.—The composition fee for the College courses is £67 4s. For those who have passed a Second Professional Examination, 41 and 37 guineas respectively for University or non-University courses.

Further information can be obtained from the Dean, the Department of Medicine, Yorkshire College, Leeds, or from the Secretary of the Faculty, General Infirmary, Leeds.

Owens College, Manchester (Victoria University): Medical Department.

The Royal Infirmary contains 290 beds; associated with it are the Convalescent Hospital (136 beds) and the Royal Lunatic Asylum at Cheadle, accommodating, with its branches, 350 patients.

Appointments.—The following appointments are made: A Surgical Registrar, at £80 per annum, and an additional £30 is paid to that officer when acting as Surgical Tutor: a Pathological Registrar, at £100 per annum; a Medical Registrar, at £70 per annum: a Director of the Clinical Laboratory at £75 per annum: an Assistant Director of the Clinical Laboratory at £50 per annum: Assistant Medical Officer and an Assistant Surgical Officer, each at £50 per annum; an Anaesthetist, at £50 per annum; an Assistant Anaesthetist, at £50 per annum: a Third Anaesthetist is appointed for six months, 30 guineas: an Accident House-Surgeon is appointed for three months, 20 guineas; Resident Officer, one year, £150 per annum; ditto, at Cheadle, one year, £150 per annum; Resident Surgical Officer, one year, £150 per annum: an Assistant Medical Officer at the Convalescent Hospital at Cheadle is appointed every six months, at a salary of £80 per annum; two House-Surgeons and two House-Physicians are appointed every

and House-Surgeons and Resident Assistant at Cheadle must possess a qualification which can be registered. Four or more Clinical Clerks are attached to each Physician and Assistant-Physician, and to the Obstetric Physician, and four or more Dressers to each Surgeon and Assistant-Surgeon, and to the Ophthalmic Surgeon, and four or more Clerks to the Pathological Registrar, to Clerks to the Director of the Clinical Laboratory, and a number of Clerks, not exceeding 6, are appointed to assist the Medical Officer for Home Patients. Accident Room Dressers will be appointed every three months, and will hold their appointment for three months; there will be three Senior Dressers and twelve or more Junior Dressers, the former selected from students who have acted as Dressers in the ward for a full period of six months. Additional Clinical Clerks are appointed to assist in the departments for the Diseases of the Eye, Ear and Throat.

Entrance Scholarships.—Rogers and Seaton Scholarships (in alternate years), £40 per annum, tenable for two years. Subjects: Greek and Latin. Credit given for knowledge of Geometry, Algebra, French, German and English. Examination, May 16th, 17th, 18th, 19th, 1904, Dalton (entrance), two of £40, one of which will be awarded annually, except in such years as a Cartwright Scholarship is awarded (in 1904 a Cartwright Scholarship will be offered for competition) and tenable for two years. Subjects: Geometry (Euclid I to IV and VI, or the subjects thereof); Algebra (as far as the Binomial Theorem, inclusive): Plane Trigonometry (to Solution of Triangles); Elementary Analytical Geometry, the Conic Sections. Credit given for knowledge of Classics and Modern Languages (including English). Cartwright Scholarship, £35 per annum, tenable for three years; subjects as in Dalton. Examination on May 16th, 17th, 18th, 19th, 1904. Hulme, three of £35, one of which will be awarded annually, tenable for three years. Examination on May 16th, 17th, 18th, 19th, 1904. Subjects: English Language (Grammatical Structure and Outlines of its History); English Literature (an Essay on some subject of English Literature); and Modern History (Outlines of English History and Geography); with at least two of the following: Latin (Translation at sight; Grammar and Easy Composition); Greek (ditto); French (ditto); German (ditto). Credit given for knowledge of Mathematics (Geometry and Algebra). James Gaskill, two of £35, one of which will be awarded annually, and tenable for two years. Examination on May 16th, 17th, 18th, 19th, 20th, 21st, 1904. Subjects: Mathematics—Geometry, the subjects of Euclid, I to IV and VI; Algebra, as far as the Binomial Theorem inclusive; Plane Trigonometry (to Solution of Triangles); Elementary Mechanics, including composition and resolution of forces in a plane, centre of gravity of simple bodies, uniform acceleration, direct impact, the elements of Hydrostatics, Boyle's Law. Chemistry: Inorganic Chemistry; Practical work, including preparations, analysis of mixtures of inorganic salts, easy quantitative analysis. Credit given for knowledge of Classics and Modern Languages (including English). Dora Muir Scholarship, £25 per annum, tenable for three years, and open to the competition of women students only. The Scholarship will be awarded on the results of the Examination for the Entrance Scholarship, and candidates may elect to take such papers as they desire. Next competition in 1905. Sir J. P. Kay-Shuttleworth Scholarship, £30 per annum, tenable for three years, open to the competition of scholars from Sedbergh School, Giggleswick School, and Burnley Grammar School. Next competition, 1906. Subjects: Geometry, Algebra, Trigonometry, Chemistry, Practical Chemistry, and Mechanics, as in the James Gaskill. Theodores Modern Languages Exhibition, £15, awarded annually. Examination on May 17th, 1904. Subjects, French and German. Two Dauntesey Medical Scholarships, value £35, tenable for one year. Candidates must not have attended lectures in a medical school. Subjects of examination: Zoology, Botany, and Chemistry. The successful candidates must enter for the full course of medical studies at the College. A Gilchrist Scholarship of £50 per annum, tenable for three years in the College, awarded annually upon the results of the June Preliminary Examination of the Victoria University. Three Scholarships of the value of £30 per annum each, and tenable for three years, are awarded to the duly qualified competitors who stand highest at the Preliminary Examination, held for the purpose of examining forms or classes in schools, provided they pass in the First Division and are recommended by the Examiners. Grammar School Scholarships, value £18 per annum, tenable for three years, open to scholars of the Manchester Grammar School, Manchester High School, Manchester Technical School, Manchester Municipal School of Technology, Manchester Municipal School of Commerce, Manchester Municipal School of Art, Manchester Municipal School of Music, Manchester Municipal School of Domestic Economy, Manchester Municipal School of Cookery, Manchester Municipal School of Dressmaking, Manchester Municipal School of Millinery, Manchester Municipal School of Laundry Work, Manchester Municipal School of Hairdressing, Manchester Municipal School of Shorthand, Manchester Municipal School of Typewriting, Manchester Municipal School of Bookkeeping, Manchester Municipal School of Arithmetic, Manchester Municipal School of Geography, Manchester Municipal School of History, Manchester Municipal School of English Literature, Manchester Municipal School of French, Manchester Municipal School of German, Manchester Municipal School of Spanish, Manchester Municipal School of Italian, Manchester Municipal School of Latin, Manchester Municipal School of Greek, Manchester Municipal School of Hebrew, Manchester Municipal School of Arabic, Manchester Municipal School of Chinese, Manchester Municipal School of Japanese, Manchester Municipal School of Russian, Manchester Municipal School of Portuguese, Manchester Municipal School of Dutch, Manchester Municipal School of Swedish, Manchester Municipal School of Norwegian, Manchester Municipal School of Danish, Manchester Municipal School of Finnish, Manchester Municipal School of Hungarian, Manchester Municipal School of Turkish, Manchester Municipal School of Persian, Manchester Municipal School of Sanskrit, Manchester Municipal School of Pali, Manchester Municipal School of Zend, Manchester Municipal School of Avestan, Manchester Municipal School of Old Persian, Manchester Municipal School of Pahlavi, Manchester Municipal School of Parsi, Manchester Municipal School of Gujarati, Manchester Municipal School of Marathi, Manchester Municipal School of Hindi, Manchester Municipal School of Urdu, Manchester Municipal School of Bengali, Manchester Municipal School of Tamil, Manchester Municipal School of Telugu, Manchester Municipal School of Kannada, Manchester Municipal School of Malayalam, Manchester Municipal School of Sinhalese, Manchester Municipal School of Burmese, Manchester Municipal School of Siamese, Manchester Municipal School of Khmer, Manchester Municipal School of Lao, Manchester Municipal School of Tibetan, Manchester Municipal School of Mongolian, Manchester Municipal School of Manchu, Manchester Municipal School of Korean, Manchester Municipal School of Japanese, Manchester Municipal School of Chin

Department, and Department for Skin Diseases are elected annually. The Assistant Demonstrators of Anatomy receive £5 each; the others are unpaid. Four times in the year Clinical Clerks and Dressers are appointed for three months.

Scholarships.—A University of Durham Scholarship, value £100, for proficiency in Arts, open annually at the beginning of the winter session to intending students. The Dickinson Memorial Scholarship, interest of £400, with a gold medal, for Medicine, Surgery, Midwifery, and Pathology, open to perpetual students in their fifth year. The Tulloch Scholarship, interest of £400 annually, for Anatomy, Physiology, and Chemistry for students at the end of their second year. The Charlton Memorial Scholarship, interest of £700 annually, open to full students entered for the class of Medicine, at the end of their fourth or fifth winter. The Gibb Scholarship, interest of £500 annually, for Pathology, at end of summer session. The Goyder Memorial Scholarship, proceeds of £325; subjects: Clinical Medicine and Clinical Surgery. Luke Armstrong Memorial Scholarship, proceeds of £680, for best essay on some subject in Comparative Pathology. The Scholarship is open to all graduates in Medicine or Hygiene, and candidates for these degrees who have spent at least six months at the University of Durham, and whose age does not exceed 30 years. The Stephen Scott Scholarship in Surgery, interest on £1,000 annually. The Heath Scholarship. The late George Y. Heath, M.D., M.B., D.C.L., F.R.C.S., President of the University of Durham College of Medicine, bequeathed the sum of £4,000 to found a scholarship in surgery, the interest to be awarded every second year. First award in 1896. The Gibson Prize in Midwifery and Diseases of Women and Children, interest on £225.

Fees.—The composition fee for the College course is 72 guineas.

University College of South Wales and Monmouthshire: School of Medicine, Cardiff.

This College, which is one of the Colleges of the University of Wales, has, since its foundation in 1883, prepared students for the Preliminary Scientific Examination of the University of London, and for the corresponding examinations of other licensing bodies. In 1893, Chairs of Anatomy and Physiology and a Lectureship in Materia Medica and Pharmacy were established, making it possible for students of medicine to spend three out of the five years of prescribed study at Cardiff. Arrangements with the Managing Committee of the Cardiff Infirmary give students of the College the privilege of attending this large and well-ordered Hospital, which is situated within five minutes' walk of University College. Many students, especially from Wales and Monmouthshire, avail themselves of the opportunity thus afforded to pursue the earlier part of the medical curriculum near home.

All classes, at the College and at the Infirmary, are open alike to both men and women students over 16 years of age.

The courses of instruction given at Cardiff are recognized as qualifying for the examinations of the Universities, Royal Colleges, and other licensing bodies of Great Britain and Ireland.

Having spent two or three years in study at Cardiff, and having passed the examinations corresponding to these years, a student may proceed to London or elsewhere and complete his qualifying course for a University Degree or for a College Diploma.

Students preparing for the Preliminary Scientific and Intermediate Examination in Medicine of the University of London may compound for their three years' instruction at Cardiff by paying a single composition fee of £57 10s., or by paying £13 13s., £28, and £21 at the beginning of their first, second, and third years respectively.

Students preparing for the First and Second Examinations or the Conjoint Board for England or for the corresponding examinations of the Conjoint Board for Scotland or for those of the Society of Apothecaries may compound for their classes by paying a single composition fee of £40, or by paying £18 10s. and £24 10s. at the beginning of their first and second year respectively.

In 1899 a department of Public Health was established, and Lecturers in Bacteriology and in Public Health and Hygiene were appointed. Medical men preparing for a Diploma in Public Health and Hygiene can attend complete courses of Lectures and Laboratory instruction in this department. These courses are recognized by the Universities of Cambridge and London, by the Royal Colleges of Physicians and Surgeons and by Victoria University.

Students preparing for a University Degree in Medicine can, with some additional work in the first three years of their study, take courses qualifying for the B.Sc. degree in the University of Wales.

Scholarships and Exhibitions.—A considerable number of scholarships and exhibitions are open to students of Medicine. The examinations for these take place in September (see Syllabus of Examination, which may be obtained on application to the College Registrar).

Further information may be obtained by application to the Dean of the Faculty of Medicine.

SCOTLAND.

University of Aberdeen.

The Faculty of Medicine embraces twelve chairs, from which instruction is given in all the main branches of medical science, namely, Botany, Zoology, Physics, Chemistry, Anatomy, Physiology, Materia Medica, Pathology, Forensic Medicine, Surgery, Medicine, and Midwifery. Special opportunities for practical instruction are afforded in the laboratories and museums attached to these departments. Clinical instruction is obtained in the Royal Infirmary (accommodating 200 patients), the Royal Lunatic Asylum (700 patients), the Sick Children's Hospital (75 patients), the City Fever Hospital (100 patients), the General Dispensary, etc. (10,000 out-patients annually), and the Ophthalmic Institution (1,600 patients annually). Courses of practical instruction are given in Diseases of Children at the Sick Children's Hospital; in Fevers at the City Fever Hospital: in Insanity at the Royal Asylum; in Diseases of the Ear and Larynx at the Dispensary: in Diseases of the Eye at the Infirmary and Eye Institution; in Diseases of the Skin at the Royal Infirmary. The fee for each University course is, as a general rule, £4 4s.: and for a second attendance, £3 3s. Matriculation Fee, both sessions, £1 1s.: summer session alone, 10s. 6d.; Royal Infirmary, Perpetual Fee, £6; or, first year, £3 10s.; second year, £3. The winter session begins on October 13th, 1903. Bursaries, Scholarships, and Fellowships, to the number of fifty, and of the annual value of £1,180, may be held by students of medicine in this University. They range from £8 to £100 per annum, and are tenable in most cases for two or three years.

Edinburgh University.

Practical Instruction.—The following means are afforded for practical instruction: Royal Botanic Garden, Herbarium, and Museum; Zoological Laboratory and Museum of Science and Art: Physical Laboratory; Chemical Laboratories; Dissecting Rooms, Bone Room, and Anatomical Museum, Physiological Laboratory; Medical Jurisprudence Laboratories: John Usher Institute of Public Health; Materia Medica Museum and Laboratory; *Post-mortem* Department of the Royal Infirmary: and University Pathological and Bacteriological Laboratory: Royal Infirmary of fully 800 beds: Royal Hospital for Sick Children, with nearly 100 beds: Maternity Hospital: City Fever Hospital, with nearly 400 beds: Mental Diseases at Royal Morningside Asylum; Tutorial Classes of Practice of Physic, of Clinical Medicine, and Clinical Surgery, Surgery, and Midwifery.

Fees.—The Sessional Fee for Zoology, Botany (Garden Fee, 5s.), Chemistry, Anatomy Lectures, Physiology, Pathology, Materia Medica, Medical Jurisprudence, Surgery, Medicine, Midwifery and Gynaecology, Clinical Surgery (Winter), Clinical Medicine (Winter), is £4 4s. each. Second Course, £3 3s. Third Free. A perpetual ticket taken at the beginning of the first year is £6 6s. Physics, Practical Chemistry, Advanced Practical Physiology, Practical Pathology, Clinical Surgery (Summer), Clinical Medicine (Summer), Practical Anatomy (Winter), Operative Surgery, Obstetric Operations, Practical Materia Medica, including Pharmacy, Pathological Bacteriology, Experimental Pharmacology, Vertebrate Morphology, and Comparative Embryology are £3 3s. Practical Botany (besides Garden Fee of 5s.), Elementary Practical Zoology (besides charge of 10s. for Laboratory expenses), Practical Physiology (Experimental), Practical Physiology (Histological), Practical Botany (Advanced), Practical Zoology (Advanced), Practical Anatomy (Summer), Anthropology, Anatomy Demonstrations, Diseases of Children, Diseases of the Eye, Diseases of the Larynx, Ear, and Nose, Diseases of Tropical Climates, Clinical Instruction on Diseases of the Skin, Regional Anatomy, Physiological Chemistry, Invertebrate Zoology, Organic Chemistry, Mental Diseases, £2 2s. Vaccination, £1 1s. Matriculation Fee £1 for each year, or 10s. for a Summer Session. Library open from 10 to 4; Saturdays, 10 to 1.

Fellowships, Scholarships, Bursaries, and Prizes open for competition in 1903-1904

Fellowships.

1. *The Freeland Barbour Fellowship* of the value of £100 to the M.B., Ch.B. who gains the highest collective marks in Anatomy, Physiology, and Pathology in July, 1904.

2. *The Allan Fellowship in Clinical Medicine and Clinical Surgery* of about £45, awarded annually, after competitive examination of the six candidates who obtain the highest marks in the subjects named in the Final Examination.

FUNDS FOR RESEARCH.

1. *The William Dickson Travelling Fund* of the annual value of £85, usually divided into grants of varying amounts.

2. *The Earl of Moray Fund* for the promotion of original research. The annual income is £600, available for payment of the actual expenses of original research.

3. *Carnegie Post-graduate Scholarships* (£100), *Fellowships* (£150), and grants in aid for research in medicine. Application forms from the Secretary to the Trust, 14, Hanover Street, Edinburgh. These to be returned by May 1st.

SCHOLARSHIPS.

1. *Vans Dunlop Scholarship* of £100, tenable for three years, to be awarded in April, 1904, for highest marks in the Medical Preliminary Examination.

2. *The Stark Scholarship in Clinical Medicine*, about £112 for one year, for the encouragement of the study of clinical medicine, to be awarded in July, 1904.

3. *Sibbald Medical Scholarship*, annual value £40, tenable for three years, given for highest marks in chemistry, botany, zoology, and physics in October, 1903.

4. *The Mouat Scholarship in Practice of Physic*, about £58 9s. annually, for the highest place in class of medicine, and highest marks in medicine in Final.

5. *The Murchison Memorial Scholarship*, annually. Proceeds of £1,000 for proficiency in clinical medicine. Examination in London in 1904.

6. *The Buchanan Scholarship*, £40 annually for proficiency in midwifery and gynaecology.

7. *The James Scott Scholarship.*—£32 10s. annually for proficiency in midwifery.

8. *The Ettles Scholarship in Medicine.*—£30 annually to the most distinguished graduate.

9 and 10. *Two Hope Prize Scholarships.*—Each £30 for one year for excellence in chemistry.

11 and 12. *Two Crichton Scholarships for Research* may be offered in October, one in anatomy and one in physiology, each of the value of £100, tenable for one year, with power of reappointment.

BURSARIES.

1. *Town Council Bursaries.*—A number are vacant. Apply "City Clerk, Council Chambers, Edinburgh."

2. *Two Sibbald Bursaries* of £30 a year, tenable for three years.

3. *Two Thomson Bursaries* of £25 a year, tenable for four years.

4. *Five Grierson Bursaries*, three of £20, and two of £10, each, in the absence of preferential candidates, tenable for one year only.

5. *Two John Aitken Carlyle Bursaries*, each £29 12s. 6d., tenable for one year.

6. *Four Mackenzie Bursaries*, each of £8 2s. 6d., awarded annually in practical anatomy.

7. *Renton Bursary*, £20, tenable for one year, with restrictions.

8. *Two Crichton Bursaries*, £50 each, tenable for four years, for Scottish students.

9. *The McCosh Graduates Bursary* of about £170 12s.; and the *McCosh Medical Bursary* of about £12 10s. 10d., tenable for one year each. Both for research.

PRIZES.

1. *The Medical Faculty Gold Medals*, given to M.D.'s whose theses are deemed worthy.

2. *The Neill Arnot Prize in Physics*, £39 annually.

3. *The Beaney Prize* for highest marks in Anatomy, Surgery, and Clinical Surgery in the Professionals, £32 10s. annually.

4. *The Cameron Prize*, £80 annually, for "any highly important and valuable addition to practical therapeutics" in the course of the five years preceding the award.

5. *Two Gunning Victoria Jubilee Prizes*, one in Surgery, and one in Pathology, each of the value of £50, awarded at graduation in July, 1904.

6. *The Ellis Prize in Physiology*, about £100, open to students and graduates of not more than five years' standing, for best essay or treatise on "Secretion and Excretion in Angiosperms."

7. *The Conan Doyle Prize*, of about £30, awarded annually to the most distinguished graduate of the year from South Africa.

8. *The Wightman Prize* in Clinical Medicine, £15 15s. annually.

9. *The Pattison Prize* in Clinical Surgery, £11 17s. 6d. annually.

10. *The Robert Wilson Memorial Prize* in Chemistry. Silver Medal and £8 8s. annually.

11. *The Dorothy Gilfillan Memorial Prize* of £11 7s. 6d. annually to the most distinguished woman student in the Final M.B., Ch.B.

12. *The Lord Rector's Prize* of 25 guineas for the best essay on "Beginnings of the English Reformation, Civil and Religious, from the Middle of the Fourteenth Century to 1517."

13. *The Trustees of Gray's Prize Essay Fund* offer three prizes of £15, £10, and £5, for the first, second, and third best essays on "The Philosophy of History."

LECTURESHIP.

The Swiney Lectureship in Geology, value £144 per annum, tenable for five years, is open to graduates, and is in the patronage of the Trustees of the British Museum.

Full particulars of all these will be found in the University *Calendar* for 1903-4, price 3s.; or in the Medical Programme, price 2d., to be had from Mr. Thin, 55, South Bridge, Edinburgh.

EDINBURGH ROYAL INFIRMARY.

Fees.—Six months, £4 4s; one year, £6 6s.; perpetual, £12 in one sum, or separate payments, £12 12s.

Eight resident physicians and six surgeons are appointed every six months; they live in the house free of charge, save for laundry. They must be registered. Many non-resident clinical clerks are also appointed for six months. The physicians and surgeons appoint their own clerks and dressers, and assistants in the Pathological Department are appointed by the pathologists. Instruction is given in all the special departments.

SCHOOL OF MEDICINE OF THE ROYAL COLLEGES, EDINBURGH.

The teaching is similar to that of the Scottish Universities, and the students receive similar certificates at the close of each session. The courses on the special subjects not included in the curriculum of the Examining Boards are also conducted by teachers specially qualified in each branch, and have for the last quarter of a century formed a special feature of the School.

This School of Medicine is composed of Lecturers licensed by the Royal Colleges of Physicians and Surgeons, and also recognized by the University through their *licentia docendi*, who, for the sake of convenience, lecture in separate buildings near at hand to the Royal Infirmary. The Lecturers form one body, are all subject to the same rules and regulations, and enjoy the same privileges. A new constitution and set of regulations have recently been drawn up, in virtue of which a medical corporation has been formed, recognized by both Royal Colleges, the government of the School is placed in the hands of a Governing Board consisting of five members elected by the Royal College of Physicians, of five members elected by the Royal College of Surgeons, and of five members elected by the Lecturers in the School. This Board, with the assistance of the Standing Committees of the School, supervises the whole management, and specially the maintenance of the efficiency and discipline of the School. The different buildings at present utilized for the purposes of lecturing are the following: 1. Surgeons' Hall, Nicolson Street; 2. Minto House, Chambers Street; 3. Nicholson Square; 4. Marshall Street; 5. the New School, Bristo Street; and other places.

MEDICAL COLLEGE FOR WOMEN, EDINBURGH.

Clinical instruction in the Royal Infirmary qualifies for graduation in the Universities. Precisely the same facilities for medical study are given as to male students in the School of Medicine, Edinburgh. Arrangements, fees, and regulations are similar. All the teachers are qualified lecturers of the School, and their courses admit to the various qualifying bodies for women. The lecturers are also recognized by the University of Edinburgh as giving courses admitting to the degrees of M.B., Ch.B. In the case of those proceeding to such degrees, the same fees as those in the University must be paid. The classes, with the exception of those in the Royal Infirmary, are open to all ladies, whether taking a full medical curriculum or not. Prospectus and all information from Miss H. F. Mackay, 20, Chambers Street (Minto House).

UNIVERSITY OF GLASGOW.

The whole course of study presented by the University of Glasgow (*q. v.*) can be passed in the Medical School of the University. For practical work there are available the Physical, Chemical (winter course, £10 10s.; summer, £5 5s.), Physiological, Zoological, and Botanical Laboratories, and the Botanic Gardens.

Partial Study elsewhere.—Only two of the five years need be spent at the University; the remaining three may be spent in such university or schools, or under such teachers, as are recognized by the University Court.

Bursaries.—Bursaries confined to the Medical Faculty amount in annual value to about £950, while bursaries in any Faculty, amounting to about the same annual sum, may be held by students of medicine, a number of both sets being open to women. Some are definitely restricted to women. Several valuable scholarships may be held by medical students who have graduated in Arts.

Hospitals.—Three very extensive General Hospitals in the City afford exceptional opportunities for clinical instruction, namely, the Western Infirmary (416 beds), near to the University and attended by the bulk of the men students, the Royal Infirmary (612 beds), and the Victoria Infirmary (180 beds); while the Royal Asylum (460 beds), the Royal Hospital for Sick Children (74 beds), the Maternity Hospital (34 beds), the Glasgow Eye Infirmary (100 beds), the Fever Hospitals at Belvidere (680 beds) and Ruchill (528 beds), and other institutions, afford facilities for the practical study of special branches.

Fees.—The matriculation fee for each year is £1 1s, in most cases the fee for each University Class is £4 4s., but in some cases it is £3 3s. For Hospital attendance students pay an entrance fee of £10 10s. at the Western Infirmary, with an additional fee of £3 3s. for each winter and £2 2s. for each summer clinical course; while at the Royal Infirmary the fees for the first year are £10 10s. and the total fees £21.

The University fee for the four professional examinations is £23 2s. (£6 6s. for each of the first and second examinations, and £5 5s. for each of the third and fourth). For the whole curriculum, the fees for matriculation, class attendance, Hospital attendance and professional examinations, amount to about £148.

Public Health, Laboratories, etc.—A new ordinance empowering the University to confer the degrees of B.Sc. and D.Sc. in Public Health received the sanction of the King in Council on May 20th, 1903. To be eligible for these degrees, candidates must be graduates of a University of the United Kingdom or of some other recognized University. The University has of late been making efforts to extend and improve the accommodation, especially the laboratories, in the medical departments. New buildings and equipment have recently been provided for Practical Anatomy at a cost of £13,000, and Operative Surgery at a cost of over £7,000; and works have now been commenced for the erection of new class rooms and laboratories for the departments of Physiology, Materia Medica, Medical Jurisprudence, and Public Health, to cost with equipment upwards of £60,000.

The Women's Department of the University (Queen Margaret College).—The course of study, degrees, regulations, fees, etc., are the same as for men. Women students have their own buildings, with class rooms, reading room, library, etc., and are taught in classes apart from male students, but have all the rights and privileges of university students. Their clinical studies are taken in the Royal Infirmary, where wards are reserved for their exclusive use, and in its dispensaries: also in the Royal Hospital for Sick Children; the Royal Asylum, Gartnavel; the City of Glasgow Fever Hospitals, Belvidere, and Ruchill; and the Glasgow Maternity Hospital.

Scholarships and Bursaries at Queen Margaret College.—The Arthur Scholarship, annual value £20, tenable for three years. Open to competition by medical students of first year at the First Professional Examination in October, 1904. This Scholarship is the gift of Mrs. Arthur, of Barshaw, and is restricted to women medical students. The following Bursaries are open to students of both sexes: The Dr. Thomas Gibson Bursary, annual value £32, tenable for four years. Open to medical students who are preparing for service as medical missionaries in connexion with the Church of Scotland. Next vacancy in 1904. It will be awarded to the eligible candidate who has gained the highest number of marks in the First Professional Examination. One Logan Bursary, annual value £17, tenable for four years; appointment by the Senate. Next vacancy, 1905. Mackintosh Mental Science Bursary in Medicine, of the value of £31, is awarded annually to the student (of either sex) attending the class of Insanity, who stands first in an examination in that subject, to be held in June—the Bursar to continue the practical study of the subject to the satisfaction of the Faculty of Medicine. The William Gardiner Bursary, annual value about £13 18s., tenable for two years, will be awarded after the autumn professional examination to the candidate who has passed in Physiology of the Second Professional Examination, and whose aggregate of marks in that subject and in Chemistry and Physics of the First Professional Examination is the highest. It is open in 1903. Six Buchanan Society Bursaries in Arts, Science, or Medicine are open in 1904; one of them is open in 1903. In Science or in Medicine they are of the value of £35, and are tenable for four years. They are awarded by the Buchanan Society to students bearing certain preferential names. Applications to be made to the Secretary, P. G. Keyden, Esq., 186, West George Street, Glasgow, on or before August 15th, 1903. Three Armagh Bursaries (£45 each, tenable for three years), one open in 1903 to a student who takes the Final Examination for M.A. with Honours in Mental Philosophy. The following are tenable in any Faculty: two Dumfriesshire Society Bursaries (each £15 and tenable for four years); two Pratt Bursaries (each £20 and tenable for four years) open in 1903, and two Taylor Bursaries (each £7, tenable for four years) are both open in 1905. The Carnegie Trust for the Universities of Scotland is empowered to pay the whole or part of the University ordinary class fees of students of Scottish birth or extraction, under conditions given in the College prospectus. The Dobbie Smith Gold Medal is awarded annually for the best essay on any subject within the Science of Botany. The Brunton Memorial Prize, of about £10, is awarded annually to the most distinguished graduate in Medicine of the year. The University Commissioners have issued an Ordinance to make regulations for the admission of women to certain other Bursaries, Scholarships, and Fellowships. Miss Galloway will supply details. See Prospectus for 1903-4.

Class and Examination Fees.—The class and hospital fees for the subjects enjoined by Ordinance as constituting a five years' course of study and clinical work amount to about £110 5s. To this must be added £5 5s. for matriculation fees (£1 1s. for each of five years), £23 2s. for examination fees, and £5 1s. for registration as a medical practitioner.

Board for Students.—A House of Residence for women students, Queen Margaret Hall, is situated near the College. The cost for board and residence is from 17s. to 25s. per week, according to accommodation. Full information can be obtained from Miss Galloway, Queen Margaret College; or from the Lady Superintendent, Queen Margaret Hall, Bute Gardens, Glasgow.

For further information male students may apply to Mr. W. Innes Addison, Matriculation Office, Glasgow University; women students to Miss Galloway, Queen Margaret College, Glasgow, W., from whom copies of the prospectus may be had.

St. Mungo's College, Glasgow.

The College buildings are situated within the grounds of the Royal Infirmary, the wards and clinical instruction therein being available for students. Qualifying classes are held during the winter in Physics, Zoology, Chemistry, Anatomy, Materia Medica, Physiology, Pathology, Medicine, Surgery, Ophthalmology, Gynaecology, Diseases of Throat and Nose, and in Public Health Laboratory Work. Instruction is also given daily in the Dispensary by the Assistant Physicians and Surgeons of the Royal Infirmary. During the summer the classes include Botany, Medical Chemistry, Practical Pathology, Practical Physiology, Anatomy, Operative Surgery, Diseases of Children, Clinical Medicine, Clinical Surgery, Medical Jurisprudence, Dermatology, Otology, Bacteriology, and Psychological Medicine. All classes in this College qualify for the diplomas of the English, Scotch, and Irish Conjoint Boards.

Class Fees.—£2 2s. for each class, except Anatomy, £4 4s.; Pathology, £4 4s.; Zoology and Botany, joint fee, £3 3s.; Otology, Throat and Nose, and Dermatology, £1 1s.

Hospital Fees.—First year, £10 10s.; second year (and perpetual), £10 10s.

Total cost of a qualifying course, including Corporation Licence, about £70.

A *Calendar* giving full particulars of the School may be obtained on application from the Dean, Professor Alex. MacPhail.

Glasgow: Anderson's College Medical School.

Lectures are delivered on all the subjects of the five years' curriculum. Hospital Practice and Clinical Lectures in Western or Royal Infirmary; Pathology in Western or Royal Infirmary; Vaccination and Dispensary Practice in Western or Royal Infirmary Dispensary. The above lectures qualify for all the Licensing Boards in the United Kingdom. They are also recognized by the Universities of London, Durham, Ireland, Glasgow, and Edinburgh (the latter two under certain conditions which are stated in the School *Calendar*).

The new buildings are situated in Dumbarton Road, immediately to the west of the entrance to the Western Infirmary, within two minutes' walk of that institution, and four minutes' walk of the University.

A *Calendar* containing full particulars of the School may be obtained from the Secretary to the Medical Faculty, Anderson's College, Dumbarton Road, Partick, Glasgow.

Class Fees.—For each Course of Lectures (Anatomy, Ophthalmic Medicine and Surgery, Aural Surgery, Diseases of Throat and Nose, and Mental Diseases excepted) first session, £2 2s.; second session (in Anderson's College), £1 1s.; afterwards free. For Practical Classes (except Anatomy)—namely, Chemistry, Botany, Zoology, Physiology, Pharmacy, Operative Surgery, first session, £2 2s.; second session, £2 2s. Reduced joint fees in Zoology and in Botany, for Lectures and Practical Class when taken in same summer session, £3 3s.; for either course separately, £2 2s. Anatomy Class Fees.—Winter: First session (including Practical Anatomy), £4 4s.; second session (including Practical Anatomy), £4 4s.; third session, £2 2s. Summer: Lectures and Practical Anatomy, £2 12s. 6d.; Lectures alone, £1 11s. 6d.; Practical Anatomy alone, £1 11s. 6d.; Osteology and Practical Anatomy, £2 12s. 6d.; Osteology alone, £1 11s. 6d. Students who have attended classes at other schools, and who desire to pursue their

studies at Anderson's College Medical School will be admitted to such classes as they may have attended elsewhere, at the reduced fees. Ophthalmic Medicine and Surgery (including Hospital Practice).—Aural Surgery, Diseases of Throat and Nose, and Mental Diseases, £1 1s. Matriculation Fee.—Winter: 10s. to those taking out two or more classes, which represents a combined fee for the winter and summer session: 5s. to those taking out only one class. Summer: 5s., except to those who have paid a fee of 10s. for the winter session. Western Infirmary.—Fees: Hospital Practice and Clinical Instruction, first year, £10 10s.; second year, £10 10s.; afterwards free. Six months, £7 7s.; three months, £4 4s. Pathology.—First session, £3 3s.; second session, £2 2s. Practical Pathology.—First session, £3 3s.; second session, £2 2s. Vaccination fee, £1 1s. Royal Infirmary.—Fees: Hospital Practice and Clinical Instruction, first year, £10 10s.; second year, £10 10s.; afterwards free. Six months, £6 6s.; three months, £4 4s. Pathology, both courses, £3 3s. Vaccination fee, £1 1s. Attendance at the dispensaries of the Western and Royal Infirmaries is included in the hospital fee. Eye Infirmary.—Fee: Hospital Practice and Clinical Instruction, including Lectures at the College, six months, £1 1s. The session opens on Thursday, October 15th, 1903.

UNIVERSITY COLLEGE, DUNDEE.

Some information as to this College will be found under the head of University of St. Andrews.

Dundee Royal Infirmary.—The Infirmary contains 300 beds, with a special ward for the treatment of diseases of children. Four Resident Qualified Assistants are appointed annually. Clinical Clerks and Dressers are attached to the physicians and surgeons, and students are appointed to assist in the *post-mortem* room. Out-patients are seen daily at 9 a.m. There is an Intern and Extern Maternity Department connected with the Infirmary. The instruction given at the Infirmary is recognized for purposes of graduation by all the Scotch Universities, the University of London, the University of Cambridge, the Royal University of Ireland, and by the Royal Colleges of England and Scotland. Further information on application to the Medical Superintendent.

Dundee Royal Asylum.—The appointments include two qualified Resident Assistants and two Resident Clinical Clerks. Clinical instruction is given.

Fees.—The fee in the case of most of the classes is 3 guineas. The hospital ticket is 3 guineas a year or 2 guineas a session. The total fees for the five years' curriculum amount to about 80 guineas.

IRELAND.

STUDENTS desirous of prosecuting their medical studies in Ireland may attend the School of Physic in the University of Dublin; the Schools of Surgery of the Royal College of Surgeons of Ireland; the Catholic University School of Medicine, Dublin; or the Schools of Medicine of the Queen's Colleges in Belfast, Cork, or Galway. The student will be guided in making his arrangements for clinical instruction by the advice of the teachers of the School which he may select to attend.

SCHOOL OF PHYSIC IN IRELAND, DUBLIN.

This school is formed by an amalgamation of the medical school of Trinity College and of the Royal College of Physicians; the King's Professors of Institutes of Medicine, Practice of Medicine, Materia Medica, and Midwifery being appointed by the latter.

Clinical instruction is given by the staff of Sir Patrick Dun's Hospital. The following Hospitals are also recognized by the Board of Trinity College: Adelaide Hospital, Royal City of Dublin Hospital, Dr. Steevens's Hospital; Richmond, Whitworth, and Hardwicke Hospitals; Jervis Street Infirmary, Mater Misericordiae Hospital, Mercer's Hospital, Meath Hospital, the National Eye and Ear Infirmary, St. Mark's Ophthalmic Hospital, St. Vincent's Hospital, Richmond Asylum, St. Patrick's Hospital.

CATHOLIC UNIVERSITY MEDICAL SCHOOL.

Prospectuses and further information about this school, which provides complete courses of lectures as required by the examining bodies, may be obtained from the Registrar of the School, Cecilia Street, Dublin, who has written a very useful *Guide for Medical Students*. The total fees for school and hospital courses is £160, payable as the courses are taken out.

THE SCHOOLS OF SURGERY OF THE ROYAL COLLEGE OF SURGEONS IN IRELAND.

The Schools of Surgery are attached by Charter to the Royal College of Surgeons, Dublin, and have existed as a department of the College for over a century. They are carried on within the College buildings, and are specially subject to the supervision and control of the Council. The buildings have been reconstructed, the capacity of the dissecting room nearly trebled, and special Chemical, Pathological, Bacteriological, Public Health, and Pharmaceutical Laboratories fitted with the most approved appliances, in order that students may have the advantage of the most modern method of instruction. There are special rooms set apart for lady students. The entire building is now heated by hot-water pipes, and lighted throughout by the electric light. A refreshment room is also open, where students can have luncheon. The winter session commences October 1st, and the summer session April 1st. All the lectures and courses of practical instruction may be attended by medical students who are otherwise unconnected with the College.

Prizes.—The Barker Anatomical Prize (£21); the Carmichael Scholarship (£15); the Mayne Scholarship (£15); the Gold Medal in Surgery, and the Stoney Gold Memorial Medal in Anatomy: Class Prizes of £2 and £1, accompanied by medals, will also be given in each subject.

Prospectus and *Students' Guide* will be forwarded post free on written application to the Registrar, Royal College of Surgeons, Dublin.

QUEEN'S COLLEGE, BELFAST.

The courses of study meet the requirements of the Royal University of Ireland and other examining bodies. The class fee is £2, except in a few cases. The total cost of the medical curriculum of the Royal University of Ireland, including examination fees and perpetual fee for the Royal Hospital, but not including fees for the special hospitals, is about £95. It amounts to about the same for the course of the Conjoint Board in Ireland.

Clinical instruction is given at the Royal Victoria Hospital. An entirely new hospital containing 300 beds was opened in July, 1903. *Fees*, six months, £7 7s.; nine months, £9 9s.; Perpetual, £21 in two instalments. The Maternity Hospital, the Ulster Hospital for Women and Children, the Hospital for Sick Children, the Ophthalmic Hospital, the Ulster Eye, Ear, and Throat Hospital, the Poorhouse Infirmary, and the District Lunatic Asylum are open to students.

Prizes.—(1) Ten medical scholarships each year, value £20 each; (2) two Dunville studentships (one each alternate year), value £145 each; (3) one Andrews studentship each alternate year, value £145; (4) numerous sessional prizes.

The College contains laboratories in connexion with the departments of Chemistry, Physiology, Pathology, Anatomy, and Physics and Materia Medica.

All the medical classes are open to women students.

A Students' Union provides dining room, reading room, library, and various recreation rooms.

A pamphlet containing full information can be had free on application to the Registrar, Queen's College, Belfast.

QUEEN'S COLLEGE, CORK.

The arrangements in the Faculty of Medicine are made chiefly with reference to the requirements of the Royal University of Ireland, but students proceeding for the examinations of the Conjoint Boards of England, Scotland, or Ireland, the Society of Apothecaries of London or the Apothecaries Hall of Ireland can arrange the courses of Lectures which they attend, and the order in which they attend them, to meet the requirements of those bodies. Certificates of attendance in the College are also accepted by the University of Cambridge. The total fees for the College Lectures and Hospital attendances required by the Royal University of Ireland is about £85.

Clinical instruction is given at the North and South Infirmaries (each 100 beds). Students can also attend the Mercy Hospital (60 beds), the Cork Union Hospital, the County and City of Cork Lying-in Hospital, the Maternity, the Hospital for Diseases of Women and Children, the Fever Hospital, the Ophthalmic and Aural Hospital, and the Eglinton Lunatic Asylum. The session at Queen's College extends from October to April inclusive (twenty-seven weeks), but arrangements have been made for the delivery of some of the three months' courses of lectures during the months of April, May, and June. The Hospitals are open to students in May, June, and July also.

The College contains Laboratories in the Departments of Biology, Chemistry, Physiology, Pathology, and Materia Medica and Pharmacy, and there are a Botanic Garden and Plant Houses in the grounds.

Scholarships and Prizes.—Eight Medical Scholarships, two in each of the first four years, of the value of £25 each, and in the fifth year the Blaney Scholarship of the value of £35, and a Senior Exhibition, value £30. Three Exhibitions, one in Practical Medicine, one in Practical Surgery, and one in Practical Midwifery, each of the value of £15. Book prizes at the sessional examinations.

Further information (free) can be obtained in the College Regulations, or on application to the Registrar, Queen's College, Cork.

Queen's College, Galway.

The Lectures of the Professors in the Medical School of Queen's College, Galway, and the Clinical Instruction in the Galway Hospitals, are recognized as qualifying for the Diplomas of the Royal Colleges of Physicians and Surgeons of Ireland, England, and Scotland, and for the Medical Degrees of the University of London and the Royal University of Ireland.

Clinical teaching is carried on in the Galway Hospital, established as a Public General Hospital (in the place of the County Galway Infirmary) by Act of Parliament (1892).

In addition to this, the Galway Fever Hospital[1] is open to Students of the Clinical Class. Here opportunities are afforded for studying the various forms of Fever and Zymotic Disease admitted during the College Session. The Medical Faculty has also made arrangements with the medical officers for the admission of students to the Galway Union Hospital. This Hospital affords an extensive field for the study of all classes of disease, acute and chronic. A special ward is set apart for the diseases of children, in which students will have an opportunity of studying this important class of cases. Opportunities for extra practice and vaccination are afforded at Galway Dispensary, No. 1. Students whose names are on the Clinical Roll of the Galway Hospital may attend any of the above-named institutions without further charge.

For further information as to the arrangements for clinical teaching (which are liable to alteration) application should be made to Professor Pye, Honorary Secretary of the Medical Staff of Galway Hospital.

CLINICAL HOSPITALS OF DUBLIN.

Sir Patrick Dun's Hospital.

Clinical instruction is given in this hospital every morning of the week, including Medicine, Surgery, Diseases of Women, Fevers, Diseases of the Skin, and Pathology. A new Out-patient Department and Operating Theatre have recently been erected.

Special classes for students commencing their hospital studies are held during the months of October, November, and December.

The *X*-ray Department has recently been remodelled, and possesses the latest and most convenient arrangements for the study and treatment of injury and disease.

Clinical Medals and Prizes are awarded annually in Medicine and in Surgery. Full particulars can be had on application to the Secretary.

Appointments.—A House-Surgeon is elected each December, and four Resident Pupils are appointed each half-year.

Fees.—The payment of £12 12s. entitles a student to the benefits of Hospital Attendance and Clinical Teaching for the Winter and Summer Sessions. Fee for Winter Session only £8 8s., and for Summer Session only £5 5s. The fees will be received by Dr. Taylor, Honorary Secretary, or by the Registrar of the School of Physic in Trinity College.

Richmond, Whitworth, and Hardwicke Hospitals.

These hospitals contain 312 beds: 110 for surgical cases, 82 for medical cases, 120 for fevers and other epidemic diseases.

Appointments.—A Resident Surgeon and a Resident Physician are appointed every year, receive a salary, and hold office for one year. Eight Residential Clinical Clerks are appointed each half-year, and provided with furnished apartments, fuel, etc. These appointments are open not only to advanced students, but also to those who are qualified in Medicine and Surgery. The Dressers are selected from among the best qualified of the pupils, without the payment of any additional fee.

The Richmond Lunatic Asylum, containing over 1,200 patients, adjoins these hospitals, affording facility for the study of mental diseases.

Further information can be obtained from the Honorary Secretary, Dr. J. O'Carroll, 43, Merrion Square East, or the Honorary Treasurer, Sir William Thomson, C.B., 54, St. Stephen's Green East.

Adelaide Medical and Surgical Hospitals.

The hospitals contain 140 beds. A House-Surgeon is appointed yearly, and three resident pupils are selected half-yearly.

Further particulars may be obtained from Mr. F. T. Heuston, 15, St. Stephen's Green North, Dublin, or any of the members of the medical staff.

Royal City of Dublin Hospital.

This hospital, in addition to the general Medical and Surgical Wards, contains special wards for Ophthalmic and Aural cases, Diseases of Women, and Diseases of Children. There is also an isolated building for the reception of infectious cases. An entirely new operation theatre has been constructed in accordance with the most modern surgical requirements. Roentgen-ray and Lupus Lamp Departments have recently been installed.

Appointments.—Clinical Clerks to the Physicians and Dressers to the Surgeons are appointed from the most deserving of the class, and certificates awarded for the faithful performance of their duties. Medical and Surgical Resident-Pupils are appointed, and special certificates awarded if merited. A Resident Medical Officer is appointed annually.

For detailed prospectus or further particulars apply to Mr. G. Jameson Johnston, F.R.C.S.I., Honorary Secretary, Medical Board, 13, Lower Fitzwilliam Street, or at the Hospital.

Jervis Street Hospital, Dublin.

The hospital was founded in 1718, and was rebuilt in 1886.

Appointments.—Resident Pupils, Clinical Clerks, and Dressers are appointed every six months without additional fees, and are awarded special certificates if their duties have been satisfactorily performed. Six Interns are appointed each half-year, and are provided with apartments, etc., free of expense.

Fees.—Winter session, £8 8s.; summer, £5 5s.; winter and summer, £12 12s.

The hospital prospectus and any further information can be obtained from Dr. Wm. J. Thompson, Honorary Secretary, Medical Board, 27, Harcourt Street.

Mater Misericordiae Hospital.

This hospital contains 338 beds. Fifty beds are reserved for the reception of patients suffering from fevers and other contagious diseases. There is a convalescent home containing 50 beds.

Appointments.—Two House-Physicians, six House-Surgeons, and twelve Resident Pupils are elected from the most attentive of the class each year.

Entries are to be made with and fees paid to the Registrar, Dr. Martin Dempsey, 37, Westland Row, Dublin.

A prospectus containing in detail the arrangements for clinical instruction, prizes, etc., may be obtained from the Secretary of the Medical Board, Mr. Arthur Chance, F.R.C.S., 90, Merrion Square West, Dublin.

Mercer's Hospital.

This hospital, founded in 1707, is situated in the centre of Dublin, in the immediate vicinity of the Schools of Surgery of the Royal College of Surgeons, the Catholic University School of Medicine, and within five minutes' walk of Trinity College. It contains 120 beds for medical and surgical cases, and arrangements have been made with the medical officers of Cork Street Fever Hospital whereby all students of this hospital are entitled to attend the clinical instruction of that institution, and become eligible for the posts of Resident Pupils, etc. There is a large Out-Patient Department, and a special department for Diseases Peculiar to Women. There are also special wards for the treatment and study of children's diseases. During the past few years the hospital has undergone extensive alterations in order to bring it up to modern requirements.

Clerks and Dressers are appointed monthly from amongst the most deserving members of the class.

Fees.—Winter, six months, £8 8s.; summer, three months, £5 5s.; nine months, £12 12s.

For further particulars apply to R. Charles B. Maunsell, M.B., F.R.C.S., 32, Lower Baggot Street, Dublin.

DR. STEEVENS'S HOSPITAL.

This hospital, situated at Kingsbridge, contains over 200 beds. Three new wards have recently been opened. It affords exceptional advantages for clinical instruction; owing to its position amongst manufactories and railway works a large number of casualties are always under treatment in the institution, while there are to be found occupying its beds at all times numerous cases of acute and chronic medical and surgical disease. There is a ward entirely devoted to venereal diseases, and a detached building for fever cases; in connexion with the hospital is a newly-built extensive out-patient department, with separate clinics for diseases of the eye and ear, skin, throat, teeth, and diseases of women. In addition to these special dispensaries, a general dispensary is held daily. Every opportunity is afforded to the students to become thoroughly familiar with the modern appliances used in diagnosis and treatment of disease. Operations are performed on Tuesday, Thursday, and Saturday. Gynaecological operations on Wednesday. There is accommodation in the hospital for four medical, six surgical, and two specialist (Gynaecology and Ophthalmology) resident pupils, who are provided with separate furnished rooms, with coal and gas, and also a comfortable common sitting room for meals which can be obtained at a reasonable rate.

Fees.—Hospital practice: Nine months, 12 guineas; six months, 8 guineas; three months, 5 guineas; Residence: Each three months, 10 guineas, which includes fee for hospital practice and certificate.

A prospectus and particulars may be obtained from the Resident Surgeon at the hospital, or from William S. Haughton, M.D., Honorary Secretary, 30, Lower Fitzwilliam Street.

ST. VINCENT'S HOSPITAL.

We have received no reply to our request for information as to this institution.

MEATH HOSPITAL AND CO. DUBLIN INFIRMARY.

This hospital contains 150 beds available for clinical teaching. There is a separate building for the isolated treatment of Fevers. There are Accident Wards and an Operating Theatre, in connexion with which all the modern requirements of surgical teaching have been provided. The certificates of this hospital are recognized by all the universities and licensing bodies of the United Kingdom. Special Classes are arranged for Junior Students at the commencement of the session.

Twenty Medical and Surgical Resident Pupils and Clinical Clerks and Dressers are appointed every session, and a House-Surgeon is elected annually.

A prospectus giving the complete arrangements for the Medical and Surgical Classes for the coming session may be obtained from the Hon. Secretary of the Medical Board, Mr. Richard Lane Joynt, F.R.C.S.I., 84, Harcourt Street, Dublin.

ROTUNDA HOSPITAL.

Master—Dr. R. Purefoy.

This institution consists of two distinct hospitals—namely, the Lying-in Hospital, into which 1,800 labour cases are, on an average, admitted annually, and the Auxiliary Hospital, set apart for the reception and treatment of patients suffering from the various forms of uterine and ovarian disease; about 500 patients are received into this hospital during each year.

There is also in connexion with the hospital a large extern maternity (2,000 patients were in the past year attended at their own homes), and a Dispensary for Diseases Peculiar to Women, which is open daily.

Pupils are admitted to the practice of all these departments. Clinical instruction in Midwifery and the Diseases of Women is given daily, and lectures are delivered regularly during the session on the subjects. Pupils can enter at any time.

The diploma from this hospital is granted to pupils on their passing an examination before the Master and Assistants after a period of six months' attendance on the practice of the hospital.

Fees.—Intern pupils: Six months, £21; three months, £12 12s.: two months, £9 9s.; one month, £6 6s. Extern pupils: Six months, £10 10s.

CLINICAL HOSPITALS.

OPPORTUNITIES for clinical instruction and study are afforded by many hospitals which are not directly connected with any medical school, to which the post-graduate student, and in many cases the student in the fifth year of the curriculum, will often find it to his advantage to resort, as they offer great facilities for gaining practical clinical experience. The following pages contain brief particulars as to the more important of them.[1]

LONDON.

Clinical instruction and appointments as Clinical Assistants can be obtained at many of the Special Hospitals in London, as well as at the General Hospitals to which medical schools are not attached. Resident appointments (Resident Medical Officer, House-Physician, House-Surgeon, etc.) are made from time to time, and vacancies are announced in our columns. The appointments are usually for stated periods of six or twelve months.

GENERAL HOSPITALS.

Great Northern Central Hospital, Holloway Road, N.—This hospital is recognized by the Examining Board in England of the Royal Colleges of Physicians and Surgeons as a place of study during the fifth year of the medical curriculum. The hospital contains 159 beds, all of which are at present occupied. The large rectangular and circular wards, each of which contains 20 beds, the operation theatre, out-patient department general and special, and the pathological departments, have all been erected since 1887. Medical practitioners are invited to attend the general and special practice of the hospital. Clinical Assistants (qualified), Clinical Clerks, and Pathological Clerks are appointed in the general and special departments, and may receive certificates at the end of their terms of office. There are five Resident Medical Officers, one Senior and two Junior House-Surgeons, Senior and Junior House-Physicians, also Pathologist, Registrar, Casualty Officer, and three Anaesthetists. Full particulars of and rules for these appointments can be obtained from Mr. Peyton T. B. Beale, F.R.C.S., Honorary Secretary of the Medical Committee.

London Temperance Hospital.—The hospital contains 100 beds. The medical and surgical practice is open to students and practitioners. Appointments (vacancies for which are advertised in the medical journals): Surgical and Medical Registrars, Resident Medical Officer, one Assistant Resident Medical Officer, and Assistant House-Surgeon. For particulars as to hospital practice and classes apply at the hospital.

Seamen's Hospital Society.—Dreadnought Hospital, Greenwich, 225 beds. Branch Hospital, Royal Victoria and Albert Docks; 50 beds. Dispensary in the East India Dock Road, and at Gravesend. The London School of Tropical Medicine is attached to the Seamen's Hospital Society, and is situated within the grounds of their branch hospital in the Royal Victoria and Albert Docks. In this hospital are constantly to be found many cases of tropical disease, and opportunities are afforded to students and others to study Practical Surgery and Diseases Incidental to Tropical Climates. Three hundred and seventeen students have joined the school since October, 1899, of which number 19 were women graduates. See also p. 544.

West London Hospital, Hammersmith Road, W. (West London Post-graduate College).—The hospital contains 175 beds, all of which are now in occupation. Some 2,500 in-patients are treated in the hospital during the year. The teaching in the hospital is especially devoted to the requirements of post-graduates. The Physicians and Surgeons attend on Mondays, Tuesdays, Thursdays, and Fridays at 2.30 p.m., and instruction is given by the Assistant Physicians and Surgeons in the out-patient department daily at 2.15 p.m. A course of 27 special demonstrations is given in the wards by the Physicians and Surgeons each session. Operations are performed daily at 2.30 p.m. There are special departments for Diseases of the Eye, Skin, Ear, Throat, and Nose, Women, *x*-Rays, Medical Electricity, and for Orthopaedic Surgery. Post-graduate lectures are delivered daily, except Saturdays, at 5 o'clock. The date of the commencement of each course is advertised

the practice of the hospital. The study certificate of the College is recognized by the Army Medical and Naval Medical Departments for "study leave." There is a pathological investigation laboratory attached to the hospital, at which instruction is given in practical pathology and elementary bacteriology. A large lecture room, together with reading and writing rooms, lavatories, etc., are provided for the use of post-graduates. The fee for the hospital practice, including Post-graduate Lectures, is £2 2s. for one month, £4 4s. for three months, and £9 9s. for one year. For Post-graduate Lectures alone, £1 1s. for a course of 10 lectures. Full particulars of the next Post-graduate Course, and any other information about Post-graduate teaching, can be obtained on application to the Dean, Mr. L. A. Bidwell, at the hospital.

North-West London Hospital, Kentish Town Road.—The hospital, which was established in 1878, provides 53 beds. It is a general hospital. There are two spacious wards for men and women respectively. The children's wards contain 18 cots. The special departments include: (1) Diseases of women: (2) diseases of the eye; (3) diseases of the skin; (4) dental. There are two resident officers; an honorarium at the rate of £50 per annum attaches to each post. Operation day, Thursday at 2.30 o'clock. Further particulars from the Secretary at the hospital.

Tottenham Hospital, N.—This general hospital, which is in the midst of a densely-populated neighbourhood, is authorized by the University of London to give certificates of Post-graduate study for the M.D. and M.S. degrees (see p. 544). It is on the high road, South Tottenham, N., within a few minutes' walk of the stations of South Tottenham (Midland Railway), Seven Sisters (Great Eastern Railway), and Tottenham Hale (Great Eastern Railway Main Line), and can also be easily reached by tramcar from Clapton, Dalston, Edmonton, Finsbury Park, Hackney, Holloway, and other parts of North London. It contains medical and surgical wards and a ward for children, having in all 73 beds, which, it is intended, will shortly be increased to 120. There are special departments for gynaecological cases, diseases of the eye, ear, throat and nose, and skin diseases. Operations are performed every afternoon of the week (except Saturday) at 2.30 p.m. There are three resident appointments, House-Physician, House-Surgeon, and Casualty Medical Officer, and Clinical Assistants are appointed under certain conditions. Over 17,000 new out-patients were treated during the last year, and 820 patients were treated in the wards. Further particulars in regard to the hospital may be obtained from Mr. H. W. Carson, F.R.C.S., Secretary to the Medical Committee, 26, Welbeck Street, W.; or from Dr. A. J. Whiting, Dean of the North-East London Post-graduate College, 142, Harley Street, W.

Children's Hospitals.

The Hospital for Sick Children, Great Ormond Street, W.C., contains 200 beds, divided into 102 medical, 73 surgical, and 25 for special and infectious cases, besides 52 beds at the Convalescent Branch, Highgate. The hospital having been recognized by the Conjoint Board for England as a place where, under the new curriculum, six months of the fifth year may be spent in clinical work, the practice is arranged to meet this need, and is open to students who have completed four years of medical study, and also to qualified medical men. Appointments are made every three months to six Medical Clerkships and six Surgical Clerkships, which are open to students at the hospital. Lectures or Demonstrations, given once or twice every week during both winter and summer sessions, are open, free of charge, to medical practitioners. The sessions are of ten weeks' duration, and begin in October, January, and March. Fees for hospital practice, three months, 2 guineas; perpetual ticket, 3 guineas. Prospectuses and further information will be forwarded on application to the Secretary, Mr. Adrian Hope, at the hospital.

East London Hospital for Children, Shadwell.—The hospital contains 107 cots, one-third being devoted to infants. Two House-Surgeons and two House-Physicians (holding office for six months) are appointed annually. This hospital is recognized by the Conjoint Board for England as a place of instruction for students, at which six months of their fifth year under the new regulations may be spent in clinical work. The following opportunities for the study of the diseases of childhood are offered to gentlemen who have completed four years of medical study, and to those who are already qualified: The practice of the hospital (in the out-patients' department such hours as the physicians or surgeons for the day are attending. The in-patient practice is open to students holding clerkships or dresserships in the hospital, and to students not holding appointments, during the attendance of the physicians and surgeons. A certain number of Clinical Clerks and Dressers are appointed every three months to each physician and surgeon. Gentlemen who wish to hold these appointments must have completed their fourth year of medical study. They are eligible for reappointment at the end of three months. Practitioners and students are admitted to the practice of the hospital in both the wards and out-patient department, and clerkships and dresserships can be obtained. Any additional information may be obtained on applying to Mr. H. Betham Robinson, M.S., F.R.C.S., 1, Upper Wimpole Street, or to Mr. Thomas Hayes, the Secretary at the hospital.

North-Eastern Hospital for Children, Hackney Road, Bethnal Green.—The hospital now contains 113 beds. Patients in 1902 (when only 57 beds were available): In-patients, 818 (247 under 2 years of age); out-patients, 19,318; new cases, 68,170 attendances. There are special Dental, Eye, and Roentgen-Ray Departments. Particulars of facilities for attending Medical and Surgical practice can be obtained on application to Mr. T. Glenton-Kerr, Secretary (City office), 27, Clement's Lane, E.C.

Lying-in Hospitals and Hospitals for Women.

Queen Charlotte's Lying-in Hospital and Midwifery Training School.—This hospital receives over 1,200 patients annually, besides having a large out-patient department. Medical pupils are received at all times of the year. Pupils have unusual opportunities of seeing Obstetric complications and Operative Midwifery, on account of the very large number of primiparous cases—upwards of three-fourths of the total admissions. Clinical instruction is given. Certificates of attendance at this hospital are recognized by all Universities, Colleges, and Licensing Bodies. Pupil Midwives and Monthly Nurses are received and specially trained. *Fees.*—Medical Pupils, £8 8s. for four weeks, exclusive of board and lodging; Pupil Midwives, £25 for three months, £29 for four months, £33 for five months. Pupil Nurses, £18 for twelve weeks, £25 for sixteen weeks, inclusive of board and lodging. The new residence for Medical Pupils opposite, and in telephonic communication with, the hospital is now open. *Terms.*—Full board and residence, £1 15s. per week.

Hospital for Women, Soho Square.—There is an organized School for Gynaecology open to qualified medical men and students after their fourth year. A limited number of Clinical Assistants to the Physicians and Surgeons in the Out-patient Department are appointed every three months. Clinical instruction is given also in the theatre and in the wards. *Fee* for the three months' course, £8 8s. Further information can be obtained by letter, addressed to the Dean at the hospital.

Ophthalmic Hospitals.

Royal London Ophthalmic Hospital (Moorfields Eye Hospital), City Road, E.C.—The hospital was founded in 1804 in Charterhouse Square; in 1821 it was moved to a larger building in Blomfield Street, where the work was carried on until 1899; in 1899 the present building in City Road was opened. It contains 138 beds for in-patients, which were occupied during last year by 1,979 persons; fifty beds were closed for want of funds; in the same year the out-patients were 32,442, and the attendances 107,491. Operations are performed daily from 10 a.m. until 1 p.m., and four surgeons attend on each day. Students are admitted to the practice of the hospital. *Fees*, for six months, £3 3s.; perpetual, £5 5s. Courses of instruction in the following subjects are given at the hospital periodically: (1) The Use of the Ophthalmoscope; (2) Errors of Refraction; (3) External Diseases of the Eye; (4) Surgical Anatomy of the Eye; (5) Operative Surgery. Systematic instruction is also given in the Laboratory of the hospital on the Pathology of the Eye. Perpetual students are admitted to the lectures free, with the exception of the course on Operative Surgery. Students of the hospital are eligible for the offices of House-Surgeon, Out-patient Surgical Officer, or Clinical and Junior Assistants. Junior Assistants are appointed every three months. Any further information will be furnished by Mr. Robert J. Bland, Secretary.

Royal Westminster Ophthalmic Hospital, King William Street, West Strand.—The hospital has been recently modernized

department. The practice is open to practitioners and students from 1 to 4 p.m. daily. Special instruction is given in the Diagnosis, Pathology, and Treatment of Eye Affections, including the Operations on the Eye, the Treatment of Errors of Refraction, and the Use of the Ophthalmoscope. *Fee:* Six months, £3 3s.; perpetual, £5 5s. For particulars apply to Mr. Adams Frost, F.R.C.S., at the hospital.

Royal Eye Hospital, Southwark.—This hospital contains 40 beds and 2 cots. The new patients in the out-patient department number over 23,000 yearly. Operations are performed and patients seen daily at 9 a.m. and 2 p.m. Qualified practitioners and students are admitted to the practice of the hospital. *Fees:* For three months, £2 2s.; for six months, £3 3s.; perpetual, £5 5s. Courses on Ophthalmoscopy, Refraction, and Diseases of the Eye, each £1 1s. (perpetual students one course free); Pathology, £1 1s., to cover cost of materials. Tutorial classes arranged to suit candidates for the various examinations. Qualified students of the hospital are eligible for the offices of Registrar and House-Surgeon, may also be appointed Clinical Assistants for six months, and are eligible for re-election. Further particulars may be obtained from Mr. Edwin Easton, Acting Secretary, at the hospital, Southwark, S.E.

Central London Ophthalmic Hospital, Gray's Inn Road, W.C.—This hospital has 28 beds, and possesses facilities for clinical teaching daily. Last year there were 12,270 new cases. Classes of instruction in the use of the Ophthalmoscope, with demonstrations on cases, and also Classes on Refraction, are given during the winter months, commencing in October. The Out-patient work begins at 1 o'clock, and operations are performed daily between 1 and 4 o'clock. For full particulars apply to the Secretary, Mr. Harry R. S. Druce.

FEVER AND SMALL-POX HOSPITALS OF THE METROPOLITAN ASYLUMS BOARD.

Students are admitted to study at the Fever and Small-pox Hospitals of the Metropolitan Asylums Board after they have completed the third year of medical education, provided they have held the offices of clinical clerk and dresser, and have obtained the sanction of the authorities of the medical school to which they belong. The minimum duration of the course of study at the fever hospitals is two months, and the ordinary course of study at the small-pox hospitals consists of twelve demonstrations. At the fever hospitals the student may attend three days, and must attend two days, a week; at the small-pox hospitals the dates and times of demonstrations are notified to students who have entered for a course. They must abide by the rules laid down as to disinfection and other matters, and must satisfy the Board of Management that they are sufficiently protected against small-pox by vaccination or otherwise. A certificate signed by the medical superintendent of the hospital at which attendance is made, and countersigned by the Clerk to the Board, is granted to a student when he has satisfactorily completed the course of study. Qualified medical men are admitted under similar terms and conditions, except that the sanction of the authorities of the medical school is not required in their case.

Fees.—Fever hospitals, two months, £3 3s., and £1 1s. for every additional month; small-pox hospitals, £4 4s. for the course of 12 demonstrations, or (for qualified medical men only) £1 1s. per demonstration, or £2 2s. per course of three demonstrations.

Courses of instruction in the treatment of fevers are usually held three times a year, beginning in January, May, and October respectively; and information as to the classes is furnished to each of the recognized medical schools in the metropolis.

Courses in connexion with small-pox are held from time to time as circumstances permit.

OTHER SPECIAL HOSPITALS: LONDON.

Bethlem Royal Hospital.—Two Resident House-Physicians are appointed twice a year for six months from recently qualified medical students. Students of certain hospitals are allowed to attend for clinical instruction. Qualified medical men are allowed to attend for three months on payment of a fee. Post-graduate courses are given from time to time.

Hospital for Consumption and Diseases of the Chest, Brompton.—The hospital has been recognized by the Conjoint Board for England as a place where under the present curriculum six months of the fifth [illegible]

There are 318 beds in the two buildings constituting the hospital, and a special throat department. Pupils are admitted to the in-patient and out-patient practice of the hospital. Three courses of lectures and demonstrations will be given during the year. Clinical Assistants are appointed to the Assistant Physicians in the out-patient department, and Clinical Clerks are appointed to the Physicians in the wards. These appointments are tenable from three to six months. The fee for the practice of the hospital is £1 1s. for each month, or £2 2s. for each period of three months, or a perpetual fee of £5 5s.

City of London Hospital for Diseases of the Chest, Victoria Park.—There are 164 beds. The practice of the hospital, both as regards in-patients and out-patients, is open to students and medical practitioners. Certificates of attendance in the medical practice of this hospital are recognized by the London University and London medical examining Boards. Information as to medical instruction can be obtained on application to Dr. O. K. Williamson, Secretary to the Medical Committee at the Hospital.

National Hospital for the Paralysed and Epileptic, Queen Square, Bloomsbury (University of London).—This hospital, with the Finchley branch, contains 200 beds and cots. The out-patient practice and lectures are free to students and practitioners. Lectures and demonstrations are given on Tuesdays at 3.30 in three courses—spring, summer, and winter—and the physicians attend every Monday, Tuesday, Wednesday, and Friday for out-patients at 2. Surgical operations are performed on days and at hours of which notice is posted at the hospital. The hospital is a school of the University of London, and has been recognized by the Conjoint Board for England as one of the places where part of the fifth year of study may be spent. Clinical Clerks are appointed to the Physicians for in-patients and out-patients. All communications regarding clinical clerkships, lectures, and hospital practice should be addressed to the Secretary at the hospital.

Central London Throat and Ear Hospital, Gray's Inn Road.—The hospital contains accommodation for 17 in-patients, and has a very extensive out-patient department (over 50,000 attendances yearly), which is daily open to all medical practitioners and students for the purpose of Clinical Demonstration and instruction. Fee, for three months' attendance, 3 guineas: for six months, 5 guineas. A course of practical demonstrations on the special diseases treated at this hospital is delivered during both the winter and summer months by members of the staff. The dates of these demonstrations are announced in the medical journals prior to their commencement. They are open to qualified practitioners and advanced students of medicine, on payment of 1 guinea for each course of twelve classes, with an additional guinea for attendance upon the hospital practice if desired. Operations on in-patients are performed on Tuesdays at 2 p.m., and on out-patients on Tuesdays and Fridays at 2 p.m. Considerable attention is given to scientific work, particularly with regard to the bacteriology of the diseases of the ear and upper respiratory passages. Full particulars will be supplied on application to the Dean at the hospital.

St. Peter's Hospital for Stone and Urinary Diseases (Henrietta Street, Covent Garden).—Qualified medical men and students are admitted free to the practice of this hospital, which contains 27 beds and has a large out-patient attendance (41,759 for 1902). New cases 4,346. Operations are performed and consultations held on Wednesdays and Fridays at 2. Clinical instruction is given regularly by members of the staff. In-patients admitted in 1902, 481.

Metropolitan Ear, Nose, and Throat Hospital.—The hospital was founded in 1838, and is situated in Grafton Street, Tottenham Court Road. The out-patient department is open daily at 2.30 p.m. to practitioners and students for acquiring clinical instruction and technical knowledge. Operations are performed on in-patients on Tuesdays, Wednesdays, and Thursday at 9 a.m. Fee for one month's attendance at the hospital one guinea, and for three months two guineas. During the forthcoming session demonstrations will be given by members of the staff on the pathology and treatment of diseases of the ear and respiratory passages. Short practical classes will also be held in clinical pathology and surgical anatomy. Weekly clinical lectures are given by the staff on the special disease treated at the hospital, the date, time, and subject of these lectures are previously announced in the medical journals. The lectures are free to all medical practitioners and students.

Royal Ear Hospital, Frith Street, Soho Square, W.—Courses

given by the members of the staff throughout the teaching year. Students can attend one or more surgeons; the fee for each course (2 clinics a week) is 1 guinea. The teaching is of a practical character, and the number of students is limited. Clinical Assistants are also appointed. For information address the Honorary Secretary of the Medical Board, Mr. Macleod Yearsley, F.R.C.S.

St. John's Hospital for Diseases of the Skin.—The Out-patient Practice (at 49, Leicester Square, W.C.) is open free to the medical profession every week day from 2 to 4 p.m., on presentation of their cards to the Medical Officer in attendance. Chesterfield Lectures are given free. The In-patient Department, with 50 beds, is at 238, Uxbridge Road, W. Further particulars may be obtained from Mr. George A. Arnaudin, Superintendent of the Hospital, 49, Leicester Square, W.C.

LIVERPOOL.

The following hospitals have made arrangements for clinical instruction:

Royal Infirmary.—The Royal Infirmary, which adjoins the School, contains 300 beds, with 40 special beds for the treatment of Diseases of Women. The Lying-in, Eye and Ear, Women's, Children's, Dental, and Skin Hospitals are in the immediate vicinity, and their practice is open to the students of the Medical Faculty. *Fees.*—The composition fees are £24 15s. for Preliminary Scientific Classes; £60 for the Medical Classes required for the Victoria, London, and other University Degrees; £70 for all the Classes required for the diplomas of the Conjoint Boards. The medical composition fees are payable in two instalments, at intervals of twelve months. The fee for hospital attendance at the Royal Infirmary is 40 guineas, also payable in two annual instalments. *Appointments.*—Three House-Surgeons, three House-Physicians, and one External House-Surgeon to the Thornton Wards, are appointed for six months, after (if necessary) competitive examination. Clinical Clerks for each Physician, Dressers for each Surgeon, and Clerks to the Thornton Wards for Diseases of Women, are appointed every three months. *Post-mortem* Clerks are appointed for six weeks. All students are required to perform this duty before the Schedule for the Final Examination is signed. Further particulars may be obtained from the Superintendent and Secretary, Mr. F. H. Moore.

Royal Southern Hospital: Clinical School.—The hospital contains 200 beds; there is a children's ward, and beds are appropriated to the diseases of women, and also for cases of tropical disease in connexion with the Liverpool Tropical School. Clinical teaching is given in the hospital, and arrangements have been made to render it both thorough and systematic. The members of the staff visit the wards daily, and clinical lectures are given each week. Tutorial classes are also held each day, at which the junior students are instructed in the methods of diagnosis, and the seniors are prepared for their final examinations. The Pathological Department has a good laboratory attached, in which the students receive practical instruction. *Appointments:* In addition to the usual clinical and *post-mortem* clerkships, two resident posts of Ambulance Officer are awarded every three months to the students whom the Board may consider most suited to hold them. *Fees:* Perpetual, £26 5s.; one year £10 10s.; six months, £7 7s.; three months, £4 4s. *Board* (exclusive of fees for Hospital Practice), £15 15s. per quarter. The practice of the hospital is recognized by all examining bodies. Further particulars may be obtained from the Dean, Mr. Newbolt, 42, Catherine Street, Liverpool.

David Lewis Northern Hospital, Liverpool.—An associated Clinical School of the Liverpool University, recognized by all Examining Boards and Universities; 210 beds. Winter Session and Clinical Lectures commence on October 1st. Students of the School are appointed to clinical clerkships and dressserships at the commencement of each session. Arrangement for board and lodging in the hospital buildings can be made for a limited number of students. Special arrangements are made for graduates who desire to undertake clinical research as clinical assistants. A fully-equipped laboratory is attached to the hospital. Two senior students are appointed Assistant House-Surgeons at the beginning of each half year, board and lodging provided. House-Surgeons and Physicians (salaried) are appointed from time to time. For all information as to time table, curriculum, fees, etc., application should be addressed to the Secretary to the Medical Board at the Hospital.

Eye and Ear Infirmary, Myrtle Street.—The infirmary contains 65 beds. Evening courses of Lectures on Refraction and Medical Ophthalmoscopy and Diseases of the Ear are delivered at this infirmary during the winter months by the honorary medical staff. Students of medicine of University College, Liverpool, have free access to the practice of the infirmary. Out-patient dresserships may be obtained on application to the Secretary of the Medical Board. The infirmary is recognized by the Conjoint Board as a teaching institution.

Liverpool Infirmary for Children.—During the building of a new hospital of 100 beds, the work of the infirmary is being carried on in temporary quarters with 18 beds. In-patients (1902), 602: new out-patients, 14,030; out-patient attendances, 50,611; the new out-patient department was opened in January, 1903. The practice of the hospital is free to students, and clinical instruction is given by the medical and surgical staff. For further particulars apply to the Secretary of the Medical Board.

MANCHESTER.

In addition to the Royal Infirmary (see page 529), facilities for clinical instruction are afforded at the following hospitals:

Manchester Children's Hospital, Pendlebury.—The hospital at Pendlebury contains 168 beds, and 24 beds at the Convalescent Home, St. Anne's-on-the-Sea. The medical staff see out-patients daily at the Dispensary, Gartside Street, at 9.30 a.m., and visit the hospital at 10 a.m. and 5 p.m. The practice of the hospital and dispensary is free to students accompanying the medical staff.

Royal Eye Hospital.—The hospital contains 110 beds. The medical staff attend daily from 9.30 to 11. Clinical instruction is given to students. Further particulars can be obtained from the Secretary, Mr. W. S. Prophet.

St. Mary's Hospital for Diseases of Women and Children.—Sixty beds, including 12 for the reception of lying-in cases, especially those attended with difficulty or danger. In the out-patient departments students are taught the various methods of examination and diagnosis, and the use of gynaecological apparatus; while in the wards they have an opportunity of becoming familiar with the diagnosis and treatment of graver cases, and of witnessing more important gynaecological operations. The number of maternity cases attended annually is over 3,000. A student attends his first five cases under the immediate supervision of the House-Surgeon and Resident Obstetric Assistant Surgeon. The hospital possesses a library, presented by the late Dr. Radford, consisting of nearly 5,000 volumes, chiefly on subjects connected with obstetrics and gynaecology. There is also a museum, containing a large number of pathological specimens, and a valuable collection of deformed pelves, casts, obstetric instruments, and anatomical models. The gynaecological practice of the hospital is free to third and fourth years' students. The fee for the midwifery practice, which includes attendance upon 20 cases of labour, as required by the examining bodies, is £2 2s. Application must be made to the House-Surgeon at the hospital. In the New Hospital, which will be opened during the coming session, there will be a larger number of beds in both departments, and there will be accommodation for resident students, who will thus have opportunities of obtaining a thorough knowledge of gynaecology and obstetrics.

Manchester Northern Hospital for Women and Children.—The hospital is situated in Cheetham Hill Road, near the centre of the town, and contains 70 beds. Out-patients are seen daily at 8.30, and the wards are visited at 9 a.m. Secretary, Mr. Hubert Teague, Barton Arcade, Manchester.

NEWCASTLE-ON-TYNE.

Hospital for Sick Children.—There are 70 beds in the hospital, besides an isolated block for infectious and doubtful cases. There is a large out-patient department. The practice of the hospital is open free to all students or qualified practitioners. The number of in-patients in 1902 was 801. The out-patient department is carried on in buildings recently erected in the central part of the city which are being at present extended at an outlay of £10,000, and the number of out-patients in 1902 was 12,244 with 18,428 attendances.

Infirmary for Diseases of the Eye.—This hospital contains 20 beds. Its out-patients number 5,000 annually. Clinical instruction is given daily from 11 a.m. to 1 p.m.

SHEFFIELD.

Jessop Hospital for Diseases of Women.—The number of beds is 78; in the Diseases of Women Department 56, and in the Maternity Department 22. Students can attend the practice of the hospital, and be supplied with cases of midwifery. (See also p. 530.)

BATH.

Royal United Hospital.—The hospital contains 130 beds, and is recognized by the Royal Colleges of Physicians, Surgeons, etc., and licensed for dissections. It contains a library and an excellent museum, in which are a large number of interesting specimens, both in Pathology and Comparative Anatomy. Fees for attendance: Twelve months, £10 10s.; six months, £5 5s. (Temporary pupils can also, by permission of the honorary staff, attend the practice of the hospital by the payment of £1 1s. for each month). Instruction in Practical Pharmacy for three months, £3 3s. For further particulars apply to the Secretary, Mr. J. M. Sheppard.

BIRMINGHAM.

Birmingham and Midland Hospital for Skin and Urinary Diseases.—The practice of the hospital is open to medical students who have passed their anatomical and physiological examinations, and to registered medical practitioners. The fee for a course of three months is 5 guineas. Further particulars may be obtained from the Secretary at the hospital.

BRADFORD.

Bradford Royal Infirmary.—The hospital contains 220 beds. Non-resident pupils are received, and have every opportunity of acquiring a practical knowledge of their profession under the superintendence of a House-Surgeon and House-Physician. One year's attendance is recognized by the Examining Boards. *Fee:* Perpetual, £10 10s.

BRIGHTON.

Sussex County Hospital.—The hospital contains 190 beds, with separate wards for children and for cases requiring isolation; and the Out-patient Department is attended by 900 or 1,000 patients weekly. It is recognized by the College of Surgeons and by the Conjoint Board as a hospital where part of a course of Dispensing may be taken. Pupils are admitted to the clinical teaching at a fee to be agreed upon. Further information may be obtained from the House-Surgeon.

CANTERBURY.

Kent and Canterbury Hospital.—The hospital contains 104 beds. Over 700 in-patients and 1,200 out-patients attend every year. Lectures are delivered weekly during term time to the students of St. Augustine's Missionary College on Practical Medicine by Dr. Gogarty, and on Surgery by Mr. T. W. Reid.

DERBY.

Derbyshire Royal Infirmary.—The infirmary will accommodate 195 patients. Pupils are admitted to the practice of the infirmary at £10 10s. a year.

DEVONPORT.

Royal Albert Hospital.—The hospital contains on the Civil side 52 beds, and 6 additional for emergency cases only, and 15 on the Government side. A course of Practical Pharmacy is given by the Dispenser on payment of a fee of £5 5s.; pupils of the medical staff can attend this course on payment of £2 2s.

EDINBURGH.

Victoria Hospital for Consumption and Diseases of the Chest.—Excellent opportunity is afforded for the clinical study of Diseases of the Chest. Special clinics by the staff are arranged from time to time, both in the hospital itself, which contains 50 beds, and in the extensive outdoor department, which has its head quarters in Lauriston Place, close to the University. The number in attendance at these clinics is limited. The fee is £2 2s. for a few weeks' course. Application for places has to be made some time in advance. Two medical appointments in connexion with the hospital are vacant every six months: (1) Resident Physicianship; (2) Non-resident Physicianship for the outdoor department. The vacancies occur usually in April and October.

Royal Edinburgh Hospital for Sick Children.—The hospital stands in Sciennes Road, about seven minutes' walk from the Medical School and Royal Infirmary, contains over 100 available beds, and is fitted with modern improvements. There are some 1,616 in-patients and 20,792 out-patients yearly. No cases of infectious disease are admitted. The out-patient department (medical and surgical) is conducted in a building adjoining the hospital, and is well equipped. Systematic clinical courses of instruction, at a fee of £2 2s., which qualify for the University and other examinations, are given at various times throughout the year by the ordinary physicians and surgeons. Students may enter at any time. A limited number of clinical clerkships are available, and six resident appointments are made yearly. The Registrar of the hospital, Dr. John W. Simpson, will supply particulars.

Edinburgh Eye, Ear, and Throat Infirmary.—Open daily at 6, Cambridge Street, at 1 p.m., for Eye Diseases; on Monday, Thursday, and Saturday at 12 for Ear Diseases; on Tuesday and Friday at 4 for Throat Diseases. There is a small infirmary of six beds in male and female wards. In-patients, 190; out-patients, 2,800. Fee for three months, £1 1s.

Edinburgh Royal Maternity and Simpson Memorial Hospital has 40 beds, about 300 in-patients and 520 out-patients yearly. Clinics are given by the physicians and their assistants. Fees for three months, £2 2s. Two House-Surgeons are appointed for each quarter.

Edinburgh City Hospital for Infectious Diseases at Colinton Mains contains 600 beds, a large number of which are available for teaching purposes. Qualifying courses of instruction are given by the Consulting Physician and the Medical Superintendent during the winter and summer sessions. In the meantime no fee is charged.

Royal Asylum, Morningside, Edinburgh.—There is a clinical field of 500 beds, comprising all the wards except those for private patients. Students have the opportunity of personally coming in contact with and examining the cases, so as to learn the modes of dealing with patients suffering from mental disease; they are exercised in diagnosis and the drawing up of certificates, the aim being to enable them to recognize its early stages, to distinguish its varieties, to adopt suitable treatment, and to advise the relatives as to sending the patient to an asylum. The course extends through the last month of the winter session and the most of the following summer session, and the fee is £2 2s. Dr. Clouston is the Lecturer on Insanity for the University of Edinburgh.

EXETER.

Royal Devon and Exeter Hospital.—The hospital contains 214 beds, including a Special Children's Ward. There are a Library, Museum, and *Post-mortem* Rooms. Attendance on the Practice at this hospital qualifies for all the Examining Boards. Arrangements may be made by which students can attend Midwifery. For further particulars apply to the House-Surgeon.

West of England Eye Infirmary.—This infirmary contains 64 beds. Arrangements can be made for students of the Exeter Hospital to attend the practice of the Eye Infirmary.

GLASGOW.

Royal Hospital for Sick Children.—This hospital, containing 74 beds for the non-infectious diseases of children, is open for clinical instruction, as is the dispensary or out-patient department. Students, by paying the fee of £1 1s., are entitled to the practice of the hospital and dispensary for twelve months from the term of entry. In-patients, 810; out-patients, 8,247. Further particulars may be had by applying to the Resident Medical Officer, 45, Scott Street, Garnethill. The Dispensary is at 11, West Graham Street.

Glasgow Western Infirmary.—This hospital adjoins the University of Glasgow. Number of beds, 416. The Clinical Courses are given by the Physicians and Surgeons, each of whom conducts a separate class, and students may attend whichever they select at the beginning of the session. Special instruction is given to junior students by tutors or assistants, and Clinical Clerks and Dressers are selected from the members of the class. Special wards are set apart for Diseases of Women and for Diseases of the Skin. In the Out-Patient Departments there are special clinics for Diseases of Women and for Diseases of the Throat, Ear, and Teeth. All the courses of clinical instruction are recognized at the University of Glasgow and other Boards in the kingdom. Nine Resident Assistants are appointed annually without fee from those who have completed their course. *Fees.*—For the hospital practice, including the various courses of clinical instruction in Medicine and Surgery, £21 in one payment, or in two equal instalments for the first and second years; for six months, £7 7s.; and for three months, £4 4s. In-patients, 5,329; out-patients, 18,252.

Glasgow Eye Infirmary.—This infirmary is situated at 174, Berkeley Street, and 80, Charlotte Street. Dispensaries open daily at 1 p.m. Operations performed on Wednesday and

Saturday at 2 p.m. Fees for six months, 1 guinea. In-patients, 1,468; out-patients, 21,549.

GLOUCESTER.

General Infirmary and Gloucestershire Eye Institution.—The hospital contains 156 beds. Resident and non-resident pupils are admitted by the General Committee on the recommendation of a member of the Medical Board. Each pupil pays in advance £10 for the first half-year, and £5 for every subsequent quarter, or portion of a quarter, of a year. Each resident pupil has board and lodging in the house, for which he pays in advance 26 guineas for the first half-year, and 13 guineas for every subsequent quarter, or portion of a quarter, of a year. Each pupil pays in advance to the House-Surgeon a fee of £5 5s. for instruction, and a further fee of £3 3s. for every subsequent year or portion of a year. One year spent at this hospital, after passing a preliminary examination, is recognized by the Royal College of Surgeons.

LINCOLN.

County Hospital.—The hospital contains 125 beds and 5 isolation beds. The House-Surgeon is allowed to take two pupils, on terms arranged by the Weekly Board, himself, and the pupils. A fee of not less than £10 10s. is paid by every pupil to the hospital. The House-Surgeon is responsible for the conduct of his pupils. The pupils remain in the hospital only when occupied in performing or observing the actual work of the hospital.

NORWICH.

Norfolk and Norwich Hospital.—The hospital contains 220 beds. Students (non-resident) are admitted according to the following scale: For three months, £3 3s.; for six months, £5 5s.; as permanent students, £8 8s. The resident officers are a House-Physician, House-Surgeon, Assistant House-Surgeon, and Second Assistant House-Surgeon.

NORTHAMPTON.

General Hospital.—There are 174 beds and a large out-patient department. Out-pupils are received, and have every opportunity of acquiring a practical knowledge of their profession. Instruction is also given in Anatomy, Materia Medica, and Pharmacy. Non-resident pupils are taken at a fee of £10 10s. annually. Resident pupils will be taken when the new Hospital is opened.

NOTTINGHAM.

General Hospital.—The hospital contains 233 beds. The Honorary Staff introduce pupils to witness the practice of the hospital on payment of £10 10s. annually in advance. The pupils receive instruction from the Resident Medical Officers.

PORTSMOUTH.

Royal Portsmouth Hospital.—120 beds. One year's attendance is recognized by the Examining Boards. For particulars as to fees apply to the Secretary of the Committee of Management.

SOUTHAMPTON.

Royal South Hants and Southampton Hospital.—This institution was established in 1838. The out-patients' building was erected in 1887. The number of beds is 130. The in-patients number about 1,500 a year, the out-patients about 5,000. Large additions to buildings, including new isolation wards, new operating room, a new ward block, and a steam laundry, and nurses' home for 44 nurses have just been completed. The hospital has been registered by the Royal Colleges of Physicians and Surgeons as a "Medical School."

STAFFORDSHIRE.

Staffordshire General Infirmary.—There are 75 beds. The pupils of medical practitioners resident in the county of Stafford are allowed to witness the medical and surgical practice of the infirmary, and to be present at operations. The pupils of the officers of the institution are admitted to these privileges gratuitously, those of other practitioners on the payment of £10 10s. with each pupil.

North Staffordshire Infirmary and Eye Hospital.—The infirmary has accommodation for 216 patients, including children's wards, eye department, and special ovarian wards, electrical and *x*-ray departments. The attendance of pupils at this infirmary is recognized by all the Examining Boards. Particulars as to fees, etc., may be obtained from the Secretary and House-Governor, Mr. Albert E. Boyce, Hartshill, Stoke-on-Trent.

WINCHESTER.

Royal Hants County Hospital.—The hospital contains 108 beds. The Physicians and Surgeons are allowed to introduce a certain number of pupils; the Resident Medical Officers may also receive a pupil, for whose maintenance a certain sum, to be fixed by the Committee, is payable annually in advance. Pupils of medical men not on the staff of the hospital may, with the consent of the Committee, become out-pupils, and see the practice of the hospital, under the direction of the Resident Medical Officer, on the payment of £10 10s. for one year, or £21 for unlimited attendance.

WOLVERHAMPTON.

Wolverhampton and Staffordshire General Hospital.—The hospital contains 230 beds, and is a Preparatory School of Medicine and Surgery. The pupils see the whole of the practice of the Physicians and Surgeons, and are trained in clinical work by the medical and surgical staff. Attendance at this hospital is recognized by the Examining Boards. *Fees*: Six months, £6 6s.; twelve months, £12 12s.; perpetual, £21.

INSTRUCTION IN PRELIMINARY SCIENCES.

THE following institutions are recognized by the Conjoint Board in England for instruction in chemistry, including chemical physics, practical chemistry, and elementary biology. Certificates for Biology will only be accepted from those institutions marked with an asterisk.

Aberystwith.—*University College of Wales.
Banbury.—Municipal Technical Schools.
Bangor.—*University College of North Wales.
Bath.—*Kingswood School.
Bedford.—Grammar School; Modern School.
Berkhamsted.—Berkhamsted School.
Birkenhead.—Holt Schools of Science and Art.
Blackburn.—*Stonyhurst College; Municipal Technical School.
Blaenau Festiniog.—County School.
Bolton.—Central Higher Grade Board School.
Bradford.—*Grammar School; *Bradford Technical College.
Brighton.—*Municipal School of Science and Technology.
Bristol.—*University College; *Merchant Venturers' Technical College; Bristol Grammar School.
Burslem.—Wedgewood Institute.
Bury.—Bury Grammar School.
Cardiff.—*University College of South Wales.
Cheltenham.—Cheltenham College.
Clifton, Bristol.—Clifton College.
Derby.—*Municipal Technical College.
Devonport.—Municipal Science, Art, and Technical Schools.
Dulwich.—*Dulwich College.
Epsom.—*Epsom College.
Eton.—*Eton College.
Exeter.—*Royal Albert Memorial College.
Felsted.—Felsted School.
Godalming.—*Charterhouse School.
Halifax.—Municipal Technical School.
Hanley.—Higher Grade Board School.
Harrow.—*Harrow School.
Huddersfield.—*Technical School.
Hull.—Municipal Technical School; *Hymer's College.
Leicester.—Wyggeston School; Municipal Technical and Art School.
Liverpool.—*School of Science, Technology, and Art.
London.—*The Department of Science and Art, South Kensington.
" City of London School.
" *St. Paul's School, West Kensington.
" Pharmaceutical Society.
" *Birkbeck Literary and Scientific Institute.
" *South-West Polytechnic Institute, Chelsea.
" *City of London College.
" Polytechnic Institute, Regent Street.
" *Polytechnic Institute, Battersea.
" *Northern Polytechnic Institute, Holloway.
" East London Technical College, People's Palace.
" Mercer's School, Holborn.
" St. Olave's Grammar School, Tooley Street, S.E.
" Merchant Taylors' School.
" Technical Institute, Wandsworth.
Manchester.—Municipal Technical School.
Marlborough.—Marlborough College.
Middlesbrough.—Middlesbrough High School.
Newcastle-upon-Tyne.—* Durham College of Science; *Rutherford College.
Norwich.—Higher Grade Board School; Technical College.
Nottingham.—*University College.
Oldham.—Municipal Technical School.
Plymouth.—*Science, Art, and Technical School.
Portsmouth.—Grammar School.
Preston.—Harris Institute.
Reading.—*Reading College; Reading School.
Rochdale.—Municipal Technical School.
Rochester.—Mathematical School.
Rossall, near Fleetwood.—Rossall School.
Salford.—Royal Technical School.
Sherborne (Dorset).—Sherborne School.
Southampton.—*Hartley College.
Southend.—Technical School.
Stoke-upon-Trent.—School of Science and Art.
Stourbridge.—King Edward's School.
Swansea.—Municipal Technical School.
Swindon.—Swindon and North Wilts Technical School.
Tonbridge.—*Tonbridge School.
Towyn (Merionethshire).—Intermediate County School.
Walsall.—Municipal Science, Art, and Technical School.
Winchester.—Winchester College.

MEDICAL EDUCATION OF WOMEN.

QUALIFICATIONS FOR FEMALE PRACTITIONERS.

DEGREES, DIPLOMAS, AND SCHOOLS.

THE qualifying bodies in the United Kingdom which admit women as candidates for their degrees or diplomas are as follows: The Universities of England, with the exception of the Universities of Oxford and Cambridge, the Universities of Scotland, and the Royal University of Ireland, Trinity College, Dublin; the Society of Apothecaries, London, and the Conjoint Board of the Royal Colleges of Physicians and Surgeons of Scotland and Ireland. Women candidates for qualification are subject to the regulations of the General Medical Council as to education and examinations in precisely the same manner as men.

Women medical students can obtain a complete medical education by becoming students of the London (Royal Free Hospital) School of Medicine for Women; the Medical College for Women, Edinburgh; Queen Margaret College, Glasgow; the Schools of Surgery of the Royal College of Surgeons in Ireland and the Queen's Colleges of Belfast, Cork and Galway. The three first-named schools receive women only. In the Schools of Surgery of the Royal College of Surgeons in Ireland special rooms are set apart for lady students. They can also enter at the Universities of Edinburgh (see p. 532), Aberdeen, and St. Andrews, the University of Birmingham, some of the Colleges of the Victoria University, and the University of Durham, the Medical and Science Faculties of which are located in Newcastle-upon-Tyne, the former in the College of Medicine, and the latter in the College of Science, where women students can receive instruction in the various subjects of these two Faculties.

For the University of Glasgow a complete medical education is given at Queen Margaret College, which is now an integral part of that University. The medical classes (systematic and practical) of the University of St. Andrews (United College, St. Andrews, and University College, Dundee) are open to women on an equal footing with men. Two years of the medical curriculum can be taken at United College, St. Andrews, or the whole five years at University College, Dundee. Women are received as students at the Dundee Royal Infirmary and the Dundee Royal Lunatic Asylum. The medical degrees of the University are open to women.

Some further particulars as to the London (Royal Free Hospital) School of Medicine for Women will be found on page 527, but intending students should write to the Secretary of the School, 8, Hunter Street, Brunswick Square, London, W.C. The prospectus of this School contains an article of advice to students which will be found very useful.

POST-GRADUATION STUDY.

A RESULT of the enormous growth of medical and surgical science and art in recent years is that a practitioner who is unable to keep himself practically acquainted with the details of that growth finds himself after a while quite "behind the times." The mere failure to advance places him and his patients at a positive disadvantage in the daily warfare against a large number of injuries and diseases. Scarcely, too, can the best men in the medical schools, however diligent, find time to attain proficiency in every branch of modern medical and surgical diagnosis and treatment. Indeed, practitioners of all classes require occasional opportunities to keep themselves abreast of science, to gain a knowledge of the newer methods of physical diagnosis, and to acquire proficiency in the use of the newer instruments of precision and in the interpretation of their indications. Below will be found some particulars as to the institutions in this country which now provide such instruction.

A large number of medical practitioners educated in the United Kingdom every year leave its shores to settle in various parts of the British Empire that are within the tropics. They are at once brought into contact with diseases unknown in this country, and for the successful treatment of these special training is requisite. To supply such, two Schools of Tropical Medicine have been founded, and some account of the arrangements in each is given below.

But it is not only that medical men tend to fall behind the times on account of advances in knowledge with which they have not made themselves familiar. It is of not less importance to remember that it is chiefly by keeping the mind in a receptive and receiving condition that it is best able to utilize the knowledge already acquired; the reception of even one new idea causes links of association to form with many others and so increases the professional power of the post-graduation student. Moreover, the acquisition, which is often possible at very small cost of time and pains, of a facility in performing minor operations or in the use of certain instruments, such, for example, as the ophthalmoscope, or retinoscope, may bring a hundredfold return, and indeed in many cases results in a remarkable power of doing without the help of consultants, and what is perhaps most important of all, by bringing their minds into contact with other progressive minds the inevitable tendency of the isolated worker to fall into mental ruts and to come under the dominion of fixed ideas is counteracted.

It has been said that it would be a good thing if the medical officers of the navy were obliged to undertake a post-graduate course of study on return from a term of three or more years of foreign service; this principle is already in course of application to the army, and it would be to the general advantage if it could be applied not only to all the services, but also as far as possible to every class of medical practitioner. For those medical men who are unable to keep in touch with medical schools or get into touch with post-graduate courses a persevering effort might well be made to keep their medical capital in a steadily-growing state by means of recent book and magazine literature alone.

What may be considered as an important addendum to post-graduate study in this country is the access to several valuable libraries. In London, the superb library of the Royal College of Surgeons in Lincoln's Inn Fields is courteously opened to all practitioners who go through the formality of obtaining a card of introduction from a Fellow or Member; the library of the British Museum is also available on easy conditions; the library of the British Medical Association is conveniently situated, and is especially rich in recent works; the library of the Royal Medical and Chirurgical Society may be consulted after obtaining an introduction from a Fellow, and the library of the Royal College of Physicians may be utilized after complying with certain easy conditions. Outside London there are valuable libraries in connexion with the universities, and others of great value, such as that of the Royal College of Physicians of Edinburgh, which may be had recourse to by suitable persons.

LONDON.

In London there are four main types of organized instruction available for qualified men. (1) Entry can be obtained into the large metropolitan teaching hospitals, more particularly in connexion with the London Post-Graduate Association, and in conjunction mainly with the teaching of the medical student. (2) There is the excellent arrangement made by the London Polyclinic by which cases of interest and rarity are examined and demonstrated in consultation with some of the leaders in the profession, and in connexion with which a large number of practical classes are conducted. (3) Certain general hospitals, mostly on the outskirts of London, throw open and limit their practice to qualified men, and post-graduate medical schools are organized to meet the requirements of their members. Among these may be at present counted the London School of Tropical Medicine, associated with the Branch Hospital of the Seamen's Hospital Society at the Royal Albert Dock, E.; the West London Post-Graduate College, associated with the West London Hospital in Hammersmith Road, W.; and the North-East London Post-Graduate College, associated with the Tottenham Hospital, at South Tottenham, N. (4) Clinical assistants are appointed in many of the special hospitals of the metropolis, such as the Brompton Hospital for Consumption and Diseases of the Chest, the Great Ormond Street Hospital for Sick Children, the National Hospital for the Paralysed and Epileptic, the Royal London Ophthalmic Hospital, the Golden Square Hospital for Diseases of the Throat, the Bethlem Royal Hospital, the Blackfriars Hospital for Skin Diseases, the Chelsea Hospital for Diseases of Women, and several others.

London Post-Graduate Association.

The London Hospital has now joined the combination of hospitals, formerly known as the Association of the Metropolitan Schools of Medicine, which affords such splendid opportunities for clinical study in London to qualified medical men, the title of which in the future will be "The London Post-Graduate Association." It will be remembered that the Association originally consisted of nine out of the eleven General Hospitals recognized by the London University as seats of medical education. Since then its scope has been steadily extended, for in the autumn of last year St. Bartholomew's Hospital and the five recognized Special Hospitals took part in the scheme, so that at the present time the ticket admits the holder to the Clinical Instruction, the Operations, the Necropsies, etc., of the following hospitals:—*General Hospitals:* Charing Cross, Guy's, King's College, London, Middlesex, St. Bartholomew's, St. George's, St. Mary's, St. Thomas's, University College, Westminster. *Special Hospitals:* Brompton Hospital for Diseases of the Chest; Hospital for Sick Children, Great Ormond Street; London School of Tropical Medicine, National Hospital for the Paralysed and Epileptic, and Royal London Ophthalmic Hospital. The ticket also admits the holder to any special post-graduate classes which may be held at any of the General Hospitals. A considerable number of Colonial and American practitioners continue to take out the tickets, which are issued at a fee of seven guineas for a three months' course, or ten guineas for a six months' course. Particulars may be obtained from the Secretary, The London Post-graduate Association, Examination Hall, Victoria Embankment, London, W.C.

London Medical Graduates' College and Polyclinic.

The London Medical Graduates' College and Polyclinic, which was opened in May, 1899, has already attracted to itself large classes of practitioners, and its success fully justifies its foundation.

The College, which occupies premises formerly used as a High School, is situated in central London, being at the corner of Chenies and Ridgmount Streets, about 50 yards to the west of Gower Street. The building, with the additions now completed, is sufficiently commodious for all present purposes.

In the basement is a dark room, against the walls of which are placed 12 seats, each separated from the adjoining one by a partition, and each having its own electric light that can be used in varying strength, naked or shaded. In this room twelve patients can be examined simultaneously, but separately from each other, with the ophthalmoscope, laryngoscope, or other instrument of precision, and their indications demonstrated. An adjoining room is fitted with appliances for instruction in ophthalmic cases, such as type tests, working models of eyes, stereoscopes, lenses, etc.

The ground floor contains class-rooms, which are furnished with black boards and various other appliances for clinical instruction. In one of them is a large and powerful Roentgen ray apparatus which is frequently requisitioned in the diagnosis of fractures and deformities. For special occasions the partition dividing one room from the other can be removed, and the two rooms thus united form a class-room of fine proportions.

The first floor is occupied by the library, reading room, and consultation theatre.

The third floor contains an excellent laboratory for bacteriology and chemical pathology, each table having its Bunsen burner, set of reagents, test tubes, etc.

There is a lift to all the floors, and the whole College is fitted with electric light everywhere. At the side of the building is a museum, which is devoted to clinical illustrations; portraits and models of diseased conditions find their place there, and the newest medical and surgical instruments and appliances of all kinds, which can be examined at any time, form a marked feature of this department of the College. The museum has been enriched by a unique collection of valuable pictures of disease, especially skin disease, most of which are painted from life, together with many other specimens of rare clinical value, which have been placed at the service of the Polyclinic by Mr. Jonathan Hutchinson, F.R.S., and the museum has been appropriately named after him the Hutchinson Museum.

One chief method of instruction provided for the medical men attending the classes is the system of consultations taking place every afternoon. These afford opportunities of studying exceptional forms of disease by the most recent methods of diagnosis. Notes are taken of the cases, and are supplemented on occasions by photographs or other portraits of the rarer morbid conditions.

West London Post-Graduate College: West London Hospital.

The West London Hospital was the first General Hospital in London to organize a systematic scheme for post-graduate teaching, and to devote the clinical material in its wards and out-patient department solely to the instruction of qualified men. The College was started in 1895, and three years later its basis was enlarged by the provision of accommodation for the post-graduates in the shape of lecture, reading, and writing rooms, etc., while owing to the continued growth of the College these were transferred last year to a building especially constructed for the purpose.

Upwards of 550 post-graduates have been enrolled since its establishment, the yearly entry being now over 150.

The hospital, which contains 175 beds, is in the main road about 3 miles from Hyde Park Corner; it is within two minutes' walk of the Hammersmith Stations of the Metropolitan, the District, and the South-Western Railways: it is within ten minutes' walk of Kensington (Addison Road) Station, and within twelve minutes' walk of the Shepherd's Bush Station of the Central London Railway, and omnibuses pass the door from Liverpool Street, King's Cross, Charing Cross, Piccadilly, Barnes, Chiswick. Electric trams from Twickenham, Hounslow, and Hampton Court come close to the hospital.

The Physicians and Surgeons attend daily at 2.30 p.m. Post-graduates accompany the staff on their visits to the wards.

Instruction is given in the out-patient department daily at 2.15 p.m. by the Assistant Physicians and Assistant Surgeons. The out-patient department has recently been enlarged and there is now ample accommodation for post-graduates to see and examine the patients.

There are special departments for Diseases of the Eye; the Ear, Throat and Nose; the Skin; for Diseases of Women; Medical Diseases of Children; and for Orthopaedic Surgery, Medical Electricity, and for *x*-ray work. Clinical Assistants are appointed from among the post-graduates. Practical classes for instruction in these subjects are held each session. They are limited in number, and each member has opportunities of gaining experience in the methods of examination and treatment.

Operations are performed daily at 2.30 p.m. Post-graduates are allowed to stand close to the table, and can see the operations perfectly. The surgeons often avail themselves of the assistance of post-graduates at operations.

Instruction is given in the administration of Anaesthetics by the Anaesthetists on the operating days, and post-graduates will be allowed to administer anaesthetics under their superintendence. Special classes are held each session; each member will have opportunities of administering several different anaesthetics.

Post-mortem examinations are performed at 5 p.m., and Demonstrations on recent Pathological Specimens are given on Wednesdays and Saturdays during each session, at 12 noon, in the Lecture Room.

Post-graduates also visit the wards in the morning with the House-Surgeons and House-Physicians; they also often render assistance to these officers in the Casualty Department.

Practical Lectures and Demonstrations are given each afternoon (except Saturday), at 5 p.m., during the session. Included in this course are lectures by outside specialists on Mental Diseases and on Public Health, and in connexion with the former instruction is also given in certain asylums.

The practice of the hospital is well adapted to the needs of medical officers of the Royal Navy and officers of the Royal Army Medical Corps, who have obtained leave for further professional study, and the certificate of attendance at the College during such leave is recognized by the Admiralty and the War Office.

A considerable number of gentlemen have studied at the College previous to presenting themselves for the degrees in Medicine of the Universities of Oxford, Cambridge, London, and Durham, also for the Fellowship of the Royal Colleges of Surgeons of England and Edinburgh.

Arrangements can be made for gentlemen working for these

higher examinations to be coached in Medicine, Surgery, etc.; full information will be supplied by the Dean. Arrangements have also been made with Mr. Johnson Smith for classes in Operative Surgery at Greenwich. Special facilities are offered to those attending the College.

The hospital is situated in a pleasant residential neighbourhood, within easy reach of the park, the river, etc., and there is no difficulty in getting good lodgings.

A certificate signed by the staff will be given at the end of three months' hospital attendance.

The hospital is connected with the National Telephone Company's Exchange, so that post-graduates can receive messages by telephone when at the hospital. (Telephone, Hammersmith 82.)

Arrangements have been made for providing tea for post-graduates each afternoon. Tea, bread and butter, and biscuits can be obtained between 4 and 6 p.m. at a charge of 4d. Smoking is permitted in the reading and writing room.

The fee for the hospital practice, including all the ordinary demonstrations and lectures, is £1 1s. for one week; £2 2s. for one month; £4 4s. for three months; £6 6s. for six months; £9 9s. for one year; and £21 for a life ticket; all fees to be paid in advance.

A course of attendance on either the medical or the surgical practice alone may be taken out for the fee of £3 3s. for three months. The fee for three months' attendance in any one special department, other than medicine or surgery, is £2 2s. for three months.

A practitioner who cannot attend the whole course may attend any ten lectures or demonstrations during the session for a fee of £1 1s.

A Vacation Class is held each year in August, and a ticket for a fortnight's hospital practice, including the lectures, can be obtained for £1 1s.

The fee for a three months' course of instruction in the administration of anaesthetics, including a course of lectures, is £2 2s.

A ticket for any of the above courses will be issued at any date.

On application to the Dean of the College a full prospectus will be forwarded to any gentleman who holds a medical qualification. All communications to be addressed to the Dean, Mr. L. A. Bidwell, Post-Graduate College, West London Hospital, Hammersmith, W.

North-East London Post-Graduate College.

In connexion with the Tottenham Hospital, N. (see p. 537), which is recognized by the University of London as a place of post-graduate study for the M.D. and M.S. degrees, facilities are afforded to qualified medical men for taking part in the work of an active general hospital, and for attending demonstrations of various branches of Medicine, Surgery, and Gynaecology, with opportunities for clinical instruction in Diseases of the Eye, Ear, Throat, Nose, Diseases of the Skin, the Administration of Anaesthetics, and Dentistry. Clinical Lectures and Demonstrations are given by members of the staff, in the lecture room, in the wards and in the various out-patient departments; operations are performed every afternoon of the week, except Saturday. The fee for a three months' course of study, which may be begun at any time, in any single department, is one guinea. A fee of three guineas admits to the whole practice of the hospital for a similar term, and a perpetual ticket for the practice of the hospital may, for the present, be obtained on payment of a fee of five guineas. Medical practitioners who have attended a three months' course in any departments are eligible for appointment as Clinical Assistants in those departments. A certificate signed by the staff may be obtained at the end of three months' hospital attendance. A reading and writing room is provided containing a reference library, and tea may be obtained. The hospital is connected with the Telephone Exchange (No. 23, Tottenham). Additional information can be obtained from the Dean of the Post-Graduate College, Dr. A. J. Whiting, 142, Harley Street, W.

University College.

Pathological Chemistry.—At University College, London, Dr. Vaughan Harley, Professor of Pathological Chemistry, holds classes in Pathological Chemistry intended for the advantage of qualified practitioners and advanced students. Each course is practical, and includes demonstrations and lectures on the principal points brought out by analysis in the diagnosis and prognosis of disease. Each member of the class is given the actual material to analyse, and from results obtained is required to make the diagnosis, which is corrected if necessary. Thus each man not only does the ordinary class analysis, but he learns to apply his results to practice. Each course includes the analysis of the saliva, stomach contents, faeces, urine, calculi, and pathological fluids, and in the lectures the chemical changes which occur in disease are fully discussed, and as far as possible explained. The laboratory is open from 9 a.m. to 5 p.m., so that the practical work can be done at the hours most convenient to those attending the class. The next class will commence in October, at a date to be fixed by mutual arrangement. The fee for the class, including apparatus and material, is £5 5s. A department is also fitted up for research work, and is open to all researchers at the fee of £1 1s. a month. Most excellent original research work has been and is being done in the laboratory, and in many instances the workers have received grants from the Scientific Grants Committee of the British Medical Association.

Department of Clinical Pathology.—The top floor of the west wing of the new hospital is equipped for histological, chemical, and bacteriological investigation of the cases in the hospital.

Charing Cross Hospital.

Post-Graduate Class and Lectures.—Special series of clinical lectures and practical demonstrations, exclusively arranged for the convenience of practitioners and post-graduate students, are given at the hospital throughout the year. The lectures for the year are arranged in three courses, each course consisting of ten meetings, and lasting ten weeks. Two of these courses are held during the winter and one during the summer. The class meets on each Thursday in the board room of the hospital, and proceeds thence to the wards or to the department in which the demonstration may be held. The fee at present charged for each course of ten lectures is one guinea. The first of the two winter courses of the ensuing academical year will commence on October 9th next, and will be conducted by the members of the medical and surgical staff. Practitioners wishing to join the class can receive any further information as to the dates and subjects by communicating with the Honorary Secretary (Dr. Willcocks) at the hospital.

London School of Tropical Medicine.

The Seamen's Hospital Society possesses two hospitals—the Dreadnought Hospital at Greenwich, 225 beds, and the Branch Hospital in the Royal Victoria and Albert Docks, E., 50 beds. It has also two Dispensaries—one in the East India Dock Road and the other at Gravesend, from which the patients are transferred to the hospitals.

The School Buildings, Laboratories, Museum, Library, etc., are within the grounds of the Branch Hospital, Royal Victoria and Albert Dock Station, Connaught Road, Great Eastern Railway.

Opportunities are afforded to students and others who may be desirous of studying diseases incidental to Tropical Climates and also Practical Surgery before entering the services or going abroad. In the hospitals of the Society are to be found cases of Tropical Disease such as may be met with in actual practice in the tropics. There are three courses in the year, each lasting three months, beginning October 1st, January 15th, and May 1st respectively.

The Laboratory, Museum, Library, etc., are open daily, and clinical instruction is given daily in the wards of the hospitals.

The Lecturers in the School are: Sir P. Manson, F.R.S., Dr. Andrew Duncan, Dr. L. Westenra Sambon, Dr. Macleod, Professor R. Tanner Hewlett, Mr. James Cantlie, Mr. E. Treacher Collins, and Professor W. J. Simpson. The Medical Tutor is Dr. G. C. Low.

Certificates are granted after examination to those who complete a full course.

Resident chambers are available for students, who must be qualified or in the fifth year of their medical studies.

Appointments.—There are a House-Physician and a House-Surgeon at the Dreadnought Hospital, Greenwich, and a Senior House-Surgeon and House-Surgeon at the Branch Hospital. The pay of these offices varies from £50 to £100.

Prize.—The Craggs Prize of £50 is awarded yearly.

The Prospectus, Syllabus, and other particulars can be obtained on application to the Secretary, Mr. P. Michelli, Seamen's Hospital, Greenwich, S.E., or from the Medical Tutor at the School.

Liverpool School of Tropical Medicine.

This school was established in Liverpool in 1899. Sir

Alfred Jones, K.C.M.G., is Chairman. The Duke of Northumberland is one of the Vice-Chairmen. It is in conjunction with the Liverpool University, and the Royal Southern Hospital, for the purposes of research and clinical teaching respectively. A special ward at the hospital has been set apart for the reception and treatment of Tropical Diseases, and all facilities for investigation and study are given in the Tropical Diseases Laboratories of the University.

Major Ronald Ross, C.B., F.R.S., F.R.C.S., is the Sir Alfred Jones Professor of Tropical Medicine and Consulting Physician in Tropical Diseases at the hospital, and Dr. J. W. W. Stephens holds the post of Walter Myers Lecturer in Tropical Medicine to the school. Dr. R. Fielding-Ould, Dr. A. S. Grünbaum, and Dr. Balfour Stewart have been appointed Assistant Lecturers, and Dr. J. E. Dutton holds the Walter Myers Fellowship of Tropical Medicine. The movement is entirely supported by the voluntary subscriptions of Liverpool merchants and others. The school has organized many important medical research expeditions to West Africa, the Brazils, Egypt, and the tropics. Mr. A. H. Milne, B.A., is the Honorary Secretary.

Cambridge.

Special arrangements for advanced study and research were made in 1896 in the University of Cambridge. Graduates of other universities may be admitted to the University of Cambridge as advanced students. They may pursue courses of advanced study or research, literary or scientific, under the direction of the University teachers, and may become members of colleges without fulfilling the same conditions as are imposed on junior students. Advanced students may, if they wish, obtain a certificate of proficiency in research, or may proceed to the degree of B.A. or LL.B. under certain conditions. In their third or some subsequent term of residence they may become candidates for certain parts of the Tripos (Honour) Examinations, among others the Natural Science Tripos, Part II. Having satisfied the examiners, and after residence of six terms in all, they are admissible to the degree of B.A. or LL.B. The Certificate of Research may be obtained after residing for three terms (one academical year), and when the student has completed six terms' residence he is admissible to the degree of B.A. The facilities for advanced study and research offered by the University include the University Library and the Philosophical Library, while each of the seventeen Colleges possesses its own Library, as do also the respective Natural Science Departments. The department of Zoology and Comparative Anatomy includes a museum of zoology and a laboratory for animal morphology and elementary biology. The department of botany contains a comprehensive herbarium and a museum of specimens illustrating the morphology and life-history of plants. There are also laboratories and class-rooms fitted for experimental work, while the Botanic Garden contains a large and varied collection, with numerous plant houses and a botanical laboratory. The department of Human Anatomy contains a spacious dissecting room, a museum, osteological room, and a number of rooms for special study and research in anatomy, histology, and physical anthropology; upon the last-named subject a special course of lectures is given. The department of Physiology contains a number of rooms provided with electric light and motive power, and with abundant and complete appliances for all kinds of practical work. Special rooms are set apart for histology, chemical physiology, and experimental inquiries, including psycho-physical researches. The department of Pathology is well equipped for the study of the processes and results of disease and for bacteriological teaching and investigation. There is also a museum containing a fine collection of specimens illustrative of morbid anatomy. The surgical portion is of special importance, and contains a large number of interesting specimens presented by the late Sir George Humphry. The Pharmacological Museum and Laboratory possesses a complete collection of the official materia medica and ample appliances for experimental and chemical research on the nature and uses of medicinal substances. Lectures on clinical medicine and surgery are given at Addenbrooke's Hospital by the staff. The department of Chemistry is very completely furnished, and several of the colleges also possess chemical laboratories. Certain scholarships are open, including the John Lucas Walker Studentship for Pathology, the Balfour Studentship for Animal Morphology, and the Coutts Trotter Studentship (at Trinity College) for Physiology and Experimental Physic. Special arrangements for Advanced Students have been made by King's College, Trinity College, St. John's College, Christ's College, and Emmanuel College. Further particulars may be obtained from the Registrary of the University, the Registry, Cambridge.[1]

Edinburgh.

At various periods of the year graduates may avail themselves of short courses in Diseases of the Chest at the Victoria Hospital for Consumption, and at the out-department of that hospital at 26, Lauriston Place, by Drs. R. W. Philip and G. Lovell Gulland; Diseases of Children by the staff of the Royal Hospital for Sick Children; Surgery in Children by Mr. Stiles at the same hospital; Diseases of Ear, Throat, and Nose, at the Royal Infirmary, by Dr. Mackenzie Johnston; on the same group of subjects by Dr. Hunter Mackenzie and Dr. Logan Turner at the Cambridge Street Infirmary; Ophthalmoscopy, by Dr. George Mackay at the Royal Infirmary, and by Dr. W. G. Sym at 6, Cambridge Street; on Infectious Diseases, by Dr. Claude B. Ker, at the City Hospital; Practical Bacteriology, by Dr. Shennan, at Surgeons' Hall: Electricity in Medicine and Surgery (with Roentgen rays), by Dr. Dawson Turner, at the Royal Infirmary and Surgeons' Hall; and in Diseases of the Skin, by Drs. W. Allan Jamieson and Norman Walker, at the Royal Infirmary.

Various other courses are from time to time available, and are advertised at the beginning of the winter and summer sessions.

Belfast.

During the summer session special classes are formed in bacteriology, clinical pathology, pathological neurology, and chemical physiology, and during the winter facilities are afforded to medical men to work at these subjects in the pathological and physiological laboratories. Lectures and demonstrations are given from time to time in the Anatomical Department on the Advanced Anatomy of the Nervous System or some department of applied anatomy.

Miscellaneous Special Departments.

Special arrangements for the study of Laryngology exist in London at St. Thomas's, Guy's, St. Mary's, Charing Cross, and the West London Hospital; for Otology at the London Hospital and the Royal Ear Hospital; and for both subjects at the Golden Square Hospital, the London Throat Hospital, and the Central London Throat Hospital. In connexion with Owens College, Manchester, a post-graduate course is held at the Ear Institute in June. Anderson's College, Glasgow, has special courses for ear diseases in November and May, and at the Aberdeen General Dispensary there is a course which extends from April to June. At many other special hospitals clinical practice can be attended, and full particulars will be furnished by the Secretaries.

At many of these special hospitals, also, a certain number of appointments as clinical clerks or clinical assistants are available. These posts are mostly filled by senior students or newly-qualified men. The field is very large, and the opportunity for gaining technical knowledge is great, as the work is done in connexion with, and under the eye of, a member of the staff. At the children's hospitals both at Great Ormond Street and at Shadwell, and also at the Evelina Hospital, appointments of this kind can be obtained.

PSYCHOLOGICAL MEDICINE.

The facilities for the study of mental diseases are now vastly increased, and, in addition to the regular lectures given in the different medical schools, post-graduate lectures are given in the Bethlem Royal Hospital. The London County Council has thrown open its large asylums, which are recognized by the Conjoint Board as teaching hospitals; this also applies to the City of London Asylum. Dr. Maurice Craig at Guy's, and Dr. Rayner at St. Thomas's, have special classes, with clinical instruction at Bethlem Royal Hospital; Professor E. W. White lectures at King's College, and gives clinical instruction at the City of London Asylum, near Dartford, and the Metropolitan Asylums for Idiots and Imbeciles, Darenth; Dr. Percy Smith is the Lecturer at Charing Cross, and gives clinical instruction at Bethlem; Dr. Claye Shaw at St. Bartholomew's, with clinical instruction at Banstead Asylum;

[1] *Guide for Advanced Students* compiled by Dr. J. Donal B. MacAlister, tutor of St. John's College, and University Lecturer in Medicine, has been printed by the Cambridge University Press, and can be obtained (price 6d.) from any bookseller.

Dr. Mickle at Middlesex and University College; Dr. Hyslop at St. Mary's; Dr. C. Mercier at Westminster; Dr. J. K. Will at the London Hospital, and Dr. T. Seymour Tuke at St. George's.

In the Provinces, also, each medical school has a Lecturer on Psychological Medicine, who gives clinical instruction in a neighbouring asylum; and in Scotland and Ireland similar arrangements exist.

The Royal University of Ireland grants a diploma for proficiency in the treatment of mental diseases under the following conditions:

The diploma is conferred only on graduates in medicine of the University.

Candidates must give notice, in writing, to the Secretaries of their intention to present themselves, and must pay the prescribed fee of £2 at least one month previous to the examination.

Candidates who satisfy the examiners will be required to pay a further fee of £3 before the diploma is conferred.

The subjects for this examination are those required by the Hutchinson Stewart Scholarship for proficiency in the treatment of Mental Diseases.

The Medico-Psychological Association of Great Britain and Ireland also grants a Certificate in Psychological Medicine after a course of training, according to the rules of the Association, to candidates registered under the Medical Act. The examinations are held in London, Scotland, and Ireland twice a year. The fee for the examination is £3 3s. Full particulars may be obtained from the General Secretary, Dr. R. Jones, Claybury Asylum, Woodford Bridge, Essex. The Medico-Psychological Association further gives a Bronze Medal and £10 10s. to Asylum Assistant Medical Officers for the best dissertation on any clinical or pathological subject relating to insanity; also the Gaskell Prize, value £30, and the Hack Tuke Memorial Prize awarded for an essay on some subject connected with insanity.

DEGREES FOR PRACTITIONERS.

SINCE it was formerly the almost universal custom for medical students educated in London not to seek a university degree, and as that custom still prevails to a considerable extent, a very large proportion of medical men in actual practice in England possess diplomas to practise but not degrees in Medicine. The want of a degree and of the title of "Doctor" is often a subject of regret in after-life, and certain universities have issued special regulations under which the degree of M.D. is granted to practitioners of a certain standing under special conditions. The regulations of these universities are stated briefly in the following paragraphs. The University of Brussels also grants the degree of M.D. to practitioners after examination, without restriction as to residence or curriculum; but this degree is not registrable on the *Medical Register* if obtained subsequently to June, 1886.

UNIVERSITY OF LONDON.

Registered medical practitioners who pass, or have already passed, the Matriculation Examination, or who are entitled to claim registration as students of the University without examination in virtue of any of the conditions described in the foot note on page 511, and who pass, or who have already passed the Preliminary Scientific Examination, may proceed to the Intermediate and M.B., B.S. Examinations without the intervals prescribed by the regulations on producing certificates that they have gone through the course of prescribed study at any time previously; subject to the proviso that no degree of the University can under any circumstances be granted by examination to any one in less than three years after passing the Matriculation Examination or admission by the University of the candidate's right to exemption therefrom.

UNIVERSITY OF DURHAM.

The degree of M.D. is granted by the University of Durham to registered practitioners of not less than fifteen years' standing, who have been qualified and in practice for that period, upon the following conditions without residence: the candidate must be 40 years of age, and must produce a certificate of moral character from three registered medical practitioners. If he have not passed previously to the professional examination in virtue of which his name was placed on the *Register* an examination in Arts, he is examined in classics and mathematics; if otherwise he is required to translate into English passages from any one of the following Latin authors: Cæsar, *De Bello Gallico* (first three books), Virgil, *Æneid* (first three books), or Celsus (first three books).

Professional Examination.—The candidate must pass an examination in the following subjects: i. Principles and Practice of Medicine, including Psychological Medicine, Hygiene and Therapeutics; ii. Principles and Practice of Surgery; iii. Midwifery and Diseases Peculiar to Women and Children; iv. Pathology, Medical and Surgical; v. Anatomy, Medical and Surgical; vi. Medical Jurisprudence and Toxicology. The examination is conducted by means of printed papers, clinically, in the Royal Infirmary, Newcastle, and viva voce. The classical portion of the examination may be taken separately from the professional on payment of a portion (£10 10s.) of the full fee.

Foreign and Colonial Practitioners.—Natives of India or the British Colonies are placed on the same footing as natives of Great Britain. Natives of India must produce evidence from an Indian university that they have passed within one year an examination in Latin.

Fees.—The inclusive fee is fifty guineas; if a candidate fail to pass twenty guineas are retained, but if he present himself again forty guineas only are required.

Dates, etc.—The examinations are held twice a year, towards the end of April and of September. Notice, accompanied by the fee and certificates, must be sent to Professor Howden, Secretary of the University of Durham College of Medicine, Newcastle-on-Tyne, at least twenty-eight days before the commencement of the examination.

UNIVERSITY OF BRUSSELS.

British practitioners of medicine holding medical and surgical qualifications are, in common with legally-qualified practitioners in other countries, admissible without further curriculum to the examination for the degree of M.D. of the University of Brussels.

Examination.—The examination is divided into three parts. The "First Doctorate" includes Medicine, Pathology (with microscopical examination[1]), Therapeutics, Mental Diseases, and Diseases of Women and Children. The "Second Doctorate" comprises Surgery, Midwifery, Hygiene, and Medical Jurisprudence. The "Third Doctorate" consists of clinical examination in Medicine and Surgery, examination in Midwifery with the *mannequin*, Ophthalmology, Operative Surgery (amputation, ligature of arteries in the dead subject), and Regional Anatomy with Dissections. Special importance is attached to practical knowledge. The examination is conducted in French through an official interpreter, but most of the examiners, it is stated, speak English fluently. The examination is viva voce, but a written examination may be obtained on paying a special fee of £1 for each part.

Dates.—The examinations take place on the first Tuesday in November, December, February, May, and June. It is desirable that the candidate should arrive in Brussels on the previous Saturday before 2 p.m. at latest. The whole examination (First, Second, and Third Doctorate) may be got through in about a week, and seldom exceeds eight to ten days.

Fees.—Candidates are required to leave their diplomas with the Registrar of the University prior to the examination. The fees are: For inscription of name, £8 12s.; for examination, £13; for legalization of diploma, 8s.; total, £22. If a candidate fail in the first part of the examination the fees for the second and third are returned to him; if in the second, the fees for the third. A rejected candidate may present himself again in three months on paying the examination fees, provided his second appearance be in the same academic year (October 1st to June 30th); otherwise the matriculation fee must be renewed—that is, the fee for inscription of name.

Further particulars may be obtained from Dr. Major Greenwood (243, Hackney Road, London, N.E.), or Dr. F. H. Edwards (Camberwell House, Camberwell, S.E.), Hon. Secs., Brussels Medical Graduates' Association. An article containing a full description of everything concerning the degree was published in the BRITISH MEDICAL JOURNAL on September 15th, 1888.

PUBLIC HEALTH OR STATE MEDICINE.

A MEDICAL officer of health of any county, or of any single or combined district with a population at the last census of 50,000 or more, or of any metropolitan district, or the deputy

[1] More microscope work is now required than formerly.

of any such officer, must be legally qualified for the practice of Medicine, Surgery, and Midwifery, and also either be registered in the *Medical Register* as the holder of a diploma in Sanitary Science, Public Health, or State Medicine, under Section XXI of the Medical Act, 1886, or have been, during three consecutive years preceding the year 1892 a medical officer of a district or combination of districts in London or elsewhere with a population, according to the last published census, of no fewer than 20,000, or have, before the passing of the Local Government Act, 1888, been for not less than three years a medical officer or inspector of the Local Government Board.

The following regulations for candidates for diplomas in Public Health have been laid down by the Royal College of Physicians of London and the Royal College of Surgeons of England, and conform to the requirements of the General Medical Council. These regulations are designed to ensure "the possession of a distinctly high proficiency, scientific and practical, in all the branches of study which concern the Public Health."

Section I.
Examination.

(1) Candidates must have obtained a registrable qualification in Medicine, Surgery, and Midwifery.

(2) The examination, consisting of two parts, will be held in the months of January and July in each year.

(3) Candidates must pass Part I before being admitted to Part II.

(4) Candidates may enter for Parts I and II separately, or at the same time, but no candidate's name will be published until he has passed in both parts of the examination.

(5) The examination in each part will be written, oral, and practical.[1]

(6) The fee for each part is £6 6s., and must be paid three days prior to the day on which the examination commences.

(7) A candidate who fails to satisfy the examiners in either part may present himself again at the next examination on payment of a fee of £3.

(8) The diploma awarded is entitled "Diploma in Public Health of the Royal College of Physicians of London and the Royal College of Surgeons of England."

(9) A candidate intending to present himself for either part of the examination must give 14 days' notice in writing to the Secretary, at the Examination Hall, Victoria Embankment, W.C.

Section II.
Conditions of Admission to Examination.

I. *For candidates who obtained a registrable qualification on or before January 1st, 1890.*

A candidate entitled to be registered under the Medical Act on or before January 1st, 1890, will be admissible to Part I of the examination on producing evidence of being at least 23 years of age, and to Part II on producing evidence of being at least 24 years of age.

II. *For candidates who obtained a registrable qualification after January 1st, 1890.*

A candidate will be admissible to examination in Part I on producing evidence:—

(1) Of having been in possession of a registrable qualification in Medicine, Surgery, and Midwifery for at least twelve months.

(2) Of having attended, after obtaining such registrable qualification, practical instruction in a laboratory, recognized by the Examining Board in England, during a period of six months.

(3) Of being at least 23 years of age.

A candidate will be admitted to Part II of the examination on producing evidence:—

(4) Of having, after obtaining a registrable qualification, been associated day by day in the duty, routine and special, of Public Health Administration during six months (of which at least three months shall be distinct and separate from the period of laboratory instruction required under Paragraph 2, Clause 2) under the supervision of

(*a*) In England and Wales, the medical officer of health of a county or of a single sanitary district having a population of no fewer than 50,000, or a medical officer of health devoting his whole time to public health work; or

(*b*) In Scotland, a medical officer of health of a county or counties, or of one or more sanitary districts having a population of no fewer than 50,000; or

(*c*) In Ireland, a medical superintendent officer of health of a district or districts having a population of no fewer than 30,000; or

(*d*) A medical officer of health who is also a teacher in the department of public health of a recognized medical school.

(*e*) A sanitary staff officer of the Royal Army Medical Corps having charge of an army corps, district or command, recognized for the purpose by the General Medical Council.

*** The certificate of an assistant medical officer of health of a county or of a single sanitary district having a population of no fewer than 50,000 may be accepted as evidence under Clause 4, provided the medical officer of health of the county or district in question permits the assistant officer to give the necessary instruction and to issue certificates.

5. Of having attended, during three months, after obtaining a registrable qualification, the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration.

6. Of being at least 24 years of age.

Syllabus for the Examination.
Part I.

The first part of the examination will have reference to the general principles of sanitary science, and will comprise the following subjects:

The elements of chemistry, physics, and geology. Methods of examination of water and air for hygienic purposes, including a knowledge of analytical methods and the interpretation of results. The chemical composition of foods, and the usual forms of adulteration. The laws of heat and the elements of pneumatics, hydrostatics, and hydraulics, in their relation to warming, ventilation, water supply, and drainage. Principles of building construction in their application to dwellings, hospitals, and schools, etc. Meteorology in relation to health; meteorological instruments, their construction and use. The general principles of sanitary engineering, including the disposal of sewage and refuse. The reading and interpretation of geological and ordnance survey maps. The microscopical examination of foods and the detection thereby of the common forms of adulteration. The methods of bacteriological analysis, and the bacteriology of water, air, food, and soil. Disinfectants, their chemical and bacteriological efficacy and use. The general pathology of infection, and the diseases of animals that are transmissible to man. Nature of immunity and protection from infectious disease.

Part II.

The second part of the examination will have reference to the application of the Principles of Sanitary Science, and will comprise the following subjects:

Laws and statutes relating to Public Health, including the model By-laws of the Local Government Board. General Epidemiology with reference to the origin, pathology, symptoms, propagation, geographical distribution, and prevention of epidemic, endemic, and other diseases at home and abroad. Unwholesome trades and the diseases to which they give rise, and the prevention of nuisances arising therefrom. Nature and origin of parasitic diseases. Nuisances injurious or dangerous to health. Causes and conditions which produce climate, general effects of climate, acclimatization. Effects on health of overcrowding, vitiated air, impure water, polluted soil, and bad or insufficient food. Duties of sanitary authorities and their officers.

Vital Statistics:—Calculation of population, birth-rate, marriage-rate, and death-rate; mortality from zymotic diseases; sickness-rate; relation between occupation and mortality; life tables, their construction and interpretation of the value of statistical facts, averages, and methods.

Laboratories recognized for the above course of Laboratory Instruction:

London.—St. Bartholomew's,* Guy's, London, University College, King's College, Charing Cross, St. George's, St. Mary's, St. Thomas's, Westminster, Middlesex, Lister Institute of Preventive Medicine.
Birmingham.—The University.
Brighton.—Technical School.
Bristol.—Medical School.
Cardiff.—University College.
Leeds.—Yorkshire College.
Liverpool.—The University: School of Science and Technicology.
Manchester.—Owens College.
Newcastle-on Tyne.—University of Durham College of Medicine.
Sheffield.—University College.

* Bacteriology only.

Books of questions set at the examinations for the diploma in Public Health during the years from 1887 to 1900 may be obtained on application to Messrs. Taylor and Francis, Red Lion Court, Fleet Street, London, E.C. Price 6d., post free, 6½d. each.

The examination for diplomas in Public Health, granted by the various Universities and Medical Corporations, and the courses of study required, are adapted to meet the regulations of the General Medical Council, and, as a rule, to fulfil the recommendations issued by that body from time to time.

Books.

It is impossible to indicate all the books which may be consulted with advantage by candidates for the various examinations, but the following list of books includes those which are most generally read:

Whitelegge's *Hygiene and Public Health* (London: Cassell and Co., 7s. 6d.); Parkes and Kenwood's *Hygiene and Public Health*, second edition (London: H. K. Lewis, 1902, 12s.); Wilson's *Handbook of Hygiene*, eighth edition (London: J. and A. Churchill, 1898, 12s. 6d.); *The Theory and Practice of Hygiene*, by Notter and Horrocks, second edition (London: J. and A. Churchill, 1900, 25s.); Stevenson and Murphy's *Treatise on Hygiene and Public Health*, 3 vols., for reference on special subjects (London: J. and A. Churchill, 1892-94, 30s.); Wynter Blyth's *Manual of Public Health* (London: Henry Renshaw, 1896, 21s.); Kenwood's *Public Health Laboratory Work* (London: H. K. Lewis, 1896, 10s. 6d.); Wanklyn's *Water, Air, Milk, and Bread Analysis*, four separate manuals (London: Kegan Paul, Trench, Trübner and Co., 5s. each); Fox's *Sanitary Examination of Water, Air, and Food*, second edition (London: J. and A. Churchill, 1886, 12s. 6d.); Woodhead's *Bacteria and their Products* (London: W. Scott, 1892, 3s. 6d.); Kanthack and Drysdale's *Practical Bacteriology* (London: Macmillan and Co., 1895, 4s. 6d.); Muir and Ritchie's *Manual of Bacteriology*, third edition (London: Young J. Pentland, 1902, 12s. 6d.); Klein's *Micro-organisms and Disease* (London: Macmillan and Co., 1896, 10s. 6d.); Crookshank's *Manual of Bacteriology* (London: H. K. Lewis, 1896, 21s.); Daniell's *Textbook of the Principles of Physics* (London: Macmillan and Co., 1896, 4s. 6d.); Balfour Stewart's *Elementary Physics* (Oxford: Clarendon Press, 7s. 6d.); Newsholme's *Vital Statistics* (London: Swan Sonnenschein and Co., 1889, 7s. 6d.); McVail's *Vaccination Vindicated* (London: Cassell and Co., 1887, 5s.); J. W. Moore's *Meteorology: Practical and Applied* (London: Rebman and Co., 8s.); Scott's *Meteorology*, sixth edition (London: Kegan Paul, Trench, Trübner and Co., 1893, 5s.); Statton's *Public Health Acts* (London: Knight and Co., 7s. 6d.); Knight's *Annotated Model By-laws*, sixth edition (London: Knight and Co., 1899, 12s.); Corfield's *Dwelling Houses: Their Sanitary Construction and Arrangements*, fourth edition (London: H. K. Lewis, 1898, 3s. 6d.).

It is also desirable to consult several *Special Reports of the Local Government Board*, etc. (London: Eyre and Spottiswoode).

University of Oxford.

The examination is in two parts, conducted partly in writing, partly viva voce, and in each subject partly practical. The first part comprises the application of Chemistry and Physics to General Hygiene. The second part comprises the

[1] The practical examination in Part II may include a visit to, and report on, some selected premises.

following subjects: General Pathology, with special relation to Infectious Diseases; the Laws Relating to Public Health; Sanitary Engineering; Vital Statistics. Both parts may be taken together at the same examination, or they may be taken at separate examinations; but no one is deemed to have satisfied the Examiners in Part II unless he has satisfied the Examiners in the subjects of Part I. The fee for admission to each part is £5. A diploma is issued to every candidate who has passed in both parts of the examination, but no diploma or certificate is given under any other circumstances. Candidates must have satisfied all the rules of the General Medical Council of the United Kingdom relating to the admission of candidates for diplomas in Public Health which are in force at the time of the examination.

UNIVERSITY OF CAMBRIDGE.

A diploma in Public Health is granted by the University, and any person whose name is on the *Medical Register* may apply to be examined, provided he can show that he has complied with the regulations laid down by the General Medical Council (see p. 547).

The examination, which is usually held twice a year, during parts of two successive weeks, beginning on the first Tuesday in April and October respectively, is divided into two parts. A fee of £6 6s. must be paid before admission to either part.

A candidate who produces evidence that he has himself held an appointment as Medical Officer of Health under conditions not requiring the possession of a Special Sanitary Diploma is exempt from the provisions of Paragraph 4. The provisions as to previous study, Paragraphs 2, 3, 4, do not apply to medical practitioners registered, or entitled to be registered, on or before January 1st, 1890. A candidate who previous to January, 1902, was admitted or was qualified for admission to the examination, or who had already entered on the course of study prescribed by the Regulations in force before that date, continues to be admissible on presenting the certificates required under the Old Regulations.

The First Part of the Examination will have reference to the General Principles of Sanitary Science, and will comprise the following subjects. The elements of chemistry and physics; methods of chemical analysis, and in particular the analysis of air and water. The laws of heat and the elements of pneumatics, hydrostatics, and hydraulics, in their application to warming, ventilation, water supply, and drainage. The geological and other conditions determining the healthiness of sites for dwellings. Sources, storage, and purification of water supply. The elements of meteorology in relation to health. Principles of building construction in their application to dwellings, hospitals, and schools. The disposal of sewage and refuse, and the general principles of sanitary engineering. Disinfectants, their chemistry and use. The chemical and microscopical examination of foods, and the detection of the commoner forms of contamination. The methods of bacteriological investigation and analysis. The bacteriology of air, water, food, and soil. The general pathology of infection, and of the diseases of animals that are transmissible to man.

The Second Part of the Examination will have reference to State Medicine and to the applications of Pathology and Sanitary Science, and will comprise the following subjects. Laws and Statutes relating to Public Health. The model By-laws of the Local Government Board. Sanitation of dwellings, schools, factories, and workshops, and of villages and towns. Inspection of slaughter-houses, cow-sheds, etc. Inspection of meat and other articles of food. General Epidemiology, with special reference to the origin, pathology, symptoms, propagation, geographical distribution, and prevention of the epidemic, endemic and other infective diseases both of temperate and of tropical climates. The methods applicable to the medical investigation of epidemics. Effects on health of overcrowding, vitiated air, impure water, polluted soils, and bad or insufficient food. Unwholesome trades and occupations, and the diseases to which they give rise. Nuisances injurious or dangerous to health. The effects on health of season and climate. The principles and methods of Vital Statistics in relation to Public Health.

The above schedule is not to be understood as limiting the scope of the examination, which will include every branch of Sanitary Science. No candidate will be approved by the examiners who does not show a high proficiency in all the branches of study, scientific and practical, which concern Public Health. The examination in both parts will be oral and practical as well as in writing. One day at least will be devoted to practical laboratory work, and one day to oral and practical examination in, and reporting on, subjects connected with outdoor sanitary work.

All applications for information respecting this examination should be addressed to Dr. Anningson, Walt-ham-sal, Cambridge, Secretary to the State Medicine Syndicate.

Candidates who desire to present themselves for the examination must send in their applications on forms supplied for the purpose, and transmit them with the fees to J. W. Clark, M.A., Registrary, University of Cambridge, for the April examination on or before March 17th, and for the October examination on or before September 15th. The prescribed certificates must be sent to the Registrary so as to reach him not later than 10 a.m. on March [illegible] and September 28th. [illegible] be crossed "Barclay and Co., Ltd." The fee for either part of the examination cannot be returned to any candidate who fails to present himself; but he will be entitled to be a candidate on one subsequent occasion without an additional fee.

A list of Colleges and Schools of Medicine at which the courses of laboratory instruction have, for the purposes of this examination, been already approved by the syndicate, can be obtained on application.

UNIVERSITY OF LONDON.

The University does not grant a Diploma in Public Health, but State Medicine is one of the branches of the M.D. Degree, which is open to persons holding the degree of M.B. Lond. (see p. 511).

VICTORIA UNIVERSITY.

A diploma in Public Health is granted after an examination, which begins about the middle of July in each year. The candidate must fulfil the requirements laid down by the General Medical Council. The examination is divided into two parts; the subjects so nearly coincide with those of the University of Cambridge that it is unnecessary to reproduce them. Special mention is, however, made of the use of meteorological instruments, of the diseases of animals in relation to the health of man, and of "Sanitary Reporting," every candidate being expected to visit and report upon the sanitary condition of some actual locality assigned to him by the examiners.

Each part of examination occupies two days, and the fee for each part is £5 5s. Application for admission to the examination must be made to the Registrar of the Victoria University, Manchester, not later than July 1st, and the fee must be paid on or before July 1st.

UNIVERSITY OF BIRMINGHAM.

The University grants the degree of B.Sc. in Public Health, and also a diploma in the same subject on the following conditions: Graduates in Medicine of this University may become candidates for the degree of Bachelor of Science in Public Health by conforming to all the requirements laid down for candidates for the Diploma in Public Health, except that after graduating in Medicine all courses of study must be taken out in the University, and they must, in addition, have attended a three months' course of Geology in the University.

The following are the regulations for the Diploma in Public Health:

General Conditions.—(1) All candidates must be registered under the Medical Act. (2) The examinations will be held in the months of January and June, and will consist of two parts. No candidate will be allowed to pass Part II until he has passed Part I. (3) Candidates may enter for Parts I and II separately or at the same time. (4) The examination in each part will be written, oral, and practical. (5) Candidates intending to present themselves for either part of the examination must give notice in writing to the Registrar of the University on the date prescribed in the Calendar. (6) The fee for each part of the examination is £5.

Conditions of Admission to the Examinations.—(1) For candidates registered under the Medical Act on or before January 1st, 1890. Candidates so registered will be allowed to sit for examination on producing certificate of registration. (2) For candidates registered under the Medical Act after January 1st, 1890. Candidates will be admitted to examination in Part I on producing evidence: (1) Of being at least 23 years of age, and of having been possessed of a registrable qualification in Medicine, Surgery, and Midwifery, for a period of twelve months. (2) Of having received, after obtaining a registrable qualification, during six months, practical instruction in a laboratory or laboratories, British or foreign, approved by the University, in which Chemistry, Bacteriology, and the Pathology of the Diseases of Animals transmissible to man are taught. (Note.—Graduates in Medicine of the University of Birmingham, or past students who have taken out the whole of their curriculum in the Birmingham Medical School, may attend the required instruction in Chemistry and Bacteriology either in this or in some other University, University College, or Medical School in Great Britain or Ireland. Others must attend the special courses of instruction in Chemistry and Bacteriology required for the diploma, in the University of Birmingham.) (3) That after obtaining a registrable qualification, he has, during six months (of which at least three months shall be distinct and separate from the period of laboratory instruction required under Rule 2) been associated [illegible]

administration under the supervision of: (*a*) In England and Wales, the medical officer of health of a county or a single sanitary district having a population of no fewer than 50,000, or a medical officer of health devoting his whole time to Public Health work; or (*b*) in Scotland, a medical officer of health of a county or counties, or of one or more sanitary districts having a population of no fewer than 30,000; or (*c*) in Ireland, a medical superintendent of health of a district or districts having a population of no fewer than 30,000; or (*d*) a medical officer of health who is also a teacher in the department of Public Health of a recognized medical school. Provided that the period of six months may be reduced to a period of three months (which shall be distinct and separate from the period of Laboratory instruction required under Rule 2) in the case of any candidate who produces evidence that, after obtaining a registrable qualification, he has, during three months, attended a course or courses of instruction in Sanitary Law, Sanitary Engineering, Vital Statistics, and other subjects bearing on Public Health administration, given by a teacher in the department of Public Health in the University, or (as in Note to Rule 2) in any medical school in the kingdom. The certificate of an assistant medical officer of health of a county or of a single sanitary district having a population of no fewer than 50,000, may be accepted as evidence under Rule 3, provided the medical officer of health of the county or district in question permits the assistant officer to give the necessary instruction and to issue certificates. (4) That, after obtaining a registrable qualification, he has attended during three months the practice of a hospital for infectious diseases recognized by the University, at which opportunities are afforded for the study of methods of administration. Officers of the Royal Army Medical Corps who have studied Chemistry and Bacteriology at the Staff College, and pursued the further course of study approved by the General Medical Council in December, 1902, will be admitted to the examination for the Diploma in Public Health, whether they have previously been students of the Birmingham School or not.

The examination for the degree is not the same as that for the diploma, and a considerably higher standard of knowledge will be exacted at the former.

The whole of the instruction, with the exception of outdoor sanitary work, required for the degree and diploma in Public Health can be taken out in the University. Fees: Sanitary chemistry, £8 8s.; caution money deposit, £1; bacteriology, £4 4s.; incidental fee, £1 1s.; geology, £2 2s.; public health lectures, £2 2s.

Conjoint Board in England.

The diploma in Public Health of the Royal College of Physicians of London and the Royal College of Surgeons of England is granted to persons whose names are on the *Medical Register*, or who are entitled to register. The examination is held in two parts, and Part I may be passed before fulfilling Clauses 4 and 5 under Part II. The subjects of the two parts and other particulars of the examination are to be found on p. 547.

University of Durham.

The University grants a Diploma in Public Health (D.P.H.) and the degree of Bachelor in Hygiene (B.Hy.) and Doctor in Hygiene (D.Hy.).

Degree of Bachelor in Hygiene (B.Hy.).—The candidate must be a registered medical practitioner, a graduate in medicine of a recognized University, and not less than 22 years of age. He is not admissible until after the lapse of at least twelve months from his obtaining his first registrable qualification. He must have spent six months of professional study subsequent to the attainment of a registrable qualification in attendance at the University of Durham Colleges in Newcastle-upon-Tyne, in the following manner: (*a*) Three months' course of lectures on Comparative Pathology, with practical work in the Bacteriological Laboratory. (*b*) Three months' practical instruction in the Chemical and Physical Laboratories. This course must not be concurrent with the three months' course of lectures on Comparative Pathology, with practical work in the Bacteriological Laboratory. Outdoor Sanitary Work: (*c*) Six months' practical study of outdoor sanitary work under a medical officer of health, as required by the rules of the General Medical Council.

The rules of the General Medical Council as to outdoor sanitary work are as follows: Every candidate shall have produced evidence that, after obtaining a registrable qualification, he has during six months (of which at least three months shall be distinct and separate from the period of laboratory instruction) been diligently engaged in acquiring a practical knowledge of the duties, routine and special, of Public Health administration, under the supervision of—(*a*) in England and Wales, the medical officer of health of a county, or a single sanitary district, having a population of no fewer than 50,000, or a medical officer of health devoting his whole time to Public Health work;[1] or (*b*) in Scotland, a medical officer of health of a county or counties, or of one or more sanitary districts having a population of no fewer than 30,000; or (*c*) in Ireland, a medical superintendent officer of health of a district, or districts, having a population of no fewer than 30,000; or (*d*) a medical officer of health who is also a teacher in the department of public health of a recognized medical school; or (*e*) a sanitary staff officer of the Royal Army Medical Corps, having charge of an army corps, district, or command recognized for this purpose by the General Medical Council. The following districts have been recognized by the Council, namely, Aldershot, Salisbury Plain, Southern and Western districts, Dublin and Cork districts, Chatham, Home and Eastern districts, North-Eastern and North-Western districts, Scottish district, and Gibraltar.[2]

(*d*) The period of six months may be reduced to a period of three months (which shall be distinct and separate from the period of laboratory instruction required under Rule 2), in the case of any candidate who produces evidence that, after obtaining a registrable qualification, he has during three months attended a course or courses of instruction in Sanitary Law, Sanitary Engineering, Vital Statistics, and other subjects bearing on Public Health Administration, given by a teacher in a department of Public Health of a recognized medical school.

Every candidate must produce evidence that, after obtaining a registrable qualification, he has attended during three months the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration.[3]

(*e*) Course of lectures on Public Health.

Regulation (*e*) to be omitted in the case of a candidate who has already attended the course before obtaining a registrable qualification.

Books recommended.—*Manual of Public Health*, by Professor A. Wynter Blyth. *Hygiene and Public Health*, by Parkes and Kenwood. *Handbook of Hygiene*, by Dr. Geo. Wilson. Notter's *Theory and Practice of Hygiene*. *Comparative Pathology: Manual of Bacteriology*, by Professor Crookshank; or *Manual of Bacteriology*, by Muir and Ritchie; *Essentials of Practical Bacteriology*, by Curtis. *Parasites of Man*, by Leuckart. *Sanitary Chemistry and Physics*; *Sanitary Examination of Water, Air, and Food*, by Dr. C. B. Fox. *Analysis of Water, Air, and Food*, by Professor Wanklyn. *Air, Water, and Disinfectants*, by Mr. Noel Hartley. *Dwelling Houses*, by Professor Corfield. *Meat Inspection*, by Professor Walley. Aitken's *Practice of Physic*. *Medical Geography*. Law: The Statutes and By-laws named under the heading "Sanitary Legislation."

The Examination is divided into two parts as follows: Part I: Sanitary Chemistry.—The examination of Air for Sanitary purposes. Water for Sanitary purposes. Milk and Food. Practical Examination in Chemistry as applied to Public Health. Physics.—The Principles of Physics in their application to warming, ventilation, water supply, and drainage. The Elements of Meteorology. Viva voce examination in Chemistry and Physics, Comparative Pathology, etc.—Knowledge of Comparative Pathology, Methods of Propagation, and Prevention of Microbic and Parasitic Diseases intertransmissible between Man and the Lower Animals; Morphology of Microbes and Animal Parasites. Methods of Microscopical Examination and Artificial Cultivation of Micro-organisms. The Bacteriological Examination of Water, Air, and Earth. Practical Examination.—The candidate will be expected to show a practical acquaintance with the usual methods of Bacteriological examination, and to be able to recognize specimens of Animal Parasites and Pathogenic Bacteria. There will also be a viva voce Examination in the above subjects. Part II: Sanitary Legislation.—Most of the Statutes relating to Public Health will be found in Knight and Co.'s *Public Health Acts* (latest edition), and the By-laws in the work under that title, by the same publishers. Vital Statistics.—Nosology.—Definition, Nomenclature, and Classification of Diseases. Climatology, Meteorology, Geographical Distribution of Health and Disease over the Globe, and in different Urban and Rural Districts of the United Kingdom. Sanitary Medicine. Practical Hygiene.—The Preparation of Sanitary Reports, and other Duties of a Medical Officer of Health. The candidate will also be required: (*a*) To pass an examination on medical clinical cases at the City Hospital for Infectious Diseases or elsewhere; (*b*) to draw up outlines for Annual or other Reports of a Medical

[1] The certificate of an assistant medical officer of health of a county, or of a single sanitary district having a population of no fewer than 50,000, may be accepted as evidence, provided the medical officer of health of the county or district in question permits the assistant officer to give the necessary instructions and to issue certificates.

[2] In the case of a medical officer of the Royal Army Medical Corps a certificate from a principal medical officer under whom he has served, stating that he has during a period of at least three months been diligently engaged in acquiring a practical knowledge of hospital administration in relation to infectious diseases.

[3] Methods of administration shall include the methods of dealing with patients, at their admission and discharge, as well as in the wards: and the medical superintendence of the hospital generally.

Officer of Health; (*c*) to report upon the condition of some actual locality; (*d*) to describe the construction and use of Hygienic Apparatus and Sanitary Appliances; (*e*) to examine submitted specimens with the microscope; (*f*) to describe submitted specimens of Diseased Organs and Tissues (Human and other); (*g*) to inspect and describe specimens of Meat or other articles of food. The candidate will also be examined viva voce.—N.B.—Candidates may present themselves for either part of the examination separately or both together, at their option. Every candidate wishing to present himself for examination for the degree of Bachelor in Hygiene must give at least twenty-eight days' notice to Professor Howden, Secretary of the University of Durham College of Medicine, Newcastle-upon-Tyne, and must, at the same time, send the examination fee and the necessary certificates. The fee for the examination for the degree of B.Hy. is £10 10s., and for the degree, £6 6s.

Degree of Doctor in Hygiene (D.Hy.).—The candidate must be a Bachelor in Hygiene, and must have been engaged for two years subsequent to the date of his acquirement of that degree, in practice, as a medical officer of health. He must write an essay on some practical hygienic subject, selected by himself and approved by the Lecturer on Public Health, and he will be examined thereon. The essays must be forwarded to the Lecturer on Public Health one month before the date of the examination. The fee for the examination for the degree of D.Hy. is £5, and for the degree £6 6s.

Diploma in Public Health (D.P.H.).—The candidate must be a registered medical practitioner not less than 22 years of age. He must have spent six months of professional study subsequent to the attainment of a first registrable qualification, in attendance at a recognized medical school, in the following manner:

(*a*) Three months' course of lectures on Comparative Pathology, with practical work in the bacteriological laboratory. (*b*) Three months' practical instruction in a chemical laboratory. This course must not be concurrent with the three months' course of lectures on Comparative Pathology, with practical work in the bacteriological laboratory. (*c*) Six months' practical study of outdoor sanitary work, under a medical officer of health, as required by the rules of the General Medical Council. Regulation (*c*) to be omitted in the case of a practitioner who has himself held appointment as a medical officer of health under conditions not requiring the possession of a Sanitary diploma under the Local Government (England and Wales) Act, 1883. (*d*) Three months' attendance—after obtaining a registrable qualification—on the clinical practice and instruction of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration. (*e*) Course of lectures on Public Health. Regulation (*e*) to be omitted in the case of a candidate who has already attended the courses before obtaining a registrable qualification.

The regulations for examination are the same as those for the Degree of Bachelor in Hygiene (see p. 549). The fee for the examination and diploma is £10 10s.

Diploma in Public Health for Medical Practitioners.—The candidate must have been registered, or entitled to be registered, on or before January 1st, 1890. The examination is the same as that for the ordinary Diploma in Public Health. Candidates must give at least twenty-eight days' notice to Professor Howden, Secretary of the University of Durham College of Medicine, Newcastle-upon-Tyne, and must at the same time send the examination fee and the necessary certificates. The fee for the examination and diploma is £10 10s.

University of Aberdeen.

The University grants a diploma in Public Health. Candidates for the diploma must have graduated in Medicine in the University, or in a University in the United Kingdom, one year before they receive the diploma; and they must produce evidence of (1) having complied with the regulations of the General Medical Council (see p. 547); (2) of having attended a fever hospital, containing no fewer than 50 beds, for six months; (3) if not a graduate in Medicine of Aberdeen University, of having attended a course in the University in one or more of the subjects embraced in the examination for the diploma. The examination consists of two parts: Part I (*a*) Physics, Engineering, and Meteorology; (*b*) Chemistry, Microscopy, and Bacteriology. Part II (*a*) General Hygiene; (*b*) Sanitary Law and Vital Statistics. The examination (which is written and oral) is held in March and July, and notice must be given to the Secretary of the Medical Faculty two weeks before. A detailed synopsis can be obtained from the Dean of the Medical Faculty, or will be found in the *University Calendar* for 1903-04. The fee, which must be paid at the time of giving notice, is £5 5s. The fee for re-examination, £1 1s.

University of Edinburgh.

This University confers two degrees in science in the Department of Public Health, namely, Bachelor of Science (B.Sc.) and Doctor of Science (D.Sc.).

Bachelor of Science.—Two examinations must be passed, and the candidate must produce evidence of having complied with the regulations of the General Medical Council (see p. 547), and have taken a degree in Medicine in the University of Edinburgh or in a University recognized by it. The subjects of the First Examination are: (1) Laboratory work, practical, written, and oral; (2) Elements of Experimental Physics: (3) Geology, written and oral. The Second Examination cannot be taken sooner than six months after the first. The candidate must have attended a course of lectures (50 at least) in the University of Edinburgh, or in a university recognized by the Court. The subjects of the Second Examination are: (1) Sanitation; (2) Sanitary Law; (3) Vital Statistics; (4) Medicine in its bearings on Public Health; and the examinations in these subjects are taken at one time. (A detailed syllabus is given in the *Calendar*, pp. 290-293. The time table will be found at pp. 301-304 of the *Calendar*). The examinations are held in March and July. The fee for each examination is £3 3s. Further particulars may be obtained on application to the Dean of the Faculty of Science at the University Matriculation Office, where the schedules for examination are issued and the certificates of candidates examined.

Doctor of Science.—Bachelors of Science in the Department of Public Health may, after the lapse of five years, proceed to the degree of Doctor in the same Department on presenting a Thesis on some subject in the Department of Public Health, or a published memoir of works, and are required to pass an examination in Public Health, and in such of its special departments as may from time to time be determined. (Candidates for D.Sc. in Public Health may appear for examination in any one of the departments of knowledge required for the degree of B.Sc. in Public Health. They are required to submit the subject in which they propose to be examined for approval at least two months before the date of the examination.) Every such Thesis must be certified by the candidate to have been composed by himself, and must be approved by the examiners. The Thesis must be lodged with the Dean of the Faculty of Science on or before December 1st, and the subject of examination must be submitted before January 20th. The examination will take place about the end of March. The fee is £10 10s.

University of St. Andrews.

This University grants a diploma in Public Health. Candidates must have been in possession of a medical degree of this University or of a University of the United Kingdom for at least twelve months previous to admittance to examination. There are two examinations: First, in Chemistry, Physics, Bacteriology, and Meteorology; secondly, in Sanitation, Sanitary Laws, Vital Statistics, Epidemiology and Endemiology and Pathology of Infectious Disease. Fee for each examination, £5 5s. For re-examination, £1 1s. A synopsis of the subjects of examination and books recommended will be found in the *University Calendar*.

Further information will be given by the Secretary of the University, or will be found in the *University Calendar* for 1903-4, published by William Blackwood and Sons, 45, George Street, Edinburgh, price 2s. 6d., or post free, 2s. 10d.

Conjoint Board in Scotland.

The Royal Colleges of Physicians and Surgeons of Edinburgh and the Faculty of Physicians and Surgeons of Glasgow will grant a conjoint diploma in Public Health, after examination by a Board on which these bodies are represented. Candidates qualified before 1890 will be admitted without evidence of special instruction (though even in their case such instruction is strongly recommended). Registered medical practitioners who have for a period of three years held the position of medical officer of health to any county or urban district of more than 20,000 inhabitants, or any entire rural sanitary district, are also exempt from courses of special instruction. Other candidates must produce evidence of attendance (subsequent to obtaining a registrable qualification) for six months at a Public Health Laboratory, and for six months under a Medical Officer of Health of a county or of a large urban district. There are two examinations, and candidates may present themselves for both of them at one period, or for either examination separately. The First Examination embraces the following subjects in their relation to Public Health: Chemistry, Laboratory Work, Physics, and Meteorology. The Second Examination includes: (*a*) Report on

premises visited; (*b*) examination at fever hospital; (*c*) examination at public abattoir; (*d*) epidemiology and endemiology; (*e*) vital statistics and sanitary law; (*f*) practical sanitation. The various subjects of both examinations are detached and limited by synopses given. The laboratory work embraces not only Chemical Analyses, but also Microscopical Examination, Bacteriology, Parasites, etc. At the Second Examination each candidate is required to submit a report on the sanitary condition of premises to which he may be sent for the purpose, and is examined on the Acts of Parliament included under "Sanitary Law." The fee is £12 12s., or £6 6s. in respect of each examination; and candidates referred are readmitted on a fee of £3 3s. in respect of each examination. The examination is held in Edinburgh or in Glasgow, there being two periods of examination yearly—October and May. The examination in October, 1903, will be held in Glasgow. Application for examination in Edinburgh to be sent to Mr. James Robertson, 54, George Square, Edinburgh; and in Glasgow to Mr. Alexander Duncan, B.A., LL.D., 242, St. Vincent Street, Glasgow, not later than fourteen days before the examination day. The regulations and synopsis of subjects will be found at page 137 of the 1902-3 edition of the *Medical School Calendar for Scotland*, published by E. and S. Livingstone, 15, Teviot Place, Edinburgh, price 2s., post free 2s. 3d.

University of Dublin.

The diploma in State Medicine is conferred after examination upon M.D.'s or graduates in Medicine and Surgery of Dublin, Oxford, or Cambridge. The name of the candidate must have been on the *Medical Register* at least twelve months before the examination, and, subsequently to registration, the candidate must have completed six months' practical instruction in a laboratory approved by the University, must have studied practical outdoor sanitary work for six months under an approved officer of health, three of which must be distinct from the time spent in laboratory work, and must have studied for three months in a fever hospital, in which opportunities are afforded for becoming acquainted with methods of administration. [This condition does not apply to candidates registered or entitled to be registered on or before January 1st, 1890.] Examinations are held in December and June, and candidates are required to send in their names at least a week before the first day of the examination to the Registrar of the School of Physic, from whom a full syllabus of the examination can be obtained. Candidates who have registered since January 1st, 1890, are required to make application for permission to present themselves for examination to the Board of Trinity College, submitting at the same time certificates of the required courses of study. The subjects of examination are: Hygiene and Epidemiology (paper); Chemistry (paper and laboratory); Physics and Meteorology (oral); Sanitary Engineering (paper and practical); Vital Statistics and Public Health Act (paper); Bacteriology and Pathology.

Further particulars can be obtained on application to the Registrar of the School of Physic, Dublin.

Royal University of Ireland.

The diploma in Sanitary Science is conferred only on graduates in Medicine of the University. Candidates may present themselves after an interval of twelve months from the time of obtaining the M.B., B.Ch., B.A.O. degrees. Each candidate who satisfies the examiners must pay a further fee of £3 before the diploma can be granted to him. Every candidate when entering for the Examination must produce:

(*a*) A certificate of having, after obtaining the M.B., B.Ch., B.A.O. degrees, attended, during a period of six months, practical instruction in a laboratory approved by the University. The nature of this course is fully indicated by the detailed syllabus of the examinations in Physics, Climatology, Chemistry, Microscopy, Bacteriology, Parasites, etc. An institution applying to be recognized as fulfilling the conditions of the regulations in regard to the course of practical instruction in a laboratory will be required to include in the instruction given in such institution the various subjects set forth in this syllabus, and special application for recognition must be made.

(*b*) A certificate of having, after obtaining the M.B., B.Ch., B.A.O. degrees, during six months—of which at least three months must be distinct and separate from the period of laboratory instruction required under (*a*)—been associated day by day in the duty, routine and special, of public health administration, under the supervision of

1. In England and Wales, the medical officer of health of a county or of a single sanitary district having a population of not less than 50,000, or a medical officer of health devoting his whole time to public health work; or

2. In Scotland, a medical officer of health of a county or counties, or of one or more sanitary districts having a population of not less than 30,000; or

3. In Ireland, a medical superintendent officer of health of a district or districts having a population of not less [illegible]

4. A medical officer of health who is also a teacher in the department of public health of a recognized medical school.

The certificate of an assistant medical officer of health of a county or of a single sanitary district having a population of not less than 50,000 may be accepted as evidence under Rule *b*, provided the medical officer of health of the county or district in question permits the assistant officer to give the necessary instruction and to issue certificates. Every candidate must produce evidence that, after obtaining a registrable qualification, he has attended during three months the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration. The Rules as to study do not apply to medical practitioners registered, or entitled to be registered, on or before January 1st, 1890. Candidates at this examination must answer in the following subjects: (1) Physics, (2) Climatology, (3) Chemistry, (4) Microscopy, (5) Bacteriology, (6) Geology, (7) Sanitary Engineering, (8) Hygiene, Sanitary Law, and Vital Statistics. The following are the particulars of the foregoing subjects of examination:

I. Physics.—General Laws of Heat: Mechanics, Pneumatics, Hydrostatics, and Hydraulics. (*Everett's Elementary Text Book of Physics.*)

II. Climatology.—A general knowledge of meteorological conditions; the reading and correction of instruments, and tabulating the results of meteorological observations. (*Buchan's Handybook of Meteorology; Moore's (J. W.), Meteorology.*)

III. Chemistry.—Constitution of the atmosphere. Pure and impure waters. Food and its adulteration. Poisonous substances used in manufactures, etc.

There will be a practical Examination, both chemical and microscopical, at which the candidate must make at least qualitative analyses. (*Hassall on Adulteration.*)

IV. Microscopy.—The recognition of the constituents of food, such as starches and muscular fibre. The recognition of the chief fibres of clothing, such as wool, cotton, and silk. The recognition of constituents of ordinary dust, and deposits from water.

V. Bacteriology.—The Morphology of Microbes, Artificial Cultivation of Microbes, Staining of Microbes in fluids and in tissues. Modes of inoculation and special characters of Pathogenic Microbes: special characteristics with practical work on Pathogenic Micro-organisms. Aërobic and Anaërobic Bacteria. Nature of immunity from infective disease and modes of producing it, with evidence of having received practical instruction in those diseases of animals that are transmissible to man. Antiseptics and disinfectants. Parasites and other Organisms infecting Foodstuffs or the Human Body.

VI. Geology.—Soils: Clays; Rocks; Sedimentary Rocks; Springs; Natural Gases; Brackish Waters, and influence of contact of sea water with ordinary fresh waters; Ordinary constituents of fresh water and sea water; solid matter, and soluble constituents not separable by filtrations.

VII. Sanitary Engineering.—The construction of dwellings, barracks, hospitals, schools, factories, etc., in accordance with the principles of warming, ventilation, drainage, water supply, etc. The examination will also include the reading of plans, sections, scales, etc., in connexion with buildings, sanitary construction, etc.

These subjects will be distributed as follows:

(*a*) Drainage and Sewerage of Houses and Towns [*Latham's Sanitary Engineering*].

(*b*) Supply of Towns with Water. [*Rankine's Manual of Civil Engineering; Hughes on Supply of Towns with Water* (Weale's Series). Much Useful informations will also be obtained in *Humber's Treatise on Supply of Towns with Water.*]

(*c*) Warming and Ventilation of Dwellings, etc. [*Parkes's Practical Hygiene; Hood on Warming and Ventilation* (latest edition); *Article on Ventilation in Spon's Dictionary of Engineering.*]

(*d*) Reading of Plans, Scales of Drawing, etc. In this portion of the examination the candidate must be able to explain the meaning of the different parts of the drawing of a dwelling-house, etc., the plans of the different floors, the sections, and how they show the relations between different parts of the building; and must also be able to take off dimensions by means of the scale of the drawing. [*Winter's Geometrical Drawing, Part I.*]

VIII. Hygiene, Sanitary Law, and Vital Statistics.—*Parkes's Practical Hygiene; Cameron's Manual of Hygiene; The Manual of Public Health for Ireland; Public Health (Ireland) Act, 1878.*]

The candidate must draw up reports on the Sanitary Condition of Dwelling-houses, or other building selected for the purpose.

Fees.—The fee for the examination is £2; and for the diploma, £3.

Conjoint Examining Board in Ireland.

A diploma in State Medicine is granted by these two Colleges after an examination conducted by them jointly. Candidates are required to comply with the requirements of the General Medical Council (see p. 547). The regulations as to study do not apply to practitioners registered or entitled to be registered on or before January 1st, 1890. The examination comprises the following subjects: State Medicine and Hygiene, Chemistry (including Chemical Physics), Meteorology and Climatology, Engineering, Vital Statistics, Law, and Bacteriology. In addition to written papers, the candidates will be examined orally in Hygiene, and practically in the reading of plans, sections, and scales, as well as in Analytical Chemistry, with special reference to air, water, and food, including the use of the Microscope, and in Bacteriology. They will also be required to read meteorological

struments, and to explain their construction; and will be called upon to make a practical Sanitary report.

The candidate must return his name to the Secretary of the Committee of Management under the Conjoint Scheme, Royal College of Physicians, 6, Kildare Street, Dublin, two weeks before the examination, and lodge with him a testimonial of character from a Fellow of either of the Colleges, or of the Royal Colleges of Physicians or Surgeons of London or Edinburgh. If he has been registered subsequent to January 1st, 1890, he must lodge, in addition, a schedule, setting forth that he has attended the necessary courses of instruction as laid down in the Regulations.

The examination is divided into two parts, which may be passed either together or separately. The examination occupies six days.

The fee for examination is £10 10s., for re-examination £5 5s.; the examinations begin on the first Tuesday of the months of February, May, and November.

A special examination for the diploma may, at the discretion of the Committee of Management, be granted on payment of £10 10s. in addition to the ordinary fees mentioned above—except during the months of August and September—and on giving a notice at least one fortnight before the date of the proposed examination.

Detailed Regulations and Schedules can be obtained from the Secretary.

INSTRUCTION AND LABORATORY CLASSES.

Courses of lectures and laboratory instruction to suit the requirements of candidates for diplomas in Public Health have been organized at the following schools and could probably be arranged for at most of the other schools and colleges (see also p. 547). The chemical and bacteriological examinations for many of the health diplomas are now so practical and the time allowed so short, that unless a candidate—even though familiar with the duties of a M.O.H.—has a certain amount of the manipulative dexterity only to be acquired by work in a laboratory, he would not be likely to satisfy the examiners.

LONDON.

St. Bartholomew's Hospital.
Charing Cross Hospital.
St. George's Hospital.
Guy's Hospital.
King's College.
London Hospital.
Middlesex Hospital.
St. Mary's Hospital.
St. Thomas's Hospital.
University College.

PROVINCIAL.

Cambridge University.
University of Birmingham.
University of Liverpool.
Yorkshire College, Leeds.
University of Durham College of Medicine, Newcastle-on-Tyne.
University College, Bristol.

IRELAND.

School of Physic, Dublin.
The Catholic University School of Medicine.
Royal College of Surgeons, Schools of Surgery, Dublin.

SCOTLAND.

University of Edinburgh.
University of Glasgow.
University of Aberdeen.
St. Mungo's College, Glasgow.
Conjoint Board in Scotland.

THE PUBLIC SERVICES.

THE ROYAL NAVY AND ARMY AND THE INDIAN MEDICAL SERVICES.

GENERAL REGULATIONS.

THE following are the rules governing admission to these services:

All candidates must submit to an examination by a medical Board into their physical fitness before being admitted to the entrance examination. Special attention is given to the candidate's power of vision. A moderate degree of myopia is not considered a disqualification, provided it does not necessitate the use of glasses during operations, and no organic disease of the eye exists.

Candidates for the Army and Indian Services may, before examination, elect to declare their intention to compete for one or other or both of these services; and their position will be determined according to the results of the examination.

As the prospect of a medical officer in one of these services attaining to the highest administrative grades depends to a large extent upon the regulations with regard to compulsory retirement at the age of 55, if below a certain grade at that age, there is a distinct advantage in entering the service at as early an age as possible.

THE ROYAL NAVY MEDICAL SERVICE.

A candidate for admission to the Royal Navy Medical Service must be between 21 and 28 years of age, age to be verified by a copy of birth registration, or by a declaration before a magistrate by parent or near relative. He must also produce a certificate of moral character, up to date, and a recommendation signed by a clergyman or magistrate to whom he has been for some years personally known, or by the President or senior Professor of the College at which he was educated. He must be registered under the Medical Act in force as qualified to practise medicine and surgery in Great Britain and Ireland. He must declare—(1) His age and date and place of birth; (2) that he is of pure European descent, the son either of natural-born British subject or of parents naturalized in the United Kingdom[1]; (3) that he labours under no mental or constitutional disease or weakness nor any other imperfection or disability which may interfere with the most efficient discharge of the duties of a medical officer in any climate; (4) that he is ready to engage for general service at home or abroad; (5) whether he holds or has held any commission or appointment in the public service; (6) that he is registered under the Medical Act in force as duly qualified professionally, and what diplomas, etc., he holds. He must be free from organic or other disease, and his physical fitness for sea service will be determined by a Board of medical officers, who are to certify that his vision comes up to the required standard, which will be ascertained by the use of Snellen's test types.

The certificates of registration, character, and birth must accompany the declaration, which is to be filled up and returned as soon as possible, addressed, "O.H.M.S." Director-General Medical Department, Admiralty, 18, Victoria Street, London, S.W.

The entrance examination consists of two parts; in Part I, *Compulsory* (*a*) Medicine, including materia medica, therapeutics, and general hygiene (marks 1,200); (*b*) Surgery and surgical anatomy (1,200). The examination in Medicine and Surgery will be in part practical, and will include, beyond papers, the examination of patients, and pathological specimens, a knowledge of bacteriology, the performance of operations on the dead body and the application of surgical apparatus. The attention of candidates is especially drawn to the importance of the section of Operative Surgery, as a competent knowledge in this subject is essential in order to qualify for a commission.

No candidate will be considered eligible who has not obtained at least *one-third* of the maximum marks in each of the above *compulsory subjects*.

Part II, *Voluntary*, consists of two divisions: (*a*) French and German (300 marks each); a knowledge of modern languages being considered of great importance, all candidates are urged to qualify in them; (*b*) Natural Sciences (Zoology, Botany, Chemistry, Physiology, Geology, and Physical Geography) (300 marks each); the two latter subjects are combined for the 300 marks. No candidate will be allowed to present himself for examination in more than two of the (*b*) subjects Total attainable marks 600 in each division. A number less than one-third of the marks obtainable in each of these *voluntary subjects* will not be allowed to count in favour of the candidate who has qualified in the *compulsory subjects*.

The examination in Chemistry will include the general principles of inorganic and organic chemistry; the preparation and properties of the chief non-metallic and metallic elements and their compounds; the preparation, properties, and classification of the more important compounds, such as marsh gas, ethylene, acetylene, methyl and ethyl alcohols, glycerine, ether, formic, acetic, lactic and oxalic acids; cyanogen and cyanides; carbohydrates; fats; proteids.

The examination in Physiology will comprise the minute structure and functions of the various tissues and organs of the body; the physiology of the blood; the nature of food and the processes of its digestion, the mechanics of the circulation and respiration; the physiology of nutrition, secretion and excretion; animal heat, the nature of sensation, volition, reflex action, inhibition and influence of the nervous system on other organs and their functions.

Zoology.—The examination in Zoology will include the general principles of biology and a comparison of animals with plants; the distinctive character of the larger groups of animals—the protozoa, coelenterata, vermes, anthropoda, mollusca, echinodermata, and vertebrata—

[1] If any doubt should arise as to this question the burden of clear proof

as illustrated by common types; the elements of embryology; animal parasites.

Botany.—The examination in Botany will comprise the general principles of the morphology and physiology of low forms of life, for example, torula, bacteria, spirogyra, moss, fern; the general morphology of flowering plants; diagnosis of the important British natural orders; medicinal plants.

Geology and Physical Geography.—The examination in Geology and Physical Geography will be limited to general principles, such as: The relations of the earth to the rest of the solar system, nature of the earth's crust, and the chief kinds of rocks, general configuration of land and water, mountains, planes, lakes, rivers, islands, glaciers and icebergs, the ocean currents, tides, winds and storms, dew, rain, climate, volcanoes, earthquakes, distribution of animal and vegetable life.

The appointments announced for competition will be filled from the list of qualified candidates arranged in order of merit; but should it at any time be considered expedient to grant commissions beyond those periodically competed for, the Admiralty has power to admit annually:

(*a*) Two candidates, proposed by the governing bodies of Schools of Medicine in the United Kingdom, who have satisfactorily filled the office of house-surgeon in a large civil hospital for at least six months.

(*b*) Not more than six candidates, according to requirements, specially recommended by the governing bodies of such Colonial universities as may be selected, and whose qualifications are recognized by the General Medical Council.

Candidates so proposed are to be approved by the Director-General of the Medical Department, and are to be certified by the governing body proposing them as duly qualified according to the regulations in force for the entry of candidates.

In cases of Colonial nominations, registration of professional qualifications as required by first paragraph above, may be deferred until after the arrival in England of a candidate who has been passed on the station, but a commission as Surgeon will not be granted until the certificate of the Registrar of the General Medical Council has been produced at the Medical Department of the Navy.

Candidates from schools at home will be required to pass a physical examination in London, which will be arranged by the Medical Director-General. Colonial candidates will have to pass a physical and test examination before a Board of Naval Medical Officers on the station.

Copies of the Regulations for entry of candidates for commissions in the Medical Department of the Royal Navy will be furnished on application to the Medical Director-General, Admiralty, 18, Victoria Street, London, S.W.

Successful candidates immediately after passing the examination will receive commissions as Surgeons in the Royal Navy, and will undergo a course of practical instruction in Naval Hygiene, the diseases of warm climates, bacteriology, surgery of gunshot wounds, etc., radiography and the photography in connexion with it at Haslar Hospital. Three prizes of the approximate value of £10 each will be awarded at the close of each session at Haslar to the students who have shown the greatest proficiency, and their seniority in the service will depend on the marks obtained at the examination in London, and at the termination of their studies at Haslar. Surgeons entered without competition will take seniority next after the last surgeon entered by competition. A fee of £1 will have to be paid by each candidate to entitle him to take part in the competition.

Surgeons are only required to provide themselves with a regulation case of pocket instruments, a stethoscope, and three clinical thermometers. All other instruments are provided at the public expense.

Promotion.—(1) An inspector-general of hospitals and fleets will be selected from amongst deputy-inspectors-general who have in that rank three years' full-pay service, and have not declined foreign service unless with the sanction of the Lords Commissioners of the Admiralty. (2) A deputy-inspector-general of hospitals and fleets will be selected for ability and merit from among the fleet surgeons. (3) (*a*) Subject to the approval of the Lords Commissioners of the Admiralty, the rank of fleet surgeon will be granted to staff surgeons at the expiration of eight years from the date of promotion to staff surgeon if recommended by the Medical Director-General and have not declined service except for reason which in the opinion of the Lords Commissioners of the Admiralty are satisfactory. (*b*) Special promotions to this rank will be made at the discretion of the Admiralty in cases of distinguished service or conspicuous professional merit. Such promotions will be exceptional and not exceed the rate of one in two years, or a total number of six at any one time of fleet surgeons so promoted. (4) (*a*) The rank of staff surgeon will be granted to surgeons at the expiration of twelve years from the date of entry, subject to the recommendation of the Medical Director-General and the passing of a qualifying examination after the completion of eight years from date of entry. (*b*) Special promotions will be made at the discretion of the Admiralty to the rank of staff surgeon in cases of distinguished service or conspicuous professional merit, such promotions not to exceed one a year, or a total of eight at one time on the staff surgeons' list. No officer will be so promoted unless he passes the examination prescribed for the other surgeons, but in such a case eight years in rank will not be required for so doing. These officers will attain the rank of fleet surgeon after eight years. (*c*) When a surgeon's promotion to the rank of staff surgeon has been retarded by failure to pass the qualifying examination, he will, should he pass and be promoted, be dealt with as follows: He will be granted the seniority of staff surgeon he would have received had he passed in ordinary course. He will reckon service for increase of full and half pay only from the date of appointment to full pay as staff surgeon. If on half pay, or placed on half pay when promoted, he will receive the lowest rate of half pay of the new rank from the date of passing the qualifying examination. Where delay in passing the qualifying examination is due to unavoidable circumstances, special consideration will be given. (*d*) The examination for promotion to the rank of staff surgeon will be held by the Examining Board, to which a naval medical officer will be attached to conduct the examination in naval hygiene. The subjects of examination will be in writing, and will include Medicine, Surgery, Pathology, General Hygiene, Naval Hygiene. Earlier promotion to the rank of staff surgeon may be granted to those surgeons who before entry have held the post of house-surgeon to a civil hospital of not less than 100 beds for a period of not less than six months, provided their conduct and professional abilities have been favourably reported on during the time they have served in the navy. They may be granted from six months to one year's seniority, according to the time they have held their civil appointments as house-surgeons, but in no case will more than one year's seniority be granted. This only applies to officers who enter by competition.

Relative rank is accorded as laid down in the *King's Regulations* and *Admiralty Instructions*, and also in the official *Quarterly Navy List*.

Full Pay and Allowances.—The rate of pay of surgeons is on entry £255 10s. a year; after four years' full-pay service, £310 5s. a year; after eight years' full-pay service, £365. Staff surgeons receive £438 a year on promotion, special, or after 12 years in the service; after 4 years' full-pay service in that rank, £492 15s. Fleet surgeons on promotions, special, or after 20 years in the servicee, £547 10s. a year; after 4 years' full-pay service in that rank, £602 5s.; after 8 years' full-pay service, £657; Deputy Inspector-General, £766 10s. a year; Inspector-General, £1,300, consolidated. The Inspectors-General at Haslar and Plymouth Hospitals, and the corresponding officer at Chatham Hospital, when the new hospital is completed, will be granted an allowance of 10s. a day as charge pay. The senior medical officer—fleet or staff surgeon—of the commander-in-chief's flagship, on a foreign station, receives an allowance of 5s. a day; of the flagship of the senior officer commanding the channel squadron, as also of the ship of a commodore or of a senior officer commanding a foreign station, 2s. 6d. a day; an allowance of 2s. 6d. a day may also be granted to the senior medical officer on ships carrying the flags of flag officers or the broad pennants of commodores not commanding stations. Medical officers conducting the course of instruction at Haslar Hospital will receive the following allowances:—The two senior officers employed upon this duty, £150 a year each: the junior officer assisting, £50 a year; the junior officer instructing the sick berth staff, £50 a year. The following charge allowances may be granted to medical officers in charge of hospital ships, if above the rank of fleet surgeon, 5s. a day; if of the rank of fleet surgeon or junior, 3s. 6d. a day. The fleet and staff surgeons serving at the Admiralty and the Marine Rendezvous will be granted hospital allowance of £53 a year in addition to the usual lodging money. Hospital allowances for naval medical officers at home and abroad, in lieu of provisions for themselves and servants, and for fuel and lights, are as follows: Deputy-inspector-generals, at home, £67; abroad, £112; fleet or staff surgeons, at home, £53; abroad, £112; surgeons, at home, £39; abroad, £108. Medical officers employed elsewhere than at a hospital, and not victualled in kind, receive an allowance of 1s. 6d. a day in lieu of above.

Half Pay.—Surgeons under 2 years' full-pay service, 6s. per

diem; after 2 years' full-pay service, 7s. per diem: after 4 years, 8s.; after 6 years, 9s.; after 8 years, 10s.; after 10 years, 11s. Staff surgeons on promotion, 12s.; after 2 years' full-pay service in rank, 13s.; after 4 years, 14s.; after 6 years, 15s. Fleet surgeon on promotion, 17s.; after 2 years, 18s.; after 6 years, 20s. Deputy-inspector-general on promotion, 25s.; after 2 years' full-pay service in rank, 27s.; after 4 years, 29s. Inspector-general, 38s.

Retirement.—Compulsory retirement will be as follows:

Inspector and deputy-inspector-general of hospitals and fleets.	At the age of 60, or if unemployed for five years. The Admiralty reserves the right to extend the age of retirement of an inspector-general of hospitals and fleets in the interests of the public service, to 62 years.	To be retired at any age if physically unfit for service.
Fleet surgeon, staff surgeon, and surgeon.	At the age of 55, or at any age, if he has not served for five years.	

Gratuities and retired pay will be awarded on retirement and withdrawal on the undermentioned scale:

Rank.	Gratuities.	Daily.	Yearly.
	£ s. d.	£ s. d.	£ s. d.
Surgeon and Staff Surgeon:			
After 8 years full pay service	1,000 0 0	—	—
,, 12 ,, ,,	1,500 0 0	—	—
,, 16 ,, ,,	2,500 0 0	—	—
Fleet Surgeon:			
After 20 years' service ...	—	*1 0 0	365 0 0
After 24 ,, ,, ...	—	*1 2 6	410 12 6
After 27 ,, ,, ...	—	*1 5 0	456 5 0
After 30 ,, ,, ...	—	*†1 10 0	547 10 0
Deputy-Inspector-General ...	—	1 15 0	638 15 0
Inspector-General	—	2 0 0	730 0 0

*To obtain this rate an officer must hold the Commission of Fleet Surgeon.

†Or on compulsory retirement at the age of 55.

Voluntary retirement and withdrawal will be allowed as follows:

(*a*) Every officer will have the option, subject to their Lordships' approval, of retiring after twenty years' full-pay service on the scale of retired pay, or with a gratuity, as laid down above.

(*b*) At the expiration of 8, 12, or 16 years' full-pay service, every officer will be permitted, subject to their Lordships' approval, to withdraw from the Naval Service, receiving a gratuity on the scale laid down above. The name of an officer so withdrawing will be removed from the lists of the Navy, with which all connexion will then be severed.

(*c*) Voluntary retirement and withdrawal at the discretion of their Lordships will be allowed, as a rule, only when an officer is unemployed or serving at home. Under very special circumstances, however, it may be permitted in the case of an officer serving abroad, provided he pays the passage of his successor to relieve him.

(*d*) Applications from officers, not entitled to retire or withdraw, to resign their commissions, will receive every consideration, but no officer will, as a rule, be permitted to resign under three years from the date of entry.

NOTE.—This necessary "subject to their Lordships' approval" for those voluntary or optional retirements, withdrawals, and resignations has of late very greatly qualified them. Loss of full-pay service from sickness or inability to obtain service from no default of the officer, peculiar to the navy as compared with the army, delays these so-called voluntary retirements and withdrawals. An officer retired with less than 20 years' service on account of disability contracted in and attributable to the service, will receive half-pay of his rank or with the consent of their Lordships a gratuity on the scales previously given, but such an officer will not be entitled to receive any special compensation for the disability in addition to the gratuity as above.

An officer retired with less than twenty years' service on account of disability, contracted in but not attributable to the service, will receive:

(*a*) If he has over eight years' full-pay service, either a gratuity on the scale given in paragraph above, or half-pay, according as their Lordships think fit.

(*b*) If he has less than eight years' full-pay service, such gratuity as their Lordships think fit, not exceeding the rate of £125 for each year of full-pay service.

Under circumstances other than those specified, and other than misconduct, neglect of duty, etc., an officer retired with less than twenty years' service will not be allowed half-pay or retired pay, but will receive a gratuity on the scale laid down above, if he has eight years' full-pay service, should his full-pay service not amount to eight years, a gratuity at the discretion of the Admiralty.

The power vested in their Lordships of granting reduced rates of half-pay and retired pay in cases of misconduct is extended to the award of gratuities on retirement, and the gratuity awarded will be reduced to such an amount as is thought fit.

An officer retiring after twenty years' full-pay service will be eligible, if recommended by the Medical Director-General for distinguished or meritorious service, to receive a step of honorary rank, such step to be awarded at their Lordships' discretion, and not to confer any claim to increase of retired pay or of widow's pension.

All retired officers will be liable, till the age of 55, to serve in time of declared national emergency, in a rank not lower than that held on retirement, even if only honorary rank.

This liability will not exist in cases of withdrawal on the conditions specified under voluntary retirement previously.

Retired officers will receive special consideration as regards appointments on shore connected with the Admiralty, now filled by civilians.[1]

Widow's Pension.—When an officer retires, or withdraws, on a gratuity, his widow and children will have no claim to pension or compassionate allowance.

Miscellaneous.—A special cabin will be appropriated to the fleet or staff surgeon or the surgeon in charge of the medical duties in each ship.

Special regulations have been made as regards the mess expenses of medical officers appointed to the several divisions of Royal Marines for limited periods.

Every medical officer will be required to undergo a post-graduate course of three months' duration at a metropolitan hospital once in every eight years (should the exigencies of the service permit), and this as far as possible during his surgeon's, staff surgeon's, and fleet surgeon's period of service. While carrying out this course the medical officer will be borne on a ship's books for full pay and will be granted lodging and provision allowances, and travelling expenses as for service under the Regulations to and from his home or port; the fees for each course (not exceeding £25) will be paid by the Admiralty on the production of vouchers at the end of the course. The medical officer will be required to produce separate certificates of efficient attendance in the following:

I. The Medical and Surgical Practice of the Hospital.
II. A course of Operative Surgery on the Dead Body.
III. A course of Bacteriology.
IV. A course of Ophthalmic Surgery, particular attention being paid to the Diagnosis of Errors of Refraction.
V. A practical course of Skiagraphy.

ENTRIES FOR TEMPORARY SERVICE.

The following are the regulations for the entry of Surgeons for Temporary Service in the Medical Department of the Royal Navy: They must be registered under the Medical Act as qualified to practise Medicine and Surgery in Great Britain and Ireland; they must produce certificates of good character: they must be reported physically fit after medical examination; and their age must not exceed 40 years.

PAY AND ALLOWANCES.

Full Pay.	Half Pay.
22s. 6d. a day. £401 10s. 0d. a year.	10s. a day. £182 10s. 0d. a year.

Note.—Half-pay is for sickness and extra leave only.

To be granted 30 days' advance of pay on joining a ship after appointment.

To receive the same allowances as are payable to permanent officers of their rank.

Lodging money at the rate of £50 a year is usually allowed when employed on shore without quarters in the United Kingdom, and £24 a year in lieu of rations. In cases however of temporary employment on shore, the lodging and provision allowances will be at the rate of 3s. 6d. and 1s. 6d. per day respectively.

If quarters are provided in a medical establishment, an allowance is granted in lieu of provisions, for self and servant, and for fuel and lights at the rate of £39 a year in the United Kingdom, and £108 a year abroad.

UNIFORM.

Each surgeon to provide himself as follows:
1. Frock coat, waistcoat, and trousers.
2. Undress coat.
3. Uniform cap.
4. Mess jacket and waistcoat.
5. Sword and undress belt.

All as specified in the Uniform Regulations.

To cover the above each officer accepted for service will receive an equipment allowance of £20 (payable on the officer's being called up for active service).

The following instruments must be provided by the surgeon:
A pocket case of instruments.
A stethoscope.
Three clinical thermometers.

MESSING.

Surgeons will be allowed, when attached to ships in commission, the ordinary ship's rations; but will have to pay about 2s. a day towards the maintenance of their mess as wardroom officers.

[1] Recently this has been the case more than formerly.

Pensions for Wounds and to Widows, etc.[1]

In the event of surgeons engaged for temporary service being wounded in His Majesty's Service, gratuities or pensions, varying in amount according to the injuries sustained, will be granted, on the basis of the awards in similar cases of naval officers.

Should temporary-service surgeons be killed in action, die within six months of wounds received in action, or meet their death by acts of the enemy, the following pensions and allowances will be granted to their widows, children, etc.:

	Widows.		Children up to the Age of 18 for Boys and 21 for Girls.		Widowed Mothers Dependent on their Sons, if the Latter left no Widows or Children.	Orphan Sisters Dependent on their Brothers, if the Latter left no Mothers, Widows, or Children.
	Killed in Action.	Drowned, etc., by Acts of the Enemy.	Killed in Action.	Drowned, etc., by Acts of the Enemy.	Killed or Drowned, or Suffered Violent Death by Acts of the Enemy.	Killed or Drowned, or Suffered Violent Death by Acts of the Enemy.
	£	£	£	£	£	£
Surgeon ...	80	65	12 to 16	10 to 14	50	50

In addition to the foregoing pensions the widows and children of officers killed in action will be granted the following gratuities:

Widows.—One year's pay of their husband's corresponding rank in the Royal Navy.

Each unmarried child, under the age of 21, one-third of the gratuity paid to the widow.

These pensions and gratuities can be given only in cases of injury or death caused by acts of the enemy, and not on account of injury, disability, or death, which may result from carrying on the ordinary duties of the service.

Conditions of Service.

To engage for six months certain, but the liability to serve will be limited to five years.

To serve when and where required from the date of signing the declaration.

To be liable to immediate discharge for misconduct or incompetency.

To rank with, but after, surgeons in the permanent service.

To be under the general rules of the service as regards discipline, etc.

To receive two calendar months' notice of services being no longer required.

To be granted a gratuity of two calendar months' pay on discharge, if not discharged for misconduct or incompetency.

Voluntary resignation of appointment will be allowed subject to the convenience of the service, but the gratuity of two calendar months' pay on discharge will be thereby forfeited.

ROYAL ARMY MEDICAL CORPS.

A candidate for a commission in the Royal Army Medical Corps must be 21 years and not over 28 years of age at the date of the commencement of the entrance examination. He must possess, under the Medical Acts in force in the United Kingdom at the time of his appointment, a registrable qualification to practise. He must fill up a form of application and declaration, which can be obtained on application to the Director-General, Army Medical Service, 68, Victoria Street, London, S.W., and submit it to the Director-General in sufficient time to permit of reference to the medical school in which the candidate completed his course as a medical student.

The Dean, or other responsible authority, of such school will be requested by the Director-General to render a confidential report as to his character, conduct, professional ability, and fitness to hold a commission in the Corps, and to this report special importance will be attached. After the form of application and the confidential report above alluded to have been received, the Director-General will decide if the candidate may be allowed to compete for a commission in the Royal Army Medical Corps. If approved, he will then be examined as to his physical fitness by a Board of Medical Officers, in accordance with regulations which can also be obtained from the Director-General. The entrance examinations are held twice in the year, usually in January and July. The Secretary of State reserves the right of rejecting any candidate who may show a deficiency in his general education.

[1] Unmarried candidates will be preferred.

An entrance fee of £1 is required from each candidate admitted to the examination, and is payable at the conclusion of his physical examination, if pronounced fit.

A candidate successful at the entrance examination will be appointed a lieutenant on probation, and will be required to pass through such courses of instruction as the Secretary of State shall decide, and, after passing the examinations in the subjects taught, and satisfying the Director-General that he possesses the necessary skill, knowledge, and character for permanent appointment to the Royal Army Medical Corps, his commission as lieutenant will be confirmed. The commission will bear the date of the officer's appointment as lieutenant on probation.

Entrance Examinations.

Candidates will be examined by the Examining Board in medicine and surgery. The examination will be of a clinical and practical character, partly written and partly oral, marks being alloted under the following scheme:

Medicine (written).

	Maximum Marks.
A. Examination and report upon a medical case in the wards of a hospital	125
B. Commentary upon a case in medicine	125
(Three hours allowed for A and B together.)	

Medicine (oral).

A. Clinical cases; clinical pathology	75
B. Morbid anatomy and morbid histology	75
(One quarter of an hour allowed for each table.)	

Surgery (written).

A. Examination and report upon a surgical case in the wards of a hospital	125
B. Commentary upon a case in surgery	125
(Three hours allowed for A and B together.)	

Surgery (oral).

A. Clinical cases, including diseases of the eye; surgical instruments and appliances	75
(One quarter of an hour allowed for this table.)	
B. Operative surgery and surgical anatomy	75
Total marks	800

The following headings are published as a guide to candidates in drawing up their reports on cases:

(*a*) A brief history of the case as given by the patient, including such points only (if any) in the family or personal history as have a distinct bearing upon the present illness or incapacity.
(*b*) A detailed account of the subjective symptoms and physical signs elicited by the candidate's personal examination of the patient, noting the absence of any which might be expected to be present in a similar case.
(*c*) Where there is any reasonable doubt in the mind of the candidate as to an exact diagnosis, he is to give the alternatives, with his reasons for making the selection.
(*d*) A commentary upon the case as a whole, pointing out the symptoms which may be considered typical, and those which appear to be unusual or only accidental complications.
(*e*) Suggestions as to treatment, both immediate and possibly necessary at a later date.
(*f*) A forecast of the progress and probable termination of the case.

Similarly the commentary on the report of a case submitted to the candidate should discuss:

(*a*) The family and personal history and other conditions preceding the development of the condition described.
(*b*) The relative significance of the physical signs, symptoms, other indications of disease noted, and the general clinical aspects of the case.
(*c*) The diagnosis, with reasons for selection of the most probable, when a positive diagnosis cannot be attained.
(*d*) The treatment—dietetic, medicinal, operative, etc., including a criticism of the plan adopted, and alternative schemes of treatment in cases of disagreement.
(*e*) The morbid appearances, and an account of the *post-mortem* examination (if any).

The examination will be held in London and will occupy about four days.

Having gained a place in this entrance examination, the successful candidates will undergo two months' instruction in hygiene and bacteriology, after which they will be examined in these subjects. The maximum number of marks obtainable at this examination will be 100.

On completion of the above course lieutenants on probation will be ordered to proceed to the Dépôt of the Royal Army Medical Corps at Aldershot for a three months' course of instruction in the technical duties of the Corps, and at the

end of the course will be examined in the subjects taught. The maximum number of marks obtainable at this examination will be 100.

Examinations for Promotion.

Lieutenant before Promotion to Captain.

(For Lieutenants appointed after March 31st, 1901.)

This examination may be taken at any time after completing 18 months' service, and will be held in the military district in which the officer is serving.

The subjects of this examination, which are detailed in the *King's Regulations*, are as follows:

1. Regimental duties.
2. Drill.
3. Military law.
4. Duties and accounts connected with military hospitals and their supplies.
5. Other duties of executive medical officers.

Captains before Promotion to Major.

(For Captains promoted to that rank after July 27th, 1895.)

Captains will be examined under the rules laid down in the next paragraph, and will be eligible for acceleration in their promotion to the rank of major under Article 352 of the Royal Warrant, subject to the following restrictions:

(*a*) The acceleration which can be gained by a captain promoted to that rank in January, 1896, will be limited to 6 months, and an officer gaining this acceleration will take precedence after the last captain promoted major on completion of 12 years' service.

(*b*) The acceleration which can be gained by a captain promoted to that rank in July, 1896, will similarly be limited to 12 months, and an officer gaining this acceleration will take precedence next after the last captain promoted to that rank in January, 1896, who may have gained 6 months' service.

(*c*) A captain promoted to that rank in January, 1897, can gain the full acceleration, but will take precedence after any captain promoted to that rank in July, 1896, who may have gained 12 months' acceleration.

(*d*) Officers gaining acceleration under (*a*) will take precedence *inter se* in order as they have obtained a special certificate or passed in the 1st, 2nd, or 3rd class, and a similar course will be followed under (*b*) and (*c*).

(*e*) In all other cases an officer who gains accelerated promotion will be placed for precedence after the last officer (whether subject to acceleration or not) promoted approximately 3, 6, 12, or 18 months before him.

This examination, which may be taken at any time after completing five years' service, will be held in London on the termination of a period of special study. The examination will consist of written papers, essays, oral and practical examinations in the following subjects, which are detailed in the *King's Regulations:*

1. Medicine.
2. Surgery.
3. Hygiene.
4. Bacteriology and tropical diseases.
5. One special subject from the subjoined list, to which additions may from time to time be made:
   (*a*) Bacteriology, including the preparation of antitoxins.
   (*b*) Dental surgery.
   (*c*) Dermatology.
   (*d*) Laryngology.
   (*e*) Midwifery and gynaecology.
   (*f*) Operative surgery, advanced.
   (*g*) Ophthalmology.
   (*h*) Otology.
   (*i*) Paediatrics.
   (*k*) Psychological medicine.
   (*l*) Skiagraphy.
   (*m*) Specific fevers.

Captains serving in that rank before July 27th, 1895, will be promoted under the old regulations contained in Appendix I, Regulations for Army Medical Services, and will not be eligible for acceleration.

Majors before Promotion to Lieutenant-Colonel.

(For Majors promoted to the rank after March 31st, 1895.)

This examination, which may be taken at any time after three years in the rank of major, will be held in the military district in which the officer is serving at times which will be duly notified.

The subjects of this examination, which are detailed in the *King's Regulations*, are as follows:

1. Military law.
2. Army medical organization.
3. Sanitation of towns, camps, transports, etc.
4. Epidemiology and the management of epidemics.
5. One special subject from the subjoined list to which additions may from time to time be made:
   (*a*) Medical history of important campaigns.
   (*b*) A general knowledge of the Army Medical Services of other powers.
   (*c*) The laws and customs of war in relation to the sick wounded.

Pay, Additional Pay, and Charge Pay.

The following are the rates of pay, additional pay, and charge pay of the officers of the Army Medical Staff and Royal Army Medical Corps, etc., as laid down in the new Royal Warrant:

Pay.

	Inclusive of all Allowances except Field and Travelling Alowances.
Army Medical Service. *At Head Quarters.*	Yearly. £
Director-General	2,000
Deputy Director-General	1,500
Assistant Director-General	850
Deputy Assistant Director-General	750

	Exclusive of Allowances.
At Other Stations.	Daily. £ s. d.
Surgeon-General	3 0 0
Colonel	2 0 0
Lieutenant-Colonel	1 10 0
Lieutenant-Colonel specially selected for increased pay after at least 8 years' service abroad	1 15 0
Major	1 3 6
After 3 years' service as such	1 6 0
Captain	0 15 6
After 7 years' total full-pay service	0 17 0
After 10 years' total full-pay service	1 1 0
Lieutenant on probation and lieutenant	0 14 0
Adjutant of the Royal Army Medical Corps (Volunteer)	The pay of his rank.
Quartermaster	As a quartermaster of infantry.

A lieutenant-colonel appointed one of the Honorary Physicians or Honorary Surgeons, shall receive pay at the rate laid down for a colonel of the Royal Army Medical Corps when qualified for promotion to that rank.

A captain of the Royal Army Medical Corps holding the brevet rank of major shall receive pay at 2s. a day in addition to the rates laid down for a captain.

Additional Pay.

Officer not serving on the headquarters staff appointed a member of the Advisory Board ... £150 a-year.
Officer serving as Secretary of the Advisory Board and Nursing Board ... ... £100 a-year.

	Daily. s. d.
Officer under the rank of lieutenant-colonel holding an appointment as specialist	2 6
Quartermaster in charge of the medical stores at Woolwich	2 6

Charge Pay.

(*a*) Officer in charge of a general or other hospital; or of a division of a general hospital—

	Daily. s. d.
If in charge of at least 50 beds	2 6
,, ,, 100 ,,	5 0
,, ,, 200 ,,	7 6
,, 300	10 0
(*b*) Officer in command of the dépôt, Royal Army Medical Corps	5 0

The senior officer of the Army Medical Service with an army in the field—
A rate to be fixed by the Secretary of State according to the magnitude of the charge

In a command abroad—

	s. d.
The senior medical officer, if the number of soldiers is 1,500 or upwards	5 0

Extra-Duty Pay.

An officer of the Royal Army Medical Corps, appointed to act as adjutant or quartermaster of the Royal Army Medical Corps (Militia) during preliminary drill or training, shall receive extra-duty pay at the following daily rates:

	s. d.
Acting Adjutant	2 6
Acting Quartermaster	2 0

Reserve of Officers.

On the completion of three years' service, an officer of the Royal Army Medical Corps may be permitted by the Secretary of State to become an Army Reserve officer for a period of seven years, and while so serving he shall receive pay at the rate of £25 a year.

With the sanction of the Secretary of State such officer may be allowed to return to the active list, and if the period he has been in the Reserve of Officers amounts to at least one year, and not more than three years, he shall be allowed to

reckon one-third of such period towards promotion, gratuity, and pension.

Pay during Sick Leave.

An officer of the Army Medical Staff or Royal Army Medical Corps may be allowed full pay during sick leave of absence under certain conditions.

Household Troops.

The rates of pay of medical officers of the Household Troops are as follows:

	£ s. d.
Brigade-surgeon-lieutenant-colonel	1 15 0
Surgeon-lieutenant-colonel	1 10 0
Surgeon-major	1 3 0
After 3 years' service as such	1 6 0

Retired Pay.

An officer of the Army Medical Service may be permitted to retire, in cases in which such retirement may be deemed expedient by the Secretary of State.

Army Medical Staff.

	Daily. £ s. d.
Surgeon-General	2 0 0
Royal Army Medical Corps and Medical Officers of Household Troops.	
Colonel	1 15 0
Lieutenant-colonel, or surgeon-lieutenant-colonel of the Household Troops—	
After 20 years' service	1 0 0
,, 25 ,, ...	1 2 6
,, 30 ,, ...	1 5 0
Lieutenant-colonel, after having been in receipt of the increased pay allowed under the terms of the new Warrant, for 3 years, or brigade-surgeon-lieutenant-colonel of the Household Troops—	
Under 30 years' service	1 7 6
After 30 ,, ...	1 10 0
Major, or surgeon-major of the Household Troops—	
After 20 years' service	1 0 0
After 25 years' service, if his service reckoning for promotion is insufficient to qualify him for promotion to the rank of lieutenant-colonel under Article 351	1 2 6

	Gratuity. £
Major or captain—	
After 5 years' service in the rank of captain	1,000
After 10 years' service if the officer was commissioned before the date of the Warrant	1,250
After 3 years' service in the rank of major, *or, if the officer was commissioned before the date of the Warrant, after 15 years' service*	1,800
After 6 years' service in the rank of major, *or, if the officer was commissioned before the date of the Warrant, after 18 years' service*	2,500
Surgeon-lieutenant-colonel or surgeon-major of the Household Troops—	
After 15 years' service	1,800
,, 18 ,, ...	2,500

Retirement on Account of Age, or Limitation of Period of Service.

Conditions of Retirement.

The Director-General of the Army Medical Service shall retire on completion of the term of his appointment; and the retirement of other officers of the Army Medical Service (except quartermasters) shall be compulsory at the following ages:

Surgeon-General	60
Colonel, *promoted to the rank on or after the date of the Warrant* ...	57
Colonel, *promoted to the rank before the date of the Warrant (subject to Article 558)*	60
Other officers	55

A major shall retire on completion of 25 years' service; or, if he fails to qualify for promotion, on the completion of 20 years' service.

A captain or lieutenant shall retire on completing 6 months' service on the supernumerary list.

It shall be competent to the Secretary of State to place a medical officer on the retired list after 30 years' service.

Scale of Retired Pay.

Director-General Army Medical Service.

	Yearly. £
After 3 years' service as Director-General—	
With 30 years' service	1,125

Retirement on Account of Medical Unfitness.

Conditions of Retirement.

An officer of the Army Medical Service placed on the half-pay list on account of medical unfitness shall, if not previously retired, be retired from the Army at the expiration of 5 years from the date on which he was placed on the half-pay list, or, if reported by the regulated medical authority to be permanently unfit for duty, on the officer's application, at such earlier date as may be decided by the Secretary of State.

An officer, whether on full or half pay, placed in detention as a person of unsound mind, shall be retired from the army, with the retired pay to which he would be entitled if reported by the regulated medical authority to be permanently unfit for duty. If his disability was not caused by military service, and he is not entitled to permanent retired pay by length of service, he shall receive temporary retired pay equivalent to the half-pay, and temporary retired pay, if any, which he would have received if his disability had been other than insanity.

Scale of Retired Pay.

Director-General Army Medical Service.

	Yearly. £
Under 3 years' service as Director-General, and after not less than 30 years' service	875

The full text of the new regulations, with appended matter, may be obtained on application to the Director-General, 68, Victoria Street, London, S.W.

INDIAN MEDICAL SERVICE.

The following account of the regulations for the examination of candidates for admission to His Majesty's Indian Medical Service is accurate as far as it goes, but it is not quite complete. Further regulations have yet to be added, which we hope to publish in due course. They are, we understand, designed to bring the Indian Medical Service into line generally with the Royal Army Medical Corps as regards the period of probation.

Candidates must be natural-born subjects of His Majesty, between 21 and 28 years of age at the date of the examination, of sound bodily health, and in the opinion of the Secretary of State for India in Council in all respects suitable to hold commissions in the Indian Medical Service. They may be married or unmarried. They must possess a diploma or diplomas entitling them under the Medical Acts to practise both medicine and surgery in Great Britain and Ireland.

They must subscribe and send in to the Military Secretary, India Office, Westminster, so as to reach that address by the date fixed in the advertisement of the examination, a declaration according to a prescribed form setting forth that they do not labour under any mental or constitutional disease, or any imperfection or disability that can interfere with the discharge of the duties of a medical officer.

This declaration must be accompanied by (*a*) a documentary proof of age.

(*b*) A recommendation from some person of standing in society—not a member of the candidate's own family—to the effect that he is of regular and steady habits; and a certificate of moral character from a magistrate or a minister of the religious denomination to which he belongs.

(*c*) *A certificate of registration* under the Medical Acts of the degrees, diplomas, and licences possessed by him.

(*d*) A certificate of having attended a course of instruction for not less than three months at an ophthalmic hospital, or the ophthalmic department of a general hospital, which course shall include instruction in the errors of refraction.

The Dean or other responsible authority of the medical school in which the candidate completed his course as a medical student will be asked by the Secretary of State for India to furnish a confidential report as to his character, conduct, professional ability, and fitness to hold a commission in the service. To this report special importance will be attached.

The physical fitness of each candidate will be determined by a Board of Medical Officers, who are required to certify that his vision is sufficiently good to enable him to pass the tests[1] laid down by the regulations. Candidates who pass the physical examination will be required to pay a fee of £1 before being permitted to compete.

The candidate's personal and professional qualifications having been found satisfactory, he will be examined by the Examining Board in the following subjects, and the highest number of marks attainable will be distributed as follows:

[1] These are as follows: (1) If a candidate can read D = 6 at a distance of 20 ft., and D=0.6 at any distance selected by himself, with each eye without glasses, he will be considered fit. (2) If a candidate can only read D = 24 at 20 ft. with each eye without glasses, his visual deficiency being due to faulty refraction which can be corrected by glasses which enable him to read D = 6 at 20 ft. with one eye, and D = 12 at the same distance with the other eye, and can also read D = 0.8 with each eye without glasses at any distance selected by himself, he will be considered fit. (3) If a candidate cannot read D = 24 at 20 ft. with each eye without glasses, notwithstanding he can read D = 0.6, he will be considered unfit. N.B.—Snellen's test types will be used for determining the acuteness of vision. Squint, inability to distinguish the principal colours, or any morbid condition subject to the risk of aggravation or recurrence in either eye, will cause the rejection of a candidate.

	Marks.
1. Medicine, including Therapeutics	1,200
2. Surgery, including Diseases of the Eye	1,200
3. Surgical Anatomy and Physiology	600
4. Pathology and Bacteriology	900
5. Midwifery and Diseases of Women and Children...	600
6. Chemistry and Pharmacy, with either Botany or Zoology at option	600

The examination in medicine and surgery will be in part practical, and will include operations on the dead body, the application of surgical apparatus, and the examination of medical and surgical patients at the bedside. The examination in chemistry will be limited to the elements of the science, and to its application to medicine, pharmacy, and practical hygiene. No candidate will be considered eligible who has not obtained at least one-third of the marks obtainable in each of the above subjects and one-half of the aggregate marks for all the subjects.

After passing this examination the successful candidates will be required to attend one entire course of practical instruction at the Army Medical School and elsewhere, as may be decided, in—

1. Hygiene.
2. Clinical and Military Medicine.
3. Clinical and Military Surgery.
4. Pathology of Diseases and Injuries incidental to Military Service.

This course will be of not less than four months' duration.

During this period of instruction each candidate will receive an allowance of 14s. per diem, with quarters, or, when quarters are not provided, with the usual fuel and light allowances of a subaltern, to cover all costs of maintainance; and he will be required to provide himself with a uniform (namely, the regulation undress uniform and mess dress of a lieutenant of the Indian Medical Service, as described in *Indian Army Regulations*, vol.vii).

At the conclusion of the course candidates will be required to pass an examination on the subjects taught during the course of instruction.

Officers appointed to the Indian Medical Service will be placed on one list, their position on it being determined by the combined results of the preliminary and final examinations, and, so far as the requirements of the service will permit, they will have the choice of commands in India (that is, Bengal, Punjab, Madras, or Bombay), according to their position on that list. Though ordinarily employed within the limits of the command to which they have been posted, they will be liable to employment in any part of India according to the exigencies of the service.

Examinations for admission to the service usually take place twice in the year—that is, about February and August.

No candidate will be permitted to compete more than three times.

REVISED CONDITIONS OF SERVICE.

We understand that the proposals of the Government of India for the improvement of the Indian Medical Service are now before the Secretary of State for India in Council, and the alterations in the conditions of service which will be sanctioned cannot be published for at least another month. The revised conditions of service will be published as soon as we receive them from the India Office.

PRISON MEDICAL SERVICE.

THE prison department consists of two branches—the convict service and the local prison service. These are now practically amalgamated, and the officers of each branch are freely interchangeable. In the case of the smaller prisons the medical officer is usually a local practitioner, but in the case of the larger prisons the medical officers are appointed by the Convict Prison Board or the Prison Commission, and form practically a special service. The Chairman of the Board is Sir Evelyn Ruggles-Brise, K.C.B. Application for employment may be made to the Board on a special form, which, we understand, can be obtained from the Secretary, Major E. G. Clayton, Prison Commission, Home Office, London, S.W.

The number of vacancies is not large, and the prospects of promotion are bad. This is due in part to the fact that the rate of pay of the higher appointments depends upon the number of prisoners in the particular prison, and that the total number of prisoners in the country is not increasing in proportion to population.[1]

[1] Intending applicants would do well to consult a memorandum prepared for the use of the Parliamentary Bills Committee of the British Medical Association, and published in the BRITISH MEDICAL JOURNAL on April 23rd, 1892.

Convict Service.—Five deputy medical officers at £250, rising to £300; four medical officers at incomes ranging from £300 to £550.

Local Prison Service.—Ten deputy medical officers at £250, rising to £300; nine medical officers at £200; three medical officers at £250; three medical officers at £300, rising to £390; six medical officers at £400, rising to £500. Quarters, or an allowance in lieu, are granted to those who give their whole time to the service.

MEDICAL APPOINTMENTS IN THE COLONIES.

1. Medical appointments are from time to time filled up by the Colonial Office in the following Colonies and Protectorates: British Guiana, Jamaica, Trinidad, Windward Islands, Leeward Islands, British Honduras, Fiji, Sierra Leone, Gambia, Gold Coast, Lagos, Northern and Southern Nigeria, Ceylon, Straits Settlements, the Federated Malay States, Hong Kong, Mauritius, Seychelles, Cyprus, Gibraltar, St. Helena, and the Falkland Islands. In Ceylon, Jamaica, and Mauritius vacancies are almost always filled locally by the appointment of qualified native candidates.

It is for the West Indies and the West African Colonies that medical officers are chiefly required.

2. The majority of the West Indian appointments involve medical charge of a district, including, as a rule, the care of a hospital, poor-house, asylum, or other institution, and free attendance on the aged and children.

N.B.—Passage money on first appointment, and leave of absence on half pay (in addition to the ordinary annual vacation on full pay, not exceeding three months in two years), are granted only in the cases specified in the Colonial Regulations. Leave on half pay is not granted before the completion of six years' service, except on the ground of illness or urgent private affairs. With regard to pension, medical officers are usually on the same footing as other Government servants; but in cases where private practice is allowed the rule is that they are not usually entitled to pension.

3. The following is a short account of the appointments in the separate Colonies:

British Guiana.—Forty-two appointments. Candidates must have held for at least six months a resident medical appointment in some public institution. Officers are appointed on two years' probation as supernumeraries, and are paid a salary at the rate of £300 per annum with quarters, without the right to private practice. Supernumerary officers, married or single, who obtain leave to reside out of the quarters provided for them will not be entitled to lodging allowance. After serving for two years, if appointed to the permanent staff, the officer will receive £400 per annum, rising by increments of £25 annually up to £700 per annum. A Government medical officer on being appointed to a district, and a supernumerary on being appointed to act in charge of a district, will receive a salary of £500 per annum, but will not receive any increments thereto until entitled to such increments by length of actual service. Every medical officer appointed to a district or to act in charge of a district will receive a travelling allowance at a rate varying from £100 to £150 per annum as the extent of the district may require. He is allowed private practice. No more than £30 is allowed for passage money on first appointment. There is a Widows' and Orphans' Fund in the colony, to which all Government servants are compelled to subscribe at the rate of 4 per cent. on their salaries. The Governor now has the power to appoint private practitioners to perform the duties of medical districts on temporary agreements.

Jamaica.—The appointments, 54 in number, are mainly district appointments with private practice allowed; the salary paid by Government varies from £150 to £250 per annum, and in most cases is £200. Newcomers are, in some cases, attached for a while to the public hospital in Kingston, and given an allowance at the rate of £200 per annum, but not permitted to undertake private practice. Some medical officers receive a varying capitation allowance for attendance on immigrants. There is a Civil Service Widows' and Orphans' Fund established by law, to which all medical officers are obliged to subscribe at the rate of 4 per cent. on their salaries.

Trinidad and Tobago.—In Trinidad there are 32 appointments. Officers are appointed in the first instance on two years' probation as supernumeraries. They receive a salary of £250 per annum with furnished quarters, and are usually attached to the Government hospital; the salary assigned to the district appointments, to which they are promoted as

vacancies occur, is £300, which is increased to £400 and upwards by various allowances for horse, house, or otherwise. These posts carry the right to private practice. After every five years' service an officer is given an additional personal allowance at the rate of £50 per annum. All officers hereafter appointed are required to contribute 4 per cent. of their salaries to the Widows' and Orphans' Fund. But in future there will be few appointments, as the Government is aiming at the introduction of a system by which the work shall be performed by private practitioners under temporary contracts.

In the island of Tobago there are three district appointments, with salaries of £250 per annum with quarters.

Windward Islands (Grenada, St. Lucia, St. Vincent).—The 22 appointments are, with few exceptions, district appointments with the right to private practice attached; the salaries paid by Government vary from £250 to £400, with allowances in certain cases. The Secretary of State reserves the power to transfer a medical officer from one island to another.

Leeward Islands (Antigua, St. Christopher and Nevis, Dominica, Montserrat, Virgin Islands).—The 25 appointments are of the same nature as in the Windward Islands. An officer when first sent out is not appointed to a particular island but to the service of the Leeward Islands, with a salary of £200, and the Governor decides as to the district which is to be allotted to him. The medical officers receive fees for successful vaccinations, *post-mortem* examinations, attendance and giving evidence at courts of justice, certificates of lunacy, and, in the larger islands, for burial certificates. They are also allowed private practice.

British Honduras.—There are four medical appointments (besides the principal post of Colonial Surgeon) in all of which private practice is allowed, if it does not interfere with the public duties of the officer; the pay varies from $750 to $1,080. Two of the medical officers are also district commissioners, and receive $1,500 for the combined posts of medical officer and district commissioner. Unless they already possess a diploma of public health, medical officers are liable to be required before they join the colony to undergo a course of instruction at a laboratory of public health or analogous institution. The dollar=about 4s. 2d.

Fiji.—There are at present 17 medical officers, of whom the Chief Medical Officer receives £600 per annum, the senior medical officer £450 per annum, and £50 allowance for house rent, the others receiving, if provincial medical officers, £400 to £500 per annum, if district medical officers, £300 per annum, with quarters, or £50 house allowance at the option of the Government.

Some of the district medical officers receive, in addition, capitation fees upon all the indentured labourers in their respective districts. These amount, usually, to sums ranging between £40 and £200 per annum. District medical officers are entitled to the private practice of their profession in all districts, on the understanding that their official duties are not made subservient to it.

Proposals are at present under consideration for consolidating the two classes of District and Provincial Medical Officers into one Government medical service, appointments to which will be made on terms not yet fixed.

Ceylon.—The pay of the (36) Sub-Assistant Colonial Surgeons and (9) Deputy-Assistant Colonial Surgeons and (8) other subordinate medical officers is at the rate of from Rs. 900 to Rs. 1,600 per annum. The (23) Assistant Colonial Surgeons are paid at a rate of from Rs. 3,000 to Rs. 5,000 per annum, and the (4) Colonial Surgeons and (3) other superior medical officers at a rate of from Rs. 5,500 to Rs. 8,000 per annum. The Principal Civil Medical Officer receives Rs. 12,000, rising by biennial increments of Rs. 1,000 to Rs. 15,000 per annum. Private practice is allowed to the subordinate officers, but the Colonial Surgeons may only take consultation practice. The Medical Service of Ceylon is mainly recruited from among gentlemen born in the island, but possessing British diplomas. Exchange Compensation—that is, an allowance in respect of one half of an officer's salary, sufficient to make up the difference between the market value of rupee and a rupee worth 1s. 6d.—is at present granted to officers appointed from this country to medical posts in Ceylon.

This privilege is subject to an annual vote of the Legislative Council, and its permanence cannot therefore be guaranteed.

Straits Settlements.—Two house surgeons in the General Hospital, Singapore, on £300 rising to £360, with free quarters. There are ten other subordinate posts in the Medical Department, with salaries varying from £360 (rising to £420) to £780 (rising to £900). Some of these posts have free quarters attached, and the holders of some are allowed private practice within limits. The salary of the Principal Civil Medical Officer is £1,000.

Federated Malay States.—There are 17 District Surgeons on salaries £360 rising to £480. There are also four State Surgeons, on salaries varying from £480 (rising to £540) to £720 (rising to £840).

Medical officers have no claim to private practice, and the enjoyment of it will be strictly subject to the permission of Government. There are two assistants in the Institute for Medical Research, on salaries of £360 to £420. These are non-pensionable, and the holders are eligible for appointment as District Surgeons.

Hong Kong.—Principal Civil Medical Officer, £800 rising to £1,000. There are two Health Officers of the Port, four Medical Officers of Health, and four Assistant Surgeons, with salaries of £480 rising to £720. Most of these appointments are pensionable. Private practice is not allowed, and free quarters are only given in few cases.

Mauritius.—There are 24 medical appointments in all. Of these 14 are minor appointments, with salaries varying from Rs.500 to Rs.1,500 per annum. The other 10 appointments have salaries varying from Rs.2,000 to Rs.9,000. Free quarters are not given in most cases, and private practice is not allowed. The service is mainly recruited from among gentlemen born in the island.

N.B.—There are Widows' and Orphans' Pension Funds in Ceylon, Straits Settlements, Hong Kong, and Mauritius, to which all permanent Government servants are called upon to subscribe at the rate of 4 per cent. on their salaries.

Officers in the service of Mauritius are required annually to contribute 2 per cent. of their salaries towards their pensions.

Seychelles.—There are four medical appointments. The Government Medical Officer receives Rs.4,000, rising, after three years' service, to Rs.4,500. The Assistant Government Medical Officers receive Rs.3,000. The holders of these latter appointments have free quarters. Private practice is allowed.

Gibraltar.—There is a surgeon of the Colonial Hospital receiving £275, and an assistant surgeon receiving £96, in each case with quarters and private practice, and allowance of £20 12s. for fuel and light. The surgeon of the hospital, as medical officer of the civil prison and lunatic asylum, receives £55, and horse allowance of £42. The assistant surgeon is also police surgeon, £45, port surgeon, £109, and is a public vaccinator.

Cyprus.—There is a Chief Medical Officer paid at the rate of £500 per annum, two District Medical Officers paid at the rate of £250 per annum, and one paid at the rate of £200, rising by £10 a year to £250, all enjoying private practice, and receiving 2s. per diem forage allowance; these are the only medical appointments in the island which are open to English candidates.

St. Helena.—The Colonial Surgeon receives £300 per annum, and £30 horse allowance. Private practice is allowed.

Falkland Islands.—There are 2 appointments, one of which is paid at the rate of £300 per annum, with £25 as Health Officer, and the other at the rate of £200 per annum. Private practice is allowed in both cases.

4. All applicants for medical employment in these Colonies must be between the ages of 23 and 30, and must be doubly qualified; preference will be given to those who have held hospital appointments as house-physicians and house-surgeons; certificates of moral character and of sobriety will be required, and every officer before being appointed will have to be medically examined by one of the consulting physicians of the Colonial Office, Sir Patrick Manson, K.C.M.G., 21, Queen Anne Street, Cavendish Square, London, W.; Dr. Andrew Davidson, 11, Morningside Place, Edinburgh; and Dr. Hawtrey Benson, 57, Fitzwilliam Square, Dublin.

5. In addition to the ordinary medical appointments in these Colonies vacancies also occasionally, though very rarely occur, for which specialists are required—for example, to take charge of a lunatic asylum, and the particulars of chief medical officer in some of the larger Colonies have not been given, as the Headship of the Medical Department in such Colonies, requiring administrative as well as professional qualifications, is not reserved to the ordinary medical staff of the same Colony, but is often filled up directly by transfer, and sometimes from outside the service.

6. Applications for medical employment in these Colonies from persons in the United Kingdom must be addressed to the Assistant Private Secretary, Colonial Office, Downing

Street, S.W. Out of the total number so applying a list of candidates will be made who will be considered as vacancies occur, but no promise whatever can be held out that candidates, even if they are placed on the list, will eventually receive an appointment. It is not possible to forecast either the number or the nature of the vacancies which will arise in the course of any given year, and it is not expected that candidates should hold themselves in readiness by refraining from other employment, as usually, when selected for an appointment, they can be allowed sufficient time to make their preparations and to terminate their existing employment.

7. Information as to the West African Medical Staff is given in a separate memorandum printed below.

8. *South Africa.*—Medical appointments in the Bechuanaland Protectorate and Basutoland are made only on the recommendation of the High Commissioner for South Africa, who usually appoints local candidates. Appointments of medical officers to the South African Constabulary are made by the High Commissioner on the recommendation of the Inspector-General. The Secretary of State does not select candidates for these appointments, and no register of candidates is kept at the Colonial Office.

Medical appointments in the Transvaal and Orange River Colony are only made on the recommendation of the Governor of those Colonies. The supply of candidates in the Colonies is understood to be sufficient, and it is not anticipated that there will be any demand for the services of medical men from this country for ordinary appointments. Information as to the conditions of practice in these Colonies can be obtained from the Emigrants Information Office, 31, Broadway, Westminster, S.W.

Medical appointments in the Cape and Natal are made only by the Colonial Governments. Information with regard to appointments in these Colonies can be obtained from the Agent-General to the Cape, 100, Victoria Street, S.W., and the Agent-General for Natal, 26, Victoria Street, S.W.

Appointments in Rhodesia are made by the British South Africa Company, 2, London Wall Buildings, E.C.

INFORMATION FOR THE USE OF CANDIDATES FOR APPOINTMENTS IN THE WEST AFRICAN MEDICAL STAFF.

1. The medical services of the West African Colonies and Protectorates (viz., the Gambia, Sierra Leone, the Gold Coast, Lagos, Southern Nigeria, and Northern Nigeria) form one service under the above name. All the medical officers for the service are selected by the Secretary of State for the Colonies, and are on one list for employment and promotion.

SALARY AND ALLOWANCES.

2. The grades and salaries of medical officers are shown in the following table:

Grades.	Gold Coast, Southern Nigeria, Northern Nigeria.			Sierra Leone, Lagos.			Gambia.		
	Minimum Salary.	Annual Increment.	Maximum Salary.	Minimum Salary.	Annual Increment.	Maximum Salary.	Minimum Salary.	Annual Increment.	Maximum Salary.
	£	£	£	£	£	£	£	£	£
Principal Medical Officer	1,000	50	1,200	800	50	1,000	—	—	—
Deputy Principal Medical Officer	700	25	800	—	—	—	—	—	—
Senior Medical Officers	600	20	700	600	20	700	500	20	600
Medical Officers...	400	20	500	400	20	500	400	20	500

3. The allowances are as follows:

(*a*) *Duty Pay.*—A Deputy Principal Medical Officer or Senior Medical Officer receives duty pay at the rate of £100 a year while acting for the Principal Medical Officer.

In the Gambia a Medical Officer while acting for the Senior Medical Officer in charge of the medical department receives duty pay at the rate of £50 a year.

Duty pay at the rate of £60 a year is also paid (1) to each Deputy Principal Medical Officer or Senior Medical Officer while employed in Ashanti or the Northern Territories of the Gold Coast, and (2) to not more than two officers of either of those ranks in Northern Nigeria, when similarly employed in outlying districts, at the discretion of the High Commissioner.

(*b*) *Horse or Hammock Allowance.*—An allowance of 2s. 6d. a day is paid to every medical officer for personal conveyance while on duty at his station, for any periods during which he is required by Government to keep, and has actually kept, a horse, carriers, etc., for the purpose.

(*c*) *Transport of Stores.*—The Government carries free of cost a reasonable amount of stores for every medical officer, the amount in each case being fixed by the local Government.

(*d*) *Travelling.*—Medical and other officers travelling on duty in a Colony or Protectorate are entitled to repayment of any actual out-of-pocket expenses which they may necessarily have incurred. In some cases, in lieu of the repayment of expenses, a travelling allowance is given, which is estimated to cover the average cost of travelling.

(*e*) *Field or Bush Allowance.*—An allowance of 5s. a day is paid to all medical officers, whatever their rank, while employed in the field or bush, away from recognized stations. Officers, while in receipt of this allowance, are not entitled to any repayment or allowance under (*d*) above.

(*f*) *Allowances on a Military Expedition.*—All medical officers, whatever their rank, while employed with a military expedition, will be paid an allowance of 10s. a day, and they will also be given free rations, or an allowance of 3s. a day in lieu of rations, whenever other officers employed with the expedition are given free rations or an allowance in lieu of rations. While in receipt of these allowances medical officers will not be entitled to any repayment or allowance under (*d*) and (*e*) above.

(*g*) *Outfit Allowance.*—An allowance of £12 is paid to every medical officer before his departure on first appointment for the purchase of camp outfit (see under "Outfit").

(*h*) *Special Allowances.*—Allowances varying in amount up to 10s. a day are paid to medical officers detailed for certain special duties (for example, sanitary duties in large towns, the charge of laboratories for research, etc.).

Medical officers when acting as Assistant District Commissioners on the Gold Coast, in addition to performing their medical duties, receive duty pay at the rate of £80 a year, and when acting as District Commissioners in Ashanti at the rate of £140 a year.

LEAVE OF ABSENCE, PASSAGES, ETC.

4. Medical officers are in general subject to the Colonial Regulations in force for the time being, Chapter XVIII of which contains the rules specially applicable to West Africa. A brief summary of these rules is given here for convenience.

5. The ordinary tour of residential service is one year, followed by leave with full pay during the voyages to and from England, and for four or two months clear in England, according as the officer is returning for further service in West Africa or not. If an officer is detained beyond the year, additional leave is given with full pay for ten or five days in respect of each completed month beyond twelve, according as he is returning or not. If he is invalided before the end of the year, the leave with full pay is for the voyages and for ten or five days in respect of each completed month, according as he is returning or not. Leave granted on the understanding that an officer will return is known as "return leave," and any pay drawn in respect of such leave is liable to be refunded if he does not return.

6. Leave may be extended for a limited period with half or no pay on the ground of ill-health, or without pay on other grounds.

7. Free passages are given to all officers who are granted leave as above. A free passage is also given on first appointment, subject to the officer signing an agreement under which he is liable to refund its cost if he relinquishes his appointment for any other reason than physical or mental infirmity, or is removed for misconduct, within three years from the date of his arrival in West Africa.

8. Half-pay is given during the voyage out on first appointment.

9. Fuller information on these points will be found in the Colonial Regulations, which are published in the annual Colonial Office List (Messrs. Harrison and Sons, 59, Pall Mall, price 10s. 6d.), or may be consulted on application at the Colonial Office; and a copy of Chapter XVIII may also be obtained free on application to the Colonial Office.

GENERAL CONDITIONS OF ENGAGEMENT.

10. Every medical officer, unless exempted from this condition on account of previous Colonial service, or for any other reason, is engaged in the first instance on probation for one year from the date of his arrival in West Africa. If it is established to the satisfaction of the Governor or High Commissioner that an officer is not qualified for efficient service in West Africa, the Governor or High Commissioner, subject to the confirmation of the Secretary of State, will have full power to cancel his appointment at any time within the year without giving him any further compensation than a passage back to England, which will be granted only at the discretion of the Governor or High Commissioner.

11. At the end of the year of probation the officer may, on the recommendation of the Governor or High Commissioner, subject to the approval of the Secretary of State, be confirmed in his appointment with effect from the date of his first embarkation from England for West Africa; and unless it is expressly continued in this manner, the appointment will cease at the end of the year.

PRIVATE PRACTICE.

12. All medical officers, except the Principal Medical Officer, in each Colony or Protectorate, are allowed to take private practice, provided that it does not interfere with the faithful and efficient performance of their official duties, but it is within the power of the Governor or High Commissioner to withdraw or suspend the privilege in such places and for such periods as he may consider desirable.

OUTFIT.

13. *Instruments and Drugs* and all medical appliances are supplied by the Government.

14. *Camp Outfit* on the following scale must be taken out by every medical officer, and an allowance of £12 is given for its purchase: Camp table, 2½ ft. by 2 ft., camp bed (straps, etc.), hurricane lamp (with spare chimneys and wicks), enamelled basin, camp chair, portable bath, Berkefeld filter, stable bucket, mosquito curtains. Tents are supplied by the Government, if required.

15. *Clothing, etc.*—The following are recommended: Thin gauze vests and drawers, one or two pairs of thick Jaeger drawers, thin flannel shirts; white shirts, turned down collars for wear at head quarters (not required in Northern and Southern Nigeria); merino socks, one or two pairs of woollen socks, thick woollen cholera belts, thin flannel pyjamas and two thick), flannel dressing gown, medium great-coat; light tropical mackintosh, the seams should be sewn throughout, as those fastened only with composition fail to pieces after a few weeks; umbrella, either white linen with green lining, or ordinary black with white cover; shooting boots; a pair of high indiarubber rain boots for crossing swamps, etc., is useful; brush, comb, shaving-brush, razor, glass, tooth brushes, powder, sponge, soap, candles, needles and thread, etc.

16. *Miscellaneous Outfit.* Table ware (not required in Algeria)—plates, dishes, glass, knives, forks and spoons, cruet, tea and coffee pot, cups and

saucers, jugs, etc.; table cloths, napkins, dusters, glass cloths; corkscrew, turnscrew, tin-opener; kitchen ware (not required in Southern Nigeria)—kettles, cooking utensils, towelling; Camp canteen; water bottle; waterproof sheet; thick blankets; towels; sheets (if desired); pillow cases; good watches or jewellery should not be taken out, a small clock is useful; lounge chair (for voyage); shot gun, ammunition, hunting knife and belt, etc., if desired; tin boxes, to hold 65 lb. or less, are better than wooden boxes or portmanteaux. Transport is effected by means of native carriers, whose average load is 50 lb. each.

N.B.—A complete set of winter clothes and winter underclothing may be required on board ship if an officer's leave of absence takes him to England in the cold weather. Arrangements might preferably be made for these to meet the officer during the voyage, as they are apt to get destroyed is kept unused in West Africa.

17. The above lists are only intended as a guide to requirements. Many articles can be obtained in West Africa, though at a rather higher price than in England. As a general rule it is desirable for officers to take out as little as possible with them, but circumstances vary, and a newly appointed officer should always, if possible, consult someone who has recently been on the Coast. If he applies to the Colonial Office he will be placed in communication with some officer at home on leave of absence, who will be able to advise him what to do.

UNIFORM.

18. In Northern and Southern Nigeria there is a uniform prescribed for medical officers in common with other civil officers, particulars of which can be obtained from the Colonial Office. In the other Colonies medical officers at present wear no special uniform.

QUARTERS.

19. At all the recognized stations free single quarters, furnished in most cases, are provided for medical officers, or an allowance is paid in lieu of quarters. Information as to the nature of the quarters, the amount of furniture supplied, etc., may be obtained on application at the Colonial Office.

PENSIONS AND GRATUITIES.

20. The ordinary regulations relating to pensions and gratuities for West African service can be consulted at the Colonial Office, but for convenience a brief, though necessarily incomplete, account of them is given here.

21. On attaining the age of 50 years, or after eighteen years' service (of which at least twelve must have been residential), an officer is qualified for a pension calculated at one-fortieth of the last annual salary for each year of service.

22. If invalided after a minimum of seven years' service, he is qualified for a pension calculated at the same rate.

23. If invalided before completing seven years' service, he is qualified for a gratuity not exceeding three-quarters of a month's salary for each six months of service: provided that he has been confirmed in his appointment, and that he is specially recommended by the Governor or High Commissioner for such gratuity.

24. For the purpose of calculating the amount of these pensions and gratuities, leave of absence without salary is not counted, while leave with half salary is counted half.

25. In addition to the ordinary regulations, an officer of the West African Medical Staff enjoys the following special privilege. At the end of nine years (of which not less than six must have been residential) he will be permitted to retire with a gratuity of £1,000, or at the end of twelve years (of which not less than eight must have been residential) with a gratuity of £1,250. All claims to pension are, however, forfeited on the receipt of such a gratuity.

APPLICATIONS FOR APPOINTMENTS.

26. Applications for appointment as Medical Officers in the West African Medical Staff (the higher grades will usually be filled by promotion from the lower) must be British subjects of European parentage, and between 25 and 35 years of age; they must possess a complete double qualification, and must be on the *Medical Register*.

27. Preference will be given to unmarried candidates. Married ones are not excluded; but it should be remembered that passages for wives and children are not provided by the Government, that houses for them are rarely available, and that, except in the case of an officer dying on active service, no provision is made by the Government for a widow or orphans.

28. Candidates should, in the first instance, apply in writing to the Assistant Private Secretary to the Secretary of State, Colonial Office, Downing Street, London, S.W., stating generally their qualifications and enclosing a certificate of birth. A form of application will then be forwarded to them to fill up and return together with testimonials.

29. Candidates whom it is proposed to select for appointment will have to be medically examined by one of the medical advisers of the Colonial Office (or, in the case of those residing in a Colony, by a medical officer appointed by the Colonial Government), and no appointment will be made unless the candidate is declared to be physically fit for service in West Africa.

30. Candidates for medical appointments in West Africa are allowed to express a preference for any particular Colony or Protectorate, and their wishes in this respect will be borne in mind and met as far as possible, but they are liable to be posted in the first instance, or transferred afterwards if necessary, to any other West African Colony or Protectorate at the discretion of the Secretary of State.

31. Transfers from one Colony or Protectorate to another will, however, be made as seldom as possible, and will usually be restricted to the following cases:

(i) If an officer is appointed in the first instance as supernumerary to the establishment of one Colony or Protectorate, pending the occurrence of a vacancy in another Colony or Protectorate.
(ii) If an officer applies himself for transfer in the same grade.
(iii) On promotion.
(iv) Temporary transfers in cases of emergency.

INSTRUCTION IN TROPICAL MEDICINE.

32. Every candidate selected for appointment will, unless the Secretary of State decides otherwise, be required to undergo a course of instruction for two or three months either at the London School of Tropical Medicine, Royal Victoria and Albert Docks, E. (near Connaught Road Station), or at the Liverpool School of Tropical Medicine at the University of Liverpool. The cost of the tuition, fees, board, and residence during such instruction, amounting to a maximum of £48 8s. 10d., for three months, will be borne by the Government, and a daily allowance of 5s. (but no pay) will be paid to each candidate during the course, and subsequently up to the date of embarkation. These payments will be made subject to the candidate's signing an agreement by which he will be bound to refund them (1) if he declines to accept an appointment in any of the Colonies or Protectorates for which he may be selected by the Secretary of State, and (2) if he relinquishes the West African Service for any other reason than mental or physical infirmity, or is removed for misconduct, within three years of the date of his arrival in West Africa.

33. Half-pay begins from the date of embarkation.

34. If a medical officer has for any reason not taken a course of instruction prior to appointment, he may be required, or will on application be allowed, to take it during his first leave of absence. In this case the tuition fees, but not the fees for board and residence, will be paid by the Government, and no daily allowance will be given in addition to pay.

Applications for futher information should be made at the Colonial Office, Downing Street, S.W.

DENTAL SURGERY.

REGULATIONS OF THE GENERAL MEDICAL COUNCIL.

CANDIDATES for a diploma in Dental Surgery are required to produce certificates of having been engaged during four years in professional studies, and of having received three years' instruction in Mechanical Dentistry from a registered practitioner, or at some dental hospital where instruction is given in this subject. One year's bona-fide apprenticeship with a registered dental practitioner, or one year's instruction at a dental hospital, after being registered as a dental student, may be counted one of the four years of professional study. The three years of instruction in Mechanical Dentistry, or any part of them, may be taken by the medical student, either before or after his registration as a student; but no year of such mechanical instruction will be counted as one of the four years of professional study unless taken after registration.

A Register of Dental Students is kept by the Registrar of the General Medical Council, 299, Oxford Street, London.

Preliminary Education.—Dental students are subject to the same regulations as regards preliminary examination as medical students, but professional study may commence by pupilage with a registered dental practitioner.

DIPLOMAS.

The Royal College of Surgeons of England, the Royal College of Surgeons of Edinburgh, and the Faculty of Physicians and Surgeons of Glasgow, each grant a licence in Dental Surgery, and the Royal College of Surgeons in Ireland grants a licence in Dentistry, in all cases after the student has produced evidence of passing through the stated curriculum and prescribed examinations. Particulars can be obtained upon application to the Secretary of the Conjoint Board in England, Examination Hall, Victoria Embankment, London, W.C.; to Mr. James Robertson, Clerk to the Royal College of Surgeons, Edinburgh, 48, George Square, Edinburgh; to the Secretary of the Royal College of Surgeons in Ireland, Dublin; and as to the Faculty of Physicians and Surgeons, to Mr. Alexander Duncan, B.A., 242, St. Vincent Street, Glasgow.

The University of Birmingham grants the degree of Bachelor of Dental Surgery to students of its own school who have obtained a licence in Dental Surgery elsewhere at least one year previously, have produced evidence of certain additional study, and have passed the prescribed examination.

EDUCATION.

A candidate for the Diploma in Dentistry can obtain the necessary instruction in special dental subjects (the general subjects being attended at some general hospital) at the Dental Hospital of London (apply to the Dean at the Hospital, Leicester Square, W.C.); or at the National Dental Hospital and College, London (apply to the Dean, the National Dental Hospital, Great Portland Street, London, W.); at the Dental School of Guy's Hospital (apply to the Dean at the Medical School, Guy's Hospital, S.E.); at the University of Birmingham (apply to the Dean of the Medical Faculty, University of Birmingham); at Owens College, Manchester (apply to the Registrar, Owens College, Manchester); at the Liverpool Dental Hospital and School of Dental Surgery (apply to the Dean of the Medical Faculty, University of Liverpool: and at the Devon and Exeter Dental Hospital (apply to the Honorary Secretary of the Hospital). The Scottish Schools of Dentistry are the Incorporated Edinburgh Dental Hospital and School (apply to the Dean, 31, Chambers Street, Edinburgh); the Glasgow Royal Infirmary, Dental Department

(apply to the Dean of the Faculty of Medicine, Mr. R. T. Kent, St. Mungo's College, Glasgow); and Anderson's College Medical School, Glasgow (apply to the Secretary, Mr. D. M. Alexander, 97, West Regent Street, Glasgow).

UNIVERSITY OF BIRMINGHAM.

Degrees in Dentistry—namely, Bachelor and Master of Dental Surgery (B.D.S. and M.D.S.)—are granted by the University of Birmingham. All candidates for these degrees must pass the same Matriculation Examination as that required from candidates for medical degrees. The Degree of Bachelor of Dental Surgery is not conferred upon any candidate who has not obtained a Licence in Dental Surgery from some body legally entitled to confer such qualification. The candidate is not eligible for the degree until a period of twelve months has elapsed from the passing of his examination for the Licence in Dental Surgery. Of this period at least six months must be spent in the dental department of a general hospital approved by the University. *A.* In addition to the Licence in Dental Surgery the candidate must produce evidence that he has attended the courses required by medical students of the University in the following subjects, and passed the examinations held in the same for medical and surgical degrees: (*a*) Chemistry and Practical Chemistry, (*b*) Physics and Practical Physics, (*c*) Comparative Anatomy, (*d*) Anatomy and Practical Anatomy, (*e*) Physiology and Practical Physiology. *B.* That he has attended the following courses: (*f*) One Course of Lectures on Medicine, (*g*) One Course of Lectures on Surgery, (*h*) Special Courses of Lectures on the Surgery and Medicine of the Mouth, (*i*) Pathology and Bacteriology; and has passed the examinations for candidates for Dental degrees held in each of these subjects. *C.* That he has attended courses in: (*k*) Dental Histology and Patho-Histology; (*l*) Comparative Dental Anatomy; (*m*) Dental Surgery and Prosthetic Dentistry. *D.* That he has received instruction in the Clinical Examination of living cases at the dental department of a general hospital for a period of not less than six months. The final examination will deal with the subjects in Classes *C* and *D*. On the expiration of twelve months from the date of passing the examination for the Degree of Bachelor of Dental Surgery, the candidate will be eligible for that of Master of Dental Surgery. For this degree candidates will be required to submit a thesis containing original work and investigations in some subject connected with Dentistry, which thesis shall be submitted to examiners to be nominated by the Advisory Board. The degree will be awarded or withheld according to the report of these examiners.

The teaching of Dentistry is undertaken by the University acting in association with the Birmingham Dental Hospital and the Birmingham Clinical Board.

An Entrance Scholarship, value £37 10s., is awarded annually at the commencement of the Winter Session.

The Winter Session begins on October 5th, 1903, and the Summer Session on April 18th, 1904.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Candidates who register as Dental Students after January 1st, 1897, are required to pass three examinations—the Preliminary Science Examination, the First Professional Examination, and the Second Professional Examination—and to produce the following certificates before admission to the several examinations:

PRELIMINARY SCIENCE EXAMINATION.

1. Of having received instruction at an institution recognized for the purpose in Chemistry, Physics, and Practical Chemistry.
This instruction may be taken prior to the date of registration as a dental student.
2. Of having been engaged during a period of not less than three years in acquiring a practical familiarity with the details of Mechanical Dentistry, under the instruction of a competent practitioner, or under the direction of the superintendent of the mechanical department of a recognized dental hospital, where the arrangements for teaching Mechanical Dentistry are satisfactory to the Board of Examiners in Dental Surgery. In the case of qualified surgeons evidence of a period of not less than two instead of three years of such instruction will be sufficient.
This instruction may be taken prior to the date of registration as a dental student.
3. Of registration as a dental student by the General Medical Council, 299, Oxford Street, London, W.
4. Of having attended at a recognized dental hospital and school:
(*a*) A course of lectures on Dental Metallurgy.
(*b*) A course of Practical Dental Metallurgy.
(*c*) A course of lectures on Dental Mechanics.
(*d*) A course of Practical Dental Mechanics, including the manufacture and adjustment of six dentures and six crowns.

SECOND PROFESSIONAL EXAMINATION.

5. Of having been engaged during four years in the acquirement of professional knowledge, subsequently to the date of registration as a dental student.
6. Of having attended at a recognized dental hospital and school:
(*a*) A course of Dental Anatomy and Physiology.
(*b*) A separate course of Dental Histology, including the preparation of Microscopical Sections.
(*c*) A course of Dental Surgery.
(*d*) A separate course of Practical Dental Surgery.
(*e*) A course of not less than 5 lectures on the Surgery of the Mouth.*
(*f*) A course of Dental Bacteriology.†
(*g*) A course of Dental Materia Medica.†

* These lectures may be given either at a recognized dental hospital and school, in which case the lecturer must be a qualified surgeon practising surgery: or they may be given at a recognized medical school, and may form part of the course required by Clause 8 (*d*).
† These certificates will only be required of students who enter at a recognized dental hospital and school on or after May 1st, 1902.

7. Of having attended at a recognized dental hospital, or in the dental department of a recognized general hospital, the practice of Dental Surgery during two years.
8. Of having attended at a recognized medical school:
(*a*) A course of lectures on Anatomy.
(*b*) A course of lectures on Physiology.
(*c*) A separate Practical Course of Physiology.
(*d*) A course of Lectures on Surgery.
(*e*) A course of Lectures on Medicine.
9. Of having performed dissections at a recognized medical school during not less than twelve months.
10. Of having attended, at a recognized hospital or hospitals, the Practice of Surgery and Clinical Lectures on Surgery during two winter sessions.
11. Of being 21 years of age.

Note.—Professional study prior to the date of registration as a dental student is not recognized except in the case of Chemistry, Physics, and Practical Chemistry, and of instruction in the details of Mechanical Dentistry (see Clauses 1 and 2), and will not be counted under any circumstances in lieu of part of the four years' study subsequent to the date of registration as a dental student, required by Clause 5.

EXAMINATIONS.

The Preliminary Science Examination consists of Chemistry, Physics, and Practical Chemistry, and will be identical with Part I of the First Examination of the Examining Board in England. Candidates may present themselves for this examination before entering at a dental school on production of certificates of having received instruction in chemistry, physics, and practical chemistry. A candidate who produces satisfactory evidence of having passed an examination for a degree in medicine, conducted at a university in the United Kingdom, in India, or in a British Colony, on the subjects of the Preliminary Science Examination, will be exempt from that examination.

The First Professional Examination consists of Mechanical Dentistry and Dental Metallurgy. Candidates who have passed the Preliminary Science Examination may present themselves for the First Professional Examination for the Licence after the completion of six months' attendance at a recognized dental hospital and school, on production of the certificates already specified.

At the Examination in Mechanical Dentistry candidates will be required to provide themselves with the following instruments, namely, wax spatula, double-ended sculptors, gouge and handle, vulcanite files, gold files, pliers, pin-roughing and bending and snipe-nose cutting nippers, broaces and handles, fret saw, one Melotte's moulding outfit, one Bunsen burner (laboratory), fine saws, Chasers special blowpipe for mouth 12 in., solder tweezers, crown holder, shears curved, collar pliers, N.P. pin nippers plain, rivetting hammer, dividers 4½ in.

The following instruments will be supplied by the hospital at which the candidates are to be examined—namely, hammers for striking up plates, horn mallets, ordinary casting materials and apparatus.

A Synopsis of the Examination in Dental Metallurgy, which will be conducted by written paper, will be found on page 5 of the Regulations.

The *Second Professional Examination* consists of:

Part I.—General Anatomy and Physiology, General Pathology and Surgery.

Part II.—Dental Anatomy and Physiology, Dental Pathology and Surgery, and Practical Dental Surgery.

The Examination is partly written, partly practical, and partly oral.

The Written Examination in Part I comprises General Anatomy and Physiology, General Pathology and Surgery; and in Part II Dental Anatomy, Physiology, Dental Pathology and Surgery.

The Oral Examination in each Part comprises the several subjects above mentioned, and is conduced by the use of preparations, casts, drawings, etc.

At the Practical Examination in Part II candidates may be examined:

(*a*) On the treatment of Dental Caries, and may be required to prepare and fill cavities with Gold or Plastic filling or material, or to do any other operation in Dental Surgery.

(*b*) On the Mechanical and Surgical Treatment of the various irregularities of Children's Teeth.

Candidates who have passed the First Professional Examination at least six months previously may present themselves for the two parts separately, or they may take the whole examination at one time. Before presenting themselves for Part I they must produce the certificates required under Section 1, Clauses 5, 8, 9, 10, and 11, and before taking Part II. the certificates required under Section 1, Clauses 5, 6, 7, and 11.

Candidates who have passed the Second Examination of the Examining Board in England, or who shall produce evidence of having passed the Examination in Anatomy and Physiology required for the Licence in Surgery of the Royal College of Surgeons of Edinburgh, the Royal College of Surgeons in Ireland, or the Faculty of Physicians and Surgeons of Glasgow, or an Examination in Anatomy and Physiology required for a Degree in Medicine or Surgery at a University in the United Kingdom, will be exempt from re-examination in those subjects in Part I.

Candidates who are members of the College, or who have passed the Examination in Surgery of the Examining Board in England, or who produce evidence of having passed the Examination in Surgery for the Licence in Surgery of the Royal College of Surgeons of Edinburgh, the Royal College of Surgeons in Ireland, or the Faculty of Physicians and Surgeons of Glasgow, or an Examination in Surgery for a Degree in Medicine or Surgery at a University in the United Kingdom, will be exempt from examination in Surgery and Pathology in Part I.

Fees.—The fee for the Diploma of the Licence in Dental Surgery is 20 guineas, and is payable in the following manner—namely:

		£	s.	d.
Preliminary Science Examination. Each admission ...		3	3	0
First Professional ,, ...		2	2	0
Second ,, ,, ,,	Part I ...	2	2	0
	Part II ...	3	3	0
Amount payable before grant of diploma		10	10	0
	£21	0	0	

Fees for re-examination will not be allowed to count as part of the fee of 20 guineas payable for the Diploma, except in the case of any candidate being on June 1st, 1900, registered by the General Medical Council as a Dental Student, and becoming within six years from the date of his registration entitled to receive the Diploma.

The Preliminary Science Examination will be held in January, March or April, July, and October in each year.

The First and Second Professional Examinations will be held in May and November in each year.

N.B.—All applications with reference to the Examination for the Diploma in Dental Surgery should be addressed to Mr. F. G. Hallett, Secretary of the Examining Board in England, Examination Hall, Victoria Embankment, London, W.C.[1]

Royal College of Surgeons in Ireland.

Candidates for the Licence in Dental Surgery are required to pass three examinations—namely, *Preliminary* (in General Education), *Primary Dental* and *Final Dental*.

Primary Dental Examination.—Every candidate is required, before admission to the Primary Dental Examination, to produce evidence (1) of having passed a recognized Preliminary Examination, and of having been registered as a medical or dental student by the General Medical Council; (2) of having, subsequently to registration as a dental or medical student, attended at a recognized medical school (*a*) one course (six months) lectures on Practical Anatomy, including Dental Anatomy; (*b*) two courses (six months each) Demonstrations and Dissections; the certificate must include a statement that the candidate has dissected the head and neck at least three times; (*c*) one course (six months) lectures on Chemistry; (*d*) one course (six months) lectures on Physiology, including Dental Physiology; (*e*) one course (three months) lectures on Materia Medica; (*f*) one course (six months) lectures on Surgery; (*g*) one course (six months) lectures on Medicine; (*h*) one course (three months) Practical Chemistry, including metallurgy; (*i*) one course (three months) Practical Physiology and Histology, including Dental Physiology and Histology, human and comparative; (3) of having attended Clinical Instruction at a recognized general hospital for one year. Primary Dental Examination, £10 10s.; Re-examination, if rejected, £5 5s. Fees are not returned to candidates who may fail to present themselves without having given two days' previous notice to the Registrar, or who may have been rejected. All fees are to be lodged to the credit of the Royal College of Surgeons at the Bank of Ireland. A rejected candidate will not be again admitted to examination until after a period of three months. Candidates who have passed in Chemistry and Physics at a First Professional Examination under the Conjoint Board with the Royal College of Physicians of Ireland, or with the Apothecaries' Hall, or an equivalent examination recognized by the College, are exempted from examination in these subjects at the Primary Dental Examination. Candidates will not obtain credit for passing any part of the examination unless they pass at the same time in at least two of the following subjects, save in case they need a lesser number to complete their examination. 1. Physics: Heat, Electricity, and Light (as in Ganot's *Natural Philosophy*). 2. Chemistry, including Metallurgy; Elementary Chemistry (inorganic), including Metallurgy, as found in Roscoe's *Lessons in Elementary Chemistry*, with a practical Examination in the Laboratory. 3. Anatomy: The Bones, the names and positions of the principal Muscles, Blood Vessels and Nerves; the elementary anatomy of the Viscera, of the Thorax and Abdomen, and of the Brain and Cranial Nerves; the anatomy of the Mouth and Jaws, and parts in relation thereto. 4. Physiology and Histology: An elementary knowledge of the functions of Digestion, Circulation, Respiration, and the Nervous System; and an elementary knowledge of Histological Structures, the Physiology and Histology of the Mouth and the organs related thereto. 5. Surgery: Inflammation, its varieties and consequences; Fractures, Dislocations, and Injuries of the Mouth, Face, Jaw, and Parts in relation thereto, their immediate and remote effects; Surgical Diseases of Blood Vessels, Diseases of the Mouth, Bones and Joints thereof, Wound Infection, Pyaemia, Septicaemia, Use of Anaesthetics, Accidents therefrom, and their treatment.

Final Dental Examination.—Candidates must produce evidence of having passed the Primary Dental Examination of this College, or the Third Professional Examination under the Conjoint Board with the Royal College of Physicians in Ireland, or with the Apothecaries' Hall, or an equivalent examination recognized by the College. Candidates are required to produce certificates of having attended subsequent to registration as a dental or medical student: 1. The following courses of lectures recognized by the College: Dental Surgery and Pathology (two courses), Dental Mechanics (two courses). 2. For two years the practice of a dental hospital recognized by the College, or of the dental department of a general hospital so recognized. 3. Of having been engaged during four years in Professional Studies. 4. Of having received three years' instruction in Mechanical Dentistry from a registered dentist.[1] Candidates holding a diploma in Surgery will be admissible to the Final Dental Examination on producing certificates of having attended: 1. One course of lectures on Dental Surgery and Pathology. 2. One course of lectures on Dental Mechanics. 3. For one year the practice of a dental hospital recognized by the College, or of the dental department of a general hospital so recognized, where such attendance has been subsequent to the date of diploma. This remission (3) has been made on the understanding that the surgeon devotes his whole time to dental work. 4. Of having been engaged during a period of not less than two years in acquiring a practical familiarity with the details of Mechanical Dentistry, under the instruction of a registered dentist. Candidates are examined in: Dental Surgery—Theoretical (including Dental Pathology), Clinical, and Operative. Dental Mechanics—Theoretical, Clinical, and Practical (including the Metallurgy of the workshop). Candidates must pass in all the subjects at the same time. Final Dental Examination.—Candidates holding L.R.C.S.I., or students who have passed Primary Dental or Third Pro-

[1] A Book of Questions set at the Examination for the Licence in Dental Surgery for the years from 1892 to 1900 may be obtained on application to Messrs. Taylor and Francis, Publishers, Red Lion Court, Fleet Street, London, E.C. Price 6d. each, post free 6½d.

[1] The three years' instruction in Mechanical Dentistry, or any part of them, may be taken by the dental student, either before or after his registration as a student; but no year of such instruction in Mechanical Dentistry shall be counted as one of the four years of professional study unless taken after registration. One year's bona-fide instruction from a registered dentist after being registered as a dental student may be counted as one of the four years of professional study.

fessional Examination of the College, £10 10s.; re-examination £5 5s. Fees for Final Examination of all other candidates, £26 5s. Re-examination, £10 10s. Extra fee for Special Examination, £5 5s. Fees are not returned to candidates who may fail to present themselves without having given two days' previous notice to the Registrar, or who may have been rejected. All fees are to be lodged to the credit of the Royal College of Surgeons at the Bank of Ireland. A rejected candidate will not be again admitted to examination until after a period of three months. The Council has power to admit to examination, *sine curriculo*, candidates whose names are on the *Dentists Register*, published under the direction of the General Medical Council, and who are unable to furnish the certificates required by the foregoing regulations, on presentation of the schedule of application as hereinafter set forth, accompanied by any certificate they may have of general or professional education, and by the required fee. The application of the candidate for examination shall be made on a form, obtainable at the College, setting forth a certificate, signed by two Fellows, Members or Licentiates of a College of Surgeons, and by two Licentiates in Dental Surgery in the Royal College of Surgeons in Ireland [or two members of the British Dental Association, or of the Odontological Society], to the effect that applicant is of good moral character, has been for five years engaged in the practice of Dentistry, is a registered dentist, and has not, during the past two years, attracted business as a dentist by advertising or other unbecoming practices. The examination and fees are the same as for the Final Dental Examination of other candidates.

OPENING OF THE MEDICAL SCHOOLS.

The arrangements for the opening of the Winter Session in the Medical Schools and Colleges in the United Kingdom, as far as they are at present complete, are as follows:

LONDON.

St. Bartholomew's Hospital and College.

The Winter Session will begin on Thursday, October 1st. The Old Students' Dinner will be held on the same evening in the Great Hall of the Hospital at 6.30 for 7 o'clock, Mr. Bruce Clarke, F.R.C.S., in the chair.

Charing Cross Hospital Medical School.

The Winter Session will commence on Thursday, October 1st, with an introductory address at 4 p.m. by Sir Charles Wyndham. The Old Students' Dinner will be held on the same evening at the Hôtel Cecil.

St. George's Hospital Medical School.

The Winter Session will begin on Thursday, October 1st, when an Introductory Address will be delivered by Dr. W. R. Dakin, M.D., F.R.C.P., at 4 p.m. The Annual Dinner will be held the same evening at the Whitehall Rooms, Hôtel Métropole, Professor Clifford Allbutt, F.R.S., in the chair.

Guy's Hospital Medical School.

The Winter Session will begin on Thursday, October 1st, when the Prizes will be distributed by the Lord Mayor of London. A House Dinner will be held the same evening in the College Dining Hall, Dr. P. H. Pye-Smith in the chair.

King's College, London.

The Winter Session will begin on Thursday, October 1st, with an Introductory Address at 4 p.m. by Sir John Alexander Cockburn, K.C.M.G., M.D. The Old Students' Dinner will be held in the evening at the Hôtel Cecil at 7 p.m., Dr. C. H. Allfrey in the chair.

London Hospital Medical School.

The Winter Session will commence on Thursday, October 1st. The Annual Dinner will be held in the College Library the same evening, Mr. Lewis Mackenzie, F.R.C.S., in the chair.

St. Mary's Hospital Medical School.

The Winter Session will begin on Thursday, October 1st. The Annual Dinner will be held on Friday, October 2nd, at the Whitehall Rooms, Hôtel Métropole, Dr. R. Farquharson, M.P., in the chair.

Middlesex Hospital.

The Winter Session will commence on Thursday, October 1st, when Mr. William Hern, M.R.C.S., will give an Introductory Address, after which the prizes gained during the previous year will be distributed by the Honourable Mr. Justice Wills. The Annual Dinner of past and present students will take place the same evening at 7 o'clock at the Trocadero Restaurant, under the presidency of Dr. William Pasteur.

St. Thomas's Hospital Medical School.

The Winter Session will open on Thursday, October 1st. The Annual Dinner, which all former and present students are invited to join, will take place on Friday evening, October 2nd, in the Hôtel Cecil at 6.30 for 7 o'clock, when Dr. C. J. Cullingworth will take the chair.

University College, London.

The Winter Session of the Medical Faculty will commence on Monday, October 5th, when an Introductory Lecture will be given at 4 p.m. by Professor E. H. Starling, F.R.S. The Old Students' Dinner will be held on Monday, October 5th, at the Hôtel Cecil.

Westminster Hospital Medical School.

The Winter Session will begin on Thursday, October 1st. The Annual Dinner will take place on Friday, October 2nd, at the Trocadero Restaurant, when the chair will be taken by Mr. W. G. Spencer, M.S.

London School of Medicine for Women.

The Winter Session will open on Friday, October 2nd.

London School of Tropical Medicine.

The Winter Session will commence on Thursday, October 1st.

PROVINCES.

University of Birmingham.—The Winter Session will commence on Monday, October 5th.

University College, Bristol.—The Winter Session will commence on Thursday, October 1st.

University College of South Wales and Monmouthshire, Cardiff.—The Winter Session will begin on Tuesday, October 6th.

Yorkshire College, Leeds.—The Winter Session will open on Thursday, October 1st.

University of Liverpool.—The Winter Session will begin on Thursday, October 1st, when the Opening Address will be delivered by Sir Dyce Duckworth, M.D., F.R.C.P.

Owens College, Manchester.—The Winter Session will begin on Thursday, October 1st.

University of Durham College of Medicine, Newcastle-on-Tyne.—The Winter Session will commence on Thursday, October 1st.

University College, Sheffield.—The Winter Session will commence on Thursday, October 1st, and the Introductory Address will be delivered on Thursday, October 15th, by Sir Michael Foster, K.C.B., M.P.

SCOTLAND.

University of Edinburgh.—The Winter Session will commence on Tuesday, October 13th.

Medical College for Women, Edinburgh.—The Winter Session will commence on Tuesday, October 13th.

Edinburgh Extra-Academical School.—The School will open on Tuesday, October 13th.

University of Aberdeen.—The Winter Session will commence on Tuesday, October 13th.

University of St. Andrews.—The Winter Session will commence on Tuesday, October 13th.

University of Glasgow.—The Winter Session will be opened on Thursday, October 15th. The Winter Session of Queen Margaret College Medical School for Women will begin on Thursday, October 15th.

Anderson's College Medical School.—The Winter Session will open on Thursday, October 15th.

St. Mungo's College, Glasgow. The Winter Session will open on Thursday, October 15th.

University College, Dundee. The Winter Session will open on Wednesday, October 14th.

IRELAND.

University of Dublin: School of Physics.—The Winter Session will commence on Thursday, October 1st.

Royal College of Surgeons in Ireland: Schools of Surgery. The Winter Session will commence on Thursday, October 1st.

Queen's College, Belfast. The Winter Session will begin on Tuesday, October 20th.

Queen's College, Cork.—The Winter Session will begin on Tuesday, October 20th

SEVENTY-FIRST ANNUAL MEETING
OF THE
British Medical Association.

Held in Swansea, July 28th, 29th, 30th, and 31st 1903.

PROCEEDINGS OF SECTIONS.

SECTION OF PATHOLOGY.

D. J. HAMILTON, M.B., F.R.C.S.E., F.R.S.E., President.

OPENING ADDRESS ON THE INOCULABILITY OF HUMAN TUBERCULOSIS UPON BOVINES.

By D. J. HAMILTON, M.B., F.R.C.S.E., F.R.S.E.,
Professor of Pathology, University of Aberdeen; President of the Section.

PROFESSOR HAMILTON said: At the meeting in Manchester last year I read a communication upon the relationship of human tuberculosis to that of bovines, and this year I again venture to present the subject to your notice. The paper by Mr. Young, Lecturer on Veterinary Hygiene in the University of Aberdeen, and myself, published in the *Transactions* of the Highland and Agricultural Society for this year,[1] has been criticized pretty freely; and it is with the view of replying to this criticism that I have framed the following observations. My excuse for introducing anything so egotistical to the notice of the Section is that these criticisms suggest matter for debate, and hence possibly may call forth some remarks from those interested in this most absorbing question. One of the critiques I refer to was contained in a leading article of our own JOURNAL;[2] and with your permission I shall make special reference to several of the points raised in it.

The experiments upon which the paper in question was founded were performed upon calves, and were devised with the purpose of testing the assertion made by Professors Koch and Schütz that human tuberculosis cannot be conveyed to bovines by any means of inoculation. In the article with which the JOURNAL honoured us, it is asserted that Mr. Young and myself "have been a little too hasty in drawing general conclusions from a limited number of experiments." What the limit of experiments is to be which is to satisfy the writer is not stated, but it must be borne in mind that our conclusions, although founded upon our own experience, have been ratified and confirmed by others who before and since have made experiments on similar lines.

The actual number of experiments made by Professors Koch and Schütz with the view of testing whether human tuberculosis can be transferred to bovines was nineteen, and it was upon these nineteen experiments that their famous announcement was based. Our experiments on the calf were also nineteen in number. In fact, twenty calves were actually selected in making up our four series of observations, but one of them died before being inoculated, and while the animal was undergoing preliminary observation. Of these nineteen calves, fifteen undoubtedly had human tuberculosis conferred upon them by feeding, respiration, inoculation, etc., while the remaining four animals either died from intercurrent complications unconnected with the disease or the result was doubtful, and, consequently, they were rejected. Of these four rejected cases, one died from septicaemia, another apparently from enteritis, while the other two, we acknowledge, proved negative. Of the fifteen cases, on the other hand, which I have referred to as having been successful, the naked-eye appearance of the parts, the occurrence of a tuberculous structure within them, the presence of the bacillus of tubercle, and, finally, the reinoculation of the disease upon the guinea-pig, proved beyond the shadow of a doubt that the calves we employed had become inoculated with the human disease. When inoculation of any virus is practised on the lower animals, the fact of the disease being communicated to a single host points a certain lesson. When this is repeated on a second host the evidence becomes more striking; but when a series of fifteen animals out of nineteen is successfully inoculated, I think that, with all due deference to the writer in the BRITISH MEDICAL JOURNAL, there is a very substantial basis to found upon, especially when it is borne in mind that certain of the rejected cases died from disease unconnected with the experiment. Allowing for the vicissitudes naturally incumbent upon inoculation of the lower animals, the above result would be held, I think, by most unprejudiced observers to be fairly convincing.

We have been taken to task, and it has been urged in argument against us as an error in judgement, that we have brought forward a case which is admittedly inconclusive in support of a particular point. The case in question was a feeding experiment, and is No. 4 of our first series, while the statement to which exception is taken is that "it seems probable, at least, that the glandular enlargement was tuberculous, but so sparsely distributed was the bacillus throughout the parts that it failed to reveal itself either on microscopic examination or after inoculation." On reading over the case and comparing it with any other of the feeding experiments, I must confess that an unbiassed observer would probably say that the remark was justified by the *post-mortem* appearances. It was only a suggestion, nothing more. We founded nothing upon the case, and had our critic been careful enough to have looked through what is said about it, he would have found that we do not bring forward this experiment in support of any point of a positive nature, and that in the summary of the whole series given at the end of our paper, this particular example is specially referred to as having proved negative. It is one of the four out of the nineteen in which we admit a negative or doubtful result was obtained.

Again, it has been asserted that we did not test all our animals previous to inoculation with tuberculin, and that consequently some of those which we allege contracted the disease from the inoculation of human tubercle upon them may have been tuberculous antecedent to the performance of the experiment.

In reply to this objection, it is to be remarked that the tuberculin test was omitted in certain of the experiments for a very good reason. Had we not done so, and had our cases proved negative, it might certainly have been urged against us that the cause of failure had been the immunity derived from the tuberculin. The ages of the six untested calves employed in our experiments were in two instances a couple of weeks, and in the others respectively one month, seven weeks, eight weeks, and seven to eight weeks. From the age of the first two animals, it would seem very unlikely that they had acquired tuberculosis before being inoculated, while the others appeared to be in perfect health at the time, and were strong and vigorous. One of these six untested animals proved negative, another died from intercurrent causes, and both of these are included among the number of cases which we admit are either negative or in which the animal had died from septicaemia or other like complication. In the remaining four the tendency of the glandular enlargements to spread upwards from the point of inoculation, with or without the presence of a primary cheesy focus, was eminently suggestive of the disease having been engrafted from the virus introduced into the inoculation wound. Had the same sequence of events occurred in the guinea-pig, employed experimentally, I venture to think that no pathologist skilled in the interpretation of inoculation lesions would have had any hesitation in concluding that the inoculation of the tuberculous virus and the manifestations following upon it were to be regarded otherwise than as cause and effect.

The only other two animals which were not tested with tuberculin previous to inoculation were respectively two days and a few days old. Is it at all likely that these were previously tuberculous? And, moreover, supposing that they had been tuberculous from natural causes, would the disease have taken the form of a chain of eminently tuberculous glands and other tuberculous deposits stretching up from the point of introduction, and present only in the limb which had been inoculated?

I cannot, therefore, bring myself to believe that any of the calves which were not tested with tuberculin had previously acquired tuberculosis. The age at which they were employed for inoculation was to a certain extent a safeguard against any such fallacy. We purposely avoided older animals in order to reduce this danger to a minimum. In all other cases the animals were previously tested with tuberculin and did not react. They reacted freely when they became tuberculous, and we found that the injection of tuberculin did not apparently interfere in any way with the result.

One correspondent reminds us that the glands in the calf are naturally larger than in the adult, and that we may have mistaken this condition for one due to our inoculations. I trust my colleague will give us credit for having got thus far. The glands we refer to were as a rule huge tumour masses which arrested the attention the moment they came into

view. Normal glands, besides, do not show nodules containing a giant-cell reticulum interspersed with the tubercle bacillus, nor do they confer tuberculosis when inoculated upon the guinea-pig.

The critic writing in the BRITISH MEDICAL JOURNAL (loc. cit.) remarks that the details of our cases are far too scanty. "What is wanted," he says, "is a detailed account of the histology and bacteriology of each organ, gland, or group of glands described as tuberculous which shall place the diagnosis of its tuberculous character upon an objective basis." This certainly indicates a thoroughness for which we were not prepared, but, without any show of vaunting our own work, I would ask whether the writer can point to any series of experiments in which detail has been more attended to than in these. Take those of Professors Koch and Schütz, the prime originators of the controversy. Do they contain anything like the detailed observation in our own? I had thought that where the gross appearances were indicative of tuberculosis, where the microscopic appearances in certain of the organs implicated supported this view, and where the bacillus of tubercle was found in the affected parts, the evidence was pretty strong for the case being one of tubercle.

Our experiments go to confirm those supporting the unity of the bovine and human organism. There was a time when I was inclined to believe in the dual theory, and at the last meeting of this Association I suggested that possibly the manifestations of local tuberculosis in man were to be ascribed to bovine origin, those which ran a rapid course to a bacillus of human origin, an idea which has also found favour at the hands of Dr. Nathan Raw. A large number of my inoculations were made from enlarged cervical glands without there having been pulmonary or other complication, but a certain proportion were from other human sources. Both of these we found were inoculable upon the calf, and hence I am inclined to believe, so far as our experiments go in the direction of proof, that either the bacilli in bovines and in man are alike, or that the calf is susceptible to both. It would be my last wish to appear to be dogmatic on the subject, but, so far as I see at present, the weight of evidence seems to favour the former view—namely, that the differences perceptible between the one and the other are the result of environment rather than dependent upon more deep-seated and radical factors.

Notwithstanding what the BRITISH MEDICAL JOURNAL critic says in disparagement, I still believe that the two cases in which we reinoculated human tuberculosis from one calf to another, with the result that the virulence of the organism increased vastly, were genuine experiments, and that the results, as suggested, were not due to mere accidental over-susceptibility of the two animals employed. It would have been remarkable if these two animals had proved more susceptible than all the others, the very two selected for this experiment. Besides, the susceptibility of calves to tuberculosis seems to vary much less than the writer supposes. It seems to be wonderfully constant.

In conclusion, let me say that it has been the last thing in my mind to reason beyond our facts, and if such an idea has taken root in the fancy of any one reading our article I can only say that such was never my intention. Might I again remind the meeting, however, that our results have been confirmed on practically all hands where the same line of experiment has been followed out? The results of the inquiry made even by the German Tuberculosis Commission agree with our own in the main issues. Hence, I cannot but think that the question of the transmissibility of human tuberculosis to the bovine is pretty well settled in the affirmative.

The opposite side of the question, whether bovine tuberculosis is transmissible to man, can, of course, never be proven experimentally, and must for ever remain a matter of conjecture.

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[1] Report of an Investigation into the Relationship of Human Tuberculosis to that of Bovines, by D. J. Hamilton, M.B., Professor of Pathology, and J. McLauchlan Young, F.R.C.V.S., Lecturer on Veterinary Hygiene, University of Aberdeen. *Highland and Agricultural Society's Transactions*, 1903. [2] BRITISH MEDICAL JOURNAL, April 25th, p. 979.

Dr. NATHAN RAW congratulated Professor Hamilton on the brilliant experimental work which he had recently concluded as showing the susceptibility of cattle to human infection. Although it was evident that human tubercle could be conveyed to cattle, it must ever remain experimentally unproved that bovine could be conveyed to humans, but the clinical and pathological evidence was strongly suggestive that in a large number of cases children (adults not so frequently) were often attacked by tuberculosis of the abdomen which was probably bovine. This process nearly always commenced in the abdomen, and spread through the peritoneum and retro-peritoneal glands through the diaphragm to the lungs, and if the patient lived long enough, the process extended to the meninges, and set up tuberculous meningitis and death. It was a point of interest that in hospital one saw the affection commence in the abdomen, and gradually or rapidly (according to the severity of the infection) spread upwards through the diaphragm to the lungs. These cases could always be attributed to the ingestion of cow's milk, as he had never seen a case of tuberculosis of the abdomen which had not been fed on cow's milk for some considerable time.

TWO CASES OF OBLITERATIVE ARTERITIS IN YOUNG MEN LEADING TO GANGRENE IN EXTREMITIES.

BY

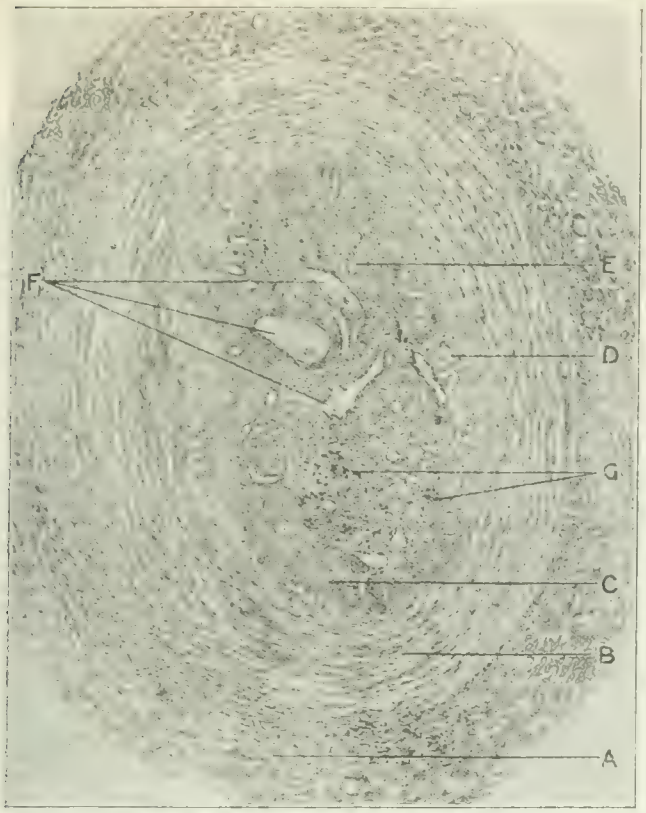
E. MICHELS, M.D., F.R.C.S., Surgeon, and F. PARKES WEBER, M.D., F.R.C.P., Physician, to the German Hospital, Dalston.

DURING the last few years we have had the opportunity of observing two cases of localized gangrene in extremities due to arterial disease in young men. One case was a typical one of the so-called obliterative arteritis. In the other case certain nervous symptoms formed a complication, and possibly the vascular changes were partly of nervous origin. We will consider the simpler of the two cases first.

CASE I.—Solomon A., a Jewish tailor, now aged 37 years, was admitted into the German Hospital, June 7th, 1902. He had emigrated to London from Russian Poland about five years previously (1897). Up to that time he had enjoyed good health. There is no evidence pointing to syphilis, ergotism, alcoholism, or poisoning by lead or arsenic. He has always had sufficient to eat. He has, however, from boyhood been accustomed to smoke a good deal, often ten to fifteen cigarettes a day, and during the last two or three years has taken much weak tea, sometimes ten to fifteen cups a day. The first symptoms of his present illness were paraesthesiae in the extremities, noticed soon after his emigration to England. Owing to partial gangrene and severe pain the left big toe was amputated two years ago (1900). Ulceration occurred in the stump, and in the following year (September, 1901), whilst the patient was in Paris, the left leg was amputated through the junction of the upper and middle thirds of the tibia. The stump healed fairly quickly, and for some months the patient was satisfied with his condition. In May, 1902, however, there was severe pain and commencing gangrene in the right big toe, owing to which it was amputated by Dr. Michels early in July. There was much too little bleeding at the operation, and the wound did not heal properly. In August, 1902, thickening and absence of pulsation were noted in the lower part of the left radial artery. Owing to the continued complaint of pain Dr. Michels performed Chopart's amputation of the right foot in September, 1902. There was hardly any bleeding at the operation. The patient for some time afterwards complained of a good deal of pain in the stump, but the wound healed slowly, and he was able to leave the hospital in January, 1903. At that time pulsation could be felt in both femoral arteries, but better on the right side than on the left. No pulsation could be felt in any part of the left radial artery, but the other arteries of the upper extremities appeared healthy, and in neither of these extremities was there any cutaneous or muscular abnormality to be noted. Patient's general condition seemed good, and the thoracic and abdominal viscera appeared healthy. The urine had never shown anything abnormal. When last seen (July 7th, 1903) the patient complained of occasional pains in the left forearm and left thigh. The vascular disease seemed not to have progressed, but pulsation had not returned in the left radial artery.

Examination of the Amputated Foot (in which we were kindly assisted by Dr. H. Ebbinghaus).—Sections for microscopical examination were cut from the following parts: (1) Dorsalis pedis artery near the site of amputation; (2) internal plantar artery; (3) extensor brevis digitorum and adductor pollicis muscles; (4) a piece of skin from the dorsum of the foot. The muscles and skin showed practically nothing abnormal, but the two arteries examined were found blocked. The lumen of the internal plantar artery was occupied by blood clot, in which organization was commencing in the peripheral portions, that is, the portions adjoining the diseased and somewhat thickened intima. The elastic layer of the intima could not be made out, and the layers of the muscular coat (tunica media) were separated by cellular infiltration. There was likewise a good deal of infiltration in the tunica adventitia and surrounding connective tissue. The lumen of the dorsalis pedis artery was occupied by newly-formed connective tissue, in which were many blood-pigment granules and several small channels lined by endothelium, some of them occupied by red blood corpuscles. The intima was thickened and its elastic layer, which (unlike that of the internal plantar artery) remained distinct, formed a very wavy line, showing that the artery was not distended by the material blocking its lumen

The middle and external coats were practically normal, but in the neighbourhood was some cell infiltration around a minute arteriole.



DORSALIS PEDIS ARTERY FROM CASE NO. 1.

A, tunica adventitia; B, tunica media; C, tunica intima, irregularly thickened, separated from the tunica media by the wavy elastic lamina (D). The space within the intima is filled with newly-formed connective tissue (E). In this connective tissue are several channels (F) lined by endothelium, some of them containing blood, and scattered in its meshes are bright brown blood-pigment granules, a special collection of which has been somewhat diagrammatically indicated in the drawing at G.

The question arises, was the blocking of the dorsalis pedis artery the result of thrombosis with subsequent organization, or was it the result of proliferative endarteritis with subsequent vascularization of the proliferating intima? In the latter case one (or more) of the channels lined by endothelium might represent the remains of the original lumen. On the other hand, the presence of the blood pigment granules points, we think, to there having been thrombosis with subsequent organization of the clot, the channels lined by endothelium being probably newly-formed blood vessels in the organized thrombus. The bones of the foot in this case were found to have undergone no atrophic process such as was evidenced in the second case.

This case appeared to us a typical one of "endarteritis obliterans," or better "arteritis obliterans," arising in an apparently healthy man without obvious cause. The pathology of this affection has been so ably studied by F. von Winiwarter,[1] C. Sternberg,[2] A. A. Wwedensky,[3] W. von Zoege-Manteuffel,[4] Bunge,[5] P. Wulff,[6] O. von Wartburg,[7] and Pearce Gould;[8] and the literature and views of various authors have been so recently discussed by Bunge and von Wartburg that we need not enter on these matters at length. Cases have also been described in England by Pearce Gould,[9] W. B. Hadden,[10] W. G. Spencer,[11] A. Dunlop,[12] and (a doubtful and complicated case) J. A. Arkwright.[13]

As to whether the final occlusion of arteries in these cases is generally due to thrombosis in already diseased vessels or to mere proliferation of the intima without thrombosis, opinions still differ. The question is, we believe, not a very important one, and we doubt whether, when thorough organization has taken place, it is always possible to distinguish between the two processes. Moreover, the arteries at points examined might show thrombosis with relatively little thickening of the intima, though at other points higher up the inner coat might have been much more thickened.

The disease seems not to be the same as ordinary atheroma, for the pathological process, which generally shows itself before the age of 40 years, does not lead on to hyalin and calcareous changes, as it usually does in true atheroma and senile angiosclerosis. Hence, as von Wartburg points out, the disease should, we think, not be included under the head of "presenile gangrene" or "angiosclerotic gangrene." Moreover, after a time, the disease sometimes appears spontaneously to come to a standstill. This seems to have occurred in the present case as well as in Spencer's case.[14] Spencer's case was described at the Clinical Society of London in January 1898; the patient was an omnibus driver, aged 27 years, in whom, as in the present case, both lower extremities and one upper extremity were affected. Three years later (January, 1901) Mr. Spencer kindly informed us that he had seen the patient a few months ago, and that he was then in good health and following his occupation as an omnibus driver. "The circulation was still defective in two of the limbs, but sufficient with care."

In the present case there was no evidence of any of the visceral vessels being affected in a similar way to the vessels of the extremities, but in some cases (for instance von Wartburg's[7] cases Nos. 7 and 9), there has been a history of apoplectiform attacks, pointing to cerebral vessels being involved, and the fatal hemiplegic seizure in Arkwright's[13] case might have been of like nature.

CASE II.—The patient,* Adolph B., aged 25, a German waiter, was admitted into the German Hospital, November 3rd, 1900. With the exception of an abscess on the right buttock at the age of 15, he had apparently been healthy till March, 1898. There was no evidence of acquired or congenital syphilis or excess in alcohol or tobacco. The urine has never been coloured with blood. He has never been out of Europe. He has apparently had sufficient food both in England and Germany. He has no knowledge of mental disease in his family, but is rather ignorant of the family history, as he left home at the age of 10. The father is supposed to have died of a pulmonary complaint, and the mother in connexion with childbirth. At the end of March, 1898, after he had been two months in England, and when he was living out of employment at Brighton, patient suffered from swelling of both legs. No special injury or shock preceded the illness. There was apparently no unnatural coloration of the skin over the swollen parts at the commencement of the illness. Pain and tenderness in the feet, especially the left foot, were noted a few days after the onset of the swelling. The swelling nearly subsided within a fortnight's time, but "blisters" appeared on the feet, especially on the soles, and superficial gangrene occurred on both heels and over the metatarso-phalangeal joint of both great toes.† The left foot suffered most. The fourth toe of this foot was black, and came away in the dressings at the end of May, 1898, and at the end of the next month the fifth toe dropped off in the same way. At this time patient was being treated in the Brighton Infirmary, and remained there until January 13th, 1899. He then came to London, and owing to mental depression, apparently brought on by his illness and by his being out of employment, etc., he attempted suicide by shooting himself in the right temple on May 4th, 1899. He was taken to the London Hospital, where he recovered from the self-inflicted injury, and was discharged on May 30th, 1899. Afterwards he went to the Epping Infirmary, and there, in July of the same year, he noticed wasting of the left leg. Owing to melancholia, he was sent from the Epping Infirmary to the Essex Lunatic Asylum on August 14th, 1899, and remained there till November 3rd, 1900, when, as mentally quite convalescent, he was sent to the German Hospital. It seems that the contracture in the left leg became first well marked whilst he was at the lunatic asylum. The left leg was affected not only with persistent spasticity, but at times also with violent rhythmical clonic movements. This "trepidation" of the extremity was very well marked on the patient's admittance to the German Hospital, and was easily excited by handling the left foot, which was then apparently hyperaesthetic. He seemed, however, to be able to some extent to stop the movements at will. On admittance there were purpuric spots and ulcers on the left foot, and similar spots to a lesser degree on the right foot. These gradually diminished under treatment by rest and simple dressings, and the trepidation of the left extremity disappeared.

Condition in January, 1901.—The patient is a rather sparely-built man with considerable wasting and contracture of the muscles of the left leg, and pes equinus as a result. The skin over the toes and adjoining portion of the dorsum of the left foot is tense and shiny and livid, and feels decidedly cold to the touch. This, however, varies much at different times; sometimes the colour is dark purple, almost blackish; whilst at other times, when the part feels warm, the colour may be reddish or may not differ much from that of the other foot. The patient says that he suffers from pain in the foot when it is heated, but that the part is likewise disagreeably affected by any exposure to the cold. The dependent position of the foot does not induce pain as it is said to do in cases of erythromelalgia. There is an ulcer over the prominence of the metatarso-phalangeal joint of the great toe. The fourth and fifth

* This patient was shown by Dr. Weber at the Dermatological Society of London. See *British Journal of Dermatology*, February, 1901; and also October, 1902, when the diagnosis was modified.

† In some respects the early history of this case reminds us of that in the first case described in Hutchinson's paper on Symmetrical Acrospacelus without Raynaud's Phenomena (*Archives of Surgery*, July, 1896, vol. vii. p. 201). In Hutchinson's case an angiospastic origin was suggested.

toes are wanting. The nails on the two next toes are represented by small horny clumps, and the great toe has no nail at all. There is a large depressed scar on the heel. The right heel shows a similar depressed scar, and there is a scar over the base of the right great toe; the second toe is fixed in extreme flexion. With these exceptions and the presence of some smaller scars, purpuric spots, and abnormal pigmentation, especially about the toes and external side, the right foot now appears healthy. Plantar reflexes are not obtained on either side. The movements of the left ankle-joint are very limited owing to the contracture, but the joint itself seems not to be involved. The knee-jerk is much increased on the left side, but on the right side it is not particularly active, and sometimes can only with difficulty be obtained at all. The circumference of the left leg 15 cm. below the lower edge of the patella is at present only 27 cm., whilst that of the right leg is 34½ cm. The muscles of the back and front of each leg react well both to galvanic and faradic stimulation. K.C.C. is greater than A.C.C. The pulsation of the anterior and posterior tibial arteries can be well felt in both extremities. There are no signs of disease in the thoracic or abdominal organs. The urine (specific gravity 1020, acid, clear) is free from sugar and albumen. There has been no fever. The pupils are equal and react naturally. In the right temporal region, above the zygomatic process, is a depressed area where, owing to the loss of a piece of the temporal bone, the pulsation of the brain can be observed. There is nothing noteworthy in regard to the skin beyond what has already been described. No abnormalities of sensation such as are found in syringomyelia can be detected.

Dr. Michels performed Chopart's amputation of the left foot on January 18th, 1901. The arteries were not found blocked and took the ligatures naturally. The wound healed perfectly and no part of the skin over the stump appeared cyanosed. The patient, who could soon walk about, was accepted as a ward attendant in the hospital. Later on, in October, 1901, he left England for hospital work in Düsseldorf. At that time wasting of the muscles was much less marked and he complained of no pain. We heard that he left the Düsseldorf Hospital in August, 1902, because he found the work too much for him.

Microscopical examination of a portion of the chronically cyanosed skin from the foot showed great thickening of the walls of the arterioles. Examinations of portions of the internal plantar and dorsal arteries of the foot showed decided thickening of the middle coat, but no endarteritis obliterans or thrombosis. Microscopic preparations were made of the extensor brevis digitorum muscle, and characteristic appearances of ischaemic myositis were found,‡ with great thickening of the intramuscular arterioles, interstitial connective tissue increase with decided numerical excess of nuclei, and atrophic changes in some of the muscle fibres. Dr. F. E. Batten kindly examined the nerves, and found nothing abnormal. The skeleton of the foot was found to share in the atrophic condition.§

A study of our second case seems to us to favour the view that there is a variety of obliterative arteritis commencing in the arterioles of extremities, particularly in those of the muscles and subcutaneous connective tissue, since (in our second case) the microscopic preparations showed the changes to be more advanced in the minute arteries than in bigger vessels, such as the dorsalis pedis. The hypertrophic changes in the arterioles in this case might perhaps be explained by the presence of a nervous element, though the peripheral nerves which were examined were found normal. The presence of such a nervous element in some cases of obliterative arteritis would form a connecting link between the latter disease and cases of Raynaud's disease and erythromelalgia[17] as well as the trophic disorders in extremities associated with tabes dorsalis and syringomyelia. Wulff[15] suspected the presence of a nervous element in the etiology of his cases because the muscular coats of the blood vessels which were not yet blocked were thickened and contracted. In our case also the atrophic change in the skeleton of the foot, such as has been noted in some cases of tabes dorsalis, etc., suggests the presence of a nervous influence, but is doubtless, like the muscular wasting of the same extremity, due partly to mere diminution of blood supply.[19]

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‡ The appearances of ischaemic myositis are well described and figured in H. Lorenz's *Muskelerkrankungen*. (Vienna, 1898, pp. 62 *et seq.*)

§ Carl Beck (Some New Points in Regard to Raynaud's Disease, *Amer. Journ. Med. Sci.*, November, 1901, p. 536.) found atrophic changes in the bony tissues in two cases which he regarded as examples of Raynaud's disease.

A DISCUSSION ON MINERS' PHTHISIS.

I.—THOMAS OLIVER, M.A., M.D., LL.D., F.R.C.P.,

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By the term miners' phthisis I mean the deeply pigmented and somewhat solid state of the lung found in miners who during life exhibited signs and symptoms of pulmonary disease of a more or less chronic character. The malady has generally been regarded as the result of breathing a dust-laden atmosphere. As there is a variety of dust, so there are different forms of lung disease attributed to dust, and to which descriptive names have been applied, for example, anthracosis of the coal miner, silicosis or chalicosis of the quarryman and gold miner, and siderosis of the steel grinder. Pneumoconiosis is the general term for all forms of dust diseases of the lung.

Miners' phthisis is in this country a much less common malady than it was fifty to sixty years ago. This fortunate circumstance is the result of the excellent system of ventilation of our coal pits and of the operation of the mining laws.

Miners' phthisis as a distinct morbid entity has been known since Ramazzini mentioned it in 1703. Pearson described the disease in 1813, and regarded the pulmonary lesion as the result of the inhalation of coal dust. In 1860 Peacock proved microscopically and chemically the identity of the dust found in the lungs with that of the atmosphere in which the patient had worked, and subsequently Zenker demonstrated that the brick red colour of the lungs of a girl who had worked among red paint for seven years was due to the presence of free particles of oxide of iron. These and other circumstances have placed beyond doubt the fact of pneumoconiosis being a dust disease and due to occupation. It is unnecessary to revive the earlier opinion expressed by Virchow, since he subsequently renounced it, of the colour of the lungs in miners' phthisis being due to altered blood pigment. That the dark particles found in the lungs are exactly the same as the dust present in the atmosphere in which the patient worked may, I think, be accepted without question, and that the pulmonary phthisis bears a distinct relation to the form and character of the dust is confirmed by clinical experience. In each 100 workmen suffering from pulmonary consumption caused by dust, Hirt found that metallic dust was responsible for 28 per cent. of phthisis, mineral dust for 25.2 per cent., animal dust for 20.8, and vegetable dust for 13.3 per cent.

I have spoken as if there was no doubt of dust being the cause of phthisis, and yet it is an open question as to whether the continued breathing of dust can cause phthisis. It is around this point that our discussion circles to-day. There are two ways by which the subject may be approached—namely, (1) by pathological inquiry in man and (2) physiological experimentation in animals. Owing to the operation of such complicating factors as alcohol, syphilis, previous illnesses, and tuberculous infection in the home and elsewhere, human pathology scarcely allows of a definite solution of the problem, nor, on the other hand, does experimentation supply quite the same conditions as those which are present in man. It is these circumstances which render the solution of the problem of miners' phthisis rather a difficult task.

PHYSIOLOGICAL PATHOLOGY.

A considerable degree of insufflating force has to be exercised in order to carry dust experimentally into the lungs of animals. In our daily life the greater part of the dust we inhale never reaches the lungs at all. It is caught in the upper respiratory passages and becomes deposited on the nasal, pharyngeal, and laryngeal mucous membranes. Should particles of dust reach the trachea and bronchi they become entangled in the mucus secreted by these tubes, and are either wafted outwards by ciliary movement or are coughed up and expectorated. So long as the bronchi remain healthy and the barrier raised by the ciliated epithelium remains intact, the chances of dust reaching the pulmonary alveoli are certainly small. Notwithstanding these obstacles, the pigmented lungs of dwellers in towns clearly indicate that dust must reach the pulmonary alveoli in considerable quantity, and since the presence of dust in the lungs under these circumstances is unattended by symptoms, the discoloration has come to be

regarded as practically speaking the normal appearance for people living in towns. The lung of the infant is free from pigment. As age advances pigment accumulates owing to imperfect elimination. Under certain circumstances a pigmented lung which has hitherto been regarded as normal and quite consistent with health becomes abnormal and therefore pathological. What confers upon such a lung those properties that cause it to be pathological? Two sets of causes are in operation, namely, intrinsic and extrinsic, and these may act either singly or combined. Local defects in the continuity of the epithelial lining of the respiratory passages would for example be an intrinsic cause, so too would any condition that obliges a person to breathe through the mouth rather than his nose, also such a circumstance as catarrh, while an extrinsic cause would be such a circumstance as the breathing of a very dusty atmosphere. That naso-laryngeal and ordinary naso-oral breathing associated with a healthy condition of the mucous membrane of the upper respiratory passages is a barrier to the entrance of dust into the lungs is shown by the readiness with which pneumoconiosis develops after tracheotomy. The effect produced by dust upon the pulmonary epithelium is largely determined by the quantity and nature of the dust that reaches the lung, and by the depth of the inspiratory process.



Fig. 1.—Experimental anthracosis in rabbit. Phagocytic cells in pulmonary alveoli containing granules of coal. × 300 diameters.

Once the normal barrier is broken, dust, if in considerable quantity and of a hard nature, produces irritation, diminishes resistance, and paves the way for secondary infection. Notwithstanding all this, the lung is still able to remove dust when its inhalation is interrupted. Experiments show that lungs rendered perfectly black through submitting animals to the inhalation of a sooty atmosphere become lighter in colour on removing the control animals from such an atmosphere, a circumstance which explains the relief obtained by men who, after working for a period in a dusty atmosphere, are fortunate in securing a long break in their occupation.

Pathology of Miners' Phthisis.

In this I offer a description of the disease in its widest sense, and not merely a statement of its morbid anatomy. Of the coal dust that keeps reaching the lung of a miner when at work part of it is continually being expectorated and part is retained? What happens to the dust that is retained. The wandering cells of the finer bronchi but especially those of the pulmonary alveoli, swallow the particles of dust. These cells, which are larger than ordinary leucocytes, are free, they wander about, and they are distinctly phagocytic in their nature. It is by means of the mobility of these cells and by the lymphatic vessels that we explain the presence of black granules in the bronchial glands of animals a few hours after their exposure to a sooty atmosphere. This migration takes place in the lung, and especially with such non-irritating particles as soot given off by a burning lamp. For a period there is no local reaction. That living cells are capable of taking up coal dust can be easily demonstrated. Professor Potter, of the Durham College of Science, and myself, fed amoebae upon coal dust, and within twenty-four hours there could be observed, in addition to the presence of very minute black granules imbedded in the protoplasm of the animalculae, as many as three or four very large particles of inert coal dust. Paramecia also swallowed coal dust, and apparently in each instance without at first experiencing any injury.

Having absorbed foreign particles, the macrophages or phagocytes of the pulmonary alveoli either eliminate the dust, remove it by migration, or they dissolve it when possible, but the free particles of dust not less than



Fig. 2.—Experimental anthracosis in rabbit. Bronchial gland contains very fine particles of coal dust. × 300 diameters.

the wandering cells are carried into the branched plasma spaces of the alveolar walls through the stomata that exist between the lining epithelial cells, and from here they are carried into the lymphatic canals that run under the pleura in the interlobular septa, also in the perivascular and peribronchial tissue. By means of the lymphatics the particles of dust are carried to the glands at the root of the lung, for these are found to be enlarged and fillled with black pigment.

Although it is difficult to determine the course taken by the lymph in the lungs, still the distribution of the pigment supports the view that the current is from the air vesicles towards the subpleural lymphatic canals and along the walls of the blood vessels and bronchi. Opinion is divided as to whether dust ever penetrates the mucous membrane of the bronchi. As a rule the lining membrane of the bronchial tubes is clear, a circumstance which supports the theory of their epithelial lining forming a natural barrier to the entrance of dust, but if the dust has been inhaled by powerful

inspiration, if it is extremely tenacious, or possesses any specially irritating or chemical properties, then the lining membrane of the smallest bronchi may become damaged, and dust find its way into the walls of the bronchi. This, however, is unusual. Following closely upon the penetration into the alveolar walls of dust particles, either free or englobed in cells, there occurs a marked increase in the fibro-connective tissue of the lung. The appearances are such as to create the impression of there having been irritation, and yet since anthracosis can exist without symptoms, and the alveolar walls and pulmonary lymphatics can contain large quantities of minute carbon particles without the individual having experienced dyspnoea and without haematosis being altered, it would appear as if coal dust *per se* produced in the first instance little or no injurious effects upon lung tissue. Something more therefore must be added to the dust so far as coal-miners' phthisis in particular is concerned. Micro-organisms might be this additional something, but bacteriological examinations of coal made by my colleague, Professor George Murray, have failed to reveal the presence of micro-organisms in coal.



Fig. 3.—Experimental anthracosis in rabbit. Small bronchus containing coal particles; loss of epithelial lining at places; inflammatory reaction. × 50 diameters.

Possibly the additional presence of stone in some of the particles of coal dust as Dr. Trotter, of Bedlington, suggests may be the cause of irritation, for, as already stated, the hardness and angularity of dust particles play an important part in producing a local reaction. In this section of lung, taken from a Transvaal gold miner who died of phthisis, the fibrous tissue is observed to be excessive; it is unevenly distributed throughout the lung, it presents itself in the form of clumps or nodules which have developed around small arteries, veins, lymphatics, and bronchi. Black pigment is found in these nodules, sometimes in the interior of large cells that are lying loose in the newly-formed fibrous tissue, sometimes the black granules are lying free. In the alveoli in the neighbourhood of these clumps there can sometimes be observed signs of catarrh and the presence of large round phagocytic cells laden with pigment. Occasionally the fibrous tissue of the clumps is so overgrown that all trace of a central vessel has disappeared, although the concentric arrangement of the fibrous tissue remains the same. On the outer zone large cells containing pigment particles are observed. These bodies are either leucocytes, alveolar epithelial cells, or connective tissue corpuscles. Here and there the pigment particles are no longer in the cells, but are lying free. As the disease advances the clumps coalesce and all trace of pulmonary tissue becomes lost. It would seem, therefore, as if a large number of the particles of dust had been carried from the pulmonary alveoli by wandering cells into the lymphatics; here the mineral matter has accumulated owing to the lymphatics being unable to get rid of it. For a period the dust remains englobed in the cells and exercises an irritant action which leads to the production of fibrous tissue at the expense of adjacent lung. Once the fibrous tissue is fully formed many of the cells containing the mineral particles degenerate and break up, thus liberating the

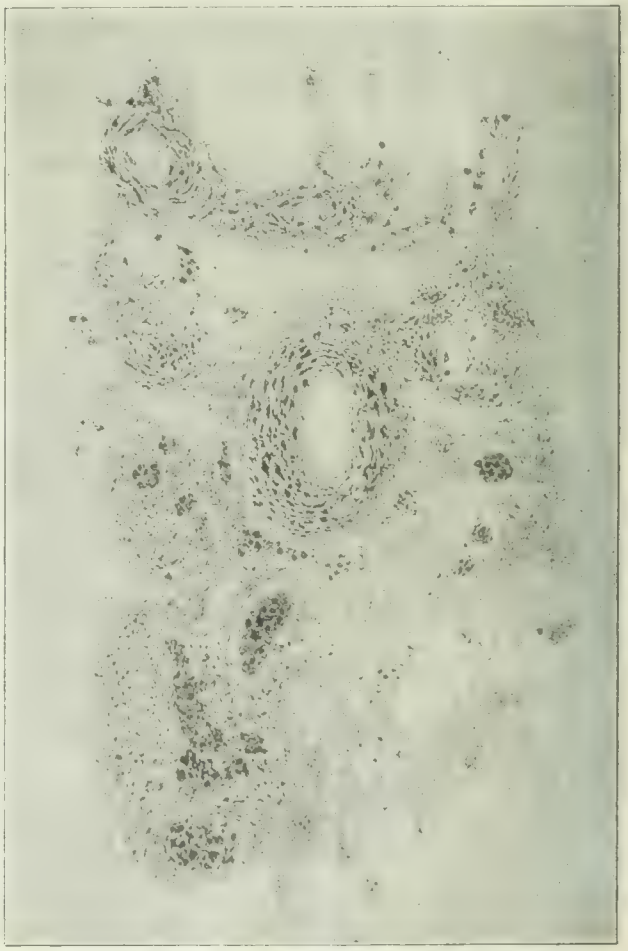


Fig. 4.—Phthisis (pulmonary) in Transvaal gold miner. × 50 diameters.

mineral particles, which are found lying free in the fibrous tissue. So far as this increase of fibrous tissue in the lung, the essential feature of miners' phthisis, is concerned, it is in my opinion usually a non-tuberculous process, and may be a natural effort on the part of the lung to rid itself of dust.

On carefully examining numerous microscopical sections of lungs in miner's phthisis in general, not only may appearances be such as to be extremely suggestive of tubercle, but even tubercles themselves may be found in which giant cells can sometimes be observed. Tubercle bacilli when present are with great difficulty detected. The presence of tubercle in these cases is probably in most instances a secondary infection rather than a primary incident. It is an accident that hastens the fatal termination without contributing much to the morbid processes already described. In an anthracotic lung

there may, of course, be found cavities of various sizes, some of which betray signs of their tuberculous origin. It is the presence of cavities in the lungs of miners that raises the question as to whether it is possible to have pulmonary excavation without a tuberculous cause. We know that there are other growths than tuberculous which undergo disintegration. Breaking down occurs in actinomycosis, and in syphilitic and sarcomatous growths. There is no reason, therefore, why in fibrotic lungs caused by dust, owing to the nutrient arteries becoming gradually more and more obliterated, the closure of the vessels should not be followed by necrosis of the tissue, besides, as Hamilton points out, some of these cavities may be bronchiectatic in origin, and be therefore caused by similar means as under other circumstances.



Fig. 5.—Gold miner's phthisis (Transvaal). × 200 diameters.

Causation and Experimental Production of Anthracosis: Gases.

The remarkable diminution in the amount of miners' phthisis in this country consequent upon the improved ventilation of coal pits required by the Mines Acts has suggested to some writers the probability of the disease being due to the inhalation of such impure gases as those given off by explosives, by the coal itself, or from the lungs and bodies of the miners, also from the ponies that are constantly kept in the pits. Carbon monoxide and carbon dioxide are two of the well-known gases given off by explosives, but the effects consequent upon their inhalation partake more of the nature of an intoxication, for they are transitory, and once the effects pass off no structural alteration is left behind in the lungs. It is otherwise with nitrous oxide given off by the higher explosives. This gas rapidly unites with oxygen, and becomes nitric peroxide, which is a dangerous compound. Inhalation of nitric peroxide is followed by acute changes in the pulmonary parenchyma of the nature of inflammation; if respired freely the gas will cause death within two or three days. In a more diluted form it might be capable of deranging the epithelial lining of the small bronchi and of the pulmonary alveoli, and by thus weakening the defence might prepare the soil for the operation of dust or microbes. If we eliminate nitric peroxide, which is a cause of acute pulmonary congestion, we can without bias dismiss from our minds the influence of the other gases as playing any part whatever in the production of pneumoconiosis.

Dust and Experimental Anthracosis.

Several attempts have been made to produce experimentally anthracosis in animals. Claisse and Joué[1] placed animals in a chamber in which a lamp charged with turpentine was kept burning. A considerable amount of smoke was given off. The animals passed from half an hour to one hour daily in the chamber, and the experiments were carried out for nine months. Precautions were taken to prevent tuberculosis. Within half an hour after one of the experiments Claisse and Joué detected charcoal in the alveoli of the lungs, and in the case of other animals submitted to a longer exposure carbon particles could be seen either as free granules or as minute dots in large round cells in the bronchial glands. The course of the pulmonary lymphatics could be easily traced owing to the masses of charcoal having formed a block in these vessels. Notwithstanding the blackening of the lung, the alveolar epithelial cells under these circumstances appeared to be still capable of performing their normal functions. Whether the particles of charcoal were lying free in the pulmonary alveoli or were englobed in cells, in none of the animals did Claisse and Joué observe the slightest sign of inflammatory reaction. Nor was there any indication of respiratory inconvenience. So far, therefore, as soot or charcoal is concerned, it would appear that a considerable degree of pigmentation of the lung can take place without either respiration or haematosis being disturbed, and it is not until the development of secondary changes takes place that dyspnoea is induced. These secondary changes, which end in fibrosis, are a consequence of bronchitis or broncho-pneumonia, of dust itself, or of tubercle.

An extremely fine and soft dust, like charcoal, has very little influence upon the lung. In order to act injuriously the particles of dust must be harder or possess chemical properties, such as is exhibited by slag dust. The men who follow the occupation of slag crushing are liable to and die from pneumonia in larger numbers than men engaged, for example, in the ironworks where the slag is produced.

In discussing the question of coal miners' phthisis, R. S. Trotter,[2] of Bedlington, leans to the view that the presence of coal dust and soot in the lungs of miners exercises very little influence if any in the production of phthisis. Anthracosis as a disease he maintains does not exist; it is simply an epiphenomenon in diseases of the lungs in which blackening of the pulmonary tissue is found. In miners' phthisis, therefore, the fibrosis would be due not to the presence of coal dust and soot, but to the presence of, and irritation caused by, the accompanying particles which come from the sandstone strata, the shale, and seggar clay. In Britain, because phthisis is in miners a comparatively rare disease, there are medical men who are of the opinion that anthracosis and pulmonary tuberculosis are antagonistic to each other, that coal dust and soot exercise in other words a protective influence upon the lung so far as tuberculosis is concerned. In the north of England as elsewhere, we certainly find that miners' wounds, even though begrimed with coal dust, heal remarkably well. I am not disposed to argue from this fact as to any antiseptic influence exercised by the coal dust, so much as simply to assert the remarkable freedom of coal from morbific germs, and to support the statement of the slightly irritating properties exhibited by coal dust when imbedded in the tissues. Before detailing my own experience of experimental anthracosis, I should like to make a few remarks upon the subject of miners' phthisis and its relation to tuberculosis.

Tuberculosis.

A mild degree of anthracosis is quite consistent with health. Although anthracosis is not of itself a disease, yet animals whose lungs are anthracotic have been found to be more liable—for example, to streptococcal infection—than those that are healthy. In a lung previously irritated by dust, the way is paved for accidental infection by either the tubercle bacillus or the pneumococcus. Because tubercle has been found in the lungs of miners who have died from phthisis, it has therefore been maintained that miners' phthisis is a tuberculous disease. This view of the malady is in keeping with the theory of the unity of phthisis and its relation to the bacillus tubercle. Without doubt the lungs of miners occasionally are the seat of tuberculosis. It is not always easy to detect tubercle in the dense masses of fibrous tissue, but when found it may contain giant cells although but seldom the specific bacillus.

When tubercle is present we are obliged to ask ourselves this question, What influence we can assign to it, and at what stage of the disease is this influence most felt? A man whose lungs are tuberculous and who takes to mining is much more likely

[1] Recherches Expérimentales sur les Pneumoconioses. P. Claisse and O. Joué. *Archives de Médecine Expérimentale et d'Anatomie Pathologique.* (Paris, 1897, p. 205.)

[2] British Medical Journal, May 23rd, 1903.

to suffer from the effects of dust than one whose lungs are healthy. Dust in the case of such a person would hasten the destructive tendencies of tubercle in the lung. The excess of fibrous tissue in the lungs is regarded by many as a protection against the invasion of tubercle. The fibrosis must be either a result of local reactions developed to oppose the further inroads of tubercle bacilli, or a product of irritation and due to dust.

In the lung of the gold miner to which I have already alluded, the most careful microscopical examination has failed to detect tubercle. During life no tubercle bacilli were found although frequently searched for in the sputum. There are in the lung indications of acute and chronic inflammatory processes. The lung is the seat of a combined anthracosis and silicosis, with distinct evidences here and there of recent catarrhal inflammation. In the alveoli large catarrhal and phagocytic cells can be seen laden with pigment particles. Here and there, too, are to be seen small clumps composed of leucocytes or lymphocytes. What these apparently recent accumulations of small round cells are I do not know; they are probably inflammatory, for the most careful examination of specially stained microscopical sections fails to detect within them the tubercle bacillus. The non-detection of tubercle bacilli is no proof of the lesion being non-tuberculous. Still, all the evidence, clinical and pathological, supports the statement I have just made, namely, that the phthisis in this particular gold miner was from first to last non-tuberculous.

One of the strongest supporters of the tuberculosis theory of anthracosis is Dr. Raymond Tripier, of Lyons.[3] In two cases of miners' phthisis Tripier found evidence of tuberculosis in the lungs alongside of anthracosis, that is, the presence of tubercle with a very abundant production of fibrous tissue, also the presence of tubercle in other organs. To him tubercle is not a coincidence or a complication, but the main cause of the malady. Speaking generally, I may with safety say that there has been comparatively little written upon pneumoconiosis since the discovery of the tubercle bacillus by Koch. The bulk of prevailing medical and pathological opinion upon miners' phthisis was formed anterior to Koch. Kuborn of Seraing is in favour of the tuberculous theory, and holds the view that coal dust does not hasten the development of phthisis. Proust and Charcot, on the other hand, maintain that there is a coal miners' phthisis without tubercle. Charcot produced experimentally in guinea-pigs the pathological conditions found in pneumoconiosis. Although Tripier's monograph was published as far back as 1884, his opinion as regards the tuberculous theory of miners' phthisis remains unchanged. In a letter which I received from him, dated May 21st, 1903, he still adheres to tuberculosis as the principal cause of miners' phthisis. One of Tripier's patients was a miner who had worked for fifteen years in the Mont Cenis and St. Gothard tunnels. It is an open secret that the construction of the St. Gothard tunnel was attended by an enormous loss of human life, and that the conditions as regards ventilation were extremely bad. The Simplon tunnel, which is in course of construction, will when finished be the longest tunnel in the world. Night and day there are always more than 500 men in the tunnel, to say nothing of a large number of horses in addition. I have visited the Simplon tunnel works, and can therefore speak from personal knowledge of the excellent system of ventilation that prevails, of the enormous volume of air that is delivered at the head of the tunnel where the men are working, also of the extremely thick and polluted condition of the air as it escapes by the return channel from the tunnel, and yet Dr. Volante, of Iselle, informs me that phthisis is extremely infrequent among the miners at the Simplon tunnel for the following reasons: (1) A medical inspection is made of all new miners applying for work, only healthy men being accepted; (2) the machines with which perforation of the rock is being made work under hydraulic pressure. The water which is introduced at the point where the rock is being pierced keeps down the temperature, prevents the formation of dust, and washes out the débris of the rock in such a way that the work is not dusty at all. In the case of miners who have died as the result of accident, Dr. Volante has always found the lungs very black owing to the large amount of smoke given off by the miners' lamps, the engines, and the explosives used in the tunnel. Bronchitis and pneumonia are not infrequently met with, but these are caused by exposure of the men to the sudden changes of temperature either in the interior of the mountain or when they emerge from the tunnel. Sometimes the cases of acute pulmonary disease pass into chronic forms and become tuberculous, a circumstance which is favoured by excessive indulgence in alcohol. It is in my opinion because the miners in the Simplon tunnel are, comparatively speaking, not exposed to dust, although they inhale large quantities of smoke from their lamps, etc., that they do not suffer from miners' phthisis.

Few will deny the contention of Tripier that fibrosis of the lung can be the result of a tuberculous lesion. Overgrowth of the interstitial tissue of organs can be produced by tubercle. Henri Claude[4] has produced experimentally tuberculous cirrhosis of the liver. The fibrous tissue found under these circumstances is extremely dense and is of bacillary rather than of toxic origin. The cirrhosis is apparently a true tuberculous fibrotic hepatitis, and is regarded as the result of excessive reaction consequent upon increased local resistance to the influence of the tubercle bacilli. Since then it is possible to induce marked fibrosis of the liver as a consequence of the injection of tubercle bacilli into the blood going to that organ, there is no reason why the same event might not take place in the lung. As a matter of experience we do find tubercle in the lungs in miners' phthisis, but instead of regarding the excessive fibrosis of the lungs as a consequence of tubercle I am disposed to regard the fibrosis as the result of irritation caused by dust, and that tubercle is a secondary and therefore accidental infection, and I base that opinion upon clinical experience, pathological observation, and experimental investigation.[5]

Here are the lungs of a rabbit into which coal dust was insufflated by Dr. Bolam and myself. It will be observed that while the greater part of both lungs has retained the bright red brick colour of health the apices and free borders of the upper lobes exhibit a slate blue coloration. When these areas were cut into, it was observed that the pulmonary parenchyma was the seat of a slate blue pigmentation with darker thread-like lines running through it.

What strikes one in examining microscopical sections of the lungs removed from animals, the subjects of experimentally-produced anthracosis, is the prominent part played by large wandering cells in the englobement of particles of coal dust, and the migration of these phagocytes into the lymphatic canals and through the walls of the pulmonary alveoli. Later on these macrophages, becoming disintegrated, set at liberty the dust granules which are seen dispersed as free particles in the fibrous tissue. What is the rôle of these phagocytes?

Metchnikoff[6] tells us that in old age there is a removal of the proper cellular elements of the tissues, and a supplanting of the same by a low form of connective tissue, and that this is largely the result of the operation of macrophages. Similar cells are present in large numbers in the lungs in miners' phthisis, and as phagocytes these must have been extremely active in the early stages of experimentally-produced anthracosis. If the morbid formation of the fibro-connective tissue in old age is a consequence of the activity of macrophages may the same cells in miners' phthisis not secrete something, or in their act of disintegration liberate something that excites the formation of the fibrous tissue that runs to excess? It is evident that the part played by these large phagocytic cells is not yet fully known.

Although under ordinary conditions it is difficult to produce anthracosis in healthy animals, yet it has been demonstrated by Claisse and Joué that if the vagi are divided anthracosis more quickly develops, and in an intenser form. Time will not permit of our discussing the protective rôle exercised by the pneumogastric nerves over the lungs in health, nor how far alcohol, by abolishing the defensive action of the vagi, explains why alcoholic subjects are more liable to anthracosis and pneumonia than temperate men.

Conclusions.

The conclusions arrived at, and which contain all the points around which I think discussion need be centred are:

1. That miners' phthisis is not the result of the inhalation of gases given off by the strata, nor evolved by the explosives used in mines.

[3] *Contribution à l'Etude de la Tuberculose Pulmonaire Anthracosique.* Par le Dr. Raymond Tripier, Lyon, 1884.

[4] *La Presse Médicale*, June 13th, 1903.

[5] In my experiments I had the able assistance of my colleague, Dr. R. A. Bolam, to whom for his kindly aid and suggestions I warmly acknowledge my indebtedness.

[6] *Etudes sur la Nature Humaine.* Par Elie Metchnikoff. Paris. 1903. P. 31.

2. That it is a disease in which there is a marked excess of fibrous tissue in the lungs, embedded in which can be seen numerous particles of coal dust and siliceous material; in which also cavities may be seen and tubercle occasionally detected.

3. That it is a disease of occupation, due to the irritating action of dust, which renders the individual liable to repeated catarrh, that it is non-tuberculous, not only in the early stages, but may even remain non-tuberculous throughout; that when tubercle is present it is an accidental infection, which, while hastening the end, does not exercise any very marked influence upon the pre-existing structural alterations caused by dust, unless it be a tendency towards disintegration.

4. That it is a local disease, purely personal to the individual, and never assuming hereditary characters.

5. That, accepting this view of the pathology of the disease, miners' phthisis, as experience in this country has shown, may be largely prevented by improved ventilation, and by the adoption of means for the removal of dust or for the allaying of dust by water.

II.—J. G. ADAMI, M.A., M.D., M.R.C.S.,
Professor of Pathology, McGill University, Montreal.

PROFESSOR ADAMI said: I am in general agreement with the conclusions arrived at by Dr. Oliver. I wish, however, that Dr. Oliver would expand his statements regarding the relationship between the dust-bearing phagocytes and the development of increased connective tissue. Undoubtedly there is in these cases a remarkable increase in the number and migration of these cells; but because there is this association are we to conclude that the phagocytes are directly concerned in the process of fibrous tissue formation? Judging by analogy, I am inclined to place little importance upon this order of cells as factors in the process save as being bearers of the dust particles, which eventually break up and deposit the particles within the tissues. Around a foreign body—a bullet, for example—there is a like deposit of fibrous tissue. Physical agents, it seems to me, are adequate to produce fibrosis without of necessity calling in toxin and derivatives of cell destruction as auxiliary factors.

III.—D. J. HAMILTON., M.B., F.R.S.E.,
Professor of Pathology, University of Aberdeen.

PROFESSOR HAMILTON said: My experience of coal miners' phthisis has been gained chiefly from a study of cases occurring in Midlothian, which came under my notice when pathologist to the Edinburgh Royal Infirmary. I am of opinion that the pigment particles which gain entrance to the lung tissue are extremely small, and that they pass in almost exclusively through the alveolar walls, not through the mucous membrane of the bronchus. They are prohibited from taking the latter course, not so much by the epithelium on the surface as by the presence of the impervious basement membrane which constitutes such a remarkable structure in the human bronchus. As to the effects produced on the lung substance, a great deal seems to depend on the quality of the coal dust inhaled, whether it contains much ash or not. Those varieties in which ash is abundant are probably more stimulating than others, and give rise to more interstitial fibrous reaction than the purer varieties. In my experience of the Midlothian disease I have been struck with the small amount of fibrous reaction which takes place. The lungs I have had an opportunity of examining, although deeply pigmented, do not appear to have become fibrous at all, while, according to Dr. Oliver's account, his experience has been very different. In the case of the worker in freestone the effect is very different. Here the amount of fibrous tissue called forth by the inhalation of the stone dust is excessive and the lung correspondingly indurated. Coal miners' phthisis in my experience is not a tuberculous process, but has more the character of an aseptic slough due to the altered conditions of the organ. In the case of the stonemasons' lung, on the contrary, a complication with tubercle at the time of death or for some time before it is frequently met with, and according to Philip is accompanied by the expectoration of tubercle bacilli.

REPLY.

Professor OLIVER said in reply: I am glad to receive Professor Adami's support that miners' phthisis is a non-tuberculous disease. There is no doubt that fine particles of dust alone are capable of inducing fibrosis of the lung. As regards the phagocytic cells and the part they play in the pathology of the disease, I shall frame my remarks so that they may be a reply to the points raised by Professor Hamilton as well as those by Professor Adami. The experience which Professor Hamilton gained when pathologist to the Royal Infirmary, Edinburgh, and the attention which he has given then and since to the subject of miners' phthisis, enables him to speak with authority. It is therefore interesting to learn from him that the miners who work in the coal fields of Midlothian do not die from phthisis although their lungs may be perfectly black. During life they bring up large quantities of a "black spit" without other signs of pulmonary disease, and in the lungs of these miners there are neither signs of fibrosis nor of tubercle after death. This is an important announcement, especially when contrasted with Professor Hamilton's other experience, namely, that the stonemasons who work in the same neighbourhood suffer from silicosis and very marked fibrosis of the lungs, accompanied by tubercle. Both classes of men are exposed to dust. The incidence of the disease in the stonemasons lends weight to what I have stated as regards the character of the dust playing an important part in the development of the malady. The freedom of the Midlothian coal miner from phthisis and fibrosis may be explained by the soft nature of the coal and the absence of stone dust. In this way the Midlothian coal miners' lungs resemble the lungs of the animals in Claisse and Joué's experiments, which could be chokefull of carbon particles without any structural alteration taking place. It is quite true that there is usually, if not always, an absence of pigmentation in the mucous membrane of the bronchi and a disappearance of the bronchial epithelial lining, and that, while the ciliated epithelium of the bronchi is a barrier to the entrance of dust, the strong basement membrane which supports these cells is very impervious to the penetration of dust. This circumstance explains the fact that it is not through the bronchial wall that dust usually enters the pulmonary tissues. In experimental pneumoconiosis, on the other hand, I have observed, in cases where the insufflating force has been rather powerful, coal dust breaking through this barrier, but it is infrequent. Professor Hamilton, like Professor Adami, has raised the question as to the rôle of the macrophages or phagocytes in the pulmonary alveoli, also their origin. Professor Hamilton is of the opinion that the large cells are not phagocytes in the ordinary sense of the word, nor do they belong to the connective tissue, but are probably of catarrhal origin. To him dust itself is the provocative agent. It is difficult to say what is the origin of these cells, but as I have found macrophages in the pulmonary alveoli laden with granules of coal two to three days after an insufflation of coal dust, I am inclined to regard them as normal habitants of the pulmonary alveoli, and to believe that they play in health an important part as phagocytes in protecting the individual against the onset of such an acute pulmonary disease, for example, as pneumonia. There is little doubt that catarrhal conditions stimulate them into greater activity. They may, of course, be modified alveolar epithelial cells. The circumstances to which I specially alluded were that the large cells are not fixed but wandering, and that they are phagocytic. Dust *per se* probably plays the most important part in inducing fibrosis through irritation, but in places the phagocytes can be seen penetrating the walls of the alveoli and the newly-formed connective tissue can be observed infiltrating itself between rows or groups of these macrophages. At this stage of the inquiry I am not disposed to attach to these phagocytic cells more than a supplementary rôle in the production of the fibrosis, but it is by these cells and the lymphatic vessels that the rapid transportation of particles of coal dust from the pulmonary alveoli to the bronchial glands is effected.

DISCUSSION ON THE PATHOLOGY OF SPLENIC ANAEMIA.

I.—H. D. ROLLESTON, M.D., F.R.C.P.,
Physician and Lecturer on Pathology, St. George's Hospital.

DR. ROLLESTON said: The term splenic anaemia has often been used extremely vaguely to describe the clinical association of anaemia with splenic enlargement, which is not clearly due to some well-recognized cause, such as tubercle, syphilis, rickets, lardaceous disease, lymphadenoma, leukaemia, cirrhosis of the liver, intestinal disturbances, etc. It has often happened that cases of this kind occur in practice, and in lieu of any other convenient name have been labelled

"splenic anaemia" during life. The result of this is that the recorded blood examinations are discordant, and that, except for secondary anaemia, there is no common feature; this is especially the case in the so-called splenic anaemia of children. Again, in necropsies of some cases regarded during life as splenic anaemia, some definite condition, not previously detected, such as lardaceous disease, syphilitic change, lymphadenoma, thrombosis of the portal vein, tuberculosis, etc., is found. There is, therefore, considerable danger that the underlying factors of secondary anaemias associated with splenic enlargement may be overlooked if the condition is at once assumed to be one of splenic anaemia. On the other hand, the fact that mistakes have often been made—and from the great difficulties presented by some cases will probably continue to be made—in assuming that splenic anaemia explains the morbid condition present in a given case does not prove that there is not a morbid entity which, as it conforms to no other known type, must at present, at any rate, be tentatively recognized.

In this discussion on the pathology of splenic anaemia I propose to confine my remarks entirely to a consideration of the condition ordinarily known by that name and studied in this country by West,[1] and Taylor.[2] Brühl[3] described it in detail as primary splenomegaly, and more recently Osler[4] has done much to establish its clinical characters, and has suggested the name "chronic splenic anaemia." The disease has also been dealt with by Banti,[5] Senator,[6] Dreschfeld[7] and others.

In order to define clearly the form of disease under discussion, I shall enumerate its clinical characters, but cannot in this section allude to them further. The clinical characters are:

1. Splenic enlargement which cannot be correlated with any known cause.
2. Absence of enlargement of the lymphatic glands.
3. Anaemia of a type midway between secondary anaemia and chlorosis.
4. Leukopenia, or at most no increase in the number of white blood corpuscles.
5. An extremely prolonged course lasting years.
6. A tendency to periodic haemorrhages especially from the gastro-intestinal tract.

The main question for discussion is whether this clinical entity is also a pathological entity—in other words, a complete and definite disease—or whether it is only a combination of symptoms which, under certain circumstances, may be due to a number of different conditions. There is no doubt, as admitted already, that some cases regarded during life as chronic splenic anaemia turn out to be suffering from some comparatively common disease, but in a certain number of cases the only morbid lesion is a chronic change in the spleen, which is compatible with the view that it is caused by long-continued intoxication or by an infection of a chronic type. Further knowledge is required as to the clinical pathology of chronic splenic anaemia in order to enable a distinction to be drawn during life between cases which present its clinical features, but are due to some underlying infection—for example, tubercle, syphilis—and the cases of primary splenomegaly. More information is required as to the significance to be attached to the tuberculin reaction in a doubtful case. A positive reaction, of course, does not prove that the splenic enlargement is due to tubercle, as there may be independent tubercle elsewhere.

In discussing the pathology of chronic splenic anaemia it is necessary to consider the structural changes in the blood, the spleen, bone marrow, and lymphatic glands, its relation to Banti's disease, and its pathogeny.

THE BLOOD.

There is a diminution of the number of red blood corpuscles, but it is not excessive, and is not on the same scale as in pernicious anaemia. The average of Osler's 15 cases was 3,425,000 per c.mm., the lowest being 2,187,000. The haemoglobin value of the red blood corpuscles is low. In Osler's 13 cases the average was 47 per cent. There is, therefore, a more marked diminution than in ordinary secondary anaemias, and an approximation to that of chlorosis. When the anaemia is grave there may be poikilocytosis and nucleated red blood corpuscles—normoblasts predominating—in the blood.

The leucocyte count must be considered one of the most characteristic features in the clinical recognition of chronic splenic anaemia. There is no leucocytosis, and usually a diminution or a leucopenia. In Osler's[8] 14 cases the average leucocyte count was 4,520 per c.mm. Complications, such as haemorrhage or secondary infections, may disturb this characteristic count, and give rise to a leucocytosis.

More information is required as to the differential count: as a rule there is a relative increase in the mononuclears, and a diminution in the polymorphonuclears. According to Da Costa there are sometimes 5 to 6 per cent. of mast cells.

Da Costa[9] sums up the blood changes by saying that splenic anaemia presents no characteristic blood picture by which a diagnosis can be made from a number of diseases which it more or less closely simulates, and Ewing[10] has found similar blood changes in lymphadenoma and gumma of the spleen.

MORBID ANATOMY.

The spleen is enlarged in all directions and greatly increased in weight, in some cases to an enormous extent; thus in Bovaird's case, which lasted thirteen years, the spleen weighed 12½ lb., and in Gaucher's case of twenty-five years duration 10 lb. In 13 other cases the average weight was 58 oz.

The surface usually shows perisplenitis and localized thickenings of the capsule, lamellar fibromata. Infarcts may occur and give rise to depressed scars on the surface. On section the organ is firmer than normal, has a beefy aspect, and appears fibrotic, but is otherwise uniform and has no resemblance to the hardbake spleen of lymphadenoma.

The microscopic appearances are not the same in all the reported cases, and three types might be tabulated, though it is conceivable that they might be regarded as representing different stages in the same process. Nearly all the cases, however, have the following features in common, fibrosis of the organ, atrophy of the lymphoid elements, and fibrosis of the Malpighian bodies. In addition, there is no evidence of exaggerated haemolysis, such as excessive pigmentation in the spleen. The three types are as follows:

1. In some recorded cases fibrosis of the organ with atrophy and fibrosis of the Malpighian bodies is all that has been noted.
2. In other cases there is in addition endothelial proliferation of the lining of the blood sinuses of the pulp.
3. In a few cases (Weichselbaum,[11] Gaucher,[12] Picou and Ramond,[13] Collier,[14] Bovaird,[15] Harris and Herzog[16]) endothelial proliferation has progressed to such an extreme degree that the blood sinuses of the pulp are filled up with large cells, 16 μ to 36 μ, with clear protoplasm and more than one nucleus showing active karyokinesis. In addition there is fibrosis of the organ and fibrotic atrophy of the Malpighian bodies. The cells may fill up the venous sinuses of the pulp, and thus imitate an alveolar new growth such as an endothelioma or carcinoma. Gaucher in 1882 originally described this condition as primary carcinoma of the spleen, and fourteen years later Picou and Ramond published another case of splenic anaemia as a primary carcinoma of the spleen, which they ingeniously suggested was derived from fetal inclusions of pancreatic cells in the spleen, an occurrence which had previously been described by Peremeschko. The morbid changes have also been regarded as an endothelioma. The proliferation of the endothelium spreads from the sinuses to the vessels which show endarteritis; this process favours thrombosis and cuts off the blood supply. Endophlebitis of the splenic vein is thus brought about, and by an extension of this process to the portal vein Banti considered that the terminal cirrhosis of the liver was induced. Extension of the endothelial proliferation from the splenic blood sinuses to the lymphatic vessels, and a similar change in the spleen has been described in the lymphatic glands in the hilum of the spleen (Picou and Ramond).

[1] *Med. Chir. Trans.*, vol. lxxix, p. 323; Allbutt's *System of Medicine*, vol. v.
[2] BRITISH MEDICAL JOURNAL, 1896, vol. ii, p. 719.
[3] *Arch. Gén. de Méd.* tome clxvii, p. 673; t. clxviii, p. 160. 1891.
[4] *Amer. Jour. Med. Sci.*, January, 1900; *Trans. Assoc. American Physicians*, vol. xvii, 1902.
[5] *Arch. della Scuola d'Anat. Pat.* tome ii, 1883, Florence.
[6] *Berl. klin. Woch.*, 1901, S. 1145.
[7] BRITISH MEDICAL JOURNAL, 1902, vol. i, p. 719.
[8] *Trans. Assoc. American Physicians*, 1902.
[9] *Clinical Haematology*, p. 234.
[10] *Clinical Pathology of the Blood*, p. 231.
[11] *Virchow's Archiv*, Bd. lxxxv, s. 502.
[12] Thèse de Paris, 1882, *Sem. Méd.*, 1892, p. 331.
[13] *Arch. de Méd. Expér. et d'Anat. Path.*, 1896, p. 168.
[14] *Trans. Path. Soc.*, vol. xlvi, p. 148.
[15] *Amer. Jour. Med. Sci.*, vol. cxx, p. 383, October, 1900.
[16] *Annals of Surgery*, July, 1901.

Relation of the Morbid Appearances in the Spleen to Each Other.

It has been suggested by Bovaird that the proliferated endothelial cells eventually form fibrous tissue, but this is unlikely. It is perhaps more probable that fibrous hyperplasia goes on at the same time as the endothelial proliferation, and is due to the same cause—namely, a chronic intoxication. It might be suggested that the endothelial proliferation passes away and that fibrosis alone is left, but this does not agree with the fact that in some cases of long duration, such as Gaucher's (twenty-five years), Bovaird's (thirteen years), the extreme form of endothelial proliferation has been best marked.

Is it possible that the cases in which endothelial proliferation is marked are uncomplicated cases and most characteristic—namely, due to the specific cause, if there be one, of chronic splenic anaemia, while the cases with fibrosis alone are the result of a mixed or of a secondary infection with other micro-organisms?

Or, lastly, are those cases with excessive endothelial proliferation quite distinct from the more familiar cases showing fibrosis of the trabeculae and pulp of the spleen and fibrosis and disappearances of the Malpighian bodies? My own feeling is rather in favour of this view.

To what Extent are the Morbid Changes in the Spleen Pathognomonic?

The marked endothelial proliferation of the organ, first described as a primary carcinoma, does not as far as I know occur in association with any other condition. If it were found constantly in splenic anaemia the question would be simple, but as it is only present in a small minority, we have to face the position that in splenic anaemia at least two types of morbid change may occur in the spleen, which may, in the present state of our knowledge, be quite independent of each other.

What importance can be attached to fibrosis involving the trabeculae and the splenic pulp, and to the fibrotic atrophy of the Malpighian bodies? Varying degrees of fibrosis are met with in long-continued bacterial poisoning, and fibrotic atrophy of the Malpighian bodies has been produced experimentally with metatoluylendiamine, paraphenylene, and sodium nitrate by Pilliet.[17] Is there anything characteristic about the distribution of the fibrosis in splenic anaemia or about the moderate degrees of endothelial proliferation, and what are the relations of these changes to lymphadenoma and to other chronic inflammatory conditions of the spleen? On these important points I shall say no more, as the material at my disposal is much the same as that shown by my colleague Dr. R. S. Trevor, who will discuss these points later, except to express my general agreement with his conclusions.

Condition of the Marrow of the Long Bones.

Here again the accounts are discordant. In some cases there is no change; this was so in a recent case under the care of my colleague Dr. W. Ewart. In other instances the red marrow has been found to have extended into the shafts of the long bones, as in pernicious anaemia (Williamson,[18] Sippy).[19] Michell Clarke[20] found the marrow of the shaft of the tibia abnormally red and devoid of fat in the case of Banti's disease.

Some cases in which red marrow has extended into the shafts of the long bones may, as in a case (No. XIII) mentioned by Osler,[21] have been examples of pernicious anaemia with enlarged spleens.

Lymphatic Glands.

Except for the anatomical fact, on which opinion seems agreed, that the lymphatic glands of the body are not enlarged, we have extremely little knowledge. In Picou and Ramond's case the lymphatic glands in the hilum of the spleen showed the same changes as the spleen, which they regarded as a primary carcinoma. Information is required as to the microscopical appearances of the lymphatic glands of the body generally.

Relation to Banti's Disease.

Banti[22] described cases where splenic anaemia became complicated in its terminal stages with cirrhosis of the liver, jaundice, and ascites. This sequence of events is the same as in that form of hypertrophic biliary cirrhosis (metasplenomegalic) in which splenic enlargement precedes any manifest change in the liver. It might, therefore, be thought that Banti's disease is a form of splenomegalic cirrhosis in which anaemia, as well as splenic enlargement, precedes any signs of hepatic disease. The idea of hepatic cirrhosis being secondary to poisons formed in the spleen has been insisted on by Chauffard,[23] who, in this connexion, regards the portal vein as formed of two branches—the intestinal and the splenic—either of which may convey to the liver poisons capable of inducing cirrhosis. It has even been suggested that the cirrhosis is the result of arsenic given in the earlier stages for splenic anaemia (W. Broadbent).[24]

Banti, however, insisted on the difference between the histological appearances of the spleen in cirrhosis, that is chronic venous engorgement, and those in splenic anaemia—namely, fibrosis, atrophy of the Malpighian bodies, and diminution in size of the veins.

On the other hand, it might be argued that those cases of apparent splenic anaemia, which eventually become complicated by cirrhosis of the liver, constitute one of a series of closely allied diseases: the diseases being (1) chronic splenic anaemia: (2) a condition termed "chronic splenomegalic jaundice" described by Lereboullet, in which there is chronic splenic enlargement and jaundice but no cirrhosis;[25] (3) Banti's disease; (4) splenomegalic biliary cirrhosis.

The speculative question arises as to whether splenic anaemia is a result of chronic intestinal intoxication or infection, and thus an allied condition to portal cirrhosis. Removal of the spleen would not cure the condition if this were the case; but it might still be urged that infection was in the first instance derived from the intestine, and subsequently became confined to the spleen. In connexion with the possibility that chronic splenic anaemia is due to intestinal infection attention should be directed to Charlton's[26] recent research on the anaemia produced by repeated injections of cultures of a colon bacillus of a low virulence. A non-virulent strain of bacillus coli was injected into the peritoneal cavity of some rabbits, while other rabbits received intravenous injections of the same culture. He obtained extreme diminution of the erythrocytes, a corresponding fall in the haemoglobin, poikilocytosis, and the presence of nucleated red corpuscles; the leucocyte count was little changed, at first there might be slight leucocytosis, but later the number usually was reduced below the normal. As bearing on the hypothesis that the condition depends on chronic intestinal intoxication it would be interesting to know whether the blood serum has any constant agglutinating action on the members of the colon group, and what significance could be attached to this reaction. In some cases of chronic splenic anaemia microscopic examination of the liver shows slight but arrested fibrosis—a condition almost the reverse of Banti's disease.

Pathogeny.

It is clear that the disease is not due to splenic inadequacy or to suppression of the functions of the spleen, since not only may splenectomy cure the disease, but removal of the spleen for rupture in previously healthy subjects does not induce splenic anaemia.

On the assumption that the dissolution of blood corpuscles takes place normally in the spleen by means of an enzyme manufactured by the endothelial cells of the pulp, it has been suggested that in splenic anaemia the increase in the endothelial cells gives rise to greatly increased haemolysis (Harris and Herzog).[27] This ingenious theory does not explain the cause of the endothelial hyperplasia, while it may be objected that the blood shows exactly the opposite characters to those met

[17] *Compt. Rendus Soc. de Biolog.*, Paris, 1894, p. 331.
[18] *Medical Chronicle*, May, 1873.
[19] *Amer. Journ. Med. Sci.*, vol. cxviii, p. 428.
[20] *Bristol Med.-Chir. Journ.*, vol. xxi, p. 14, 1903.
[21] *Trans. Assoc. American Physicians*, 1902.
[22] *Semaine Médicale*, 1894, p. 318.
[23] *Semaine Médicale*, May 24th, 1899.
[24] British Medical Journal, 1903, vol. i, p. 1140.
[25] The cases included in the chronic splenomegalic jaundice group by Lereboullet (*Thèse de Paris*, 1902, No. 180) are four cases reported by Hayem (*Presse Méd.*, March 9th, 1898), three by Boinet (*Arch. Gén. de Méd.*, 1898), Bettmann's case (*Münch. med. Woch.*, June 5th, 1900), and Minkowski's case (*Verhandlungen Congress f. inn. Med.*, Wiesbaden, 1900). It is probable that Claud Wilson's remarkable cases of six members of a family in three generations having anaemia, enlarged spleens, and periodic attacks of jaundice and abdominal pains (*Trans. Clin. Soc.*, vol. xxiii, p. 162, vol. xxvi, p. 163) also belong to this group, as well as two cases reported by Sir T. Barlow and Batty Shaw. Lereboullet (*Sem. Méd.*, 1903, p. 180) has recently described another allied condition—meta-icteric splenomegaly—in which jaundice appears first, recedes, and is followed by splenic enlargement due to portal engorgement induced by fibrosis in the portal canals due to sclerosing angiocholitis.
[26] *Jour. of Med. Research*, vol. viii, p. 344, November, 1902.
[27] *Annals of Surgery*, July, 1901.

with in pernicious anaemia, which is regarded as due to blood destruction in the portal area.

Since removal of the spleen has seemed to cure the disease, it would appear that the anaemia depends on the splenomegaly, and that they are not both concomitant effects of a chronic toxic or infective condition of the blood or of some other part of the body. It would, therefore, be reasonable to think that a chronic infective or toxic process is localized in the spleen, and that it gives rise to endothelial proliferation, general fibrosis, atrophy of the Malpighian bodies, and to the blood changes.

Speculative questions arise as to the mechanism of the blood changes. Are they due to inhibition of the erythroblastic and leucoblastic functions of the bone marrow, brought about by bacterial poisons, or by cytotoxins produced in the spleen? It is most unlikely that chronic destructive changes in the spleen lead to the production of cytotoxins, which destroy the leucocytes (leucolysins) and the red blood corpuscles (erythrolysins). In the first place there is no experimental evidence to show that an animal can produce autolysins for its own tissues in the same way that it can for the tissues of another animal;[28] and, in the second place, we have no data to show whether the lymphatic glands show chronic changes which can in any way be regarded as comparable with those—swelling and degeneration—produced acutely by injecting splenotoxin into guinea-pigs (Flexner).[29]

As to the cause or causes producing the changes in the spleen we are quite in the dark. No micro-organism can be correlated with the splenic change. In some cases cultures taken from the spleen have been sterile, while in others various different micro-organisms, probably accidental or due to *post-mortem* infection, have been found.

In conclusion, the following appear to be the points for discussion:

1. Accepting chronic splenic anaemia as a clinical entity, is there sufficient evidence to accept it as an established pathological entity?
2. What significance can be attached to the structural changes in the blood, spleen, bone marrow, etc.?
3. What is the exact relation between splenic anaemia and Banti's disease?
4. What is the nature of the disease? Is it an intoxication or an infection?

Until the last question is fully answered, any reply to the first must either be suspended or be in the negative.

II.—R. SALUSBURY TREVOR, M.A., M.B., B.C.,

Curator of the Museum, St. George's Hospital.

DR. TREVOR said: As an introduction to a discussion of the morbid appearances of the spleen in splenic anaemia, and to avoid needless repetition in the description of three specimens which I am able to show you to-day, it will be as well to summarize those changes in the spleen hitherto regarded as characteristic, and to note only the points of difference which my specimens show from the picture thus pieced together.

The spleen, as a rule, is enlarged in all its dimensions and much increased in weight. Its average weight in 12 cases collected by Dr. Rolleston[30] was 61 oz.; the average of the three specimens shown is a little over 32 oz. The surface is as a rule smooth, except for the presence of tags left by adhesions from old perisplenitis, whilst the capsule may show localized thickenings, spleen corns, or lamellar fibromata. (Such a patch is well shown in Specimen A on the outer aspect of the upper pole, and in the same specimen the adhesion to neighbouring viscera is well exemplified in the lappet of the left lobe of the liver, firmly fixed to the upper end of the spleen.) On section the speckled appearance of the normal viscus due to the presence of the Malpighian corpuscles is frequently lost, the surface being more homogeneous, and varying in colour from a deep brick-red or reddish-brown to a paler salmon tint. On the other hand, the fibrous structure is frequently more evident and the consistence firmer.

The vessels are thickened, often showing the lesions of endarteritis or endophlebitis, and may gape widely on section (as in Specimen C). Banti[31] speaks of plaques in the walls of the splenic and portal veins looking like atheromatous patches due to localized endothelial proliferation, and, in addition to this, describes a sclerotic endophlebitis of the splenic vein with true atheromatous and calcareous patches, such changes spreading later to the portal vein. I show you a really remarkable example of this condition affecting the splenic, mesenteric, gastric, and portal veins, which I found at the necropsy on a man aged 53.

In addition to these changes described, infarcts may be found leading to necrosis, and later to scar formation. In neither of the three specimens I show is this lesion present.

The histological changes met with in the spleen in splenic anaemia are manifold, and may be summed up as follows:

1. Atrophy of the Malpighian bodies, brought about either by an overgrowth of the connective tissue ensheathing the central artery, or by an encroachment of fibrous tissue from the periphery.

2. Thickening of the capsule and the trabeculae, the walls of the vessels and of the fine fibrous reticulum forming the walls of the spaces of the splenic pulp.

3. Proliferation of the endothelium lining the splenic vessels and blood spaces of the pulp. The proliferated endothelium appears in the form of large cells with clear protoplasm and a peripherally-situated nucleus, the cells in some instances completely filling the blood space. Occasionally giant cells are present.

Fibrosis and atrophy of the Malpighian bodies have been described by Banti[32] as the primary change. West[33] states that this change is regarded as characteristic and the most important lesion. More recently Senator[34] sums up the views put forward and says that "the splenic enlargement depends upon a fibroadenitis. In the centre of the follicles surrounding the arteries is a zone of overgrown connective tissue. In the first stage the veins are clothed with a layer of large cells, which give to the vessels the semblance of epithelial canals. Similar cells are to be seen in the reticulum surrounding the veins. Later the pulp is transformed into fibrous tissue."

Proliferation of the endothelium may in some cases be the predominating lesion—so extensive may it be in fact as to lead to the presumption that the condition was one of primary carcinoma as in the cases of Gaucher[35] and Picou and Ramond.[36] The case described by Collier[37] is another admirable example of an advanced grade of endothelial proliferation. Through the kindness of Dr. Collier, who has given me permission to show a section from his case, and of Dr. Rolleston, who has provided me with the material, I am able to show you under the microscope a specimen of this change in its most advanced grade. The section also shows well the pigmentary deposits which are also found in the spleen in some cases of the disease.

The three cases, which I have had the opportunity of examining and specimens of which are now on exhibition, were briefly as follows:

CASE I.—A young man, aged 23, who had had splenic anaemia for at least twelve years, having been previously treated at a children's hospital for much the same condition, was admitted into St. George's Hospital under Dr. Rolleston's care, and was found to present the typical clinical features of the disease. Splenectomy was performed, but death occurred two days afterwards from haematemesis. No necropsy was permitted. The spleen weighed 35 oz., and is a typical picture of all the changes that have been described—namely, atrophy of Malpighian bodies, with overgrowth of the connective tissue round the central artery, fibrosis of the reticulum and endothelial proliferation. No pigmentation and no giant cells are present.

CASE II.—A man, aged 53, a commissionaire, was admitted into St. George's Hospital under Mr. Jaffrey's care to undergo, at his own request, a radical cure for a hydrocele of many years' standing. At the operation, which was successfully performed, a great tendency to haemorrhage was noticed. On the following day a rise of temperature, in the absence of any local trouble in the wound, led to a careful physical examination, when deep-seated pneumonia was suspected. At the same time a greatly-enlarged spleen was discovered. Profuse diarrhoea, with haemorrhage from the bowel and, later, epistaxis and bleeding from the mouth, caused the patient's death fifteen days after operation. In spite of the absence of blood count, the repeated haemorrhages, the histological findings in the spleen and a mild cirrhosis of the liver, together with the changes in the splenic vessels, all formed a picture so like that drawn by Banti and Senator that I came to the conclusion that we had to do with a case of Banti's disease of some long standing. It must be added that there was a syphilitic history. The spleen in this case weighed 42 oz., and differs from the last in three points—namely: (1) That the Malpighian bodies in places are well preserved, but in others are small and atrophic; the central artery, however,

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[28] Ehrlich and Morgenroth, *Berl. klin. Woch.*, 1900.
[29] *Univ. of Penn. Med. Bull.*, November, 1902.
[30] *Splenic Anaemia*, 1902, p. 10.
[31] *Ziegler's Beiträge zur path. Anat.*, Bd. xxiv, s. 21.
[32] Loc. cit.
[33] Allbutt's *System of Medicine*, vol. v, p. 545.
[34] *Berl. klin. Woch.*, Bd. xxxviii, s. 1145 (1901).
[35] *Sem. Méd.*, 1892, p. 331.
[36] *Arch. de Méd. Expér. et d'Anat. Path.*, 1896, p. 108.
[37] *Path. Soc. Trans.*, vol. xvi, p. 148.

shows no surrounding fibrosis. The fibrosis of the reticulum, and endothelial proliferation are well shown; (2) the vessels are markedly diseased, and the splenic artery showed three calcified aneurysms; (3) in addition, there are small areas of haemorrhage.

CASE III.—The third case was that of a man aged 35, who gave a history of illness of about nine months' duration. On admission into St. George's Hospital, under Dr. Ewart's care, a diagnosis of splenic anaemia was made, the blood changes being such as are met with in these cases. Much improvement followed his treatment in hospital, and a diminution in the size of the spleen was observed. Death, however, resulted from haemorrhage following a ruptured oesophageal varix. The spleen weighed 1 lb. 8 oz. Microscopically it shows a patchy fibrosis chiefly around the trabeculae, with but little general thickening of the reticulum. There is a slight diminution in the number and size of the Malpighian bodies, but no fibrosis around the central artery. There is a very slight grade of endothelial proliferation. No giant cells and no pigmentation are present.

The shorter history and the slighter grade of the changes in this last case, as compared with those in the other two, naturally suggest the question, Is there any normal sequence in the times of the occurrence of the morbid appearances described? Can it be said, for instance, that pure endothelial proliferation, as in Collier's case, is the primary lesion and the general fibrosis and atrophy of the Malpighian bodies but a secondary change, the result, perhaps, of a prolonged chronic intoxication?

Senator[38] appears to regard a proliferation of the endothelium clothing the blood vessels and spaces as an early change, and says "that later the pulp is transformed into fibrous tissue."

The confirmation of a statement such as this is fraught with difficulty, inasmuch as the onset of splenic anaemia is insidious, and patients only present themselves for treatment under ordinary circumstances when they feel really ill. The history given may be a short one, when on examination considerable enlargement of the spleen is found to exist—an enlargement often so great as to force one to conclude that the disease has been of some duration.

On tabulating a few of the published cases in which necropsies were made, and arranging them in chronological sequence according to the length of time the disease was supposed to have existed (see Appendix), it soon becomes apparent that the changes found at any one period of the disease are inconstant, and consequently it cannot be said that the changes described follow each other in any definite sequence, and the question put must be answered in the negative.

The next question to be decided is: Are the changes described really distinctive of the spleen in splenic anaemia? Given a section of the spleen showing the lesions described, can it be definitely said without other evidence that the case was one of splenic anaemia?

There is under one of the microscopes a section of the spleen of a small child, who died from what was thought to be ordinary broncho-pneumonia. Careful search failed to find any trace of tubercle in the body, and subsequent histological examination of the lung proved the lesions to be tuberculous, and many tubercle bacilli were found in the sections.

The spleen was cut under the impression that it would furnish a good section of a normal organ, but it is not normal. It shows a well-marked grade of endothelial proliferation, not so marked as in Collier's case for example, but still fairly well pronounced.

Under another microscope is a section of the spleen of a man, aged 44, who died with very advanced atrophic cirrhosis of the liver and ascites, for the relief of which the Talma-Moreson operation had been performed some 2½ years previously. The patient gave a history of alcohol and syphilis. The spleen weighed 3 lb., and was surrounded by adhesions. It contained many haemorrhages and calcareous areas, and the vessels showed well-marked endarteritis. The section in places shows a well-marked fibrosis of the reticulum with some endothelial proliferation; in other parts the pulp spaces are dilated and lined with a detritus, the result of cell destruction which give an appearance of thickening not actually present. These areas are similar to the spleen of stasis. But in the fibrosed areas the picture presented is a good likeness of what is met with in splenic anaemia.

Azzurini[39] claims that the splenomegaly found in cases of cirrhosis of the liver, in whatever stage it may be, is due to stasis—due to the dilatation of the veins and spaces with blood. The capsule and adventitia of the veins are thickened, but not the reticulum. In some long-standing cases such a thickening may seem to exist, but is to be explained by:

1. Aggregation of the filaments from compression by the dilated veins and capillaries.

2. The tendency that the detritus, due to destruction of the cellular elements, has to surround the filaments, and thus give them the false appearance of thickening.

Azzurini states that his results coincide, amongst others, with those of Oestreich, with the exception that the latter author describes a hyperplasia of the cells of the pulp.

Oestreich,[40] however, finds that the spleen in the early stages of cirrhosis of the liver shows a cellular proliferation—a hyperplasia of the pulp—which may remain as such even to the later stages of the disease, but which may pass on to further indurative changes—namely, increase of connective tissue or true atrophy of the pulp. His Cases 7 and 8, both of advanced cirrhosis, are good examples of a general fibrosis of the spleen. In all his cases the follicles and vessels were intact.

Lastly, fibrosis and atrophy of the Malpighian corpuscles are described by Pilliet[41] as a constant change in the spleen of old age, and the same condition has been produced by him[42] experimentally by the injection of various poisons acting on the blood.

We have seen that there are other conditions clinically widely differing from the set picture of the disease under discussion, in which similar lesions can be found in the spleen. If, then, we are given only the spleen and no further details, we cannot definitely say that we have to do with a case of splenic anaemia.

On the other hand, I am inclined to think that the presence in the spleen of all the changes described may help to complete the picture of a case of splenic anaemia in which some other detail is wanting.

Before concluding I would briefly touch upon the morbid appearances of the spleen in lymphadenoma as compared with those met with in splenic anaemia.

Dr. Rolleston, writing last year, considers that the term lymphadenoma of the spleen is justified as describing the changes met with in splenic anaemia because they agree with those recently described as being found in the soft form of lymphadenoma of lymphatic glands.

A comparison of the spleen from a case of lymphadenoma, which I recently examined, shows both macroscopically and microscopically striking differences. The marbled appearances of the "hardbake" spleen bears little resemblance to the homogeneous "beefy" spleen of splenic anaemia. The microscopical appearances of the lymphadenoma spleen are great overgrowth and proliferation of the Malpighian bodies, and masses of lymphoid cells, apparently of new formation, which crowd out and compress the normal splenic pulp.

Such were the changes also observed in the spleen in a case recently described by Dr. Peacocke,[43] which he entitled, A Case of Splenic Anaemia, but which he states should more accurately be A Splenic Form of Hodgkin's Disease.

Dr. Andrewes[44] gives a clear definition of lymphadenoma, namely, "a disease characterized by a progressive enlargement of the lymphatic glands and of the lymphoid tissue of certain internal organs, notably, the liver and spleen, unattended by the indiscriminate metastasis of sarcoma, and characterized by what he believes to be a definite histological change in the lymphatic tissues affected." This change includes fibrosis and endothelial proliferation, but it is not a general change in the internal organs—it is limited to the lymphoid tissue, and we do not hear that it leads to atrophy and disappearance of such lymphoid tissues as the Malpighian corpuscles.

In splenic anaemia the changes are diffuse, and affect generally the several tissues of the spleen simultaneously and in different ways; in lymphadenoma the changes are localized to the lymphoid tissue.

[Dr. Trevor expressed his sincere thanks to Dr. Ewart, Dr. Rolleston, Mr. Jaffrey, and to Dr. Collier for permission to make use of and show specimens from cases under their care.]

[38] Loc. cit.

[39] *Lo Sperimentale*, fasc. v-vi, p. 597, 1902.

[40] *Virchow's Arch. f. path. Anat.*, Bd. cxlii, s. 285.

[41] *Soc. de Biologie Comptes Rendus*, 1892, p. 283.

[42] Ibid., 1894, p. 332.

[43] *Dublin Journal of Medical Science*, April, 1903.

[44] *Path. Soc. Trans.*, vol. liii, p. 306.

Appendix.—*Table of cases of Splenic Anaemia arranged in Chronological Order according to Supposed Length of Duration.*

Author.	Sex.	Age.	Duration	Weight of Spleen.	Atrophy of Malpighian Bodies.	Thickening of Rectum.	Endothelial Proliferation	Reference.
				oz.				
Murrell ...	F	31	Under 3 w'ks	9	No	Much	No	*Lancet*, vol. i, 1902, p. 1177.
Hawkins and Seligmann	M	37	3 m'ths	25	No	Very slight	Marked	*Lancet*, vol. i, 1903, p. 787.
Case (3) ...	M	35	9 m'ths	24	Slight	Slight	Slight	
Banti... ...	F	16	2 years	46	No	Noticeable	No	Quoted by Bruhl. *Arch. Gén. de Méd.*, vol. clxviii. p. 160.
West	M	36	2 years	76	Fair	Slight	No	*Med. Chir. Soc. Trans.*, vol. lxxix.
Williamson...	M	9	2½ years	40	Very marked	Marked	No (?)	*Med. Chron.*, vol. xviii, p. 103.
Michell Clarke ...	F	19	4 years	61	Slight	Marked	Of vessels only	*Bristol Med. Journ.*, vol. xxi.
Picou and Ramond ...	F	32	4 years	98½	No	Marked	Enormous	*Arch. Gén. de Méd. et d'Anat. Path.*, 1896, p. 168
Collier ...	F	6	4 to 5 years	66	Disappearance	Slight	Enormous	*Path. Soc. Trans.*, vol. xlvi, p. 148.
Rolleston (Case 1) ...	M	23	12 years	37	Marked	Very marked	Marked	*Splenic Anaemia*, 1902.
Gaucher ...	F	—	25 years	—	Disappearance	Marked	Enormous	*Semaine Méd.*, 1892, p. 331.
Trevor (Case 2) ...	M	53	?	42	Slight	Well marked	Marked	*Lancet*, vol. i, 1903, p. 1446.

III.—Herman Senator, M.D.,

Professor of Medicine in the University of Berlin.

Professor Senator said: I am of opinion that the so-called splenic anaemia cannot be strictly separated from other similar affections of the haemopoietic viscera which have a great resemblance to leukaemia, without the characteristic condition of the leukaemic blood, and which therefore it is justifiable to class together under the name "pseudo-leukaemia," as Cohnheim proposed in 1865. Indeed, the symptoms and course of these affections are very similar, and a combination of "splenic anaemia" with affections of the other haemopoietic organs is frequentiy observed. I shall confine myself to the pathological part of the question, especially the relation of anatomical changes to pathogeny. As to the spleen, the enlargement is due to the hyperplasia of pulp and follicles, and, in the later course, of the connective tissue and elastic fibres. At first there is more or less hyperaemia, which decreases gradually the more the fibrous induration advances. Beneath the cells of the hyperplastic pulp and follicles there are remarkable phagocytic cells of various sizes with a more or less numerous inclusion of cells and cellular detritus; especially remarkable also are the many exceedingly large oval or roundish or flattened cells with great vesicle-like nucleus, which, however, with regard to their protoplasm, nucleolus, and staining properties have not been uniformly described by the observers, and consequently also not uniformly explained. Some cells appear as if floated together into extraordinary large giant cells, some present an amoeboid aspect (Ashton, Marchand).

The opinion that at least the larger number of the cells are hyperplastic endothelia of the venous capillary vessels would appear most acceptable (Bovaird, Harris and Herzog, Borissova).

Beside the enlargement of the spleen, a swelling of some or many abdominal glands is regularly observed, as I conclude from my own observations as well as from those described by others. This is the fact also when no swelling of the exterior glands exists, that is, in cases of so-called pure splenic anaemia or pseudo-leukaemia lienalis or idiopathic splenomegaly.

This swelling is also caused by a simple hyperplasia with increase of the connective tissue and of the cells, among which, besides lymphocytes, various other cells, partly resembling myelocytes are to be found.

Condition of the Blood.—The blood does not show in all cases, and also not in each case at all times the same properties. As far as deductions may be drawn from the existing observations, although it is not certain that these can always be classed under the same heading, the blood shows at the beginning and in very slowly-progressing cases for a protracted period the property of the so-called simple anaemia only, that is, decrease of the erythrocytes and of the haemoglobin, poikilocytosis, and either no considerable change in the number and quality of the leucocytes or a slight increase of the multinuclear (neutrophiles), that is to say, the so-called leucocytosis microcytes. An abnormal quantity of blood plates may also be noticed. During the further progress or from the beginning in such cases, which have a more rapid course with more intensive anaemia and cachexia, disposition to haemorrhages, and so forth, a still greater decrease of the haemoglobin may occur than would correspond with the diminution of the erythrocytes, in consequence of which the so-called "colour index" becomes less; further, the number of the leucocytes frequently decreases, more especially that of the multinuclears, so that the uninuclears, particularly the lymphocytes, are in excess without being themselves absolutely increased, thus leucopenia and (relative) lymphocythaemia may be represented. Finally, nucleated red cells may also be observed, even if not to so large an extent as in the typical pernicious anaemia, and eosinophile cells in an abnormally large number.

This condition of the blood, which differs in some degree from that of simple anaemia, may be caused by the spread of the morbid process to the bone marrow and to a larger number of lymphatic glands. Moreover, it is not surprising that the quality of the blood changes in the course of the chronic disease, during which better and worse periods alternate. Beside this, the condition of the blood may undergo a change in consequence of intercurrent diseases, by febrile attacks, by large haemorrhages or suppurations.

During the further course, as Banti has pointed out, interstitial hepatitis, with granular atrophy of the liver and ascites, is not rarely developed. These cases may justly be termed "Banti disease," and would thus represent the second stage of the splenic anaemia.

Some years ago I directed attention to the fact that ascites may occur without cirrhosis of the liver, which fact is undoubtedly proved by clinical observations and by necropsies; and, finally, many cases end fatally without ascites, whether cirrhosis of the liver existed or not, death occurring mostly by cachexia or haemorrhages.

With reference to the etiological conditions, only those cases may be taken into consideration in which the tumefaction of the spleen is alone the chief or principal clinical symptom, which cannot be explained by other causes—cases which, therefore, have been termed idiopathic splenic hypertrophy, or primary splenomegalia.

It is well known that in febrile infectious diseases an acute tumefaction of the spleen regularly occurs, although not so extensive in all cases. This tumefaction usually disappears after the fever, but may exceptionally remain and then gradually increase.

This is most frequently observed with malaria, a tumefaction of the spleen remaining after the typical febrile attacks, followed then by anaemia and cachexia. This is more rarely met with in other infectious diseases, as I have noticed, for instance, in a case of typhoid fever, and in another of influenza. Further, a chronic tumefaction of the spleen, with extraordinarily severe anaemia, is very frequently observed in cases of rickets, and here, I may add, some cases of Barlow's disease, although the identity of this disease to rickets is not generally admitted.

After deducting these cases a number remain without a definitely ascertainable cause. In some of these cases, the origin of which is still entirely unknown, a family predisposition to the disease would appear to exist, as proved by the occurrence with three children of the same family, observed by Brill.

The bone marrow shows an embryonal (lymphoid) property, as far as I am able to gather from my own observations and from the few published notices. The cells, the augmentation of which produces this condition, are the same, existing in the normal red bone marrow, but the proportion of the various cells to each other is so differently stated that a rule cannot be deduced in this matter.

In reference to other forms of severe anaemia it only appears worthy of note that nucleated erythrocytes (erythroblasts) are not found in augmented but rather in an abnormally small number, and also giant cells.

In a few cases within the lymphoid marrow several distinctly differing grey or grey-reddish spots were found, consisting of an especially large and dense conglomeration of lymphadenoid tissue (forms of so-called "myeloma").

In one case of splenomegaly with ascites Borissova found

in such circumscribed spots of the bone marrow the before mentioned large cells, as existing in the spleen and explained them as hyperplastic endothelia of the venous capillary vessels.

The condition of the liver is very different. If the organ is in any way diseased, which, as it would appear, in the first period of the sickness is not the case, the alterations may have three different forms. First, smaller or larger spots of conglomerated round cells. In the above mentioned case of my observation this formed the only essential change of the organ. The cells had principally the character of the lymphocytes, a portion seemed in a fatty degeneration, other cells were filled with a dark-brown pigment. There can be no doubt that it was metastatic lymphoma, that is to say, a secondary alteration. In one case of Ashton's, the liver has not shown such spots, but in the very dilated capillary vessels an extraordinary large number of lymphocytes existed by the side of few eosinophile and neutrophile leucocytes.

In other cases (Bovaird, Borissova) the liver showed also, especially numerously, the above-mentioned large cells, resembling the hyperplastic endothelia that were present in the spleen and in the bone marrow. In the case of Borissova these cells were found undoubtedly in the dilated capillary vessels.

Finally, an alteration, identical or very similar to the common cirrhosis of the liver has been several times described, and Banti has mentioned more especially an annular, interlobular cirrhosis, originating from the connective tissue round the ramifications of the portal vein as characteristic of that form of splenic anaemia named after him. The principal part of the portal vein shows, according to Banti, a sclerotic induration of the intima, a process which has spread to it from the similarly-changed splenic vein. Buday also found such a sclerotic process of the portal vein.

There can be no doubt that many of these cases, described as pseudo-leukaemia or cirrhosis of the liver with splenomegaly, are caused by syphilis, especially hereditary syphilis, but it would be entirely incorrect to attribute all such cases, or even all cases of splenic anaemia to syphilis alone.

I will not urge the fact that in a number of cases no sign of syphilis can be proved either by the anamnestic or by an objective examination, as it is sufficiently known how difficult a proof of that disease can be brought clinically or often anatomically. But there are, as I also have previously proved, undoubted cases of splenic anaemia, in which neither cirrhosis of the liver or ascites were present; and, further, the proliferation of the interstitial connective tissue in a series of cases must undoubtedly be regarded as secondary. In fact this may be sufficiently explained by the alterations in the spleen.

In this regard it may be remarked in the first place that the entire complex of the symptoms of splenic anaemia may have existed many years without the discovery of ascites or cirrhosis of the liver by the most careful and constantly-repeated examination. Further, this has been proved in a not inconsiderable number by the necropsy *in vivo* of such cases, in which the spleen has been extirpated, and by the subsequent course, and finally the necropsy also has confirmed such cases. These cases may correspond (as mentioned) to the first (anaemic) stage of Banti's disease; it may last ten to twelve years, and longer. Hitherto it has not been possible to ascertain whether this stage, providing a cure has not been effected in any manner—as, for instance, by splenectomy—can ever pass necessarily to the second and third stage of Banti's disease.

These changes of the liver may, as stated, be explained as secondary, and as consequences of the splenic affection. It is true that the older opinion is not yet generally abandoned that every swelling of the spleen combined with cirrhosis of the liver is always and exclusively caused by congestion in the portal vein. But this opinion has long been disproved by myself and others (Oestreich), and it is shown that the swelling of the spleen is only in a small degree owing to congestion, in the main independent of the liver, and produced by the same cause as the latter, or even preceding the alteration of the liver which may be induced thereby.

With regard to splenic anaemia, the idea that affection of the liver is secondary, produced by a swelling of the spleen, appears very likely. We are aware how easily the liver is affected by injurious substances, transported to it from the portal vein, and especially with regard to the cirrhosis of the liver of alcoholics, it is justly assumed that the origin is to be found in the irritating substance carried to the liver from the veins of the digestive tube. It is easy to understand that blood of abnormal condition conducted to the liver from the affected spleen through the large splenic vein may likewise unfavourably act upon the liver.

The existence of those large cells originating from proliferated endothelial cells of the spleen is a direct proof that in splenic anaemia the injurious substances are transported from the spleen to the liver. Not only may those cells carried from the spleen produce further consequences by obstructing the circulation of the blood and by mechanical irritation, but no doubt still other injurious substances in the same time may pass over from the spleen to the liver.

Recapitulating, it will be apparent that in the course of splenic anaemia the liver may become affected in different ways, either by the occurrence of lymphomatous spots, or by the embolic transport of cell material and other injurious substances from the spleen, which produce inflammation and necrosis. It would also be possible for the same injurious substances to act upon the spleen and the liver, but the morbid course would always seem to prove that the spleen is first affected.

In regard to the ascites, which does not always occur, as mentioned by Banti, so late in the last stage, but not seldom prematurely, and also may disappear, its existence, as I have previously indicated, cannot be derived from a liver cirrhosis in those cases in which this may not be clinically or anatomically proved. Perhaps a congestion in the portal vein and ascites are produced in consequence of the obstruction of the capillary vessels by the repeatedly mentioned great cells, and the disappearance of the same may be understood by the cells being occasionally carried away or destroyed, and hereby the circulation again becoming free. Further, in some cases the compression of the lymph channels by swollen abdominal glands is perhaps of importance, and finally also perhaps the congestion of the tumefacted spleen in the abdominal cavity. The high grade of anaemia may also contribute to a more or less diffused hydropsy with ascites.

Beside the anatomical alterations described others are often found *post mortem*, less constant, and partly only consequences of anaemia and cachexia. I must not fail to mention that in some cases a swelling of the thyroid gland, further, of one or both suprarenal glands, and of the follicles of the alimentary tube have attracted my attention. Specific bacteria, which might be brought into causal connexion with the disease, have been repeatedly searched for, but never found.

On the bases of the above remarks, the following view of the properties and development of splenic anaemia may be considered as justified. The reason for the swelling of the spleen is to be found in an abnormal condition of the blood, which may be owing to different causes. In cases which are observed in the course of malarial cachexia, or of rickets, or, though rarely, of Barlow's disease, further in the rare cases of splenomegaly left after other acute infectious diseases, the reason may be the specific alteration of the blood peculiar to each of these diseases. For the other cases with unknown etiology it must be assumed that the injurious substance reaches the blood from the intestinal tube through the lymphatic ways. This assumption is justified by the fact that the abdominal lymphatic glands are always swollen in a more or less degree, as above mentioned, even where no other swollen glands are found.

It is known how easily the spleen responds to all irritations proceeding from the blood, principally of an infectious, but also toxic, nature. In a similar manner act the other haemopoietic organs, the bone marrow, and the lymphatic glands. The reactive power of these organs to various irritations is, however, different, as sometimes the one will respond more and sometimes the other or in an increased degree.

We therefore regard the process in these cases with entirely unknown etiology in the same manner, as, for instance, the swelling of a typhoid spleen is developed in an acute manner, that is, introduction of the injurious substance from the alimentary tract, swelling of the respective lymphatic glands, alteration of the blood, and hyperplasia of the spleen. The affection of the spleen may then further produce an alteration of the blood, which on its part may lead to a pathological change of other organs, more especially of the bone marrow and lymphatic glands. It would be also possible that the same alteration of the blood, which originally has only produced the swelling of the spleen, may act injuriously also upon the other haemopoietic organs, if its influence lasts sufficiently long. It is also not improbable that the injurious substance taken up from the alimentary tract is not always the same, and that the variations in an earlier or later participation of the other lymphatic glands

and of the bone marrow of the liver, etc., are just dependent on these differences.

In support of the opinion that at the beginning only the spleen is affected, the fact may also be mentioned, as already proved in a sufficiently large series of cases, that after extirpation of the spleen the disease was cured or the course arrested. Hereto the opinion of Pepperheim would well correspond, that severe anaemia only supervenes when circumscribed, lymphoid, or splenoid spots ("myeloma") in the bone marrow are added to the swollen spleen. Cases in which such "myelomata" have not yet formed he distinguishes as pseudo-leukaemia lienalis.

By the primary and prevailing affection of the spleen, splenic anaemia is distinguished from lymphatic anaemia or Hodgkin's disease, in which, as known, the swelling of the lymphatic glands is the first always prominent symptom. It may well be assumed that in this disease the organs of the vocal and pharyngeal cavity and the larynx are the entrance portals, through which the pathogenic cause enters the lymphatic glands of the throat, and thence into the blood, and further, that the abnormality of the blood hereby produced is such as to act as an irritation, contrary to splenic anaemia, at first and principally upon the lymphatic glands in general, and only later upon the spleen and the bone marrow.

The myelogenetic form of anaemia (pseudo-leukaemia medullaris) may be assumed when the bone marrow is primarily affected with lymphadenoid spots. Such cases have hitherto been found only in a small number, and, as far as the same could be clinically well observed, presented the form of strong anaemia with a condition of blood, partly similar to pernicious anaemia, partly to lymphocytic leukaemia, as may be found occasionally also in serious cases of splenic anaemia. For the diagnosis of these cases, beside this condition of the blood, the existence of Bence Jones's albumosuria perhaps may be of a certain importance. At all events the description and explanation here given seem to me to justify the demand that splenic anaemia should be united with affections of the other haemopoietic organs in one group under the name of "pseudo-leukaemia," which in the splenic or lymphatic or medullary form may be subdivided according to the prevailing affection of the one or other organ. Of course these forms can be combined with one another either from the beginning or in the further course.

IV.—J. MICHELL CLARKE, M.A., M.D., F.R.C.P.,

Physician and Pathologist, Bristol General Hospital.

DR. MICHELL CLARKE said: From a clinical point of view splenic anaemia seems to me to be sufficiently well-defined, and its characteristic symptoms, of which the enormous spleen in a well marked case is the most striking, render it easily recognizable, for, as Professor Osler points out, such a large spleen is only common to leukaemia and splenic anaemia, and examination of the blood at once settles the diagnosis between the two diseases. It seems further established that the symptoms first described by Banti belong to the final stage of splenomegaly or splenic anaemia. The disease is so uncommon that the personal experience in it of any one man must be limited: some remarks on the few cases I have seen may not be out of place here.

First, as to the blood condition; in a well-marked case of Banti's[45] disease with enormous spleen, attacks of haematemesis, ascites, and a duration of illness of four years examination of the blood six weeks before death gave haemoglobin 22 per cent., erythrocytes 1,900,000, white cells 3,500; differential count, polymorphonuclears 56 per cent., small lymphocytes and transitional cells 25.3 per cent., large mononuclears 11 per cent., eosinophiles 0.3 per cent. In the last five weeks of life the large mononuclear cells increased to 18 per cent.

In a case of splenic anaemia of some standing under the care of my colleague, Dr. J. O. Symes, it was curious that the differential blood count was absolutely identical with the above.

In a third case in which, although the disease had only lasted six months, the spleen was very large, reaching to the iliac crest below, and outwards to the umbilicus, the blood showed haemoglobin 42 per cent., erythrocytes 3,430,000, leucocytes 8,000, and the differential count gave normal proportions. The first two cases go to increase the number in which a relative increase of large mononuclear cells has been found, and it is interesting to bear in mind that a similar change in the blood has been found in a certain number of cases of lymphadenoma.

[45] *Bristol Medico-Chirurgical Journal*, March, 1903.

The discrepancies in the blood counts which appear in the published cases of splenic anaemia may, I think, be accounted for when we remember the long duration of the disease, the changes that take place during its course, and also the frequency of severe haemorrhages; the latter must affect the blood count for a considerable time, as in the late stages of the disease at any rate they are but slowly recovered from. In future cases the relation in time of the blood count to haemorrhage should be clearly stated.

With regard to ascites, although cirrhosis of the liver is probably the most important cause, it is not present in all cases which present this symptom. This was so in my case, for although in some parts of sections of the liver there was an excess of a fine fibrillar tissue with a moderate round-celled infiltration in the portal canals and their branches, it was by no means general, and apparently not enough to account for the large amount of ascites—11 and 8 pints of fluid were removed on two occasions—nor for the presence of numerous varicose veins at the cardiac end of the oesophagus, from rupture of one of which the patient died. But even without hepatic cirrhosis there are other causes at work which in combination might cause ascites, especially in the late stages of the disease—for example, heart weakness, with chronic congestion of liver and spleen, well marked in my case, and the influence of the impoverished state of the blood, aided possibly by the presence of toxins in some part of the portal system of vessels, upon the nutrition of the capillary walls in that system. I should like also to call attention to the presence in this case of a chain of enlarged lymph glands, dark red in colour, each the size of a bean or larger, which extended from the hilum of the spleen along the upper margin of the pancreas to the spine. The trabeculae and framework of these glands were thickened, the vessels injected, and in some sinuses there were numerous red corpuscles, in others large cells with clear protoplasm and deeply-staining nuclei like those in the spleen. There were no other enlarged lymph glands elsewhere. That the enlargement of these glands may be of importance in the pathology of the disease is rendered possible by Dr. Warthin's observations[46] on the changes in the haemolymph nodes and prevertebral lymph glands in pernicious anaemia.

A striking point in my case, considering the long duration and the profound anaemia of the later stages, was the absence of fatty degeneration in any of the organs. In looking over the reports of cases to which I have had access, I do not find as a rule this point specially mentioned. If fatty degeneration in the viscera is absent in splenic anaemia, even in those cases in which the anaemia has been profound for some time before death, it certainly affords a marked difference to what obtains in pernicious anaemia, and, on the other hand, to the laying on of fat which so often accompanies chlorosis, and, I think, must be of importance in the pathology of the disease.

With regard to the histological changes in the spleen, the view does not seem to me to be sufficiently established that the fibrotic changes present in some cases are a later sequel of the endothelial proliferation found in others; partly because in some even long-standing cases the two changes exist side by side. Nor in the absence of endothelial changes in many cases does the view that splenic anaemia is a lymphadenoma of the spleen afford a sufficient explanation of the malady.

As to the nature of the disease, whether the splenic condition is the primary change, or merely secondary to a blood state, one of the chief arguments in favour of the former view is the cure of the disease that has in several cases followed splenectomy. Now from their recent researches on the functions of the spleen, Noël Paton and Goodall[47] conclude that there is no evidence that the spleen has any haemolytic function. It is rather a scavenger of the blood, removing dead erythrocytes, breaking down haemoglobin, and retaining the iron for future use. It is noticeable that true haemolytic changes are not marked in splenic anaemia; for example, absence of accumulation of haemosiderin in spleen and liver. Supposing that this "scavenging" action of the spleen were to fail, for example, as a result of the action on the spleen of a poison absorbed from the intestinal tract, then products of dead corpuscles or other toxic matters would accumulate in the organ, and excite irritation. The source of irritation coming through the blood stream, the first changes would occur in the vessels, and this would account for the marked changes in the endothelium of the vessels which are so prominent a feature in some of the published cases. If the

[46] *Amer. Journ. Med. Sci.*, 1902.
[47] *Journal of Physiology*, vol. xxix.

process were limited for a time to the spleen the chief feature of the disease at this period would be the enlargement of that organ, and on this hypothesis, that the toxic matter could for some time be kept pent up in the spleen, removal of the viscus by carrying off bodily the poisonous material would check the disease at this stage.

Later in the course of the disease the toxic matters escaping into the portal blood and carried to the liver would gradually set up the cirrhotic process in this organ, provided the patient was not cut off by an intercurrent haemorrhage. Further, from the connexion between the veins of the stomach and spleen, it is possible that toxic material might reach the stomach directly, and lead to haematemesis; haemorrhage would on this view be a symptom indicating that the diseased process was no longer confined to the spleen.

I should like further to ask opinions as to the relation of splenic anaemia to a peculiar form of anaemia, of which I have seen three cases in which there was a moderate enlargement of the spleen, not dependent on malaria, syphilis, cirrhosis of liver, or any other assignable cause. The blood change was that of secondary anaemia, with a slight increase of large transitional mononuclear cells. Thus in one case the red cells were 2,290,000, white 8,000, haemoglobin 55 per cent. In another, red cells 2,400,000, white 6,250, polymorphonuclears 72 per cent., small lymphocytes 16 per cent., large mononuclears 10 per cent. Epistaxis recurred several times in one case. The spleen reached 2 to 3 in. below the ribs; the illness seemed to proceed by recurrent attacks, in the intervals of which the patients improved very greatly. The relapses seemed to recur at intervals of 6 to 12 months. The blood changes and other signs were not those of pernicious anaemia. Can such cases be included under splenic anaemia, or would they eventually pass into it with further enlargement of spleen? Or, on the other hand, must a greatly enlarged spleen always be present from an early stage of the illness to constitute true splenic anaemia?

V.—WILLIAM EWART, M.D., F.R.C.P.,

Senior Physician, St. George's Hospital.

DR. EWART said: One of the cases of which the morbid anatomy has been reported by Dr. Trevor exhibited such remarkable improvement under treatment that I think a description of the clinical features will not be out of place:

W. G., aged 34, single, a groom, of moderate habits as regards alcohol, free from syphilis and of average healthy parentage and previous history, was admitted into St. George's Hospital (Medical Register, No. 1773, 1902) on December 17th, 1902, suffering from anaemia and exhaustion three weeks after a severe haematemesis. Smaller quantities of blood had been vomited again on December 15th. His previously robust health had broken down twelve months ago after a first haematemesis. Since then he had noticed now and again some blood in the stools, and three months ago a swelling of the abdomen. In spite of much prostration he had not taken to his bed until two days before admission.

He was a stout broad-shouldered man rather older than his years in appearance, with pallid mucous membranes and somewhat pasty, blanched complexion. The lungs were normal, the heart healthy but for a haemic murmur over the pulmonary artery. The abdomen was large and soft, the liver not much enlarged, but the spleen of great size, extending upwards to the seventh rib in the mid-axillary line, and downwards to a point ½ in above the line passing from the navel to the anterior superior iliac spine, of firm consistence and rather irregular outline. The urine was normal of specific gravity 1020. His clinical history in the hospital was one of convalescence without any prominent symptoms, and he was sent to Wimbledon on April 8th, 1903, to complete his recovery.

The treatment adopted was rest in bed, a generous diet, including raw meat, fresh vegetables and fruit, and red wine; graduated exercises, respiratory and general; and medicinally the perchlorides of mercury and of iron, and an abundant supply of brewer's yeast. From February 18th to March 22nd ten subcutaneous injections of sodium cinnamate were administered (20 minims of Drage's solution). Under this plan the patient rapidly made blood and improved remarkably in every way, gaining weight and strength. The spleen, however, did not show a proportionate shrinkage, although there was a definite reduction in its size. The complexion and general aspect during the greater part of the period of residence in the hospital were those of plethora rather than of anaemia. No complications were observed, and the functions and secretions remained normal throughout. The blood presented no marked morphological peculiarities. There was from the first a decided tendency to leukopenia, and this persisted during the stage of hyperglobuly which succeeded the previous oligocythaemia. The following blood counts were registered:

Dec.	20.	Red,	3,200,000	; white,	2,900	: haemoglobin,	22½	per cent.
,,	24.	,,	2,600,000	,,	1,750	,,	—	,,
Jan.	20.	,,	4,600,000	,,	—	,,	—	,,
Feb.	14.	,,	6,250,000	,,	3,100	,,	85	,,
March	3.	,,	—	,,	6,300	,,	—	,,
,,	23.	,,	—	,,	4,000	,,	—	,,

It will be seen that during the period of injections of sodium cinnamate a slight increase of white cells was recorded.

The patient was readmitted from Wimbledon on June 11th (Medical Register, No. 973), considerably blanched after a large haematemesis the previous evening and again the same morning. His pulse was weak, with a rate of 96 per minute; the respirations rather laboured, at 26 per minute. No haemic murmur was heard, but the first sound was short, and the cardiac area of dullness rather large. No searching examination was possible, but the spleen was found to be of much smaller size than previously, reaching to the fifth interspace in the mid-axillary line, and little more than 2 in. below the costal arch. Haematemesis recurred at 6 o'clock and at 8 o'clock the same evening, and he died at 9.20, in spite of subcutaneous injections of morphine and of adrenalin chloride.

An almost equally marked reaction to treatment occurred in another case under my care, in which the disease is known to have existed twelve years. This seems to me to demonstrate that cases of splenic anaemia may remain for considerable periods free from cachexia, and even from anaemia; it suggests that the affection may not be of an essentially malignant or progressive nature; further, that general treatment should not be hastily abandoned for operative measures. In view of the difficulty of arriving at any conclusion from the present data of morbid anatomy and of the probability that more than one disease is included under the name, it is desirable that clinical analysis should be brought to bear more searchingly upon the pathology of the disease, and that an endeavour should be made to trace in the varied behaviour of individual cases some clue to the nature and to the best treatment of the varieties of the affection.

VI.—F. M. SANDWITH, M.D., F.R.C.P.,

Senior Physician, Kasr-el-Aini Hospital, Cairo.

DR. SANDWITH said: I should like to draw attention to the fact that splenic anaemia is to be found in Egypt. In my medical wards I have seen some twenty cases of ascites with enlargement of liver and spleen, and with no apparent cause such as alcohol, malaria, syphilis, or bilharzial disease. I have had the opportunity of showing examples of these cases to many medical visitors, none of whom could throw any light upon their diagnosis. Lately I have seen Professor Senator's article in the *Berliner klinische Wochenschrift*, and at once recognized that my unknown cases were really Banti's disease. Since then I have seen two or three cases, of which one died, the spleen being found to weigh 116 oz. I have not noticed much anaemia, and never jaundice. It may be of interest that some of my cases have been in children.

VII.—D. J. HAMILTON, M.B.

Professor of Pathology, University of Aberdeen; President of the Section.

PROFESSOR HAMILTON said: I have listened with much pleasure and instruction to the various papers laid before the Section on this most interesting subject, and the conclusion I have come to no doubt like many others is that as yet the pathology of this, as of so many other blood diseases, is wrapt in obscurity. The various contributors to the discussion have shown us how the spleen becomes cirrhosed and enlarged, and how various other ulterior changes take place in its essential parts, how the liver likewise becomes cirrhosed, and how alterations in the blood pointing to haemolysis apparently without leucocytosis are to be met with, yet I would ask whether this constitutes the essential pathology of the disease, or is to be regarded as the effect of a causal agent as yet undiscovered. Dr. Rolleston, Professor Senator, and others have drawn attention to the phenomena of the disease being due possibly to the absorption of an intestinal toxin and this seems to me to constitute a most promising line of inquiry. Professor Senator drew a comparison between splenic anaemia and Hodgkin's disease. He supposed that both might be diseases due to the absorption of an intestinal toxin, the one reacting upon the glands the other on the liver and spleen. Dr. William Hunter's observations on the relationship of an ulcerated state of the tongue or of dental caries to the causation of pernicious anaemia were of significance in this connexion. It seems to me that the weak spot in the discussion, if such a term in so admirable a discussion can be permitted, is that no one has referred to the condition of the intestine and its contents. It appears to me exceedingly likely that the *materies morbi*, the prime originator of the disease, might be met with among the intestinal flora, and I should like to see in the search after its pathology a thorough investigation of the bacteriology of the intestine in a series of undoubted cases.

CHANGES IN THE SPINAL CORD IN A CASE OF DIPHTHERIAL AND OF ALCOHOLIC PARALYSIS.

By J. MICHELL CLARKE, M.A., M.D., F.R.C.P.,
Professor of Pathology, University College, Bristol; Physician, Bristol General Hospital.

THE case of diphtherial paralysis was briefly as follows:

A young woman, aged 20, married, was admitted into the Bristol General Hospital with paralysis of all four limbs, of the diaphragm, and with bronchitis. Six weeks previously she was taken, whilst scrubbing the floor, with pains in the hands and loss of power in them. By the end of the day the pains and paralysis had spread to the whole of the upper extremities. During the next week the paralysis remained limited to the arms, and she had to be fed and dressed, but could walk about. At the end of the week pains and paralysis came on in the legs, and in the course of twenty-four hours was complete in them. She remained thus until admitted two weeks later.

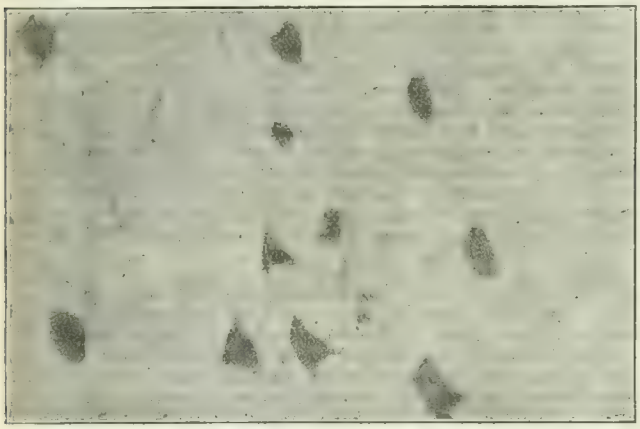


Fig. 1.—Low power. Diphtherial paralysis. Group of cells from lateral column in anterior cornu of cervical enlargement of cord. The cell in the middle of the field and one in the upper part (left hand corner) are only slightly affected; the others show central chromatolysis, displacement of nuclei, are rounded and have mostly lost their processes; in two the nucleus forms a bulging on contour of cell.

On admission she was obviously very ill. There was considerable bronchitis, with congestion of bases of lungs, weak heart's action, paralysis of both arms and legs; both hands and feet were dropped. The muscles were wasted: paralysis and wasting were most marked in the extensors, and most in them towards the periphery of the limbs:

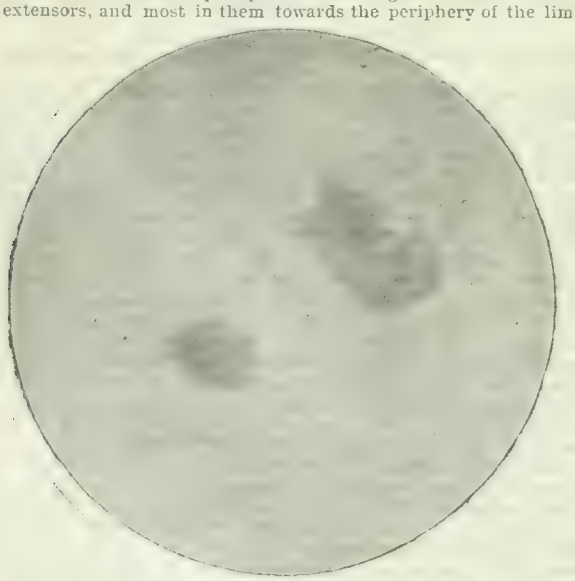


Fig. 2.—Cells similarly affected from vagus nucleus in same case. The uppermost cell is less changed.

the only movements left were slight power of raising the shoulders, of flexion, adduction and abduction of the hips, of slight flexion of fingers, knees, and feet. Reaction of degeneration was present in the extensors, complete in those of the fingers and toes, and in the small muscles of the hands, partial or diminished reaction to both currents in the other limb muscles. There was no affection of sensation, objective or subjective, except the initial pains, which soon passed off. Deep reflexes were lost, superficial present. No paralysis of palate, of swallowing, or of accommodation. Careful investigation into the cause of the illness showed the presence of abundant virulent diphtheria bacilli in the fauces, although she had never had the slightest sore throat, or nasal discharge. No albumen in urine. The diaphragm was completely paralysed, there was bronchitis, which was succeeded by broncho-pneumonia, of which she died six weeks from the onset of paralysis.

Necropsy.—Except bronchitis, broncho-pneumonia, and a dilated flabby heart there were no changes in the viscera. The kidneys were healthy.

Microscopic Examination.—Nervous system, sections from pons, medulla, spinal cord, and peripheral nerves were stained by the Nissl, Van Gieson and Marchi methods.

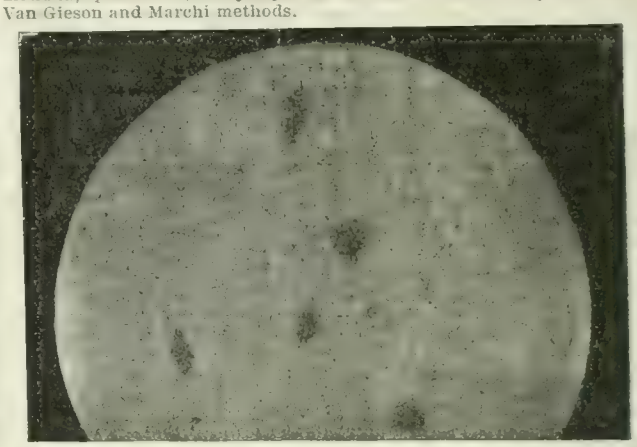


Fig. 3.—Low power. Alcoholic paraplegia: cells from anterior horn of lumbar enlargement of cord showing some changes but in less degree.

Spinal Cord.—The changes found by Nissl stain were present in the cells of the anterior horn in the cervical and lumbar enlargements; the anterior mesial group of cells were normal throughout; the lateral groups of cells showed varying degrees of central chromatolysis. In some sections all the cells were more or less affected, and this was especially the case in the lateral column of cells in the lateral horn in the cervical region. The change consisted in a conversion of the Nissl granules into a fine dust, which took the stain very feebly, in an extrusion of the nucleus to the periphery of the cell, and in swelling of the cells, which assumed a rounded, globular form, and lost their processes. The destruction of the Nissl granules could be seen in the early stages of the process to begin around the nucleus and to spread outwards; in this stage Nissl bodies could still be seen on the periphery of the cell and on the dendrites; later they all disappeared. The nucleus in the cells in which degeneration was less advanced did not appear much



Fig. 4.—Some of the same cells under high power.

altered except in its excentric position, but later the nuclear membrane stained deeply, became wrinkled, and the nucleus either appeared flattened or shrunken against the edge of the cell, or formed a swelling of its contour. The nucleolus stained well, and appeared normal in nearly all cells, but in a few of the most degenerated cells it could not be recognized. The most advanced change consisted in a shrinking of the whole cell to a small, badly stained rounded body. Other changes present in the cells of the anterior horn were increase of

the pigment masses, and in a few vacuolation. These changes were also present, but not to an extreme degree, in the cells of Clarke's column, and in a few cells in one spinal ganglion which was examined.

Medulla Oblongata.—Cells showing similar changes were found, alongside of unaffected cells, in the vago-accessory nucleus, in the nucleus ambiguus, and in the hypoglossal nucleus. By Marchi's method degenerated fibres could be seen about the diseased cells in the anterior horn, and could be traced through the anterior roots within and outside the cord. They were in abundance in these places, and were also traced into the branches of the peripheral nerves, in which they were fewer in number. The nerves examined were anterior and posterior tibial, musculo-spiral, and ulnar. Degenerated fibres were also found in the phrenic nerve, and in the roots of the vagus and hypoglossal nerves in their course within the medulla. They were also present in the posterior roots, and could be traced from them into the posterior columns, whence they passed on, but few in number, and upwards in the columns of Goll. In sections of two portions of heart-muscle, including papillary muscle, no fatty change was seen, but many of the muscle fibres had a glassy or hyaline appearance. Sections of the cord and nerves stained by Van Gieson's method showed some injection of the vessels in places, and in a very few parts of the anterior horn there was a small accumulation of round cells. Indications of an interstitial or inflammatory process were, however, practically absent.

From the clinical point of view the case is interesting from the absence of any antecedent illness or source of diphtherial infection: from the motor character of the paralysis and absence of any sensory disturbance except initial pains.

From the pathological aspect it is interesting as showing the affection not only of all parts of the lowest motor neuron, but also of the afferent fibres in the posterior roots and posterior columns, and of the cells in Clarke's column. The characters of the pathological changes indicate that the process is a degenerative one, involving a direct action of the toxin upon the anterior horn cells and their extensions, and not due to a secondary change in the cells, the so-called "reaction at a distance" form, a primary affection of the peripheral nerves.

The second case was one of alcoholic paraplegia, the arms being unaffected. The paralysis, with wasting of muscles and reaction of degeneration in them, followed the ordinary type. Sections from the anterior and posterior tibial nerves showed degeneration of the nerve fibrils with secondary interstitial changes. Those from the cord stained by Nissl method showed changes in the cells of the anterior cornu similar, but as a rule in less advanced degree, to those described in the above case of diphtheria. The degenerated cells were fewer in number, and were confined to the lumbar enlargement, being absent in the dorsal and cervical regions.

NOTE.

In the above I have only given a brief statement of the changes found, and have not referred to the literature of the subject, but I may refer the reader to papers dealing with the subject by Drs. John Cole, *Archives of Neurology*, vol. ii, p. 835; *Brain*, 1902, vol. xxv, p. 326; and Charles Bolton, *Archives of Neurology*, vol. ii, p. 806.

THE PURIN BODIES OF HUMAN FAECES IN HEALTH AND DISEASE.

By I. Walker Hall, M.D.,
Assistant Lecturer in Pathology, Owens College, Manchester.

[Abstract.]

There exist earlier observations upon the purin bodies of the faeces by Weintraud, Petrèn, Parker, and Krüger, and Schittenhelm. These workers established the fact that a considerable amount of nuclein is excreted by the bowel and that the quantity varies with meat, carbohydrate, and milk diets. Only traces of free purin bodies have been found and uric acid has been always absent. The object of the present research is to determine the amount of faecal purin excreted by different individuals under varying conditions, to inquire into the relation of the purin bodies of the faeces to those of the food, and to obtain some further insight into the origin of these bodies.

The method followed has necessitated the maintenance of fixed diets and the faeces have been taken in periods of six days each. The exact details of the process will be published elsewhere. The faeces were boiled for twelve hours in 0.5 per cent. H_2SO_4, filtered, neutralized, filtered, made slightly acid, boiled and again filtered, the filtrate treated with copper sulphate and sodium bisulphite, the resultant precipitate collected, washed, decomposed by H_2S, the filtrate evaporated in acid solution, then made strongly alkaline, once again precipitated by copper sulphate and sodium bisulphite, and the total purin finally obtained as silver compounds. An aliquot portion was taken for estimation of the total purins and the remainder subjected to a special process for the separation of the individual purin bases.

Results.—Up to the present 40 studies have been made upon three individuals. They show that upon the same diet, even at intervals of three and six months, the same individual excretes daily practically equal quantities of purin bodies in the faeces. These amounts are least upon a milk diet (namely, purin-free food), and most upon a vegetable diet. The intermediary position is held by the mixed diet. When large doses of pure hypoxanthin and xanthinwere added to the food the faecal purins were not increased. The administration of 0.5 gram of guanin led in one subject to a marked increase about 60 per cent. reappearing in the faeces; in another person the guanin was better absorbed, but still a large amount was excreted per the faeces; 500 grams of pancreas gland caused an increased purin excretion, and only about 60 to 70 per cent. of the total quantity was absorbed. The quantitative separation of the faecal purins showed that guanin, adenin, xanthin, and hypoxanthin were always present. About one-half of the total quantity was represented by guanin, one-quarter by adenin, and about an eighth each by xanthin and hypoxanthin. It is probable that any guanin occurring in a free state in the alimentary tract is in part oxidized to xanthin.

Under ordinary circumstances, the food purins are not voided by the faeces. When the dietary contains large amounts of nucleins, as, for instance, sweetbread, only a certain proportion is decomposed or absorbed, and the remainder appears in the faeces. The figures obtained suggest that there is a distinctly personal factor in the absorption of nuclein and its derivatives. There is little doubt that in experiments upon general metabolism the faecal purins should always be estimated, although from a clinical standpoint their slight variations may be neglected. An attempt to isolate nuclein from the faeces in a sufficiently pure condition for elementary analysis has, so far, not yielded successful results, because of the difficulty of an entire removal of the mucin.

The presence of guanin, adenin, xanthin, and hypoxanthin in the faecal nuclein suggests an origin from the cell nuclei of the intestinal mucous membrane, but it is possible that the pancreatic juice may contain some free guanin. In diarrhoea and inflammatory conditions of the mucous membrane the purin bodies are increased. In a case of subacute rheumatism they are unaltered in the acute attack, in a subacute attack, and during convalescence six months later.

In the normal adult the faecal purin yields daily about 0.010 to 0.023 gram nitrogen (0.025 to 0.0575 gram xanthins) a small amount in comparison with the 0.16 gram (0.58 gram uric acid and xanthin) nitrogen passed per urine on a purin-free diet. It is known that a small quantity of nucleo-albumin may be met with in the urine and that it arises from shed epithelium. Similarly, a certain amount of nuclein must be daily shed by the bronchial, pharyngeal, and nasal membranes. The remaining tissue cells pass their decomposed nuclein into the circulating fluids of the body. It is obvious that in all inflammations of the alimentary tract the purin excretion will be increased.

Have these facts any practical significance? The attainment of an individual factor for nuclein absorption may assist in the determination of dietaries and indicate the general absorptive and selective faculty of the intestinal epithelium, and it may also suggest therapeutic measures and point to the probability of auto-intoxication in particular cases.

CLASSIFICATION CARDS FOR USE IN BACTERIOLOGY.

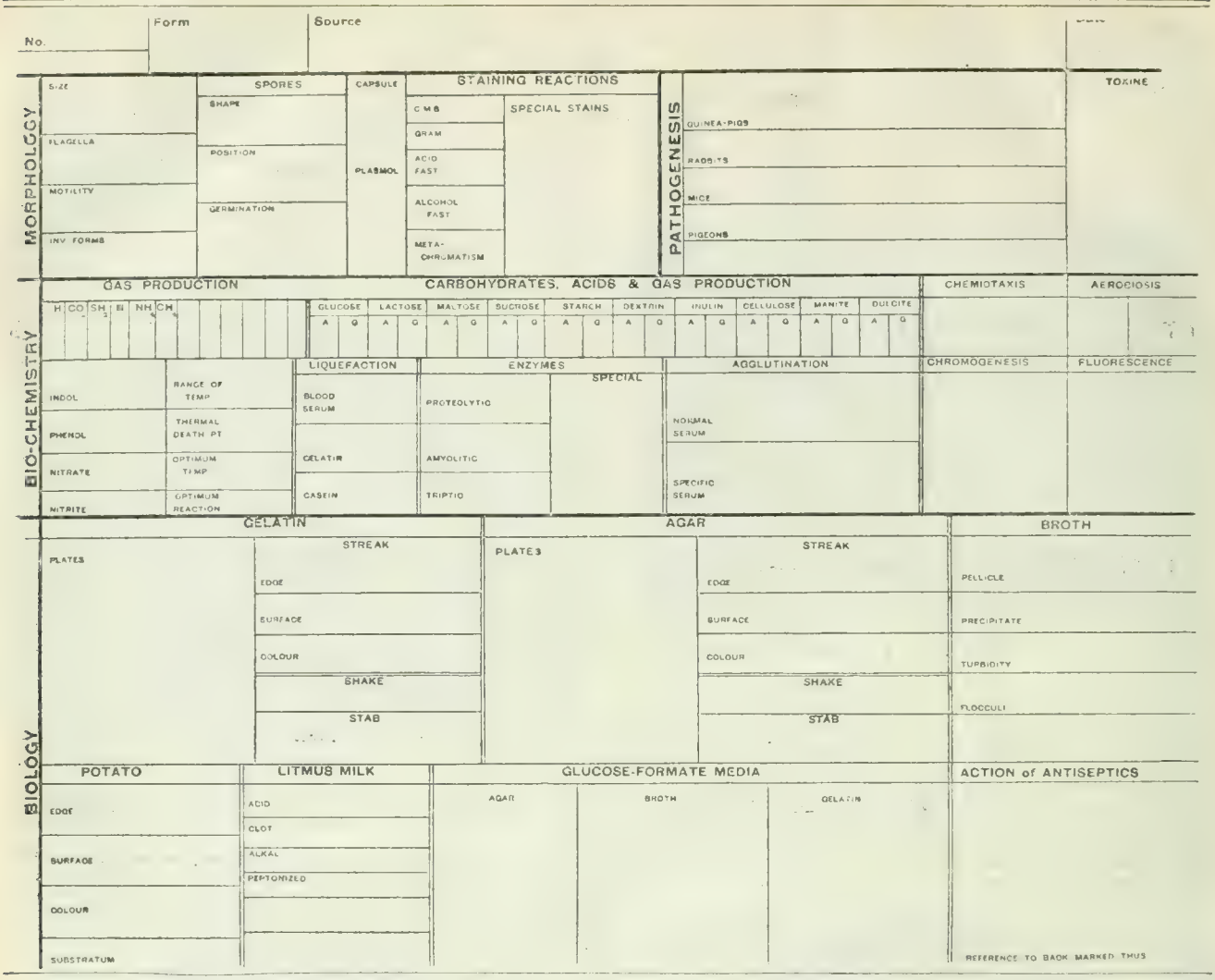
By Kenneth Goadby, M.R.C.S., L.R.C.P., D.P.H.,
Pathologist, National Dental Hospital.

The adoption of the card-index system in record-keeping is well known, and, in routine bacteriology, is the only way isolated observations can be satisfactorily scheduled under their respective headings, and yet remain arranged for easy and rapid future reference.

The facts relating to a given organism are collected upon a single card, the details arranged under a given plan can be looked over at a glance and one series compared with another in the easiest manner possible.

The method I have adopted after a considerable number of trials requires two sizes of cards, large and small. The small cards contain the preliminary notes of the examination, and a good deal of other matter. The large cards contain the cultures and other details of minute description.

The method of record-keeping is as follows:



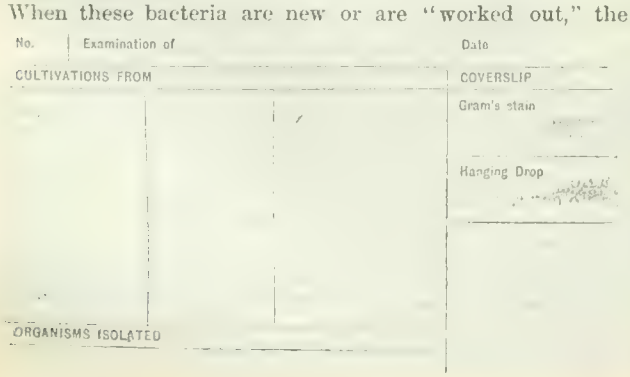
The small cards, as the headings show, are used mainly to record the preliminary examination, and form a journal of the work done, in many cases the whole of the necessary statistical material required as a record of the given examination.

Suspected material submitted for bacteriological examination, blood examination, agglutination, etc., may be recorded on these cards.

The indexing is simple, blank guides are used, and any subject-heading required is written in; these guides up above the cards in the tray allow of rapid reference to any subject.

Where any special organisms are isolated their special designation is noted in the space for the purpose at the bottom of the card.

When these bacteria are new or are "worked out," the various reactions are entered up on the large cards, with proper reference to the smaller cards.



The large cards are designed to contain full description of the biological, biochemical, morphological, pathogenic characters of the various organisms isolated arranged in series in such a manner that they may be overlooked at a glance and compared with those of any other organism.

The various reactions are noted by plus or minus signs in the appropriate columns, and where simple signs are not enough some systematic nomenclature is made use of to obviate any unnecessary length of description such as that suggested by Chester in his determinative bacteriology.

The cards when filled up are placed in the cabinet under the proper subject matter heading. It is thus possible to keep together the records of all the investigations without the multiplication of notebooks, and at the same time have the material ready for immediate reference.

When sufficient room is not found on the cards an asterisk is marked against the entry, and the reference made over to the back. If then there is not enough room a blank card may be used and attached to the other leading card with a clip. The method is one that lends itself especially to subgrouping and arrangement of bacteria, and the systematic examination of water, sewage, etc.; organisms isolated during other investigations may be annotated and the description filed with a minimum of trouble and the material indexed for future reference.

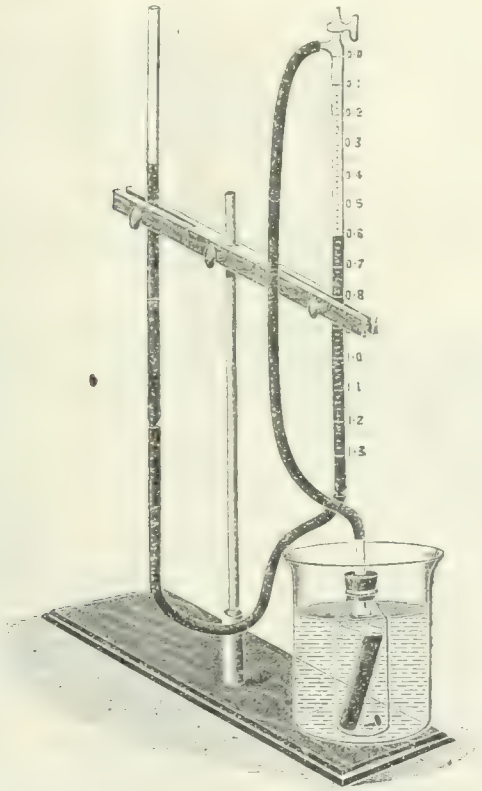
BEQUESTS TO MEDICAL CHARITIES.—Under the will of the late Mr. William Oxenden Hammond, who died on May 17th, 1903, the Kent and Canterbury Hospital receives the sum of £1,000, while the School for the Indigent Blind and the Royal Hospital for Incurables each receive £500.

A NEW METHOD FOR THE DETERMINATION OF URIC ACID IN URINE.

BY

A. F. Dimmock, M.D., M.R.C.S., L.S.A., Medical Officer of the Harrogate Infirmary. and F. W. Branson, F.I.C., F.C.S.

The authors have devised the following method, which has been found to work easily: 100 c.cm. of the urine are taken and warmed to about 40° C., and then saturated with 31 grams of ammonium chloride, the whole being well shaken in a stoppered measuring glass, graduated at 100 c.cm., until complete solution of the ammonium chloride is effected. The contents will now be at a temperature of about 15° C., and should be left for at least two hours (preferably twelve) for the precipitate of ammonium urate to subside. Should any of the precipitate have a tendency to remain near the surface, a gentle rotation of the measuring glass will cause it to settle. The supernatant liquid is then poured off, and the portion left is carefully filtered through a small filter paper (diameter about 5.5 cm.), as by Hopkins's method. The precipitate is carefully washed with a very dilute solution of ammonia, consisting of one part liq. ammon. fort. in 1.000 of distilled water.



The precipitate is best washed in the following manner: Allow the liquid to drain from the precipitate, then fill the filter paper with the dilute ammonia solution contained in a wash bottle. Allow this to drain off and again fill the filter paper with the ammonia solution. Repeat this operation a third time. Test some of the filtrate with a 5 per cent. solution of nitrate of silver, acidulated with nitric acid, 5 per cent. Only a very slight precipitate should be given, indicating the absence of any appreciable amount of ammonium chloride, but should the filtrate still contain this salt wash with a small additional amount of the dilute ammonia solution. Place the precipitate with the filter paper in the generating bottle, fill the tube up to the mark (25 c.cm.) with the hypobromite solution, and lower it into the bottle (as shown in illustration) by means of a piece of string. Note temperature of hypobromite solution, which should approximate to that of the room in which the estimation is to be made. Now place the cork in the generating bottle and plunge the bottle in a vessel of cold water of a similar temperature to that of the hypobromite solution. After two minutes adjust the water level in the measuring burette to zero, and then close the tap, and note that the water level remains constant. In order to test if leakage occurs in any part of the apparatus, alter the water level in the measuring burette, any defect is then easily seen. Finally tilt the generating bottle and allow the reagent to flow out of the tube, and shake so as to promote the reaction between the sodium hypobromite and the ammonium urate. After ten minutes, during which time the bottle should be shaken at intervals, the level in the two tubes is adjusted, and the percentage of uric acid read off, as indicated by the nitrogen evolved.

The process appears to be quite suitable for proportions of uric acid ranging from 1 in 1,000 to 1 in 10.000. The factors for the graduation of the burette (parts per 1,000) have been obtained by means of numerous determinations of solutions prepared from pure uric acid, urea (2 per cent.), and normal phosphates, chlorides, and inorganic constituents. Six determinations of 100 c.cm. of a solution containing 0.6 part of uric acid per 1,000 gave a mean of 8.5 c.cm. of nitrogen.

By the addition of a second scale (graduated in parts per 100) to the burette, the instrument may be used as a ureameter, 2 c.cm. of urine being taken for each estimation. This quantity is transferred by means of a pipette to the generating bottle, in which is placed a tube containing 25 c.cm. of the sodium hypobromite solution. The subsequent procedure is the same as for the estimation of uric acid. The solution of hypobromite of soda is made by dissolving 100 grams of caustic soda in 250 c.cm. of water, then adding 22 c.cm. of bromine.

Mr. G. L. Eastes remarked that the earlier steps of this method were identical with the preliminary part of Hopkins's process for the estimation of uric acid, but that the subsequent stages of decomposition of the ammonium urate, filtration, washing, and resolution, and the final titration were discarded and replaced by a decomposition method with hypobromite. The result was empirical, but theoretically the experimental error should not amount to more than 3 per cent. of the total amount of uric acid present, a result comparable to that obtained in the estimation of urea. The advantage of the method described by Mr. Branson and Dr. Dimmock lay in its shortening the time occupied by Hopkins's method by at least two hours, and often five or six hours. The new process should be capable of accomplishment in one day, especially in the absence of pus, whereas the employment of Hopkins's method usually necessitated the final steps being performed on the succeeding day. The figure obtained would not have the accuracy of the Hopkins's method, but in the current expression would be "sufficiently accurate for clinical purposes."

LEUCOCYTOSIS AND LYMPHOCYTOSIS IN MALIGNANT DISEASE, LYMPHADENOMA, LEUKAEMIA, ETC.,

With Tables of 42 Blood Examinations.

By F. G. Bushnell, M.D., D.P.H.,
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The following paper embodies the chief features of 42 blood counts made in the routine work of the clinical laboratory of the South Devon and East Cornwall Hospital, with remarks on the leucocytosis and lymphocytosis of malignant disease, Hodgkin's disease, leukaemia, etc.

The tables illustrate such assistance as is lent to diagnosis and knowledge of disease by examination of blood, and more especially of the colourless cells.

The light thrown upon disease processes is in this case hampered by the uncertainty of the origin and development of leucocytes in man. I venture to remind you briefly of the subject's salient points. Ehrlich believes that all haemal leucocytes which possess granulations originate in bone marrow, and persist in original type through life, while non-granular large and small lymphocytes are manufactured in lymphatic glands, and then turned into circulation. Uskow considers, on the other hand, that leucocytes are developed from small lymphocytes in lymph glands and marrow, a sort of "ripening" in blood stream. There is experimental evidence that this does occur in the sodium cinnamate leucocytosis in cats (Batty Shaw). Again, the leucocytosis of digestion (33 per cent. increase above normal) is suggestive that such a change occurs. We know that lymphocytes are present in lacteals during absorption, and increased lymph pours out of the thoracic duct, yet the gain in the haemic leuco-

Leukaemia: Hodgkin's Disease: Pernicious Anaemia.

Number.	Name, Age, and Sex.	Disease.	Red Cells per c.mm.	Haemoglobin.	Colour Index.	Large Mononuclear Cells.	Large Lymphocytes.	Lymphocytes.	Transitionals.	Polymorphonuclear Neutrophiles.	Eosinophiles.	Mast Cells.	Total Leucocytes per c.mm.	White to Red.	Date, Remarks.
—	F. L. P., female, 5	Lymphatic leukaemia	1,111,538	20	1.00	—	—	—	—	—	—	—	31,250	1 to 35	White cells in films consisted almost entirely of large and small lymphocytes with a few polymorphonuclear neutrophiles and eosinophiles. *Post Mortem:* Numerous haemorrhages present; spleen weight, 3½ oz.; mesenteric glands enlarged.
399	F. A., female, 7	Lymphatic leukaemia	6,192,000	75	0.50	—	7.1	20.8	3.00	65.1	0.5	—	21,178	—	May 1st, 1903: This rapid blood change occurred between April 9th and May 1st, 1903. There was pleural effusion and mediastinal (?lymphatic glandular) growths and general slight enlargement of superficial lymph glands; no necropsy obtained. Myelocytes in films to 35 per cent. per c.mm., enucleated reds in small numbers, December 23rd, 1901.
418							92			6.5			159,649		
135	A. P., male, 42	Splenomyelogenous leukaemia	1,822,916	22	0.59	—	23	—	—	34.0	5.0	—	409,157	1 to 5	
29	W. D., male, 5½	?Hodgkin's disease	2,950,000	30	0.50	—	40	—	—	60.0	—	—	12,500	1 to 250	Some myelocytes present, July 22nd, 1901. *Post Mortem:* Liver enlarged; weight 31 oz., spleen 9½ oz.; Malpighian bodies distinct; lumbar lymphatic glands enlarged as in Hodgkin's disease; the leucocytes contained a few myelocytes and small lymphocytes. August 12th, 1901. *Post Mortem:* Liver weight, 31.5 oz., spleen 9 oz.; prominent Malpighian bodies.
			1,565,625				50			50.0			13,125		
384	K. F., female, 17	Hodgkin's disease (cervical glands)	6,000,000	75	—	17.3	8.0	8.5	—	62.5	1.5	2	34,781	1 to 170	May 27th, 1903: Excess of large mononuclear cells and large lymphocytes.
													12,400		April 13th, 1903.
502	W. H., male, 38	Pernicious anaemia	1,724,000	40	1.10	—	—						4,897	1 to 360	506 leucocytes counted. Megaloblasts and normoblasts present; a myelocyte seen; polychromasia.
			1,592,000	35	1.12		59.3		0.32	38.3	1.6	0.3	10,612	1 to 150	

cytes is either of polymorphonuclear neutrophiles with relative diminution of large and small lymphocytes, or else of all cells equally. Recently it has been shown in the guinea pig that the large mononucleated cells of blood and serous exudates originate from the endothelium of serous membranes, blood vessels, lymph vessels, and sinuses (J. M. Beattie).

The origin of leucocytes is yet an open question in several respects. Here I mention a small point—that the microscopical distinction drawn between large mononuclear cells and large lymphocytes, after staining with ordinary clinical methods, is quite arbitrary to my mind. Every intermediate form, and shade, and tint of nucleus and cytoplasm is seen, and only typical cells can be distinguished.

In 18 cases of malignant disease, the leucocytes present in 1 c.mm. of blood were estimated in 14 and in 9 (64 per cent.) there was slight (11,140 per c.mm.) to decided (32,580 per c.mm.) leucocytosis. An osteosarcoma (spindle-celled of femur) showed high count (28,282 per c.mm.) as observed by Alexander, v. Lembeck, and others. A sarcoma testis gave 19,934 per c.mm., whereas a lymphosarcoma of bronchial glands gave 13,333 per c.mm. and sarcoma pubis 11,140 per c.mm.

In a case of carcinoma of stomach, there was no leucocytosis (7,144 per c.mm.) as noted by Osterspey, Hayem, Osler, and others.

In carcinoma of pancreas there were 10,407 per c.mm., as in two counts of Alexander. With metastases higher counts have been found (18,300 per c.mm.) in this disease.

In 4 cases only out of 18 (or 22 per cent.) the relative increase in polymorphonuclear neutrophile cells (above normal 60 per cent. to 75 per cent.) was present in differential count, namely, epithelioma of cheek (80.6 per cent.), of pancreas (91 per cent.), pharyngeal (?sarcoma) growth (88.8 per cent.), and lymphosarcoma (80.6 per cent.). A large mononuclear leucocytosis (12 per cent.) was observed in one case of sarcoma scapulae (Donati, Dieballa, and others point out similar excess). In general the counts showed the leucocytosis of malignant disease in about 50 per cent. of cases, but the blood changes were of no specific diagnostic value.

LEUKAEMIA.

In a case of splenomyelogenous leukaemia the blood picture was diagnostic of the disease ("polymorphous" blood).

In one case of lymphatic leukaemia in a child of 7 (39.9), with slight general enlargement of lymphatic glands and mediastinal growth (?lymphatic glandular) and pleural effusion, there was a rise of leucocytes from 21,178 per c.mm. on April 9th, 1903, to 159,649 per c.mm. (× 7) on May 1st, 1903. A large relative and absolute lymphocytosis confirmed the diagnosis. No necropsy was permitted.

Two cases illustrate the extreme difficulty of classification of anaemia in children and infants. One, a child of 5, showed marked anaemia with lymphocytosis (31,250 per c.mm.). At the necropsy there was moderate enlargement of mesenteric lymph glands, a spleen of 3½ oz. in weight, and numerous subcutaneous and subserous haemorrhages. No signs of syphilis, or rickets, or tuberculosis seen. (The mother admitted a strong specific history.) Microscopically there was considerable endothelial proliferation in mesenteric lymph glands. The disease clearly could not be labelled with certainty as lymphatic leukaemia, and less so as Hodgkin's disease, splenic anaemia, or infantile pseudoleukaemia.

A second case was a child of 5½ years, with marked anaemia and slight leucocytosis (12,500 per c.mm.). enlarged liver, and marked enlargement of lumbar glands and spleen. Here the blood was of little diagnostic value, and the necropsy showed the presence of lymphadenomatous changes in lumbar lymphatic glands and spleen.

It is interesting to note that there was a history of malnutrition, consequent upon unsuitable diet in the first year of life in two, of carious teeth and stomatitis in two, and of insanitary surroundings in all these cases.

Bradford and Batty Shaw have called attention to the association of lymphatic glandular disease ("acute leukaemia") and stomatitis with errors in diet. Lymphocytes are said to be insensible to active chemiotaxis, yet their function of carrying fat globules from epithelium of villi of intestine to lacteals has been proved. This local lymphocytosis is probably due to stimulation of mesenteric lymph glands consequent upon normal irritation of chyme and resulting hyperaemia. It is suggested that prolonged abnormal stimulation of these glands occurs in glandular disease (with or without accompanying haemic lymphocytosis). The chronic irritation of lymph glands may be due to unsuitable food (either containing or not containing

Malignant Disease.

Number.	Name, Age, and Sex.	Disease	Red Cells per c.mm.	Hæmoglobin per cent.	Colour Index.	Large Mononuclear Cells.	Large Lymphocytes.	Lymphocytes.	Transitionals.	Polymorphonuclear Neutrophiles.	Eosinophiles.	Mast Cells.	Total Leucocytes per c.mm.	White to Red.	Date, Remarks.
420	C. H., female, 57	Carcinoma mammae	4,208,000	74	—		39		1.0	58.00	1.3	—	24,436	—	773 leucocytes counted, May 7th, 1903.
424	M. H., female, 84	(?) Retro-pharyngeal growth	6,956,000	102	—	—	0.9	8.9	0.4	88.80	0.7	—	32,580	—	414 leucocytes counted, May 13th, 1903.
466	E. S., female, 50	Carcinoma uteri	—	[illegible]	—		47.6		—	50.60	1.7	—	16,250	—	June 23rd, 1903.
471	S. C., female, 58	Carcinoma pancreas	5,464,000	40	—		50.5		1.1	46.02	1.7	0.5	10,407	—	June 26th, 1903.
472	J. M., male, 46	Carcinoma mammae	—	—	—		37.7		0.5	59.10	2.2	0.2	8,400	—	June 26th, 1903. Microscopically was spheroidal cell carcinoma with deposit in axillary glands.
417	Female, 40	Carcinoma uteri	4,368,000	75	0.7	—	6.8	25.1	1.1	65.10	1.6	—	26,671	—	April 30th, 1903, 930 cells counted.
416	J. S., male, 59	Carcinoma of rectum	5,708,000	95	0.8	—	6.7	38.9	1.8	49.00	3.60	—	42,948	—	April 29th, 19035, 50 leucocytes counted.
328	J. L. M.	Malignant disease of stomach	5,600,000	50	—		39.6		—	60.70	—	—	7,144	—	150 leucocytes counted, January 17th, 1903.
332	V. F.	Carcinoma mammae	—	—	—		48.0		0.9	49.00	1.8	—	—	—	January 3rd, 1903.
339	M. P. F., 9 years	Spindle-celled sarcoma femur	5,520,000	80	—		22.3		1.3	74.00	1.6	—	28,282	—	January 29th, 1903.
321	M. P., female, 9	Sarcoma femoris	—	—	—	—	—	—	—	—	—	—	—	—	Slight leucocytosis on January 13th, 1903, previous to examination; number 339. January 13th, 1903.
335	[illegible] B., male, 35	Sarcoma testis	4,800,000	85	—		46.4		0.9	50.40	2.3	—	19,934	—	Two days after operation. January 24th, 1903
345	G. O., male, 17	Lympho-sarcoma tonsil	6,000,000	85	—		27.3		—	72.30	—	—	—	—	January 28th, 1903.
354	B., male	Sarcoma pubis	3,040,000	95	—	—	—	—	—	—	—	—	11,140	—	February 8th, 1903.
391	E., male, 63	Carcinoma pancreas	—	—	—		8.0		—	91.70	0.3	—	—	—	2,375 leucocytes counted, April 2nd, 1903.
381	M. K., female, 38	Carcinoma cervix	4,804,000	65	—	4.6	36.0	22.0	—	35.00	—	—	6,666	—	154 cells counted, March 20th, 1903.
342	W. W., male, 17	Recurrence sarcoma scapulae	—	—	—	12.3	8.2	8.8	—	66.80	1.7	—	—	—	350 cells counted, April 8th, 1903.
398	J. H., female, 64	Lymphosarcoma, bronchial glands	—	—	—	2.7	5.5	—	—	84.50	0.2	—	13,333	—	2,075 cells counted, April 8th, 1903.
402	J. J., 63	Cancer of cheek	—	—	—	—	0.7	17.4	—	80.60	1.7	—	16,400	—	April 12th, 1903.
396	T. M., male, 64	Malignant abdominal disease	4,880,000	45	0.47	0.5	15.2	21.9	—	56.10	4.8	—	18,225	—	April 28th, 1903, 680 leucocytes counted.
412	[illegible]		3,024,000	50	—	—	24.2	25.7	—	42.10	7.5	—	24,458	—	April 7th, 1903, normoblasts present.

bacterial or animal toxins), and its occurrence was indicated in these cases, as in Hodgkin's disease generally, by proliferation of endothelium. A similar process has been noted in enterica and in experimental injection of animals with lymphotoxins of animal toxins. In infants a digestive leucocytosis occurs, after the first feedings, of 30,000 to 35,000 per c.mm.

May we not urge that the relationship between errors of diet and lymphatic glandular disease, especially in young children, should be closely observed in the future?

An excess of 32.5 per cent. (normal 4 per cent. to 8 per cent.) of large mononuclear leucocytes was seen in the aestivo-autumnal form of malaria (with crescentic bodies in blood), but the limit of 12 per cent. above which a diagnostic value has been laid to malaria is unreliable, as 17.4 per cent. was noted in a case of Hodgkin's disease in a young woman.

The presence of crescentic bodies in the blood of a case of blackwater fever, with a leucocytosis of 25,591 per c.mm. (21.6 per cent. lymphocytes) in the light of its unknown origin is of much interest.

Eosinophilia was noted in a case of malaria with "jigger" in the foot and bubo, and in an enchondroma fibulae. Leucocytoses were noted in beri-beri (2) of 31,020 per c.mm., and 34,285 per c.mm.; Addison's disease 20,360 per c.mm., 9,754 per c.mm., and 16,290 per c.mm.; hypertrophic cirrhosis of liver 26,398 per c.mm. In a semi-comatose case of cerebral abscess, diagnosis was aided by the presence of a marked leucocytosis, and on three occasions pernicious anaemia was excluded from the diagnosis in cases with anaemia dependent

Miscellaneous Diseases.

Number.	Name, Age, and Sex.	Disease.	Red Cells per c.mm.	Hæmoglobin per cent.	Colour Index.	Large Mononuclear Cells.	Large Lymphocytes.	Lymphocytes.	Transitionals.	Polymorphonuclear Neutrophiles.	Eosinophiles.	Mast Cells.	Total Leucocytes per c.mm.	White to Red.	Date, Remarks.
425	P., male, 27	? Addison's disease	6,256,000	95	—		37.6		—	47.0	7.6	—	20,360	—	May 21st, 1903. No necropsy obtained.
444			5,520,000	90	—		42.4		2.6	50.5	4.4	—	9,754	1 to 550	186 leucocytes counted, May 27th, 1903.
432	F. W., female, 26	Fibroma of abdominal wall	—	80	—		36.0		—	60.5	8.5	—	16,200	1 to 400	460 leucocytes counted, May 19th, 1903.
441	J. W., male, 39	Lobar pneumonia	7,184,000	65	0.5		17.2		—	82.7	—	—	57,017	1 to 123	243 leucocytes counted; examination made day before crisis, May 22nd, 1903.
390	W., male	Anaemia after bleeding piles	6,400,000	55	—	6.7	13.9	7.1	2.8	67.1	1.2	—	15,217	—	April 15th, 1903.
464	A. W., male, 24	Tuberculous peritonitis	4,952,000	—	—	—	—	—	—	—	—	—	14,666	—	June 22nd, 1903.
459			4,784,000	—	—	—	—	—	—	—	—	—	15,654	—	June 16th, 1903.
419	T. C., female, 19	? Tuberculous peritonitis	6,192,000	75	0.5	—	7.1	20.8	6.3	65.1	0.5	—	27,178	—	May 2nd, 1902.
480	A. C., male, 42	Hypertrophic cirrhosis of liver	4,040,000	42	—	—	—	—	—	—	—	—	16,000	1 to 150	June 23rd, 1903.
			4,064,000	46	0.5	—	—	—	—	—	—	—	26,938	—	July 8th, 1903. No marked change in leucocytes.
475	F. A., male, 24	Beri-beri	6,632,000	90	—		42.2		—	53.8	—	—	34,285	—	July 1st, 1903. 154 leucocytes counted.
473	M.S., male, 24	Beri-beri	5,250,000	—	—		37.7		—	60.3	1.9	—	31,020	—	June 30th, 1903. 305 cells counted.
—	S. T., male, 28	Malaria aestivo-autumnal	2,480,000	50	1.0	32.5	12.0	15.2	0.9	35.6	3.5	—	10,284	1 to 240	February 2nd, 1903, crescentic and ring-shaped bodies in blood. February 3rd, 1903 (bubo and jigger in foot), March 3rd.
			2,560,000	50	1.0	30.7	14.2	17.7	0.9	27.9	8.2	—	12,891		
			2,800,000	75	1.2	12.7	4.4	15.6	1.2	46.6	19.3	—	14,673		
						32.9	15.6	7.5	1.8	27.9	13.5	.005	—		
—	A. B., male, 35	Blackwater fever; malarial infection	2,420,000	30	0.6	9.9	11.7	9.9	1.0	64.6	2.7	—	25,591	1 to 94	March 4th, 1903. Few crescentic and ovoid bodies present.
						11.1	15.4	20.8	0.5	49.5	2.4				
—	F., 10	? Tuberculous adenitis	4,800,000	70	—	29.5		—	—	70.4	—	—	8,570	1 to 560	July 7th, 1903.
431	M. B.	Anaemia	3,944,000	40	0.5	—	—	—	—	—	—	—	8,954	—	May 18th, 1903.
322	J. C., male, 14	Enchondroma fibulae	4,500,000	85	—	58.0		—	—	32.0	12.0	—	14,339	—	January 13th, 1903.
						68.0				27.0	4.7	—		—	
			4,400,000	75	—	20.0				80.0	0.6	—	82,580	—	
434	E. R., female, 34	Anaemia	3,656,000	36	—	—	—	—	—	—	—	—	8,145	—	
435	J. Mc.G., male, 34	Dysentery and hepatitis	—	—	—	—	54.6	—	0.5	43.2	1.5	—	12,218	—	May 15th, 1903.
						4.5	32.0	—	—	62.0	1.5	—	8,000	—	May 20th, 1903.

on chlorosis and malignant abdominal disease. Its diagnosis was confirmed in a case showing marked anaemia colour index of 1.1, leucopenia with relative lymphocytosis, megaloblasts and normoblasts, poikilocytes, and polychromasia. I venture to submit that such blood examinations as these are an undoubted aid to diagnosis and to knowledge of disease processes.

HYGIENIC TOBACCO.—According to the *Gazette Médicale de Paris*, a French physician, Dr. Petitdidier, working on the lines of a research instituted by a German investigator, has discovered a means of neutralizing the effect of the nicotine in tobacco. The method, as described, has, at any rate, the merit of simplicity. All that is required is to dip the tobacco leaves, in the course of their preparation, in a decoction of which the principal ingredient is wild sweet marjoram. The procedure is said to destroy all the harmful properties of the tobacco without removing any of its good qualities or its aroma.

SECTION OF DISEASES OF CHILDREN.

WILLIAM ARBUTHNOT LANE, F.R.C.S., President.

CASE OF SYPHILITIC NEPHRITIS IN AN INFANT AGED 5 MONTHS.

By GEORGE CARPENTER, M.D.

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History.—Charles B., aged 5 months, was admitted into the North-Eastern Hospital for Children on May 29th, 1903. His mother attended Shadwell Hospital six years previous for a venereal complaint and his father was treated as an out-patient at St. Bartholomew's Hospital about the same time for a disease for which he took a prolonged course of pills. The first child was prematurely born at 6½ months; it lived two months. The second was a full term child and is still living; the third was also full term and is living; and the fourth, the patient, was an eight months child. At birth it was a small but apparently healthy infant. It was breast fed. At two months old it had "snuffles"

and "congestion of the lungs" and began to waste. Next a red rash appeared on its buttocks and its legs and feet. This faded and then disappeared. The child was always pale and its face was noticed to be "puffy," more so at one time than another.

State on Admission.—His weight was 9 lb. 7 oz.; the motions were green and slimy and the temperature was 97.8 F. He was a small anaemic infant with scanty hair on the front half of the scalp: the eyebrows and eyelashes were also thin. The face was puffy, especially below the eyes, and the temporal veins stood out prominently. "Snuffles" was a marked feature. He had a copper-coloured patch of eruption on the chin and copper-coloured macules were scattered about the buttocks. There was also copper-coloured redness in the flexures of both knees which extended on the left side to the calf. The palms were glistening. The heart, lungs, liver, spleen, and abdomen were healthy. The eyes were normal. The urine was of specific gravity 1,006, the reaction was acid and it contained one-fourth of albumen. He was ordered hydrargyrum cum creta 1 grain thrice daily.

April 28th. The quantity of urine passed in the twenty-four hours was three ounces. The specific gravity was 1008, the reaction acid, urates were deposited, and the albumen amounted to one-third.

April 30th. The rash is fading. The quantity of urine passed in the twenty-four hours was two and a-half ounces. The specific gravity was 1006, the reaction acid; urates were deposited, and the albumen amounted to one-third.

May 2nd. To-day the face is very "puffy," and the legs pit on pressure. The quantity of urine passed was three ounces. The specific gravity was 1010, the reaction acid; urates were deposited, and the albumen was one-third.

May 6th. The urine was of specific gravity 1006. The urea was estimated at one and two-third grains to the ounce. Albumen amounted to five-twelfths. On centrifuging the urine an appreciable quantity of detritus appeared in the tube, which consisted of (1) numerous hyaline casts, both large and small; (2) similar casts, with a few epithelial cells and red blood discs upon them; (3) definite epithelial casts; (4) red blood discs; (5) detritus of renal epithelium, the cells appearing singly and in clumps; (6) granular casts, a few; and (7) urates of sodium and ammonium crystals. There were really quite a number of red blood discs which were swollen more than a sprinkling. The microscopical characteristics were therefore those of acute catarrhal nephritis.

May 8th. There has been a loss of weight three-fourths of a lb. since his admission into the hospital. The temperature keeps subnormal. The quantity of urine passed in the twenty-fours is slightly more, namely, four and a-half ounces. The specific gravity is 1008; it is acid; urea amounts to one and one-third grain to the ounce, and albumen is one-fifth. Renal casts and urates are present. The rash on the chin is fading. There is marked pitting of the legs and slight pitting on the backs of the hands on examination.

May 10th. The quantity of urine passed in the twenty-four hours amounted to five ounces; urea was one and two-third grains to the ounce, and albumen was one-fifth.

May 12th. Four ounces of urine were passed in the twenty-four hours, and the albumen was one-fifth.

May 14th. Seven ounces of urine were passed, and albumen amounted to one-sixth.

May 16th. Five ounces of urine were passed, and albumen amounted to one-sixth. The temperature rose to-day to 99.4° F.; it had been subnormal since his admission.

May 18th. The face is more swollen, especially in the morning. There is much dropsy of the legs extending above the knees to the buttocks. The child is wasting and is failing in strength. The eruption has disappeared. The buttocks are superficially ulcerated.

May 20th. Six ounces of urine were passed of specific gravity 1002, urea one and one-third grain to the ounce, and albumen one-eighth. The temperature was normal. The general oedema had increased.

May 21st. The urine was swarming with organisms, and casts were very few. One or two epithelial casts were seen, and some hyaline and waxy casts. There were no red blood corpuscles. Round cells were seen about the size of, or a trifle larger than, white corpuscles. The specific gravity was 1001, the reaction acid, urea was two grains to the ounce, and albumen was barely one-sixth.

May 23rd. He is now passing nine ounces of urine of specific gravity 1002, and acid reaction. Albumen amounts to one-seventh. He is much weaker, and the oedema is increasing.

May 25th. Six and a-half ounces of urine were passed, and albumen was one-sixth. The temperature now varies between 97° F. and 98° F., and the child is growing perceptibly weaker.

May 29th. He sank and died in the early morning.

Necropsy.—The heart and lungs were normal. The spleen was normal; the liver was toughened. The kidneys were lobulated and the capsule readily stripped; coarse changes were not obvious.

The microscopical report is as follows:

The kidney is in a condition of catarrhal nephritis. Casts are visible here and there in the tubules. The cortical renal tubules are dilated. There is an excess of round cells in the glomeruli and fibrillary thickening of the glomerular capsules. The catarrhal changes are patchy in distribution, some areas of the kidney being apparently quite healthy. There are not any interstitial changes. The small arteries in the neighbourhood of the glomeruli are thickened, and their lumens are greatly diminished. This thickening appears to be due to mesarteritis rather than to endarteritis. The endothelium of the glomeruli seems to be thickened also, at least that is my opinion on comparing the specimen with a healthy infantile kidney. I think the structural alterations in the blood vessels may fairly be held responsible for the anuria which was a prominent feature in the case.

The point is raised, Can catarrhal nephritis arise from the action of the syphilitic poison? My reply to that is Yes, undoubtedly, and that on clinical observation backed by pathological finding. Here is the proof.

A weakly-looking, "snuffling" female infant, aged 5 weeks, came under my care at the Evelina Hospital on November 7th, 1889. A rash appeared when it was 2 weeks old. When I saw the child there was desquamation about the palms, the soles, the belly, the ears, and elsewhere about the body. The lips were superficially ulcerated. There was shallow ulceration from the anus upwards between the gluteal folds. At the root of the nose there was a yellow scab and slight yellow crusting here and there on the ears. On the buttocks there were a number of red papules with crater-like central depressions. A week later the back of the left hand became puffy. The following week there was a deep ulcer in the natal fissure with a yellow unhealthy base. Three weeks from the first attendance both eyelids were oedematous, white, and waxy-looking, and there was marked dropsy of the feet, legs, hands, and forearms. There was a ring of albumen with cold nitric acid one-sixteenth of an inch thick. Microscopically, in a gravity specimen, there were hyaline and epithelial and a few blood casts, but no separate red blood discs. The child died soon after this. As in the case previously described hydrargyrum cum creta 1 grain was given thrice daily.

Necropsy.—There was consolidation of both lower lobes of the lungs. The kidneys, which were quite natural-looking, were lobulated; there was doubtful injection in places of the interglobular vessels. The lungs showed grey hepatization; the alveoli were more or less blocked with round cells. There was fibrosis of the vessel walls. The kidneys showed intense glomerulitis, and the glomerular capsules were thickened by the addition of fibrous tissue. There was also interstitial fibrosis. The vessels seen in transverse section have their walls thickened by the addition of fibrous tissue (mesarteritis), and there is an indication of new vessel formation in the young fibrous tissue which is developing in the stroma. In one section a round-celled infiltration measuring 0.033 mm. by 0.0166 mm. was large enough to constitute a tiny granuloma. The tubules were in a state of catarrhal nephritis.

Here, then, there is evidence of catarrhal nephritis in an incontestable syphilitic kidney, and the fact that syphilis can and does produce catarrhal nephritis is obvious. There is no reason, therefore, why a point should be strained to prove that the case of catarrhal nephritis I now place on record is not due to syphilis because there are no interstitial changes, and that it must therefore be owing to some other undetermined cause; on the contrary, quite the other way. I purposely ignore the condition of the small arteries, which I take to be a syphilitic change.

I am convinced from this case that congenital syphilis is capable of producing catarrhal nephritis, as well as interstitial nephritis, and there is no valid reason why one form should not occur independently of the other.

These unfortunately are the only pathological findings of syphilitic kidney disease which I have had under my clinical observation. I have had from time to time, though very infrequently, several cases of catarrhal nephritis in syphilitic infants, which were unfortunately soon lost sight of, but as is conclusively proved above, the finding of catarrhal products in the urine does not prove the absence of interstitial changes in the kidney.

The practical lesson taught from these clinical observations is that congenital syphilis in some instances produces a nephritis which is indistinguishable clinically from acute catarrhal nephritis by reason of its symptoms and its urinary deposits, and that interstitial kidney changes may or may not be present in such cases.

The quantity of urine passed daily by the infant was very low indeed. In a series of observations which I made on the urine of a newly-born infant some time ago, and the results of which I brought to the notice of the Society for the Study of Diseases in Children,* the average quantity for the twenty-four hours was 19½ oz. At this point I should like to record the fact that the child is now quite well and strong and free from disease. The urea in that case was very small, from ⅓ to ½ grain per fluid ounce, the greatest daily quantity being 4½ grain and the smallest 2⅘ grain.

In comparison with this the urea does not seem unduly low, though the normal has been estimated at a somewhat higher figure than this by some foreign observers. The quantity of urea passed per ounce would accord with observations I have made on healthy children about the same age, but in these I have no record of the amount of urine passed in the twenty-four hours.

* Notes upon the Urine of a Newly-born Infant, by George Carpenter, M.D. *Reports of the Society for the Study of Diseases in Children*, vol. i, p. 160.

ADENOID VEGETATIONS IN INFANCY.

By R. C. DUN, C.M., F.R.C.S.,

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THE possible existence of adenoids during the first year of life, and their occasional development to a size sufficient to produce serious symptoms in infants, is now fully recognized. Some cases are certainly congenital, nasal obstruction or other symptoms referable to the condition being present at birth. Probably in all those examples in which definite symptoms arise during the first year, some hypertrophy of naso-pharyngeal lymphoid tissue is present when the child is born.

I believe that a considerable number of infants do suffer from a slight degree of adenoid vegetations, giving rise to some amount of nasal obstruction and catarrh. In such cases there is usually slight noisy respiration, most marked during sleep, husky cry, and more or less nasal discharge. As a rule there is little interference with the general health, and the majority of these cases can be kept in check, and perhaps cured, by suitable general and medical treatment. I believe that very few of them call for radical interference.

It is not this class of case with which I wish to deal, but with the more serious ones in which grave symptoms are present, materially interfering with the general health of the infant, and showing no tendency to improvement under medical treatment. That such cases do occur is beyond doubt, though they are comparatively infrequent.

Reviewing the cases of this type which I have observed, I should arrange them according to symptoms into the following groups:

1. Those in which marked obstructive and catarrhal symptoms, with or without epistaxis, are alone present.
2. Those in which reflex nervous phenomena are the principal manifestation.
3. Those in which secondary septic conditions predominate.
4. Those in which marked nasal obstruction and catarrh are associated with nervous and septic symptoms.

Group 1, comprising the purely obstructive and catarrhal cases, includes 9 out of the 22 examples of adenoid vegetations producing grave symptoms in infants which I have had under my care. The usual manifestations have been noisy respiration, amounting to snoring at night with broken sleep, the infant awaking frequently with attacks of dyspnoea. I have seen ordinary inspiration so obstructed as to cause drawing in of the lower intercostal spaces. The cry is hoarse, and is often accompanied by a curious inspiratory snort. There is usually distinct "snuffling," with nasal discharge, which may add to the discomfort by blocking the anterior nares or producing excoriation and eczema of the face. Some degree of inflammation of the tonsils and pharynx is as a rule present. Occasional slight epistaxis is not uncommon. I have seen one case in which the bleeding from the nose occurred so frequently and in such quantity as to produce marked anaemia. Under this heading I must refer to difficulty in sucking. I have seen one example of this; it occurred in a baby 2 weeks old with marked nasal obstruction, and was apparently due to an ability to breathe through the nose, the nipple having to be relinquished in order to allow of oral respiration. The child had no difficulty when fed with a spoon, and the removal of the adenoids completely cured the condition. I have not seen a case in which there was obstruction sufficient to interfere with the act of swallowing, though several have been reported. Deafness of a marked degree may be due to obstruction of the pharyngeal orifices of the Eustachian tubes.

The diagnosis of such cases as the above presents little difficulty, the symptoms being for the most part similar to those met with in older children with adenoids. Congenital syphilis has to be excluded where there is snuffling. Up till the sixth month I have not seen the typical adenoid facies developed. In young infants digital examination of the naso-pharynx is impossible owing to the small space between the soft palate and the pharyngeal wall. Posterior rhinoscopy is of course out of the question.

Group 2 includes those cases in which reflex nervous phenomena predominate. Of these I have seen convulsions, laryngeal stridor, and vomiting. Two cases of convulsions in infants which were cured by removal of adenoids have come under my notice.

One baby, aged 5 months, had had convulsions for three months, the attacks were at first infrequent, once or twice a week, but had gradually increased in number, in spite of medical treatment, until four or five attacks in the day were the rule. The child was breast-fed, none of the usual causal conditions were present, but it was ascertained that it had occasional slight nasal discharge, and snored slightly when sleeping on the back. The naso-pharynx was scraped; the same day there were two convulsive seizures, the next day three, and thereafter the child remained perfectly free.

The second case exhibiting convulsions was 2½ months old. Since the age of 3 weeks there had been frequent attacks. The child had "snuffles" during the first month of life which subsided without treatment. No signs of congenital syphilis were present. The pharynx and tonsils were slightly congested and the cry was hoarse. The child habitually slept with its mouth open. The naso-pharynx was scraped, and there were no further convulsive attacks.

The one case of laryngeal stridor which I have met with in association with adenoids occurred in a child 3 weeks old. There was a distinct crowing sound produced at both inspiration and expiration, which continued during sleep. This had existed since birth. There had been two attacks of epistaxis—the tonsils and pharynx were slightly red—and there was a watery discharge from one nostril. Curetting of the naso-pharynx resulted in immediate cessation of the crowing. I saw the child after two months, and there had been no recurrence.

Reflex vomiting I have seen in one case, associated with adenoids, insufficient to produce obstructive symptoms. The child was 10 months old and was being judiciously fed. It had been in good health up to the eighth month, when it had an attack of bronchitis of short duration; during convalescence vomiting first began. This occurred almost immediately after the act of swallowing. The first two or three mouthfuls of each feed were usually returned, the remainder being retained. The throat and tonsils, which had been in a state of subacute inflammation since the bronchitic attack, had received the most assiduous local treatment, and many changes in feeding had been made without avail. On digital examination a small mass of vegetations was found on the vault of the pharynx. These were removed; during the week after operation vomiting was occasional, after that time it ceased entirely.

Group 3. Cases in which secondary septic processes are the chief symptoms. Those that I have met with are acute recurrent suppurative adenitis and repeated attacks of otitis.

In two infants which I had to deal with, aged 6 months and 11 months, cervical gland abscesses occurred on four occasions in the first case, and seven times in the second. Digital examination of the naso-pharynx in both revealed adenoid growths, though these had given rise to no symptoms of catarrh or nasal obstruction, and in neither were the tonsils or pharynx inflamed. Removal of the adenoids in both these infants gave satisfactory results. In the first case, one gland, which was enlarged at the time of operation, suppurated a month later, but no subsequent adenitis occurred. In the second case there was no glandular suppuration after the removal of the naso-pharyngeal growth.

Acute attacks of otitis, 5 in number, were the chief symptoms which I met with in a child of 7 months. There had been, at first, no suspicion that adenoids existed, as none of the symptoms usually associated with that condition were present. The only guiding point in the history was occasional attacks of coryza. For a year after the removal of the adenoids this child has been entirely free from ear trouble. Cases such as I have included in the last two groups are probably quite unusual, but the possibility of their occurrence should not be lost sight of.

Group 4 comprises cases where definite obstructive and catarrhal symptoms have been associated with nervous or septic manifestations—such as tetany, paroxysmal cough, vomiting, recurrent acute suppurative adenitis and attacks of otitis. Such cases as these run no risk of being overlooked, owing to the presence of the usual symptoms associated with blocking of the naso-pharynx.

In all I have met with 22 cases in which serious symptoms, markedly interfering with health and not yielding to medical treatment, have been associated with the presence of adenoid vegetations in children under the age of 1 year. I have only included those in which, from the definite improvement following operation, there can be no question that the adenoids were the actual causal factor. Tabulating these cases according to symptoms we have, in Group 1:

	Number of Cases.	Age.
Nasal obstruction and catarrh alone	6 ...	2½ to 12 months
Nasal obstruction and catarrh with severe epistaxis	1 ...	4½ months
Nasal obstruction and catarrh with difficulty in sucking	1 ...	2 weeks
Nasal obstruction and catarrh with marked deafness	1 ...	8 months

In Group 2, including those in which reflex nervous phenomena were present without definite signs of nasal obstruction :

	Number of Cases.	Age.
Convulsions	2 ...	5 and 2½ months
Laryngeal stridor	1 ...	3 weeks
Vomiting	1 ...	10 months

In Group 3, comprising those cases in which septic infection was the predominant symptom :

	Number of Cases.	Age.
Recurrent acute suppurative cervical adenitis...	2 ...	6 and 11 months.
Recurrent acute otitis	1 ...	7 months.

In Group 4, cases combining obstructive with nervous or septic symptoms :

	Number of Cases.	Age.
Nasal obstruction and tetany ...	1 ...	3 months.
.. .. .. paroxysmal cough	1 ...	3 ..
.. .. .. vomiting ...	1 ...	2½ ..
.. .. .. acute otitis ...	1 ...	9 ..
.. .. .. suppurative cervical adenitis ...	2 ...	10 ..

Summing up the question, I believe that in the very large majority of cases of adenoids in infancy the symptoms are slight, and do not materially affect the health and development of the child, and that such cases may be efficiently treated medically, operative interference being uncalled-for; that, on the other hand, there are some cases, comparatively few in number, in which definite and severe symptoms occur, produced marked ill-health; that such symptoms are usually those of nasal obstruction and catarrh, but that occasionally reflex nervous phenomena or septic processes predominate, and, finally, that these cases are most satisfactorily treated by the removal of the adenoid growths.

REVIEWS.

PATHOLOGY.

THE second volume of the revised manual of pathological histology,[1] by Professors CORNIL and RANVIER, is interesting and valuable from beginning to end, and its contents impress us with a much more uniformly favourable opinion than did those of the first (BRITISH MEDICAL JOURNAL, July 26th, 1902, p. 252.). Muscle is dealt with by Dr. Durante; blood by Dr. Jolly; bone marrow by Dr. Dominici; and the nervous tissues by Drs. Gombault and Philippe. The pathology of muscle receives very scant attention in most textbooks, so that the very careful and comprehensive treatment of the subject in this volume deserves to be widely known, and, as it is supplemented by a very full bibliography, ought to prove extremely useful as a work of reference. The work on the blood is also good, and calls attention to many points which are overlooked in most textbooks. We are particularly pleased to find that the study of the bone marrow, the pathological importance of which has recently been emphasized by some excellent work done in this country, is dealt with at considerable length and well illustrated. The section on nerve tissues contains a useful account of most of the important special methods in fixing and staining which have been introduced for the demonstration of the finer details of nerve structure, and both the illustrations and descriptions of the various histological abnormalities associated with nerve lesions are deserving of mention.

Students generally form a rough classification of their textbooks into two main divisions—the one comprising those which form light and interesting reading, the other those which are difficult, require concentrated attention, and can only be read in small portions at a time. The *Textbook of Pathology and Pathological Anatomy*,[2] by Dr. HANS SCHMAUS, would fall under the former category. It may be recommended to the medical student who is at the commencement of his hospital career. It will give him an insight into the many ways in which pathological considerations enter into the clinical problems with which he is confronted, and will impress upon him that the physiology he has already learnt must not be discarded as an encumbrance, now superfluous, but must be retained and revived in a new light, as affording the primary basis for the rational understanding of morbid processes. When he nears the end of his hospital career, if he is required to pass a searching examination in pathology, or if he takes an interest in the subject for its own sake, he will not find the present textbook sufficient; its scope is too wide to be thorough, and it will be necessary for him to learn more about the details of morbid anatomy, morbid histology, and bacteriology in books, each exclusively devoted to one of these departments of pathology. A special feature of Dr. Schmaus's book, which is rarely met with and supplies a much-felt want, is his full and useful description of the morbid histology of the nervous system.

Dr. HERMANN DÜRCK's work on *General Pathological Histology*[3] is an excellent book. It is clear, concise, well filled with information, and deals with the subject in a way which is calculated to render the main established principles of pathological histology readily comprehensible to the student. Highly obscure and controversial matters are, as far as possible, avoided, and, as must necessarily be the case in an outline of pathology intended for students, many of the statements are more dogmatic and categorical than is quite justifiable in the present uncertainty of our knowledge. But the process of simplification has not been pushed too far; the treatment of various authors' views is, on the whole, fair, and there is an absence of that air of finality and personal bias which is apt either to deaden the reader's interest or arouse his distrust. We are glad to see that Dr. Dürck deals very fully with the important subjects of circulatory disturbances, degenerative changes, and inflammation. The illustrations are copious and very well executed.

Dr. LAZARUS-BARLOW intends his *Pathological Anatomy and Histology*[4] to serve as a textbook for elementary students, and for that purpose has thought it desirable to introduce many simplifications in the treatment of his subject. Photomicrography has not been employed, because the interpretation of a photomicrograph is considered too difficult for the beginner; the microscopic specimens have therefore been drawn by a non-medical artist, "so that they represent faithfully the appearances seen by the elementary student." The question of illustrations is important, because a good illustration generally conveys more to a student than pages of verbal description; but we feel that Dr. Lazarus-Barlow will hardly succeed in convincing everybody that the method he has adopted is the best. Undoubtedly, blurred photomicrographs and poor semi-diagrammatic drawings confuse the student and mislead him; but in some of the recent American textbooks the photomicrographs are exquisitely clear, and the drawings made by skilled pathologists such as Ribbert are not only diagnostic but marvellously accurate; and we see no reason to believe that the reproductions which appear best to the eye of the trained pathologist are not also the most instructive to place before the average medical student. But the most serious fault we have to find with the book is that Dr. Lazarus-Barlow fails to recognize the appropriate limits of his subject and frequently enters into elementary generalities. His treatment of the intestinal tract is particularly unsatisfactory. No student purchases a textbook of pathology in order to be informed that the term "hernia" is applied to morbid conditions of the brain, testis, and lung as well as of the intestine, that in umbilical hernia the protrusion takes place at or near the umbilicus, that hernias may either be reducible or irreducible, and so forth. He studies hernia, and has to study it thoroughly, in his textbook of surgery: the page and a quarter which Dr. Lazarus-Barlow devotes to the subject is therefore out of place. So too is the three-quarters of a page which is assigned to intestinal entozoa. These parasites are fully described, as the author admits, in every textbook of medicine. Then why attempt to describe them here in an inadequate

[1] *Manuel d'Histologie Pathologique.* Par V. Cornil et L. Ranvier, avec la collaboration de MM. A. Brault et M. Letulle. Troisième Edition. Tome Second. Paris: Félix Alcan. 1902. (Roy. 8vo, pp. 864, 202 illustrations. Fr. 25.)

[2] *A Textbook of Pathology and Pathological Anatomy.* By Dr. Hans Schmaus. Translated from the Sixth German Edition by A. E. Thayer, M.D. Edited, with additions, by James Ewing, M.D. London: Henry Kimpton. 1903. (Royal 8vo, pp. 662, 351 illustrations, including 35 coloured plates, 21s.)

[3] *Atlas und Grundriss der pathologischen Histologie.* Teil III. *Allgemeine pathologische Histologie.* Von Dr. Hermann Dürck. Munich: J. F. Lehmann. 1903. (Crown 8vo, pp. 410, 108 plates, mostly coloured. M. 20.)

[4] *The Elements of Pathological Anatomy and Histology.* By Walter Sydney Lazarus-Barlow, B.A., B.C., M.D.Camb., F.R.C.P.Lond. London: J. and A. Churchill. 1903. (Roy. 8vo, pp. 705; 7 plates; 171 illustrations. 24s.)

fashion? If he had provided illustrations of the diagnostic segments they would have been of some help to the student, because textbooks of medicine are not usually illustrated; but this he fails to do. We select these two examples as illustrating a tendency of the author to overlook the usually-recognized distinction between the morbid phenomena which come under the head of pathological anatomy and histology and those which are appropriately treated in works on surgery and medicine; the introduction of scraps of rudimentary surgical and medical knowledge both encumbers the book and obscures its value as a pathological treatise. At the same time we are glad to recognize that many portions of the book are both instructive and likely to stimulate a genuine interest in pathology. The chapters on the chronic fibroses, theories of new growths, and the classification of tumours may be mentioned as examples. But these subjects are much too difficult to be comprehended by the helpless and very ignorant type of medical student for whom the greater portion of the book is apparently written.

The recent appearance of the third part marks the completion of the German *Encyclopaedia of Microscopy*,[5] with special reference to staining methods, edited by Professors EHRLICH and WEIGERT and Drs. KRAUSE, MOSSE, and ROSIN. It is intended to be bound in two volumes (the first A. Lakmoid, and comprising 704 pages: the second, Lamelli-branchier-Zusatzflüssigkeiten, and, including the index, amounting to 700 pages). It will be heartily welcomed by the microscopist as an invaluable addition to his equipment. From an ever-increasing army of workers in various departments of microscopical science and art, each member of which contributes his quotum, be it large or small, to the general store of information, there results such an accumulated mass of technical details as to render a work such as the one under notice an absolute necessity, and as such we opine that in its completed form it will be absent from few laboratory libraries. It must be understood, however, that systematic descriptions of tissues, organs or structures find no place in this encyclopaedia: the various articles—some of which are signed—are strictly limited in matter to points of technique, although they are sufficiently comprehensive in range to embrace all branches of microscopy—bacteriology, botany, histology, both normal and pathological, and zoology, together with notes on the chemistry of the reagents employed in the process described, and many of the pieces of apparatus. The paragraphs are concisely and clearly written, the subject title being printed in bold black-faced type, thus facilitating the work of reference; useful, if not exhaustive bibliographies are given whenever required by the importance of the subject treated. Figures of apparatus derived for the most part from Zeiss's Catalogue, and diagrams to the number together of 134, are inserted where necessary, though from the character of the work profuse illustration is obviously impossible. Some of the articles are so exhaustive as to form complete monographs on their particular subjects, such as those on embryological technique, by Professor Ballowitz (Greifswald) and methods of experimental embryology by Dr. Wetzel (Berlin), which extend to some fifty and thirty pages respectively; microscopical methods as applied to the tissues of the nervous system, by Professor Nissl (Heidelberg), of sixty-eight pages, and as applied to the visual organs, by Dr. Herzog (Berlin), of about half that length. Gold methods, by Professor Szymonowicz (Lemberg), silver methods, by Dr. Moss (Berlin), and Golgi's method, with all its numerous modifications, important and trivial, by Professor Kalling (Gottingen) are described at length, whilst among other noteworthy contributions to be found in the volumes are methods of blood examination and staining by Dr. Pinkus (Berlin), fixation by Dr. von Tellyesniesky (Buda-Pesth), methods of injecting blood and lymph vessels by Professor Hoyer, jun. (Cracow), maceration methods by Professor Spalteholz (Leipzig), paraffin embedding methods are described by Professor Heidenhain (Tübingen), whilst a complete and lucid description of methods of "plastic reconstruction," from serial sections, is from the pen of Dr. Peter (Breslau). Photographic methods as applied to microscopical work are fully detailed by Professor Zoth (Innsbruck), under the heading Microphotographie, in which the subject of the employment of colour screens in the photography of preparations stained by the various dyes and reagents, is carefully explained. Dr. Petri contributes a short but extremely interesting historical account of the development of the microscope from the primitive seventeenth century instrument of Leeuwenhoek to the elaborate Zeiss model of to-day. A point we are glad to notice is the fact that cross references are not numerous, most subjects being treated each under its own particular heading. An index giving the contributions supplied by each of the collaborators completes this important and useful work.

VON DUNGERN describes his book on "the antibodies"[6] as the results of earlier researches and new experiments, but this description requires some qualification. By earlier researches he means the work of all those observers who have helped to build up the modern views of immunity, and more especially Ehrlich's work on toxins and antitoxins, etc., and by new experiments he means some of undoubted value which he himself has carried out with precipitins. It need hardly be pointed out that the subjects of the first part are most efficiently dealt with, since v. Dungern's own work on the lysins and antibodies is well known. The book deals very fairly with all the views published on most of the important portions of these subjects. His personal opinion is never thrust at the reader, but whenever he expresses himself definitely he bases his conclusions on logical deductions. He employs the term antibodies in its widest sense, and discusses more or less fully all the known products of immunization. We note that in spite of this wide treatment in dealing with the cytolysins, he entirely ignores the attempts which Leyden has made to produce an immune serum which acts specifically on epitheliomatous cells. Absolute specificity is necessary, he says, if one would destroy the cells of a growth without damaging the organism, and unfortunately none of the lysins for special tissue cells possess this. The theoretical possibility of producing an epithelial immune serum which acts so much more strongly on epithelial cells than on other tissue cells—for example, blood cells—has been proved, but all attempts to work in this direction have been unavailing, owing to manifold difficulties hitherto insurmountable. In the second part he reports experiments which he has carried out recently on some animals, peculiarly well adapted for the purpose, such as the crab, maja squinado, and the octopus vulgaris. These experiments appear to be of considerable value in further clearing up some of the dark points in connexion with antibody formation, and in still further supporting Ehrlich's doctrine of immunity. The whole book is carefully written, and as a rule long and involved sentences are avoided, so that the subject is as clear as such a complicated one can be. The references are given as footnotes, and form, when massed together, a fairly complete biliography. The author has been more or less successful in arranging his subjects consecutively, which fact makes the book easier reading than is the rule with productions of workers in this branch. Taken as a whole the work is important, and should be read by all who are attempting to follow closely the development of immunity teaching.

INCOME-TAX.

MR. FRY'S little book on *Income-Tax Anomalies*[7] appears at an opportune moment. The Committee of the House of Commons is not likely to lack suggestions as to the scope and nature of its duties, but we doubt whether many reformers will go so far as to publish their views on the subject. Perhaps the most interesting chapter to the professional man is that headed Industrial and Spontaneous Income, in which the author endeavours to prove that differentiation, for purposes of taxation, between earned and unearned incomes is both desirable and practicable. The problem is, however, not quite so easy of solution as might be inferred, as the following illustration will show: A. is a widow, with six children to bring up and educate, and with an income of £1,000 a year, derived from house property; B. is an eminent physician whose fees average £20,000 per annum; C. is a "sleeping partner" in a manufacturing firm, from which he draws £15,000 a year. Under the scheme proposed by Mr. Fry A. would be charged with tax at

[5] *Encyklopädie der mikroskopischen Technik mit besonderer Berücksichtigung der Färbelehre.* Herausgegeben von Prof. Dr. Paul Ehrlich, Dr. Max. Mosse, Dr. Rudolf Krause, Dr. Heinrich Rosin, und Prof. Dr. Carl Weigert. Berlin and Vienna: Urban and Schwarzenberg. 1903. (Roy. 8vo. Part I, Abbe'sche apparat Formaldehyde, pp. 400, fig. 16; Part II, Formaldehyde Metachromasie, pp. 400, figs. 45, M.10 each; Part III, Metagelatine Zusatzflüssigkeiten, pp. 600, figs. 72, M.15.)

[6] *Die Antikoerper, Resultate früherer Forschungen und neue Versuche.* [The Antibodies: Results of Earlier Researches and New Experiments.] Von Dr. Emil von Dungern, Bart. Jena: G. Fischer. 1903. (Demy 8vo, pp. 114; 2 diagrams and 3 curves. M.2.50.)

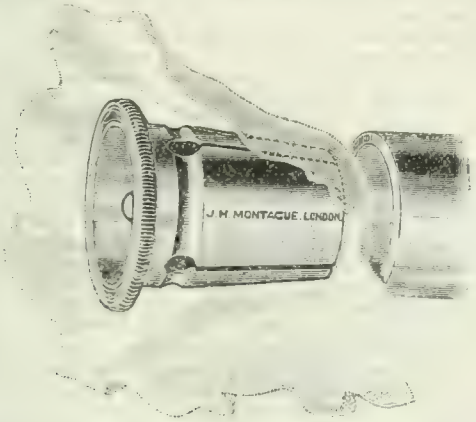
[7] *Income-Tax Anomalies.* By T. Hallett Fry. London: Horace Cox. 1903. (Demy 8vo, pp. 39. 1s.)

1s. in the £, while B. and C. would have to pay at the 8d. rate only. There is something to be said in favour of the contention that a married woman should be treated as a *feme sole* for income-tax purposes, instead of her income being dealt with as if it belonged absolutely to her husband; but, were such a course adopted, it is probable that the openings for evasion would be so numerous as to render the scheme unworkable. No conscience is more elastic than that of the average taxpayer about the time when he makes his annual return of income, and in some cases conscience would stand the strain of an arrangement whereby the joint income was so divided as to result in a minimum of taxable liability. Judging from the author's italics, the greatest of all *Income-Tax Anomalies* is the present method of assessment of foreign firms and companies, a conclusion to which we confess we should hardly have come unaided, and we do not feel altogether convinced by the arguments adduced by Mr. Fry in support of his opinion. In this connexion we notice some confusion on his part between "domicil" and "residence"—words which possess entirely distinct meanings. The test of liability to income-tax in cases into which a foreign element enters is not domicil but residence, and to the best of our belief, the former term does not occur in any clause of the income-tax code. It may be added that while the subject is by no means exhaustively treated in the booklet before us, yet the author appears to have laid his finger on some of the real defects in the present system; and he has treated his material in such a way as to render it of interest to the average taxpayer who is not a specialist in income-tax law or practice.

REPORTS AND ANALYSES
AND
DESCRIPTIONS OF NEW INVENTIONS
IN MEDICINE, SURGERY, DIETETICS, AND THE ALLIED SCIENCES.

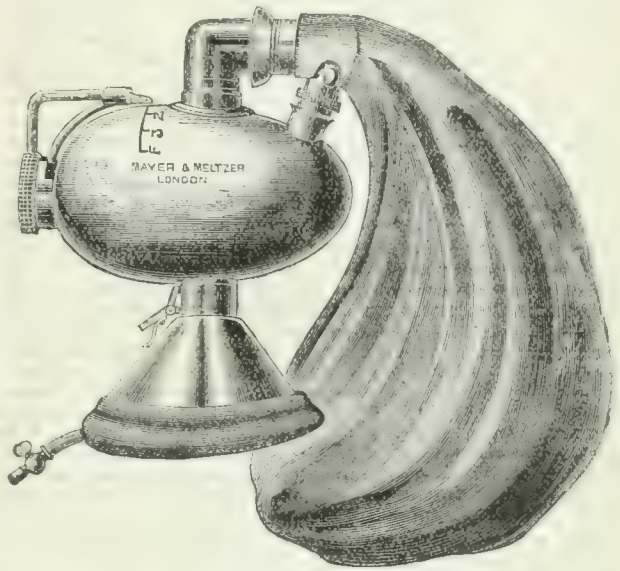
MEDICAL AND SURGICAL APPLIANCES.

A Spring Collar for Gas and Ether Apparatus in Ethyl Chloride Narcosis.—Dr. A. DE PRENDERVILLE, Anaesthetist to the Tottenham Hospital and the London Throat Hospital, W. (Weymouth Street, W.) writes: Instead of using elaborate special mechanism for ethyl chloride narcosis, I have had the most satisfactory results with the spring collar here shown, fitted to the



ordinary face mask. Slightly conical in shape, the colla will fit any mount. Its sole object is to fix the lint lining o the face piece. First fit Hewitt's or Clover's bag to selected face piece; then take circlet of limb (diameter about 7 in.) place collar apex downwards in centre, gather up edges over superior border and hold tightly in right hand: next force cone into ring of facepiece, and spread out lint lining smoothly against walls of mask. Trim edges so as to lie well within rubber air pad. If Hewitt's bag be used, arrange valves for immediate to-and-fro breathing. I prefer one breath of air after five or six inspirations; this can be readily given through stopcock without disturbing facepiece at all. In private I detach rubber bag from stopcock, and affix fresh paper bag for each patient. That portion of limb covering the cone is somewhat stretched *in situ*, and thereby allows of an airway between bag and mask, sufficiently free to cause little or no sense of oppression to the patient. In spraying on the narcotic, I endeavour to limit diffusion to that portion of lint lining furthest removed from the face, and at the same time, by rapid circular movements, to cover the surface more or less uniformly, and so to avoid saturation at any given point. Briefly summarized, the spring collar presents the following advantages: (1) Small cost; (2) ready adaptability to apparatus, dental or general, in ordinary use; (3) simplicity of introduction and withdrawal; (4) complete fixation of limb lining, and thereby impossibility of displacement during deep inspiration. The spring collar has been made for me by Mr. J. H. Montague, New Bond Street, W.

A Wide-bore Regulating Ether Inhaler.—Dr. R. J. PROBYN-WILLIAMS (Welbeck Street, W.) writes: The disadvantages of the narrow bore of the ordinary Clover's inhaler are well-known to all anaesthetists, and I now wish to call attention to an inhaler which has been made for me by Messrs. Mayer and Meltzer, which seems to possess some advantages over the modified Clover inhalers with a wide bore which have been introduced by Dr. Wilson Smith[1] and Dr. Hewitt.[2] In shape it is ovi-



form, and the body is pierced in both its long and short diameters by two tubes. The short or vertical tube is rather wider than the average adult trachea, and this bore is not diminished in any part of its course, as it is in the ordinary model of Clover's inhaler. Through this tube respiration takes place, and to its extremities are attached the facepieces and bag. In the long or horizontal diameter rotates another tube which regulates the amount of the respired air which is deflected into the ether chamber. At its extremity is an indicator which moves round part of the larger end of the inhaler. There is no water chamber, and the two metal pieces forming the inhaler may be separated and boiled when required. There are also several novelties in the details which need not now be described. The inhaler has been proved to work well, and possesses the advantages of a wider bore in the patient breathing freely without noise, remaining of a better colour, and secreting less mucus and saliva. It is 6 oz. lighter than the ordinary Clover's inhaler, is more comfortable to hold on account of its shape, it can be easily and satisfactorily cleaned, and it is also inexpensive.

INTERNATIONAL CONGRESS OF OTOLOGY.—The International Congress of Otology will hold its seventh meeting at Bordeaux from August 1st to 4th, 1904, under the presidency of Dr. Moure. The questions proposed for discussion are: (1) The Choice of a Simple and Practical Acoumetric Formula; (2) Diagnosis and Treatment of Suppurations of the Labyrinth; (3) Technique of the Opening of Cerebral Abscesses of Aural Origin and After-Treatment.

[1] *Medical Annual* (Wright), 1899.
[2] *Lancet*, vol. i, 1901.

SUGGESTIONS ON MEDICAL EDUCATION AND REFORM.

By ROBERT FARQUHARSON, M.D., M.P.

IT requires some boldness, I know, to ramble through the thorny jungle of comment on these subjects, where angels have trodden before, and where my intrusion may have no special value. Most of the arguments have already been worn threadbare. May I place some considerations before you as the plain and simple reflections of the man in the street? The onlooker, however, often sees most of the game, and detachment from active professional work is not the worst way of looking round, and reading, and thinking, and wondering whether the more advanced and scientific methods of the present day turn out better practitioners than those which were in vogue in the late Fifties, when I was a student in Edinburgh.

In the first place, I consider it a sheer waste of money to provide bacteriological installations and physiological laboratories in every medical school. I should no more encourage an ordinary practitioner to meddle actively with microbes than I would allow him to operate for appendicitis. Bacteriology is the most misleading thing in the world unless worked by specially-trained scientists, and in every locality there should be a central station where such investigations can be carried out on rigidly up-to-date lines. This we have in Aberdeen, where Professor Hamilton, our leading authority on pathology, generously gives much time and work to unravel such problems as are put before him. Then, again, unless young fellows are to become physiologists pure and simple, why puzzle their brains in the vain attempt to understand the conflicting views of Continental authorities, or the complicated varieties of mechanical contrivance invented for experimental purposes? Let us have again central stations where research can be carried on according to the Ludwig methods under careful supervision, and then let the results be accepted without repetition or endorsement. The sceptical attitude can be carried too far, and I am quite prepared to believe in the inhibitory action of the pneumogastric nerves, although I have never sat in the back seat of an imperfectly-ventilated lecture room, and dimly seen some kind of indicator slowly moving up and down to register the movements of the heart.

Next, I hold that young fellows are over-coddled and fed with spoonmeat nowadays. There is a tutor at hand to expound and explain everything; nothing is left to be casually picked up, and the brilliant band of practitioners who manned the benches of the old Edinburgh University in former days under the giants of the past were nothing the worse for having practically had no actual teaching, but had been left to mouse about under the inspiring influence of Goodsir, Christison, Simpson, Syme, Edmund Forbes, Bennett, and their colleagues, and the tutorial department naturally fell into the hands of the "grinders," a most useful class of men, abhorred by pedants, but beloved by those who had the advantage of working with them. In my day Gregory's attempts at professional instruction were simply absurd. He could explain nothing, and the simplest experiment went wrong in his clumsy fingers. Goodsir, though a far bigger man, was not much better, for he was perpetually struggling in the clouds of transcendentalism, and although much of his epoch-making work was contained in his lectures, and, being unpublished, was calmly appropriated by others, we could make nothing of him, and had it not been for my dear old master Struthers, who lectured in my first year, I must inevitably have been plucked in anatomy as I was in chemistry. Under these circumstances we had recourse to Wilkinson, a born teacher with a clearness of exposition which I have never heard surpassed, whose drawings in coloured chalk on the blackboard of difficult bits of regional anatomy almost approached genius.

One result of the modern and excessive development of departmental instruction is that professors have no time or energy left for original work. The Scotch universities are staffed by able men, who had made their mark before election. But what is the output now? Simply *nil*, because their powers are wasted by having to cram into little boys' over-stuffed brains a heterogeneous mass of confused material to meet the imperious demands of General Medical Council inspectors, and then they have to read a vast and complex variety of literature to keep up with what is called the progress of the times, which seems to me, as a man in the street, to be too often purely destructive, one set of men demolishing the work of their predecessors, and being in their turn demolished by those by whom they were succeeded. In the good old days, when the yellow and faded leaves showed the antiquarian nature of the lecturer's MSS., research was actively going on, and the splendid series of investigations pouring forth with the virile vigour which was then the stimulating characteristic of my old Alma Mater. Every subject is now so overgrown that one mind cannot grasp it all, and chemistry, physiology, and the like have to be worked like the co-operative stores—in compartments. But, so far as I know, there is no limit to the scope within which an examination may be carried on, and an unhappy student can easily be plucked bare by any faddist who magnifies the importance of his special line of knowledge. Perhaps this has already been done, and I may be a day after the fair, but, if not, I should like to see rigidly-defined areas, within the limited circle of which the knowledge of students should be tested, and professors should be expected to expatiate, and then every chair should be provided, as in Germany and elsewhere, far more efficiently than at present, with the well-qualified and, above all things, well-paid assistants, who should relieve the occupant of all tutorial work, and set him free to carry on that original work on which the reputation of a university so largely depends.

How far examination is really a good test of knowledge is an old controversy which I do not wish to reopen except to say this: that the capacity for placing one's accumulated stores of information clearly and coherently on paper is a special gift; and a man may be an excellent doctor although he may have a poor literary faculty, and gives meagre answers to questions. And when we remember what outside examiners too often are, and how they spin elaborate cabinets of conundrums to gratify their own ingenuity, we may wonder not that so many students are "plucked," but that any get through at all. For this reason I am strongly in favour of keeping the examinations, at the universities at all events, purely and solely in the hands of the professors. The assessor is generally a young man, perhaps an assistant surgeon or physician to a London hospital, where he has been seeing chronic dyspepsias, varicose ulcers, and winter coughs for ten or fifteen years, and to put him as a spy (for that is what it really amounts to) on the proceedings of a man of perhaps European reputation is an absurdity so palpable that I wonder it has survived so long.

The great advantage of the professor doing all the examining, as in my old Edinburgh days, when the arrangement worked admirably, is that he can supplement the results of the replies to the printed queries by his experience of the class work and general demeanour of each individual student; and the look of a "kent face" will steady the timid and restore his scattered thoughts to the matter in hand.

As regards the arrangement of the student's time, it is most important that the first two years should be exclusively devoted to anatomy, chemistry, botany, materia medica, and physiology; and until they have been cleared out of the way, and the overcharged memory relieved by examination, admittance to the in-patient or out-patient department of the wards should be rigidly barred. Any one who is actively engaged in dissection is a source of danger to sick people, which no antiseptic precautions can avoid; and to ask young men to engage in clinical work before they understand the structure or functions of the human body, or the action and uses of medicines, is an absurdity so glaring as to require no refutation. The old system of apprenticeship, now unhappily abolished by educational faddists, was not open to this objection, for under it young fellows were early broken into the harness of general practice; under experienced supervision they were taught to make up medicines, to do a little small surgery, and to see a class of cases of a slight and trivial kind which never reach our great hospitals. Above all, they learnt, if they were fortunate in their master, the art of managing sick people, and, above all, the necessity, no less than the propriety, of courtesy and kindness to the poor. This lesson, which is too often neglected in the bustle and scrimmage of out-patient hospital practice, was taught to Edinburgh students of my time by the late Warburton Begbie, the best type of the beloved physician, whose personal charm was only equalled by his clinical tact, and whose memory will be for ever green in the memory of his attached pupils.

Out-patient departments are mischievous absurdities, and should be abolished without delay. There we see an unhappy physician, perhaps a Fellow of his College, spending the best years of his life in doctoring gaunt processions of dyspepsias, and winter coughs, and chronic rheumatism,

and bronchitis, and phthisis, creating appetites with tonics which he cannot gratify with food, and searching in vain for some crumbs of comfort or instruction to give to his expectant class. How much better the old Edinburgh plan was. There was no out-patient department there, but only what was called a waiting room, where cases sent for admission to the wards were seen by the physician or surgeon in charge. Dispensaries did the rest, and there we saw a moderate number of cases, and were given the addresses of others to be visited at home. This was done under the direct supervision of the medical officers whom we called in on emergency, and when I say that my immediate superiors were Gairdner, Sanders, and Matthews Duncan, I think it will be allowed that this was a professional training most valuable to the student, and an admirable arrangement, for the patient was attended at home under domestic conditions which could at any time be supplemented by admission to the hospital.

The fifth year of medical study, which I cannot but regard as an educational fad, is usually wasted so far as I have been able to find out. I cannot discover what its place in the curriculum really is, and it places a burden on the backs of long-suffering parents which they can ill afford to bear.

The worst of medical study is that its methods are continually in the melting pot at the instigation of the General Medical Council, which, having outlived the necessity for its existence, is compelled to invent work—one day it abolishes a most useful body of men, the unpaid assistants, who are now flung on the world ruined and penniless because their existence annoyed the comfortable consultants of Harley Street and Savile Row, and the next spend their time in debating the intricacies of what they are pleased to call "infamous practice," to squabbling with the leading corporations, who very properly decline to accept their dictation, and to unsettling the minds of the Conjoint Board about their systems of examination, with the result that, although its members are all honourable and distinguished men, and their chairman is exceptionally dignified and impartial, they have lost all hold on public opinion, and are now practically bankrupt. Would it not be better to sweep them out of existence, to have a registration office, charging a small fee, and at the same time to reform drastically by abolition all corporations and examining bodies, and let the qualifications for practice be given by a Conjoint Board, whose proceedings can be controlled by the Privy Council, and who are free from fussy and meddling interference, and let those who desire a higher degree go to the universities.

The Royal College of Physicians may of course retain itself as a select and dignified debating society, conferring what titles it pleases, and looking after its somewhat indifferent library, and maintaining by means of a curator the fiction of a museum which I doubt if any one has ever seen; and of course the magnificent museum of the College of Surgeons should be maintained by the State.

REPORT OF THE COMMISSION ON DYSENTERY AND ITS RELATION TO ENTERIC FEVER.

In August, 1900, the Secretary of State for War appointed a Commission to report on "the nature, pathology, causation and prevention of dysentery and its relation to enteric fever." The Commissioners were Lieutenant-Colonel Bruce, Colonel Lane Notter, and Professor W. J. Simpson. The immediate occasion which led to the appointment of the Commission was the terrible mortality from these two diseases in the South African campaign, and in view of this fact it cannot be said that the terms of the appointment quoted above were happy or likely to bring about an exhaustive inquiry into the preventable causes of mortality in the late war.

The result of an inquiry is a bacteriological report by Lieutenant-Colonel Bruce (48 pages and 15 coloured plates); a report by Dr. Simpson of 49 pages, appendices of 30 more pages, and several maps; and a report by Colonel Notter comprising 16 pages and 1 plate. The last and the first reports are undated, the second is dated November 29th, 1901. A short introduction is prefixed to these three reports signed by Drs. Bruce and Simpson and dated November 29th, 1901, and what is in fact a minority introduction but undated is added by Professor Notter. In view of these facts it is not altogether surprising that nearly two years have elapsed before the report is presented, and that it now loses much of its value in consequence of its individual characteristics. It contains much valuable information, and had it been a unanimous report, some hope of rational reform in the sanitary service of the army might have been entertained.

The Etiology of South African Dysentery.

Lieutenant-Colonel Bruce made a bacteriological investigation of 18 cases of dysentery and 7 of enteric fever, and describes in detail the pathological conditions found. He arrives at the following conclusions:

1. That dysentery in South Africa is not caused by amoebae, as there is some reason to believe is the case with the dysentery of certain other countries.
2. That the organs in dysentery are absolutely sterile. Hence, unlike enteric fever, the causal agent confines itself to the intestines.
3. That in the large intestine no particular species of micro-organism stands out prominently as in the case of cholera.
4. That there is not sufficient evidence in this work to advance the theory that some of the normal inhabitants of the intestines belonging to the coli group take on a pathogenic power.
5. That there is no connexion between dysentery and enteric fever, Eberth's bacillus not being found in the organs or intestines of dysentery.
6. That there is a certain amount of evidence to show that so-called cases of dysentery following enteric fever are relapses of enteric, where the disease has attacked the large intestine.

Professor Simpson's Report.

In the second part of the report, Professor Simpson deals in a thorough and workman-like manner with the conditions and causes leading to the immense mortality in the South African campaign. On the last page of his report he gives an estimate of the cost of enteric fever in the campaign, which most usefully brings out what a large saving would be effected merely from a financial point of view by the taking of the necessary preventive measures. Taking the cheapest infantry soldier to cost £40 by the time he arrives in South Africa, his death by enteric fever implies an estimated cost to the country of £87; if he is attacked by enteric fever and recovers, the cost is £57, on the assumption that he resumes work at the end of four months; £108 if he is invalided home and has to be replaced by another man. During the two years of the war there were at least 31,128 cases of enteric fever, and on the above basis the total cost was £2,724,306: and, if to this be added the cost of extra hospital staff and equipment of hospitals and transport, the cost is brought up to at least £3,500,000. This estimate does not include dysentery, and is calculated on the basis of the cheapest soldier available.

Enteric Fever and Dysentery in the Civil Population.—Enteric fever under ordinary circumstances is a veritable scourge in South Africa, and dysentery, although ordinarily mild, assumes a virulent form in the mines. The main cause of these diseases is undoubtedly an insufficient protection of the water supplies and a general absence of a proper and sanitary disposal of excreta and slop water.

Enteric Fever and Dysentery in the South African Army.—In view of the above facts it is not surprising that in the absence of efficient means of prevention the South African army suffered badly. The number of deaths from enteric fever were over six and a-half times that of dysentery in the first year of the campaign, and nearly six times in the second year.

Decomposing food has been a great cause of fatal dysentery in former times; and it is satisfactory therefore to learn that the "comparative absence of a general prevalence of fatal dysentery and scurvy may be very properly ascribed to the excellent commissariat and food arrangements of this war." Dr. Simpson makes a useful suggestion on this point, that is, that meat should not be sent out in tins containing more than a single soldier's rations for the day, in order that exposure to dust and dirt of the opened tins may be avoided.

The *drinking of surface waters* was the most usual cause of dysentery; but the sand which lodged on food during dust-storms appears also to have been a cause.

History of Modder River.—Dr. Simpson next passes in review the main epidemics of the campaign, his deductions being based in the main on information obtained on the spot or from official sources. We cannot agree with Colonel Notter's demurral to "so much of Part II of the report being taken up with details as to, and criticisms of, circumstances connected with the occupation by the army of camps at Modder River, Paardeberg, and Bloemfontein," on the ground

that "practically none of the facts therein referred to came under the actual observation of the Commission, as the events occurred some months before the Commissioners arrived in South Africa," and that "the opinions offered on these incidents are based almost entirely on hearsay or secondary evidence." If such objections were to hold good, and if the investigator were not to be credited with a capacity for sifting the wheat from the chaff of evidence, public health inquiries would be almost entirely impracticable, and a large proportion of the reports of the medical inspectors of the Local Government Board, for instance, must be relegated to the waste-paper basket.

The description of the Modder River outbreak is an excellent example of the belated adoption of precautionary measures which characterized the campaign. On January 17th, 1900, Surgeon-General Wilson, the Principal Medical Officer, finding the Modder River camp in an insanitary state, advised Lord Roberts, who was then in Capetown, that wells should be sunk for the troops not only at Modder River, but on the lines of communication between Orange River and Modder River. Lord Roberts immediately agreed, and the ordinary machinery under the Royal Engineers was put in motion for this purpose. "So slow, however, was this machinery, which is not specially adapted for this work, that it was not until February 9th that the requisite number of wells was completed. A portion of the troops began to leave the Modder River on February 11th." Nothing in Colonel Notter's statement quoted above appears, in view of the above and similar detailed information, to justify us in disagreeing with Dr. Simpson's statement as follows:

As preventive works they (tube wells) should have been constructed, not when an epidemic manifested itself, but immediately the camp was formed, which would have been nearly two and a-half months earlier. The medical officers adopted preventive measures as far as they were able, in order that the soldiers should be provided with good water, but there was no general organized scheme by which abundance of pure water was obtainable. Plenty of fuel was obtainable, for although the Modder River district is barren of trees, there was a railway behind to bring up coal.

History of Paardeberg and Bloemfontein.—Both the Boer and British forces were infected when they left the Modder River and started for Paardeberg. It cannot be wondered therefore that a large proportion of them, having to drink the polluted river water, became victims of enteric fever and dysentery. But, as Dr. Simpson points out:

The geological formation of this district is sandstone and shale with ironstone, so that if there had been a health department with the requisite machinery and staff, there would have been no difficulty in procuring an abundance of naturally filtered water by boring.

The result of mismanagement and neglect here and at Bloemfontein was an incidence-rate of enteric fever and simple continued fever of 10.6 per cent. (4,280 cases) in the course of seven weeks.

Dr. Simpson points out that the records in the hospitals of the above cases, while valuable medically, possess no sanitary value, because they do not record the distribution of these invalids according to camps. It is obvious that "when large numbers of troops are collected together in many different camps in and around a town, an accurate (hospital) record of the zymotic sickness in each camp becomes a matter of vital importance. There is no other method of focussing or locating any special disease occurring in a large force, and of at once obtaining the requisite information in order to deal promptly with the causes and the disease." This important criticism is not successfully met by Colonel Notter's remark that "with troops in the field, the units of which are often for days together moving rapidly, elaborate statistics are quite impossible." It ought not to be impracticable to have a column in the hospital returns giving the camps from which each patient is derived; and the information thus given would, if properly utilized, enable work of a preventive character to be done, which would diminish greatly the strain on the accommodation in the hospitals.

It is a perfectly sound criticism that

the impossibility of obtaining the necessary material or information to make an analysis of the incidence of dysentery, enteric fever, etc., on the different regiments and on the camps that were occupied in and around Bloemfontein indicates at once the absence of the essential machinery required at a sanitary bureau. With the intelligence on this subject defective there were neither the data for immediately locating the particular causes at work on the particular bodies of men, nor the means of forseeing and forestalling, checking, or controlling the epidemic with any degree of precision.

History of Pretoria.—It is unnecessary to enter in detail into the history of other camps. Most instructive details are given by Dr. Simpson in his report. Among the recommendations made by a sanitary officer specially appointed for the western district of Pretoria was one "that a sentry be placed on the so-called spring in the river to prevent men drinking the water in an unboiled state." This recommendation was endorsed by the Principal Medical Officer for Pretoria, but no constant guard was put on the spring. This omission "cost many more times the men than would have been required to guard a dozen such places." The force of this remark does not appear to us to be diminished by Colonel Notter's comment that "too much is made of a failure to put a guard on a particular disused water supply. It must be remembered that the men at that time were getting but one night in bed per week."

Sanitary Condition of Camp.—Instances like the following tell their own story of gross neglect. The pure water of Barberton is conveyed to a close reservoir in pipes. A picket encamped on the top of this reservoir and the soldiers of the picket obtained their water supply by taking off the ventilator and dipping their cans into the reservoir. At Naauwport an excellent water supply was pumped from a well into a tower. To guard this the well and pumping arrangements were placed inside a blockhouse. The blockhouse on inspection was found to be used as a latrine, not more than 8 ft. from the well. Colonel Notter remarks on this that it was "the outcome of observations made by Dr. Simpson alone, and constitutes, I believe, an isolated case." Compare with this Dr. Simpson's remarks as follows:

These are a few instances out of many observed in which, owing to the absence of a jealous guarding of the water supply a pure supply ran the risk of becoming impure. On the other hand, when the water was inferior or liable to pollution, no very great efforts were made to improve the quality. The matter was viewed as one of the exigencies of war which it was impossible to remedy, instead of as a serious difficulty which under any circumstances must be overcome.

It is pleasant to have Dr. Simpson's testimony that "many regiments succeeded in taking precautions under the greatest difficulties."

There is a grave discrepancy between his further statement that it was the general exception for the water to be filtered or boiled; and Colonel Notter's statement

that Dr. Simpson's statement is considered by him to be "far from the real facts:" and that "in my experience it was rather the exception to find water not boiled or filtered."

We need not follow the details of the discussion of the sanitary conditions of camps. The following is Dr. Simpson's summary of the conditions giving rise to the insanitary condition of large camps:

1. Surface supplies of water and their liability to pollution by dead animals or excrementitious matter, or surface drainage, or all combined.

2. The imperfect and ill-considered disposal of carcasses of horses and oxen.

3. Defective covering of latrines, proximity of litter, manure, and refuse heaps; and fouling of the ground with urine and slop water, causing risk of infection of food from flies and from the possible contamination of boots, clothes, utensils, and hands.

4. The absence of organized establishments for the cleansing of camps that have been occupied, the absence, also, of arrangements for the distribution and location of regiments on clean ground, and the consequent occupation of the same camps successively by different regiments.

We cannot better complete our summary of the conditions found than by placing in parallel columns the two following accounts:

Dr. SIMPSON.	Colonel LANE NOTTER.
The soldier is undisciplined in sanitary matters in the field, and the officer himself untrained in sanitation.... It requires very little descriptive powers to portray the results. Polluted water supplies, filthy latrines covered with swarms of flies and uncovered with earth, excrement, polluted soil, manure heaps and dead horses have been the usual accompaniments of camps where large numbers of troops have been located.....There are certain to be numbers of regular troops with clean camps, but they are overwhelmed by those that are otherwise. Too much is dependent on individual effort, and too little on concerted action properly controlled.	I consider the description given of the general state of camps to be grossly exaggerated. In my opinion, except in a few cases of camps occupied by Colonial and irregular forces, the general sanitary state of the camps was good. In connexion with the same subject, I think the criticisms as to the absence of any sanitary organization are hardly justified by the facts. There is an organization, but it is inadequate in *personnel*.

We have left ourselves no space to discuss Dr. Simpson's proposals for improved sanitary organization.

It is unfortunate that even here Colonel Notter, with practical experience of army organization, considers many of

these recommendations as "unworkable," and liable to lead to "friction and failure." The only practical point on which there is agreement is as to the advisability of the organization of a cadre of officers specially trained in sanitation. This does not, so far as we can judge, fully meet the requirements of the case. Either the further measures recommended by Dr. Simpson are practicable or not. If not, then alternative practicable suggestions which do not appear in this report should be forthcoming. Will public opinion allow the matter to remain in its present most unsatisfactory condition?

PREHISTORIC SANITATION IN CRETE.

By Captain T. H. M. Clarke, M.B., D.S.O., R.A.M.C.,
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We must all remember reading in our schooldays of the Minotaur, that monster half-man half-beast of the labyrinth with its tales of horror and romance. Lately most of your readers must have seen in the daily press articles and allusions to the many interesting discoveries made in the course of the excavations at Knossos, Crete, where, owing to the indomitable energy and perseverance of Mr. Arthur Evans, who had the valuable assistance of Mr. Hogarth and others we are now able to see and examine the palace of King Minos, that royal personage round whom so many myths have been woven.

No special training is required to appreciate the graceful statuary, the huge amphorae, the beautiful vases, the marble throne of prehistoric kings, or the lifelike figures in the brilliantly-coloured frescoes—some of which are so curiously modern in appearance. There are also the tablets bearing writing—as yet undeciphered—which prove the existence of a written language many hundred years older than was previously believed possible. The appreciation of art, the artistic skill—silent witnesses to the refinement and culture of life in that ancient court—are all rather bewildering when we remember how very old it all is. Mr. Evans places the date of the palace in its existing shape at about 1800 B.C., somewhat earlier than Mycenae, and contemporaneous with the Shepherd Kings of Egypt, but proofs have been found of a lofty civilization long before this, and the remains of a still more ancient palace beneath the present one, going back to 2800 B.C. These dates may not convey very much at first; they are to many of us merely figures; but let us try to imagine the world at that epoch if we can, let us search our minds for our old historic landmarks. Knossos flourished over 2,000 years before Rome was thought of, many hundred years before Hector fell fighting beneath the walls of Troy, in those days when the gods mingled in the battles of this earth of ours. Let us think of England as she is and as she was at the period of the Christian era, of the mighty changes that have taken place in those nineteen hundred years, and then when we must add another nineteen hundred years to reach the epoch with which we are dealing, perhaps it may help us to realize its immense antiquity. Amidst the débris of Minoan civilization at Knossos a discovery has been made which will appeal with peculiar interest to the members of our profession—namely, that a large and well-designed system of sanitation existed in the palace. The remains are fortunately sufficient to enable us to appreciate how advanced these ancients were in this as in many other respects.

Before entering on a detailed description of these remains, it would be perhaps best to give a general idea of the palace and its environs.

About three miles from the north coast of the island of Crete and about the same distance due south from the city of Kandia, there is a valley surrounded by rather high hills forming roughly a V, the apex of the letter being due south and its legs open towards the sea. In the midst of this somewhat narrow valley there is a low ridge, and it is on the southernmost end of this ridge that the palace is situated; the town extended between it and the sea to the port of Knossos. A stream enters the valley at the apex of the V, and in its course to the sea passes to the east of the ridge and close beneath the palace walls. This stream, in the olden days, was once a river, judging by the markings in its bed.

The great central court of the palace (54 metres by 24) ran due north and south along the top of the ridge, and the palace buildings for the most part occupy the slopes on either side, that is to say, they lie east and west of this court. The buildings to the west consisted of magazines and storerooms, in which were found the huge jars, once full of corn and oil, still in position along the walls; but those on the east and more precipitous slope facing the river presented a marked difference: the rooms in this part were evidently used as dwelling rooms, and were occupied by the "royalties" and their chief retainers. No evidence of any strongly-fortified city walls has been found, as the "Knossians" relied, like ourselves, on their fleet as their chief protection. In this they differed from Tyrns and Mycenae, whose inhabitants had to put their trust on the strength and position of their walls, and subordinated everything to that consideration. It is interesting to note how the Knossian architects, being free from this anxiety, were guided by sanitary considerations in placing the dwelling rooms on the river side, although, owing to the sudden slope of the ground, it entailed the raising of at least two if not three stories. It is on this side that the remains of a sewage system of drains have been found.

It is unfortunately impossible to construct a complete plan of these drains and sewers, but sufficient still exist to show that these people were by no means ignorant of sanitary truths, and that they went to great trouble to apply them.

Waterborne System of Sewage.

As Mr. Evans justly points out, we must look on the drainage system of the palace as a means in the first instance of getting rid of the surface water which fell on its courts and roofs. The Minoans, however, skilfully availed themselves of these rain conduits, and by bringing into connexion with them various sanitary conveniences, such as the watercloset (described below), they were enabled to have a waterborne system of sewage.

There are four large shafts, constructed of cut stone and lined with cement, which descend vertically from the upper stories of the "domestic quarter," and open into a strongly-constructed, flat-roofed stone conduit, which is about a yard in height and half a yard in width. This conduit is made of limestone flags set edge to edge, and was also originally lined with cement. These shafts probably served a threefold purpose: (1) as a means by which the rain water reached the drains; (2) as ventilating shafts; and (3) as a means of access to the sewers for cleansing purposes. Labour was abundant, as slaves were employed in large numbers.

In the attached plan (Fig. 1) can be seen part of five drains and the shafts A, B, C. It is rather interesting to note that

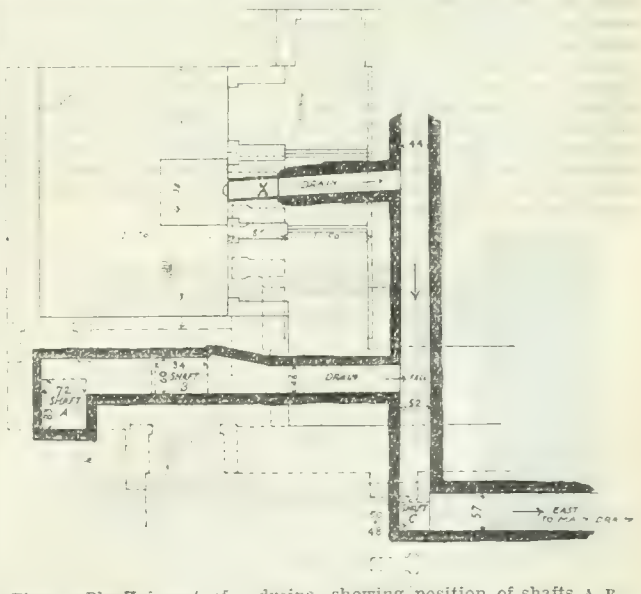


Fig. 1.—Plan of part of 5 drains, showing position of shafts A, B, and C.

shaft C opens into the angle formed by the sewer as it turns sharply to the east, after it has received the drainage of the watercloset, whose position is marked by a X in the sketch. In on of the upper stories of the domestic quarter a kind of "housemaid's closet" has been found, a small and narrow chamber, with a floor sloping into one of the shafts, down which rubbish could be shot. There are certain points of general interest about these drains to which attention may be drawn. One must be struck by the care with which they were laid, so that the stones composing them still preserve

their position and their correct level; that limestone and not the perishable gypsum has been used in their construction, although the latter was more easily obtainable, and was employed almost exclusively in the other parts of the building; also that they were laid as far as possible beneath passages and "light-wells," so that they were easily accessible, and were not a danger to the sleeping apartments. Although Knossos abounds in evidences of the "jerry-builder's" art; still it is consoling to note how carefully he was excluded from tampering with the sewers, a precaution not always taken nearer home.

DESCRIPTION OF THE WATERCLOSET.

The discovery of the watercloset, to which I have alluded before, must prove most interesting to us. A good idea of this can be obtained from the plans (Figs. 2 and 3).

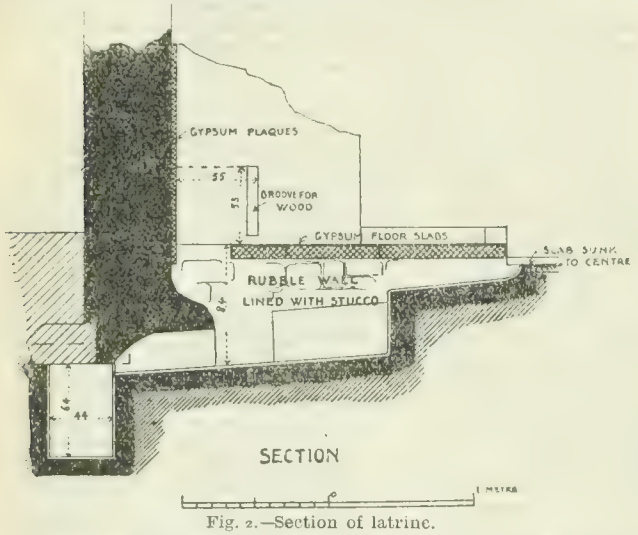


Fig. 2.—Section of latrine.

It consists of a small chamber about a metre in width and two metres in length, resembling in its shape and size a similar room in a modern house. Outside the lintel of the door is a flag sloped towards a hole, which opens into a short drain beneath the floor, and down which water could be thrown for flushing purposes, and also the household "slops." From the groove seen in the wall there appears to have been a wooden seat about 57 c.m. from the ground. The floor, as well as the walls, is faced with gypsum slabs which cease just within the outer line of the seat, so as to leave an access to the drain below. This drain can be seen communicating with the north branch of the main drain in the plan Fig. 1.

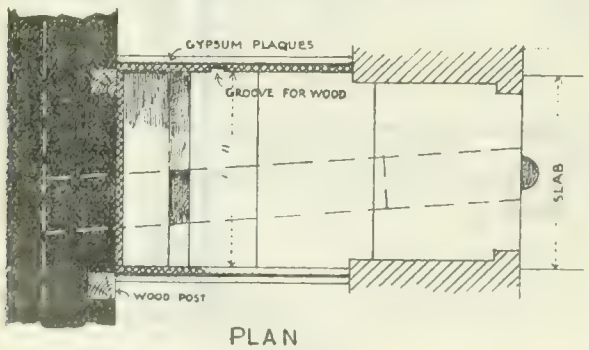


Fig. 3.—Plan of latrine.

The curious projection shown in black (Fig. 2) is rather difficult to explain. It has been suggested that it may have been used for the attachment of a balance flap to shut off the escape of sewer gas; perhaps it was employed as a support for an earthenware basin or receptacle for the excreta. Judging by the shape of the cavity, this basin would have been vertical in front and sloping at the back, or, in other words, it would resemble in shape the "wash-out" closet of the present day, in which a certain amount of water is kept in the basin by a ridge, over which the excreta are carried by a flush of water. One notices in the plan (Fig. 3) that the drain beneath the door of the closet deviates markedly to one side, and it looks as if this deviation was devised to leave room for a vessel with water for flushing purposes.

Another feature of scarcely secondary interest to the water-closet has been unearthed on the same side of the palace, but lying further to the north and separated by a considerable interval from the system of sewers.

A stone staircase has been found and descending beside it a shallow runnel for water. This water runnel descends in a series of curves forming a system of "parabolae," each curve of the system corresponding to the step of the stair alongside of which it lies. At the bottom of the staircase the runnel continues its way as a narrow channel which presents many sharp turns and elbows in its course until it reaches a small tank from which it again emerges, at the same level, but this time to run a straight and direct course to a place where was formerly a large cistern. The parabolae were admirably designed to permit water to change its level suddenly without increase of velocity. We find the same object pursued in the abrupt bendings of the channel when it quits the stairs, so that the water eventually enters the small tank very slowly and gently. The reason of all this care is evident when we realize that this was a small sedimentation tank, meant to intercept any suspended impurities before the water entered the storage cistern. Two small stone projections in the sides of the channel just before it reaches the sedimentation tank may have given support to a filtering screen of some porous material, an arrangement not uncommon in our times.

We may conclude from all this that King Minos was fully alive to the importance of a pure water supply, at least for his own household.

TERRACOTTA PIPES.

If the lady of the fresco in the modern-looking ball dress causes a feeling of astonishment, I am sure a like sensation must be created by a section of terracotta piping recently uncovered at the northern end of the palace. Unfortunately, owing to the subsidence of an ancient wall the line of piping was broken and interrupted, so that it is only possible to form a guess at its purpose. Its direction points to communication with a room in which stands a small olive press, so that it may have conveyed the oil to another place for storage as it was crushed from the olives.

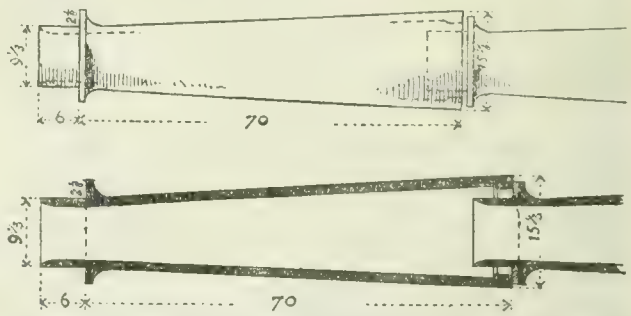


Fig. 4.—Elevation of drain pipes below floor in "corridor of draught board" (measurements in centimetres).

The sections are 76 cm. in length, beautifully graduated; the bore at the larger end is 13 cm., tapering almost imperceptibly to 9½ cm. at the other. The narrow end of one fits into the expanded end of the next, as seen in Fig. 4, thus forming a spigot and socket-joint. At 6 cm. from the spigot end there is a collar, and in the socket end a groove. The space between was filled with cement, and the joint thus rendered watertight.

Mr. Evans considers that they belong to the earlier period of the later palace, that is to say that they must have been placed in position over 3,000 years ago, still they are as fresh and new looking as the day they left their maker's hands. They show a finer finish and workmanship than one is accustomed to find in modern pipes of the same kind. The fact that certain sections were still found in position is sufficient testimony to the method in which they were laid, and a closer inspection confirms this impression, as we find that the ground had been prepared beneath them, and that they are reclining in a bed of cement. In fact such precautions were taken as we find laid down in our own textbooks on this subject.

Some years ago, when sanitary member of Sir Herbert Chermside's administration, I had a good opportunity of making the acquaintance of modern Cretan sanitation and of appreciating how far they have fallen from the standard of

the Minôans, although, indeed, this is not surprising considering the many vicissitudes of this unfortunate island, least of all need it astonish us who are aware of the attitude of some of our own people at home on similar questions.

The *Spectator* recently observed in a leading article that "the plain truth is that care for sanitation is one of the last teachings of wisdom that reach even the civilized." This quotation may serve to prevent us from overlooking the real importance of the broken drains and pipes at Knossos—namely, the strong additional proofs which they afford of a civilization so advanced that it has been attained to by few nations even in the present day.

In conclusion, I would like to express my indebtedness to Mr. Evans and to Dr. Duncan Mackenzie for their kind assistance when I was at Knossos, and also to the former for lending me the excellent architectural plans of Mr. Theodore Fyfe.

THE PARLIAMENTARY SESSION.

The session recently closed cannot be regarded as one fruitful of legislation interesting to or affecting the medical profession. There were no fewer than 234 public Bills introduced, and of these 60 were Government measures. The Government succeeded in passing 39 of their Bills and hanging up one—the Port of London Bill—for consideration in the next session of Parliament. Of the 39 Acts of Parliament, the Irish Land Act and the measures dealing with London Education, Scotch Licensing, the Employment of Children, Motor Cars, and the Sugar Convention were the most important. The Employment of Children Act was, in its progress through the House, made a permissive measure, and local authorities were given full powers to regulate the age of children trading in the streets, and the clause which provided that children attending school should not be allowed to work more than twenty-five hours a week was omitted on the motion of the Home Secretary. The Expiring Laws Continuance Act had a special medical interest this year, inasmuch as the Vaccination Act of 1898 was included in its schedules, and by this device the conscientious objector was given another year's lease of life.

In the other 32 Acts passed by the Government there are a few that deal with questions of Local Government. Of these the Housing of the Working Classes Act (No. 2) passed by Mr. Long late in the session is the most important, as it extends the period of the repayment of loans for buildings and the purchase of land, and makes other improvements which will be of some use in large towns. The Poor Law (Dissolution of School Districts and Adjustment) Act is an administrative measure of some use, and the same may be said of the Act to enable the county councils to promote Bills in Parliament. By another Act the Board of Agriculture has added to its duties the supervision of fisheries, and further departmental measures deal with the Local Government transfer of powers, and the control of Borough Funds. The remainder of the legislative record of the Government calls for no comment as it was mostly concerned with naval and military matters and finance. When we turn to the public Bills introduced by private members, which numbered 174, we find that only 11 of these had the good fortune to become Acts of Parliament. One of these is the only purely medical measure passed this session and is called the Addenbrooke's Hospital Act. It was introduced and carried by Sir Richard Jebb in order to confirm a scheme of the Charity Commissioners for the better management of the hospital. Of the other 10 none are of professional interest, unless it be the Guinea Postal Order Act of Mr. Henniker Heaton, which may be a convenience for the transmission of fees as well as subscriptions. When the long list of the failures is considered, and the 183 Bills dropped, withdrawn, or rejected are analysed there is much more interesting matter to consider.

The Ministry dropped 20 Bills in the course of the session, most of them small measures of little import. Among these were Bills dealing with the creation of new Bishoprics for Bristol, Southwark, and Birmingham, and a Bill to increase the strength and emoluments of the Ecclesiastical Commissioners. Two Bills of considerable importance, however, failed to pass—namely, the Prevention of Corruption Bill, which was carefully considered in the Lords, and in the Standing Committee on Law in the Lower House, but was finally abandoned on August 11th. The other, the Butter Bill, afterwards rechristened the Adulterated Butter Bill, was finally withdrawn after a very stormy passage through Grand Committee. The 163 Bills promoted by private members, which failed to pass, dealt with almost every variety of legislative problems. Many were of special interest from a medical and public health point of view. There were 4 proposals for the amendment of the Medical Acts. The chief one, introduced by Sir John Tuke, sought to modify in some particulars the disciplinary powers of the General Medical Council, while the three others, introduced by General Laurie, one of which was a modification of a Bill previously introduced, were directed to bring about reciprocity of medical practice between the United Kingdom and Canada, and to enable Canadian surgeons to serve in the military and civil services of the Crown. There were two Bills dealing with vaccination, one to abolish compulsory vaccination (Mr. Bayley), and the other to provide that no prosecutions should be undertaken under the Vaccination Acts without the consent of the guardians (Mr. Channing). Sir Francis Powell and Sir Walter Foster again introduced the Public Health Bill and the Rivers Pollution Bill, but were unsuccessful in reaching the Committee stage with either. The Plumbers' Registration Bill had no better success. There were three Bills dealing with superannuation—the Local Authorities Officers' Superannuation Bill of Mr. Jessel, Mr. Maxwell's Poor-law Officers' Superannuation Bill for Scotland, and a measure for Poor-law Superannuation in Ireland, introduced and persevered with to the last day of the session by Mr. Joyce. There were four Housing Bills introduced by Dr. Macnamara, Sir J. D. Poynder, Mr. C. Hay, and Sir Walter Foster, which served a useful purpose in forcing the Government to pass their measure. Other Bills worthy of mention, but which never got a second reading, are the Cottage Homes, Elementary Education (Blind and Deaf Children), the Coroners Inquests (Railway Fatalities), the Infant Life Protection, and the Pharmacy Bill. Two Bills of importance came down from the Upper House, but failed to obtain progress in the Commons—namely, the Lunacy Acts Amendment (London) Bill and the Shops Early Closing Bill. The Bill that excited most medical opposition was perhaps the Cruelty to Animals Bill, of which the second reading was moved a few minutes before midnight on one of the early days of the session. The Bill after that incident was carefully watched, and no more progress was made, although the notice was kept on the paper up to the last day the House sat. In the 200 odd private Bills, including some 20 for Scotland, and in the large number of Provisional Order Bills, which received the Royal assent during the session, a good deal of local government work has been authorized for local areas, which it would be impossible in any moderate space to analyse. There was, however, one Act passed among these which deserves especial mention, and that is the Act which creates a University at Liverpool, and so provides the Medical School of that city with power to grant medical degrees to its students.

LITERARY NOTES.

A writer in the New York *Medical News* states that while in New Orleans he saw one of the most precious bibliophilic treasures of American medical literature. This is the first book ever printed and published in New Orleans. It is in the possession of Mr. T. P. Thompson, whose choice collection contains more of the important documents relating to old Louisiana before and after its acquirement by the United States than any other private library in the country. The book is a little work on medicine, the title of which is *Médicamens et Précis de la Méthode de Mr. Masdevall Docteur Médecin du Roi d'Espagne Charles IV pour guérir toutes les Maladies Epidémiques*, etc.—that is, Remedies and a Brief Description of the Methods of Mr. Masdevall, Doctor of Medicine to the King of Spain, Charles IV, for the Cure of all Epidemic Diseases. As the little book contains less than 100 pages, the assumption that it contains remedies for all epidemic diseases shows striking confidence on the doctor's part. This is not all, however, for the title proceeds to include the cure of putrid and malignant fevers and the means of protection against them. "Price, four escalinos. To be obtained at the establishment of Louis Duclot, Printer, at New Orleans, 1796, with permission of the Government." The dedication is to Baron Carondelet, the Spanish Governor at the time. Although the author vaunts his remedies as practically infallible in every kind of disease, they are only ordinary drugs, most of them now used very commonly in so-called family remedies; practically all of them are inert. Antimony, however, in various forms is prescribed on all possible occasions. Tartar emetic,

butter of antimony, and the antimonial mixture were evidently the old doctor's sheet anchors in the treatment of fever, though there is also an opiate febrifuge that was apparently often prescribed. Cream of tartar was employed at the beginnings of fevers, partly for its laxative and partly for its diuretic and diaphoretic effects. The practice of using it thus has not gone out yet among the older physicians of South America. Among the simples employed for colds, the combination of which was guaranteed to be a sure cure for consumption (has there ever been a time when there was an infallible cure for consumption?), was a mixture of the decoction of coltsfoot, of the wild poppy, of creeping ivy (hedera terrestris), of maiden hair fern, and the finest honey. Curiously enough, the time for special medication in Dr. Masdevall's opinion was not the spring of the year, but the autumn. After all, perhaps, it is not surprising that it was after the oppressive heat of the summer rather than their pleasant winters that the inhabitants of old New Orleans felt the sluggishness that is supposed to be an indication for active medication.

The second number of the *Journal of the Royal Army Medical Corps* contains a brief history of military medical journalism, largely based on an article on the subject which appeared in May of last year in the *Journal of the Association of Military Surgeons, U.S.A.* In that article it was pointed out that England stood alone as a country without a journal devoted to military medicine. The only representative in this sphere of journalism which Britain could claim before the appearance of the *Journal of the Royal Army Medical Corps* was the *Indian Medical Gazette*, which, edited by officers of the Indian Medical Service and not professedly a Service journal, has for many years published a valuable series of papers directly connected with military medicine. Next to the *Journal of the Royal Army Medical Corps*, the youngest military medical journal is that of the Association of Military Surgeons of the United States Army, which, though really the descendant of the Association *Transactions*, only assumed its present monthly form in 1902. In the previous year, the French fortnightly journal, *Le Caducée*, made its appearance. Other French papers of this kind are the *Archives de Médecine et de Pharmacie Militaires* and the *Archives de Médecine Navale*. The former has been in existence since 1815; it is published by order of the French Minister of War. The other, issued under the orders of the Minister of Marine, is of later date. In Germany, the Army Medical Service is represented by the *Deutsche militararztliche Zeitschrift*, which has been in existence since the Franco-German war. It is issued monthly, and devotes much space to official orders and notifications. A subsidiary German publication is *Das Rothe Kreuz*, devoted entirely to first-aid work. The organ of Austrian military medicine is the *Militararzt*, appearing as a semi-monthly supplement to the *Wiener medizinische Wochenschrift*: it has been in existence since 1868. The Italian army is represented by a monthly entitled *Giornale Medico del Regio Esercito*, and the navy by the official *Annali di Medicina Navale*. The Belgian army is represented by the *Archives Médicales Belges*, which made its first appearance in 1857. Russia has the *Voyenno Meditsinskii*, which dates from 1823. The *Norsk Tidskrift für Militar Medicin* is published under the direction of the Surgeon-General of the Norwegian army, and fulfils for Scandinavia what the *Tidskrift i. Militar Halsvard* does for the military surgeons of Sweden. This journal has been published regularly for more than twenty-five years. Finland is represented by the *Finsk Militar Tidskreft*. In Holland the *Militair-Geneeskundig Tijdschrift* is the organ of the medical officers of the Dutch army and navy. This is a quarterly of comparatively recent date, and is devoted largely to tropical medicine. The Spanish army has two publications—the *Revista de Sanitad Militar*, which is really the official organ of the Sanitary Corps, and *La Medicina Militar Española*, which devotes itself to Colonial or tropical medical subjects. Among the newer armies of the world there is a monthly journal devoted to military medicine issued in Buenos Aires, which is now in its thirty-fourth year of publication. The medical officers of the Japanese army are represented by the *Gun Igaku Kwai Zasshi*. Lastly, from Geneva comes the *Bulletin International des Sociétés de la Croix Rouge*. Its title sufficiently indicates the branch of army work with which it mainly deals. This summary of the present extent of military medical journalism shows that there are some twenty-two periodicals devoted to this section of medicine. It is true many of them are strictly official, and consequently possess certain advantages as well as disabilities attaching to that position. But, regarded as a whole, they consitute a flourishing section of medical literature.

Dr. Gee contributes to the *St. Bartholomew's Hospital Gazette* for July a scholarly paper on Abraham Cowley, poet and physician. Cowley was born in London in 1618. He was educated at Westminster School, and afterwards at Trinity College, Cambridge. When the Parliamentary visitation of the University was made at the end of 1643 he refused to take the covenant, and was consequently ejected from Cambridge, "torn from thence," to use his own words, "by that violent public storm which would suffer nothing to stand where it did, but rooted up every plant even from the princely cedar to me the hyssop." He went into exile with Queen Henrietta when she retired to France. He was absent from his native country for more than twelve years wholly spent in bearing a share in the distresses of the Royal family or labouring in their service. Like most who put their trust in princes, however, he got nothing but promises, and he returned to London only to be seized as a spy. He was befriended by Sir Charles Scarborough, well known as the friend and pupil of Harvey. Scarborough became his bail for £1,000. Thus, thinks Dr. Gee, was it that the thoughts of Cowley, now 40 years of age, were turned to physic. "To this purpose, after many anatomical dissections, he proceeded to the consideration of simples, and, having furnished himself with books of that nature, he retired into a fruitful part of Kent, where every field and wood might show him the real figures of those plants of which he read. Thus he speedily mastered that part of the art of medicine" (Sprat), and, poet-like, he wrote six books of Latin verses on plants. He was admitted Doctor of Physic at Oxford in December, 1657. He went to live at Chertsey, where he wrote his essays and where he died in his 49th year. Among his friends was Thomas Hobbes, author of the *Leviathan;* William Harvey, to whom he addressed an ode; and other distinguished men of the day. Evidence of his deep interest in natural science is afforded by a scheme which he described in a pamphlet entitled "A Proposition for the Advancement of Learning," which was published in 1661. His main object was the advancement of knowledge by research. The professors of his college were to be devoted to experiment, observation, discovery, and invention. The college proved nothing more than a poet's dream. Yet, as Dr. Gee points out, it had an unforeseen result, for it promoted the foundation of the Royal Society.

THE ENDOWMENT OF MEDICINE IN THE UNITED STATES.—In his speech at the commencement exercises of Harvard University, President Eliot said that this year the treasurer reported that the cash addition to the property of the College was £260,000. Of that sum, £100,000 consisted of contributions to the great undertaking of the medical school. This led the President to speak of the particular direction of the beneficence of the friends of the University for medicine. More than £400,000 had been attracted to the medical school undertaking. The money came more easily there than anywhere else. What was the reason? It was directed in this way, he said, by the profound sense of gratitude of many men and many women for the service which medicine had rendered to them, to their children, to those dear to them. It was directed in this way by the conviction that many more discoveries and unimagined blesssings were coming out of medical study into the service of the world. That very day there had been added to the funds provided for the medical school undertaking 285,000 dols.; and both gifts—there were two—came charged with the most sacred purpose to do good in this world.

BEQUESTS TO HOSPITALS.—Under the will of the late Mr. Matthew Whiting, of Wandsworth Common, S.W., the sum of £5,000 has been bequeathed to the Bolingbroke Hospital; £3,000 each to the London Hospital, Guy's Hospital, and St. George's Hospital; £2,000 each to the Mount Vernon Consumption Hospital and the Dental Hospital; £1,000 to St. Luke's Hospital; and £500 each to the Royal Eye Hospital and the Royal London Ophthalmic Hospital. In addition, £1,000 each has been left to the Royal Association in Aid of the Deaf and Dumb, and the Otham Convalescent Home, near Maidstone, and £500 each to the St. Monica's Home Hospital for Sick Children in Brondesbury Park and the Invalid Children's Aid Association in Henrietta Street.—Under the will of the late Mrs. Mary Eliza Rothwell, widow of Mr. William Rothwell, of Halifax, £100 has been bequeathed to the Royal Halifax Infirmary.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1903.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, SEPTEMBER 12TH, 1903.

THE MEDICAL ASPECTS OF THE PARLIAMENTARY SESSION.

The careful analysis of the work of the last session of Parliament which we print in the British Medical Journal this week (p. 599) offers some materials for serious consideration. The session was never expected to be a very fruitful one, but a review of its work must certainly lead to the conclusion that it is relatively barren in any great results. The Irish Land Act is certainly a measure of the first importance, and may, and probably will, result in great social changes in the sister isle. But no other measure, not even the London Education Act, which simply applies to London, with suitable modifications, the Act of last year, can be regarded as of the highest national importance.

The Employment of Children Act will, we believe, be useful in protecting the little children who ply their trades in our streets from some of the evils incidental to their calling. It is a permissive enactment, and will really depend largely as to its effects on the local authorities. For our part we could have wished more central control in the matter in order to secure uniformity of administration in different parts of the country. We also regret that stronger action was not taken to prevent the street trading of young girls under sixteen. Medical support was given to this view in the Grand Committee, and Dr. Farquharson strongly urged it in the later stages of the Bill in the House itself. When the actual achievements of the session are counted up we find that only two measures of strictly medical interest have been enacted. One is the small Act for the better administration of Addenbrooke's Hospital at Cambridge, and the other, passed in the shape of a private Bill, creating the new University of Liverpool. There is nothing to be said respecting the former, but as regards the Liverpool University Act it must be remembered that it adds another to the many portals of entrance to the medical profession and also gives an additional member to the already overgrown General Medical Council. It is a pity that these results could not have been discussed before the Act was passed, for both points are of much concern to the General Medical Council and also to the profession. Liverpool has as much right to have its University as Manchester and Birmingham, and will make, we are sure, splendid use of its new powers. We wish it all success, and we only point out two, after all not highly important, effects of the new University Act in order to indicate how questions of some medical importance are overlooked by the legislative machine.

The amendment of the Medical Acts was not forgotten during the session, but the experience gained by the promoters of the small Bills before the House this session is not altogether encouraging for large proposals of medical reform. Sir John Tuke's little Bill, which was also before Parliament last year, proposed to give the General Medical Council power to erase the name of a practitioner from the *Medical Register* for a limited period, and to give the medical authorities power to deprive a person of his diploma after his name had been erased from the *Register*. Nothing could be more simple and more reasonable. Two sessions of Parliament have, however, seen these reasonable proposals refused. The reason is not far to seek: the Friendly Societies are not friendly to the General Medical Council. They remember, and resent, certain proceedings in connexion with medical aid associations and their medical officers, and so they watch narrowly, and do their utmost to prevent any attempt to improve the penal powers of the Council. The Friendly Societies number their members by hundreds of thousands, and thus have great political influence, and will prove, unless differently disposed in the future, a serious obstacle to reform of the Medical Acts. We note this with much regret, but it is well to recognize the fact. Another Bill—the Public Health Bill of Sir Francis Powell—which would give medical officers of health and sanitary inspectors security of tenure, was also blocked by strong opposition on the part of some of the large municipalities. Against such powers the profession has hitherto been impotent, and we trust that some better understanding may be arrived at before another session begins. Every medical officer of health can help in the municipality in which he works. If the public health service of the country were as popular, as from its duties and its objects it deserves to be, local authorities might everywhere co-operate to make the position of medical and sanitary officers more secure and more independent.

The renewal of the Vaccination Act of 1898 by its inclusion in the Expiring Laws Continuance Act helped the Government to avoid the subject of vaccination for another year, but the antivaccination party is still active, and the question of compulsory vaccination and revaccination must soon be faced. If the Government require encouragement to make the law more efficient they ought to get it from the recent prevalence of small-pox throughout the kingdom. The Adulterated Butter Bill failed largely because it attempted to extend the scope of the Adulteration Acts. These Acts have hitherto been used to prevent fraudulent misrepresentation of the article sold and adulteration of articles of food in a direction injurious to health. The attempt to prevent the sale of so-called milk-blended butter went beyond these principles, and so there was considerable opposition to the Bill, and it was finally dropped. As the Adulteration Acts were originally passed mainly through the influence of medical men, it is well that a strict medical watch should be kept over legislation of this kind to prevent it being used for any trade interests. We shall no doubt hear of this Bill again in an altered form, whereby a proper standard for water in butter may be fixed. The Prevention of Corruption Bill, which may in some ways indirectly affect the profession, is another measure which is likely to come up again, and which must be carefully watched. The two great lessons of the session, however, to which we think attention may be directed most profitably are the activity of the anti-vivisection party and the supineness of the Government in connexion with the law of death certification. The vote for the Home Office gave an opportunity for discussing the administration of the vivisection law, and, thanks to a powerful speech by Sir Michael Foster, resulted in a

vindication of the character of the British school of experimental physiologists. The number of questions so persistently asked as to vivisection all through the session is a clear indication that energetic attempts will be made to modify the law and make it less favourable to experimental research. As regards death certification, Sir Walter Foster pointed out on the vote for the Local Government Board that nearly ten years have elapsed since a Select Committee reported on the grave inadequacy of the law as it stands. That it is made possible for crime to escape detection in some cases, and that the vital statistics of the nation are rendered less accurate, seem to us strong reasons for an amendment of the law, and we feel obliged to complain of the remissness of the Administration which allows a question of such importance to the public to be neglected or postponed session after session. Finally, the session has taught us that the new plan of answering questions by printed answers affords great facility for the ventilation of medical grievances. More medical topics have been raised in this way during the past session than in any previous sitting of Parliament, and we hail with satisfaction a new avenue for approaching the Administration of the day on questions of professional and public concern.

THE COST OF PUBLIC VACCINATION.

It has been stated in the press that Mr. Chamberlain has made representations to the President of the Local Government Board with reference to the heavy cost of public vaccination in Birmingham and that he caused the following letter to be addressed to the Birmingham guardians at the end of last month:

> I am directed by Mr. Chamberlain to say that he has conferred with the President of the Local Government Board, who informed him that the question at the present time is being examined by a small Departmental Committee, which will consider and report. In the meantime the President recognizes the necessity for some change and Mr. Chamberlain hopes that the Local Government Board will be able to satisfy all reasonable requirements.

The former part of this statement does not surprise us as we were aware that certain antivaccinating guardians have been agitating about the matter, but we must confess to being a little astonished at the rest of the information. It may perfectly well be that the subject of the fees laid down as the minima by the Local Government Board should be considered open to discussion and it is perfectly proper that a Departmental Committee should be engaged in watching how this, the financial, part of the Act is working out. That, however, is an entirely different matter from the President stating off-hand, and before such a Committee has had time to hand in any report, that "he recognizes the necessity for some change."

To make a statement of this kind amounts to prejudgement of the whole matter, and it is scarcely diplomatic for a public official in the position of Mr. Long thus to commit himself in advance on a matter in which the appearance, if not the reality, of strict impartiality is essential if serious trouble is not to be created.

The gentlemen who form the Committee are Mr. E. H. Llewellyn, M.P. (Chairman), Mr. J. Lithiby, Dr. R. Bruce Low, and Mr. W. Vallance; and if Mr. Chamberlain's quotation of Mr. Long can be trusted, it must now have been at work some time. Nevertheless, we are not aware that any evidence with regard to the matter has been sought from the persons directly affected, or that the views of the profession have been sought, either directly from its leading members or from those who commonly represent it as a body. There are, after all, two sides to every question, and especially to every contract, and we should have thought that, even as a mere matter of courtesy, the President of the Local Government Board would have thought it proper to take the profession in some way into his confidence before forming, still less publicly expressing, views such as those with which he is credited in the letter quoted. It is a discourtesy at the least, into which we venture to believe no Government Department would allow itself to be betrayed if, for instance, it were dealing with fees payable to members of the legal profession. In such case there would certainly be some foregoing reference to the Benchers of the Inns of Court, the Incorporated Law Society, etc.

There is also this to be remembered. It is one thing for the President of the Local Government Board to lay down a scale of fees and another for the medical profession to accept it, and we are not sure but what any attempt roughly to force it to accept lower fees for vaccination than those now in force might not be resented in very practical fashion.

We should regret very much if this were the case, but it is a perfectly possible contingency, not to be lightly set on one side; for the profession is now much more effectively organized than in the past, and more ready to stand up for itself and its members.

Medical men, however, have always been ready to take a liberal view of the amount of work they should do even at low fees when such work partakes of the nature of a public duty, and if it can be shown that the fees at present paid are out of proportion to the value of the work to the community, or to the amount of the labour, time, and skill demanded of those who perform it, no objection probably will be raised to adequate reduction. So far as we are aware, however, no evidence has at present been produced that this is really the case; for merely to point to isolated cases of abrupt rise in the totals received by certain individuals in certain places, without consideration of qualifying factors, is no evidence at all.

The only statement on the point which has appeared in the papers, so far, is that recently made by *Truth*, to which reference was made in the BRITISH MEDICAL JOURNAL of August 22nd. We were uncertain at the time how far the statements made were accurate in point of figures, though we felt assured that the inferences could not be correct. We have found since that *Truth* had been entirely misled by its correspondent. So far from the number of children vaccinated at Birmingham in the two years which he compared being practically stationary, the number in the first year was 2,666, and that in the second 4,013, while the totals, including revaccinations, in the two years were 2,849 and 7,504 respectively; nor are the South Shields figures more correct.

This special instance of Birmingham is only of importance since it has apparently been the basis of the intervention in the matter both of *Truth* and Mr. Chamberlain. Leaving it aside, it may be said generally that, other things being equal, a space of five years should be sufficient to test the suitability of any given scale of fees. In this case, however, there are a good many disturbing factors which must pass away before the true financial results, both to the public and to vaccinators can be clearly gauged for the purpose of comparison of the past with the future.

One of these factors is that in the year 1898 vaccination, and consequently expenses in connexion therewith, had fallen to an abnormal point, as shown in the reports

of the medical officer of the Local Government Board, of which some account is given in this week's issue. Immediately on the passing of the Act the number of vaccinations began to rise, and it has been rising ever since, as shown in the same report. Neglect of vaccination in 1898 and previous years naturally left a large amount of back work to be made up, and performance of this naturally increased expenses in subsequent years.

Another disturbing factor is the small-pox outbreak in London in 1901, and in the Northern and Midland counties at present and last year. The result of the coincidence of these two factors, which in fact are really sequential one of the other, and both of previous neglect, is to make the present amount of both primary and revaccination entirely abnormal. Next year there will probably be a material drop, but the true mean cannot be reached until sufficient time has elapsed for both these factors to cease to exercise any influence. Then alone will it be possible to make a true estimate as to whether the standing charges for vaccination are really greater than they should be.

The cost of vaccination, as represented by fees paid case by case, has undoubtedly increased; but this is the inevitable result of the luxurious way in which the Legislature has ordained that it shall be performed. Naturally it costs more to send a medical man round to hunt up the patients in their own houses than would be the case if the patients were obliged to seek him out at a station.

On the other hand, the ratepayers are relieved of the expense of providing stations, etc., and the fees received by the vaccinator are no longer "net" as they used to be, for from them must be deducted the expenses to which he is put in moving about his district. The time, too, which he has to expend before he has earned his fee in any one case is immensely increased. It is a very different thing to vaccinate and inspect a dozen children waiting in a station, and to seek out, often time after time in vain, the same number of children scattered over different parts of a town or district, and vaccinate them in their own houses. Both the work and its responsibilities and drawbacks, especially to those who endeavour to carry on private practice at the same time, are certainly enormously increased by the Act of 1898, and on this account alone it is exceedingly doubtful if the minimum fee at present paid is in any way too high.

Apart from and in addition to all such considerations, there is no doubt that the operation of vaccination now is and ought to be a more expensive procedure both in time and money than was formerly the case. On the one hand the old rate was fixed some forty years ago when the general expenses of a medical career were much smaller than at present, and on the other it is now recognized that if accidents and unnecessarily inflamed arms are to be avoided much more care and skill should be bestowed upon the performance of vaccination than was formerly believed to be necessary, and this of course means more time spent over it.

It is the failure to recognize this fact earlier that is possibly responsible for much of the hostility to vaccination which has hitherto existed. The true interest of the public, quite apart from that of isolated individuals, demands now that the highest standard of work in vaccination should be exacted. But the highest standard of vaccination or any other work cannot be obtained unless adequate fees are paid.

THE SANITARY LESSONS OF THE SOUTH AFRICAN CAMPAIGN.

In another column are given particulars of the more important portions of the report of the Commission sent out by the Secretary of State for War to South Africa in 1900 to inquire into the incidence of enteric fever and dysentery in connexion with the war. The Commission consisted of two army and one civilian doctors, all well known in their particular departments of work. The only portion of the report, however, which is free from acute difference of opinion between the Commissioners is that of Lieutenant-Colonel Bruce, dealing with the bacteriological aspects of the question. The main differences of opinion, as indicated in the separate reports of Colonel Notter and Dr. Simpson, are set forth on page 596, though we have by no means exhausted the list. Possibly these differences of opinion account for the delay in the issue of the report, the main part of which is dated November, 1901, while the report has only now been published. The differences of opinion both as regards the main causes of mischief, the degree of negligence and neglect, and the remedies that should be adopted, are unfortunate. It will be a public calamity if, as the result of a divided report, the contents of the volume under discussion are ignored, and the future sanitary administration of the army is not placed on a satisfactory footing.

It is a significant coincidence that since the contents of the special article on page 595 were penned the report of the Royal Commission of inquiry into the South African war has appeared; and one sentence of this report is so pertinent that we quote it here. They remark: "We regret to say that we are not satisfied that enough is being done to place matters on a better footing in the event of another emergency." Clearly, then, the moral which can be drawn from the report of the small Commission with which we are now dealing holds equally good in other departments of army organization; and the conditions generally are such as to produce a pessimistic if not an actually hopeless feeling in regard to reform.

The differences of opinion as to the main causes of the excessive incidence of enteric fever and dysentery during the late campaign are, however, matters which do not on consideration appear to be irreconcileable with prompt and efficient safeguards for the future. It is quite certain that contaminated water supplies, personal infection, defective latrine arrangements, and the scourge of flies all bore an efficient share in spreading the above diseases. It is not necessary to agree as to the apportionment of blame between these before insisting on preventive action in regard to them all. The above are the main vehicles of infection, but the chief cause of spread of disease was undoubtedly the underlying lack of foresight and the failure to adopt precautionary measures at a sufficiently early stage to be efficient. An impartial observer reading Dr. Simpson's contribution to the report cannot but be struck by the cumulative evidence of carelessness, ignorance, and neglect in regard to sanitary precautions which characterized the greater part of the campaign. Happily this is no reflection on the medical department of the army, to the value of whose work eloquent testimony is borne. But they were overwhelmed with work in connexion with patients already to hand, and they had no administrative control of sanitary administration. Thus the energy which with intelligent foresight on the part of their superior officers would have been directed to the

prevention of disease was diverted into the harassing and overwhelming duties connected with the treatment of an enormous number of individual cases of disease. It is abundantly clear from Dr. Simpson's report what a calamitous and ruinously expensive policy this meant. On a low estimate, the enteric fever of the campaign cost over £3,500,000, and this leaves out of the account the terrible loss of life, the diminution of the efficiency of the army, and the prolongation of the war, for which it was at least partially responsible.

What hope is there of any better fate in a future campaign? We fear but little. We are assured that other countries have suffered equally under similar conditions. And this appears to be held to be sufficient reason for the general attitude of *non possumus* assumed by the Army Department and by the majority of officers. What has been, must be! This fatalistic policy is the main obstacle to reform. Those who hold it fail to recognize the fact that, making free allowances for the risks necessitated by military exigencies, there is abundant room for reform in detail, and that safety lies in attention to these details. The guarding of suspicious water supplies, the prompt boring of wells for the larger camps, the more systematic attention to latrines, the changing of sites of camps, and numerous other points, if attended to before instead of after outbreaks had occurred, would have changed the complexion of the late campaign. In addition to the above considerations, the importance of educating both officers and men in the elements of sanitation during times of peace which we have repeatedly advocated in these columns needs to be again urged.

Meanwhile what action will be taken in regard to the recommendations of the present Commission? A further inquiry is necessary to assess the relative value of the different opinions and recommendations made by Colonel Notter and Dr. Simpson, and this inquiry should not be held by army officers, who appear to be wedded to the *status quo*. When Parliament meets again the subject should be brought prominently forward, and further attempts made to secure that the lessons capable of being derived from the late war may not be lost.

THE PREVENTION OF WATERBORNE DISEASE IN THE ARMY.

In a letter which appears in the *Times* of September 1st, Dr. Leigh Canney returns to the charge on the subject of the reforms necessary in the means adopted for the supply of water to the troops both in times of peace and on active service. In the same issue Surgeon-General A. C. C. de Renzy drives the point home by a letter on the same subject, the text of which is drawn from India. Both these letters are fully justified, for there is as yet no proof that either the past lesson of South Africa and the ever-present lesson of India has really been taken to heart by the War Office, and the time has unfortunately passed when the public can rest satisfied with a simple assurance from a Secretary of State that any matter, however important, is receiving due attention at his hands. It is admitted now that none of the eight postulates which Dr. Canney collected and laid down as essentials are either superfluous or impossible, and the public would be glad to receive some positive proof that steps have actually been taken to give effect to them. That any effective steps are really being taken is the more seriously open to doubt, since we learn from Dr. Canney's letter that the War Office has positively not yet even got so far as to try the very effective field water-boiler which was described in the British Medical Journal of March 15th, 1902. The trial made of it fully bore out the claims made for it by Dr. Canney; and it is astonishing to learn that the War Office, if, as it alleges, it is really doing anything, is simply experimenting in a dilatory fashion with the Waterhouse-Forbes apparatus. Referring to the experiments with water-sterilizing apparatus, it has been stated on behalf of the War Office that "great difficulty is being experienced in obtaining satisfactory results." If this is so, it may well be asked why the War Office does not at once try some other apparatus, and especially that suggested by Dr. Canney himself? A single field day on Salisbury Plain would settle the prima-facie merits of this or any other machine having the same object. If the whole matter consisted in the choice of one apparatus or another, the public would have less occasion to feel anxiety as to what steps are really being taken to put an end to the ravages of typhoid and other waterborne disease than is at present the case: but there are other and in some respects more important factors to be considered. Many of the postulates demand for their fulfilment far more than the simple fiat of a Secretary of State, and entail among other things the creation of a proper mental attitude toward the subject on the part both of officers and men, but more particularly of the former. One of the greatest difficulties in the way of real reform is the ignorant contempt and indifferent attitude which characterized many combatant officers while in South Africa, and which appears to characterize a good many of them still. Numbers of them appear to be quite ignorant that there is any necessity for caution in the matter of water at all, and others shrug their shoulders and allege inability to influence the men as far as this matter is concerned. Either of these factors is enough to paralyse all effort, and neither of them should be allowed to continue. It is the duty of the War Office to put both down with a strong hand; and the most effective cure, and the one which the War Office will adopt if it really means business, is the introduction into the *King's Regulations* of a distinct statement that the occurrence in a regiment or a detachment of anything more than sporadic cases of waterborne disease such as may be accounted for by deliberate non-compliance by individual men with common-sense regulations or by other unavoidable circumstances, will render its commanding officer liable to be called on to defend himself before a court of inquiry. Quite apart from past events in South Africa, the annual losses from preventable disease in India are enormous, and not a month passes without something happening which should lead to some commanding officer being severely taken to task. The outbreak of cholera among the Shropshires in India, of which telegraphic news has just been received, entailing the loss of an officer and seventeen men, is a case in point.

DEATH OF MR. W. L. BURR.

All who knew Mr. William L. Burr, Financial Secretary to the British Medical Association, will be grieved to hear of his death, which took place a few days ago after a short illness. A melancholy feature in the case is that he was on holiday at the time, and he actually died in a hotel at Hindhead. His last hours, however, were watched over by a devoted wife and an affectionate brother. Mr. Burr, who was in his 60th year, had shown symptoms of failing health for some months, but it was thought that rest and change of scene would soon set him up again. About a week before his death he was struck down by what seems to have been an apoplectic stroke, and although there was a partial return of consciousness, with other signs that appeared to those about him to warrant a hope of recovery, he passed away peacefully just before midnight on Tuesday, September 8th. Mr. Burr was appointed Assistant Secretary to the British Medical Association in November, 1883, and Financial Secretary in the early part of 1898. Before entering the service of the Association he had been for a long time with Messrs. Price, Waterhouse and Co., public accountants, and for nine years before his appointment he audited the accounts of the Association for the

principals. In this way he acquired a thorough knowledge of the financial affairs of the Association, which made him specially valuable as an official. Mr. Burr's work was done so unobtrusively that to the great body of members of the Association he was probably little more than a name, but those who knew what he was, and what he did, can testify to the keen interest which he took in everything that concerned the prosperity of the Association, and to the faithful and conscientious service he gave to it in his particular sphere of duty. He was a man of most amiable character, courteous in manner, kindly to all in need of help, and straightforward in all his dealings. In Mr. Burr the British Medical Association has lost an able and useful official, and the staff a highly-respected colleague. We are sure that the deepest sympathy will be felt by all members of the Association for Mrs. Burr in her sad bereavement. The funeral will take place on Saturday at Dunstable, Mr. Burr's native place, where many of his relatives lie buried.

INTERNATIONAL CONGRESS OF OPHTHALMOLOGY.

The tenth meeting of the International Congress of Ophthalmology will be held at Lucerne on September 19th, 20th, and 21st, 1904. Professor Dufour is President, Professor Pflüger, Vice-President, Professor Mellinger, Secretary and Treasurer of the Organizing Committee, Professor Snellen of Utrecht, President of the last Congress, is an honorary President. The President of the Swiss Confederation, Dr. Deucher, who is a Doctor of Medicine, is also an Honorary President. The Organizing Committee has issued a kind of manifesto, certain passages of which we think might well be borne in mind by all who take an active part in the organization of congresses. The Committee declares that scientific congresses have been reproached, and with reason, for failing in their aim—the advancement of science. The reasons for this are, first, that too much time is given up to excursions and pleasure. In the second place, the rapid publication of scientific journals renders superfluous a long journey to hear communications which could be better understood by reading. The Committee rightly insists that discussion, not the mere reading of papers, should be the chief object of these meetings. "It is by interchange of ideas that the spark is generated which brings us new light." With the object of rendering the discussions more profitable, the Organizing Committee has made the following arrangements: Members who wish to contribute papers are requested to send their manuscripts at the same time as their subscription to Professor Mellinger, Bâle, before May 1st, 1904. The paper must be written in one of the four official languages of the Congress, English, French, German, Italian, and its length must not exceed five printed pages of the size of the official report of the previous congresses. The papers received will be grouped according to their contents and immediately printed. They will form the first part of the printed report of the Congress, and will be sent to each member, together with his admission ticket, at least two weeks before the time appointed for the opening of the Congress. In this way each member will know the subjects to be dealt with, and will be able to prepare himself for serious discussion. The Committee suggests that by this means the reading of the papers may be dispensed with—a notable reform which may save congresses from the fate which seems otherwise to be in store for them of crumbling away under their own weight. The authors will be called upon by the President to make known in a few words the conclusions at which they have arrived, after which the discussion will at once begin. It is hoped that in this way the opinions of experienced men, who have not the time to write and publish their experiences and opinions, may be heard. The discussions will be printed and will form the second part of the official report, which will be sent to each member after the close of the Congress. Only one subject is officially proposed for discussion, namely, "To settle the question of indemnity as regards the value of an eye, lost or injured." Professor Axenfeld (Freiburg), Dr. Sulzer (Paris), and Dr. Wurdemann (Milwaukee), have been invited to draw up reports on the subject, which will be printed at the beginning of the official report. The afternoons will be given up to practical demonstrations. Notwithstanding the somewhat austere sentiments professed by the Committee, "cakes and ale" will not be altogether neglected. The town of Lucerne proposes to give a reception on the eve of the opening of the Congress, September 18th. On September 20th there will be an official dinner. Mountain or lake excursions are also proposed. The entrance fee of £1 will entitle members to receive the official report of the Congress and to take part in the excursions. Fuller information may be obtained from Mr. Walter H. Jessop, 73, Harley Street; Dr. George Mackay, 20, Drumsheugh Gardens, Edinburgh, or Mr. Henry R. Swanzy, 23, Merrion Square, Dublin.

DEATH CERTIFICATION AT HOSPITALS.

At the conclusion of a series of inquests at Stepney on September 5th the coroner, Mr. Wynne E. Baxter, mentioned an extraordinary case, possessing several points of serious interest and importance for the medical profession. The case was that of a little child who had been twice attended to in the casualty department of the East London Children's Hospital for some trifling disorder. A few days after the last visit to that institution the mother went to pick the child up and found it apparently dead. Under this apprehension she went to the hospital and endeavoured to obtain a death certificate, but on her return home she found the child alive. The casualty officer at the hospital, who had found nothing sufficiently wrong with the child to account for the sudden death, very properly refused a certificate, and with equal propriety reported the supposed death to the coroner. The assistant officer of the coroner then proceeded to arrange the preliminaries for an inquest, but on calling at the parent's house found the child alive and further measures on his part unnecessary. It might be thought that the judicious part played by the casualty officer in the matter would have elicited commendation; so far from this being the case, however, he was made the object of some amount of undeserved reproach. A coroner's juryman present at the time the case was mentioned, seizing the opportunity to indulge in the usual criticism of hospitals and their ways, expressed the opinion that "the doctor ought to have made some inquiry before reporting the matter." From their manner of reporting the case, too, several of the daily newspapers would seem to have shared the juryman's opinion, and on reading them one would almost gather that there is an impression prevailing in some quarters that death certificates are often granted at hospitals in a somewhat lax and perfunctory manner. Needless to say, there is no element of truth in such a supposition. If there be any point in the comments on the conduct of the casualty officer in question, they must mean that, before reporting to the coroner he should have visited the parents' house to ascertain the reality of the death of the child. Now any one with the slightest acquaintance with hospital routine would know that such visits are impossible, and that to impose on the hospital residents the duty of viewing the corpse in every case before granting a death certificate would be to disorganize totally every department of the hospital on many days of the week. Such a duty, moreover, is not imposed on private practitioners, who have many more facilities for visiting their patients' residences. To expect the visiting out-patient staff, too, to view the corpse before granting a death certificate would be to inflict such a burden that no gentlemen would be found willing to take such posts. Considering the amount of attention which the conduct of the casualty officer has attracted, even acting in the judicious manner he did, it is not difficult to foresee the amount of obloquy and ridicule that would have been launched against him and the institution he serves had he granted the certificate with the child alive. Yet, had the child been seriously ill on his seeing it, and the death reported to him by the nearest relative, the mother, he would have had no option allowed him by law but to grant the certificate. Mr. Baxter

whose kindly appreciation of the many difficulties attaching to hospital practice is well known, did right to call the matter an important one. It opens up the whole question of hospital out-patients and death certificates. The out-patient departments are, of course, primarily intended for those not seriously ill; yet to refuse treatment at such places to many in whom death might at any moment occur, and (especially does this refer to children's hospitals,) would be to inflict an intolerable hardship on the poor. Still, it has to be admitted that hospital staffs have much less control over such patients in their residences than is the case with private practitioners. It might be well, then, if a plan could be instituted by which all death certificates as to out-patients were sent on to the coroners for the districts in which the patients died for distribution. This plan would not materially add to the coroner's work, and in some instances might lighten it by giving him early information regarding cases in which he might deem an inquest advisable. In this way attempted frauds on insurance companies would be frustrated, and the mere knowledge that the death certificate would be personally brought by the coroner's officer would prevent many cases of ill-treatment or neglect.

LECTURES ON HEALTH SUBJECTS IN LONDON BOARD SCHOOLS.

WHETHER the allegation that certain classes of the population of these islands are undergoing physical deterioration be true or not, it is certain that every influence calculated to counteract that downward course is to be heartily encouraged. Foremost among the influences which would in time exercise a beneficial effect on the national health and physique would be the spread of education in sanitary subjects amongst the people themselves. Attempts have been made in the past to instruct the lower classes on the value of fresh air, the importance of choosing a cheap and nutritious diet, and the gain of living in "Physiological Righteousness"; but apparently they have had very slight success. The School Board for London is about to make another attempt to instruct the masses in such subjects, and we trust its efforts may lead to a diffusion of knowledge of sanitary matters, and to a juster perception of their great national importance. The Evening Continuation Schools Committee of the Board has authorized Dr. R. J. Collie, Medical Superintendent of Hygiene, First Aid, and Home Nursing Classes, to open twenty experimental classes, and if these succeed more will be organized. Already eighty head teachers have applied to have these classes started in their evening schools; but at present only twenty will be opened. Competent lecturers have been selected for the classes, two being young consultants. Different classes of schools in various districts will be opened; some amongst the very poor, others in better-to-do working-class neighbourhoods. Dr. Collie has drawn up a syllabus of these Lectures on Health (printed by Alexander and Shepheard, Limited, Norwich Street, Fetter Lane, E.C.), which may serve as a guide for the lecturers on his staff. Each lecture is to be made as practical and as elementary as possible, and a non-technical graphic treatment of the subject is recommended. Even if the syllabus be not closely followed, the practical work is in no case to be omitted. Ten lectures are for mixed classes; four for females only. Amongst the subjects of the former series are the house, air and ventilation, clothing, prevention of consumption, care of the skin, ...ise, personal hygiene, food, water, the prevention of ...read of infectious disease, and of communicable skin dise...in school life. The four lectures for females only are ...oted to the care of infancy, childhood (especially as to fo... and clothing), ill-health in women, dress, and, lastly, ...oking. It is impossible to give here the syllabus of any ... these lectures in detail; but, in that on food the following dicta appear: "Good food need not be dear food, many cheap foods most nutritious. Kinds of food: Roughly, two kinds—frame formers and fuel givers.... Necessity of pasteurizing all London milks; description of a simple method by means of a jug and a saucepan.... Tinned milk: its dangers. Oatmeal: children fed on porridge and milk grow taller and healthier, and learn more quickly, than those fed on tea and coffee.... Diet for the child, the worker, and the invalid..... How easily milk and water can be infected; how to prevent it..... Alcohol: its abuse, effect on tissues, moral consequences. The value of beef-tea as a stimulant. Tea: its value and abuse. Stewed tea: its action on the heart and on foods. Coffee, cocoa: how to make them." If on these subjects only the teachers give their classes the wholesome instruction foreshadowed by this quotation, they will more than justify their own appointments. Unfortunately, however, such subjects do not "pay" in the examinational sense, and Dr. Collie is wisely endeavouring to attract a full attendance at the classes by the employment of striking chemical and other experiments during every lesson, and by the use of diagrams suited to the mental capacity of the audience. Each teacher is to be supplied with a box of apparatus with which all the experiments mentioned in the syllabus can be performed, whilst the diagrams which deal with every part of the course are well executed and calculated to excite the lively attention of the young people to whom they will be exhibited. We understand that the classes will be formally started next week.

CONGO MEDICAL EXPEDITION.

THE medical expedition to the Congo sent out by the King of the Belgians in conjunction with the Liverpool School of Tropical Medicine to investigate cases of sleeping sickness and other tropical diseases sailed from Southampton on September 4th on the Elder Dempster liner *Albertville*. The members were entertained at luncheon before embarking, and Mr. Chamberlain telegraphed as follows: "Wish all possible success to expedition of Liverpool School of Tropical Medicine about to be sent to Congo by King of Belgians." The Lord Mayor of Liverpool also sent greetings. The following telegram was sent by Sir Alfred Jones to the King of the Belgians: "Representatives of Liverpool School of Tropical Medicine and others assembled at Southampton to bid farewell to the Congo Medical Expedition, take opportunity of conveying thanks to your Majesty for your valuable assistance to science by co-operation in expedition."

BACTERIOLOGY AND TROPICAL DISEASES.

ON August 19th Professor Boyce, of the Liverpool School of Tropical Medicine, delivered a lecture in connexion with the summer meeting of the Extension students on Bacteriology in Relation to the Tropics. He said that they had the power of control, and malarial diseases would disappear like other diseases in proportion as their intelligence and foresight became more and more developed. Infectious diseases would gradually tend to die out as civilization increased. Malaria had disappeared from England, but the process took ages, and where science put into their hands the latest weapons with which to attack their enemies, it was their duty to throw away bows and arrows. In England they did not realize the awful mortality, the loss of human beings and substance that occurred, for instance, in India, where from January to August of the present year close on 600,000 persons died from plague. How many more had died from cholera and malaria? The number would be treble that. That was the decimation of the labourers and toilers who helped to build up England's greatness; but, in the face of this fact, this country did not do all it might to prevent this shocking waste. Surely it was time that the nation saw that the scientific laboratories of this country were wholly inadequate, whether attached to the older or the newer universities. They were making efforts—very small efforts—to come abreast of some other countries, but still, considering the enormous wealth of this country and its huge responsibilities, these were but small drops in the ocean. Animals might transmit a disease from which they were suffering to man directly, and also by means of the tsetse fly and the common house fly, which was a pest which

should be rigorously excluded from the house. A little reflection would show what a very dangerous insect it was, travelling over all kinds of dirty places and then going into the dining-room. It had been shown that the tsetse fly had recently paralysed the trade of Mauritius. Then, again, the virus which produced disease in man required an intermediary host, and some animal or insect was required for the purpose. It was now known that malaria was spread by a parasite in the blood, and not by a bacterial parasite. It was proved that the one great source of infection as the intermediary host was the mosquito, which required damp places to breed in, and in this way it had become possible to prevent malaria through infected mosquitos. The danger, however, was not in the marsh, but in the compound, and that brought prevention under their control; that is to say, it was a question of ordinary sanitation. There was little doubt the campaign had commenced in earnest, and from all sides they heard of success.

THE R.A.M.C. COLLEGE.

According to the *Times*, the first course of instruction for captains of the Royal Army Medical Corps has lately been brought to a close, and the result of the examination has been such as fully to justify the action of the War Office in creating the Royal Army Medical College. All the officers who presented themselves for the examination passed. The examinations in the special subjects and in hygiene and bacteriology took place immediately on the termination of the periods of hospital attendance and of the laboratory courses respectively. Out of 26 officers who underwent the test 22 obtained the marks necessary to qualify as specialists. The reports from the medical staffs of the several hospitals to which the officers were attached speak in eulogistic terms of the excellent example they set and the desire they evinced to profit to the fullest extent by the instruction imparted to them by the professors. The Royal Army Medical College may now, therefore, says our contemporary, be regarded as a permanent institution of the Army.

HOUSING THE WORKING CLASSES.

During the last days of the session of 1903 an Act of 17 clauses entitled the Housing of the Working Classes Act 1903 passed into law, with very little discussion and indeed with scarcely any consideration. Some of its provisions are nevertheless of very great importance and must have not a little influence upon the rehousing of persons of the working class who are displaced by sanitary and other improvements in our towns. It will be remembered that those who have advocated municipal housing schemes have often complained that the period within which money borrowed on the security of the rates for the erection of dwellings, even when extended to fifty or sixty years, is all too short, having regard to the "life" of the buildings erected, and that accordingly an unnecessary burden is placed upon the tenants during the repayment period if such schemes are to be self-supporting. By Section I the maximum period for repayment of housing loans may now be extended to eighty years. Under Section II, by an Order in Council, so much of the housing work in respect of the central authority as has hitherto fallen under the Home Office jurisdiction may be transferred to the Local Government Board; that is to say, London and the extra-metropolitan areas will or may, in future, be dealt with by the same central office In the case of default by a local authority in carrying out a necessary rehousing scheme, the confirming authority may, under Section IV of the new Act, compel the local authority by mandamus to proceed or itself execute the scheme. Various minor improvements in procedure in respect of schemes are made by Sections IV to VII; and by Section VIII it will no longer be necessary for a local authority, before proceeding to obtain an order to close dwellings unfit for habitation, to serve a notice on the owner requiring him to abate the nuisance. This will ensure greater promptitude in dealing with slum property, without going through what is often a sorry farce—that is, faking up premises which are utterly irremediable. Section XI confers on municipal bodies, with the consent of the Local Government Board, powers to provide and maintain any building adapted for use as a shop, any recreation grounds or other amenities which would be beneficial to persons inhabiting a lodging-house. This gives a much-needed power, and one which recently, in the case of providing a cook shop, in connexion with the London County Council's Mill Lane lodging-house, was the subject of acute controversy. In a schedule accompanying the Act certain provisions are made in respect of rehousing displaced persons, applicable not only to rehousing schemes carried out by local authorities after effecting the clearance of insanitary areas, but also to displacements effected by street improvement and by companies acting under compulsory powers, such as railway company clearances. It would appear from this schedule that the number of the working class population for whom accommodation is to be provided shall not exceed the number of such persons actually displaced by the particular improvement or clearance who were then in residence, or who had resided there and who were within the previous five years displaced in view of the improvement. This appears to be a new principle on a more strict application of the meaning of rehousing and may tend to fetter and imperil rehousing schemes in the more crowded districts, but on the whole this new Act will be welcomed as a small but useful advance by sanitary reformers.

THE NATIONAL PHYSIQUE.

The Lord President of the Council has appointed a Committee to make a preliminary inquiry into statements that have been made as to the physical deterioration of certain classes of the population of the United Kingdom. The following are the members of the Committee: Almeric W. FitzRoy, C.V.O. (Chairman); Colonel G. M. Fox, C.B.; J. G. Legge; H. M. Lindsell; Colonel George T. Onslow, C.B., R.M.L.I.; John Struthers, C.B.; J. F. W. Tatham, M.D. Mr. FitzRoy is the Clerk of the Council; Colonel Fox was formerly head of the Gymnastic School of the Army; Mr. Legge is Chief Inspector of Reformatory and Industrial Schools; Mr. Lindsell is Principal Assistant Secretary to the Board of Education; Colonel Onslow is head of the Navy Recruiting Service; Mr. Struthers is an Assistant Secretary to the Scottish Education Department; and Dr. Tatham is Superintendent of Statistics in the Registrar-General's Office. The Committee will probably hold its first meeting in October.

THE SCOTTISH SANITARY CONGRESS.

The twenty-ninth annual congress of the Incorporated Sanitary Association of Scotland was opened at Stranraer on September 3rd, when Dr. Glaister, Professor of Forensic Medicine in the University of Glasgow, delivered a presidential address on "The Sanitary Problems of the Future." Referring to the massing of people in large centres, he emphasized the need for enumeration at shorter intervals than every ten years. It was a question, he considered, which should be urgently placed before Parliament. The problem of atmospheric pollution could not be solved by men of science alone, but it could be solved by the united action and efforts of men of science and local authorities. In regard to the growth and incidence of population, he referred to the migration of rural dwellers townwards. For many families probably no better step could be taken; for others it would only prove deplorable, since so much depended on initial health and other important considerations. But, whether fitted or not for the step, the hygienic conditions of life were more severe in the city than in the country. In no respect were the prejudicial effects of town-living upon the labouring classes better demonstrated than in the depreciated physique of the third and fourth generations of many of those who had proceeded from the country to the towns. One of the significant features of present day statistics, and one calling for the serious consideration of sanitarians, was the high prevailing rate of

infant mortality in populous centres. The great loss of infant life was a preventable wastage, and therefore worthy of the attention of sanitarians. If its cause were found to be more attributable to maternal ignorance than negligence, then it would become part of the duty of local authorities, administrative and educational, to wage war against the ignorance which prevailed regarding the rearing and feeding of infants by artificial methods. The first step, in his opinion, was for the medical profession to set its face against the tendency of mothers who were fit to nurse their children to avoid doing so under various thinly veiled pretexts; the second was for municipal authorities to employ skilled women to supervise the feeding of infants in poorer localities; the third, for the same authority to prepare and distribute under suitable conditions supplies of sterilized milk for the feeding of those infants who must be brought up by hand. In the event of a further decline in the birth-rate and a persistent high infantile mortality, it might become the duty of the State to pass a measure whereby women should not be eligible for employment until the expiry of at least one month after delivery, and whereby local authorities should be empowered to establish, when deemed necessary and advisable, public *crèches* for the infants of those women who, after the expiry of a month, were compelled to follow some employment. Whatever measures were adopted, either by municipalities or State, the results would far outweigh the cost, for truly there could be no higher work, viewed either from an ethical or economic standpoint, than the preservation of the lives of the children. Other papers read before the Congress were on the Medical Inspection of School Children, by Dr. W. Leslie Mackenzie, Medical Inspector to the Local Government Board for Scotland; on Infantile Mortality, by Dr. William Robertson of Leith, in which he laid the chief blame on bad feeding and the inferior quality of milk; and one on the Milk Supply of Large Towns by Mr. Harris, the City Analyst of Glasgow, who said that the regulations of the Board of Agriculture demanded no more than that with which the producers were capable of complying. Other papers were on the sanitary necessaries of a modern farm, the provision of isolation hospitals, and disinfection in country districts.

THE INTERNATIONAL ASSOCIATION OF THE MEDICAL PRESS.

A MEETING of the Committee of the International Association of the Medical Press was held at Brussels on September 1st, in one of the Committee rooms of the Belgian House of Representatives. The following countries were represented: Spain, Dr. Cortezo (President) and Dr. Monmeneu; France, Drs. Granjux and Blondel; Belgium, Dr. Déjace; Norway, Dr. Aaser; Denmark, Dr. Caroë; Portugal, Dr. Silva Carvalho; United Kingdom, Dr. Dawson Williams and Mr. Adolphe Smith. Regulations for the conduct of the business of the Committee were adopted, and it was resolved to bring the existence and aims of the Association under the notice of the editors of the principal medical journals in America North and South. Applications were received from the directors of medical journals in Holland and Hungary, and the Committee decided to invite these gentlemen to take steps for the formation of national associations. The question whether a congress of the medical press should be held in Lisbon immediately before the International Medical Congress to be held there in 1905, or whether the Congress should be replaced by a general meeting of the International Association was considered, but a decision deferred until the next meeting of the Committee.

CIVILIZED BARBARITY.

THE Prime Minister more than hinted the other day in the House of Commons that the balance of responsibility for the crimes now being perpetrated in Macedonia rather inclined to the side of the insurgents; and the latest news from that quarter, even if it be rather an expression of extravagant hate than of deliberate intention, must tend to confirm this opinion. A telegram from Berlin states that the leaders of the insurgents have threatened to infect the river Derkos, from which the water supply of Constantinople is derived. It is said to be their intention to infect the water with the bacilli of Asiatic cholera, plague, and small-pox! If this represents their plans, it proves, for one thing, that in bacteriology they are sadly to seek. The "bacillus of small-pox" has yet to be discovered, and the plague bacillus will not long survive in water. As to Asiatic cholera, no doubt it is often waterborne, but the artificial infection of a large watercourse must be set down as a wild and spiteful dream. It is the avowed intention of the insurgents to compel the intervention of Europe on their behalf by a series of outrages, but they ought to realize that the carrying into effect of such inhuman projects as are attributed to them in Germany can only tend to bring European opinion to the side of the Sultan, against whom personally the insurgents, it is said, will specially direct their attention by infecting in particular the pipes supplying Yildiz Kiosk with water. Their present proceedings and vapourings are only arousing the sympathies of civilized countries for Turkey; the murder of officials and the senseless destruction of inoffensive persons, such as resulted from the wrecking of the passenger train at Kuleli Burgas, can only disgust those who might otherwise have been inclined to sympathize with the aspirations of the Macedonian peoples. With Turkey it is very much a case of a dog with a bad name, and it is unfortunate that so few have had the opportunity of studying the peoples of Eastern Europe, so that the materials which the majority of Western nations have for a judgement between the Turk and his subjects in Macedonia are as vague as those possessed by the insurgents on the subject of bacteriology. But perhaps we wrong the insurgents, and this "news" from Germany is only another illustration of the perverse ingenuity so often displayed by one of our daily contemporaries when they touch any subject remotely connected with medicine.

BIOLOGICAL MINERALOGY.

PHYSIOLOGISTS have for some time recognized the importance of inorganic as well as organic chemistry in the elucidation of the problems of life. The inorganic compounds have been generally considered to play a part which is subordinate to the organic; still, the intimate relationships which exist between the two classes of compounds show conclusively that both are essential for the manifestations of vital activity. Few, however, would go so far as M. Gaube, who, in a recent work,[1] attributes an overwhelming importance to the mineral compounds. It is his aim to show that variations in the mineral adherents of protoplasm will explain all the manifold difficulties which have hitherto baffled biologists. Life is impossible without them, and some metals termed "biodynamic" are more important than others. Nutrition, the action of ferments, the phenomena of growth and reproduction, are all problems of mineral chemistry. This idea is carried also into the region of pathology; bacterial maladies are, for instance, examples of mineral specificity, and treatment must depend on the same principle. The facts of evolution become clear as daylight if once the doctrine is grasped that variations in relative affinities for different minerals underlies it. Such are a few of the main problems which Dr. Gaube sets himself to prove under the somewhat quaint title of biological mineralogy. He appears to have written a good deal on the subject, to judge from numerous quotations which he makes from his previously-published papers, and one detects throughout the present work a tone of discontent that his ideas have not been more widely accepted by other scientific men whom he is pleased otherwise to regard as clear-sighted and eminent; he is willing to forgive Darwin and others their blindness, because at the time they worked the great science of biological mineralogy had not been born. The first half of the book treats of the specificity and speciality of mineralization; thus potassium is the specific

[1] *Cours de Minéralogie Biologique.* Quatrième série. (Course of Biological Mineralogy. Fourth series.) By J. Gaube (du Gers). Paris: A. Maloine. 1903. (Crown 8vo, pp. 363, F. 4.)

mineral of the blood; blood would not be blood without potassium; other constituents and other minerals may change, but potassium stands alone as unchangeable and all-pervading. Magnesium is the specific metal for reproduction, calcium for growth, and so forth. These far-reaching conclusions depend mainly on a few experiments on the addition of various minerals to the culture media in which moulds are growing. The second part of the book deals with white of egg and the serum of various animals; the rotatory power of these varies: this difference depends on mineral admixture. This indicates a different constitution of the organic matter of the blood, which is specific for different animals. The book is worth reading if only as an instance of how an idea—however fantastic—can be worked up by an enthusiast. It contains plenty of valuable information, and here and there a bright idea, but all is marred by being construed only in such a way as to support the underlying hypothesis. A couple of quotations may serve as illustrations: "In the presence of an embryo we ask ourselves, as did the great sculptor before a block of marble—will it be God or a table? This embryo—will it be sheep, horse, or man? It is the intervention of mineral matter which furnishes the key to the answer." "The mineralization of the white of an egg varies between the eggs of the same fowl, as also does that of the yolk: the same observation can be applied to the generative elements in general. The statement of this simple fact appears to me to explain in the midst of influences of atavism and heredity the differences and resemblances between parents and their children and between the children of the same parents. The principal causes of these phenomena resides in the differences of the quantity and quality of mineralization." After this it is hardly surprising to be informed that a minute difference between the rotatory power of antidiphtherial serum and the normal serum of the horse is sufficient to explain the curative action of the former.

SENSE PERCEPTION AMONGST SAVAGES.

The Cambridge Anthropological Expedition to Torres Straits devotes Part II. of the second volume of its *Report* to a study of the faculties of hearing, smell, taste, cutaneous sensation, and the muscular sense, as exhibited in the Murray islanders. As regards auditory acuity, the general conclusion is that the powers of the islanders in the Torres Straits are somewhat inferior to those of the average European. The sense of smell does not readily lend itself to exact experimental tests, and this difficulty was enhanced in Murray Island owing to the trouble in obtaining as a diluent for the test odours a water which was perfectly free from smell. The results of the experiments show that, as compared with the people of Aberdeenshire, olfactory acuity is slightly higher amongst the Murray islanders. The investigation of taste showed that bitter and acid were liable to be confused with salt. It is interesting to note that in appreciation of the sense of touch the Murray islanders are distinctly superior to us: in the skin areas tested the threshold of tactile discrimination, expressed in terms of distance between two points touched, was found to be one-half that of the average Englishman. Their threshold for skin-pain produced by pressure is, on the contrary, nearly double that of the Englishman: in other words, whilst the Murray islanders possess a sense of touch twice as delicate as ours, their susceptibility to pain is only half as great as that of the European. The tests applied for estimating the muscular sense were naturally an entire novelty in Murray Island, but, notwithstanding this disadvantage, the natives exhibited a slight superiority to the ordinary civilized man in the power of discriminating small differences in weight. The general impression derived from a perusal of this interesting volume is that, although primitive man may excel us in the acuity of some of his sense faculties, the marvellous stories of phenomenal sense-acuity amongst savages must pass a very rigid scrutiny before they can be received with anything but scepticism; at all events the exact scientific experiments here recorded do not corroborate them.

The annual dinner of the Westminster Hospital Medical School will take place at the Trocadero Restaurant on Friday, October 23rd, not on October 2nd as published last week.

The opening of the Medical Faculty of the University of Birmingham, which will take place on Monday, October 5th, will be inaugurated by a *conversazione*, when an address will be delivered by Sir Victor Horsley.

Dr. Caley, Dean of St. Mary's Hospital Medical School, asks us to state that the winter session will begin on Thursday, October 1st, at 3.30 p.m., when the prizes for the last session will be presented by Sir William Broadbent, and an introductory address will be delivered by Mr. V. Warren Low.

Mr. W. Waldorf Astor has sent a cheque for £20,000 to the account of the Cancer Research Fund. It is to be hoped that this excellent example will be followed by other men of wealth and enlightenment, and that the £25,000 still required to make up the sum asked for by the administrators of the Fund may soon be subscribed.

The Treasurers of the Middlesex Hospital have received £250 from "Anonymous," being the second instalment of an annual contribution promised for a period of ten years, and £50 from the Worshipful Company of Drapers, being the second instalment promised for five years to the Fund for the development of the Cancer Investigation Department.

It is stated that Dr. Kuss, of Paris, has taken a number of consumptive patients to the Vallot observatory, near the summit of Mount Blanc, for the purpose of ascertaining the effect of rarefied air on their lungs. The patients remain in the open for the greater part of the twenty-four hours in every kind of weather.

The Harveian Oration will be delivered at the Royal College of Physicians of London by Dr. W. H. Allchin on Monday, October 19th at 4 p.m. The Bradshaw Lecture will be delivered at the College by Dr. Edmond F. Trevelyan on Thursday, November 5th at 5 p.m. The subject is Some Observations on Tuberculosis of the Nervous System.

According to a telegram from Mombasa under date September 5th, which appears in the *Times* of September 8th, Lieutenant-Colonel Bruce, who with Dr. Nabarro was sent from London in February of the present year on behalf of the Government and the Royal Society to study the sleeping sickness in Uganda, has left for England on the conclusion of his mission. He states that the ravages of the disease are unabated.

Surgeon-General Sir William Wilson, K.C.M.G., who was Principal Medical Officer of the Army throughout the South African war, reached the limit of age on August 27th. With the approval of the Secretary of State for War, however, he is to be retained on the full-pay list as supernumerary of his rank, in order to enable him to complete the official report on the medical arrangements of the war.

Charitable Bequest.—Mr. George Coupland of Hemswell Cliff, Lincoln, farmer, has left the ultimate residue of his estate, amounting to over £60,000 to his executors in trust to found a hospital to be called the "John Coupland Hospital," for the treatment and relief in sickness of poor persons in the parish of Gainsborough or in any of eight neighbouring parishes.

Ireland.

LOCAL GOVERNMENT BOARD FOR IRELAND.

DR. EDGAR FLINN, Medical Inspector Local Government Board, Ireland, attended the Congress of Hygiene and Demography at Brussels as the delegate of the Board.

LEGACIES FOR DUBLIN HOSPITALS.

Mr. Richard Hawkins Beauchamp, who died at Nice on May 22nd last, left a personal estate of £423,926 15s. 10d. Among numerous legacies are the following: King's Hospital Fund, £10,000; City of Dublin Hospital, £5,000; Hospital for Incurables, Dublin, £5,000; Rotunda Lying-in Hospital, Dublin, £2,000; Royal Victoria Eye and Ear Hospital, Dublin, £2,000; Convalescent Home, Adelaide Hospital, Dublin, £500. Mr. Beauchamp was one of the partners in the well-known Ball's Bank, Dublin, now merged in the Northern Banking Company.

QUEEN'S COLLEGE, BELFAST.

The President of the Queen's College, Belfast (Rev. Dr. Hamilton) has issued his report for the year 1902-3. The condition and progress of the College are in many ways satisfactory; the number of students entering the Faculty of Arts is double that of last year; the number of lady students is increasing, and last year 45 were entered in the College books, and a lady for the first time obtained a Senior Scholarship, that of Classics. The lady students obtained also their full share of scholarships and prizes generally. The President quotes with approval the opinion of the Royal Commission that "women and men students should attend lectures and pass examinations in the same colleges, and obtain degrees on the same conditions." Fresh advances of an important character in the various Faculties are enumerated. Changes have occurred in the *personnel* of the staff. Dr. Gregg Wilson has succeeded Dr. Cunningham in the chair of Natural History; Dr. T. H. Milroy succeeded Dr. W. H. Thompson in the Dunville Chair of Physiology. A lectureship in Vaccination has been instituted, to which Dr. John McLiesh, one of the medical officers of the Union Infirmary, has been appointed. Two new demonstrators have been obtained, one of Botany, and one of Geology. A careful revision of the library catalogue and books is in progress, and over £800 was spent, but of this a comparatively small amount was devoted to the medical school. The museums and laboratories are in full working order and their contents enlarged.

FEVER ACCOMMODATION IN BELFAST AND THE ROYAL VICTORIA HOSPITAL.

After several postponements, the change to the new buildings has been definitely fixed for September 17th, and a very important problem has presented itself for solution before that date. In the old site in Frederick Street a special fever block existed; this was the original fever hospital. For many years it has been used more or less as a private fever hospital, and many of the better class patients suffering from infectious diseases have been treated in it. When the plans of the new hospital were being considered, the municipal authorities were quite confident that the City Fever Hospital would be in existence as soon as the new Victoria Hospital, and so no fever accommodation was provided in the latter. Now, however, the one is ready, and specifications are just being taken out for the other; and so no fever accommodation will exist for the general public for at least three, probably five, years, except the Union Fever Hospital. This is said to be one of the best managed, but no attempt would be made to provide not merely luxuries and private wards, but anything beyond the fare allowed by the regulations. Consequently, for governesses, shopgirls, tradespeople, schoolboys and schoolgirls, and suchlike, no fever accommodation for over 360,000 people, not including small surrounding towns, is provided except the Union Fever Hospital. A deputation from the Board of Management of the Royal Victoria Hospital waited upon the City Council on September 1st; and Dr. Byers, who was the only medical member of the deputation able to attend, put the matter clearly and forcibly before the meeting. The deputation said they came to press upon the Council the desirability of making some accommodation for infectious diseases in Belfast, and that the hospital authorities would meet the Council in every way they could. The present old hospital with some modifications would serve as a town fever hospital for some years till the new one was built, and this course was recommended. Finally, the matter was referred to the Health Committee of the Council.

PROPOSED SHELTERS FOR CONSUMPTIVES.

A few weeks ago the Public Health Committee of the Belfast City Council passed a resolution for the erection of shelters for consumptives in a walled-in enclosure of about an acre in extent in the Ormeau Park. The residents of the district headed by several of the leading medical men held a large meeting to protest against such a proceeding. All agree that shelters of some kind are required, but strong objection was raised against having twenty or thirty consumptives congregated in a small area in a public park. It would be dangerous to those frequenting the park, the sight would be deterrent to children, and an occasional sudden death would cast a feeling of awe and dread where cheerfulness and laughter were expected. The object of the Health Committee was to remove the poorer patients to this spot for the day, to have a trained nurse in attendance, and to disinfect the homes in the meantime. On September 1st a large deputation waited upon the monthly meeting of the City Council, at which the resolution of the Health Committee was coming up for confirmation or otherwise; several speeches were made against the proposal, and marked local antipathy was evident. It was clear from the subsequent long debate that although the scheme carried much, in fact general, sympathy, yet that no broad or generous policy had been enunciated, that the attempt was but tinkering at the subject, and that the site chosen, independent of the strong opposition of the district, was not the best, either in itself as being rather low lying and near the river, and as interfering with the "rights of the healthy." On a vote being taken in full Council the proposal was thrown out by 21 to 16.

HEALTH OF LURGAN.

The Medical Superintendent Officer of Health for Lurgan (Dr. Agnew) has just issued his annual report for the year 1902. It is a pamphlet of 20 pages, with 21 tables, and contains very interesting information. The population is over 12,000, and there was a birth-rate of 32.8 and a death-rate of 20.9. In Table E the death-rate is given as 19.5. The zymotic death-rate was 1.3. As Lurgan is chiefly a manufacturing town these figures may be considered satisfactory. Forty-eight deaths occurred from some form of tuberculosis, chiefly pulmonary; and Dr. Agnew draws attention to the fact that the mortality from tuberculosis is three times that from all the zymotic diseases combined, and urges that the supineness of the public and the indifference of sanitary authorities must be removed. The workhouse hospitals are unsuitable for the reception of cases of pulmonary tuberculosis; and he recommends a county sanatorium as the first measure, with the supervision of the district sanitary authorities by the county councils. General hygienic measures amongst the poor are of paramount importance. Dr. Agnew also complains of the refusal of many sanitary authorities to adopt the provisions of the Notification Act and the Infectious Diseases Act, which are compulsory in England and Scotland. Of what use will be regulations and pamphlets if the houses of the poor are still suffered to remain utterly insanitary? During the year there was an epidemic of scarlatina; it was energetically and successfully combated. All the cases except two were removed to hospital, and disinfection was thoroughly carried out. One case of small-pox was discovered, and two more of the same family developed it, but the disease went no further. Paragraphs are devoted to the water supply, the dairies, cowsheds, and slaughter-houses, and schools; and, finally, Dr. Agnew gives a brief summary of the sanitary duties devolving upon the district councils and their officers. The report shows that exceptional care and attention is devoted to the public health of Lurgan, and, what is of immense importance, a full report is given of what has been done and what remains to be done.

APPORTIONMENT OF LEGACIES TO HOSPITALS BY THE COURT OF CHANCERY.—Under the will of the late Mrs. Pyne, of Royston, Herts, her residual estate of about £35,000 was bequeathed to "such charities as she by codicil to her will should appoint." There was no codicil to the will, and a decision of the Court of Chancery has been obtained as to whether the expressed intention was a good bequest. The decision being in the affirmative, the Court has apportioned the residue, and among the institutions which benefit are Addenbrooke's Hospital, Cambridge, to the extent of £5,000, Royston Cottage Hospital £5,000, and the North Herts and South Beds Hospital at Hitchin £2,500.

Scotland.

GLASGOW'S INEBRIATE REFORMATORY.

THE Committee of the Corporation of Glasgow responsible for the management of the Inebriate Reformatory known as "Girgenti Home" which is situated in Ayrshire has just issued its second annual report which deals with the year 1902. The home is used only for female cases and is licensed for 58 patients, having been practically full most of the year. A new departure was made in the course of the year by furnishing one of the dwelling-houses at the farm-steading and putting 6 beds there. This gave an opportunity to the patients resident there to live under conditions more resembling home life and at the same time granted them a kind of modified parole. At the beginning of the year 1902 there were 46 patients and there have been 20 new admissions. On December 31st, 1902, the numbers were in the home 40, licensed out 10, discharged 3, transferred to State reformatory 5, died 1, and absent from home or from guardians 7. Of the 40 patients left in the home only 3 had been resident for more than eighteen months, two-thirds had been for a year or more, and the remainder for periods under a year. Of the 10 patients on licence 9 were classified as "hopeful" and one "doubtful," while of those in the home who had been resident for six months and more the "hopefuls" numbered 17, the "doubtfuls" 12, and the "hopeless" 6. Great difficulty was experienced in finding suitable situations and guardians for patients on licence, and a source of great trouble and annoyance was the escape of patients from the home or from their guardians. There was no doubt the return of an escaped inmate had a disturbing effect on the others. No difficulty had been experienced in finding plenty of work for the inmates. In winter they were mostly occupied indoors, but in summer they kept the policies tidy and attended to the garden, orchard, and farm. During the year the health of the inmates had been good. In a memorandum on the working of the Inebriates Act the Committee makes some useful criticisms. Of the persons remitted by the magistrates from the Glasgow police-courts for inquiry there are many that cannot be dealt with and whom the prison system makes no impression on. There were many hopeless cases who were vicious and uncontrollable to a degree almost amounting to insanity, whose care ought to be undertaken by the State because they required almost prison discipline. There were also those who were physically deteriorated to a degree that placed them beyond any hope of ever being fit for efficient work, and this class ought to be cared for by the parish council. Frequent applications had been made for the admission of inebriates who had not been convicted before the police-courts, and the Committee feels strongly that an amendment of the Act to permit of the committal of such cases should be made.

GLASGOW UNIVERSITY EXTENSION.

The extension of the University Buildings in Glasgow, which is about to be begun, has given rise to much discussion, which has been renewed during the last two or three weeks. First of all, when the question of sites for the new physical laboratory and the extension of the Medical Faculty buildings was spoken of, a great outcry arose amongst present and former students against any proposals that would encroach upon the University athletic ground between the present University buildings and the Western Infirmary. To meet this objection, plans were prepared showing two separate buildings—one for physics and the other for medical subjects—on opposite sides of the road leading from the College to the infirmary. These plans, which were described in the BRITISH MEDICAL JOURNAL of July 18th, 1903, p. 177, has actually been passed and contracts accepted when the matter was again raised. The accepted plans are said to be inconsistent with the original scheme of the University buildings, and of a patchy character; and it is urged that it would be better to sacrifice the present athletic field—which will have to go some time if the extension of the College buildings goes on as it should do—and have the present extension and all future buildings planned more in keeping with the original design. Any alteration of the plans in this way need not be more costly, but would involve the provision of a suitable athletic ground on the outskirts of the city, as has already had to be done in Edinburgh. It is understood that the whole question is to be raised again at the next meeting of the University Court, when it should be finally settled one way or the other.

THE LOCAL GOVERNMENT BOARD.

THE report of the Medical Officer to the Local Government Board (Mr. W. H. Power) for the year 1901-2 is a volume of 637 pages bound in such fashion as to reflect the least possible credit upon those who are responsible for this part of the work. If a book of this character is worth publishing at all, it is worth publishing bound sufficiently well to be capable of being perused at least once before the leaves begin to fall out and the work is sent to be put into a permanent binding. But this is not the case. In spite of the difficulties thus created we have perused the work with care and should be glad to be able to give a full account of its interesting contents, but its length alone would make this impossible even if the matter were of such nature as to be capable of effective compression.

Besides the long and able summary of the year's work drawn up by Mr. Power himself, there are 20 subsidiary reports in Appendix A, which deal with a similar number of special inquiries; in Appendix B there are 9 reports on the results of certain bacteriological and chemical researches; while in Appendix C there are 3 further reports of an allied nature to those in the foregoing, and also some 21 pages of photo-micrographs, etc., in illustration of Appendices B and C.

Of the reports in Appendix A, 8 are devoted to the subject of Vaccination chiefly from the statistical point of view, but curiously enough not one of them refers to revaccination. Surely the Local Government Board receives information on this most important subject; if so why is the information not summarized and published? The other reports in this appendix refer for the most part to inquiries held in connexion with local outbreaks of disease, and are chiefly of local and temporary interest, except in so far as lessons may be drawn from them by towns other than those to which the reports have immediate reference.

The researches dealt with in Appendices B and C have many of them received notice in the columns of the BRITISH MEDICAL JOURNAL at the time they were concluded, but for purposes of reference and record some further notice of them is desirable.

Haffkine's Plague Prophylactic.

In a report headed "The Nature of Haffkine's Plague Prophylactic," Dr. Klein gives an account of his extended researches into the nature and value of this protective as demonstrated in rodents, and of the behaviour in general of the B. pestis in these animals. He finds that rats alone are a satisfactory subject of experiment in this relation, inasmuch as individual guinea-pigs and rabbits vary too widely in susceptibility. He believes that, so far as rats are concerned, the proof is absolute that Haffkine's prophylactic confers complete protection against what would otherwise be a fatal dose of B. pestis. Curiously enough, it appears that, however indifferent to living plague cultures a rat may be made by treatment, its blood shows no evidence of the formation of antibodies germicidal to the B. pestis outside its own body. Contrary to what has generally been believed to be the case, Dr. Klein found that the virtue of "Haffkine" is not entirely confined to the sterilized bacillary bodies, but exists in a minor degree in the liquid part of the prophylactic as well.

Chemical Pathology.

In a report on "The Chemical Products of Diarrhœa-producing Bacteria," Dr. Martin deals with the B. dysenteriæ. He found that a filtrate of a culture of this organism on certain media gives rise in the rabbit to loss of weight and temperature and to notable diarrhœa. The poisonous character of the culture is not due to any non-proteid body, and is found in the greatest strength in the intracellular substance of the bacillus itself.

Anaërobic Bacteria.

In a report headed "The differentiation of the several anaërobic microbes commonly present in the intestinal contents of man and other animals," Dr. Klein details the results of his further study of the B. enteritidis sporogenes, and supplies certain fresh data whereby to distinguish the latter from the B. butyricus and B. cadaveris sporogenes. It is with these that the B. enteritidis is most liable to be confounded, and the study is of importance on account of the potential pathogenicity of this organism and its constant presence in sewage, street dust, manure, etc.

The Identification of the B. Diphtheriae.

Dr. Gordon's further study of the B. diphtheriae deserves the attention both of those who are called on to make reports on throat-swabs, etc., and those who are responsible for the action founded thereon. It brings into strong relief the difficulties which surround the delivery with any confidence of a negative report upon any given specimen within the space of twenty-four hours by any of the morphological, cultural, or agglutinative tests available. It is clear, however, that, on the other hand, a positive report can be given with much confidence within eighteen hours or thereabouts, and without recourse to inoculation experiments, even should Hoffmann's bacillus or the B. coryzae segmentosus or others be present in addition to the diphtherial organism.

Widal's Reaction.

During a research into the Agglutination by Blood of Emulsions of Micro-organisms, with Special Reference to Specificity, Dr. Klein has submitted the claims of Widal's reaction as a means of early diagnosis of enteric fever to thorough re-examination, and with satisfactory results. He is able to reaffirm its value, and states that except in extremely low dilutions it is very rare for human blood serum other than that from enteric patients to be found capable of agglutinating the B. typhi.

Sewage and Soil.

Dr. Houston has again gone over the ground covered by a consideration of the outcome of the competition between sewage organisms and those native to the soil when brought about under the conditions of sewage farms and the like. The experiments as a whole go far to dispel the notion that the surface layers of soil are a fertile breeding ground for microbes of the pathogenic varieties.

The other three reports in Appendix B include an exhaustive consideration by Dr. Houston of all microbes in any way resembling B. coli in connexion with a research into the Chichester water supply as a possible cause of disease, a report by Dr. Klein on the Micropathology of Haemorrhagic Small-pox, and a description of the best means of applying carbonic oxide to the destruction of rats on loaded vessels, by Dr. Haldane.

Appendix C contains a paper on variola equina by Dr. Blaxall, a description of a new method of making anaërobic cultures by Mr. Fremlin, and a report by Dr. Green on the action of chloroform and various other substances on the specific and extraneous micro-organisms of vaccine.

Small-pox and Vaccination.

Turning now to Mr. Power's report, and leaving aside his summary of the general administrative business of the medical department of the Local Government Board, his account of the small-pox epidemic in London in 1901, and his references to plague and cholera, it is to be noticed that the Act of 1898 has necessitated the construction of an additional vaccination table. The column "Not accounted for" in the statements previous to the Act correctly represented the amount of unlawful abstention from vaccination, and does so still, but since exemptions under the conscientious clause place such cases outside the "Not accounted for" list, a further table has become necessary to show the true relations of those protected by primary vaccination to the total number born in each year. Mr. Power is of opinion that the statistics show that rejection by parents of vaccination steadily increased while the Vaccination Commission was sitting, culminated in 1898, and thereafter greatly decreased. Thus in the five years 1893-7 the children remaining unvaccinated represented a percentage of 21.0 of the total births; in 1898 the percentage rose to 26.6; in 1899 it declined to 20.8, and further again, in 1900, to 19.9. Search through the figures county by county reveals the same general decline, only four counties showing more abstentions in 1900 than in 1898.

Other data given by Mr. Power show that a high degree of abstention from infantile vaccination in any locality, whether due in the main to conscientious objection or to carelessness of parents and neglect by authorities was nevertheless accompanied by an increase in the majority of unions of the total amount of vaccination performed, and that such increase was on the whole greater in Unions where hostility to vaccination was frankly proclaimed by the conscientious objector than in unions where a low vaccination rate was simply due to neglect. It would appear, indeed, that a disposition on the part of a given section of any population to make use of the conscientious clause is in no way incompatible with growing acceptance of vaccination among the rest of that population.

Mr. Power also points out that the average protection throughout England varied very greatly, and that it was mainly thanks to a very limited number of centres, or in other words to a small minority, that the protection of the population remained as low as it did in those years. He also draws attention to the graphic illustrations prepared by Mr. Huddart which appear in the report, and which emphasize first that growth in different counties of any general disposition towards abstention from infantile vaccination has been extremely small, and secondly that the topographical range of deliberate and sustained opposition to the vaccination laws is smaller still.

The report on the small-pox epidemic in 1901 in London also contains several notable comments. The difficulties created during the epidemic by the hostile or indifferent attitude of certain Boards of Guardians receives comment, and it is noted that there was a pronounced and growing tendency on the part of borough councils to supersede defaulting Boards of Guardians in matters which appertain to vaccination. Since the former are, and the latter are not, responsible for the public health of the population under them this fact is not surprising.

It may be noted that one borough in which the authorities had refused to insist upon revaccination of their sanitary staff lost the services, permanently or temporarily, of no less than five of the officials through attack by small-pox; and it is also not without significance that in quarters where general opposition to vaccination prevailed; sanitary measures of any kind seem to have been carried out in a very half-hearted fashion.

The usual summaries of notified attacks and certified disease in urban areas of England do not appear in this volume, and it is noted that they are now included instead in the quarterly returns of the Registrar-General. In the latter, however, they are not complete, because the authorities of certain health resorts do not care to give the early publicity thus entailed to the fact that infectious disease exists within their midst.

BRITISH PRACTITIONERS ABROAD.

The following article, which should have appeared in the Educational Number of the British Medical Journal issued on September 5th, was crowded out by the pressure of matter:

The only enactments passed since the last issue of the Educational Number which affect practitioners abroad are an amendment to the Medical Registration Act (1890) of Barbadoes, and a Medical Act for the Leeward Islands. By the Barbadoes enactments, the Colonial Secretary of Barbadoes no longer acts as Registrar, and "the erasure of name of registered practitioner" clause is repealed, and the following section substituted for it:

"If any medical practitioner shall be convicted of any felony or be deprived of the qualification or qualifications under which he is registered by the body or bodies which granted it or them, or if his name shall be erased from the British *Register* by the General Medical Council of England; or if any medical practitioner shall die or shall be absent from the island for a period exceeding two years, then and in any of such cases the Registrar shall erase the name of such medical practitioner from the *Register*. Provided always that in case the name of any medical practitioner shall have been erased in consequence of absence for the period above mentioned, should such medical practitioner return to the island, the medical assessors are hereby authorized and required to grant a new certificate on the application of such medical practitioner, and he shall be entitled to have such certificate registered free of charge."

The Medical Act of the Leeward Islands is entitled "An Act to Regulate the Qualification of Practitioners in Medicine, Surgery, and Dentistry, and the Sale of Medicines."

No person can recover fees for medical or surgical attendance or practise medicine or surgery who would not under the law of England for the time being entitled to practise, etc., in the United Kingdom.

The penalty for illegal practice of medicine by quacks is a fine on conviction not exceeding one hundred pounds.

It may be mentioned that this Act applies to Antigua, St. Kitts, Nevis, Montserrat, and the Virgin Islands.

We note that the Medical Act Amendment Bill promoted by General Laurie, and which we reported last year as having been introduced into the House of Commons in the summer session, has not become law.

THE INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

Preliminary Meeting.

On Tuesday evening, September 1st, 1903, the preliminary meeting of the members of the Eleventh International Congress of Hygiene and Demography was held at the rooms of the Literary and Artistic Club, Waux-Hall du Parc, Brussels, and the attendance, though only three hundred were expected and provided for, was, probably, over a thousand. Apart from the support given to the Congress by the King of the Belgians and Prince Albert, and the widespread and active interest in the objects of the meeting taken by the members of the Government, by their inspectors and other officers engaged in sanitary work, and by managers of mines and other large industries as well as by members of the medical profession, the attractions of the fair City of Brussels and the genial hospitality of its inhabitants no doubt had much to do with the enormous attendance at the meeting, which before the end of the week amounted to more than 1,800. Though a good many no doubt were holiday makers, the seven sections in the division of hygiene and the single one devoted to demography were all well attended and sat twice daily.

Among the foreign delegates who spoke on Tuesday was Professor Sims Woodhead, of Cambridge. The other British delegates present included Sir James Crichton-Browne, Dr. Oliver (Newcastle), Miss Anderson (Principal Lady Inspector at the Home Office), Dr. Legge, Mr. Thomas Cutler, and representatives of the Royal Institute of British Architects, the Sanitary Institute, the Royal College of Veterinary Surgeons, and the Society of Medical Officers of Health. Sir Patrick Manson represented the Colonial Office.

Opening Ceremony.

The Congress was formally opened by Prince Albert in the Great Room of the Palace of Academies on the morning of September 2nd. In his speech the Prince insisted that, owing to the discoveries in bacteriology and the methods of protection they had led to, the infectious diseases most commonly met with and most dangerous to life were now, if not curable, at all events avoidable. But hygiene, to benefit all, must be universal, and progress in this direction was hampered not merely by want of means, but by individual inertia and private interest. Hence the necessity for public hygiene, and an irresistible movement of opinion in favour of the more active intervention of the law for the protection of the health of populations was evident on all sides. But the power of the law, though great was limited, and hygiene must not only be embodied in our laws, but must rule our lives. Energetic and persistent teaching by the pen, by oral instruction, and, above all, by practical works, alone would make the principles of hygiene widely known; so that in the light of facts experience might triumph over ignorance and indifference—the eternal foes of all progress—and induce the masses of the people to recognize the necessity of sanitary reforms. After the Prince had declared the Eleventh Congress of Hygiene and Demography open, the President (M. Beco, Secretary-General of the Ministry of Agriculture) gave the history of the Congress from its foundation in 1852; and addresses were also delivered by various delegates, including Dr. Sims Woodhead, Professor of Pathology at Cambridge University, the delegate for Great Britain.

Receptions and Entertainments.

There was a reception by Prince Albert, in the absence of the King, at the Royal Palace on Wednesday evening attended by more than 1,300 members. The following evening the Burgomaster, M. de Mot, received a vast crowd in the beautiful rooms of the Hôtel de Ville, and on Friday the large Alhambra Theatre was packed with spectators for a gala performance, which included a mimodrama entitled *Le Mort*, with music by Lein Dubois. The plot, taken from one of the most powerful of Camille Lemonnier's romances, was adapted for representation by Paul Martinetti, and for the benefit of the polyglot audience the argument was given in the programme in eight different languages. Some Danses Louis XV. and Danses Directoire by Mlles. Louise and Blance Monte seemed to be quite as much appreciated. Sunday was occupied by a special visit to Antwerp on the invitation of the Municipal Administration and the inspection of the works under their control.

A banquet for 500 was arranged for Monday, September 7th, and excursions to Spa and other places of interest subsequent to the closing assembly of the Congress on the 8th. On the whole the meeting was most successful, but some details might have been arranged much better; more recognition might have well been given to the delegates sent on invitation by important associations and scientific bodies. If the cards of membership had been posted on receipt of the qualifying contribution, or even if there had been definite information as to where to apply for these, some members who were unable to reach Brussels till the 2nd would have been saved much trouble, and might not have been deprived of the honour of attending the reception at the Royal Palace. A few simple precautions would have prevented a protracted and quite unnecessary struggle for seats for the spectacle gala at the Alhambra. But, after all, the most satisfactory impression remains that work, and not amusement, was the real business of the meeting.

Work of the Sections.

The programme of the work of the Sections was published in the British Medical Journal of January 31st, 1903. It is impossible to give here anything like a full account of the work, but a few of the principal communications presented to the Congress may be mentioned.

Tuberculosis.

Dr. Newsholme, Medical Officer of Health for Brighton, read a paper in which he described the action of the English public health authorities in the struggle against tuberculosis. He showed that the mortality from this disease had been divided by two, and regarded the greater decline at earlier ages and in the female sex as indicating that domestic causes of tuberculosis had improved more than occupational, to which men were particularly exposed. Omitting the earlier years, for which the figures were not entirely trustworthy, the rapid decline began in the years immediately following active sanitary legislation and administration. Many of the most important sanitary improvements had acted directly by diminishing opportunities of infection, as well as indirectly, by improving the standard of health; but the greatest amount of good would, he thought, be secured by controlling to the utmost both sets of factors. The close relationship between the price of wheat and the mortality from consumption was not a question chiefly of cheaper food, but of a general improvement in the standard of health. Poverty and tuberculosis were "close companions, poverty not only furnishing the appropriate soil, but also increasing the closeness of contact and the frequency of opportunities of infection." As regards administrative measures against tuberculosis, the first was a knowledge of the existence of the disease. Facilities for gratuitous examination of sputum had been utilized in Brighton since 1897, and that town had a system of voluntary notification of consumption in successful working since the beginning of 1899. Sheffield had recently secured a local Act enforcing compulsory notification of phthisis, with powers for disinfection and cleansing. Special stress was laid on the hospital training and treatment of consumptive patients. In Brighton 10 beds were reserved at the isolation hospital for such patients. There patients were kept for a month, 120 patients being thus annually passed through the institution. The patient himself, though not cured was improved in health, and able to start work again with increased strength. While in the hospital his home was cleansed and disinfected and when he went home he had been so trained in managing his expectoration that in the majority of instances the danger of infection for his family and fellow workmen had become very slight. The educational part of sanatorium treatment as thus developed was more important than its curative aspect; and it presented the advantage that a much larger proportion of phthisical patients could leave their work for a month than for more protracted periods. In connexion with this point stress was laid on a remark made by Dr. Koch in his address at the meeting of the British Congress on Tuberculosis. He expressed the opinion that the great reduction in the mortality from phthisis in England was due to "the considerable number of special hospitals for tuberculosis" in England. The number of beds in these hospitals given by Dr. Newsholme showed that they could not have had more than an infinitesimal effect. If, however, workhouse infirmaries were taken into account the result was very different. In Brighton, 201 consumptive patients admitted to its infirmary spent on an average 316 days there before their death. This meant that 18 per cent. of the total consumptive patients in Brighton were, so far as their relatives were concerned, living during the most infectious period of their

illness under conditions in which freedom from infection was secured. This factor must have had a large share in the reduction of phthisis in England.

Dr. J. F. SYKES, Medical Officer of Health for St. Pancras, presented a paper showing that the death-rate in England and Prussia (the population and rate of increase in both countries being approximately the same) from tuberculous diseases had decreased from 36 to 15 per 10,000 of both sexes in the period between 1851 and 1901.

Professor BROUARDEL presented a report on tuberculosis statistics of various cities, prepared in conjunction with Dr. Mosny. In the year 1899 the mortality from pulmonary tuberculosis in every 10,000 inhabitants was 40 in Russia, 36 in Austria, 30 in France, 22 in Germany, 20 in Switzerland, Denmark, and Ireland, 18 in Holland and Italy, 17 in Belgium, Sweden, and Norway, and 13 in England. Tuberculosis, it was stated, was less prevalent because the public powers intervened by regulating the work in factories, and especially by directing the greatest attention to the salubrity of dwellings. The example of England was held up for the imitation of the French Government, which should intervene more practically in the struggle, and fight the scourge in the army, the navy, the schools, as well as in the congested and unhealthy districts of cities, towns, and villages. The army, navy, and schools required special attention, and all soldiers, sailors, and scholars found with the germs of tuberculosis should be carefully eliminated or separated from the healthy persons.

Professor DEJONG (University of Leyden) gave reasons for believing that bovine tuberculosis was transmissible to human beings. The bacilli of human and bovine tuberculosis were identical in their effects; consequently it was the duty of the public authorities to prevent the propagation of tuberculosis by unsound meat and infected milk.

Dr. GRATIA (Brussels) said that proof had now been given that human tuberculosis was transmissible to cattle. The converse experiment, the transmission of bovine tuberculosis to man, could not be made. Dr. Gratia stated that he had performed a similar experiment on 16 monkeys by giving them the milk of tuberculous cows to drink, and 14 of the animals died. He reported other experiments which had been made with regard to infantile tuberculosis. Sixteen per cent. of the children examined had been found to be tuberculous through being fed with milk from tuberculous cows. That, too, showed that bovine tuberculosis was transmissible to man.

Dr. KESSEL, a pupil of Dr. Koch, maintained that the inoculation of cattle with human tuberculosis had only produced local results from which no conclusion could properly be drawn.

The French and Belgian delegates, among whom was Monsieur CHAUVEAU, supported the thesis of the transmissibility of bovine tuberculosis to human beings, while the Germans contended that such transmissibility had not been proved. Eventually the Section by a large majority passed the following resolution:

That human tuberculosis is perfectly transmissible from one person to another. Nevertheless, in the present state of our knowledge, it is necessary to recommend hygienic measures for the prevention of the propagation of animal tuberculosis in the human species.

Malaria.

The following resolution was passed on the motion of Sir PATRICK MANSON:

That this Congress, recognizing the practical importance of the mosquito-malaria theory, would urge on all Governments in malarial countries (1) that officials, both civil and military, be required before taking service in such countries to show evidence of practical knowledge of the theory and its application; (2) that educational establishments, whether Governmental, missionary, or other, in such countries be requested to include in their curricula instruction of native students in the mosquito-malaria theory and its practical application; (3) that officials ignorant of the theory or systematically ignoring its practical application be considered as unsuitable for service in malarial countries.

Diphtheria.

Dr. MARTIN, of the Pasteur Institute of Paris, read a paper on the results obtained by serum-therapeutic processes in the cure of infantile diphtheria. The paper was the subject of a long discussion.

Plague.

The sixth and seventh sections discussed measures for combating plague. It was agreed that the quarantine imposed on persons coming from countries infected with bubonic plague should be freed of its vexatious character, and that the evil could be combated more efficaciously by the institution of suitable sanitary services on board ships, and by general international measures against the means by which plague was spread, including the extermination of rats likely to be infected.

Spinning Factories.

The insanitary condition of spinning factories formed the subject of a discussion. Two series of resolutions were adopted. One of these, brought forward by M. BUYSSE (Belgium), proposed that the age of admission into spinning factories should be raised to the extreme limit compatible with the economic situation; that the hours of labour should be gradually reduced, and that mill owners should be called upon to make every effort to reduce the temperature of the spinning rooms and also give adequate pecuniary assistance to workwomen during the period of confinement and establish nurseries near the factories for the use of the mothers and their infants during the hours of work. The other, moved by Dr. LECLERC, embodied several technical regulations for improving the sanitary conditions of the workrooms and in favour of fixing the age of admission at eighteen years.

FINAL MEETING.

Various resolutions were formulated for submission to the final meeting. The Section on Alimentary Hygiene held that pork, if previously submitted to heat or cold adequate to destroy the cysticerci it contained, might be used as food; by a large majority they decided that when many parts of an animal were affected with actinomycosis the whole should be seized; they declined in regard to tubercle to insist on the examination of the intermuscular and visceral lymphatic glands. In regard to the sale of milk, they were unanimous that nothing should be sold as milk except as it came from the udders of healthy cows. None of the products of milk, such as skimmed or half-skimmed, or centrifugalized milk, should be used in feeding the sick, the newborn or the aged. They rejected the proposition that such subproducts should be sold only in special shops or after colorization.

In the afternoon the Colonial Section received reports from representatives of different nations on the organization of medical instruction in the Colonies. The fourth Section adopted a motion in favour of the development of home industry on the condition that it should be subject to the same sanitary and legal regulations as labouring factories. A motion signed by Mr. Smith (Great Britain), Dr. Félix (Belgium), Dr. Perroncito (Italy), Dr. Tott (Austria-Hungary), and Dr. Lemere (France) in favour of the creation in all countries of a ministry of labour hygiene and public aid was rejected.

CLOSE OF THE CONGRESS.

The International Congress of Hygiene closed on September 8th; the King telegraphed his congratulations. The Congress will hold its next meeting in Berlin in 1907; it has been invited to meet in Washington in 1909.

CONTRACT MEDICAL PRACTICE.

SIDMOUTH.

THE rules of the Sidmouth Dispensary have come into our hands, and two points in them seem to call for observation. This institution appears to be of a semi-philanthropic character, and is to that extent not comparable with an ordinary club. Payments, however, are made to the medical officers, and if payments are made at all they should be fairly representative of the work done.

Medical men are inevitably called on in the course of their ordinary life to dispense a large amount of charity in the shape of work done for people from whom they are perfectly aware that any remuneration whatever is very hypothetical. It is a form of charity which few men in any class of practice can altogether avoid, and which still fewer in any way grudge, and there is little or nothing to be said against it.

This, however, is not the case with that other form of charity which consists in medical men undertaking paid work at less than the rates at which they would contract to do it if no element of charity entered into the matter. This is a very different matter, for, however praiseworthy the motive may be, ends do not justify means. There should be a sharp division drawn by every medical man between the charitable and business sides of his work, and there should be no premeditated and open-eyed admixture of the two so far as money matters are concerned. If a man chooses to

mix things up in his private work the consequences are more or less his own look-out, but in other work he is certainly bound to resist any attempt to force him to admix business and charity at the hands of managers of philanthropic institutions and associations.

These remarks are called forth by two clauses in these regulations, one of which provides for attendance on confinements and the other for vaccination. The first of these provides a payment for each confinement of any character of 10s. 6d. or 12s. 6d., according as whether the patient's residence is or is not within a mile of the parish church. The other provides free vaccination at any age to those who have been admitted as members of the dispensary.

Both of these regulations are objectionable, and the medical officers concerned are not justified in agreeing to them. The payment for confinement is less than that which would be accepted from any club. If, therefore, the dispensary managers are not disposed to bring up the payments to that very moderate rate, or to provide for their members in this direction otherwise than by the exercise of vicarious charity at the expense of their medical officers, the cases should be turned over to the parish officer, who would receive 10s. 6d. from the guardians in a simple case and £1 1s. in a complicated one.

Free vaccination at the hands of the medical officers of a dispensary is also altogether wrong. There would be no hardship whatever to the members in cutting this regulation out, for Government provides free vaccination to all who choose to apply for it. By undertaking it for nothing the medical officers are depriving the public vaccinator of the fees to which he is entitled without any profit to themselves, and if the managers of the dispensary are anxious to provide for vaccination of their members at all, the fee paid should be the minimum fee allowed by the Local Government Board for vaccinations—namely, 5s. at the houses of the patients and 2s. 6d. at the surgeries of those who perform the operation. The former in most cases is on the whole adequate, and the latter, considering the number of visits and the amount of trouble to which many cases of vaccination gives rise, does not err on the side of generosity.

Club Practice and Sickness Assurance.

Dr. Harry Grey (Kingsbridge, S. Devon) writes: As a small contribution to our views of contract practice, I venture to ask our contractees to look at the matter in the light of the terms of the great sickness insurance companies. When a club member falls sick, we may suppose that on an average he will require during the time that he is off work one doctor's visit per day, with medicine; a fair charge for this let us take as 3s., about the ordinary fee charged in the country to non-club members. This would make his doctor's bill 21s. a week (during his sickness). I have lately taken out a sickness insurance policy, and I find that to obtain 21s. per week during the time that I am disabled I have to pay £2 4s. 1d. a year, that is to say, the insurance company expects that the average sickness of its policy holders will be fifteen and a-half days per annum (allowing, as we must also do, for working expenses). Contrast this with the club rate of 1d. a week, which supposes (providing that the doctor is decently paid for his attendance) that the average sickness of the club member will be one and a-third day per annum. Is the club member so much more healthy a man than the policy holder? Or is the club member so much less likely to go on the sick list unnecessarily, when he loses no wages by it, than the ordinary business man who has a dead loss on every day he is off work? Or, lastly (the only feasible deduction), is the insurance company charging £2 4s. 1d. when the odd shillings alone would amply repay their risk? The thing is absurd, and it is high time that in discussing with our clubs the raising of the weekly payments we should ask boldly for the 10d. a week (£2 4s. 1d. a year) they spend on beer and tobacco, instead of begging humbly for the inadequate farthing or halfpenny extra. The working man may think that 10d. a week is a good deal out of 18s. or 20s., but there are two reasons why he should think it well-spent money. In the first place, he gets a good deal for it; in the second, what is more important to him than to be well looked after in his illness, seeing that his health and strength are both his capital and income? I put forward this view of the matter for the benefit of those of us who are willing to accept contract work. Personally, I think all contract work in medicine is a mistake (on the part of the medical officers), and that it could easily be got rid of by making the clubs take over the medical attendance liability, as they have taken on their shoulders the sick-pay liability: that is to say, let the members employ what doctor they like, the club paying the bill. We should then hear no more of dissatisfied patients or overworked and underpaid doctors.

THE EPIDEMIC OF SMALL-POX.

The majority of reports on the prevalence of small-pox which have arrived during the past few weeks refer to the outbreak in the extreme north of England.

Northumberland, Durham, Cumberland, and Westmorland during the earlier part of the epidemic escaped very lightly indeed as compared with the counties immediately to their south. The disease now, however, appears to have obtained rather a strong hold of Northumberland, and a good deal of excitement has been caused by the number of cases which have occurred in and around Newcastle in particular. In some localities of County Durham there also appear to have been more cases than heretofore.

In other localities in the northern counties things have been quiet, though there have not been wanting places in which small new outbreaks have given rise to alarm. The majority of towns in Lancashire and Yorkshire, however, now appear to be happily engaged in clearing up accounts, and in a less degree the same is true of the Midlands.

In Cambridge the number of cases under treatment has now fallen to about 30, and the sharp outbreak at Burton-on-Trent seems to be practically over. Four cases, however, have occurred at Lincoln in a common lodging-house, and the outcome of these remains to be seen. The county of which Lincoln is the capital as well as the largest town has hitherto kept itself entirely free except for a few sporadic cases at Grantham, and one or two at Spalding; and a very vigorous effort is being made to prevent tramps who were in contact with the cases at Lincoln from spreading the disease throughout the county. It is said that they have been offered £5 a head and free board of a luxurious character to remain under observation in a camp outside the city for the prescribed number of days.

In London the number of cases has been on the decline, and there are now only about fifty cases altogether under treatment, but another small sharp outbreak has just been reported within the Ealing area.

At Burton the outbreak gave rise to the prosecution of a medical man for failure to notify the first case, to which 16 others were directly traced. The case had been in his hands for a fortnight, and it appears from the newspaper report that he had been warned on a previous occasion for failing to notify a case of infectious disease.

At Newcastle a man was heavily fined for improperly exposing himself when suffering from small-pox, and after his friends had drawn attention to his condition. He appears to have continued at work as a journeyman tailor for a fortnight, with the result that his master contracted the disease and died. In the same town the outbreak of disease has given rise to unusual activity on the part of antivaccinists by way of stemming the tide in favour of the operation. The chief feature of the campaign was that it led to letters from recent patients, who described the differences which they had themselves observed while in hospital between small-pox in the vaccinated and unvaccinated subject. Another interesting incident was a challenge to a talkative antivaccinator to pass his summer holiday in the small-pox hospital with one of his vaccinated opponents. Needless to say it was not accepted. A kind of manifesto, in which the nurses of the hospital described their dread of nursing unvaccinated cases on account of their sickening character, also appears to have exercised a good deal of influence. A report which Dr. Hope was directed by the Health Committee of Liverpool, at the end of last month, to draw up on the epidemic there, will, it is understood, contain some rather striking figures with regard to the respective mortality among the vaccinated and unvaccinated. It would appear that there were 972 cases altogether at Liverpool, of whom 215 bore no traces of having been vaccinated. Of these 57 died, while among the 757 remaining cases there were only 11 deaths. The publication of this report, therefore, will be awaited with interest.

THE PLAGUE.

Prevalence of the Disease.

India.

During the weeks ending July 25th, August 1st and 8th the deaths from plague in India numbered 2,200, 3,342, and 3,613 respectively. During the three weeks the chief mortality from the disease occurred in the Bombay Presidency, where out of the totals given above the deaths from plague were returned in the city and Presidency together as 1,827, 2,727, and 2,838. In the Punjab, during the week ending July 25th, the deaths from plague fell to 14. During the week ending August 1st the deaths from plague in Mysore rose from 202 during the previous week to 279, and in Central India from 23 to 65.

Cape Colony.

The plague reports in Cape Colony during the weeks ending August 1st and 8th were as follows:

Port Elizabeth.—Fresh cases, 0 and 0; deaths 0 and 0; under treatment in hospital, 3 and 2.

East London.—Fresh cases, 0 and 0: deaths, 0 and 0; under treatment, 4 and 3.

Queenstown.—Fresh cases, 0 and 1; deaths, 0 and 1: under treatment, 1 and 1.

In the above-mentioned towns plague-infected rats continue to be found. In King Williamstown, Graaff-Reinet, Burghersdorp

Stockenstrom, and Riversdale, no plague in man or animals during the two weeks in question.

HONG KONG.

During the weeks ending August 8th, 15th, 22nd, and 29th the fresh cases of plague in Hong Kong numbered 9, 13, 4, and 3, and the deaths from the disease 9, 11, 3, and 3 respectively.

MAURITIUS.

During the weeks ending August 20th and 27th the fresh cases of plague in Mauritius were returned as 15 and 20, and the deaths from the disease amounted to 9 and 14.

THE PREVENTION OF CONSUMPTION.

UNITED KINGDOM.

Staffordshire.—At a meeting of the Walsall Rural District Council, held recently, Mr. J. F. W. Binns presiding, a circular was read from the Staffordshire County Council stating that a meeting would shortly be held to consider the establishment of a county sanatorium for consumptives, and asking that representatives should be appointed to attend. The Chairman said he believed the matter had already been practically decided by the County Council. Mr. Bonner said the proposal was admirable, but the only question was whether it would not involve too large an expenditure. It was decided that the Chairman and Mr. Clare attend the meeting on the Council's behalf.

Northamptonshire.—We learn from the *Northampton Mercury* that whilst many other counties are paying much attention to the prevention of tuberculosis and making provision for the treatment of sufferers, Northamptonshire remains indifferent. Though Northamptonshire does not suffer so much as the cities and other congested centres, the death-rate in town and county is sufficient to make the local authorities seriously consider whether the time is not ripe for taking steps to check it. Last year alone no fewer than 214 people died from consumption in the county of Northamptonshire, and 126 in the borough of Northampton, the death-roll in town and county thus being 340. So far the town and county authorities of Northamptonshire have taken no action, and, with the exception of tentative experiments at the Northampton General Hospital, nothing for the benefit of consumptives is being done. A crusade was started in Northampton some years ago by an influential representative meeting at the Town Hall, and the necessity of urgent united action was enthusiastically affirmed. A local branch of the National Society for the Prevention of Consumption was formed, but its energy, says our contemporary, was apparently exhausted by the issue of a few placards proclaiming precautions against the spread of the disease. During the last two years two wards in the isolation block of the Northampton Hospital have been used for the treatment of consumptives on the open-air principle. There are twelve beds—six for males and six for females—and these have been constantly occupied ever since the experiments began; there have been hundreds of applications, but, owing to the limited accommodation, only about forty have at present undergone treatment. The average stay of the patient is about three or four months, and the results have been eminently encouraging, for, although most of the cases have been of an advanced type, there has been an improvement in 80 per cent. In 27 per cent. of the cases the disease has been arrested, and 7 of the patients have recovered sufficiently to be able to return to work. Each patient gets 14 oz. of meat per day, ¾ lb. of butter, and a quart of milk, besides rich milk puddings. Eggs and bacon are provided for breakfast three days in the week, boiled bacon two days, and fish the other two days, and the patients are allowed as much bread as they care to eat. These experiments have thrown considerable extra expense on the hospital, and the governors in their annual report have emphasized their feeling that the provision for consumptives at the hospital should be only a temporary measure preliminary to the construction of a county sanatorium. The institution of these experiments is largely due to Dr. P. S. Hichens, who has received loyal and able assistance from Dr. G. H. Lewis, the late House-Surgeon, and Dr. Spearman, the present House-Surgeon. The County Council, under the Isolation Hospitals Act, may constitute a whole county into "a hospital district" for the specific purpose of providing hospital accommodation for consumptives, as has been done in several other counties. The cost to Northamptonshire would be very trifling, for a farthing rate produces £1,150, so that the cost would be covered within £150 by a rate of that amount.

ASSOCIATION NOTICES.

COUNCIL.

NOTICE OF MEETING.

A MEETING of the Council will be held in the Council Room of the Association, at 429, Strand (corner of Agar Street), London, on Wednesday, the 21st day of October next, at 2 o'clock in the afternoon.

August, 1903. GUY ELLISTON, *General Secretary.*

ELECTION OF MEMBERS.

ANY candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

THE Library will be closed until further notice.

GUY ELLISTON, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

MIDLAND BRANCH: DERBY DIVISION (including Derby and the County of Derbyshire).—There will be a meeting of this Division at the Town Hall, Buxton, on Thursday, September 24th, at 4 p.m. Agenda: To elect four members to the Executive Committee. To pass a vote of thanks to Mr. J. Acton Southern, late Secretary of the Division. Mr. C. H. Taylor will move: "That a Subcommittee be appointed to investigate the draft Medical Acts Amendment Bill, and to report on it to the Division at an early date. That the same Subcommittee shall also consider the resolutions referred to the Division by the Council and the Representative Meeting at Swansea." (The draft Act and the resolutions were published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of Saturday, August 22nd.) As many points in the above Act are of great importance, the Committee hopes that members will consider it carefully. After the meeting the following items have been arranged: 5 p.m. Visit to the Devonshire Hospital. 5.30 p.m. Tea in the gardens (if fine). 6 p.m. Inspection of baths. 6.45 p.m. A dinner, which will be arranged for if a sufficient number of members wish it. Prices of tickets and place where the dinner is to be held will be intimated to such members as signify their intention of being present.—WINSTAN ST. A. ST. JOHN, 16, Duffield Road, Derby, Honorary Secretary.

SPECIAL CORRESPONDENCE.

BERLIN.

The Water Supply of Metz.—Hygiene of Schools.—Antialcohol Propaganda.

WE all know the German Emperor's fondness for quick, personal intervention, and the sharp language of his occasional public reprimands. But in his telegram to Prince Hohenlohe (Governor of Alsace-Lorraine) on the water supply of Metz, His Majesty has broken his own record. The telegram begins by stating that an epidemic of enteric fever has broken out amongst the citizens of Metz, endangering the garrison, which epidemic has been caused by ("has its origin in") the badly-protected Bouillon spring and the "unheard-of condition of its conduit pipes." The Emperor proceeds to state that this state of things is the fault "solely" of the Metz municipality, which, in spite of unfavourable reports, signed by such authorities as v. Leuthold and Koch, and in spite of repeated protests and warnings from the commander of the Metz garrison, had not made up its mind to the necessary energetic action. His Majesty adds that the present state of things "cries to Heaven." Finally, Prince Hohenlohe is requested to make an end of these conditions without delay, with the sharpest means at his disposal, and to force the town to do its duty. Of course these charges made in such uncompromising terms have caused the greatest excitement in the Metz district, and they have not long remained without an answer. The Metz Town Council declares that the cases of enteric have all occurred in a suburb not supplied by the Bouillon spring. It further affirms that there neither is, nor has been for decades, any epidemic of enteric fever amongst the town population of Metz. It proposes to publish statistics proving the favourable hygienic conditions of the town. Whatever may be the rights and wrongs of the case, the following facts are certain: (1) There has been an outbreak of enteric fever

in one of the Metz suburbs. (2) The Bouillon spring—the source from which ever since the Roman era Metz has been supplied with pure, crystal-clear water—has for some time, owing to want of care, been in great danger of contamination, if not actually contaminated. (3) The commander of the garrison, recognizing the snail's pace at which the improvements necessary were being carried out by the municipality, and fearing disastrous consequences for the health of his troops, by a decisive measure cut off the water from the Bouillon spring, thereby leaving the town practically without water supply at a period of great heat. The tangle of these complications was cut by the sharpness of the Emperor's orders; the works were hurried forward by every means at command, so that a few days later the opening of the Bouillon spring supply was announced.

The Prussian Ministry of Education has published a rescript drawing attention to hygienic defects in schoolhouses, especially as regards ventilation and heating. District medical officers are requested to suggest methods of improvement where the arrangements are defective, and to keep a watchful eye on this and similar matters where new buildings are erected. In the poorer districts arrangements for gratuitous baths have proved a great boon to the children, and it is recommended that new school buildings should be provided with them.

In the hope of spreading and popularizing knowledge regarding the danger to health of alcoholic drinks, the Imperial Board of Health has issued a tract on the same lines as its previous pamphlets on tuberculosis, enteric, and dysentery. The matter is not sensational, but in its plain statements, and in the diagrams illustrating the relative nutritive value of three-pennyworth of beer, compared with the same money's worth of milk or ordinary victual, and the ravages produced in the constitution by excessive consumption of alcohol, it forms a convincing object lesson, and may do good work as a small weapon in the great struggle against mankind's old and terrible enemy—drunkenness.

MANCHESTER.

Cost of Disposal of Sewage by Chemical and Bacterial Treatment.—Report of Sanitary Association: Noises due to Vehicular Street Traffic and their Remedy.—Milk and its Dangers.—Infirmary Architects and Fees.

We have before us the very interesting annual report on the disposal of Manchester sewage, issued by the Rivers Department of the City Council. In Manchester at present only about one-tenth—or 1,300,000,000 gallons—are treated by bacterial methods; the remaining nine-tenths are still treated chemically. There is a large amount of residual sludge by the latter process. The cost per 1,000,000 gallons last year was 7s. 6d. for the chemical part of the process, while it cost 11s. 4d. to carrying the resulting sludge to the open sea, that is, almost £1 per 1,000,000 gallons of sewage. The cost of the bacterial treatment alone is about 6s. The bacterial method is gradually growing in favour, and what were intended as chemical tanks are being gradually converted into septic tanks.

We have also again to welcome the annual report of the Manchester and Salford Sanitary Association, which interests itself with the many phases of public health. Manchester is said to be one of the noisiest cities in the kingdom. Assuredly much might be done to lessen the din of the vehicles in the streets. Perhaps the fault is not due entirely to the material or "sets" with which the streets are mostly paved. The construction of some of the vehicles themselves, and especially when they are loaded with piles of boxes and rapidly driven through streets narrow and bounded by high buildings, make a din that is quite intolerable, and could easily be mitigated. Persons are fined for allowing black smoke in too large quantities to be vomited forth by factory or other chimneys. Why not deal similarly with those traders whose carts make certain rooms in some streets almost uninhabitable? These jarring sounds could be largely remedied if some control were exercised, as is done in Berlin. The Association has directed its efforts in trying to get the City Council to use wood pavement in front of hospitals and schools in the main thoroughfares. The fact is, that while this does to some extent mitigate the evil, it does not attack the *fons et origo*, the real cause of the noise. Much might be done in the construction of vehicles by the use of indiarubber tires to make life more free from the jarring discords of the busy vehicular traffic incident to a large commercial city.

Again the old story of infantile mortality in Manchester and Salford crops up, and the report points out how dangerous a means of disease milk may become, and its authors offer some suggestions. They say:

> A good deal of evidence has been adduced to show that given milk collected under proper hygienic conditions, immediately cooled by ice, distributed with observance of the same conditions, and kept cool by ice till required by the child, then diarrhœa can be reduced almost to a minimum in the infants fed on such a product. So important is the care of milk, especially during the warm weather, and so great would probably be the saving of life and suffering from the introduction of the above-mentioned measures, that it has been suggested as a duty which the authority owes to the community to hold itself responsible for the supply of pure, clean, fresh milk to the poorest citizens.

This is well enough as far as it goes, but the solution of the problem is to be found only in the hygienic education of the people, especially girls. The methods described the other day at the Congress of Hygiene in Brussels, whereby mothers are not only instructed in the methods of artificial feeding of infants when this is necessary, but the mothers themselves are encouraged to bring their babies weekly to a central dépôt where the infants are weighed and examined by medical men, is one that has been productive of the highest benefit. In these dépôts also girls are trained in much that may be useful to them in womanhood and motherhood.

Once again the Infirmary question, and this time the choice of an architect. It appears that twelve selected architects have been invited to prepare plans, and it is stated that each is to be paid £100, £1,200 in all. Complaint is made in the lay press that expense might have been saved had other methods been adopted. It is stated that the Corporation for premiums of in all £325 obtained twenty to thirty designs for their Technical School. There is also some carping as to the selection of the twelve architects. It is suggested that a wider range should have been taken. The Infirmary Board, however, has unanimously resolved to adhere to its policy of selection.

SYDNEY.

Insanity in New South Wales.—The Open-air Sanatorium at Wentworth Falls.—Expectoration in Railway Carriages.—Medical Matters in Parliament.—The Bubonic Plague.

The annual report of Dr. Eric Sinclair, the Inspector-General of the Insane in New South Wales, which has just been presented to Parliament, is of rather a disquieting character, inasmuch as it reveals not only a relative but also an actual increase in the insane population in this State for the year ending December 31st, 1902. The number of insane persons under official cognizance on that date was 4,687, being an increase of 199 over the corresponding figures for the previous year. The average annual increase for the last twenty years has been 119, so that the increase this year has been considerably over the average. The proportion of insane to the general population is 1 to 299 persons in the State. The number of patients discharged recovered was 378, equal to 39.91 per cent. on the admission and readmissions. The recovery-rate is a good one, and compares favourably with the English rate of 37.27 per cent. The year 1902 had been characterized by the largest number of admissions, and examination of the figures shows that each year an increasing number of insane must be provided for in the hospitals and licensed houses. It is evident that the present institutions could not continue to accommodate this increasing number of patients, and there is at present urgent need for additions to the existing hospitals and also for new institutions. Although this has been pointed out in the annual reports for some years past, so far no steps have been taken to meet the requirements. In view of the overcrowded state of these institutions the recovery-rate is remarkably good, as there is not the same opportunity of using all the modern methods of treatment, and all the energies of the staffs have to be directed to avoiding accidents and merely housing the patients. To meet the present needs of the situation Dr. Sinclair strongly advocates the erection of the proposed hospital at Orange. The cost of maintenance had been considerably increased last year owing to the high prices of provisions, the result of the federal tariff, and the drought. In the year 1901 the cost of provisions was £44,278 for 4,225 patients, while last year it was £56,884 for 4,376 patients. The weekly cost of maintenance per patient was 12s. 7d.

The sanatorium at Wentworth Falls for the open-air treatment of pulmonary phthisis is continuing to do good work, and, owing to the increased demand for accommodation, it

is proposed to erect additional buildings to accommodate 20 more patients. At present 20 patients are being treated there, and others are waiting their turn for admission. A further sum of £385 is to be spent in providing for the laundry and other additional administrative buildings in connexion with the institution. The supply of water is at present exercising the minds of the Committee, and it has been decided to wait upon the Minister for Works, and request the services of an official of the department to report upon a suitable site for the conservation and supply of water for the sanatorium, as it was feared that during the summer months the water stored in the tanks would prove inadequate for the wants of the patients.

The Railway Commissioners have drawn up a new by-law with reference to expectorating in railway and tramway carriages. This has been approved by the Governor in Council, and will come into force on August 1st. It is as follows: "Any person in any railway or tramway carriage who shall spit into or upon any such railway or tramway carriage shall be liable to a penalty not exceeding £2." It is noteworthy that the restriction does not apply only to smoking cars but to all descriptions of carriages.

In the Legislative Council recently, in reply to a question by the Hon. Dr. J. M. Creed, the Vice-President of the Executive Council stated that "the advocacy of the merits of vaccination was not regarded as a suitable subject of specific instruction. The matter fell within the scope of the general functions of the Board of Health, from which body it would no doubt receive attention." This attitude of the Government, in the face of a serious outbreak of small-pox in Tasmania, and the failure of the quarantine regulations to keep out the disease from the Commonwealth, is one deserving of severe condemnation. But it would seem that the medical profession is itself to blame for a large amount of the indifference with which the practice of vaccination is regarded by the general public. The Hon. Dr. C. K. Mackellar has introduced a Bill into the Legislative Council to make further and better provision for the protection, maintenance, education, and care of infants; to provide for the inspection, supervision, and control of places established or used for their reception and care; and to constitute children's courts. This Bill is on somewhat the same lines as one introduced by Dr. Mackellar last session, but which did not reach further than the second reading. Dr. Mackellar has been lecturing and giving addresses on this subject for some time past, and it is to be hoped that his Bill will become law during the present session, as it deals with a matter of great public importance at the present time. In the Legislative Assembly Mr. Kelly moved that a select committee be appointed to inquire into and report upon the manner and method of treating the inmates in Newington and Brookwood Asylums. Several deaths had occurred under what might be termed as curious circumstances, but no inquests had been held. Proper attention was not given to the patients. He ventured to say that 50 or 60 per cent. of the inmates of these asylums would be found to have come from the adjacent States. The Minister for Lands said that the matter was now being investigated by one of the honorary Ministers, and suggested the adjournment of the debate upon the motion until that report had been presented to Parliament. This procedure was agreed to, and the debate was adjourned for a fortnight.

Plague matters are at present fairly quiet. No further case of infection in man has occurred, though plague-infected rats and mice continue to be found from time to time. For some time past the Board of Health has had under consideration the desirability of securing uniformity of action on the part of municipal councils, in order to prevent a recurrence of plague. A circular has been issued to the council clerks of the municipalities in the State. It sets out that spread of the infection over the metropolitan area has been observed to be closely associated (1) with the presence of plague rats at wharves at which produce is customarily handled, and (2) with the distribution of fodder to the retail stores which are found in every municipality. The circular also states that in all probability a third epidemic of plague will declare itself in the course of a few weeks, and that the danger might be much diminished, and spread of the infection much limited, if all produce stores and other places at which food for man and cattle is stored or sold were so constructed and maintained as to render harbourage of rats on them as little likely a possible. Attached to the circular is a model of the by-laws prepared by the Attorney-General for the guidance of the municipalities in taking action in accordance with the wishes of the Board.

CAPETOWN.

Proposed Medical Congress.—The Profession in South Africa.—The Reciprocity Question.—District Surgeons' Association.—Ophthalmological Practice at Johannesburg.

There has been a certain amount of delay in the arrangements for the projected Medical Congress, owing to the President-elect, Dr. C. F. K. Murray, having been compelled to relinquish the post, on account of having to take a voyage to Europe. The election of a successor gave rise to a good deal of unpleasantness, as matters of this kind often do in Capetown, but the difficulty was eventually met by the selection of Dr. Sinclair Stevenson, who served as president of the only Congress that has thus far been held in this city. Dr. Stevenson is a highly respected practitioner, at present a member of the Medical Council, and at one time president of that body, and in his hands there is little doubt that everything possible will be done to promote the success of the Congress. It is doubtful, however, whether the attendance will be as good as in previous years, owing to the fact that the derangement of practice caused by the war will render it very difficult for men to leave their work.

I alluded just now to the chronic unpleasantness which mars professional intercourse in Capetown. It is very curious to note how closely the standing feud in our medical circles simulates the political one that gave rise to the war. It is a "Burgher" and "Uitlander" question on a small scale. Capetown is an old city, and, until late years has been a sort of little world in itself, running quite apart from the general stream of South African life. Formerly, the ranks of the medical profession were almost entirely recruited from sons of the local families. With the great expansion of late years, numbers of men, both from Great Britain and from other parts of the Colony, have come in, and there has come into being a most regrettable division into two camps, one that of the sons of the local families and their partners, and the other that of the comparatively new arrivals, and whenever any medical question arises, whether it be connected with the British Medical Association, the Medical Council, or an election to the hospital staff, the "Burgher" *versus* "Uitlander" squabble comes up, and hard things are said on both sides, and too often find expression in the lay press.

The eternal political divisions which find their way into every walk of life in this country have recently made medical matters the subject of a regular full dress debate in the House of Assembly. Formerly any diploma indicating a certain curriculum, and carrying with it the right to practise in the country where it is granted, could be registered in the Cape Colony, although the Natal Medical Council has, since its formation, refused to register any diplomas "except such as entitle the holder to registration in the United Kingdom." But some two years ago the Cape Medical Council adopted a regulation exacting the additional condition that no diploma should be registrable "unless the country granting it conceded equal rights to diplomas from the United Kingdom." This is generally known as the reciprocity regulation, and it was fiercely opposed by the two members of the Medical Council who happen to be members of the Bond, but it was carried, received the sanction of the Government, as all Medical Council regulations have to do, and became law. Almost immediately afterwards it was taken over word for word by the Transvaal. It is really stricter than the regulation in Natal, inasmuch as the meshes of the latter, being based on British rules, are wide enough to admit Italian graduates, whereas the Cape, in a recent case, refused to register an Italian, holding, as it was quite entitled to do, that the privileges in Italy cannot be interpreted as involving "equal" rights. But it is somewhat easier than the Transvaal regulation, inasmuch as a rider to it exempts from its operation bona-fide South African students who either qualified or commenced their studies in a foreign country before the passing of the regulation, whereas the Transvaal regulation has no such rider. Yet, curiously enough, although in one case the Transvaal rejected a South African with a German qualification who was later accepted by the Cape by virtue of the rider, the northern colony has recently registered an Italian diplomate who had been refused at the Cape, albeit the regulations of the two Colonies are word for word the same. I can only assume that the Transvaal authorities took the view of your Privy Council that the Italian privileges amount to reciprocity. However, a

Bond member of Parliament, during the discussion on the estimates, made a first attack on the reciprocity regulation, and he was supported by nearly all the leading lights of the same party, who persisted in elevating the question to the purely political plane, and in characterizing the action of the Medical Council as an ebullition of Jingoism. But the Government stood by the Council, and, as the discussion was raised on the estimates, nothing came of the onslaught, but it is almost certain that, should a Bond Minister ever come into power, an attempt will be made to coerce the Council into rescinding the regulation. Still, as I read the Act, Government has only the power of refusing assent to a new regulation, not of overturning an existing one, so that, unless by means of a wholesale change in the *personnel* of the nominee members, it could hardly effect a change so long as medical opinion remains as it is. At present, out of the nine members of Council, four are elective, one (the Colonial Medical Officer of Health) *ex officio*, one a dental nominee, and three medical nominees. But, as the dental member has a right to vote on all questions if medically qualified, which the present member is, this gives the Government a clear majority if it likes to push matters to extremities. The present Government has, however, just reappointed as its nominees the one dental and three medical members, who retire at the end of this year, at which date the three years' tenure of office of the present Council expires. Only two members are against the reciprocity regulation, one, Dr. A. H. Petersen, being a nominee, and the other, Dr. J. H. M. Beck, who is also a prominent member of the Assembly, and almost certain to be a future Minister, being a representative. And it is hardly likely that any Government would go to the extreme step of an entire change of nominees on a matter like this, although, politics entering so deeply into all things here, there is no knowing what may happen. So sensible, however, is the profession of the danger, that I understand a determined attempt will be made to prevent the return of Dr. Beck at the ensuing election, although he is personally very highly respected, and has sat in the Council since its formation. He holds very strong views against reciprocity, and never loses an opportunity of endeavouring to widen the registration portals. At the last meeting he strongly opposed a regulation for the admission of dentists, which was taken word for word from the British rule as to curriculum, and succeeded in getting the definition of a year as "one winter and one summer session" deleted, avowedly in favour of certain American and colonial men. As a matter of fact, I do not think that political feeling had much, if anything, to do with the imposition of the reciprocity regulation. It would have been imposed long ago but for the fact of a Ministry being in office which it was known would not sanction it. The main motive was the feeling that reciprocity is a just principle, and besides, there is uppermost in the minds of the South African practitioners the fact that the profession is so much overstocked, that any measure restricting the influx is good alike for the men here and for the men who would come. Added to this is the feeling that the Englishman must invariably go to the wall before the German or Russian graduate, for two reasons, one being that in all the Dutch districts, the farmers will employ any man rather than a Britisher, and the other that the foreign graduate is unhampered by ethical restrictions which the British trained man usually feels binding upon him.

The District Surgeons' Association has already accomplished some good work in aid of the body of medical officials whom it represents. It has secured a practical promise that district surgeons will, in future, receive an allowance for medicine which at present they have to supply free, at a cost which in some cases approaches or even exceeds the amount of their salary, and that the *post-mortem* fee will be increased. It has also secured the passage in the Legislative Council of a motion condemning the practice of the officers of the Cape Medical Corps being allowed to treat civilians, a grievance felt keenly by the district surgeons of the native territories garrisoned by the Cape Mounted Rifles.

I notice that a correspondent in your issue latest to hand inquires as to the opening for an ophthalmic surgeon in Johannesburg. Unless he is amply provided with capital, and prepared to take risks, I should not advise him to go there. There are already several very well qualified specialists in that line, more than sufficient for the available work. Living is very expensive, especially in the matter of rents. Whether he secured a house in a central position, or central rooms and a house in the suburbs, he must be prepared, even if his ideas are modest, to set aside £40 to £50 per month for rent. Other items are not much higher than at the Cape, probably about 75 per cent. higher than in England. But really central houses or even consulting rooms are almost unobtainable at any price.

CORRESPONDENCE.

THE (PROPOSED) MEDICAL ACTS AMENDMENT BILL.

Sir,—Presumably this Bill, as it appeared in the Supplement to the British Medical Journal of August 22nd, is intended merely as a very rough draft sketch of what its authors wish the Divisions to discuss before the several matters with which it deals are put into some less inaccurate form. At least I trust that it is so, for if it be seriously proposed to introduce this Bill in its present dress, it will, unless ruthlessly amended, come out as one of the most enigmatic, inaccurate, and ungrammatical Acts of recent years, and that is saying a very strong thing. Now, without expressing any approval or disapproval of any of the objects aimed at in the Bill, as far as I can detect them, I will here point out some of the many evidences of careless drafting and looseness of diction which seem to be the most noticeable feature of the Bill.

1 (*b*). As at present proposed, any graduate, medical or not, of one of the universities named, may vote at the General Medical Council elections (in connexion with his particular university), provided he is a registered practitioner according to Section 21 of the Bill, although he may have no medical connexion with his university. Can the framers of this scheme really intend this?

(*c*). Is it intended that the voters referred to in (*b*) should be included in (*c*)? If so, most practitioners would have two votes to the single vote of some. The body termed "General Medical Council" in this section is referred to in some sections as the "General Council," and in others as the "Council" simply.

(*c*), (*d*), (*e*), (*f*). Instead of the clumsy phrase "hereinafter called direct representatives" being so frequently repeated, why not introduce a definition in the proper place, and thus do away with the awkward arrangement hidden away in Section 3 (3)?

2. The concluding three lines should be introduced into some section dealing with the functions of the General Medical Council, or should constitute a separate section.

3 (2). In order to avoid the ambiguity caused by the verbal arrangement suggested, the concluding thirteen words should be inserted after the word "election," four lines higher up.

(3) (*a*). The phraseology might be simplified and shortened, thus: "The nomination . . . . not fewer than twelve persons entitled to vote at the election; and, etc." But should this not be done, the word "or" (line 3) should, at least, become "and."

(*b*) Line 3, after the words "by post to" insert the words "and to the registered address of." Line 4, omit the words "at his registered address."

(*c*) Line 2, after the word "for" insert the word "only."

(5) Line 2, "retiring" is hardly the word to apply to a man "at the expiration of the period for which he was elected," particularly as the word "retired" (line 9) is confounded with the idea of "resignation," which is correctly used in line 5. Line 5.—The (use, line 1, and) repetition of the phrase "any such" are unfortunate; presumably the meaning of the framer is "A direct representative elected in the place of a direct representative on the expiration of the period for which the latter was elected shall come into office at the expiration of such period, and a direct representative elected to fill the vacancy caused by the death or resignation of a direct representative shall come into . . . . for which such *resigning* or . . . . elected."

4. Line 6, for "made" read "appointed."

6. Line 2, for "appointed" read "nominated."

7. Line 4, "Acts."—Since by Section 41 (2), the word "Acts" includes the Midwives Act, 1902 (notwithstanding "unless the context requires," which it does not), it would be well to exclude specifically this 1902 Act from Section 7.

13. The wording is very obscure, and I am not sure that the real meaning is set forth. Why introduce, without definition, and suddenly and without notice, "the professional curriculum" in the middle of a clause? The mere "antedating" of registration could not possibly postpone the commencement of the "professional curriculum" until after registration had been "effected."

14. Line 2. The "attempt" is very properly referred to as a "misdemeanour" in England or Ireland, but why is it to be in Scotland a "crime" *or* an "offence"? Which of the two does the draughtsman wish it to be? And, if a crime, why?

15. Line 6, for "shall" read "may."

16 deals with *assistant* examiners, who are referred to in (1) as "examiners," though in (2) the expression "the said assistant examiners" appears.

17. Line 6, "Final Examination." If this means "State" examination it would be well to say so, especially as the latter phrase occurs in (2) line 5.

20 (4) and (5). Does the word "Council" here refer to the General Medical Council or to the Privy Council? [*vide* 17, (1)], and, whichever "Council" it may be, does the word "allow" (5), line 3, include "approve of and pay for"?

21. Line 1, omit the words "*for Regulations for Registration.*" Is the person who has satisfied the requirements of this section to be entitled to practice without more being done? Will he be authorized to assume some distinctive title which may indicate that he is now a "registered medical practitioner," though without any diploma from a "medical authority"?

22 (1). Line 5, why apply for "continuance of" the entry of his name on the *Medical Register* for the ensuing year if the Registrar is to cause the name to be "entered" (line 9)—not "continued" on the *Register* (*Medical Register?*)—for the ensuing year? As the section stands there is to be no "continuance" about it; the name either goes on or does not go on. As in the case of a publican's licence, which is either granted or not granted, it is perfectly incorrect to speak of "renewal."

(2) Line 3, is the notice to be forwarded by post and prepaid?

(3) The language is peculiar. Is it intended to mean that "the General Registrar shall forward by prepaid post to each of the registered medical practitioners whose addresses as appearing in the current *Medical Register* are without the United Kingdom a notice corresponding with the notice mentioned in subsection (3) of this section, such notice to be forwarded to each of such practitioners not less than 42 days prior to the 31st day of January in each year"? If it does not mean this, what does it mean?

(4) Line 4, omit the words "holding a commission," and insert the words "so long as he continues"; line 5, after "army" insert "medical service"; omit "and" and insert "or is"; omit "being."

23 (3). See Section 6 and Section 20 (5).

25 (1). In the event of the name of a person who, although he has been registered under Section 21, and is engaged in the practice of his profession, may not be in possession of any medical diploma [granted by any corporation], being erased from the *Medical Register* for a limited period, the General Registrar will (as this section stands at present) have no power to restore the name, since the power so to do depends on the possession by the person of a "medical diploma." Was this the intention of the framer of this subsection?

(1) Line 9, for (the second) "the" read "such." Line 13, for "the" read "such." Why not provide for the insertion on the *Medical Register* of medical "diplomas" (last line) obtained by such practitioners as may be registered under this Bill? This subsection provides for the *restoration* of the name and the "diplomas," and Section 21 for the entry of the name (?), but nowhere do I find any provision for the "entry" of the "diplomas."

(2) Would not the concluding clause of this subsection convey most of what is intended by the whole of the subsection? Line 1, "It shall be lawful for each.....etc." It *is* lawful already, though the wording would suggest that it is not lawful, and it impliedly restricts the revoking, suspending, and cancelling by a medical authority to the case of a person whose name "has been erased" by the General Medical Council. It suggests that the medical authority should wait for the Council. The terms "medical authority" and "medical corporations" are loosely used, and, apparently, in the same sense, and without any definition in the Bill itself.

(3) Whatever may be intended here, the word "and," in line 6, should come out. Suppose a man who, in addition to having a Doctorate in Medicine, had a Doctorate in Laws also, had his name erased from the *Medical Register*, would he, in the opinion of the proposer of this scheme, if he continued during the period mentioned to describe himself as "Dr. So-and-So," become saddled with the responsibility of this subsection? I do not quite understand the reference to Section 24. Section 14 can hardly be intended, seeing that the latter deals with *students*, and speaks of "misdemeanour," "crime," and "offence;" this subsection mentions "offence" only.

27. Line 2, "Council"—Which Council?

28. (3) Lines 11 and 12, for "extend, to repeal, or alter," read "affect."

(4) Line 1, for the words "or other certificates" read the words "nor any other certificate which may be." Line 5, after the word "same" insert the words "shall at the time of signing."

29. Is this intended to bring in such a body as the Obstetrical Society? Last line, presumably the word "infringement" was intended instead of the word "offence."

31. The words "*Interpretation of Terms*" are out of place here (see Section 36).

(2) Line 2, omit all the words after the word "by" to the end of the clause, and insert the words "any person." The Interpretation Act of 1889 provides that, unless the contrary intention appears, in statutes passed after 1850, words importing the masculine gender include females, the singular includes the plural, and the plural the singular, etc.

32. Line 2, for "the" read "a."

33. Line 5, omit the word "such," and insert the words "any deceased." Line 6, omit the words "deaths who may be deceased," and insert the word "dentist."

34. Can it be intended that the names of the members of the honorary medical staff of each hospital should be exposed to public view on the outside of the hospital premises? The phrase "affixed to public view" is novel. Lines 9, 10, and 11. If an unregistered "practitioner" exposes either his real name or an assumed name on his house (as required) he cannot be reached by this section; and, without more on his part, Section 30 will not touch him.

36 (*a*). Line 1, the word "person" does not occur in Section 24. Lines 2 and 3, why use such an uncouth and so meaningless a phrase as "such said"? In place of it the word "this" should be used in line 2, and the word "these" in line 3; but the whole subsection (*a*) is perfectly unnecessary (see Section 31 (2) for reference to the Interpretation Act of 1889).

(*b*) Line 1, for "or" read "and." Line 2, for "means" read "mean."

37. Line 2, for "increase or diminish" read "affect." The phrase "appointed day," which occurs not less than four times in seven lines, is nowhere defined. "Appointed day," in an Act of Parliament, does not necessarily mean the date of the commencement of the Act.

I am of opinion that this proposed Bill should be recast before it is submitted for consideration to the Divisions of the Association.—I am, etc.,

Lincoln's Inn, W.C., Aug. 29th. BERNARD O'CONNOR.

SIR,—With your kind permission, I should like to make one or two brief observations on the Medical Acts Amendment Bill now before the Divisions.

1. *Fees for Attendance at Councils* (2).—I never did understand why the representatives of the medical corporations should be paid out of the funds of the General Medical Council by the general body of the profession, since these representatives do the work of the corporations only, and in all equity they should be paid by the corporate bodies whose work they do and whom they represent.

2. *Registration.*—One or two pounds might be charged as the fee for the registration of those whose names are placed on the *Register* for the first time. I think that ten shillings should be an ample fee for every subsequent annual registration.—I am, etc.,

Stillorgan, co. Dublin, Aug. 30th. P. O'CONNELL, M.D.

REPRESENTATIVE MEETING.

SIR,—As a Divisional representative who attended the last meeting with a perfectly free hand, and not as a delegate, I trust that all the Divisions will discuss the matters referred to them by the Council some time before April.[1] If they do so, then each representative will be able to vote judicially, and not as a machine (see By-law 18).

In reference to the appointment of substitutes, might I suggest that each constituency appoint a representative and also a deputy, and that if neither of them are present at the annual meeting that the Council have power to appoint any one resident within the area and present at the meeting as the Divisional representative?—I am, etc.,

Southampton, Aug. 31st. A. A. MACKEITH.

[1] BRITISH MEDICAL JOURNAL, p. 426.

REGULATIONS FOR THE PRACTICE OF MIDWIVES.

Sir,—While expressing my appreciation of the rules and regulations drawn up by the Central Midwives Board for the practice of midwives, I would like to draw the attention of modern obstetricians to what I consider an extraordinary rule under Section E, "Direction to Midwives." Paragraph 2 reads:—"E. When called to a confinement a midwife must take with her (*d*) an antiseptic lubricant for smearing the fingers, catheters, douche nozzles, and enema nozzles before they touch the patient."

I should like to know if there is any good purpose served by the use of lubricants in obstetrics. I personally am not aware of any, especially as Nature supplies one in abundance, namely, the vaginal secretion, whereas the use of a lubricant, even an antiseptic one, has the following objections:

1. At present, the vaseline pot or lard pot of the "handy woman" is the commonest means of spreading puerperal infection, and consequently is the main factor in the high maternal mortality in working-class practices.

2. Lubricants, when exposed to the air, are good culture mediums for the growth of bacteria.

3. Antiseptic lubricants are usually mechanical mixtures, for example, carbolized vaseline. In this case the vaseline protects the bacteria from the action of the carbolic acid; and, further, it is well known that carbolized vaseline has no bactericidal power.

4. If an infected lubricant be introduced into the vaginal canal the lubricant will hold the infection *in situ*, and no amount of liquor amnii will be able to dislodge it.

Now, in addition to these arguments, I think that if lubricants are allowed many midwives will think that the sterilization of their hands will be unnecessary if they have them well covered with a supposed antiseptic (?) lubricant, thus defeating the whole idea of cleanliness. Moreover, the transference of the lubricating pot from one patient to another will be a constant and unnecessary source of trouble.

The use of lubricants in obstetrics is prohibited by the Rotunda Hospital, the premier maternity institution of the British Empire.

No modern surgeon smears his hands or instruments with lubricants in performing any surgical operation. Why should they be used in obstetrics?

Of modern authorities, Norris and Dickenson, the authors of the standard American textbook, forbid the use of lubricants; Lusk does not recommend them.

I should like to hear what some of the leading obstetricians have to say about this matter, because I think that it would be a great improvement if this paragraph were deleted, and it would probably prevent a great deal of unnecessary puerperal fever.—I am, etc.,

R. P. Ranken Lyle,
Lecturer in Midwifery at the University of Durham College of Medicine.

Newcastle-upon-Tyne, Aug. 26th.

MEDICAL DEFENCE.

Sir,—Having taken an interest in the reform of the British Medical Association, I am naturally anxious to understand the working of the new Constitution. From the British Medical Journal, p. 265, I learn that:

> The new Council at its first meeting on Wednesday, July 29th, on the proposition of Sir Victor Horsley, appointed a Committee to consider whether the general or the individual medical defence of its members should be undertaken by the British Medical Association. The Committee was further instructed that if its report should be in favour of the proposition, it should present a scheme according to which the Association could, in the opinion of the Committee, safely and efficiently execute the work of medical defence.

Now, I understood that no member could bring anything before the Association except through his Division; that he must first get his Division to take up the question he wishes to bring forward. It would appear, however, that the Council can still exercise great power, if it can do as we are told it is doing.

To offer to defend its members who get into trouble is to vote in favour of the Association taking up medical defence, and I have no doubt that if the question were put to the vote now it would be carried by an overwhelming majority, but there are other questions than the mere selfish one which must be considered.

In the first place, although we have £80,000 worth of property and a good income from the Journal, no member can receive any of that money, even if the Association was broken up. Would it not be like giving me money if the Association defended me when in trouble? I think it would, and for that reason we ought to have nothing to do with medical defence.

In the second place, if we undertook medical defence we would lay ourselves open to the charge of being a trades-union, and once we descend any lower than we have done in that direction our good influence upon public questions, if ever we had any, will be lost.

In the third place, if we take up medical defence we depart from the objects with which the Association was originally founded, and in the pursuit of which it has prospered; and it might become a question whether even a majority could apply the funds of the Association to an object so alien to the intentions of its founders. It seems to me that the correspondence columns in the British Medical Journal is the only place where the question can be properly put before the members, and I trust you will insert this letter in your next issue.—I am, etc.,

Denholm, Roxburghshire, Sept. 8th. John Haddon, M.D.

P.S.—No doubt we have a large income, which may continue if the new Constitution works satisfactorily, and it may be advisable to make some changes in accordance with Surgeon-General Evatt's suggestions. We might, I think, make a distinction between new and old subscribers by allowing those of twenty years' standing to have the Journal at half price. That might induce some to continue membership longer than they would otherwise do, and after paying twenty years in equity some reduction might be given.

OPHTHALMIA NEONATORUM.

Sir,—Dr. Sinclair, in his able letter on Ophthalmia Neonatorum and the rules promulgated by the Midwifery Board, says, "As I wish to be serious, I shall say nothing about the suggestion—nay, rule—that she (the midwife) must attend to the eyes as soon as the head is born." The learned President of the Board was one of my examiners, so I suppose the rule is all right—but, as Lord Dundreary used to say, "There are some things a fellah can't understand."

We used to be taught to "follow down the uterus" during delivery of the body. Besides, is the cord never round the neck? Do not the shoulders sometimes endanger the perineum? and what would happen if the midwife had been called hurriedly to a lady with a loaded rectum?

No, Sir, I venture to think that for once the worthy President forgot his student days, and was lulled into the temporary oblivion born of an aristocratic practice, assisted by skilled and deft nurses.

Surely a little Condy judiciously applied when the child is being washed would meet the circumstances of most cases.—I am, etc.,

Upham, Hants, August 31st. James C. Hoyle, M.B., D.P.H.

THE RELATION OF HUMAN AND BOVINE TUBERCULOSIS.

Sir,—Dr. Nathan Raw's contention that "human and bovine tuberculosis are different species of tuberculosis" is of great interest in drawing attention to this subject, but at the same time it is far from convincing. That they are manifestations of the same disease modified by environment seems to be the truth. His further thesis that "the child is more susceptible to bovine than to human infection, and that the general mode of infection is by the ingestion of tuberculous cow's milk," is certainly not proven, and not a single fact is brought forward to sustain it.

Dr. Raw concedes that Professor Koch is correct when he declares that bovine tuberculosis cannot produce the human variety in man; but, in order to reconcile this statement with his own views on the matter, he evolves the quite unnecessary theory "that man is attacked by two distinct varieties of tubercle, one conveyed by infection from one person to another, the other by receiving into the body bovine bacilli in milk or meat," and the only argument adduced in favour of this theory is that the results of tuberculous infection in the case of infants and of adults are quite different, and that in the former they approximate to those found in bovine tuberculosis, while in the latter they do not.

In investigating this question it is of the greatest importance to study the manner in which the tubercle bacilli are introduced into the system. Now it is a generally accepted fact that diseases attack the weaker organs, or those in most active use and necessarily more prone to accidental debilitating influences. In the case of the healthy infant the alimentary system is in far greater active use than, for

instance, the respiratory organs, and in the case of hand-fed infants, vastly more subject to abuse as well. This is one of the causes for the frequency of tuberculous infection starting first in the mesenteric glands in infants. I say "infection" advisedly, for these glands, in carrying out their proper function, filter out and imprison those tubercle bacilli (among others) which have found their way through the walls of the intestinal canal, and it is only when this function ceases to be protective, either on account of malnutrition of the tissues or of over-abundance of the bacilli, that general tuberculosis supervenes. On the other hand, in the case of young adults, when they are practically starting on the rough battle of life, the respiratory organs are subject to great stress from multitudinous causes and become liable to all sorts of accidental debilitating influences. They are then more prone to tuberculous infection than they have been throughout childhood. It must be remembered also that every adult has been through the infantile fire, so to speak, and those with inefficient mesenteric glands have been eliminated, so that the chance of infection through the digestive organs at this age has been greatly diminished, if not annihilated.

Why should it be presumed that "infantile" tuberculosis, as distinguished from "pulmonary" tuberculosis, originates from the ingestion of cows' milk? Dr. Raw, without a shred of proof, says that it does; whereas we have Professor Koch's dictum that it does not! One of the chief characteristics of the infant is its constant endeavour to cram every available object into its mouth for the purpose of suction, and it is an undoubted fact that almost every available object is liable to have on its surface the bacilli of what has been called "human" tuberculosis. Why, then, insist upon the active operation of the bacilli of the so-called "bovine" order? Seeing that there is no doubt as to the infectiveness of the "human" bacillus, and that that of the "bovine" is at least questionable, irrefragable proof of the latter's activity is required, and not merely a pious conviction.

That "infantile" tuberculosis should be found chiefly in children brought up by hand, either on cows' milk or other food, is not surprising, for the more natural the diet the more healthy the digestive organs, and vice versa.

Admitting, as even Dr. Raw does, that the bacilli producing "pulmonary" and "infantile" diseases are similar, at any rate, microscopically and chemically, there is every reason to presume that they are identical, and that the difference in the symptoms of the two diseases depends on the environment of the causal bacilli. For these bacilli, capable of setting up pulmonary phthisis in a decadent lung, are probably profoundly modified after a passage through the human digestive tract, and such of them as survive give rise to a disease —that is, a set of results distinctly different from the disease, or a set of results normally produced by them.

That "bovine" and "infantile" tuberculosis are so similar in their manifestations is another point in favour of the above views, for it is vastly more probable that such an animal as the cow should become infected by the ingestion of tubercle bacilli with the food than by inspiring them into lungs, which are certainly not overstrained. Of course the lungs with other tissues may become infected subsequently.

If when he says "man is attacked by two distinct varieties of tubercle" Dr. Raw means that man suffers from at least two distinct varieties of tuberculosis due to Koch's bacillus, I am quite in accord with him. Even in those cases where he has noticed the two varieties in one lung, these have simply been modifications of the same disease, one due to direct infection, the other to indirect infection from "other parts of the body."

It is perhaps useless to inquire which of these diseases under discussion is a modification of the other, or whether they are both modifications of some common type, but it is interesting to note that in the early part of the last century, before the human race had taken to promiscuous travelling, the only countries where tuberculosis was unknown, or very rare, were those in which the people used the milk of other animals—goats, sheep, etc.,—and not that of the domestic cow.

I am, etc.,

Brondesbury, Aug. 30th. E. C. KINGSFORD.

NURSING AS AN OCCUPATION.

SIR,—Miss Margaret Breay, in her letter on this subject, takes exception to the suggestion that medical men, being competent judges of a nurse's qualifications while the lay public are not, should protect their patients from "quack nurses." Your correspondent considers it to be the duty of the State to safeguard the public by a system of registration for nurses, and contends that, as the standard of medical education has been raised and the dignity and honour of the profession increased by the Medical Acts, the passing of a Nursing Act would have a similar effect on the nursing profession. I venture to think that she is wrong. While agreeing that a Nursing Act would certainly get rid of those who had no training at all (a desirable end more quickly reached by the refusal of medical men to recognize untrained people as "nurses") it would, on the other hand, let loose on the public a vast army of women possessed of the "little knowledge" which "is a dangerous thing," yet guaranteed by the State as trained nurses.

The recent proposal of the Local Government Board to grant the title of "qualified nurses" to one-year's probationers at workhouses does not hold out much hope of a high standard of training being exacted by the State preliminary to registration.

The enormous number and variety of hospitals in the United Kingdom, entirely free from Government control, receiving probationers for training, makes uniformity of nursing education impossible. If, as in the case of medical education, only the large general hospitals with medical schools were to be recognized as training schools for nurses, as they are for doctors, uniformity of training would be feasible and a high standard be ensured. But such a course, or indeed any definition of a "training school" under the proposed Act, would mean the virtual wiping out of all hospitals and institutions not so recognized, for few could afford to pay an entire staff of trained nurses, and none but "training schools" could receive probationers. In the case of some so-called "hospitals" and "nursing homes" only good could result, but great hardship would be inflicted on the majority of the smaller provincial hospitals, which are doing invaluable work for the sick poor.

The alternative of allowing all nurses certificated by their training schools to be placed on the proposed register, provided they attained the State-defined minimum of nursing education regardless of the length and kind of training they had received, would not tend to raise but to lower the standard to that of the smallest and most inefficient hospital recognized by the State as a "training school." The Local Government Board's "qualified nurse" would be, unless they denied their offspring, just as much as the "Bart.'s" graduate of four years' training, a "State registered nurse," and as such legally qualified to undertake any and every nursing duty, midwifery alone excepted. How such a state of things would "help the best" one fails to see. The more ignorant the nurse the more likely she would be to take upon herself duties she was neither entitled nor sufficiently experienced to perform, and the lay public would be even less able than at present to judge of a nurse's qualifications, all alike being labelled "State registered nurse."

With regard to the latter part of your correspondent's letter, it seems hardly necessary to point out that as a medical man is answerable to no one, and is solely responsible for the diagnosis and treatment of his cases, and as a nurse is not an independent practitioner, and does not originate but merely carries out the prescribed treatment under the medical man's supervision, they do not stand in the same relation to the public, for whose protection the Medical Acts were primarily passed. Also the personal characteristics of a nurse who lives with her patients, whether at home or in a hospital, must be of much greater moment to them than those of the doctor, whom they only see at intervals, and for comparatively brief periods of time.

It is necessary to know more about the condition of nurse training in the Colonies and the United States before blindly following their lead in the matter of registration. In Natal and Cape Colony there are few civil hospitals, only five of more than 80 beds, and nearly all the civil hospitals with the exception of Kimberley are under Government or municipal control, and are State or rate supported. They cannot therefore be used as a basis of comparison with our voluntary hospitals. In the United States, according to an article in the *Hospital* on the subject appearing a few weeks ago, the conditions as to registration are most unsatisfactory, and, if I remember rightly, a year's training only is required, in some of the States, as a qualification for registration.

State registration of nurses cannot guarantee either the character or attributes necessary to a nurse; and if it fails equally to ensure a high standard of training and efficiency, the injury it would inflict on the nursing profession would

not be counterbalanced by ridding it of a few impostors in uniform.—I am, etc.,

September 3rd. A Hospital Sister.

THE INDIAN MEDICAL SERVICE.

Sir,—The Indian Medical Service is deeply indebted to you for so ably advocating their claims from time to time, and the announcement recently received in this country by cable that the British Medical Association was making an appeal to members of Parliament on behalf of the service and as to the many and great disadvantages under which it at present labours, has been received with a feeling not only of relief but intense satisfaction. The service has been most loyal, I may say eminently so, to the Government it serves, and has borne the strain and hardships of the last few years without murmuring, with the hope that things would improve; it has, however, had little or no sympathy shown to it, so that discontent has gradually become rampant throughout the ranks of the service till it could stand it no longer, and the present appeal is the result. It was hoped that, when the new warrant for the sister service became an accomplished fact, the Government of India would have lost no time in applying its provisions to India and the Indian Medical Service; a long time has elapsed since then with no apparent attempt on their part, which has naturally disheartened the service generally, and it soon became obvious that no, or little, sympathy of an active or practical character could be hoped for from them. The present action of the British Medical Association will be appreciated keenly by all ranks, and it is sincerely hoped that no half measures or compromises will be put up with. The time has come when science, and medical science specially, should be represented on the highest councils of the land, and we can expect no real good or amelioration of our conditions of service until the head of the service is represented in a very substantial manner at head quarters, that is to say act in the capacity of a medical secretary to the supreme Government, and be attached to the Viceroy's Council. There is at present a so-called "legal member" and a "public works" member, then why in the name of Providence should there be any objection to there being a "medical and sanitary" member? And as regards the actual work in either the Viceroy's or any of the other provincial Legislative Councils under Lieut.-Governors of local administrations, I feel sure that the inclusion of an officer of mature service in the Indian Medical Service who has by dint of that service acquired a peculiarly good and thorough knowledge of the country, and such as is obtainable by few in other departments of the public service in India could be utilized with much advantage to Government and its people, would be a greater gain than having many such as are at present gazetted to the supreme councils of provinces, etc., in this country! Moreover, we have a similar case in that of the sister service, the R.A.M.C., at home, in which the official head, the Director-General, is a member of the supreme council of that department of the State, the War Office Council, and has direct access to the Secretary of State for War; then why should there be any valid objection to the Director-General of the Indian Medical Service having a similar seat on the Viceroy's Council in this country, which is practically subordinate to the Secretary of State for India? Further, there is the matter of the salary of the Director-General Indian Medical Service, which at present barely equals that of a first grade district judge under a local administration, and is quite out of keeping with his high position as what should be Medical and Sanitary Secretary to the Government of India, and whose salary should be at least on a level with that of a general commanding a first-class district in India. In such things we should do well to follow America, where popular prejudice, vested interests, or departmental feeling are not considered in dealing with such matters, and where science has its proper place. It is sincerely to be hoped that the Government of India will take this opportunity—a grand one—to treat these matters sympathetically, and sanction the demands made, which, after all, will not cost very much, and are the most reasonable and are the only conditions likely to relieve the present state of discontent rampant in all ranks of the service, and for the relief of which the service has hitherto in vain looked for redress from the Government it serves. It is stated in the local press that the Government of India has already advised a liberal improvement in the pay and conditions of service of the Indian Medical Service. These have not yet been made public, so it is useless to speculate thereupon. I trust, however, that whatever they may be, such will be made known to the Association, and that no compromise or half-measures will be accepted by it, as the claims are only just and reasonable, and, as such, have been arrived at after much and careful deliberation, and they, and they only, can be accepted as the remedy for a state of affairs which, if allowed to go on much longer, will speedily ruin the prospects of a medical service, at any rate, in its time, acknowledged to be on all sides the finest in the world, and to the skill, devotion, and energy of whose officers this country, and Government in particular, owes so much.—I am, etc.,

August 20th. I.M.S.

DOCTORS AND THE DISPENSING OF DRUGS.

Sir,—I should like to draw Mr. Idris's attention to the following case. My brother started to practise in a village where there was but one other doctor and a chemist. Neither of the doctors dispensed, but it soon became known to my brother that the chemist was doing all he could to injure him for the benefit of his opponent. Now, if it had been illegal to dispense, what redress was there? The remedy, however, was simple enough.—I am, etc.,

September 2nd. Non-Dispenser.

OCULAR ACCOMMODATION AND THE APPARENT SIZE OF OBJECTS.

Sir,—Kindly allow me to draw attention to a fact with which I recently became acquainted, and which perhaps may not be known to others; namely, that one can at will alter the apparent size of objects. That the sensation of varying ocular tension helps us to judge of distance, and that the inferred distance goes to determine the apparent size of objects, are familiar principles. As I reflected on these points the idea struck me that a voluntary change of ocular accommodation should be attended by a change in the apparent size of objects, and on putting the matter to the test I found that this was so. Fixing the eyes on a distant object I shut one eye and then accommodated for near vision. The distant object at which I was looking immediately appeared to shrink. An easy way to accommodate for near vision while looking at a distant object is to direct the eye on the finger tip 3 in. or 4 in. in front of the eye in the line of vision with the distant object. The reason for shutting one eye is to avoid the confusion of pictures due to the convergence that goes with accommodation for near vision.

The explanation of the phenomenon is simple. An object which gave, at the near distance for which the eyes are accommodated, such a retinal image as is given by the distant object would really be a small body; and such is the force of the mental association that the inference becomes involuntary.

The experiment is most striking if tried on one's own reflection in the mirror.

An amateur artist of my acquaintance has successfully used this device in place of a diminishing glass.

In some morbid states objects appear to be small. Usually this might be due to spasm of the muscles of accommodation. But the same result might arise through keeping the eyeballs immobile, so as not to take in the intermediate points by which also we judge of distance. The effect of the absence of intermediate points is illustrated by the well-known seeming smallness of the vertical moon as compared with the horizontal moon.—I am, etc.,

Davos Platz, Aug. 31st. William R. Huggard.

CANCER IN BAVARIA.

Sir,—Some months since your ably-conducted paper had a series of articles containing statistics of cancer in various countries. The rate of mortality from cancer was shown to be abnormally high in Bavaria, and in the Salzkamargate. Travelling through these two districts I am greatly struck by the very large number of lakes in both of them, and also the large proportion of land in both of them covered by forests. A glance at the large scale maps in Baedecker's *Eastern Alps* will confirm what I write. I think the above conditions must have some connexion with the prevalence of cancer, as I have noted in other countries that it is more prevalent in districts containing large bodies of water combined with woods.—I am, etc.,

Badgastein, Aug. 28th. Ernest L. Walford.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: HENRY HUNT, Surgeon, to the *President*, for Yarmouth Hospital, temporary; LANCELOT KILROY, Surgeon, to the *President*, additional, for three months' hospital study; WALTER H. S. SEQUEIRA, Surgeon, to the *Odin*, September 2nd: KENNETH H. JONES, Surgeon, to the *Pembroke*, additional, September 2nd; REGINALD ST. G. S. BOND, Surgeon, to the *St. Vincent*, September 2nd: ALBERT O. BOBARDT, Surgeon, to the *Royal Arthur* for the *Katoomba* and medical dépôt, Sydney, September 2nd; JOHN ST. J. MURPHY, Surgeon, to the *Britannia*, September 2nd; WILLIAM E. MATHEW, Surgeon, to the *London*, September 2nd; JOHN P. H. GREENHALGH, Surgeon, to Plymouth Hospital, September 2nd.

Civil Practitioner A. F. STUDDERT has been appointed Surgeon and Agent at Belmullet, Doohoomay, Blacksod Point, Elley Bay, and Ballyglass, August 26th; Civil Practitioner J. FENDLAY, M.B., to be Surgeon and Agent at Rattray Head.

DEFECTS OF THE NAVAL MEDICAL SERVICE.

FLEET SURGEON writes: It will not be doubted that the letter in the BRITISH MEDICAL JOURNAL of August 22nd, and signed "A Naval Medical Officer," was written by one well qualified to judge of matters as they stand at present, for he speaks with an authoritative voice on points of which details are quite unknown outside the precincts of the Admiralty. It is mentioned in the letter I refer to that "it has become a kind of fashion to abuse the navy." Presumably the writer meant the medical department of the navy, for surely it is not the fashion to abuse the navy as a whole. Nor is it less certain that when the condition of a department is such, that abuse is the term which accurately describes the general run of comments it meets with, bad, indeed, is the state of that department, and verily the truth of "A Naval Officer's" statement in this connexion will not be questioned by those who see things as they are. The writer went on to suggest that the profession at large should feel no gratitude towards those who point out the defective state in which the service is at present: and why? Because the profession is "fearfully overcrowded." What kindly thought! What evidence of keen interest in the welfare of the service in which he holds a commission! The profession is overcrowded, so let the medical branch of the navy stand in its present unsatisfactory state: let it serve as an overflow for those who here will find a living, or probably fail to do so elsewhere. As has been truly said before, fearful indeed must the overcrowding be when men will still come forward to fill even half the vacancies announced. The thanks of the navy, and of the public will shower slowly on the heads of those who shut their eyes, and try to shut the eyes of others, to the necessity there is for drastic changes, before men of the proper stamp come forward in anything like sufficient numbers.

ARMY MEDICAL STAFF.

COLONEL W. J. CHARLTON, R.A.M.C., to be Surgeon-General, *vice* Surgeon-General W. S. M. Price, retired, August 11th. Entering the service as Assistant Surgeon, April 1st, 1871, Colonel Charlton became Surgeon, March 1st, 1873; Surgeon-Major, April 1st, 1883; was granted the rank of Lieutenant-Colonel, April 1st, 1891; made Brigade-Surgeon-Lieutenant-Colonel, May 2nd, 1895: and Colonel, July 1st, 1899. He has no war record in the Army Lists.

Sir WILLIAM WILSON, who reached the limit of age on August 27th, is, as a special case, to be retained on the full pay list as supernumerary of his rank, to enable him to complete the official report on the medical arrangements of the war in South Africa.

Surgeon-General W. S. M. PRICE, Principal Medical Officer, Bombay Command, has retired from the service, August 11th. He entered the service as Assistant Surgeon, September 30th, 1864; became Surgeon, March 1st, 1873; Surgeon-Major, September 30th, 1876; Brigade Surgeon, November 7th, 1889: Surgeon-Colonel, February 27th, 1895; and Surgeon-General, December 1st, 1898. He was in the Afghan war of 1878-80 (medal), and in the Nile expedition in 1884-5 with the Korti Field Hospital (medal with clasp and Khedive's bronze star). He was made Honorary Surgeon-General to the Governor-General of India, January 1st, 1900.

ROYAL ARMY MEDICAL CORPS.

EXCHANGE.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 8s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

MAJOR R.A.M.C. will exchange to go abroad. Complete tour.—Address No. 4300, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

LIEUTENANT-COLONEL J. C. DORMAN, M.B., C.M.G., is promoted to be Colonel, *vice* W. J. Charlton, promoted August 11th. Colonel Dorman's previous commissions are thus dated: Surgeon, March 31st, 1875; Surgeon-Major, March 31st, 1887; granted the rank of Lieutenant-Colonel, March 31st, 1895; and made Brigade-Surgeon Lieutenant-Colonel, June 13th, 1898. He served in the Afghan war in 1878-9 (medal); in the Egyptian war of 1882 (medal, and Khedive's bronze star); and in the South African war in 1899-1901 as Principal Medical Officer of a Division and sections on the Lines of Communication (mentioned in dispatches, granted the Queen's medal with four clasps, and made a Companion of the Order of St. Michael and St. George).

Lieutenant W. F. ELLIS, from the Seconded List, to be Lieutenant, August 26th.

Colonel W. E. SAUNDERS, C.B., Principal Medical Officer Poona District, officiates as Principal Officer, Bombay Command, pending the appointment of a permanent successor to Surgeon-General Price.

Captain S. G. BUTLER, who serving in the Madras Command, is appointed to officiate as Personal Assistant to the Principal Medical Officer, Madras Command.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL (TEMPORARY COLONEL) W. R. BROWNE, M.D., Madras Establishment, to be Colonel, May 19th. He was appointed Assistant-Surgeon, April 1st, 1873, and became Brigade-Surgeon-Lieutenant-Colonel, March 1st, 1898. He served during the Rumpa rebellion in 1879-80.

Colonel P. F. O'CONNOR, M.D., C.B., Bengal Establishment, who has been Principal Medical Officer of the British Forces in North China, has left Tientsin for India, and has been relieved by Lieutenant-Colonel L. A. Waddell, M.B., C.I.E., Bengal Establishment.

The undermentioned Captains are promoted to be Majors, dated July 28th:—Bengal Establishment: B. H. DEARE, B. C. OLDHAM, R. BIRD, M.D., S. B. SMITH, J. S. S LUMSDEN, M.B., G. H. FROST, M.B., E. WILKINSON, G. F. W. EWENS, M.D., C. DUER, M.B., H. S. WOOD, M.B. Madras Establishment: J. ENTRICAN, M.B., W. G. PRIDMORE, M.B., C. DONOVAN, M.D., J. PENNY, D. H. M'D. GRAVES, M.B., C. H. L. PALE, M.B. Bombay Establishment: T. W. IRVINE, M.B. Their first appointments bear date July 28th, 1891.

The undermentioned gentlemen are appointed Lieutenants, dated January 31st: WILLIAM S. J. SHAW, M.B., CHARLES S. PARKER, M.B., HAROLD H. BROOME, M.B., FREDERICK N. WHITE, M.B., CHARES G. SEYMOUR, DAVIS HERON, M.B., THOMAS C. RUTHERFOORD, M.B., HENRY C. KEATES, M.B., LEETHEM REYNOLDS, ERNEST C. TAYLOR, M.B., RICHARD A. NEEDHAM, M.B., DWARKA PRASAD GOIL, M.B., JAMES KIRKWOOD, M.B., ALFRED WHITMORE, M.B.

Lieutenant-Colonel W. K. HATCH, M.B., Bombay Establishment, is permitted to retire from the service from November 15th. He was appointed Assistant-Surgeon, March 31st, 1877, and became Brigade-Surgeon-Lieutenant-Colonel, March 31st, 1897. He was in the Afghan war in 1880 and has the medal for the campaign.

Lieutenant HENRY RICHARD MACNEE, officiating with the 30th Punjab Infantry in China, died at Shan-hai-Kwan, on July 14th, aged 27. He joined as Lieutenant, June 28th, 1900.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

SURGEON-LIEUTENANT H. W. M. STROYER, M.B., 4th Durham, resigns his commission and is appointed Second-Lieutenant, September 5th.

Surgeon-Lieutenant F. A. WAGSTAFF, 3rd (Cambridgeshire) Volunteer Battalion the Suffolk Regiment, to be Surgeon-Captain, May 14th.

The announcement which appeared in the *London Gazette* of June 26th is cancelled and the following substituted: Captain F. E. A. WEBB, from the Harwich Volunteer Infantry Brigade Bearer Company, is retransferred as Surgeon-Captain 3rd (Cambridgeshire) Volunteer Battalion the Suffolk Regiment (supernumerary), June 27th.

VOLUNTEER RIFLES.

SURGEON-LIEUTENANT G. T. D. ELDER, M.D., 1st Nottinghamshire (Robin Hood), resigns his commission, August 29th,

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

LIEUTENANT-COLONEL J. E. SQUIRE, M.D., the London Companies, is granted the honorary rank of Colonel.

VOLUNTEER INFANTRY BRIGADE BEARER COMPANIES.

THE appointment of Mr. F. B. JEFFERISS to the West Kent Company, which appeared in the *London Gazette* of August 4th, is cancelled.

Lieutenant H. G. MALLAM, Sussex and West Kent Company, to be Captain.

THE EVOLUTION OF THE VOLUNTEER MEDICAL SERVICE.

SURGEON-GENERAL GEORGE EVATT writes: Colonel Giles, in some remarks on a letter of mine in the BRITISH MEDICAL JOURNAL of June 6th, 1903, p. 1348, considered me in error in not referring to volunteer infantry brigade bearer companies as "R.A.M.C. volunteers." I desire to say that a decision has been officially given that these companies do not form part of the Royal Army Medical Corps Volunteers. Colonel Giles and his brother officers of these companies have therefore to work for this very desirable further step of volunteer evolution, and I trust will soon achieve success.

ENTERIC FEVER.

LIEUTENANT-COLONEL R. HUNTLEY NICHOLSON (R.A.M.C. Retired) writes: Amongst the civilian portion of the profession there is an idea in many cases that the officers of the Royal Army Medical Corps know little or nothing about enteric fever. If there is a disease that they should know something about, enteric fever is the one, especially those that have been in India, and those, I venture to think, know a great deal more about it than their civil *confrères*. My experience is that the "civil surgeon" was the one that possessed the monopoly of the term "simple continued fever," and I had a very large experience of those gentlemen. Personally, I have always looked upon the term as a very bad one, and only a cloak to save oneself the trouble of declaring the disease to be what it was—namely, enteric fever. It may not be generally known that when the civil surgeon arrived in South Africa, he looked upon the *Nomenclature of Diseases* as the patent and monopoly of the Royal Army Medical Corps, and was astonished when it was pointed out that the Royal College of Physicians were the authors. I am sure that many of my friends amongst the civil surgeons will bear me out in this.

MEDICO-LEGAL AND MEDICO-ETHICAL.

METHYLATED SPIRITS IN MEDICINES.

ACCORDING to the *Maidstone Gazette*, a case was heard recently at Maidstone Police Court in which F. J. Oliver, a chemist of Bank Street, was summoned for having in his possession medicines for internal use, namely, Fardon's cough balsam and balsam, anisi containing methylated spirits, and also liniment of iodine made with the same spirit.

For the prosecution, counsel pointed to the Spirits Act of 1880, which forbade the admixture in anything intended for internal use of methylated spirits or any derivative thereof, and said that their use in tinctures was forbidden partly because they were injurious if taken internally, and partly because their use in this fashion was an evasion of the tax on alcohol.

Mr. J. F. Halpin, an analyst employed in the Government laboratory,

stated that he found 25 1-oz. and 23 7-oz. bottles of the Fardon's mixture, and quantities of the other medicine mentioned, in the defendant's shop, and that they contained methylated spirits. The other tinctures in the shop contained no methylated spirit. The liniment was labelled as having been made with methylated spirit, as also were sundry other liniments to which the Board of Inland Revenue raised no objection.

For the defence, Mr. Beck admitted the facts as stated, but asked the Bench to disabuse its mind of any idea that if the matter had not been discovered by the Inland Revenue there would have been any real injury to the public health. In the balsam of aniseed the amount of methylated spirit was very small, and the balsam formed part of a stock bought by the defendant some years before from the previous occupant of the shop. The prescription for the cough balsam had also been bought in the same way, and somehow methylated spirit was provided in the receipt.

The Bench retired, and after twenty minutes' consideration imposed a fine of 40s. and 10s. costs in each of the three cases.

FAILURE TO NOTIFY SMALL-POX: A FINE.

ACCORDING to the *Birmingham Post*, the magistrates at Burton-on-Trent heard, on September 4th, an action brought against Mr. W. B. Ryan, a medical officer of the Amalgamated Friendly Societies' Medical Association, for failure to comply with the provisions of the Notification of Diseases Act.

Evidence was given showing that Mr. Ryan attended daily for about a fortnight a certain George Bailey, residing in an inn, whose face and hands were covered with spots. He had been asked whether the case was one of small-pox by the patient's friends, but assured them several times that the disease was nothing to be alarmed about. At the end of the fortnight Mr. Ryan went away for his holiday, leaving the case to his colleague, Dr. Thorpe. The latter stated in evidence that he saw the case on July 24th at the request of Mr. Ryan, and after doing so called on the latter, and told him that the case seemed to him serious, and that there ought to be a consultation. Mr. Ryan, however, said that it was unnecessary. Dr. Thorpe did not see the case again until August 5th, when the defendant went away. Three days later he visited the patient, and a few days after the case was removed to the isolation hospital. He had never seen a case of small-pox before, but Mr. Ryan said he himself had seen a good many in London. Cross-examined, the witness said he would now recognize a case of small-pox if he saw one; he had been thirteen years a medical man, and he was in medical charge of some 6,000 people, but he could not say what was the most dangerous period of a case of small-pox.

Dr. Coates, Medical Officer of Health, said that when he visited the patient Bailey he found him covered with crusts from head to foot, and formed the opinion that the patient had been suffering from small-pox for about three weeks. Since this case there had been eighteen others in the borough, and sixteen of them had been traced to direct contact with the patient Bailey. He had received no notice from Mr. Ryan about the case, but Mr. Ryan, in answer to a letter, had informed him that he had treated the case as one of severe impetigo. There might, Dr. Coates said, be a casual resemblance between a case of impetigo and one of small-pox, but he did not think it was of such nature as to deceive a trained medical practitioner.

For the defence, counsel stated that it was a genuine error of judgement, and that Mr. Ryan was only bound by law to use the brains with which Providence had endowed him.

Mr. Ryan then entered the witness-box and stated that he had acted honestly in the matter, and had believed the case to be one of impetigo and nothing else. In cross-examination he admitted that he had once before received a warning from the medical officer of health for not notifying a case of infectious disease.

The case terminated by the Court fining the defendant £2, together with £3 7s. 6d. costs.

HOSPITAL ADVERTISEMENTS.

ETHICS.—We share our correspondent's regret that the Essex and Colchester General Hospital should continue to advertise the attendance of the members of its staff in spite of the recommendation of the Ethical Committee and of the emphatic way in which this recommendation was approved at the Representative Meeting at Swansea.

PROFESSIONAL CHARGES.

M.B.CANTAB.—A minimum fee would be three guineas, in addition to out-of-pocket expenses.

PROFESSIONAL CIRCULARS.

X. Y. Z.—Such circulars upon the admission of a new partner are permissible, provided they are only sent to bona-fide patients in the practice concerned.

VISITING CARDS.

ONE IN DOUBT.—Our correspondent is quite justified in point of etiquette in putting "M.R.C.S." after his name upon his visiting card. Some practitioners have two cards—one for ordinary social purposes and the other with their qualifications for professional use. The question is entirely one of taste.

THE COURTESY CALL.

VIVID.—It is discourteous not to return the newcomer's call. Under these circumstances he would be justified in regarding his friendly advances as rejected, and might ignore the social and professional existence of his uncivil colleague.

DISTRICT MEDICAL OFFICERS AND BOROUGH COUNCILS.

MEDICUS asks if it is legal for a district medical officer to sit as councillor, or alderman, on a borough council.

*** A district medical officer is an officer of the Board of Guardians, not of the borough council, and therefore is under no disability with regard to becoming a member of the latter.

COMPENSATION FOR INJURIES.

ENQUIRER.—A labourer employed by a firm which had purchased and were breaking up one of His Majesty's ships, slipped and fell over a beam, fracturing two of his ribs. Is he entitled to compensation, and does the Employers' Liability Act apply to his case? What steps should he take?

*** He may obtain compensation both under this Act and the Workmen's Compensation Act. In order to enforce his rights he should put the matter in the hands of a solicitor.

ASSISTANT'S HOLIDAY.

A. J. F.—It is customary for a principal to allow an assistant who stays with him for any length of time a reasonable holiday during the year and to pay his salary during that time.

BUYING AND SELLING PRACTICES.

H. E. D.—If any actual misrepresentation has been made our correspondent should consult a solicitor, but if his evidence is not sufficient to satisfy a court of law it would probably fail to convince the General Medical Council. The buying and selling of practices is regarded in this country as quite legal, but is forbidden by the Royal College of Physicians of London under its by-laws to its Fellows or Members.

A QUESTION OF PRACTICE.

ENQUIRER.—Our correspondent would not be justified in prescribing for his patient until he had made whatever examination may be necessary to ascertain the condition he has to treat.

PROFESSIONAL SECRECY.

QUAERITUR.—If each medical man is to be the sole judge of when and where he may violate professional secrecy the rule ceases to exist. There can be no comparison between the obligation to disclose certain facts imposed by Parliament under the Notification of Diseases Act and the latitude claimed by our correspondent which would leave unfettered the discretion of every medical practitioner.

CHARGES TO MEDICAL PRACTITIONERS.

J. L. K.—The rule is that no charge is made to medical men in practice. When they are not in practice they are in the same position as the rest of the public, but their circumstances should be taken into consideration. Our correspondent is fully justified in making such charges as the means of the patient may seem to warrant.

QUACK ADVERTISEMENTS.

FRANCIS DIXON, M.B.—The advertisement of Dr. King's Liver Pills, to which our correspondent draws attention, is simply that of an ordinary quack medicine, and the name of the person who signs the certificate does not appear on the *Medical Register* for 1903. The Ethical Committee has undertaken the regular crusade which our correspondent calls for, but it can obviously take notice only of the proceedings of legally qualified persons. If it should appear that the signatory is a member of the medical profession, his attention will be called to it.

FEE FOR LUNACY CERTIFICATE.

SANDY.—Under the circumstances we think that a fee of five guineas would be reasonable.

TESTIMONIALS AND TRADE ADVERTISEMENTS.

AGGRIEVED.—The advertisement will be referred to the Ethical Committee which is dealing with this question.

DR. HUBBERSTY.—The name does not appear in the *Medical Register* for 1903, but the advertisement will be sent to the Ethical Committee which is dealing with these cases systematically.

P. G. HARVEY.—The advertisement of Ridge's Food and the testimonial attending it will be sent to the Ethical Committee which is dealing with the matter.

CHANGE OF MEDICAL ATTENDANT.

COUNTRY PRACTITIONER.—A patient is at liberty to change his or her medical attendant at will, but should always courteously inform the former attendant that his services are no longer required. If the superseding practitioner knows that another has been in attendance, it is undoubtedly his duty to ask whether it has been clearly explained that the services of the latter are no longer required.

SUPERSEDING PRACTITIONERS AND *LOCUM TENENTES*.

LONG PRESTON.—The duties of a superseding practitioner are the same towards a *locum tenens* as towards the principal; if he is called in to take charge of a case which has been previously under the care of another practitioner, he should take care that the latter is courteously informed that his services are no longer required.

MEDICAL ETHICS.

DR. IBOTSON.—It is hard on C. that he should have to bear the consequences of the quarrel between A. and B., but he should not have mixed himself up in it by giving A. the undertaking described. As A. and B. are quarrelling, and C. is allied with A., B. naturally is not friendly to C., but a personal quarrel is not in itself a proper ground for opposing the election of a member of the British Medical Association. If the circumstances are as stated, we should be sorry to think that such opposition would be successful.

WHO SHOULD OPERATE?

A. B. X.—Accepting both A.'s and B.'s accounts of what happened, it is plain that B. did not know that A. had declined to operate solely on the ground that the child would be better off in the hospital, and had sent the case away on the understanding that it would be taken to the hospital. In these circumstances, if the operation is to be performed outside the hospital A. should do it, and B. should give way to A., who was originally in charge of the case.

SHOULD A MEDICAL PRACTITIONER DO HIS NEIGHBOUR'S WORK FOR NOTHING?

INQUIRER.—A medical practitioner who is called in to a case during the absence of a neighbour may charge for his services at the usual rate, but it is customary not to do so on the ground that such services are often reciprocal.

DANGEROUS QUACKS.

A. P. STINSON.—We sympathize with our correspondent's indignation at the treatment received by his patient, but the patient should have complained to the police. The Medical Defence Union might take up the case if the evidence is satisfactory.

EMERGENCY VISITS.

WANT TO KNOW.—Our correspondent is unquestionably entitled to charge emergency fees for such night visits upon a scale sufficient to compensate him for the disturbance.

MEDICAL ADVERTISING.

DR. COCKLE.—We have referred the case to the Ethical Committee. The position seems a very undignified one for a medical practitioner to occupy.

DOCTORS AND CHEMISTS' SHOPS.

E. R. B.—The question raised by our correspondent is one involving matters of an ethical rather than a legal bearing. It would not be acting illegally for him to adopt the course which he proposes, but it is one which, from an ethical standpoint, we could not advocate or advise.

PATIENTS AND PRACTITIONERS.

A CORRESPONDENT writes that he has lately been called in to attend the family of a man who had for some time previously been to his knowledge the patient of a medical neighbour with whom he is on friendly terms. He suggested to the patient that he should acquaint his old doctor with the fact that he desired to change his medical adviser, but the former declined on the ground that the latter had not attended at his house for more than three months. He wishes to know what would be the correct thing for him to do.

*** If our correspondent is on friendly terms with the other practitioner, he may, if he thinks it desirable, give him an explanation of what has taken place, but he is not debarred by any rule of medical etiquette from attending to the patient in question.

AGREEMENT NOT TO PRACTISE WITHIN A CERTAIN AREA.

FAIR PLAY writes that he has recently sold his practice, and is bound by an agreement not to practise within six miles of his residence. Would this be violated by his occasionally seeing an old patient, who travels fifty miles for that purpose, and pays a consultation fee of one guinea?

*** It would be a violation of his agreement to see this patient within the radius laid down.

PAYMENT FOR POLICE CALLS IN COUNTRY DISTRICTS.

H. A.—Our correspondent is correct in supposing that in London the police give a certificate of attendance—3s. 6d. in the day, 7s. 6d. at night—when they require the services of a medical man. In the large towns and in country districts the practice varies, and we have many complaints about it from time to time. Our correspondent should make out an account for the work he has done in attending tramps and others at the request of the local constable during the last three months, and send it to the police superintendent. He may, however, get a reply that it is the duty of the Poor-law medical officer to attend to these cases.

SCHOOL CERTIFICATES IN SCOTLAND.

A CORRESPONDENT asks several questions as to school certificates in Scotland: (1) Can a School Board or a teacher demand a certificate regarding the inability of a pauper child through illness to attend school, directly or without fee, from a parochial medical officer who is not paid by the School Board, or is the medical officer in this respect responsible for such a certificate to the parish council only?

*** We are of opinion that any demand made to a parochial medical officer for a certificate concerning a pauper child should be made by the parish council. As the parochial medical officer apparently is not an official of the School Board, this Board has no right to demand certificates from him concerning pauper children, except through the parish council. If the child is suffering from an infectious disease, Section LVII of the Public Health (Scotland) Act has to be attended to. It states: "Every parent or person having care or charge of a child who is or has been suffering from infectious disease, or who resides in a house where such disease exists or has existed within a period of three months, who shall knowingly or negligently permit such child to attend school without procuring and producing to the teacher or other person in charge of such school a certificate from the medical officer which he shall grant free of charge, or from some legally qualified medical practitioner, that such child has become free from disease and infection, and that the house and everything therein exposed to infection has been disinfected to the satisfaction of such medical officer or medical practitioner, shall be liable to a penalty not exceeding forty shillings."

(2) Has a parish council any right to dictate to their medical officer the terms of a certificate regarding the inability through illness of pauper children to attend school, and ask him to sign such dictated certificate on "soul and conscience?"

*** We are not aware of any statutory form of certificate. That being so, it is for the medical officer to consider how the certificate should be drawn out.

(3) Have parish councils to regard such medical certificates as the above as private and confidential, and are they entitled to hand over such certificates to the teacher of the School Board free of any charge?

*** Parish councils, in our opinion, are not bound to consider medical certificates private and confidential, and are entitled to communicate their contents to the School Board if they consider it necessary to do so.

MAY A MEDICAL PRACTITIONER SUPERVISE A PROFESSIONAL FAST?

NYMPH.—Our correspondent writes to ask whether it is unprofessional for him to accept an engagement to watch a woman who is going through a thirty-five days' fast?

*** There is nothing unprofessional in accepting such a position, but in doing so our correspondent also assumes all responsibility. It is his duty to watch his patient, and, if he considers persistence in the fast attended with danger to life, he should formally express his opinion, and, should his views not be accepted, he must retire from the case. It is impossible to say what view a coroner's jury would take if the woman were to be so unfortunate as to die in spite of due care, but there are records of similar fasts, which our correspondent will find in the back numbers of this JOURNAL, to prove that they may be carried out with safety.

MEDICAL ETIQUETTE.

PER MARE PER TERRAS.—Our correspondent dissents from the answer given to "Substitute" in the BRITISH MEDICAL JOURNAL of August 1st, page 283, where it is stated that the administration of an anæsthetic is not to be regarded as debarring the practitioner from attending the patient should he be subsequently called in. He says: Surely for the doctor to take over a patient to whom he had been thus introduced by his friend in confidence would be a breach of faith?

*** The rule appears to be the same as that which obtains where medical practitioners assist one another in consultation. This is that while the consultant must under no circumstances take charge of a case seen by him in consultation, the restriction holds good only for the particular illness, and does not extend to future illnesses. The practitioner who administers the anæsthetic may not take over the case in that illness, but is free to do so in the future, subject to the rules which regulate a change of medical attendant.

HOSPITAL AND DISPENSARY MANAGEMENT.

SUNDERLAND INFIRMARY.

THE report of this infirmary, being the 109th annual report issued, shows that during the year ending June 30th, 1903, the daily average number of patients in hospital was 188·86, while the total number of in-patients admitted was 3,165, of whom 1,945 were surgical and 1,220 medical patients. Both the total number of in-patients treated and the daily number in hospital are considerably over what they were in the year 1901, while the number of out-patients shows a corresponding increase from 5,988 patients in 1901 to 6,947 in 1903. Other points of interest are that the average stay of patients in hospital has been reduced in the interval between the two dates mentioned from 25·9 days to 21·4 days; that the average cost of each patient has fallen from £3 13s. 1d. to £2 16s. 6d., and the cost for the year of each bed occupied from £51 4s. 4d. to £47 10s. 7d. In spite, therefore, of the increased work done, the expenditure has remained practically the same, and the nett result appears to be that it has been found possible to invest a further sum of £4,000, in spite of about £1,000 having been expended under the heading of extraordinary expenditure. Nevertheless the call for hospital accommodation in Sunderland is increasing, and the committee is anxious to provide it, and for that purpose the issue of an appeal was suggested and approved at the general meeting. No statement from the medical staff of the infirmary was included in the report received.

MAGHULL HOME FOR EPILEPTICS, LIVERPOOL.

THE report of this home for the year 1902, being the fourteenth of its existence, shows that 61 patients were admitted during the year, 22 discharged, that 1 died, and that 174 remained on the last day of the year. Of these 8 were first-class patients paying £2 2s. a week, 50 second-class patients paying £1 1s., and the rest third-class patients, for whom 7s. 6d. is charged. The home has a farm and other lands extending to about 100 acres, and a profit to the amount of about £400 appears to have accrued from this source. Under these circumstances it would not be very clear why the home required any charitable assistance except for the fact that the original cost of the property has not yet been paid off. In the medical part of the report there are several points of interest; thus it is noted that the staff had to deal with no less than 23,412 epileptics during the year, and that in spite of this no accident of a serious character occurred to a patient during an attack owing to the constant watch kept over them. By way of enabling the medical staff to obtain an accurate idea of the form of attack in each case, the nurses are expected to keep account of all fits in the patients under their charge, and a prize is given yearly to the nurse who hands in the largest number of perfectly clear accounts of what happened in each individual fit; it was gained last year by Nurse McLean. The importance of early adoption of regular treatment in all cases of epilepsy is punctuated in the report, and it is shown how much more hopeful are early cases than late ones. One interesting observation is the discovery of an apparently causative relation between some cases of chronic epilepsy and nasal obstruction. The Honorary Secretary and Treasurer of the home is Mr. W. Guisewood, 2, Exchange Street, East Liverpool.

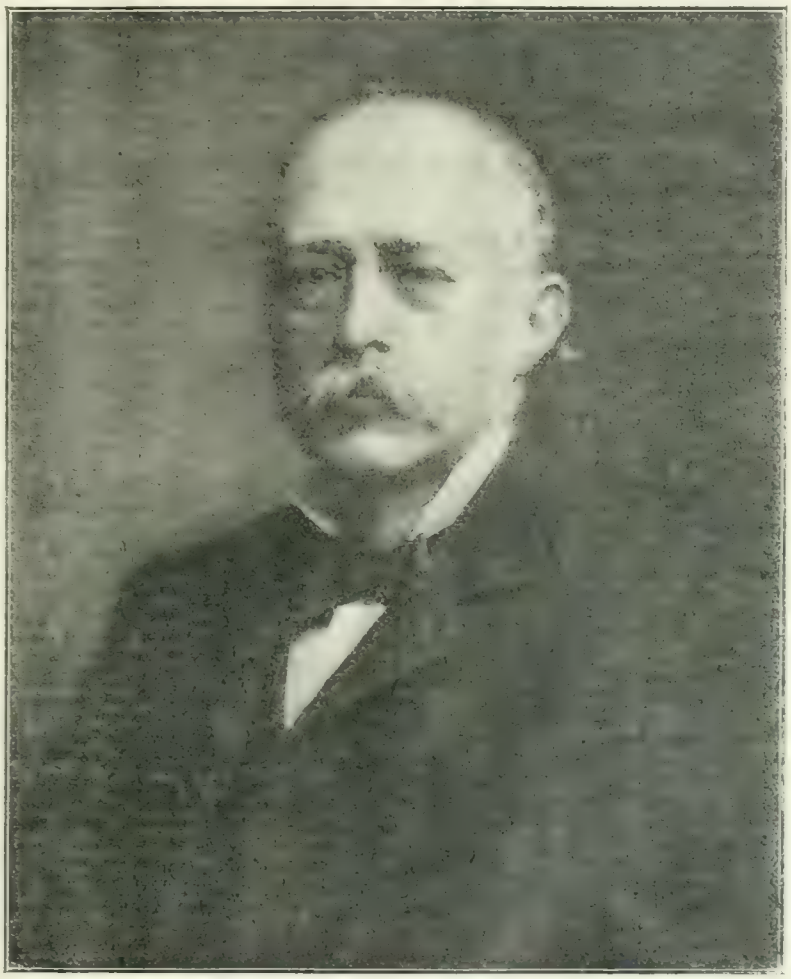
SUCCESSFUL VACCINATION.—Mr. W. Drinkwater, of Bicester, Oxon, has been awarded for the fifth time a grant of ten guineas for successful vaccination.

OBITUARY.

WILLIAM HENRY CORFIELD, M.A., M.D., F.R.C.P.,

Professor of Hygiene, University College, London.

Professor Corfield, whose unexpected death in Sweden on August 26th has already been announced in the British Medical Journal, was born at Shrewsbury in 1843, and received his preliminary education at Cheltenham Grammar School. In due course he proceeded to Magdalen College, Oxford, where he obtained a Demyship in Natural Science. His University career was exceptionally brilliant. He took a First Class in Mathematics at Moderations and in the Final Schools, and a First Class in the Final Natural Science School. He afterwards gained a Medical Fellowship at Pembroke College, the Burdett-Coutts Geological Scholarship, and finally the Radcliffe Travelling Fellowship. He continued his medical studies at University College, London, taking his M.B. degree at Oxford in 1868. He proceeded to M.D. in 1872, and was elected a Fellow of the Royal College of Physicians of London in 1875, having been admitted a Member in 1869. In 1868 he was Examiner for Honours in the Natural Science School at Oxford. He discovered the existence of lithodomus borings in the Aymestry limestone of the Silurian formation, and "thus removed to an earlier age than had been previously known the evidence of boring bivalves."



WILLIAM HENRY CORFIELD, M.A., M.D., F.R.C.P.

Early in his medical career he determined to devote himself specially to hygiene. He was appointed Professor of Hygiene in University College, his Chair being the first of the kind established in London. He also initiated the first hygienic laboratory. For six years he was a member of, and reporter for, the British Association Committee on the Treatment and Utilization of Sewage. He was active in promoting the foundation of the Parkes Museum, and took a prominent part in organizing the International Congress of Hygiene and Demography held in London in 1891. He was for many years Medical Officer of Health for St. George's Hanover Square. In 1899 he was appointed Consulting Sanitary Adviser to H.M. Office of Works. He was also Sanitary Adviser to University College and Hospital. In addition to these public appointments he had a large consulting practice as a sanitary expert.

Dr. Corfield was President of the Epidemiological Society, Past-President of the Society of Medical Officers of Health, and Vice-President of the Sanitary Institute. He was an Honorary Corresponding Member of the Royal Academy of Medicine in Belgium, the Imperial Society of Medicine, Constantinople, and the Italian Royal Society of Hygiene; He was an Honorary Member of the French Society of Hygiene and of the Hungarian Society of Public Health and a Fellow of the Medical Society of Sweden.

He contributed largely to the literature of preventive medicine. Among his publications may be mentioned *A Résumé of the History of Hygiene* (1870); *A Digest of Facts Relating to the Treatment and Utilization of Sewage* (3rd edition) (1887); *Dwelling Houses: their Sanitary Construction and Arrangements* (of which a fourth edition appeared in 1898); *Health* (1880); *The Laws of Health* (of which a ninth edition was published in 1896); *Disease and Defective House Sanitation* (1896) (which has been translated into French, Italian, and Hungarian); *The Etiology of Typhoid Fever and its Prevention* (1902); co-author of reports of British Association Sewage Committee (1870-6); *A Treatise on Hygiene and Public Health* (1892). Among papers read before Societies may be named Alleged Spontaneous Production of the Poison of Enteric Fever, published in the *Transactions* of the Epidemiological Society (1874); and Sore Throat caused by Slight Escapes of Coal Gas, published in the *Transactions* of the Society of Medical Officers of Health (1887).

Professor Corfield was a man of wide intellectual interests, extending far beyond the limits of his special province of professional work. He was a collector of rare books, and a *connoisseur* in binding. But he was far from being a mere bibliomaniac; he knew and appreciated the contents of his books as much as he delighted in his coverings. He was always willing to show his treasures, and an evening spent with him in examining them was a real treat to persons of kindred tastes. His library was particularly rich in works on angling, for he was an enthusiastic disciple of Izaak Walton. He was also a lover of prints, and was the possessor of a fine collection of woodcuts by Thomas Bewick.

Dr. Corfield's health had been failing for some time, and a year or two ago he had the appearance of a dying man. He suffered from dyspepsia of such severity that nutrition became greatly impaired; in particular he could not eat meat without suffering great pain afterwards. This symptom was relieved, as he himself thought, by a special form of vibratory massage; and certainly, whether as the effect of the treatment or of a natural remission in the disease, he to a large extent recovered the look of health. The improvement was, however, but temporary. He was attacked by chronic diarrhoea, which gradually undermined his strength. But he did not lose heart. So late as the end of last May he wrote to a friend, "I am a little better, but it is very slow work, as I am so weak; and no wonder, as I have had about thirteen weeks of diarrhoea since Christmas ..... However, I am rid of that for the present, and now have only my tiresome and painful dyspepsia." Even a week before his death, while at Marstrand, Sweden, whither he had gone, not for treatment as stated in the British Medical Journal, but on a fishing

expedition, he seemed to be improving, and talked of resuming his sport.

The end came very suddenly; fortunately, he had his daughter and one of his sons with him. As a proof of the high esteem in which he was held it may be mentioned that the King of Sweden, who was at Marstrand, sent to inquire about him.

In Professor Corfield the country has lost one of the pioneers of preventive medicine and a sanitarian of world-wide reputation; the medical profession has lost a very distinguished member; while his many friends mourn an entertaining companion and a genial and highly-accomplished man.

A FRIEND AND FORMER PUPIL writes:

Professor Corfield belonged to the second generation of hygienists in this country; inspired by the work of such men as Chadwick, Ramsay, Parkes, and Simon, he was the contemporary of Buchanan, Galton, and Thorne, and the teacher of many of those who now hold leading positions in the department of medicine to which he devoted himself. Before leaving Oxford he received, owing in the main to the influence of Acland, a strong bent towards the study of preventive medicine. He came up to London with introductions to, among others, Professor Sharpey, of University College, the Mentor of every young medical Telemachus of that day. Sharpey encouraged him in his inclination to take up preventive medicine as a career, and helped him in many ways. In particular it was largely through Sharpey's influence that Corfield became Professor of Hygiene at University College. He was an excellent lecturer, earnest, humorous, and practical. From an early date he took pains to illustrate his course by practical demonstrations of apparatus, and by visits to waterworks, sewage farms, and other undertakings of municipal public health departments. When, on the death of Parkes, it was proposed to perpetuate his memory by founding a museum of practical hygiene Corfield took the keenest interest in the scheme, and with the help of his friend, the late Mr. Rogers Field, M. Inst. C.E., was mainly instrumental in bringing together a very instructive collection of apparatus, drawings, and plans which was for some time housed in University College. The authorities of that institution, however, never took quite kindly to the scheme, and after a year or two announced that they could no longer find room for the collection. It seemed as if the scheme must fall through, but a few men who perceived the importance of maintaining such a collection, assisted by personal friends of Parkes, raised a fund which rendered it possible to transfer the collection to the building in Margaret Street where it has ever since been maintained. It was not very easy to keep the public sufficiently interested in such a museum to ensure an income to defray rent and other expenses, but, mainly through the efforts and influence of Corfield, Douglas Galton, Rogers Field, and Dr. Poore, the task was accomplished, and the museum was maintained as an independent institution until it was taken over by the Sanitary Institute. The amalgamation of the Parkes Museum of Hygiene with the Sanitary Institute strengthened both bodies, and at a later date Corfield was Chairman of the Council of the Institute.

As has been said, Corfield belonged to a generation of hygienists now passing away. He began the study of hygiene when bacteriology can hardly be said to have existed, and, while keenly interested in the growth of bacteriology, and possessed to a high degree by that scientific curiosity which impels a man to make himself acquainted with at least the main principles of every scientific advance, Corfield retained to the end that broader outlook which characterized the men who were making the science of hygiene in his youth. He was, as a practical man, content to accept the conclusion that overcrowding, insufficient ventilation, foul drains, or polluted water supply were inimical to the public health without inquiring too curiously into the precise way in which the injurious effect was produced. For he was, beyond all things, a practical man, a man of detail, hunting out the weak place with untiring perseverance.

For many years he enjoyed what may be called a consulting practice in sanitation. The country houses which he has remodelled in respect of their sanitary arrangements must be numbered by hundreds, and his opinion was much sought with regard to large schemes for water supply and drainage.

Socially he was a clubbable man, and his well-stored memory made his fluent talk agreeable and stimulating. He had read widely, had a retentive memory, and the courage to say frankly "I do not know" when he felt at all uncertain. Thus it was possible to accept any statement he made with confidence.

His loss will be very keenly felt by a large circle of friends and acquaintances, both at home and abroad.

WE regret to announce the death of Dr. FRANCIS COOKE, which took place at Cheltenham on August 18th. Dr. Cooke was one of the oldest practitioners of Cheltenham, and for half a century he was associated with the work of the General Hospital, latterly as Senior Honorary Physician, a position from which he retired in 1893. Dr. Cooke, who was educated at Edinburgh and Paris, was University Gold Medallist at Edinburgh in 1835, taking his M.D. degree in 1836. In the same year he was admitted a Licentiate of the Royal College of Surgeons, Edinburgh. In 1869 he became a Member of the Royal College of Physicians of London. He was a member of the Royal Medical and Hunterian Societies of Edinburgh, and was Consulting Physician to the Cheltenham General Hospital. Dr. Cooke was the author of *A Treatise on Consumption*.

T. R. JESSOP, F.R.C.S.,

Consulting Surgeon to the Leeds General Infirmary; Member of the Council of the Royal College of Surgeons of England.

Mr. T. R. Jessop, whose death on September 6th we regret to record, was born at Brighouse, Yorkshire, on November 11th, 1837. His father, Mr. Thomas Jessop, was a solicitor practising in that town. His school days were passed at Giggleswick, and in 1856 he joined the Leeds School of Medicine. In 1860 he was appointed House Surgeon to the Leeds General Infirmary. In those days the House Surgeon had control of the medical and surgical wards, was responsible for the performance of *post-mortem* examinations, and took no small part in the general management of affairs. Mr. Jessop has often told how he went, not infrequently, direct from a *post-mortem* examination to an operation. In those days, he would say, an operation was a manipulation which soiled one's hands, and he pithily described the change brought about by Lister by saying that in the pre-antiseptic days you washed your hands *after*, to-day you washed them *before*, an operation. In 1865 Mr. Jessop began practice in Leeds, and, as his private records show, was called as a consultant, both in medical and surgical cases, before the first week was over. Indeed, when he left the infirmary, an informal request, framed at the instance of many of the practitioners of the district, was made to him urging that he should practise especially as a physician, and promising him support. His tastes, however, were chiefly surgical, though he took consulting work in both medical and surgical cases. For two years he served as Surgeon to the Leeds Dispensary before being appointed in 1870 Surgeon to the Leeds General Infirmary. For twenty years he served on the full staff of that institution, and it was there that his great reputation was built up. He is credited with the first operation for abdominal pregnancy, due to secondary intraperitoneal rupture of the gestation sac, in which the lives of both mother and child were saved. It was he who first, in England, successfully removed a sarcoma of the kidney in 1877. His experience of colotomy, as laid bare by him at the meeting of the British Medical Association in Leeds in 1889 was almost unrivalled. As an operator for stone, in the days when lithotomy was the test and proof of a surgeon, he had experience beyond the range of most of the surgeons in England.

In the year 1890 he was appointed Consulting Surgeon to the infirmary. At the Leeds Medical School he held many teaching posts, and at the amalgamation of the school with the Yorkshire College he was appointed the first Professor of Surgery. This appointment he resigned in a few years owing to the heavy pressure of private work. For several years he was on the Council of the British Medical Association. For eleven years he was a member of the Council of the Royal College of Surgeons of England, and in 1901 he was appointed Senior Vice-President, and Bradshaw Lecturer.

In the early part of this year Mr. Jessop's health began to fail. For a time he rallied and was able to resume active work, but on September 3rd a cerebral haemorrhage produced coma, and death gradually supervened.

Since the days of the first William Hey, a pupil of John Hunter, Leeds seems never to have lacked a surgeon of the foremost rank. Among the names upon this roll of fame, there is none more worthy, none more honoured than that of Thomas Richard Jessop.

For over a generation Mr. Jessop enjoyed one of the largest, and for a time the most extensive, practice of any surgeon in the North of England. In consultation he combined a wide and solid knowledge of the principles of scientific medicine and surgery with an intuition, as remarkable as it was accurate, of the powers both mental and physical of his patient. When examining a patient he was slow, minute, deliberate; every detail, however insignificant it might seem, was duly noted, and its value weighed. In describing a case to a class or in discussion with a colleague, each symptom was given its proper place. The perspective of his clinical picture was never at fault and its completeness was never disputed. Eloquence was never his, but it is doubtful if there ever could have been a lecturer whose clinical descriptions were more accurate, more vivid, more readily recalled to memory. As an operator in his best days he was rapid, precise, mindful of all points, equal to any emergency, never disturbed, and never hastened by any seeming disaster. In his earlier days much of the operative work he undertook was pioneer work; yet, however heroic the procedure, none ever doubted its necessity, all recognized its probable safety, when he assumed responsibility. No man ever had his patient's interests more at heart, nor ever treated them more kindly or more courteously. Students and patients who met him daily in the hospital had for him a feeling almost of reverence. On all occasions when his action was determined upon, he was firm, unyielding, even masterful, yet his manner never changed from one of gentleness and consideration. Students, young practitioners, older surgeons, and colleagues alike consulted him in times of stress or doubt, and none ever left him without feeling the better and braver for his advice. He was a great and a good man, first and always; then a great surgeon. In counsel he was prudent, deliberate and far-seeing; in action resolute; in all things full of charity, sympathy, and kindness. The influence of such a man does not end with his life. Those who have known him and loved him have but to think of him as he moved in his daily work among them to feel that their lives are the better and their work the nobler for the lessons that they learnt from him.

HENRY GRAY CROLY, F.R.C.S.I.,

Ex-President, Royal College of Surgeons in Ireland; Senior Surgeon, Royal City of Dublin Hospital.

It is not given to every man to die in harness, although surely it must be in this wise that the stalwart workers of the world would in most instances elect to leave it. Such, at any rate, was the manner in which Henry Gray Croly's active life came to an end on Friday, August 28th, 1903. During the late visit of Their Majesties the King and Queen to Dublin amongst those who presented to them addresses of welcome Mr. Croly was a conspicuous figure with an address from the Royal City of Dublin Hospital, with which his name is so closely associated. No one who saw him on that occasion, looking so full of life and vigour, could have suspected that in a few short weeks the Dublin that knew him so well should know him again no more. As in the case of so many robust and strenuous men, an apoplectic seizure was responsible for the sudden and fatal issue. He had left his own residence, 7, Merrion Square, and had gone to spend some time with his brother, Dr. Albert Croly, of Rathfarnham, Co. Dublin, and there alone in the night his spirit passed away.

Mr. Croly, who was about 67 years of age, was the elder son of Dr. Henry Croly, J.P., of Rathfarnham, Co. Dublin, where his second son, Dr. Albert Croly, now follows in his father's practice. Most of H. G. Croly's student days were spent in the school of the Royal College of Surgeons and in the City of Dublin Hospital, where he obtained the Purser Medal, but during the Crimean war he was accepted as a surgical dresser in the navy, and gained a medal for services rendered during action in the Gulf of Riga. Returning to Dublin, he obtained the licence of the Royal College of Surgeons in 1856, and for two years he acted as House-Surgeon in the City of Dublin Hospital, on the staff of which he was subsequently elected Surgeon. In 1860 he became a Licentiate of the Royal College of Physicians of Ireland, and three years later he proceeded to the Fellowship of the Royal College of Surgeons. Meanwhile he had started private teaching and had become a Demonstrator of Anatomy in the school of the Royal College of Surgeons, and this latter position he occupied for sixteen years, so that a good foundation in the knowledge of anatomy was gained, while his surgical experience was rapidly widening. The growth of his private practice eventually compelled him to retire from his school connexion, but in a few years he succeeded in being elected as a Surgical Examiner and then as a member of Council of the Royal College of Surgeons, and finally he filled the Presidential chair of the College for two consecutive years in 1890-1.

As a surgical teacher Mr. Croly attracted large classes of students. He was gifted with the faculty of being able to express himself clearly and tersely, and there was always that force about the man himself and that spontaneity and freshness of diction that go to make a teacher interesting as well as instructive. A strenuous man, who is endowed with ability and a strong personality, must inevitably stir up feelings of respect or aversion in others, according to the type of the individuals with whom he is brought into closest contact. Mr. Croly was no exception to this rule; he was frankly outspoken, he had firm convictions, he was a hard hitter, and very courageous, with the result that the sentiments he inspired were not infrequently opposed to his popularity.

Mr. Croly was a brilliant surgeon, keen and enthusiastic in his work, and never frightened by the magnitude of an operation. In his earlier days it was his ambition that when his epitaph came to be written it should read, "He was a

surgeon," and such a distinction is clearly his due, even notwithstanding the fact that the rapid march of abdominal and cerebral surgery had been faster than one of his years and training could readily follow.

His contributions to surgical literature were so numerous and covered such a wide range of subjects that it would be impossible to enumerate them on this occasion. Mention must be made, however, of the following: Cellulitis of the Neck (lines of safety and lines of danger), Ligation of External Iliac Artery for Ilio-femoral Aneurysm, Ligation of Subclavian Artery in Second Stage, Colotomy (18 successful cases), Splenectomy, and Gastrostomy for Cicatricial Stricture of the Oesophagus.

Mr. Croly was a well-known figure at the Dublin horse shows, where he successfully competed as an exhibitor in the harness classes on many occasions. His pair of high-stepping chestnut mares with himself as driver were objects of attraction for many years in the streets of the city.

The death of his wife within the last couple of years was a serious blow to him, but he was blessed with a most devoted family. His elder son, Mr. Henry Croly, is surgeon to Mercer's Hospital, Dublin, while his younger son is Captain William C. Croly, R.A.M.C.

We record with regret the death of Dr. William Tocher Scott, which occurred at Stalybridge, on August 23rd, as the result of pyaemia, contracted in the performance of his professional duties. About three weeks before his death, while performing a surgical operation at the Ashton-under-Lyne and District Infirmary, upon a patient who was suffering from perforated appendicitis, he accidentally cut the second finger of his right hand. On the following day the finger became painful and swollen, the temperature rose above normal, and in the next twenty-four hours signs of acute septic poisoning developed. In spite of the best attention that medical skill and kindly interest could devise, he gradually became worse, septic diarrhoea set in, and he died from exhaustion three weeks after the onset of the symptoms. Dr. Scott was only 36 years of age at the time of his death, and he had been in practice in Stalybridge since 1898. He was a native of Fyvie, in Aberdeenshire. He graduated as a Master of Arts at the University of Aberdeen in 1887, and obtained the M.B., C.M., with Honours, in 1891. He was in practice in Ashton-under-Lyne for six years before he settled in Stalybridge. He was Honorary Surgeon to the Ashton-under-Lyne and District Infirmary and also to the Children's Hospital. He was held in great respect by all who knew him, while his great ability, genial manner, and thoughtfulness for others had won for him a large number of friends and admirers in the town. His death has caused a painful shock both to his friends and also to the public of the district generally, where he was widely known and very popular. The deceased gentleman leaves a widow and three little children—a boy and two girls. The burial took place very quietly in the graveyard of the parish church of Fyvie, in Aberdeenshire.

Rarely, if ever, have we had to chronicle so sad a story as the almost tragic deaths of both editors of the *Zentralblatt für Physiologie*. The announcement of the death of Professor Sigmund Fuchs of Vienna, and Professor I. Munk of Berlin, the editors of this *Zentralblatt*, within two days of each other, must have come to all who read this well-known epitome of the doings in the physiological world with startling suddenness.

Sigmund Fuchs was born in 1859, and early in life, while attending the Gymnasium in Bielitz, showed a marked inclination towards natural science. After studying at Vienna he was for a time Demonstrator of Physiology under Brücke, then he worked in the Anatomical Department, and afterwards at the Eye Hospital; finally, in 1895 he became a *Privat-docent*, and in 1897 extraordinary professor in the University. Early in his scientific career he was struck with a mysterious malady which in the end confined him to his room. Still he worked on, ever courageous and diligent in spite of waning health and strength. He discovered the nerves of the light organs of *Elater noctilucus*, and made important contributions to the photo-electrical changes in the retina, and the electric charges accompanying stimulation of the cutaneous nerves of the selachians. He died on July 20th, aged 45. On the day of his death his relatives received a telegram of condolence from his friend and colleague Munk. Two days later Munk also had passed beyond the veil.

Professor Munk died suddenly from heart failure. On the previous Thursday he gave the last lecture of his summer course, and on the following day—apparently in good health—visited as usual, and attended to the duties of his laboratory. Born in 1852, he died at the early age of 51. Immanuel Munk's name is writ large in the history of the progress of the study of metabolic phenomena and of that of nutrition. He was stimulated thereto as a pupil of Hoppe-Seyler in Strasburg, and of Salkowski and Liebreich. He took his M.D. in 1874. His chief works deal—*inter alia*—with the formation of urea in the liver, done under Hoppe-Seyler. On his return to Berlin, and while practising medicine, he worked in Salkowski's laboratory chiefly on the chemistry of the urine, and on the influence of glycerine on proteid-metabolism, and showed that though glycerine is a product from fat, it in no way changes the metabolism of proteid, and does not like carbohydrates, fat, or gelatine "spare" a part of the proteids even when it is administered in larger doses than is contained in fat. Then he studied the fatty acids, showed that they were absorbed, and that they could "spare" the proteid consumption. As the chyle was milky from the presence of emulsionized neutral fats, he thought there must be some special mechanism for the absorption from the intestine of free fatty acids, and that these acids must in some way be reconverted into neutral fats. By feeding animals with fatty acids foreign to their organism, Munk solved the problem of their synthesis. This led to his researches as to how fat is absorbed, and now we know his views are taught in all our textbooks. He then studied the effect of bile on the absorption of fats, and found that in the absence of bile, fatty acids were better absorbed than neutral fats. Other studies on the secretion of urine followed, especially the secretion in excised and perfused kidneys. In 1886 he published with Uffelmann his well-known *Handbook of Dietetics*, which reached its third edition in 1898. His lectures were always largely attended, and he kept, or rather attracted, his audience from the beginning to the end of his course. His *Lehrbuch der Physiologie* as a compendium giving an all-round view of the subject has deservedly attained great popularity in Germany. It is now in its sixth edition (1902). Born in Posen in 1852, after taking his degree in 1873, he studied under Heidenhain in Breslau, in 1875 under Hoppe-Seyler in Strasburg. Returning to Berlin in 1876, he in 1881 became assistant at the Veterinary School, which he relinquished in 1883. He worked much in the laboratory of his friend Professor N. Zuntz. In 1895 Du Bois-Reymond called him to replace Professor Gad. In 1899 he became Professor Extraordinarius. He also succeeded Professor Gad as one of the editors of the *Zentralblatt f. Physiologie*.

Dr. Charles Hathaway, of St. Leonard's-on-Sea, who died on August 29th, was born in 1817, and received his medical education at St. Thomas's and Guy's Hospitals. He received an appointment in the Honourable East Indian Company's service, and after the Sutlej campaign, in which he was actively employed at the field hospital, he was appointed Civil Surgeon at Lahore. He devoted himself to the reform of the prisons in the Punjab, and by his exertions the mortality amongst the prisoners was largely reduced, while a saving in the expenditure was effected. During the Mutiny he was on duty at the central gaol, where 2,000 long-term and life convicts were immured. In 1852 he was appointed Inspector-General of Prisons in the Lahore province; and in 1862 the military authorities, on a severe outbreak of cholera in the European troops, applied for his services, and the post of Sanitary Commissioner was given him by the Government. He was appointed Private Secretary to the Governor-General of India—Lord Lawrence—in 1863, and finally left the service in 1866.

An Experienced Midwife.—According to the *Gazette Médicale de Paris* a midwife—Madame Griboval, aged 65—has for 40 years played the part of Lucina to all women adding to the population in the district of Bolbec, Normandy. She has recently attended her thirteen thousand two hundred and seventy-first case. The good lady, whatever may be her knowledge of the science of midwifery, can at any rate boast a very extensive experience.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

THE ANNUAL REPORT OF THE REGISTRAR-GENERAL FOR ENGLAND AND WALES.

THE sixty-fourth annual report of the Registrar-General relating to the vital statistics of England and Wales for the year 1901 has just been issued. Although the earlier publication of quarterly returns somewhat discounts the interest attaching to the more general statistical facts of the year, the report now published contains much additional information, and an elaborate analysis of the various facts which renders possible a better appreciation of their significance.

MARRIAGE-RATE.

The number of marriages during 1901 was 259,400, corresponding to a rate of 15.9 persons married per 1,000 of the estimated population. In the three preceding years the rates had been 16.2, 16.5, and 16.0 per 1,000.

BIRTH-RATE.

The births registered in England and Wales during the year under notice numbered 929,807, and were equal to an annual rate of 28.5 per 1,000 of the population, against an average rate of 29.9 per 1,000 in the preceding ten years. There has been a continuous decline in the birth-rate since 1895, when it was 30.3 per 1,000, the rates from 1898 onwards being successively the lowest on record. The lowest birth-rates during 1901 occurred in the counties of Sussex, Westmorland, Rutlandshire, Oxfordshire, Devonshire, Somersetshire, Herefordshire, and Dorsetshire; and the highest rates in Northumberland, South Wales, Staffordshire, Monmouthshire, and Durham. There were 1,040 male births to 1,000 female births, the average proportion in the ten preceding years having been 1,036 to 1,000.

DEATH-RATE.

The 551,585 deaths registered in England and Wales during 1901 were equal to an annual rate of 16.91 per 1,000 of the population, against an average of 18.21 per 1,000 in the decennium 1891-1900, and 20.97 per 1,000 in the period 1838-1901. To allow of a fair comparison, however, between the rates for different periods or for different localities, it is necessary to make some correction for the variations of the age and sex constitution of the populations on which the rates are based. Adopting as a standard the age and sex proportions for the whole country, as ascertained by the census of 1901, the death-rate of 16.91 per 1,000 for that year compares with a corrected average rate of 18.06 for the preceding decennium, and of 20.19 for the sixty-four years, 1838-1901. Among the registration counties the lowest corrected death-rates in 1901 were recorded in Huntingdonshire, Oxfordshire, Rutlandshire, Wiltshire, Dorsetshire, Devonshire, Hertfordshire, and Herefordshire; and the highest rates in Warwickshire, the West Riding of Yorkshire, South Wales, Durham, Northumberland, and Lancashire.

With regard to the mortality at different age-periods, it appears that the death-rates for 1901 compare favourably at all age groups of both sexes with the corresponding rates in the decennia 1881-90 and 1891-1900. Among females between 15 and 45 years of age the mortality was the lowest on record, as was also that among males from 15 to 25 years of age. The proportion of deaths of infants under 1 year of age to registered births was equal to 151 per 1,000, against an average proportion of 154 in the ten preceding years.

The rate of mortality in the group of districts taken to represent the urban population was 17.7 per 1,000, while in the remaining and chiefly rural districts the rate was 15.3 per 1,000; thus the ratio of urban to rural mortality was as 116 is to 100. Both the urban and the rural rates were slightly below the respective averages.

CAUSES OF DEATH.

In the report under consideration the causes of death are tabulated according to a new arrangement which it was deemed desirable to introduce at the commencement of the present decennial series of reports. Among other important alterations the names hitherto assigned to "classes" and "orders" of disease—zymotic, constitutional, dietetic, etc.—have been discontinued on the ground that it is more than doubtful whether any classification that could be devised would permit of tabular modifications, from time to time, commensurate with the requirements of scientific medicine.

The aggregate mortality from the seven principal epidemic diseases was below the average; from diphtheria and from diarrhoea, however, the death-rates were in excess, the rates from small-pox, measles, scarlet fever, whooping-cough, and "fever" showing a decline. Influenza was proportionally less fatal than it had been in any year since 1896. The mortality from phthisis among males during 1901 was equal to 1,487 deaths per million living, and among females, to 1,055 per million; these rates were considerably lower than the respective averages for the ten preceding years. The deaths referred to cancer or malignant disease numbered 27,487, the death-rate from this cause being the highest on record for both males and females. The mortality directly ascribed to alcoholism last year was equal to a rate of 113 per million living among males, and to a rate of 80 per million among females; both these rates were considerably below the corresponding rates for 1900.

INADEQUATE CERTIFICATION.

The causes of many of the deaths are still stated so indefinitely as to be practically useless for statistical purposes. Such cases would have been much more numerous but for the inquiries which are systematically addressed to medical practitioners with reference to certificates in which the cause of death is not definitely described. Respecting the deaths during 1901, there were 5,762 replies to these inquiries containing information which, in most cases, led to a more accurate classification of the cause of death. For example, 657 deaths from malignant disease, 170 from puerperal septic diseases, 102 from venereal diseases, and 370 from intemperance, were transferred to these headings although originally returned as due to such ill-defined causes as tumour, ovarian disease, disease of liver, etc.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8,478 births and 4,616 deaths were registered during the week ending Saturday, August 29th. The annual rate of mortality in these towns, which had been 15.7 per 1,000 in each of the two preceding weeks, increased that week to 16.0 per 1,000. The rates in the several towns ranged from 3.5 in Devonport, 8.3 in Bournemouth, 8.3 in Hastings and in Blackburn, 8.9 in Croydon, 9.2 in Leyton, and 9.8 in Willesden, in Walthamstow, in Bristol, in Smethwick, and in Swansea, to 21.0 in Nottingham and in Burnley, 21.8 in Wigan, 21.9 in Hull, 22.3 in Sunderland, 22.8 in Rotherham, 23.0 in Aston Manor, 25.2 in Middlesbrough, and 26.3 in Sheffield. In London the rate of mortality was 14.3 per 1,000, while it averaged 16.7 in the other seventy-five large towns. The death-rate from the principal infectious diseases averaged 3.7 per 1,000 in the seventy-six large towns; in London this death-rate was equal to 2.9 per 1,000, while it averaged 4.0 per 1,000 in the seventy-five large provincial towns, among which the highest death-rates from the principal infectious diseases were 7.3 in Birkenhead and in Rotherham, 7.7 in Middlesbrough, 7.9 in Aston Manor, 9.2 in Hull, 9.4 in Burnley, 10.1 in Wigan, and 11.8 in Sheffield. Measles caused a death-rate of 1.0 in Sunderland, 1.1 in Middlesbrough, 1.8 in Sheffield, and 2.3 in Ipswich; diphtheria of 1.2 in Salford and 1.8 in Rotherham; whooping-cough of 1.2 in Rochdale and 1.6 in Burnley; and diarrhoea of 5.5 in Grimsby, in Rotherham and in Middlesborough, 6.0 in Bootle and in Bolton, 6.4 in Birkenhead, 7.2 in Aston Manor, 7.3 in Burnley, 8.4 in Wigan and in Hull, and 9.2 in Sheffield. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. One fatal case of small-pox was registered in Liverpool, and one in South Shields, but not one in any other of the seventy-six large towns. The number of small-pox patients under treatment in the Metropolitan Asylums Hospitals, which had been 48, 45, and 52 at the end of the three preceding weeks, had further risen to 57 at the end of last week; 11 new cases were admitted during the week, against 4, 9, and 13 in the three preceding weeks. The number of scarlet-fever patients in these hospitals and in the London Fever Hospital on Saturday, August 29th, was 1,774, against 1,771, 1,758, and 1,797 on the three preceding Saturdays; 199 new cases were admitted during the week, against 216, 225, and 225 in the three preceding weeks.

In seventy-six of the largest English towns, including London, 8,683 births and 4,548 deaths were registered during the week ending Saturday last, September 5th. The annual rate of mortality in these towns, which had been 15.7 and 16.0 per 1,000 in the two preceding weeks, declined again last week to 15.7 per 1,000. The rates in the several towns ranged from 3.2 in King's Norton, 5.4 in Leyton, 6.6 in Croydon, 7.2 in Handsworth, 8.6 in Hornsey, 9.4 in Willesden, and 9.9 in East Ham and in Bournemouth, to 21.0 in Burnley, 21.7 in Gateshead, 21.8 in Wigan, 21.9 in Liverpool, 22.3 in Bootle, 22.6 in Sheffield, 23.0 in Birkenhead, 24.4 in Hull, and 25.2 in Middlesbrough. In London the rate of mortality was 14.1 per 1,000, while it averaged 16.5 per 1,000 in the seventy-five large provincial towns. The death-rate from the principal infectious diseases averaged 3.4 per 1,000 in the seventy-six large towns; in London this death-rate was equal to 2.8 per 1,000, while it averaged 3.6 per 1,000 in the seventy-five other large towns, ranging upwards to 6.0 in Stockport and in Middlesbrough, 7.1 in Salford, 7.5 in Wigan, 8.3 in Sheffield, 8.9 in Bury, 9.2 in Hull, and 12.0 in Bootle. Measles caused a death-rate of 1.1 in Sheffield, 1.6 in Warrington, and 2.3 in Ipswich; scarlet fever of 1.8 in Bury; diphtheria of 1.2 in Brighton; whooping-cough of 2.1 in Burnley; "fever" of 2.6 in Bootle; and diarrhoea of 4.3 in Liverpool, 4.6 in Aston Manor, 4.8 in Salford, 4.9 in Stockport and in Middlesbrough, 5.9 in Wigan, 6.3 in Bury, 6.5 in Sheffield, 8.4 in Hull, and 8.6 in Bootle. The 7 fatal cases of small-pox registered in the large towns last week belonged respectively to London, Hanley, Burton-on-Trent, Liverpool, Halifax, Newcastle-on-Tyne, and Tynemouth. The Metropolitan Asylums Hospitals contained 49 small-pox patients on Saturday last, September 5th, against 45, 52, and 57 on the three preceding Saturdays; 6 new cases were admitted during last week, against 9, 13, and 11 in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 1,758, 1,797, and 1,774 at the end of the three preceding weeks, had risen again to 1,796 at the end of last week; the number of new cases admitted during the week was 222, against 215, 225, and 199 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday, August 29th, 912 births and 495 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 14.6, 15.4, and 15.1 per 1,000 in the three preceding weeks, was again 15.1 per 1,000 in that week, and was 0.9 per 1,000 below the mean rate during the same period in the seventy-six large English towns. The rates in the eight Scotch towns ranged from 13.9 in Perth and 14.1 in Edinburgh, to 15.8 in Greenock and 20.1 in Paisley. The death-rate from the principal infectious diseases averaged 2.8 per 1,000 in these towns, the highest rates being recorded in Paisley and Greenock. The 232 deaths registered in Glasgow included 4 from measles, 4 from scarlet fever, 4 from diphtheria, 4 from whooping-cough, 3 from "fever," and 37 from diarrhoea. Three fatal cases of measles, 2 of scarlet fever, 2 of diphtheria, and 2 of diarrhoea were recorded in Edinburgh. Six deaths from diarrhoea occurred in Paisley, 4 in Dundee, and 3 in Leith: and 2 deaths from whooping cough, and 4 from diarrhoea in Greenock.

During the week ending Saturday last, September 5th, 910 births and 542 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 15.1 per 1,000 in each of the two preceding weeks, rose last week to 16.6 per 1,000, and was 0.9 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 11.8 in Leith and 13.8 in Paisley, to 16.5 in Greenock and 18.8 in Glasgow. The death-rate from the principal infectious diseases averaged 2.7 per 1,000 in these towns, the highest rates being recorded in Glasgow and Paisley. The 284 deaths registered in Glasgow included 2 from measles, 2 from scarlet fever, 2 from diphtheria, 6 from whooping-cough, 6 from "fever," and 35 from diarrhoea. Two fatal cases of diphtheria and 2 of diarrhoea were recorded in Edinburgh. Two deaths from whooping-cough, 2 from "fever," and 2 from diarrhoea occurred in Dundee; 7 from diarrhoea in Aberdeen; 2 from measles and 7 from diarrhoea in Paisley; and 4 from diarrhoea in Greenock.

HEALTH OF IRISH TOWNS.

DURING the fortnight ending Saturday, September 5th, 1,145 births and 637 deaths were registered in six of the principal Irish towns, being an average for each week of 572 deaths and 328 births. Limerick in the later

week registered 71 births against only 6 deaths, which, coupled with a blank record as regards zymotic disease must surely constitute a record for a town of 38,000 inhabitants. The mean annual death-rate of these towns, which had been 21.5, 13.7, and 19.2 per 1,000 during the preceding three weeks, fell during the first week of the fortnight under notice to 18.2 and then to 16.5 per 1,000, these figures being 2.2 and 0.8 over the mean rates during the corresponding periods in the seventy-six English towns. The death-rates ranged in these six Irish towns from 5.8 in Waterford to 24.2 in Dublin in the first week and from 8.2 in Limerick to 21.9 in Cork in the second period. The death-rates from the principal zymotic diseases in the six towns averaged for the first week 2.4 per 1,000, and for the second 1.8 per 1,000. The highest point, 5.5, in either week was reached by Cork, while Limerick and Waterford were free from deaths from zymotic disease during the whole fortnight. One death from measles in Belfast, and 1 from scarlet-fever at Dublin was recorded, but no other deaths were recorded in any part of Ireland from these diseases, nor yet from typhus, small-pox, or diphtheria.

HEALTH OF WESTMINSTER.

THE population of the City of Westminster for 1902 is returned as 180,830. The birth-rate is 18.7, and the corrected death-rate 16.0 per 1,000. But in the annual report of Dr. F. J. Allan, the Medical Officer of Health of the city, which we have received, these returns are elaborated with a wealth of detail which is both valuable and interesting. The corrected infant mortality is 127, as compared with the London rate of 139, varying from 87 in Hampstead to 174 in Shoreditch. Voluntary notification of phthisis is to come into force in the current year. The epidemic of small-pox is discussed in detail. The notification of chicken-pox is reported as having been of little use in Westminster. The total small-pox death-rate was 18.6 per cent. Among the vaccinated, good and bad, it was 10.7 per cent.; of the vaccinated who had three, four, or more marks, the rate was 6.6 per cent., and in those only having one or two marks the rate was 19.7 per cent. Among the unvaccinated, the death-rate was 64.7 per cent. Dr. Allan introduces a chart to show the incidence of the disease upon vaccinated and unvaccinated, its degree of severity, and its mortality. Thirty persons are reported as having contracted typhoid fever from eating shell-fish, and the matter is discussed in the report. Representations have been made to the City Council which have been sent by the Local Government Board to the Royal Commission on Sewage Disposal now sitting. Part II of the Report is devoted to general sanitary matters, housing, workshops, and food. Progress has been made with the Clare Market scheme, which has now been on hand for some seven or eight years. Houses for 610 persons have been opened in Duke's Court, and note is made of the new buildings at Millbank. Eleven houses in Turner Court have been closed, and details of the Regency Street scheme are discussed in the report. Dr. Allan refers to the healthiness of the block dwellings in Westminster, and gives the death returns as follows: Peabody Buildings, 15.7; Industrial Dwellings Company, 8.0; London County Council Buildings, 15.0; Soho Industrial Dwellings Company, 12.6; and the Metropolitan Association Dwellings, 11.8.

PUBLIC HEALTH WORK AT COLCHESTER.

DR. EDWARD CHICHESTER, the Medical Officer of Health of Colchester, in his annual report for 1902, just issued, furnishes some substantial evidence of the work of preventive medicine. It will be remembered that in Colchester diphtheria has been prevalent in recent years, and the antitoxin treatment has not had a fair trial. During 1902 the returns showed great improvement. In all, however, 162 cases of diphtheria were notified and 15 deaths occurred (as compared with 287 cases in 1901 with 38 deaths). Of the 162 cases in 1902, 103 were isolated and treated at the infectious disease hospital with 6 deaths, a rate per cent. of 5.8. Among the 59 cases treated at home the death-rate per cent. was 15.2. The cases treated in hospital all had antitoxin; in the cases treated outside some had antitoxin and some did not. When these figures are compared with 1901 the results of systematic and early administration of antitoxin are at once seen. In 1901 the cases were treated with a spray of dilute lactic acid, and some were given antitoxin. The death-rate per cent. was 25.9. Immediately the new régime was commenced, and antitoxin given in all cases at once, the death-rate fell, and now stands on the year's working at 5.8 per cent. Dr. Chichester has also used other means at his disposal, and by bacteriological examination of suspicious sore throats, has been able to check the spread of infection. Seven children from the Central School having sore throats were examined, the diphtheria bacillus was found, and the children were isolated. The result was that no further cases of diphtheria occurred. In 1901 before these examinations were made, one girl with a sore throat in which no swab was taken, proved infectious. Subsequently 15 cases of diphtheria arose which can apparently be traced to this case. Several of these cases proved fatal. Convalescents under the new order of things have been considered infectious as long as diphtheria bacilli could be found in their throats, and until there have been three consecutive negatives they are not discharged. Dr. Chichester considers that antitoxin and bacteriological examinations account for the decline in diphtheria in the town. Reference is made in the report to much excellent sanitary work which has been done during the year. The death-rate is 14.1. Tuberculous disease seems to make a heavy toll at the Eastern Counties Idiot Asylum, where 16 deaths occurred, compared with 67 for the whole of the rest of the 37,000 people in the borough.

WOMEN AS HEALTH INSPECTORS.

THE Women's Rescue League, of Washington, has submitted a report to the Board of Health, pointing out that men have proved failures as health inspectors, and that women should replace them. They state that they followed up the men in a recent inspection, and found that much had been overlooked. This is possibly enough, for a woman's power of observation in this particular sphere is naturally much greater than that of the average man. In other respects, however, it would seem that the mere man presents certain advantages. For instance, in the report, it is stated that the energetic ladies were greatly annoyed and frightened by the large number of rats encountered during their inspections.

THE COST OF DISINFECTING.

THE difficulty which the practitioner sometimes experiences in persuading his patient to allow rooms, bedding, etc., to be disinfected is largely due to ignorance of the fact that the cost of carrying out these operations is thrown upon the local authority. By an Act which was passed in 1890, bedding, clothing, and other articles "shall be disinfected by the local authority, and shall be brought back and delivered to the owner free of charge, and if any of them suffer unnecessary damage the authority shall compensate the owner for the same, and the amount of compensation shall be recoverable in, and in case of dispute shall be settled by a court of summary jurisdiction." The law in Scotland is even more stringent, for it is provided by an Act now in force that when the local authority has disinfected any house, part of a house, or any article it shall compensate the occupier or owner of such house or the owner of such article for any unnecessary damage thereby caused to such house, part of a house, or article; and when the authority destroy any article under this section it shall reasonably compensate the owner thereof, and the amount of any such compensation shall be recoverable in a summary manner. The full force of this section is illustrated by a recent case. There an officer employed by the Corporation of Ayr proceeded to disinfect a house from which a scarlet-fever patient had been removed. The process of disinfecting was carried out by placing certain disinfectants on the floor of the infected room, where they were ignited. Having done this the officer left, after giving directions that the room should not be opened for three hours. In consequence of the disinfecting operations the house took fire. The householder then brought an action for damages, relying on a section of the Act which provides that when the local authority have disinfected any house they must compensate the occupier or owner for any unnecessary damage thereby caused. The Sheriff held that this provision was applicable, and found the corporation liable in damages to the extent of £48.

VACCINATION REGISTERS.

"ALPHA."—A correspondent writes that he has recently resigned his post as public vaccinator to a certain district, and that his successor was permitted by the guardians to act as his deputy for about three weeks. During that time the deputy vaccinated about half-a-dozen infants, but by an oversight these cases were initialled in the register by himself as public vaccinator. This was discovered by the Local Government Board inspector, who appeared to consider it a serious offence. Our correspondent asks whether, in event of his being appointed public vaccinator to another district, the Local Government Board would be likely to refuse consent. It is most important that the vaccination registers should be accurately kept, and particularly that they should show by whom each individual operation was done. It is impossible to say how the Local Government Board may regard the matter, but if this is the only time such an oversight has occurred we do not think it likely that consent would be refused to another appointment.

CONTRIBUTIONS TO PENSION BY DECEASED MEDICAL OFFICER UNDER SUPERANNUATION ACT, 1896.

THE widow of a Poor-law medical officer writes to ask whether the executors of her deceased husband can claim any return of the contributions which were deducted from his salary towards providing a pension.

*** The guardians have no power to return contributions to the representatives of an officer who dies while holding office.

EXAMINATION OF PAUPER LUNATIC.

F.R.C.S.EDIN., D.P.H.LOND., writes: (1) I am district medical officer here and was called on by the relieving officer to visit and examine an alleged lunatic—a pauper. I did so, and found no necessity to send the patient to the asylum. Am I entitled to an extra fee (10s. 6d). from the guardians? (2) On July 10th the relieving officer sent an order for me to visit and report on the case of M. C., an alleged lunatic, and a message that the magistrate (——) would meet me at the house of the patient. My *locum tenens* duly attended, and found no necessity for her removal. Who is responsible for the fee—the relieving officer, as representing the guardians, or the magistrate?

*** With regard to (1), we do not think our correspondent can claim any fee for this case, as no magistrate appears to have been consulted in the matter. He appears to have visited the patient and to have given an opinion on her mental state without any magistrate's order to do so, and simply on the verbal request on the relieving officer who himself felt no doubt that he was somewhat safeguarded by the opinion given to him. This relieving officer, however, by not reporting the case to a magistrate (as required by the Lunacy Act) seriously failed in his duty. If this had been done, it would then have been the duty of the magistrate to call to his assistance a medical practitioner, and on receiving from him a report of the case, to have ordered a proper fee to be paid to him by the guardians. With regard to (2), we are not told that our correspondent received any order from a magistrate to report on this case, but if he did receive such order and subsequently made a report to the magistrate as to the mental condition of the patient, he would be entitled to a fee for so doing. The guardians would in such case be liable for this fee on the magistrate making an order for its payment, or they would be at liberty to pay a reasonable fee without any order.

GRADUATION OF A BLIND MEDICAL STUDENT.—It is stated by the Berlin correspondent of the *Daily Chronicle* that a young Jew named Ludwig Cohn, from a village in Silesia, who has been totally blind since his tenth year, has just succeeded in obtaining his doctor's degree in the philosophical faculty at the University of Berlin. Cohn was obliged to have everything read to him. During the course of nearly twenty years' study he has formed a considerable library of philosophical and scientific works in Greek, Latin, French, and German, all written by himself in pointed type for the blind.

MEDICAL NEWS.

THE VALUE OF MEDICAL PROTECTION.—We are informed that a member of the London and Counties Medical Protection Society was, some time back, arrested by the Japanese police on board ship, by mistake for an individual of the same name. As a result of representations made by the Society to the Foreign Office, the Japanese Government has now decided that, while maintaining that the claim for compensation could not be entertained in accordance with the law of the country, they will grant the complainant as a matter of courtesy and grace the sum of £30 in view of the annoyance and inconvenience to which he has been put.

LECTURES ON BACTERIOLOGY AT PLYMOUTH.—The Plymouth Education Authority has appointed Dr. F. Bushnell to deliver a course of bacteriological lectures for medical men, veterinary surgeons, agriculturists, brewers, farmers, sanitary inspectors, teachers, and others. These will be illustrated by lantern slides, cultures and demonstrations, and it is hoped to make arrangements for a class of practical bacteriology in the future.

PRESENTATIONS.—Dr. Thompson Campbell, who has been Superintendent of the Ochil Hills Sanatorium since that institution was opened nearly eighteen months ago, was presented recently on his resignation with a gold-mounted cane and smoker's companion by a number of his friends and patients.—After fifty years' service at the West Cornwall Dispensary and Infirmary as honorary physician and consulting physician, Dr. Montgomery was presented with a silver tray, and the balance of £172 5s., which was collected by subscription.

MEDICAL VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL.—House-Surgeon. Salary at the rate of £70 per annum.

BLACKBURN AND EAST LANCASHIRE INFIRMARY.—Junior House-Surgeon, resident. Salary, £70 per annum.

BURTON-ON-TRENT INFIRMARY.—House-Surgeon, resident. Salary, £120 per annum, rising to £140 per annum.

CHORLEY: RAWCLIFFE HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

COLCHESTER: ESSEX AND COLCHESTER GENERAL HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

DEVON AND CORNWALL SANATORIUM FOR CONSUMPTIVES, Didworthy.—Resident Medical Superintendent.

DOVER: ROYAL VICTORIA HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

DUDLEY: GUEST HOSPITAL.—(1) Senior Resident Medical Officer. Salary, £100 per annum, rising to £120. (2) Assistant House-Surgeon, resident. Salary at the rate of £40 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark.—Clinical Assistants and Clinical Clerks for Out-patient Department.

HOSPITAL FOR DISEASES OF THE THROAT, Golden Square, W.—(1) Senior Clinical Assistant, (2) Anæsthetist.

JERSEY GENERAL DISPENSARY AND INFIRMARY.—Resident Medical Officer. Salary, £120 per annum.

LEICESTER INFIRMARY.—Assistant House-Surgeon, resident. Salary, £80 per annum.

NEW HOSPITAL FOR WOMEN, Euston Road.—Clinical Assistant in the Out-patient Department.

SAMARITAN FREE HOSPITAL, Marylebone Road, N.W.—Clinical Assistants.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon. Appointment for six months. Salary at the rate of £70 per annum.

STROUD GENERAL HOSPITAL.—House-Surgeon, resident. Salary, £80 per annum.

VICTORIA HOSPITAL FOR CHILDREN, Tite Street, S.W.—House-Surgeon, resident. Honorarium £25 for six months.

MEDICAL APPOINTMENTS.

BANNISTER, Marmaduke, M.B.Lond., M.R.C.S.Eng., Honorary Physician of the Blackburn and East Lancashire Infirmary.

BOSSON, G. A., M.R.C.S., L.R.C.P., District Medical Officer of the Lewisham Union.

BRUCE, R. T., M.B., M.S.Edin., District and Workhouse Medical Officer of the Thame Union.

BUTT, P. J., M.B., C.M., reappointed Medical Officer of Health to the Hoole Urban Council.

BYRNE, J. P., L.R.C.S.I., House-Surgeon, Provincial Hospital, Port Elizabeth, South Africa.

CAMPBELL, Alfred, F.R.C.S.Edin., M.R.C.S.Eng., Assistant Medical Superintendent of the Hospital for the Insane at Toowoomba, Queensland, *vice* A. Price, M.B., Ch.B.Edin., resigned.

CLEMSON, T. F., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Wootton Bassett District, Wiltshire.

CONNOR, D., M.R.C.S., District Medical Officer and Public Vaccinator, Victoria Plains, West Australia.

COOKE, John Benson, L.R.C.P., L.R.C.S.Edin., Medical Officer to H.M. Convict Prison, Portland.

CUFF, Archibald, M.B., B.C.Cantab., Honorary Surgeon to the Sheffield Royal Infirmary, *vice* Charles Aikin, F.R.C.S., resigned.

EXHAM, A. R. F., M.D., B.Ch.Dub., District Medical Officer of the Drayton Union.

GARNER, W. L., M.B., B.C.Camb., Medical Officer of the Ampthill Union Workhouse.

GOODE, Christina L., M.B., Assistant Medical Officer, West Ham Infirmary, Leytonstone, N.E.

GREIG, J. Sangster, M.B.Aberd., Medical Officer, West Ham Union Workhouse, Leytonstone, N.E.

HAWORTH, H. D., M.B., Ch.B., House-Physician to the Manchester Royal Infirmary.

HODGSON, J. F., M.D., Ch.B.Vict., Assistant Medical Officer of Health of the County Borough of Halifax.

HOLMES, H. G., M.B., M.Ch.Syd., Government Medical Officer and Vaccinator at Warialda, N.S.W., *vice* Dr. R. E. S. MacKinnon, resigned.

HOWARD, T., M.B., B.S.Irel., District Medical Officer of the Weymouth Union.

HUNT, J. A., L.R.C.P.Edin., M.R.C.S.Eng., Certifying Factory Surgeon for the Borrowash District, Derbyshire.

JOHNSON, A. E., M.B., Ch.B., House-Surgeon to the Manchester Royal Infirmary.

KITCHIN, Percy, M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Newport District, County Salop.

LAVERY, J. P., L.R.C.P. & S.Edin., L.F.P.S.Glasg., Certifying Factory Surgeon for the Dundalk District, County Louth.

MACDONALD, D. R., L.R.C.P., L.R.C.S.Edin., Certifying Factory Surgeon for the Dunbar District, Haddington.

MACPHERSON, R. B., M.D.Glasg., Certifying Factory Surgeon for the Cambuslang District, co Lanark.

MARTIN, R. H., M.B., B.S.Edin., Second Assistant Medical Officer to the Central London Sick Asylum District.

OGILVIE, T. W., M.B., M.S., District Medical Officer of the East Retford Union.

O'NEILL, C. S., M.B., Ch.B., House-Physician to the Manchester Royal Infirmary.

OSBORNE, A., M.R.C.S., L.R.C.P., District Medical Officer of the Barnstaple Union.

PENNY, H. J., L.K.Q.C.P.I., Public Vaccinator for the Portland District, Tasmania.

REIDY, J., L.R.C.P. & S.Edin., District Medical Officer of St. George-in-the-East Parish.

RHODES, J. M., M.D.Brux., L.R.C.P., L.R.C.S.Edin., Certifying Factory Surgeon for the East Salford District, Lancaster.

SANDOE, J. W., M.D.Durh., B.S., Certifying Factory Surgeon for the Silverton District, County Devon.

SAPP, J. G. V., M.B., C.M.Edin., D.P.H., District Medical Officer of the Strand Union.

SCOTT, Joseph, M.B., C.M.Glasg., Medical Superintendent, Government Indo-European Telegraphs, Teheran, Persia.

SCOTT, Robert G., M.B., C.M., Honorary Medical Officer to the Hobart Hospital, Tasmania, *vice* Hon. Gamaliel H. Butler, M.R.C.S., L.R.C.P., resigned.

SCOTT, W. T., M.B., B.C.Camb., House-Physician to the Royal Berks Hospital, Reading.

SECRETAN, W. B., M.B.Lond., F.R.C.S., House-Surgeon to the Royal Berks Hospital, Reading.

SHAW, W. F., M.B., Ch.B., House-Surgeon to the Manchester Royal Infirmary.

SHEAHAN, James G., L.R.C.P. & S.Edin., L.F.P.S.Glasg., Physician to Out-patients, St. Vincent's Hospital, Melbourne.

SIMON, D. Ap, M.B., Ca.B.Glasg., District Medical Officer of the Llandilofawr Union.

STEWART, W. G., M.B., B.S.Lond., District Medical Officer of the Ware Union.

STONEY, Robert B., M.B., Ch.B.Dub., Medical Officer for the Aboriginal Station at Cumeroogunga, N.S.W., *vice* Dr. T. Orde Smith, resigned.

TAYLOR, F. W., M.B., C.M., Honorary Assistant Physician of the Blackburn and East Lancashire Infirmary.

THOMPSON, James, M.B., B.S.Melb., Resident Medical Officer to the Perth Public Hospital, West Australia, *vice* L. S. Allan, resigned.

WALKER, T. A., L.R.C.P.Edin., M.R.C.S., District Medical Officer of the Weymouth Union.

WHITE, T. D., L.S.A., Certifying Factory Surgeon for the Southminster District, Essex.

WINCHESTER, G. C., M.B., M.S.Edin., District Medical Officer of the Eastry Union.

WRIGHT-GRANT, J., M.B., C.M., Physician to the Daneswood Sanatorium, Woburn Sands.

ST. THOMAS'S HOSPITAL.—The following gentlemen have been selected as House-Officers from Tuesday, September 1st, 1903:
House-Physicians.—P. N. Panton, B.A.Cantab., L.R.C.P., M.R.C.S.; J. N. Sergeant, L.R.C.P., M.R.C.S.
House-Physicians to Out-patients.—R. E. H. Leach, M.A., M.B., B.Ch.Oxon., L.R.C.P., M.R.C.S.; G. R. Bickett, M.A., B.C.Cantab.
House-Surgeons.—J. E. Adams, L.R.C.P., M.R.C.S.; H. Upcott, L.R.C.P., M.R.C.S.; C. Wheen, B.A.Oxon., L.R.C.P., M.R.C.S.; N. Carpmael, L.R.C.P., M.R.C.S.
House-Surgeons to Out-patients.—W. L. Harnett, B.A.Cantab., L.R.C.P., M.R.C.S.; H. J. Pinches, B.A., M.B., B.C.Cantab., L.R.C.P., M.R.C.S.; T. Guthrie, B.A., B.C.Cantab., L.R.C.P., M.R.C.S.; L. E. Wigram, M.A., M.B., B.C.Cantab.
Obstetric House-Physicians.—(Senior) H. Spurrier, B.A.Cantab., L.R.C.P., M.R.C.S.; (Junior) W. H. Harwood Yarred, B.Sc.Lond., L.R.C.P., M.R.C.S.
Ophthalmic House-Surgeon.—(Senior) A. C. Hudson, M.A., M.B., B.C.Cantab.
Clinical Assistants in the Special Department for Diseases of the Throat.—G. C. Adeney, L.R.C.P., M.R.C.S. Skin.—C. N. Sears, L.R.C.P., M.R.C.S.; C. H. Latham, L.R.C.P., M.R.C.S.
Several other gentlemen have received extensions of their appointments.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 8s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

BARNES-PEARSON.—On August 28th, at Ribbleton Lane, Preston, Lancs, the wife of J. Barnes-Pearson, M.B., C.M.Edin., of a son.

CROWLEY.—On August 18th, at 116, Manningham Lane, Bradford, the wife of Ralph H. Crowley, M.D., of a daughter.

RAW.—On August 28th, at 66, Rodney Street, Liverpool, to Dr. and Mrs. Nathan Raw, a son.

ROSE.—At Melrose, Aylesbury, on September 4th, to Horace and Ada Rose, a son—Ralph.

TIBBITS.—On August 27th, at 25, High Street, Warwick, the wife of Hubert Tibbits, M.B., of a son.

TILBURY-FOX.—On September 2nd, at The Gables, Ashford, Kent, the wife of Campbell Tilbury-Fox, M.R.C.S., L.R.C.P., of a son.

MARRIAGES.

HEGGS—SANSOME.—On August 27th, at Christ Church, West Bromwich, by the Rev. Watkiss Jones, of Hill Top, assisted by the Rev Arthur Kerr, M.A., of Dewsbury, and the Rev. Ed. Hounslow, A.K.C.Lond., Raymond Mitchell Heggs, L.R.C.P.Lond., M.R.C.S.Eng., son of the late W. F. Heggs, West Bromwich, and grandnephew of Captain T. Mitchell, late 6th Rifles, Governor of H.M. Prison, Salford, to Maud Ethel, daughter of T. Sansome, Esq., M.R.C.S.Eng., J.P., Wes Bromwich.

LEGGE—BLAKENEY.—On Thursday, September 3rd, at the Parish Church, Melton Mowbray, by the Rev. R. Blakeney, M.A., Vicar of Melton Mowbray and Rural Dean, assisted by the Rev. R. S. C. H. Wood, B.A., Sydney Colin Legge, M.R.C.S.Eng., L.R.C.P.Lond., of 58, The Tything, Worcester, to Louise Grace, daughter of the late William Blakeney, Esq., Registrar-General for Queensland. At home after 1st of October.

MCKECHNIE—CULLEN.—On August 24th, at St. Mary's Church, Bedford, by the Rev. Vitruvius Wyatt, M.A., William Ernest McKechnie, M.B., Ch.B.Edin., Indian Medical Service, to Marion Alice Cullen, only daughter of the late James Cullen, M.D., of Motihari Chumparun, India.

MILLIGAN—NYSTROM.—At St. Andrews Church, Gothenburg, on the 8th inst., by the Rev. Courtnay Downman, Chaplain, Wyndham Anstruther Milligan, M.A., F.R.C.S. Edin., London, son of the late Very Rev. Professor Milligan, D.D., of the University of Aberdeen, to Hulda Eleonore, youngest daughter of Oscar Nystrom, Esq., of Mahult, Skallinge, Sweden.

SNAPE—YELD.—On the 2nd inst., at St. Mark's, Bradbury, Stockport, Harold Snape, M.B., Ch.B.Vict., of Salford, to Constance Vaudrey, youngest daughter of the late H. S. Yeld, Esq., M.D., of Sunderland.

DEATHS.

FARMAR-BRINGHURST.—On 28th ultimo, from shock and exhaustion following an operation for appendicitis, at Hilfield Lodge, Aldenham, Herts, Billa, the dearly-beloved wife of Major E. D. Farmar-Bringhurst, and youngest daughter of the late Colonel Blurton, 2nd Queen's. Indian and South African papers please copy.

JESSOP.—On September 6th, at The Quarries, Chapeltown, in his 66th year, Thomas Richard Jessop, F.R.C.S. of 32, Park Square Leeds.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

Communications respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the Journal, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

Original Articles and **Letters** *forwarded for publication are understood to be offered to the* British Medical Journal *alone, unless the contrary be stated.*

Authors desiring reprints of their articles published in the British Medical Journal are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

Correspondents who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

Correspondents not answered are requested to look at the Notices to Correspondents of the following week.

Manuscripts forwarded to the Office of this Journal cannot under any circumstances be returned.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the Journal be addressed to the Editor at the Office of the Journal, and not at his private house.

Telegraphic Address—The telegraphic address of the EDITOR of the British Medical Journal is *Aitiology, London*. The telegraphic address of the MANAGER of the British Medical Journal is *Articulate, London*.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

S. P. H. wants to find a really satisfactory earth closet, if one exists. He will be glad if any member can tell him of one.

W. E. B. will be glad if any reader of the British Medical Journal can tell him where he can purchase an "Eastbourne carrying chair." It has two wheels, and is said to be exceedingly easy to get up and down stairs.

Dr. T. Reuell Atkinson (Chadwell Heath, Essex) writes: Can any of the readers of the British Medical Journal tell me where I can procure a copy of model rules for the employment of a district nurse in a rural neighbourhood? We are about to start such a nurse here, where the population is very scattered and mostly very poor.

Derma writes: About a year ago one number of a medical periodical was sent out as an advertisement. It contained an article on the gangrene produced by carbolic dressings with a plate giving illustrations of that on the fingers, hands, etc. If any one could give me the name of that paper or furnish me with that number I should be obliged.

Motors.

H. B., who is much interested in the letters which have appeared in the Journal on steam and petrol motors, would be greatly obliged if any member could give him information regarding the suitability of electric motors for town work; if they are reliable, and if the cost of upkeep is high.

Wanted: A Diagnosis.

Perplexed writes: Several lads collected crabs on a (?) sewage-contaminated shore, cooked and ate them. All, I believe, were ill, but two only came under my care. Fever 103° to 104° at 8 a.m. Constipation, delirium; petechial rash on abdomen of one and two red spots, elevated, and disappearing on pressure; moist *râles* over whole of both lungs and hypostatic congestion; no vomiting, no convulsions. Optic neuritis not looked for. Some gurgling in iliac region; tongue, thick whitey-brown fur; no cough; respirations somewhat quick; alae nasi active; no expectoration; pulse small, quick. To-day ninth day of fever. I should be obliged if a reader would kindly name probable disease.

ANSWERS.

Scotia (Bournemouth).—We do not consider it within our province to supply information as to hotels, temperance or other.

Dr. J. Tertius Clarke (Perak).—Van Gehuchten's method of detecting rabies is described in the article on Rabies in the *Encyclopaedia Medica*.

J.M.S.—The question of various diets in health is dealt with shortly in Solis-Cohen's *System of Physical Therapeutics*, vol. vi; Davis on *Dietotherapy*, Part I; *Diet in Health—United States of America, Germany, and Savages, etc.* We do not know of a book dealing exhaustively with "national dietaries."

The M.D.Lond. Examination.

Candidate.—We are informed that the two books best adapted for the purposes are Titchener's *Primer of Psychology and Outlines of Psychology* and Hyslop's *Mental Physiology*. With regard to the examination in medicine either Osler's *Practice of Medicine*, or Taylor's *Manual of the Practice of Medicine*, would be the best for general work.

The Plague of Flies.

Dr. J. Tregelles Fox (Leeds) writes: Is "M.O." quite sure that there is sufficient cleanliness, and cleanly removal of waste products of every description? Possibly the smell of disinfectants or stale "elder, musk, etc.," may, in combination with some peccant odour, actually attract the flies, like the "straw laid down" for quiet attracting the organ grinder.

M.D.Brux.

"Max."—There is a small handbook, price 2s. 6d., published by C. Reinhardt, M.D.Brux., entitled "A Degree for British Practitioners." This book we believe can only be obained of the author. Dr. M. Greenwood, of 243, Hackney Road, N.E., and Dr. F. H. Edwards, of Camberwell House, S.E., Hon. Secs of the Brussels Medical Graduates' Association, would also be able to give any desired information.

Hospital Construction.

X-rays.—Messrs. Henman and Cooper, Birmingham; Paul Waterhouse 25, New Cavendish Street, and P. B. Adams, 65, Leadenhall Street, are all well-known hospital architects. We are unaware of any very recent work on hospital construction and sanitation, but our correspondent will find about as much information on the subject of a general character as is likely to be useful to any but an architect in most of the larger works on hygiene, for example, Shirley Murphy, Lewis and Balfour, Notter and Firth, etc. The classical work is *Hospitals and Asylums of the World*, by Burdett, of which the two last volumes deal with hospitals and include a portfolio of plans. The complete work costs 12 guineas, but the two volumes mentioned can be bought for £9.

Treatment of Prostatitis.

Dr. Thomas Webster (Redland) writes: On reading Mr. T. Fagge's reply to "Prostate," in the British Medical Journal of August 22nd, I fail to see the rationale of his prescription *re* "chronic prostatitis"; it would have been more helpful to the practitioner in such cases if Mr. Fagge had completed the formula of his prescription. Having a case of chronic prostatitis in hand which does not need even a mild aperient, I would like to know on what views of the case Mr. Fagge prescribes "citrate of lithia." My patient is neither gouty nor rheumatic. It has often struck me, as well as many other members, what a pity it is that our professional brethren, who so often and so kindly try to help one another, write so loosely when they recommend certain drugs in certain cases. As a rule they might better, on all occasions, complete their prescriptions; exactness and thoroughness would not detract from the obligation.

Dr. J. Tregelles Fox (Leeds) suggests that "Prostate" (see British Medical Journal, August 8th) might try leaving off all local and sedative treatment, relying on (1) occasional cholagogue purgatives, (2) cold bathing, (3) sexual abstinence for a time, and (4) habitual postural treatment. By the latter is meant lying prone for part of the night, and "knee-shoulder drill" morning and evening—like the Mohammedan praying, with pelvis highest. It is believed that the symptoms "Prostate" describes are connected with congestion in pelvis and lumbar spine, and are excited by local irritation, such as anything being in the rectum. The morning erections may be timed by the matutinal "move on" of the colon. "*Brevis coena jurat*" and some article of diet such as sweets or stimulants at night may be part of the exciting cause.

Diet Table in Rickets.

Dr. Morris J. Williams (Fulham) writes: I have reason to believe that a vast number of medical practitioners have, like myself, experienced a great deal of difficulty in formulating a suitable diet table for children suffering from rickets between the age of 1 and 3 years that will satisfy the parents, who are invariably of opinion that something more substantial than milk, cream, and meat juice is essential for the well-being of their offspring. I have asked several of my medical acquaintances what diet should be prescribed, but they, like the books, enumerate a long list of what should be prohibited. I find that parents, after listening to the prohibitions, sigh and ask, "Well, what shall I feed him or her on?" They do not consider liquids food for children over 9 months old. I shall be glad to learn of a four-meal a day diet table that will supply a little variety at breakfast, dinner, tea, and supper for these little patients.

Motors.

Motor writes: In reply to "B. F. P.," I still think an American steam car is by far the cheapest to buy. Two friends of mine own such cars, and in one instance the cost second-hand was only £55. The owner has had no bother owing to what might be called its low cost—namely, excessive wear, but the troubles are much the same as described by "B. F. P." My other friend's experiences with a second-hand car are much the same. Since writing my last letter I saw a locomobile, guaranteed in working order, sold at a London motor auction at £18. I therefore still maintain that to medical men, who generally have to consider first cost, the steam car of that type affords the possibility of a cheap means of conveyance, capable of unlimited work, with the drawback that it should have skilled attention and is somewhat costly in maintenance. No modern petrol car with anything like its reliability can be bought second-hand at twice the cost of the locomobile pattern; and to most medical men with country practices the outlay of £100 or more, with great depreciations in view, is a serious matter. I may say that I keep a two-wheeler, brougham, and one or two horses, according to season, and now think I shall be best served as a substitute by one of the older pattern Daimlers. I hear they are very reliable, comfortable, strongly built, and, being solid-tyred, are free from puncture troubles and the risk of exceeding the future legal limit. Having four speeds they can climb any hill. With a car like this, attended to by an expert, I hope to save money all round and gain in comfort. Canopies can easily be fitted.

Dr. W. W. Hardwicke (East Molesey) writes: In reply to "Country Practitioner," I have pleasure in giving him my experience of motor *versus* horse, which is as follows:

1. A good motor will do the work of three horses, winter and summer, but the driver must not only be able to drive, but thoroughly learn every part of his engine. After three months' practice he ought, if he is at all mechanical, to be able to locate any little trouble that may arise; and if he is not mechanical, he had better by far let motor cars alone. The troubles are generally in connexion with the sparking and not with the engine. The car is always ready and never tired. All he wants is a good supply of petrol. Half a gallon will drive him for two or three hours, at a cost of 6d. The repairs are very trifling, but a car, like an ordinary carriage, wants a touch up with paint and a coat of varnish every second year. As regards tyres, Michelin tubes and Renforcé clipper Continental covers make him fairly safe from punctures if he drives carefully in daylight. At night he must of course risk broken bottles in the road, especially in country villages.

2. He will find it difficult to beat a De Dion voiturette. The new pattern, with single cylinder, 6 h.p., and engine in front, is a little gem, but the older pattern, 4½ h.p., is a good reliable car, and can be bought cheap. I have driven one of the latter, with a Parisian hood, for twelve months with much comfort. This hood has waterproof sides which can be removed in summer, when it acts as an awning, sheltering from the glare of the sun. I commenced with a belt-driven Benz, but as a correspondent last week says, it is now out of date. Let him beware of cars having any but first-class names of makers, and if he takes my advice he will not look at a steam car. Their silent movement is very seductive, but their drawbacks are almost too numerous to mention. Among these, however, are constant watching of the steam gauge in front; sitting over a burning lamp with a large surface of petrol flame; a tubular high-pressure boiler with numerous joints which sooner or

later leak; the petrol consumed is much greater than is the case with an ordinary petrol car.

DR. GEO. W. ENGLAND KERR (Inverness) writes: In answer to the inquiries regarding the suitable type of car for medical men for all-round-year work, allow me to give you my experience. Five years ago I found that nine horses were inadequate for my work, and I gladly welcomed the advent of the motor which would gain the necessary time. I purchased the fourth car of the Arrol Johnston (of Paisley) manufacture, and that car has now done over fifty thousand (50,000) miles, and the same firm offered me last week two-thirds of the original cost price for it, which I declined, as it will certainly do me another four or five years. I have two such cars, and find them exceptionally reliable—a splendid investment—and have used them during the last five winters every day. When one considers the roads of Inverness-shire, which are certainly the worst in Scotland, the steep gradients, and the heavy macadamizing of these roads, no better guarantee could be given to any doctor as to one of the most reliable cars that can be procured. For a doctor is different from a man who buys his car for pleasure. It must be on the road every day, and must be of value, instead of worthless at the end of six or seven years. No severer test has ever been made on any car, and none could have come out of the ordeal better than these have done. My late coachman drives one, and I have a trained mechanic, who drives the other and attends to almost all the little repairs necessary. I have also a Toledo steam car, which I keep for town work, but which I am afraid would require to be laid aside for two or three months in the winter, on account of the heavy nature of the roads. Comparing the cost of these cars with the upkeep of my horses for the twelve years previous, I find it much the same—if anything, a shade less; but I gain enormously in time with the motors, and thus can easily save two or three extra hours per diem, which one can either utilize to further one's practice or have it for leisure. Regarding the price, the first one cost £285, the second (which is 12-h.p., with a well-fitted hood) £370, and the Toledo steam car £275. I shall be glad to give any additional details to any of my fellow practitioners who care to write me.

DR. CHARLES CORBEN (Chepstow) writes: After using a car for three years perhaps the results of my experience may be of some use to my professional brethren. These remarks apply more particularly to country work. The main object being reliability without excessive expense, I think the following are the chief essentials for a petrol car: (1) Tube and electric ignition combined; either failing can be substituted by the other with practically no delay. (2) Solid tyres, thus perhaps diminishing comfort, etc., but also avoiding the numerous puncture troubles, which on a night visit would be inexpressible. (3) Consequent on above speed not to exceed 20 miles per hour at most or car would soon rattle to pieces. (4) Car strongly and comparatively heavily built to counteract increased vibration from solid tyres, and also the effects of the heavy bye-lanes a doctor has to traverse. (5) Chain transmission; good roller chains give very little if any trouble if properly adjusted and lubricated; belts may give and live axles cannot be repaired on the road. (6) A removable hood is useful if only to protect the seat from rain when in a house, but it does more. (7) Spray carburetter; in cold weather surface carburetters cause much trouble in starting, and here is another benefit of burners for ignition, they warm the engine. (8) I believe a two cylinder 6-8 b.h.p. with mechanically operated inlet and outlet valves, parts as protected, but as accessible as possible with a low speed engine, such as the Daimler; 800 revolutions normal to be the best; three or four speeds to enable any hill to be negotiated; of course powerful countershaft (water cooled for preference) and sprocket band brakes. A leather apron completely covering lower half of body and legs is very useful. To be successful with a car I consider the owner ought to be (*a*) his own driver, (*b*) to master thoroughly all the details of the car himself, (*c*) to inspect the car narrowly at regular intervals, (*d*) to superintend personally, or better do himself, all the minor repairs and adjustments, (*e*) to carry every possible spare part with him, (1) set of bolts and springs, (2) split pins and cotter pins, (3) inlet and exhaust valves, (4) speaking plug and platinum tube and burners, (5) float for float chamber and jet for spray, (6) spare chain, (7) complete set of spanners, ordinary, box, and adjustable, (8) pliers, pincers, large and small screwdriver, hammer and files, (9) lubricating oil can filled; (*f*) to have a place for everything and everything in its place. The chief drawback to motors for medical men is the unconscionable time taken in repairs and overhauling, about which I can give very little advice that is encouraging. I now let a local firm of shipbuilders adjust and rebush my bearings and do what is necessary, but of course have to discover and point out to them what I want done. Competition alone will make repairers consider the value of time, and thus make a motor car the ideal means of progression for medical men. In case my experience during these years is of any use the following might be added: On my 6 h.p. Daimler I have never once failed to reach my destination. The chief cause of stoppages have been—I have not electric ignition—(1) burner blocked, (2) jet from carburetter blocked, (3) induction valve or spring broken (not mechanically operated), (4) loss of pressure, forcing petrol to float chamber, (5) chain breaking (twice), (6) platinum tube burst, (7) a spanner dropped into the gear box by a careless workman, (8) an upset owing to tiller steering going wrong. I now have wheel, (9) clutch slipping badly.

NOTES, LETTERS, Etc.

POST-VARIOLOUS VACCINATION.

DR. CHARLES A. HODGETTS, M.D., L.R.C.P.Lond., Medical Inspector Provincial Board of Health, Ontario, Canada, writes: As the question of post-variolous vaccination had already entered the bounds of legal medicine before your interesting article appeared in the BRITISH MEDICAL JOURNAL of January 31st, 1903, I had been giving some attention to the matter, and would like to refer your readers to the following cases:

The first is recorded by Brouardel, and appears in the *Twentieth Century Practice of Medicine*, vol. xiii. The immunity conferred by variola against a second attack is also subject to the same variations. In 1868 I saw a lady at Passy who was suffering from confluent variola, being then 32 years of age; in 1871, after the siege of Paris, she had an attack of discrete variola; in 1873, having occasion to vaccinate her niece, I performed the operation on her, and was surprised to find that it took perfectly. Thereafter I revaccinated this lady six times at intervals of six months, in the presence of Dr. Lorain, and each time the vaccinal eruption appeared with absolute regularity. In 1876 the lady left Paris, and I have not seen her since.

The second is found in Clifford Allbutt's] *System of Medicine*, vol. ii. p. 578, and is given by Ernest Hart, as follows: 1858, A. B., born; mother developed small-pox when infant was 8 days old, and child had it in a mild form; 1858, when three months old successfully vaccinated (three scars); 1881, successfully vaccinated (two scars); 1883, mild attack of small-pox; 1892, September, successfully vaccinated (two scars); November, unsuccessfully vaccinated; 1893, unsuccessfully vaccinated; 1896; very mild attack of small-pox (but indubitable) (T. C. A.). There is strong evidence that this persistent falling away from immunity in this respect existed in other members of the patient's family.

The third is mentioned by H. Norman Barnett in a communication appearing in the BRITISH MEDICAL JOURNAL of December 27th, 1902: "The need for revaccination even in those who have suffered from small-pox was well shown by one of the ship's company, whose face was covered by pits, but who it was thought well to further safeguard, with the result that the vaccine took effect, producing most characteristic pustules and fairly severe constitutional symptoms."

The specific case to which I would refer was the cause of some litigation in this province a few months ago. The husband having been sued by the municipality for the care of his wife, who had an attack of small-pox in December, 1902. He entered as a counter plea that his wife never suffered from small-pox, and produced medical evidence to show she had subsequently been successfully vaccinated. "Mrs. V., unvaccinated. December 9th, 1901, attacked with small-pox discrete in character. December 11th, 1902, was vaccinated in two places with vaccine obtained from different sources. Both took, and on January 2nd one seab was still adherent." That the case was small-pox there can be no doubt, as six other cases were directly traceable to having been infected by Mrs. V. The medical men who gave evidence in support of this claim stated that, on account of the reaction from the vaccine being typical in every particular, it was conclusive evidence that the disease she suffered from was not small-pox, and the municipality had no claim on the husband, while, on the contrary, the woman had grounds for entering a claim for damages against the municipality, should this argument find favour with the judge. This, I believe, is the first instance of the claim being made in court that "a successful take" was sufficient ground to upset a diagnosis of small-pox made twelve months before; and fortunately, when cross-examined, I was able to give expert testimony to disprove the same, and much to the surprise and discomfiture of the lawyer and the testifying physicians.

The question is, indeed, a most interesting one in view of the fact that there have been so many mild cases of small-pox in Canada and the United States during the past three years, and there are many instances where physicians who persist in denying that the disease is small-pox adopt this method of post-variolous vaccination to prove their contention. I know of many instances where the attempt is reported to have been made, but the above is one of the few where it has been successful.

THE D.P.H. EXAMINATION OF THE CONJOINT BOARD.

A DIPLOMATE IN PUBLIC HEALTH writes: Allow me to state the experience I have had with the last D.P.H. examination of the English Conjoint, which seems to have upset the plans of "Rural Sanitary Authority." I graduated only last year, and began the D.P.H. course in a well-known London teaching institution last October. Ever since then I devoted my whole time to D.P.H. work, doing no other work. Surely, if busy "Rural Sanitary Authority" could devote three hours daily to his Part II work I was in a better position to devote more than three hours, and let me assure you that I did so, spending five hours daily in laboratory and other D.P.H. work. In addition I read privately at least four and a-half hours daily, excluding Sundays, on which days only two hours were set apart for the work. But I should say that I was reading for Parts I and II at the same time. Of course I devoted far more than the average number of hours when the examinations were two months distant.

My teacher, who has large experience, declared I ought to pass the examinations without any difficulty; but as regards Part II I was not quite so sure, as the range of this examination seems to have no limit whatever. But I was rejected in Part I (of which I was most confident), and therefore did not even have the pleasure of paying for Part II. (It is a pity the Conjoint lost the chance of securing my other 6 guineas!) This was the first time I was ever rejected in an examination, and but for "Rural Sanitary Authority's" letter I would not trouble myself about it, for since then I sat for a similar examination elsewhere and obtained the desired qualification.

Let "Rural Sanitary Authority" not think this is a "cry of some young medical student who too often imagines the examiners, and not the examinee, is at fault," but of one who, though young, did his duty much more conscientiously than the average medical practitioner, who can ill afford the time necessary for such an examination, and one of whose chief anxieties must at all times be his patients.

SOMNOFORM AND NITROUS OXIDE.

DR. G. W. B. DANIELL, late Anaesthetist to the Tottenham Hospital, etc. (Edinburgh), writes: As I see no reply to "Swansea's" queries which appeared in the BRITISH MEDICAL JOURNAL of August 15th, I venture to briefly answer them:

1. Somnoform is not considered as safe as nitrous oxide; neither is it as safe as pure ethyl chloride, which latter has other advantages over somnoform.

2. I would recommend nitrous oxide for short dental operations up to 30 sec., and chloride of ethyl for longer ones, say up to 90 sec., although it is sometimes difficult to procure that time; yet, on the other hand, a longer period can often be procured, and I have occasionally got 2½ min. and more of available anaesthesia in suitable cases.

3. The dangers of ethyl chloride and somnoform would probably be in respiratory failure. I would refer "Swansea" to a paper on ethyl chloride anaesthesia published in the *Lancet* of April 4th, 1903, by Dr. W. J. McCardie, of Birmingham, in which the whole question is treated in a most able way.

4. As to which is the best apparatus to use for somnoform or ethyl chloride, I would remark that I have tried several, and have now no hesitation in saying that the inhaler devised by Dr. T. D. Luke, of Edinburgh, is the best. It is exceedingly simple, very light and portable,

easily cleaned, and has nothing in it to change or get out of order. Dr Luke describes his inhaler in the *Lancet* of July 18th, 1903.

After some experience of this inhaler in minor operations and in dental surgery, I have found some modifications of advantage, which I intend shortly publishing with an illustration. Meanwhile I shall be glad to correspond with "Swansea" on the subject if he would like to write to me.

Mr. R. H. J. Swan described in the JOURNAL of July 11th his somnoform inhaler, which I have seen him use in the dental department of Guy's Hospital with results which were highly satisfactory. I have used it, but rather prefer my own modification of Dr. Luke's for somnoform as well as chloride of ethyl.

In conclusion, I would add a word of caution on these new anaesthetics. They are all at present more or less on their trial, and much more experience will have to be recorded before a definite statement can be made as to their relative rapidity and efficacy in comparison with nitrous oxide in dental surgery, not to mention certain disadvantages such as after-sickness, headache, etc. Doubtless some of these disadvantages will be got over by increased experience. As with the administration of other anaesthetics, so with ethyl chloride, etc., caution and experience are required in their administration to produce good results in regard to a satisfactory anaesthesia, a minimum of after effects, with safety to the patient. I would strongly recommend intending administrators to see it given by an experienced anaesthetist first, and to administer it under his guidance several times and to several types of patients before attempting to give it to their own patients. This will be of advantage to all concerned, and the drug may not have to bear the blame which might really be due to faulty administration.

THE MULTIPLICATION OF UNIVERSITIES.

DR. DOBSON POOLE (Bournemouth) writes: It is curious to consider the effects of the supply of additional educational centres, especially now that there are to exist separate universities for Liverpool, Manchester, Leeds, Sheffield, and one town and another. The wonder is that so many towns should seek special university powers when our vast schemes of education are just beginning to show such poor, and even retrograde, results. The reasons, which are in reality excuses, for many of these extra institutions are those adduced for education generally, namely, civilization, evolution, progress, etc., all of which have the peculiar ring of the vote-bait of the politician; and the particular one for a medical university, the "supply of clinical material," is as old as it is applicable to every village. The end of all politics is to know where to levy the tax. This is sadly illustrated in the case of a university which proposes to put an extra penny in the £ on to the poor-rate, so that the three R's may be replaced by the three F's—Free education, Free titles, and Free starvation! These are ticklish times for education, because development and decline go on together in the same function, each laying special stress upon the other, with the result that oppression is experienced in both. This oppression (extortion) cannot have but one effect—disorder in action. The competition among universities has already begun to tell its tale—the new ones have begun to eat up the old and with no profit, and the old ones to harass the new and with no profit. Both new and old are thus struggling to exist, but neither to flourish. The education motto of to-day is "the stamp's the man for a' that." Thus there are more men than than ever who know the structure of the Graafian follicle, and fewer than ever who have the skill of the trained obstetrician. In short, there is no "excellency of knowledge;" all is monopoly of titular power. The specialism of Nature is excellence, that of idealists mediocrity. A glance at a recent issue of the BRITISH MEDICAL JOURNAL would convince any one of the difficulty the General Medical Council have in regulating the disorderly effects of competition and corruption among some medical examining bodies, all of which evils may be directly traced to the over-production of universities and similar institutions. These manifestations may, then, be regarded as a prodromal sign of the approach of the "one portal" system, at least as regards medical education—a summary action by Parliament to deprive both the new and the old institutions of their greatest privileges, and to put a finishing touch to their tendency to become mere machines for fulfilling the bare requirements of the law. And "since many things increase vanity, what is man the better?"

NAUHEIM BATHS.

DR. J. TREGELLES FOX (Leeds) requests us to state that he introduced this accessory method of treatment at Strathpeffer Spa five years ago, and the method is still used there by his medical brethren.

LETTERS, COMMUNICATIONS, ETC., have been received from:

A Another Naval Medical Officer; H. R. Andrews, M.B., London; Dr. T. R. Atkinson, Chadwell Heath; Mr. H. Alston, Gosforth; Another Member; Dr. H. B. Allen, Carlton (Vic.). **B** Dr. J. H. Bryant, London; Dr. F. Bushnell, Plymouth; Dr. H. Barnes, Carlisle; Mr. D. J. Burroughs, London; Mr. J. F. Blake, Putney; Dr. F. Bushnell, Plymouth; Blenheim. **C** Causeway; C. Christy, M.B., London; Mr. S. Chadwick, London; Dr. W. Cassels, Birmingham; Chevron Moerted; Dr. E. Cullinan, London; Mr. C. Corben, Chepstow. **D** Dr. W. J. Dodds, Prestwick; Derma; Miss D'Orsey, Oxford; Mr. G. W. B. Dantell, Edinburgh; Dr. Sidney Davies, Woolwich; Dr. A. Duke, London; Professor Delépine, Manchester. **E** Enquirer. **F** Mr. J. T. Fox, Leeds; Mr. H. S. Fielder, London; Messrs. Fuerst Brothers, London; Mr. A. J. Foote, Markfield; Dr. D. Fairweather, London; F.R.C.S.; F.R.C.P.; Sir M. Foster, London; F. B.; Dr. H. Marcus Fernando, London. **G** Dr. H. Grey, Kingsbridge; Mr. T. R. Gallard, Chadwell Heath; G. A. L.; Dr. G. Gore Gillon, Auckland; Dr. Ogilvie Grant, Inverness; G.; Dr. M. M. Gould, Philadelphia; Dr. H. Grey, Kingsbridge. **H** Mr. B. F. Hartzhorne, London. Dr. T. Houston, Belfast; Dr. J. C. Hoyle, Upham; H. B.; Dr. W. R. Huggard, Davos Platz; Dr. J. Haddon, Hawick; Mr. S. P. Hosegood, North Walsham; H. E. D.; Dr. M. C. Hine, Buncrane; Dr. W. W. Hardwicke, East Molesey; Dr. E. H. Hogg, London. **I** Mr. T. H. W. Idris, London; I. M. S. **J** Dr. Robert Jones, Woodford Bridge; Dr. W. H. H. Jessop, London. **K** Mr. E. C. Kingsford, London; Dr. C. G. B. Kempe, Salisbury; Dr. G. W. E. Kerr, Inverness; Mr. A. E. Kennedy, London. **L** Dr. R. P. R. Lyle, Newcastle-on-Tyne; Mr. E. Muirhead Little, London. **M** J. Marshall, M.B., Bridvend; Dr. R. Macharen, Carlisle; Dr. Bennett May, Birmingham; Member, British Medical Association; Mr. S. L. C. Mondy, London; Medicus; Mr. John Marshall, Bridgend; Dr. A. A. Mackeith, Southampton; Motor; M.B.Cantab.; Mr. W. H. Martindale, London; Dr. P. M. Matthai, Bombay; M. H.; Mr. E. F. Morris, Hereford. **N** Nazaina; Non-dispenser; Nemo. **O** Dr. P. O'Connell, Stillorgan; Dr. H. O'Connor, London. **P** Sir R. Douglas Powell, Bart., K.C.V.O., London; Mr. F. Parry, Market Drayton; P.; Dr Dobson Poole, Wolverhampton. **R** Dr. J. Reid, Bandon; Dr. J. B. Ronaldson, Haddington; Dr. R. E. Rentoul, Liverpool. **S** Mr. C. G. Stuart-Menteath, London; Dr. A. Stanley, Furness; Mr. E. S. Smith, London; Dr. C. W. Suckling, Birmingham; Mr. J. S. Stewart, Milnathort; Scotia; Dr. T. L. Stedman, New York; Dr. Stevens, London; Mr. H. F. Smith, Midsands; Simplex. **T** Mr. E. A. O. Travers, Kuala Lumtur; Dr. H. Tilley, London. **V** Veritas. **W** Mr. T. Webster, Bristol; Mr. S. Wesley Wilson, Stoke-on-Trent; Mr. E. L. Walford, Badgastein; Mr. G. D. Wilson, London; Dr. R. T. Williamson, Manchester; Dr. J. M. Wainwright, Scranton, Pa.; Mr. M. J. Williams, London; Mr. C. G. Wheelhouse, Filey; W. E. B.

BOOKS, ETC., RECEIVED.

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SEVENTY-FIRST ANNUAL MEETING
OF THE
British Medical Association.

Held in Swansea, July 28th, 29th, 30th, and 31st 1903.

PROCEEDINGS OF SECTIONS.

SECTION OF TROPICAL MEDICINE.

G. H. F. NUTTALL, M.D., Ph.D.Camb., President.

A DISCUSSION ON DISPOSAL OF EXCRETA IN THE TROPICS.

I.—W. J. SIMPSON, M.D.Aberd., F.R.C.P.Lond.,
Professor of Hygiene, King's College, London; Lecturer on Hygiene, London School of Tropical Medicine.

PROFESSOR SIMPSON said: In opening the discussion on the disposal of excreta in the tropics it is unnecessary to dwell on its importance from a health point of view. It is generally recognized that the secretions from the bowels and kidneys are important media for freeing the infected system of infectious material, and that even when that infectious material is principally discharged by the mouth in the sputum or saliva it is often also to be found in the alvine secretions. Nor is it necessary at a meeting of this kind to do more than refer to the vehicles by which the infectious material thus discharged is again transferred to other healthy bodies. Soil, water, food, and air each play their part at times according to circumstances, the two principal factors concerned with the causation of filth diseases being generally a polluted water supply and a polluted soil. There are often controversies as to whether the soil or the water has the greater influence, each having its advocates based on their particular experience.

Without entering into the merits of these I shall content myself by stating that both polluted soil and polluted water as causal agents are intimately connected with one another, and they are seldom apart; and although it is quite possible in a particular set of circumstances that one should play a predominant part to the exclusion of the other, yet this in no way excludes the other under a different set of conditions. The claims of the one are shown by the excellent results which follow the introduction of drainage or an improved method of disposal of the sewage, while the claims of the other are exhibited by a reduction in the incidence of filth disease after the provision of a new and pure water supply protected from sewage pollution. There can be no doubt that the best results are attained when both water supply and the removal and disposal of excreta have been most satisfactory. As a rule, a polluted water supply and a polluted soil are due to defective removal of sewage.

In England the disposal of sewage is a term generally employed to represent its treatment for purification. It is at this stage where most of the difficulties connected with sewage disposal have arisen in this country, for, as a rule, those connected with collection and removal have been more or less satisfactorily overcome.

In the tropics it is different, and the term has a wider meaning and includes collection, removal and purification. It is obvious that there is little use of elaborate systems of purification in the last stage if the excreta are not properly dealt with or disposed of in the first two stages, and as a consequence a large quantity is allowed to remain and pollute the soil in close proximity to the dwellings. Indeed I doubt whether the first two stages are not by far the most important and whether the last stage, or that of purification or disposal, possesses in the tropics the same pressing necessity from a health point of view as it does in a country like England unless under exceptional circumstances such as in the case of cantonments, hill stations, and some large towns. Certainly the facility afforded for the application of excreta to land are much greater in the tropics in consequence of a large rural population in contradistinction to an urban one. The Chinese, especially of Southern China, are probably the most careful of all nations in the collection, removal and disposal of excreta, while they are perhaps the most careless in the removal and disposal of garbage and sulliage water. Their villages and towns, owing to the garbage lying in the streets and the sulliage water soaking into the soil or stagnating in the drains, are, speaking generally, the most filthy and and most offensive smelling that can be met with. The solicitude displayed in the collection, removal, and disposal of the excreta is not, however, based on any health considerations, but because among a people representing an ancient civilization agricultural skill and knowledge have been brought to a high degree of development. The manurial value of the excreta is to such an extent appreciated that the passer-by is deemed to confer a favour by urinating in the receptacle provided near the shop or dwelling for that purpose. To own a public latrine in China is almost as lucrative a business as to own a pawnshop. Nothing under such a régime is wasted. In the villages the latrines are openings immediately over large cemented cesspools, the contents of which to all appearances undergo certain bacterial changes similar to those in the recently introduced septic tank in England, for when emptied and discharged on to the adjacent fields or into boats there is no deposit, but the whole seems to be in a liquid state. The boats convey the sewage to the farmers, who store it in similar cesspits and apply it to the land. So expert are the purchasers of the manure as to its grades of value after admixture with urine or water that they are able to at once adjudge its worth in the market. It is seldom that fresh excreta are used. The market gardener has a cesspit in his garden into which fresh urine and faeces are daily poured. He stirs this up with the old and ladles out a small quantity each time he wishes to manure his plants. For manuring the mulberry trees in connexion with the silkworm industry the solid excreta are alone used but not in the fresh state. They are put into a pit and allowed to ferment for some months before being used.

Although the Chinese methods of removal are not such as to commend themselves to any one interested in sanitation, yet it does not follow that it is impossible to receive some valuable sanitary hints from their methods. And these are, I should say first, that the land is the final and proper stage for the disposal of excreta; secondly, that certain preparatory changes in the excreta before being applied to the land are advantageous; and, thirdly, that waste of and pollution of the soil by excreta in villages can be prevented by placing public latrines over raised and well-cemented cesspools protected from flood water. In fact, for villages in the tropics I am disposed to think that the Chinese method of dealing with the excreta is by far the most practicable and the most healthy as long as the cesspools and latrines over them are well raised above the ground and protected against flood water and rain water. The raising above the ground protects from flood water, and a bamboo and plantain-leaved roof is sufficient to protect from rain water. Each farmer can have his own cesspit in his own field, so that the manure can be used as required, and in the case of public latrines in or immediately outside the village the removal of the contents of the cesspools to the fields would have to be done periodically, with care, by means of carts. I hope it will be understood that I am not in favour of underground cesspools in proximity to wells, and subjected to the influence of rain water and flood water and the varying levels of subsoil water; but I am of opinion that the latrines and cesspools which I have referred to under the conditions stated are safer, cleaner, healthier, and more adapted for village life in the tropics than existing arrangements, or, perhaps more accurately, want of arrangements, with pollution of soil in every part of the village. It is the collection and removal of excreta which are so manifestly defective in the tropics. In large and small towns, cantonments, and villages the same defects are to be seen, and the same methods are practised for circumstances which are widely different. The mistake is a common one to suppose that because one method is more or less adapted to one set of circumstances it is adapted to another which may be totally different.

As practical sanitarians it is necessary to grasp the fact that it is not always necessary to introduce new methods, or even European methods. On the contrary, excellent results are often obtained by the old methods or some modification, as long as the hygienic principles of the West are followed. For instance, with the exception of cantonments, in which the population is under strict discipline and control, water-closets for general use may be put aside as out of the question. There is nothing to be gained by inveighing against manual methods when the character of the population and habits of the people allow of no other. All that can be done at present is to improve the methods with which they are familiar as much as possible.

The latrines provided must be simple, inexpensive, and

adapted to the customs of the people using them. There is no difficulty in meeting these requirements, and there are plenty of suitable patterns. But whether the latrines are simple or elaborate, two defects have to be avoided which in my experience of many parts of the world I find to be most common and to lead invariably to nuisance and pollution of the soil. These defects are exposure to rain from the absence of a protective roof and exposure of the floor of the latrine and the receiving pail to flood water from failure to raise them above the level of the surrounding surface. The remedies are simple, but about 99 out of 100 latrines that are a nuisance become so by reason of their having been constructed without reference to these two important points. I may go further and state that the greater proportion of difficulties connected with the removal by hand or cart of excreta is due to these defects, for apart from the nuisance created and the pollution of the soil that follows, it becomes an impossibility under the circumstances to remove excreta *plus* rain or flood water.

It is easy enough to calculate the numbers of pails and carts required for the removal of the excreta in a given population, but as soon as rain water or flood water becomes mixed with them the volume is such that no calculation can be correct and no plant is sufficient for its removal.

Apart from the protection against rain and flood water, it is a common practice to erect latrines for soldiers, coolies, emigrants, and pilgrims without calculating beforehand the amount of excreta that will likely be produced, and consequently the number of pails, carts, and establishment required are not adequately provided for. The result is overflowing pails, which a little forethought and supervision would have prevented. No latrine common to numbers of people keeps clean or has its parts regulated automatically, and it is accordingly as essential that an attendant should be always provided for these purposes as it is that a water cistern and flushing arrangements should be provided for a public watercloset in this country. These may seem obvious facts, but they are apparently so obvious that they are generally neglected in practice. As regards removal of excreta, it may be broadly stated that no town of over 10,000 or 15,000 inhabitants can deal satisfactorily with the removal of its excreta other than by a system of pipes. This need not involve an elaborate arrangement of sewerage. The system which appeals to me as suitable for a small town with a mixed population is a pail system with numerous small dépôts dotted at convenient distances over different parts of the town where the excreta and slops from the houses in the vicinity can be emptied and immediately conveyed by pipes to the outfall where it is to be treated. Each district dépôt may be considered to be a large watercloset which instead of serving one house serves a group of houses in its neighbourhood.

Belonging to the local authority and under its exclusive control, they can be fitted with flushing and disinfecting arrangements. These dépôts allow of the removal of excreta being effected expeditiously without carts and with a small staff. They get rid of the necessity of those engaged in removal having to travel long distances to the place at which the excreta are finally settled; they afford facilities for the daily cleansing and disinfection of the pails or buckets and the renewal of the old, new buckets being stored at the dépôt; and they also permit of the disinfection of the hands and feet of those engaged in the work. In cantonments this system might be very well applied to the major portion for the commodes of the Europeans and the pails of the natives, while for the barracks, in which there is always a concentration of men, watercloset latrines within easy access from each barracks might be substituted, thus doing away with any nuisance and danger attached to the management and handling of a large number of pails used by large numbers of men.

A system such as this is the nearest approach to the watercloset and sewerage system of Europe that can with advantage be provided for a small town in the tropics. Indeed, it is doubtful whether there is any other system that is better. It has to be remembered that the appliances to which Europeans are accustomed are not those which are found elsewhere. For a few Europeans and a few Europeanized natives the watercloset in a detached building may be useful, but for the majority of the population in a town in the tropics the pail system with dépôts such as I have mentioned is a very advanced stage of sanitation, and at present is the only practical solution of the question, considering the habits and customs of the peoples that have to be dealt with. There are races in the tropics for which even this system would be too advanced.

Failure of the system from a sanitary point of view usually lies in the fewness of the dépôts and in the absence of the provision of disinfecting and cleansing appliances at these dépôts. Special care must be taken to guard against these defects, and dépôts should be multiplied with discretion. In Calcutta in the European quarter there is a dépôt in every compound by which the sewage of the house can be removed by gravitation to the outfall. In the case of localities where gravitation is impossible owing to the flatness and extent of the town, the sewage can be conveyed to the outfall by the assistance of either the Schone or Liernur system. These systems are the exact opposite of the other and sometimes one is more suitable than the other; depending largely on the amount of water supply available. Both the Schone and Liernur systems are European, but it must be remembered that they are employed at a stage in the disposal of the sewage when the habits and customs of the people can have no influence one way or another on the apparatus used. Being under the full control of the authority that has adopted them, they are beyond the reach of injury from carelessness or ignorance on the part of the population.

Coming now to the final disposal or treatment of excreta in the tropics, the only practical method which suggests itself to my mind is application to the land, unless it is the case of a town situated on the sea and the currents are such as to carry the excreta away to sea. The application to land appeals to an agricultural people, and most of the countries in the tropics contain this kind of people. The only question which arises as a rule is whether the excreta should be applied direct to the land at once or undergo some form of preparation. Although I am personally in favour of excreta being somewhat prepared for the land according to the Chinese method or the septic tank system, by which the putrefactive organisms get full play and at the same time have every opportunity of destroying disease germs, yet I am inclined to think that the application of fresh excreta to land can be carried out under most circumstances in the tropics without the slightest danger of spreading disease, provided certain precautions are taken.

In the case of villages and small towns, when the excreta are taken by cart or pail to the trenching ground, whether from the cesspool where they have undergone bacterial change or from the pail where the excreta are fresh, the quickest and most satisfactory disposal is burial in shallow trenches regularly arranged and the immediate cultivation of the soil. Trenches of 2 ft. are too deep, because ploughing of the land is necessitated before the full benefits are derived from the system and the manure is brought in contact with the plants. Certain difficulties, however, arise in connexion with this system in a very dry or very wet country. In a dry country it may be unsatisfactory unless it is conjoined with some system of irrigation which shall give moisture to the land. This can, as a rule, easily be obtained from wells. In a dusty country the burial during the dust-storm season should be deeper, and the ploughing done when this season is over, or the excreta could be poured into a cesspool properly protected on the trenching ground, and could be used for irrigation later on. In wet countries there may be a season of the year when, owing to much rain during the rainy season, trenching is accomplished with very great difficulty. It appears to me that at this season of the year many of the difficulties connected with it might readily be got over if there were in different parts of the trenching ground raised cesspools into which the sewage could be discharged until the land could receive it either for irrigation or direct trenching. The system may appear to be crude, but it overcomes certain difficulties, and has the merit of not being injurious to health; and it is the prevention of the spread of disease and of the pollution of streams which has to be provided against.

In all trenching grounds or irrigation fields where carts and pails may be taken with excreta in them there should be arrangements for cleansing and disinfecting these appliances. It is to the absence of these arrangements and want of care in cleansing and disinfection of the utensils employed that I mainly attribute any dangers that may arise from a trenching ground. I have never been able to trace disease to a properly conducted trenching ground. Swarms of flies over, or at any part of, a trenching ground indicate that it is not being properly managed.

I next come to the preparation of the sewage before it is applied to the land, a system which is particularly adapted to

the ordinary sewerage system of large towns or to the sewage conveyed in the system of pipes which I have described. The experiments of Mr. Silk of Calcutta, and of Major Roberts, I.M.S., of Simla, have conclusively shown that notwithstanding the concentrated nature of Indian sewage, that is, the sewage of vegetable eaters as compared with that of Europeans, it is quite as effectively dealt with by the bacterial or septic tank system. From this, however, it is not to be concluded that the system can be transferred without modification to the tropics. A too hasty conclusion of this kind led an eminent sanitary engineer, now deceased, into a mistake by which Indian sewage was attempted to be treated on the same estimates as English sewage with the result that the plant was a failure and discredit was brought on the bacterial system. If, however, the different conditions in the tropics are recognized and studied it will be found that the anaërobic and aërobic organisms of the excreta are as active in liquefying the solids and breaking down organic matter in the tropics as they are in colder climates. Of the different systems probably the septic tank is the most suited to the tropics in that the excreta in early stages are protected from flies, and in that the faeces of vegetable feeders contain a large amount of undigested vegetable matter and cellulose which appears to be more thoroughly broken up by anaërobic than aërobic organisms. Even after passing through the septic tank and bacterial filters the effluent should be applied to the land for irrigation purposes.

The differences in this mode of treatment in the tropics from the same carried out in Europe may be summed up I think in larger tanks, a more prolonged exposure in the anaërobic bed, protection from flies, and use on the land. Under certain circumstances I think the filter bed might be dispensed with and after a fairly prolonged exposure in the septic tank the excreta could be with advantage applied to the land direct in the dry season, while in the wet season the assistance of the filters would relieve the land of much of its work, and prevent it from becoming sewage-logged.

II.—Andrew Duncan, M.D. Lond., Lieutenant-Colonel I.M.S. (retired),

Physician, Seamen's Hospital Society; Lecturer on Medicine, London School of Tropical Medicine.

THE DISPOSAL OF SEWAGE IN THE TROPICS.

Dr. Duncan said: Of all the methods of disposal of sewage in the tropics which I have seen, none can compare, according to my experience, with that advocated by Dr. Vivian Poore. This authority advocates the following measures to be taken: The sewage must not be buried deeply, for we wish to obtain nitrification, and for this oxygen and microbes are necessary. Therefore the depth of burial should not be more than one skip or half a skip. No antiseptic is to be used, for such would render the ground sterile. Earth closets are employed, the earth not being dried artificially over a stove lest it become sterilized, but it is to be sifted and stored in a shed for a few weeks before it is wanted. The earth used must be pure humus from the top layer of the soil; if taken from deeper strata, it is comparatively sterile. As regards the dejecta treated, an average amount of urine mixed with the solid excreta is no disadvantage. All excrements are removed to the above shallow trenches daily, and the ground thus treated cultivated. The results in Almora of this system employed in the hospital of the 3rd Goorkha Rifles were as follows: In 1893 I was in officiating medical charge of the 3rd Goorkha Rifles at Almora. The excreta were at that time removed to pits lying behind and below the hospital, about 500 to 600 yards distant. This was the supposed method of removal. But the hospital *mehtars*, unless rigorously looked after, instead of taking the excreta to the pits and burying them, would throw them down the hill side before reaching the pits. If the wind happened to be blowing from the direction of the pits towards the hospital, a distinct faecal odour was often perceptible. In 1898 I was again in officiating charge of this regiment. Subsequently to the first period Dr. Poore's method of treating the excreta, as published in his *Rural Hygiene*, was instituted by Colonel Hamilton, the medical officer in charge. The excreta were all buried in the hospital compound, which presented to the eye a bright green, grassy covering, free from all smell. Colonel Hamilton informs me, on my questioning him as to the details of this method, that the following must be attended to—namely, that the filth must not be buried too superficially in India, or the birds will scratch it up. The ground must be dug and pulverized preparatory to the deposition of the excreta therein. This method in the case of a limited community is unrivalled; whether it would answer in a large cantonment I know not. For example, in British barracks there might be a danger of infecting the soil with the typhoid bacillus, as shown by the experiments of Firth and Horrocks. In such cases the best disposal of filth would seem to be by incineration.

III.—Leonard Rogers, M.D., M.R.C.P., I.M.S.,

Lately Acting Professor of Pathology and Bacteriologist, Medical College, Calcutta.

THE INFLUENCE OF THE SEPTIC TANK ON PATHOGENIC BACTERIA.

Captain Rogers said: In India at the present time the septic tank process is beginning to be introduced in various places, a large scheme for the treatment of much of the Bombay sewage having been planned, while in Bengal and other places the system is being tried on a small scale with latrines over the tank in the case of some large mills, and as an experiment at Calcutta at the Presidency Gaol. At the request of the Government of Bengal I carried out some bacteriological investigations in connexion with the last-mentioned septic tank, which, although owing to want of time they are far from complete, yet may be worth bringing before this meeting.

My object was to try and ascertain the effect of the process on pathogenic bacteria. Owing to the enormous practical difficulties in recovering given added bacteria after mixing them with the innumerable organisms in a septic tank effluent, I determined to adopt a new procedure. If pathogenic bacteria are destroyed in the septic tank, presumably this will be due to either the chemical conditions in the tank being unsuitable for their growth or actually inimical to them, or to their being swamped in the struggle for existence by the other organisms present. I therefore proposed to separate the organisms present in the septic tank effluent from the fluid in which they live, and to test the action of the sterile effluent on various pathogenic bacteria under anaërobic conditions, in order to see how far the chemical conditions were injurious to the added organisms. Secondly, I intended to isolate some of the organisms which are present in largest numbers in the tank, and add these severally to the sterile effluents, together with pathogenic organisms. In this way the action, if any, of the commonest organisms present on the pathogenic ones could be ascertained without difficulty, as, only known species being present, the daily variations of the pathogenic ones could easily be ascertained. The latter part of my scheme I have not yet been able to carry out, but the results of the first part are not without interest, and may be recounted briefly here.

The effluent was collected as it escaped from the septic tank, and was found to contain very large numbers of anaërobic organisms. It was then passed through a porcelain filter under pressure, and thus rendered sterile. To this sterile effluent in test tubes pathogenic organisms were added, and plates made after thorough mixing, and counted after incubation, in order to obtain an approximate idea of the number of organisms added. The tubes were then incubated under anaërobic conditions, and fresh counts of the number of organisms present after varying periods made, in a drop of the fluid taken with the same platinum loop as in the first count. Controls under aërobic conditions and in sterile water were also made.

Table of Experiments with the Typhoid Bacillus.

Experiment.	Conditions of Culture.	Control Count.	Day of Count.							
			3rd.	4th.	5th.	6th.	7th.	9th.	11th.	12th.
1	Anaërobic	50	8	—	■	—	—	—	—	
2	Anaërobic	300	0	—	—	—	—	—	—	
3	Aërobic	400	7	—	0	—	0	0	0	—
4	Aërobic in water	400	80	—	133	—	14	—	—	
5	Anaërobic	44	■	■	—	■	—	—	—	
6	Aërobic	44	—	5	—	3	—	—	—	1
7	Anaërobic	128	—	1	—	—	—	—	0	—
8	Anaërobic in water	128	—	1	—	—	—	—	10	—

The most important organism to be dealt with is the typhoid bacillus. The table given above shows the numbers in the count made at the time of inoculation of the sterile septic tank effluent and those obtained at later periods under both aërobic and anaërobic conditions.

From the table (p. 639) it will be seen that in the control experiments Nos. 4 and 8 the typhoid organism remained alive in the sterile water at the end of 7 and 11 days respectively, the last experiment having been carried out under anaërobic conditions. In the case of Experiments 3 and 6 the organism was added to the sterile effluent and kept under aërobic conditions, with the result that it died out by the fifth day in one instance, but survived in greatly decreased numbers up to the twelfth day in the other. In the remaining experiments the sterile effluents were kept under anaërobic conditions after being inoculated with the typhoid bacillus, with the result that it was nearly always recoverable in small numbers on the third and fourth days, but not at later periods. It appears, then, that the chemical conditions of the septic tank are distinctly inimical to the typhoid bacillus, which rapidly decreases and, after a few days, disappears when exposed to its influence under anaërobic conditions such as obtain in the septic tank. Yet the fact that they may remain alive for three or four days under these conditions show that the rate of flow through the tanks must be very slow if it is to be relied on to destroy all typhoid bacilli which may enter them.

Comma Bacillus of Cholera.—Similar experiments were carried out with the organism of cholera, which, after the typhoid bacillus, is the most important pathogenic organism in the tropics from the present point of view. Control experiments were at the same time carried out by adding the bacillus to sterile water under both aërobic and anaërobic conditions. In none of the six experiments performed could any cholera bacilli be recovered from either the sterile septic tank effluents or from the controls after three days, so that it would appear that there is little likelihood of this organism surviving the action of the septic tank process.

Anthrax Bacillus.—This organism was tested as an example of a highly resisting pathogenic bacillus, which may possibly, although very rarely, find its way into a septic tank. Without going into detail as to the experiments it may be said that the sterile effluent under aërobic conditions appeared to have no more inhibitive effect on the anthrax bacillus than sterile water had under the same conditions. Similar experiments carried out under anaërobic conditions also showed no marked difference between the sterile septic tank effluents and sterile water, the organism surviving for many days in both, doubtless owing to the resistance of the spores.

Staphylococcus.—This organism when similarly tested died out by the fifth day in the septic tank effluent under anaërobic conditions, although it flourished in sterile water anaërobically. In the effluent under aërobic conditions it was rapidly reduced in numbers, but in one instance it survived for twelve days.

Streptococcus.—The species of this organism which was tested died out rapidly both in the septic tank effluents and in the water controls, but it would not be wise to draw any conclusions from the experiments with a single species in view of Houston's experiences of this organism in sewage.

Micrococcus Melitensis of Bruce.—The germ of Malta fever is said to be conveyed through sewage, so similar experiments were carried out with it in view of this fever having been found in some parts of North Western India. It was found, however, to die out both in the sterile septic tank effluents and in sterile water very rapidly. Precisely similar results were also obtained with the Shiga bacillus of dysentery and with the plague bacillus.

As far as the above results go they tend to show that the septic tank process is inimical to most of the pathogenic organisms tested with the exception of the anthrax bacillus. On the other hand, even small quantities of the effluent from the tanks showed both the bacillus enteritidis sporogenes and streptococci, so that it cannot be considered as by any means free from pathogenic bacilli, while its subsequent passage through a filter bed, and then over a small piece of land with subsoil drainage, failed to free it from these organisms and from large numbers of coli bacilli, although the total number of bacilli were much reduced by these means, so that even after such treatment it would not be safe to discharge it in any place within reach of any water which might possibly be used for drinking purposes.

IV.—H. MARCUS FERNANDO, M.D.Lond.,
Physician, General Hospital, Colombo, Ceylon.

DR. FERNANDO said: I agree with Dr. Simpson that in dealing with varying conditions of climate, population, and habits of the peoples met with in the tropics, the system of sewerage adopted in any given town or village must largely depend on those varying conditions. In connexion with the adoption of the pail system for small towns in the tropics, recommended by Dr. Simpson, I think there are several objections which we must not overlook. First, on account of the ablutions which inhabitants of the tropics practise, a large amount of excreta finds its way to the compound in the neighbourhood of the pail, and thus serious surface pollution goes on continuously with all its dangers. In connexion with the irrigation of the land with liquid and solid sewage there are also serious drawbacks, especially in parts where the inhabitants are not accustomed to such farming. In Ceylon, at any rate, great difficulty will be experienced to obtain labourers to work on such farms, or a sale for the vegetable produce of such manuring. In a country with a large raintall the irrigation fields for sewage get waterlogged at times for weeks together, and undoubtedly sewage under these circumstances must find its way into the neighbouring ponds and rivers which are used for bathing purposes. It should also be remembered that such lands breed enormous numbers of flies, which cannot be looked upon as a matter free from danger to the public health. In connexion with the interesting experiments of Captain Rogers it is a matter of congratulation that the septic tank is so effective in destroying the pathogenic bacteria of sewage. There is no doubt that the septic tank promises to be the most effective means of dealing with sewage in the tropics in the near future.

V.—W. BRIGGS CLARKE, M.B.,
Barbadoes.

DR. CLARKE said that in Barbadoes the septic-tank system had been in use for many years; the porous limestone of which the island is composed allowing the contents of the tank to disappear into the soil, so that when the tank is opened it is found empty, and quite free from smell. Dr. Clarke mentioned an instance of a trench being opened some twelve months after being covered over, and a number of persons suffering from typhoid fever in consequence. The influence of sunlight upon the excreta in tanks had not been referred to in any of the papers, yet it was a subject of great interest.

VI.—Fleet Surgeon P. W. BASSETT-SMITH, R.N.,
Lecturer on Tropical Diseases, Haslar.

FLEET SURGEON BASSETT-SMITH said: There is one point which it is necessary to bear in mind with regard to sewage in its application to the land, that is, the widespread diffusion of intestinal parasites. In China especially these parasites are most abundant and frequent, caused, no doubt, through the infection of the fresh vegetables that are consumed. In regard to the growth of micrococcus melitensis, mentioned by Captain Rogers, I have made a considerable number of observations, and have found that the organism retains vitality in sterile, sea, tap, and rain water for three to five days. It will also grow in sterile urine for the same time. In fluids, however, where many other organisms are present in abundance, the micrococcus melitensis is quickly crowded out, and so is impossible to be isolated again; therefore this fever is unlikely to be spread from the septic tanks, but much more likely by water and milk.

VII.—Sir PATRICK MANSON, K.C.M.G., M.D., LL.D.,
Medical Adviser, Colonial Office and Crown Agents of Colonies.

SIR PATRICK MANSON said that the very efficient method followed by the Chinese in regard to the disposal of excreta was a purely commercial matter. The addition of water to the fluid excreta was carefully guarded against, and although the Chinese had no scientific methods of testing the specific gravity of urine, etc., they employed a very ready and practical one—namely, urine tasting—to ascertain the quality of this valuable commodity.

VIII.—F. M. SANDWITH, M.D., F.R.C.P.Lond.,
Professor of Medicine, Medical School, Cairo.

DR. SANDWITH remarked that all sewage should go to the land, and as soon as possible should be removed from the possibility of infecting householders, but in towns or villages where the ideal of drains could not be attained cesspools seemed to answer the purpose in Egypt with certain provisos: (1) The cesspool must not be near any drinking well or other water supply; (2) it must not be placed under a house, and must be cut off absolutely from the house, and

provided with ventilators; (3) it must be cemented not only at the sides, but at the bottom in fact, it must be water-tight, and becomes what was now called a septic tank. The effluent, which was all liquid, could be removed by an odourless system of pump and tubes. Though he had tried to get the authorities in Egypt to introduce a water-drainage system, and still thought this the best system of removal for towns, he felt bound to say that he had never seen any cases of epidemic disease which could be traced directly to good or bad cesspools. But it was an interesting fact that diphtheria was seldom seen in Egypt in people who lived in sanitary houses or in peasants who lived an outdoor sanitary life, but was fairly common among town dwellers who lived in insanitary houses. This was due perhaps to the anaemia and less resistance caused undoubtedly by the free entrance of cesspool gas and smell into private houses. It must be understood definitely that all stools derived from patients suffering from enteric, cholera, dysentery, ankylostomiasis, and perhaps plague, must be thoroughly disinfected with milk of lime or some other solution before being thrown into the cesspool.

IX.—L. W. Sambon, M.D. (Naples),
Lecturer, London School of Tropical Medicine.

Dr. Sambon said that in Italy, from early Roman times, the cesspool system had been in vogue until the present day. The excreta were applied to the soil, but this led to considerable danger. When vegetables thus treated were eaten raw, as in salads, etc., typhoid and other germs were no doubt distributed broadcast. It had been shown that by the most careful and thorough washing and rinsing it was impossible to clean vegetables for the table so as to rid them of the pollutions caused by excreta being utilized directly as a fertilizer.

X.—J. Cantlie, M.B., F.R.C.S.,
Surgeon, Seamen's Hospital Society; Lecturer in Surgery, London School of Tropical Medicine.

Mr. Cantlie said that the pail system existed not only in China, but also in Japan, where it was, during recent years, being conducted on scientific principles, and answered admirably. In the discussion the differences between cesspits, cesspools, and septic tanks seemed to have been overlooked, and until a clear idea with regard to the terms in use was stated the discussion threatened to prove useless. The removal of fluid waste in a town in the tropics, as elsewhere, was best accomplished by underground sewers. It was necessary to see that they were properly constructed and not left wholly to the native labourers or overseers to lay as they pleased. In the houses open cemented channels should be the rule. Waterclosets were not to be thought of for native quarters, but dry earth closets wherever possible; or, failing these, a receptacle for the excreta which could be readily emptied or cleaned.

XI.—Captain A. T. W. King, I.M.S.

Captain King said that owing to the prevalence of private latrines in India it was impossible to carry out the septic tank system thoroughly in cities.

XII.—Major I. Penny, I.M.S.

Major Penny said that the pail system had been introduced into Burmah lately with great success. The pails were fitted with close covers when being removed from the latrines: they were taken by specially-constructed carts to the trenching ground, where they were emptied, cleaned, and exposed to the sun. This system encouraged private latrines in the compound of the house, and was therefore acceptable to natives, as their children and women would use them.

XIII.—Cuthbert Christy, M.B., C.M.Edin.,
Liverpool.

Dr. Christy said: I am sorry that flies have not received in this discussion the attention that they deserve. All methods of disposal of excreta should in my opinion be classed under two headings, namely, those in which the excreta are absolutely destroyed and those in which they are made use of for fertilizing purposes. The former are safe methods, the latter are dangerous, owing to dust and flies. If an open tank is used earth should be thrown in every morning before the flies become active.

XIV.—Kenneth W. Goadby, M.R.C.S., D.P.H.Camb.,
London.

Mr. Goadby said: A great deal of the discussion has centred around the question of septic tanks and cesspools. The septic tank, properly speaking, is an anaërobic tank, from which leakage is impossible; the cesspool as generally built is especially arranged for subsoil pollution. There should be no difficulty in properly constructing a cesspool with clay-puddled sides, which then subserves the function of the septic tank. Most pathogenic bacteria are preserved at their greatest virulence under anaërobic precautions; hence the passage of the effluent over the aërobic filters may tend to destroy those pathogenic bacteria which may have passed through the septic tank.

XV.—G. H.F. Nuttall, M.D., Ph.D.Camb.,
President of the Section.

Dr. Nuttall said: The effect of sunlight on bacteria in sewage material depends on the thickness of the layer the light has to penetrate. Dr. Sambon's statement that vegetables treated by an excreta-irrigation system are liable to carry infection is true, and therefore no vegetables obtained from land so treated should be eaten raw. Revenal in Philadelphia reported the presence of anthrax distributed by spores after passing through septic tanks. By doing away with cesspools in the camps and receiving the excreta in closed tanks carefully protected Reed checked the spread of typhoid fever in the United States Army during the recent war.

Reply.

Professor Simpson, in reply, said he hoped it was not understood he advocated cesspools in large towns. They were useful in villages under the conditions mentioned, but were not adapted to towns. Cesspools might be harmless in better-class houses, but they would almost certainly be a source of ill-health among the poorer classes. In towns there must be private latrines and the excreta must be removed from the dwellings. This he considered could be best effected by the pail system and the dépôts referred to. As to the difficulty with ablution water, this could be overcome by having larger pails. The risk of disease being caused by eating the plants grown on the trenching grounds or sewage farms such as that mentioned by Dr. Sambon could easily be averted by a selection of the crops to be grown. The whole system was under the control of the local authority, and the growth of salads, radishes, etc., could easily be avoided. Recognizing the influence of flies in the spread of disease, he was not in favour of the open tank bacterial treatment, but of the closed septic tank.

SPRUE: PRIMARY AND SECONDARY,

WITH SPECIAL REFERENCE TO THE BLOOD CHANGES FOUND, WITH ILLUSTRATIVE CASES.

By P. W. Bassett-Smith, Fleet Surgeon R.N.,
Lecturer on Tropical Diseases, Haslar.

The condition which is generally recognized under the name of sprue is of particular interest, owing to the uncertainty of its causation, its intractable character, and often fatal termination. It is a form of disease which one would expect to find frequently in H.M. Navy, so large a fleet being now maintained in the China seas, taking in one of the most prolific endemic areas.

Curiously enough but few cases appear in the returns; this may be due to the following reasons: (1) The good food, and supply of distilled water to the crews; (2) the patients are early taken under treatment, so that the marked features of the disease are not developed, the cases then being generally returned as ordinary diarrhoea; (3) the frequent invalidings out of the service of chronic "dysenterics," so that we lose sight of the cases; (4) the failure to recognize the true character of the case.

Etiology.

The numerous synonyms in use show how varied are the conditions which present themselves, differing greatly according to the locality in which the cases are found, so much so that the question of it being a specific entity at all is doubted.

Climatic influences have undoubtedly much to do with its causation, and it is certain that residence in the Far East is generally made out on going into the histories of the cases: residence there for prolonged periods is certainly not

Histological Characters of the Blood Found in a Case of Primary Sprue: Recovery.

Date.	Red Cells.	White Cells.	Differential Counts. Neutrophiles.	Large Mononuclear Lymphocytes.	Small Lymphocytes.	Eosinophiles.	Myelocytes.	Nucleated Reds.	Haemoglobin.	Remarks.
			Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.		Per Cent.	
Dec. 7, 1902	1,060,000	2,900	40.0	10.5	42.0	1.0	—	Few normoblasts present	20.0	Red cells very irregular in size and shape, pale, plates few, no rouleaux, decrease of percentage of neutrophiles.
Dec. 10, 1902	1,040,000	—	—	—	—	—	—	—	—	" "
Dec. 19, 1902	1,446,000	2,040	—	—	—	—	—	Few normoblasts present	—	" "
Dec. 30, 1902	1,112,000	2,160	—	—	—	—	—	—	—	—
Jan. 13, 1903	1,020,000	1,760	43.0	8.0	39.0	8.0	0.5	Normoblasts fairly abundant, 1 in 17,340 red	—	Red cells irregular, neutrophiles decreased, eosinophiles increased. nucleated red abundant = 93 per c.mm.
Feb. 3, 1903	2,700,000	2,600	43.0	7.0	44.0	6.0	—	Normoblasts few, 1 in 53,000 red	40.0	Nucleated red less abundant = 61 per c.mm.
Feb. 16, 1903	2,860,000	2,200	43.5	6.5	46.0	4.0	—	Present very few	—	Red cells better colour and shape.
Feb. 24, 1903	3,600,000	—	—	—	—	—	—	—	—	—
Mar. 4, 1903	3,600,000	—	43.0	8.5	42.0	6.0	—	Present very few	—	—
Apr. 3, 1903	3,840,000	7,200	56.0	15.0	26.0	3.0	—	None found	—	Red cells more regular, increase of neutrophiles, eosinophiles normal.
May 9, 1903	4,400,000	—	68.0	8.0	22.0	2.0	—	None found	—	Red cells good shape and colour. rouleaux formation, relative proportion of white cells normal.

Histological Characters of the Blood Found in a Case of Sprue Secondary to Dysentery: Death.

Date.	Red Cells.	White Cells.	Differential Counts. Neutrophiles.	Large Mononuclear Lymphocytes.	Small Lymphocytes.	Eosinophiles.	Myelocytes.	Nucleated Reds.	Haemoglobin.	Remarks.
			Per Cent.	Per Cent.	Per Cent.	Per Cent	Per Cent.		Per Cent.	
Mar. 7, 1903	1,690,000	2,400	39.0	8.0	51.0	2.0	—	—	—	Red cells very pale, irregular, no rouleaux, no nucleated red, neutrophiles very low, lymphocytes increased.
Mar. 13, 1903	1,560,000	6,000	—	—	—	—	—	—	—	" "
Mar. 20, 1903	1,900,000	3,000	—	—	—	—	—	—	—	" "
Apr. 3, 1903	1,560,000	2,400	55.0	10.0	33.0	1.0	1.0	Few present	—	Relative number of neutrophiles increasing, myelocytes present.
Apr. 8, 1903	1,040,000	2,800	53.0	14.0	29.0	1.0	3.2	—	—	Myelocytes more abundant.

necessary, the disease occurring some times under 1 year, as in Case 1 and others I could quote.

According to Manson, the higher the mean temperature of the locality the more serious is the type of the disease; it is a noticeable fact that those living under the most favourable conditions, as officers, etc., suffer as much as the men, and women are said to be attacked more often than men. For predisposing causes, mental exhaustion, intestinal troubles, chills, unsuitable foods, and perhaps excesses in alcohol are the most common.

Whether it is specific or not, the condition of malnutrition produced is so marked, the anaemia so excessive, and the mortality so high, that some distinctive term is necessary to fix attention on the disease; the question of its specificity is then less important.

The American surgeons, from a great experience of the disease in the Philippines, are of the opinion that it is not properly a specific disease, but only a condition produced after attacks of dysentery, probably caused by certain definite forms of bacilli belonging to the "colon" group, which they were able to isolate from the stools. That this is not strictly true is proved by the occurrence of cases where there was no evidence of a previous attack of dysentery, cases which any who have had experience in the Far East must be able to call to mind; for myself, I believe it is a chronic inflammatory condition (causing cirrhotic changes in the mucous membranes) of bacterial origin; giving rise to a diminished supply of those nitrogenous products which are required in the formation of the red cells. The term "tropical aphthae" is perhaps one of the least suitable of the names given, as the condition frequently appears long after the patient has left the tropics, and also that the aphthous symptoms may never be present.

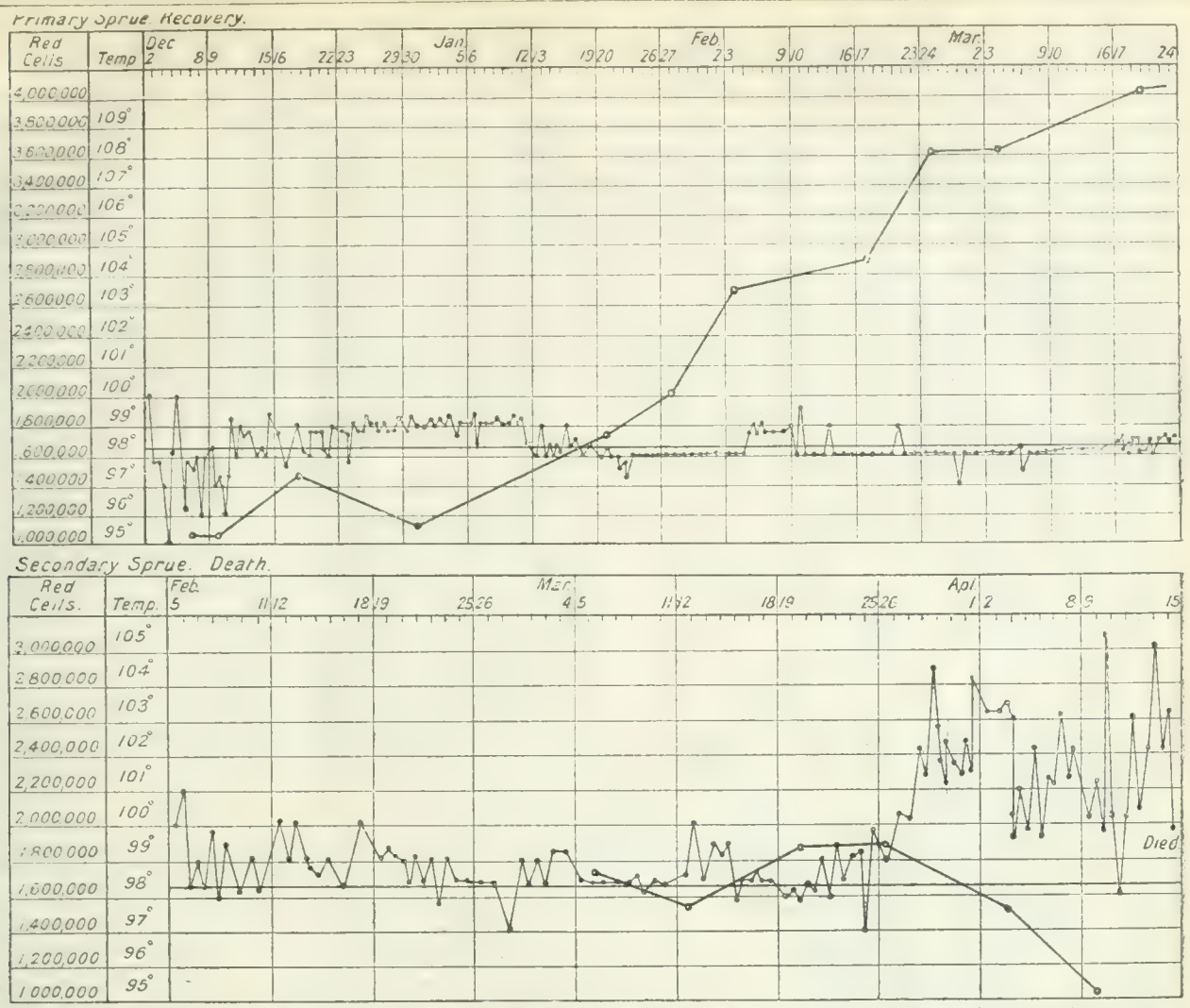
The general characters of the disease have been minutely described, and the changes found in the bowel emphasized, the latter consisting for the most part in a gradual disappearance of the absorbents in the mucous membrane of the small intestine, and in extreme thinning of the gut walls.

In this paper I particularly wish to draw attention to the characters of the anaemia which this disease produces, and to point out that, if recovery is to take place, it must be, I think, by raising the oxygenizing agents—namely, the red cells in the blood—to their normal level; for when we find the reduction of these to be so great as to give only one million per cubic millimetre for any length of time, life from this cause alone is seriously endangered; the blood then resembling very much that of pernicious anaemia, except that the haemoglobin value of the cells is also reduced, and megaloblasts are not present.

The cardinal points in coming to a diagnosis are: (1) Irregular and chronic diarrhoea, with dyspepsia, causing flatulent distension of the belly and the occurrence of fermenting offensive stools, which in chronic cases become pasty, clay-coloured, and very abundant; (2) progressive emaciation: (3) extreme secondary anaemia; (4) changes in the buccal mucous membrane, with or without the production of an aphthous condition; (5) *post mortem*, a thinning of the gut, with destruction of the mucous membrane and its absorbent glands.

Two forms of the disease are generally distinguished: (1) Primary, where the symptoms are insidious, commencing as ordinary diarrhoea; (2) secondary, following after a dysenteric attack, the dysenteric processes having subsided.

The cases here described illustrate these two varieties, and, though similar in many things, yet terminated quite differently. One with a previously healthy record responded to treatment, the intense oligocythaemia gradually disappearing, the patient gaining strength and weight, and is now able to continue his work, feeling quite well. The second, being debilitated by a previous two years of dysentery, gradually lost ground, the red cells sank lower and lower in number, pulmonary complications set in with high fever, and he died



from exhaustion, the typical mouth symptoms becoming more marked as the debility progressed.

CASE I.—A stoker of H.M.S. *Terrible*, who was less than one year on he China station, while at Hong Kong suffered from more or less persistent morning diarrhoea, which did not incapacitate him from duty; this continued on the passage home, and he went on leave; there he became steadily worse, a correct diagnosis not having been made. After a month he was admitted into Haslar Hospital. His condition then was extremely critical: a subnormal temperature (as low as 95°), extreme emaciation, a dull, earthy complexion with sunken eyeballs, a feeble pulse, a distended abdomen, slight vomiting, and frequent large, loose, fermenting stools; the tongue was small and pointed, glazed in the centre and morbidly red at the tip and edges. Examination of the blood showed excessive changes, a count giving only 1,000,000 red cells and 2,960 white cells per cubic millimetre, a film showing the characters of "pernicious anaemia," except that the large nucleated red cells were not present, and the haemoglobin value was low. His appearance was one of advanced malignant disease. He was put on milk diet, in minute quantities, and kept very warm. In a week's time there was marked improvement and he continued to progress satisfactorily. A careful series of observations were made, showing the progressive improvement of the blood—the factor of the disease which appeared to me to be most important—especially in the paucity of the red cells, for with a reduction of these to 1,000,000 the physiological processes of the body were reduced to their lowest degree. The treatment adopted consisted in the administration of "iron and arsenic" in very full doses, and fresh bone marrow, with ox-gall pills to supply the absence of normal bile and prevent fermentation in the bowel. Under this treatment the blood count steadily mounted up to 4,500,000, and the patient, after four months, is now feeling better than he did before the attack.

This is an example of a neglected case, where the malnutrition produced by the want of assimilation of the food had induced a condition of secondary anaemia so profound that, if not quickly corrected, death would certainly have taken place.

CASE II.—A petty officer, aged 29, who had returned from the China station in September, 1902, where he had suffered from an attack of acute dysentery. Since his return the bowels had always been loose, in fact, he stated that he had not passed a solid stool for two years. Three days before admission he was much worse, passing from nine to ten liquid, offensive stools daily; his tongue was red, clean, but irritable-looking, and there was abdominal tenderness and distension.

Admitted on February 5th. Temperature normal, pulse 64; considerable emaciation and debility; belly soft, full, and tender over the iliac region; liver slightly enlarged; tongue red and small. He had a loose cough and abundant mucoid expectoration, and there were submucous *rales* over both bases, the urine was free from albumen. He was put on bismuth and a cough mixture, with pure milk diet *plus* a little chicken broth. For the next week the abdomen was often drum-like; food gave rise to pain and increased peristaltic action, but there was no tenesmus, the bowels acting about twice a day. There were no tubercle bacilli in the sputum. Then the temperature fell, the stools became "sprue-like," very copious, pale, and frothy, with slight bilious vomiting, loss of appetite and dyspepsia; the tongue was denuded and red, and the mouth was sore.

After a month (March 5th) the condition of sprue was more marked, also the flatulent distension of the belly, dyspeptic pains, and fermenting stools. His blood count gave 1,690,000 red and 2,400 white cells per c.mm. There was no improvement during the next week, in spite of salol and ox gall, etc. On March 22nd the emaciation was greater, herpetic ulcers on the side of the tongue appeared, the bowels were loose, causing a sudden evacuation of abundant, offensive, pultaceous stools; there was no pain, but his gums were sore and the temperature was raised. A week later the temperature was high, the pulse was fast, the gums were spongy and slightly ulcerated, the stools were offensive, and there was great depression and loss of strength, his skin was dry and the cough more troublesome. On April 3rd he was much weaker, the voice sinking to a whisper; marked hectic fever, the temperature rising as high as 104°, 105° at night, with rigors; haemic *bruits* were present and oedema of the lungs. Under treatment the condition of the mouth improved and the stools became semi-solid, but the pulmonary symptoms increased, low delirium set in, and he died on April 15th from exhaustion; a blood count taken on the 8th—six days before death—gave 1,064,000 red and 2,800 white cells per c.mm.

Treatment.

Milk diet, followed by clear soups, Brand's essence, egg flips, and raw meat juice, according to the condition of the stools. Medicinally, salol, Dover's powder, arsenic and iron, ox gall, and for a time acetozone (which did harm), also stimulating expectorants for the cough were given.

At the necropsy we found:—Lungs: Congested and oedematous, no tuberculous disease or pneumonic consolidation. Heart: Fatty degeneration, no valvular disease. Liver: Large and pale, weighing 77 oz. Pancreas: Larger and harder than normal. Stomach: Greatly distended; duodenum and upper part of the jejunum fairly healthy-looking; lower part of the small intestine and colon with the mucous membrane atrophied, very thin, almost diaphanous; no ulcers were present in either the large or small intestine.

This was a case of "sprue secondary to dysentery" in which the mouth symptoms were very marked, and the stools were typical. The pyrexia with rigors, which led up to the fatal termination was probably septic in character, there being no pneumonic or tuberculous disease of the lungs. The enlargement of the liver was marked, its substance was very pale and showed signs of fatty degeneration, but no evidence of liver abscess. The condition of the pancreas, which was enlarged and cirrhotic, is noteworthy, for Drysdale quotes a case where a similar condition was present, and both Bertrand and Fontan describe changes in this organ.



Film of blood from Case I, showing normoblasts.

The actual blood changes found were the following:

In Case I.—On admission the red cells were only one-fifth the normal number per c.mm., those that remained being poor in haemoglobin and deformed in shape; microcytes, macrocytes, ovals, and irregular shapes being the rule. The white cells were about half their normal number, the most active phagocytic forms were considerably decreased and the small lymphocytes relatively increased. No nucleated reds were seen. After a month's treatment, when the increase of the red cells commenced, there was for a time an influx of normoblasts, typical of regenerative processes, the white cells remaining the same, except that there was an increase of the eosinophiles. As the red cells approached normal in number, shape, and colour, the nucleated forms disappeared, and the total and relative number of the white cells also became more natural.

In Case II the red cells from 1½ million per c.mm. sank to 1 million just before death. The white cells were about half their normal number. There was also in this case a great decrease in the number of the neutrophiles at first; but these increased relatively during the pyrexia at the termination, when myelocytes appeared.

Sir PATRICK MANSON, K.C.M.G., said that in this very important disease it was to be regretted that there had been little done in recent years. Experience had taught three things in the treatment of this disease: (1) Not to stick too long to a dietary if it were not found to be successful; (2) the high value of strawberries and other fruits; (3) the value of arsenate of iron as a blood restorative.

Dr. W. BRIGGS CLARKE said that in Barbadoes sprue occurred amongst the natives, and recoveries were few. Europeans were seldom attacked. Some observers ascribed the disease to debility, others to syphilis; tainted meal corn was also considered to be an etiological factor. A peculiarity of sprue in Barbadoes was that it was associated with a pigmentation of the skin, and towards the end of the illness lunacy was common. In regard to treatment no good results had been obtained from bone marrow or meat juice.

Dr. G. C. LOW said: In reply to Dr. Clarke's description of the disease known as psilosis pigmentosa in Barbadoes, I should like to point out that this disease is not the same as the disease known as sprue in the East Indies, and as seen at home. It is probably pellagra, or if not that a very closely-allied disease. The onset of the pigmentation, and especially the mental attitude towards the end, combined with the other symptoms, differentiate it from sprue, and though I did not specially study the disease I have little doubt that it s pellagra.

Mr. JAMES CANTLIE said: At a meeting of this Section some five years ago I advocated a "meat" treatment for sprue. I had few followers at that time, but at the present day a considerable number of practitioners have been converted to treating sprue by a purely "meat" diet in preference to milk. Further experience of this treatment—namely, minced beef lightly cooked, 5 oz. thrice daily, to which the white of egg is added—has proved after a few days successful where milk had been tried and failed. Rice, cooked dry as for curry, should be given with the meat at the end of four or five days of pure meat treatment, and such vegetables as boiled celery or seakale added during the second week. It must be observed that, whether the diet consisted of fresh milk, fresh meat, or fresh strawberries, all seemed to point to a scorbutic element present in all cases of sprue—a condition which should be combated by appropriate articles of diet and antiscorbutic remedies generally.

Mr. KENNETH W. GOADBY stated that for some little time he had been making bacteriological investigations in cases of sprue which had come into the Seamen's Hospital under the care of Sir Patrick Manson. So far the number of cases was not large, and as yet he had examined no *post-mortem* material, there having been no deaths, with one single exception. In this case the friends refused to allow a necropsy. Such results as he had obtained were negative. Several animals (guinea-pigs) were inoculated with some of the liquid and fermenting stools; the inoculation was made both intraperitoneally and subcutaneously, but with no pathological effect. Some of the matter was also injected into the mucous membrane of the mouth, but with no effect. Scrapings of the ulcers occurring in the mouth were obtained from one case of sprue, and after washing in sterilized distilled water were inoculated into the mucous membrane of the mouth of two guinea-pigs, but with no result. Several bacteria had been isolated from the faeces, but none of them were of interest, as they were for the most part members of the colon group. On one occasion he isolated and identified Flexner's bacillus. The blood had also been examined, but he was unable to obtain cultivations even when large quantities of culture fluid were used (500 c.cm.). The mouth did not appear to contain any bacilli other than those generally met with in dysentery and other conditions in which the gums underwent chronic inflammation. The mouth condition was worth mentioning, as in all the cases he had seen there was a chronic condition of pyorrhoea alveolaris. In two cases it was more than chronic, and was in an acute stage. As he had already mentioned elsewhere,[1] the products from chronic alveolar suppuration often produced death in small animals when the pus was inoculated subcutaneously, and the filtered broth cultures might also produce a fatal result in guinea-pigs. The mouth condition in sprue was, he thought, of some importance to the general treatment.

Major J. PENNY, I.M.S., observed that he had encountered sprue accompanied by malaria in Burmah, and more particularly amongst Sikh soldiers. Some of the native cases terminated fatally. Europeans home from the East had, to his knowledge, developed sprue in England. He had seen good results in the treatment of sprue from the use of papaya and isophagol seeds.

[1] *Mycology of the Mouth.*

MALARIA: THE MODE OF ENTRY OF THE SPORE INTO THE RED CORPUSCLE.

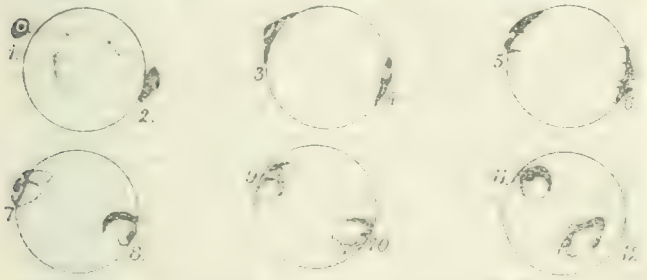
By Cuthbert Christy, M.B. and C.M.Edin.,
School of Tropical Medicine, Liverpool.

In studying the various phases of the cycle of Golgi in the development of the malaria parasite, the student of the subject finds, when arriving at the description of that stage at which the sporocyte ruptures, and the free spores, becoming amoebulae, attach themselves to and enter other blood corpuscles, that there is apparently a gap in our knowledge of the sequence of events at this point. He is usually told that the spores "attach themselves to other blood corpuscles which, in some unknown way, they contrive to enter."

In studying the case of a patient in the Southern Hospital, Liverpool, a sailor from West Africa suffering from irregular tertian, I was fortunate in obtaining some blood films shortly after the dehiscence of a crop of sporocytes, in which, after staining by Romanowsky's method, all the stages from the free spore to the perfect ring, but more especially that stage directly after the attachment of the spore, are beautifully seen.

I have had a series of thirty-three drawings made from those slides, and a study of this series has convinced me that the above-mentioned gap is not difficult to fill up, and with the help of the accompanying twelve diagrams, selected from my drawings, I hope to be able to show that the method of entry is comparatively simple. [The original drawings and slides were exhibited in the Pathological Museum during the meeting of the Section.]

In a live preparation beneath a cover-glass the rupture of the sporocyte and the dehiscence of the spores can be observed, and the spores easily studied, but in the rapid normal blood stream it is not probable that the spores, after the rupture, remain free for more than a very short space of time, but attach themselves almost instantly to the rim (Fig. 2) of the nearest red corpuscle, consequently it is extremely rare to meet with a free spore (Fig. 1) in an ordinary blood film.



That they do attach themselves to the rim of the corpuscle, and never to its lateral concave surfaces, though difficult to explain, is shown clearly by a study of my slides; and that they attach themselves almost instantly to the nearest red corpuscle is shown by the fact that when two or three parasites are attached to one corpuscle, of which there are many examples in my slides, they are invariably all of the same age.

Having once become attached, either by a pseudopodium or by some power of adhesiveness, the cytoplasm, or working part of the amoebula, if I may so describe it, proceeds to elongate and spread itself out (Fig. 3) by means of its protoplasmic power of movement, along the rim of the corpuscle, occupying in many cases, even at this early stage, a fifth of its circumference. At a slightly later stage the blue-stained cytoplasm, still spread out along the rim, is seen to have sunk a little (Fig. 4) apparently into the corpuscle, leaving, in many cases, the clear, unstained nucleus, and the deeply red-stained chromatin nucleolus, protruding conspicuously (Fig. 6). As the process of entry and development proceeds the rim of the corpuscle presumably becomes weakened, that portion of it nearest to the parasite becomes appreciably decolorized, and pseudopodia or minute processes (Figs. 5 and 6) are thrown into it, either from the centre of the parasite, or more commonly from its extremities.

These processes, having established themselves within the corpuscle, become larger and thicker (Figs. 7 and 8) as the rest of the cytoplasm, still lying outside, flows in upon them; the nucleus and the nucleolus then follow, sinking below the rim (Figs. 8 to 10), until the whole parasite is well within (Figs. 9 to 12) the corpuscle, leaving no appreciable gap or fault in its circumference. In the majority of cases the processes are first thrown into the corpuscle from near the extremities of the young amoebula stretched out upon its rim; increasing in size, as already described, they gradually extend and meet (Fig. 10 and 11), thus forming the ring. They enclose a portion of the corpuscular substance, which soon becomes decolorized and absorbed. Sometimes several processes meet, or nearly meet, enclosing portions of the corpuscular substance, but presently it is seen, in this case, that two of them predominate (Fig. 9), while the smaller ones recede, and a ring is thus formed (Figs. 9 to 12).

When taking the slides above referred to, I also made cover-glass preparations, and for some hours watched the gradual process of entry, so that my description, which I trust is not too brief, is not only from a study of the drawings made from my slides, but is, to some extent, from life also.

The method of entry, as I observed it on this occasion, does not agree with that described by Shaudinn in the *Arb. a.d. kaiserlichen Gesundheitsamte*, vol. xix, part ii, 1902. He there describes and figures the process, in the case of both the spore and the sporozoite, in a manner which would lead one to believe that it is similar to the forcible mode of entry of the vermicules into the cells of the stomach wall of the mosquito.

The elongation of the spore on the rim of the corpuscle, and its method of penetration as described above, cannot, I think, be disputed by any one who studies slides taken at that particular stage at which I obtained mine; and if we reflect that the sporozoite, although spicular in shape at first, is an organism practically similar to an amoebula, one cannot avoid the conclusion that in all probability its mode of entry is similar to that of the spore, and not by direct perforation by one end as Shaudinn has described.

DISCUSSION ON TRYPANOSOMIASIS.

I.—Sir Patrick Manson, K.C.M.G., M.D., F.R.S., LL.D.,
Medical Adviser, Colonial Office and Crown Agents of Colonies.

Sir Patrick Manson said: The subject of trypanosomiasis in man, though a very recent one, has already advanced sufficiently to justify the prognostication made only last year that ere long it would take an important place in tropical pathology. Although there is some ground for the claim that Nepveu was the first to recognize, or rather to see, a trypanosoma in human blood, it was not till Forde and Dutton had placed on record their case from the Gambia Colony that the idea of human trypanosomiasis as a distinct disease was definitely entertained. Only a few months later Daniels and myself recognized the disease in a patient from the Congo. Before this case could be recorded in detail I heard of a third case, also from the Congo, identified by Dr. Broeden, who, along with Dr. Sims, of Leopoldville, had recognized the disease in one or more additional Europeans in that region. Meanwhile, Dutton and Todd had been investigating the subject on the Gambia and in Senegambia, and had encountered another European case, and also a number of cases among the natives. Hardly had this announcement been made than Castellani discovered (November 12th, 1902) that the infection occurred among the natives of Uganda. He found the parasite in March, 1903, not only in the blood but also in the cerebro-spinal fluid; and as regards the presence of the parasite in the blood in natives of Uganda, Baker confirmed this observation. Still later, Bruce also has confirmed Castellani's discovery both as regards the blood and the cerebro-spinal fluid. Quite recently Leishman has brought forward a certain amount of evidence that trypanosomiasis occurs in India, and still more recently this evidence has been supported by Donovan. Thus trypanosomiasis in man, which made its *début* only some eighteen months ago, is thoroughly established as a definite element, and probably an important element, in tropical pathology.

And here I would remark parenthetically that in this matter of trypanosomiasis the formation of a Tropical Section at these meetings of the British Medical Association and the establishment of Schools of Tropical Medicine have received once more their justification. But for the London School of Tropical Medicine Forde would not have been using his microscope in the diagnosis of fevers on the Gambia, and he would not have started the subject by his find of the trypanosoma in the original case; but for the Liverpool School of Tropical Medicine Dutton would not have been on the Gambia to identify, and subsequently to describe and study with such signal success, the organism Forde had found; but for the Tropical Section of the British

Medical Association at Manchester last year Daniels and I would not have been shown Forde's case at Liverpool; but for this the disease possibly would not have been looked for and recognized on the Congo by Sims and Broeden; but for the London School of Tropical Medicine Castellani and Baker would not have been using their microscopes to such good purpose in Uganda. In fact, but for our Tropical Schools and Section human trypanosomiasis would not have seen the light perhaps for many years to come. Pardon this digression. Institutions, and even Sections of the British Medical Association, are, like men, glad of an opportunity to justify their existence.

The enthusiasm attending the first flush of discovery is apt to carry people off their legs, and to lead even experienced pathologists to conclusions beyond the facts. In such circumstances the amount of speculation and hypothesis is apt to be in inverse proportion to the amount of reliable data. Our care therefore should be to accumulate additional facts, and whilst doing so to discriminate carefully in our speculations between the possible and the proved. In that spirit I would ask you to discuss the subject of human trypanosomiasis.

By way of giving a lead I propose to refer to the following points:

1. The methods of investigation.
2. The ascertained clinical features of the infection in (*a*) the European and in (*b*) the native.
3. The possible relationship of human trypanosomiasis to trypanosomiasis in the lower animals, and to certain obscure tropical diseases—(*a*) sleeping sickness, (*b*) hyperpyrexial fever of West Africa, (*c*) kala-azar and certain forms of splenomegaly common in the tropics.
4. Prognosis.
5. Treatment.
6. Prophylaxis.

1. *Methods of Investigation.*—These hitherto are two—examination of the blood with the microscope: inoculation of the lower animals.

In an exhaustive examination of the blood in the tropics, in addition to enumeration of the various kinds of blood corpuscles, we have to keep in view several distinct types of parasites, filaria embryos, trypanosomes, malaria parasites, spirilla, bacteria. To most easily find or exclude these we have to make use of three degrees of magnification, besides various methods of treating the blood films. Each of these methods is more or less specially appropriate to a particular type of micro-organism. Thus, for filariae, a very large, thick, slowly-dried unfixed blood film, dehaemoglobinized and stained by immersion in a weak watery solution of an aniline dye, and systematic search with a $\frac{1}{2}$ in. or $\frac{3}{4}$ in. objective is, in my experience, the most reliable method. I am speaking now of ascertaining the presence merely of filarial parasites, not of their critical examination. For malaria parasites, bacteria, or spirilla we should employ very thin, fixed and stained films and a $\frac{1}{12}$ immersion lens. For searching the blood for trypanosomes I consider a moderately thin, fixed, methylene blue, or better, thionine or Romanowsky-stained film and a $\frac{1}{6}$ objective to be the best method.

An important point in the examination of blood films is the attitude of mind of the observer. He must be on the outlook, intent on finding the particular form of organism he is in quest of; he has, so to speak, to focus his mind as well as his microscope, otherwise he is almost sure to fail in his quest. This is an important matter. I believe from want of this attitude of mental alertness, as well as from using either too high or too low magnifying powers I have overlooked the trypanosoma many times in the large number of blood films from natives of the endemic region I have examined during the last twelve or thirteen years. We must also bear in mind that very generally trypanosomes are so scanty in the peripheral blood of unquestionable trypanosoma infections that many slides may have to be searched before a single parasite is encountered. In the case we had at the Seamen's Hospital we often failed to find them. Sometimes in our examinations there would be only one or two parasites in an entire film. Although in this patient the number of parasites in the peripheral blood did not seem very manifestly correlated to the temperature of the patient, yet, judging from what occurred in Forde's case, in Dutton's cases, in Baker's cases, in surra and in nagana, as the parasites are generally most in evidence during the febrile recurrences, it is probably best to make the blood examination when the body temperature is high. I have had no experience of the method for the detection of trypanosomes, but possibly in weak infections the plan I described some years ago for detecting malarial crescents by dehaemoglobinizing thick films by dipping them for a short time in water and then fixing with alcohol and staining, or that recently described by Ross for weak malaria infections might be of service. I do not know if centrifuging the blood with the idea of concentrating the trypanosomes in a particular part of the blood column has been extensively applied to human trypanosomiasis. Dutton appears to have used it to a limited extent, but in Durham's hands[1] it was very successful in nagana infections, and, where possible, should certainly be availed of in the human subject. In the centrifuged blood the trypanosomes accumulate in the leucocyte layer above the red corpuscles.

At best microscopic examination of the blood, generally speaking, is, in a negative sense, unreliable. Some other and more reliable method is urgently required. Naturally we turn to injection of the lower animals with the suspected blood. Unfortunately most of the ordinary laboratory animals are but feebly susceptible, or, if they become infected, the evidences of infection, clinical and microscopical, are long delayed and difficult to recognize. I understand that in Liverpool they have succeeded in infecting monkeys and rats, but this infection apparently is not certain, nor is it quickly manifested; moreover, monkeys are not always available. Professor Hewlett failed in the considerable number of animals he inoculated from our case at the Seamen's Hospital; at all events, in none of these was there that prompt response that we have in rats and mice to the nagana trypanosoma; and to be of much use in what I might designate, considering the circumstances in which a diagnosis is usually sought for in this disease, in field pathology the result should be prompt and unmistakable. Some easily-procured animal highly susceptible to human trypanosomiasis is at present a practical desideratum. That there are such animals I have little doubt.

2. *The Clinical Features of Trypanosomiasis* in (*a*) the European and (*b*) the native.

As regards the latter, the published information is very meagre. In Baker's three cases fever was a feature; but, as it was because the patients had fever that their blood was examined, it is quite possible the concurrence of the fever and the parasite was to some extent coincidence, and that the parasite might be present in other natives who have no fever. The experience of Dutton and Todd supports this conjecture.

In the European, however, an irregular undulant fever seems to be a constant feature. Apparently the initial rise of temperature is high. It was so in the case recorded by Daniels and myself; it was so in another Congo case to which I alluded in the BRITISH MEDICAL JOURNAL some months ago; and it was so in a case in Uganda about which I heard recently from Dr. Moffat. Referring to the latter case, Dr. Moffat, in a letter dated April 5th, 1903, writes as follows: "About a month ago he (the patient) began to have severe fever, which I took to be malarial, though I could find no parasites..... I was very soon struck with the obstinacy of the fever, which would not respond to quinine even given hypodermically. On the fifth day of the illness he had a severe attack of what looked like (and probably was) cerebral malaria with maniacal symptoms. I gave him 60 gr. of quinine hypodermically spread over a period of eight hours. Whether as a result I know not, but the temperature fell to normal and remained so for twelve hours. It then began to rise slowly again, and the patient had a more or less continued fever for about a week, and this in spite of repeated quinine administration. The peculiar course of the illness made me suspicious, and I again examined the blood, with the result that I found it full of trypanosomes..... Curiously enough, the very next day.....his temperature fell to normal, and all the parasites disappeared. After four days of normal temperature he had another attack of fever lasting two days, and the trypanosomes again appeared. He is now again normal and free from fever." In Forde and Dutton's case, and in the Congo cases which I have just referred to, this undulant type of fever was a feature. I fancy therefore that, as regards the European at all events, undulant fever is a constant feature of trypanosomiasis.

Another probably very frequent symptom in the European is the peculiar circinate erythema which, together with the accompanying oedema of skin and subcutaneous tissue, has been described by Forde, Dutton, Daniels, and myself. It would appear, however, that these symptoms are not essential, for Moffat writes me that beyond pyrexia his case "had none

[1] BRITISH MEDICAL JOURNAL, 1901, p. 512.

of the symptoms which were described in Dutton's and your cases."* Muscular weakness, rapid irritable pulse, anaemia, and breathlessness are probably pretty constant symptoms; but enlargement of the spleen, which was and is so pronounced a feature in Forde's case and in the case Daniels and I have recorded, is absent in another patient heard of on the Congo. In reply to my inquiries this latter patient writes: "As far as I know my spleen has not been enlarged. Certainly I have not been conscious of any trouble with it." Although the erythema in this case was at times very pronounced, it too was absent on one occasion for several months on end, and apparently was not an initial symptom, as it did not show itself for nearly two months from the commencement of the illness.

What may turn out to be a valuable point as an aid in diagnosis is the occurrence of eye symptoms—choroiditis, iritis, cyclitis, and optic neuritis. I have given in the British Medical Journal Mr. Treacher Collins's description of the characteristics of the choroiditis in our case, and need not repeat the description. I am indebted to Mr. John Tweedy for the following notes on the condition of the eye in the other Congo case I have alluded to:

January 18th, 1902.—Mrs. M., a Congo missionary for three years and then for nine months; worn glasses for many years, at first only for reading, etc., but lately contantly. Has had several attacks of iritis. In two attacks both eyes affected at the same time; last attack only left eye. Has had several attacks of malaria. Complains of a "glimmer" before the left eye. Complains of a rash (which I did not see, and for which I suggested that Dr. Crocker should be consulted).

On examination:

Vision R. = $\frac{6}{12}$, with her distance glasses sp. + 2.5 = $\frac{6}{9}$.
L. = $\frac{6}{12}$, " " " sp. + 2.25 cy + 0.5 | $\frac{6}{12}$.
With her reading glasses R. sp. + 4.0 1 Jaeger.
L. sp. + 3.5 cy + 0.5 | 1 Jaeger.

O.S. Fine dotted ring of uvea on both anterior capsules. (Remains of passed iritis. Media otherwise clear. Discs and fundus apparently healthy.)

Ordered R Quinin. sulph, 1 gr.; calomel. ½ gr.; liq. bellad., ⅛ gr., as pill, three times a day. Ordered fresh glasses.

May 7th. It was thought that the eruption on the face and body was due to quinine. Quinine discontinued. The rash improved; but Mrs. M. got a return of fever, and had to resort to full doses of quinine, and did not notice that rash was worse for the quinine. No further iritis. With distance glasses, R. equals $\frac{6}{9}$, L. not $\frac{6}{6}$, but only perception of light at the extreme nasal upper field of vision. L., for ten days Mrs. M. has seen only out of the inner corner of the left eye. O.S. R., media clear, disc and fundus normal; L., vitreous hazy, especially portions adjacent to the disc; optic disc swollen and blurred, optic neuritis. Ordered mist. hyd. iod. (mild).

After this I saw Mrs. M. at University College Hospital, and have no notes of the later stages of the case, and not a very definite recollection of the details.

For a time the optic neuritis was very marked, and was associated with much retino-choroiditis, which, however, I am unable to describe. The inflammation gradually subsided, and to the best of my recollection the sight returned to normal acuteness.

This patient dates her illness from September 29th, 1900. Her first attack of iritis occurred in the middle of May, 1901: a second and more severe attack occurred in the following August, a third in November, and the optic neuritis described by Mr. Tweedy in May, 1902. Vision, she informs me, is now quite restored.

Another interesting point in this case was the occurrence of a transient paralysis. She writes: "About this date (April 11th, 1901) I was paralysed in the left side for about one hour; then after a short interval the right side was attacked, the paralysis lasting for about the same time." It may be remembered that the other case had at one time a peculiar choreic seizure, and also that she had thrombosis of the veins of the leg.

Doubtless as we become more acquainted with the disease, additional clinical phenomena will come to light. An important one may or may not be mononuclear leucocytosis, for if this be a feature of trypanosoma infection, the value of the symptom in the diagnosis of doubtful malaria cases is very much discounted. A mononuclear leucocytosis may be a feature common to several types of protozoal infection. This is a point well worth working out.

3. *The possible relationship of human trypanosomiasis to a specifically identical infection in some of the lower animals* is a thing that must not be lost sight of. Few parasites are absolutely peculiar to one species of host. We know that the surra, the nagana, the mal de Caderas, and the dourine trypanosomes can each of them be communicated to and live in a considerable variety of mammalian hosts. The same is probably the case with T. Gambiense. We are a little too apt to assume that the vulgar soil supplied by an ordinary vertebrate is no fit medium for a parasite which has obtained the dignity of being a human parasite. I believe that in the case of the malaria parasite this mistake has been and is made by a good many theorizers. I believe the future will show that both trypanosoma Gambiense and the malaria parasites have other mammalian hosts in addition to the human mammal, and that the humbler mammals have a good deal to do with the endemicity both of trypanosomiasis and of malaria. We require more systematic and more extended observations to clear up this point for both classes of parasites.

A most important question has been opened by Castellani's discovery of a trypanosoma in the cerebro-spinal fluid in sleeping sickness. Is its presence there merely coincidence, or is a trypanosoma the cause of sleeping sickness? There are facts and arguments for both views.

The principal facts in favour of regarding the trypanosoma as the cause of sleeping sickness are (1) the frequency of its occurrence in this disease; at all events, in Uganda Castellani found it in 20 out of 34 cases, Bruce in 38 out of 38 cases; and (2) its occurrence in connexion with the nervous system. Now, frequency of occurrence may only mean frequency of concurrence; indeed, in the district where Castellani and Bruce worked F. perstans was found more frequently in sleeping sickness cases than was the trypanosoma, and this by Castellani himself and his colleague, Dr. Low. Before concluding on the ground of concurrence in favour of the trypanosoma as the cause of sleeping sickness we must have accurate statistics as to the presence or absence of the parasite in the general population of the endemic area of sleeping sickness, and also as to the geographical ranges of the disease and of the parasite respectively. Such an investigation has disposed of the claims of F. perstans, once so hopeful, and may very possibly dispose of those of this newest aspirant to pathogenic distinction.

As regards the significance of the presence of the trypanosoma in the cerebro-spinal fluid, too much importance must not be attached to this, for it is not improbable that it occurs in many of the fluids of the body besides the blood; Durham informs us that in nagana T. Brucei is to be found in the vitreous humour.

Against the specific relationship of the trypanosoma to sleeping sickness are the facts that Europeans so far have not been attacked by sleeping sickness, although undoubtedly they must have often been the subject of trypanosomiasis, and that the parasite has not been found in sleeping sickness on the Congo or in West Africa. The former objection may be explained by the assumption, suggested by Castellani, that the trypanosome hitherto found in Europeans is a different species to that found in sleeping sickness. This is surely a very improbable thing, considering that as Europeans get one kind of trypanosoma on the Congo, they might just as well get the other kind that Castellani's hypothesis postulates must occur there also. The second objection I mention is easily and probably correctly explained by the fact that so far the blood in Congo sleeping sickness has not been critically examined for trypanosoma sufficiently often.

To my mind a great, but not insuperable, difficulty to the view that the trypanosome is the cause of sleeping sickness lies in the fact that in some, perhaps in many, instances the interval between the date of infection with the specific cause and the clinical manifestation of the disease is one of several years; the natives of some places give seven years as the limit. Guerin's observations in the West Indies bear this out. A well-authenticated case occurring not very long ago in England is equally conclusive. It is now many years since Guerin's observations were made, and lest from their antiquity they might be considered unreliable, I made it a point of ascertaining the facts of the English case I allude to. The patient was a negro boy sent home from the Congo to be educated at the African Training Institution, Colwyn Bay, North Wales. I recently wrote to the Rev. W. Hughes, the superintendent of the institution, for a restatement of the circumstances, more particularly of dates and symptoms. Under date of July 10th, 1903, he very courteously replied, "The boy you refer to arrived in this country in September, 1885, and enjoyed excellent health for about two years, until September, 1887, but about that time I observed symptoms of the sleeping sickness. At first there was a dullness in his eyes and he was lazy and indifferent at his lessons. He had been able to commit to memory twelve verses a day from the Bible, but, gradually,

* Since this paper was read I have had an opportunity of examining Dr. Moffat's case. A circinate erythema had developed identical in character with that in Forde's and my own cases.

in a few weeks it was as much as he could do to learn six verses, and a little later on it was useless to try him with these lessons. Then staggering began. He would walk a little way and then rest against a lamp-post or a wall, and we would find him on his knees often in going to bed by his bedside, having gone to sleep while saying his prayers. Once at a later stage, I found him asleep with his hands in a basin of cold water, in which he had been trying to wash his face. Also, towards the final stages, he would refuse to eat and often let the basin drop from his hands, and finally he would not eat at all and would hardly speak."

Although in many specific infections prolonged incubation periods occur, for example, in leprosy, tuberculosis, rabies, etc., so far as we know successful infection with trypanosomiasis is manifested within a few days or weeks from its occurrence. It is difficult to conceive how a pathogenic agent like a trypanosome could remain inactive for periods amounting to years. Still we know so little about the life-history of this class of parasite that we must not make too much of this point.

On the whole I am inclined to the view that the trypanosoma of the African is not the cause of sleeping sickness, and that it bears the same pathogenic relationship to the European that the trypanosome of the African wild game bears to exotic domestic animals; that is to say, that whereas the native man and beast are immune in a pathogenic sense to the native trypanosome, the exotic European and European domestic animals are not so. Such a theory seems to be more in harmony with the epidemiology, symptoms, and pathology of sleeping sickness than that enunciated by Castellani and endorsed by Bruce.

Certain obscure tropical fever should be studied with an eye to a possible trypanosoma etiology, notably hyperpyrexial fever of West Africa and kala-azar of India and elsewhere.

We know so little about the hyperpyrexial fever of West Africa that beyond conjecturing a possible connexion with the trypanosome I must not venture.

As regards kala-azar and those curious and very fatal forms of chronic fever not amenable to quinine, and accompanied by enlargement of the spleen and liver, and often by hyperpigmentation of the skin, I think we may have some hope that in the trypanosoma Gambiense or in a similar parasite we may find their explanation. The recently recorded observations by Leishman and Donovan on what may be involution or evolution forms of a trypanosome in splenic pulp in this class of case are most hopeful. It is a pity that so far experimental injection of the blood of such cases into the lower animals has been neglected. I would urge this as a possible means of unravelling the mystery which for so long has shrouded kala-azar and similar types of tropical disease.

4. As regards the *prognosis* of trypanosomiasis in the African (disregarding sleeping sickness) it is apparently good; as regards the European it is not so favourable, but certainly not necessarily bad. Both of the patients I have had to do with are alive after three and two years respectively—the former expresses herself as being perfectly well; and the latter is certainly no worse, probably better, than when she was first seen nearly a year ago. The trypanosomes are as numerous as ever in the latter. Apparently immunity as regards their pathogenic properties is being gradually acquired.

5. *Treatment* so far has proved absolutely unsuccessful. Arsenic, quinine, methylene blue, and horse serum injection, all carried to the limits of prudence, had absolutely no influence for good in our cases.

6. *The prophylaxis* will be roughly indicated as soon as we know what is the inoculating agent. It may be a *Glossina*, *Tabanus*, a *Stomoxys*, or other blood-sucking diptera; but there are other blood suckers in Africa besides diptera, more particularly ticks, which should not be overlooked. The carapato disease of the Zambesi basin is certainly produced by the bite of a tick—Argas moubata. This is probably more widely distributed than is generally known. Sir Alfred Sharpe, H.M. Commissioner in British Central Africa, told me sometime ago that he thinks he came across this disease near Lake Tanganyika. He very kindly gave me a short account in writing of his observation.

Whether the carapato disease has anything to do with the trypanosome I cannot say, but certainly it belongs to that great group of tropical diseases that depend on infection by insects and their allies. It is well deserving of careful study, not only on its own account, but as possibly tending to throw light on trypanosomiasis and similarly produced pathological conditions. I drag it in here partly by way of suggestion and partly in the hope that by calling attention to it some one with the opportunity may be induced to investigate the subject.

Here I would allude to the debt of gratitude we of the Tropical Section owe to Professor Ray Lankester, Mr. Theobald, and now to Mr. Austen, of the British Museum, for their intelligent appreciation of some of the wants of tropical pathology, and the energy they have shown in trying to meet them. The monograph on the tsetse flies, just issued by the Natural History Department of the British Museum, cannot fail to prove of great value in this study. Mr. Austen's monograph contains practically all that is known about these flies, and it will be, as Mr. Theobald's book on the mosquitos has shown, a centre for additional knowledge to crystallize around.

In concluding these remarks I must apologize for their loose and discursive character. The subject is so new and so incomplete that they could hardly be otherwise. Such as they are, I hope they may give rise to some useful discussion.

II.—CUTHBERT CHRISTY, M.B., C.M.Edin.,
School of Tropical Medicine, Liverpool.

THE DISTRIBUTION OF SLEEPING SICKNESS ON THE VICTORIA NYANZA AND ITS CONNEXION WITH FILARIASIS AND TRYPANOSOMIASIS.

DR. CHRISTY said: On reaching Uganda in July, 1902, as a member of a Commission sent out by the Royal Society to study sleeping sickness, it was my first aim to map out the area of distribution of the disease, and afterwards that of F. perstans, in order to see whether the two areas in any way corresponded, as they were supposed to do. The Medical Officer for Busoga district, had already remarked its prevalence along the lake regions of his district. The accompanying map (p. 649) will show the distribution of the disease as I found it towards the end of 1902.

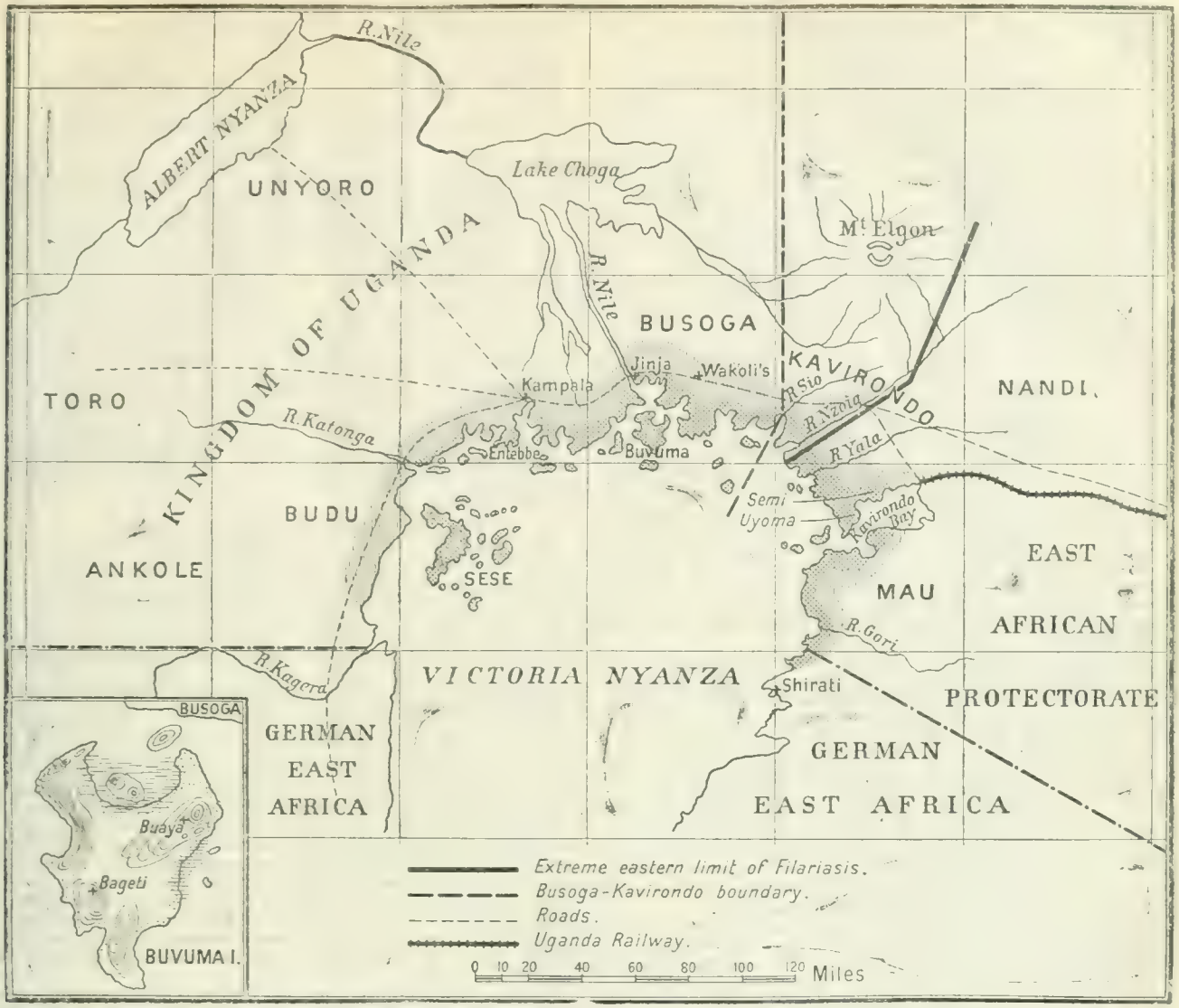
The darkest marked portion of the map indicates what I have termed the infective area, or that in which the disease appears to be contracted. This area consists of a narrow strip of coast-line, at its widest not more than ten miles, extending for 250 miles along the shores of the Victoria Nyanza, from the mouth of the Katonga river, the northern boundary of Budu, on the west, through Uganda, Busoga, and Kavirondo, to Kavirondo Bay. Then across the mouth of the bay, and down the eastern shores of the great lake, where I traced it nearly as far as the Gori river, the provisional boundary between British and German East Africa. A letter, received just before leaving Uganda, from the German medical officer stationed at Shirati, showed that the disease had passed the boundary between the two countries and was gradually spreading southwards. The infective area also includes the margins of all the islands in the British portion of the Victoria Nyanza.

The lighter shaded portions of the map, namely, the centres of the islands, and the districts inland beyond the infective area, indicates the country in which the disease is prevalent, but in which it does not seem to be contracted, nor to be infective. I have called this the non-infective area. The cases occurring in it are usually isolated ones, scattered here and there, and whole families are never infected. Moreover, in the majority of these cases a history of the patient having been at or near the lake some months previously can be obtained. The natives themselves in some parts recognize that the disease is contracted in districts which are within sight of the waters of the Victoria Nyanza, and the victims frequently volunteer the information that they have been to the lake.

Very few cases of sleeping sickness have occurred to the westward of Kampala and Entebbe, and none south of the Katonga, with the exception of two or three that were reported, and two I saw, in Budu, all of which I ascertained had been imported from the Sese Islands opposite, or from Uganda, and one rather doubtful case in Ankole.

Sleeping sickness is prevalent at Jinja (Ripon Falls), but the infective area shows no tendency to spread for more than a mile or two northwards down the Nile, or along any of its tributaries, nor along any of the caravan routes or roads.

Although I made a very extended search, travelling, during my 9½ months stay in the country, over almost the whole of the better known parts of the Uganda Protectorate, as well as over a considerable portion of the western districts of the



East African Protectorate, and also into the Congo Free State and German East Africa, I found no other endemic or epidemic areas of the disease.

In mapping out the area of distribution of F. perstans I travelled eastwards from Kampala along the coast, obtaining blood slides from the natives on every convenient opportunity, on an average perhaps every ten miles along my route.

All through Uganda and Busoga I found F. perstans common. From 60 to 80 per cent. of both men and women harboured the parasites, until I passed the Busoga-Kavirondo boundary. Once past that boundary the percentage dropped abruptly to 14 per cent., and then to 5 per cent. Still further east, beyond the Nzoia river it was entirely absent, even in districts where sleeping sickness was affecting half the population. I took several hundred blood slides in Southern Kavirondo east of the Nzoia river without finding a single filaria embryo. The same absence of filariasis existed beyond Kavirondo Bay, down the eastern shores of the Victoria Nyanza, and from what I know of the inhabitants, and the open character of the country, it probably, with the exception perhaps of the larger filariae, does not occur anywhere in the East African Protectorate east of the Nzoia river.

On my journey south of Kavirondo Bay I was fortunate in having the assistance of the medical officer of the Kisumu district. This officer subsequently visited Uyoma Promontory and the badly-infected district of Semi, which I had already passed through, and he wrote me afterwards that he had taken and examined many slides, but without finding F. perstans, thus confirming my work. He also visited the Nandi plateau, and wrote that he had found no F. perstans.

My discovery that sleeping sickness extended along the lake shores for more than 100 miles beyond the extreme eastern limit of filariasis enabled me to report to the Royal Society on October 31st, 1902, that the two diseases are not connected with each other.

I subsequently found that the distribution of F. perstans extended over large areas in Busoga, the kingdom of Uganda, Unyoro, Toro, and Budu. I also traced it into the Congo Free State, and found a few cases on the Nile at Wadelai, and again at Gondokoro.

If F. perstans were the cause of sleeping sickness, as has been supposed, that disease would have spread far and wide from the shores of the Victoria Nyanza.

There is no evidence to show that sleeping sickness was known in the country before six years ago at the outside, and possibly not before two years ago. There is no doubt, on the other hand, that F. perstans is an old inhabitant. It cannot have invaded so large an area as its present distribution in the short space of six years, nor can it have infected the inhabitants of some districts to the extent of 90 per cent. in so short a time.

In the island of Buvuma and other places I took a large number of blood slides, both from sleeping sickness cases, and from persons apparently free from the disease. The percentage of F. perstans in each case was practically equal, being only slightly higher amongst the former—a difference I think not difficult to account for.

In order to study more exactly, amongst other points, the characteristics of localities in which were situated a large number of cases of sleeping sickness in a circumscribed area,

I made a visit of some days' duration to the badly-infected island of Buvuma. The accompanying small map of that island, in which the small dots show the actual location of sleeping-sickness cases, illustrates one result of my investigation. I was conducted from shamba (plantation) to shamba all over the island, and found that the majority of the outlying huts which were not empty contained a case or cases of sleeping sickness. I discovered that practically all the cases occurred near to the water's edge, on the lowest lying parts of the island, and that the huts were invariably surrounded by bananas or forest growth. On the other hand, the village of Buaya, situated on high open ground, and protected by a high wattle fence, did not contain a single case, and only two deaths had occurred amongst those in the chief's village at Bagete, situated fairly high, but near to forest growth.

These characteristics hold good for all the sleeping sickness area. Compact villages and populous centres are not nearly so seriously affected as the shambas and outlying places. Scattered villages, where the houses are surrounded by bananas, etc., are less exempt, with the exception of large places like Kampala, which come under the heading of populous centres, and are not infected.

In strong contrast to Busoga, with its dense forests and cool banana groves, the prevailing landscape in Kavirondo consists of rolling downs covered with short grass. There the parts affected by sleeping sickness, as elsewhere, are the districts bordering on the Victoria Nyanza and along the estuaries of the rivers, where grow scattered trees and scrub, and fantastic candelabra euphorbias. The exemption of villages is less noticeable in Kavirondo, where they are all more or less compact, and each family has a separate village, usually surrounded by a high wattle fence or an enormous floral hedge. Here again, however, large villages situated on high ground and in the open, although within the infective area, are almost exempt.

On reading the above description of the characteristics of the localities most affected by sleeping sickness, it will be evident to those who are conversant with the habits of the genus *Glossina* (tsetse fly) that the disease occurs in just such places as might be inhabited by the tsetse, namely, low-lying situations near to water and amongst trees or scrub. The tsetse (species ?) we know is found occasionally in open thorn forests, far from water, but this is exceptional. Colonel Bruce, now studying the subject of trypanosomiasis and sleeping sickness in Uganda, has already found Glossina palpalis to be fairly common in certain parts along the lake shore, but it remains to be seen whether the area of distribution of this fly agrees with that of sleeping sickness as mapped out by myself and described in his paper.

If *Glossina Palpalis*, whose bite and peculiar local distribution I am well acquainted with at certain places on the Niger, is ultimately found to be common all through the sleeping-sickness area, it probably is troublesome to man only at certain seasons, for, although without looking for it, I met with the fly on two or three isolated occasions, nowhere was it a pest, certainly nowhere within the sleeping-sickness area. In Buvuma Island it did not attract my notice at all.

The genus *Tabanadae*, to which "hippo" and "mangrove" flies belong, has a wide distribution, which extends all over the country and along the Nile, and in no way agrees with that of sleeping sickness. The bite of these flies is, however, severe, and they may be regarded as possible carriers of disease.

On reading a recent work on the tsetse fly (7 species of *Glossina*) by Mr. E. E. Austen, of the British Museum, I learnt for the first time that several travellers have recorded the fact that the "tsetse" avoids the neighbourhood of villages, the probable reason being its known dislike to the smell of faeces, one writer asserting that, where the fly is most numerous and troublesome, it is only necessary, upon shooting some animal, to turn out the contents of the stomach, and all the flies at once leave the vicinity. As I have shown that sleeping sickness avoids villages and populous centres, the above fact is a remarkable coincidence, and, if correct, the inference is unavoidable that some species of tsetse is the carrier of the causative agent, probably trypanosoma Castellani, of sleeping sickness.

Although not connected with the subject of distribution, it may be of interest to note that a very frequent, though not invariable, symptom of sleeping sickness is an inordinate appetite, and this very symptom I noticed in Nigeria in 1898 was conspicuous, and almost invariable, in horses suffering from trypanosomiasis.

There are, however, many facts which cannot at present be reconciled with the trypanosomiasis theory of the causation of sleeping sickness.

III.—J. EVERETT DUTTON, M.B., Ch.B.Vict., and J. H. TODD, B.A., M.D., C.M.McGill,
Liverpool School of Tropical Medicine.

RESEARCHES ON TRYPANOSOMIASIS IN WEST AFRICA.*

DRS. DUTTON AND TODD wrote: We returned only three weeks ago from the Gambia, where, as you know, we have been working on trypanosomiasis. We are leaving again for that continent on September 3rd, this time for the Congo Free State, to make further investigations and complete our work on trypanosomiasis, so that it is unfortunately not possible for either of us to spare the time necessary to attend the session. We shall read with a great deal of interest the reports of the discussion, particularly those portions which concern themselves with the possible causal relationship of trypanosomata and sleeping sickness, and with methods of finding the parasites in infected animals when they are present in the peripheral blood in only small numbers. In writing this letter we are afraid that we have taken it for granted that you have seen our preliminary report published last winter in the BRITISH MEDICAL JOURNAL, since much that follows is a continuation of that communication.

Prevalence and Distribution in the Gambia.

We find that the disease extends practically from the mouth of the river to the end of British territory, some 250 miles up stream. We have no evidence to indicate that there is any one type of locality particularly subject to the disease; neither do we find that there are zones or belts of territory in which the malady occurs. For instance, although we found three cases out of thirty-five people examined in one village situated among the mangrove swamps, still we have examined many other similarly-situated villages in a far more thorough way without seeing a single parasite. We have found cases in low-lying riverside villages, in towns placed on high ground, on the sea coast far from mangrove swamp or river (Kommbo District), and in the upper river at Fatotenda. The latter town is situated on the river bank, here 20 ft. in height, and is far from any mangrove swamp. The neighbouring country is very flat, and extends in a sparsely-wooded plain, broken only by a fresh-water marsh or two on all sides for a great distance. How far the disease extends into the interior we are unable to say, since British territory stops on either side at only seven miles distance from the river, and we have only once had the opportunity of making investigations in French territory—at Maka, about thirty miles from the river bank. Here we examined about 100 natives with negative results.

Prevalence.—We have now seen six cases of trypanosomiasis in the native, and have once found the parasite in a white man (quadroon). Over 1,000 persons in Gambia have had their blood examined by us. The percentage which these figures give can by no means be taken as exact, both because the number examined is too small, and because those who were examined were only those individuals who could be persuaded by small bribes of beads, candy, etc., to be pricked. Remembering these facts, and taking into consideration the method of examination we employ (described in preliminary report in BRITISH MEDICAL JOURNAL), we think that we are justified in assuming the disease to be much more common among the natives than the figures seem to indicate.

Observations on the Disease.—The quadroon case is the case mentioned in the preliminary report already spoken of. There we gave a synopsis of its characteristics. On January 18th we went down river from McCarthy Island to see Mr. Q. at his factory, Sakuta, and to stay with him for a day or two while examining him and seeing the natives in the neighbouring villages. We found him in excellent spirits, and he said that he was feeling "very fit." He had been free from shortness of breath and palpitation for some time, and since May, 1902, had gained 24 lb. We found his temperature normal, pulse 104, respirations 18, blood examination showed red cells 4,350,000, white cells 8,000, haemoglobin 96 per cent., and in 0.5 c.cm. of blood 19 organisms were seen (centrifuged). The colonial surgeon, Dr. Chichester, had advised him to take a preparation of arsenic, but none had been taken, and Q. had dosed himself with four sets of capsules from Dr.

* This communication was addressed in the form of a letter to Sir Patrick Manson.

Kidd Davies, an American patent medicine man—one of the capsules contained methylene blue—and Warner's safe cure and quininae bisulph. 9 gr. every other day. Since then we heard nothing of him until March 22nd, when we got a message to say that he was very ill, and "would we come to see him?" We started as soon as possible, but unfortunately arrived too late to see him alive. His friends said that his last illness had commenced with a cold and fever on the Monday; he soon took to bed, complaining of headache and pain over the spleen. On Friday he was unconscious, and on Sunday dead. No more exact information than this could be obtained from the friends, and a necropsy was refused us. The original disease in this case commenced in October, 1901, so that its duration was almost the same as in Mr. K.'s case, namely, a year and a-half.

Native Cases.—As stated above, we have found parasites in the blood of six natives—two females, four males. The results of our examinations are as follows: Woman, 35 years, at Lamin; boy, 9 years, at Lamin; girl, 16 years, at Lamin; boy 12 years, at Gunjur; man, 35 years, at Kountawuru; man, 22 years, at Fatotenda.

Taken as a whole, the history and clinical examination of these cases revealed nothing important. In the younger cases the usual enlargement of the spleen was met with. Enlargement of lymphatic glands was present in some, not in others; parasites were very scanty in all except the girl aged 16, where 23 were counted in one cover-slip. We will describe the detail of these cases in our report. While considering the above native cases, we should like to point out, first, that it is difficult to get reliable information from a native—they say whatever they imagine will please their questioners; secondly, we have only had the opportunity of examining the cases at most twice; this is, of course, due to the exigencies of travelling, etc.; and, thirdly, we have reliable histories from two cases only.

Taking all the above facts into consideration, we believe that the disease as it occurs in natives is a peculiarly mild one. Clinically we believe it impossible to diagnose the disease in the native. The accelerated pulse-rate, slight rise in temperature, history of fever, etc., occur in natives in which no parasites have been found. We have long thought, because of this lack of symptoms, that possibly the black man in this disease bears the same relation to the white as does the game of Central Africa to domestic animals in the tsetse fly disease. The parasites found in the quadroon and native cases seem to be identical in morphology and reaction in animal experiments. We have had no opportunity of investigating the course of the disease in the native—if we can call it a disease—but the ages of the natives infected indicate that there can be no acquired immunity. It would be rather curious if the woman at Lamin or the man at Kountawuru had only recently become infected for the first time after having been exposed to infection from childhood. We think that the varying ages of the various cases is another point in favour of our belief that the parasite occurs very frequently in the natives, but occurs only in a periodic manner in their peripheral circulation.

The Disease in Horses.

The horse is the only animal in Gambia in which we have found pathogenic trypanosomes. We have examined cows, dogs (few), goats, sheep, monkeys, and a few deer as well as many small fry such as rats, squirrels, etc., but without result. We have unfortunately been able to examine very few donkeys and have been unable to get one for inoculation purposes. Out of thirty-six horses examined ten were infected.

Sketch of Symptoms.—The first thing noticed is that the horse seems to have lost something of his accustomed "buck" and vigor. He no longer seems to have quite the same vivacity in harness or to have as much endurance as usual. Still the animal is apparently in perfect condition. He is fat and his coat is in good condition. Outwardly he is in perfect health. The temperature is only slightly above normal at this time (102.6°), and if the blood is examined but few parasites will be seen—perhaps as many as ten to a cover, often not so many. Two or three weeks later more marked signs of ill-health become manifest. The horse has commenced to grow thinner, his head is drooping, his eye is not so bright, and although he is well able to go under saddle, still the rider is conscious of the animal's weakness, which has now become patent. At this period there are periodical rises of temperature, when the parasites will usually be found in the blood, although at other moments they may often be absent. In another month emaciation is more marked. The ribs commence to show, as a Frontier Police Officer pithily expressed it, "The flesh seems to slip back from the horse's chest to his belly." The scrotum becomes relaxed and the testicles hang so low that they seem to be oedematous at first sight. At times a slight watery discharge from the eyes may be observed. In none of the horses have we observed the marked oedema of abdomen, scrotum, and legs, nor the staring of the coat which is described in the "tsetse fly" horses in South Africa. This last stage has lasted in one of our horses for seven months, and during this time on only four occasions have parasites been seen in its blood. On each occasion their presence was accompanied by a slight rise in temperature, 103° or thereabouts. We brought this horse home with us. It is now in Liverpool, and its condition has much improved since leaving Africa. As the disease proceeds emaciation becomes more and more marked. The ribs and ilia stand out prominently. The animal wears an apathetic chronically tired expression, which is most characteristic. No oedema is to be made out. The whitish discharges from the eyes—in small quantities—is often seen. Saddle galls and sores on the projecting hip bones are often present. No haemorrhage has been observed in any of the mucous membranes. No blood has been seen in the urine. The parasites are now almost continuously present in the blood and may reach very considerable numbers. The temperature fluctuates, though it is generally raised, and may go up as high as 105°. Two horses have died under observation. One lingered for three days, scarcely able to rise from the ground, in a state of utter weakness. His breathing was very laboured, he sweated almost continuously, and just before death had a slight convulsive seizure. The second animal died suddenly one day after being taken out a little distance to graze. In this animal a few conjunctival petechial haemorrhages were seen. The most notable features observed in the necropsies of these two animals were the yellow gelatinous oedema fluid found around the sheath, and in the first case on the abdomen, the amber-coloured lymph with flakes of yellow gelatinous lymph seen in the peritoneum and in the pericardial and pleural cavities. There was a general enlargement of all lymphatic glands. Some were soft, amber-coloured, and watery, others had a chocolate-coloured centre, and still others showed marked petechial haemorrhages. The spleen was not enlarged. The lungs were congested. The liver showed fatty change. In one case the heart showed marked fatty degeneration (thrush heart). To the naked eye there was no change in bone marrow. Only in the very last stages of the disease does any marked alteration in the blood seem to take place, then both red cells and haemoglobin are diminished. Just before leaving Bathurst we heard that a year-old colt, examined and found to be infected in October, 1902, was still alive. On the other hand a similar horse in much the same condition died two months after we bought it. We think from what we have seen that it is not impossible that horses may occasionally recover.

Synopsis of Results of Experimental Inoculations of the Two Diseases into Lower Animals.

Monkeys.—The dog-faced monkey, Cynacephalus sphinx (Desmoulins?) is insusceptible to either horse or human parasites. We have experimented with 9 of these monkeys. The small mangrove monkey (species?) is very susceptible to horse trypanosome (only obtained one specimen of this monkey).

Rabbits die from horse trypanosome in about one month and a-half; with the human trypanosome they appear to thrive and increase in weight, though parasites are seen in their blood in small numbers occasionally.

Guinea-pigs, with horse trypanosome, die in about one month; with the human parasite one lived for four and a-half months. Marked *post-mortem* changes in those animals inoculated with horse trypanosome.

Dogs (pups) die in two to three weeks from horse trypanosome: two inoculated with the human parasite have grown into quite big dogs, and have been sent home.

Old Dogs.—One large bitch (sent home), inoculated five months ago with horse parasite, is still alive and well; no parasite has been seen in the peripheral blood, but the blood is pathogenic to rats. Another grown-up dog died in a month after inoculation with horse trypanosome.

Large bush rats (species?) are very susceptible to horse trypanosome. With human parasite they live and thrive, though organisms are more frequently seen in their blood than in the animals inoculated with the human parasite.

Mice (house) die from horse trypanosome in two to three weeks; with human trypanosome live much longer.

Hens.—African hens are insusceptible to horse trypanosome, one sent home inoculated several times.

Cows.—We have infected a cow and a calf with horse trypanosome. These animals have lived for two months and four weeks respectively. N.B.—We have never found the disease in cows naturally.

Goats.—None have died from horse trypanosomiasis, while two inoculated with the human parasite have died, one a kid in three months. Another goat inoculated three months ago has lost much weight, and shows many trypanosomes in its blood.

Rats.—Rats can be inoculated with the human disease, though none have ever died of it alone; while rats infected with horse parasite die as a rule in about four weeks.

Discussion of Results with Reference to Identity or Otherwise of the two Parasites.

The above inoculation (primary) experiments show a distinct difference between the diseases produced, in animals, by the human and the horse trypanosomes. The horse parasite is the more pathogenic, and after death obvious *post-mortem* lesions, namely, enlargement of spleen and glands, the latter usually haemorrhagic, are found. The "disease" caused by the human trypanosome is very chronic, the animal's health does not seem to be affected, and in the only deaths which have occurred in animals infected with this parasite no macroscopic lesions were perceived. In the early stages of both diseases the continued presence of the parasites in the peripheral blood is far from the rule. This tendency to disappear from the peripheral circulation is much more marked in the human parasite. In the later stages of the horse disease (a week before death) the presence of parasites is constant, and their numbers gradually increase until death takes place. The morphology of the two parasites presents, so far, no characteristic differences. There are, it is true, a few minor points in which they differ, but before anything definite can be said a careful study of stained specimens will be necessary. From a consideration of the above facts it is impossible to decide whether the parasites found originally in horse and man are the same or different. The one clear distinction we can draw at present is the marked dissimilarity of the disease produced by inoculation in lower animals.

Transmitters of the Diseases.

Here, unfortunately, we have to disappoint you as much as we ourselves have been disappointed by saying that our results are negative. We tried many times in vain to transfer both parasites by biting flies to healthy rats from either naturally-infected horses or artificially-inoculated animals. Two species of flies, *Stomoxys* and *Glossina* were used. If the method of transmission of this disease were, as is maintained, simply a mere mechanical transference of parasites from one animal to another by means of the insect's proboscis, we think we should have obtained some result in our experiments. Perhaps, however, it may be that the parasite cannot live for even a few hours in the insect's proboscis during the dry season owing to the excessive lack of moisture in the atmosphere. At McCarthy Island, where some of our experiments were undertaken, there was a daily difference of from 15° to 20° between the wet and the dry thermometer bulbs. Mr. Hewby, a travelling commissioner in Northern Nigeria, has told us of an observation, based on a very careful study, which seems to be interesting in this connexion. He noticed that his ponies after passing through a certain bit of bush in the wet season often became ill and died of fly disease. Ponies sent through the same bush in in the dry season, however, escaped, although the flies, which he says are the same as the *Glossinae*, which we showed to him, were always present in great numbers. We should have liked to have given you our results in a more detailed way; but it is impossible, as our notes are not yet completely arranged or our animal experiments completed or fully worked out. We hope before we return to the Congo to publish as far as possible a complete account of the animal experiments up to date, and to give a description of about six species of trypanosomes found in frogs, birds, tortoise, and mice.

IV.—CUTHBERT CHRISTY, M.B. and C.M.Edin.,
School of Tropical Medicine, Liverpool.

ORNITHODORUS MOUBATA, AND TICK FEVER IN MAN.

DR. CHRISTY said: In recent years many travellers in tropical Africa, Persia, and elsewhere, have reported that they have occasionally suffered very severely from the effects of the bites of ticks. And since the fact has been established that the protozoa and other blood parasites of vertebrates from necessity employ blood-sucking insects, etc., as intermediary hosts for the continuance of their species, ticks have been regarded with suspicion, as the probable transmitters of human diseases, either from man to man, or from animal to man. They have long been known to fill this rôle for the parasite (Pirosoma bigeminum) of Texas cattle fever.

Of the many species of ticks only two are as yet known to be injurious to man, Argas persicus in Asia, and Ornithodorus moubata in Africa, and possibly another in America.

Towards the end of 1902, whilst engaged in studying the etiology of sleeping sickness in the Uganda Protectorate, I was informed by a native that there was an "insect" whose bite caused serious illness. He described it as a spider, and volunteered the information that it came out of the ground. Upon instituting a search at one of the camping places, I had brought to me specimens of a large tick, which subsequently turned out to be Ornithodorus moubata. I discovered that this tick, known by the native name of "bibo," was fairly common in Busoga, Uganda, Budu, German East Africa, Toro, Unyoro, and at Wadelai on the Nile.

In places where it is most common it can be collected in hundreds by searching the dust and straw on the floors of the huts erected for caravan porters, or the houses of the natives, though in these latter it is not so easily found when the floors are kept clean. Near Kampala the natives collected them for me round the bases of the vertical supports of the roof. These ticks, when full grown, are about 8 mm. long by 6 or 7 mm. broad. Their colour when alive is greenish brown. The leathery chitin of the dorsal surface is thickly studded with minute tubercles, and has a crumpled, embossed appearance, due to several deep furrows, when the tick is unfed, but when distended with blood these furrows are less evident. The eight-legged adults have also on the dorsal surface from four to six light-coloured spots. They bite at night, and fall off when gorged. They are frequently carried long distances in mats or bedding, or in porters' loads which have been piled for safety in the rest huts at night.

The natives of the protectorate, particularly in Toro, dread this tick, and know well the symptoms occasionally following its bite. In describing these they invariably go through a pantomime indicative of vomiting with pain in the head and abdominal region. They say that the symptoms may last for several weeks, but are never followed by fatal results. The great majority of natives are immune, and suffer no ill-effects from the bite, presumably having been immunized by a previous bite or bites.

Mr. R. I. Pocock, of the British Museum, has kindly furnished me with the following note upon the specimens which I submitted to him for detemination:

> The ticks above referred to by Dr. Christy are identical with those collected in Angola by Dr. Welwitsch, which Andrea Murray described in 1877 as Argas moubata, stating that the essential difference between this species and the earlier described Egyptian Argas Savignyi is the presence of the pale integumental spots, independently observed by Dr. Christy in the former, and well seen in a live specimen amongst those he has submitted to me. The specimens are also specifically identical with examples in the British Museum collected by Dr. Dowson at Tete on the Zambesi.
>
> The species is now known as Ornithodorus moubata. As I pointed out in 1901, it may be distinguished from O. Savignyi by the invariable absence of the two pairs of eyes present in the latter. Hence it has recently, but quite unnecessarily, been renamed by Neumann, O. Savignyi var. coeca. Neumann records it from the Transvaal, etc., so it is evidently widely distributed throughout Central and Southern Africa. Dr. Christy's discovery of the species in Uganda, and his testimony as to its prevalence almost throughout the country, comes as a surprise after the statement, in Johnston's *Uganda Protectorate*, that he did not remember "having encountered or heard of that poisonous tick" with which he was well acquainted on the Zambesi. It is an interesting fact that the testimony of Drs. Livingstone and Welwitsch, Sir John Kirk, Dr. Dowson, Dr. Daniels and Sir Harry Johnston, with respect to the sickness which follows the bite of this tick, both in Angola and British Central Africa, has been independently confirmed by Dr. Christy, who, at the time, did not know that the "bibo" of Uganda is identical with the "moubata," "tampan" and "carapato" of the Zambesi watershed. I am not aware that the allied species O. Savignyi, which has been recorded from Egypt, Nubia, Abyssinia, Somaliland, British East Africa, etc., shares the bad reputation of O. moubata. The geographical areas of the two species overlap. Hence, without the examination of actual specimens, it would be impossible to say which of the two species is involved in any given case of "tick-fever."

I examined several cases of illness amongst my porters and others, which were accompanied by very severe symptoms

attributed to the bite of the bibo, without finding anything peculiar in their blood, and with one exception, not even F. perstans. The worst case was one of my servants, a Swahili from Mombasa. Six days before being taken ill he had, contrary to his usual habit, slept in a native hut at a camp where the tick was very abundant. His main symptoms were violent headache, fever, constant vomiting, pain in the epigastric and abdominal regions, and some purging. For a time I almost gave up hopes of his recovery, but seven days after the onset he was able to get out of his hammock and had nearly recovered his usual health. There was no enlargement of liver or spleen, or other physical signs that I could discover. On several occasions during the month previous to his illness I had examined this man's blood as an encouragement to timid natives, without finding filariae. During his attack, and for a week after it, the blood examinations were also negative. Two months afterwards, however, whilst coming down the Nile, I again examined his blood and found a F. perstans embryo. Subsequently I found two more.

The distribution of Ornithodorus moubata as I found it in Equatorial Africa in no way agrees with that of sleeping sickness, but it does agree to some extent with that of F. perstans. In a district near the north end of the Albert Edward Nyanza, where the tick was very abundant, I found that not only was a larger percentage than usual of the natives infected with F. perstans, but their blood, in very many cases, was so full of the embryos that I could count 100 or more on one slide.

As the outcome of these facts and coincidences, I have been led to suggest that the above-described symptoms, known amongst human diseases as "tick fever"—a very different thing to the tick fever of cattle—may possibly be the result of a primary inoculation with F. perstans, or, in other words, that Ornithodorus moubata may possibly act as the intermediary host of that blood parasite.

The fact that in the districts where the tick is prevalent the majority of the natives are immune to the effects of its bite, would seem to point to a lengthy immunity produced by the previous bite or bites of a healthy tick, or one infected with F. perstans. The length of this immunity would agree with what we find in the case of F. perstans, for once infected the embryos may probably be found throughout life.

Before my discovery of Ornithodorus moubata in Uganda and its neighbourhood it had only been recorded from Angola on the west, the Zambesi river on the east, and, according to Neumann, in the Transvaal. From both the former places F. perstans has been recorded. It remains to be seen whether the tick will be recorded from other districts known to be infected with F. perstans, which so far is only known to occur in Tropical Africa and British Guiana. It is, I think, highly probable that when the tick is searched for in the latter place it will be found, for, besides the enormous bed-bug, known as the "benchuka," so common in the Argentine, I have seen in Para and Paraguay a tick, troublesome to man, very similar, to the best of my recollection, to Ornithodorus moubata, and in a recent article dealing with the upper Orinoco in the *Geographical Journal*, a writer speaks of bush-ticks as being called "garrapatas" by the natives.

I regret that, owing to the death of most of my specimens, I am not as yet able to bring forward any further evidence to strengthen my suggestion regarding the host of F. Perstans in the shape of dissections or inoculation experiments. For the guidance of those favourably situated for the observation of genuine tick fever cases I would suggest that it is important to note whether or not filariae occur in the blood of these cases at the time of the attack, and if not to watch the cases for two or three months afterwards.

There are one or two varieties of F. perstans, or allied species, occurring in Uganda, and in this article where I say F. perstans I provisionally include those varieties or species.

V.—A. Castellani, M.D.,
Florence.

Dr. Castellani said: The observations of Sir P. Manson on sleeping sickness are very important, but I must confess his criticisms do not shake my opinion that the disease is a trypanosoma infection. In Uganda since the beginning of November, 1902, when I began to use a special technique, I found very frequently a trypanosome in the cerebro-spinal fluid of sleeping sickness patients, whereas I never found it in the cerebro-spinal fluid of cases of other diseases taken as controls. I then came to the conclusion that the sleeping sickness is due to the trypanosome I had found. My results have been afterwards amply confirmed by such an authority on trypanosomes as Colonel Bruce, who, using my technique, has found this trypanosome constantly in the sleeping-sickness patients. I do not intend to go here into the question whether the trypanosome present in sleeping sickness is a new species or not. As according to Dutton, Todd, and Manson, T. Gambiense is not pathogenic for the natives, the trypanosome found in sleeping sickness, if it is really the cause of the disease, must be considered a different species. But the question of the species is a secondary one; the important point to settle is whether the trypanosome present in sleeping sickness is the cause of the disease or not. There is no doubt that sleeping-sickness patients seem to be more liable to be infected by some parasites than the healthy natives. F. perstans, for instance, in some districts is more easily found in the blood of sleeping-sickness patients than in the blood of healthy natives. But where does one find the trypanosome in sleeping sickness? Not only in the blood, but also, and more frequently, in the cerebro-spinal fluid. Filaria perstans has never been found in the cerebro-spinal fluid. I agree with Sir Patrick Manson that the clinical features of sleeping sickness are different from those presented by "Gambia fever," by the form of trypanosomiasis described in connexion with T. Gambiense, but why in man there should be only one form of trypanosomiasis when in the lower animals there are so many? Let us take the example of the horse. The horse is liable to be affected by five different forms of trypanosomiasis—surra, nagana, mal de Caderas, dourine, and the form just described by Dutton and Todd. I do not see any reason why man also, in analogy, should not be liable to be infected by different species of trypanosomes, each of which might give rise to a different disease. As regards the pathology of sleeping sickness, we know that in uncomplicated cases there are practically no macroscopical lesions. Microscopically Mott and Low have observed a mononuclear leucocytic infiltration around the vessels of the brain and the spinal cord. I have noticed that the leucocytic formula of the cerebro-spinal fluid is mononuclear. This mononuclear leucocytic infiltration and exudation is certainly more in favour of a protozoön origin of the disease than against it. To sum up, I believe sleeping sickness is due to the trypanosome I found because: (1) This trypanosome is constantly (or almost constantly) present in the cerebro-spinal fluid of the patients. (2) According to my experience, it is never found in the cerebro-spinal fluid of other diseases outside sleeping sickness. (3) The pathological changes of sleeping sickness are more in favour than against it being a trypanosoma disease.

VI.—Louis W. Sambon, M.D.,
Lecturer, London School of Tropical Medicine.

Dr. Sambon said that the information supplied by Dr. Christy as to the presence of Ornithodorus moubata in Uganda, Busoga and Unyoro was most interesting, and his confirmation of the peculiar disease inoculated by this tick was especially valuable. Formerly, the "disease of Tete" was somewhat doubtful, but now they were in possession of sufficient information to show that it was undoubtedly a specific and widely distributed tick disease. Dr. Emile Brumpt told him that the natives of Kilimandjaro and the Galla country feared the bite of a tick which they asserted caused disease in about eight or ten days. It was probably Ornithodorus moubata. As to the association between O. moubata and F. perstans Dr. Sambon thought it very improbable. Dr. Christy had not found F. perstans or any other kind of filaria undergoing development within the body of the tick, and the very different geographical areas of Ornithodorus moubata and F. perstans were strongly against the hypothesis that Ornithodorus moubata might be the intermediary host of F. perstans. As to the trypanosoma theory of sleeping sickness, Dr. Sambon looked upon it as exceedingly probable. Sir Patrick Manson objected that the long incubation period of the disease was against the trypanosome theory. Dr. Sambon failed to see why. There were numerous examples of a long incubation period or of a long latent stage intervening between the moment of infection and the manifestation of grave symptoms in several diseases and chiefly in diseases known or believed to be due to protozoal parasites (malaria, blackwater fever, sprue, hydrophobia, etc.) In certain cases the incubation period of sleeping sickness might be very long,

but as a rule it was comparatively short. A comparison between the clinical features of sleeping sickness and those of trypanosomiasis in various animals was very favourable to the trypanosoma theory of sleeping sickness.

As to the distribution of sleeping sickness and its possible connexion with tsetse flies, Dr. Christy's careful and important observations, coupled with the observations and experiments made by Dutton and Todd in Gambia were very much in favour of the suggestions he had recently published in the *Journal of Tropical Medicine*. He thought that tsetse flies were not merely carriers of trypanosoma infection as stated by Lieutenant-Colonel Bruce, but that they acted as intermediary hosts to these parasites. The peculiar development of the tsetse lava within the body of its parent suggested very strongly a transmission of the disease through the progeny as was known to be the case in cattle haemoglobinuric fever.

The patch distribution of sleeping sickness along the margins of rivers and lakes seemed to agree very well with the peculiar distribution of tsetse flies. The trypanosoma theory of sleeping sickness suggested a *Glossina* as the most probable intermediary host, and though the various species might prove efficient in the transmission of the disease, *Glossina palpalis* was the most suspected on account of its wide range in West Africa. Dr. Sambon thought that the well-known limitation of tsetse flies to the neighbourhood of water bodies might find its explanation in peculiar feeding habits connected with the freshwater fish of Africa, many of which were amphibious, and lived like rabbits in burrows during the long dry season, coming out at night to feed on grain and insects. Trypanosomes were very common parasites amongst fish, and especially amongst those species which lived in the mud. It was also important to remark with Laveran and Mesnil that the trypanosomes of fish were strikingly like those of mammals, and very different from those of the closer related batrachians.

The natives of various parts of Africa (Senegambia, Congo, etc.) ascribed sleeping sickness to the sting of a fish or to the consumption of diseased fish with swollen gills.

As to the relation between sleeping sickness and the trypanosoma fever described by Ford, Dutton, Manson, and Baker, it was at present impossible to state anything definite. Morphologically he saw no difference between T. Castellanii and T. Gambiense; indeed, it is not possible to distinguish either of these trypanosomes from those found in nagana and surra. But it was quite possible that they did represent different "strains," or, as he had suggested in his paper, different "biological species." Indeed, experimentally, they knew that by passing through certain hosts the trypanosomes of nagana acquired certain peculiarities which greatly modified their pathogenic action when again inoculated into their usual hosts.

VII.—Dr. G. C. Low, M.B.,

London School of Tropical Medicine.

DR. LOW said: The etiology of sleeping sickness is still a very doubtful one, and as a part of this discussion has turned on this subject I shall say a few words. 1. As to the question of filaria perstans as a cause of this disease. When in British Guiana I found that F. perstans existed in at least 50 per cent. of the aboriginal Indians of that territory. Yet sleeping sickness (though a few assertions have been made that cases have been seen) I am convinced does not exist there at all. 2. On arriving in Uganda, Dr. Hodges and Wiggins had already shown that there were no cases of filaria perstans in Kavirondo, yet sleeping sickness was spreading there with great rapidity. Those points at once suggested that the nematode had nothing to do with the disease, but one also looked at the pathological condition that it might give rise to. It has been asserted that as F. nocturna only sometimes gives rise to symptoms, that F. perstans may do the same. A glance at the site of selection of the adults in the human subject shows at once that this does not follow. F. nocturna living in the lymphatics if it die may give rise to changes in the lymphatic system, but F. perstans, living as it does in the connective tissue of the mesentery, could only on its death give rise to a little local inflammation, or probably even not that. The only other theories would be: (1) A collection of embryos in the cerebral capillaries, a point which does not occur, as the seat of special selection is really the heart and large arteries in the thorax; (2) the formation of a toxin, which analogy from the case of other filariae seems highly improbable. The discovery by Castellani of the trypanosome in the cerebro-spinal fluid of cases of sleeping sickness opens up the possibility of this having something to do with the disease. Here one must be careful. In the marasmic condition which patients pass into in sleeping sickness many parasites seem to invade them. *Post mortem* they show ankylostomes, ascaris lumbricoides, trichocephalus dispar, bilharzia haematobia, F. perstans, evidence of old malaria, and now also trypanosomes. Until this can be admitted one must, in exactly the same way as for F. perstans, examine individuals in areas where there is no sleeping sickness and also in areas where the disease exists to see how many of the healthy individuals harbour this parasite. Again, the pathology has to be studied closely to see if trypanosomes can cause such pathological changes as are found in sleeping sickness. So far as we know they never do in the lower animals, though more microscopical work on the subject is required. From the pathological standpoint, the disease resembles closely a bacterial one, and the appearance of the meningeal exudation if glanced at superficially resembles closely that of an ordinary septic meningitis. On close examination one sees, however, that in sleeping sickness the exudation consists of mononuclear leucocytosis, and is seen spreading in the perivascular spaces around the vessels, whereas in the septic meningitis the exudation is polymorphonuclear, and is not seen spreading around the vessels. The chronic condition of the first disease may cause the mononuclear infiltration, but the point requires clearing up. In conclusion, dealing with Dr. Christy's theory that Argas moubata is the host of F. perstans, though this tick-like bug is very common in British Central Africa, Daniels had clearly shown that there was no F. perstans there. Again, in British Guiana there is no Argas moubata, and yet plenty of F. perstans. Again, one must in this work be very careful not to jump at conclusions. Suppose even one found filariae in sections of an Argas, it does not follow that it has anything to do with the filaria one is searching for. To obtain reliable results on the subject of intermediate hosts, one must always rear one's insects and then serially dissect them. If one does not do this one is liable to fall into grave errors. As regards Dr. Sambon's statement that tsetse flies are always found near water, personally I know that there are large areas completely dry and covered with scrubby bush where they are common. Mr. Jackson also states this clearly, and he is an authority in whom I have the greatest reliance. Perhaps, of course, Dr. Sambon and I are talking of different species.

VIII.—Leonard Rogers,

Captain I.M.S.

CAPTAIN ROGERS said: The view expressed by Sir Patrick Manson that kala-azar is possibly due to a trypanosome is, in my opinion, not to be entertained. It is impossible to recognize so-called involuted forms of trypanosomes. In the many hundreds of cases of kala-azar I have examined a trypanosome has never been found. The pigmentation met with in kala-azar points to the presence of an endoglobular parasite, and the trypanosome has its habitat in the plasma. In surra disease no melanotic change is produced by the trypanosome.

FIVE CASES OF ABSCESS OF THE LIVER,

THREE OPERATED ON BY AND UNDER THE CARE OF FLEET SURGEON G. KIRKER, R.N.

By Fleet Surgeon P. W. Bassett-Smith, R.N.,

Lecturer on Tropical Diseases, Haslar.

THE following five cases of "abscess of the liver" lately under treatment in the Royal Naval Hospital, Haslar, are, I believe, of sufficient interest to be recorded as examples of the different forms that may be met with in England in men who have returned from the tropics. A study of them also shows emphatically the value of systematic examinations of the blood for the presence of leucocytosis, which is a constant and most important diagnostic sign in the detection of these deep-seated abscesses; they also point to the great value of a free examination of the part by a well-devised open operation; for, though a cure may take place by natural means—that is, by spontaneous rupture and evacuation through the lung, as in Case IV—yet such an eventuality is most frequently the commencement of a prolonged course of a hectic fever, and often death from intercurrent pulmonary complications. In all five cases there was found a history of dysentery, but in none had it been of a severe character.

The surgical treatment of abscess of the liver is still one over which there is much difference of opinion, but the value

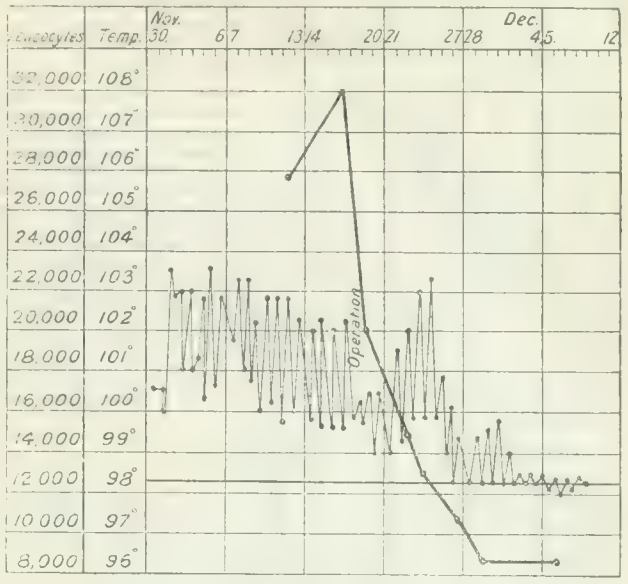
of the free incision is steadily gaining ground, when instead of stabbing the organ in the dark, as is so frequently done, it is attacked either through the chest walls and pleura, or directly from the abdomen, with greater chances of rapid and successful results. In Cases IV and V we see how exploratory punctures failed entirely to find the abscesses, which fortunately then burst upwards into the right lung, and in one apparently ended most satisfactorily, for the patient, though he felt quite well, with the temperature and respiration normal, yet there remained at the right base a patch of consolidated lung, ready to give trouble with any extra cold, etc., the other still continues to spit up small quantities of liver pus eight months after the rupture, and is cachetic and unfit for duty.

Mr. R. J. Godlee, in the British Medical Journal of May 17th, 1902, p. 1210, recommends the lower axilla as the best site for incision. Lieutenant-Colonel J. Maitland, in the British Medical Journal of February 22nd, 1902, p. 458, points out that puncture alone is attended with considerable risk, and quotes a death due to this procedure. He states that the best operation is through the pleura, and excises a portion of rib, suturing the pleural surfaces together, then the diaphragm and peritoneal surfaces, if no adhesions are present, and finally enlarging the liver opening with forceps, before introducing two drainage tubes. If opened through the abdomen the peritoneal surfaces should be stitched together, or the part be well packed before opening the abscess. He condemns *in toto* Manson's operation. Captain Keble, R.A.M.C. (British Medical Journal, September 6th, 1902, p. 702), recommends the open operation and washes out the cavity. In two of his cases there was no rise in the temperature or other clinical sign of liver abscess. Lieutenant-Colonel Hatch, I.M.S. (British Medical Journal, December 6th, 1902, p. 1768) states, from an enormous experience at Bombay, his belief that puncture of the liver is dangerous, and recommends free incision, preferring to open between the ribs, without resection, and without washing out; neither does he stitch the pleural surfaces. He also states that he has seen no bad results from the escape of the pus into the abdominal cavity. Captain Leonard Rogers, I.M.S. (*Journ. Trop. Med.*, February 16th, 1903), from his experience at Calcutta, only found pyogenic organisms in the pus in 8 out of 24 cases, but demonstrated amoebae in the walls of the abscess in 16 out of 17. This comparative sterility of the pus may perhaps explain why secondary peritonitis is so uncommon. In two out of the three unruptured abscesses here recorded I was able to isolate a pure culture of the colon bacillus, and in none found amoebae. In a case which occurred here (recorded in the *Lancet*, August, 1900), when amoebae were present in the liver pus, the pus was found to be sterile from other organisms.

Blood Examination.

The line of the leucocyte curve carefully taken in these cases (using a Thoma-Zeiss counter) shows in Case I a rising leucocytosis before the operation and rapid and steady fall afterwards, the patient making a perfect recovery. In Cases II and III there was an immediate fall after the operation, increasing again as the temperature rose, falling slowly as the purulent discharge decreased, with exacerbations from probable fresh collections and septic absorption. In Case II after operation there was some basic pneumonia of the right lung, the count reaching 80,000, the highest I have been able to find recorded, except in leucocythaemia. In Case IV with the fever, there was a very high leucocyte count, which after rupture and evacuation rapidly fell, but remained above normal even when the patient was discharged; about the same as that found in the more chronic Case V.

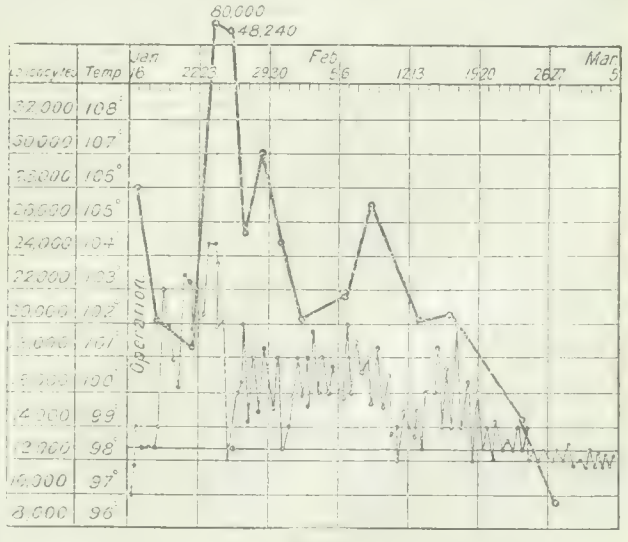
Case I.—This man, aged 34, was sent to hospital for (?) typhoid, having been ill on board in Portsmouth for four days with abdominal pains and local tenderness, diarrhoea, and fever. On admission there was sharp pain in the abdomen, increased on breathing and coughing, decubitus dorsal, and the legs drawn up, temperature was 103°. The temperature continued high, with large diurnal ranges, pain became localized over the liver, and the blood count gave a high and rising leucocytosis, due to a great increase in the polymorphonuclear cells. The serum, tested on two occasions for typhoid, gave negative results. It was evident that a hepatic abscess was present, and on inquiry an old history of dysentery was made out. Fourteen days after admission he was transferred to the care of Fleet Surgeon Kirker, and the abscess was at once opened and drained. Although the prominence was a little more marked on the left side, the incision was made through the right rectus, when the peritoneal cavity was opened, adhesions were found to exist immediately to the left, the incision was then carried through this region, and when the surface of the liver was reached an exploratory needle was inserted and pus found; the opening into the peritoneal cavity was then plugged with iodoform gauze and the abscess opened; it contained a considerable amount of very thick pus, its cavity was washed out, and a drainage tube inserted. There was a short relapse of fever, the temperature rising to 103, but this gave way to quinine;



Case I.

the blood count nevertheless steadily fell, and in ten days was normal, which seemed to indicate that the rise was not due to reaccumulation of pus and fresh septic infection; the recovery was rapid, and the patient was discharged cured.

Case II.—Private marine, aged 23. History of dysentery in 1900, and was invalided for it in 1901. Admitted to Haslar in January, 1902, with pain and tenderness over the liver, the pain was severe and resembled biliary colic. There was slight jaundice. Temperature 99° F. Course: Temperature was remittent in character, liver dullness increased downwards, the tongue thickly coated, abdomen somewhat tympanitic and tender. On the 17th he was transferred to Dr. Kirker for operation. Under an anaesthetic tenseness and fullness were well marked in the epigastric and right hypochondriac regions, a vertical incision was made close to the right linea semilunaris, at the lower part the omentum presented, and on examination with the finger, adhesions were immediately felt above, at the margin of the liver; the abdominal cavity was closed off with gauze and the abscess opened, pus welled up, thin in character; the cavity was found to be near the surface of the right lobe of the liver, the incision was extended along the margin of the ribs and the abscess cavity cleaned out; a little pus got into the abdominal cavity, and this was washed out with hot saline solution, the lower part of the wound

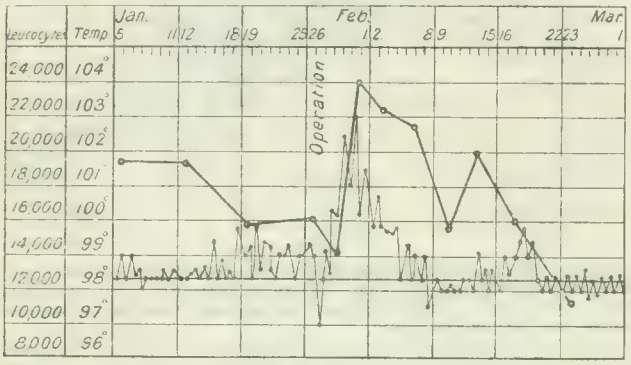


Case II.

was closed up, a gauze drain inserted, and a large tube in the abscess. There was no peritonitis following the operation, but on the fourth day there was considerable cough, hurried respiration, and expectoration of blood-stained sputum. On the seventh day there was an abundant flow of bile from the abscess cavity and rapid breathing, the pleura was explored with negative results, the pain was severe, and the evening temperature 104° F. For the next week bile still escaped from the

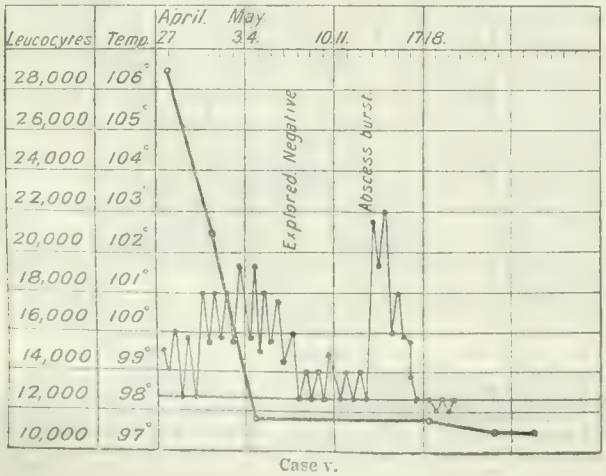
wound and his condition was critical. He then began to improve, but a low form of basic pneumonia was present; ten days after he was allowed out in the open air, and was finally discharged to duty. The chief interesting points in this case were: The history of dysentery two years before, the acute symptoms, but without rigors or sweats, the large size of the abscess, the profuse discharge of bile, the secondary pneumonia, and the high blood count throughout, one week after the operation reaching 80,000 per c.mm.

CASE III.—This patient, aged 25, had lately been invalided from Bombay for remittent fever and had served five months previously in the Persian Gulf. He had passed a little blood and mucus, with some pain over the right side of the belly. The temperature rose, and remained up, and in hospital it was noticed that the hepatic dullness was increased. On the voyage home he improved, and the temperature fell, but there was irregular diarrhoea and hepatic tenderness. On admission to Haslar in the end of December the temperature was normal and he was very anaemic, the liver dullness was greatly increased and the spleen was enlarged; there were no sweats, shivers, ascites, or oedema; he was gaining weight, the tongue was clean, and the appetite was good. The part was examined with the *x* rays, and the dull area did not appear to move with respiration. The blood showed no malarial parasites, but a leucocytosis. He continued to improve for a time, gained weight and strength, but the pulse was fast, and the cachexia did not pass off; this, with the persistent presence of a high blood count, made a diagnosis of liver abscess probable; so I made an exploratory puncture into the upper and back part of the liver, drawing off thickish pus. He was at once transferred to Dr. Kirker for operation. An exploring needle was passed between the eighth and ninth ribs in the mid-axillary line; pus at once issued; an incision was made close to it about 1½ in. of ninth rib excised, the incision was carried into the pleural cavity; no lung, but diaphragm presented, some pus escaping round the needle; the pleura was plugged all round with gauze, the liver was adherent to the diaphragm, the opening was enlarged, and a great quantity of pus was discharged; the cavity was then washed out, the diaphragm was secured to the deep margin of the wound all round, and a drainage tube inserted. He did well, and in less than a month was convalescent. The interesting features in this case were the long history of fever following diarrhoea, the subsequent improvement with a normal temperature; in fact, an absence of almost all the signs of liver abscess except hepatic enlargement, cachexia, and a high blood count.



Case III.

CASE IV, aged 27, gave an old history of dysentery. The illness had a sudden onset while in barracks. On admission the tongue was coated, there was hectic fever with sweats, no hepatic tenderness, but this organ was enlarged upwards, the dullness extending to the angle of the scapula; there was cough and mucoid expectoration, and shoulder pains; temperature generally 101° at night; his blood count was high, 29,800 per c.cm., mostly an increase of the neutrophiles. Next day he was transferred for operation. The liver was punctured in six places, and no pus was found; four days after there was continuous and fairly profuse expectoration of liver pus. The temperature then fell and he made an uninterrupted recovery, except that the blood count kept rather high, 11,000, and there were signs of some consolidation of the right base. At his own request he was discharged to duty.



Case V.

CASE V, who was aged 35, while serving in the Persian Gulf, had slight dysentery and was treated in Bombay Hospital for (?) enteric. While convalescing, symptoms of liver abscess came on, and he was explored on two occasions without result; this was followed by pleuritic pain and signs of basic pneumonia, and the rupture of the abscess with profuse expectoration of liver pus. On the passage home he improved and went on leave; he returned to Haslar, and as the abscess was fairly local, the drainage imperfect, and he was generally losing ground with hectic fever and pain, he was transferred for surgical treatment, having now been sick for nine months.

LIVER ABSCESS, WITH TEN CASES.

By JAMES CANTLIE, M.B., F.R.C.S.,
Lecturer in Surgery, London School of Tropical Medicine.

THE cases of liver abscess of which I give details I operated upon during the past two years (1901, 1902) by trocar and cannula and siphon drainage.

Searching for Pus in the Liver.

When there is a suspicion of pus in the liver it is the duty of the practitioner at once to explore the liver thoroughly by means of an aspirating syringe. Pus may be reached by the first puncture, but if not the liver should be punctured in at least six places before coming to the conclusion that a liver abscess is not present. The number of punctures may, however, be multiplied, and in one case I made as many as twenty-four punctures during one week. It is my custom when blood flows into the syringe to draw off a quantity of blood—in all as much as 6 to 10 oz.—having learned by experience that the abstraction of blood from an inflamed liver is the readiest method of relieving hepatitis if it is present. The danger of haemorrhage from such punctures, although it has never occurred to me, I am well aware of, as it has been mentioned by so competent a surgeon as Mr. Hatch, of Bombay. That the liver does bleed from its capsule after needle punctures I proved as follows: Whilst engaged in drawing off ascitic fluid from the abdominal cavity, I passed a needle several times into the enlarged liver of the patient. The clear ascitic fluid flowing from the cannula in the lower part of the abdomen became speedily tinged with blood; as the flow proceeded, the ascitic fluid became so markedly sanguineous that I withdrew the cannula and applied compression by a bandage firmly applied round the body over the region of the liver. No further complication occurred, and the patient was much relieved by the relief from ascitic fluid and no doubt also by the withdrawal of blood from the congested and enlarged liver.

To obviate the danger of wounding the inferior vena cava, the only vessel likely to be wounded by a needle and thereby cause fatal or even serious haemorrhage, I have acted upon the following anatomical observation gained by a study of frozen sections of the body made at the level of the liver: The inferior vena cava at the level of the liver is situated at (practically) equal distances from the surface along a line leading from the middle of the body in front to the angle of the ribs on the right side—the area in which a needle must be introduced in searching for pus in the liver. Now in a patient whose body measures 32 in. in circumference at the level of the seat of the intended operation, the centre of the inferior vena cava is $4\frac{1}{3}$ in. from the surface. The needle, therefore, cannot be introduced without danger further than $3\frac{3}{4}$ in. in a direction from the surface of the body towards the position of the inferior vena cava. To guard against the danger of wounding this vessel, I have my needles made of a length commensurate with this anatomical fact. When the circumference of the body is 36 in., my needle is $\frac{1}{3}$ in. longer, and, when 40 in., $\frac{2}{3}$ in. longer. The diagram on p. 657 will more readily explain my meaning.

It is well to have anatomical data to reassure the practitioner that he can safely puncture the liver with the precautions given. For if he hesitates to puncture the liver by a needle when he suspects pus on account of the dread of haemorrhage, it is a serious matter, there being no signs and symptoms of pus in the liver of so definite a character, short of actually demonstrating the presence of pus by an aspirating needle, that are in any way positive. A man may have a pint of pus in his liver, and yet there may be no pain, no increase

in temperature, no cough, no great loss of appetite, nothing, in fact, in his general condition to justify the conclusion that he is suffering from liver abscess; nothing short of actually finding the pus by the needle of an aspirating syringe is conclusive; and if this one diagnostic means is withheld because of the danger of haemorrhage, the chances of the patient being successfully treated are small. I have by anatomical data tried to remove this dread and danger.

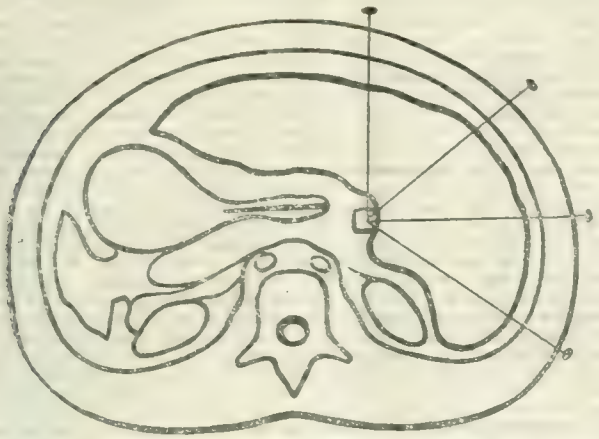


Diagram showing the inferior vena cava to be (practically) equidistant from the surface of the body at the level of the liver, anywhere in a line drawn from the xiphoid cartilage along a line round the right side of the body as far as the angle of the ribs.

The Use of the Trocar and Cannula.

This method has been condemned in no stinted terms by several surgeons having experience of hepatic abscess. Surgeons who practise it are accused of surgical cowardice: they are told they should look their enemy in the face, etc. These are not arguments—merely statements. Other surgeons equally competent consider that transthoracic and transabdominal incisions are over-heroic and unnecessary, and so the conflict of opinions proceeds. I have ever in my teaching kept before me the fact that medical men engaged in practice in the tropics, and who meet with cases of liver abscesses, are in the vast majority of instances far removed from hospitals with up-to-date appliances; they may have to depend on untrained native assistants at their operations, and on untrained male natives to "nurse" their cases. With such surroundings, for any practitioner however skilled to attempt transthoracic incision, in the search for possible pus in the liver, is practically to condemn his patient to death. Given, however, a means of operation that he can do safely and speedily himself, he will not hesitate to search for and drain a liver abscess instead of wasting precious time and placing his patient's life in danger by delaying until the pus points in the epigastrium, breaks upwards through the lung into the bowel, or takes yet more dangerous courses. If a well-appointed hospital is within fifty miles or a short voyage by sea, the practitioner, scared by the over-heroic plan of treatment, may elect to send his patient thither rather than perform abdominal section or transthoracic incisions, and thereby incur the risk of the patient succumbing *en route*.

In the best circumstances, however, I maintain that a *deep-seated* suprahepatic or intrahepatic abscess is best treated by the trocar and cannula and siphon drainage through a large tube. Subhepatic abscesses, of which I have had experience of three, should always be operated upon by abdominal incision. If, also, the practitioner waits, or does not see the case, until the pus is pointing in the epigastrium or towards the right ribs latterly, an incision, with removal of a portion of a rib if necessary, is no doubt the better treatment; but with deep-seated abscess it is a different matter. The exposure of a liver with pus deep-seated in its substance, does not help one in locating the presence of pus in the organ: one is no wiser clinically by such a procedure, and Colonel MacLeod relates a case of a well-known surgeon (in Britain) exposing the liver by abdominal incision and finding the organ apparently healthy, closing the wound, to be told that two days afterwards his patient passed a large quantity of liver pus by the bowel. I have no hesitation in saying from the result of a considerable experience now, that for the treatment of deep-seated liver abscess (and they are all deep-seated in the early stage, when they should be operated upon) the trocar and cannula method, with ample siphon drainage, is the proper method of treatment, be the operator ever so skilled and his hospital environment of the very best.

Case I. *Long-standing Suprahepatic Abscess: Recovery.*—B. C., European, male, aged 52. Patient states that he enjoyed good health until December 23rd, 1899, when in Durban, Natal, he had an attack of jaundice and fever for a week. During the first three months of January, 1900, he had several relapses, during which he suffered from jaundice and fevor, but not so marked as on first attack. His illnesses were attributed to catarrh of stomach.

In June, 1900, whilst in Pietermaritzburg, had return of similar symptoms, diagnosed "scurvy," and afterwards "malarial jaundice." He had frequent attacks during the latter half of 1900 of rigors, fever, and sweating, and always accompanied by slight but decided jaundice, lasting a few days only.

In December, 1900, came to England, having improved in health on the voyage; but after landing he had during three weeks slight attacks of illness every second day. His illness was then diagnosed as due to gall stones. He was put to bed and watched for five weeks, when all symptoms disappeared. Towards the end of April, 1901, pain returned in the back and the pit of the stomach. He went to hospital and an operation was proposed, but deferred. The illness he suffered from at this time was different to any he had had before, as the liver was markedly enlarged, reaching as far as the umbilicus, and he had attacks of fever lasting threeor four hours, and pain on taking a deep breath. The attacks were again ascribed to gall stones.

On June 12th, 1901, the probability that the patient was suffering from hydatids was entertained. I was asked to see the patient on June 14th with the view of operation. The patient had then a gnawing pain in right hypochondrium, an evening temperature between 100° and 101°; he was pale and emaciated, having lost weight considerably, and suffered from night sweats and sleeplessness. The liver was small; the lower border could be felt only in the epigastrium; an abnormally dull patch could be made out in the mid-axillary line.

On June 16th, having come to the conclusion that the patient was suffering from liver abscess, I operated in the usual way by trocar and cannula and siphon drainage. A few ounces of thin, light, yellow pus with a greenish tinge escaped. On June 19th I stopped siphon drainage and cut the tube short. The tube was gradually shortened, and on June 29th it was withdrawn altogether: and by July 1st the wound had healed. On July 4th the patient left for the country.

This was evidently a case primarily of hepatitis with recurrent attacks of perihepatitis. The exact date on which pus was formed is uncertain; probably an intrahepatic abscess followed the very first attack of illness, and the pus reached the surface of the liver in the midaxillary line after some eighteen months. The appearance of the pus, the fact that but little escaped during siphonage, and the speedy cure, pointed to the purulent collection as being of very long standing, the abscess having become more or less sacculated (a condition only possible in long-standing purulent collections in the liver), and the contents had undergone degenerative changes. The patient never had dysentery or diarrhoea.

Case II. *Suprahepatic Abscess; Recovery.*—G. K., European, male, aged 44. Patient states that he went to the West Indies in 1881. Got fever at Colon in 1895. Never had dysentery. In February, 1902, whilst in St. Thomas, West Indies, got fever, but temperature never ranged above 101° F. in the evening, and after a week's rest went to work again, although not feeling any better. He went to Barbadoes for change, and then to St. Kitts; in both places he was treated for malarial fever. He arrived in England on July 3rd, 1902, the evening temperature at that period reaching as high as 102° and 103° F. He went straight from the ship to first one and then another watering place in the North of England, where he was treated for liver and malaria. On July 17th, 1902, I saw the patient for the first time, and suspected a liver abscess. The patient, owing to the fact that he had no pain, never had dysentery, had never been told he had liver abscess, etc., begged to be allowed further treatment at one of the watering places. On July 31st patient returned to London, and on August 2nd I operated on the usual way by trocar and cannula and siphon drainage. A pint and a half of liver pus escaped at the time of the operation. Siphon drainage was left off on August 6th, but owing to a rise in temperature it was again applied on August 8th, and finally left off on August 12th, when a shorter tube was substituted. On August 21st the patient left the nursing home convalescent.

Case III. *Suprahepatic Abscess: Opened into Lung: Long Deferred Operation: Loss of Eye: Incomplete Recovery.*—E. F., European, male, 28. Whilst engaged in an hunting expedition in Siam the patient was suddenly seized with hepatitis and an intestinal flux, probably dysentery. He had never been in the tropics before and had only been a few weeks in the country before being taken ill. After four or five weeks, during which time he was treated whilst up-country for malaria, he came to Bangkok where he was seen by Dr. H. C. Highet, who at once diagnosed a liver abscess and as the patient wished to come to England for operation he was sent on board ship. On July 13th, 1902, the patient reached London having been very ill on the voyage. On July 14th I saw the patient for the first time when the evidence of liver abscess was very marked. The patient was emaciated, in great pain, constant cough, and the expectoration had that day just become purulent and tinged with blood. Within three hours I operated, as the case was urgent, and the patient in great distress from pain, cough, high temperature, sleeplessness and impossibility to lie down.

On July 14th, 1902, I operated in the usual way—trocar and cannula and siphon drainage. At the time of the operation 2¼ pints of pus escaped, and a large quantity escaped daily for seven days. The patient was speedily relieved; the siphonage was only applied at intervals after the fourth day to allow of the patient changing his position—a necessary step owing to his emaciated condition. By the twenty-first day (August 4th) all local signs had disappeared, the temperature was normal, and the patient was allowed to get up with only a small drainage tube in his side. About this time the patient observed dimness of vision in the right eye. In a few days pain succeeded, and an ophthalmologist who examined the eye pronounced it uveitis. After ten days the vision was completely lost, suppuration occurred within the eye, and the eyeball had to be removed. The stump healed well. The patient left the nursing home with a minute drainage in the wound in the side. In about five weeks' time pus seemed to collect in the base of the lung. The abscess tract was opened up freely so that three fingers could be introduced. The liver was found completely healed, but a cavity existed in the base of the lung. The wound was drained and did well. The patient left for Egypt, where pus again collected in the base of the lung. Mr. Madden, Cairo, laid the wound freely open, excising a portion of two ribs. Gradually the channel closed, but the pulmonary abscess remained to give trouble when the patient returned to England. The further exact history is unknown to me.

This was a deep-seated suprahepatic abscess, causing extensive destruction of lung, owing to long-deferred operation. The loss of the eyeball was no doubt due to phlebitis of the ophthalmic vein.

CASE IV. *Intrahepatic Abscess; Recovery.*—R. B., 26, European, male. The patient went to Ceylon in March, 1897; he had malaria six months after landing. Had dysentery May, 1898. In June, 1900, had dysentery again and recurrences at intervals during 1900. In February, 1901, whilst in Ceylon, had pains in right shoulder and in the epigastrium. Admitted into the Seamen's Hospital August 25th, 1901, looking anaemic, with icteroid-tinted complexion. Temperature 99.8°. Liver dullness increased upwards in mid-axillary line. On August 28th pus was found 4 in. from the surface (the patient's chest measured 40 in. in circumference). The abscess was treated in the usual way by trocar and cannula and drained by siphon drainage. In this case the cavity was washed out from September 9th with normal salt solution and a weak solution of tincture of iodine. Previous to operation the temperature ranged between 97° F. in the early morning and 100.6° F. in the evening until the abscess was opened, when it reached and remained at the normal. The patient left the hospital completely recovered on October 15th, 1901.

CASE V. *Intrahepatic Abscess; Recovery.*—T. W., European, male, 40. Went to China in 1899. In October, 1900, had dysentery; recovered, and came to England March 12th, 1901, quite well. During the first week of April, 1901, got pain in right shoulder and night sweats, and began to rapidly lose weight, so much so that in three weeks he lost 3 st. Admitted to Seamen's Hospital April 25th, 1901. The patient was then pale and sallow, and had marked pain, especially on movement, in the right side and in the right shoulder. Liver dullness increased upwards along the whole of the hepatic dome; downward increase not marked; there was slight cough and expectoration of brownish mucus. During the five days he was in hospital before operation the morning temperature was subnormal, and the evening temperature rose to 102° F. usually. On May 1st, 1901, abscess operated upon by trocar and cannula and siphon drainage; 20 oz. of liver pus drawn off at the time of operation; in the pus neither amoebae or cocci. During the progress of this case there was some difficulty with drainage owing to the liver subsiding downwards as the size of the abscess and the congestion of the liver diminished. When the drainage was unsatisfactory the base of the right lung became congested, the temperature rose slightly, and it was found necessary to open up the wound more widely on June 3rd. After this the expectoration became muco-purulent and at times tinged with blood, the right lung at its lower lobe becoming consolidated. An abscess was opened on left forearm on June 27th. On July 19th, 1901, the patient left the hospital quite well.

In this case the pus seems to have found its way towards the base of the left lung without having actually opened into a bronchus, hence the long-continued pulmonary congestion and the delay in recovery.

CASE VI. *Intrahepatic Abscess: Opened into Lung: Operation: Recovery.*—J. A. M., European, male, 41. In China sixteen years. Had dysentery 1894. On August 8th, 1902, I saw patient for first time and diagnosed an abscess in the liver; he was incredulous and wished operation deferred. He continued during August to go about, although feeling very ill and in considerable pain in right hypochondrium, with severe night sweats. Whilst in Brighton, where he resides, the abscess, on August 30th, 1902, burst upwards through a bronchus and the patient expectorated a large quantity of liver pus. The temperature fell somewhat for a few days, but rose again on September 8th; he continued to expectorate from 1½ pint to 2 pints of pus daily until October 7th, when the expectoration ceased. Great pain and distress ensued, but relief came on the following day by 1½ pint being suddenly coughed up. On the evening of October 8th, owing to the incessant coughing and distress, Mr. V. T. Greenyer was called in. An incision was made in the post-axillary line, a piece of rib was removed, and a drainage tube inserted into the abscess. I saw the patient on October 18th at Brighton, he was expectorating liver pus in quantity; temperature in the evenings rose to between 102° and 103°; the patient was in great distress from incessant cough and sleeplessness. I punctured the liver more deeply by trocar and cannula, and drained by siphonage. Pus flowed freely from the drainage tube, probably from another abscess, the cough ceased, the temperature fell immediately, and the patient completely recovered in a few weeks.

CASE VII. *Intrahepatic Abscess: Operation: Recovery; two Subsequent Attacks of Hepatitis (Non-suppurative).*—T. S., 37, European, male. The patient had malaria in Cyprus, 1898, and at Assiout, subsequently, had several attacks of fever. Admitted to hospital at Cairo July 26th, 1901, with dysentery and a temperature fluctuating between 98° F. and 102° daily, with loss of weight, enlarged spleen and liver, and night sweats. August 20th he complained of sharp pain in the right mid-axillary line over the ninth rib. Subsequently the intestinal flux abated, the spleen and liver diminished in size, the pain abated, the temperature fell to nearly normal, and the patient left Egypt for England. September 17th, 1901, I saw the patient, and so masked were the symptoms that it was not until October 15th that I advised exploration of the liver. On October 18th, 1901, a quantity of pus was found deep in the substance of the liver—an intrahepatic abscess. The abscess was treated in the usual way by trocar and cannula and siphon drinage. The temperature immediately fell to normal, and in twenty-one days the patient left the hospital completely recovered. On November 25th, 1901, the patient returned with increase of temperature and signs of hepatitis, the assignable cause being insufficiency of clothing, the patient wearing no overcoat, and thin underclothing during the month of November in England. The liver was swollen, the lower lobe of right lung congested. Right pleuritic and peritoneal friction could be heard for several days over the chest and around the seat of the old operation. Suspecting pus had formed, the patient was put under an anaesthetic, and the needle of an aspirating syringe inserted in ten separate places, and passed in all directions in the liver. As an example of the extent the liver may be traversed by a needle, I may mention that although the skin was punctured in but ten places, the needle without being drawn was in most instances made to traverse again the liver substance at another angle, so that twenty-two separate punctures were actually made in this case at one sitting. A considerable quantity of blood was drawn off in the syringe, amounting in all to 9 or 10 oz., the blood being allowed to follow freely into the syringe when a large blood vessel happened to be tapped. This plan I invariably follow when searching for pus in the liver, and always with immediate and marked benefit to the patient. No pus was found, and the temperature began slowly to fall, the pain to subside, and by December 14th the temperature was normal. The patient had evidently an attack of hepatitis, and the assumption that the attack was due to chill and not to another abscess, would seem substantiated. In January, 1902, the patient had again reached Assiout on the Nile, apparently in good health. In March, 1902, however, he had again a sharp attack of hepatitis lasting some four weeks. From this, however, he again recovered without an hepatic abscess forming.

CASE VIII. *Two Abscesses, one not drained: Death.*—T. H., 65, European, male. Had dysentery March, 1902, in Natal; never in good health since. Admitted August 5th, 1902. Liver explored and pus found. Abscess treated by trocar and cannula and siphon drainage. A little pus (3 oz.) escaped at the time of the operation, and but very little through the tube afterwards. As the patient was not doing well, on September 19th the abscess cavity was freely opened up and a double drainage tube introduced. The patient, however, got pulmonary congestion of both bases, and died October 16th. *Post mortem*, an intrahepatic abscess was found in the substance of the right lobe untouched by the trocar and cannula.

In this case the circumference of the man's chest at the region of the liver was 41 in., and the length of the needle used—3¾ in.—was evidently too short. This case also serves to teach an important clinical point, namely, when pus is found in the liver and the abscess efficiently drained, and yet the febrile symptoms do not subside, suspect another abscess and search the liver until it is found. The anatomical data given at the introduction to this article should be borne in mind: That the depth of puncture should vary with the size of the chest at the level of the liver.

CASE IX. *Intrahepatic Abscess: Pyaemic Organisms in Blood at the time of Operation: Died: Many Small Abscesses Found in Liver Post Mortem.*—E. S. M., aged 59, European, male. In China the patient had malaria and dysentery occasionally during 28 years' residence. Developed fever in London during April, 1902. No malarial parasites in blood and the cause of the fever was not diagnosed. In June had recurrence of fever and was treated for malaria for two months in London but without any beneficial results. The patient got weak and emaciated to an extreme degree. September 17th, 1902, I saw the patient at Brighton with Mr. F. Treves, under whose care the patient had just come. Mr. Treves had diagnosed a liver abscess. The abscess was treated by trocar and cannula and siphon drainage. From one to two pints of pus escaped at the time of the operation and for three days it flowed away by the tube. The abscess was evidently of considerable standing by the appearance of the pus; being thick, greenish and smelling badly. *Post mortem*, the liver was found adherent all round, and whilst the main abscess was drained, numerous multiple abscesses were scattered throughout the liver substance.

As in Case 1 there is no doubt that the abscess in this case had become more or less encysted, and the fact that after three days the pus suddenly ceased to flow and a sero-sanguineous fluid (not bile stained) came away instead, confirmed that opinion.

Case x. *Intrahepatic Abscess: Operated on in Japan: Recurrence: Pyaemic Organisms in Blood at Time of Second Operation; Died of Haemorrhage from Abscess Cavity.*—E. R., aged 28, European male. In China got fever in March, 1902; went to Japan. A liver abscess pointed in epigastrium, where it was opened and drained. The wound healed over, and he came to England via America. Went to watering-place in the North of England, where he was treated for malaria. He was seen at Coventry by Dr. M. M. Moore, who diagnosed hepatic abscess. On October 20th I operated in the usual way—trocar and cannula and siphon drainage. The pus flowed from cannula with enormous force, and from 1 to 2 pints escaped at the time of operation. Drainage not quite satisfactory. On October 27th and again on November 11th the channel was enlarged until three fingers could be introduced into the wound. The patient never did well. Staphylococci were found in the blood, but no malarial parasites. The patient died suddenly of haemorrhage from the walls of the abscess cavity.

Most probably the haemorrhage was due to pyaemia, although there was some evidence in the history of the case that it might have resulted from cirrhosis. This case proves the futility of opening a liver abscess in front. If a hepatic abscess is pointing in the epigastrium it is of great extent, and can be, and ought to be, reached from the neighbourhood of the angles of the ribs. Should the abscess have been opened in the epigastrium it should also, as soon as possible, be drained from further back and the front wound allowed to close.

Instances of Pus Being Found in and around the Liver not Connected with Hepatic Abscess.

(*a*) *A Case of Suppurative Pylephlebitis in which Pus was Found by a Needle Passed into the Liver Substance.*—J. D., aged 67, European, male, had been in Crimean war (1854), where he had an attack of dysentery. Never lived abroad afterwards; no recurrence of dysentery, and in good health for forty-five years. In 1902 had influenza, from which he gradually passed into a pyaemic state. Sir Lauder Brunton diagnosed that the cause was attributable to some lesion in the liver, and at his suggestion I searched the liver for pus. At the sixth stab pus was found with the syringe, but on inserting the trocar and cannula no pus escaped. The pus that was removed was grumous, muco-purulent-looking material of a character which I had never before seen removed from the liver, and I ventured to state that the pus was not from a liver abscess. The patient collapsed and died, and at the necropsy the following conditions were found: A small perforation of the rectum on the posterior wall, 6½ in. above the anus; outside this in the perirectal tissue on the posterior wall was a mass of fibrous tissue evidently of very old standing. In this tissue pus was diffused, and the veins which led from thence to the inferior mesenteric vein were full of pus. The trunk of the portal vein and its tributaries and every branch of the portal vein in the liver were quite full of pus.

I had, therefore, aspirated one of the branches of the portal vein in my search, and the peculiarities of the pus—non-hepatic abscess pus, yet from the substance of the liver—was accounted for. The history was now made plain: Dysentery, 1854; dysenteric perforation of rectum; a barrier of fibrous tissue prevented faecal extravasation; influenza had reduced resistant power of the barrier tissue, with faecal infiltration, suppuration locally, pylephlebitis, and pyaemia. The question arises. How long had the portal vein been completely occupied by pus? The pyaemic state, with local signs and symptoms of pylephlebitis, had lasted over three weeks, so it may be conjectured that a man can live for three weeks with the portal circulation in abeyance.

(*b*) *Pus in the Dome of the Liver due to Appendicitis.*—A male Indian patient was admitted into the Seamen's Hospital in state of collapse. He died shortly afterwards, and *post mortem* the appendix was found lying parallel with the ascending colon, and almost touching the liver. Suppurative appendicitis was found to be the cause of death, and a large quantity of pus had found its way between the liver and diaphragm.

Had this case been submitted to hepatic exploration by the aspirating syringe, pus would have found no doubt; and been unless care had been taken in the examination of the pus extracted the surgeon might have been content to establish drainage over the liver, and thereby have missed the real origin of the trouble. Both the cases related (*a* and *b*) show the importance of ascertaining if it is really liver pus that is coming away in the aspirating syringe or during subsequent drainage. It is not sufficient to get pus, it is necessary to be known whether that pus is of hepatic or of extrahepatic origin. If the abscess is suprahepatic in origin the pus will be sterile when first drawn off; if the abscess is intrahepatic there will be cocci present in the pus, a history of fairly recent dysentery, and the pus will look and smell like liver pus. If the pus is of extrahepatic origin there will be a history of some extrahepatic lesion, or of pyaemia, and in addition the appearance of the pus, its odour, and the bacteria present will serve to differentiate its origin.

[Four other cases of hepatic abscess were referred to.]

(To be continued.)

Scientific Grants Committee

of the

British Medical Association.

Report LXXVII.

THE PATHOLOGY OF ACUTE RHEUMATISM AND ALLIED CONDITIONS.*

PROGRESS REPORT ON CHEMICAL PATHOLOGY.

BY

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In a previous note[1] published by one of us in association with Dr. R. M. Beaton, we were able to confirm the original observation of Triboulet that a particular micro-organism is constantly associated with acute rheumatism. To this organism we venture to apply the distinctive term "micrococcus rheumaticus"[2] on the ground that although we were unable by ordinary methods and on ordinary culture media to distinguish it from the other members of the streptococcus group, yet certain points of difference had been ascertained quite definitely, strongly suggestive of the specific nature of the micro-organism concerned. These differences consisted in:

1. The colour change produced in a blood-agar culture similar to the change originally noted by Eyre and Washbourn with the pneumococcus, and by Eyre with the bacillus influenzae, but not observed with ordinary streptococci.

2. The differential reaction obtained in Marmorek's test,[3] namely, the power of growing in filtered cutures of an ordinary streptococcus.

3. The faculty of growing best in highly alkaline media (as noted previously by Wassermann[4]).

4. The rapid production of considerable quantities of acid.

These differences are quite as definite as those by which, for example, the bacillus enteritidis has been distinguished from its nearest allies, and were considered to suffice for a provisional separation of the rheumatic organism from the ordinary pyogenetic streptococci.

Moreover, the organism has in several hands produced all the stigmata of acute rheumatism in rabbits, except chorea and the cutaneous erythemata. And the infection runs in animals a course quite different from that usually associated with streptococcus septicaemia.

The attempt which has been made to decide the question whether this organism is an ordinary streptococcus by showing once again that the latter can occasion endocardial lesions hardly affects the question, since it has long been known that many different organisms may produce endocarditis.

We are not, however, here concerned with the results of animal experiment, nor with the production of rheumatic lesions. The present communication is directed to a further stage of the investigation dealing with the chemical pathology of rheumatism and with the chemistry of the micrococcus.

In the first place we may mention incidentally the observation that the micrococcus has a haemolytic action upon red blood corpuscles greater and more rapid than that of any other streptococcus which we have yet examined—a fact of interest in relation to the very rapid and considerable anaemia of rheumatic fever.

As regards the pyrexia, also, of rheumatic fever, we have succeeded in isolating an albumose from cultures of the organism grown in albuminous fluids free from albumoses, which on injection into animals (guinea-pigs and rabbits) rapidly produces marked pyrexia, and leads to an increase of temperature of three or more degrees of Fahrenheit, reaching on one occasion 105° F.

Our main results, however, deal at present with the production of acid by the micrococcus, and the isolation of this acid from rheumatic subjects. The point particularly to be

* A part of the expenses of this work were defrayed out of grants received by Dr. Walker from the Scientific Grants Committee of the Royal Society and from the British Medical Association.

emphasized at the moment is that the rheumatic micrococcus produces relatively large quantities of formic acid, and that the same acid is obtainable from the urine of rheumatic patients. On these points we are able to formulate the following provisional statements:

1. The micrococcus rheumaticus produces formic acid in very considerable quantity, and also at least one other acid of the fatty acid series.

2. The acid (formic) is present not only in the filtered cultures of the organism, but it can also be extracted from the bodies of the micro-organisms themselves. The washed micrococci contain, in addition to formic acid, at least one of the higher fatty acids.

3. Ordinary streptococci, such as a streptococcus isolated from a case of erysipelas, only give rise to a small quantity of formic acid, so far as our experiments at present go. This observation may constitute a means of differentiation between the rheumatic micro-organism and other members of the streptococcus group.

4. Formic acid and probably another fatty acid are present in the urine during the course of acute rheumatism in appreciable amounts. From normal urine formic acid is either altogether absent or occurs in traces only.[5]

5. Under the salicylic acid treatment of rheumatic fever formic acid is, so far as we have been able to investigate, reduced in quantity in the urine of the patient.

6. Formic acid is obtainable from the tissues of an animal (rabbit) suffering from acute arthritis due to the inoculation of the micro-organism.

The cultures which we have employed in these experiments are cultures grown in highly-alkaline (−10 Eyre) broth for about six days, by which time the reaction has usually become neutral to litmus. And from a litre of such culture fluid, after filtration, we are able to obtain an amount of acid corresponding closely to the total change produced by the organism in the reaction of the media. Of this acid formic acid constitutes about one-half, the remainder being chiefly acetic or propionic, probably the former. A litre of culture yields about ½ gram of formic acid.

The method which, after many trials, we at present find to be the most convenient for the separation of the acids, which we had previously found to belong to the fatty acid series, is by evaporation of the filtered culture (or urine) in an alkaline condition to about a quarter or one-fifth of their original bulk, subsequently acidifying with sulphuric acid and subjecting the acid fluid to steam distillation.

With regard to the origin of formic acid, we believe it to be formed by the micro-organism by the oxidation of sarcolactic acid into formic and acetic acids according to the equation—

$$CH_3 CHOH. COOH + O = CH_3 COOH + H. COOH.$$

Such a decomposition is readily admissible. From ordinary culture broth or *Fleischwasser* alone traces of formic acid are obtainable by means of steam distillation with dilute sulphuric acid. This we believe can only originate by a hydrolytic decomposition of the sarcolactic acid in meat extract, similar to the decomposition known[6] to occur in heating lactic acid with dilute sulphuric acid in sealed tubes at 130° C, according to the equation—

$$CH_3 CHOH. COOH = CH_3. CHO + H. COOH.$$

And we have found experimentally that the same change occurs, though only slowly, in the steam distillation of a weak solution of lactic acid with dilute sulphuric acid.

From culture fluids containing preformed formic acid the acid distils over rapidly at first, but later on comes off more slowly and maintains a fairly constant yield. The later portions we attribute to the above decomposition, since they are comparable in amount with the results obtained from our controls. Thus in one case the acidity of successive litres of the distillate from a rheumatic culture corresponded to 12.2, 2.15, 1.3, and 1 c.cm. of normal soda, while the control gave constantly an acidity corresponding to about 1 c.cm. of normal soda per litre of distillate.

From the bodies of the rheumatic micrococci themselves, after repeated washing to remove adherent traces of the culture fluids, we have obtained appreciable amounts of formic acid. It follows that the processes concerned in its production proceed within the body of the micro-organisms themselves. Traces of formic acid are also obtainable from ordinary streptococci.

In most cases the formic acid found in our experiments has been separated as a sodium salt, and has been subsequently identified by the usual chemical tests. It may also be separated as an insoluble iron salt.

The connexion of formic acid with the activity of the rheumatic micrococcus is of considerable interest in relation to the evidence of country folk-lore, since it is currently alleged that persons who keep bees, and are thus frequently subjected to the action of formic acid, are peculiarly insusceptible to rheumatism.

We are at present endeavouring to perfect our methods, and propose to enter on a full investigation of rheumatic affections and the allied conditions along these lines, comparing them with the ordinary septicaemias. There are already indications that the beneficial action of salicylates in rheumatism may find a simple chemical explanation.

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REVIEWS.

TSETSE FLIES AND TRYPANOSOMIASIS.

As soon as the dissemination of malaria was proved to be connected with mosquitos, the Trustees of the British Museum with commendable promptitude brought out Mr. F. V. Theobald's *Monograph on the Culicidae*, and now that the subject of trypanosomiasis has began to loom large on the medical horizon, the same body has authorized the publication of a *Monograph of the Tsetse Flies*,[1] by Mr. E. E. AUSTEN, the Dipterologist to the Museum. The monograph is well illustrated, and contains seven coloured plates of exceptional excellence by Mr. Terzi. It may be divided for the sake of convenience in two parts, the first consisting of the bionomics of tsetse flies, a historical survey, the systematic position of the genus, the systematic description of the genus and its species, and a chapter on the anatomy of the mouth parts, by Dr. H. J. Hansen, of Copenhagen, the second dealing with the bibliography, which is unusually large, and a series of very interesting and instructive appendices. To the majority of people, especially to those who have read the many books on sport and exploration in Africa, the name tsetse is familiar, but beyond this very few know what the fly is like, or any adequate idea of the damages it has caused and still causes amongst horses and cattle in Africa. The book will afford most interesting information to biologists, scientists, doctors, Government officials, and laymen, especially to those who are interested in the colonization and future development of the large tracts of pastoral Central Africa. The historical survey contained in Chapter II is of great interest, as it contains the earliest records of the pioneers of African exploration and sport, and shows how they were hampered by this pest. It is wonderful how closely all the descriptions of the tsetse fly agree with each other, and the few divergences of opinion that exist may be accounted for by the fact that the tsetse embraces at least seven different species. The chapter on the external anatomy and the description of the different species is the best that has ever appeared on those insects: and with such a clear description the identification of those different species—a most important point—should be within the reach of all. The bibliography of the subject takes up a large part of the book, and is very fully entered into, extracts from each book or paper being given, so that one can follow with ease the different accounts of the many people who have written on this subject. The interesting appendices at the end of the book prove that there is not such a close connexion between the tsetse fly and the buffalo as has generally been supposed. After reading through the monograph carefully, the impression left is that the whole question of the tsetse fly and the spread of disease by it is still in its infancy. It seems more or less certain that *Glossina morsitans* and probably *Glossina pallidipes* are responsible for the transmission of the trypanosoma Brucei from animal to animal, but it has yet to be shown what part, if any, the other species play in the spread of trypanosoma diseases. The identification by Mr. Austen of the tsetse fly from Entebbe, Uganda, as *Glossina palpalis* is of exceptional interest. Mr. Jackson first noted its presence there, and pointed out that there was no big game, whilst cattle, sheep, and other domestic animals lived and throve there. On the other hand, however, the trypanosomes discovered by

[1] *A Monograph of the Tsetse Flies (Genus Glossina, Westwood)*. Based on the collection in the British Museum. By Ernest Edward Austen; with a chapter on mouth parts by H. J. Hansen, Phil. Doc. London: British Museum (Natural History). 1903. (Roy. 8vo, pp. 330, 9 plates. 15s.)

Castellani in cases of sleeping sickness there may be associated with this fly. From this it is evident that each individual species of the tsetse fly must be accurately studied and experimented with, just as the different species of mosquito have been for malaria; and now that Mr. Austen's monograph so clearly describes those different species, the task should be rendered much easier for future workers—namely, the spread of trypanosoma by other flies. Many other interesting points are raised in the book, but lack of space forbids us to enter into the discussion of those points.

SURGICAL ANATOMY.

The third and last volume of Dr. John B. Deaver's large work on *Surgical Anatomy*[2] is published rather later than had been expected at the outset of the work. The delay is amply justified by the large additions which have been made both to the text and to the plates (which have been increased from 200 to 499) since the first plan of the work was laid down. The parts dealt with in this volume are the abdomen, the pelvic cavity, the thorax, and the lower extremity. The same method of detailed anatomical description, followed by a brief but sufficient reference to the surgical interest of the region, has been adopted as in the previous volumes. The anatomical errors or omissions are singularly few; among them may be mentioned the absence of any reference to the normal duct of Santorini in the pancreas, and an incorrect description of the encysted inguinal hernia in which it is said that "the protruding mass pushes against the septum which occludes the processus vaginalis and the internal abdominal ring and forces it to yield. Thus the septum forms the sac," and "encysted hernia therefore has two layers of peritoneum in front." The illustrations which were a notable feature in the two preceding volumes are in this exceptionally good The objectionable representation of the arteries in vertebrate segment has been omitted. Throughout the volume the illustrations are lavishly supplied and are both helpful and informing. We may heartily congratulate Dr. Deaver on the completion of an arduous and prolonged task. His labour will be well repaid by the success that his work will undoubtedly achieve. No better textbook of surgical anatomy is in existence, and we may confidently predict that Dr. Deaver has satisfied the needs of the profession for at least a generation.

Dr. Woolsey's *Applied Surgical Anatomy*[3] is a very comprehensive and well-illustrated volume in which the topographical anatomy of the body and those features of the various regions which may be considered to be of the greatest surgical importance are dealt with simultaneously. The author has made excellent use of the method he has adopted, and we agree with him that it is the method best adapted to the requirements of the student who is passing from the anatomy rooms into the wards, and to the needs of the practitioner who wishes to revise his knowledge of the structure of the body with which he deals in the ordinary course of his work. The text of the book is full and interesting, perhaps too full for many who have but little spare time at their disposal, and on the whole little or no objection can be taken to the statements contained in the various sections, but here and there assertions are met with which are not quite accurate or up to date. Thus, in the chapter on cerebral localization, the sensory motor areas are described as being distributed over the ascending parietal as well as over the ascending frontal convolution, whilst the experiments of Sherrington and Grünbaum and the histological observations of Campbell have indicated that they are almost entirely limited to the ascending frontal gyrus; further, in association with this section of the book, it must be noted that the figure indicating the method of localizing the position of the fissure of Sylvius is correct, but the assertion that the fissure commences at a point 1½ in. horizontally behind the external angular process is incorrect, as is also the additional statement that the first ¾ in. of the Sylvian line corresponds with the main fissure, for only the outer-end of the stem of the fissure abuts against the lateral wall of the cranium. In the description of the mammary gland a slip in the text places that organ in contact with the scalenus anticus muscle, and in the account of the pharynx two inaccuracies appear. One is contained in the statement that the pharyngeal cavity is widest at the level of the hyoid bone, and in reality the widest part is immediately beneath the roof, between the lateral boundaries of the fossæ of Rosenmüller; the second is in the assertion that the pharyngeal bursa is the remains of the hypophysis cerebri, whilst developmentally there is no association between the two structures. In spite of these small detractions, which are almost inevitable in a first edition, the book will prove both interesting and useful to those for whom it is intended.

COMMERCIAL MYCOLOGY.

The appearance of Part I of Volume II of Lafar's *Technical Mycology*,[4] with its sub-title, the Utilization of Micro-organisms in the Arts and Manufactures: A Practical Handbook on Fermentation and Fermentative Processes for the Use of Brewers and Distillers, Analysts, Technical and Agricultural Chemists, Pharmacists, and all interested in the Industries Dependent on Fermentation, translated by Chas. T. C. Salter, affords us an opportunity of reviewing not only this part, but the whole work, the first volume of which appeared some five years ago. The author starts with the definite plan of collecting and arranging in readily accessible form as much as possible of the available information bearing on the processes of fermentation as brought about by the various fungi. The first volume deals with the schizomycetic fermentation or the fermentations induced by the lower fungi, the second with eumycetic fermentation or the fermentations brought about by the higher fungi. From the point of view of the general reader it might appear that the first volume, which deals with such a variety of organisms as those that play a part in distilling and brewing operations, in the preparation of wines and vinegar, in the dairy and on the farm, in the manufacture of tobacco, and the preparation of sugar, in nitrification and sewage disposal, in the preparation of flax and tanning of leather, and a host of other trade processes, might be of greater interest than the second; but it will be found by those who take the trouble to read a few chapters carefully that they will not be content to put the book down at this stage but will make a point of reading every chapter that has already appeared and will await with interest the concluding portions of the work. The author in his introduction deals with the theories of spontaneous generation and fermentation, tracing their history from the observations made by Van Leeuwenhoek down to the present time, and an interesting history it is. He then describes the organisms of fermentation, giving their position in the botanical system, discusses schizomycetic fermentation in a series of nine sections, dealing first with the general morphology and physiology of the schizomycetes and then in turn with the general biology and classification of bacteria, the principles of sterilization and pure cultivation, chromogenic, photogenic, and thermogenic bacteria, the heat-resisting bacteria, lactic fermentation and allied decompositions, the formation of mucus and allied phenomena of decomposition, and finally with the decomposition and transformation of organic nitrogenous compounds and the oxidizing fermentations. In Part I of the second volume, Division 2, treating of eumycetic fermentation, is commenced. Here we have three sections in which the author deals with the rudiments of the general morphology and physiology of the eumycetes, fermentation by zygomycetes, and lastly the form, structure, and chemical composition of the yeast cell. The point that will perhaps strike most forcibly those who take up this work will be the great improvements that have taken place in various technological processes since Pasteur, his colleagues and successors studied the various organisms that play a part in fermentation and decomposition. Methods of preserving food have been modified by Pasteur's studies on the destruction of germs by heat, on intermittent sterilization, on filtration, and on the use of various antiseptics. The study of aërobic and anaërobic fermentation has thrown light on the butyric acid fermentation and allied decomposition processes. The study of lactic acid has led to modifications in the production of butter and cheese, in the methods of brewing, and in the preservation and storage of fodder. The changes that take place in wine and beer have been followed and explained, and it is shown that the various noxious fermentations can now be prevented. The process of the fixation of free nitrogen by bacteria has been applied to agriculture, and the functions

[2] *Surgical Anatomy: A Treatise on Human Anatomy in its Application to the Practice of Medicine and Surgery.* By John B. Deaver, M.D., Surgeon-in-Chief to the German Hospital, Philadelphia, In 3 Vols. Vol. III. London: Rebman Limited. 1903. (Demy 4to, pp. 816, 179 plates. £5 5s.)

[3] *Applied Surgical Anatomy Regionally Presented.* By G. Woolsey, A.B., M.D., London: Henry Kimpton. 1903. (Demy 8vo, pp. 522, 125 illustrations. 21s).

[4] *Technical Mycology: The Utilization of Micro-organisms in the Arts and Manufactures.* By Dr. F. Lafar. Translated by C. T. C. Salter. Vol. I: Schizomycetic Fermentation. London: C. Griffin and Co. 1898-1903. (Demy 8vo. pp. 424 and 198. 15s. and 7s. 6d.)

of leguminous nodules—the conditions favourable to their growth and their action in helping to supply nitrogen for the use of their hosts—have been studied and applied in agriculture with the most gratifying results, whilst the oxidizing fermentations, in which nitrifying bacteria and acetic acid bacteria play such an important part, have also been studied and the results of such study applied in the arts. In the second volume a full account is given of the fermentation processes set up by the mucors, and especially by the mucor Bruxii and other species of amylomycetes which have the power of effecting saccharification of starch, so that when the yeast cells are added alcoholic fermentation is set up; the first part of the work thus naturally leads up to yeast fermentation, low and high yeasts being in turn treated, and the various brewing processes described, not merely as technical processes, but in relation to the life-history of these saccharomyces. It will be evident that a work of this character must have an interest for a very wide circle of readers, and we heartily commend it to all who have anything to do with any of the processes here described, and not only to these, but to all who take any interest in biological problems. The work is well printed and has a number of admirable illustrations.

REPORTS AND ANALYSES
AND
DESCRIPTIONS OF NEW INVENTIONS
IN MEDICINE, SURGERY, DIETETICS, AND THE ALLIED SCIENCES.

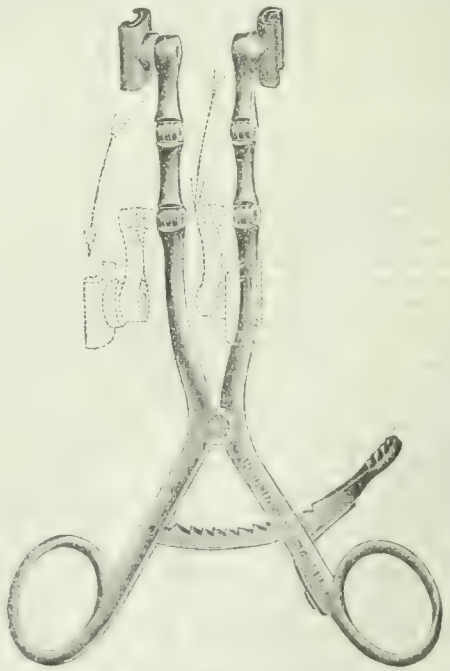
MEDICAL AND SURGICAL APPLIANCES.

A New Surgical Bag.—Mr. Arthur H. Buck, F.R.C.S.Edin. (Brighton), writes: The surgical bag, as illustrated in the accompanying sketch, I designed with the view of being able to go out at short notice to do any operation in private in a thoroughly aseptic and antiseptic manner. The frame is strongly made and covered with closely woven strong brown canvas, lined with selvit. The dimensions are 30 in. by 20 in. by 9 in. The shape of the bag, that of a dressing bag, allows of the whole of the contents being seen at a glance when the lid is thrown back. The contents are as follows: (1) An instrument sterilizer of the ordinary pattern, except that I have designed the lid with a flange, under which a ring of thick round sold indiarubber fits tightly, half its circumference lying in a groove. This lid is also fitted with clasps by which it is clamped down into the body of the sterilizer, which is thus rendered watertight by the pressure on the rubber. This, to my mind, is a great advantage, as the instruments



can be sterilized before leaving home, the superfluous water emptied out, and none of the rest leak into the bag during transit. The rubber must be removed before applying the burner and replaced afterwards; this is a perfectly simple matter, as, being made smaller than the circumference of the lid, it can be sprung into or out of the groove. (2) An oblong but deeper vessel fitted with folding legs and a similar lid, in the bottom of which lies a nest of five bowls of nickel plate d tin. These are utilized as bowls for lotions, etc. Inside th e smallest and over the nest of bowls is space for six or eigh t towels, flat sponges, etc. The lids of these receptacles ar e also designed to be instrument trays. All sponges, bowls, towels, ligatures, instruments, and instrument trays can thus be readily boiled. Two methylated spirit burners, each with three powerful flames, are carried in the instrument sterilizer. (3) A receptacle for dressings, bandages, aprons, etc. The dressings I carry are those supplied by Messrs. Maw, Son and Sons, sterilized dry and packed in waxed paper. These three articles are made of nickel-plated copper. The other contents consist of: Scalpel box, needle case, infusion apparatus, hypodermic syringe, tube and rubber funnel for abdominal or other irrigation, ligature case, and various bottles in metal cases which can be filled to suit individual taste. My own contain chloroform, ether, methylated spirit, pure carbolic, adrenalin, strychnine, and morphine. There are also wide-necked bottles for salt, vaseline, tabloids, carrying specimens of a growth, etc. Ample space is left in which to pack rolls of instruments, Clover's crutch, or any of the other numerous etceteras which may be required for individual cases. Great trouble has been taken in the manufacture of this bag by Messrs. Maw, Son and Sons, and I can only say that the workmanship and finish are entirely to my satisfaction.

Mouth Gag.—Dr. Cole-Baker (Southsea) has devised a mouth gag, which he describes as follows: The gag is made in the form of a forceps, the front ends of which are fitted with grooves to fit on the gums or teeth. The invention consists in making the front limbs with two pivotal joints so arranged that when the gag is fixed in the mouth the handle can be be bent round laterally out of the way of the operator. Many mouths, owing to absence of teeth in the upper or lower jaw, offer great difficulties for the ordinary gag. With this invention there is no mouth in which a suitable position cannot be found, and when fixed it will allow of operating on either side, the handles being bent well out of the way. The handles of the instrument are so slender that with the ordinary facepiece gas can readily be given for the extraction of teeth, allowing the operator to pass rapidly from one side to the other by simply turning the handles laterally on their pivotal joints.



The instrument can be most readily inserted by holding the last phalanx of the limbs between the finger and the thumb, with the ends of the fingers pressed against the ends of the grooves, and thus steadying them with the handles resting in the palm of the hand. This can be done with either hand, while with the other the handles are squeezed together in order to open the limbs sufficiently. The limbs are held in proper position required by means of a ratchet arrangement. The gag can be used for the removal of the tongue, adenoids, and tonsils, for cleft palate, and all laryngological operations; in fact, for every use of all other gags except that of forcing the mouth open. It is made by Messrs. Arnold and Sons, West Smithfield, London.

THE RÔLE OF EYESTRAIN IN CIVILIZATION.

By George M. Gould, M.D.,
Philadelphia, Pa., U.S.A.

By means of the glimpses I could obtain from biographic and autobiographic writings, I have made a study of the disease of eleven patients who lived in the last century. These were De Quincey, Carlyle, Mrs. Carlyle, Darwin, Huxley, Browning, Wagner, Parkman, Whittier, Herbert Spencer and Nietzsche. If we fuse the data thus gained into a composite clinical photograph the lessons become more clear and striking. The diseases, or rather the symptoms of the one disease common to all, were headache, "biliousness," sick headache, "nervousness," indescribable suffering, inability to do literary work without producing these symptoms, and relief of the symptoms whenever, even for a day or a few hours, literary work was stopped; entire cessation of the characteristic symptoms at about 60 years of age. Here we have a definite clinical picture that differentiates the fundamental pathologic condition from that of any other disease. The symptoms were briefly, and without quotation marks, as follow:

Of De Quincey.—Pain in the head beginning at 14; violent twitchings of the stomach during sleep, at 17; neuralgic affection at 18 or 19; nervous horror, irritation of the stomach, gastralgia, illness, dejectedness, biliousness, wretchedness, dizziness, a nervous malady of a very peculiar character, insomnia. The digestional difficulty was predominant.

Of Carlyle.—Dyspepsia, torture as of a rat gnawing at the pit of the stomach, bad health, nervous disorders, insomnia, biliousness, melancholy, cardiac symptoms. The dyspepsia was the leading complaint.

Of Mrs. Carlyle.—Sick headache, nervous sufferings, insomnia. Hers was a case of life-long sick headache.

Of Darwin.—Dispiritment, pain and palpitation about the heart, sea-sickness, illness, inability to do literary work, disordered stomach, prostration of strength, sick headache, vomiting, insomnia, headache, great weakness. The digestive organs were those principally affected.

Of Huxley.—Hypochondriacal dyspepsia, cardiac symptoms; unaccountable prostration; liver; headache: flatulent dyspepsia; mental depression—a case, again, of almost typical sick headache.

Of Browning.—Headache, confused cerebral symptoms, depression, dizziness, deranged liver, nervous excitability. This is a case of almost simple headache.

Of Wagner.—Feeble stomach, sick headaches, extreme depression, cardiac symptoms, insomnia, shattered nerves, intense irritability, violent headache. A martyr to sick headache.

Of Parkman.—Dyspepsia, stirred-up head, photophobia, the greatest inability to use the eyes in literary work, insomnia, insanity feared on the part of friends and physicians. Mental, ocular, and cerebral symptoms dominant.

Of Whittier.—Delicate health, great weakness, depression, palpitation of the heart, influenza, headache, weariness, rheumatism, cerebral symptoms, neuralgia, insomnia. Headache, physical weakness and sensitiveness were continuous from early manhood to the completion of presbyopia.

Of Herbert Spencer.—Insomnia, inability to use the eyes except for short periods, queer feelings in the head. Insomnia was the chief complaint, others plainly avoided by astute precautions.

Of Nietzsche.—An intensification of almost all the preceding symptoms, especially the ocular and cerebral ones, with final ending in insanity.

The strange mystery of the disease of the eleven must strike one even with a hasty glance over their "biographic clinics." This lack of cause or reason for their sufferings struck each one, and pages of excerpts might be gathered showing their wonder. An unseen and malignant enemy or fatality seemed seated above them or at the very heart of their being—implacable and inexplainable. To their physicians they turned with beseeching question, and imploring aid. Some spent a great part of their lives in going from one doctor to another, or in dipping into quackery, in travelling for hoped relief anywhere, by "change of climate," "change of scene," etc. Most of them tormented themselves all their lives in dieting, and two gave much of their life to the hydropathic delusion. In every case the one fact stands out clearly—and it could be verified by any number of quotations—that their miseries were consequent directly and quickly upon use of their eyes in writing or reading, and yet not one of them, while repeatedly chronicling the fact with their own pens, ever caught a hint of the causal nexus. That Mrs. Carlyle should have read in bed until the early morning hours and then have taken morphine to stifle the direct results of suffering; that Nietzsche should have taken two big trunks full of books with him when, broken down by eyestrain, he resigned his professorship; that each one told of his torture when he read or wrote, and not have seen that it was the reading or writing which caused it—all this is amazing. But it is the daily story in the oculist's office. That lay scientists and professional observers, as they might be termed, should have been incapable of perceiving the fact is as strange as it is pathetic. That their physicians should not have done so is strange as it was inexcusable. The reason for the blunder of both patient and doctor is to be sought in deficient closeness and accuracy of observation, and consisted in a threefold error.

Three Inaccuracies of the Patients and of their Physicians.—The first was to ascribe the disease to the organ in which the symptoms appeared or seemed to be most manifest. This folly still dominates most treatment to-day and underlies much error in our pathology. Despite a thousand proofs of the fallacy, it seems ineradicable. We acknowledge in words that the organism is a unit with absolutely interdependent parts, and yet we go on practically oblivious of the truth of the old fable of the belly and its members. When we vividly realize that distressing symptoms in an organ may have their origin in other and even in distant organs, we shall make an instant and tremendous advance in practical therapeutics. "Doctor, do you think it is my nerves?" is the primitive pathology of the simple, and is the exact counterpart of that which always traces headache to brain disease only, or digestive troubles solely to diseases of the stomach.

The second faulty observation consisted in thinking that intellectual labour *per se*, or an over-amount of it, caused the symptoms. Patients and scientists forgot that in the great majority of intellectual people it was not and is not so. Humboldt, for instance, is said to have worked with his eyes about 20 hours a day for some 80 years. In the eleven patients mentioned it was not the working of the intellect, or the amount of it, that gave pain, but simply an accident of that labour—a certain mechanical, or, shortly, optical part of it that produced the symptoms.

The third observational mistake occurred in thinking that the "change of scene" everlastingly advised, or "change of climate," or the walking, riding, visiting, etc., of itself caused the relief. Again, this relief was merely an accident of the outdoor life. Thousands of others did not require the change, and the relief of the sufferers was due to non-use of the eyes at near-range work; if the cause was put in action, the symptoms recurred whenever and wherever the patient was. "Black care sits behind us on the crupper."

The Disease was Functional.—De Quincey's physicians said he had "gastrodynia," a name utterly without pathologic meaning to the physicians of the past, or indeed of the present. All the patients had more or less severe gastric symptoms; in some it was the chief, called by various names, such as nausea, vomiting, biliousness, dyspepsia, liver, etc. The modern gastrologist knows nothing of these diseases except as the results of errors of diet or of organic disease. Some modern surgeons would even go so far as to trace them all to gastric ulcer, for which operation is the only cure. In 1903 a grave medical journal has said editorially that even obscure gastric symptoms demand gastrotomy and excision of the ulcers. The answer to that, of course, is first, What caused the ulcers? Secondly, it is surgical monomania. Such a modern surgeon would surely have gastrotomized our eleven patients. That affliction at least was spared them. That the disease of all these patients was functional is demonstrated by the fact that they lived to the average, or more, of three score years and ten, and that it disappeared at the beginning of old age, precisely and illogically when the general vital powers were lessening towards death. The older each lived the freer he became from the peculiar kind of suffering which had made middle life so wretched. In the year 1902 a physician most well informed—at least expert in other matters—traces to climacteric melancholia, *plus* heredity, *plus* neuroticism, the tragedy of one of these eleven, and adds that we call diseases "functional" because we cannot observe the minute anatomic or organic changes which underlie all such conditions. This seems to me a more foolish pathology than that which said simply "gastrodynia," and let it go at that. Are there organic tissue changes in sea-sickness? That is a very real disease while it lasts. Why does it last so short a time? What caused the changes?

The Variation of the Symptoms.—It is a truism of medicine that there is no typical case, even of organic diseases. The "soil" is of as much influence in producing symptoms as the "seed." And of functional disease this is peculiarly true. The symptoms of eyestrain are amazingly complex and differ in some respects with every patient. More than any other morbid cause its effects are multitudinous. When the rôle of vision and the functional relations of the eye with the organism and with life are understood, the reason for the infinite variety of symptoms is seen. The two things that bind all to unity are the certainty of a common cause and the equal infallibility of the therapeutic test. If use of eyes produces any of these results, it is almost surely the cause; if disuse of the eyes relieves, it is doubly sure; if, without disuse of the eyes, the wearing of proper glasses does the same, the demonstration is beyond all question. In every one of the eleven cases disuse of the ametropic eyes did give temporary relief; the paralysed accommodation at about 60 did the same thing permanently, and added great ability to the power of ocular use; these symptoms in thousands of American patients have been instantly extinguished by lenses properly correcting the ametropia. The demonstration is perfect.

The Result in Lost Time and Opportunity.—If De Quincey's opium eating, as I have no doubt, was due to his eyestrain, then a large part of his life was certainly wasted from that cause. Surely three-fourths of Carlyle's working time and ability were spent in horseback riding, walking, and in recovering from the exhaustion of writing. He produced during his working life about one-half page a day. Much of Mrs. Carlyle's life was spent in thirty-hour or sixty-hour continuous vomiting and in suffering, and if this could have been avoided, the time and much good white paper, spoiled by critics and biographers concerning her and her husband, would have added greatly to the national income—especially in the saving of paper! Darwin was able to read or write only about two hours a day., and his literary product was less than that of Carlyle. The rest of his waking hours—those he did not waste fighting insomnia—were spent walking like a dumb animal about his "sandwalk," or more foolishly enduring the brutal water cure. Fortunate it is that if he could not read and write, he could think and observe. The output of great minds is to be measured qualitatively, of course, not quantitatively, but ours is the grievous loss, nevertheless.

Just at the climax of Huxley's sufferings, at the zenith of his powers and at the moment presbyopia would probably have given him relief, he was compelled to resign and take to the moors. For 45 years his life and power of work had been greatly crippled by his sick headache. What a tragedy! What a loss for science! Browning avoided suffering by avoiding eye-work, by going to Italy, by living in the open air, and when he could not do this, in living, as his biographer says, "upon the surface," and by "countless social engagements."

Wagner came near committing suicide many times owing to his tortures. He also squandered a large part of his life in hydropathy, diet, and walking, until relief came all at once from three apparently supernatural sources.

Parkman himself estimated that 75 per cent. of his life had been wasted by his inability to use his eyes. He avoided the agonies of the others by simple renunciation. Not being ingenious Yankees they never had a "gridiron" nor recognized the need of it. Parkman's output for 14 years was about 6 lines a day, and his life product was but little greater. The hideous waste of his superb powers and valuable time was, I think, fully 90 per cent.

All the newspapers which Whittier edited until he had to quit all literary work except verse-making had to be discontinued because of his bad health. He was forced to renounce his splendid ability as statesman and reformer, and for the rest of his life retire to the farm to nurse his health and write a little poetry.

Spencer avoided suffering by cunning precautions in non-use of his eyes; more deftly still, he hid his lack of scholarship (German, metaphysics, etc.), which was denied him because he could not study.

The havoc wrought by eyestrain in a genius the natural peer of any, the superior of most, in the German professor at 24—the incomparable Nietzsche—is so pitiful and awful that one can scarcely speak of it with restraint.

The result in suffering is incalculable and horrible. There are, and will be, biographies of these people which will not allude to it, and physicians and medical editors have been known who smile ironically at the "exaggeration" of "vivid imaginations"; there are numberless asses who think they are excused from all sympathy with a Carlyle or a Nietzsche and have no need of a thousandth of their nobility of character, because they, the ignoble long-eared, disbelieve in something the great men have said or taught. "Let us be contemptible because their philosophies are so," one seems to overhear. The misery of the pain of one attack of the nausea of sick headache has not been equalled except in some mediæval or Oriental torture-chamber. When for some profound reason the dominant and oldest instinct of the organism—that for food and nutrition—is violently reversed, it should be plain, even to the stupidest lay mind that the deepest wrong exists, and that the very springs of life are being drained. Add to this another symptom almost equally terrible—intense pain in the brain, the organ controlling both character and life-processes, and what disease could be more desperate? How many of our patients had sick headache is impossible to tell, owing to the disinclination, especially in writing and biographies to speak of vomiting. Probably most of them did have it more or less. Of Mrs. Carlyle, Huxley, Wagner, and Darwin it was almost constant when the eyes were used in near work. Whittier, Nietzsche, De Quincey, and Carlyle suffered from it also. Spencer, Browning, and Parkman escaped, undoubtedly by means of not driving the eyes to the degree of use that would produce it. But headache alone without the "thirty-hour or sixty-hour retching" is bad enough. Then it must be remembered that for geniuses like these upon whom was laid the awful duty of world regeneration and enlightenment, the mental anguish from knowing their life-work frustrated was greater than any simply physical suffering could be. This comes out with tragical emphasis in a hundred quotations that I must omit. Until insanity came to his rescue the mental and physical agony endured by Nietzsche is one of the most terrible spectacles one can imagine.

Insomnia.—There were but two of the eleven patients who were not extreme sufferers from inability to sleep. Of some it seemed the chief complaint, and the bitterness and reiteration of the trouble by most was so great as to make this symptom of exceptional interest to physicians and physiologists and to demand a scientific explanation. For thirty or forty years several, one would judge, could get on the average but two or three hours of sleep a day; a full night of sleep was hardly ever, or never, secured, and the attempt to rid themselves of noise constituted their greater trials and expenses of practical life and dominated all plans and methods of domestic economy. Oriental cruelties, physiological laboratories, etc., have demonstrated the absolute necessity of sleep, the fatality of enforced wakefulness, and every one knows from personal experience how all health and happiness are dependent upon that strange lapsing of consciousness. There is an unconscious divinity of physiology, one at least whose consciousness is so different from ours that we call it unconscious, though it is more ingenious and purposeful than man's most exalted and scientific vision can ever suspect.

Is it not true that the biologic divinity never sleeps? Is it not simple fact that for sixteen hours a day he lends to our consciousness, as temporary engineer-in-charge, the marvellous machine we call the human body and brain? Is it not as evident that even while we as engineers are in charge, his attention is always present in every bolt and bar, in every cell of every organ? One of his little, but to us as physicians conspicuous, functions we have named *vis medicatrix Naturæ*, the healing power of Nature, the wonderful art of instinctive unconscious repair, the amazing and perfect proof of the very presence of God. Is it not, again, the oldest of physiologic truths that in highly complex and differentiated organisms like ours, the conditions of repair and healing are intermediated by cerebral and neural control? In other words, our derived or subordinate consciousness works by means of the cerebral mechanism loaned to us by the sleepless chief engineer for two-thirds of the twenty-four hours. Follow the logic one link further and it is seen that while the locomotive is put in our hands, it cannot be repaired. It must stop running and go into the shop for repairs. It is noteworthy that even if no repairs are needed an ordinary railway locomotive gets tired and must literally be rested. A simple bar of steel, it seems, needs sleep, rest from continuous strains. More strikingly does the human machine require the lapsing of our engineering control and so of our consciousness. This or something like it, is the philosophy of sleep. And now for the application to our subject: the astigmatic and aniso-

metropic eye can scarcely rest from muscular or innervational strain for a second of the sixteen waking hours. The heart rests every beat, every organ and every muscle rests, because no muscle can be steadily innervated for more than a few minutes without painful effort. The safety of the organism, the "making a living," requires this sixteen hour restlessness of the astigmatic eye. Nothing like this denial of this absolute law of physiology exists in any other organ of the body. The eye dare not be injured, and the natural injury to it must be reflexly shunted to the brain or to other organs; in extreme cases of overuse, the fundamental conditions of organismal existence, nourishment, and cerebral control are denied, and the organism itself is profoundly hurt or even destroyed. That, or something like it, is the philosophy of eyestrain and of reflex ocular neuroses. Lastly, the injury to the cerebral and neural mechanism and its exhaustion and injury is so great by the sixteen-hour struggle, that when at night it is given over to the chief engineer, the repairing is such an active process that there is no rest possible, and the human consciousness is aroused, is awakened, by the very stir and din of the repairing process. That, or something like it, seems to me the philosophy, or rather physiology, of the insomnia of eyestrain.

It may be of interest to note in this connexion that eyestrain commanded all of our patients to reverse the proverb as to the value of the "midnight oil" to the student and literary man. The eye and brain, tired and disordered by the day's struggle, cannot work at night, and especially by the poor rushlights and candles of the last century. It cannot do so even with the best poor lights of our time. Only in the early morning hours could all of the eleven find enough resilience of mind and strength of eye to do any original work.

The digestional reflex, next to insomnia and headache, was the most pronounced and constant symptom of the eleven patients, and of nearly all was the most crippling and dangerous. The rôles that biliousness and dyspepsia have played in civilization, and are still to play, are, indeed, far from "play," are as serious a part as those of any, possibly of all infectious diseases combined. That, I know, seems exaggeration at first sight, but not when one reconsiders the fact that denutrition is the fundamental preparation of the "soil" for the reception of most organic and infectious diseases. It is, indeed, a dangerous thing to "explain," or, rather, to attempt to explain, the mechanism of intimate physiologic and pathogenic processes. Most physiology of this kind is crudity and error, guessing at best. In two thousand years I cannot find that the medical profession knows at all certainly what biliousness and dyspepsia really are, and we are surely further still from knowing their causes and the mechanisms of the causes. Rough observation, crude clinical facts, are about as far as we have got. One shrinks from too much parading of his own clinical experience, but each day of sixteen years, and many thousands of patients, have convinced me that eyestrain is the almost sole cause of the awful disease sick headache, that it causes a vast deal of so-called biliousness and of dyspepsias of many kinds, and that correction of eyestrain relieves these troubles suddenly and as if by magic.

I frankly confess that, despite all pondering over the fact and study of the physiologies, I am in doubt as to the mechanism. In a general way and usually the head is an inhibitory organ to the so-called vegetative or unconscious processes of the body, but eyestrain is such a peculiar disturbance of cerebral function that one doubts if it is essentially an exhaustion and depletion, or an excitement and irritation. Certain observers have thought that some types of diarrhoeal diseases are due to it, but the distinct evidence of the eleven cases studied, and of my own clinical experience, leads me to think it is usually, if not always, inhibitory to the digestional process. The vomiting would argue for this also very strongly. Physiologically both the diarrhoeal and constipational processes may, I understand, be results of the same initial inhibitional and indigestional cause. Indeed, the symptoms of essential excess and deficiency of nerve force, of hypersthenic and asthenic disturbance may be the same apparently, or so similar as to end in confusion. Irritation and exhaustion sometimes seem mere names denoting phases of a single underlying morbidity. Several of our patients and quite a number in private practice have exhibited palpitation of the heart, lapsed beats, irregular rhythm, etc., as an undoubted result of eyestrain. If stimulation of the pneumogastric nerve, as we are taught, results in increased rapidity of the cardiac beat, it is by no means clear that this inhibitory acceleration will explain the cardiac complications of eyestrain. It is a disturbed rhythm and irritability, a disordered function rather than an acceleration, with which we have to do. The study of the headaches of eyestrain, the migraines, the localization and almost infinite varieties of them, and of the mental or psychic functions, also leads us into the mysteries and contradictions of cerebral function, and localization of function, which are so far beyond the unravelling of science. Choreas, twitchings and tics are proofs of sthenic irritation and disorder, while pareses and even paralyses, sometimes also due to eyestrain, are of course only explainable on the theory of exhaustion and inhibition. But facts, accurately observed, precede philosophies, and sufficient unto the day is the evil thereof.

"*Irritability*" *and* "*Nervousness.*"—The biographies and letters of almost every one of the eleven patients are filled and overflowing with evidences, expressions, and facts, going to show cerebral and emotional irritability, what, for want of a better word, may be called nervousness. The passion for activity, the desire for change and movement, are often uncontrollable and the words used to express it are painfully intense. It rises to morbid extremes just in proportion to the amount of eyework demanded or completed. In every one it took the form of physical exercise, usually of walking. Carlyle walked numberless miles and rode one horse some 20,000 miles. De Quincey walked around his "measured circuit" 1,000 miles in 90 days: during his life he averaged 15 or 20 miles a day in walking, often far into the night. Darwin trudged about his "sandwalk" all the time he was not hydropathizing. Huxley's only relief was 10 or 15 miles a day. Browning, Parkman, Wagner, Nietzsche, even Whittier, were forced to the same plan of life, each in his special way. Even Mrs. Carlyle says she walked from 6 to 10 miles a day for 10 years. Parkman's early fiery athleticism is positively morbid in its intensity; in his youth De Quincey ran to vagrancy for years, and Darwin's devotion to sports in his college days was the despair of his father; and so on. There can be no doubt that this commanding impulse made Darwin take the *Beagle* vogage, made Huxley join the *Rattlesnake* expedition, and turned both from other studies and living to natural history and science. When Parkman was denied the power of reading and writing, and when he could not live among the wilds or go into the army, he devoted himself to horticulture for 14 years (by means of low stools and rolling chairs), and when he could not do this he rowed or practised sedentary gymnastics. Spencer avoided danger by recreation, and because Nietzsche denied the need of walking and action so much, forcing his eyes to a relentless fury of study, he positively went insane. Wagner felt he would literally go mad unless he should relieve himself by exercise, and he deeply cursed the "damnable organ of sitting still." That all lived to ripe old age, that their health improved as they grew older, that when very old most of them could outwalk all the young men—all this shows that their hearts were not organically diseased, that they were essentially physically sound, and that their ailment was essentially functional. The demand and ability to carry out lifelong physical exercise also points to an overplus of nerve force and an undeniable necessity of draining the surplus innervation to the large muscles of the body. But it also points more surely and clearly to the fact that only by this means could the eyes be rested and the source of reflex irritation shut off. That, or something like it, appears the plain philosophy of the "nervousness" of eyestrain sufferers and their absorbing need for physical activity. The greater number of literary men and intellectual workers show no such uncontrolled necessity, because these have no eyestrain. Whenever one has such patients, or reads of such men being great walkers, look out for eyestrain. Truant schoolboys are to be studied from the same standpoint. When 50 per cent. of epileptics have unsymmetric astigmatism, it is suggestive of a possible ocular origin of their disease, even though when epilepsy is fully established and extreme it may not be curable by glasses. When young criminals are found to have an enormously high average of high hyperopia—such as would absolutely interdict study and handwork—what can they do, if poor and naturally unmoral, what can they do but drift into crime?

Apathy and Exhaustion seem at first sight utterly at variance with a synchronous exhibition in the same patient of nervousness and an impulse—not to be disobeyed—towards activity. In Whittier the exhaustion, anaemia, and apathy

were more pronounced than in any of the others. In Darwin the psychic fatigue and depression coexisted with the spurred and jaded body. In Wagner and Mrs. Carlyle it came to a feverish coexistence, and alternation of exhaustion and activity, both morbid. In the others it phased itself in varying degrees of predominance and alternation. The intense melancholy and depression of Carlyle, Whittier, Darwin, Wagner, etc., and of most "dyspeptics" is proverbial, and has even provoked many absurd pathologic sayings, themselves pathologic, such as "Genius breeds upon a dyspeptic soil," etc.

One heartrending result of their exhaustion was the desire or fear of death, or of worse than death—insanity. Darwin was always on the edge of despair, and at one time in middle life made his will, in view, as he thought, of approaching death. Carlyle often shuddered at the apparent uselessness and fatigue of life, and the advisability of death. Wagner was constantly tempted to suicide, and at one time seems to have resolved upon it. Whittier, Nietzsche, Wagner, all were convinced, in youth or mid-age, that their lives had been lived out, and that nothing was left to do—at least no ability to do it. The peculiar nature of eyestrain, the rapidity with which it produces morbid reflexes and is relieved easily explains the facts of the coexistence and alternation of exhaustion and irritation. They are mere aspects of one neural and psychic fact.

(To be continued.)

SOME OPEN SCHOLARSHIPS AND PRIZES.

IT is probable that more men, especially among those recently qualified, would be glad to try for some of the numerous scholarships and prizes offered both in this country and abroad in open competition, if they knew of their existence, or if, knowing of them, they were made aware of their conditions. It has been a cause of surprise to find how many men even the Murchison Scholarship, the Astley Cooper Prize, and the Jacksonian Prize were unknown. Although some of the scholarships and prizes are of value on account of the substantial pecuniary aid they afford in protracted and costly researches, there are others whose intrinsic value is small, but which, however, have a high importance on account of the distinction they confer.

SCHOLARSHIPS AND PRIZES FOR STUDENTS.

The Medical Schools with hardly an exception offer Entrance Scholarships to all students intending to begin their medical curriculum. Most of the London hospitals offer some five, ranging in value from £150 to £50. The University of Edinburgh offers every third year one of the value of £300, a Vans Dunlop Scholarship of £100 for three years, the next award of which will be in April, 1904. Some of the entrance scholarships, including exhibitions, are awarded for proficiency in the arts and others for knowledge of the preliminary sciences of the curriculum. Particulars in regard to them will be found in the Educational Number of the JOURNAL. It is understood that the successful candidates will take up the full course at the hospital in question, but there is no reason, as far as we are aware, why intending students should not compete at two or more medical schools simultaneously.

The Murchison Memorial Scholarship in Clinical Medicine, which perhaps confers the most distinction of all purely medical scholarships in Great Britain, is open to students of medicine or recently-qualified men who have been educated in London or Edinburgh, having been registered students in either place for not less than five and not more than seven years. It is of the annual value of 20 guineas, and is awarded alternately in London by the Royal College of Physicians, and in Edinburgh by the University of Edinburgh. In 1904 the examination will be held in London.

At Owens College, Victoria University, there is an annual open Scholarship in Physiology and Comparative Anatomy called the Robert Platt Physiological Scholarship of the value of £50 for two years. Its award mainly depends on the results of an examination, but aptitude for original research is taken into account.

The Jenks Memorial Scholarships are of the value of £27 per annum for five years. One is awarded annually by the Royal Colleges of Physicians and Surgeons alternately, preference being given to students leaving Epsom College.

The Barker Anatomical Prize, of the value of £21, is offered by the Royal College of Surgeons in Ireland, and is open to all medical students of the United Kingdom. The prize is awarded for the best dissection of a specified part, which must be sent before March 31st to the Curator of the Museum, Royal College of Surgeons, Dublin, from whom further particulars may be obtained.

ENDOWMENT OF GENERAL RESEARCH.

The British Medical Association has instituted two Research Scholarships awarded annually, but capable of being continued for three years, each of the yearly value of £150. These are for the encouragement of research in anatomy, physiology, pathology, bacteriology, State medicine, clinical medicine, and clinical surgery. They are awarded by the Council of the Association on the recommendation of the Scientific Grants Committee.

The Association has also established an Ernest Hart Memorial Scholarship of the annual value of £200, the holder of which is required to devote himself to the study of some subject in the department of State medicine. Forms of application for these scholarships may be obtained from the General Secretary of the Association, and should be sent in on or before October 4th.

The Grocers' Company have instituted three Medical Research Scholarships, open to all British subjects, of the annual value of £250. They are intended as an encouragement to the making of exact researches into the causes and prevention of important diseases. Particulars should be obtained before the end of April in each year by application by letter to the Clerk of the Company at Grocers' Hall, Princes Street, E.C.

At Cambridge there are several valuable Studentships and Scholarships in Science, each of the annual value of £200, and tenable for three years. One is the Balfour Studentship for original research in biology, and especially in animal morphology; and the other the John Lucas Walker Studentship for original research in pathology. At Trinity College the Coutts Trotter Studentship is open in physiology and experimental physics. Others which should be mentioned are the George Henry Lewes Studentship in physiology, and the Allen Research Scholarship, of the annual value of £250, for research in several branches of study, of which medicine may be one.

In connexion with the Lister Institute of Preventive Medicine a Studentship of the value of £150 has been offered. It is open to all British, including Colonial, subjects; it is tenable for one year, and is renewable for a second year. It has been instituted for the purpose of research in pathological chemistry. Applications must be sent in to the Secretary to the Governing Body not later than October 1st in each year.

The Salters' Company Research Fellowship, of the annual value of £100, is for the promotion of research in pharmacology. It is awarded by the Company on the nomination of the Treasurer of St. Thomas's Hospital and a Committee of Selection. It may be held for a term of three years, and the research must be prosecuted in the laboratories of St. Thomas's Hospital.

In connexion with the University of Liverpool, are the Alexander Fellowship in pathology, which was instituted in 1899 for a period of five years, and is of the annual value of £100, and the Colonial Fellowship in pathology and bacteriology, for which there is a preference for members of Colonial universities and medical schools.

The Riberi Prize, which is of the value of £800, is offered by the Royal Medical Academy of Turin for original work in anatomy, physiology, pathology, or pharmacology. Research on the history of medicine since the Renaissance may also be submitted. The account of the research must be written in Latin, French, or Italian, and is to be sent to the Secretary of the Academy. The prize will next be awarded for work done during the five years 1902 to 1907. Further information may be obtained from the General Secretary, Dr. B. Silva.

The Gross Prize of the value of £200 is awarded by the Philadelphia Academy of Surgery as trustee of the late Dr. Emanuel Gross for original research in Surgery, the prize essay to be published in book form.

Grants in aid of scientific research are made after due consideration both by the British Medical Association and by the Royal Society.

INCENTIVES TO SPECIFIED RESEARCHES.

The Weber-Parkes Prize is awarded by the Royal College of Physicians every third year for an essay on some subject connected with the etiology, prevention, pathology, or treatment of tuberculosis, especially with reference to pulmonary consumption in man. The prize consists of 150 guineas and a silver medal. A similar medal is also awarded to the essayist

who comes next in order of merit. The next award will be in 1906.

The Jacksonian Prize of the Royal College of Surgeons is open to Fellows or Members of the College. Its annual value is about £12. For 1903 the subject of the prize essay is the various forms of conjunctivitis, their pathology and treatment. Dissertations must be delivered at the College not later than 4 p.m. on December 31st.

The Astley Cooper Prize is a triennial prize of the value of £300, which will be next awarded in 1904 for the best essay on the pathology of carcinoma and the distribution and frequency of occurrence of the secondary deposits, corresponding to the various primary growths. The essays must contain an account of original experiments and observations not already published, and be illustrated as far as possible by preparations and drawings. They are to be in English or accompanied by an English translation, and must, on or before January 1st, 1904, be addressed to the Physicians and Surgeons of Guy's Hospital, London, S.E.

The William F. Jenks Memorial Prize is given triennially by the College of Physicians of Philadelphia for the best essay on some announced gynaecological or obstetrical subject. It is of the value of about £100. The essays are to be sent to the Chairman of the Prize Committee, from whom all particulars may be obtained. The last award was in January, 1901.

The Carmichael Prize is in the award of the President and Council of the Royal College of Surgeons in Ireland. It is of the value of £120, and is given for the best essay dealing with the state of the medical profession in Great Britain and Ireland.

The Gordon Lectureship in experimental pathology, which is of the annual value of about £250, is awarded by Guy's Hospital for a period of five years. The conditions attached to the lectureship include the delivery of twelve lectures on general pathology during each year and the prosecution of research in pathology.

The J. Francis Mason Scholarship, which is of the value of £200 for one, two, or three years is offered for research in the physiology and pathology of the thymus gland, including if necessary the other so-called ductless glands. Candidates must send in their names, with a statement of their qualifications and three recent testimonials, either to Dr. Caverhill, 46, Randolph Crescent, Edinburgh, or to Professor Sims Woodhead, Pathological Laboratory, Cambridge, from whom further particulars may be obtained.

The Imperial Academy of Sciences in Vienna has received about £210 from Professor Seegen for the purpose of a prize to be given for the best work on the subject of the elimination of the nitrogen of albuminates by the lungs or skin in gaseous form, if any. Essays, which may be in German, French, or English, must be sent on or before the last day in January, 1904.

The Enno-Sanders Prize of the Association of Military Surgeons of the United States is open, under certain condition, to medical officers of the British navy and army. Full information concerning the competition may be obtained from Major James Evelyn Pilcher, Carlisle, Pennsylvania, the Secretary of the Association. The last award made this year was to Major Frederick Smith, D.S.O., of the Royal Army Medical Corps.

The Alexander Memorial Prize, consisting of a gold medal and £50, is open to executive officers of the Army Medical Staff on full pay, but not to acting professors or assistant professors at Netley. The subject for the next competition is syphilis in the army and its influence on military service; its causes, treatment, and the means which it is advisable to adopt for its prevention. Essays should not exceed 20,000 words, exclusive of tables, and should reach the President of the Committee on or before December 31st, 1905.

About thirty open prizes are offered each year by the Académie de Médecine of Paris, of which the most valuable is the François-Joseph Audiffred Prize. This is of the value of £1,000, and is offered to any person, without distinction of nationality or profession, who in the opinion of the Académie de Médecine is rightly adjudged to have discovered a preventive or cure of tuberculosis. The following are among the more important offered for the year ending with the end of February, 1904; the sum specified in each case does not necessarily go to one candidate, but may be divided. The Academy Prize, awarded annually, worth about £40, is this year for a clinical and experimental research on cirrhoses of the liver. The Baillarger Prize of £80 (biennial) is for the best work on the treatment of insanity, and on the organization of lunatic asylums. The Barbier Prize of £80 (annual) is for the discovery of a cure for such "incurable" maladies as hydrophobia, cancer, epilepsy, typhoid, and cholera. The Mathieu Bourceret Prize of £50 (annual) is for work on the circulation of the blood. The Adrien Buisson Prize of £437 (triennial) is for the best discovery in relation to the cure of diseases hitherto known as incurable. The Campbell Dupierris Prize of £95 (biennial) is for the best work on anaesthesia, or the diseases of the urinary tract. The Capuron Prize of £40 (annual) is for a research on the application of radiography to obstetrics. The Chevillon Prize (annual) of £65 is for the best work on the treatment of cancer. The Daudet Prize of £40 is for an essay on the surgical treatment of tumours of the large intestine, excluding the rectum. The Desportes Prize of £55 (annual) will be awarded for the best work on practical medical therapeutics. The Ernest Godard Prize, of the value of £40 (annual), is offered for the best work on special pathology. The Theodore Herpin (of Geneva) Prize of £125 (annual) is for a research on epilepsy and nervous diseases generally. The Jacquemier Prize of £70 (triennial) is for a work on an obstetric subject containing an important advance. The Laborie Prize of £210 (annual) is awarded for the greatest advancement in surgical science during the year. The Louis Prize of £125 (triennial) is for an essay on the serumtherapy of typhoid fever. The Meynot Prize (annual) of £108 is this year to be awarded for the best work on diseases of the ear. The Saintour Prize of £166 (biennial) is for the best work on any subject in medicine. The Stanski Prize of £58 (biennial) is for an essay on contagion. The essays are to be legibly written in French or Latin, and are to be accompanied with a sealed envelope containing the name and address of the competitor.

The Craig Colony Prize, of the value of £40, is in the award of the managers of Craig Colony, New York, and is for the best essay on the subject of epilepsy.

The Rogers Prize, of the value of £100, is offered by the Senate of the University of London for an essay on the relation of tuberculosis and streptotrichosis from a pathological point of view. The competition is open to all the members of the medical profession in the United Kingdom. Essays, preferably typewritten or printed, must be sent to the Secretary of the Senate not later than February 28th, 1904, from whom full particulars may be obtained.

Prizes for Accomplished Research.

The Walker Prize for the Royal College of Surgeons is awarded every five years for the best work in advancing the knowledge of the pathology and therapeutics of cancer. It is of the value of £100. It is open to foreigners as well as British subjects, and it is not intended that essays should be written especially for the competition. The next award will be for the five years ending December 31st, 1905.

The John Tomes Prize is awarded triennially by the Royal College of Surgeons for original work on dental surgery, pathology, anatomy, physiology, or mechanics. The next award is for the period ending December 31st, 1905.

The Cameron Prize, which is of the value of about £100, is given annually by the University of Edinburgh to the member of the medical profession who shall be adjudged to have made the most valuable addition to medical therapeutics during the year preceding.

The Marshall Hall Prize is given every five years by the Royal Medical and Chirurgical Society for physiological and pathological researches relating to the nervous system. The next award will be in 1908.

The Swiney Prize, which is of the value of £100 in money with a silver cup of the same value, is awarded every fifth year by the Royal College of Physicians of London and the Society of Arts alternately, for the best work on jurisprudence. The last award was in 1899.

The Baly Medal is awarded by the Royal College of Physicians of London every alternate year to the person who shall have most distinguished himself in the science of physiology, especially during the two preceding years. Its value is £20. The next award will be in 1905.

The Moxon Gold Medal, which is of the value of £30, is awarded every third year by the Royal College of Physicians of London to the person who shall have been adjudged to have most distinguished himself by observation and research in clinical medicine. The next award will be in 1906.

The Bisset-Hawkins Medal, of the value of about £60, is awarded triennially by the Royal College of Physicians of London for work which has advanced public health and sanitary science during the previous ten years.

The Alvarenga Prize of the College of Physicians of Philadelphia, of the value of £36, is awarded annually for the best

essay on any subject in medicine not already published. The essays, bearing a motto but no name, are to be sent to the Secretary on or before May 1st of each year, and the award is made about July 14th following. A second Alvarenga Prize is given by the Académie de Médecine in Paris, a third by the Hufeland Society in Berlin, a fourth in Belgium, and a fifth by the Misericordia Hospital of Lisbon.

One of the Nobel Prizes, of the value of over £8,000 sterling, is awarded by the Carolinian Institute in Stockholm to the person who has been adjudged to have made the most important discovery in physiology or medicine during the preceding year.

The Bressa Prize of the Royal Academy of Science, Turin, is of the value of about £400, and is given for the most important scientific work produced during a given term of years. The last award was made in 1899.

The Vallauri prize, which is in the gift of the Royal Academy of Science of Turin is to be awarded to the scientific investigator who during the previous four years shall have published the most important work on any one of the physical sciences, interpreted in the widest sense of the expression. The prize is of the value of £1,200. The next award will probably be in 1906.

UNITED KINGDOM POLICE SURGEONS' ASSOCIATION.

AT a meeting of the United Kingdom Police Surgeons' Association held on September 16th, the following report was presented by Mr. Fred. W. Lowndes, the Honorary Secretary:

The Council has again the pleasure of meeting the members of the Association, and reporting the progress made since the meeting held at Manchester last year. At that date (July 30th) the Departmental Committee of the Home Office had nearly completed taking evidence, and it was hoped that their report would soon be issued. Unfortunately from various causes the report was not issued till late in the session, due publicity being given to it in the *Lancet*, BRITISH MEDICAL JOURNAL, and the leading daily papers in London and the provinces.

Your Council regard the report in many respects as an admirable one. It is satisfactory to notice that the Committee fully admit the insufficiency of the existing fees and allowances to medical witnesses, especially those attending sessions or assizes from a distance. It is satisfactory also to notice that they recommend the fee of 1 guinea for the medical examination of persons in cases of sexual offences.

Your Council also observe with pleasure that increased fees and allowances are recommended for medical witnesses attending distant assizes and sessions, or giving evidence in police courts, and your Council trust that the proposed scale of fees increasing the present allowances will be authorized by the Home Secretary before the next quarter sessions and autumn assizes.

Your Council have pleasure in recording the great assistance they have received from the Council and officers of the British Medical Association in this important matter, and the cordiality with which the Joint Committee of the two Associations worked together for the attainment of the end they had in view, and when the new scale of allowances appears, they are confident it will be found to be greatly to the advantage of the whole profession. Your Council are of opinion that the Joint Committee has done all that it was possible to do, and that there is no necessity for reappointing its members for another year.

Your Council has revised the rules of the Association, and now presents them for adoption at the annual meeting.

A vacancy has occurred on the Council by the death of Dr. McDonnell, of Belfast, and your Council recommend that that and one other vacancy be filled by the election of Mr. Paul Bush, of Bristol, and Dr. J. T. J. Morrison, of Birmingham.

Dr. J. T. Morrison, of Birmingham, having resigned the office of Honorary Secretary, your Council has much pleasure in recommending the appointment of Mr. George Harrison, of Chester, as Joint Secretary in his place, with Mr. Fred. W. Lowndes, of Liverpool.

While regretting Dr. Morrison's resignation and thanking him for his past services, your Council hope that he will retain his seat as one of its members.

Early in the year Mr. Lowndes posted, at his own expense, copies of last year's report, with a private letter and form of application for membership, to 150 police surgeons whose names appeared in the last Constabulary *Almanack*. He also wrote letters to the *Lancet* and BRITISH MEDICAL JOURNAL, which were duly published, asking all police surgeons who had not received them and wished to do so to communicate with him. The result was very disappointing, and your Council would reiterate the request given at the end of their last report, that every member should co-operate in trying to obtain the accession to their ranks of police surgeons who are not members.

The report was adopted.

OFFICERS AND COUNCIL.

The following is a list of the officers and Council of the Association:—*President:* H. W. Roberts, M.R.C.S. (London). *Vice-Presidents:* Sir H. D. Littlejohn, M.D. (Edinburgh), H. W. Oulton, M.D. (Dublin). *Treasurer:* H. Nelson Hardy, F.R.C.S.Edin. (London). *Hon. Secretaries:* F. W. Lowndes, M.R.C.S. (Liverpool), G. Harrison, M.R.C.S. (Chester). *Council:* H. Barnes, M.D. (Carlisle), J. F. Craig, M.D. (Birmingham), W. J. Heslop, F.R.C.S.Edin. (Manchester), E. K. Houchin, L.R.C.P. (London), L. Maybury, M.D. (Portsmouth), W. Powell, M.R.C.S. (Cheltenham), W. Washbourn, L.R.C.P. (Gloucester), W. M. Roocroft, M.R.C.S. (Wigan), C. Templeman, M.D. (Dundee), T. Wallace, M.D. (Cardiff), J. Paul Bush, C.M.G. (Bristol), J. T. J. Morrison, F.R.C.S. (Birmingham).

LITERARY NOTES.

THE life of Sir William Flower, who, as Curator of the College of Surgeons Museum, and later as Director of the Natural History Museum, South Kensington, did so much for the promotion of the study of comparative anatomy, has been written by Mr. C. J. Cornish. The work, besides being a record of Flower's work, will contain many references to the numerous celebrities with whom he was in one way or another brought in contact. The book will be published by Messrs. Macmillan.

It will doubtless be welcome news to the countless admirers of Dr. John Brown, the author of *Rab and his Friends*, that a life of him by Dr. J. Taylor Brown is shortly to be published.

Messrs. Chapman and Hall will shortly issue *The Carlyle Country*, with a study of Carlyle's life by Mr. J. M. Sloan. Sir James Crichton-Browne, who knows the district well, contributes an introduction.

The Car Magazine (published at 17, Shaftesbury Avenue, W.,) edited by the Hon. John Scott Montagu, M.P., is the latest addition to the already numerous publications relating to automobilism. The object of the new magazine is to supplement Mr. Montagu's weekly journal, the *Car Illustrated*, which in future is to be restricted to notices of current events, whilst the *Car Magazine* is to contain "long and weighty" articles bearing on motor cars. It is not intended, however, to be merely of technical interest, but to be "valuable to those who, not so much interested in the mechanical details of motor cars, yet see a great future in this new form of transit." The magazine is to contain descriptions of the most beautiful spots in England, and accounts of any social or political changes which the automobile may produce. It also has as an object the improvement of our national highways. In the first number Mr. Montagu certainly fulfils the expectations which are aroused by his "Introductory." Under the title of "Pros and Cons" he appeals to the motorist and the non-motorist to entertain greater consideration for one another; he calls on the motorist always to "behave like a gentleman" when on the road, and urges the non-motorist not to stand in the way of the industry through ignorance and conservatism. It is the cheap car, costing £100 or thereabouts, that will firmly establish automobiles, and it is the perfecting of this type of car which is engaging the attention of motor-car builders at the present day. The reliability trials now in progress ought to do much in this direction. Mr. Montagu's motto is "Moderation in our ambitions, consideration for others, and education for all." The number contains contributions from such well-known writers as Sir Gilbert Parker, "T. P." (who discusses Motoring for Health), and Horace Hutchinson. There is also an interesting collection of letters from famous men of the day on the Future of Automobilism. At the end there are Notes on Motor Cycling, Reviews of Books, Notes on Motors on the Continent and in America, Patent Inventions for Cars, and Commercial Notes. On the whole, the *Car Magazine* makes a very favourable impression; the type is excellent and the photographs are admirably reproduced.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1903.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, SEPTEMBER 19TH, 1903.

THE PROFESSION AND THE PUBLIC.

The holiday season is always favourable to the production of letters to the newspapers, which to our thinking are at least as amusing and as instructive as the reports of the Parliamentary and other speeches which fill their columns during the greater part of the year. This year there has been much discussion about the medical profession, in which the writers exhibit the usual misunderstanding of our position, aims, and actions, but in particular fall foul of what they are pleased to call "medical etiquette," which is made to bear the burden of all the sins of the "doctors."

One of the writers, who describes himself as "a simple-minded citizen of the United States," informs the readers of the *Daily Mail*, over the signature of "Obesus," that he has consulted an English doctor who is the author of a book addressed to sufferers from "too solid flesh," and that the said practitioner ordered him to procure and consume certain wines, mineral waters, and biscuits which could only be obtained from particular firms, and to rasp his body daily with an ingenious instrument only to be procured at a given address. These instructions, when pondered over, led to inquiries and the discovery that "the doctor was himself the wine and mineral water merchant, the cracker merchant, and the body rasp merchant," and "Obesus" wants to know if this is medical etiquette?

Two days later a letter appeared in the same paper over the signature "Registered Medical Practitioner," purporting to be from the doctor himself, in which the substantial truth of the accusations is not denied. This gentleman, indeed, pleads that he is not the "owner" of any business company supplying the articles in question, but he admits that he has a personal interest in two, but the rasper is the property of a "very old friend" whom he has tried to help, but who, with customary ingratitude, has given him away.

We are sure that most of our readers will agree that the state of things to which "Obesus" has drawn attention is a scandal which should and could be stopped. Although all must admit that it is unfitting for a medical practitioner to be pecuniarily interested in the sale of wines, mineral waters, or foods which he can order to his patients, there has been no authoritative expression of opinion upon the point. It is well known that shares in wine and other companies have been offered to medical men on special terms, but this notorious fact does not stir the authorities who are supposed to control our professional conduct. A few years ago, in the discussion upon the Secret Commission Bill, Sir Edward Fry brought this very charge against us, and instanced the case of the wine company in which in the course of legal proceedings it was admitted that a number of medical men had been given founders' shares on the understanding that they would do their best to push the sale of the company's wines. Sir Edward Fry complained that the names of these gentlemen could easily have been obtained, but that no step was taken by the profession to punish their offence. It may be remembered that in the comments made in the British Medical Journal upon Sir Edward Fry's letter it was pointed out that the acceptance of these shares had been strongly condemned by the medical press, but it was impossible to deny that the General Medical Council and the medical corporations had remained passive in the face of a grave professional scandal.

How much misconception respecting such matters exists even in the medical profession is shown by a letter, signed "W.," which appears in the *Daily Mail*, in which it is asserted that the name of a doctor who advertised himself by writing a book on obesity and made money by the means complained of would not be found on the *Register* of the General Medical Council, or at any rate if such conduct were reported to the Council the offending practitioner's name would be at once removed. The confidence of the writer is unfortunately not justified by the past history of the profession. We should be glad to see the question brought up at the General Medical Council, in order that a warning resolution similar to those which have already been passed on other questions might be framed, under which it would be possible in future to prosecute before the Council any one guilty of the acts which "Registered Medical Practitioner" admits, we hope, not without a blush.

Another writer addresses the editor of the *Daily Chronicle* on the dangers of medical etiquette, and complains that he was prevented from obtaining the assistance of a physician in the course of the severe, and ultimately fatal, illness of one of his children because he unwittingly mentioned the name of the physician to the family medical attendant. He was told that by doing this he had been guilty of a gross breach of medical etiquette, the consequence of which was that he was unable to obtain the services of the physician he had named, and a second opinion was not called in until too late to be of any use. This letter is answered by "General Practitioner," who rightly points out that he has never heard of such a rule of medical etiquette, and suggests a different explanation of the writer's story. Our readers need not be told that no such rule exists, and its spirit is entirely foreign to that of medical etiquette, which is only the rule of right and equitable conduct between medical practitioners, or between them and the public. No medical practitioner has the right to refuse to call in a second opinion when asked to do so, and although we are quite aware that such regrettable exhibitions of perversity as that complained of may happen, they are due to the bad temper or vanity of individuals, and not to any rules recognized by the profession.

Another correspondent makes a complaint which unquestionably might be due to a somewhat rigid adherence to supposed medical etiquette. For some reasons not easy to explain in these days of telegrams and telephones the writer went up to London to arrange with a physician for an immediate consultation in the country. The consultant was, unfortunately, unable to go, but when asked if he could name some one else to take his place, refused, on the ground that to do so would be contrary to medical

etiquette. The writer says he had to return home to learn that the physician who stood second in the opinion of the family medical attendant lived next door to the eminent practitioner he had waited upon. This certainly seems a rather foolish business; it would have been quite easy to have telegraphed in the first instance, or when it was found that the first physician selected could not go, the name of another might also have been selected by telegram. There was certainly no rule of medical etiquette to forbid the physician first applied to from suggesting a substitute, but he probably deemed it more courteous to allow the choice to be made by the family medical attendant, and he could not be expected to presume upon the neglect of the usual means of communication, which was the true cause of any hardship that may have resulted from his action. The writer seems to be under a curious misconception in regarding his family doctor's opinion of the relative merits of consultants as something generally recognized and admitted, as if there existed lists of consultants in order of merit for every disorder, whereas it is quite possible that had the consultant first applied to indicated a substitute for himself his choice might have fallen differently.

Finally, the correspondence drifts into a chorus of abuse of incompetent doctors. For example, "T. D. W." says he is told that "to-day there are practising as doctors thousands of men whose inexperience and general inefficiency are a very serious menace to the legions whose bodily welfare they minister to," while others complain that it is not incompetence but negligent indifference which they say is so apparent in the present-day practitioners. They want to know why the General Medical Council, which is so prompt to punish a "kind-hearted practitioner who issues a pamphlet with his name attached, to assist suffering humanity in freeing itself from pain and disease," by removing his name from the *Medical Register* does not also punish the man who by negligence or incompetence sacrifices the life of his patient. Of course this is mere nonsense. The man who by negligence or incompetence sacrifices the life of his patient is amenable to the civil and criminal laws of this country, but so long as no steps are taken to convict the supposed offender he must necessarily go unpunished.

Another writer speaks of the whole profession as of being "in a chaotic condition and lacking official supervision," and we have often heard similar complaints even from our own ranks. But what is the standard of comparison? What profession is there that is better organized or supervised than ours? We admit freely that the organization and supervision might be better; and in the course of this article we have drawn attention to the present need of greater attention being paid to such matters, but it is certain that there are black sheep in every profession, and that in all of them incompetence and carelessness may remain undiscovered and unpunished.

It is to the interest of us all that black sheep should be weeded out, and offenders, if offenders there be, will receive no support from us, but it is much easier to make charges than to produce evidence. General accusations are not only unfair but unavailing, but if there are faults the public has the remedy very much in its own hands. Medical men who endeavour to impose upon their patients the tyranny of a false medical etiquette, or who show carelessness, indifference, or incompetence in the treatment of their cases may be punished most effectually by being passed over in favour of those who are just, careful, and capable; and who will deny that these form the vast majority in our ranks?

THE BRITISH CONSTITUTION.

EVERY Briton is proud of the British Constitution, but nobody can exactly state its provisions; it does not exist anywhere on paper; it has never been codified, and is no more than a floating body of custom, habit, and prescription. It is no doubt founded on law and the powers of the Second Chamber, but its exact operation at any given epoch is largely determined by the state of public opinion. Our forefathers fought for the principle that the people who paid the piper should call the tune, and the long struggle which reached its most acute stage in the conflict with the Stuarts finally came to an end with the great Reform Act. The battle was won by politicians and lawyers, and by politicians and lawyers have all departments of Government since been conducted. We have been in the habit of boasting that the professional politician is unknown to us, but if the boast was ever true, it has not been so for the last century or more. A young man goes into politics as he takes up any other profession. To succeed he ought to possess certain advantages and qualities: he must in the first place, as somebody said, choose his family carefully, for family connexions are an immense assistance in his career; he must have a competence so as to be able to wait his chance; he must have some forensic ability—the power of getting up a case and stating it clearly—and he must be a partisan; the judicial mind, which hears both sides and can rest in suspense, the scientific spirit which seeks only for more knowledge and has the courage to say, "I do not know," are not for him. He may sit on the fence for a short time but the more quickly and the more noisily he comes down on one side or the other the greater his chance of filling the public eye and ear. Once he has achieved this feat he is, according to the practice if not the theory of the British Constitution, supposed to be fit to take an influential part in the administration of any department of Government. He begins, perhaps, at the Local Government Board where his concern will be with schemes for water supply and drainage, with by-laws to regulate street traffic or the exclusion of plague. A reconstruction of the Ministry will send him to govern Ireland, or put him at the head of the commercial department; finally, perhaps, after a period in the cold shade of Opposition—during which he will devote himself probably to the criticisms not of these departments about which he has learnt something but of those of higher grade to which he aspires—he finds himself at the head of the army, controlling our foreign policy, or obstructing the Government of India from his office in Whitehall. There have been a few men in our history of abilities so transcendent, of public spirit so lofty, that they have easily and quickly learnt the business of each new department; but the average Minister is usually in the position of Lord Palmerston who, when he took the Colonies, asked the permanent official to show him "where these places are."

The system is so rooted in our customs and habits that it requires some independence and courage to ask whether it is incapable of improvement, and whether everything is really for the best in the best possible constitution. For a generation or so the question has been asked here and there, but the questioner has been met with a pitying

smile from the practical politician. He will be told that it is essential that all Government departments should be subject to the immediate control of the House of Commons, and to secure this the Minister must be a trained politician knowing the temper of the House, and liable to instant disgrace if he ventures to run counter to its spirit at the moment. Under this system the expert gives his opinion to his political chief, who, in deciding whether he will act upon it or not, will consider rather the effect upon the prospects of his party at the polls than the ascertained scientific facts. As a rule, the country can be convinced by facts, and scientific opinion and knowledge, if properly organized, could lead public opinion in the right direction. But science, as Sir Norman Lockyer said in his presidential address to the British Association, is unorganized, and the average politician is not only ignorant of science, but often actively detests it, as Bismarck hated the professors, and Robert Lowe the endowment of research, which he used to say "meant perambulators." The number of people who ask our question has, however, increased during the last decade; the South African war added to their numbers, and the damning report of the War Commission may, it is to be hoped, bring it under the serious consideration of all thoughtful men, and even make some politicians disposed to inquire whether it may not be politic to recognize the new trend of opinion, lest by continuing too long to contemplate their fly-blown phylacteries they find themselves left out of the running.

There may be differences of opinion as to Lord Rosebery's power as a politic leader, but there can be no doubt that he has a keen perception of what the educated classes in the country are thinking, and the courage sometimes to express a definite view. He does not seem disposed to take a large and wide view. He will deal only with a concrete case, without asking where the principle involved will lead. This is what he has done in his open letter on the War Commission's report published in the newspapers on September 12th: "We have squandered our resources, we have piled up debt with both hands, we have enormously increased our public expenditure, we have given uncontrolled power to our Ministers, and the report shows us where this generous confidence has landed us." It is time, therefore, to make a new departure, and the remedy is to place the War Office under an expert—Lord Kitchener—for a time. His relations to the Cabinet would easily be settled by more methods than one, Lord Rosebery says, and as he has been Prime Minister he ought to know. It is interesting to see the grand constitutional difficulty which has always been supposed to make it impossible to put an expert at the head of his department thus lightly brushed aside.

For a permanent organization Lord Rosebery, like other innovators, looks to the Admiralty as a model. There we have a Board consisting of four naval lords, experts, and one politician, presided over by a politician. The plan, which is of spontaneous native growth, is believed to work well; and it is natural to ask why, if it is the best for the navy and the army, the principle should not be extended to other departments of State Government? Take the Local Government Board, for instance. It is a Board only in name. The department consists practically of a President, a Parliamentary Secretary—both members of one or other House—and permanent officials. There is no Board of experts, and the position of the scientific experts of a department which has constantly to deal with scientific questions is entirely subordinate. The time has surely come when we should as a nation look carefully into our system of national administration in all departments. It would be well to make a beginning with the Local Government Board, the status and position of which is from other points of view unsatisfactory. The precedent of the Board of Admiralty proves that it is easy to have a Board of experts without destroying the responsibility of Ministers to Parliament. The President of the British Association spoke strongly of the failure of those employed in the State service to grasp the conditions of the modern world into which science so largely enters. This must continue so long as the men who are at the head of State departments receive no tincture of scientific education, while they are given the uncontrolled power of which Lord Rosebery, from personal experience, speaks.

TRYPANOSOMIASIS.

Sir Patrick Manson, in opening the discussion on trypanosomiasis in the Section of Tropical Medicine at the annual meeting, said rightly that "the subject has already advanced sufficiently to justify the prognostication made only last year that ere long it would take an important place in tropical pathology." In 1890 Nepveu, while engaged in researches on the parasite of malaria in Algiers, found trypanosomes in the blood of six individuals. An account of this discovery was published in a paper entitled "Sur un Trypanosôme dans le Sang de l'Homme," in the *Comptes Rendus et Mémoires de la Société de Biologie* in 1898; and, though his work did not attract much notice at the time, the rediscovery of those parasites has again brought it into prominence.

In May, 1901, Forde, the Colonial Surgeon of British Gambia, found small, worm-like, active bodies in the blood of a patient suffering from fever; and in December, 1901, Dutton, of the Liverpool School of Tropical Medicine, on being shown those, at once recognized them as trypanosomes. Both Forde and Dutton independently published papers on this case, and shortly afterwards Sir P. Manson and Dr. Daniels, who had seen the patient in Liverpool, through the kindness of Dr. Dutton, diagnosed a case at the London School of Tropical Medicine as the same disease, confirmation being quickly obtained by the finding of trypanosomes in the blood.

Those discoveries at once attracted public attention, and fresh observers recorded other cases in West Africa (Dutton and Todd) and on the Congo (Sims and Broeden), while more recently still Castellani found trypanosomes in the spinal fluid of cases suffering from sleeping sickness in Uganda; and in three cases of obscure fever, also in Uganda, Baker found trypanosomes in the blood. Those observations from different parts of the world indicate that the area of distribution of the trypanosome will probably be found to be extensive. Leishman believes, though perhaps on rather insufficient evidence, that what he calls Dum-dum fever is due to a similar parasite, and Manson suggests that the blood of kala-azar patients should be closely examined to see whether or not it may be present there also.

So far carefully recorded cases in Europeans have shown definite symptoms, associated with a peculiar type of fever, and this latter feature has given birth to the term "trypanosomiasis fever," a term which is now used to designate the disease. In Dutton and Todd's latest series of cases—six natives, two females, four males—the history

and clinical examination revealed nothing important, but in Baker's Uganda native cases symptoms, chiefly of the nature of a well-marked pyrexia, were present for some days. It is very probable that Manson's idea, that the trypanosome of the African bears the same pathogenic relationship to the European that the trypanosome of the African wild game bears to the imported domestic animals, will turn out to be correct.

Death, so far as our knowledge at present goes, does not appear to be inevitable amongst Europeans who suffer from this disease, because, although in the original case from the Gambia the patient succumbed to his infection, and also the quadroon mentioned by Dutton and Todd in the note on their last expedition, the histories of many of the other cases seem to show a gradually-increasing immunity to the parasite, with a return to more or less normal health.

This class or type of case, described accurately first by Dutton, next by Forde, and then by Manson and Daniels, resembles somewhat closely the course of similar trypanosome diseases in some of the lower animals, and it must now be reckoned with as a separate entity amongst tropical diseases. If this were all the matter would be easy, but Castellani's discovery of trypanosomes in the spinal fluid of patients suffering from sleeping sickness opens up a new field for speculation, especially so when one considers that he failed to find similar organisms in the spinal fluid of Baker's three cases of trypanosomiasis fever. Manson, after a careful survey of the whole question, comes to the conclusion that the trypanosome is probably not the cause of sleeping sickness, and disposes of Castellani's view of this trypanosome being a special species by bringing forward the fact that Europeans do not get sleeping sickness, though living constantly in the endemic area where they must often become infected with trypanosomes.

Low points out the prevalence of many parasites in patients in the marasmic condition of sleeping sickness, and suggests more minute study of the pathological changes in lower animals, the subjects of nagana and kindred diseases, to see how far those are comparable with the meningo-encephalitis of sleeping sickness. The streptococcus found by the Portuguese Commission and by Castellani is always present in this disease, and the very similar meningeal lesions produced by other cocci render it much more probable that the streptococcus, and not the trypanosome, is responsible for this part of the disease. Because the trypanosome is constantly present in cases of sleeping sickness, it does not in the least follow that it is the cause of the disease; it has been shown to exist in the blood of Europeans and natives in Uganda, who have shown no traces of sleeping sickness, and the only way in which this has been explained is that they are two different species of trypanosome—an improbable suggestion, and one not supported by any proofs.

Before the trypanosome can be said to be the cause of sleeping sickness, much more careful and systematic work will be required both from the epidemiological and pathological points of view, and especially from the latter because it is difficult to understand this parasite producing a well-marked meningo-encephalitis always associated with a definite organism.

The discovery of trypanosomes in man is undoubtedly a far-reaching one, and it has opened up a new field in tropical pathology, the future investigations in which will be watched with interest by the medical profession throughout the world.

THE COST OF VACCINATION.

WE publish in the present issue a letter from a public vaccinator which fully bears out the statements made in an article headed *Truth* on Vaccination which appeared in the BRITISH MEDICAL JOURNAL of August 22nd, page 429. It also usefully illustrates some of the points to which reference was made in our article on the cost of vaccination last week. The letter leaves no room for doubt that, as inferred by us upon both occasions, the duties and responsibilities of a public vaccinator under the Act of 1898 are materially different to what they used to be, and that though some public vaccinators are at present making a good deal of money, they are working very hard for it, and that the aggregate sums received will drop very considerably as soon as the present small-pox scare has died down and, more particularly, as soon as the backwork left over from years of past neglect has been cleared up. An interesting sidelight on the subject is furnished by a very able analysis of the returns of the Metropolitan Asylums Board which appeared in the form of a letter in the *Times* of September 15th. The writer, Mrs. Garrett Anderson, deals with these returns from the three following points of view: The protective influence of infant vaccination and the limits of its duration; the cost to the ratepayers of the methods at present employed to prevent or control epidemics of small-pox; and the necessity for systematic revaccination at school age if epidemics of small-pox are to be avoided. As regards the first point, her analysis of the admissions and after-history of the cases under the care of the Metropolitan Asylums Board during the epidemic in London in 1901-2 shows that the protection afforded by vaccination to children is very complete. The number of children who are vaccinated of course vastly exceeds the number of those other children who remain unvaccinated, and yet in spite of this only 41 cases of small-pox occurred in this large vaccinated group of children under the age of 7 during the 1902 epidemic and none of them died; but on the other hand in the small group of unvaccinated children under the same limit as to age, no less than 811 cases occurred and 337 of them ended in death. She similarly produces figures from the returns which show that the whole of the vast group of vaccinated children under 15 suffered very slightly and very rarely, while the infinitely smaller but unvaccinated group of children under the same age suffered most grievously, and she very aptly asks how this difference can possibly be explained if there is nothing in vaccination. She shows, however, with illustrations derived from the figures in the returns, that neither the protection conferred by vaccination nor that produced by antecedent small-pox is an absolute and immutable quantity, and that that of the former diminishes year by year with a speed which varies to some extent in different individuals and according to the primary efficacy with which the operation has been performed. Protection from good childhood-vaccination appears to persist to some extent up to the age of 30, but after that age it is a negligible quantity. Although, therefore, the vast mass of the infant population is well protected, the protection of those above this age is a constantly diminishing quantity and the majority of people in default of panic or other unsystematic vaccination are not protected at all. In order, however, to afford some protection to this large majority of once-vaccinated or never-vaccinated persons at the time of their greatest utility to the State, the present system of isolation, with all its attendant drawbacks, has necessarily been introduced. Mrs. Garrett Anderson points out that it does and must totally fail to prevent recurrences of epidemics, although it may do something to control them, and that in the case of a disease of the character of small-pox it is, although necessary under present circumstances, economically unsound. She asks the ratepayers to consider whether it is worth while to continue it, or whether they should not rather insist upon the adoption of those measures which in Germany have proved so effective that, in spite of its borders being coterminous with small-pox-ridden Russia, it is not found necessary to keep up separate small-pox hospitals at all after the fashion

adopted in England. By way of helping ratepayers to come to a decision, her letter includes a searching analysis of the expenditure on small-pox prevention during the past twenty years in London. She is able to show that, apart from the wastage of valuable lives, injury to trade, the cost of panic-vaccination, and other minor sources of expense, the up-keep of small-pox hospitals, even in non-epidemic times, forms a very large item, and that, independently of the current expenses of epidemics which fall upon the ratepayers in different boroughs, the accumulating debt of the Metropolitan Asylums Board which is due to small-pox, and still unpaid, is enormous. If London, she says, can afford to fling away every few years money which need not be spent at all, let it spend it on general hospitals, or on sanatoria for consumptives, or on playgrounds for children, or on holidays for workers, and not upon small-pox epidemics, which can be completely prevented by vaccination and revaccination at school age. By way, further, of giving a definite and concrete example of what a small-pox epidemic means she shows that the last epidemic in Battersea cost £71 7s. 1d. for each and every case that occurred within the borough.

OUTBREAK OF PLAGUE AT MARSEILLES.

On September 9th, 5 deaths were reported to have occurred at Marseilles from plague, and 10 cases were in addition stated to be under treatment from the same disease. On September 10th, 29 cases of plague were officially announced by the authorities to exist. The outbreak occurred in a cardboard factory situated at Barnahé, a suburb of Marseilles, and is attributed to the importation of a number of bales of rags from Smyrna. In the rags a few dead rats were found, and the persons first infected were those engaged in handling the bales. Immediate steps were taken to prevent the spread of the disease, and there seems every reason to hope and believe that the outbreak is quite localized. It is to be noted that the port from which the vessel with bales of rags on board hailed—namely, Smyrna—is a Mediterranean port. Plague was reported from Smyrna some time ago, but for several months past it has not been officially stated that plague existed there or in the neighbourhood. If it is really the case that the disease reached Marseilles from that source it is a subject for inquiry and serious international consideration. The rags may have only been collected at Smyrna from different places in Syria, or from Constantinople itself; this makes matters still worse, for it indicates the possibility of even a wider source of infection. It is to be hoped that the sanitary authorities at Marseilles will make strict inquiry into this matter, and request their Consular representatives to supply them with exact information as to the presence of plague at the eastern end of the Mediterranean littoral. There seems to be every indication that the rat is again the medium of infection in this instance. Dead rats were found in the rags, and to this fact is attributed the infection of the persons who handled the bales. Be this as it may, it would be well were sanitary medical officers at our ports to extend their inquiries as regards plague being on board a vessel which has sailed from an infected port. We now know that almost any animal may contract plague. Professor W. J. Simpson and Dr. Hunter, in Hong Kong, have shown that domestic animals acquire plague readily. They have shown that cats, dogs, sheep, cattle, pigs, fowls, ducks, turkeys, etc., may acquire the disease, and by the presence of the bacilli in their excretions pollute the soil. The persistence of plague is thereby explained when once it becomes established in a district or town, and the speedy eradication of the disease rendered well-nigh impossible. An additional danger is the fact that pigs, fowls, etc., may have plague and yet show no signs or symptoms of illness. A pig may have a temperature of 103° to 105° F. for weeks, and die of plague suddenly during the fourth week. A fowl may have a temperature of 105° to 107° F., and yet, like the pig, may eat well during the whole period of pyrexia, and die suddenly with evidence of plague bacilli in the blood and organs. Therefore, whilst our attention is being exclusively bestowed on the rat as the medium of infection in plague, there can be no doubt we lay ourselves open to serious error, for any animal brought from the ship to the shore may convey the disease, and whilst the ship is being disinfected and the rats destroyed, the other animals brought on shore, and perhaps sold, in the public markets, such as fowls, pigs, or sheep not consumed on the voyage, may be the real sources of infection. The French sanitary system is so efficient that we have every reason to rest assured that the outbreak of plague at Marseilles will be carefully and scientifically dealt with.

DR. KOCH'S SOUTH AFRICAN CRITICS.

We gather from an article which appears in the *Natal Witness* of July 18th that the observations which Dr. Koch has recorded upon the cattle disease in Southern Rhodesia have not escaped hostile criticism in our South African colonies. The article in question, entitled "The Inconsistency of Dr. Koch," contains a vigorous protest against the discrepancies and confusion in which, it is alleged, Dr. Koch has involved the whole subject of red-water fever in cattle. According to the writer, the German professor commits the blunder of identifying both Rhodesian fever and Texas, or red-water fever, with the cattle fever of the East Coast of Africa, whilst at the same time maintaining that the two former fevers are not identical with one another. In support of this charge extracts are quoted from Dr. Koch's reports of 1897, when he was commissioned to investigate the cattle fever on the East Coast of Africa, and are compared with quotations from his report, dated May 23rd of the present year, on the cattle disease in Southern Rhodesia. It certainly appears that Dr. Koch has not succeeded in reconciling his views in a very clear or convincing fashion, and, in view of the great practical importance of the work he has undertaken, it is highly desirable that he should vindicate his position against the charge of scientific inaccuracy. Unfortunately the writer of the article referred to impairs the cogency of his criticisms by a lamentable display of bad taste. The cheap rhetorical abuse which he directs against Professor Koch and those who were responsible for his appointment can serve no useful purpose, and may create the impression, amongst those who expect scientific matters to be discussed impartially, that the article as a whole is too deeply tinged with personal bias to call for serious consideration. The writer's protest against the employment of a German scientist for an English investigation is particularly inapposite. English pathologists have a record of discoveries in medical science which raises them above any feeling of petty jealousy on that score; they are prepared to receive and to criticize Professor Koch's pronouncements on this as on any other subject in a friendly spirit of scientific cosmopolitanism which ignores racial distinctions and international jealousies.

HOW TO BE HEALTHY WITHOUT DOCTORS.

One of the most important works to which the medical profession has recently set its hand is the education of the public in the prevention of disease. This hygienic crusade is being urged at present by men of the highest position in our midst with a zeal and self-sacrifice for which no praise can be too high. Unfortunately, the people is in this respect still too often a fool, its particular form of folly being an utter lack of discrimination in the choice of teachers. It encourages all and sundry to appeal to it in these vital matters with an inclination to lend its ear to those who advertise most blatantly, and whose propositions require the least amount of thought for assimilation. Among such, one of the most prolific is Mr. Eustace H. Miles, who has published, at a comparatively early age, a formidable list of works, ranging in theme from the History of Rome to the Failures of Vegetarianism, and from the Teaching of Jesus to the game of Squash. Mr. Miles is a well-known athlete, but he does not appear to have taxed himself severely in the study of physiology, though in his latest work, entitled *Avenues to Health*, he goes so far as to quote with approval the statement that at birth bone is in the condition of gelatine. He has, moreover,

acquainted himself with the semi-popular writings of some physicians, but the main basis of his theories is deep personal study, the same means, it will be remembered, by which Mr. G. R. Sims was enabled to evolve for the public benefit his celebrated hair restorer. To the scientific mind there appears to be no reason why a person of exceptional physical endowments should be especially qualified to preach hygiene; it would be as reasonable to go to Mr. Kipling for a treatise on penmanship. This, however, the public will never learn, and if Mr. Kipling were to issue a treatise on penmanship, it would no doubt sell by thousands. Moreover, it is conceivable that Mr. Miles's hygienic manifestoes might, even if unscientific, at any rate be harmless. A careful examination of his latest writings, however, brings the regretful conviction that this is far from being the case. His fundamental hypothesis is that as there are many channels by which disease may attack the body, so there are many avenues by which, to use his own expression, health may enter; of these he lays great stress upon self-suggestion, which he complains has been unduly neglected by physicians. His opinion of our profession is expressed with engaging candour; he states, for instance, that it does not know, and it will not learn. He suggests that it should be paid by results, quoting with approval the fact that a similar system is advertised by a well-known maker of "electric" belts. He goes on roundly to accuse our brethren of denouncing any new method of what he is pleased to regard as rational therapeutics, because it would rob them of their business. He condemns, too, the whole system of medical education as a prolonged waste of time, and gives it as his opinion that for the present several years' study of disease a six months' course in health would be an efficient substitute. Mr. Miles is not merely a destructive critic, but has much that is practical to offer us in exchange for the effete theories of medicine and surgery. There is, in fact, no physical agent from cold water to sweet music which he does not invoke to his assistance, and in addition he shows, to his own satisfaction, that where even these may fail the mind can step in and supply the deficiency. He suggests that the various methods should be tried individually, and that the subject should select those which are particularly suited to him, a process which he would have no difficulty in carrying out in the course of, say, 200 years. But other objections might be urged against some of the remedies proposed. As to the employment of certain proprietary articles of food which he advertises we have nothing here to say, but he also recommends the self-use of the stomach tube and the enema. Here we beg leave to assure him he is not playing with such innocuous weapons as he seems to imagine; not a few cases of sudden death after gastric lavage are on record, and there can be little doubt that many more will occur if Mr. Miles's latest book becomes as popular as those which have preceded it. He also devotes much space to an account of the miraculous cures effected, in cases which, of course, had been given up by the medical profession, by an instrument called the *Lebenswecker*, or, as one should say, "life-waker." The principle of this is to puncture the skin with a number of minute holes, and then to paint it over with a patent oil made in Germany. It appears, according to Mr. Miles, that in the unhealthy, and in them alone, a crop of pustules follows, and that when the scabs fall off the patient is cured of consumption, epilepsy, gout, rheumatism, or whatever other complaint he may have suffered from. One passage (*Avenues to Health*, pages 82 and 83) really merits quotation:

> A patient came to a friend of mine, and wished to be cured of a large growth at the end of his nose. "What was wrong with you before you had this?" my friend first inquired. "Oh, only an inflamed leg; but I was cured of that." "How?" "By a kind of plaster covering my leg." Off it came, and my friend found that the poison which had appeared over the leg had been driven inwards and upwards. By his *Lebenswecker* he brought it back to, and then out of, the leg in vast quantities, and the nose-swelling soon disappeared also.

It seems almost incredible that a man who, during a residence of some years at a public school and a university, should have had the opportunity of becoming educated, could pen such pernicious nonsense. It is of interest to note that his work entitled *How to prepare Essays, Lectures, Articles, Books, Speeches, and Letters* has attained the dignity of a second edition, and furthermore that he has in preparation a work devoted to the subject of uric acid.

THE PREVENTION OF CRUELTY TO CHILDREN.

The Committee of the National Society for the Prevention of Cruelty to Children states in its report that the year ending March 31st was one of unusual success. The number of cases in which the Society found occasion to intervene increased by 2,159, but the percentage of cases in which warning alone was deemed sufficient also showed an increase. In those cases in which prosecution was undertaken—about 10 per cent. of the whole—the action of the Society was endorsed by the courts in all but 2.9 per cent. It is claimed that the increase in work shown does not demonstrate increased cruelty, but increase in the geographical scope of the Society's work and greater recognition by the public of what can be done in the interest of suffering children. The best testimony to the work of the Society, however, is that given by a number of level-headed men who have made a careful and prolonged study of its operations, such as several London magistrates, the Bishop of London and the Lord Chief Justice, which may be found in the account of the ceremonial on the occasion of the opening of the new central offices in Leicester Square. The special subject dealt with in this year's report is the reform of inebriate mothers and the line which the Society has adopted in this matter. A great deal of suffering is caused to children by inebriety on the part of their mothers, but it differs in character from that with which the Society ordinarily has to deal in other cases. It alternates as a rule with excessive indulgence, and is not due to hardheartedness. With the women *qua* inebriates the Society does not concern itself, but with the women *qua* inebriate, and therefore cruel, mothers it deals actively. When necessary it secures their entry to homes, and while they are there it does all it can to revive and strengthen the maternal instinct. For this purpose it keeps them supplied with full information as to the doings and welfare of their children, sending photographs, etc. It also takes steps to secure for the woman when released as pleasant a welcome as possible, and conditions which are calculated to strengthen her *morale*. Special facilities have been granted by the Home Office for the work of the Society in this direction, and women who are let out on parole are put under the observation of the officers of the Society instead of that of the police. The work of the Society in this direction seems to be based on distinctly sound lines, but the movement is too young for it to be possible to foretell its ultimate results as far as the great majority of cases is concerned.

ANTIVACCINIST PROPAGANDA.

The lot of the conscientious as well as the unconscientious objector to vaccination has not been a particularly happy one during the past year or two. It is, therefore, perhaps not unnatural that the latter should be driven to somewhat desperate measures. Nevertheless, it seems somewhat hard upon the Fellows of the Royal Society in general and upon Mr. Alfred Russel Wallace in particular that they should be gibbeted as they are in the following leaflet which a correspondent found pasted in a Tauchnitz novel during a recent holiday abroad:

> While utterly powerless for good vaccination is a certain cause of disease and death in many cases, and is the probable cause of about 10,000 deaths annually by five inoculable diseases of the most terrible and disgusting character.
>
> Mr. Alfred Russel Wallace, LL.D., F.R.S.

Mr. A. R. Wallace is a gentleman who, now many years ago, made a considerable reputation by publishing some books of travel, and we are not aware whether he ever attempted to add to it by really penning the statement thus attributed to him. Even if he did, however, that does not justify his being exposed in this fashion to the derision of ignorant novel readers who are not prepared

to swallow either traveller's tales or the tales of a travel-writer. *Aliquando bonus dormitat Homerus* has long been accepted as representing a very human frailty, and Mr. Wallace may be permitted to aberrate occasionally from the attitude normally characteristic of a Fellow of the Royal Society. Besides that things might really have been much worse. The statement, of course, is not exactly one which would constitute a good title to admission to a scientific body, but after all it is one of which many men would be proud. It is not given to every sleepy Homer to be able to make eight false statements in thirty-eight words, and the assertion as to five inoculable diseases, etc., is particularly remarkable in the face of the fact that the glycerine with which all vaccine is now treated before it is issued for use kills off every extraneous organism other than that producing vaccinia in about three weeks, and that the chloroform treatment which is believed to be about to take its place does the same in the short space of about six hours. Modern vaccine, therefore, is quite incapable of producing any reaction other than that desired. Ordinary antivaccinists nowadays, however, are rather more cautious than Mr. Wallace apparently is or was, and confine themselves to statements less easily controverted, at all events when they have reason to expect an answer of any kind. Thus some of them now admit that vaccination does some good, but not enough to justify its performance at the public expense, and they endeavour to whittle away the amount of good which they cannot deny very much as follows: Weakly children are not vaccinated, therefore the unvaccinated are weakly persons; weakly persons cannot resist disease, therefore small-pox kills them, but not because they are unvaccinated but because they are weakly. It is pretty, but as logic scarcely sound. Some of them, too, appear to be quite hurt because vaccination does not confer absolute immunity against attack as well as practical immunity from a fatal issue to an attack, and point to the prevalence of the disease in the best vaccinated towns. Their favourite best vaccinated town hitherto has been London, but this they will have to abandon, since the Local Government Board statistics just published show that it is the worst.

THE MEDICAL PROFESSION IN AUSTRIA.

There appears to be one country in Europe which is not overstocked with doctors, namely, Austria-Hungary; nevertheless our Austrian brethren are not happy. At a Congress recently held in Vienna it was stated that 20,000 communes of the Austro-Hungarian Empire, that is to say, 86 per cent. of the total number, are too poor to pay for a medical officer, and 30 per cent.—or taking Galicia alone 75 per cent.—of persons who die are buried without a medical certificate. The number of medical students is also steadily decreasing. Only 32 per cent. of the students of the Austrian universities belong to the medical faculty. The total number of medical students this year is 2,120, whereas in 1888-9 it was 5,277, showing a decrease of some 60 per cent. in about twelve years. The causes of the growing unpopularity of the medical profession is said to be the legislation which has made assurance against sickness compulsory among the working classes. About one-third of the population of Vienna is now so assured, and in the rural districts it is impossible for medical practitioners to make a livelihood. It is further stated that, owing to the progress of hygiene, the average number of cases of sickness has diminished by one-half. Quackery, too, is rampant, and the doctors find the struggle against all these opposing forces becoming more and more unequal.

SUICIDE IN THE UNITED STATES.

Mr. William B. Bailey has collected statistics on suicide in the United States from 1897 to 1901. They are taken almost wholly from the public press, as the United States Government affords no assistance. Thirty journals were studied to collect the data. Out of 10,000 suicides 7,781 were males and 2,219 females, giving a ratio of about $3\frac{1}{2}$ males to 1 female. As in most countries, the number of the married who took their own lives slightly exceeded that of the single, while single, widowed, and divorced women were found to commit suicide more often than men in like situation. Shooting appears to be the favourite method of taking life, followed closely by poison. Hanging as a means of self-destruction is not held in so much favour as in the northern parts of Europe, nor is drowning as in the Southern. Jumping from heights, poison, and gas are confined principally to the cities. With males the favourite method is shooting, and the one least used is jumping from heights. Women seem to have a predilection for poison, though a few take their quietus with cutting instruments.

"SCIENTIFIC" PHRENOLOGY.

During the last few years some attempt has been made to revive the doctrines of the so-called science of phrenology. This has no doubt been in part due to the interesting studies in criminal sociology undertaken by Lombroso and his school, one of the aims of which has been to determine, in so far as may be possible, the relations of moral qualities to physical conformation. If this could be done with anything approaching certainty, it might be possible to influence the training of youth in the direction of lessening criminal tendencies. But the attempt to revise the doctrines of phrenology is distinctly a retrograde step. We are irresistibly impelled to this view by a careful study of the writings of its latest exponent in England, Dr. Bernard Holländer.[1] Dr. Holländer has reverted to the old doctrine that the various regions of the brain are concerned with particular mental, moral, and intellectual functions; thus the prefrontal region is, according to him, the seat of the intellect, the frontal of the moral sentiments, the parietal of the egotistical sentiments, the occipital of the affections, and so on. Sexual passion is relegated by him to the cerebellum, chiefly, it appears, on the ground that the philosopher Kant, in whom this organ was very slightly developed, was by way of being a misogynist. In support of these sweeping assertions, in which of course there is nothing new, he has no fresh evidence to adduce other than the second-hand and often vague accounts of clinical cases not always confirmed by *post-mortem* examination. He deduces that it is possible to ascertain the character of an individual by investigating the conformation of the skull, and offers with considerable confidence advice as to the training of children and the choice of professions based upon such investigations. We cannot but think it unfortunate that such doctrines should be promulgated by a member of the medical profession in works intended for lay readers. It is quite true that in forming an estimate as to character, the trained observer will not disregard the size and shape of the head; something is to be learnt from these if the subject is approached in an unbiassed, that is to say really scientific, manner. Much, no doubt, can be elicited from the physiognomy, something too from the handwriting. Even the examination of the hand should not be neglected, though one need not believe in lines of "life," "heart," and so forth. In other words, the estimation of personal character is a subject worthy of the closest attention; it requires prolonged study and long observation of each individual case under different circumstances. The results thus gained may be invaluable, but there is no royal road to them; this phrenology professes to be, and, as its basis is highly imaginative, it is unworthy to be countenanced by a scientific profession.

SILENCE IS ASEPTIC.

We are taught that silence is gold. That proverb was first spoken long before the days of carbolic acid and rigid antisepsis. Dr. Mendes de Leon informed the Netherlands Gynaecological Society last March that speech is septic. This development of an old saying was not taught as a parable or a generalization, nor was it even expressed in these three words. The distinguished Dutch gynaecologist

[1] *Scientific Phrenology*, by B. Holländer, M.D. London: Grant Richards 1902. Cr. 8vo, pp. 320. 6s.

dwelt on the danger of speaking during an operation. Let an explanation or a few demonstrative observations to the extent of only 300 words be spoken over an agar-agar slide, and at its conclusion, we are assured, no fewer than a quarter of a million of germs will be found on the slide, including the streptococcus and the staphylococcus! A terrible warning, indeed, all the more since we are told that disinfection of the mouth is of no avail. An American visitor to Old World hospitals observed, a few years ago, that one European operator gargled before doing an abdominal section, yet his results were not highly satisfactory. Still, Dr. Mendes de Leon feels so sure that speech is septic that he employs a mouthpiece consisting of two metal gauze plates with wool placed between them. It must be interesting to hear observations made by the wearer. Perhaps the apparatus might first be used in the lecture room, so that the operator's pupils might learn to understand his modified speech. Nevertheless, it cannot be denied that in principle Dr. Mendes de Leon is quite right.

MALARIA IN THE ANDAMANS.

A REPORT on malaria,[1] by Captain Waters, I.M.S., of the Andaman Penal Settlement, shows how prevalent malaria is in that part of the world. The usual prophylactic measures for diminishing malaria, so well known to every one now, were given a trial, and a marked diminution in mosquitos took place after special gangs of men were told off to clean up drains, fill up puddles, and to cut down bush and undergrowth. An experiment carried out on some of the female prisoners by protecting them with mosquito nets, showed at once the efficacy of this line of prevention. The old objection, namely, that the net does not allow air to enter and is stuffy, is brought forward; if the windows are left widely open there is no reason why the air should not be as good inside a net as outside it, and the objection is really a trivial one. The most striking part of the report is to be found in the statement that only one variety of *Anopheles, A. Rossii*, is found in the islands. In view of the recent work of the Malarial Commission in India as regards this mosquito and its apparent inability to spread malaria in Calcutta, this statement requires to be looked into. It is possible that another *Anopheles* is really present and has not been identified, or that this mosquito in certain districts is really capable of spreading malaria. What is described as a "mass dose" of 30 gr. of quinine hypodermically is heroic treatment, but is surely unnecessary. Luckily, blackwater fever seems to be unknown there. The nomenclature of the parasites found microscopically is an extraordinary one, and is valueless in regard to the formation of any conclusion as to the relative proportions of the benign and malignant fevers in that area. It is especially unfortunate, with so much good material at hand, that this should not have been more carefully worked out. The last part of the report, on the percentage of leucocytes, is not sufficiently extensive to allow any conclusions to be drawn from it.

MISPLACED KIDNEYS AND PELVIC TUMOURS.

THE possibility of pelvic kidneys must always be borne in mind both by physicians and surgeons who have to deal with abdomino-pelvic tumours. There seems to be some relation between retroperitoneal growths and kidneys placed in the pelvis, or at least on the pelvic brim. Billroth discovered a misplacement of this kind in operating on a fibromyoma of the broad ligament, and Doran had a similar experience when removing a large retroperitoneal lipoma. There was no difficulty in detecting the precise nature of the malformation in either of these cases, that is to say, not only was the kidney displaced, but its vessels clearly arose from the iliacs. A recent discussion before the Gynaecological Society of Munich[2] shows that a misplaced kidney, lying in the pelvis, may lead to errors of diagnosis, whilst it is not always clear whether it be a floating kidney, dragging down renal vessels of normal connexions or a kidney supplied by vessels in the pelvis. Otto Seitz exhibited a cystic kidney which extended deeply into the pelvis and bore other characters suggesting that it was an ovarian cyst. It proved to be renal, and on the posterior layer of parietal peritoneum being divided it was removed by enucleation. Stumpf, in discussing this case, expressed the belief that it was a true pelvic kidney; it was on the left side, as is usual in this anomaly. Ludwig Seitz had observed a right pelvic kidney in a stillborn child. Amann related a case of great importance as to the clinical aspect of the question. An enlarged kidney which extended into the pelvic cavity was found closely adherent to a pyosalpinx. It could not be decided (presumably at an operation) whether this were a case of floating or of true pelvic kidney. Stumpf remarked that as far as diagnosis could guide us, nothing further was certain than that a tumour of this kind lay behind the intestines. More light is needed on the question of true pelvic kidney, and the demonstrators of pathology in medical schools have ample opportunities for making researches which might greatly increase knowledge of a subject of undoubted interest and of no mean importance in these days of abdomino-pelvic surgery.

THE POISON OF SEA SNAKES.

IN a further communication, read before the Royal Society, Dr. Leonard Rogers continues the record of his observations on the poison of sea snakes. From a series of experiments on rabbits, cats, and frogs, he finds that, in lethal doses, *Enhydrina* poison has no direct depressing action on the heart. The marked rise of blood pressure which is observed is secondary to failure of respiration, producing venosity of the blood. Dr. Rogers has demonstrated that the primary action of the poison is the production of a respiratory paralysis by a direct action on the respiratory centre, this being very quickly followed by paralysis of the end plates of the phrenic nerves. This phenomenon may occur at a time when the sciatic nerves show no end-plate paralysis. It is observed that the poison has a very marked action in paralysing the end plates of motor nerves, but does not perceptibly affect the conducting powers of the nerve trunks themselves. In this respect it resembles cobra venom and curare. The action of *Enhydrina* venom on the reflex functions of the spinal cord is slight, and altogether secondary in importance to its influence on respiration.

THE KING'S SANATORIUM FOR CONSUMPTIVES.

THE first steps in the actual work of erecting the King's Sanatorium for Consumptives at Easebourne near Midhurst were taken on September 15th, when a commencement was made with digging the foundations. Sir John Aird has secured the contract for the water supply and road-making. The contract for the building itself has not yet been placed. Mr. Percy Adams, as already announced, is the architect, and the building, which is estimated to cost between £50,000 and £60,000, will, it is expected, be opened for the reception of patients within two years' time.

IN the list of officers on whom decorations have been conferred in recognition of services with the Kano-Sokoto Expedition is the name of William Henry Langley, L.R.C.P., L.R.C.S.I., Principal Medical Officer, Protectorate of Northern Nigeria, who is made a Companion of the Order of St. Michael and St. George.

THE mysterious Régnier, to whom Madame Humbert assigned the part of the mythical Henry Robert Crawford, was, it appears, in early life attached to the military training hospital at Lille. He failed, however, in his final examinations. Nevertheless, he served in Algiers as auxiliary surgeon. His subsequent career as journalist, spy, laundryman, etc., does not concern us.

[1] A Report on Malaria as seen in the Andaman Islands. By Ernest E. Waters, M.B., Captain I.M.S.
[2] *Zentralbl. f. Gynäk*, No. 27, 1903, p. 837.

We are asked to state that the annual exhibition of pathological specimens added to St. George's Hospital Museum during the past year will be on view from October 1st to October 17th, between the hours of 10 a.m. and 5 p.m. A description will be attached to each specimen, but Dr. R. Salusbury Trevor, Curator, and Dr. T. R. C. Whipham, Assistant Curator, will be pleased to demonstrate them to any one interested.

The estate of the late Dr. W. S. Playfair has been sworn at £46,262 1s. 2d. gross, and at £44,261 net, as far as at present ascertained. His widow is appointed sole executrix. On her decease, his estate and effects are to go to his children in such shares and on such conditions as she shall appoint: in default thereof, the diamond ring presented to Dr. Playfair by the Emperor of Russia is left to his son Nigel, and the ultimate residue of his estate to his children in equal shares.

A provincial sessional meeting of the Sanitary Institute will be held at the University of Birmingham on Saturday, September 26th. A discussion on some practical considerations in connexion with modern methods of treating sewage will be opened in the large theatre of the University by Professor A. Bostock Hill, M.D., and Mr. J. Edward Willcox, Assoc.M.Inst.C.E. The chair will be taken at 11 a.m. by Dr. Alfred Hill. The programme of the meeting includes an inspection of the Birmingham Crematorium, and visits to the works of the Tame and Rea District Drainage Board at Tyburn, and to the site of the quarter-acre slag bacteria bed at Minworth Greaves.

The funeral of the late Mr. W. L. Burr, Financial Secretary to the British Medical Association, took place at Dunstable on Saturday, September 12th. Mr. George Eastes represented the Council, and Mr. W. E. Warne the office. Mr. Guy Elliston, the General Secretary of the Association, was unavoidably prevented from being present. Among the wreaths sent by friends was a very beautiful one subscribed for by the clerks and the members of the printing staff, to all of whom Mr. Burr's unfailing courtesy and considerate kindness had greatly endeared him.

Scotland.

Glasgow University Extension.

A special meeting of the University Court was held on September 10th to consider the proposed alteration of the plans for the new buildings. The meeting was held in private, but an official statement was afterwards published to the effect that, after full discussion, the Court did not see any reason to delay the work which they had already authorized or to make any alteration in the accepted plans. Dr. McVail, who has been an advocate of the alternative scheme, dissented from this finding.

The Glasgow Corporation and Fees for Street Accidents.

In a recent issue of the *Glasgow Herald* there appeared a letter from Dr. Thomas Colvin relative to doctors' fees in street accidents which is so much to the point that we reproduce it in full. Dr. Colvin, writing under date September 1st, says:

In the discussion at yesterday's meeting of the Corporation on doctors' fees in street accidents, one of the main points, according to your report of the proceedings in to-day's issue, did not seem to be raised by any of the speakers. What medical men complain of is not so much the amount of fees allowed in these accidents and in sudden attacks of illness on the street, but the fact that in many cases they receive no fees whatever for services rendered. Again and again the doctor spends his valuable time and energy in fixing an injured limb, or dressing a wound, or giving the necessary attention and advice in cases of fainting, epileptic and apoplectic fits, and it is a written or unwritten law of the Corporation that unless his services have been specially sought by a policeman he has no legal claim, although an undoubted moral claim upon the Corporation if it be granted that it is one of the functions of a Corporation to make adequate provision for the welfare of the citizen on the public street. It is true that he receives the grateful thanks of the patient, and, whilst appreciating this in no small degree, it is well to remember that grateful words will not pay the doctor's police rates or his butcher or baker's bill, for, like other human mortals, he cannot exist on air alone.

Now it will be very evident to all that when a person is injured or taken suddenly ill on the street his or her chances of recovery will be in proportion to the rapidity with which the patient comes under skilled treatment. Hence the vital importance of calling in the nearest doctor to prevent, for example, a patient bleeding to death, or brandy being given to an apoplectic, and hastening his journey to another kingdom; and there can be no two opinions that in these cases the nearest doctor should be sought, independent of the policeman, who may not be found when wanted, or the casualty surgeon, who may be at a distance or otherwise engaged. But when the nearest doctor knows, from bitter experience of loss of time and disappointment to his own patients, who not only appreciate his work, but generously pay him for it, then it is not to be wondered at if he may have at times refused, and may probably again refuse, to respond to these calls until he is remunerated by the Corporation for his services. The question is one of public importance, for every man (including the City Fathers), woman, and child is liable at any time to be injured or taken suddenly ill on the street, and I am quite sure that the general feeling of the community is against the parsimonious policy of the Corporation in this matter.

The Glasgow Port Local Authority.

The order recently issued by the Scottish Local Government Board constituting the Corporation Police Department the Port Local and Sanitary Authority of the Port of Glasgow will come into force on October 15th. In view of this, a deputation has been conferring with the officials of the more important sanitary authorities in England for the purpose of ascertaining and reporting on the precise procedure followed out in these ports, and on the special machinery and appliances which those authorities have to enable them to cope in an efficient and expeditious manner with any infected vessel. An important question also to be considered was the liability that might arise through damage done to cargo by the process of disinfection of suspected ships. The deputation, which included the Medical Officer of Health and the Chief Sanitary Inspector, has visited Newcastle, Hull, Liverpool, Cardiff, and London.

Shellfish and Enteric Fever.

Another illustration of the dangers of eating shellfish is furnished from Glasgow. The medical officer of that city, in reporting a number of cases of enteric fever, mentions that in connexion with this particular outbreak the probable source of infection had been shellfish contaminated by sewage. The different patients had been on holiday to the same town on the Firth of Clyde, during the probable time of infection. Without exception they had consumed shellfish—in this case cockles and mussels, not oysters—in the raw and cooked states. In the absence of any other source of infection it seemed probable that the shellfish had been the cause of the disease, and this presumption was strengthened by the occurrence of some similar cases in two of the burghs adjoining Glasgow. One family who had not visited the coast town in question had had shellfish brought up to them by a neighbour, and in this case the mother sickened of enteric fever, and seven other members of the family were secondarily infected through her. In all it seems that 26 cases of enteric fever have directly and indirectly been associated with this one source of infection, and the local authorities concerned have taken precautions to warn the public of the dangers of taking shellfish from that particular locality. The actual proof of the presence of bacilli in the shellfish is not yet complete but shellfish from the supposed contaminated area are at present the subject of examination by the City Bacteriologist.

Ireland.

The Irish Poor-law Revolt.

There can be little doubt that the chief grievance which has driven the Irish dispensary doctors to revolt is the old-standing abuse of the dispensary ticket system.

Framed originally on the lines of the English Poor Law, the Irish Poor-law doctors were required to afford medical relief to paupers only, who were defined as persons possessing less than a quarter of an acre of land, but by degrees, one after another, the statutory restrictions upon the issue of medical relief tickets were removed, until at present and for years past the dispensary doctor has been required to attend gratuitously any person in his district who could obtain a ticket—no difficult undertaking.

While the landlord class had means and could pay good fees the local doctor made a fair living, but with the impoverishment of that class there was no corresponding increase of fees from the farmers, so that the ticket grievance became daily more unendurable. The doctors have demanded again and again to no purpose a legal definition of a poor person, holding that a person to whom the guardians would not give relief, either inside or outside the workhouse, is not entitled to gratuitous medical attendance.

Some years ago Dr. Kidd, the President of the Irish Medical Association, proposed that certain classes should be entitled to medical relief at a reduced fee, and when the new dispensary regulations were issued under the Act of 1898, the Local Government Board sanctioned such arrangement. We expressed our doubts as to its feasibility at the time, and nothing has since occurred to alter our view. In prosperous localities where fees are good it might work, but over the greater part of Ireland, outside the towns, the fees are already so low that further reduction would bring them to the vanishing point, and this appears to have been the opinion of the majority of dispensary doctors, who believed the reduced fee would soon be regarded as the maximum. Half a crown for advice and medicine does not leave much margin for reduction if a man only gets a dozen such in the week, and 5s. to 7s. 6d. an hour one way for long country journeys would be about the average fee to farmers, and does not strike one as extravagant.

The dispensary doctors have always been refused redress of grievances on the grounds that the supply exceeded the demand. They have resolved this shall no longer afford a reason for refusing them a living wage, and their effort is backed not alone by all their professional brethren in Ireland, but also by the *Irish Times*, which is giving them ample space to make known their demands, and strongly advocating their claims to redress. Nothing short of a Commission of Inquiry will satisfy them, and we believe, if they act temperately, firmly, and above all legally, it will have to be granted.

The Granard Scandal.

The conflict at Granard has been advanced another stage by the publication of the decision of the Local Government Board on the recent inquiry held by its inspector, Dr. Joseph Smythe, in reference to the admission of Dr. J. Maguire to do temporary duty in the hospital without its authority; the death of a patient, named Masterson, and the complaint of Father Egan as to the employment of a person of bad character in the wards. The Commissioners dismiss the master from office under seal for having admitted Dr. Maguire to the hospital without inquiry. As to Dr. Maguire they consider that he is "not a proper person to be entrusted with the care of the Irish poor, and they will not sanction his employment in future either as permanent or temporary medical officer." Dr. Dolan "deserves censure for the part he took in actively helping out the scheme for the avowed purpose of depriving Dr. Kenny of his appointment in the Granard Workhouse. As, however, he has only been a short time in the Poor-law service, and has expressed regret for the part he took in the transaction, and as it is apparent that he was merely employed by others to work out their aims, the Board will not take further action in his case beyond making a record against him in the books of the department. It trusts, however, that this case will be a warning to him not to be again led into any similar discreditable transaction, and to confine his attention to the discharge of his duties in his own district." The other persons who took an active part in this regrettable affair are not amenable to the control of the Local Government Board. As regards the woman M'Alister, the Board considers that, whilst the guardians are to blame for maintaining healthy unmarried mothers and their children in the infirmary, by refusing to provide accommodation for them in their proper place in the workhouse, and to procure sufficient paid attendants, yet this default of the guardians did not justify the medical officer in retaining the woman's name on the medical book as a patient, even though he was not able to discharge her from the infirmary. The Board hopes that the protest of the Rev. Mr. Egan will have the effect of directing the guardians' attention to their duties in this important matter. The guardians who were examined at the inquiry admitted that the recommendations to hospital improvement and repairs were reasonable and necessary, and the Board requests that these improvements may be carried out without further delay. The Local Government Board, in conclusion, trusts that the guardians will now endeavour to settle all outstanding questions with regard to the nursing in the workhouse, and that they will secure the services of a master who will maintain discipline and promote harmony amongst the officers of the institution. Now that the medical officer has disclaimed any intention of wilfully hurting the feelings of the sisters, and has expressed his regret that any words or actions of his have had this effect, the guardians appear to have an opportunity of bringing about a reconciliation which would be the means of facilitating the return of the sisters to their place in the infirmary. The consideration of the letter was postponed for three weeks, but meanwhile a unanimous vote of confidence in the master was passed.

The Auxiliary Asylum, Youghal.

At the monthly meeting of the Committee of Management of the Cork District Lunatic Asylum held on September 8th, the following resolution was proposed by the Rev. Dr. Brown, Bishop of Cloyne:

That the following offices in the Youghal Asylum be entrusted to a community of nuns at the salaries named: matron, who is to be superintendent of the asylum, £40; assistant matron, in charge of asylum store, £35; head hospital nurse, £35; clerk and book-keeper, £35; laundry superintendent, £35; storekeeper, £35; head attendant in charge of kitchen, £35; head attendant, £35.

The resolution was passed, but apparently many members were not agreed as to its wisdom from the following discussion:

Mr. Meade asked if any of those ladies would be in charge at night. He took it for granted they would not; and that being so they would have to have an additional staff. Did they think it fair to the deserving sons and daughters of those who contributed to the rate that they should not get a position in an institution like that? He had not the slightest objection to those ladies, but he thought it hard to close the position against respectable lay people.

Dr. Brown: Are not the nuns the daughters of the farmers and shopkeepers?

Mr. O'Gorman asked what advantage it would be to the public to have to pay on the double?

Mr. O'Callaghan said if they left all the positions open there would be any amount of lay attendants to be appointed. Perhaps that would suit Mr. Meade's book.

Mr. Meade said he had no book to suit. The people these positions would suit were passing their doors every day going to America to seek employment. His views were shared by a good many who were sitting there that day.

Alderman Barrett said the nuns would not be on the night shift and that would be very serious as it would mean a double staff.

The Chairman then put the motion and asked if there was any one against it. He then declared that it was carried unanimously.

The next discussion took place as to the appointment of a resident medical officer. It appeared that £600 was allowed in the specification for a doctor's residence in connexion with the new asylum. However, Dr. Kelly (Bishop of Ross) informed the Committee that the house "was built for the superintendent, and the superintendent was going to be a lady."

Dr. Woods said he had a very great number of years' experience, and in his opinion it would be impossible to manage the institution in Youghal safely without a resident medical man. The responsibility was put on him (Dr. Woods) of certifying patients for the asylum and if he had no assistance he was afraid he would be placed in a very great difficulty.

It was finally decided to appoint a local visiting doctor.

City of Dublin Hospital.

We regret to learn that, owing to the state of his health, Sir George Duffey has resigned his position as Physician to this hospital, which he has served for many years with great distinction. The death of Mr. Henry Gray Croly has made a vacancy on the surgical side also, and the Governors will meet in due course to make the necessary appointments, for which there are many candidates.

Decoration for Dr. W. H. Langley.

Dr. W. H. Langley, who is a member of the Northern Nigeria medical service, has had the C.M.G. conferred upon him for distinguished services in the recent expedition to Kano and Sokoto, when he acted as Deputy Principal Medical Officer. Dr. Langley is a Fellow of the Royal College of Surgeons of Ireland. Before he joined the service in Nigeria he was Assistant Surgeon to the Richmond Hospital, Dublin.

BRITISH ASSOCIATION.

The seventy-third annual meeting of the British Association for the Advancement of Science was opened at Southport on September 9th, when Sir Norman Lockyer delivered his presidential address. After some introductory remarks, he said that the 19th century would ever be known as the one in which the influences of science were first fully realized in civilized communities; its scientific progress had been so vast that it seemed rash to predict that any of its successors could be more important in the life of any nation. The progress of science indeed brought in many considerations which were momentous in relation to the life of any limited community -any one nation. One of these considerations to which attention was now being greatly drawn was that a relative decline in national wealth derived from industries must follow a relative neglect of scientific education. Britain in the middle of the last century was certainly the country which gained most by the advent of science, for she was then in full possession of those material gifts of Nature, coal and iron, the combined winning and utilization of which, in the production of machinery and in other ways, soon made her the richest country in the world. With the winning of mineral wealth and the production of machinery in other countries, and cheap and rapid transit between nations, our superiority as depending upon our first use of vast material resources was reduced. Science, which was above all things cosmopolitan—planetary, not national—internationalized such resources at once. Hence the first great effect of the general progress of science was relatively to diminish the initial supremacy of Britain due to the first use of material resources, which indeed was the real source of our national wealth and place among the nations.

Neglect of Mental Resources.

The unfortunate thing was that, while the foundations of our superiority depending upon our material resources were being thus sapped by a cause beyond our control, our statesmen and our universities were blind leaders of the blind, and our other asset, our mental resources, which was within our control, was culpably neglected. It was now known, from what had occurred in other States, that if our Ministers had been more wise and our universities more numerous and efficient, our mental resources would have been developed by improvements in educational method, by the introduction of science into schools, and—more important than all the rest—by the teaching of science by experiment, observation, and research, and not from books. It was because this was not done that we had fallen behind other nations in properly applying science to industry, so that our applications of science to industry were relatively less important than formerly. But this was by no means all; we had lacked the strengthening of the national life produced by fostering the scientific spirit among all classes and along all lines of the nation's activity; we had not learned that it was the duty of a State to organize its forces as carefully for peace as for war; that universities and other teaching centres were as important as battleships or big battalions.

The Struggle for Existence in Modern Communities.

Some years ago, in discussing the relations of scientific instruction to our industries, Huxley pointed out that we were in presence of a new "struggle for existence," a struggle which, once commenced, must go on until only the fittest survived. It was a struggle between organized species—nations—not between individuals or any class of individuals. It was, moreover, a struggle in which science and brains took the place of swords and sinews, on which depended the result of those conflicts which, up to the present, had determined the history and fate of nations. The school, the university, the laboratory, and the workshop were the battlefields of this new warfare. What was wanted was a complete organization of the resources of the nation, so as to enable it best to face all the new problems which the progress of science, combined with the ebb and flow of population and other factors in international competition, was ever bringing before us. Very few people realized the immense number of scientific problems the solution of which was required for the State service. To meet the new peace conditions there must be equality or superiority in universities, scientific organization, and everything which conduced to greater brain power. We were suffering because trade no longer followed the flag as in the old days, but because trade followed the brains, and our manufacturers were too apt to be careless in securing them. In one chemical establishment in Germany 400 doctors of science, the best the universities there could turn out, had been employed at different times in late years. In the United States the most successful students in the higher teaching centres were snatched up the moment they had finished their course of training and put in charge of large concerns, so that the idea had got abroad that youth was the password of success in American industry. It had been forgotten that the latest product of the highest scientific education must necessarily be young, and that it was the training and not the age which determined his employment. In Britain, on the other hand, apprentices who could pay high premiums were too often preferred to those who were well educated, and the old rule-of-thumb processes were preferred to new developments—a conservatism too often depending upon the masters' own want of knowledge. The matter was not one which concerned our industrial classes only, for knowledge must be pursued for its own sake; and since the full life of a nation with a constantly increasing complexity, not only of industrial, but of high national aims, depended upon the universal presence of the scientific spirit—in other words, brain power—our whole national life was involved.

The Necessity of the Organization of Science.

The present awakening in relation to the nation's real need was largely due to the warnings of men of science. Had the neglect of their warnings so far been due to the way in which these had been given? At present science had no collective voice on the larger national questions; there was no organized body which formulated her demands. He had been driven to the conclusion that their great crying need was to bring about an organization of men of science and all interested in science similar to those which proved so effective in other branches of human activity. For the last few years he had dreamt of a chamber, guild, league—call it what you will—with a wide and large membership, which should give them what was so urgently needed. Quite recently he sketched out such an organization, but what was his astonishment to find that he had been forestalled, and by the founders of the British Association!

The British Association such an Organization.

Every one connected with the British Association from its beginning might be congratulated upon the magnificent way in which the other objects of the Association had been carried out; but as one familiar with the Association for the last forty years he could not but think that the object to which he specially referred had been too much overshadowed by the work done in connexion with the others. A careful study of the early history of the Association led him to the belief that the function he was now dwelling on was strongly in the minds of the founders. How well the organization was framed to enable men of science to influence public opinion, and so to bring pressure to bear upon Governments which followed public opinion, was shown by the following facts: (1) Unlike all the other chief metropolitan societies, its outlook was not limited to any branch or branches of science; (2) they had a wide and numerous fellowship, including both the leaders and the lovers of science, in which all branches of science were, and always had been, included with the utmost catholicity—a condition which rendered strong committees possible on any subject; (3) an annual meeting at a time when people could pay attention to the deliberations, and when the newspapers could print reports; (4) the possibility of beating up recruits and establishing local committees in different localities, even in the King's dominions beyond the seas, since the place of meeting changed from year to year, and was not limited to these islands. They not only had a scientific Parliament competent to deal with all matters, including those of national importance relating to science, but machinery for influencing all new councils and committees dealing with local matters, the functions of which were daily becoming more important.

Corresponding Societies.

The machinery might consist of their corresponding societies. They had already affiliated to them seventy societies with a membership of 25,000. Were this number increased so as to include every scientific society in the empire, metropolitan and provincial, they might eventually hope for a membership of half a million. The Council was fully alive to the importance of giving a greater impetus to the work of the corresponding societies. During this year a Committee was appointed to deal with the question, and later still, after that

Committee had reported, a conference was held between that Committee and the corresponding societies to consider the suggestions made, some of which would be gathered from the following extract:

In view of the increasing importance of science to the nation at large, your Committee desire to call the attention of the Council to the fact that in the corresponding societies the British Association has gathered in the various centres represented by these societies practically all the scientific activity of the provinces. The number of members and associates at present on the list of the corresponding societies approaches 25,000, and no organization is in existence anywhere in the country better adapted than the British Association for stimulating, encouraging, and co-ordinating all the work being carried on by the seventy societies at present enrolled. Your Committee are of opinion that further encouragement should be given to these societies and their individual working members by every means within the power of the Association; and with the object of keeping the corresponding societies in more permanent touch with the Association they suggest that an official invitation on behalf of the Council be addressed to the societies, through the Corresponding Societies Committee, asking them to appoint standing British Association subcommittees, to be elected by themselves, with the object of dealing with all those subjects of investigation common to their societies and to the British Association Committees, and to look after the general interests of science and scientific education throughout the provinces and provincial centres . . . . . Your Committee desire to lay special emphasis on the necessity for the extension of the scientific activity of the corresponding societies and the expert knowledge of many of their members in the direction of scientific education. They are of opinion that immense benefit would accrue to the country if the corresponding societies would keep this requirement especially in view with the object of securing adequate representation for scientific education on the Education Committees now being appointed under the new Act. The educational section of the Association having been but recently added, the corresponding societies have as yet not had much opportunity for taking part in this branch of the Association's work; and in view of the reorganization in education now going on all over the country, your Committee are of opinion that no more opportune time is likely to occur for the influence of scientific organizations to make itself felt as a real factor in national education.

He believed that if these suggestions, or anything like them, were accepted great good to science throughout the empire would result:

A British Science League of 500,000 with a sixpenny subscription would give £12,000 a year, quite enough to begin with. The British Association would be a vast gainer by such an expansion of one of its existing functions. Increased authority and prestige would follow its increased utility. The meetings would possess a new interest; there would be new subjects for reports; missionary work, less needed than formerly, would be replaced by efforts much more suited to the real wants of the time. This magnificent, strong, and complicated organization would become a living force, working throughout the year, instead of practically lying idle, useless, and rusting for fifty-one weeks out of the fifty-two so far as its close association with its members is concerned.

Our position as a nation, our success as merchants, were in peril chiefly—dealing with preventable causes—because of our lack of completely efficient universities and our neglect of research. This research had a double end. A professor who was not learning could not teach properly or arouse enthusiasm in his students; while a student of anything who was unfamiliar with research methods, and without that training which research brought, would not be in the best position to apply his knowledge in after-life. From neglect of research came imperfect education and a small output of new applications and new knowledge to reinvigorate their industries. From imperfect education came the unconcern touching scientific matters and the too-frequent absence of the scientific spirit in the nation generally, from the Court to the parish council.

Universities.

He had shown that, as far as our industries were concerned, the cause of our failure had been run to earth; it arose from the insufficiency of universities both in numbers and efficiency. No additional endowment of primary, secondary, or technical instruction would mend matters.

Sir Norman Lockyer proceeded to say that our conception of a university had changed. University education was no longer regarded as the luxury of the rich, which concerned only those who could afford to pay heavily for it. The science which schoolboys neglected, with the full approval of their teachers, on their way through the school and the university to politics, the Civil Service, or the management of commercial concerns, was now one of the great necessities of a nation. University competition between States was now as potent as competition in building battleships; and it was on this ground that our university conditions became of the highest national concern.

Why we have not more Universities.

Chief among the causes which had brought us to the terrible condition of inferiority as compared with other nations were our carelessness in the matter of education and our false notions of the limitations of State functions in relation to the conditions of modern civilization. We in Great Britain had 13 universities competing with 134 State and privately endowed in the United States and 22 State endowed in Germany. The German State gave to one university more than the British Government allowed to all the Universities and University Colleges in England, Ireland, Scotland, and Wales put together. These are the conditions which regulate the production of brain power in the United States, Germany, and Britain respectively, and the excuse of the Government is that this was a matter for private effort. Did not our Ministers of State know that other civilized countries granted efficient State aid, and, further, that private effort had provided in Great Britain less than 10 per cent. of the sum thus furnished in the United States in addition to State aid? Were they content that we should go under in the great struggle of the modern world because the Ministries of other States were wiser, and because the individual citizens of another country were more generous than our own?

Paucity of Private Endowments.

What were the facts relating to private endowment in this country? In depending in our country upon this form of endowment we were trusting to a broken reed. If we took the twelve English University Colleges, and forerunners of universities, unless they were to perish from lack of knowledge, it was seen that private effort during sixty years had found less than £4,000,000—that is, £2,000,000 for buildings and £40,000 a year income. This gave an average of £166,000 for buildings, and £3,300 for yearly income. What was the scale of private effort they had to compete with in regard to the American Universities? In the United States, during the last few years, universities and colleges had received more than £49,000,000 from this source alone; private effort supplied nearly £7,000,000 in the years 1898-1900. In Germany, the buildings of the new University of Strassburg had already cost nearly a million; about as much as had yet been found by private effort for buildings in Manchester, Liverpool, Birmingham, Bristol, Newcastle, and Sheffield. The Government annual endowment of the same German university was more than £40,000. The State endowment of the University of Berlin in 1891-2 amounted to £168,777. The more did we find that we to a large extent lack both the sources of endowment upon one or other, or both, of which other nations depended. To compete on equal grounds with other nations we must have more universities, a far better endowment of all the existing ones, not forgetting better opportunities for research on the part of both professors and students. Another crying need was that of more professors and better pay. Another was the reduction of fees; they should be reduced to the level existing in those countries which were competing with us—to, say, one-fifth of their present rates, so as to enable more students in the secondary and technical schools to complete their education.

At present there were almost as many professors and instructors in the universities and colleges of the United States as there were day students in the universities and colleges of the United Kingdom. How about local effort? Any one who studied the statistics of modern municipalities would see that it was impossible for them to raise rates for the building and upkeep of universities. The buildings of the most modern university in Germany had cost a million. For upkeep the yearly sums found, chiefly by the State, for German universities of different grades, taking the incomes of seven out the twenty-two universities as examples, were:

First class ...	Berlin	£130,000
Second class ...	Bonn, Göttingen	56,000
Third class...	Königsberg, Strassburg	48,000
Fourth class ...	Heidelberg, Marburg	37,000

Thus, if Leeds, which was to have a university, was content with the fourth-class German standard, a rate must be levied of 7d. in the pound for yearly expenses, independent of all buildings. But our towns were already at the breaking strain. During the last fifty years, in spite of enormous increases in rateable values, the rates had gone up from about 2s. to about 7s. in the pound for real local purposes. But no university could be a merely local institution.

How to get more Universities.

In the first place, let us inquire if our universities were equal in number to those of any two nations commercially competing with us. In the United Kingdom we had until quite recently 13. Of these, one was only three years old as a teaching university, and another was still merely an examining Board. In Germany there were 22 universities, in France (under recent legislation) 15, in Italy 21. It was difficult to give the number in the United States, because it was clear from the tables given in the report of the Commissioner of Education that some colleges were more important than some universities, and both gave the degree of Ph.D., but of universities in title there were 134. Among these there were 46 with more than 50 professors and instructors, and 13 with more than 150.

What will they Cost?

The comparison shows that they wanted eight new universities, some of which, of course, would be colleges promoted to university rank and fitted to carry on university work. Three of them were already named—Manchester, Liverpool, Leeds. He had spent a year in making inquiries of friends conversant with the real present needs of each of the universities, old and new. He had obtained statistics which would fill a volume, and personally he believed that £24,000,000 at least was required to bring our university system up to anything like the level insisted upon both in the United States and in Germany. Even Oxford, their oldest university, would still continue to be a mere bundle of colleges unless three millions were provided to enable the University, properly so-called, to take her place among her sisters of the modern world; and Sir Oliver Lodge, the principal of the very youngest University, Birmingham, had shown in detail how five millions could be usefully and properly applied in that one locality to utilize for the good of the nation the enthusiasm and scientific capacity which were only waiting for adequate opportunity of development. How was this money to be raised? He replied, without hesitation, let £24,000,000 be set apart from one asset, our national wealth, to increase the other, brain power. Let it be assigned and borrowed as it was wanted; there would be a capital sum for new buildings to be erected in the next five or ten years, the interest of the remainder to go towards increased annual endowments. There need be no difficulty about allocating money to the various institutions. Let each University make up its mind as to which rank of the German Universities it wished to emulate. When this claim had been agreed to the sums necessary to provide the buildings and teaching staff of that class of university should be granted without demur. This sum was not to be regarded as practically gone when spent; it was a loan which would bear a high rate of interest. Sir John Brunner, in a speech connected with the Liverpool School of Tropical Medicine, stated recently that if we as a nation were now to borrow ten millions of money in order to help science by putting up buildings and endowing professors, we should get the money back in the course of a generation a hundredfold. He added that there was no better investment for a business man than the encouragement of science. According to Sir Robert Giffen, the United Kingdom as a going concern was in 1891 worth £16,000,000,000. Were we to put aside £24,000,000 for gradually organizing, building, and endowing new universities, and making the existing ones more efficient, we should still be worth £15,976,000,000, a property well worth defending by all the means, and chief among these brain power, they could command.

Research.

Education, after all, was but a means to the end, which, from the national point of view, was the application of old and the production of new knowledge. Its national importance, apart from education, was now so generally recognized that in all civilized nations except our own means of research were being daily more amply provided for all students after they had passed through their University career. It was imagined by many who had given no thought to the matter that this research should be closely allied with some application of science being utilized at the time. Nothing could be further from the truth; nothing could be more unwise than such a limitation. Surely all the laws of Nature would be ultimately of service, and therefore there was much more future help to be got from a study of the unknown and the unused than we could hope to obtain by continuing the study of that which was pretty well known and utilized already. If we so organized our teaching forces that we could use them at all stages, from the gutter to the University, to sift out potential Faradays—to utilize the mental products whic otherwise would be wasted -it was only by enabling such men to continue their learning after their teaching was over that we should be able to secure the greatest advantage which any educational system could afford. It was now more than 30 years ago since his attention had been specially drawn to this question of the endowment of research—first, by conversations with M. Dumas, the Permanent Secretary of the Academy of Sciences; and, secondly, by his association with Sir Benjamin Brodie and Dr. Appleton in their endeavours to call attention to the matter in this country. At that time a general scheme of endowment suggested by Dumas was being carried out by Dury. This took the form of the *Ecole Spéciale des Hautes Etudes;* it was what our fellowship system was meant to be—an endowment of the research of post-graduate students in each seat of learning. The movement in England began in 1872, when a society for the organization of academical study was formed in connexion with the inquiry into the revenues of Oxford and Cambridge, and there was a famous meeting at the Freemasons' Tavern, Mark Pattison being in the chair. Brodie, Rolleston, Carpenter, Burdon-Sanderson were among the speakers, and the first resolution carried was:

> That to have a class of men whose lives are devoted to research is a national object.

The movement died in consequence of the want of sympathy of the University authorities. In 1874 the subject was inquired into by the late Duke of Devonshire's Commission, and, after taking much remarkable evidence, including that of Lord Salisbury, the Commission recommended to the Government that the then grant of £1,000, which was expended by a committee appointed by the Royal Society on instruments needed in researches carried on by private individuals, should be increased, so that personal grants should be made. This recommendation was accepted and acted on; the grant was increased to £4,000, and finally other societies were associated with the Royal Society in its administration. The committee, however, was timorous, possibly owing to the apathy of the Universities and the general carelessness on such matters, and only one personal grant was made; the whole conception fell through. Meantime, however, opinion had become more educated and alive to the extreme importance of research to the nation, and in 1891 a suggestion was made to the Royal Commission which administered the proceeds of the 1851 Exhibition that a sum of about £6,000 a year available for scholarships should be employed in encouraging post-graduate research throughout the whole empire. The suggestion was carried through by Lord Playfair's enthusiastic support. This system had been at work ever since, and the good that had been done by it was now generally conceded.

A Scientific National Council.

In referring to the new struggle for existence among civilized communities, Sir Norman Lockyer said he had pointed out that the solution of a large number of scientific problems was now daily required for the State service, and that in this and other ways the source and standard of national efficiency had been greatly changed. Much evidence bearing upon the amount of scientific knowledge required for the proper administration of the public departments, and the amount of scientific work done by and for the nation, was brought before the Royal Commission on Science, presided over by the late Duke of Devonshire now more than a quarter of a century ago. The Commission unanimously recommended that the State should be aided by a scientific council in facing the new problems constantly arising. But while the home Government had apparently made up its mind to neglect the advice so seriously given, it should be a source of gratification to all to know that the application of the resources of modern science to the economic, industrial, and agricultural development of India had for many years engaged the earnest attention of the Government of that country. The Famine Commissioners of 1878 laid much stress on the institution of scientific inquiry and experiment designed to lead to the gradual increase of the food supply and to the greater stability of agricultural out-turn, while the experience of recent years had indicated the increasing importance of the study of the economic products and mineral-bearing tracts. Lord Curzon had recently ordered the heads of the various scientific departments to form a Board, which should meet twice annually, to begin with, to formulate a programme and to review past work. The Board was also to act as an advisory committee to the Government, providing, among other matters, for the proper

co-ordination of all matters of scientific inquiry affecting India's welfare. The importance of such a Board was many times greater at home, with so many external as well as internal interests to look after. It might be asked, What is done in Germany, where science is utilized and fostered far more than here? The answer was, There is such a council, very much like what our Privy Council once was. It consists of representatives of the Ministry, the universities, the industries and agriculture. It is small, consisting of about a dozen members, consultative, and it reports direct to the Emperor. He was informed that what this council advised generally became law. We seemed to be still in the Palaeolithic age in such matters, the chief difference being that the sword had replaced the flint implement. Some might say that it was contrary to our habit to expect the Government to interest itself too much or to spend money on matters relating to peace, that war dangers were the only ones to be met or to be studied. But this view left science and the progress of science out of the question. In conclusion Sir Norman Lockyer appealed to his audience to gird up their loins and see to it that the science of the British Empire should no longer remain unorganized.

Finances.

The report of the General Treasurer (Professor Carey Foster) was presented. It showed an expenditure for the year 1902-3 of £3,468 and receipts to the amount of £4,117, the balance thus being £649. Among the items of expenditure were a contribution of £750 to the Antarctic Expedition, and grants to committees, amounting to £845, allotted at the Belfast meeting. The balance brought forward from last year was £1,565. The investments of the Association amounted to £10,101.

Section of Geography.

Dr. Tempest Anderson gave an interesting description of phenomena attending the recent volcanic eruptions in the West Indies. Dr. Anderson was nominated, along with Dr. J. S. Flett, by the Committee appointed by the Royal Society to investigate the eruptions, to proceed to the scene and to report upon them. They visited St. Vincent and afterwards Martinique. The lecture was illustrated by a series of very beautiful photographs showing the terrible devastation and extraordinary changes wrought by the eruptions.

Section of Zoology.

In this Section the opening address was delivered by the President, Professor Sydney J. Hickson. He began with a review of the provision made in this country for the advancement of biological science since the last meeting of the British Association at Southport twenty years before. He said that notwithstanding the important part which that branch of science had played in contributing to the sum of useful human knowledge during the last two decades, the progress made in this direction was far from satisfactory. Neither in the older Universities of Oxford and Cambridge, nor in the colleges and national institutions situated in London, nor in the newer universities and colleges of the provinces, had any new posts been created or adequately endowed which enabled the holder to devote a reasonable amount of his time to the pursuit of biological knowledge. In one respect, however, he might notice and acknowledge with gratitude an improvement in their position. In the laboratory accommodation both in the universities and on the sea coast, they were a good deal better off than they were. These institutions had, however, been built and were being maintained almost entirely by funds supplied by private benefactors, or out of the inadequate resources of the universities. The Treasury had made a provisional grant of £1,000 per annum towards the maintenance of the work done by the Marine Biological Association, but, apart from this, there had been no increase in the support given from public funds.

In Germany, France, Belgium, Holland, and more particularly in the United States of America, progress had been rapid and continuous. But if the research done by English zoologists had not been as great in amount as it might have been, it might be truly said that they had fully maintained its standard as regards quality. They had all realized that in this country more than in any other that was called civilized, there prevailed among all classes an extraordinary ignorance of the first principles of biological science. The science of natural history was as a closed book to most of those who after a public school and university education had attained to positions of trust and responsibility in the government of the country and its cities. Moreover there were many who had gained a high position as men of science, and whose opinion was frequently quoted as authoritative on questions affecting science in general, who were more ignorant of the first principles of the science of biology than the Dutch schoolboy of 15 years of age.

Dealing with the practical problems confronting biologists, Professor Hickson said that the growth of our great cities and the improvement in our ideas of sanitation had brought forward as important problems for consideration the purity of the water supply and the disposal of sewage. The municipal authorities at last realized that these problems could only be satisfactorily met by elaborate scientific investigation, and they had found that it was not only desirable for sanitary reasons, but also profitable to call in men of science for consultation and advice. At present, however, these problems were approached from only two points of view—the chemical and the bacteriological—the effect or effects of other organisms than bacteria upon the character of the sewage effluent and the purity of water for drinking purposes being neglected. He was very much impressed by the fact that at the meeting of the Sanitary Institute last year in Manchester the speakers used the expressions "bacteriological examination" and "biological examination" as if they were synonymous, and no mention was made either of the animals or plants which were invariably present, and materially assisted, if they were not actually necessary for the maintenance of the most suitable balance of life in these waters. The time had come when an inquiry should be made of the organisms other than bacteria that were normally present both in waters at the sewage works and in the large reservoirs which supplied cities with drinking water. He could give several examples which showed that our ignorance of the general balance of animal and vegetable life in the large reservoirs was profound, and that a systematic inquiry conducted by competent persons would most certainly lead to knowledge which would be of great scientific importance, and in the long run remunerative to the community. An investigation such as this, which was really for the benefit of the whole community, should be conducted by a central authority at the public expense.

Proceeding to speak of the application of knowledge to practice, Professor Hickson said that at the time the Association last met in Southport no one would have ventured to predict that the study of the anatomy and life-history of the diptera, or the general biology of the minute sporozoa, would have any direct bearing upon the development of our industries. But to-day, by our knowledge of the mosquito *Anopheles*, and the sporozoan parasite it carried, they were in a position to destroy or ameliorate the malaria pest which had hindered the commercial development of so many of our colonies in tropical countries, and by encouraging the development of such countries they were assisting to a very material extent our home industries and the general trade of the country. It would be of very little profit to this country to endow munificently the technical institutions and those branches of science to which the adjective "applied" was given, to build British "Charlottenburgs," and to attract by handsome salaries the most distinguished professors to the study of the application of science, if at the same time they starved and allowed to sink into insignificance the fundamental sciences upon which the whole superstructure rested. The distinction drawn between pure and applied science was, however, in danger of being broadened and deepened rather than diminished by the recent activity in the foundation of schools and colleges for technical instruction.

Section of Anthropology.

The President of the Section, Professor Johnson Symington, M.D., F.R.S., of Queen's College, Belfast, in his opening address treated of the relation between the external and internal form of the cranial wall, and the further relation between the inner cranial wall and the surface convolutions of the brain. According to a report in the *Times* he said that since the institution of that Section nearly twenty years ago, the development, growth, and racial peculiarities of both skull and brain had attracted an ever-increasing amount of attention. The introduction of new and improved methods for the study of the structure of the brain and the activity of an able band of experimentalists had revolutionized their knowledge of the anatomy and physiology of the higher nerve centres. The value of the results thus obtained was greatly enhanced by the consciousness that they bore the promise of still greater advances in the

near future. If the results obtained by the craniologist had been less marked, this arose mainly from the nature of the subject, and was certainly not due to any lack of energy on their part. Craniological collections were continually increasing, and the various prehistoric skullcaps from the Neanderthal to the Trinil still formed the basis of interesting and valuable memoirs. While the addition to their general knowledge of cerebral anatomy and physiology had been so striking, those aspects of these subjects which were of special anthropological interest had made comparatively slight progress, and could not compare in extent and importance with the advantages based upon a study of fossil and recent crania. These facts admitted of a ready explanation. Brains of anthropological interest were usually difficult to procure and to keep, and required the use of special and complicated methods for their satisfactory examination, while skulls of the leading races of mankind were readily collected, preserved, and studied. Vigorous attacks had not infrequently been made upon the craniometric systems at present in general use, and it must be admitted that craniologists as a whole had concentrated their attention mainly on the external contour of the skull, and had paid comparatively little attention to the form of the cranial cavity. The outer surface of the cranium presented features due to other factors than brain development, and an examination of the cranial cavity not only gave important information as to brain form, but by affording a comparison between the external and internal surfaces of the cranial wall it gave a valuable clue to the real significance of the external configuration. Beyond determining its capacity, they could do but little towards an exact investigation of the cranial cavity without making a section of the skull. Forty years ago Professor Huxley in his work, *On the Evidence of Man's Place in Nature*, showed the importance of a comparison of the basal with the vaulted portion of the skull, and maintained that until it should become "an opprobrium to an ethnological collection to possess a single skull which is not bisected longitudinally" there would be "no safe basis for that ethnological craniology which aspires to give the anatomical characters of the crania of the different races of mankind." Professor Cleland and Sir William Turner had also insisted upon this method of examination, and only two years ago Professor D. J. Cunningham, in his presidential address to this Section, quoted, with approval, the forcible language of Huxley. The curators of craniological collections appeared, however, to possess an invincible objection to any such treatment of the specimens under their care. Even in the Hunterian Museum in London, where Huxley himself worked at this subject, among several thousands of skulls scarcely any had been bisected longitudinally, or had the cranial cavity exposed by a section in any other direction. The method advocated so strongly by Huxley was not only essential to a thorough study of the relations of the basi-cranial axis to the vault of the cranium and to the facial portion of the skull, but also permitted of casts being taken of the cranial cavity—a procedure which had been too much neglected by craniologists. If a cast were taken of the cranial cavity and compared with the brain, which had previously been carefully hardened *in situ* before removal, it would be found that the cast not only corresponded in its general form to that of the brain, but showed a considerable number of cerebral fissures and convolutions. This moulding of the inner surface of the skull to the adjacent portions of the cerebral hemispheres was usually much more marked at the base and sides than over the vault. Since the specific gravity of the brain tissue was higher than that of the cerebro-spinal fluid, the cerebrum tended to sink towards the base and the fluid to accumulate over the vault: hence probably these differences admitted of a simple mechanical explanation. Except under abnormal conditions, the amount of cerebro-spinal fluid between the skull and the cerebral convolutions was so small that from a cast of the cranial cavity they could obtain not only a good picture of the general shape and size of the higher parts of the brain, but also various details as to the convolutionary pattern. The question of the relations of the outer surface of the cranium to its inner surface and to the brain had engaged the attention of experts as well as the "man in the street" since the time of Gall and Spurzheim, and one might naturally suppose that the last word had been said on the subject. This, however, was far from being the case. All anatomists were agreed that the essential function of the cranium was to form a box for the support and protection of the brain, and it was generally conceded that during the processes of development and growth the form of the cranium was modified in response to the stimulus transmitted to it by the brain. In fact, it was brain growth that determined the form of the cranium, and not the skull that moulded the brain into shape. This belief, however, need not be accepted without some reservations. Even the brain might be conceived as being influenced by its immediate environment. There were probably periods of development when the form of the brain was modified by the resistance offered by its coverings, and there were certainly stages when the brain did not fully occupy the cranial cavity.

The New Phrenology.

Whatever might be the precise influences that determined skull and brain growth, there could be no doubt but that within certain limits the external form of the cranium served as a reliable guide to the shape of the brain. Statements such as those by Dr. J. Deniker, "that the inequalities of the external table of the cranial walls have no relation whatever with the irregularities of the inner table, and still less have anything in common with the configuration of the various parts of the brain," were of too general and sweeping a character. Indeed, various observers had drawn attention to the fact that in certain regions the outer surface of the skull possessed elevations and depressions which closely corresponded to definite fissures and convolutions of the brain. Many years ago Sir William Turner, who was a pioneer in cranio-cerebral topography, found that the prominence on the outer surface of the parietal bone, known to anatomists as the parietal eminence, was situated directly superficial to a convolution of the parietal lobe of the brain, which he consequently very appropriately named "the convolution of the parietal eminence." Quite recently Professor G. Schwalbe had shown that the position of the third or inferior frontal convolution was indicated by a prominence on the surface of the cranium in the anterior part of the temple. This area of the brain was of special interest to all students of cerebral anatomy and physiology, since it was the discovery by the illustrious French anthropologist and physician, M. Broca, that the left inferior frontal convolution was the centre for speech, that laid the scientific foundation of our present knowledge of localization of function in the cerebral cortex. This convolution was well known to be much more highly developed in man than in the anthropoid apes, and the presence of a human cranial speech bump was usually easily demonstrated. The faculty of speech, however, was such a complicated cerebral function that the "new" phrenologist should be cautious in estimating the loquacity of his friends by the degree of prominence of this part of the skull, more particularly as there were other and more reliable methods of observation by which he could estimate this capacity.

Cranial Form and Measurement.

The cranium was not merely a box developed for the support and protection of the brain, and more or less accurately moulded in conformity with the growth of that organ. Its antero-lateral portions afforded attachments to the muscles of mastication and supported the jaws and teeth, while its posterior part was liable to vary according to the degree of development of the muscles of the nape of the neck. Next to the brain the most important factor in determining cranial form was the condition of the organs of mastication—muscles, jaws, and teeth. There was strong evidence in favour of the view that the evolution of man from microcephaly to macrocephaly had been associated with the passage from a macrodontic to a microdontic condition. The modifications in the form of the cranium due to the influence of the organs of mastication had been exerted almost entirely upon its external table; hence external measurements of the cranium, as guides to the shape of the cranial cavity and indications of brain development, while fairly reliable in the higher races, became less and less so as we examined the skulls of the lower races, of prehistoric man, and of the anthropoid apes. One of the most important measurements of the cranium was that which determined the relation between its length and breadth and thus divided skulls into long or short, together with an intermediate group neither distinctly dolichocephalic nor brachycephalic. These measurements were expressed by an index in which the length was taken as 100. If the proportion of breadth to length was 80 or upwards, the skull was brachycephalic: if between 75 and 80, mesaticephalic; and below 75, dolichocephalic. Such a measurement was not so simple a matter as it might appear at first sight, and craniologists might themselves be classified into groups according as they had selected the nasion, or depression at the root of the nose,

the glabella, or prominence above this depression, and the ophryon, a spot just above this prominence, as the anterior point from which to measure the length.

The Anterior Point of Measurement.

The difficulties of estimating the extent of the cranial cavity by external measurements and the fallacies that might result from a reliance upon this method were especially marked in the case of the study of the prehistoric human calvaria, such as the Neanderthal and the Trinil and the skulls of the anthropoid apes. The glabella could not be selected as the anterior point from which to measure the length of the cranium, and must, like the zygomatic arches and occipital protuberance, be excluded from our calculations if we desired to determine a true length-breadth index. The difficulty, however, was to select a definite point on the surface of the cranium to represent its anterior end, which would be free from the objections justly urged against the glabella. Schwalbe suggested the hinder end of the supraglabellar fossa, which he stated often corresponds to the beginning of a more or less distinctly marked frontal crest. He, Professor Symington, had found this point either difficult to determine or too far back. He would suggest a spot in the median line of the supraglabellar fossa, crossed by a transverse line uniting the posterior borders of the external angular processes of the frontal bone. This plan was not free from objections, but it possessed the advantages of being available for both male and female skulls. In the skull of a male gorilla which he had measured the selection of this point diminished the length of the cranium by 25 mm., thus reducing it to 137 mm. The breadth being calculated at 114 mm., the index was 83.21, and hence distinctly brachycephalic. The length of the cranial cavity was 118 mm. and the breadth 96 mm., and the length-breadth index was thus the brachycephalic one of 81.36. The measurements of this gorilla's skull showed in a very clear and obvious manner that from an external examination of the skull one might easily be misled as to the size and form of the cranial cavity, and that, in order to determine from external measurements the proportions of the cranial cavity, skull outgrowths due to other factors than brain growth must be rigorously excluded. Further, they served to emphasize the interesting fact that the gorilla's skull was decidedly brachycephalic. This character was by no means restricted to the gorilla, for it had been clearly proved by Virchow, Schwalbe, and others that all the anthropoid apes were markedly round-headed. It had been generally held that brachycephaly indicated a higher type of skull than dolichocephaly, and that the increase in the size of the brain in the higher races had tended to produce a brachycephalic skull. In estimating the value of this theory as to the evolutionary line upon which the skull had travelled, it was obvious that the brachycephalic character of the skulls of all the anthropoid apes was a fact that required consideration.

The Neanderthal and Trinil Skullcaps.

Few if any fossils had attracted an equal amount of attention, or given rise to such keen controversies, as the Neanderthal and the Trinil skullcaps. According to some authorities both these skull caps were undoubtedly human, while others held that the Neanderthal belonged to an extinct species of the genus *Homo*, and the Trinil was the remains of an extinct genus—*Pithecanthropus erectus* of Dubois—intermediate between man and the anthropoids. One of the most obvious and easily recognized peculiarities of these skull caps was the very marked prominence of the supraorbital arches. The glabella-occipital length of the Neanderthal was 204 mm., and the greatest transverse diameter, which was over the parietal region, was 152 mm., an index of 74.51—while the much smaller Trinil calvaria, with a length of 181 mm. and a breadth of 130 mm., had an index of 71.8. Both of these skulls were, therefore, slightly dolichocephalic. Schwalbe had corrected these figures by making reductions in their lengths on account of the frontal "outworks," so that he estimated the true length-breadth index of the Neanderthal as 80, and that of the Trinil as 75.5. These indices, thus raised about 5 per cent., were considered to represent approximately the length-breadth index of the cranial cavity. A comparison of the external and internal measurements of many recent skulls with prominent glabellae would probably show a greater difference than that calculated by Schwalbe for the Neanderthal and Trinil specimens. Schwalbe had devised a series of measurements to illustrate what he regarded as essential differences between the Neanderthal skullcap and the corresponding portion of the human skull, and had arrived at the very important and interesting conclusion that the Neanderthal skull possessed a number of important peculiarities which differentiated it from the skulls of existing man, and showed an approximation towards those of the anthropoid apes. He had maintained that in recognizing with King and Cope the Neanderthal skull as belonging to a distinct species, *Homo Neanderthalensis*, he was only following the usual practice of zoologists and palaeontologists by whom specific characters were frequently founded upon much less marked differences. He also maintained that as the Neanderthal skull stood in many of its characters nearer to the higher anthropoids than to recent man, if the Neanderthal type was to be included under the term *Homo sapiens*, then this species ought to be still more extended, so as to embrace the anthropoids. While yielding to no one in admiration for the thoroughness and ability with which Schwalbe had conducted his elaborate and extensive investigations on this question, the President felt that Schwalbe had not sufficiently recognized the significance of the large cranial capacity of the Neanderthal skull in determining the zoological position of its owner, or made sufficient allowance for the great variations in form which skulls undoubtedly human might present. The length and breadth of the Neanderthal calvaria were distinctly greater than in many living races, and compensated for its defect in height, so that it was capable of lodging a brain fully equally in volume to that of many existing savage races, and at least double that of any anthropoid ape. If the characters of the Neanderthal calvaria were so distinctive as to justify the recognition of a new species, a new genus ought to be made for the Trinil skullcap. In nearly every respect it was distinctly lower in type than the Neanderthal, and yet many of the anatomists who had expressed their opinion on the subject maintained that the Trinil specimen was distinctly human.

Results of Investigations.

Important and interesting as were the facts which might be ascertained from a study of a series of skulls regarding the size and form of the brain, it was evident that there were distinct limits to the knowledge to be obtained from this source. Much additional information as to racial characters would undoubtedly be gained had we collections of brains at all corresponding in number and variety with the skulls in our museums. We knew that as a rule the brains of the less civilized races were smaller, and the convolutions and fissures simpler, than those of the more cultured nations, but beyond this little had been definitely determined. As the results of investigations in human and comparative anatomy, physiology, and pathology, we knew that definite areas of the cerebral cortex were connected with the action of definite groups of muscles, and that the nervous impulses starting from the organs of smell, sight, hearing, and common sensibility reached defined cortical fields. All these, however, did not cover more than a third of the convoluted surface of the brain, and the remaining two-thirds were still to a large extent a *terra incognita* so far as their precise function was concerned. Was there a definite localization of special mental qualities or moral tendencies, and if so, where were they situated? These were problems of extreme difficulty, but their interest and importance were difficult to exaggerate. In the solution of this problem anthropologists were bound to take an active and important part. When they had collected information as to the relative development of the various parts of the higher brain in all classes of mankind with the same thoroughness with which they had investigated the racial peculiarities of the skull, the question would be within a measurable distance of solution.

Section of Mathematical and Physical Science.

The President of the Section, Mr. Charles Vernon Boys, F.R.S., in the course of his address spoke of radium. He characterized the properties of radium as transcending all others in their intrinsic importance and revolutionary possibilities. The discovery by Professor and Mme. Curie of what seemed to be the everlasting production of heat in easily measurable quantity by a minute amount of radium compound was so amazing that even when he had seen the heated thermometer he was hardly able to believe what he had seen. This discovery, which could barely be distinguished from that of perpetual motion, which it was an axiom of science to call impossible, had left every chemist and physicist in a state of bewilderment. Further, Sir W. Crookes had devised an experiment in which a particle of radium kept a screen bombarded for ever, each collision producing a microscopic

flash of light, the dancing and multitude of which forcibly compelled the imagination to follow the reasoning faculties and realize the existence of atomic tumult. Thanks to the industry and genius of a host of physicists at home and abroad, the mystery was being attacked and theories were being invented to account for the marvellous results of observation. An atom of radium could certainly produce an emanation that was something like a gas, which escaped and carried with it wonderful properties; but the atom, the thing which could not be divided, remained and retained its weight. The emanation was truly wonderful. It was self-luminous, it was condensed by extreme cold and vaporized again; it could be watched as it oozed through stopcocks, or hurried through tubes, but in amount it was so small that it had not yet been weighed. Sir W. Ramsay had treated it with a chemical cruelty that would well nigh have annihilated the most refractory or permanent known element; but this evanescent emanation came out of the ordeal undimmed and undiminished. The radium atom sent out three kinds of rays, one kind being much the same as Roentgen rays, but wholly different in ionizing power, according to the experiments of Strutt. Each of these consisted of particles which were shot out, but had different penetrative power; they were differently deflected by magnets and also by electricity, and the quantity of electricity in relation to the weight was different, and yet the atom, the same atom, remained unchanged and unchangeable. Not only this, but radium or its emanations or its rays must gradually create other bodies different from radium, and thus, so we were told, one at least of these new gases which but yesterday were discovered had its origin. Then, again, just as these gases had no chemical properties, so the radium which produced them in some respects behaved in a manner contrary to that of all proper chemicals. It did not lose its power of creating heat even at the extreme cold of liquid air, while at the greater degree of cold of liquid hydrogen its activity was found by Professor Dewar to be actually greater. Unlike old-fashioned chemicals which, when they were formed, had all their properties properly developed, radium and its salts took a month before they acquired their full power (so Dewar told us), and then, for anything we knew to the contrary, proceeded to manufacture heat, emanations, three kinds of rays, electricity, and gases for ever. For ever; well, perhaps not for ever, but for so long a time that the loss of weight in a year (calculated, he supposed, rather than observed) was next to nothing. Professor Rutherford believed that thorium or uranium, which acted in the same kind of way, but with far less vigour, would last a million years before there was nothing left, or at least before they were worn out; while the radium, preferring a short life and a merry one, could not expect to exist for more than a few thousand years. In this time one gram would evolve one thousand million heat-units, sufficient, if converted into work, to raise 500 tons a mile high; whereas a gram of hydrogen, our best fuel, burned in oxygen, only yielded 34,000 heat-units, or one-thirty-thousandth part of the output of radium. He believed that this was no exaggeration of what we were told and what was believed to be experimentally proved with regard to radium; but if the half of it were true the term "the mystery of radium" was inadequate; the miracle of radium was the only expression that could be employed.

Section of Zoology.

Dr. Gerald Leighton, in an account of Some Recent Observations on British Reptiles, pointed out that it had long been a matter of dispute and doubt whether the British adder (*Vipera berus*) ever took to the water as a matter of ordinary habit. Most ophiologists denied this, or at any rate had not observed it. Years of observation in English counties had failed to bring forward a single case, but the result of some correspondence indicated that in Scotland the habit was not unusual. Investigations and experiment with adders in the Scottish Highlands proved that in that district adders were in the habit of swimming the streams and rivers, a habit which had become incorporated in some of the folklore of the Highlands. Fatal cases of adder-bite were by no means so rare in Great Britain as most people supposed. One was reported last year, and now a few weeks ago there was another in South Wales. Both were in young boys. In addition to the very restricted distribution of the smooth snake (*Coronella austriaca*) in Surrey, Hants, and Dorset, it was known that Berkshire was also a habitat twenty years ago. For years, however, no specimen had been seen in that county, and it was supposed to have become locally extinct. During the present summer it had reappeared, one specimen having been taken near Wellington College. Probably this species was more widely distributed than we knew of, its close resemblance to the adder causing it to be destroyed without recognition at the hands of those who encountered it. Associated with the smooth snake in its distribution was the sand lizard (*Lacerta agilis*). This rare lizard was found in the same parts of the counties above mentioned, and was the staple food of the smooth snake. But the sand lizard also occurred in very considerable numbers in the neighbourhood of Southport, and practically nowhere else than the places stated. Here, however, the smooth snake had never been known to occur, and it was curious that this lizard should be so common locally and absent from all other places north of the Thames.

Section of Chemistry.

Professor Dewar read a paper by Dr. Allan Macfadyen on the Application of Low Temperatures to the Study of Biological Problems. The paper described the employment of low temperatures for effecting the disintegration of living cells. Liquid air appeared to be the most convenient means of obtaining the necessary cold, and its temperature—190° C.—prevented chemical changes. Diseased animal tissues had been treated by its aid, and their intracellular constituents obtained, for example, epithelium, cancer tissues, etc. Moulds, yeasts, and bacteria had been rapidly triturated under the same conditions, and the respective cell juices submitted to examination. In this way it had been demonstrated that the typhoid organism contained within itself a toxin. From these and other researches it had become evident that there existed a distinct class of toxins and ferments which were contained and operated within the cell or bacterium. To this class belonged the diphtheria toxin which had been so successfully used in the preparation of diphtheria antitoxin. Photogenic bacteria preserved their normal luminous properties after exposure to the temperature of liquid air, but the effect of grinding the cells at the same temperature was to abolish the luminosity of the cells. The rabies virus had not yet been detected or isolated. The seat of the unknown rabies virus was the nervous system, and if the brain substance of a rabid animal were ground for a given length of time at the temperature of liquid air, its infective properties as regarded rabies were abolished.

Evening Lecture.

Palaeolithic Man.

Dr. R. Munro lectured on Man as Artist and Sportsman in the Palaeolithic Period. He observed that so long as *Homo sapiens* was believed to occupy a higher platform in the organic world than other animals by virtue of his special endowments, no one apparently thought of looking for evidence of his origin and history in the obscure vista of prehistoric times. But though this belief was modified about half a century ago by the doctrine of organic evolution, still for a long time no rational explanation was forthcoming of how man acquired his distinguishing characteristics; and even now their origin and development were among the most obscure problems within the whole range of anthropology. So long ago as 1893 he had, as President of the Anthropological Section of the Association, advocated the hypothesis that the origin of the higher mental manifestations of man was primarily due to the attainment of the erect attitude which, by entirely relieving the fore limbs of their former function as locomotive organs, afforded him the opportunity of entering on a new phase of existence in which intelligence and mechanical skill became the governing factors. The result was the substitution for Nature's means of defence and self-preservation of a variety of implements, weapons, and tools made with their own hands; and hence the subsequent wellbeing of these novel bipeds became dependent on their ability to interpret and utilize the laws and forces of Nature. As time went on they began to recognize the value of reasoning as the true source of inventive skill, and this resulted again in a steady increase of human intelligence and brain substance. The attainment of the erect posture and the consequent increase of intelligence produced marked effects in the shape and size of the skull, and therefore, for more or less mechanical reasons, in the jaws and teeth and chin. There were thus two distinct lines on which investigations into the past history of mankind might profitably be conducted, for, just as the human skull, as compared with that of one of the higher apes, had undergone striking changes, both in form and

capacity, before reaching the normal type of modern civilized races, so, similarly, the artificial products of man's hands showed a steady improvement in type, technique, and mechanism commensurate with his knowledge of the laws of Nature. Indeed, the trail of humanity along its entire course was strewn with the discarded weapons and tools which from time to time had to give way to others of greater efficiency. These observations were necessary to show the nature and true significance of the methods by which anthropologists had been enabled to prosecute their researches far beyond the limits of the historic period. The special subject of the discourse to illustrate these results, said Dr. Munro, consisted of some exceptionally interesting human relics chiefly belonging to the later palaeolithic period in Europe. They had been most abundantly found among the culinary débris of a race of hunters who inhabited caves and rock-shelters in France, Switzerland, the South of England, and other parts of Europe. Among the most remarkable objects collected in these localities were representations of various animals, carved, and sometimes sculptured, on pieces of ivory, horn, bone, and stone. Dr. Munro, by means of several fine lantern slides, exhibited these specimens on the large screen. In exhibiting these slides he dwelt on their age, and showed that the time which had elapsed since the palaeolithic artists and hunters lived embraced the entire duration of the historic, iron, bronze, and neolithic ages, together with an interval of unknown length between the neolithic and palaeolithic civilizations. Of the later discoveries of these human relics the rock-shelter of Schweizersbild, near Schaffhausen, was one of the best examples, as its débris indicated that the site was a constant rendezvous for bands of roving hunters from the Palaeolithic Period down to the Bronze Age. Dr. Nuesch, its explorer, had expressed the opinion, founded on the relative thickness of the deposits and the character of the fauna represented in them, that the antiquity of its earliest human relics could not be less than 20,000 years. And since the art-remains found in that station and in the adjacent cave of Kesslerloch were precisely similar to those of the analogous stations in France, the above estimate could be accepted as equally applicable to the latter; and after all allowances for possible errors had been made, Dr. Munro said he could see no objection to Dr. Nuesch's lowest estimate of man's first appearance in Northern Switzerland—namely, 20,000 years ago. Dr. Munro went on to say that were it possible for one of our palaeolithic ancestors to sit in judgement on the comparative merits of the two civilizations, his verdict would probably be something like this: You have utilized the forces of Nature to a marvellous extent, and thereby secured the means of greatly increasing the number of your fellow-creatures; but at the same time you have multiplied the sources of disease and misery. The invention of money has facilitated the accumulation and transmission of riches among a few; but it has impoverished the many, and supplied incentives to fraud, theft, and all manner of crime. Patriarchal establishments have given way to social organizations governed by laws founded on moral sentiment and ethics; but their by-products are extreme luxury and extreme poverty. Hence, to support the weak and the unfortunate is no longer a matter of charity, but a moral obligation. Notwithstanding the size of your asylums, hospitals, and almshouses, they are always full and always on the increase. You have formulated various systems of religion, but whether founded on the principles of fetichism, polytheism, or monotheism, they are all more or less permeated with contradictory or controverted creeds and dogmas. National sport as practised with weapons of modern precision can only be characterized as legalized killing of helpless creatures. To shoot pigeons suddenly liberated from a box at a measured distance, or to slaughter overfed pheasants, or even to stalk semi-domesticated deer driven to the muzzle of a rifle all, of course, within sight of a luncheon basket is a poor substitute for the excitement and field incidents of the chase in palaeolithic times. With no better weapons than a spear, or lance tipped with a pointed flint, and a small dagger of bone or horn, we had, not infrequently, to encounter in mortal combat the mammoth, rhinoceros, cave bear, or some other fierce and hungry animal which, like ourselves, was prowling in quest of a morning meal. Such scenes had many of the elements of true sport, and, being essential to our existence, were of daily occurrence. Moreover, from the standpoint of your modern ethics, our method of sport put the combatants on something like a footing of equality and gave our opponents a fair chance of escape. Nor did we in the least infringe on the principles of modern societies against cruelty to animals. We cultivated physical qualities by the natural exercise of the senses, and personal prowess was the distinguishing prerogative of our heroes. Thus we acquired the experience, skill, strength, and courage of practised athletes—qualities which left no room for fear or cowardice. With us brain power passed almost directly from the generating organ to the muscles of the administrator; with you it has to pass through a complicated system of accumulators liable to various degrees of leakage, and it is this leakage which often sucks dry the blood-life of your civilization. Finally, the permanence of your civilization remains to be tested by the touchstone of time. For civilizations, like the genera and species of the organic world, have their life-histories determined by as fixed laws as those that govern the resultant of the parallelogram of forces. To cosmic evolution, under which, to a large extent, our race and civilization flourished, you have superadded altruism, which means the survival of the weak as well as of the strong. But altruism will continue to be a living force among civilized communities only so long as your present and prospective food supplies hold out. For, after all, the essential problem of your social existence is how to provide food for an ever-increasing population. Whenever these necessaries of life become inadequate to meet the demands of the inhabitants of this globe, then your boasted civilization comes to the end of its tether, and the only solution of the crisis will be a recurrence to the cosmic law of the survival of the fittest.

SECTION OF ANTHROPOLOGY.

In this Section Mr. JOHN L. MYRES described a pre-Mycenaean sanctuary with votive terra-cottas at Palaeokastro in Eastern Crete. The sanctuary stood on the summit of the hill called Petsofà, which bounded the bay of Palaeokastro southward, and was excavated in April, 1903. Within the enclosure were found (from the bottom upwards) a layer of undisturbed soil resting on the southward shelving rock surface; a layer of blackened ashy earth, apparently the remains of a large hearth or bonfire, full of whole and broken terra-cotta figurines, with painting of the Minôan (pre-Mycenaean) technic; a layer of disturbed soil obliterating the ashy layer and containing fragments of its figurines; over all, a rubble building of early Mycenaean date like those of the settlement site at Palaeokastro, one room of which still retained its plastered and whitewashed floor, with a plastered bench round three sides, and the remains of a door. A column base from an earlier building was found built into its foundations. The terra-cottas included figures of men and women in characteristic pre-Mycenaean costume, analogous to that shown on the frescoes at Knossos, and completed in the case of the women by gigantic and very stylish hats—a quite new feature. Other terra-cottas represented miniature oxen, rams, goats, pigs, dogs, weasels, hedgehogs, birds, chairs, miniature vases, and other objects of daily use, together with the horns and legs of a larger series of oxen, the bodies of which appeared to have been completely cleared away from the ash heap from time to time. A very large number of quite plain clay balls of about the size of a marble seemed to be votive like the other offerings, but were not so easily explained: they might, however, represent occasions of prayer or thanksgiving which defied the ingenuity of the modeller.

Mr. W. L. H. DUCKWORTH read a note describing investigations in Crete. At the invitation of the Cretan Committee of the British Association he had travelled to Athens last January and commenced observations on the skeletons of the ancient Greeks now stored in the Athenian museums, and also on the modern Greeks. Proceeding to Crete at the end of February he next investigated the modern Cretans, and finally conducted excavations at a very ancient ossuary at the eastern end of Crete. The main results of these researches were embodied in four special reports, of which the following was a summary: The ancient inhabitants of Crete in the Minôan period were of slight stature and had long, narrow heads. They practised a mode of interment singularly like that found in the case of the New Race of ancient Egypt, the corpse being laid on the left side and in a contracted position, the head directed to the east. The ancient Cretans resembled the Mediterranean race described by Sergi and others. The modern Cretans were of taller stature than their predecessors and had shorter, broader heads, especially at the eastern end of the island. The ancient Greeks of the Mycenaean period possessed long, narrow skulls and thus agreed with the early Cretans. The modern Greeks differed most markedly in this

respect from their predecessors, as their heads were shorter and broader. The reason for this was probably that the earlier race had been replaced by a different stock which might be Venetian, Albanian, or Slav, or perhaps all three elements were present. The modern Cretans had not been so fully transformed in respect of headform as the modern Greeks except in the eastern parts of Crete, where the change since the Minôan period was even more marked than in Greece. There was some reason to suppose that the original Cretan stock might have persisted in Eastern Crete, the ancient stronghold of the Eteo-Cretans of Homer. But his researches showed that such was not the case and that the remnants of the aboriginal population must be sought for elsewhere in the island, so that the inquiry would be renewed with increased zeal.

The Meeting in 1905.

At a meeting of the general committee Mr. Fuller, Agent-General for Cape Colony, in the name of the Government of the Colony, extended to the British Association an invitation to hold their meeting of 1905 in South Africa. He said that the dispatch which had conveyed to him his instructions did not ask that the meeting should be held in Cape Colony alone, as it was recognized that there were other parts of South Africa which were equally interested in the visit of the Association.

Sir Walter Peace (Agent-General for Natal) said he had been instructed by his Government to support the invitation offered by Mr. Fuller.

Mr. Fiddes (Colonial Office) said that he had been deputed to invite the British Association on behalf of Lord Milner and the Transvaal Government to include the Transvaal in their visit. The Association by visiting South Africa would undoubtedly advance the cause of science and of education, which was one of the crying wants in the Transvaal.

Professor Dewar moved that the invitation which had just been conveyed to the Association be accepted, and that the meeting of 1905 be held in South Africa.

The motion was unanimously agreed to.

Election of President for 1904.

Sir H. Roscoe moved:

That the Right Honourable Arthur James Balfour be appointed President for the meeting of 1904 at Cambridge.

Professor Forsyth seconded the motion, which was carried unanimously.

The vice-presidents and the local officers for the Cambridge meeting were then elected; and as general officers of the Association for the ensuing year Principal Carey Foster was re-elected treasurer, Major MacMahon was re-elected one of the general secretaries, and Dr. Herdman was elected as the other general secretary, in the room of Dr. D. H. Scott, resigned. Dr. J. G. Garson was re-elected general assistant secretary, and, the ordinary members of the council and the auditors having also been elected, the meeting adjourned.

THE INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

(Continued from page 614.)

The want of organization by the Local Committee was the subject of a good deal of discussion by most of the British members. There was not published, as is the case, for example, with the British Medical Association and some of the other International Congresses, a daily list of those who attend, so that, but for the accidental meeting of friends, it was impossible to say who were at the Congress. The daily journal, too, gave very inadequate reports of the proceedings of the various Sections. It was amusing to find even the Brussels newspapers finding fault with the arrangements made for their comfort. The *Petit Bleu*, for example, puts forward as an excuse for the brevity of its reports that the Central Bureau of the Congress had not deemed it necessary to facilitate the objects of the daily press, for at several of the Sections no tables had been set aside for the reporters. Notwithstanding these deficiencies, the meetings were well attended, and the Congress, on the whole, was a great success. Brussels is a good town for a Congress. The weather, too, was fine, and this circumstance contributed to make the meeting an enjoyable one.

It is impossible to give an account of all that occurred in the Sections. The number of papers was so large that it was decided not to have them read at the meetings, but to allow the various speakers simply to make remarks and to draw attention to the most salient points.

Meat Supplies.

In the Second Section there was a warm discussion upon meat supplies. The consumption of meat taken from an animal that had suffered from anthrax, farcy, and tetanus was condemned, while it was maintained that the consumption of the flesh of animals bitten by a mad dog might be allowed so long as the meat was sterilized. One would naturally think that in the act of cooking, the meat would become sterilized. How to improve the supply of milk to the poorer classes also formed the subject of discussion.

Ankylostomiasis.

One of the most interesting, certainly one of the most animated, discussions early on in the Congress was that in the Fourth Section on ankylostomiasis. It is a difficult thing at an International Congress on the Continent, and especially in Belgium, where socialistic tendencies prevail, to have even a medical or scientific subject discussed without it becoming political. We in this country scarcely see where politics come in under such circumstances, but in Belgium it is otherwise. State interference in Belgium is, comparatively speaking, limited to what it is in Germany or even in France, and that explains to some extent the political elements introduced into the discussions at a Congress of Hygiene. It was very proper that ankylostomiasis should have formed the subject of discussion, for both in Belgium and in Germany the ravages caused by the intestinal parasite are the cause of considerable disquietude. In Germany the number of cases of ankylostomiasis among the miners in the valley of the Ruhr in 1896 was 107. The numbers rose to 275 in 1900, 1,130 in 1901, and in 1902 they reached 1,355. A similar progress of the disease has occurred in Belgium. The first case of ankylostomiasis in Belgium was detected by Professor Firket in the intestine of a miner who died in Liége in 1884. In 1902 the Bacteriological Institute examined the faeces of 10,000 miners, and in 55 per cent. there were found the ova of the parasite. At Liege there is a Workman's Mutual Insurance Society. Struck by the large drain upon their funds caused by the ill-health of the miners, an inquiry showed that this was mostly due to ankylostomiasis. In 1899 and 1900 the Belgian Government stated that it could not intervene in the struggle against the disease. What the Chamber of Deputies said it had no power to do is now being done by a special annual grant of 20,000 francs from the Provincial Council of Liége, so that not only do afflicted miners receive sustenance, but bacteriological examinations can also be made. A dispensary for the treatment of ankylostomiasis in Liége has now been practically established.

It was around the treatment of this parasitic disease that a certain amount of warmth was imported into the discussion. Dr. Jorissenne of Liége recommended the following simple and inexpensive medicinal treatment—namely, 1½ to 2 grams of sulphur, 40 to 50 centigrams of terpine, and 1 to 2 grams of condurango. Dr. Perroncito of Turin, whose work on ankylostomiasis causes him to be regarded as an authority, stated that the duodenal parasite was unable to resist the action of carbolic acid in the proportion of 1 per cent., and that the extract of male fern gave excellent results; but he added that, whatever was done in the way of medicine, personal cleanliness on the part of the miners was the best remedy. After a lengthy discussion, extending over the greater part of two days, certain resolutions were adopted, which among other things included a medical examination of all miners applying for work, proper sanitary arrangements in the mines and on the surface for the disposal of excreta, that no absolute reliance can be placed upon any particular antiseptic; the provision of special dispensaries for the examination of the stools, and of the instruction of miners in hygiene by meetings, tracts, etc.

Workers in Zinc and Lead Factories.

Following immediately upon the close of the discussion on ankylostomiasis in this Section, which had been very ably presided over by the veteran Dr. Kuborn, of Seraing, the meeting proceeded to discuss the means to be adopted to preserve the health of workers employed in zinc and lead factories. Professor Dewalque having taken the chair, M. Dalbastee, in a rather animated speech, pleaded for the interdiction of the use of white lead in the painting of public buildings. Dr. Thomas Oliver, of Newcastle-upon-Tyne, subsequently addressed the meeting, and although the bulk of

his experience of lead poisoning was drawn from infirmary practice, still his position as medical expert on several of the Home Office Commissions had given him an opportunity of seeing a very large amount of industrial lead poisoning. In speaking of the symptoms, he drew attention to the frequency with which lead colic simulated appendicitis and vice versa—of the unreliability of the blue line on the gums as a sign of active poisoning, also of the very marked influence of alcohol in precipitating workpeople into plumbism. Dr. Oliver gave statistics to show that lead poisoning was declining in several of the industries in England, which he regarded as a triumph of trade hygiene. He alluded to the report on the use of lead in the potteries, which, along with Professor Thorpe, he had presented to the Home Secretary, one of the recommendations in which was the use of leadless glazes for white pottery. Dealing with the question of substitutes for white lead, raised by the previous speaker, Dr. Oliver said that while France had settled this question for herself by forbidding the use of white lead and replacing it by zinc white, the subject was not in England the public one it had become on the Continent, nor was the experience of practical men—for example, house painters, engineers, contractors, etc.—quite unanimous in regard to the equal enduring and covering powers of zinc-white compared with carbonate of lead. Professor Firket recommended better ventilation and means for the removal of fumes. Dr. Thisquieu, the Liége Inspector of Factories, maintained that the rate of infantile mortality among the lead workers was not so great as had generally been maintained. The other members who spoke expressed a strong desire to see zinc-white substituted for lead. In this discussion, as in that upon ankylostomiasis, it was all but impossible for the President to prevent it becoming political.

Other interesting discussions took place in this Section, such, for example, as fatigue in the various trades, also on the linen industry, and the resolutions moved by M. Leclerc de Pulligney, of Paris, which dealt with the renewal of air and the allowed amounts of carbonic atmosphere in the air of linen factories, also the temperature, etc. The conditions of labour in the fur trade and the health of the workpeople formed the basis of an interesting debate introduced by Dr. Glibert, Medical Inspector of Factories, Brussels, who showed that in the gums of many of the workpeople there was a blue line equal to that met with in plumbism, but which was really due to mercurial poisoning. He exhibited to the meeting two women whose gums showed this highly-developed blue line. He therefore proposed that a periodical medical examination should be made as in lead factories. Dr. T. M. Legge, of the Home Office, stated that this periodical medical examination was made in England. M. de Pulligney raised the question whether it was not possible to find another substitute for mercury in the fur trade.

Railway Hygiene.

The other Sections were employed discussing the hygiene of automobilism, also that of the navies and armies, etc. In that of Demography the desirability of having a uniform and official method of dealing with statistics was discussed, also the necessity of having uniformity in the arrangement of the statistics of births, etc. The health of railway workers and the registration of their illnesses, so that the medical officers could see at a glance the medical history of their patients, received considerable support, so too the wearing of special clothing by men when cleaning out wagons, etc. In the disinfection of railway carriages Dr. Redard, principal medical officer to the Paris railways, maintained that disinfection by gas—for example, the vapour of formic aldehyde or sulphurous acid—had no effect whatever upon tubercle bacilli, and was therefore useless. Hot air at 110° C. was one of the best of disinfectants, so too were mercuric chloride, calcium chloride, sodium hypochlorite, and potassium.

Entertainments.

Among the social treats provided for the Congress by the Local Committee mention must be made of the reception in the Hôtel de Ville by the Burgomaster of Brussels and his colleagues. No more appropriate place could have been chosen. As the members strolled through the beautifully carved and decorated rooms of this fine old building there was only one expression of pleasure with the reception. The Congress visited Antwerp and was banqueted by the Town Council. Visits were made to several of the works in and around Brussels, and to some of the inland watering-places.

ASSOCIATION NOTICES.

COUNCIL.

NOTICE OF MEETING.

A Meeting of the Council will be held in the Council Room of the Association, at 429, Strand (corner of Agar Street), London, on Wednesday, the 21st day of October next, at 2 o'clock in the afternoon.

August, 1903. Guy Elliston, *General Secretary.*

ELECTION OF MEMBERS.

Any candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

The Library is now reopened and available for the use of members.

Guy Elliston, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

Midland Branch: Derby Division (including Derby and the County of Derbyshire).—There will be a meeting of this Division at the Town Hall, Buxton, on Thursday, September 24th, at 4 p.m. Agenda: To elect four members to the Executive Committee. To pass a vote of thanks to Mr. J. Acton Southern, late Secretary of the Division. Mr. C. H. Taylor will move: "That a Subcommittee be appointed to investigate the draft Medical Acts Amendment Bill, and to report on it to the Division at an early date. That the same Subcommittee shall also consider the resolutions referred to the Division by the Council and the Representative Meeting at Swansea." (The draft Act and the resolutions were published in the Supplement to the British Medical Journal of Saturday, August 22nd.) As many points in the above Act are of great importance, the Committee hopes that members will consider it carefully. After the meeting the following items have been arranged: 5 p.m. Visit to the Devonshire Hospital. 5.30 p.m. Tea in the gardens (if fine). 6 p.m. Inspection of baths. 6.45 p.m. A dinner, which will be arranged for if a sufficient number of members wish it. Prices of tickets and place where the dinner is to be held will be intimated to such members as signify their intention of being present.—Winstan St. A. St. John, 16, Duffield Road, Derby, Honorary Secretary.

South Midland Branch.—The autumnal meeting of this Branch will be held at Bedford County Hospital, Bedford, on Thursday, October 15th, 1903, at 2 p.m., under the presidency of Mr. Audland (Wellingborough). Members wishing to read papers or show specimens must communicate at once with E. Harries Jones, Northampton, Honorary Secretary.

South Wales and Monmouthshire Branch: West Wales Division.—A meeting of this Division will be held at the Royal Gate House Hotel, Tenby, on Friday, September 25th, at 1 p.m.—S. Glanville Morris, M.D., Nantgaredig, Honorary Secretary.

South-Eastern Branch: Reigate Division.—The first meeting of this Division under the new Constitution will be held at the White Hart Hotel, Reigate, on Thursday, October 8th, at 4 p.m., Mr. Ernest C. Drake (Redhill) in the chair. Agenda: Minutes of a meeting held at Reigate June 18th. To decide when and where the next meeting shall be held, and to nominate a member of the Division to take the chair thereat. Papers have been promised by Mr. W. J. Walsham (Surgeon to St. Bartholomew's Hospital), Dr. W. S. A. Griffith (Assistant Physician-Accoucheur to St. Bartholomew's Hospital), and Mr. J. Smith Whitaker (Organizing Secretary to the Association). Members desirous of exhibiting specimens or reading notes of cases are invited to communicate at once with the Honorary Secretary. Dinner at 6 p.m.; charge 7s., exclusive of wine. The Honorary Secretary would be much obliged if members would kindly inform him by post-card whether they intend, if possible, to be present at the meeting, and if likely to remain to dinner. All members of the South-Eastern Branch are entitled to attend and to introduce professional friends.—W. A. Berridge, Redhill, Honorary Secretary.

South-Eastern Branch: Isle of Thanet Division.—The next meeting of this Division will be held at the Sea Bathing Infirmary, Margate, on Thursday, September 24th, at 4 p.m., Mr. W. K. Treves in the chair. Agenda: The adoption of Ethical Rules for the guidance of the Division. Mr. J. S. Whitaker (Organizing Secretary of British Medical Association): What can the Divisions of the British Medical Association do for the good of the profession? Mr. Treves will start a discussion on the value of Over-Feeding. Tea will be served after the meeting. All members of the South-Eastern Branch are entitled to attend these meetings and to introduce professional friends.—Hugh M. Raven, Barfield House, Broadstairs, Honorary Divisional Secretary.

Border Counties Branch: West Cumberland Division.—There will be a meeting of this Division at the Infirmary, Whitehaven, on Tuesday, September 29th, at 3.30 p.m. Agenda: (1) Chairman's address. (2) To discuss the Medical Acts Amendment Bill, the Vaccination Acts, and the resolution passed by the Representative Meeting at Swansea. (3) To discuss cases and exhibit pathological and other specimens. After the meeting there will be a dinner at the Grand Hotel at 5.45 p.m.—T. G. Mathews, 6, Scotch Street, Whitehaven.

CORRESPONDENCE.

ARE THE FEES FOR PUBLIC VACCINATION EXCESSIVE?

SIR,—As I see there is a departmental inquiry going on as to the cost of public vaccination under the new Act, and seeing that this inquiry is seemingly being carried on without any reference to the public vaccinator, perhaps I may be allowed to discuss the question from that official's point of view.

I, Sir, am a public vaccinator, and held office for some years before the passing of the present Act. A comparison, therefore, of the duties then, and under the new conditions, is necessary to arrive at a just estimate of the question of whether the remuneration now paid is as exorbitant as many would have the public believe.

Under the old Act the duties of the public vaccinator were simple in the extreme. A "station" was provided for him. Once every week, at a stated time, he had to attend there. His armamentarium consisted of his lancet and a spirit lamp, with some capillary tubes. Children were brought to him there to vaccinate, and again to inspect. His source of lymph was what he could get from the arms of those he vaccinated. His instructions were to use only the clear lymph from the vesicle and be sure and sterilize his lancet. In addition, he had to keep a record of the source of lymph—that is, A. B., No. 170, vaccinated from No. 99. He had to provide against a failure of his supply of lymph by storing up in capillary tubes as much of the humanized lymph as he thought necessary.

Having his register with him he could complete his work at the station, and even supposing he had 20 vaccinations to perform he could easily finish within the hour. Thus there was no interference with his other work. His fee was certainly small, 1s. 6d. per case successfully vaccinated, supplemented by another 1s. as bonus for efficiency. He had no further liability, need not even prescribe for an inflamed arm.

During this period my guardians, in common with most other Boards, simply ignored the Vaccination Act, the result being that many a week passed without a single child being brought to the station, and I do not think I ever in any year drew £10 in fees. At that time my district contained a population of from 80,000 to 90,000, and the birth-rate was about 34 per mille, and it must be noted that not more than 20 per cent. of the children were vaccinated.

Look now at the change that has taken place. What has the public vaccinator to do now in comparison with what he had under the old Act? First he receives a list of unvaccinated children (4½ months old) from the vaccination officer; he has to arrange that list to fall in with his other work. Then he must send out (twenty-four hours clear before he visits) the statutory notice of his intention to visit (paying the postage). He calls on the date specified, and very probably finds the door locked, the people having "gone for a walk," etc. He probably has to repeat his visit three or four times before he finds some one at home who gives him the information that "We're not going to have it done," or "We're going to take it to our own doctor" (all this for the fee of 1s.).

Returning home he (public vaccinator) has to enter the result of his visit and return the list to the vaccination officer.

Should he find the people at home he may find the child not in a fit condition to be vaccinated, in which case he postpones the operation, and at the expiration of the period must again call. Should he vaccinate on the first visit he must call again within sixteen days to inspect and must then fill up and post the certificate of successful vaccination, or in case of failure must vaccinate again (and, by the way, this is not an uncommon result, the lymph, especially in warm weather, being very liable to become inert). If he is successful in the operation (which must be performed somewhat after this fashion: the arm to be washed and dried, the instrument sterilized, the lymph applied, and the vaccination well protected by means of pads) he has his register to keep, which is rather a complicated one, and after ascertaining the result has a detailed return to make to the Local Government Board showing how he has used every tube of lymph supplied to him, giving age of person vaccinated, number of insertions made, number of vesicles produced, and number of failures. He must also state whether the lymph was used for primary or revaccination.

Again, should any child's arm inflame, or the child become in any way ill from the effects of vaccination (and everything under the sun is placed to its debit for weeks after the operation), he must attend to that child, and supply any medicaments necessary until better.

Now, Sir, I am one of the most fortunate of the public vaccinators, in that I live in the centre of a compact district, enclosed in a radius of two miles. I am on the minimum fees though, which I do not consider fortunate. What is my experience in working this district? Taken as a general thing, it is somewhat like this: I receive the list, and carry out the regulation as to the notice of intention to visit. Say that the list contains thirty-seven names (I have taken one haphazard). I call on these people, and at night I find the result to be:

I have vaccinated	9
Found doors locked and people out	9
Own doctor to vaccinate	9
Have to postpone vaccination on account of illness of child ; ...	5
Refuse vaccination altogether	4
House empty	1
	37

So that I have to call again on nine cases to ascertain their intentions, and it may be that in some of them four, or even six, visits may be necessary before I can get the necessary information.

Now, Sir, the remuneration I am entitled to for this work is:

Names on list, 37, at 1s.	£1 17 0
Nine successful vaccinations at 5s.... ...	£2 5 0
	£4 2 0

and in that sum is included whatever sum I might be entitled to for the thirty or so extra visits I shall have to make, and for any medicaments I may supply.

Compare this with the fees which obtain in ordinary working-class practice. Here the minimum visit fee is 1s. 6d., not including medicine. So that a general practitioner would get for the, say, sixty-four visits I have to pay to complete the above list, a sum of £4 16s. and an extra amount for medicine, etc. Where is the excessive rate of pay? The public vaccinator is out of pocket in every case at the rate of at least 2d., even when he uses "Shanks's mare" to convey him round; so that not counting the time occupied in keeping register, lymph record for the Local Government Board, writing notices, stamps, pads, postponement register (optional, but necessary), he receives less than would be received by the general practitioner for his visits alone, the operation of vaccination being thrown in. Again I ask, Is this excessive pay?

But why have the public vaccinators been so busy of late? Boards of Guardians throughout the country having neglected their duty are now crying out at the large sums they have to pay out for vaccination, and compare the present state with what obtained when the Vaccination Act was practically a dead letter, and I have pointed out that for years fully three-fourths of the children remained unvaccinated. Now comes the scourge of small-pox, and every one rushes for the only protection there is against this disease—result, inflated returns. Primary vaccinations of persons up to 20 years of age are by no means uncommon. Let me take a page of my own register for the period of the "scare"—namely, last spring. There are on that page twenty-five vaccinations (primary). Only six were of children under 6 months old, but no less than eleven were over 10 years. This page is only a specimen; there are hundreds telling the same tale. Does not this speak for itself? I maintain that by their neglect, work has had to be crammed into a few months which ought to have been spread over years, and which would have been paid for at the smaller sum paid in those years. But, sir, whilst the public vaccinator has been doing all this work, what has become of his private practice?

Speaking for myself, I can only say that my own work has decreased in a most marvellous manner. I have not one quarter of the practice I had before the passing of the present Act: but, at the same time, if I had, I could not look after it. So that I have had to make a sacrifice in order to perform the duties of public vaccinator, and if these fees (minimum) are made any less, I shall be a pecuniary loser to a serious amount. I trust that a stand may be made, and that both sides of the question may be considered, as unless this be done, no report, no matter by whom it is made, can be considered satisfactory.

The facts as set forth above are not known even to the profession, let alone the general public; and I verily believe that Boards of Guardians are more ignorant of them than any other persons; or else, being antivaccinators, they are finding out that their propaganda is being discredited, and fear their occupation will soon be gone.—I am, etc.,

Burnley, Sept. 14th. J. M. FERGUSON.

MEDICAL DEFENCE.

SIR,—Dr. Haddon has written to you on this subject and no doubt he will be satisfied by the number of answers he will receive through you to his queries. With your permission I would like to point out to him that he seems to have made at least two grave errors in his interpretation of the paragraph he quotes. He quite ignores the word "or" by which the two questions of defence of the interests of the profession generally and the interests of the individual are joined. Also he jumps to the conclusion that the funds already at the disposal of the Association are suggested for use for both of these objects. I can see no such suggestion in the proposition of Sir Victor Horsley.

Dr. Haddon also quite overlooks the fact that the Central Council in carrying out this suggestion of Sir Victor Horsley's may, and no doubt will, refer the whole subject to the Divisions for their opinions; and having obtained these will then be in the best position for making the report asked for.

With regard to defence of the profession generally, I feel sure no member would grudge the use of funds with such an object in view; and if in due course the Finance Committee reported to the annual meeting they had given a sum to fight an imposition on the profession by individuals or societies, I feel sure he would be a mean man who would not approve the outlay.

As to defending "members who get into trouble," I think rather the expression should be "who find trouble unexpectedly cast upon them." If any member does not wish for this security against costs that may make him a beggar and his family objects for charity, then he need not subscribe to a defence fund, and he can go on his way rejoicing that he at all events is not a member of a "trades-union"; but don't let him later seek pity from those proved wiser than himself. To try and smirch what seems to me the duty of every medical man who has others dependent on him and whose bank account is not one of five or six figures as "trades-unionism" is wrong. Why "trade"? I would call it "professional unionism." The public laugh at our ethics and the way we allow everyone to make a convenience of us. I for one hope the Association will be asked by an overwhelming majority to give their name to a branch department for medical defence of those members who wish to join it, and will from time to time make private wrongs the wrongs of the profession at large, if they feel by so doing they are defending a principle.—I am, etc.,

Southfields, S.W., Sept. 11th. E. ROWLAND FOTHERGILL.

P.S.—No doubt if any member has purchased the BRITISH MEDICAL JOURNAL for some twenty years and he feels he is entitled to a reduction, the Representative Meeting will authorize the Central Council to supply him with copies in the future even at the cost price of the paper used—if he will put his case before them through his Division.

MEDICAL ACTS AMENDMENT BILL.

SIR,—The proposed Bill is interesting if not instructive. It is saddening to observe how on the first page Liberal principles are ignored, after seventy years of discussion. "One man, one vote." Under the scheme I am to have seven votes, and the Irishman two. Having regard to his remoteness from centres of influence, fairness would have given him the greater number. But my seven are of less value than his, for everybody else has about the same number, and as only one vote goes to each candidate, each of my votes is lost in the crowd. But how splendid for party purposes! The decree goes forth from Harley Street, and a list of names—seven votes means something then. But far be party spirit from amongst us.

A representative must represent something, some sort of constituency. What community of interest have the Members of the College of Surgeons as such? Their only bond is that for a few hours—during which they were forbidden to talk to each other—they suffered examination. But this past pain gives them no common ground of interest. As well give votes to those who employ the same firm of tailors. If this be true of the MM.R.C.S., still more must it apply to their bedfellows in this scheme, the LL.R.C.P. and the LL.S.A. They can have no community of interest, unless they are the same person. I observe, also, the Universities are to be disfranchised, and their graduates stirred up together in various pots. What bond of interest have Cambridge and Birmingham graduates? Who can represent these constituencies? The thing is not only impossible, it is unthinkable.

There is much to be said on the various clauses of Part I. but it appears to have been overlooked that the collection of my seven votes will involve five or six times the expense of collecting one vote, and that candidates would of necessity be men whose income runs into four figures, for few else could undertake the expense.

While appearing to give increased representation, the scheme actually takes away what we already have. The *Medical Register* contains about 1 300 pages. Take an amputating knife, and divide it into sections of 100 pages each. The persons whose names occur in each section will form a constituency, and the thirteen members thence elected will form the General Medical Council. This is a much simpler scheme and economical; and as the duties of the newly-made Council are to appoint a registrar and clerks, they will do very well, and earn the thanks of the profession.—I am, etc.,

Kensington, W., Sept. 14th. G. C. CRICHTON.

REGULATIONS FOR THE PRACTICE OF MIDWIVES.

SIR,—I have read with very great satisfaction the admirable letter of Dr. R. P. Ranken Lyle in the BRITISH MEDICAL JOURNAL of September 12th in reference to the rule under Section E, "Directions to Midwives" drawn up by the Central Midwives Board for the practice of midwives. "E. When called to a confinement, a midwife must take with her (8) an antiseptic lubricant for smearing the fingers, catheters, douche nozzles, and enema nozzles before they touch the patient."

In the early days of antiseptic midwifery there was some excuse for an antiseptic lubricant (corrosive glycerine, carbolated vaseline, etc.), as it represented the recoil from the old filthy castor-oil or hair-oil so often supplied by the nurse to the doctor when about to make a vaginal examination; but subsequent scientific knowledge and more extended experience have taught us that the use of any lubricant in obstetric practice is, as Dr. Lyle so well points out, both unnecessary, because unnatural; misleading, as its employment may tend to make midwives less careful about sterilizing their own hands as well as the external parts of their patients, which is of far greater importance than any lubricant; and, from the fact that the lubricant may not be germ-free, positively harmful.

But there is another objection to this direction to midwives. The mentioning of a lubricant for the fingers draws their attention too much to vaginal examination, while all modern scientific midwifery teaching of midwives and students should aim at developing more and more the abdominal method of palpation, and at reducing vaginal examination to a minimum. A much better rule in reference to the use of instruments would be to insist simply that all catheters, douche nozzles, and enema nozzles should be boiled before being used.—I am, etc.,

JOHN W. BYERS,
Professor of Midwifery, Queen's College, Belfast.

Belfast, Sept. 12th.

OPHTHALMIA NEONATORUM.

SIR,—Will you allow me a few lines in reply to two letters that have recently appeared in your columns? First, Professor Sinclair's four lively columns about ophthalmia neonatorum and other things.

I have nothing to say about Germanophiles, Professor Credé's genius or want of it, or the peculiarities of Leipzig.

I regret Professor Sinclair's letter because it tends to obscure certain broad facts which I think have been proved. (1) Ophthalmia neonatorum has caused a vast amount of blindness, whatever has been the good fortune of the Manchester Maternity in that respect; (2) no one was able to prevent ophthalmia: it was continually breaking out in maternities all over Europe until Professor Credé introduced his prophylactic; (3) Professor Credé's prophylactic has succeeded wherever it has been tried; (4) no other prophylactic has succeeded equally well, and the only ones that have had any measure of success have been in principle the same as Credé's and have been based upon it.

I need not go into further detail; those interested in the subject who wish evidence of the statements I have made will find it in the paper on the subject by Mr. Stephenson recently read before the Obstetrical Society of London, and anyone who may care for my personal opinions on matters of

detail will find them in my remarks on that paper. I have only to add that I see no necessity for any explanation about venereal disease as a preliminary to the use of Credé's method in hospital practice.

Dr. Ranken Lyle's letter is an enumeration of the evils that may ensue from a midwife's not following the directions of the Midwives Board. The Board direct not *any* lubricant, but an *antiseptic* lubricant. If the midwife uses a solution of corrosive sublimate in glycerine, 1 in 2,000, the mischiefs detailed by Dr. Lyle will not result.

The Dublin Rotunda is an excellent and famous institution, but the opinions of its staff are not final.—I am, etc.,

Harley Street, Sept. 15th. G. E. HERMAN.

STREET ACCIDENTS AND THE TRANSPORT OF INJURED PERSONS.

SIR,—I was recently called up at midnight to go and see a poor aged man, residing on the top floor of a four-storied building, who had fallen down in his room, and had obviously broken the neck of his right thigh bone, and his removal to a hospital was necessary. Somewhat naturally I appealed to the policemen on the beat, asking them to bring one of the stretchers one sees standing about in the streets and to convey the sufferer to a hospital. They declined, saying that they could not leave the beat and that the street ambulances were only for actual accidents in the streets.

Previous experience had told me that the hospital authorities would not send and remove the man. Then there was the St. John Ambulance Association not available, as the man's employer lived in the country, and, personally, I could not undertake the responsibility of the cost thereof. An appeal to the district union or infirmary at that hour, if successful, would have involved much delay; the result being that the man had to remain where he was until the morning.

The above incident seems to show that with all the interest and money now devoted to nursing and first-aid to the sick, the present arrangements are unsatisfactory and incomplete, and there is a want of some system under which the police could more effectively co-operate with the hospitals or local authorities, county or city councils, parochial or otherwise, for prompt and effective attention to such cases. I have therefore ventured to bring the matter to your notice as worthy the attention of the British Medical Association.—I am, etc.,

London, S.W., Sept. 9th. ARTHUR E. T. LONGHURST, M.D.

THE STATE REGISTRATION OF TRAINED NURSES.

SIR,—Your correspondent, "A Hospital Sister," states that I "take exception to the suggestion that medical men being competent judges of a nurse's qualifications, while the lay public are not, should protect their patients from 'quack nurses.'" May I be permitted to say I said no such thing? What I did contend was that busy medical men should not be obliged to investigate for themselves the credentials of the nurses they employ, but should be able readily to ascertain the experience of a given nurse by reference to a State Register of Trained Nurses, compiled by a responsible professional authority. At the present stage of the movement for State registration it is surely unnecessary to discuss, as your correspondent does, whether or no it is desirable. The principle is no longer debateable, and those of us who believe that registration affords the basis of all future progress know that by working for it we can only hasten the day of its inevitable attainment. In the same way the utmost its opponents can do is to delay its enforcement.

In this connexion the opinion of the late Sir James Paget, expressed ten years ago, may be of interest. He wrote in 1893 to the late Sir Henry Acland, "I think it is only a question whether it is to be granted at once or a few years hence. . . . In the same family one sister takes a medical qualification and is registered, another becomes a nurse and she cannot be registered. The contrast is becoming ridiculous as well as unjust, and must soon come to an end." So think many of us.—I am, etc.,

High Street, W., Sept. 16th. MARGARET BREAY.

FELLOWSHIP OF THE ROYAL COLLEGE OF SURGEONS, EDINBURGH.

SIR,—I cannot agree with Dr. Knight in his endeavour to introduce ladies to the Fellowship of the Royal College of Surgeons, Edinburgh, though sympathizing with him in his chivalry. The admission of women to the administrative classes of a corporation ought to be resisted on the same grounds as they are excluded from voting for members of Parliament.—I am, etc.,

Stoke-on-Trent, Aug. 20th. S. WESLEY WILSON.

"MEDICAL MISSIONARIES."

SIR,—The article under the above heading in the BRITISH MEDICAL JOURNAL for June 20th opens up a question which is seldom touched upon in your columns, but which is of great importance.

As one who was connected with a mission for four years, and carried on the medical work at one of its stations during that period faithfully and conscientiously, may I be permitted to place on record my experience of the utility and drawbacks of such work?

With regard to utility there can be no doubt about the matter. This is shown by statistics, when appeal for funds is issued, in the roughest but only possible way. This is, of course, speaking from a medical point of view; from a missionary point of view it is otherwise. Some missionaries cannot go near a hospital because the smell of drugs or sight of blood makes them faint. I have even known a missionary refuse to pass through the native part of a town because the smell was too strong! During all the time that I was in charge of a mission hospital the clerical members of the mission visited the same some dozen times or so.

The drawbacks to the work I consider to be many, but at the same time capable of removal if a certain scheme of reform were drawn up. First, there is the drawback of the numbers who attend the out-patients and the consequent scamping of work; this could easily be remedied if the medical officers were allowed to use their discretion and refuse to treat those who could pay for medical advice and treatment, except as private patients, whether the fee for such treatment went to the hospital or the doctor is a secondary matter.

But unfortunately the missionary authorities place statistics in the front rank, and consequently the medical officer almost insensibly degenerates into a relieving machine; the in-patients also suffer, for it is impossible under these circumstances to give them the proper amount of attention. These remarks apply, of course, to those stations where the medical man is single-handed and has only native assistants, who often need more looking after than the patients.

But I believe that the chief drawback to medical mission work is the financial one. The work is arduous, the risks are enormous, the kind of man required for the work is rare, and unfortunately seldom a man with private means; therefore, the salary should be sufficient to enable a man to insure himself heavily for the sake of his wife, for I am firmly convinced that a married man is best for this kind of work, except in the interior of certain lands where the risk of being killed by mobs is present.

But what are the facts?—£200 a year and a house is, I believe, considered good enough pay for the medical missionary, and in some places any private fees have to be handed over to the mission. In most places where missions are established the cost of living is greater than in England; this fact emphasizes the inadequacy of the salary.

A medical missionary runs far greater risks than the ordinary clerical missionary, owing to his closer contact with the natives. In one country I know of, for instance, nearly every medical missionary has had typhus fever, and two at least have died of that disease.

I have already taken up enough of your valuable space, but I feel so strongly the importance of the subject that I hope someone who can write more eloquently than I upon the matter will do so.

May I urge upon any prospective medical missionary who reads this to be careful before pledging himself for a term of service in the foreign missionary field to see that an adequate salary is offered him?

One more word. The reason for the existence of the Livingstone College, Leyton, is due to this very fact that the missionary societies will not grant a salary large enough to attract fully-qualified medical men. If they did so every missionary station would be able to get a duly-qualified medical man attached to it, not necessarily a medical missionary, but at any rate one who is in sympathy with missionary work.

The societies complain that they cannot obtain the services of medical men, but when able and energetic men do offer in many cases, the red tape encountered and the diminutive salary offered block the way. But if a man cares to smother his

conscience and agree to everything the entrance is made easy for him, consequently many who are totally unfitted for missionary work get sent out.—I am, etc.,

TEMPERANTIA IN OMNIBUS REBUS.

HOSPITAL ACCOMMODATION ON MAIL STEAMERS.

SIR,—I agree entirely with Major W. J. Buchanan's letter in the BRITISH MEDICAL JOURNAL of June 6th on this subject. During several years' service in a line of mail steamers running from a subtropical port to one in the temperate latitudes, I had on more than one occasion to deplore the lack of proper hospital accommodation on board. Although the vessel was owned by a company noted for its attention to detail, and whose ships are considered to be some of the finest afloat of their size, yet in none of them, at the time of which I write, was the smallest attempt made to provide any hospital accommodation for cabin passengers. It is true that there were two places on board set apart for hospitals, but this was done to conform to the quarantine regulations of the colony to which the vessels trade, which require all vessels entering the ports of the colony with passengers on board to provide two hospitals, one for men and another for women, in a part of the ship which can be isolated if necessary. These conditions the company complied with to the letter, setting apart two compartments in the extreme after-part of the ship, next to the steam steering-gear, and surrounded on all sides by various ship's offices. These places were quite unsuitable, except for the purposes of the law, as hospitals, being extremely noisy, very hot, and most uncomfortable in rough weather for even a good sailor in perfect health. They were, however, the only places where even moderate "isolation" could be secured. I shall not soon forget having to treat a case of small-pox, in the early stages, in one of these "hospitals." Luckily on the fifth day the patient was landed at a port of call and escaped with his life. It was impossible to have treated the patient, a European sailor, in any other part of the ship and have due regard to the safety of the seven hundred or so other persons on board.

The last twelve days of the voyage in these steamers are spent entirely at sea, hundreds of miles from land, and it was then that one felt the lack of conveniences for the treatment of the sick. Without nurses—if you except the stewardess, a most willing but terribly overworked individual—absolutely dependent upon Asiatic stewards for the carrying out of orders, it is not to be wondered at if a good deal of anxious watching fell to the lot of the surgeon. In one instance—that of a case of double pneumonia—I was obliged to give up my own cabin to the patient's cabin mate and share the sick man's room, in order to see that he received proper attention during the night. It is not difficult in a small ship to combine the duties of nurse and doctor, but in a large mail steamer carrying several hundreds of passengers, it is no easy task. In this present age of much ocean travel it would seem to be the duty of all steamship companies to be as particular about the medical arrangements of their vessels as they are about other matters pertaining to the comfort of their patrons. I understand that soon after I left the employ of the company above mentioned, improved hospitals for the use, if necessary, of saloon passengers were built into the ships on the bridge deck, a place capable of isolation and quiet and free from much motion. Whether the arrangement works well I am unable to state. All large passenger vessels should carry at least two persons on their articles who are capable of nursing the sick, and who, when their services were not required in that capacity, could be employed in doing clerical or other light work. I know several ship's surgeons who perform the duties of purser as well as those of medical officer; why, then, could not a purser's assistant be also a male nurse? In regard to women nurses, properly certificated nurses should be employed, and I have no doubt that many ladies in the nursing profession would enjoy seeing a little of the world, while at the same time earning some pocket money, not to mention the store of good health which they would be laying up for after-use in the arduous struggle of their profession on shore.—I am, etc.,

SHIP'S SURGEON.

INFANTILE AND BOVINE TUBERCULOSIS.

SIR,—Dr. Nathan Raw's interesting paper is a valuable contribution on the subject as regards his own observations and experience. His references, however, to the Registrar-General's statistics are not quite up to date. If Dr. Raw had examined the more recent figures of the Registrar-General he would have found that, although these are opposed to the often quoted statement of Sir R. Thorne-Thorne, they do in effect offer a valuable confirmation of his main contention that bovine tuberculosis is the principal cause of abdominal tuberculosis in children. In England and Wales the deaths from tabes mesenterica per million population increased up to 1880 but since then have steadily diminished from 290, in the five years 1881 to 1885, to 196 in 1896 to 1900, the last quinquennium showing two-thirds of the whole decrease. The annual summary of the Registrar-General for 1902 shows that in London the deaths from tuberculous peritonitis and tabes mesenterica have diminished by one-half since 1892, namely, from 1,298 in 1892 to 661 in 1902. During the same period there has been a diminution, but a much smaller one, in the deaths from tuberculous meningitis. The latter seem to follow very closely the deaths from phthisis, increasing and diminishing as the latter rise and fall.

I am informed by the medical officer of the infirmary of this union and other local medical practitioners that they have observed a very great reduction in abdominal tuberculosis in children during recent years. We see thus that whatever was the case in former years, tuberculous peritonitis is now diminishing much more rapidly than phthisis, especially in London. Surely this is what would be expected on the theory that bovine tuberculosis was the chief source of abdominal tuberculosis in children.

Great efforts have been made by many sanitary authorities in recent years to obtain a milk supply free from tubercle bacilli, and cows with tuberculous udders have been almost eliminated from London cowsheds by means of the County Council's efforts. In this borough, and probably in many others, milk coming from the country is now comparatively free from tubercle bacilli. I do not know what are the figures that Dr. Raw refers to as to the percentage of cows in London cowsheds infected with tubercle, but they are opposed to the report of the Medical Officer of Health. This report for 1901 shows that out of over 4,000 cows in these sheds on the last inspection, only 7 were infected with or suspected to have tuberculous disease of the udder, and the sale of milk from the 7 suspected cows was prohibited. No doubt a large number of cases of tabes mesenterica are not really tuberculosis, but I know of no reason to suppose that anything has happened during the last ten years, 1892-1902, to affect seriously the proportion of correct to incorrect medical diagnosis in this respect. I think, therefore, that one is justified in saying that the marked decrease in the total deaths from abdominal tuberculosis and tabes mesenterica indicates a corresponding diminution in abdominal tuberculosis, and that this decrease is probably chiefly due to elimination of milch cows with tuberculous udders, and partly, no doubt, to the increasing practice of sterilizing milk before consumption. At the present time I find that direct infection (usually from parents) in this borough is the most frequent source of all forms of tuberculosis in children.—I am, etc.,

Woolwich, Sept. 1st. SIDNEY DAVIES.

OBITUARY.

THOMAS ANTHONY DODD, M.R.C.S.,

Newcastle-upon-Tyne.

THE news of the tragically sudden death of Thomas Anthony Dodd will be received by old students of the University of Durham College of Medicine, Newcastle-upon-Tyne, with the profoundest sorrow. On the afternoon of September 9th, while being driven towards Newcastle from Ponteland, his horse, which was high spirited and always afraid of steam, suddenly reared on seeing a traction engine, broke the shafts of the American "buggy" in which he and his coachman were sitting, and threw both to the ground. The coachman, falling upon the soft ground at the side of the road, was comparatively but slightly hurt, but Mr. Dodd falling on the hard roadway upon his head was immediately rendered unconscious. The horse in its mad career ran a considerable distance before it was captured. Fortunately Dr. Lownds, of Newcastle, was coming close behind in his own carriage, and, finding Mr. Dodd completely unconscious, he had him placed in his own conveyance and t ken home to St. Thomas's Place. There the assistance of Dr. Beatley, who lives close at hand, was immediately sought, as also the aid of Mr. Dodd's old friend, Mr. Page; but before the arrival of the latter life had become extinct. Death w s attributed to fracture of the skull.

There were few medical men better known in Newcastle or

more generally beloved than was Mr. Dodd. A cheery manner, a good word for every one, kind to and considerate of the wants, particularly of his poorer patients—all loved him. He was a general favourite. The son of a Newcastle surgeon, and with two brothers in the Army Medical Department, Mr. Dodd took an active interest in medical and military matters, and was himself an old volunteer officer. He only retired a year or two ago from the 1st Newcastle Royal Engineers, in which he held the rank of Surgeon-Major.

He contributed little to the literature of his profession; but his Case of Excision of the Patella, published in the British Medical Journal in 1884, remains, we believe, unique. When he exhibited the patient from whom he had removed the patella to the members of the Northumberland and Durham Medical Society it gave rise at the time to a very animated and interesting discussion, in which, owing to the success of the operation, Mr. Dodd had the best of it.

Fond of angling and shooting, Mr. Dodd used to take a lengthened holiday in the north of Scotland. As a Conservative and a Churchman he took a practical interest in many of the local movements. He was a good operator, and as a surgeon was much in request. At the time of his death he was Medical Officer to the Workhouse Hospital. He stood high in the esteem of the guardians and in the affection of the patients in the hospital. At old students' dinners he was a familiar figure. His tragic end has cast quite a gloom over Newcastle-upon-Tyne. All will miss him.

We regret to announce the death of Dr. William A. Henderson, at Florence, after an illness of some months' duration. Dr. Henderson obtained the Diploma of the College of Surgeons and Physicians of Edinburgh in 1869, and a few years afterwards proceeded to China, where he quickly built up a large practice. He was Medical Officer to the Imperial Maritime Customs for some time at Chefoo and Mingpo, and Medical Officer of Health as well as Medical Officer to the Presbyterian Church of England hospitals. These important appointments entailed continuous and arduous work, apart from the exertions of a large and increasing private practice. But notwithstanding, during his long residence in China extending over a period of twenty-one years, he allowed himself only one brief holiday of eight months. The result was that a fine constitution was injured, and some eleven years ago he had to relinquish practice altogether. There is no doubt that Dr. Henderson's enforced retirement from active practice was a great blow to him, for he loved his profession, and just at the time when his health gave way he had a very large and lucrative practice, patients coming to him from all parts of China. His active brain and fine intellect would not be satisfied with the repose which was essential for the restoration of his health, for he gave himself with great ardour to the study of archaeology and agriculture. Dr. Henderson made a number of contributions to medical literature, perhaps the most important of them being a paper on "Catarrh of the Intestines in Malarial Fever," termed "Psilosis" by Dr. George Thin, and "Sprue" by Sir P. Manson, and "Tropical Diarrhoea" by Sir J. Fayrer. Dr. Henderson's interest in this subject was personal, inasmuch as his primary illness was of this nature, while his views on the pathology of the disease did not differ very materially from those of the authorities who have been named, yet he appeared to take a more comprehensive view, and inclined to the belief that other abdominal organs besides the intestines were profoundly modified in their functions. Dr. Henderson has gone to his rest, but at his graveside were many friends (all who remained of the British American Colony in Florence at this season). He gave a helping hand to many young struggling men, but, like all men of real nobility of character, he greatly disliked anything savouring of cant or insincerity.

We regret to announce the death of Mr. John Edward Boyton, of Watlington, the oldest inhabitant of that town, and probably the oldest medical man in practice in the kingdom. Mr. Boyton was born in April, 1816, and was therefore in his eighty-eighth year. He was admitted as a Member of the Royal College of Surgeons in 1838, and L.A.H.Dub. in 1839. About sixty-one years ago he started in practice at Watlington. He held at first the two appointments as Medical Officer to the Thame and Henley Unions, but the latter he gave up. Mr. Boyton was married in 1853, nearly fifty years ago, and leaves a widow, three sons, and two daughters. He was Medical Officer to eight Friendly Societies in the neighbourhood, Surgeon to the Great Western Railway, and under the Factories Act, and an Honorary Medical Officer to the Cottage Hospital. At all times, even up to the end, he took an active part in everything that was going on around him, and was a most generous subscriber and active worker in any good cause. He was a musician of no mean order. He was the son of Captain James Boyton, late of the 63rd Regiment (an Irish family), and his grandfather, who lived to be 99 years 6 months, was also in the army.

Mr. James Fergusson, F.R.C.S.Edin., of Richmond, who died on September 5th, was a native of Dumfriesshire. He attended an arts course at the University of Glasgow, and afterwards a course of theology at the University of Edinburgh, with the object of entering the Church of Scotland. Not feeling, however, that his true vocation was the ministry, he began the study of medicine in Edinburgh, at the University and the Royal College of Surgeons, where he had a brilliant career, gaining many distinctions and prizes. He was admitted to the Fellowship of the Royal College of Surgeons, Edinburgh, in 1866. He practised in Fifeshire for about six years, when he decided to come south on account of Mrs. Fergusson's delicate health. He settled at Richmond over thirty years ago. The esteem in which he was held in Richmond was shown by the very large attendance at the funeral.

We regret to announce the death of Mr. H. J. Hawthorn, of Ecclesfield, a member of the Sheffield Division of the Yorkshire Branch of the British Medical Association. He was held in the highest esteem by all with whom his professional duties brought him in contact. Mr. Hawthorn was a native of Uttoxeter, where his father was a medical practitioner. He was admitted a Member of the College of Surgeons of England and a Licentiate of the Apothecaries' Society in 1860. He was a man of undemonstrative and quiet nature, but behind all this there was a kindliness of heart which more than anything else endeared him to many in the humbler walks of life.

Dr. William Smiles, formerly well known as a medical practitioner in Bedford Square, died recently at Guildford, at the age of 87. He was educated at Edinburgh, where he took his M.D. degree in 1839. He was admitted a member of the Royal College of Surgeons of England in 1861. He was for several years surgeon to the Government Prisons at Coldbath Fields and Clerkenwell, and Physician to the St. Pancras Royal General Dispensary. He was a Fellow and formerly Vice-President and Secretary of the Medical Society of London and a Corresponding Fellow of the Madrid Academy of Surgeons.

Deaths in the Profession Abroad.—Among the members of the medical profession in foreign countries who have recently died are Dr. Alexander Parkas, the oldest practitioner of Buda-Pesth, aged 90; Dr. van Lith, some time Professor of Psychiatry in the University of Utrecht; and Dr. Chalot, Professor of Clinical Surgery in the Medical Faculty of Toulouse.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been made at the Admiralty: Hamilton Meikle, Fleet Surgeon, to the *President*, lent to the *Spartan*, September 12th; Richard Miller, M.B., Staff Surgeon, to the *President* for three months' course of hospital study, September 15th; William H. Patterson, Fleet Surgeon, to the *Dædalus*, September 9th; William Hackett, M.D., Staff Surgeon, to the *Northampton*, for the *Cleopatra*, September 9th; John E. Coad, Staff Surgeon, to the *Audacious*, September 9th; Robert D. Jameson, Surgeon, to the *Rover*, for Royal Navy Cadets' Sick Quarters, Osborne, September 9th; A. Davidson, M.B., Surgeon, to the *Partridge*, September 10th; Edward B. Townsend, Fleet Surgeon, and William R. M. Young, Staff Surgeon, to the *President*, additional, for three months' course of hospital study, September 7th; Nelson J. Roche, Surgeon, to the *Benbow*, September 16th.

Staff Surgeon William Job Maillard, V.C., retired, died at Bournemouth on September 10th, aged 40. He was appointed Surgeon, August 22nd, 1889, and for "distinguished service" was specially promoted to be Staff Surgeon, June 2nd, 1889, retiring from the service, April 7th, 1902. He was awarded the Victoria Cross for his conspicuous bravery during the outbreak at Candia in September, 1898. During the landing of seamen from the *Hazard* he, after having disembarked and reached a place of safety, returned through a perfect deluge of bullets to the boat, and endeavoured to bring into safety an ordinary seaman who had fallen back wounded into the boat as the other

men jumped ashore. Surgeon Maillard failed to bring the seaman in only through the boat being adrift and it being beyond his strength to lift the man (who was almost dead) out of so unstable a platform, he returned to his post with his clothes riddled with bullets, though he himself was unhurt.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT-COLONEL W. L. CHESTER, M.B., to be Colonel, *vice* Colonel R. Exham, retired, August 19th. Colonel Chester entered the service as Surgeon, March 31st, 1875; became Surgeon-Major, March 31st, 1887; was granted the rank of Lieutenant-Colonel, March 31st, 1895; and was made Brigade-Surgeon-Lieutenant-Colonel, August 3rd, 1898. He was in the Boer war in 1881, and with the Nile expedition in 1884-5, for which he received a medal with clasp and the Khedive's bronze star.

Lieutenant R. B. BLACK is seconded for service with the Egyptian army, August 13th.

Lieutenant-Colonel HENRY JAMES PEARD, C.M.G., died at Middelburg, Cape Colony, on the 18th ultimo, aged 45. His commissions were as follow: Surgeon, July 30th, 1881; Surgeon-Major, July 30th, 1893; Lieutenant-Colonel, July 30th, 1901. He served in the campaign on the North-West Frontier of India in 1897-8 with the Malakand Field Force (medal with clasp), and in the South African war in 1899-1900 (mentioned in dispatches and appointed a Companion of the Order of St. Michael and St. George).

Lieutenant-Colonel F. A. HARRIS, from half-pay, retires on retired pay, September 9th. His commissions are thus dated: Surgeon, February 5th, 1881; Surgeon-Major, February 5th, 1893; and Lieutenant-Colonel, February 5th, 1901. He went on half-pay, October 24th, 1901. He was in the Egyptian war of 1882, receiving the medal and the Khedive's bronze star, and in the recent war in South Africa.

Captain R. T. BROWN, M.B., from half-pay, to be Captain, with precedence next below H. E. Weston, August 12th. Captain Brown was placed on half-pay on account of ill-health in May last.

We regret to announce that Lieutenant-Colonel HARE, R.A.M.C. (R.P.), died at Bournemouth on September 14th.

CHANGES OF STATION.

THE following changes of station amongst the officers of the Royal Army Medical Corps have been officially reported to have taken place during the last month:

	From.	To.
Colonel W. A. May, C.B.	Natal	Egypt.
Lt.-Col. C. A. Webb	Egypt	Dover.
" A. E. J. Croly	Bombay	Edinburgh.
" T. J. O'Donnell, D.S.O.	—	Chester.
" S. F. Lougheed, M.D., C.M.G.	Home District	Woolwich.
Major S. F. Freyer, M.B., C.M.G.	South Africa	Home District.
" A. De C. Scanlan	Malta	Aldershot.
" G. Bent	Warwick	Chester.
" G. Raymond, M.B.	Preston	Delamere.
" A. Wright	Gosport	Portsmouth.
Captain E. C. Anderson, D.S.O.	South Africa	Dover.
" F. M. Mangin	R.A.M. Coll.	"
" C. E. Pollock	"	Home District.
" W. J. Taylor, M.B.	"	"
" B. W. Longhurst	"	York.
" A. E. C. Keble	"	Chatham.
" St. J. B. Killery	"	Dover.
" E. M. Williams	"	Portsmouth.
" J. R. McMunn	"	Dublin.
" H. V. Prynne	"	Woolwich.
" K. B. Barnett, M.B.	"	Aldershot.
" M. Boyle, M.B.	"	Edinburgh.
" C. M. Fleury	"	Salisbury Plain
" A. C. Fox	"	Edinburgh.
" S. F. St. D. Green	"	Dublin
" G. St. C. Thom, M.B.	"	Aldershot.
" F. Kiddle, M.B.	"	Devonport.
" G. T. K. Maurice	Bengal	Salisbury Plain
" D. E. Curme	Penally	Devonport.
" C. S. Smith, M.B.	Aldershot	Gren. Guards.
Lieutenant R. Rutherford, M.B.	Curragh	Cork.
" W. D. C. Kelly, M.B.	"	"
" W. C. Rivers	"	"

Lieutenant-Colonel D. O'Sullivan has been selected for increased pay under Article 362 of the Royal Warrant.

Captain G. St. C. Thom, M.B., has assumed the command of B Company at the Aldershot Training School.

The undermentioned Lieutenant-Colonels on retired list have assumed the medical charge of troops at the stations specified: J. A. Gormley, M.D., Kingston; R. W. E. H. Nicholson, Aldershot Military Prison; J. McLaughlin, M.D., Bradford.

ARMY MEDICAL RESERVE.

SURGEON-LIEUTENANT W. H. VICKERY to be Surgeon-Captain, September 12th.

The promotion of Surgeon-Lieutenant-Colonel E. L. FREER, V.D., is antedated to December 24th, 1899.

ARMY MEDICAL STAFF.

MEMORANDUM.—Surgeon-General T. TARRANT, M.D., retired pay, late Army Medical Staff, to be an Honorary Physician to His Majesty, *vice* Surgeon-General A. H. FRASER, retired pay, deceased, September 9th.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL (TEMPORARY COLONEL) T. J. H. WILKINS, Madras Establishment is promoted to be Colonel, from June 30th. He was appointed Assistant Surgeon, September 30th, 1873, and was made Brigade-Surgeon-Lieutenant-Colonel, July 14th, 1886. He was with the Burmese expedition in 1885-6, and has the Frontier medal with clasp.

The undermentioned Lieutenants, having completed a course of instruction at the Medical Staff College and being reported qualified, have been admitted to the service, from January 31st: W. S. J. SHAW, M.B., Bombay; C. S. PARKER, M.B.; H. H. BROOME, M.B., Punjab; F. N. WHITE, M.B., Bengal; C. G. SEYMOUR, Bengal; D. HERON, M.B., Punjab; T. C. RUTHERFOORD, M.B., Punjab; H. C. KEATES, M.B., Punjab; L. REYNOLDS, Punjab; E. C. TAYLOR, M.B., Punjab; R. A. NEEDHAM, M.B., Madras; D. P. GOIL, M.B., Bombay; J. KIRKWOOD, M.B., Madras; A. WHITMORE, M.B., Madras.

Lieutenants J. D. GRAHAM, M.B., C. A. SPRAWSON, M.D., M. MACKELVIE, M.B., W. LAPSLEY, M.B., W. H. CAZALEY, P. A. BROWNE, M.B., W. V. COPPINGER, M.D., A. SPITTELER, M.B., J. C. S. OXLEY, H. R. MACNEE, L. J. M. DEAS, M.B., W. M. HOUSTON, M.B., W. D. A. KEYS, M.D., G. J. G. YOUNG, M.B., J. GOOD, M.B., A. CHALMERS, M.B., W. G. HAMILTON, and S. R. GODKIN, to be Captains, June 28th. Their first commissions dated from June 28th, 1900.

Lieutenant-Colonel Z. A. AHMED, M.D., Bengal Establishment, has retired from the service, July 19th. He was appointed Assistant-Surgeon, October 1st, 1872, and became Brigade-Surgeon-Lieutenant-Colonel, April 8th, 1899. He was with the Hazara Expedition in 1891 (medal with clasp), and in the campaign on the North-West Frontier of India in 1897, with the Malakand Field Force (mentioned in dispatches, medal with clasp).

Lieutenant-Colonel S. H. DANTRA, M.D., Bengal Establishment, has also retired, July 10th. His first commission bears date March 31st, 1876; that of Surgeon-Lieutenant-Colonel, March 31st, 1896.

Major W. H. W. ELLIOT, M.B., D.S.O., Bengal Establishment, is appointed Secretary to the Principal Medical Officer in India, from August 13th.

ROYAL ARMY MEDICAL CORPS (MILITIA).

LIEUTENANT H. FOX, M.B., is seconded for service under the Foreign Office, August 13th.

ROYAL ENGINEERS (VOLUNTEERS).

SURGEON-LIEUTENANT H. HALTON, M.B., 1st Lancashire, to be Surgeon-Captain, September 12th.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

THE following announcement is substituted for that which appeared in the *London Gazette* of June 26th last, under the heading "Gordon Volunteer Infantry Brigade Bearer Company": Messrs. JAMES SMART and JOHN W. MILNE to be Lieutenants in the Aberdeen Company, June 27th. [The announcement cancelled was to the effect that these gentlemen had been appointed to the Gordon Company.]

The transfer of Lieutenant F. KELLY, M.D., from the Royal Army Medical Corps (Volunteers), the Aberdeen Company, to the Gordon Volunteer Infantry Brigade Bearer Company, which was announced in the *London Gazette* of August 14th last, is cancelled.

Lieutenant A. B. MINTON, the Woolwich Companies, to be Captain, September 12th.

Lieutenant R. W. B. MARCH, the Manchester Companies, to be Captain, September 9th.

VOLUNTEER INFANTRY BRIGADE BEARER COMPANY.

SURGEON-CAPTAIN W. N. EVANS, from the 1st London Volunteer Infantry Brigade Bearer Company, to be Captain, September 12th.

Lieutenant A. R. BADGER, Worcester and Warwick Company, to be Captain, September 9th.

VOLUNTEER RIFLES.

SURGEON-LIEUTENANT J. F. CHRISTIE, M.B., 1st Volunteer Battalion the Gordon Highlanders to be Surgeon-Captain, September 9th.

Surgeon-Captain J. CANTLIE, M.B., 7th Middlesex (London Scottish) to be Surgeon-Major, September 9th.

Surgeon-Lieutenant G. C. CATHCART, M.B., 7th Middlesex (London Scottish), to be Surgeon-Captain, September 9th.

Mr. WILLIAM F. ROE to be Surgeon-Lieutenant in the 19th Middlesex (Bloomsbury), September 9th.

THE EVOLUTION OF THE VOLUNTEER MEDICAL SERVICE.

MAJOR JAMES TURTON, Commanding, Sussex and Kent V.I.B. Bearer Company, writes: In the BRITISH MEDICAL JOURNAL of September 12th Surgeon-General Evatt states that it has been decided officially that Volunteer Infantry Brigade Bearer Companies do not form part of the Royal Army Medical Corps Volunteers. Will the General kindly explain the meaning of a circular War Office letter of April 20th last, which instructed officers commanding Bearer Companies that the distinctive arm-patch on the service uniform of their men was to be as follows—for example:

R.A.M.C.
V.
Sussex and Kent.

These apparent contradictions are a little bewildering to an ordinary intellect.

SELECTION FOR ADMINISTRATIVE RANK.

LIEUTENANT-COLONEL R.A.M.C.—We would remind our correspondent that selection for administrative rank does not turn on professional merit alone. A man has no right to be selected, and if not selected he has no redress. He enters the service with the knowledge that at a certain stage of his career he is liable to be "passed over," and must then complete his career as an executive officer. The responsibility of selection rests with the Advisory Board. Nothing remains for our correspondent but respectfully to solicit a reply to his appeal. We do not think that a question in the House of Commons would be of any use.

COCAINE HABIT AMONG NEGROES.—At the annual Hampton Negro Conference held recently, the question of the increase of the cocaine habit among negroes was discussed by Dr. J. W. Prather. After a report on the diseases to which the negro is liable, he called attention to the fact that upwards of 200,000 negroes are addicted to the cocaine habit or the use of other narcotics.

MEDICO-LEGAL AND MEDICO-ETHICAL.

THE HEREFORD ISOLATION HOSPITAL.

At the end of July an action was tried before the County Court Judge of Hereford and a special jury, which is of some importance but too long to report in full. The following account, however, gathered from the *Hereford Times*, gives the details that are of medico-legal interest.

The plaintiffs, the Mayor and Corporation of Hereford, acting as the sanitary authority, sued Mr. H. J. Patey for £23 17s., the cost of the medical superintendence and maintenance of Mr. Patey's two children while suffering from scarlet fever at the isolation hospital, while Mr. Patey put in a counter-claim for £50. The latter was made up of expenses to which the defendant alleged he had been put through the negligence of the plaintiffs.

The main outline of the case was as follows: In 1900 the defendant had a child in the hospital suffering from scarlet fever, for which he agreed to pay the sum of £1 11s. 6d. a week. On its discharge he paid at this rate and expressed himself as in all ways satisfied. This case occurred in the summer. In December, 1902, scarlet fever again broke out in Mr. Patey's house and two children one after the other were removed to the hospital, being while there under the treatment of Mr. Patey's own medical attendants.

At the end of January, or eight weeks later, the first child was sent home as cured and disinfected, but six days later another case occurred in the house and was followed by four others, three being children and two domestic servants. These cases, Mr. Patey alleged, cost him £50, and this sum he claimed from the sanitary authority on the ground that they were due to his child having brought infection from the hospital. The plaintiffs, on the other hand, alleged that the child had been properly disinfected before discharge, and that the cases which occurred after its return home were due to some other cause.

For the plaintiffs a sanitary inspector proved the general nature of the agreement entered into by Mr. Patey as to the payments he should make, while the matron in examination and cross-examination gave evidence to the following effect: The staff consisted of herself and two maids, one of whom acted as cook, but she could get extra assistance if required. The patients not in charge of private medical men were attended by Dr. Fitzsimons. When Mr. Patey's first child was admitted in December there was only one other case, but ten others were admitted before it left. Mr. Patey visited the hospital frequently and expressed himself satisfied and made her a present when the children left. Later on at a committee meeting at which the defendant was present the latter expressed himself as dissatisfied with the way in which patients were discharged, and told witness she had not a sufficient staff. The children had been discharged in the same way as all other cases of scarlet fever which had been admitted in the witness's time, some eighty in number, and there had never been any complaint. The boy was quite well when sent out, and before leaving was given a bath in a separate building and had his clothes disinfected. He was allowed to come back and wait in her sitting room for about ten minutes until fetched, but did not shake hands with any one. The bath room was disinfected before the boy went into it. Her sitting room was not disinfected, but was not under the same roof as the wards. It was connected with her bedroom by a passage, and her bedroom communicated with the vestibule between the two wards. She wrote to Mr. Patey to take the child away, because the defendant's medical man said it was quite well and fit to go. She may have said to the defendant that she had not time to attend to all the children. One of the maids who helped her was 16 years of age and the other 22. She had understood the defendant to tell her, while the children were at the hospital, that one of his servants had been in contact with a case of scarlet fever at Wellington. In the summer time the patients after their discharge bath were not allowed to return to the buildidg, but waited in the garden.

Mr. Patey, who conducted his own case, gave evidence to the following effect:—He considered the staff inadequate—a matron and two girls, one employed as cook, for twelve patients. The children when they left the hospital had lice in their heads, and the first discharged had a running ear. After the return of the first child five other cases had occurred in his house, and had put him to great expense. The first new case showed symptoms of scarlet fever six days after the child returned from the hospital. He believed it brought the infection with it. He maintained that there was an implied contract on the part of the sanitary authority to do things properly and that they had not done so. He had only told the matron that he had heard that one of his servants had been near a case of scarlet fever at Weobley, and that he had kept her away from his house for a month on that account, but he afterwards found it was not a case of scarlet fever at all. No ill consequence had followed the return of the child from hospital in 1900. That was discharged in the summer, and there were only three patients in hospital. In consequence of his representations he understood the Corporation was now putting up a discharge block.

Dr. Dickenson, medical attendant of the defendant, said that he attended to the children medically but did not know about the lice until told of them. When the first child was well he told the matron it could go home, and took it for granted that it would be properly discharged. It was a farce, he considered, to send the child to wait in the matron's room, and if he had known that was the way things were done, he would not have allowed it to go home. In his opinion Mr. Patey's other children had received infection from the hospital. He took it for granted that the children would be kept clean, and considered a fever hospital without a discharge block a farce.

Dr. Fitzsimons, medical officer of the hospital, said that when patients were under the care of other medical men he did not interfere with them, though he looked after the hospital generally. He considered the way in which the child had been discharged was reasonable, proper, and satisfactory. He had, he believed, mentioned a discharge block to the Sanitary Committee, but not as a matter of necessity, and he did not think they would get any better results with it than they had got without it.

Mr. C. H. Moore, Medical Officer of Health for the City of Hereford, said he had studied the subject of fever hospitals for years. The Hereford Fever Hospital was an excellent one according to modern requirements and those of the Local Government Board. He thought every reasonable precaution was taken on the discharge of Mr. Patey's son. The child ought not to have been taken back, as he was, to the matron's room, but remembering that she acted as nurse and mother and had to take care of the child, it was most reasonable. On anything but a wet cold day he would have kept the child in the bath room until the cab came for it.

After some other evidence of non medical interest on side issues, the judge summed up, and the jury brought in a verdict in which they awarded the plaintiff Corporation £1 a week for each of the children maintained and costs, while with regard to the defendant's counter claim they found that Mr. Patey's other children were infected by the first child returned from the hospital, and that this occurrence was due to the neglect of the plaintiff Corporation, against which therefore they gave the defendant, Mr. Patey, a verdict of £30 and costs.

UNREGISTERED PRACTICE.

According to the *Leyton Times* the following evidence was given at an inquest in Walthamstow at the end of August last on the body of John Pocock, a blacksmith, aged 64:

Amelia E. Pocock said that the deceased was her father, and that he had been ill for more than five weeks, but did not get medical advice until August 7th, when he went to Dr. Tcherkoff, of 32, Hoe Street. The latter told him he was suffering from jaundice and gall stones and gave him some medicine. On the 13th deceased went to the doctor again and received some different medicine. On the 21st he was too weak to go, so witness went instead, and was told that if her father was weaker he should go to the hospital. Some days after the deceased had pain in the stomach, which continued all the week, and Dr. Tcherkoff gave her some quinine pills, of which the deceased took nine. She thought the doctor was a properly qualified doctor.

H. W. Brown, a visitor of a sick club, said it was his duty to visit sick members, and produced a certificate signed by Dr. Tcherkoff.

Dr. Steele said he was called to the deceased one evening, but found him dead. He made a necropsy, and found no gall stone anywhere. Death was due to cancer of the liver. No treatment would have made any difference since the case was bound to end fatally.

Mr. Tcherkoff, who was present, declined to give evidence.

The Coroner, in summing up, remarked that the deceased had unfortunately got into the hands of a man who did not know for what he was treating him, and but for the medical evidence that the end must in any case have been fatal, the jury could have treated the case as one of manslaughter.

The jury brought in a verdict in accordance with the medical evidence, and the foreman expressed a hope that the proper authorities would take the matter up and prosecute Tcherkoff.

The Coroner, addressing Tcherkoff, pointed out to him that he was liable to be prosecuted for practising without being registered, and that he was not acting in ignorance, for he had been in trouble before. Tcherkoff, in reply, said he had not seen the deceased for two weeks before he died; that he did not practise directly, but only helped friends; and that he was a missionary by occupation. To this the coroner replied that there was plenty of missionary work to be done in Russia, and that the sooner he got back there the better. The *Leyton Times* adds that Tcherkoff was committed for trial on a charge of manslaughter in August, 1901, in connexion with the death of a child whom he had treated, but was acquitted at the Central Criminal Court.

FOLKESTONE SANATORIUM.

At Folkestone County Court in August last Dr. Gilbert, of Folkestone, sued Mr. J. C. Clark, of London, for the sum of £4 due for medical attendance on the defendant's child while the latter was a patient in the Folkestone Sanatorium.

From the evidence as detailed in the *Folkestone Herald*, it appears that while on a visit to Folkestone the child contracted scarlet fever and was removed to the sanatorium by order of the sanitary authority, and while there was attended by Dr. Gilbert from August 7th, 1902, to September 23rd of the same year. Dr. Gilbert sent a bill to Mr. Clark without receiving a reply, but eventually he received a letter in which it was stated that as the defendant paid the charges of the Corporation he did not consider himself liable to the doctor.

Evidence having been given to the above effect, Dr. Larking, on behalf of the plaintiff deposed that the Corporation acting as sanitary authority did not provide a medical officer for attendance on the patients at the isolation hospital. The medical officer of health refused to attend patients except as private patients of his own, and witness had known cases in which but for the charity of doctors patients would have had no medical attendance at all. The view of the Corporation in carrying out their duties under the Public Health Act seemed to be that it was not their duty to provide medical attendance. Local doctors did not consider the state of things at the sanatorium satisfactory. There ought to be someone appointed to look after people who were not able to pay for their own doctor. Under the present arrangement patients were supposed to provide their own medical attendance. If the doctors were asked by the matron to see a case they never refused, but if it had not been for them many patients would have been without medical attendance so far as the sanitary authority were concerned.

Sanitary Inspector Pearson stated that the Corporation provided a nursing staff at the hospital.

The defendant, giving evidence on his own behalf, stated that in the first instance the Corporation charged him 2 guineas a week for his child, but after he protested reduced the charge to 1 guinea. Prior to his leaving Folkestone, where he and his family had been staying, Dr. Gilbert was understood to have informed his wife that there would be no charge. When, however, they had returned to town, Dr. Gilbert began to send him bills, but he took no notice, since he did not think that he was liable. Later on he found that he was liable, and consequently tendered a payment of £2 to Dr. Gilbert in payment of all liabilities, considering that it was ample. He had been paying all along the line, and the business had cost him £30, and had it happened in London it would not have cost him more than 30s.

The Judge, who in the course of the case remarked that he had never heard of a hospital without a medical staff, and that he hoped that the attention of the Local Government Board would be called to the matter, gave a verdict for the plaintiff for the full sum claimed, with costs, saying that the case was an unfortunate one for the defendant.

In a public correspondence relative to this case, it was stated by the Chairman of the Sanitary Committee that medical attendance was provided by it, inasmuch as all patients not under the care of other medical men were attended by the medical officer of health, whose fees for attendance on such patients were paid by the Corporation. In reply to this Dr. Larking wrote to the papers maintaining the material

accuracy of his evidence, and stating that if any such arrangement really existed local medical men were unaware of it. He also asked, apparently without eliciting any official reply, at what date the practice of obtaining parish relief orders for patients whom private medical men could not attend, had been abandoned.

CORONERS AND MEDICAL PRACTITIONERS.

DR. S. T. CRAIGIE MONDY has sent us some particulars concerning an inquest recently held in the Wandsworth district. He says: "I was called out on Sunday morning, August 6th, to see a man, and when I arrived at the house he was already dead. As I was informed that he had taken some 'Epsom salts' I immediately took possession of and sealed the box, and also the glass, the spoon, and the dregs of the solution of salts from which he had taken his dose; and the case was reported to the coroner. The following day the coroner's officer called upon me, and said that the coroner wished for the articles I had brought away, and that I had no right to remove them. Had I left these things behind me might not the relatives, inadvertently or otherwise, have thrown away the box containing the salts and washed out the tumbler, and thus these valuable sources of evidence would have been lost? I was not summoned to the inquest, but a Dr. Freyberger was ordered by the coroner to make a necropsy, and it appears from the account in the local press that he did so, and stated that the deceased died from corrosive poisoning, and that a chemical analysis of the contents of the stomach would be necessary, and the inquest was adjourned for that purpose. As the coroner's order for necropsy directs that if necessary an analysis of the contents of the stomach and intestines should be made, I would ask why was not this done in the first instance? I examined the body within ten minutes of the death, and I consider myself quite as competent as Dr. Freyberger to make a necropsy, and to discover the cause of death. I should like your opinion as to whether I did rightly, and was justified in taking charge of and sealing up the articles I did under all the circumstances of the case?

*** On being called to such a case our correspondent must reasonably have expected that he would in due course be summoned as a witness to the inquest; and as the medical man called to the case, we consider that he acted rightly in the course he adopted, and we further think that if the coroner had exercised a sound discretion, our correspondent should have been summoned to give the medical evidence at the inquest, when probably he would have examined the salt and discovered its poisonous nature, with the condition of the stomach and intestines, and the collateral evidence; a correct verdict might thus have been arrived at without adjournment. Dr. Freyberger, in addition to his assumed special proficiency as a pathologist, also acts as an analyst, and if an inquest is adjourned for the purposes of a special analysis, he can be employed by the coroner to make it with the consent of the County Council, and for this we understand that a fee of 5 guineas is allowable in the scale of disbursements.

In a further letter Dr. Craigie Mondy says: I have, eight days after the inquest was adjourned, received the coroner's summons to attend his court and give evidence on September 12th, at 11 a.m. Had this been my permanent address this date would have been an inconvenience to me, but as I am only *locum tenens* and leave here on Monday night or Tuesday morning next (September 1st) to take up another post for a week—that is, till September 8th—I am now debarred from accepting any further appointments till this inquest is ended. For this attendance I shall get £1 1s., but shall lose at least five days' appointments over it. Had I been called on to give evidence in the first place this inconvenience and loss of time and remuneration would not have arisen, for a mere repetition of my findings would not have been necessary.

*** We quite agree with all our correspondent says, and that if he had been called in the usual way at the first inquiry all the inconvenience would have been avoided, as well as the extra expense to himself and to the county.

DR. FERENCH BLAKE (Putney) writes: Anent the correspondence which has lately appeared in the medical press from medical men in Battersea and its neighbourhood complaining of the treatment to which they have been subjected by the Westminster coroner (Mr. Troutbeck) by his adopting the very unusual course of handing over nearly all necropsies in the district to a stranger residing at Primrose Hill—Dr. Freyberger—I wish to relate a similar instance which recently occurred to myself. A patient brought to my house early on the morning of August 17th, her infant (at whose birth I was present) "because it looked so blue"; on examining it I pronounced it dead and instructed the mother to communicate with the coroner's officer. This she did. In the course of a few days I received a letter from the deputy coroner, a Mr. Henslowe Wellington, stating that he "had asked the pathologist (Dr. Freyberger) to make the *post-mortem*," and requested me to furnish particulars bearing upon the death "at once" so as to enable him to judge whether my evidence would be required. I returned the deputy coroner's letter to its author.

THE REMUNERATIVE ART OF PUFFING.

ETIQUETTE.—We have handed the testimonial in favour of Mazawattee cocoa to the Ethical Committee, which is endeavouring to deal systematically with such cases.

THE PUFFING OF MEDICAL MEN IN THE LAY PRESS.

M.B., M.A.—Our correspondent sends us a cutting from the *Berwick Advertiser*, which contains a paragraph announcing the purchase of a house by a newly-arrived medical man, the opportunity being improved by the editor to draw attention to the skill, devotion, unselfishness, and other good qualities of the purchaser. We have already drawn attention to the regrettable extent to which the Scottish newspapers are made the vehicles for such puffs (see BRITISH MEDICAL JOURNAL, July 4th, p. 56), and we have expressed the opinion that it is time the medical profession in Scotland bestirred themselves to put a stop to what amounts to a scandal.

MEDICAL ETIQUETTE.

PRACTITIONER.—In the case of a lady aged 25 there is no obligation to seek the consent of her parents before proceeding to such examination as the gynaecologist might think necessary in order to form a diagnosis.

A QUESTION OF SALARY.

SIMPLEX writes that he was engaged as an assistant with an agreement that a month's notice should be given on either side. A short time after he entered on his duties the principal died, and the executors offer him payment up to the date of the death only. Four days later he consents to continue as assistant on the same terms with his late principal's successor. (1) Can he legally claim a month's salary from the executors in lieu of notice? (2) would it be unprofessional to do so, seeing that he continues as assistant in the same practice.

*** (1) He can legally claim a month's salary in lieu of notice from his late principal's executors; (2) under the circumstances it would be better to forego the claim, but our correspondent ought to suffer no loss, and should be paid by the executors anything due for his services between the death of the principal and his entering the employment of the principal's successor.

MEDICAL ADVERTISING IN THE LAY PRESS.

A CORRESPONDENT sends us a cutting from a copy of the *Yorkshire Post* containing advertisements of practitioners requiring assistants and medical assistants requiring situations, and he draws attention to one which states that an unqualified assistant is required, "able to take entire charge occasionally," and he asks whether this is allowed?

*** As we read the resolution of the General Medical Council, it would be infamous conduct in a professional respect to allow an unqualified person to have entire charge of a practice.

STARTING PRACTICE WITHOUT AN INTRODUCTION.

RETIRED INDIAN MEDICAL OFFICER.—There is nothing contrary to medical ethics or etiquette in our correspondent starting in practice without purchasing an introduction, but undoubtedly in small places such intrusion is often resented by the resident practitioners.

THE LIABILITY OF EMPLOYERS FOR MEDICAL SERVICES RENDERED TO SERVANTS.

M. H.—As our correspondent was requested by the employer to see the servant, and to accompany him to the hospital, he is entitled to be paid, and should charge a reasonable sum for his service upon the basis of his ordinary visiting fees for the time occupied. The employer should pay. It is quite customary to charge a double fee for a night visit.

THE RIGHT TO PATIENTS.

E. R. R. C.—We think B. should have offered to give up the case to A. as soon as he became acquainted with the circumstances, but if the patient and his employer wished him to continue in attendance he could do so with A.'s consent, and we think his arrangement to share the fees with A. was a friendly solution of the difficulty.

MEDICAL ADVERTISING.

MEDICUS complains that at the watering place where he resides a medical man who visits the place for the season puts up his plate and practises, while at the same time he allows his name to appear in the visitors' list in both local papers, as "Dr. Blank, family," with his home address. Our correspondent asks whether this is not advertising.

*** We presume that Dr. Blank would reply that it is merely an intimation to his friends that his family is in residence at the watering place.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8,300 births and 4,575 deaths were registered during the week ending Saturday last, September 12th. The annual rate of mortality in these towns, which had been 15.7, 16.0, and 15.7 per 1,000 in the three preceding weeks, rose again last week to 15.8 per 1,000. The rates in the several towns ranged from 5.0 in Bournemouth, 6.7 in Hornsey, 8.1 in Burton-on-Trent, 8.9 in Croydon and in Smethwick, 10.4 in Reading and in Swansea, 10.6 in King's Norton, and 10.8 in Walthamstow, to 20.8 in Tynemouth, 20.9 in Hull, 22.0 in Sunderland, 22.1 in St. Helens, 22.3 in Bootle, 22.5 in Middlesbrough, 23.0 in Grimsby, 24.1 in Stockton-on-Tees, 26.7 in Stockport, and 27.7 in Wigan. In London the rate of mortality was equal to 15.2 per 1,000, while it averaged 16.1 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 3.2 per 1,000 in the seventy-six large towns; in London also this death-rate was equal to 3.2 per 1,000, while among the seventy-five large provincial towns it ranged upwards to 6.0 in Stockton-on-Tees, 6.5 in West Ham, 6.6 in Aston Manor, in Sheffield, and in Sunderland, 6.7 in Wigan, 6.9 in Bootle, and 9.5 in Grimsby. Measles caused a death-rate of 1.5 in Ipswich and 2.4 in Warrington; diphtheria of 2.0 in Tynemouth; whooping-cough of 1.3 in Aston Manor, and 1.5 in Leyton and in Merthyr Tydfil; "fever" of 1.2 in Bolton; and diarrhoea of 4.2 in Hull, 4.4 in Rhondda, 4.5 in Sunderland, 4.7 in Burnley, 5.0 in Stockton-on-Tees, 5.4 in West Ham, 5.6 in Sheffield, 6.0 in Bootle, 6.7 in Burnley, and 8.7 in Grimsby. The mortality from scarlet fever showed no marked excess in any of the large towns. One fatal case of small-pox was registered last week in Liverpool, but not one in any other of the seventy-six towns. The number of small-pox patients under treatment in the Metropolitan Asylums Hospitals, which had been 52, 57, and 49 at the end of the three preceding weeks, had further declined to 46 at the end of last week; 9 new cases were admitted during the week, against 13,

11, and 6 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital on Saturday last, the 12th inst, was 1,772, against 1,797, 1,774, and 1,706 on the three preceding Saturdays; 212 new cases were admitted during last week, against 225, 199, and 229 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, September 12th, 892 births and 470 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 15.1, 15.1, and 16.6 per 1,000 in the three preceding weeks, declined again last week to 14.4 per 1,000, and was 1.4 per 1,000 below the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 8.5 in Leith and 12.7 in Edinburgh, to 18.9 in Paisley and 20.1 in Perth. The death-rate from the principal infectious diseases averaged 2.4 per 1,000 in these towns, the highest rates being recorded in Dundee and Perth. The 225 deaths registered in Glasgow included 5 from measles, 7 from whooping-cough, 3 from "fever," and 21 from diarrhœa. Ten fatal cases of diarrhœa and 4 of "fever" occurred in Dundee; 9 of diarrhœa in Edinburgh, 6 in Aberdeen, 3 in Greenock, and 2 in Paisley.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, September 12th, 456 births and 298 deaths were registered in six of the principal Irish towns, both items being considerably below the average of foregoing periods. The mean annual death-rate of these towns, which had been 19.2, 18.2, and 16.5 per 1,000 in the three preceding weeks, fell slightly to 16.2 per 1,000 during the week under notice, this figure being 0.4 over the mean annual rates during the corresponding period in the seventy-six English towns. The death-rates ranged in these six Irish towns from 6.8 in Limerick, and 14.4 in Cork to 19.9 in Dublin, and 28.0 in Waterford. The latter town, however, usually occupies a much more favourable position. The death-rates from the principal zymotic diseases in these six Irish towns averaged during the week 2.7 per 1,000. The highest point, 5.8, was reached in Waterford, and was due to 3 deaths from diarrhœal diseases. No deaths at all were registered during the week in all Ireland from small-pox, measles, scarlet fever, or typhus. In Dublin 1 death was recorded from diphtheria, 1 from whooping-cough, 1 from enteric, and 7 from diarrhœal diseases. In Belfast enteric caused 6 deaths, diarrhœal diseases 12, whooping-cough 3, and diphtheria 1.

VITAL STATISTICS OF THE COUNTY OF ESSEX.

DR. THRESH'S report to the Essex County Council for 1902 only appeared early in August, owing, he states, to one of the returns being very late. The chief statistics for the county are the following:

Estimated population for the middle of 1902 in the administrative county is 852,610. In correspondence with what is taking place in other counties the birth-rate shows a lower figure than for previous years. It is 27.0 (England and Wales 28.6) for the whole county, 28.3 in the urban districts and 23.9 in the rural districts. Fortunately the death-rate is only 12.6, being 3.7 per 1,000 lower than that for England and Wales. It is 12.0 in urban and 14.3 in rural districts. The total deaths numbered 10,754. In correspondence with the rest of the county the "slaughter of the innocents" has been greatly lessened, the rate of infantile mortality being but 109, 114 for urban and 93.5 for rural districts. The latter figure shows that the often-repeated statement that an infantile mortality of 100 per 1,000 for the first year of life is practically unavoidable and all above that figure is avoidable is certainly too high. In four urban and one rural districts, however, the figure is above 130, being 173 for Saffron Waldon, 134 for Barking, 132 for Brentwood, 139 for Halstead, and 161 for the rural district of Orsett. The above report also contains the "report of the Committee appointed to consider the causes of the excessive infantile mortality in Essex."

The zymotic death-rate was 1.33 (England and Wales 1.64). It was very low in the rural districts, being only 0.91 per 1,000.

For the county the figures for the separate diseases were small-pox 0.21, measles 0.117, scarlet fever 0.054, whooping-cough 0.245, diphtheria 0.248, "fevers" 0.171, diarrhœa 0.286. With the exception of small-pox and "fevers," these figures are all below those for England and Wales.

Dr. Thresh, however, records the curious fact that while the death-rate from all the infectious diseases has been little more than half the average for the last ten years, the number of cases of notifiable diseases has been above the average and greater than has been notified in any previous year. This has been chiefly due to the prevalence of small-pox, 1,334 cases of which were notified, and of these 181 died, that is, a mortality of 13.56 per cent. The great majority of these cases occurred in the seven districts of Barking, East Ham, Grays, Leigh-on-Sea, Walthamstow, Romford, and Orsett. Dr. Thresh again points out, what he had previously insisted upon elsewhere, that the districts which suffered most were the comparatively thinly populated rural districts adjacent to the hospital ships and the Dagenham Small-pox Hospital. In regard to typhoid fever, Dr. Thresh again points out its comparative prevalence in the Thames Valley part of the county, the rates being: Thames Valley case-rate 2.34 and death-rate 0.24 per 1,000; other parts of county case-rate 0.74 and death-rate 0.12 per 1,000. A special report by Drs. Thresh and F. L. Wood on a typhoid fever outbreak due to oysters is appended.

The summary of work done in the county public health laboratory during the year shows that 126 samples of water were examined chemically and 46 bacteriologically, while 192 samples of effluent were chemically analysed. It is noteworthy as indicating how little Widal's reaction for typhoid fever is appreciated still in many parts of the country, that while 705 swabs were examined for the presence of the diphtheria bacillus, only 22 samples of blood were examined for this reaction. The report concludes with a summary of the reports of the different medical officers of health.

MEDICAL ATTENDANCE ON A CASE OF SMALL-POX REMOVED FROM WORKHOUSE TO A TEMPORARY HOSPITAL.

H. M.—We assume that the temporary hospital to which the patient in question was sent from the workhouse is a hospital established by the guardians, and not by the sanitary authority of the district. If this be correct and the hospital is within the medical district of either A. or B. it would be the duty of the one holding such district medical appointment to attend the case without extra remuneration if directed to do so by a proper order of the guardians or of the relieving officer of the district in which the hospital is.

DOUBTFUL CASE OF LUNACY.

SANE AND INSANE writes to the following effect: An elderly lady wholly dependent on her brother for support and subject to attacks of temporary insanity was certified by her doctor as insane. She was removed to the asylum; on arrival there she was found to be perfectly sane and was forthwith discharged. Our correspondent asks what can be done for her safety in the future, as it appears impossible to find a suitable residence for her either in or out of an asylum for £50 per annum, this being all her brother is prepared to spend on the case.

*** As this patient appears to have been sent to any asylum on one medical certificate only, it may be assumed that she was sent to a county asylum as a pauper. If this be correct, there ought to be no difficulty in dealing with the case in the future should her condition at any time appear to justify further certification, as it would then be the duty of the relieving officer of the district to take all necessary steps which the condition of the patient would indicate to be necessary.

INDIA AND THE COLONIES.

INDIA.

Mr. Haffkine's Work in India.—Mr. W. M. Haffkine, C.I.E., has compiled a "Summarised Report on the Bombay Plague Research Laboratory" for the years 1896-1902 representing all the work done by himself and his assistants from the opening of the laboratory on October 8th, 1896, to May 31st, 1902, a period of 5¾ years. The preparation and distribution of the plague prophylactic constituted the principal business of the institution. 2,867,141 doses were distributed to India and foreign countries. Full details are given of the distribution. The history of the discovery of vaccine and of the various improvements made in its manufacture is recorded, and information given regarding the modus operandi and the results of its use. References are furnished regarding reports and articles bearing on the effects of inoculation, both preventive and curative. The means and agencies adopted for the purpose of introducing and spreading the practice among Indian peoples are summarized. Other researches concerning plague conducted in the laboratory are briefly treated of—pathological studies; studies on the antitoxic serum treatment; experiments in serum diagnosis; examination of plague-suspected animals, ships, cultures, and patients; researches on the plague bacillus in Nature; and studies in disinfection. The laboratory has also been largely used for other purposes, the chief of which are observations and experiments on cholera; enteric fever—prophylaxis, causation, and serum diagnosis; Malta fever; relapsing fever; scurvy; snake venom and antivenene; diphtheria; leprosy, variola, and vaccinia; epizootic lymphangitis and surra. A full list of publications and lectures by the officers of the laboratory is published. The foregoing bald abstract of their interesting record indicates an immense amount of work of the highest interest and value done by Mr. Haffkine and his assistants, whose labours are fully and warmly acknowledged. This laboratory will always hold a conspicuous place among the institutions established and undertaken for the purpose of promoting the scientific study of medicine in India.

Cholera in Kashmir.—Dr. A. Mitra, Chief Medical Officer, Kashmir, has written an elaborate report on the epidemic of cholera which prevailed in the Kashmir Valley during the years 1900 and 1901. The report, which is got up in the usual Indian fashion, and has been printed in the Central Gaol Press, Srinagar, is a creditable production. Kashmir has been visited by cholera eleven times since the year 1824. The epidemic preceding the present one was in 1892, and was short and sharp; 16,845 cases were reported with 11,712 deaths. In the present outbreak 19,265 attacks were registered with 10,811 deaths. No information is given regarding the population of the province or of the towns and villages attacked. Cholera invariably enters the Kashmir Valley from the Punjab. On the present occasion the outbreak of 1900 and the recrudescence of 1901 were both associated with the pilgrimage to Amariath. Detailed returns show that the incidence of the disease was extensive, but the Valley of Harwan, the gaol, the State hospitals, and the public serais at Srinagar and Baramulla escaped. The disease persisted, but with greatly reduced intensity during the winter months, and revived with the warmth of spring and summer. It abated in July and August, but recurred severely in September and October, dying down a second time during the winter. Efforts were made by means of inspection and quarantine to exclude the disease, but these proved or no service. Dr. Mitra has fully realized the need of sanitary reform in Kashmir, and has caused the accomplishment of many important improvements in Srinagar and elsewhere as regards conservancy, water supply, buildings, roads, food supplies, etc. Cleansing operations were pushed in the presence of the epidemic, and generous arrangements made for the treatment of the sick. He believes that water, food, and flies constitute the most common means of conveyance of the cholera contagion and endorses the "tea kettle theory." The excreta of cholera patients should, he considers, be burnt, and he does not attach much value to the process of permanganizing wells and springs. He mentions that during the epidemic there was a large mortality among cows, sheep, and fowls, but no data are given by which the disease or diseases causing this excessive mortality can be identified.

HONG KONG.

REPORT OF THE MEDICAL OFFICER OF HEALTH FOR THE YEAR 1902.

THE report of the Medical Officer of Health, Dr. F. W. Clark, has been published in the Government *Gazette*:

Area.—The area under the jurisdiction of the Sanitary Board comprises (1) the island of Hong Kong, which has an area of 29 square miles, and (2) a portion of territory on the mainland with a sea frontage of 10 miles and an area of 18 square miles. "The city of Victoria is built on the northern shore of the island, with a frontage to the sea of about 5 miles, while the harbour, which separates it from Kowloon on the mainland, is rather less than a mile and a-third wide at its narrowest part, and somewhat over three miles at its widest part." "The domestic buildings of the city of Victoria number 9,234 (exclusive of barracks and police stations) of which 920 are non-Chinese dwellings, while there are also some 130 European dwellings in the Hill district." Throughout the year Dr. Clark has expended much time in examining and passing plans for the alteration of existing houses and the building of new dwellings. In 1902 the number of new houses completed was 898, as compared with 796 in 1901.

Climate.—The average monthly temperature has been 73.4° F., as compared with 72.1° F. during 1901; the maximum monthly temperature was attained in August and September, when it reached 81.8° F., and the minimum monthly temperature was recorded in February, being 59.5° F. The highest recorded temperature during the year was 92.2° F. on July 27th, and the lowest 40.5 F. on February 4th. The temperatures are taken at 108 ft. above mean sea level, and at 4 ft. above the grass. The total rainfall for the year was 97.50 in., as compared with 55.78 in. in 1901—the wettest month being May, with 26.73 in., the driest, February, with only 0.02 in. The greatest amount of rain which fell on any one day was 8.66 in. on August 2nd, while no rain fell on 223 days of the year; the relative humidity of the atmosphere was 75.6 per cent., as compared with 75 per cent. in the previous year, while during March to August it averaged continuously over 82 per cent. The average daily amount of sunshine throughout the year was 5.3 hours, and on 51 days no sunshine was recorded.

General Sanitary Condition.—In the early part of the year the Colony was visited by Professor Simpson, M.D., F.R.C.P., and Mr. Osbert Chadwick, M.Inst.C.E., C.M.G., who had been specially deputed by the Secretary of State to report on its general sanitary condition. Their reports emphasized the urgent need of improved lighting and ventilation for the Chinese buildings, with the result that the Public Health and Buildings Bill was drafted and passed by the Legislative Council in February, 1903. For many years the medical officer of health had called attention to the great defects in the present Chinese dwelling-houses, and it is satisfactory that the Bill referred to has now become law.

Population.—"The population at the census taken in January, 1897, was 248,880, while at the census taken in January, 1901, it was (exclusive of the new territories) 283,975. This represents an increase of 35,095 within a period of four years, and affords a remarkable proof of the rapid progress of the Colony." For convenience, the city of Victoria is divided into ten health districts, while Kowloon is divided into two health districts under the supervision of the sanitary staff. Dr. Clark has carefully worked out two tables, the first showing the number of Chinese houses and floors (that is, separate Chinese dwellings in most cases), and the number of inmates per house and per floor in the city of Victoria, while the second gives the acreage and total population of each health district of the city of Victoria and the number of persons per acre. One district (No. 5) shows more than 800 persons to the acre; others also are "far too densely packed with human beings, and it is essential to the welfare of this Colony that a remedy should be speedily found and put into operation for this insanitary condition." "So far as I have been able to ascertain," Dr. Clark writes, "there is no other city in the world which has 132 persons to the acre, and yet this is the density of population of the city of Victoria as a whole, that is to say, including all the outlying vacant lands, and the villages, racecourse and cemeteries, the public gardens, vacant military land, and all the unoccupied hillside below the upper limit of the city health districts, that is, about 450 ft. above high-water mark. Glasgow, which is the most densely crowded of the large cities of the United Kingdom, has but 61 persons to the acre." The two health districts in which the outbreaks of bubonic plague invariably commence and are most severe show the greatest number of occupants per floor, namely, 8.8 and 9.0.

Births.—The corrected birth-rate for 1902 was 6.1 per 1,000, while among the Chinese alone the rate was 5.3 per 1,000.

Deaths.—The death-rate for 1902 was 21.7 per 1,000 as compared with 23.5 in 1901, 23.9 for 1900, and an average of 23.0 per 1,000 during the past five years. In calculating the death-rate, 582 deaths from bubonic plague have been included. "It is satisfactory to find that, in spite of the persistence of bubonic plague, the death-rate shows a considerable reduction during the past ten years as compared with the previous decade, but there can be no question that this rate is still exceedingly high, having regard to the fact that the population is so largely composed of young adults." The death-rate among Chinese was 21.93 per 1,000, while the death-rate among non-Chinese was 19.0 per 1,000. Of 43 deaths occurring in the army, 16 were due to malarial fever, 3 to bubonic plague, and 2 to dysentery. Eighteen deaths were registered in the Colony as occurring in the China Squadron, and of these 2 died from cholera, 1 from dengue fever, and 3 from pneumonia. In the mercantile marine or in foreign navies there were 28 deaths, the principal causes being cholera (6), enteric fever (2), bubonic plague (2), and pneumonia (5). Among the non-Chinese resident civil community 263 deaths occurred, and of these 31 were due to cholera, 23 to pneumonia, 22 to phthisis, 20 to general tuberculosis, 15 to bubonic plague, 15 to malarial fever, and 8 to enteric fever.

Deaths among the Chinese.—Among the Chinese, respiratory diseases gave a death-rate of 5.4 per 1,000, and malarial fever a death-rate of 1.3 per 1,000. "The draining of the nullahs is the only practicable means of reducing the death-rate from this cause (malarial fever)." Four hundred and fifty-two deaths were caused by beri-beri, the largest number being registered in December, the smallest in January. Dr. Clark attributes beri-beri to "infected food, and most probably to damaged rice or other grain which has been attacked by some fungoid growth."

Infectious Diseases.—"The total number of cases of infectious diseases reported by registered medical practitioners during the year was 1,171, of which no less than 572 were bubonic plague and 410 were cholera." Over 200 Chinese connected with the sanitary staff were inoculated with Haffkine's antiplague serum, with the result that not a single case occurred among the staff, whereas in the previous year out of 30 ratcatchers 7 are known to have died of plague, while 5 others left the Colony sick, 2 of whom died at their homes in China. "The results, therefore, of the Haffkine inoculation, coupled with strict discipline in regard to cleanliness and the wearing of leather boots when on duty were eminently satisfactory as regards the plague staff."

Small-pox.—There was a slight outbreak of small-pox in the early part of the year, 57 cases being reported. Seven occurred in Europeans, of whom 1 died; 2 in "other Asiatics," both of whom recovered. The number of vaccinations recorded in the Colony is still far from satisfactory.

Cholera.—A somewhat serious outbreak of cholera occurred early in the year, resulting in the notification of 460 cases, and no doubt the spread of the disease was encouraged by the shortage of the water supply with the contingent intermittent service. Only 20 cases were Europeans, of whom 12 died, while of 408 cases among the Chinese 304 were fatal, and of 32 cases among "other Asiatics" 27 were fatal, the Japanese being heavy sufferers, as out of 20 cases amongst them 16 were fatal.

Diphtheria.—Twenty cases of diphtheria were reported during the year, as compared with 6 in 1901. The long-continued drought and inadequate flushing of the drains contributed largely to the marked increase in the number of cases; 8 of the cases were Europeans, 1 of whom died, while the total deaths numbered 5.

Puerperal Fever.—Seven cases were notified with 5 deaths, all among the Chinese community, while 29 deaths were due to childbirth and to morbid conditions incident to parturition. The need for a maternity charity is again called attention to in Dr. Clark's report.

MEDICAL NEWS.

ROYAL PORTSMOUTH HOSPITAL.—Hospital Saturday street collection, which was made at Portsmouth on September 12th, amounted to £323 3s. 5½d. The town was divided into twenty-three sections, and 474 ladies were engaged in the work of collecting. Collections were also made in several of the outlying districts, but the results are not yet known.

MEDICAL VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

ABERYSTWITH INFIRMARY.—House-Surgeon, resident. Salary, £150 per annum.

BIRMINGHAM: GENERAL HOSPITAL.—House-Surgeon, resident.—Salary at the rate of £50 per annum.

BLACKBURN AND EAST LANCASHIRE INFIRMARY.—Junior House-Surgeon, resident. Salary, £70 per annum.

BURTON-ON-TRENT INFIRMARY.—House-Surgeon, resident. Salary, £120 per annum, rising to £140 per annum.

CITY OF LONDON HOSPITAL FOR DISEASES OF CHEST, Victoria Park, E.—Physician to Out-patients.

GLASGOW EYE INFIRMARY.—Resident Assistant House-Surgeon. Salary, £75 per annum.

HEMEL HEMPSTEAD: WEST HERTS INFIRMARY.—House-Surgeon, resident. Salary, £100 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House-Physicians. Honorarium, £25 for six months.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Medical Officer. Salary, £180 per annum.

SAMARITAN FREE HOSPITAL, Marylebone Road, N.W.—Clinical Assistants.

SEAMEN'S HOSPITAL SOCIETY, Greenwich.—(1) House-Physician at Dreadnought Hospital; (2) Junior Resident Medical Officer at Dreadnought Hospital; (3) House Surgeon at the Branch Hospital. Salaries, £85, £40, and £50 per annum respectively.

SHREWSBURY: SALOP INFIRMARY.—Assistant House-Surgeon, resident. Salary at the rate of £50 per annum.

SOUTHAMPTON INCORPORATION.—Resident Assistant Medical Officer of the Workhouse Infirmary.—Salary, £120, increasing to £150 per annum.

VICTORIA HOSPITAL FOR CHILDREN, Tite Street, S.W.—House-Surgeon, resident. Honorarium £25 for six months.

YORK DISPENSARY.—Resident Medical Officer. Salary, £120 per annum.

MEDICAL APPOINTMENTS.

ADAMS, Percy T., M.R.C.S.Eng., D.P.H., L.S.A., Deputy Medical Officer of Health of the Orange River Colony.

COCKBURN, William, M.B., C.M.Aberd., Certifying Factory Surgeon for the Old Meldrum District of Aberdeenshire.

FINDLAY, John, M.B., Ch.B., Surgeon and Agent for the Admiralty at the Coastguard Station, Rattray Head, Aberdeenshire.

LIGHT, L. W., M.R.C.S., L.R.C.P., Medical Officer for the Bradwell District of the Maldon Union.

KENNEDY, A. Dingwall, M.B., Ch.B. Glasg., provisionally, Medical Officer to the Ballachulish Quarrymen's Medical Club and Friendly Societies, *vice* Lachlan Grant, M.D., C.M.Edin., resigned.

KNIGHT, Wilfred E., M.B.Edin., L.R.C.P.E., Senior House-Surgeon to the West Ham and East London Hospital, *vice* W. L. Brabon, M.B.Aberd., resigned.

LINTON, F. T. Churchill, M.B.Edin., Junior House-Surgeon at West Ham and East London Hospital, Stratford, E.

NESFIELD, R. W., M.B., Ch.B.Vict., Medical Officer for the Cumberworth District of the Huddersfield Union.

PAYNE, E., M.B., M.R.C.S., L.R.C.P.Lond., District Medical Officer of the Dover Union.

ROBERTSON, A., M.D., D.P.H., Clinical Assistant to the Chelsea Hospital for Women.

HENCHLEY, A. R., M.D., Clinical Assistant to the Chelsea Hospital for Women.

MORGAN, C. Howard, M.R.C.S., L.R.C.P., Clinical Assistant to the Chelsea Hospital for Women.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 8s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

EVANS.—On September 15th, at Berth Ddu, Cottenham Park, Wimbledon, the wife of David Robert Powell Evans, L.R.C.P., M.R.C.S., L.S.A., of a son.

MACKIE.—At 71, Ashbourne Road, Derby, on August 28th, the wife of Alexander H. Mackie, M.D., of a daughter.

MARRIAGES.

BENNETT—HENDERSON.—On September 12th, at St. John's Wood Presbyterian Church, by the Rev. J. Monro Gibson, D.D., Norman Godfrey Bennett, M.A., M.B., B.C. Cantab., L.D.S.Eng., 50, Brook Street, Grosvenor Square, W., to Maida Mabel, second daughter of John Henderson, 51, Lancaster Road, Hampstead.

DEVITT—GRIFFIN.—July 22nd, at St. Patrick's Church, Ravenswood, North Queensland, by Rev. Father Weare, Richard Edmond Devitt, M.B., B.Ch., B.A.O., R.U.I., Surgeon to District Hospital, Ravenswood, and eldest son of late Michael Devitt, formerly of National Bank, Ireland, to Gertrude, youngest daughter of John Griffin, Esq., J.P., Ravenswood.

JAMES—WALDRON.—On September 16th, at the Church of the Holy Cross, Ramsbury, Robert Blake James, M.R.C.S.Eng., L.R.C.P.Lond., of Hungerford, to Margaret Clara Waldron, of Eastridge House, Ramsbury.

KERR—JUDD.—On August 18th, at the Protestant Church, Bangkok, Siam, by the Rev. W. D. Courcey Blakeney, Arthur Francis George Kerr, M.B., T.C.D., to Daisy Muriel Judd, youngest daughter of the late William Abraham Judd, Esq., of Greenhithe.

MCCLINTOCK—IRVINE.—On September 16th, at Great James Street Church, Londonderry, by the Rev. J. Canne, assisted by the Rev. J. Thompson and the Rev. J. D. Cakey, Lawson Tait McClintock, M.B., Ch.B., of Loddon, Norfolk, younger son of the late Dr. J. R. McClintock, of the Grove House, Church Stretton, Salop, to Louise Maud, second daughter of the late Rev. S. Irvine, of Greenbank, Londonderry.

DEATH.

SMITH.—September 4th, at his residence, 34, Alexandra Road, Southport (late of Great Grimsby), James Edward Smith, M.D., M.Ch., R.U.I., L.M.R.C.P.I.Galw. & Dub. ed 54.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Articulate, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

ASTHMATIC asks for information as to the composition of Tucker's asthma cure.

A. W. G. writes: Is it practicable to give A. C. E. as an anaesthetic in a Junker's inhaler or will the three components evaporate with varying rapidity?

MR. H. C. ROGERS (Newport Pagnell) writes: Will some kind reader name a home which is likely to receive a young woman who is afflicted with chronic ulceration of the bowels? The weekly sum to be paid must not exceed 10s. Applicant is a good needlewoman, and would make herself useful.

M.R.C.P.E. would be glad to hear the opinion of his brother practitioners as to the evils, if any, caused by living on a chalk soil. He has lately removed from a clay to a chalk soil, and is told that the water, being so impregnated with chalk, is bad for gout and rheumatism. He does not think so himself, but would like some information on the subject.

COLONEL A.M.S. (retired) writes: I am aged 66, of very feeble physique, and for eight years a sufferer either from stenosis of pylorus, chronic gastritis, or a twist or displacement of either pylorus or duodenum. In either case I have all the concomitants of one or other of these conditions. On looking back to a painful and suffering life, I believe I have had some organic stomach lesion for twenty years, and I consulted various men of light and leading without a diagnosis being arrived at. About 9½ years ago I nearly died in an acute attack of the gastric form of influenza, when my attendant (to whom I am greatly indebted) discovered a dilated stomach, for which I commenced the use of the stomach tube. At first its use was followed by great relief, but after continuing it more or less frequently all these years, I find the relief less and less, whilst the discomfort of using it has increased almost in a similar ratio. My diet has been for years almost entirely fluid—beaten eggs, milk and plasmon, small quantities of meat juice, etc. I have tried total abstinence, but have found some stimulant almost indispensable. My present state is great emaciation, intense and most distressing hyperchlorhydria, sometimes most fetid eructations, always great gaseous distension, and the greatest difficulty in relieving myself of this, tense constipation (or occasionally very liquid stools over which I have no control). My stomach has the leather-bottle feel to the hand, and my advisers tell me I have no perceptible tumour. Gastralgia often severe, and then I resort to lavage, as also I have to do when the eructations are fetid, as they are if I take any amylaceous food. Will some member kindly tell me if I am likely to derive any benefit from residence at Vichy or any similar place? If so, I should be greatly indebted by advice as to some place where the climate is mild in winter; and also, if possible, with the name of some private family (preferably British) where I could have some of the comforts of home for self, wife, and one boy aged 14. I should add I am absolutely unable to take the dry dietary usually recommended. The gastralgia returns the instant I take any solid, even Mellin's biscuit.

THE ACTION OF PREPARATIONS OF CACTUS AND GELSEMINUM.

CAUSEWAY writes: I have been anxious to know more definitely the action of these two agents. I have a patient, about 56 years old, who was pretty well, and had a very good appetite till she got a chill in mid-July, which brought on congestion of one lung, and later congestion of the kidneys. Her pulse went up to 140, and her respirations to 56. For some days the administration of oxygen was necessary, and was found beneficial. The lung has cleared up, respiration is normal, the urine has only ⅛ albumen, but still the pulse keeps up to 112 in bed propped up, and to 120 when sitting up. I have tried tincture of digitalis, including the standardized form by Parke Davis, up to m 15 every four hours without the least perceptible effect. I dropped it because it was impairing the appetite. I have since used tincture of aconite, increasing from m 5 to m 15, thrice a day, with diminution from 120, or 124 to 112, 116. It is combined with m 5 tincture strophanthus. In this state of the heart's action I have thought of convallaria and of cactus. Of the latter, of which I have seen stated that it is not cumulative like digitalis; that it lowers the pulse-rate, and enables the patient to lie down, when this cannot be done, a condition my patient suffers from. I would like to know what is the most recent consensus of opinion as to its action, what preparation of it is best, and what are the doses. Regarding gelseminum, I have seen it stated that it is useful in certain forms of cough, but what kinds I do not remember. My patient suffers from a dry, hacking cough mostly at night, generally referred to the throat or upper part of the chest. There is no bronchitis. I should be much obliged for information about these two agents. Would sparteine be better than cactus for slowing the heart; and in what form and dose?

ANSWERS.

DR. JOHN B. OLIVER (Liverpool) writes, in reply to "Derma" (BRITISH MEDICAL JOURNAL, September 12th, p. 634): "Derma" will find the article on carbolic gangrene in the *Medical Review* for September, 1900.

ORIENT.—Our correspondent would doubtless find that one of the following works would meet his requirements: Sir William Moore, *A Manual of Family Medicine and Hygiene for India*; E. A. Birch, *Management of Children in India.*

BLENHEIM would be glad to know if any member can give information relative to the efficiency of the treatment for paralysis by a certain Dr. Scholder of Lausanne.

*** We know nothing of Dr. Scholder's treatment, but think it probable that it is similar to that devised by Dr. Frenkel of Heiden. This consists in graduated exercises, partly with the aid of mechanical appliances, and is said to be of value in lessening ataxic symptoms in tabes.

"EASTBOURNE CHAIR."

MR. F. MANSEL (Tunbridge Wells) writes: In reply to "W. E. B." (BRITISH MEDICAL JOURNAL, September 12th), the agent for the "Eastbourne Chair" is Mr. Senior, chemist, Compton Street, Eastbourne.

DR. ASTLEY ROBERTS (Eastbourne) writes: "W. E. B." will get all particulars from R. H. Woodland, 3, Bedford Well Road, Eastbourne, maker of the "Eastbourne Improved Invalid Chair," or from Mr. J. Senior, Compton Street, Eastbourne (agent).

DOCTOR'S DISPENSER.

CAROLUS.—In order to qualify as dispenser to a doctor, "Carolus's" daughter should pass the assistant's examination of the Society of Apothecaries of London, regulations respecting which will be supplied on application at the Hall. The examination is divided into two parts, one of which is a practical examination in the compounding and dispensing of medicines, and the other an oral examination in materia medica, chemistry, pharmacy, and the translation of prescriptions. Examinations are held four times a year, commencing on the fourth Wednesdays of the months of January, April, July, and October. The fee is five guineas, and notice of candidature must be lodged fourteen days in advance, together with the fee, a certificate stating the age of the candidate (which must be not less than 18), and a certificate that the candidate has received instruction from the signer in practical pharmacy for six months. The latter may be signed by a registered medical practitioner, a fully qualified chemist, or an assistant of the Society who is holding a public appointment. So far as the regulations are concerned, therefore, there is no reason why "Carolus" should not coach his daughter himself. The examination throughout is believed to be eminently practical throughout, and the syllabus shows clearly the ground which is covered.

ASSISTANTS' EXAMINATIONS AT THE SOCIETY OF APOTHECARIES.

MISS DOROTHYE E. MILLIGAN should obtain the regulations for the assistants' examination from the Society of Apothecaries, and study the syllabus which it contains to make certain that she understands exactly what she has to learn. She should then read a book on each subject which covers rather more ground than that of the examination, but only profoundly study those parts which seem to come within the syllabus. She should read, for instance, the first three parts and some special sections on organic compounds mentioned in the syllabus of the *Manual of Chemistry*, by Luff and Page (Cassell and Co.) and *Materia Medica and Therapeutics*, by Mitchell Bruce (Cassell and Co.), not troubling about the therapeutic sections. When she believes she understands these books she can test and crystallize her knowledge by turning for awhile to a cram book such as the *Apothecaries' Hall Manual* (Whitaker and Co.), by M. Thomson, but for any other purpose cram books are useless, since the explanations given are too brief. The practical work is of much importance, and she will have to get "signed up" by either a registered medical man, a qualified chemist, or an "Assistant" holding a public appointment as having been for six months a student of practical pharmacy. Unless she can find some one qualified as above who will undertake really to instruct and help her, she should join one of the many classes in pharmacy advertised.

JOHANNESBURG AS A SPHERE FOR OPHTHALMIC PRACTICE.

JOHANNESBURG writes: In the BRITISH MEDICAL JOURNAL of August 1st, 1903, a correspondent, "A. G.," asks for information concerning Johannesburg as an opening for an ophthalmic surgeon. For his information I may say that there are already two gentlemen in practice here who devote themselves exclusively to ophthalmic work; two others confine their attention to eyes, ears, throats and noses; and several general practitioners who have a good knowledge of ophthalmic work do a large amount of eye surgery. Since the population is a small one, the ground is well covered so far as eye work is concerned. The period of waiting that "A. G." would have to undergo would be quite as great if not greater than in any large town at home. "A. G." also asks in regard to cost of living. This is at least four times as great as at home, more particularly in the matter of house rent; the comforts obtainable even then are by no means commensurate with the expenditure, regarded from a home standpoint. I may add that I am wholly impartial in the matter as I never myself touch eye work. At the present time it is impossible to to advise "A. G." to adopt Johannesburg as a field in which to practise his speciality.

NOTES, LETTERS, Etc.

A BROKEN NECK.

SOME of our readers may have noticed reports in the press recently as to the "limbless man" and a "billiard marker with a broken neck," and the following details concerning the cases may therefore be of interest to them.

The man with a broken neck lives at Birmingham, and in answer to an inquiry, Dr. Suckling, Consulting Physician to the Queen's Hospital, writes that he remembers the man and has looked up his notes of the case, and continues as follows: "He consulted me on June 7th, 1898, and told me that six months previously he had fallen backwards down stairs and had hurt his neck. He was suffering from pains in the neck, down the shoulders, and round the throat. He was only easy when in

bed. His head was fixed and projected forwards, and any attempt to move it from side to side gave great pain. In the nape of the neck the posterior arch of the atlas could be quite plainly felt. I diagnosed partial dislocation of the cranium forwards from the articular facets of the atlas, and recommended him to Mr. Bennett May with a view to its reduction."

With reference to the same case Mr. Bennett May has been good enough to reply in the following terms: "In answer to your inquiries respecting the case mentioned, I can identify it as that of a patient whom I saw on the recommendation of Dr. Suckling some five or six years ago. I diagnosed the injury as a dislocation of the occiput from the atlas, the cranial bone being carried forwards. He was not paralysed in any way, and walked to my consulting room, but movement of the head appeared to be very painful. I thought reduction was probably practicable, though it was then six months after the accident. The arrangements, however, fell through, owing, I think, to the element of risk involved, and I heard no more of the case until this notice of it in the paper, which, I need hardly say, was a surprise to Dr. Suckling and myself. We had not at that time the *x* rays to help us, but I had no doubt of the diagnosis. I am sure the injury was a very remarkable one, and have no knowledge of anything similar, either from reading or experience." The details of the other case, that of the limbless man, are as follows: The right leg was amputated just below the knee: the left leg at the middle of the thigh; while both hands were removed at the wrist. The Surgical Aid Society, from whom this information was obtained, adds that "it is proposed to fit the poor fellow up with thoroughly well-made and serviceable artificial legs, feet, and hands, the latter being also equipped with such appliances as will enable him to feed himself, to write, to hold books and light parcels, to carry and pull heavier weights, and to use such tools and implements as his future occupation may demand. As to the legs and feet, it is needless to say that these will enable him to walk unaided, and, in fact, restore him to a position of comparative independence. It is probably only in such matters as dressing and undressing and other duties requiring the delicate use of the natural fingers that he will need the help of friends." These limbs are to be supplied free by the Society, which also wishes it to be known that in cases of temporary disablement among poor people loans are made of air and water beds, invalid carriages and chairs, crutches, etc. The Society has lately altered its premises, so as to provide greater instrument-fitting space on the ground floor of its premises in Salisbury Square. From its annual report it appears to be receiving a fair measure of support from the charitable public, but not more than the annual increase in its work requires. The report of the surgeon for last year shows that 18,709 cases were relieved during the year, of whom 1,730 were children: the total number of appliances granted being 29,895: while, in addition, 368 were supplied for temporary use. The Secretary is Mr. R. C. Tresidder, Salisbury Square, E.C.

THE PROBABLE MODUS OPERANDI OF THE PARASITES OF MALIGNANT DISEASE.

FLEET SURGEON J. H. WHELAN, M.D., R.N. (H.M.S. *Edgar*), writes: If cancer be caused by parasites, protozoal or other—and to me most of the evidence we at present possess points to such being the case—then a most important and interesting question to consider is, How do they likely act? Have we any evidence, circumstantial or direct, on the subject? As the disease is not definitely proved to be parasitic, of course there can be no direct evidence; but, allowing the premiss that it is parasitic, I think we can make more than an ordinary surmise on the subject. The epithelial nature of the essential part of the growths, the differential peculiarities of the metastases of cancer that start in certain intestinal glands—cylindrical or adenoid cancer—from that starting in the skin, seem to me to point in one direction only. The following explain all the known phenomena of the disease:

(*a*) The parasites enter and attack epithelial cells only.

(*b*) They do not destroy the epithelial cells, at least at first, but dominate them and live with them symbiotically.

(*c*) They stimulate these cells to inordinate proliferation, and wean them entirely from their allegiance to their commonwealth. The primary tumour is formed.

(*d*) Traitors are proverbially their country's bitterest foes, and these misguided cells prove no exception. They become the contented helots of the parasites.

(*e*) Detachments of the renegade cells enter the lymphatics, carrying their masters with them, and found colonies wherever they can succeed in making a lodgement—secondary tumours.

(*f*) The renegades batten and fatten at the expense of the other members of the commonwealth, and the parasites batten and fatten by the aid of their helots.

(*g*) The commonwealth gradually becomes poisoned by the combined excreta of the parasites and the renegades. It is preyed upon and obstructed by the alien settlement and colonies. Disorganization, decay, and dissolution follow.

(*h*) The stroma of cancer is but the unsuccessful efforts of the connective tissue cells to isolate and combat the enemy.

Where do the parasites come from? How do they escape from their host? Allowing the disease to be parasitic, these are the two crying questions of the hour. When we are able to answer them, the strategic position of the foe will be more than precarious. Sarcomata are probably caused by a different species of protozoal parasite to that of cancer. It probably attacks connective tissue cells, and these only, hence the absence of the distinctive fibrous stroma. Its colonial enterprises are made through the blood circulation.

INCOME-TAX OVERCHARGES.

THE INCOME-TAX ADJUSTMENT AGENCY, LIMITED (Poultry, E.C.), writes: That hardy annual the blue notice of charge having begun to make its appearance, will you permit us to remind your readers that if they are dissatisfied with their assessments they can appeal against the same to the Commissioners for special purposes at Somerset House. The principal occupation of these gentlemen is the hearing of appeals, and not only do they understand income tax as no local commissioners do, but they can be relied upon to treat appellants with courtesy and to see that they get fair play. The public are continually suffering gross injustice at the hands of different bodies of local commissioners, very few of whom have any knowledge of the matters upon which they have been appointed to adjudicate. October 5th next is the last day for giving notice to set off a loss in business against income from any other source.

THE WET SUMMER AND THE PUBLIC HEALTH.

A FRIENDLY CRITIC writes: The leader on The Wet Summer and the Public Health, which appeared in the BRITISH MEDICAL JOURNAL of August 29th, is interesting to the medical profession, as it ought to be consolatory to holiday makers. But is not the beneficial effect of a wet summer due to the purifying of the air as much as to the cleansing of the surface of the streets?

THE D.P.H. EXAMINATION OF THE CONJOINT BOARD.

RURAL SANITARY AUTHORITY writes: The communication of "Diplomate in Public Health" more than corroborates what I contended in my letter—namely, that the Part II Examination of the English Conjoint Board is no test of the fitness of a candidate for the post of medical officer of health. I should like to know where your correspondent was allowed to sit for his examination, for I am given to understand that no candidate is admissible to the examination of any other qualifying authority who has been rejected within the six preceding months.

SOMNOFORM AND NITROUS OXIDE.

DR. G. W. B. DANIELL writes to point out an error in his communication on this subject in the BRITISH MEDICAL JOURNAL of September 12th. The passage as printed ran as follows: "In conclusion, I would add a word of caution on these new anaesthetics. They are all at present more or less on their trial, and much more experience will have to be recorded before a definite statement can be made as to their relative *rapidity* and efficacy in comparison with nitrous oxide in dental surgery." The word printed *rapidity* should be *safety*.

ERRATUM.—In the paper by Dr. F. G. Bushnell entitled Leucocytosis and Lymphocytosis in Malignant Disease, Lymphadenoma, Leukaemia, etc., the sentence "Myelocytes," etc. (p. 586, Table I, blood count 399, lymphatic) belongs to the next blood count (135, A. P., splenomyelogenous). Under column "Date, Remarks," "enucleated" should be "nucleated."

LETTERS, COMMUNICATIONS, ETC., have been received from:
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BOOKS, ETC., RECEIVED.

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A Simple Method of Water Analysis, especially designed for the use of Medical Officers of Health. By John C. Thresh, M.D Vict., D.Sc.Lond., D.P.H.Camb. Fourth edition. London: J. and A. Churchill. 1903. 2s. 6d.

The Practical Details of Cataract Extraction. By H. Herbert, F.R.C.S.Eng., Major I.M.S. Second edition. London: Bailliere, Tindall and Cox. 1903. 4s.

The Story of My Life. By Helen Keller. With her letters (1887-1901), and supplementary account of her education, etc., by John Albert Macy. London: Hodder and Stoughton. 1903. 7s. 6d.

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The Refraction of the Eye. By Gustavus Hartridge, F.R.C.S. Twelfth edition. London: J. and A. Churchill. 1903. 6s.

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SEVENTY-FIRST ANNUAL MEETING
OF THE
British Medical Association.

Held in Swansea, July 28th, 29th, 30th, and 31st 1903.

PROCEEDINGS OF SECTIONS.

SECTION OF TROPICAL MEDICINE.

G. H. F. Nuttall, M.D., Ph.D.Camb., President.

(Concluded from page 659).

DISCUSSION ON LEPROSY: ITS ETIOLOGY, HISTOLOGY, AND TREATMENT.

I.—Jonathan Hutchinson, F.R.S., LL.D.,
Consulting Surgeon, London Hospital.

Mr. Hutchinson commenced by stating that he had nothing novel to discuss in reference to the bacteriology of leprosy. Although there had been rumours that the bacillus had been successfully cultivated on fish broth, they had not been sufficiently confirmed to entitle them to attach importance to them. No observer had as yet discovered the bacillus either in fish or any other article of food. In seeking to discover its mode of entrance into the human body they were therefore still left to the light of circumstantial evidence, for nothing had been made the subject of demonstration. That light had, however, become of late increasingly strong, and unless he was much mistaken, it might be trusted to lead them in the right direction. It led, he thought, irresistibly to the conclusion that the disease was in some way caused by food, and that its germs were received by the stomach, and at the same time it utterly discredited all suggestions of contagion by the breath, by touch, or by skin inoculation.

Proceeding to discuss *seriatim* a number of propositions which had been placed before the meeting, the speaker dealt first with

The Possibility of Inheritance.—The evidence on this matter was perhaps much on a par with that as regards tuberculosis. No one could deny the possibility, and facts every now and then came to light which seemed to support it. They were, however, not numerous and they were counter-balanced by a large amount of negative evidence. Nor was it usually difficult to explain such facts in other ways. In a recent visit to a leper hospital in India he had been shown two children of 4 years who were undoubtedly the subjects of the disease and both of them were the offspring of leprous mothers. Here might seem to be a good instance of inheritance, but then it was to be remembered that both these children had been suckled by their mothers and thus it was quite possible that the bacillus had been received by the mouth either from the parent's milk or from some sore on her skin. That fetal transmission was not common was proved by the experience of homes for the children of lepers—several of which existed in India—and by the fact that no single instance of it could be found amongst the descendants of lepers who had migrated to America. For practical purposes such transmission might be left aside as being of little or no moment in reference to the diffusion of leprosy.

Not Contagious in the Ordinary Sense of the Word.—Certain facts which had come under his observation in the Kaffir kraals of Natal had convinced him that in some way personal communication was possible. Children who had been bred up in company with a leper, but who were descended from healthy parents, and who had never eaten fish, had become the subjects of the disease. They were very few in number, and they occurred in communities where the disease was exceedingly infrequent. Now, on the supposition that the disease was communicable by breath or touch or insect bites there was nothing to prevent it from spreading widely amongst Kaffirs; and, as it had shown no tendency to do so, they were obliged to conclude that something peculiar had occurred as to the exposure of these children. The most probable conjecture seemed to be that they had received the living bacillus direct from the hands of some one who had given them food. Such communication might be suitably termed "commensal," and although most likely to happen in the case of young children, it might not be wholly restricted to them. The admission of its possibility made it imperative that no leper should be allowed to touch articles of food to be consumed by others, or to serve in the capacity of nurse. Upon the estimate of its frequency would depend to some extent the opinion as to the desirability for segregation measures. It was, however, not improbably very rare, and that it could not suffice to keep leprosy alive in any community was proved by the experience of the Middle Ages in England and many other places, and by that of the Norwegian lepers in the United States. In these instances the disease had wholly disappeared in connexion with change in social conditions, which it could not have done if commensal communication were of frequent occurrence.*

Proceeding next to discredit the idea of the contagiousness of leprosy by any of the methods ordinarily suspected, the following facts were mentioned:

That experimental inoculations (with the single very doubtful exception of the Sandwich Islander Keanu) had always failed.

That it was universally admitted to be very infrequent for husband and wife to be both lepers.

That leprosy in most countries where it occurs is of widespread prevalence, but nowhere very common.

That in many countries it has existed from century to century without material increase (Ceylon, India, Burmah, etc.).

That with rare exceptions nothing in the least approaching to epidemic prevalence is ever observed.

That in many communities large sections of the population are constantly almost wholly exempt.

That the attendants in leper asylums never contract the disease.

That lepers residing in England, France, or the United States at the present day never become foci from which the disease spreads.

That on the supposition of contagion it is impossible that the disease could have died out in England and other places from which it has disappeared. Not only is it certain that there was no systematic or efficient segregation, but it is on record that when the leper hospitals could no longer be filled, other persons—the blind, crippled, etc.—were admitted into them.

That although, as might be expected, in many countries and at different times popular opinion has been in favour of contagion, in many others it has been strongly the reverse.

That at present in India lepers mix freely with others, and attend as out-patients at hospitals without the slightest repulsion being shown, yet the disease is thought to be decreasing rather than otherwise.

As opposed alike both to contagion and heredity it may then be alleged—

That when leprous communities are removed to a distance from the place of origin the disease dies out.

That when individual lepers are removed to non-leprous places they do not convey it.

That when the social conditions of a leprous district are changed the disease dies out of itself.

It would be easy to quote the conclusion of many careful observers who have examined the facts in leprosy districts in different parts of the world and have arrived at opinions strongly opposed to belief in contagion. On this the great Norwegian authorities, Drs. Danielssen and Boeck, wrote: "Among the hundreds of lepers whom we have seen daily, not a single instance has occurred of the disease spreading by contagion. We know many married persons one of whom is leprous, cohabiting for years without the other becoming affected. At St. George's Hospital (Bergen) many of the attendants on the inmates have lived there more than 30 years and are quite free from any trace of the disease. As the result of our observations, we have only to deny the contagiousness of leprosy." See Report of Royal College of Physicians 1869, lxix.

Having thus given reasons for believing that neither heredi-

* In a review of Gavin Milroy's Report on Leprosy and Yaws in the West Indies, and V. H. Carter's Report on Leprosy and Leper Asylums in Norway in the *British and Foreign Medico-Chirurgical Review*, vol lv, 1875, it is stated that the belief in the contagiousness of leprosy was once universal, and it was solely this belief that led in the first instance to the formation of leper hospitals. The reviewer goes on to say: "The belief in its contagiousness has been dying out. The accounts collected by the College of Physicians, by Dr. Milroy in the West Indies, by Danielssen and Boeck, all point this way. There are scarcely any trustworthy instances of contagion. They are indeed numerous enough, but they do not bear rigorous investigation. . . . The concurrent opinion of many ages has pointed to rotten fish and salted provisions as favouring the production of leprosy, and Dr. Milroy, after personal observation in the West Indies, and Mr. Hutchinson, are inclined to attribute a great deal to decayed fish as an article of diet."

tary transmission or personal communication take any large share in the production of leprosy, the speaker next proceeded to adduce evidence in support of the creed that it is caused by some article of food.

The sameness of the malady in all countries where it prevails, its occurrence under the most varied social and terrestrial conditions and without regard to race, make it evident that it must depend upon some well specialized cause, and that neither heat or cold, poverty or hardship, telluric or climatic influences have anything to do with it. It is a disease no doubt of the poor chiefly, but not very infrequently of the well-to-do, and even of priests and kings. Contagion having been disproved, there is nothing that can under such conditions be reasonably suspected excepting food. In strong support of such suspicion we have the facts:

That in countries where the disease is rare a large majority of its subjects will assert that they have had no leper predecessors, and that they had never seen a leper before the outbreak of their malady. For cases in which this double denial is made we have no better term than *de novo*. In South Africa, where the disease is very sparingly scattered over immense districts, the statements of patients who deny having ever been exposed to risk of contagion are borne out by the fact that it would have been almost impossible that they should. A similar statement is true of many other places, and the whole group of what are called sporadic cases fall, of course, into this category. In many leper asylums a large majority of the cases are, so far as any evidence can be obtained, of *de novo* origin.

The preference of leprosy for certain places, certain stages of civilization, certain religious sects, and certain special vocations are also facts which give support to the belief in food causation. The same may be asserted of the well-proved, and often great, excess with which the male sex suffers from it. Many special articles of food have from time to time come under suspicion, but there is none which will bear any serious examination excepting fish. It is not probable that a disease which is the same in all countries can be due to one kind of food in one and another elsewhere. The cause of leprosy must be everywhere one and the same.

The fish hypothesis of leprosy, as at present put forward, suggests that either the bacillus itself may infest fish in certain conditions of partial decomposition or that some element may be generated in connexion with such fish which may excite the bacillus of tubercle, when already present, to new modes of development. The idea that the disease occurs from the excessive use of fish-food is no doubt quite erroneous. Quantity has probably nothing whatever to do with it. It is some special quality or ingredient, which occurs but seldom, which determines the malady. If it were common, leprosy would be universal and few would escape. The very frequent use of fish as food is influential only in that it increases the number of times at which risk is encountered but does not in itself constitute a danger. So also the belief that fish in any form as an unwholesome article of diet leads to impoverishment of the system and so indirectly to leprosy is quite untenable. Persons in the most robust health are often attacked and nothing in the nature of health failure is ever observed as an introductory stage. It may be that the special ingredient in decomposing fish, which is the cause of leprosy, is of as infrequent occurrence as are the ptomaines in sausages, pork pies, and the like, which occasionally produce epidemic poisoning. This is a suggestion which may somewhat damp our hopes of ever discovering the ingredient concerned in any specimen of fish. It is quite obvious that it is never present in any of the kinds of fish, whether cured or otherwise, which are consumed in England and other non-leprous countries, and its infrequency in regions where leprosy itself is rare may be inferred. Thus, while the bacteriological examination of decomposing fish is of the utmost interest and importance, it may probably be long before we obtain demonstrative evidence from that source. In the investigation of circumstantial evidence it is essential to keep in mind the great length of the period of latency which has been proved to occur in many cases. If the agent which evokes the disease may remain in the body wholly without any obvious results for ten or twenty years abundant opportunity is afforded not only for change of place of residence but for much forgetfulness on the part of the patient as to the habits of diet, etc., which prevailed at the time of its acquisition.

Mr. Hutchinson next went on to cite facts which seemed to give definite support to the opinion that the use of unsound fish as food is by far the most common cause of the prevalence of leprosy. He believed it to be—with the exception of a small number of cases already adverted to as being due to commensal communication—the sole cause.

Taking the facts *seriatim* we had, he said, in the first place:

1. The circumstance that in almost all ages and places where leprosy has occurred, fish has come more or less under suspicion. This suspicion had been mentioned by hundreds of writers.

2. It had been remarked over and over again that it occurs chiefly in fish-producing districts on the sea coast, or islands, estuaries, rivers, and lakes. Although often met with inland and in districts apparently remote from fish supply, there could be no doubt that, speaking roughly, this observation is well founded. At the present time it is said to encircle Europe as a girdle, but nowhere goes far inland. On this point a foremost authority, Dr. Danielssen, bore long ago definite testimony: "Spedalsked is essentially a disease of the sea coast, and if it appears further inland it is to be observed along the course of rivers or on the borders of lakes. In our own country (Norway) the great localities for the disease are the deep fiords and islands which are found on our western coast, where the population, which is chiefly engaged in fishing, has located itself."

3. Wherever the consumption of fish is stimulated artificially by religious creed, there the prevalence of the disease is increased. This is true of almost all Roman Catholic populations which observe their fast days with strictness, and are able to procure salt fish. The days of greatest prevalence of leprosy in Europe were those in which the usages of this Church were most strictly followed, and it is worthy of note that when Catholic Mid-Europe suffered severely, the interior of Russia, under the influence of a ritual which forbade fish as well as flesh on fast days, remained free. At the present time it is believed that the disease is twelve times as frequent in the inland plateaux of Catholic Colombia as it is in India. It is, perhaps, not possible, to mention any country where Catholic missions have been successful where an increase in leprosy has not resulted. On the other hand in India, the Jains, high caste Brahmins, etc., whose tenets conduce to vegetarianism are almost wholly exempt.

4. It has been often remarked that communities engaged in fishing often suffer with exceptional severity. Norway and Iceland are instances in point, and in former days the Orkneys, Hebrides, and Faroes might have been included. The little island of Minicoy, the chief occupation of which is fishing, and where it is said that four fish meals are eaten daily, has a leper ratio of 150 per 10,000, whilst Ceylon, in which the consumption of fish is general but very small in amount, has less than 2. The leper population of Tracadie, in Nova Scotia, almost the only habitat of leprosy in Canada, is a community of fishermen. Whilst in India the general average of prevalence is only 5 per 10,000, it attains in the fishing village Kaligoan a ratio of 500. Certain other districts in India might be mentioned in which the prevalence is almost as great and they are all fishing centres. Nowhere inland in India does the disease attain what may be deemed a very excessive prevalence, that is, upwards of 20 per 10,000. It might, indeed, puzzle any unbeliever in the fish hypothesis to name any locality or any community where the prevalence amounts to 20 per 10,000 in which those concerned are not either definitely engaged in fishing or members of the Roman Catholic Church.

5. In many places concerning which we have facts as to the advent or increase of leprosy it is known that the development of a fishing industry was its starting point. This was the case in the Sandwich Islands, and very remarkably in South Africa.

6. The disease has in many cases declined simultaneously with a reduction in the consumption of fish or improvements in the methods employed for curing it.

7. Mr. Vincent Richards, who made a most painstaking investigation of the facts as to fish-eating and leprosy in India, and whose conclusions were not wholly favourable to the connexion, yet gave with great candour very important facts as to the village of Kaligoan, near Balasore. It has, he tells us, a population of 947 and 45 lepers, a proportion of nearly 500 per 10,000. It is a fishing village five miles from the sea, and the Gokhas, a fisherman caste, suffer more severely than others.

Mr. Richards adds that the chief difference in the habits of the inhabitants of this village and those of the neighbouring districts is that they eat more fish, and says that the facts "certainly seem to indicate that the consumption of fish does exercise some influence in producing the disease."

Speaking generally of the application of the fish hypothesis as regards leprosy in the world at large, it was suggested:

1. That it explains its antiquity.
2. That it accounts for its widespread prevalence.
3. That it explains its local distribution.
4. That it accounts for its excessive incidence in connexion with the Roman Catholic religion.
5. That it explains the dying out of the disease in connexion with the advance of civilization.
6. That it explains the persistence of the disease in certain localities (in Norway and Iceland from the large consumption of bad fish, and in Spain and Portugal from the Catholic fast days).
7. That it explains the great prevalence of the disease in Europe in the Middle Ages (Roman Catholicism) and its absence from Mid-Russia (Greek Church).
8. That it explains, also, the fact that although met with for the most part in association with poverty it not infrequently has its victims amongst the wealthy.
9. That it explains the remarkable difference which is observed in many places in respect to the liability of the two sexes.
10. That it accounts for the *de novo* and sporadic cases.

Adverting to his recent Indian tour, Mr. Hutchinson stated that he had everywhere invited criticism. He had held public meetings in connexion with the Medical Colleges in most of the principal cities—Colombo, Madras, Calcutta, Lahore, and Bombay—and after all of these there had been discussion. Although numerous objections to the fish hypothesis had been put forward, they had not in his opinion been of much weight. Most of them concerned minor or merely local matters, and did not affect the larger issues. Since his return to England he had submitted his conclusions on two occasions to debate, once at the Polyclinic, and once at a meeting of the Epidemiological Society. Respecting all these, he said:

If I am asked what were the chief objections advanced by those who took part in these discussions, I should be at some loss what to reply. The fact that the bacillus has been never actually found in fish has been repeatedly urged, and I have been much pressed to be definite as to whether I really think that the bacillus exists in fish. Amongst other objections most of the following have been more than once mentioned:

That the gastric juice would kill the bacillus.

That leprosy ought still to occur in England and Scotland.

That Ireland still remains Roman Catholic and still eats fish.

That some Brahmins and even a few Jains are lepers.

That in many districts in India where but little fish is eaten leprosy yet prevails.

That some great fish-eating communities escape leprosy. To none of these is the reply in the least difficult. We believe that the bacillus of tuberculosis may be conveyed by food, and if so why not that of leprosy? No decomposing fish is now eaten in any part of the British Isles. The Brahmins, etc., in India do not under all circumstances abstain from fish as food, and in India famine often compels deviation from caste.

In adverting to some other objections which are still sometimes urged against the fish hypothesis, Mr. Hutchinson said that he was not inclined to attach any value whatever to the denials made by patients. He had had much experience of such denials, both in South Africa and in India, and felt justified in holding that it was useless to inquire. The native races in both these countries failed entirely in perception of responsibility for speaking the truth. They habitually said what they supposed it to be most for their credit or their interest to say. In justification of his attitude of mind in reference to this class of so-called evidence he related some items of experience.

In the Durban Leper Hospital a Kaffir patient denied with the utmost emphasis that he had ever eaten fish, but the caretaker of the establishment produced for Mr. Hutchinson's inspection a bag of half-salted fish, and said that the man was in the habit of eating it just as the others did. At one asylum in India the medical officer had produced for Mr. Hutchinson a scheduled statement of facts as to all his inmates. It showed that a large proportion of the men denied having ever eaten fish. It proved, on further inquiry, that only one out of more than forty adhered to that statement, and no explanation whatever of the discrepancy was offered. When the Prince of Wales's Commission was collecting evidence in India it was found on one occasion that the replies given to all questions as to age, number of children, inheritance, etc., were the same, the principle observed being that each should repeat what his predecessor had said. Both in India and South Africa there were large classes of the population entertaining some degree of prejudice, religious or social, or both, against fish-eating, and a large majority of such might be trusted to deny having broken caste. It must also be remembered that in times of scarcity many would take food which under other conditions they would avoid.

Another objection sometimes urged was that the ratio of prevalence of leprosy was not always in proportion with the production or even the use of fish. In reference to this it must be remembered that it is only fish in a state approaching decomposition which is under suspicion, and that in many countries where the supply is abundant none such is ever eaten. This remark applies to the British Isles and includes Catholic Ireland. In no part of these islands is there at the present day any class which could under any circumstances be induced to eat tainted fish. The appetite for it which formerly existed has wholly died out and been replaced by strong antipathy. Nor, were it otherwise, would the sale of such an article be permitted by our health officers.

There can be little doubt that the statements which weigh most with the British profession, alike in support of the belief in contagion and as opposed to the food hypothesis, are those which come to us from Norway. We are assured that in that country leprosy is rapidly diminishing, and it is assumed that the reduction has been produced by segregation measures. It is possible, however, to give to the facts a very different complexion. Within half a century Drs. Danielssen and Boeck, the illustrious pioneers in the scientific study of leprosy, recorded their conviction in the strongest language that the disease was not contagious. Now, no new clinical facts have accrued since then to change that opinion. The resuscitation of the creed has resulted solely from Dr. Hansen's discovery of the bacillus. If, however, the general trend of observation in Norway was opposed to belief in contagion in 1850, it is so still. This is indeed the fact, as now and then cases occur in which the disease appears to originate *de novo*, and in which those concerned deny that they have ever run any risk of contracting it. At the date mentioned Dr. Danielssen indeed came so near to the creed now propounded that he wrote that the disease was in some way connected with the fishing industry, but he attributed it rather to the exposure encountered than to the food. No advocate of the fish-eating hypothesis could, however, wish for stronger testimony than he bore as to the dietetic habits of his countrymen. He wrote as follows:

Dr. Danielssen on Fish Eating in Norway.

"Herrings are generally used in a salted state; rarely, if ever, are they eaten fresh. But the greater part of these salted herrings are exceedingly ill prepared for the table. The peasant of the western coast is so little delicate about this article of food, which forms so large a proportion of his daily sustenance, that he often devours the herring in a putrid state. Where the herring fishery happens to be in localities where assistance is not at hand, such as is often the case to the north of Bergen, a large number of the herrings are thrown on shore and are left there for many days waiting for purchasers. Should these not appear, or should they refuse to take the fish on the ground of their being old and stale, the peasant then appropriates them to his own use, and, adding a small quantity of salt to the half rotten herrings, he conveys them home. After the lapse of some weeks these herrings are, in a manner, pickled—that is to say they are sour (half rotten), and then they become the daily food of the whole family. Each week until they are consumed they become more and more decayed, but nevertheless the nauseous food is eaten till not a herring is left. Nay, so constant is this hateful custom among the peasantry, that they will not touch fresh fish, but prefer to leave it for some days, until incipient decay gives it a zest for their coarse palates."

Dr. Ehlers, writing quite recently respecting the dietetic habits of the Icelanders, amongst whom leprosy still prevails, bears very similar testimony. "Fish is naturally one of the most important articles of food.....the poor are inclined to sell their good fish to the merchants, and keep the poorer small fish for themselves, of which they put in salt all they can, and dry the remainder. But their drying of the fish is insufficient. The fish keeps moist, and is finally eaten in many places in an absolutely half-spoiled condition."

Now, although the upholders of the doctrine of contagion might deny that any change had taken place in the habits of the Norwegian peasants, there is good reason to believe

that they are mistaken. Civilization has advanced in Norway as elsewhere. Other articles of food have become more abundant, and the methods in use for the curing of fish have vastly improved. That the diminished prevalence of leprosy, such as it is, is due rather to these influences than to what has been called compulsory segregation may be very reasonably maintained. As a matter of fact, there is not even now any segregation system which would be efficient if the disease were really contagious. A full third of the Norwegian lepers are still at their homes, for the law compelling removal to an asylum is one which is subject to local option as to its enforcement.

It is to be remembered also that the disease underwent gradual extinction in countries not far from Norway some centuries ago; the Orkneys, Shetlands, and the British Islands quite without the assistance of segregation laws. It lingered late in the Faroes, and its final disappearance from them was held by a Norwegian observer to have been brought about by the abandonment of deep-sea fishing and the adoption by the fishermen of farming pursuits. Madeira also affords another good instance of the diminution of leprosy in the face of advancing civilization, for its large leper hospital is now almost empty and many rooms have to be closed, although there has never been any attempt at compulsory segregation.

After adverting briefly to the measures needful for the prevention of leprosy, the following was offered as a practical conclusion. That the facts which have been accumulated as to the conditions under which leprosy prevails are such as to make it urgently desirable to adopt precautions against the consumption of ill-cured fish as food. The establishments of the fish curers ought to be inspected, and proper methods of curing enforced. All taxes on salt or other hindrances ought to be removed, and the public should be warned that risk attends the use of fish in an unsound state.

In concluding his address Mr. Hutchinson made a strong appeal to the medical profession to give patient attention to the evidence which now exists on this important subject. He referred to the fact that on Robben Island at the present time from five to six hundred of our fellow subjects are imprisoned for life for no crime. They are there because the medical profession holds that leprosy is a bacillary disease, and that all bacillary diseases must spread by contagion. Yet there is overwhelming evidence in proof that the share taken by personal communication is exceedingly small under all circumstances, and wholly absent under most. Thus overweening confidence in scientific dogma becomes the parent of cruel injustice and the cause of untold wretchedness The responsibility for the existence of the Cape Colony leper laws rests undoubtedly with the British profession. It is for that profession to deal conscientiously with the facts, and to express in clear terms its conclusion as to whether there is or is not any justification for adding to the misfortune of leprosy the utter misery of forcible and life-long seclusion from family and friends.

II.—H. MARCUS FERNANDO, M.D.,

Ceylon.

DR. FERNANDO opposed Mr. Hutchinson's views and said that he had arrived at quite opposite views in regard to segregation from his experiences in Ceylon.

III.—PHINEAS S. ABRAHAM, M.D.Dubl., B.Sc.Lond.,

F.R.C.S.I.,

Dermatologist, West London Hospital; Surgeon, Hospital for Diseases of the Skin, Blackfriars.

DR. ABRAHAM expressed his thanks to Mr. Hutchinson for again bringing this important question forward in his usual able, lucid and persuasive manner. He for one was greatly touched by Mr. Hutchinson's final appeal against those terrible leper prisons—like Robben Island. Whilst he thought that bad cases, which could not be properly treated with due precautions at home, should be sent to special hospitals, it seemed monstrous to confine the early cases, such as two now under his care, that of a lady and a gentleman, to which he referred. Although he agreed with Mr. Hutchinson in many respects and could confirm his statements, especially as regarded the absence of evidence of contagion in this country, he believed that leprosy was a bacillary disease, and that, like tubercle, it could be introduced into the human system—but with more difficulty—by various channels, the alimentary and respiratory systems, and also by inoculation through the skin. He was in that sense a contagionist. The ground opened up by Mr. Hutchinson was so wide that it would be impossible to discuss all the points raised; he would, however, shortly say that if Mr. Hutchinson would insert the word "easily" after "spreads" in his first proposition, he thought they could all accept it; he would suggest also the substitution of the word "frequently" for "occasionally" in his third proposition. He deplored the resuscitation of the term "*de novo*," which was first used in connexion with the occurrence of leprosy by the late Dr. Kanthack, one of the members of the 1890-1 Indian Leprosy Commission, against, he believed, the better judgement of several of his colleagues. The words had a distinct and well-known connotation, and it seemed to him inaccurate to say that a disease which they knew had a definite bacillary cause ever arose *de novo*. On the last occasion a few weeks ago that he had the pleasure of discussing leprosy with Mr. Hutchinson, he alluded to the rapid decrease of the disease in Norway since the enforcement of partial segregation, and Mr. Hutchinson at once stated that that diminution was due to the fact that they were curing their fish better in Norway. To obtain definite information on this point, he wrote to Dr. Ehlers, the great Scandinavian authority on leprosy, and asked him to be present if possible at this meeting. Dr. Ehlers had written the following interesting letter, which he begged to read:

Dear Sir and Colleague,—My best thanks for your kind letter of July 9th. I had already got an invitation to the British Medical Association meeting in Swansea, but I am so busy now that I cannot leave Copenhagen, because my Government sent me out on a hygienic expedition (concerning, amongst other questions, leprosy) to the Danish West Indies, in January-May, 1903. Otherwise I should have been glad to go to Swansea, and break a lance with the old master, our dear Hutchinson, notwithstanding I consider his ideas to be quite wrong. Why does he always speak of "badly cured fish," when he speaks of the fish theory? What is "badly cured," and what is 'well cured" fish? There must be in the fish something (bacillus, poison, or what?) which causes leprosy, if his idea should be right. It is not allowed to fight with so ill-defined terms. He must give a better explication of what he means with "badly cured." In Norway, as in Iceland, they employ the same manner still to cure—that is, to dry—the fish, as for a century ago, but it is clear that the fish is better treated, better cured now, than a hundred years ago. People are cleaner to-day than in the eighteenth century.

In Iceland there was an increase in the frequence of the leprosy from the moment (1848) at which they closed the four small and poor asylums up to the years 1894-5, when I made my first investigations in the land, and opened the eyes of the generally well-instructed Icelanders to the dangers of contagion, hitherto neglected. The Icelandic Leprosy Law of February 4th, 1899, and the opening of the Oddfellows Leper Asylum with 70 beds at Reikiavik have already—within five years—caused a remarkable decrease in the number of cases of leprosy.

In 1896 I found in Iceland 181 lepers, and presumed that there were over 200 (we now know that this was really the case).

The latest report from Dr. Bjarnhedinsson (just published in *Ugeskr for Laegen*, July 10th, 1903, p. 649) shows us that this number had decreased at the beginning of this year to 133.

A Decrease of One-Fourth in Five Years!

Do you think that the fish has been better cured in these five years? I think that the opening of the hospital with isolation of 70 of the worst lepers has had this result. For some time my little popular pamphlet on leprosy was spread in 4,000 copies in the population. In twenty years we will finish with the leprosy in Iceland, as they are abolishing this disease in Norway, and as they are abolishing it in Sweden (where there are now only 66 lepers in all).

In the so-called fish hypothesis there is another obscure point to which I should like to call attention. Mr. Jonathan Hutchinson always speaks of "badly-cured fish." But the different populations who know and accept this old hypothesis believe that only particular species of fish are able to produce the disease. Thus the Icelanders fear the halibut, whose fat flesh they say can give leprosy. Other inhabitants of the same island incriminate the trout. At the Egean Sea the inhabitants of the Iclion feared the fish (I don't know the English name—French, *thon*). ["Tunny."] In the Danish West Indies the negroes speak of the king-fish as giving leprosy.

Does Mr. Hutchinson mean that all different kinds of fishes can give us leprosy, or has he any suspicion against certain species? How can he explain the development of leprosy in people who never have eaten fish? I have seen such people in Crete. In my eyes there is only one grain of truth in the fish hypothesis: the people who content themselves with a badly-cured "dry fish" are very poor people. Such poor people are always very dirty. And dirtiness is the uncle of contagion. Dear sir and colleague, if you find these few remarks worth publication, I beg you to give them a better English form than I was able to do, and to read them in my name, with my best compliments, at the meeting in Swansea in the leprosy discussion; and if you wish any further information, I shall be glad to answer.

Yours very faithfully, Dr. EHLERS.

IV.—F. M. SANDWITH, M.D., F.R.C.P.Lond.

DR. SANDWITH stated that his experiences in Egypt had shown him that leprosy was not markedly contagious, and he

had known husband and wife who did not contract the disease one from the other. Mahomed said "Fear a leper as you would a roaring lion," but his followers had largely forgotten this teaching as they had to day little or no fear of coming in contact with lepers. So far as he knew there was no other theory except the tainted fish theory before the scientific world. In Egypt it was impossible to get away from fish-eating people, and much of it was consumed in a bad condition. He put the proportion of lepers in Egypt in the total population at 4 per 10,000. Dr. Sandwith mentioned an instance of a boy contracting leprosy who had never eaten fish.

V. Sir Patrick Manson, K.C.M.G.,
Medical Adviser, Colonial Office.

Sir Patrick Manson confessed that he was not one of Mr. Hutchinson's disciples in regard to this theory. If fish was the medium by which the bacillus entered the body, how did it get into the stinking fish? What was wanted was to hunt up the origin of the lepra bacillus; if it was present in rotten fish, why should it not be in fresh fish, as it must surely be in fresh fish first? Leprosy and tuberculosis were similar diseases. The leprosy bacillus was not inoculable, and the tubercle bacillus was inoculable with great difficulty. The incubation period of both diseases was lengthy, and there were numerous points in which the diseases were similar. Fish was undoubtedly associated with leprosy, but only in a very indirect way.

VI.—L. W. Sambon, M.D.,
Lecturer, London School of Tropical Medicine.

Dr. Sambon said: Mr. Hutchinson recognizes the lepra bacillus as the cause of leprosy, but he ascribes the production of the disease to the consumption of badly-cured fish. His statements are contradictory. He adduces much information to show that the specific bacillus is followed with impunity with fruit and other food stuffs handled by lepers with open sores; indeed, he reminds us that inoculation experiments have practically always failed, and at the same time he wishes us to believe that the disease is contracted by eating fish that has been salted, dried, and cooked. At one time he believed fresh fish could cause leprosy; now he seems inclined to look upon leprosy as a food intoxication, etiologically analogous to that of decomposed canned meat (*Kreotoximus*). The peculiar geographical distribution of leprosy; its steady increase in certain regions, its steady decrease in others, its disappearance from many parts of Europe, where it was very prevalent at one time; its sudden appearance and rapid spread in islands and countries previously immune, are all facts which do not agree with Mr. Hutchinson's theory.

It is quite true that the discovery of the lepra bacillus has prompted the belief in contagion. The term "contagion" is an old and misleading one. Recent knowledge has shown how very varied are the ways and means by which a disease could pass from one person to another. As a rule, there are intermediary agents of transmission, and very probably the peculiar conditions of leprosy infection will find their explanation in some intermediary agent.

Dr. Sambon said he fully agreed with Mr. Hutchinson and Dr. Abraham as to the horrors of segregation in leper asylums, but he was bound to admit that it was through the cruel and pitiless measures of segregation enforced during the Middle Ages that leprosy had been almost swept out of Europe. To avoid much future wretchedness if was of the utmost importance to deal wisely with present lepers. They did not know how the disease was transmitted; it was quite possible that man might derive the infection from some lower animals, as he might contract tuberculosis from cattle and plague from black rats; but there was no doubt that another leprous man was the usual source. They knew for a positive fact that each patient might become a centre for other groups of cases. They knew also that the disease had always decreased after segregation. They must therefore restrict the wandering of lepers in order to prevent a wider spread of this fearful, incurable disease.

VII.—James Cantlie, F.R.C.S.,
Surgeon, Seamen's Hospital Society.

Mr. Cantlie said that he could cite instances in which contagion seemed to play a part, and others in which prolonged contagion failed to convey leprosy from the leprous to the healthy. He had in China seen a girl become a leper from attending as a nurse on her leprous father (both Europeans), whilst the mother, who refused to touch her husband, escaped. He had, on the other hand, seen a woman in the leper village in Canton who had lived in the village for over 20 years, had had three leper husbands, all of whom died of the disease, yet the woman remained perfectly free from leprosy. He had as long ago as 1892 drawn attention to the similarity of leprosy and tuberculosis and had ventured to consider the former as a special form of the latter. The statement, at one time derided, was being more widely entertained at the present day.

VIII—John D. Hillis, F.R.C.S.I,

The following communication by Mr. Hillis was presented: The propositions advanced by Mr. Hutchinson I must totally dissent from, nor do I think they are likely to be accepted or supported by any authority on the subject. I will shortly state my reasons for this dissent, but before doing so I would suggest that we should accept with reluctance the conclusions of any one, no matter how eminent, who may visit leper countries for a short time with a fixed theory in the mind or on the look-out for evidence to support that theory.

Mr. Hutchinson's argument briefly amounts to this: All lepers have probably eaten fish during their lifetime; therefore leprosy must in some way be caused by a fish diet. But surely such a theory would equally apply to other articles of food or other diseases; and it should not be difficult to prove how untenable these propositions are in view of the mass of information that has in recent years been accumulated on the subject. My own experience of leprosy extends over twenty years as visiting physician to a large leper asylum, and it is directly opposed to Mr. Hutchinson's. That experience has been partly embodied in my work, *Leprosy in British Guiana*, published in 1881. When I was first appointed to that asylum the Governor placed in my hands for my guidance and information a celebrated but unfortunate report on leprosy by the Royal College of Physicians (1867). This report influenced and guided all the actions of the local authorities with regard to leprosy. It held that the disease was not contagious or influenced by contact in any way; that segregation was unnecessary; and consequently no efforts were made to deal with lepers in an efficient or satisfactory manner. They were allowed to roam at will, intermarry and mingle with the surrounding inhabitants, and with the most disastrous consequences. On my advising the Government to enforce segregation I was naturally referred to this report, and hence a policy of *non possumus* prevailed. They said, "We acknowledge the evils of the present system, but in face of that report the Colonial Office could hardly sanction compulsory segregation." Subsequently, however, I succeeded in convincing Acting-Governor Young of the soundness of my views, and I was permitted to carry out a modified form of segregation and put the asylum in order. I mention this to show how unfortunate for the welfare of the lepers themselves was the influence of this report, and the same result is likely to follow Mr. Hutchinson's attempt to change our modern views of leprosy.

My own opinion and that of others are to be found in the chapter on the etiology of leprosy in the work referred to. In the section relating to the influence of diet in leprosy I examined this fish hypothesis, concerning which I was compelled to state, "This theory should now be laid aside as obsolete" (p. 150). I ask in all seriousness, Has anything occurred since 1881 to make it necessary to rewrite that sentence? Has not everything that has since been discovered and written only confirmed this view? I have lived to find the opinions outlined in 1881 on the contagiousness of leprosy subsequently endorsed by the Royal Commission, which reported to the same effect, and by our further knowledge of Hansen's specific bacillus. I could multiply extracts all of which go to disprove Mr. Hutchinson's theory, but will content myself with one or two which directly bear on the subject under discussion.

In British Guiana there are several tribes of aboriginal Indians, all of whom live by fishing, hunting, etc., and consume large quantities of salted or fresh fish. Leprosy is unknown among any of these tribes except the Warraw's. The latter, who are not so exclusive as the other tribes, alone of all of them dwelt near and commingled and intermarried with the lepers when the asylum was removed to the mouth of the Pomeroon, and leprosy has prevailed among them ever since, whilst the other tribes have remained absolutely free. If

fish caused leprosy among the Warraws, Mr. Hutchinson will have to explain why the others are exempt. Again, it has been shown that the natives on the border of the great desert of Sahara never eat fish, and yet get leprosy in its worst form. What about Thibet, where fish is almost unknown in the mountainous regions, and yet leprosy prevails? In Roman Catholic Ireland, where fish is constantly eaten, the only case of leprosy I can lay my hands on is the well-known one of Dr. Hawtrey Benson's, where a man from India came home a leper, and slept with and infected his brother. Instances could be multiplied, but why labour the point? Experience has proved, and is daily proving, the real nature of leprosy, and what are the only means of preventing its spread.

BILIARY ABSCESSES OF THE LIVER: WITH OPERATION.

By Captain Leonard Rogers, M.D., M.R.C.P., I.M.S.

By biliary abscess of the liver I mean abscesses in the liver within the bile ducts, sometimes called suppurative cholangitis. This condition, although rare, is of considerable importance on account of the very great difficulty of diagnosis during life, and because I believe it may, in some cases at all events, be made amenable to surgical treatment if diagnosed in time, although it is invariably fatal if treated by purely medical means.

My attention was directed to this subject in 1889, when Demonstrator of Pathology at St. Mary's Hospital, by meeting with no less than three cases in the *post-mortem* room within six months, not one of which had been correctly diagnosed during life. A search in the available literature enabled me to collect 20 cases of the disease, an analysis of which yielded the following points of importance. In no single case had the conditions been diagnosed during life. In 18 of them gall stones in the hepatic or common bile ducts was the cause of the suppuration, in 1 a hydatid cyst of the liver opening into a hepatic duct, and in the remaining case a primary cancer of the common duct was the origin of the affection. Gall stones, then, are by far the commonest cause, as well as constituting the most hopeful class of cases. The duration of the disease after symptoms of suppuration had commenced, as shown by rise of temperature, rigors, profuse sweating, etc., was only three weeks on the average in cases in which there was no way of escape for the pus out of the bile duct in any direction, many of the cases ending fatally very shortly after definite symptoms of pus formation showed themselves. There were, however, three marked exceptions to this rule, the most remarkable of which was one of the St. Mary's cases, which lived for no less than eighteen months, and which I had the opportunity of watching in the wards for most of that time. The man was first admitted for empyema, which was successfully drained, the pus being bile-stained. The wound healed, and the patient left hospital, only to return shortly after coughing up bile-stained pus. This continued in varying degree for upwards of a year, the case being thought to be a suppurating hydatid cyst of the liver opening through the lung. Lastly, a perinephric abscess formed and was opened, the pus being again bile-stained, and the patient died exhausted a few weeks later. *Post mortem* I found the liver riddled with suppuration. The bile ducts were very greatly dilated above some gall stones, and full of pus. On tracing up the dilated ducts a long probe could be passed from the common hepatic duct through the liver and diaphragm into an abscess in the base of the right lobe of the lung and lower right bronchus. A direct communication could also be traced between the dilated hepatic ducts and the perirenal abscess, while the scar of the empyema wound also led through the diaphragm down to another dilated pus-containing hepatic duct. The case, then, was one of multiple abscesses in the hepatic duct, opening in various directions, and the very long duration of the case was evidently due to the partial drainage of the pus through the right pleura, lung, and around the right kidney respectively, although these imperfect means of escape were not sufficient to prevent a fatal termination.

The second of the cases of long duration lasted six months, and here a communication between the enormously dilated bile ducts with the interior of the hepatic flexure of the colon had become established, which allowed of some drainage of the pus, while in the third the suppuration had loosened the gall stone, which was situated at the lower end of the common bile duct, to such an extent as to allow a passage of some of the pus into the bowel around the stone, the case lasting four months after symptoms of suppuration had shown themselves. It is evident, then, that very incomplete means of escape for the pus greatly prolongs the course of the disease, without, however, preventing a fatal termination.

These cases naturally suggested to me the possibility of saving some of these cases by an early operation for the purpose of opening and draining the hepatic ducts. The feasibility of such an operation was shown by a study of the 20 cases I had collected, for the most striking feature of many of them was the enormous dilatation of the bile ducts both without and within the liver. Thus, in several cases the ducts were found after death to be about as large as the small intestine, and in the great majority of them they were as large as a finger, and these could be found and opened without any very great difficulty, especially in those cases where one or more gall stones were present in the ducts immediately below the dilated portion. Even where there was no gall stone to act as a guide, the opening of the dilated duct would not necessarily present much difficulty, for in one of the St. Mary's cases, which had been diagnosed as suppuration in the gall bladder, an operation was undertaken and what was thought to be the gall bladder was opened, brought up to the surface and drained, but the patient was too exhausted and died the next day. *Post mortem*, I found that the enormously dilated hepatic ducts had been opened, and not the gall bladder, the latter being very small and deeply placed under the liver. I was struck by the fact that in nearly half my collected cases this contracted condition of the gall bladder was found, the organ being no longer than the tip of a finger in many of them. We have here a case in which the dilated pus containing bile ducts were actually opened and drained during life in mistake for the gall bladder, but unfortunately too late in the course of the disease to save the patient. And here we come to the main difficulty, namely the early diagnosis of these very difficult cases, for it is a remarkable fact that in not one of the twenty cases which I collected in 1889 had a correct diagnosis been made; that of suppuration in the gall bladder in the case just mentioned having been the nearest approach to accuracy.

Time will not permit me going into detail with regard to the diagnostic value of the different symptoms met with in these cases. In some a history of the passage of gall stones or of biliary colic at some earlier period, together with rigors and high irregular temperature and generally hectic condition will suffice, while in others all history pointing to gall stones may be absent, and only jaundice and symptoms of suppuration internally may be present. There is, however, one group of symptoms which was present in about half my cases to which I attach great significance. It consists of a complete obstructive jaundice, which is always present in the earlier stages of the disease, followed by the reappearance of bile in the stools in often small quantities and a decrease in the jaundice, accompanied by an aggravation of the general symptoms with rigors and hectic condition, instead of the amelioration naturally expected to ensue on the partial removal of the complete obstruction of the bile ducts. This improvement in the jaundice and reappearance of bile in the intestine, together with increasingly severe general symptoms, is due to softening and distension of the wall of the ducts by suppuration occurring within them above the obstruction, leading to loosening of the impacted stone, which in turn allows of the escape of a little of the bile and pus into the bowel past the stone. I do not know of any other class of case in which this sequence of symptoms occurs, and I look on it as an indication for immediate operation to drain the ducts, and for the last thirteen years I have been on the look-out for such case.

I must now pass on to a case of this rare disease which recently came under my care in the European General Hospital, Calcutta.

The patient was in the Forest Department, and he came in on April 6th, 1902, for the treatment of enlarged liver and a history of occasional attacks of ague, and repeated attacks of jaundice preceded by severe pain, the last of which occurred three weeks before admission. The liver dullness extended from the fifth rib to 6 in. below the costal margin. Spleen not enlarged; heart and lungs normal; pulse 48; slight jaundice; temperature normal. From April 13th to 17th he suffered from intermittent fever and was treated with quinine. On the 22nd he had a rigor, the temperature rising to 104°, falling to 101° the next morning, when I examined the blood at the request of the physician under whom the patient was at that time, as liver abscess was suspected. I found no leucocytosis, but, on the contrary, they were below the normal, with a large proportion of large mononuclears, and

further search revealed malignant tertian parasites and quinine treatment was resumed; and, with the exception of a slight rise on the 27th, and ague on May 4th and 7th, no more fever occurred; the jaundice improved, and he left hospital on May 18th, the case at this period having been one of biliary colic complicated by malarial fever.

On December 18th, 1902, he returned to hospital, and came under my care. Ill since 7th in bed. Has passed several gall stones since the 15th, which he brought with him, the largest being about ¾ in. in diameter. The liver dullness extended from the fourth space to 3 in. below the costal margin. Spleen not enlarged, well-marked jaundice and much pain of a colicky nature requiring morphine. Temperature from 100° to 102°, with profuse perspiration.

The fever continued, and on December 22nd he coughed up a quantity of viscid frothy mucus. Temperature, of a hectic type, continued rising to 103° and 104° in the evening. The vocal fremitus was slightly diminished, but there was only partial loss of resonance at the right base. I diagnosed suppuration in the bile ducts in the liver, and advised operation for the purpose of draining the ducts and removing any gall stones. After a consultation this was agreed to. On the morning of the 25th he coughed up a small quantity of pus, but in view of the case mentioned above, in which a fatal termination ensued in an abscess of this kind, in spite of the opening through the lung, and having certain knowledge of gall stones having been passed, it was decided to proceed with the operation as previously arranged. Captain H. Mackin, I.M.S., kindly helping me.

Operation.—An incision was made in the right linea semilunaris with its centre over the lower edge of the liver. The gall bladder was completely hidden beneath the edge of the liver, but its fundus was reached and opened, and a number of small gall stones were extracted. On now passing the finger along the bile ducts beneath the liver, a large mass of gall stones were felt deep under the liver, which could only just be reached. The wound was now enlarged upwards and downwards, and a transverse incision made across to the middle line, so as to enable the lower edge of the greatly enlarged liver to be turned up. The mass of stones in the right hepatic ducts could now be reached and opened, and with very considerable difficulty a mass of large gall stones, some 3 in. in length and over an inch in diameter in places, were removed, some of which were well within the liver substance. As it was quite impossible at such a depth to bring the opening in the duct to the surface, and as the patient was in a low state, a glass drainage tube was inserted and gauze carefully packed around it and the wound united around the tube. The patient suffered severely from shock, but rallied somewhat in the afternoon, but was much troubled by coughing up mucus. At 10 in the evening he was easier, and coughing up mucus more easily. However, he never fully rallied from the shock of the prolonged operation and died at 5.30 a.m.

Necropsy.—The same morning the body was examined. There were already good adhesions around the gauze packing and no trace of leakage of discharge into the peritoneal cavity. The liver was removed with the stomach and duodenum and right lung altogether. Only one small gall stone in the depth of the liver in the right hepatic duct was found, which was much smaller than some of those removed at the operation, so would easily have escaped through the opening made in the duct, and would doubtless have escaped through the wound, although too deep in the liver to be removed at the operation. Behind this stone the bile ducts were much dilated and full of pus in a limited portion of the upper posterior portion of the right lobe of the liver. This tracking abscess had opened posteriorly by the side of the inferior vena cava, and travelled up through the diaphragm and the base of the right lung into the inferior bronchi. The common bile duct was dilated, and its opening into the duodenum was large and free.

In this case a correct diagnosis of suppuration in the intrahepatic bile ducts was made very shortly after admission, and the operation undertaken without any unnecessary delay. The great enlargement of the liver and depth of the stones in its hilum caused unusually great difficulty, yet the ducts were completely cleared with the exception of the small stone mentioned, and but for the unfortunate opening of the tracking abscess into a bronchus on the morning arranged for the operation leading to a serious extra tax on the patient's strength in coughing up the muco-pus, I think a favourable result might reasonably have been hoped for, while the conditions revealed *post mortem* clearly showed that nothing short of removal of the stones impacted in the hepatic ducts, and free drainage of the pus-distended intrahepatic ducts, could have relieved the symptoms and averted the fatal termination of this very deadly affection. In short, if the case had come under my care a week earlier his life might have been saved by a still earlier operation, which emphasizes the importance of early diagnosis with a view to very early operation.

I have not had time to search the literature of the last few years for cases of this nature, but I think that at any rate cases in which suppuration in the intrahepatic ducts have been diagnosed and an operation undertaken with the direct object of draining the abscess through opening the bile ducts are sufficiently rare to be worth placing on record, as these cases are quite distinct from, and require totally different operative treatment to, the ordinary amoebic tropical abscess of the liver.

LATHYRISM.

By Major A. G. Hendley, I.M.S.

The best definition of this affection is Scheube's, which not only sums up in a few words prevalent opinions as to its causation, but at once recalls the nature of a too narrowly-known disease of importance. He says: "Lathyrism is a disease of the nature of an intoxication with a spastic spinal paralytic course, which is attributable to poisoning with various kinds of the family of *Papilionaceae lathyrus* (chick-pea or common pulse).

Dr. Watts, in his *Dictionary of the Economic Products of India*, says: "Lathyrus, a genus of annual or perennial plant of the natural order *Leguminosae*, which comprises some 170 species, seven of which are natives of India." The specimens I have here are of the commonest cultivated Indian variety, lathyrus sativus, known in different parts of India under various vernacular names, as *khesári dáll*, *teóra*, *lákh*, or *lákhóri*. To quote Dr. Watts again: "Lathyrus sativus (jarosse or gesse) is indigenous from the Southern Caucasus to Northern India; it has spread as a weed of cultivation from its original home, and is now cultivated all over India." In the Central Provinces some 358,000 acres are under lathyrus cultivation; and it is in these provinces that the disease has of late years become so increasingly prevalent as to call for Government inquiry, which inquiry has been entrusted to Major Andrew Buchanan, I.M.S., who has for the past six months or more been devoting his entire attention to this subject.

History.

Lathyrism is no newly-discovered affection. Its history dates from very early times, being, according to Huber, alluded to in the Hippocratic writings, where mention is made of the fact that "At Ainos those men and women who continually fed on pulse were attacked by a weakness in the legs which remained permanent." In Don's *System of Gardening*, again, it is recorded, in describing lathyrus sativus, that: "In several parts of the Continent a white pleasant bread is made from the flour of this pulse, but it produced such dreadful effects in the seventeenth century that the use of it was forbidden by an edict of George, Duke of Wurtemberg, in 1671, which was enforced by two other edicts under his successor Leopold in 1705 and 1714." In Italy and France the disease was also observed during the seventeenth and eighteenth centuries, and in the earlier half of the nineteenth century, large numbers of persons becoming affected in France, British India, and Algiers, attracted apparently some considerable attention. From the years 1857-68, when Dr. James Irving—then Civil Surgeon of Allahabad—contributed five very interesting and exhaustive papers to the *Indian Annals of Medical Science* on the subject of an epidemic of lathyrism then prevailing in the North-West Provinces, down to 1893, when I described in the *Indian Medical Gazette* a localized outbreak I had met with in the Central Provinces, the disease seems to have attracted no notice, save at the hands of a few veterinary surgeons, who noted its effects on cattle, and may in consequence be assumed as practically non-existent. The circumstances under which I first made acquaintance with the affection were as follows:

Towards the end of July, 1893, I came across a village where quite suddenly some 10 per cent. of the male population had during the previous five or six weeks (that is, since the commencement of the rainy season) become paralysed, more or less severely, in the lower limbs. At that time I had never heard of such an affection as lathyrism, but careful investigation and inquiry into the circumstances of the outbreak soon convinced me that they owed their condition to poisoning with lathyrus sativus, a pulse on which all the affected, poor hand-to-mouth labourers had largely subsisted for some eighteen months on account of the failure of their more regular crops, in consequence of which the village landlord had paid his labourers in kind with the cheapest grain available—namely, lathyrus sativus. For some years I saw no further case of this disease; but with years of scarcity culminating in the terrible famine of 1896-7, the local conditions artificially produced by the village landlord in 1893 became general; the poorer agricultural labourers were driven to resort extensively to the cheapest foodstuff procurable (lathyrus), and with most disastrous consequences. In the average village a dozen or more victims would be found, whilst in a famine relief camp of some 4,000 persons it became easy to pick out one or two hundred such cases.

The disease has, in the Central Provinces and adjoining

native States, gone on spreading ever since, helped by the second severe famine of 1899-1900; until at the present time Major Buchanan writes to me that he has an incomplete census of 2,700 cases in one district and 1,400 cases in another; and in a recent letter says, "I have seen 190 cases this morning."

Symptoms.

I will now pass on to a description of the symptoms and mode of onset of the disease. For reasons, given above, it will be seen that only the poorest classes are liable to this disease; those who are forced to subsist on the grain unmixed or diluted only slightly with other grain. All the affected will be found to belong to this class. They eat it either ground into flour as bread, cooked as porridge, or boiled with or without oil as lentils, much as we eat haricot beans. Practically all are field labourers, and the wonderful unanimity with which all agree as to the onset of the disease is most striking. A man will say, "I went to sleep perfectly well and very tired after a day's ploughing or other field work in the rain (it is always in the rainy season) and awoke in the morning to find my legs stiff, weak, trembling, and very heavy to lift when I rose to walk." (I have never been able to elicit any history of premonitory symptoms.) This weakness and trembling, you will be told, increased so rapidly that within ten days progression became difficult, even with the aid of sticks. Still the patients have no sense of illness and no pain; they have good appetites, sound digestions, and natural sleep at night. Both legs are usually affected simultaneously, first the calves, then the thighs, and soon after this all sexual appetite and power was lost. All complain bitterly of this.

On examination of any typical case, of some six weeks' duration, you will find that the gait is very peculiar. Aided with a long two-handed staff walking is possible, the rate of progression being under two miles an hour. The body above the hips sways from side to side, whilst the feet, which seem clogged with invisible weights, are lifted with evident difficulty and dragged forward, the toes scratching along or barely clearing the ground. The leg bearing the weight of the body is bent at the knee and trembles, whilst the advancing leg, dragged wearily forward strongly adducted, is planted unsteadily directly in front of its fellow, the toes reaching the ground first. In short a kind of paralytic goosestep. The general effect is one of laboured unsteadiness, due to great weakness. The evident spasm of the thigh adductors ceases to be very apparent when the patient reclines on his back, when the thighs can be separated, usually without resistance, to a normal extent. There is no wasting, no loss of muscular tone, no true tremors, only tremblings of the entire limbs when weight is put on them. Sensation seems quite unaffected. The tendon reflexes are much exaggerated, both knee-jerk and ankle-clonus; the slightest stimulus starting the latter phenomenon going for a long time. There is no loss of power or undue excitability in bladder or rectum. The arms, trunk, head and neck muscles are unaffected. The mind is clear, speech natural, pupils normal and reacting naturally to light and accommodation. The urine is often of rather high specific gravity (1030), acid, and contains abundant urates. Such are the symptoms as I have found them. I am aware that some writers state that digestive disturbances, colicky pains, and diarrhoea are usually precursors of the paralytic state; and that sensory disturbances such as hyperaesthesia, anaesthesia, and formication, with bladder troubles, such as incontinence and retention of urine, are common. I have never met with a case in my experience of many hundreds where the slightest history or evidence of any such complications could be traced.

Etiology.

As regards the etiology of the disease, it is, I think, generally conceded now that the paralysis is in some way due to lathyrus poisoning. Other main theories of causation are:

1. That lathyrus eating has nothing to do with it.
2. That if it has, it is only diseased grain which is capable of poisonous effects.
3. That exposure to sun or some local hot wind is the true cause.
4. That the paralysis is due entirely to cold and damp.
5. One eminent authority on tropical medicine (Manson) has thrown out the suggestion that, like alcoholism and probably beri-beri, the disease may be due to the entrance into the body of a toxin generated by germs whose habitat is outside the body.
6. Lastly, I am quite prepared to hear some champion of parasitism arise and suggest that some organism, so minute as to have hitherto escaped observation, is really the author of all the mischief.

In the time at my disposal I cannot fully discuss these and other theories, and can only say that the occurrence of the disease in epidemic form among lathyrus eaters and among no others, seems to me very strong evidence that a lathyrus diet is primarily responsible. The idea that diseased grain only is injurious is an argument probably borrowed from the analogy of ergotism. I know of no facts to support the idea. That exposure to sun or some local hot wind can be held responsible is at one disproved by the undoubted fact that the disease has occurred (amongst lathyrus eaters) equally disastrously in India, Italy, France, Algiers, and Wurtemberg, countries with vastly dissimilar meteorological conditions. Also, if exposure to cold and wet alone could induce lathyrism, England surely should be full of such cases. As regards Manson's suggestion that the affection, like beri-beri, may be a "place disease," one has only to remember that the paralysis is incurable, and that removal from the locality where the person was attacked is in no sense beneficial. As to what the actual poison is, and how it acts, that is a matter still left for our eminent physiologists and chemists to decide. Church has stated the chemical composition of the grain as: water, 10.1; albuminoids, 31.9; starch and fibre, 53.9; oil, 0.9; ash, 3.2; and has further observed that "the oil expressed is a powerful and dangerous cathartic."

Astier says "there is present in the grain a volatile liquid alkaloid, probably produced by some proteid ferment, which exhibits the toxic action of the seeds, and the action of which is destroyed by heat." On this volatility and destruction by heat notion has been based much speculation as to possible variations in methods of cooking, explaining the capriciousness of the effects of a diet of this grain on different individuals. Scheube says, "Several poisonous alkaloids have been extracted but further investigations are necessary;" also, "that by the administration of preparations made from the grain, a disease giving rise to symptoms similar to lathyrism has been produced in animals."

Professor Dunstan, of the Indian Institute, is now working at this subject. So far his investigations and experiments on animals are inconclusive, but go to show (1) That only certain samples of lathyrus are poisonous; (2) there are some reasons to think the poison is contained in the skin or husk of the seed, but no fungus has been discovered; (3) that poultry are immune, but that rabbits and guinea-pigs are sometimes affected. Professor Dunstan also tells me that in Canada lathyrus is largely grown and freely used as poultry food, so probably birds are immune. My own pigeon feeding experiments in India were all negative and so support this view.

There remain two points of interest in connexion with the causation of lathyrism, namely, its marked preference for males and its seasonal incidence, that is, during the rainy season. Dr. Irving found that the proportion of females to males attacked was about 1 in 12. Major A. Buchanan, I.M.S., with a recent very large experience, tells me he finds it 1 in 10. I personally have only seen 3 female cases against many hundreds of males. Major Buchanan accepts the comparative immunity of females as an unexplainable fact, but says that the reason for the seasonal incidence of the disease is very simple, namely, that "he finds that the ordinary grain pits or granaries are closed in June, and that lathyrus grain is only issued to labourers in the rains."

The difficulty in the way of accepting this explanation is that (1) I do not believe the custom he alludes to is general—that of only eating lathyrus during the rains—it certainly was not during the recent famines; and (2) the fact that according to this idea cases occurring quite early in the rains must have been caused by a very few days' dietary of the poison; and this is opposed to all my experience of histories given me by patients. I prefer an even simpler solution of both difficulties. As long ago as 1858 Dr. Irving quoted the prevalent opinion amongst intelligent educated natives as being, that "the lameness produced by eating lathyrus was really a mixture of palsy and rheumatism," and added "they seem to think that living on this particular grain is the predisposing cause, and exposure to cold, rain, and damp weather the exciting cause."

I believe the native idea is the correct one. I believe that lathyrus, whilst it may possibly cause paralysis by itself, ordinarily only predisposes to it, that it makes the subject ready or ripe for the attack of paralysis, but that exposure to severe wet and cold is required actually to excite the sudden seizure. This seems to me to explain the unvarying history of the sudden unexpected attack during the wet season only; for nearly always the attack occurs after an unusually thorough wetting whilst ploughing, watching crops at

night, or other field work that ordinarily falls to man's lot and not to woman's. To their greater protection from severe and prolonged exposure alone, I believe, women owe their comparative immunity. I have suggested to Major Buchanan that the respective shares which exposure and a lathyrus dietary have in producing the paralysis might well be tested during the extensive animal-feeding experiments which are to be carried out at the Bombay Research Laboratory.

Morbid Anatomy and Pathology.

Satisfactory observations on the morbid anatomy and pathology of the disease are wanting. From the clinical symptoms one would be justified in assuming it to be a form of lateral sclerosis, but in Watts's *Dictionary* I find a statement that "Cantarri of Naples has published a number of cases in which he has carefully observed the conditions after death. No affection of the spinal cord was discovered. The muscles of the lower extremities, especially the abductors, were found to have undergone a fatty degeneration, etc." Scheube mentions one published necropsy (where death resulted from malarial cachexia) where "a softening of the spinal cord above the lumbar enlargement was found." Allbutt refers to two examinations of horses which had died of lathyrus poisoning. In these the symptoms were apparently mainly those of cardiac and respiratory oppression, and after death "the mischief was found mainly in the cells of the anterior horns of the cord, which were diminished in number and atrophied. There was also thrombosis of small arteries, which were also thickened. There was, too, fatty degeneration of the heart and intrinsic muscles of the larynx." From this he suggests that the nerve mischief may be secondary to the vascular lesions, which would suggest a similarity to ergotism. The prognosis of this disease as regards life is favourable. It does not seem to cause death directly, but the paralysis is incurable. Treatment, I believe, is quite futile.

A PLEA FOR THE PROPER MEDICAL SUPERVISION OF "REFRESHMENTS" PURVEYED ON RAILWAYS IN THE TROPICS:

WITH SPECIAL REFERENCE TO INDIA, AND FOR BETTER LATRINE AND LAVATORY ACCOMMODATION FOR THE TRAVELLING INDIAN PUBLIC.

By H. D. McCulloch, M.B.,
Chief Medical Officer, N.G.S. Railways, India.

Our vast Imperial commerce and the foreign enterprises which have come into being since the introduction of steam as a motive power, our great mercantile marine and extensive railway communications, extending in India alone to over 26,000 miles, has resulted, among other things, in rapid intercourse between East and West, which in its turn has gone to bring into prominence certain disadvantages, having regard to the public health of the communities concerned, hitherto remote from one another. Contingencies have arisen necessitating the adoption of special precautionary measures to prevent the conveyance of infection from already infected areas to uninfected areas.

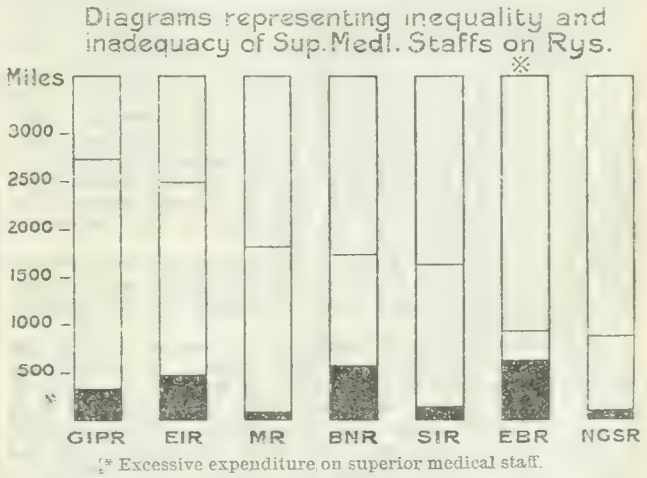
Owing partly to the infection being undetectable during the latent period in man and the vitality of the virus under varying conditions, climatic and otherwise, the difficulties experienced by medical authorities in the framing and adoption of sanitary preventive regulations have been very great, and the inconvenience to the general public extremely irksome, at these times of panic, the consequence being the abandonment of such regulations or their irregular adoption in certain areas "pro forma," and the adoption of serum inoculations of Haffkine's antitoxin systematically and on a large scale, by the temporary employment of a large superior medical and sanitary staff, with the greatest benefit, where this was tolerated.

It became necessary last year for the Home Government to depute to India a special railway expert in administrative matters, and Mr. Thomas Robertson, C.V.O., was selected as Special Commissioner to inspect and to report on the administrations of railways in India from the commercial and economic aspects, though the administrations of the various mercantile marine companies in which our Government is not so directly interested was not included.

The full text of Mr. Robertson's report was, I believe, available in India last May, but the Blue Book to be issued here is, I am told, still in the hands of the King's printers. To quote from an Indian newspaper article on "Indian Railway Defects," referring to the very candid report of the Special Commissioner, he is represented as having stated that, speaking generally, he thought the present administration and working of the Indian railways cannot be regarded as satisfactory, etc. He advocates the provision of dining cars on all fast through-service trains to economize time, and thinks that railways in India are not sufficiently appreciative of the value of their third-class passenger traffic, drawing special attention to certain gross abuses to which these are subjected. He further suggests the introduction of electric fans, which he thinks should be made compulsory within five years; the use of oil sprinklers to allay dust, and lavatory accommodation in all third-class carriages, which should be widened. Beyond these important sanitary recommendations no reference is made to the medical departments of railways, this being, perhaps, a matter beyond the province of his report.

The Government of India, however, in the Public Works Department addressed the different railway administrations through the local governments last year desiring that certain rules should be formally agreed to between the medical and sanitary authorities of local governments and those of railways within their areas, for the purpose of affording such mutual advice, support, and intimation of outbreaks of epidemics, etc., as may be for the general benefit of the public health and for the prevention of much sickness and mortality.

While these rules are having the consideration of our Government the proposition that I would venture to advance is the necessity for adequate medical and sanitary staffs not only on our great Indian railways, but also on our mercantile marine, to enable them to cope with modern sanitary and medical requirements, the urgent need for which the diagrammatic representations below will, I think, make obvious: and I trust that the time has now come for our medical members of Parliament, aided by the General Medical Council, to urge the Government to send out a Special Commissioner and medical expert to inspect and report upon the medical administrations of our mercantile marine and great railways in the interests of public health



* Excessive expenditure on superior medical staff.

	Miles.	Employés.	Medical Administration, Cost Per Mile.
			Rs.
Great Indian Peninsular Railway...	2,674	20,500	21.40
East Indian Railway	2,358	20,300	30.02
Madras Railway	1,600	16,000	6.50
Bengal Najpur Railway	1,557	15,500	35.37
South Indian Railway...	1,350	13,500	8.94
Eastern Bengal Railway	899	8,900	50.18
Nizam's State Railway...	745	8,000	12.02

The democratic idea that every citizen is entitled to the benefit of everything that will add to human health and happiness is growing fast. Health and sanitation Acts by the Legislature, medical officers of health, sanitary inspectors, inspections of workshops, etc., have all, in addition to prolonging life and diminishing death, done incalculable service by rousing in the public mind the vague beginnings of a tremendously important mental process of a dissipation of

the former fatalistic assumption that disease and deformity, weakness and unfitness are inevitable things, which God and the Devil had arranged between them for the chastening of mankind and the punishments of their sins. These are the weighty words of Dr. Clouston, President of the Royal College of Physicians, Edinburgh, in his interesting address to the Scottish Medical Corporations recently. Nine-tenths of his observations apply to State medicine in India, particularly with the workings of railways and our large passenger steamers plying in the East.

The question of food supplies to travellers *en route* in the East is one the importance of which in the present day cannot be exaggerated, where long journeys by steamship or by rail are undertaken, where travellers have no alternative but to accept as food and drink whatever is provided by the authorized caterers, and I think all medical men who have travelled in the East will concur with me.

Although we do not hear of those diseases incidental to the slow and tedious voyages prior to the introduction of steam as a motive power, acute and chronic disorders are remarkably common and generally fatal.

When natives of temperate and northern latitudes travel to the tropics and subtropical regions for pleasure, they usually elect to do so in the late summer or early autumn of northern climes, thus avoiding the rigours of their winter as well as the excessively humid heat of the tropics in summer. The great food question, under these conditions, does not force itself on their attention, as their general health does not suffer in any marked way by continuing on the same number of meat meals that they have been accustomed to. But for those who are obliged to travel at other seasons of the year, or who make their temporary home in the tropics, this food question is of vital importance if their general health is not to suffer in a marked way.

In the East, and more so in India, the people are to a great extent vegetarians, a form of diet taken as it is along with an excess of starchy and farinaceous food, has been found to be best suited to tropical climatic conditions. Those Anglo-Indians who enjoy the best health have adopted this form of diet from experience and it is to be recommended. Unfortunately the white man in the East is very reluctant to change his accustomed meat diet and this has to be catered for by the purveyors of steamships, railways, and hotels. On board ship little or no fault can be found with the food or drink supplied and the same holds good for the hotels of the principal Indian ports with the exception of Madras. But the food and drink supplied on Indian railways with a very few exceptions is proverbially bad. The Great Indian Peninsular and East Indian railways are, I believe, the first and only railways that provide a dining saloon on their fast through-service trains. This system is a great necessity on most passenger trains and as suggested by Mr. Robertson should be more extensively adopted.

The more enterprising and best managed railways have their own Co-operative Stores of Europe provisions and food stuffs and is a great boon to their employés but this system is far from universal.

It is during the summer months or hot season that the demand for "refreshments" on the long and tedious railway journeys is greatest and the unwary traveller is ready to quench his thirst with whatever drink is available. Most railways provide a compartment for an aërated water seller, ice being also carried. As a rule it is only made worth the while of men in poor circumstances to take the contract for such supplies and the risks run by travellers are great. British soldiers and Eurasians are the principal sufferers.

On one occasion, while travelling by rail in the Punjab along with a medical officer of the I.M.S., our private supply of mineral water being expended, some was procured from the train supplier, which had an immediate emetic effect on my fellow traveller. Detecting an inky flavour in mine I escaped this inconvenience, and on further examination the sulphate of iron was found in solution, its presence there being explained by the fact that the river water used was putrid when collected in the large iron cistern at the works, and crude alum had been freely used to clarify the water in the cistern, with the resulting formation of the sulphate of iron in excess in the lower half of the tank. This form of chemical poisoning rarely does much harm beyond occasionally causing alarm by the suspicion of cholera.

But during the long rainy season, when the atmosphere is charged with much moisture, fermentation and slow decomposition of organic refuse goes on everywhere near human habitation, and flies, mosquitos, and other vermin abound, infesting most station platforms. Where the soil is clay—such as in Bengal, the East and West littoral—surface drainage is slow, and the subsoil water is not easily contaminated, wells, which are the chief source of drinking water, remain wholesome longer, but in the Central Provinces the nature of the soil permits of the contamination of wells earlier in the season by rapid percolation. Drinking water is in constant demand at all hours of the day and night at most railway stations, and its sanitary supervision should be systematically conducted. A Brahmin porter is usually employed on most railway platforms, and he doles out unfiltered well water to thirsty travellers when these are not able to resort to the water taps on platforms. His methods of dealing with the water he supplies are quite his own, and he is often seen washing his vessels at a dirty ditch near the well. For Europeans and Eurasians who drink water—and these are many—filtered water, from filters standing on railway platforms, is provided. But to see reliable filters is the exception, though a number of local varieties have been devised for railway platform use. The 3-candle Berkefeld filter, which is more or less efficient, is found in railway saloons, but the Pasteur-Chamberland pressure filter, which is inexpensive and most efficient, has not yet been introduced, although the necessary pressure is available in most stations.

The management of the water supply is usually under the same department other than the medical, usually the locomotive and carriage or the traffic department, although the medical officer is supposed to be the sanitary superintendent. On the more important railways, where a number of medical officers are employed, this department of sanitation is better supervised. Attention is usually drawn to the contamination of wells after the occurrence of an outbreak of cholera, when Hankin's very effective method of dealing with such wells is resorted to. The proper construction and ventilating of wells is generally overlooked, as well as the proximity of latrines. These latter are usually erected on station platforms, and could to a great extent be dispensed with when latrine and lavatory accommodation of a design adapted to the use of third-class passengers in carriages is more universally adopted.

Tea and coffee are largely partaken of even by many native Indians, and the danger of infected milk is not understood, although milk clots it is considered wholesome, though we know that milk may be loaded with the bacillus of cholera, typhoid and dysentery, and need not clot. On one occasion passing through Agra I called for tea, which was served in the usual way, the milk being in a small jug. Previous to adding it to the tea I chanced to apply my nose to the jug, which emitted the odour of sewer gas. Having automatically returned the milk jug to the tray and declined the beverage, the offended waiter was able to administer it to the wants of the weary troopers of the 10th Hussars, who had alighted there and were making their way through the crowd. They drank it all. I never heard the result, but we often wonder why young soldiers in India are so subject to that dread disease enteric, from which so many deaths occur annually.

The sanitation of military barracks in India is above reproach of any kind, yet conjectures as to the causes of typhoid are always forthcoming, and bazaar lemonade is reputed poisonous. Stale beer on draught and alleged German beer are often provided and drunk in the hurry of a railway journey with as serious consequences.

In regard to foods, fresh meat being poor and fibrous unless curried, it is served twice cooked, or tinned bully beef is served as a special dish for first-class passengers. Tinned meats, more particularly salmon and lobsters, are very risky at best. I have known a waiter to open a tin of salmon in mistake for a tin of jam, and as he could not throw the salmon away without loss, it was left on the shelf till next day, and served up with cucumber for dinner; its effects were very sudden and severe on the three Englishmen who partook of the meal, and they barely escaped with their lives. Ptomaine poisoning is of more common occurrence in travellers than is generally supposed, though the public are only made acquainted with such cases through the press when important officials contract such sickness.

Complaints and representations to the proper authorities in regard to the poor food formerly purveyed on shipboard has been productive of the best results, thanks to modern refrigerators, but on Indian railways the public are apathetic and a remedy seems remote; so long as the officials of the railway company do not make it a point to partake of food at railway refreshment rooms when on their tours of inspection. I quote from an editorial by Mr. Cantlie in the *Journal of*

Tropical Medicine, June 15th, 1903. "An invalid in the tropics" ordered home is frequently loth to leave his more or less comfortable home or hospital to undergo the hardships he is subjected to on board ship. He feels too ill to undertake the voyage, and may prefer to risk the chance of recovery in his tropical environment.

The life of an invalid on board ship, even under the most advantageous circumstances, is not, and never can be, anything but most trying and uncomfortable, yet it is surely possible to alleviate in some measure his unenviable, and in many cases dangerous, position.

Mr. Cantlie goes on to say, "We do not join in the universal condemnation of that much-maligned member of our profession, 'the ship's doctor.' It is the fashion to view him as a being of inferior medical calibre, and one only to be mentioned to be pitied or ridiculed. How unjust these statements are all medical men who have travelled are fully aware of, but the public have come to look on the service men, whether of the army or navy or of the merchant service, as bodies apart and as belonging to a different profession species to the practitioner at home. The public services are doing all in their power to free their medical men from the opprobrium that has attached itself to these departments, but the 'ship's doctor' is content to continue with the stigma which gossip has fixed to his calling." The same may be said of the railway surgeon, and railway surgeons have been known in India for over fifty years. The work of the railway surgeon seems as fully entitled to recognition as military surgery, with which it has many features in common. Mr. Cantlie further states that no "medical man ought to be placed in charge of passengers or crews of ships sailing to and fro to tropical countries without a previous course of instruction in tropical diseases. Few reforms have been obtained for seamen except by Act of Parliament, and even if shipowners and Boards of Management are so shortsighted as to require legal compulsion in this matter, we would warn them that even this may be imposed upon them."

"We understand that a movement in the direction of insisting upon trained nurses being carried on passenger ships is being instituted, and whilst cordially supporting the movement, we hope that the shipping companies likely to be affected will see it to be their duty to the public and the empire by doing all they can to smooth the pillows of those of our countrymen and countrywomen who carry on the work of the empire in regions where disease is rife, and where it is well-nigh impossible to live without contracting ailments which necessitate extreme care whilst the sufferers are being conveyed to their native shore. The public purse grants subsidies to not a few of our great shipping companies, and the public welfare demands that the lives of human beings be considered of more importance than the delivery of mails and the storage of merchandise."

VARIOLOID VARICELLA IN TRINIDAD:

OBSERVATIONS ON ITS NATURE, ORIGIN, AND MODE OF SPREAD BASED ON THE OBSERVATION OF 4,029 CASES.

BY

J. R. Dickson, M.B., C.M.Edin. and C. F. Lassalle, M.D.Edin.

[Abstract.]

This disease, which was at first considered to be varicella, is characterized by the following main features. In general terms it is a febrile disease contagious in nature, with definite stages of incubation, invasion, and the appearance of a cutaneous eruption.

Period of Incubation.

The exact determination of the duration of this period is attended with difficulty, as the history obtainable from the class of people most frequently affected—that is, the unskilled labouring class—is vague and indefinite. The duration, however, may be approximately fixed from the following cases, in which the dates of exposure to infection and the invasion of the disease are definitely known. Generally the history obtained indicated a lapse of about a fortnight after exposure to infection before the appearance of symptoms. The duration of the incubation period of the disease may therefore be taken to be from ten to fifteen days.

Symptoms of Invasion.

The usual history obtained was one of fever and headache for three days, followed by the appearance of a rash. General muscular pains, fever, and headache were present in most cases. Of muscular pains, backache was most frequently specified as a special symptom. Vomiting occurred in about one-fourth of the cases. These symptoms varied from slight pyrexia and headache to high fever with delirium, and it was observed that when they were severe the subsequent attack was usually mild. Frequently there was a feeling of *malaise* for one or two days, and it was only on the appearance of the rash that this symptom was recognized as the invasion of the disease. The duration of this period was usually three days, but in many cases it extended to five to seven days, while in others it was as short as one day. During this period the patient felt ill and kept to bed. As a rule, the temperature fell to normal on the appearance of the rash, and the patient felt better, but not infrequently the pyrexia continued for several days. No initial case of any kind was observed during this period.

The Eruption.

The rash usually appeared on the fourth day of the illness as papules, and, generally speaking, went through successive stages of vesiculation, suppuration, desiccation, and desquamation. These stages were not characterized by any regular or typical sequence, and in cases seen after the full establishment of the rash; the most prominent feature was a polymorphic eruption of vesicles, pustules, drying pustules and crusts, of various sizes side by side. The rash invaded the body in successive crops. From cases kept under close observation it was evident that they were distinct and definite crops, and not an appearance due to retarded development of certain of the elements. The rash usually appeared first on the face, forearms, and front of trunk, and generally simultaneously. In cases observed in the general wards of the Colonial Hospital from the first onset of fever the rash frequently appeared first on the forearms and hands, or on the legs. The papules were readily seen, and rarely presented any special firmness on pressure. Vesiculation occurred early, and with rare exceptions within three days of the appearance of the rash. In a large number of cases it was complete within forty-eight hours, and in many cases numerous well-formed vesicles were seen on the first day of the rash. As a rule, the vesicles gradually increased in size, and the contents, at first clear serum, became turbid, sero-purulent, and purulent on the eighth or tenth day. At this time these elements had generally developed into large, distended, unilocular bullae, measuring 5 to 10 millimetres in diameter, and on being pricked exuded a sero-purulent fluid and collapsed. Frequently, however, the contents were either entirely clear serous fluid, or serous fluid and more solid mucoid material. These bullae were more especially constant on the extremities. Frequently well-formed bullae developed without passing through a preliminary papule stage. Similarly in many cases vesicles with thin, translucent, glassy envelopes occurred without a previous papule stage. These vesicles dried without becoming pustular. True umbilication of vesicles was rarely observed. Apparent or pseudo-umbilication, due to the commencement of the process of drying at the central prominent part, which caused a shallow depression, was a common feature. In other instances the type of the element was what would be best described as a vesico-papule—that is, a raised papule surmounted by a shallow vesicle, the papule having only undergone vesiculation in its central and most prominent part. These vesico-papules occurred in vaccinated as well as in unvaccinated people. There was no regular and definite stage of pustulation. It was irregular in extent, and as regard the different elements. The bullae more especially became pustules, but the development was gradual and generally tardy. It was frequently observed, both in vaccinated and unvaccinated persons, that numerous vesicles dried up and crusted without becoming pustules. The vesico-papules became sero-purulent, or purulent, in their upper portions only, and then dried as a whole.

The mode of desiccation varied according to the type and site. On the face, as a rule, this occurred early—that is, from the third to the sixth day. The drying process began at the apex as a yellowish-brown scab. Rupture of the wall occurred at this point. The contents dried as they escaped, and gave rise to light yellowish crusts. These were easily detached, and were seen to have been imposed on a firm raised base, the surface of which was dry. These excrescences were a constant feature. They were slowly absorbed, and in about two weeks were replaced by macules varying in hue, but usually pink or black, according to the colour of the patient. In the majority of cases the macules were at the surface level of the skin, but frequently further contraction and absorption occurred resulting in the formation of shallow pits. The elements on the

trunk dried early, frequently earlier than on the face. The bullous elements ruptured easily, their contents escaped, and the cuticle collapsing on to the base assumed the appearance of a piece of thin wrinkled parchment. The surface underlying this was flat and dry. The vesico-papules usually scabbed. On the palms of the hands and soles of the feet, the elements, whether vesicles or pustules, usually dried without rupturing, their contents becoming inspissated and absorbed. After desiccation was complete the resulting surfaces were generally flat, circular in shape, with a dark pigmented periphery surrounding a light-coloured centre. Frequently they were surrounded by a fringe of separated cuticle, which was gradually shed. Occasionally these spots presented an irregular mottled appearance. Gradually the surfaces became uniformly dark. The stains faded, and even in cases in which they had been very numerous had very largely or entirely disappeared in from three to four months. In some cases this occurred earlier, whereas in others some of the macules persisted, and were distinguishable about nine months after.

Distribution of the Rash.—As a rule, the extremities, face, and back of trunk were the parts most affected, the palms of the hands and soles of the feet were frequently affected, the severer the case the more constant the appearance of rash on these sites. The severer the case the more copious relatively was the rash on the trunk, and the elements showed a greater tendency to be confluent on the forearms and flanks than on any other part of the body.

General Symptoms.

In the large majority of cases there was marked absence of constitutional symptoms, and it was difficult to persuade patients to remain indoors. Even in cases plentifully covered with the rash, the constitutional symptoms were slight as compared with the amount of eruption. When the eruption was fairly copious, discomfort due to burning and "tight feeling" of the skin, more especially of the hands and feet, was all that was complained of. In addition to this, the symptoms, when present, were one or more of the following—namely, pyrexia, depression, malaise, aching pains, and sore throat.

Pyrexia.—In upwards of 95 per cent. of cases there was no rise of temperature after the period of invasion. In many cases the temperature, usually of an intermittent type, continued raised for two or three days after the appearance of the rash. Pyrexia during the further course of the disease—namely, from the eighth to the twelfth day—occurred in a very small percentage of cases only. Out of 406 cases treated in the isolation wards of the Colonial Hospital, secondary fever occurred in 13 only.

General depression rarely occurred in any marked degree, and was more especially observed in those who were debilitated from privation or old age, or were the subjects of chronic disease. In the isolation wards of the Colonial Hospital, where the severer cases were treated, a relatively small number only kept to their beds, and to any one visiting these wards the cheerful countenances and general bearing of not being seriously ill were striking features. After the stage of invasion the appetite was, except in a few cases, excellent, and the ordinary full hospital diet for convalescent patients was insufficient.

Malaise and aching pains varied with the amount of eruption, and were rarely urgent.

Sore throat was a fairly frequent symptom, and varied from slight congestion of the pharynx and fauces without eruption to marked congestion with the occurrence of a greater or less amount of vesicular eruption. In many cases in which the skin was abundantly covered with rash there was no throat affection.

Complications.

Excepting in the severer cases complications were either absent or of a mild nature. In order of frequency these were:

Eye.—Catarrhal conjunctivitis occurred very frequently. Corneal ulcer was an occasional complication.

Digestive System.—Diarrhœa occurred early and was mild. At a later stage it was usually severe.

Nervous System.—In children, occasional convulsions. In one case in which the attack was mild, convulsions suddenly supervened and caused death.

The urine was as a rule normal. Of 406 consecutive cases treated at the Colonial Hospital in the isolation wards, in 347 the urine was free of albumen; in 59 cases albumen was present generally as a trace which disappeared during convalescence. As a rule the disease occurring in pregnant women ran its course, without producing abortion. Premature birth of the fetus occurred one or two weeks after the recovery of the mother in several cases. In others the course of gestation was uninterrupted. In the premature births the fetus presented signs of the disease, and it was evident from the stage of the eruption that the fetus had contracted the disease about one or two weeks after its appearance in the mother.

Sequelae.

Boils and abscesses were the only sequelae and occurred in about one-third of the severer cases.

Microscopic examination of the contents of the elements showed: First to fifth day, lymphocytes and polymorphonuclear neutrophiles in increasing numbers. Sixth to seventh day, cloudy swelling and commencing disintegration of the cells. Seventh to ninth day, more complete disintegration; after this the contents were purulent.

Cultures on agar-agar from vesicles, sixth to eighth day, showed typical growths of streptococcus pyogenes.

Recurrences or Second Attacks.

Twelve cases of second attacks—occurring one to seven months after complete recovery from the first attack—have come under notice. These cases were all reported by medical practitioners and seven of them were seen by both of us. The symptoms of invasion, the character of the eruption and the resulting maculae were similar in both attacks and of the same nature as those of other cases of the disease.

Duration of the Disease.

This varied with the severity of the attack, being very short in mild cases, and on an average did not extend beyond three weeks. The duration of stay in hospital may be taken as a criterion of the duration of the disease. An analysis of 406 cases treated in hospital shows an average stay in hospital of 16.8 days. These cases were as a rule all discharged cured and after desquamation was complete.

Age Incidence.

This is shown as a percentage, based on an analysis of 4,029 cases, in the following table:

Under 1 year	2.0 per cent.
1 to 5 years	3.0 ,,
5 to 10 ,, ...	5.0 ,,
10 to 20 ,, ...	25.0 ,,
20 to 30 ,, ...	35.5 ,,
30 to 40 ,, ...	20.0 ,,
40 to 50 ,, ...	8.0 ,,
50 to 60 ,, ...	1.0 ,,
60 and upwards	0.5 ,,
	100.0

Origin and History of the Epidemic.

The first case of which there is a record was that of an inmate of the lunatic asylum, St. Ann's. The asylum is situated in an isolated position beyond the limits of the town.

This patient had been an inmate of the asylum for some years, and developed the disease on April 16th, 1902. The case was isolated on the appearance of the rash; but other cases appeared during May, June, July, and August, until 19 inmates and attendants, all adults, were affected. The source of infection could not be traced, and must have been either a visitor or attendant who had a mild attack and escaped notice. The cases were returned as varicella, but the medical superintendent has since reported that they were similar to the cases of eruptive fever now occurring, and in one instance—that of an attendant who had the disease in August, 1902—a few pigmented marks, identical in appearances with the macules already described, were visible up to about a month ago. It is of interest that of the 19 cases 10 were in vaccinated and 6 in unvaccinated persons, and in three the evidence of vaccination was doubtful. The most severely attacked were an inmate, vaccinated in infancy, and an attendant revaccinated in 1898, and showing three good marks of successful vaccination.

On May 2nd, 1902, a similar case in an adult was reported from Woodbrook, a suburb to the west of Port-of-Spain. Cases next occurred in Dundonald Street, in the north-west of the town, in September. Early in October a woman who lived in a barrack yard in the south-east of the town developed the disease within a fortnight of her arrival from Yrapa in Venezuela. About the third week of October a case, that of a trader who had recently come from Guiria in Venezuela, occurred in Duke Street, about the middle of the town. Both of these cases lived in largely-tenanted barrack yards, did not seek medical aid, and were not reported at the time. Other inmates of these yards were subsequently affected, but this fact was discovered only in the early part of December, and after they had recovered. During November 11 cases occurred in the middle and south-east of the town, and though in all probability the two cases above quoted were the sources of infection,

yet there is ground for believing that in 3 of the cases the contagion was derived from other sources. Five of the cases occurred in one yard in Duncan Street in the first week of November, and of these the 2 who showed the most distinct vaccination marks were most severely attacked. During December 8 cases were reported from the eastern, south-eastern and middle portions of the towns. Of these, one was a vagrant who developed the disease within a week of his arrival from Yrapa. In January, 1903, a house to house inspection was instituted, other cases were discovered in various parts of the town, and the disease began to assume epidemic proportions. At first the majority of persons affected were hucksters, sailors, and quay labourers, that is, were of that class of the population which would earliest be exposed to contact with an imported disease. Reports of the prevalence of a similar disease in the adjoining coastal villages of Venezuela had for some time been circulated, and early in February information was received that several deaths had occurred, and that the disease was now stated to be variola. With the view of obtaining accurate information, a commission of two medical practitioners, one of whom had had extensive experience of small-pox, were sent to Venezuela to investigate and report on the nature of the eruptive fever prevalent there. The commissioners visited Yrapa and Guiria. The following extracts are taken from their report:

The disease had existed in Yrapa for nearly a year, and had not varied in character, that is, has always been a mild affection. Two deaths had occurred in the country around. One was that of a chronic alcoholic, the other probably died more from privation and neglect than anything else. We visited Messrs. Fournelli and Cottin, both Frenchmen, long established in Venezuela. Their households had not been attacked, and they were under the impression that Europeans were spared. Mr. Fournelli stated that in Carupano, where there was a large European community, and where this disease had been very prevalent, no European had been attacked. These gentlemen informed us that no alarm was even felt at Yrapa about the sickness—that they called it "lechina" (Spanish for chicken-pox). As a proof of the mildness of the disease, they referred to the attack of Guiria by the revolutionary force from Yrapa, when many of the troopers, though covered with the eruption, carried their Mausers cheerfully to battle. The Commissioners came to the conclusion that the disease was exactly the same nature as that occurring in Port-of-Spain, and was not small-pox. They expressed the opinion that the disease was imported into Trinidad from Yrapa. There is a large daily passenger and trade traffic between Port-of-Spain and the villages on the adjoining Venezuelan coast, and the voyage does not occupy more than one day. Under these circumstances, and in view of the instances above quoted, there seems to be little doubt that the disease was introduced into Trinidad from Venezuela.

From returns it would appear that the susceptibility both in vaccinated and unvaccinated persons increases from early age and attains its maximum at the 20 to 30 age period. After this it diminishes with each subsequent period. It was commonly observed that a large proportion of mild cases occurred in unvaccinated people, and that many of the severer cases occurred in people who were vaccinated and showed good marks.

2. *Incidence on Recently Vaccinated Persons.*—Of 312 reported upon, 28 were among recently vaccinated and revaccinated persons. Four cases occurred within one year of vaccination; 8 within three years; 4 within four years; 11 from four to eight years.

3. *Vaccination During the Incubation Period.*—Vaccination within the first five days of the incubation period appeared to modify the attack. Several persons were vaccinated at the end of the incubation period, that is, a day before the occurrence of the symptoms of invasion, and vaccinia and the disease ran concurrently without apparently modifying one another in any way.

4. *Vaccination During Convalescence and on Complete Recovery.*—In a series of 185 cases the following results were obtained: 145 were unsuccessful; 25 gave a modified reaction, a vesico-papule formed which crusted over quickly, a firm raised purple fibroid growth resulting. In 15 cases vaccination was successful. It is worthy of note that in three of these cases vaccination performed immediately on recovery from the disease was unsuccessful, but gave good vesicles four to five weeks later. Three persons (a primary vaccination and two vaccinations) were vaccinated with lymph from one of these cases and typical vesicles were obtained.

Mortality.

The fatality of the disease is very low. Of 4,029 cases occurring up to May 30th, 1903, there were 18 deaths, giving a case mortality of 0.44 per cent. In this connexion it is of interest to note the fact that in the years 1871-2, when undoubted small-pox was epidemic in this island, there were 12,531 cases, with 2,449 deaths, giving a mortality of 19.5 per cent. This bears out the experience that small-pox in the tropics and among dark races is a severe affection, and attended with a high fatality.

Prophylaxis.

On account of the mild nature of the disease and the slight attendant discomfort preventive measures in a strict sense are impracticable. Even a house-to-house inspection failed to discover all cases, as many of those affected continued to pursue their outdoor occupations. Vaccination, revaccination, and isolation are the measures which experience has shown to be the most useful in dealing with the disease, but in the absence of special provisions in existing legislation for the enforcing of them, and a strong public feeling against compulsory vaccination and revaccination, those measures could not be efficiently and generally carried out.

General Remarks.

The outstanding feature of the disease is its atypical character. In some respects it is analogous to the epidemic in America of what has been termed irregular or atypical small-pox by Dr. Heman Spalding of Chicago and some other American writers, but presents marked differences in the following particulars: 1. The occurrence of second attacks in persons who have recently recovered from the disease; 2. the successful vaccination of persons recently recovered from the disease; 3. attacks on the recently vaccinated.

Dr. W. Briggs Clarke (Barbadoes) said it might be of interest to note that while small-pox prevailed in Barbadoes, a disease of undefined character was declared to exist in Trinidad. Barbadoes was quarantined by neighbouring ports, but ships at Trinidad were allowed to come and go freely to West Indian ports. Dr. Masson, of Trinidad, reported the cases to be small-pox, and Dr. Bridger was deputed by the Barbadoes Government to report on the Trinidad epidemic. Dr. Clarke fortunately had a few photographs taken by Dr. Bridger, and they were so convincing that there could be no doubt as to the disease being one resembling small-pox. He did not say that the cases which occurred during the recent epidemic in the West Indies were one and the same disease, but he did say that Barbadoes was justified in obtaining and acting upon the report sent in by Dr. Bridger. In British Guiana, in Barbadoes, and wherever in the West Indies this eruptive fever existed it was styled small-pox, except in Trinidad, a curious fact, to say the least of it.

Dr. G. C. Low (London) said he had seen in Barbadoes a disease similar to that which prevailed in Trinidad, and he had no hesitation in saying he believed it to be small-pox.

TROPICAL MALARIA AND ITS PROPHYLAXIS.

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In dealing with the subject of malaria I desire in this address to place before you the special features of its prevalence in Ceylon, and to indicate how the special conditions of agricultural industry which prevail in the island must modify and limit the means at our disposal to combat its spread.

Malaria is widely prevalent over the whole of the low country of Ceylon, and especially so over the sparsely populated parts to the north and east of the island. Its periodical outbursts bear a remarkable and interesting relation to the seasonal rains, and hence some knowledge of the climatic and meteorological conditions of the island is necessary, for the proper appreciation of the prevalence of malaria.

The conditions of climate that obtain in Ceylon have been designated equatorial by Wallace. They are a high average temperature both day and night with but slight variations throughout the year, a heavy rainfall, and an excessively humid atmosphere. Such conditions prevail not only in Ceylon, but also in all the tropical islands on either side of the equator up to 15 degrees of latitude north or south in both hemispheres. In Ceylon the annual variations of weather are determined by the prevailing monsoon winds with their corresponding bursts of rain. Broadly speaking, three distinct climatic zones or areas may be distinguished in the island. The mountain zone plays little or no part in the production of malaria. In fact, above 1,500 ft. malaria does not

occur in Ceylon. The low country is again divisible into two areas. A moist and a dry zone determined entirely by the prevalence or deficiency of the monsoon rains. The moist zone includes the thickly populated south-west and southern parts of the island. It has two rainy periods in the year with both the monsoons; the south-west monsoon rains prevailing in May-July, and the north-east monsoon rains in October-December. These rainy seasons are separated by two well-marked droughts. On the other hand, in the dry zone, which extends over the north and east of the island, there is a comparative failure of the south-west monsoon rains. There is only one period of heavy rain which occurs in the north-east monsoon in October-December to be followed by one prolonged drought.

The occurrence of malaria in these two zones seem to be remarkably affected by the peculiarities of rainfall above described. In the moist zone two distinct epidemic waves may be observed corresponding to the two rainy seasons, but following the rainburst after an interval of about a month. In the dry zone only one annual epidemic wave of fever occurs, and that after the heavy rainburst in October to December. The routine of events which eventuate in the periodic outbursts of malaria in epidemic form may be described as follows: During the drought the ponds dry up, the breeding grounds for the mosquito larvae are abolished, and the adult *Anopheles* repair to the jungle, or to shady nooks for resting. With the early rains after the drought they come out again to lay eggs in the newly-formed pools. The onset of the rainy season, with its accompanying cold winds, chills the bodies of the meagrely-clad villagers, and determines a relapse of fever amongst the malariated. These are the early isolated cases of fever that occur at the beginning of monsoon rains. The young *Anopheles* recently hatched out are now infected by these early cases, with the result that a widespread epidemic is set on foot until the pools dry up again when the rains cease. The natural history of epidemics of malaria in Ceylon furnish further proofs, if such were necessary, of the mosquito-malaria theory. Although on a general survey of the low country of Ceylon malaria may be described as occurring in definite periodic waves, dependent on seasonal rains, alternating with periods of drought, yet it must not be supposed that this is the course all throughout the island. A large tract of fertile low country occurs to the south and west of the island abutting on the mountain zone, with an abundant rainfall well distributed throughout the year. In these parts the ponds are seldom dry, and the young larvae of *Anopheles* are met with throughout the year with the result that first infections of malarial fever occur continuously without any periodic break.

Of the different forms of malarial fevers, the aestivo-autumnal form or the tropical malaria of Koch is by far the most prevalent. In fact, more than 99 per cent. of the cases of fever that occur in Ceylon are of this type. The quartan fever I have not seen in any case acquired in the island. The benign tertian is more common than the quartan, and is most often met with in patients who have come over from Central or Northern India. In fact, the benign tertian and quartan forms of fever are so rare in Ceylon that an important generalization may be deduced that in equatorial regions, where the average temperature is seldom below 80° F., only the tropical forms of the parasite are generated. I am aware that in a recent report from the Federated Malay States simple tertian and quartan forms are described as fairly common in that colony. The explanation probably is that these cases occur amongst the numerous Chinese coolies of that colony who had been infected in China previous to their arrival into the Malay States.

Before passing on to the question of prophylaxis of malaria in Ceylon, I wish to emphasize certain points in the natural history of the parasite of tropical malaria which seem to me to be of great practical interest and importance. It is unnecessary for my purpose to enter into a lengthy discussion as to the question whether in tropical malaria we have to deal with only one species of the parasite or with several forms. In the present state of our knowledge I think the simplest view to take is to regard all the tropical forms as belonging to one species. In Ceylon, as elsewhere, in first infections a definite periodicity is not manifest, but occasionally in mild infections I have seen two or three cases where the fever was of a distinct double tertian type clinically. On the other hand, in relapses a tertian periodicity is fairly common. Under the circumstances I am inclined to believe that the tropical parasite is really one which requires forty-eight hours for its maturation in the human blood. At any rate, on this hypothesis one can explain all the clinical varieties, whereas the inference that a quotidian parasite exists because a few cases show a diurnal exacerbation of fever of equal intensity is not sound, as such a fever may be due to a double tertian infection where the two groups of parasites are of equal intensity.

Amongst the features which distinguish the tropical parasite from the benign forms one noteworthy characteristic is the comparative rarity of the parasitic forms in the peripheral circulation during the early days of the febrile attack. Indian observers have definitely asserted that this parasite is often absent from the peripheral circulation during the first two days of fever. Again, the sporulating body is seldom or never met with in the peripheral circulation.

Golgi has asserted that in the case of this parasite its proper habitat is the internal organs, and that the few forms met with in the peripheral circulation are wandering forms, which have probably strayed out of the normal bounds of their habitat. Another feature of great importance is the appearance of the gametocytes. The crescent bodies are met very late in the course of the fever. In untreated cases they are rarely seen before the second week of fever, but in cases that receive treatment even two or three days after the onset these bodies are seldom or never evolved. Taking these facts into our consideration it is clear that in this type of fever the chances of infecting the mosquitos are very much less than with benign forms; and, further, between the onset of fever and the appearance of crescents in the peripheral blood a considerable interval of time is at our disposal to prevent the infection of mosquitos by appropriate treatment of the fever-stricken patients.

In dealing with the prevention of malaria three courses are now well recognized to be open to us to adopt—namely, (1) The extermination of the *Anopheles*, (2) the prevention of mosquitos infecting man, and vice versa by the use of curtains, mosquito-proof houses, and other measures, and (3) the systematic destruction of the parasite in man. Any of these methods, if effectively carried out, is quite competent to exterminate the disease.

The first method has been rigorously carried out in several towns during the last few years with apparently successful results, but the work has to be kept up at great cost if the good results are to be maintained. In towns which are well drained, and where the breeding grounds for the mosquito are few and far between, I have no doubt that this method is both effective and economical, but this method is not at all practicable in Ceylon, India, and other rice-growing tropical countries. The low-lying lands of such countries consist of ricefields which are periodically flooded for months together by the heavy rains. Not only are these tracts undrainable, but the peculiar agricultural industry—namely, rice cultivation—for which they are suited will not permit drainage. The cultivation of rice is known as a wet crop. The seed is sown in mud or in a puddle, and young corn for nearly two months or more requires the surface of the field to be flooded for its proper growth and maturation. Hence this important agricultural industry which is connected with the production of the food supply of the masses is one which provides excellent breeding grounds for the mosquito larvae. As two crops are taken generally every year from each field, such breeding grounds are artificially manufactured for several months every year as an incident in the agricultural operations of the tropics. The rice fields in Ceylon and India in malarial districts abound with the larvae of *Anopheles*. But such larvae are met with not only in the cultivated rice fields, but also in the artificial tanks, which are specially devised for the storage of water to supply the water for drinking as well as for agricultural purposes during the droughts. So great is the importance of such storage of water in droughty parts in the tropics that the building or repairing of tanks forms the starting-point of all attempts in the development of the country; but, curiously enough, these tanks themselves furnish breeding grounds for the *Anopheles*. It is clear then that in all rice-growing districts the destruction of the mosquito would necessitate the giving up of rice cultivation, a remedy which would be more disastrous than the disease itself. I may further add that among Eastern nations, whether in India, Ceylon, or Java, this is the one industry which the Government is continuously endeavouring to increase and foster, as from long experience the authorities have discovered that by the extension of cultivation of rice they secure not only food for the masses, but enable inhabitants to provide themselves with treatment when disease overtakes them.

The Italian Government has been so much concerned by the rice fields as active propagators of the mosquito, that rice cultivation within four miles of a human habitation has been prohibited by statute. In Ceylon and India the rice fields not only exist in the midst of villages, but the cultivator has in many instances actually to sleep on a platform in the middle of his field during the growth of the plant at night to prevent damage and destruction to his crops by wild beasts.

But, it may be asked, What about the towns and cities? Why not destroy the *Anopheles* pools round such places? In Ceylon, however, the large towns are remarkably free from malaria and do not require such treatment, whereas the fever prevails in the sparsely-populated villages and amongst the scattered rural population. And as three-fourths of the total population of the island are distributed over the rural districts and only one-fourth from the urban population, hygienic efforts restricted to the towns will have little or no effect on the prevalence of malaria.

The process of exterminating malaria by destroying the mosquito larvae over extensive, sparsely-populated districts is neither a practical nor an economical procedure when other objections are absent; but when it is directly concerned with the interference of the food supply, and even the water supply, of the people, it becomes absolutely impossible.

Mosquito-proof houses as a method of prophylaxis are wholly inadmissible in the tropics on a large scale. With a night temperature seldom less than 80° F. such houses would be so close and hot as to render existence physically impossible. In addition to this drawback the cost of such dwellings would be prohibitive. The ordinary mud hut of the tropical peasant costs him practically nothing.

An attempt to exterminate malaria by killing the parasite in man on a large scale has been made by Koch in Java and German New Guinea. After studying tropical malaria in German East Africa, Koch came to the conclusion that this method of prophylaxis held out the greatest promise. In Java he carried out the quinine treatment in a bold and drastic manner. His method was to search for all cases of latent malaria during the period when fever was not prevalent. To treat such cases thoroughly and vigorously and thus diminish the chances of relapses as much as possible at the commencement of the next fever season, and then during the fever season he administered large doses of quinine twice a week to the whole community as a prophylactic. In his interesting reports Koch has definitely asserted that as a result of such measures he had freed two villages from malaria in three months. The results are indeed brilliant, but his method in all its details cannot be carried out elsewhere. No community of people free from fever will tolerate all-round drugging with quinine on the off-chance of escaping fever. Whilst fully realizing the importance of Koch's experiments, a modification of his methods may be adopted which, though less rigorous, is likely to give satisfactory results.

I have already pointed out that in the tropical fevers the parasite is not numerous in peripheral blood during the early days of the fever bout, and that the gametocyte is only met with in neglected and untreated cases of protracted fever. As the gametocyte is the only form of the parasite which can infect mosquitos, it is obvious that there is a considerable interval of time at our disposal between a given attack of fever and the chance of mosquito infection from such an attack to kill the parasites by quinine. To put the matter in another form: in the prevention of mosquito infection in this form of fever, it is unnecessary to drug a whole community with quinine, but it is only necessary to treat cases of malarial fever as they occur, but such cases should be treated promptly, vigorously, and systematically.

The above conclusions, based on theoretical grounds, are borne out by practical experience. Since 1894 an experiment on a small scale has been conducted on a plantation in the Kurunegala district of Ceylon where malaria is intensely prevalent. The number of labourers on this plantation has varied from 80 to 100, and when they suffer from fever, and only then, they receive treatment with quinine in mixture form in a thorough and systematic manner. The special methods adopted in this plantation are the following, namely: (1) Labourers, when they absent themselves from work or are otherwise suspected to be ill, are searched for and examined, and when found to suffer from malaria are at once put upon treatment. (2) Quinine is not withheld, as is constantly done in the tropics when the fever bout is over. Cases of recent recovery are kept under supervision, and are given quinine two or three times a week for a month. (3) An attempt is made to deal with chronic cases of anaemia and other forms of malarial cachexia as soon as they appear.

This plantation, where prior to 1894 fever was so rife that labourers could not be obtained or kept together, has, since the above methods were adopted, become the favourite plantation of the district for the coolies. Fever amongst the labourers has decreased to a remarkable exent, but figures drawn from them are useless for comparison, as the labourers are constantly changing. For several years no case of fresh infection has incurred on the plantation.

During the last three years a new manager with his family and servant, numbering five, and the storekeeper and his servant have lived continuously on the plantation without any attack of fever, and yet this is a part of the country which is intersected and surrounded by rice fields on all sides, and one where in every hut *Anopheles* mosquitos can be found practically all throughout the year. I may further add that mosquito nets or other appliances are not in use in any of the dwellings.

In tropical countries, including Ceylon, where malaria is met with several districts are now free from this malady which were formerly infected. In examining these areas what is remarkable is that the *Anopheles* is still present. This is the experience even in Europe. What, then, is the explanation of the disappearance of malaria? For surely it cannot be due to the extinction of the *Anopheles*, for it is still met with, and occasionally, as in parts of Calcutta, in large numbers. The conclusion seems to me this: that malaria disappears from a community or a district when quinine treatment is brought within the means of its poorest inhabitants. In most cases this desirable result is not generally attained until a district is so thoroughly developed as to enable its inhabitants to obtain permanent and profitable employment, and thus the means of obtaining efficient treatment.

In conclusion, whilst admitting that over small areas specially suited for such measures the extermination of the *Anopheles* may be an efficient and practicable method of dealing with malaria, in the rice-growing tropics it is wholly inadmissible. In these regions the effective treatment of the fever on the lines indicated holds out the greatest promise of success. Where quinine is now made available for the inhabitants of a malarial district in India or Ceylon no systematic effort is made for the treatment of the disease. For dealing with malaria in a district the following points should be insisted upon, namely:

1. A prompt search for cases of fever as fast as they occur with efficient treatment. If necessary or otherwise practicable malaria should be included in the list of infectious diseases whose notification to the local sanitary authority is compulsory.
2. The continued treatment of fever cases after the attack is over to prevent relapses.
3. The systematic treatment, especially during the non-fever season, of the cases of anaemia and other forms of debility induced by chronic malarial poisoning.

The above measures represent the least that can be expected from a sanitary authority in the treatment of malaria in an infected district and it is gratifying to observe that when such measures are effectively carried out a great deal will have been done to exterminate the disease. The surest prophylaxis consists in efficient treatment.

PLAGUE IN DOMESTIC ANIMALS.

By JAMES CANTLIE, M.B., F.R.C.S.Eng.,
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THE report that has recently reached this country that several fowls, a duck, and a quail, exposed for sale in the Hong Kong market, were found to be infected with plague is one which is calculated to create alarm, or, at any rate, to open up a wide field of inquiry. The fact that domestic animals, and animals exposed for sale as food, are subject to plague helps, perhaps, to explain the endemicity of the disease and the persistency with which it clings to a town or district where once it has prevailed. It is an old belief amongst the Chinese in Yunnan that almost all domestic animals are liable to plague, and they actually formulate a scale of relative infectivity amongst animals. The Chinese believe that the animals which by their stature are nearest the ground, such as mice, rats, cats, etc., contract the disease

first, and that the taller animals—pigs, sheep, cattle, and horses—are less liable, and are always attacked subsequently to the smaller animals. Whatever truth there may be in this observation, there is no doubt the statement that domestic animals are readily liable to plague is correct.

The experiments carried on in 1902 by Professor W. R. Simpson and Dr. Hunter in Hong Kong have taught us new facts in connexion with the infectivity of domestic animals. By vaccinating, inoculating, and more especially by feeding animals on plague cultures, or on the blood or organs of plague-infected animals, Professor Simpson showed that monkeys, sheep, calves, pigs, fowls, geese, ducks, pigeons, turkeys, etc., readily contracted plague, and one of the most telling results of his observations has brought home to us the fact that they more readily became infected when fed upon plague bacilli in any environment than by any other known means of causing infection. He proved also that the bacilli were found in the flesh, in the organs, and in the excretions of these animals, and the fact that skin parasites readily acquired the bacillus when fed on plague-infected animals has long been known to us.

How far the flesh of these animals is concerned in communicating plague would seem to depend upon the degree to which it is cooked. The flesh of thoroughly cooked plague infected animals can perhaps be consumed with impunity, but in China thorough cooking is regarded by some classes of the community as calculated to destroy the flavour of the food, and they not infrequently partake of entrails after merely washing them. In connexion with this subject it may be of interest to know that the Chinese use the duck—one of the animals which readily contract plague—in various ways in cases of illness. In attacks of fever from whatever cause duck's blood is liberally smeared over the face, neck, trunk and limbs, and the duck is used as we use a poultice. In abdominal pains a live duck is split open along its ventral aspect and then immediately, whilst warm, applied to the abdomen of the sufferer, as we would a hot fomentation or a linseed meal poultice.

In China and in many Oriental countries the domestic animals, such as fowls and pigs, live in close proximity to human beings, so close in fact that they are often under the same roof, and housed or allowed to wander about in the same apartment. The consequence is that whether the human beings or the animals contract plague first either may infect the other, for each is liable to the disease. In this way the disease becomes endemic in a particular house or apartment, whilst other houses or apartments close by are free from plague.

Our attention has perhaps been too closely bestowed upon rats as the carriers of plague; for whilst pursuing that theory we have neglected the facts now brought to our notice that any or probably all domestic animals do suffer from the disease, and that a multitude of other foci of infection are at hand.

Of acute and chronic forms of plague in animals the latter is the more interesting from an epidemiological point of view. Professor Simpson finds that pigs may suffer from plague for weeks without betraying any symptoms of illness. He tells us that pigs with plague remain in apparently good health, even when their temperature is 103° F. or more; and it is only by carefully recording their temperatures that we have any evidence that they have departed from the normal. For three or four or more weeks the pig may suffer from high fever after contracting plague, but until a few hours before death it gives no sign or symptom of illness.

Turkeys may live after being infected for as long as 44 days, ducks for 54 days, geese for 35 days, sheep for 34 days, and so on. During all this time, however, the animals are giving off plague bacilli in their faeces and urine and infecting the parasites which inhabit their skin and its coverings. Men and animals which are brought into intimate contact with them are thus exposed to infection.

These new facts in connexion with plague help us to understand its persistency, its endemicity, and the difficulty of its eradication, for it would appear that every living thing in proximity with a plague focus may contract the disease. The transmission of plague by ships is, in the light thrown on the subject by recent facts, keenly brought home to us. At plague-infected seaports every kind of device has been practised to prevent rats getting from the infected shore to the ship or from the infected ship to the shore. But whilst guarding against rats, the fowls, geese, ducks, turkeys, sheep, and pigs may have been brought on board for purposes of consumption by the crew or passengers, or from transmission from port to port. Each and all of these animals, however, may be infected, suffering from chronic plague, and yet giving no sign or symptoms of illness. The rats in the ship may be free from plague until the fowls came on board, yet it is only when these rodents die that plague is suspected. The acrimonious discussion as to whether the rats are infected first and man afterwards, or vice versa, has raged for several years, but the varying evidence brought forward may find its solution in the fact that it was some other animal that infected both, and the rat and man developed the disease almost contemporaneously. Plague has frequently occurred whilst the rat remained free, as proved by the most careful bacteriological inquiry, and epidemiologists have, in their conviction that the rat and the rat only is the carrier of the disease, been led astray in their investigation. Plague appeared in Glasgow, but no rats were found infected until twelve months afterwards, and there can be no doubt that some other animal from on board a ship sailing from a plague-infected port was the conveyer of the disease.

The prophylaxis of plague therefore assumes a much wider proportion than has hitherto been bestowed upon it. Any and every animal received on board ship may possibly convey plague; it may be suffering from plague and yet show no signs of illness. The fowl will readily eat its food, and the pig's appetite will continue as voracious as ever even when the temperature of the former may be 107° F., and that of the latter 104° to 105°.

These are problems which the sanitary officer of the port must at once take in hand if plague is to be controlled. The one evidence of plague in animals short of examining the blood or excretions of the animal for plague bacilli is that of temperature; so that it comes to this, that the temperature of every animal previous to being received on board from a plague-infected port should be tested, and steps taken to weed out the apyrexic from the pyrexic—a laborious process no doubt, but it is the only means known to us at present how to separate the infected from the healthy. Not only, however, is it domestic animals that are known to be infected. The marmot in Mongolia was proved by Clemow to suffer from plague; bats were found to be infected in Naples; pigeons, which were until recently held to be immune, are now known to succumb readily to the disease; and the story of the crow flying over Rome, falling dead in the street, and infecting children with plague who picked it up is readily explainable in the light of modern research.

What is wanted is a ready means of diagnosing plague in animals; for to take the temperature of each pig of a large consignment, or to examine the blood for plague bacilli is an ordeal the best equipped port officers could not possibly do. Could we tell by inspection that an animal had plague, we might hope to be able to control plague in some measure, but until we discover a rapid method of diagnosing plague in animals, I fear we have little hopes of combating the spread of the disease.

SECTION OF OPHTHALMOLOGY.

HENRY E. JULER, F.R.C.S., President.

INTRODUCTORY REMARKS BY THE PRESIDENT.

GENTLEMEN,—In opening this Section of Ophthalmology I have pleasure in reminding you that its meetings this year promise to be of the greatest interest to us all. Each day is provided with the discussion of an important subject, which is to be followed by a series of papers which appear to be pregnant with practical and important instruction. We are fortunate indeed not only in the nature of the discussions, but in the selection of those who have consented to introduce them—namely, Mr. Stanford Morton on the Operative Treatment of Conical Cornea, Mr. Nettleship on the Relationship between Retinal Haemorrhage and Renal Disease, and Mr. Hartridge on the Operative Treatment of Strabismus. These discussions alone would, I am sure, be of sufficient interest to compensate us for the loss of time and the trouble of attending the meetings, but the papers which are to follow, such as those by Dr. Darier of Paris, Dr. Sydney Stephenson, Mr. Tatham Thompson, Mr. Lister, and many others, will, I am sure, tend to the advancement of ophthalmology, and so will give us complete satisfaction.

NOTES ON OPERATIONS FOR CONICAL CORNEA.

By A. Stanford Morton, F.R.C.S.,

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The treatment of conical cornea is generally recognized as being beset with much difficulty, for which various methods, giving very varying results, have been suggested and tried from time to time.

In this paper it is proposed to consider the treatment only from the operative point of view for cases which are not otherwise sufficiently improved.

The object of an operation is to produce such a flattening of the cornea as will enable the patient to obtain useful vision. The operations chiefly in vogue to attain this end are:

1. Cauterization without perforation.
2. Cauterization with perforation.
3. Excision of the apex of the cone.

In view, however, of the paucity of statistics giving full details of series of cases treated by these three methods, the data as yet available are scarcely sufficient to allow a decision being arrived at in favour of either operation. In the hope of aiding, in some slight degree, the attainment of this desirable end I have ventured to record in detail all the cases of which I possess notes subsequently to the operation (except, perhaps, some two patients whom I have been unable to follow up).

In doing this I have endeavoured to show:

1. The V. without and with glasses before operation.
2. The V. without and with glasses after operation.
3. As far as possible the permanence, or otherwise, of the result by giving the visual acuity just after the operation and again at a later date (in one instance, Case I, twenty years).
4. Complications attending operation.

For enabling me thus to bring forward this series of cases my warmest thanks are due to my friend, Mr. W. Ilbert Hancock for the infinite pains he has taken in looking up the notes, personally examining and testing all the available patients, and then sifting the material and tabulating the results.

In a large majority of the cases the operation performed was excision of an elliptical piece from the apex of the cone, a method which I was led to try by reading the notes of a series of successful cases operated on in this way by Mr. C. Higgens, and reported by him in the British Medical Journal, 1880, vol. i.

The operation performed in the following cases consists in transfixing the apex of the cone by a long, narrow, and stiff Graefe knife whose edge is turned forwards and a little to the right. The knife is pushed steadily onwards until it cuts its way out through the cornea to the right of the apex of the cone, thus forming one edge of the elliptical piece to be excised. The flap thus formed is held well up by its free edge with fine forceps. The knife being then passed beneath the points of these forceps, cuts out on their left side through the corneal tissue, and so completes the excision of an elliptical piece, about 2 mm. by 1 mm., containing the apex of the cone.

Excision of the apex may be performed in the vertical or horizontal meridian, or in the meridian of least curvature. There is perhaps not very much choice as between the vertical and horizontal incisions though, possibly, with the former, the wound is more under cover of the lids, and therefore less disturbed, than a horizontal incision which might be just in the line of the palpebral aperture.

Of treatment by cautery in concentric zones, without perforation, so ingeniously devised and skilfully practised by Sir Anderson Critchett, I have had but little experience. In two only of the cases (II and VII) was cauterization performed as a primary operation. In Case II it was done first without, and some months later with, perforation. In Case VII the A.C., though not empty when the operation was completed, leaked freely for three weeks with much corneal infiltration and ciliary injection.

From a perusal of the notes, it will be seen that operations for conical cornea are certainly not devoid of risk and should therefore be undertaken only when other means fail to give the desired vision.

Complications of Operations.—As the following cases show, the dangers attending excision of the apex are (*a*) anterior synechia, (*b*) iritis and posterior synechia, (*c*) increased tension, (*d*) hypopyon. In cauterization with perforation there are the same risks, and though in cauterization without perforation these are minimized, yet in one case which came under my observation there was increased tension requiring treatment.

Treatment of Complications.—In order to avoid as far as possible the risk of anterior and posterior synechiae, the eye should be well under atropine, and care should be taken to avoid extending the incision too far, especially in the downward direction. After the operation ung. atrop. should be freely inserted with as little disturbance as possible of the lids. Increased tension is seldom met with except as the result of anterior synechia. If anterior synechia occur it may be dealt with by Lang's knives or iridectomy. Iritis will be treated in the usual way, and, should troublesome posterior synechia supervene, iridectomy is indicated.

Choice of Operation.—It is difficult to specify the indications in favour of one or other method of operating. Should the cone be only slightly prominent, and especially if situated towards the outer side of the cornea, cauterization would seem to be indicated rather than excision of the apex. Where complications already exist in the eye to be operated on, such as a pupil contracted and fixed by iritic adhesions, one would probably use the cautery without perforation, as being perhaps less risky.

Cautery, with perforation, and excision of the apex appear to involve about the same amount of risk. The scar, however, of the cautery is probably generally more extensive than the linear scar of the excision, and therefore leaves less cornea clear for visual purposes.

Preliminary Iridectomy.—This has occurred to me as likely to obviate to some extent the occurrence of anterior synechia when the cornea is perforated. I am not at all sure, however, of its advisability, for on several occasions I have noticed how much worse the vision was while the pupil was dilated by atropine than afterwards. Then on reinstilling atropine the vision was again materially lessened, so that it seemed as if the narrow fissure between the scar and the pupillary border was an advantage which would have been lost had iridectomy been performed.

Perforation or Non-Perforation.—Flattening of the cone is the object aimed at, and this is certainly best attained by perforation. Whether, however, the advantages gained by the extra flattening thus obtained are more than counterbalanced by the risks incurred, and whether the perforation should be effected by the knife or the cautery, are points on which it will be easier to form an opinion when we have at disposal more statistics giving full details of complete series of cases treated by the various methods.

Table I.—*Summary of Operations.*

1. Number of cases operated upon, 13: (1) males, 3; (2) females, 10.
2. Age at first operation: (1) Youngest, 20; (2) eldest, 32.
3. Number of eyes operated on, 20.
4. Number of operations, 30: (1) excision of apex, 26; (2) cautery, 4.
5. Excision of apex: (1) Uncomplicated, 19; (2) complicated, 7; anterior synechiae, 7 (26.9 per cent.); with increased tension, 3; without increased tension, 4 (3 with iritis and hypopyon).
6. Operation of excision repeated on 8 occasions; improvement in Cases I, III, V, VI; no improvement in Cases XI, XII, XIII.

In no case was the operation repeated as the result of a gradual failure in the visual acuity, but because of the little or no improvement following the previous operation.

7. Secondary operations: (1) Iridectomy, 9: (*a*) for increased tension, 5: Cases II, VIII (3), XI; (*b*) optical, 4: Case X: (2) division of anterior synechiae. With Lang's knives, 2; Cases II, XI; (3) paracentesis, 2; Cases X, XI.
8. Time taken for the anterior chamber to re-form, variable: (1) shortest, 24 hours; (2) longest, 3 weeks.
9. Operation with cautery performed, 4 times: (1) without perforation, 1: Case II: (2) with perforation, 3: Cases II, III, VII. One of these, Case II, had previously been done without perforation.

Case I.

Mrs. W., aged, 32.

May, 1880.—V. R. = $\frac{6}{36}$ J1 at 2 in. c — 5 D sph. = $\frac{6}{12}$ some; L. = $\frac{6}{36}$ J2 at 2 in. c — 5 D sph. = $\frac{6}{18}$ some. No glasses help for near type.

June 9th, 1880.—Operation on left. Excision of apex.

Progress.—Uncomplicated. Anterior chamber leaked for three weeks.

February, 1881.—Operation on right. Excision of apex. Repeated at a later date.

Progress.—Uncomplicated.

May, 1881.—V. R. c̄ + 2 D sph. ⊂ + 2.5 D ↘ 35° = $\frac{6}{9}$ partly J1 at 14 ins.; L. = $\frac{6}{12}$ J1 at 12 in. c̄ + 2 D sph. = $\frac{6}{9}$ letters J1 better.

Feb. 8th, 1901.—V. R. = $\frac{6}{12}$ some J1 at 12 in c̄ + 5 D.cy. ↘ 30° = $\frac{6}{9}$ some. L. = some J1 c̄ + 1.75 D sph. ⊂ + 1 D.cy ↘ 60° = $\frac{6}{9}$ full.

CASE II.

Edith L., aged 26.

V. { R. = counts fingers at 6 in. J20 not improved. Very prominent cone with apical opacity. L. = 6/36 J1 at 6 in. c̄ — 1 D sph 6/18.

March 19th, 1902.—Operation on right. Cautery without perforation of cornea.

April 5th, 1902.—R. = 6/6 J16 not improved.

April 30th, 1902.—Operation on left: Excision of apex.

Progress.—Adhesion of iris to upper and lower extremities of the incision with ultimate increased tension, for which an iridectomy downwards removing the lower anterior synechia was performed. Later the upper anterior synechia was divided with Lang's knives.

November 21st, 1902.—Operation on right. Cautery with perforation of cornea.

January 7th, 1903.— $\frac{\text{R. } \bar{c} \text{ 4D sph.}}{\frown - 1.5 \text{ D.cy. } 80^\circ} = \frac{6}{12}$ letters $\bar{c}$ + 2 D.cy. 10° J1 at 5 in.

L. = 6/12 $\bar{c}$ — 3.5 D.cy. 75° = 6/9 letters J1.

CASE III.

Emma H., aged 28.

February 13th, 1896.—V. { R.: Counts fingers at 4 ft. J1 at 1 in. not improved. L.: Counts fingers at 5 ft. J1 at 1 in. not improved.

February 14th, 1896.—Operation on left. Excision of apex.

Progress.—Uncomplicated.

April 28th, 1896.—Operation on right. Excision of apex.

Progress.—Uncomplicated.

July 28th, 1896.—V. { R. = < 6/6 J16 not improved. L. = 6/18 letters J1 at 6 in.

March 23rd, 1900.—Operation on right. Cautery with perforation of cornea.

May 4th, 1900.—R. < $\frac{-3 \text{ D sph.}}{\frown - 6 \text{ D.cy } 70^\circ} = \frac{6}{24}$

November 27th, 1900.—Operation on right. Excision of apex.

Progress.—Uncomplicated.

February 5th, 1901.—V. { R. = 6/6 J1 at 5 in. $\frac{\bar{c} - 3 \text{ D.sph.}}{-6 \text{ D.cy. } 70^\circ}$ = 6/12 some. L. = 6/6 J1 at 7 in. c̄ — D.sph. = 6/12 some.

CASE IV.

Ellen M., aged 29.

September 21st, 1893.—V. { R. = 6/9 J 6 at 3 in. c̄ −4 D.cy → = 6/6. L. = 6/9 J 6 at 3 in. c̄ −4 D.cy ↓ = 6/6.

September 22nd, 1893.—Operation on right. Excision of apex.

Progress.—Anterior chamber reformed on the third day, with slender tag of iris adherent to the wound below. On the fifth day after the operation an acute attack of iritis with hypopyon developed, which subsided under treatment.

October 25th, 1893.— $\frac{\text{R. } \bar{c} \text{ +2 D.sph.}}{\frown \text{+2 D.cy } 70^\circ} = \frac{6}{24}$.

February 13th, 1894.—Operation on left. Excision of apex.

Progress.—Uncomplicated.

February 8th, 1901.—V. { R. = 6/24 J1 at 10 in. c̄ —4.5 D.sph. = 6/12 full. L. = 6/60 J1 at 5 in. $\frac{\bar{c} - 7 \text{ D.sph.}}{\frown - 5.5 \text{ D.cy. } \downarrow} = \frac{6}{24}$.

CASE V.

Lydia M., aged 23.

December, 1902.—V. { R. = 6/60 c̄ + 3.5 D.cy → 6/36 L. = 6/60 c̄ + 3.5 D.cy → 6/36 } partly.

January 15th, 1903.—Operation on left. Excision of apex with some benefit. Operation repeated on April 23rd, 1903.

Progress.—Uncomplicated.

July 6th, 1903.—L. = 6/9 1 letter J1 at 9 in. $\frac{\bar{c} - 1.5 \text{ D.sph.}}{\frown - \text{D.cy } 60^\circ}$ = partly.

c̄ + 1.5 D.sph = J1 at 10 in.
⌒ — 1 D.cy 60°

CASE VI.

Bertha R., aged 20.

June 2nd, 1902.—V. { R. = 6/9 J1 at 8 in. not improved. L. = 6/9 J1 8 in. not improved.

June 9th, 1902.—Uncomplicated.

September 8th, 1902.—L. = 6/6.

February 2nd, 1903.—Operation on left repeated.

Progress.—Uncomplicated.

March 12th, 1903.— $\frac{\text{L. } \bar{c} - 7 \text{ D.sph.}}{\frown - 4 \text{ D.cy. } 60^\circ}$ = 6/9 1 letter.

April 23rd, 1903.—Operation on left repeated a second time.

Progress.—Uncomplicated.

July 6th, 1903.—L. = 6/18 J1 at 3 in. $\frac{\bar{c} - 1.5 \text{ D.sph.}}{\frown - 3 \text{ D.cy.} \rightarrow}$ = 6/6 (1).

c̄ + .5 D. sph. = J1 at 6 in.
⌒ + 3 D.cy ↓

CASE VII.

William S., age 21.

November 6th, 1899.—R. J1 at 3 in 6/9 (1) not improved.
L. J1 at 3 in 6/6 not improved.

In the left eye the cone was only slightly elevated and its apex was very rounded, so that its transfixion would have been difficult. For this reason, and also because the cone was situated well to the outer side where opacity would less interfere with vision, it was decided to cauterize.

November 13th, 1899.—L. cautery probably with perforation.

The A.C., though it did not empty at the operation, leaked for fully three weeks, and there was much infiltration of the cornea.

Progress.—Otherwise uncomplicated.

March 5th, 1900.—L. 6/6.

December 3rd, 1901.—L. J1 at 12 in. 6/12 c̄—1.5 sph. 6/12 letters.

CASE VIII.

Kate V., aged 22.

September 6th, 1897.—V. { R. = 6/60 J. 1 at 3 in. badly. Not improved. L. = 6/60 J. 1 at 3 in. badly. Not improved.

September 7th, 1897.—Operation on right. Excision of apex.

Progress.—Anterior chamber leaked for two weeks, re-forming with broad anterior synechiae. Later increased tension developed, for which an iridectomy outwards was performed, only proving partially successful. A second iridectomy inwards permanently relieved the tension.

November, 1897.—R. = 6/6 1 letter J. 12. c̄ — .75 D. sph. = 6/6.

February 15th, 1898.—Operation on left. Excision of apex.

Progress.—Almost similarly complicated course to that of right, with anterior synechia and increased tension relieved by an iridectomy downwards after an attempt to divide the synechia had failed.

April 18th, 1898.—L. = 6/6 not improved.

Feb. 2nd, 1901.—V. { R. = < 6/60 J1 at 6 in. $\frac{\bar{c} - 6 \text{ D. sph.}}{\frown - 1 \text{ D.cy.} \rightarrow}$ = 6/12 full J1 at 10 in. L. = < 6/60 J14 at 4 in. c̄ — 6 D. sPh. = 6/36 J12.

CASE IX.

Arthur A., aged 22.

March 11th, 1892.—V. { R.=counts fingers at 2 ft. not improved. L.=6/36 J1 at 10 in. c̄ – 1.5 D.sph.=6/9 partly.

February 14th, 1893.—Operation on right. Excision of apex.

Progress.—Uncomplicated.

November 27th, 1900.—R.=6/60 J1 at 10 in. $\frac{\bar{c} - 4 \text{ D.sph.}}{\frown - 1.5 \text{ D.cy } 40^\circ}$ = 6/12 letters.

CASE X.

Hannah S., aged 28.

January 2nd, 1895.—V. { R.=Counts fingers at 3 ft. Not improved. Opacity of apex of cone. L.=6/60 J 2 at 2 in. Not improved.

January 3rd, 1895.—Operation on right. Excision of apex.

Progress.—Wound healed and chamber re-formed the second day with no anterior synechia. On the third day eye became painful and infected, sticky lymph adhered to the wound, aqueous turbid and later anterior chamber completely filled with a yellowish mass of lymph which on January 6th was removed through the operation wound. Again accumulating paracentesis was performed and from this date the inflammatory process gradually subsided.

February 15th, 1898.—Operation on left. Excision of apex.

Progress.—This eye ran a similarly complicated course to the right. After the lymph had been removed through the wound the eye rapidly quieted down recovering with a tag of iris adherent to the wound.

March 18th, 1898.—Left iridectomy outwards.

April 20th, 1898.—Right iridectomy outwards.

Progress.—Both operations were followed by subacute iritis, the colobomata becoming eventually filled with organized lymph.

July 8th, 1898.—Left iridectomy inwards.

July 15th, 1898.—Light iridectomy inwards.

March 13th, 1903 { R. = 6/6 J 10 c̄ — 2 D.cy → = 6/24 2 letters. L. = 6/6 J 2 at 8 ins. $\frac{\bar{c} - 2 \text{ D.sph.}}{\frown - 2 \text{ D.cy. } \downarrow}$ = 6/9

CASE XI.

Alice J., aged 28.

June 24th, 1895.—V. { R. = < 6/6 J 8 at 4 in. c̄ — 7 D.sph. = 6/6. L. = < 6/60 J 8 at 4 in. c̄ — 7 D.sph. = 6/60.

Progress.—Uncomplicated.

July 23rd, 1895.—Operation on left. Excision of apex.

Progress.—Anterior chamber re-formed on seventh day with tag of iris adherent to wound, which was divided later with Lang's knives.

September 19th, 1895.—V. { R. = 6/36 J1 at 6 in. Not improved. L. = 6/18 J4 at 3 in. Not improved.

June 23rd, 1898.—Operation on right repeated.

Progress.—Anterior chamber re-formed the following day with pupil not well dilated and iris adherent to wound. A few days later the eye became painful with increased tension; paracentesis gave only temporary relief, and on the symptoms returning an iridectomy downwards proved successful.

February 8th, 1901.—V. { R. = 6/60 J12 at 4 in. c̄ — 3 D.sph. = 6/60. L. = 6/18 J1 at 3 in. $\frac{\bar{c} - 2.5 \text{ D.sph}}{\frown - 4 \text{ D.cy.} \rightarrow}$ = 6/24 J1 at 6 in 60°

CASE XII.

Alfred A., aged .

August 8th, 1898.—V. { R. = 6/6 c̄ — 1.5 D.sph. = 6/24 J4 at 4 in. L. = 6/24 c̄ — 0.5 D.sph. = 6/18 partly J1 at 4 in.

August 9th, 1898.—Operation on right. Excision of apex.

Progress.—Uncomplicated.

December 13th, 1898.—R. c̄ — 5 D.sph = 6/6.

October 26th, 1900.—Operation on right repeated.

Progress.—Uncomplicated.

February 8th, 1901.— { R. = 6/60 c̄ — 2 D.sph. 36. c̄ — 3 D.sph. = J6 at 8 in.

CASE XIII.

Sophia T., aged 22.

September 10th, 1891. V. { R. = < 6/6 J1 at 3 in. $\frac{\bar{c} - 10 \text{ D. sph.}}{\frown - 7 \text{ D. cy. } 40^\circ}$ = 6/60 L. = < 6/6 J1 at 2 in. not improved.

September 11th, 1891. Operation on left. Excision of apex.

Progress.—Uncomplicated.

November 2nd, 1891. L. c̄ — 10 D. sph. = 6/12.

November 3rd, 1891. Operation on left repeated.

Progress.—Uncomplicated.

February 15th, 1901—L. = < 6/6 J1 at 3 in. not improved.

TABLE II.—*Analysis of Results.*

Case.	V. Before Operation.		V. After Operation.		Time Between Operation and Testing.
	Without Glasses.	With Glasses.	Without Glasses.	With Glasses.	
I	R. = < $\frac{6}{60}$ J. 1 at 2 in. ... ... L. = < $\frac{6}{24}$ J. 1 at 2 in.	Not improved ... ... ,, ,, ...	R. = $\frac{6}{18}$ some J. 1 at 12 in. ... L. = $\frac{6}{18}$ some J. 1	$\frac{6}{9}$ some J. 1 at 12 in. ... ... $\frac{6}{6}$ J. 1 at 12 in.	19 years. 20 years.
II	R. = Fingers at 6 in. J. 20 ... L. = $\frac{6}{36}$ J. 1 at 6 in.	,, ,, ... ,, ,, ...	R. = $\frac{6}{36}$ J. 1 at 4 in.... ... L. = $\frac{6}{9}$ J. 1 at 9 in.... ...	$\frac{6}{12}$ letters J. 1 at 5 in. ... ... $\frac{6}{9}$ letters J. 1 at 12 in.	10 months. 8 months.
III	R. = Fingers at 4 ft. J. 1 at 1 in. ... L. = Fingers at 5 ft. J. 1 at 1 in.	,, ,, ... ,, ,, ...	R. = $\frac{6}{60}$ J. 1 at 5 in.... ... L. = $\frac{6}{60}$ J. 1 at 7 in.... ...	$\frac{6}{9}$ J. 1 at 5 in. ... ... $\frac{6}{36}$ J. 1 at 7 in.	4½ years. 5 years.
IV	R. = $\frac{6}{36}$ J. 6 at 3 in. ... ... L. = $\frac{6}{60}$ J. 6 at 3 in.	$\frac{6}{60}$ ... ... $\frac{6}{60}$	R. = $\frac{6}{24}$ J. 1 at 10 in. ... ... L. = $\frac{6}{36}$ J. 1 at 5 in.	$\frac{6}{12}$ J. 1 at 12 in. ... ... $\frac{6}{24}$ J. 1 at 5 in.	8 years. 7 years.
V	L. = $\frac{6}{60}$	$\frac{6}{36}$ partly	L. = $\frac{6}{9}$ 1 letter J 1 at 9 in. ...	$\frac{6}{6}$ partly J. 1 at 10 in.	6 months.
VI	L. = $\frac{6}{36}$ J. 1 at 8 in....	Not improved... ...	L. = $\frac{6}{18}$ J. 1 at 3 in....	$\frac{6}{9}$ 1 letter J. 1 at 6 in.	1 year.
VII	L. = $\frac{6}{60}$ J. 1 at 3 in....	,, ,, ...	L. = $\frac{6}{12}$ J. 1 at 12 in.	$\frac{6}{9}$ 2 letters J. 1 at 1 . in.	2 years.
VIII	R. = $\frac{6}{36}$ J. 1 at 3 in.... ... ... L. = $\frac{6}{18}$ J. 1 at 3 in....	,, ,, ... ,, ,, ...	R. = < $\frac{6}{60}$ J. 1 at 5 in. ... ... L. = < $\frac{6}{60}$ J. 14 at 4 in. ...	$\frac{6}{12}$ J. 1 at 10 in. ... ... $\frac{6}{36}$ J. 12	3½ years. 3 years.
IX	R. = Fingers at 2 ft.	,, ,, ...	R. = $\frac{6}{60}$ J. 1 at 10 in.	$\frac{6}{18}$ J. 1 at 10 in.	8 years.
X	R. = Fingers at 3 ft. ... ... L. = $\frac{6}{36}$ J. 2 at 2 in....	,, ,, ... ,, ,, ...	R. = $\frac{6}{60}$ J. 10 at 10 in. ... ... L. = $\frac{6}{60}$ J. 2 at 8 in.... ...	$\frac{6}{12}$ most J. 10 at 10 in. ... ... $\frac{6}{18}$ most J. 2 at 8 in... ...	8 years. 5 years.
XI	R. = Fingers at 6 ft. J. 8 at 4 in. ... L. = Fingers at 5 ft. J. 8 at 4 in.	$\frac{6}{60}$ ... ... $\frac{6}{60}$	R. = < $\frac{6}{36}$ J. 12 at 4 in. ... ... L. = $\frac{6}{60}$ J. 1 at 3 in.... ...	$\frac{6}{60}$ J. 12 at 4 in. ... ... $\frac{6}{24}$ J. 1 at 3 in...	6 years. 6 years.
XII	R. = $\frac{6}{60}$ J. 4 at 4 in....	$\frac{6}{24}$	R. = $\frac{6}{36}$	$\frac{6}{36}$ J. 6 at 8 in.	2½ years.
XIII	L. = $\frac{6}{60}$ J. 1 at 2 in....	Not improved... ...	L. = < $\frac{6}{60}$ J. 1 at 2 in.	< $\frac{6}{60}$ J. 1 at 2 in.	9 years.

The glasses giving the above results will be found in detail with each case.

Mr. TATHAM THOMPSON had in his earlier cases operated by removal of an elliptical piece from the apex of the cornea, having first passed sutures into it in order to bring the edges together. This he had since given up, and had almost exclusively used the cautery, and with this he had had most encouraging results. He thought the central area should be burnt as deeply as possible short of causing perforation. In his last six cases he had done a preliminary iridectomy as he believed it added to the safety of the operation.

Dr. KARL GROSSMANN (Liverpool) said while he regretted not to have kept an accurate record of the cases he had operated upon—altogether about a dozen—his impressions and recollections of some of them were very vivid. Some 20 years ago he followed the method he had seen used by Snellen, of slicing a wedge-shaped piece out of the apex of the cone after having passed a discission needle through it, if possible without opening the anterior chamber. Later on he used the actual cautery (ferrum candens), and replaced this afterwards by either the galvano-cautery or the thermo-cautery, always taking care not to perforate into the anterior chamber. The results obtained had been always satisfactory, except in the case of a neurotic patient 22 years of age. On the one eye of this patient a satisfactory result was obtained after repeated cauterizations, but in the other neurotic attacks followed each cauterization, one with momentary suicidal tendency. A week afterwards signs of keratomalacia set in which, in spite of the most careful attention, could not be stopped. Except in this one instance, Dr. Grossmann had been so well satisfied with the thermo-cautery and galvano-cautery that he never had occasion to adopt Sir A. Critchett's complicated cauterization. In the future, however, he intended trying cauterization by means of a burner, specially made for him and modified for eye work, for the application of hot-air cauterization as introduced for surgical purposes by Dr. Lugen Holländer, of Berlin.

Mr. RICHARD WILLIAMS said that since 1886 he had done no other operation than the cautery though previously he had performed excision of the apex, but the results of this were not good and he infinitely preferred the former method without perforation. He thought that many cases could be sufficiently improved with glasses and general treatment.

Mr. DOYNE thought that the most brilliant results were obtained by excision of the apex, but that cautery without perforation was infinitely safer and for this reason he preferred it. He had never failed to get flattening of the cornea to a sufficient degree, but it should be watched and carried much further than appeared necessary at the time. The scar in the course of time tended to disappear and he had never had any complications.

The PRESIDENT preferred to cauterize and perforate.

Mr. MORTON, in reply, said he did not at all like putting a suture in any cornea especially in the abnormally thin ones usually present in this disease. He thought that iridectomy would be a disadvantage in most cases; he had done it on occasions but only for special reasons. He thought that to aim to cauterize just short of perforation was practically impossible, as one could never tell how thin the cornea was. It was very difficult to gauge the amount excised and apparently it did not make very much difference. He felt that each case should be treated on its own merits, and it could not be said that one operation was distinctly superior to another. What was wanted was an extended series of cases with full data of the visual acuity both with and without glasses before and after the operation.

EXTRACTION OF CATARACT IN THE CAPSULE.

By Major HENRY SMITH, M.D., M.Ch., I.M.S.,
Civil Hospital, Jallundhar, Punjab, India.

EXTRACTION of the lens in the capsule was practised in the early days of cataract extraction on the Continent of Europe, but seems to have fallen into disuse. The attitude of English ophthalmologists towards it appears from the fact that at the meeting of the British Medical Association held at Cheltenham in 1901, a paper was read in the Section of Ophthalmology by Mr. F. Richardson Cross, of Bristol, and in that paper he remarked incidentally: "The ideal extraction of a cataract is that of the whole lenticular body in its capsule. But this is only safe under exceptional circumstances." Mr. Cross's view seems also to have been tacitly accepted by the meeting.

I quite agree with Mr. Cross as to the theoretical excellence of the operation, and in addition to that I hope to show in the present paper that it not only possesses great practical utility, but that the circumstances under which it is not advisable are few. In India extraction in the capsule was practised to some extent by Surgeon-Major Macnamara, I.M.S., in the early Seventies, and in recent days it has been made a systematic operation by Lieutenant-Colonel T. R. Mulroney, I.M.S., and his assistant, the late Rai Barbadur Mehr Chand, and I hope that the operation will be firmly established in India before the expiry of many years.

The details of the operation which I perform are my own.

My personal experience extends to over 8,500 cataract extractions. Of these, about 2,000 were performed by the orthodox method of scratching the capsule and leaving it behind, and about 6,500 were extractions in the capsule. Those extracted by capsulotomy were, generally speaking, my earlier operations. In them, when a nervous patient was operated on under cocaine, it occasionally happened that when the incision was made, before there was time to take out the speculum, the patient by screwing up the orbicularis muscle put pressure on the eyeball and shot out both the lens in its capsule and a quantity of vitreous. I was agreeably surprised to find that these cases generally turned out well in every way. The observation of this accident and its results induced me to perform extraction in the capsule as a systematic operation, modifying details as experience dictated.

Table of Results of Cases submitted to Extraction in the Capsule at Jullundhar Civil Hospital from January 1st, to May 1st, 1903.

Number.	Iritis.	Escape of Vitreous.	Capsule Bursting	Capsule Left Behind.	First-class Results.	Second-class Results.	Third-class Results.
	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
1,023	0.19*	6.6	8	4	99.42	0.19	0.39

* Occurred in cases where the capsule was left behind.

Preliminary Inspection of the Eye to be Operated on.—The trained eye of the surgeon, aided only by the fingertips, will supply more information than all the instruments that have yet been devised for this purpose. The patient's eye can be properly inspected only when he is lying on his back in a good light, from which the direct rays of the sun are excluded. The appearance of the sclerotic, the lustre of the iris, the position of the iris, the position of the lens, and the reaction of the pupil to light will reveal to the naked eye all that is required as far as cataract is concerned, except in the very rarest of circumstances. The reaction of the pupil to light is almost as accurate an indicator of the visual acuteness of the retina as the galvanometer is of an electric current.

For practical purposes, and having regard only to the operator's point of view, I classify cataracts as follows:

I.—In children.
(*a*) Soft, that is, of milky consistency.
(*b*) Gelatinous, that is, of gelatinous consistency.
II.—In adults.
(*a*) Hard.
(*b*) Semi-soft, that is, a core surrounded by juice of milky consistency.
(*c*) Semi-gelatinous, that is, a core surrounded by material of grape-juice consistency.
(*d*) Atrophic.

The operator, before he has made his incision, can diagnose each of these varieties with accuracy, hence the importance of the classification. Cataract in children and atrophic cataract are not suitable for extraction in the capsule. In the semi-gelatinous variety the lens occasionally has a peculiar bluish tinge. These cases, also, are unsuitable for extraction in the capsule, for the capsule is weak and liable to become ruptured during the operation, allowing the core and lens matter to escape; and if the surgeon be not dextrous, it will retract, together with some lens matter, so that the ultimate effect on the eye is no better than if the operation had been performed by scratching the capsule.

Out of 1,083 cataracts operated on by me during the first four months of the current year I decided that 60, or 5.5 per cent., were unsuitable for extraction in the capsule. Thirty-one of these were in children and 29 were in adults; so that among the adults I excluded 2.7 per cent. from this operation. Having decided that the case is suitable for extraction in the capsule, and the usual preliminaries having been gone through, I make a liberal-sized upper incision, inserting the knife at the sclero-corneal junction just as deep as anatomy and experience teach us will avoid wounding the dangerous area, and cut out in the cornea with a sweep half-way between a normal pupil and the sclero-corneal junction. I then take out the speculum, and my assistant hooks up the upper eyelid on an ordinary large-sized strabismus hook, and draws down the lower lid by placing the ball of his thumb on the skin of the face close to the lower eyelid. He lifts the upper lid well up with the strabismus hook, and relaxes his hold on neither the upper or the lower lid until the operation is finished. It is important that he should lift the upper lid well up and retain the lower one so well down that the orbicularis muscle cannot be brought into action by the patient until the operation is finished. The importance of a thoroughly competent and reliable assistant in this matter cannot be over-estimated. Assuming that the operator is skilled in ophthalmic manipulation, it is the free action of the orbicularis muscle in almost all cases which causes escape of vitreous. I consider it of supreme importance to impress this fact upon any one attempting the operation. I then place the curve of a strabismus hook over the cornea about the junction of the lower with the middle third of the lens, and a spoon just above the upper lip of the wound. I press the strabismus hook down neither towards the wound or from it, and do not alter its position until the lens is nearly out, all the time making slow, steady, and uninterrupted pressure and counter-pressure. When the lens is more than half way out I, while keeping up the tension with the spoon in its original position, shift the strabismus hook forward, and gently tilt the lens by getting the edge of it in the concavity of the strabismus hook. If this latter manœuvre be done with the spoon or other comparatively sharp instrument, or with the slightest roughness or jerk, the capsule will give way and allow the body of the lens to escape, and if the operator be not dextrous will itself retract with some contained lens matter, and being in part dislocated will give trouble in its removal. I shall deal with the removal of such capsules later on. The lens in its capsule being out the eyelids are let go and bandaged up with the usual antiseptic pad. If a trace of vitreous have escaped it is snipped off with scissors, and if the iris prolapses it is replaced before the eyelids are let go. In the case of non-iridectomy extractions the slow, steady strain of the lens on the pupil tires out the muscle of the iris and the pupil gently relaxes as the muscle tires. There is no advantage in a preliminary instillation of atropine. I have frequently thus extracted the lens in its capsule in opium-eaters, in which the pupil was contracted with opium, without atropine and without difficulty. This slow, steady proceeding also allows time for the lens to become gently dislocated. The operator who attempts to extract the lens in its capsule either with or without an iridectomy, as rapidly as is done when the capsule is scratched, will have disastrous results. By over-rapid expression the capsule will burst. I find that the whole operation takes from two to three minutes—twenty to thirty cataracts in the hour. The only sponging, washing, or douching I use is a preliminary washing out of the conjunctiva with a 1 in 2,000 perchloride of mercury solution. After the lens in its capsule comes out, if we go "fiddling" we are sure to have an escape of vitreous. The lids on closing are quite sufficient to drive out any fluid there may be, vitreous or other, except blood. Blood should not escape in a cataract operation beyond the merest trace, which can be neglected. The operation I perform with an iridectome differs in no way from the above, except in the iridectomy. The corneal wound I make is very little larger than is necessary for the safe extraction of cataract by the ordinary method. I have before called your attention to the capsule giving way when the lens is partly out. Of the 1,023 cases submitted by me to extraction in the capsule in the current year the capsule gave way in 8 per cent. In half of these I was able to catch the capsule hanging out of the wound with its contained lens matter, thus leaving the capsule behind in 4 per cent. of the cases. This is the most serious complication in this form of operation. The operator at this juncture should keep up sufficient pressure with the strabismus hook in his right hand to prevent the capsule retracting, and lifting an ordinary dissecting forceps with his left, he should catch the capsule and bring it with its contained matter with him. If the capsule have retracted, we should try by gentle stroking to press out its contained lens matter—this the experienced operator will generally succeed in doing—and if the capsule be evident to the eye we may make an attempt to catch it with an iris forceps and fetch it out. If we cannot do this latter by one or two careful attempts we should desist and watch events.

Escape of vitreous, so much dreaded, though not a desirable thing, I have seldom seem evil consequences from. In the 1,023 cases under consideration, escape of vitreous amounted to 6.6 per cent., and in only one of them did I see evil consequences attributable thereto. Cases in which the amount of escape has been small seem to do just as well as others. The vitreous seems to repair as well as any other tissue, and why should it not? The place of escaped vitreous is either taken by aqueous humour or is renewed, and the tension of the eye

does not seem to suffer unless the escape be considerable. The cases noted in the table in this paper are, with three exceptions, only a bead of vitreous escape. The three exceptions were in supremely nervous patients, who shot out the lens and a quantity of vitreous the moment the incision was completed. Two of them turned out well, and one was completely lost. It may be noted that the accident in these three cases would have occurred in any operation. The statistics also include the extraction of some 35 cases of lenses couched by the *rawal* (the native ophthalmic quack operator of India), and in these we are a little more likely to have escape than in ordinary plain-sailing cases. When the lens is halfway out, or much earlier in the case of couched lenses, a clear point of vitreous will occasionally appear in the wound behind the lens. It is due to the fact that the capsule is unusually strongly anchored in part and refuses to give way. The moment this clear point appears behind the lens when it is being expressed, the spoon in the left hand which has been making counter pressure should be lifted, the strabismus hook in the right hand keeping the lens in position. The spoon should be pushed beneath the lens through the clear point and the lens suspended on it. Once the lens is supported on the spoon the stabismus hook can be used as before to drive out the lens, the spoon merely coming with the lens but not drawing it out. It will be observed that I use the spoon for the purpose of supporting the lens, and preventing it from putting pressure on the vitreous. If we attempt to lift out the lens on the spoon merely, the capsule will give way with exceeding frequency. The manœuvre I recommend is in practice an easy preceeding and prevents undue escape of vitreous.

Visual Results.—Owing to pressure of work, neither I nor my reliable assistant have time to test systematically the vision of every case when leaving hospital, as the Jallundhar Civil Hospital is not merely an ophthalmic but also a large general surgical hospital, in which there are but two native qualified assistants. On slack days we have time to go into details as regards visual results. The visual acuteness of cases extracted in the capsule is far ahead of what I used to have when I scratched the capsule and left it behind. With about an 8 D. lens—testing for long range—I find that about 30 per cent. of the patients can count the military test dots at a distance of from 40 to 57 feet (the normal maximum being 57 feet), about 60 per cent. between 20 and 40 feet, and the remainder being 10 and 20 feet. The cases of 10 and 20 feet were generally regarded at the time of operation as cases of low visual acuteness due to chronic retinal changes. To count the military test dots at a distance of 15 feet is all that is required of recruits for line regiments of the British regular army.

Iritis.—982 cataracts of the 1,023 cases under consideration were extracted in their entirety in the capsule. In the remaining 41 the capsule had to be left behind. In these 982 cases I had not a single case of iritis. In the 60 cases in which the capsule was scratched and deliberately left behind, and in the 41 in which I was obliged to leave it behind iritis occurred proportionately distributed to the extent of about 5 per cent. In these 982 I had four absolute failures. The details are as follows: (*a*) Suppuration, 1. (*b*) Haemorrhage from the fundus, 1. (*c*) A nervous patient shot out the lens in capsule and a large quantity of vitreous just on completion of the incision; eye wasted. In the remaining 101 cases I had two failures: (*a*) haemorrhage, 1; (*b*) suppuration, 1.

The cases extracted by me this year were all done with an iridectomy, hence the absence of prolapse of iris. In previous years I did this operation systematically without an iridectomy unless in exceptional cases. It will be observed that iritis does not follow when the lens is extracted in its capsule, and here I do not draw a distinction between irritation of the iris and iritis; I call them both iritis. My former experience of extracting the lens in its capsule without an iridectomy led me to the same conclusion. It is generally held that iritis following cataract extraction is largely due to bruising of the iris by the lens when it is escaping, and this is also advanced as the reason why iritis follows more frequently in cases in which an iridectomy has not been done than in cases in which an iridectomy has been done, the bruising of the iris being necessarily greater. This is, in my opinion, entirely beside the mark. If extraction of the whole lenticular body in its capsule is not followed by iritis, then it follows that bruising of the iris has no connexion with this iritis. The iritis following cataract extraction is in my opinion due to the fact that lens matter and capsule have been left behind. Why it follows oftener when no iridectomy is done than when an iridectomy is done is due to the fact that it is more difficult to get the last traces of lens matter out of an eye in which an irdidectomy has not been done than out of one in which it has been done, and as a consequence it is more often left behind.

Macnamara says, "The greater my experience in these matters the more convinced I am that most of our failures in extraction are due to the fact of soft lenticular matter and capsule being left in the eye after removal of the lens"; and Richardson Cross says in the article before referred to, "After extraction of a lenticular cataract there will always remain some fragments of altered lens or capsule as a record of the operation."

With both of these remarks I entirely agree. By extraction in the capsule we practically eliminate iritis and the possibility of after-cataract, both of which are serious complications. Dealing with an after-cataract is at least as serious as the extraction of the lens in its capsule *de novo*. It will also be admitted that the vision is necessarily more acute than when the capsule is left behind and than when iritis has occurred. No instrument or douche need to be inserted to remove lens matter, and thus manipulation in the interior of the eye is reduced to a minimum. There is no friction applied to the cornea, and hence the minimum of injury is done to its epithelium. As to its drawbacks, I know of none which is not capable of being overcome by experience. I may add that extraction in the capsule is not an operation for the inexperienced. In the hands of a skilful operator extraction in the capsule is at least as much in advance of the ordinary operation as litholopaxy is of lithotomy in the case of stone in the bladder.

Mr. Bishop Harman related a case in which he had extracted the cataract in its capsule.

Dr. Brailey thought it extremely difficult to find out how great pressure the eye would stand in removing the lens if the capsule were not opened.

The President said he had seen the operation done, but there was nearly always escape of vitreous.

Major Smith, in reply, said that experience only was needed in order to find out when the lens was coming away without danger to the vitreous.

SUBCONJUNCTIVAL INJECTIONS OF TUBERCULIN T.R. IN THE TREATMENT OF INTERSTITIAL KERATITIS.

By Dr. A. Darier,
Paris.

The following case of interstitial keratitis was related by Dr. Darier, who believes it to be one of a tuberculous nature both on account of the absence of all signs of syphilis and from the violent reaction provoked by a subconjunctival injection of tuberculin T.R.

The patient was a girl aged 13, her teeth were good, and she had a scrofulous appearance. Her parents were healthy, and of eight children one only died from tuberculous affections. In 1899 she had typhoid fever and in 1900 she had repeated attacks of inflammation in the right eye. In a year the sight was completely destroyed, and the year following the left eye became affected. There was interstitial keratitis of a sclerosing form and some injection $V = \frac{1}{8}$. The right eye appeared to be completely lost and the iris was invisible, but there was perception of light. At first Dr. Darier prescribed in addition to general treatment instillations of oily collyrium with essence of clove alternating with applications of dionine in powder and massage of the cornea with mercurial lanoline. This produced no effect, and then instillations of jequiritol were started, which at first produced much reaction, but subsequently immunity was established, but by this time the patient could see the hand and various colours. The left eye during this time underwent various changes. She tolerated injections of cyanide of mercury, but a fresh relapse occurred. He then used hetol as a subconjunctival injection, but this produced no reaction, but had a great influence on clearing the morbid process.

On the right side he gave a subconjunctival injection of tuberculin. The local reaction was most violent, but there was not the least rise of temperature. For eight days there was intense chemosis, etc., and pannus developed. A considerable number of injections were given, until, in February, 1903, when the cornea was transparent enough to allow the

contents of the anterior chamber being seen, and an abundant exudation on the back of Descemet's membrane. The fluid in the anterior chamber was so viscid that it could not be aspirated. Posterior synechiae were present, and an iridectomy was done on March 15th. On June 20th the vision had returned, the right eye being $\frac{1}{5}$ and the left $\frac{1}{15}$.

ON THE TREATMENT OF THE MORE SERIOUS SYPHILITIC DISEASES OF THE EYE.

By Dr. A. Darier,
Paris.

The majority of syphilitic diseases of the eye are readily cured by ordinary mercurial treatment, but there are some malignant cases that resist treatment. No method of administration of mercury give such exact control as that of intravenous injection, and it is far superior to subcutaneous injections when accumulation may take place. The patient and surgeon should watch for what I have called the "reactional limit," which is recognized by abdominal pain, etc., and then we have arrived at the maximum dose. The method of intravenous injection of aqueous solutions of cyanide and biniodide of mercury which I recommend is to use from $\frac{1}{2}$ cg. to 1 cg. of the salt and augment the doses by degrees until some sign of colitis appears. I then reduce the dose and again increase it until a point is reached when 2 cg. or 3 cg. can be injected into the system. If improvement takes place they may be reduced but not discontinued until thirty or forty injections have been given. Then a month's rest is taken before a second series of injections is given, frequently potassium iodide does more harm than good. Injections of pilocarpin are very useful aids to the action of the mercury. Prolonged treatment is necessary in many cases.

Dr. A. Bronner (Bradford) asked Dr. Darier if he thought the good effect of tuberculin was due to any specific action or only to increased vascularization. If this latter were the case the operation of peritomy would do harm rather than good.

Mr. Sydney Stephenson spoke of the advantages of treating cases of interstitial keratitis with intravenous injections of cyanide of mercury.

A DISCUSSION ON EYE CHANGES IN RELATION TO RENAL DISEASE.

I.—Edward Nettleship, F.R.C.S.,

Consulting Ophthalmic Surgeon, St. Thomas's Hospital.

Mr. Nettleship said: Although much attention has been bestowed upon the retinal changes that occur in renal disease, information is still needed upon several points. It is of course in chronic interstitial and parenchymatous nephritis that albuminuric retinitis commonly occurs. A few cases are on record where it has occurred in connexion with lardaceous disease, and with nephritis due to inflammation of the bladder, ureter or pelvis of the kidney; but additional cases in connexion with any of these maladies are worthy of careful record. I give details of several of such cases. The chief exception to the rule is the retinal changes depending on the chronic nephritis seen in pregnancy, the special character of which is rapid degeneration of the epithelium such as is found in some forms of acute blood poisoning. Though the condition is not true inflammation, the kidney so affected may pass with unusual rapidity into a condition of chronic nephritis and contraction. Any evidence as to the state of the kidney before the first pregnancy should be recorded. This may be of great importance in deciding whether or no the uterus should be prematurely emptied.

I agree with the usual statement that the prognosis in renal retinitis due to pregnancy is better than in ordinary cases.

Out of 22 cases of pregnancy retinitis of which I have notes, 41 per cent. or two-fifths are known to have lived for 2 years or more after the retinitis, while of 41 cases of renal retinitis not due to pregnancy only 22 per cent., or barely one-fifth, lived for more than 2 years. The majority of cases of pregnancy retinitis do not occur until after several pregnancies, but when it occurs during the first pregnancy subsequent pregnancies may occur with no return of the renal or eye symptoms.

Influence of Age and Sex in Renal Retinitis (Omitting Pregnancy Cases).

The proportion is about two males to one female. The age of patients with ordinary albuminuric retinitis ranges from 30 to 60 in by far the majority of cases, and the most prolific single decade is from 50 to 59, while that of the pregnancy cases is from 30 to 39. My cases seem to show that the prospect of life was better when renal retinitis occurred after 55 than before, but I also have notes of 3 very young patients who were only $5\frac{1}{2}$, 21, and 23 years respectively, and yet they lived an unusually long time after the attack. When renal retinitis occurs early in life the relative sex frequency seems to be reversed, for of 24 patients under the age of 21 years, 10 were males and 14 females.

The two chief factors in the production of renal retinitis are (1) a morbid state of the blood, and (2) a diseased condition of the retinal arteries, and in most cases the two are combined.

The blood state is the chief cause of the severe acute cases with great oedema, etc., and these patients often recover both health and sight, and this is especially seen in the favourable pregnancy cases.

I think that an early stage of granular kidney may fairly be suspected whenever decided hyaline thickening of the retinal arteries is seen by the ophthalmoscope, and that this suspicion will be much strengthened if the patient be comparatively young.

This hyaline thickening of the retinal arteries is doubtless spread unequally throughout the system, and it may be conspicuous in one eye and insignificant or absent in the other, while even the arteries in the affected eye are by no means always equally changed in all parts of their course.

Whether the thickening of retinal arteries, specially described by Gunn and others, is so useful a diagnostic sign of granular kidneys in elderly people is, I think, an open question; but, anyhow, it should be looked upon as a sign of the danger of cerebral haemorrhage. I agree with Dr. Samuel West, who thinks that the more violent cases of retinitis are chiefly toxic, and that the milder and more chronic ones are often chiefly vascular in origin. I, however, think it unnatural to draw a sharp distinction between the "exudative" or "inflammatory" and the "degenerative" varieties, or to associate either form with any particular kind of chronic nephritis. I feel clear in my own mind that there is only one sort of renal retinitis, and that the many varieties and changes seen during life indicate only different stages and degrees of general oedema, exudation, and degeneration. The patches of exudation into the nerve-fibre layer form white or greyish-white soft-edged patches of moderate size, and are scattered about the optic disc region. These "woolly" patches form early in the attack of retinitis, but as the individual patches often disappear and fresh ones frequently form later, they may be present both early and late in the disease, and with various degrees of general haze and oedema. The other kind of opacity appears later in the disease in the form of intensely white sharply-defined rounded dots, which when they become confluent form spots or patches. They are specially apt to occur in the yellow-spot region, and are so arranged as to form the well-known stellate figure. They are never in front of the retinal vessels. They may be expected from four to eight weeks after the onset, or later.

Various other constitutional or local conditions may produce retinal changes similar in appearance to those of renal origin, and one of the most important is glycosuria. Out of my 59 cases of retinitis in diabetes, only 7 occurred in hospital patients. In many, a little albumen was present as well as sugar, but it is well established that retinitis may occur in diabetes without albuminuria.

Diabetic retinitis differs somewhat in ophthalmoscopic appearance from the renal cases. The life prospect is in my opinion better in the diabetic cases than in the renal ones, though the data on which my conclusions are based are too small to admit of a positive statement.

The typical renal retinitis is nearly always symmetrical, though often one eye is worse than the other. Occasionally, when haemorrhage is the chief sign, one eye only may be affected. There is reason to think that the retina atrophied by previous disease may be unable to take on the changes constituting renal retinitis. It would be interesting to know of any instances in which a second attack of renal retinitis has occurred after the first had cleared off. However this may be, there are cases to prove that recurrences of retinal

haemorrhage do occur in eyes that have passed through an attack of albuminuric retinitis.

Occasionally pigmentation of the retina and night blindness are present. I consider that most of the cases of choroiditis described as of renal origin are secondary to retinitis; but the vessels of the choroid are sometimes much diseased, and Weeks has found extravasation of blood into the choroid. Occasionally new blood vessels form in the vitreous; but this is rare, and is not characteristic of kidney disease.

Iritis has been seen in renal disease in two cases by Knies, and a slow destructive irido-cyclitis occurred in one of my cases, but it probably was tuberculous and in no sense albuminuric.

II.—George Carpenter, M.D.,

Physician, Evelina Hospital for Sick Children; Assistant Physician, North Eastern Hospital for Children.

Dr. Carpenter gave his experience of juvenile cases of retinitis. He had for many years past made routine examinations of the fundus oculi in cases of nephritis in children. During that time he had seen three examples. Two of the cases occurred in children suffering from chronic interstitial nephritis, and both were verified *post mortem*. There was a growing opinion among physicians that interstitial nephritis was of syphilitic origin. The third case mentioned was a girl, aged 8 years, who suffered from parenchymatous nephritis, and there was intense neuro-retinitis with oedema and degenerative changes. There was in this case no evidence of syphilis. He was of opinion that congenital syphilis in some cases was responsible for parenchymatous nephritis, and that retinitis was not uncommon in interstitial nephritis in children. What was uncommon was interstitial nephritis and not the eye complications. He regretted that time did not allow him to enter more into detail on this most interesting and important subject so ably introduced by Mr. Nettleship.

III.—Gustavus Hartridge, F.R.C.S.,

Senior Surgeon, Royal Westminster Ophthalmic Hospital.

Mr. Hartridge thought cases of albuminuric retinitis should be divided into those which were toxic in character and those in which the changes were entirely secondary to disease of the blood vessels. The cases that got well—as in albuminuria—might be toxic in character alone. With regard to the pigmentation, the disturbance might indicate the high-water mark of fibrinous oedema. The character of the opaque white patches must always be a difficulty. Some cleared up altogether, proving that they must have been either exudative or loss of transparency. He had recently seen a boy, aged 12, who was under treatment for kidney disease with retinitis, but in addition there were well-marked patches of choroiditis; this made the case appear to be of syphilitic origin.

IV.—Henry Power, M.B., F.R.C.S.,

Consulting Ophthalmic Surgeon, St. Bartholomew's Hospital.

Mr. Henry Power, after thanking Mr. Nettleship for his very able paper, related the case of a clergyman, aged about 30, whose health had suddenly failed and his vision became impaired. On examination retinal haemorrhages were found with white spots radiating round the macula. The case was believed to be one of albuminuric retinitis, but an examination of the urine by a physician of high repute showed the entire absence of albumen. Three weeks later, the vision becoming worse and the retinal changes more marked, he was again seen by the same physician, who then found the urine contained abundant albumen. The patient died a few months later. It would appear that here the retinitis preceded or was concomitant with the occurrence of the kidney disease. He had seen a case where haemorrhages and the usual characters of albuminuric retinitis had occurred in a pregnant woman who subsequently recovered.

V.—A. Quarry Silcock, F.R.C.S.,

Surgeon, Royal London Ophthalmic Hospital.

Mr. Quarry Silcock asked if Mr. Nettleship had seen neuro-retinal changes in surgical kidney. He himself had not done so except in cases of associated cardio-vascular changes of chronic nephritis. Even in cases of prolonged suppression of urine in calculous anuria, he had never seen retinal changes. The prognosis he thought very unfavourable, but he agreed with Mr. Power in his remarks as to the retinits of pregnancy.

VI.—R. A. Reeve, M.D.,

Toronto.

Dr. Reeve said that in the discussion so scientifically and accurately introduced by Mr. Nettleship he hardly liked to add odd cases unless of distinct value. There were two, however, he should like to mention. The first was that of a man in his prime and apparently quite healthy who within six weeks of the first failure of sight died from Bright's disease. Typical renal retinitis was found. The second case was a healthy man in middle life with fundus changes due to high myopia, that was, slight haemorrhages and choroidal changes. Several experts were in error as well as himself who was led to believe that renal disease had been negatived. Later, albumen with casts was found and the ocular changes were doubtless associated with the kidney disease.

THE CORNEAL LESIONS OF ACQUIRED SYPHILIS.

By Sydney Stephenson, M.B.

Ophthalmic Surgeon, Evelina Hospital for Children.

Nowadays it will, I think, be generally conceded that acquired syphilis may affect the cornea primarily in two different ways: First, under the guise of an interstitial, diffuse, or parenchymatous keratitis; secondly, as a true keratitis punctata, first described by Mauthner.[1] The latter form must be sharply differentiated from ordinary keratitis punctata, which we now recognize as merely a sign of inflammation of some part of the uveal tract—iris, ciliary body, or choroid, as the case may be. Mauthner's punctate keratitis, on the contrary, is a primary specific affection of the cornea. It is characterized by groups of circumscribed greyish spots lying at various depths in the substantia propria of the cornea, absent or ill-developed episcleral injection, rapid development, and equally rapid disappearance. The iris is not involved in the morbid process. The punctate dots are ascribed by Mauthner to a localized gummatous infiltration of the cornea. I have failed to find any instance of Mauthner's punctate keratitis described in British ophthalmological literature, but the following is a case in point:

A.W., aged 29 years, contracted primary syphilis towards the end of April 1895, and developed ulcers in his throat and a roseolous rash some two months later. He was treated with mercury for about one year. I saw the patient in May, 1899, that is, about four years after the initial lesion. The sight of one eye had been defective for a few days, and the eye itself had felt rather uncomfortable. V. = $\frac{6}{9}$. T.n. A considerable number of tiny grey spots were scattered deeply in the substance of the cornea, the epithelium of which showed no changes. The eye flushed up under examination, but there was otherwise no redness. The iris was not involved. The corneal spots disappeared, and vision became normal after about six weeks' treatment with mercury and chalk, 1 gr. thrice daily.

It is comparatively recently that the connexion has been recognized between acquired syphilis on the one hand and interstitial keratitis on the other. Thus, in his authoritative work on *Certain Diseases of the Eye and Ear Consequent on Inherited Syphilis* (published in the year 1863) Mr. Jonathan Hutchinson comments upon "the entire absence of interstitial keratitis from the rôle of tertiary symptoms of acquired syphilis" (p. 221). After this lapse of time it becomes, perhaps, a little difficult to say who first pointed out the relationship between the two conditions of acquired syphilis and interstitial keratitis. But in 1873 Fournier[2] cited cases where the eye disease was consequent upon the acquired disorder. As regards this country, the first case of the kind was reported by Wordsworth in the year 1876.[3] The patient, a woman aged 25 years, manifested an intense bilateral keratitis, together with undoubted symptoms of acquired syphilis. The upshot of the case—contrary to the general rule—appears to have been bad. A couple of years later Dr. M. J. Symons[4] reported a similar case in a man aged 29 years, who had contracted syphilis eight years earlier. Both eyes were affected, but the most meagre details are given of the exact clinical condition. In 1892 William Lang[5] described an unusual case of this kind, where a unilateral keratitis followed some fourteen months after a chancre of the ocular conjunctiva of the same eye. In 1897 Henry Juler[6] gave details of a bilateral keratitis due to syphilis acquired by a young married woman, and in the following year the same writer reported a second case,[7] also in a married woman, aged 33 years. The left eye of this patient became affected with interstitial keratitis twelve years after the primary sore on the genitalia, and the corneal mischief had been preceded by irido-cyclitis and choroiditis of the same eye. In 1897 A. Maitland Ramsay[8] reported the case of a woman, aged 32 years, who presented a typical interstitial inflammation of one

cornea twelve years after the primary specific lesion. The other eye became involved, but the outcome of the case appears to have been favourable. Lastly, in the year 1899, J. B. Lawford[2] made the most important contribution to the subject that has yet appeared in British literature, inasmuch as he published notes of no fewer than 5 cases of interstitial, non-ulcerative keratitis in patients who were the subject of acquired syphilis. It is noteworthy that the disease ended favourably, and was unilateral in every one of Lawford's 5 cases.

A good many cases, now amounting in all to about 60, have been published on the Continent and in the United States of North America. Indeed, some authors have managed to collect a relatively large number of observations—as, for example, Alexander (13 cases), Trousseau (11 cases), Ancke (10 cases), and Haltenhoff (5 cases).

The following case (for permission to publish which I am indebted to Mr. R. W. Doyne) has recently fallen under my immediate observation:

Henry S., aged 32 years, a barman, first attended the Royal Eye Hospital, Southwark, on March 27th, 1903. His personal history was as under: Twelve years ago he sustained a blow over his right eye, an accident followed by ulceration. He was ill for about six weeks, but afterwards recovered almost full sight in the affected eye. The latter remained without alteration until 14 days before he attended the hospital, when it became rather painful, got red, watered, and its sight failed. The patient admits gonorrhoea, but denies syphilis. However, he has been married for seven years, and has one child, aged 5½ years. Since the birth of that child his wife has had three miscarriages. Eight months ago his throat became bad, and he remained under medical treatment on that account for several weeks.

Present State.—The patient presents no stigmata of hereditary syphilis. There has been destruction of the anterior pillars of the fauces and of the neighbouring parts, and a small hole in the palate lies at the root of the uvula, which has been partially destroyed by phagedaena. R.E. Slight photophobia, lachrymation, and ciliary redness. An adherent leucoma, of circular outline, lies close to the periphery of the upper inner quadrant of the cornea. The nasal half of the cornea is clouded by interstitial opacities, but the anterior epithelium is intact and not stippled. V. = Fingers. L.E. (examined with dilated pupil) shows no changes. V. = $\frac{6}{6}$.

Treatment and Progress.—The inflamed eye was shaded, and atropine drops (gr. 2 to the ounce) were used three times a day. April 3rd.—R.V. Hand reflex. Cornea markedly cloudy, especially in the central region. No great amount of pain, but the eye is markedly congested. T. —1. Pil. hydr. c. cret., gr.j, t.d. April 17th, eye much less red. No pain. Pil. hydr. c. cret., gr.j, four times a day. April 24th. The right eye is now almost free from redness. Some mercurial ulceration is present at the roots of the lower incisor teeth. May 1st. Slight ulceration and soreness about the incisor teeth. R.E. no pain and but slight lachrymation. No redness. The cornea is much clearer, and the pupil may be recorded as semi-dilated. T.n. V. fingers at 0.5 metre. May 8th. R.E. free from all redness, and cornea clearing rapidly. V. $\frac{5}{60}$. June 5th. R.E., no redness, and but trifling photophobia. T.n. The peripheral parts of the cornea are now perfectly clear, so that the surface markings of the iris are visible. Some faint interstitial opacities, however, remain continuous with the leucoma adherens mentioned above. V. $\frac{6}{12}$. June 26th. The cornea is now clear, with the exception of a small tongue of opacity continuous with the adherent leucoma lying near the upper inner part of the limbus. T. n. V. $\frac{6}{6}$.

Remarks.—The proof of syphilis in the foregoing case depended wholly upon circumstantial evidence, of which the main data were (1) that the patient's wife had had three consecutive miscarriages following the birth of a healthy child, and (2) that the patient himself had suffered from a destructive ulceration of the fauces and neighbouring parts of the oro-pharynx, which could scarcely be due to any cause other than syphilis. Then there is another important piece of evidence—namely (3) that the features of the corneal inflammation conformed with those observed in acquired syphilis, inasmuch as they comprised (*a*) one-sidedness, (*b*) patchiness, (*c*) prompt response to specific treatment, and (*d*) favourable termination.

From a study of the literature I am forced to the conviction that this form of keratitis is not so uncommon as the comparatively few cases placed on record might lead one to believe. This view is borne out by the figures adduced by certain authors, which have been incorporated in the following table:

Name.	Reference.	No. of Cases.	Due to Acquired Lues.	Per-centage.
Jakolewna	*Zurich Thesis*	63	2	3.1
Dier	*Zeitschr. f. Aug.*, 1889	—	—	1.9
Haltenhoff	*Bull. de la Soc. Fr. d'Oph.*, 1887	66	5	7.5
Pfister	[illegible]	15	—	—
Ancke	*Centralbl. f. prak. Aug.*, 1885	100	10	10

These figures are not large, but, so far as they go, they tend to show that from 1.9 per cent. to 10.0 per cent. of all cases of interstitial keratitis are due to acquired syphilis. It is more than merely probable that acquired syphilis is sometimes overlooked as a cause for interstitial keratitis. One is a little apt to forget that acquired extra-genital syphilis is not unknown amongst children. The mistake is not so likely to happen in adults, in whom the existence of a unilateral, non-ulcerative keratitis would naturally lead to inquiries as to the existence of the acquired disorder. The following is a case in point.

A girl, aged 12 years, was brought to me a few years ago with a patchy parenchymatous keratitis affecting one eye. The family history did not suggest syphilis, neither did the girl herself manifest any obvious signs of that diathesis. No evidences of tubercle were forthcoming. Under the influence of liberal doses of mercury with chalk the patient made an astonishingly quick recovery. This fact—so different from what is usually seen in the more common form of interstitial keratitis—led me to extend my inquiries. I then found that when a baby aged 2 or 3 months, the patient had developed an obstinate sore upon the right upper eyelid, and that this had been followed after the lapse of some weeks by a widely-spread eruption, cutaneous ulcerations, and a state of prolonged debility. The keratitis in this case was, therefore, probably due to acquired syphilis.[10]

Interstitial keratitis is generally considered to be a very late secondary or a tertiary event of syphilis. Comparatively few cases are recorded as occurring under two years from the primary infection, and three only within one year from that event. In the cases collected by me the average period works out at 10.8 years; the longest interval was in a case of Ellett's,[11] where it amounted to twenty-three years, and the shortest three weeks in a case reported by Löwensohn.[12] The latter case is interesting. It was one of bilateral keratitis in a man aged 26 years, where the corneal affection coexisted with a hard chancre on the prepuce, that is, with the symptoms of primary syphilis. In a case of Lawford's again, a unilateral keratitis followed four and a-half months after a primary syphilitic lesion of the right lower eyelid, and the patient at the time suffered from a "sore throat."[13] But the specific lesions commonly noted in association with interstitial keratitis include oro-nasal ulcerations, palmar and plantar psoriasis, gummata of the skin, periosteum, and muscles ozaena, deafness, ptosis, facial paralysis, ecthyma, vitreous opacities, and choroido-retinitis—in short, those symptoms that are usually included under the name "tertiary." The interstitial keratitis of acquired syphilis, then, is shown to be a tertiary phenomenon by the period at which it generally occurs, and also by its associations in the shape of other tertiary lesions.

Some authors—as, for example, Valude[14]—have claimed that this form of keratitis is, from the clinical point of view, especially distinguished by the fact that it is not so apt to be vascularized as the form associated with the inherited disorder. This claim may be true, broadly speaking, but in my own case the affected eye was at one stage extremely vascular, while the existence of a definite "salmon-patch" has been noted by Lawford[15] and by Fritz Mendel.[16]

NOTE AND REFERENCES.

[1] Zeissl's *Lehr. der Syph.*, p. 279. [2] *Leçons sur la Syphilis chez la Femme.* [3] *Royal London Ophthalmic Reports*, vol. ix, Part I, p. 51. [4] *Lancet*, 1886. [5] *Trans. Ophthal. Soc.*, vol. xii, p. 74. [6] *Lancet*, December 18th, 1897. [7] BRITISH MEDICAL JOURNAL, August 20th, 1898. [8] *Glasgow Medical Journal*, February, 1897. [9] *Trans. Ophthal. Soc.*, vol. xx, p. 67. [10] Mauthner (loc. cit.) met with a case of interstitial keratitis in a suckling who had contracted syphilis from the nurse. [11] *Ophthalmic Record*, 1900, p. 283. [12] *Jahresbericht der Ophthalmologie*, 1902, p. 532. [13] Loc. cit. [14] *Annales d'Oculistique*, January, 1897. [15] Loc. cit. [16] *Centralbl. f. prak. Augen.*, January, 1901, p. 10.

THE USE OF RETINAL EXTRACT IN ATROPHIC RETINAE.

By ROBERT W. DOYNE, M.A.Oxon., F.R.C.S.,

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SOME of you may have seen an article in the BRITISH MEDICAL JOURNAL for July 25th on the use of retinal extract in atrophic retinae. The subject was treated in general terms, as I was addressing an audience of general practitioners. To-day I wish to make more special reference to the subject, and to draw your attention to the value of the treatment by results obtained in particular cases. I may, however, as a prelude to the clinical notes that I shall read to you, make a few remarks upon the manner in which this remedy appears to act. When I first used it I did so with the idea of supplying

in excess to the blood a specific food that was especially valuable for the retina as being more or less identical tissue, but the results have been so marked as scarcely to be sufficiently accounted for, to my mind, by the absorption of a food of identical anatomical character; they seem rather to point to the presence of some physiological principle such as is found in the case of the thyroid gland.

Messrs. Burroughs and Wellcome, in their physiological department, are sparing no pains in endeavouring to separate out such principle should it exist. As further illustrating the probable presence of an active principle, I may point out that an ordinary retinal extract, or retinae preserved in glycerine, are of comparatively little value as compared with fresh retinae. The retinal extract now put on the market by Burroughs, Wellcome and Co., under the name of "optocine," is a somewhat complicated preparation, the result of careful experiments initiated by myself and carried on by Burroughs, Wellcome and Co., not only to isolate and preserve, but also to produce from retinae such an active principle as I have assumed to be present, but which up to the present I have failed to isolate. The reality of its presence, however, I myself cannot fail to doubt when I observe the enhanced value of the extract prepared in this special manner. The most convincing result I have quite recently obtained has been from a highly specialized preparation that no doubt Messrs. Burroughs, Wellcome and Co. will shortly be able to place on the market. The one cause of regret I have in connexion with this treatment is its expense. This, I fear, must necessarily remain an obstacle. The dose is equivalent to from 6 to 10 retinae a day. The supply of fresh retinae is of course limited, they are no use unless absolutely fresh, the difficulty of getting them in large numbers immediately after slaughter entails extraordinary expense, and the preparation of a potent extract involves elaborate care and time. I may add, however, that I have succeeded in getting no preparation that acts better than fresh retinae, and in small numbers for individual cases they are not difficult to obtain in the provinces from butchers who slaughter for themselves, but the difficulty comes in where a large number of animals are slaughtered by contract, and where they cannot reach the hands of retailers till too late, for I desire again to impress on those who may use fresh retinae the significant fact that they must be absolutely fresh. In every case in which I have tried this remedy the patient has claimed to have derived benefit, that is of some significance certainly, but nothing more, for among them are cases where I should be unwilling to admit their claim, but in the great majority of cases the improvement has been so marked and definite that I find it impossible not to accept the conclusion that the result is directly due to the remedy. It seems to me to act by bringing out any potentiality that may remain in the atrophic retina, for of course one cannot believe it possible to do anything for a retina that has entirely ceased to be functional, but no doubt there is a stage in which no ordinary light stimulus is sufficient to excite function. Such a condition is well compared with the difficulty, and later on impossibility, of reading as evening falls; there comes a stage in which the light, though present in a certain degree, is insufficient for exciting the function of the retina; and this feeding appears to do for the atrophic retina what an artificial illuminant does for a normal eye when daylight is insufficient. This kind of analogy is well borne out by watching the cases. A patient may say "I do not think I can see any smaller print, but everything looks clearer and blacker," or again, "for the first time for a long while I could read my letters quite easily this morning, the writing generally is as pale as the paper, but to-day it was much blacker." These are instances of remarks made as patients have first begun to improve. Now I may point out the value of such testimony in differentiating such improvement from mere fancied improvement; for if it were only a case of the wish being father to the thought, they would look out for and claim to read smaller print, to read for much longer, or something of that sort; but the claim they make is just that which physiology would lead us to expect. I first tried this remedy in retinitis pigmentosa, for it was in connexion with that disease that the idea first developed in my mind. I have used it in five of these cases, and in every one of them there has been very distinct and real improvement. It is interesting to note that in two of these cases the patients have claimed and undoubtedly have seen to read much more readily in a comparatively weak artificial illumination; for instance, about 3 ft. or 4 ft. away from an 8-candle power lamp. It would be going out of the scope of this communication, besides taking up too much of your time, to go into explanations of this fact—for fact it certainly is—and it has been made quite manifest to me that the renewed function obtained by this remedy has been counteracted by the action of too intense daylight, and this is quite plausibly what one might expect.

My first case was that of a lady, aged 46, who has been under my care for about ten years. Reading had become a difficulty to her, especially magazines like the *Strand*. I made no special observations as to what J. she could read before treatment, but the improvement in her case it was impossible to doubt. She herself was quite certain of it. I thought it possible that the condition of light in Oxford might perhaps account to some degree for her improvement, so I asked her to report to me when she went home, and was using her eyes under the conditions to which she was accustomed. I will read her letters to me since her treatment, and you will gather that now, some two months after treatment, her sight is beginning to fail again, as one might expect by leaving off the diet. I have put her on it again in the form of opticine, and hope she will again improve.

In such cases as retinitis pigmentosa it will be obviously necessary to keep up the treatment, but exactly how much need be taken I have not sufficient data to form an opinion.

Another case of retinitis pigmentosa was that of A. W., aged 40, whose vision on July 2nd was R. $\frac{6}{24}$, L. $\frac{6}{60}$. When he was given retinae twenty-one days later he claimed great benefit, and said he was reading as well as he did ten years ago. On inquiring how he formed that judgement he gave as an instance that being a commercial traveller he had to call from house to house, and he could see the numbers of the houses easily without crossing the street, which he knew he had been unable to do because of the necessity of crossing the street for the purpose; he also said he could read by day much more easily. On testing, his vision had risen in the R. from $\frac{6}{24}$ to $\frac{6}{12}$, L. from $\frac{6}{60}$ to $\frac{6}{24}$ partly.

Another retinitis pigmentosa case was that of a lady who had marked central loss of vision with fairly good peripheral field. Before treatment V. R. was words of Jaeger 14, L. words of Jaeger 10. After a month she could read: R., Jaeger 14 and words of 12; L., Jaeger 8 and words of 6. There was thus some very real improvement in size of print, but the most marked improvement was the blackness of the print and the ease with which she could read what before was little more than guessing. She had a well-printed novel, and to begin with could guess at a word here and there by the length of the word and by the long letters as "t's" or "l's" or "y's" it contained, but before a month was over she could read the book continuously though slowly. Of course her macular region was affected, and the Jaeger she could read would hardly convey evidence of the whole improvement; she herself was positive of her improved grasp of her surroundings, the ease of finding steps, etc.

The next case of R. P. was a very advanced one. His V. was R. bare P. L., L. $\frac{6}{36}$ doubtfully; no notes of J. He began treatment on May 21st. On May 26th, V.: R., P. L., L. doubtfully $\frac{6}{60}$, and J. 19; on June 2nd, Jaeger, 16. After a fortnight's treatment he claimed to be able to walk about much better. When asked for proof, he volunteered the significant fact that he could see the red flowers in the garden, a thing he had not done for quite three years. I think that a very important observation.

Another, R. P., is the sister of the previous case with central changes. She, too, has central changes and very little peripheral pigmentation, and her fields are good. She has only been a week under treatment, and claims certainly, and without doubt seems to see better. I meant to have taken a comparative observation with J. the day before I came here, but had not time to do so.

With records of this sort I felt that there was one class of case, of all others, that should respond—namely, tobacco amblyopia, and I put four cases on treatment.

May 14th, C. R. (56), V.: R. $\frac{6}{36}$ + 3, J., 16; L. $\frac{6}{60}$ + 3, J., 14; R. eye always weaker.

May 21st (seven days later): R. $\frac{6}{36}$, Jaeger, 4, at 12 in.; L. $\frac{6}{36}$, Jaeger, 2, at 11 in.

May 23rd (nine days later): R., Jaeger, 4; L., Jaeger, 1.

June 2nd (nineteen days): R. $\frac{6}{12}$; L. $\frac{6}{9}$.

The R. did not improve further; there was evidence it had always been amblyopic.

Another case, probably combined tobacco and choroidal atrophy.

R. C., aged 78. The notes made when he first came under treatment were as follows:

April 2nd. Thickening of choroid vessels; pigmentary and atrophic changes at macula. V.: R. = $\frac{6}{60}$ with cor.; L. = $\frac{6}{60}$; Jaeger, 19. There was no improvement with the usual treatment up to June 5th, when he began retina feeding.

June 9th (four days). V.: both eyes, J. 16.

June 27th. V.: both eyes $\frac{6}{36}$; J. 10. This patient admitted continuing to smoke though forbidden to do so.

Another tobacco case in which tobacco, both chewing and smoking was not discontinued is as follows:

A. A., 71, May 7th. V.: with cor., R. $\frac{6}{36}$; Jaeger, 16 (?); L. $\frac{6}{60}$; Jaeger, 14.

May 14th. Treatment begun.

May 23rd (ten days later). V.: R. $\frac{6}{18}$; Jaeger, 4; L. $\frac{6}{36}$; Jaeger, 12.

June 2nd (nineteen days later). V.: R. $\frac{6}{12}$; Jaeger, 1; L. $\frac{6}{24}$; Jaeger, 4.

Another tobacco case, probably of two or three years' duration:

D. E., 55. Sight bad for two or three years, with usual symptoms of tobacco amblyopia.

June 18th. Treatment begun. V., with cor, R, $\frac{6}{36}$; Jaeger, 10; L. $\frac{6}{36}$; Jaeger, 10.

July 2nd (fourteen days later). R. $\frac{6}{24}$: Jaeger, 2; L. $\frac{6}{9}$; Jaeger, 4.

July 26th. I questioned him. He had improved much more, but I have

failed to note improvement. He remarked he had not seen so well for three years, and at the same time admitted that he had practically continued his smoking all the time.

I think you will admit that these tobacco cases give very definite evidence in favour of the treatment. My own experience is that under other treatment tobacco cases do not make much improvement for three weeks, whereas these cases were far advanced in recovery by that time.

I now wish to mention a case of optic atrophy. It is difficult to understand how such cases improve, unless it be that the increased functional activity of the retina gives a stronger stimulus than it can get through the wasted fibres. I give you the facts of this case, which are striking, and I cannot conceive leave much room for doubt.

L. G., aged 28, came under treatment at the Oxford Eye Hospital on September 18th, 1902, with the history that she had been attended at the Manchester Eye Hospital with optic neuritis after premature labour, the result of a fall, that fourteen days after confinement her vision began to fail, and that she was absolutely blind to light for one month, having been tested by a candle held close to her eyes. Whether that observation was correct or not I cannot say, but when I saw her on September 18th her V. was R. fingers at 2 in., L. fingers at 3 in., and she was led about. Some very slight improvement took place in the next eight months under the usual treatment.

On May 21st, 1903, when she began retina feeding, V. was: R. Jaeger, 19: L. Jaeger, 20.

May 30th (only nine days later): V. R. and L., $\frac{6}{12}$.

June 2nd: Jaeger, 12 (words of).

June 8th: Jaeger, 10 (words of).

July 2nd: Jaeger 6 (words of).

July 23rd: Jaeger 4 (words of).

She can walk alone about the town and do shopping. She is, however, still colour blind, and sees better in dull light.

One more case of primary optic atrophy in L.A. This case is valuable because the patient was an able man, and had been a tutor of his college at Oxford. I particularly asked him to test the treatment for me carefully and scientifically. The case is interesting for other reasons. As a young man he had damaged his right eye with a racquet ball, and cataract had resulted in that eye. His left eye, however, had served him well. Locomotor ataxy developed and advanced to a distressing extent, but for some years now the condition has only become slightly worse. His only useful eye began to fail from atrophy, and became so bad that he could only read with the greatest difficulty, print having become so pale; and please note, he also had almost, if not entirely, lost his colour perception for red. This I know to be the case, for it was by the fact that he could distinguish a red colour of a book with his cataractous eye that suggested to me the possibility that the retina of that eye might be sound. I successfully removed his lens, though the difficulties due to his condition of bowel and bladder trouble made the operation a particularly precarious one. I, however, never was more pleased to get $\frac{6}{9}$ and Jaeger 1, as was the case with this unfortunate patient, whose only remaining pleasure in life was reading. It was this patient whom I placed upon the latest extract that Burroughs, Wellcome and Co., as I mentioned just now, prepared for trial. He began treatment on July 11th, and could only with that eye through the cataract lens belonging to the other eye read Jaeger 20; five days later Jaeger, 19; nine days later Jaeger 16 and words of 14. He had at first looked at a monthly calendar of large block numbers, and could barely make out anything even knowing the sequence of numbers printed there and the days of the week, but after nine days he could see it quite well, and, mark you, could readily distinguish the red from the black type, alternate days being so coloured. I then tested out his colour perception for red, allowing for the different condition of the eye, and if the red perception of his "good" eye (the aphakic one) was any better than the other it was only very slightly so. You will remember that I had, before I operated three years ago, diagnosed the condition of the retina of the cataractous eye by the fact that even through the opaque lens its perception of red was apparently normal, while that of the other was lost.

I must not occupy your time or weary you with clinical records of other cases, suffice it to say that I have had excellent results from cases of old choroiditis and cases of damaged and thinned retinae of high myopia. I say nothing of functional cases for, if it be true, as I hope I have proved, that this remedy is of value in gross organic lesions it must be of value in merely functional exhaustion. When I first began to turn my attention to this subject I had no idea that it had been in any way approached before, but Mr. Sydney Stephenson very kindly looked up the literature of the subject, and has shown me that Louis Dor in 1897 employed an extract of the ciliary body, and that Lagrange in 1898 used an extract of vitreous body and ciliary body combined which was called "oculine." I understand also that choroid, retina, vitreous, and ciliary body have also been extracted together and used. I believe I am correct, however, in saying that retina in the way I have put before you to-day has never been so employed before, and I may reiterate the fact that unless it is specially prepared it has comparatively little effect.

Dr. DARIER (Paris) said that after the publications of Brown-Séquard he and many others had tried spermine in cases of optic atrophy with varied success. Later on he tried to stimulate the secretion of visual purple by injecting subconjunctivally an extract of the ciliary body, choroid, and retina. He obtained from this encouraging results. It would be very satisfactory, however, if the "optocine" of Mr. Doyne had the same result when given by the mouth.

Dr. EDRIDGE-GREEN was much interested in Mr. Doyne's results, as he had several years ago tried to prepare a solution of visual purple for administration by the mouth. He was not surprised to hear of the improvement Mr. Doyne described, as it fitted in with his theory of vision.

Mr. SYDNEY STEPHENSON had treated three cases of tobacco amblyopia with Mr. Doyne's "optocine." The result in each case was good, and showed a marked improvement in spite of the continued use of tobacco.

EPITHELIAL PLAQUES OF THE CONJUNCTIVA.

By W. T. LISTER, F.R.C.S., AND W. I. HANCOCK, F.R.C.S.

[ABSTRACT.]

MESSRS. LISTER and HANCOCK brought forward four cases of rare epithelial tumours of the conjunctiva. Cases I and II were in young people under 25. The small growths were of a yellowish colour and were situated near the limbus above the cornea. One had been removed, but had recurred at the same situation. The surface was dull and one was marked with furrows which corresponded microscopically with minute papillae. They differed from dermoids in containing neither glands nor hairs, and from xerosis patches by the absence of the frothy appearance; the patients were otherwise healthy and there was no nightblindness. Cases III and IV were in people well over middle life, the growths were of a dead white colour like sodden epithelium. One of them had some minute pink spots which corresponded to some minute thin walled blood vessels, the other had no blood vessels. Clinically they somewhat resembled epithelioma of the conjunctiva but differed from them in that they had not the convoluted edge and in colour they were too white. Microscopically all the growths consisted of greatly thickened conjunctival epithelium. None of the cells passed into the connective tissue. The growths corresponded more nearly with callosities of the skin, rather than with warts or corns, and until they had collected further information the authors were inclined to give them the more general title of "Epithelial Plaques of the Conjunctiva."

THE MECHANISM OF ACCOMMODATION IN MAN.*

By KARL GROSSMANN, M.D., F.R.C.S.E.,
Ophthalmic Surgeon to the Stanley Hospital, Liverpool.

THE question as to the mechanism of accommodation received its scientific answer some fifty years ago, and in such a manner that it seemed to have been settled finally. The changes during accommodation of the size of the reflex images formed by the anterior surface of the lens were first observed in 1849 by Max Langenbeck,[1] and soon discovered again and carefully investigated in 1851 and 1852 by Cramer, and published by him in 1853.[2] In the following year, 1854, Helmholtz, who had been unacquainted with Cramer's Dutch publication, the German translation of which appeared in 1855, published the result of his researches in Graefe's *Archives of Ophthalmology*, which had just commenced its career a few months previously. According to his theory the accommodation was mainly if not solely due to an increase in the spherical curvature of the anterior surface of the lens. This increase was due to the relaxation of the zonula, and the latter was produced by the contraction of the ciliary muscle, or, as it was then called, "tensor choroideae."

This view was generally accepted, until in 1858 Mannhardt[3] by a study of the comparative anatomy of the ciliary muscle, came to the conclusion that the accommodation by increased curvature of the anterior surface of the lens was produced by the traction (and contraction) of the ciliary muscle. This view was little accepted, and was seriously supported only by Schoen,[4] who ever since has adhered to it. He found a very valiant supporter in Tscherning, who in the *Archives de Physiologie* of 1894 and 1895 adopted Schoen's views. Tscherning corroborated what Cramer, and—fifty years before

* These investigations are being continued, and the results will be made known in due course.

him—Thomas Young had observed, that the anterior surface of the lens does not retain during accommodation its spherical shape, but changes into a hyperboloid, the centre becoming more curved and the periphery more flattened than before. These changes are attributed by him to the increased tension of the zonula as the result of the contraction of the ciliary muscle. With regard to the alteration of the anterior surface of the lens he says:[4] "My investigations show that the essential phenomenon in the accommodation of the eye consists in the flattening of the peripheral portion of the anterior lens surface; it is this flattening which indirectly produces the increase of curvature in the central portion, and thereby as its result the increase of refraction. This flattening thus being a phenomenon of the first importance for the study of the mechanism of the eye, it becomes desirable to study it as closely as possible, the more so as in my opinion it is the weightiest argument against the acceptance of the theory of Helmholtz."

The two theories are then briefly these:

(A) The increased curvature of the lens during accommodation is produced by relaxation of the zonula due to contraction of the ciliary muscle.

(B) The increased curvature of the lens during accommodation is produced by tension of the zonula due to contraction of the ciliary muscle.

The former view (A) is called the Helmholtz theory, the latter view (B), though identical with Mannhardt's and Schoen's, we will call for our purposes the Tscherning theory.

A formidable attack was made in 1896 by C. Hess, who in an able paper[5] brought at one blow the weight of important new observations to bear against Tscherning's view. Since then the discussions at the International Ophthalmological Congress at Utrecht, 1899, and at the International Medical Congress at Paris, 1900, have left the balance in favour of the Helmholtz view, in spite of the heated attempts of Schoen, Tscherning, and others to get the victory on their side. I had not taken a very ardent interest in the controversy when I was induced nearly a year ago to approach the subject. I can only say I have entered the discussion in a perfectly unbiassed spirit. My object has been to ascertain facts—undoubted, unassailable facts—and to bring new evidence. Having obtained this, the facts would have to be placed and interpreted, irrespective of any preconceived idea or theory. It was perfectly indifferent to me which way the result would turn. The objective facts would have to be accounted for.

In the autumn of last year a young man came to me to consult me about his eyes. Twenty-six years of age, of middle stature, well-formed, except for a scar on the right upper lip (due to an accident), healthy in appearance. A casual glance shows rather dark eyes of otherwise normal size, on closer inspection the iris cannot be seen. No photophobia, no unusual expression or behaviour in daylight. Examination in the dark room reveals: Corneae normal in size and transparency; iris both in right and left eye completely absent. Right eye: Lens of normal transparency except for a very small anterior and still smaller posterior polar cataract. Left eye the same as right; however, both anterior and posterior cataracts are still smaller than the corresponding opacities in the right eye. These four opacities are very shallow and are situated within and in contact with the capsule. In the fundus of the right eye, near the equator, there is a slightly yellow, discoloured, longish patch noticeable in the retina, otherwise the fundus shows no abnormalities. Refraction: Hypermetropia and vertical corneal astigmatism of 2D. S.R. = $\frac{1}{2}$ with + 6.0 ⌒ + 2.0 ϕ S.L. − $\frac{1}{2}$ with + 7.0 ⌒ + 2.0 ϕ For near distance he sees Jaeger 5 with difficulty; he is not a good scholar. Both the focal and the ophthalmoscopic illuminations are borne as easily and as well as daylight; no sign of photophobia. On looking into the fundus in the direction of the visual axis the lens practically fills the corneal area, when looking in an oblique direction the free margin of the lens becomes easily visible. Following it all round it is found that the equatorial margin of the lens is quite free from contact with any portion of the ciliary body, of which in fact no trace can be detected.

In case the patient should not present himself for any later careful examination he was shown at the Liverpool Medical Institution on November 6th, 1902. The only point raised on that occasion was that in the few known cases of congenital aniridia glaucoma was almost always present. This was not so in this case, and I drew attention to the fact that we had in this instance one of the rarest and most noteworthy combinations of occurrences, and if there should be a sufficient amount of accommodation at all—not necessarily so in congenital aniridia—an investigation of the mechanism of accommodation should be made.

And the accommodation was present. Here was given the most exceptional concurrence of favourable conditions:

a. Normal size of cornea, lens, and eyeball.

b. Transparency of cornea, aqueous, vitreous.

c. Transparency of lens, except for a very fine mark—a regular "chalk mark"—of the anterior and posterior pole.

d. A sufficiently good visual acuity.

e. Absence of photophobia.

When asked to look at an object held within 8 in. from the eye the existence of accommodation seemed to be very doubtful at first. Though the ophthalmoscope seemed to show an increase of about 1 to 2 dioptries no trace of any ciliary processes could be detected anywhere. The zonula fibres were noticeable all round although only faintly.

Eserine was then instilled, and soon the picture changed.

1. When examined with the plane mirror, the lens, hitherto quite homogeneously red, appeared divided into three concentric zones. The central part ($4\frac{1}{2}$ mm. in diameter) shows, except for the point-shaped polar opacity, the clear red of the fundus. Round this an incomplete ring (2 mm. broad) of a horseshoe-shaped shadow shifts round with the movements of the mirror, and can thereby be completed into a ring-shaped shadow zone. This in its turn is again surrounded by a clear zone of about 1 mm., reaching to the extreme edge of the lens (Fig. 1). The ring-shaped shadow zone is the

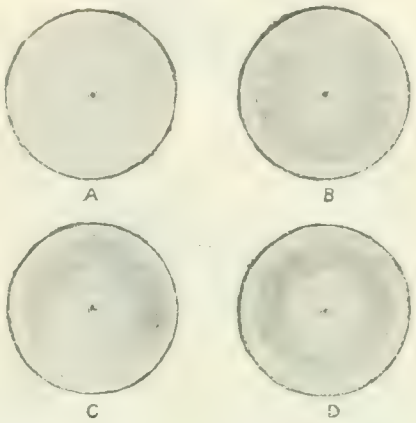


Fig. 1.—Shadow test with plane mirror; the dark spot in the centre represents the anterior polar cataract. A, without eserine; B, C, D, with eserine.

expression of a difference of refraction that has taken place between the central and the more peripheral portion of the lens; it is the indication that the surface of the lens has changed its spherical form into that of a lenticonus (an anterior one, at any rate), such as has been been observed by Cramer and proved by Tscherning.

2. The second, and perhaps most striking, feature is, however, the tremor of the lens. This does not occur at once, but only after five to ten minutes have elapsed after the first instillation of eserine. When any jerky movements of the eyes are made, vertical or lateral, the lens shows a most marked tremor of about two or even four small but distinct vibrations. This can be seen to perfection as well by reflected as by transmitted light, thanks to the polar chalk marks on the lenses. When not under the influence of eserine not a trace of this tremor can be seen, not even during the highest exertion of voluntary accommodation.

[The tremor of the lens proves, as has been pointed out by Hess, that the pressure in front and behind the lens must be the same during the height of accommodation, otherwise tension of the zonula would take place, and the lens could not vibrate loosely in its suspension as it does. With regard to this point more accurate knowledge is required than we at present possess, and the results of the investigations in this direction will be published in due course.

In the first volume of the large handbook of Graefe-Saemisch, Merkel (*Makroscopische Anatomie des Auges*, i, p. 38), in speaking of the lens, says: "The vitreous adheres so closely to the posterior surface of the lens that in quite fresh eyes a separation is impossible there, so that it first requires maceration before lens and vitreous can be separated." Tscherning (*Compt. Rend. Cong. Intern. d'Ophthal. d'Utrecht*, Amsterdam, 1900, p. 252): "Mr. Hess, who supports the Helmholtz theory, supposes that the lens sinks downward in consequence of the slackening of the zonula. But not only does the Helmholtz theory seem to me to have to be given up for other reasons, but it also appears difficult to imagine that the lens could sink at all, considering the manner in which it is fixed on the vitreous, unless the anterior part of the vitreous takes part in the movement."

Now, Merkel and Tscherning must clearly be wrong. It does not appear impossible to me that the pressure of the vitreous is not borne by the zonula. What part the hyaloid plays in this respect has never been investigated, but we know that when the lens with its capsule undamaged is removed from its normal position, either luxated or

extracted, the vitreous does often remain in its normal place. Only today have we seen Major Smith's dazzling array of some thousands of lenses in the intact capsule extracted in India, and I am sure that even if he did not say so, we should not believe that Major Smith would have extracted all these lenses within the capsule if a prolapse of vitreous had been forthcoming in many of them. Our knowledge in this direction very urgently requires improvement.]

This practically agrees with the observations made by Hess.[7]

3. The ciliary processes become visible. Not very much, but distinctly visible all round the circumference, and it is almost easier to see them under focal illumination, where they stand out from the aphakic (extralenticular) portion of the red fundus, than with the help of the ophthalmoscope (Fig. 2). As far as can be ascertained, they have made a



Fig. 2.—A, without eserine, no ciliary processes; B, with eserine, ciliary processes. The two black spots represent anterior and posterior polar cataract respectively.

centripetal movement towards the visual axis, and do not appear to have moved forward towards the cornea. There remains a distinct interval between the ciliary processes and the lens everywhere.

4. The circumference of the lens at its equator remains perfectly circular but decreases considerably.

I have taken a large number of measurements of the equatorial diameter of the lenses with a little apparatus which I constructed for the purpose. A microscopically accurate measurement is impossible, but here we fortunately have to deal with such comparatively speaking large measurements that we need not mind errors of $\frac{1}{4}$ to $\frac{1}{2}$ mm.

These are the average measurements equal for both eyes: The equatorial diameter without any drug, $11\frac{1}{2}$ mm.; with homatropine, $12\frac{1}{4}$ mm.; with eserine, $10\frac{1}{4}$ mm.

Here, then, we have a difference; a decrease of the equatorial diameter of 2 mm. between the homatropine and the eserine effects. [It must be borne in mind that we have to deal with a high degree of hypermetropia. The homatropine was a 1 per cent. solution, given only very sparingly, as the patient did not like these applications of eserine or homatropine at all. It is therefore quite possible that under the effect of a fairly strong solution of atropine a still greater difference might have been found. But as all these measurements took a great deal of time for their careful carrying out, and had to be often repeated for verification, I had to be satisfied without going to extremes, especially as all the results were unmistakably clear and unequivocal.]

[The equatorial diameter of the lens decreases during accommodation. In Fig. 8 Tscherning (*Annales de la Policlinique de Paris*, July, 1895, and also in *Optique Physiologique*, 1898, p. 164) represents the lens in rest and in accommodation. It is seen there that the equatorial diameter is larger in accommodation than in rest, as it would have to be according to his theory. We have seen that both his facts and theory are wrong. In 1867 A. Coccius published a paper in Leipzig on the mechanism of accommodation of the human eye, in which he mentions that during accommodation he observed in iridectomized eyes an apparent diminution of the diameter of the lens. Tscherning, on page 171 of his *Optique Physiologique*, remarks in reference to these observations: "Les phénomènes observés par Coccius sont probablement dus à une illusion d'optique.". My own observations have vindicated the correctness of those of Coccius, and vice versa.]

This decrease of the equatorial diameter of the lens during accommodation as observed and measured here for the first time, is a fundamental fact of the first importance. Quite alone, by itself, without any other corroborating facts, it suffices to demolish the theory of Mannhardt, Schoen, and Tscherning, that the ciliary muscle, by its contraction during accommodation, exerts a pulling, stretching effect on the equator of the lens (through increased tension of the zonula).

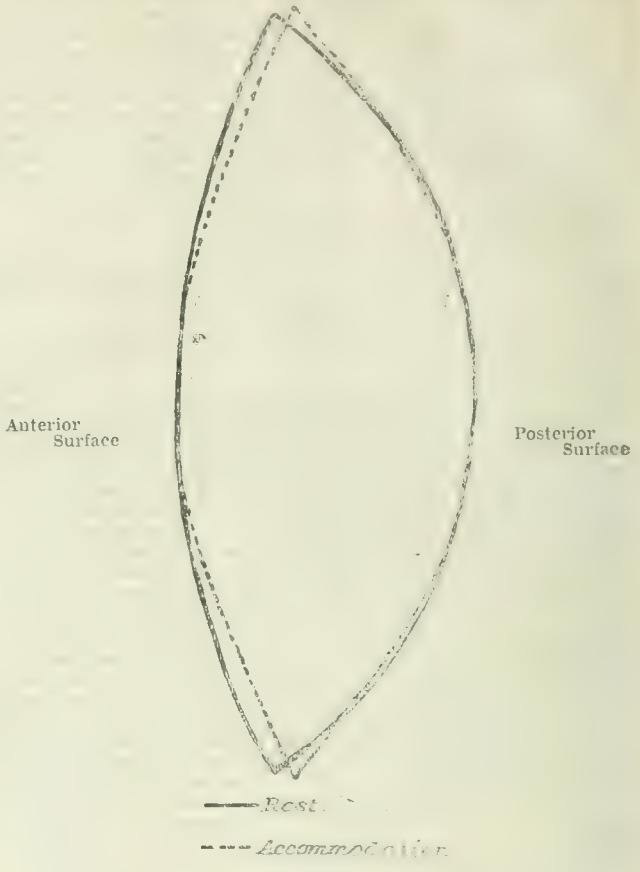


Fig. 3.

5. If the circumference of the lens at the equator decreased, it was to be presumed that its thickness—the antero-posterior diameter—should increase accordingly, the lens being composed of a practically incompressible material.

Direct measurements, hitherto impossible, were carried out in this instance. They were not easy and required a great deal of patience and time, but they gave clear and decisive results. Fig. 3 explains the method adopted by showing a

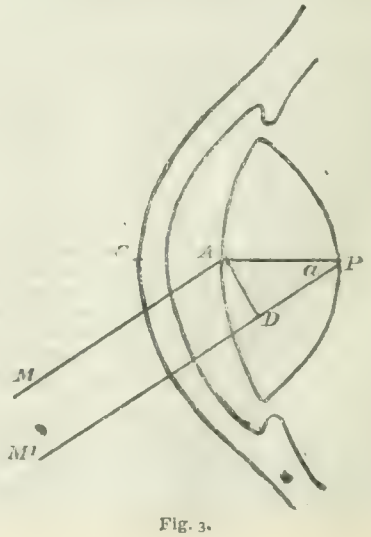


Fig. 3.

meridional section of the eye. A represents the anterior, P the posterior pole of the lens, C the apex of the cornea. It should be remembered that in A and in P were the welcome point-shaped cataract spots which could be used as marks of the anterior and posterior capsule. A microscope of low power was focussed, first on to A and then to P, while the eye and the stand of the microscope were kept in the same relative position. The mark at A being larger than at P, the measurement could not be taken in the direction A P, as A would have covered P, obstructing the view of P altogether. A direction was therefore chosen, oblique enough to avoid the obstruction of P by A. The microscope M was first focussed on A in the direction of M A, and then on P in the direction of M P, which was in reality the identical direction without any lateral displacement of the microscope, A and P being in the same field of the microscope. The difference between the two focussing distances gave D P; and this gave $A\ P = \frac{D\ P}{\cos\alpha}$, being the angle A P D, which was measured for each experiment especially. Owing to the patient's disinclination for atropine and homatropine, the measurements were taken only for the state of the lens (*a*) without any drug, and (*b*) with eserine. The average of all these measurements, which showed only very slight differences, gave the result that the thickness of the lens, its antero-posterior diameter was for distance without any mydriatic 3.14 mm., with eserine 4.44 mm. showing a difference of 1.3 mm. If we consider that the eye examined was highly hypermetropic and that of a youthful individual, we may safely assume that the difference would have been still greater if atropine had been employed; but even without any mydriatic we have here established for the first time, and proved irrefutably that the thickness of the lens increases during accommodation.

[With regard to the increased thickening, Helmholtz, in the second edition of the *Physiologische Optik*, p. 134, says: "According to our observations, the anterior surface of the lens advances, while the posterior surface remains in its place; the lens must, therefore, increase in thickness during accommodation. And as it cannot alter its volume we are driven to the conclusion that the diameters of its equatorial plane decrease." This conclusion—though not *a priori* cogent—I have been able to prove to be correct.]

6. After having found that the thickness of the lens increases so considerably during accommodation, it became desirable to examine the relative position of lens and cornea in rest and in accommodation. This was done in a manner similar to the preceding measurements described under No. 5. The distance between C and A was measured by the same microscope; C was marked by small specks of dust, and of A the first focusable plane was taken. In this instance, however, the direction C A could be adhered to, and no angular measurements were needed. It was found that the distance from the anterior surface of the cornea to the anterior pole of the lens was in rest, 3 mm.; with eserine 2½ mm. The distance between lens and cornea decreases, therefore, during accommodation.

In spite of this advance of the anterior surface of the lens the lens itself does not move forward. The advance of the anterior surface is 0.5 mm.; the thickness increases 1.3 mm.; the posterior surface therefore recedes 0.8 mm., so that the lens itself either remains in its position or more probably moves slightly backwards. It certainly does not move forward.

[Already in 1841 Hueck (*Die Bewegung der Krystallinse*, Leipzig) had observed that during accommodation the anterior surface of the lens advances a little.]

7. We have seen under No. 3 that under the effect of eserine the lens becomes tremulous. This striking feature was first observed and correctly interpreted by Hess as the expression of the slackening of the zonula. Hess found that at the height of accommodation (in some instances without, but more generally with eserine) the lens suddenly descends a little, and when the accommodation is relaxed, it rises equally suddenly back into its original position. This movement is a downward one, due to the effect of gravity: the lens sinks by its own weight. In order to prove this, Hess put his head on the right side when the right lens descended towards the right temple; on the left side when the right lens descended towards the nose: forehead downwards when the lens went towards the forehead, always moving towards the lowest point. When the face was placed horizontally either downwards or upwards the lens did not move at all. Tscherning[9] gives two very good illustrations but no explanation, and appears loth to accept the irrefutable conclusions of Hess.

In view of these opinions it was particularly interesting to see how the lenses of our patient behaved. As has been already stated under No. 3, the tremor at the height of the action of eserine was very striking. But on further investigation something else became more striking still, and that was a displacement of the lens upwards and inwards. Whereas the ophthalmoscope before the application of eserine gave the appearance (Fig. 4*a*) (right eye), the application of eserine changed the picture to Fig. 4*b*. In the left eye an analogous

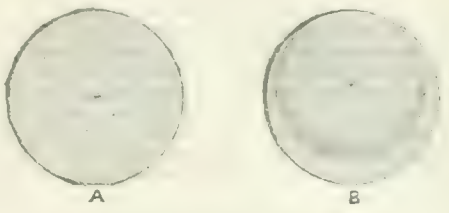


Fig. 4.—A, without eserine; B, with eserine.

symmetrical movement upwards and inwards was found. This upward movement counteracts and exceeds the slight downward movement of the lens that takes place due to its own gravity in the erect position, where it would have to be subtracted, while it would have to be added if the head were held downwards. Remarkable as this upward and inward movement of the lens is, it is not surprising that it has never been observed before. It is the result of the asymmetry of the eye, and one of the proofs—if such were needed—that in the present instance we have to deal with a perfectly normal accommodation, where only one part of the apparatus, and that a quite unimportant one for the mechanism, though not for the optical result, is missing—namely, the iris.

Since first making this observation I have examined thousands of irides, and found in the overwhelming majority of cases that the pupil during contraction moves noticeably inwards and upwards, less frequently inwards and downwards or simply inwards. This at the same time explains why Hess and his friends found, in the entoptic examination of their individual "lens spectra," that only a downward movement of the lens took place: the pupil and the pupillary margin to which the entoptic movement was correlated had already made a movement in the same direction, and practically together with the lens itself, a movement which therefore became unrecognizable for subjective entoptic observations. From the movement of the lenses in our case we may say with absolute certainty that, had the irides been present and of normal size and function, the pupils would also have moved upwards and inwards.

This point is of such interest and involves such important questions connected with the asymmetry of the dioptric apparatus that it will be gone into more carefully in a special paper.

8. The changes of the curvature of the surfaces of the lens have been examined by means of the Sanson-Purkinje reflex images. Helmholtz and his school used two points as source of light. Tscherning, by using three points arranged in a straight line, was thereby enabled to demonstrate that in accommodation the anterior lens surface increases in curvature in the centre and decreases in curvature towards the periphery. Fig. 5 is a reproduction of Tscherning's Fig. 4 from his article on the Theory of the

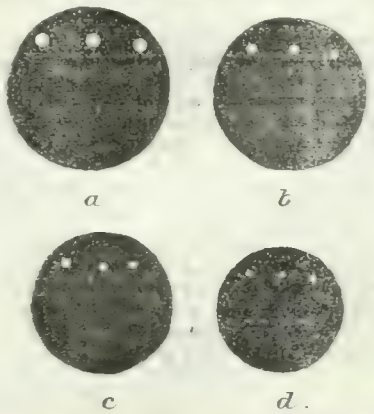


Fig. 5.—After Tscherning. A, rest; B, C, D, increasin accommodatio and concomitant decreasing pupil

Optical Changes in the Eye during Accommodation, in *Archives de Physiologie*, January, 1895. The limits of examining these images were very narrow owing to the fact that with increasing accommodation the size of the pupil narrows, and the iris accordingly covers more and more the peripheral area of the lens available for the reflex images. For the same reason it has never hitherto been possible to examine the curvature of the posterior surface of the lens in the living eye, except with a more or less dilated pupil, never with a narrow pupil, and during accommodation only for small degrees of accommodation and in its central area exclusively. Examinations were therefore instituted to investigate the behaviour of both anterior and posterior lens surfaces of our case under eserine. With regard to the anterior surface, it was found that images obtained were not sufficiently useful for our purpose. The cause of this led to investigations, the results of which are interesting enough to be given in a special paper.

[The anterior surface of the lens is in the majority of cases not spherical even during rest. This becomes more apparent in advancing age. Most of the lenses extracted in their capsule and shown by Major H. Smith to-day have an anterior surface more hyperbolic than spherical, and the same holds good for the posterior surface.]

The posterior surface of the lens, however, gave results as clear as they were unexpected (Fig. 6). The source of light

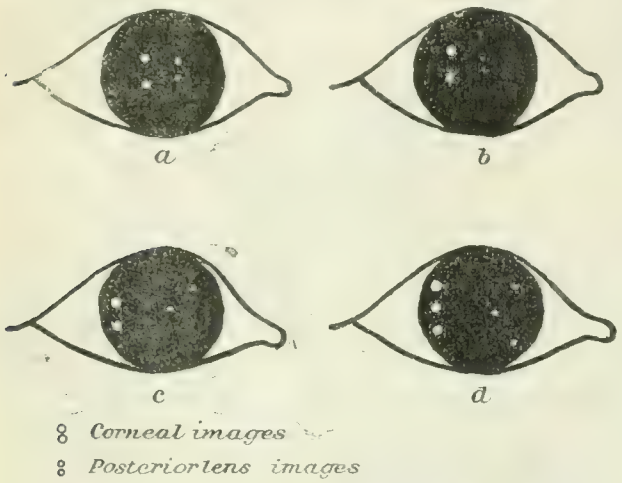


Fig. 6.—A, without eserine (rest, distance); B, with eserine, images near posterior pole; C, with eserine, images nearer equator; D, images nearer equator (3 images, eserine).

was an uncovered arc light, doubled by two prisms. So little was there any trace of photophobia that the strong light was borne without difficulty for a long series of examinations. It was found that in rest the posterior surface of the lens was practically spherical, the two images (the smaller ones in Fig. 6*a*) being of the same size in all accessible parts of the posterior surface. Fig. 5*a* represents them formed in the centre, near the posterior pole. After eserine had been applied the images formed in the same place showed a distinct approach to each other; the distance between them had decreased (Fig. 5*b*). This gives an unmistakable proof for the increased curvature of the central portion of the posterior surface of the lens.

This increased curvature of the posterior surface of the lens had already been observed by Helmholtz, but then it appeared very small; so small, indeed, that he did not attribute very much importance to it, although he quite decidedly comments on it as early as the first edition of the *Physiologische Optik* of 1867. When, however, the images are formed from more peripheral portions of the posterior lens surface, by suitably turning the eye, the distance between them increases considerably, to a greater extent the more peripherally the image is formed. Nor is this all. If we arrange the lights so that they are vertical above each other, and that the reflection of the one is formed on a line that horizontally halves the lens, the other image is formed either below or above this line, and at the same time considerably displaced laterally (further from the centre, nearer to the equator of the lens).

If the eye is turned in such a manner that the one image is formed as far above as the other below the horizontal meridian of the eye, then there is no lateral displacement between the two; they are both on the same vertical line. The lateral displacement is shown for the upper half of the posterior lens surface in Fig. 6*c*. If we construe it for three images, we obtain Fig. 6*d*, similar to Fig. 5*d* of Tscherning. The conclusion derived from this observation is that the posterior surface of the lens changes during accommodation in exactly the same manner as the anterior surface, and forms a posterior lenticonus, with increased curvature of the centre and flattening of the peripheral portion.

That the central curvature is greater and more powerfully refractive than has been thought hitherto is made probable by the reduced size of the images obtained as against rest (I must here repeat that no mydriatics were used) and by the differences observed between the ordinary drugless state of a highly hypermetropic eye and after eserinization. As Professor Sherrington pointed out to me, the apparent reduction in the distance of the two images is enlarged by the increased refractive power of the accommodated lens, an enlargement caused not only by the increased curvature of the refracting surfaces but also by the increased thickness of the lens. The fact is hereby established that during accommodation not only the anterior but also the posterior surfaces participate in forming a double lenticonus such as sketched in Fig. 7.

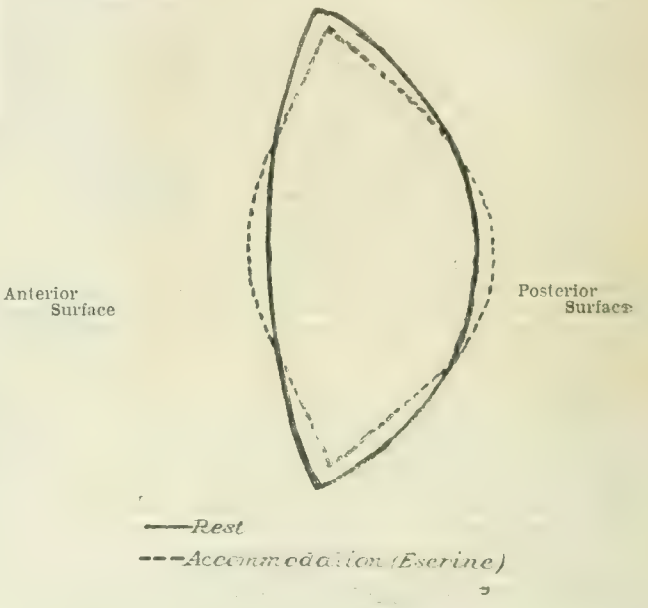


Fig. 7.

I had the privilege last month of demonstrating the case at Oxford at the meeting of the Physiological Society. On that occasion Professor Gotch was good enough to offer me the loan of the Helmholtz ophthalmometer belonging to Oxford. I hope at the earliest possible date to go over the above investigations again, and to be able with the help of that instrument to supplement by exact and minute quantitative measurements the observations given above. Though some of them are only qualitative, owing to the absence of such an incomparable instrument of precision as the Helmholtz ophthalmometer is, they are absolutely conclusive and irrefutable. In a case like this negative results might not have had a claim to generalization. Here, however, a number of positive facts have been found, most of them in harmony with, and corroborated by, previous observations, none, not even the most striking new ones, incompatible with them.

I take this opportunity of expressing my sincere thanks to my friend, Professor Sherrington, who not only with the greatest courtesy placed the resources of the Physiological Laboratory of Liverpool at my disposal, but also assisted me indefatigably in the often very tedious process of verifiying and confirming the observations and measurements made.

Dr. Grossmann's paper was discussed by Mr. Harman, Mr. Silcock, and Mr. Nettleship. In answer to Mr. Nettleship's question, Dr. Grossmann replied that the increase of refraction by eserine was between $\frac{3}{8}$ and $\frac{3}{4}$ dioptrics. This might appear very little, but it must not be forgotten that one had to deal with hypermetropia of about 9 D. In his notes Dr. Grossmann found that the difference in refraction after application of eserine and of a weak solution of homatropine resp., measured on March 11th, was 5 D, so that it was more

than probable that a thorough atropinization would give a still greater difference. In reply to Mr. Harman, he said that a moment's reflection would show that in a case like this negative results might not have had a strong claim to generalization. Here, however, a number of striking, positive facts had been found, most of them in harmony with, and corroborated by, previous observations, none, not even the most startling new ones, incompatible with them.

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THE TREATMENT OF CONCOMITANT CONVERGENT STRABISMUS.

By Gustavus Hartridge, F.R.C.S.,
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The treatment of convergent concomitant strabismus in a scientific manner can only be approached by the consideration of those various factors which may help to produce the disorder, and by a careful examination of every case, so that the value and importance of each factor may be ascertained. We all know that convergent concomitant strabismus is a condition affecting both eyes: it is a binocular defect, and is the result of excessive innervation of the internal recti muscles excited by the associated act of accommodation. The factors which may take part in the production of squint are:

1. Hypermetropia. The hypermetrope has to accommodate for distance in order to see clearly; he will therefore at the same time have the tendency to converge.

2. Imperfect development of the fusion faculty. This faculty has to be acquired by all children; they certainly do not commence to learn binocular vision till after the age of one year, probably it is acquired gradually towards the end of the second year. Binocular vision necessitates equal—or fairly equal—vision in each eye. Until the fusion faculty is learnt the higher centres in the brain are not sufficiently developed to control the lower centres. Many children never learn binocular vision; there is no fusion faculty. These children are especially liable to squint.

3. Defective visual acuity of one eye, whether the result of an optical defect or caused by disease, diminishes the value of binocular vision, and therefore renders it more difficult to acquire the faculty of fusion.

4. The anatomical conditions of the eyes. Under this head we include the position of rest of the eyes, the position of attachment of the muscles, the size and shape of the orbits, the size of the eyes themselves, and the distance between them. All these have their influence in the production of squint.

These various factors are not of the same value in each case. They may not even all be present; hence a careful and systematic examination of each case is essential in order that we may determine the value of each factor before we can hope to undertake the treatment satisfactorily. This examination should include: 1. Taking and recording the visual acuity of each eye; 2, measuring the angle of the squint on the perimeter; 3, taking the field of fixation, especially if there appear to be any weakness of the muscles; 4, atropinizing the child and working out the exact optical defect by retinoscopy, confirming the result by glasses and the test types. In children under the age of 5 we must depend entirely upon the results obtained by retinoscopy. It should be noticed if there is any diminution of the squint under atropine.

The object of our treatment must be twofold: 1, The correction of the deformity: 2, the establishment of binocular vision. The public ask of us much less than this. A person brings his child for treatment simply that the eyes may be set straight, and is frequently surprised when it is pointed out that the child is using only one eye, and that the vision of the squinting eye is very defective.

The treatment may conveniently be divided into: 1. optical; 2, orthoptic or educational; 3, operative.

Optical Treatment.

An accurate correction of any optical defect, carefully adjusted and constantly worn, is the first essential. Many cases will be cured by this treatment alone. The most favourable ones are those in which the visual acuity of each eye is normal, with a potential power of fusion.

Orthoptic Exercises.

The exercises most commonly employed are: 1. Covering up one eye (usually the fixing one) for a certain fixed time daily or twice daily, so as to ensure the use of the weak or defective eye. This is most simply and conveniently done by placing a pad of cotton wool behind the spectacle glass of the eye we wish to exclude. Formerly I used a small black metal block which was made to slip over the glass of either eye as occasion requires, but I found this less satisfactory than the cotton wool, many children soon learning to dodge the block. 2. The power of fusion is tested, and for this purpose the fusion tubes of Priestley Smith are useful; so, also, is the heteroscope, which is practically the same instrument placed in a frame capable of adjusting and recording the angular deviation. The central spot in each tube is replaced in this instrument by a vertical slit, so that fusion may be attained by a vertical overlapping of these slits. Having found that the patient is able to fuse these two lines, we note the limit in each direction and record the result.

Then daily practice may be made with a stereoscope. The one I show is convenient. This is another useful form; the pictures are drawn on gelatine, and all sorts of devices can be adopted.

Worth has introduced an instrument which he calls an amblyoscope; this instrument has the advantage that it can be used for squint of any degree, and by using unequal illumination the object before the squinting eye can be brought into prominence. These exercises must be made of an interesting character, or the child will not submit to them.

Bar reading was first suggested by Javal, and is suitable for older children. A ruler, paper-knife, or strip of cardboard, or a bar of any kind—so that it is not too broad—is held between the book and the eyes in such a way as to hide a portion of the type from one eye or the other. I use a strip of metal of this shape, and find it very convenient. The head must be kept still when using the bar, and the patient must be shown how to use it. If the patient has binocular vision the bar offers no impediment to the reading, but when one eye is not being used the patient has to stop when he comes to the bar. Bar reading may be practised for an hour or more twice a day. All these exercises are very valuable, especially if they are commenced when the child is very young. The earlier they are begun the better will be the results obtained.

I must admit, however, that these exercises entail upon the little patient and his friends an amount of patience and perseverance which is not always forthcoming. The child should be encouraged to look at distant objects rather than near ones, and when reading he should hold his books at least 14 in. away; many children hold their books and toys much too close. They are tempted to do this because of the shortness of their arms. These two forms of treatment must in all cases be honestly carried out for twelve months before any operation can be entertained. The value of these two forms of treatment is beyond all question; but they do not succeed in curing all cases of convergent strabismus.

Operative Treatment.

When we come to consider an operation for the cure of this disorder we at once step upon very debatable ground. All operations on the muscles of the eye are unscientific. We are dealing with a disturbance of the innervation and not with muscles which are defective in strength; besides, this defective innervation is not a fixed quantity, but may diminish with age, often ceasing entirely about the age of puberty without any apparent reason.

This is the time at which many cases of concomitant strabismus will get well, and in which eyes that have been operated upon may diverge. One has to bear in mind that many cases of convergent concomitant strabismus, which were in the first instance cases of excessive innervation, only may after a time result in a disturbance of the equilibrium of the muscles. We know how the excessive use of the ciliary muscles in hypermetropia results in hypertrophy of that muscle, especially its circular fibres. May not the constant convergence cause hypertrophy of the internal recti muscles? while the constant contraction of these muscles must tend to stretch and weaken the external recti.

Every operator must have noticed how much the muscles vary in size; in doing tenotomies the internal recti are found

very strong and large, while when we are advancing the external recti they are often found very small and attenuated. In all cases, before undertaking any operation, the field of fixation of the squinting eye should be taken with the perimeter, so that we may be able to judge if there be any deficiency in the field of fixation. When the field of fixation shows a contraction outward in convergent strabismus, then an operation may be undertaken. The question is, Is an operation ever justifiable when there is no diminution in the field of fixation?

A great deal has been written about squint operations; but the curious thing is that almost every writer shuts his eyes to the deformity produced by most of these operations, though every day one sees cases where the caruncle is much sunken, the movements of the eyeball seriously curtailed, with a wide palpebral aperture, and perhaps some exophthalmos, producing marked deformity; in most cases where an advancement has been performed there is considerable thickening over the advanced muscle.

The public, fortunately, also fail to notice the deformity produced by tenotomies. Only the other day a man came to me with his little daughter, and asked me if no operation could be done to cure the child's squint; he told me that the defect was first noticed at the age of 4; she was ordered glasses then, and had worn them for three years. With the glasses there is now no squint, and the child has good binocular vision. On removing the glasses the left eye turns inwards. The man referred me to his own case, saying that since he had an operation ten years ago he had not required glasses. He and his friends did not appear to notice that the eye was straight only for distance, that the power of convergence with this eye was very slight, that the caruncle was deeply sunken, and that there was exophthalmos with a very wide palpebral aperture; the eye was amblyopic. He thought the operation had been very successful, whereas in reality the result could not have been worse. This is not an uncommon case. If after a full consideration of every point connected with a particular case an operation is decided upon, we have to choose from the following list: (1) Simple tenotomy; (2) tenotomy with an advancement of the opponent muscle; (3) advancement without tenotomy; (4) removal of a portion of one muscle; (5) stretching one of the muscles.

A simple tenotomy can, as a rule, produce only a difference of 15 degrees in the direction of the eye, and it does so generally by diminishing the amplitude of the convergence, so that frequently there is a relative divergence of the eye for some distances. It does not produce, as one would wish, a displacement of the range of the convergence, simply a curtailment. Simple tenotomies are seldom satisfactory.

Where the chart of the field of fixation shows a weakness of the external recti muscles, the best results may be obtained by a limited tenotomy of one internal rectus combined with an advancement of the external rectus of the same eye. Advancement without tenotomy of the opponent muscle, so ably advocated by Landolt, has not in my hands given equally good results. The effects produced have often been insufficient, and sometimes there is produced a certain amount of enophthalmos which is disfiguring.

Removal of a portion of a muscle and suturing the two ends together I have never seen done. There would appear to be no advantage in this operation over an ordinary advancement, and the results may be less certain. Where shortening of a muscle is required advancement is as a rule quite satisfactory. Stretching the muscles I have only performed on two occasions; Panas has treated a large number of cases by this method, and speaks most enthusiastically of its efficiency. Panas considers that most cases of squint are the result of a spastic contraction of the internal recti muscles; he uses considerable force when stretching a muscle, and afterwards freely separates its attachments without dividing it.

The chief points on which I would invite discussion are:

1. Should the two eyes ever be operated upon at the same time? I think not.
2. When should an operation be undertaken?
3. What operation gives the best results?

CONVERGENT SQUINT:

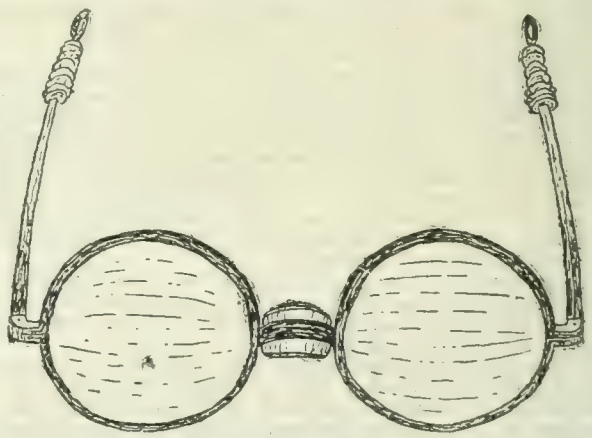
METHODS OF PRESERVING OR RESTORING THE SIGHT OF THE DEVIATING EYE AND OF ESTABLISHING BINOCULAR VISION.

By CLAUD WORTH, F.R.C.S.

I HAVE been engaged for several years in investigating the subject of squint, and have made detailed notes of more than 1,800 cases of convergent squint. One of the results of this inquiry, an account of which has been published elsewhere,[1] is to prove conclusively that congenital amblyopia is very rare, and that at the first appearance of a squint the corrected vision of the deviating eye is almost always as good as that of its fellow. Yet when one sees a patient who has squinted constantly with one eye for any considerable time and has merely received the usual routine treatment, one usually finds that the deviating eye has become very blind. This blindness is almost invariably the result of long-continued suppression of the vision of the eye, and might have been prevented. Whether it will be possible to restore the lost sight will depend, in each case, chiefly upon the proportion of the child's life during which the suppression has been allowed to continue. On seeing a case, therefore, one's first thought should be directed to the preservation of the sight of the squinting eye. This is to be accomplished by forcing the child to use this eye. Any refractive error should at the same time be corrected by glasses.

Optical Correction.

It is usually stated that a child under 3 or 4 years of age is too young for glasses. A squinter who has any notable refractive error should wear spectacles no matter how young he may be. Many of my squinting patients have worn glasses before 3 months of age, and have been cured before they were old enough to walk. In a case of hypermetropia and astigmatism my practice is to correct the astigmatism exactly and to correct all but 0.5 D. of the hypermetropia. Spectacle frames for infants should be of tempered steel. A broad flat plate of tortoiseshell should be fitted under the bridge-piece, so as to distribute the pressure on the nose. The sides should be straight and very short, reaching to just above the ear and ending in a loop. About $\frac{3}{4}$ in. near the loop should be wrapped



with wool. The spectacles are tied on by tapes, passed through the loops, behind the child's head. These frames are very comfortable. After the first hour or two even the youngest infants wear them as naturally as they wear clothes. If the sides were of the usual length the tapes would act at the end of a long lever, causing painful pressure above the child's ear, and in lying down the pressure of the pillow would push the spectacles forward. Of course small children sometimes break their glasses, but I have never known a case in which the eye has been injured thereby. The lens, being held in the frame, does not break into splinters, but cracks across.

Exercising the Deviating Eye.

It is almost useless to order the fixing eye to be covered for a certain number of hours every day with the object of exercising the deviating eye. Whatever the mother or nurse may promise at first, they will after a time find the constant supervision required too great a tax upon their patience, especially as the child usually cries whenever the pad is applied. Fortunately, such persecution is unnecessary.

A normal eye, or an eye whose refractive error is corrected by glasses, sees distant objects distinctly, without effort, by virtue of its static refraction alone. But the eye must make an effort of "accommodation" in order to focus near objects. Atropine has the property of temporarily suspending this power of accommodation. An atropinized normal eye still has perfect distant vision, but the near vision is temporarily reduced to about one-tenth of the normal. In the case of a young patient, whose squinting eye has not yet lost the power

of central fixation, I order atropine to be put into the fixing eye *only*, every morning. The child, of course, wears his glasses at the same time. He still sees distant objects clearly, but he will be unable to see distinctly his toys and picture books with the atropinized fixing eye. He soon discovers that by bringing the (unatropinized) squinting eye to bear upon these near object he can see them much more clearly. He therefore habitually and unconsciously uses the (atropinized) better eye in looking at distant objects, and the (unatropinized) worse eye in near vision. In this way the squinting eye is most efficiently exercised, without any trouble to the parents or inconvenience to the patient. This will always prevent amblyopia exanopsia. And in a case in which a considerable degree of blindness has already been acquired, one finds at each visit, if the child be young enough, a steady improvement in vision, until after a few weeks or months of this treatment the vision of this previously amblyopic eye becomes perfect or nearly so. When this step is reached, the child uses the unatropinized eye in distant vision as well as in near vision, and squints with the atropinized eye. I now discontinue the atropine. When its effect has passed off the squint may alternate, or one or other eye may constantly exhibit the deviation. In the latter case the non-squinting eye is atropinized for two or three weeks until alternation is produced. The best form in which to use the atropine is a 1 per cent. solution, dropped into the eye once every morning from a camel-hair brush or feather. Atropine ointment or lamellae may be used instead, but are more troublesome to insert. It should be very clearly explained to the nurse that the atropine is to be used for the better eye only.

In a case in which the deviating eye has already lost the power of central fixation, the visual acuity of this eye will be less than one-tenth of the normal. The plan of treatment just described cannot, therefore, be employed until central fixation has been restored. An attempt should be made to restore it by continuous occlusion of the fixing eye by a pad and strapping-plaster. After a day or two the child becomes more or less accustomed to the continuous occlusion, so that the plan is less troublesome and distressing than covering the eye for a few hours a day, as well as being much more effective. If one succeeds in restoring the power of central fixation in the deviating eye, the further treatment may be proceeded with as already described.

A very common but most harmful practice is to order atropine for both eyes for children who are supposed to be too young to wear glasses. The object, of course, is to lessen the convergence by paralysing the accommodation. Atropine used in this way never brings about a permanent improvement in the squint, though it occasionally causes a temporary suspension of the deviation. But the deviating eye usually has the greater refractive error, so that to paralyse the accommodation of this eye with atropine is the very way to ensure that it shall never be used. The most hopeless cases one sees of blindness of the squinting eye are those which have been treated with atropine for both eyes for a few months.

Binocular Vision.

When a person with a normal pair of eyes looks at a distant view, pictures of all the objects he sees are simultaneously formed upon functionally corresponding parts of each retina. The impressions received from the two eyes are blended in the brain, so that we are conscious of only one single picture. This act of psychically blending the two sets of visual impressions constitutes binocular vision. But binocular vision is something more than a mere passive overlapping of two similar pictures. If a prism be placed before one eye, with its apex towards the nose, the fusion centre, by virtue of its control over the oculo-motor co-ordinations, causes the eyes to converge until the displaced image in the prism-clad eye can be blended with the image formed in the naked eye. Again, if one looks at a distant view, one can, with a little practice, perceive two images of any object which is only two or three feet from the eyes. But under ordinary circumstances these images are blended, so that one does not suffer from diplopia. The blending of slightly dissimilar pictures in a stereoscope is familiar to every one. In a normal-sighted person the fusion sense first causes the oculo-motor apparatus to place the eyes in the most favourable position for fusion; then if any disparity in the images remain, this is overcome by what I have called the elasticity of the fusion sense. This fact is the key to the etiology of convergent squint, and to the only successful method of treating the anomaly.

The Normal Development of Binocular Vision in Infancy.

I have elsewhere described the investigations which I have made with a view to gaining some knowledge of this subject; I therefore only give a brief summary of results. The matter is of supreme importance, as no attempts at fusion training will be successful which are not undertaken at the age when the fusion sense should normally be developing.

The vision of each eye separately, the preponderance of the macular region, and the conjugation of the two eyes in vertical movements, the human infant has fairly well developed at birth. The conjugation of the eyes for horizontal movements (intended to subserve the function of binocular vision) is perfected within the first few months of life. Between 5 and 6 months I found the first certain evidence of a "desire for binocular vision," though probably a certain degree of binocular vision exists at a much earlier date. At first, if any obstacle be interposed (for example, a prism with apex towards the nose), it is a question whether an effort shall be made to overcome it or whether the vision of one eye shall be temporarily suppressed. Towards the end of the first year the visual apparatus will make a considerable effort in the interests of binocular vision. Failure to fuse at this age results, in a normal infant, not in suppression but in diplopia. At 3 years of age a much greater amplitude of fusion is found. The fusion sense normally reaches its full development before the end of the 6th year.

The Method of Developing the Fusion Sense.

Probably most ophthalmic surgeons have at some time or other ordered "stereoscopic exercises" in cases of convergent squint, and have after careful trial abandoned the practice. The reason of their failure is the early age at which alone it is possible to develop the fusion sense. When the child is old enough for home exercises with a stereoscope and for "bar reading" he is long past this age. Fusion training between the ages of 3 and 5 years is, in suitable cases, very rapidly and easily accomplished, and the results obtained are most striking. Between 5 and 6 the results are apt to be less perfect. After 6, or at the latest 7, years of age, fusion training is mere waste of time.

Two great difficulties in training the fusion sense of young children are: (1) The child is too young to understand the object of the exercises; he will therefore only submit to them so long as he finds them attractive; (2) though the visual acuity of the child's deviating eye may be perfect, the vision of this eye is suppressed, so that he is ordinarily unable to perceive the image formed in it, except when the other eye is closed.

The instrument with the help of which I have succeeded in overcoming these difficulties is fully described in the *Transactions* of the Ophthalmological Society. The amblyoscope, as I have called it, is a sort of reflecting stereoscope which is capable of adjustment to suit a squint of any degree or direction. The object slides are so arranged that they can be illuminated separately, either by two electric lamps on swinging arms or by two paraffin lamps on a table. This is in order that their relative brightness of illumination may be varied. In one of the earlier forms of the amblyoscope I tried to accomplish this by dulling one of the images with smoked glasses. This plan, besides being inconvenient, did not give sufficient contrast.

The patient must be young, preferably between 3 and 5 years of age. The deviating eye must not be very blind. Fortunately in cases in which the treatment which I have just described has been carried out soon after the first appearance of the squint, the sight of both eyes is nearly always perfect.

A squinter uses his "fixing" eye only, or, under certain circumstances, his "deviating" eye only, but he is unable to use both simultaneously. The sight of one eye is "suppressed." The first step in the treatment is to overcome this suppression. The window blinds are drawn down to partially darken the room. Seated in a chair facing the two lamps, the surgeon takes the child on his knee and adjusts the amblyoscope approximately to suit the angle of the deviation. Each lamp is about 4 ft. away. First, a pair of object slides is used requiring no fusion, only simultaneous perception of dissimilar objects, say a cage before the fixing eye and a monkey before the squinting eye. The child on looking into the amblyoscope will at first see only the cage. His curiosity is aroused by remarks about the monkey which he is told to look out for, while the lamp before the deviating eye is brought nearer and nearer. A point is at last reached when the illumination of the picture before this eye becomes so intense that its

vision can no longer be suppressed. The child now sees the monkey, but has lost sight of the cage. The relative distances of the lights are readjusted until after a time the child sees the cage and the monkey simultaneously. The child quickly learns to move the instrument himself so as to make the monkey go in and out of the cage. Other similar pictures are shown him until the suppression is perfectly overcome under these special conditions of illumination and convergence.

The child is next shown a pair of pictures requiring true fusion—for example, on one slide a man with only one leg, on the other a similar man with two legs but no head. Occasionally one image is suppressed when these pictures are made to overlap, in which case one returns for a time to the first class of object slides. Usually, however, the patient at once sees both images, and readily learns to blend them into a complete picture. All this may usually be done in one lesson if the child be young enough.

The next step—increasing the amplitude of fusion—requires more practice, three, four, or even half a dozen lessons being required. The child is shown many pairs of slides requiring fusion, while one tries to vary the angle of convergence of the amblyoscope without the fused picture coming to pieces. After a time a considerable range of movement becomes possible. This amplitude of fusion may for practical purposes be taken as a measure of the development of the fusion sense. While these exercises are in progress the illumination of the object slides is very gradually equalized. By talking to the child and encouraging him to chatter one easily learns what he really sees, though a direct question would elicit no information. Fusion training must, of course, be carried out by the surgeon himself. It is of no use ordering the amblyoscope or any other instrument for use at home. The object of the exercises is to develop the fusion sense at an age when this is possible, not a mere remedying of the deviation. But in many cases the "desire for fusion" directly brings about a sudden cure of the squint. Whatever means may be necessary to overcome the deviation, if one has preserved the sight of the deviating eye and established a "desire for binocular vision," one may confidently look forward to a perfect and permanent cure of the whole trouble.

RESULTS OF TREATMENT.

The Vision of the Squinting Eye.—In any individual case of unilateral squint it is open to anyone to say that the vision of the deviating eye might have remained perfect without treatment. Similarly, in a neglected case, it is usually suggested that the blindness of this eye is congenital. Statistics, however, give a very clear and definite answer.

Of 193 cases of constant unilateral convergent squint which I saw first when the deviation had lasted during less than one-eighth of the child's life, and in which treatment was carried out to my satisfaction, the visual acuity of the squinting eye, with optical correction, was subsequently found to be perfect in 165 cases. In 17 cases it was $\frac{6}{9}$ or $\frac{6}{12}$; in 9 cases it was $\frac{6}{18}$ or $\frac{6}{24}$; in 2 cases only it was $\frac{6}{36}$ or $\frac{6}{60}$. In no case was the power of central fixation absent.

Compare these results with the visual acuity of the squinting eye in 413 cases which first came under observation, when a constant unilateral squint had lasted during more than one-half the child's life, without any steps having been taken to preserve the sight of this eye. In only 14 of these cases was the vision of the squinting eye, with optical correction, perfect; in 28 cases it was $\frac{6}{9}$ or $\frac{6}{12}$; in 90 cases it was $\frac{6}{18}$ or $\frac{6}{24}$; in 102 cases it was $\frac{6}{36}$ or $\frac{6}{60}$; and in 179 cases it was less than $\frac{6}{60}$. In 191 of these cases the power of central fixation in the deviating eye was lost irrecoverably.

Fusion-training.—In the earlier cases I had not perfected my methods of fusion-training, and in recent cases sufficient time has not yet elapsed to show that the results are permanent. I therefore give the results of fusion-training in 100 consecutive cases beginning January, 1896. Five were what I have called essentially alternating squints, in which I was unable to get even simultaneous vision of the two object slides. In 17 cases the patients were more than 6 years of age. I got a moderately good result in 2 of these and failed in the other 15. I scarcely ever now attempt fusion-training after 6 years of age. Of the remaining 78 cases, which alone were suitable for fusion-training, I failed in 12 cases (owing to intractability of patient, irregularity of attendance, or apparent absence of the power of acquiring fusion), in 7 cases the result was only moderate, and in 59 cases a good amplitude of fusion was developed. In 2 of these cases the parents refused advancement which was necessary to complete the cure; 4 cases have been lost sight of; the remaining 53 cases are perfectly and permanently cured.

REFERENCE.
1 *Squint: its Causes, Pathology, and Treatment.*

Mr. TATHAM THOMPSON was of opinion that attempts at correction of optical errors could not be commenced too early, though he had never attempted to enforce the use of correcting glasses before 10 years of age. He had only used ordinary stereoscopic exercises, but considered the use of atropine in the fixing eye as the best means of encouraging the functional activity of the deviating one. No operation should be performed until prolonged use of optical means had been tried. He never operated on the two eyes together. As regarded simple tenotomy, this was justifiable in a certain number of cases of moderate deviation with obvious overaction of the internal rectus. In squint of high degree he advised advancement alone or in combination with tenotomy of the opposite muscle of the same side. The method of advancement he almost invariably employed was that of splitting the tendon and reattaching the halves above and below: this enabled the operation to be done with much less tension on the sutures.

Mr. MADDOX expressed indebtedness to Mr. Worth for enforcing the very early training of squinting eyes; just as at Utrecht Mr. Priestley Smith pressed the very early performance of operation if done at all. He suggested that lamps and a dark room could be dispensed with in using the amblyoscope if the child and surgeon were to sit on a music stool before a window, and by rotating the stool a greater or less amount of light could be allowed to illuminate either tube.

Mr. N. BISHOP HARMAN drew attention to the remarkable anticipation of our present knowledge of the fusion faculty in children. Pepys in his famous diary recorded a talk he had with the doctor of the ship which brought Charles II. from exile. The doctor informed him, says Pepys, "that children when they are young do use their eyes severally to look in any direction, but as they grow they have to use them so that they have but one eye." Mr. Harman strongly maintained that binocular vision in the individual and in man as one of the higher animals was of recent date. Comparative anatomy had shown that lately developed organs and faculties were those most easily lost under adverse circumstances and in some subjects almost trifling errors of refraction or opacities in the media easily destroyed the recently acquired binocular vision.

Dr. R. A. REEVE (Toronto) said he had been surprised and gratified to find at what an early age correcting glasses would be tolerated and worn. He had never used them before 2 years but frequently before 3 years. He thought it much better to operate on both eyes rather than to do too much on one and not to interfere before 6 years of age. Owing to risk of maladjustment he preferred to advance by the tucking operation of the late Dr. Noyes.

Mr. GRAINGER (Chester) in speaking of the operation of advancement was strongly in favour of an operation in which the muscle was sutured without removing any part of it. He divided the tendon sufficiently far from the scleral attachment so as to leave enough to stitch the divided end of muscle to, the cut muscle being drawn forward over the attached piece of tendon.

Dr. DARIER (Paris) said that the operation for strabismus had both scientific as well as aesthetic bearings. The vision had if possible to be restored in the amblyopic eye as well as the eye put straight. Simple tenotomy carefully performed was a good operation in slight cases which might be done in both eyes if the effect of the first was not sufficient. If too much was done, the caruncle sank, and a divergence was produced. Advancement of the muscle was the most effective and reliable operation, and in the majority of cases it should be combined with tenotomy, as this gave greater effect and was not so liable to produce enophthalmos. He quite agreed with Mr. Worth in his view that amblyopia was developed in squinting eyes, and that they were not defective from the beginning. He commonly used atropine to the fixing eye in young children up to the time spectacles could be worn. He thought orthoptic training profitable in children over 4 or 5 years of age.

The PRESIDENT highly congratulated Mr. Worth on his excellent results. He thought a single tenotomy was in many cases a most useful operation, and far less complicated than advancement.

Mr. Lister asked whether the operations done by Mr. Hartridge and Mr. Worth were done under anaesthetics. He thought that the results obtained under cocaine anaesthesia were excellent, but not so when a general anaesthetic was used.

Mr. Hartridge, in reply, said that general anaesthetics were necessary in young children.

Mr. Worth said that in cases in which he had been able to train the fusion sense he had no hesitation in resorting to operation at any age, because the trained fusion sense could be relied upon to do the fine adjustment; but in cases in which binocular vision was out of the question he never operated until he was able to do so under cocaine.

FIXATION OF THE EYE DURING OPERATION.

By J. Tatham Thompson, M.B.

[Abstract.]

The writer, after calling attention to the difficulties often met in controlling involuntary movements of the eye during operation, pointed out that the position of rest of the eye in general anaesthesia is upward, and that the upward direction is the one that the eye almost invariably assumes when a speculum is in use, and the eye seeks protection from the coming contact of an instrument. There is then a struggle between the upward muscular pull and the downward torsion of the fixation forceps, and the result is a great tendency to gaping of the corneal incision when completed.

The method that he had found most successful was in the application of the double silk sutures passed through the subconjunctival tissues, about 2 millimetres from the corneal margin in the horizontal meridian on either side. These were manipulated by an assistant, and by these means both upward and lateral movements could be controlled without the same tendency to gaping of the corneal incision.

AN OPERATION FOR PTOSIS.

By H. Collen Ensor, M.R.C.S.,

Ophthalmic Surgeon, Cardiff Infirmary.

[Abstract.]

The following operation was devised and performed by Mr. Ensor on a case of complete unilateral ptosis. The patient was a girl, aged 9. The eyebrow was shaved and slightly raised, and an incision was made down to the periosteum covering the supraorbital ridge from the internal to the external angular process. A second incision was made through the skin only from the extremities of the former incision and below it, so that a portion of the skin, about 5 mm. broad at the inner side, and 7 mm. at the outer side, could be removed with scissors, as here the skin was more abundant, and the occipito-frontalis did not act so powerfully. Pacquelin's cautery was then applied to burn the tissues at the upper part of the wound, thus charring the tissues to the bone along its whole extent, the orbicularis palpebrarum was also burnt so as to weaken the muscle. The wound was then dressed and allowed to granulate, and it healed in three weeks.

In order to produce a little more effect the operation was practically repeated later on, and the result was excellent. This operation secured the following results:

1. The appearance is far more symmetrical than when one eyebrow was much higher than the other.
2. The hiding of the scar by placing it immediately below the hair of the eyebrow.
3. The formation of a fixed groove under the eyebrow instead of the appearance of vertical bands produced by the constant action of the occipito-frontalis muscle.

PRELIMINARY NOTE ON THE PATHOLOGY AND DIAGNOSIS OF SPRING CATARRH.

By Major H. Herbert, I.M.S.

[Abstract.]

This report deals only with spring catarrh observed in natives of India, and possibly the tissue changes may be more advanced than in those living in temperate climates.

The most noticeable change is the remarkable infiltration of the affected tissues both ocular and palpebral with eosinophile leucocytes. By fixing with mercury these cells are at once seen to be eosinophiles, and the greater the infiltration of cells the greater is the proportion of these special corpuscles. This infiltration is very rare, and the only other place in which he was aware of its occurrence was in some cases of pemphigus of the skin. The infiltration is only very marked in the more irritable stage of the affection. There is ordinarily very little exudation in spring catarrh, but it is quickly induced by slight irritation of the surface. Thus if the lid is everted for examination it will be found that after a few minutes there is some exudation, and this if examined fresh under the microscope will be found to be full of eosinophiles. This is a most important point in the diagnosis.

Sections of the limbus show breaches in the epithelium as well as minute vesicles situated in the epithelial layer and these containing eosinophiles and other wandering cells. The contents of these vesicles, as well as the bare spots, stain to some extent with fluorescine and are then readily visible clinically.

In six cases in which Major Herbert had examined the blood there was an increase of from 10 to 20 per cent. of the total leucocyte count. This is not uncommonly in natives due to nematode worms in the intestine. Ordinary inflammatory exudation contains very few eosinophiles, and one may fail to see them at all in a smear preparation, but they may be seen in large numbers in the pus thrown out around the guinea worm.

Finally, in some sections stained with polychrome methylene blue there are intracellular bodies which may possibly be parasites.

FURTHER NOTE ON THE SUPERFICIAL PUNCTATE KERATITIS OF BOMBAY.

By Major Herbert, I.M.S.

[Abstract.]

A paper was read on this subject two years ago by the author at the annual meeting of the British Medical Association, and since then Major Herbert has had an opportunity of its further study. It is of constant occurrence in Bombay, and is never entirely absent. It was most prevalent in the warm weather at the close of the rainy seasons. There was a widespread epidemic in the autumn of 1901, in which year the rains ended unusually early, and in October of that year these cases formed one-fourth of the total out-patient attendance.

The clinical features have already been described, but the fluorescine stained dots on the cornea may not be found in the first two or three days of the affection. The typical appearance of the conjunctiva with a mere trace of ciliary injection suggests the nature of the affection if the disease be prevalent.

He had been unable to learn much about the encapsuled bacillus found in this condition, owing to its feeble staining powers and to its inability to grow on the ordinary media. Gram's method stains it better than any other, though there may be a considerable unstained area at one end of the capsule, and this end is broader than the rest. A few apparently empty capsules may be found.

MODIFIED MULES'S GLASS BALL FOR USE AFTER REMOVAL OF THE EYE.

By Adolph Bronner, M.D.,

Senior Surgeon, Bradford Eye and Ear Hospital; Laryngologist, Bradford Royal Infirmary.

In late years numerous suggestions have been made to modify the ordinary methods of enucleation in order to improve the movements of the artificial eye, and to make it look as prominent as the other eye.

We are indebted to Mules for the simple and ingenious idea of eviscerating the eye, and then placing a glass ball into the scleral cavity. Frost recommends that the ball be placed in Tenon's capsule, after removal of the eyeball. The method I formerly adopted was to enucleate the eye, insert a glass ball into Tenon's capsule, then tie the four recti muscles over it, and cover it with subconjunctival tissue and then with conjunctiva.

In many cases, however, the ball did not remain *in situ*, but (probably owing to the pressure of the upper lid) it worked its way upwards and outwards, and was therefore not of much use. Messrs. Weiss have made for me a Mules ball, with a hole through the middle, which is covered in with glass, so as to keep the ball air and water tight.

I now operate in the following manner. A catgut suture is passed through and tied on to each of the tendons of the four recti muscles. The eye is then removed. The glass ball is introduced into Tenon's capsule, a thick silk suture is passed

through the centre with a needle attached to either end. The superior and inferior, also the external and internal recti muscles, are then tied together over the ball. Three or four catgut sutures are put through the subconjunctival tissue above, below, and over the ball, and tied together in a vertical line. The needles attached to the end of the silk suture of the glass ball are passed through either side of the subconjunctival tissue. Four sutures are then put through the conjunctiva on either side of and over the ball, and united in a horizontal line. The ends of the suture of the glass ball are not covered in by the conjunctiva, but are allowed to hang out at the outer and inner ends of the line of suture. They are then loosely tied together over the sutures so as to keep the glass ball *in situ*. The silk suture is not removed for five or six weeks, so as to give the parts time to become thoroughly organized and hardened.

The few cases in which I have adopted this method of treatment have done very well. The artificial eye had a fair amount of lateral movement, and appeared to be nearly as prominent as the other eye. The glass ball remained *in situ*, and did not become displaced. In one case the subconjunctival stitches gave way and the ball came out.

KNEE-JERK PHENOMENON IN INTERSTITIAL KERATITIS.

(CONGENITAL SYPHILIS, WITH A SCHEME FOR STANDARDIZING THE VARIATIONS IN THE PHENOMENON).

By N. BISHOP HARMAN, M.A., M.B.Cantab., F.R.C.S.

[ABSTRACT.]

IN the *Ophthalmic Hospital Reports*, vol. xii, 1888, Messrs. Lang and Casey Wood gave the results of their examination of the knee-jerk in cases of interstitial keratitis, the result of congenital syphilis, and they came to the conclusion that they were absent or much diminished.

The method Mr. Harman adopted to test this was to make the patient sit down in a chair with both feet on the ground, he was then told to look at and point with both hands to a spot in the ceiling, and while doing this the tendon was tapped with the sharp edge of a piece of millboard, while the extensors of the knee were grasped in the other hand of the operator. The result was judged mainly by the feel.

In all, 100 cases were examined, and as a comparison he had examined an equal number of healthy individuals of about the same age, etc., as those suffering from interstitial keratitis. This was the result:

State.	Absent.	Re-inforced.	Sub-normal.	Normal.	Brisk.	Exaggerated.
Disease ...	1	4	3	75	12	5
Health ...	1	4	8	74	11	2

This showed that there was practically no difference between the healthy and diseased. The reaction was much steadier in males than in females.

Mr. DOYNE said he had himself recently examined 30 cases. In all cases the knee-jerk was present, though in few it was diminished.

Mr. BEAUMONT said that in 15 cases he had examined he had found the knee-jerks present.

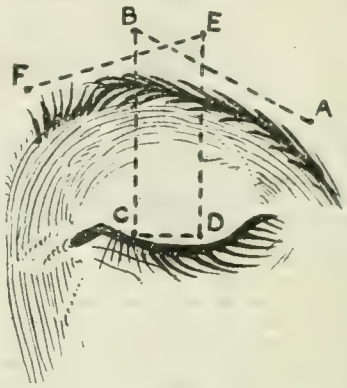
AN IMPROVED OPERATION FOR THE RELIEF OF PTOSIS.

By N. BISHOP HARMAN, M.A., M.B.Cantab., F.R.C.S.

[ABSTRACT.]

THE operation here described is a modification of the method adopted by Mules, in which he inserts a wire into the lid and makes this fast to the frontalis muscle, and leaves it permanently *in situ*. This has the disadvantage that if bent too acutely it may break, and it is necessary to split the free edge of the lid so that a groove may be formed for the loop, and this may injure the hair follicles. The buried knots above the brow may cause irritation, and the lid cannot be everted except with the risk of breaking the suture, and finally, a wire never becomes part and parcel of the body and is always liable to expulsion.

These difficulties may be overcome by substituting a fine chain for a wire. The chain used is known as "wove chain"; it is fine and delicate, and will sustain a weight of 15 lb. before breaking. The chain is inserted by the aid of a 4-in. abdominal needle with a triangular cutting edge. The needle is inserted above the external angular process, and passed up and in deeply beneath the tissues of the forehead, and is withdrawn rather to the inner side of the middle of the lid; the needle is inserted again at the same point and passed straight downwards through the lid to within a short distance of the lid margin, again inserted here, passed horizontally along the lid margin, and again brought out. Reinserted at the same point and passed upwards parallel to the other vertical limb, and brought out above the eyebrow, and finally inserted at the same spot, and withdrawn close above the internal angular process. The chain is thus completely buried and evenly stretched. Lastly, by traction on the free ends the lid can be raised to the desired degree and the free ends cut off and buried. Thus:



A COLOUR VISION COMMITTEE.

DR. EDRIDGE-GREEN moved the resolution standing in his name:

That the Council be requested to give effect to the resolution passed by this Section last year that a Colour Vision Committee be appointed to recommend an efficient test for colour blindness.

He pointed out that the official tests were inefficient, in that several varieties of colour blindness escaped detection by them, and in addition a great many normal-sighted persons were rejected. The appointment of a Committee bound no one to anything beyond investigation of the subject. This was seconded by Mr. BEAUMONT and passed unanimously.

REVIEWS.

SOME TEXTBOOKS OF MEDICINE.

TEXTBOOKS of medicine appear with somewhat alarming rapidity; most of them claim in some way or another to fill a gap, but of very few can the reviewer honestly state that they are in his opinion really so adapted. Dr. MONRO'S[1] manual seems to us, however, a work of more than ordinary value. It confesses to being primarily intended for students, and it is to them that we would particularly recommend it. Its size has necessitated condensation and its object does not require originality of treatment; the book is, in other words, a summary of the modern practice of medicine, and as such it is on the whole excellent. A remarkable amount of information is compressed within reasonable limits, and the work comes well out of all the tests we have applied to its accuracy. As is only to be expected the account of treatment is inferior to the descriptions given of those parts of the subject which are more profitable in examinations, and in this department we do not find Dr. Monro invariably sound, as, for instance, in his recommendation of the salicylates in arthritis deformans, or, as he still prefers to call it, rheumatoid arthritis. Nor are we inclined to agree entirely with his account of the causes of rickets, in which there is no mention of over-lactation. The purist, too, might well object to such words as calvarium and polyarticular. The book is excellently presented in the same series as Rose and Carless's *Manual of Surgery*, and deserves to find many readers as a useful help during the anxious period before the final examinations.

[1] *Manual of Medicine*. By Thomas Kirkpatrick Monro, M.A., M.D., Fellow of and Examiner to the Faculty of Physicians and Surgeons, Glasgow; Physician to Glasgow Royal Infirmary, and Professor of Medicine in St. Mungo's College. London: Bailliere, Tindall and Cox. 1903. (Demy 8vo, pp. 921; 39 illustrations. 15s.)

It is perhaps inevitable to compare the latest exemplar of German medical science, *Nothnagel's Encyclopaedia of Practical Medicine*, with Ziemssen's famous *Encyclopaedia*, which did so much to establish the supremacy of German medicine a generation ago, and it is impossible to feel that the comparison is altogether favourable to the newcomer. Apart from the solid merits of the text, about which we shall have something to say hereafter, the English reader cannot help being repelled by the grating style in which the translation of the volume on *Diseases of the Stomach*[2] is presented, while his eyes will be offended by the eccentricities of spelling affected by the transatlantic printers. We read of "smaragd green" for "emerald green," "dull" for "blunt"—for example, "a dull spoon" (p. 181), "a dull stomach tube" (p. 63); while "will" generally replaces "shall." On page 268 the words "thin" and "thick" are curiously confounded. "Professor Ewald used a *thick* rubber tube" to cover the wire of a stomach electrode, but a few lines lower down we are told that "Rosenheim, like Ewald, uses a *thin* stomach tube." In the second sentence "thin" is evidently used in the sense of slender, while in the first "thick" refers to the walls of the tube, but both adjectives are applied to the same instrument, which is both thick and thin! No rule seems to be followed in dealing with nouns of multitude, which sometimes are followed by the verb in the singular, at others in the plural. On page 221 we read "per orem," but this is no doubt a slip, as elsewhere "per os" is employed. To leave the translation and pass to the subject matter, Professor Riegel has given an adequate account of diseases of the stomach, although no one could call it either brilliant in style or original in thought. As might be expected, the volume commences with an account of the modern methods of stomach examination. The author points out that a good deal of time may be wasted upon the determination of the total amount of hydrochloric acid in the stomach contents without obtaining any practical information of proportional value. As he says, the hydrochloric acid question is not so important as it was thought to be a few years ago, and at present the position, size, and motility of the stomach justly claim greater attention. For the determination of its position and size he recognizes the great advantage of inflating with CO_2, the value of the method consisting not only in determining the lower boundary of the stomach, but in delineating its form and position and establishing the presence or absence of tumours connected with it. He adds: "Personally I have never seen any disagreeable consequences or any symptoms whatever, although I have performed inflations almost daily for many years," an experience which we can endorse. The general chapter on diet is somewhat unnecessary, as the same information has to be repeated under each separate disease, while it contains no facts which have not been published repeatedly. A good many of the statements seem to be made without much consideration. For example, aleuronat flour is said to be a very suitable article of food for dyspeptics, but in England we find it as difficult to cook as so much sand, and it can only be made into articles of food by mixing it with a considerable quantity of ordinary flour, nor do we see why dried gluten should be thought specially digestible. On the same page the author praises Valentin's meat juice as being comparatively cheap: by which we understand him to mean that it is cheaper than expressed meat juice from fresh meat, but unless it is supplied at a lower price in Germany than it is here we doubt if this is the case. On the next page, speaking of vegetables, we are told that "roots and bulbs are usually devoid of much nutritive value," but we had always supposed starch and sugar, of which bulbs and roots contain a considerable quantity, to be of great nutritive value. A little lower down veal is said to be a readily digestible meat, although Beaumont's table places veal very low in the list of digestible substances. No doubt Beaumont's results have been somewhat modified by Gigglberger, but even according to the latter roast veal is not more digestible than roast beef, and is less so than roast mutton. The American editor protests, his experience being that veal is not the digestible meat that Germans believe it to be. We must also express surprise at learning that "every stomach case will tolerate considerable quantities of butter if given with cakes or fine white bread," for butter in "considerable quantities" is very apt to cause intense gastric irritation, and many dyspeptic patients are obliged to abstain from it altogether. The author is a believer in the value of nutritive enemata, but he does not recognize the necessity for making them in a complicated manner, and recommends a mixture of milk and eggs, with a small quantity of salt and one or two teaspoonfuls of red wine. He is emphatic with regard to the addition of salt, as Huber found that it greatly increased absorption, and this conclusion was supported by Greutzner. The dictum that champagne must be considered a beverage that is in general unsuited to the stomach is too sweeping, for good champagne is of all alcoholic beverages the one most easily tolerated by the stomach. Nor do we agree that coffee does not suit cases of stomach disease as well as tea, and that the latter is always preferable; we can only assume in explanation that the author's acquaintance with the use of tea is limited to the classes who use it in very small quantities and employ only the finer qualities; if he were in the habit of dealing with a population drinking coarse Indian or Ceylon tea, he would find it to be a very common cause of gastric disturbance. On the other hand, in this country coffee rarely appears as a cause of stomach trouble, probably for reasons very similar to those which explain the innocence of tea in Germany. On page 221 the effects of tobacco are spoken of with some hesitation, although the general rule is laid down that patients with any stomach disease should smoke as little as possible; but on page 303 the author definitely asserts that attacks of hyperchlorhydria occur acutely after the excessive use of tobacco, even in persons accustomed to smoke continuously. Alkalies are accepted as a means of counteracting hyperacidity, but their value as a means of stimulating the gastric secretion is denied. In support of this view we may recall the results of Pawlow's experiments, which show that alkalies have a distinctly inhibitory effect upon the gastric glands. He thinks the administration of pepsin is rarely indicated, but papaine may be tried where hydrochloric acid is absent. This statement is theoretically true, but we have yet to see a preparation of papaine which will keep a reasonable time without losing its digestive action. Cases in which the salivary secretion is deficient are held to be exceedingly rare, and the utility of adding diastatic ferments to the food is not admitted. We are glad to see that washing out of the stomach is recommended to be done at night, three hours after the last meal. It may be an inconvenient time if the practitioner has to do it, but the patient may be taught to perform it for himself, or a nurse can do it. The utility of the operation is greatly diminished if it is performed when food has to be taken again almost immediately, as the stomach gets no rest, instead of being thoroughly cleansed and remaining empty and undisturbed for ten or twelve hours. With regard to electricity and its various applications to the treatment of diseases of the stomach it is satisfactory to be told that "the general practitioner can get along without it, or, at all events, he can treat his patients by other methods which are just as effective." This coincides with our own opinion, but it is not that of the American editor, who appends a note advocating the intragastric method of Einhorn. In the chapter on ectasy the author contends that it means permanent enlargement of the stomach. We have seen cases recover after a few days' rest which we should not know how to describe except as ectasy or dilatation, nor could we have foretold the result of treatment by any distinctive sign or symptom; all we can say is that there is a better chance of recovery taking place where the patient is young and the general condition good. In the etiology of primary dilatation insufficient stress seems to be laid upon neurasthenia as a cause. We are glad to see that the author repudiates the suggestion that malposition of the stomach or gastroptosis is a cause of the nervous and hysterical symptoms, and recognizes that when they occur they are, like the condition of the stomach, dependent upon the state of the nervous system. The doctrine that the use of the stomach tube is necessary for the diagnosis of gastric ulcer or that it is free from danger cannot be accepted: if it were true that hyperacidity constituted trustworthy evidence of ulceration, it might be worth while to pass the tube, but unfortunately this is not the case. Hyperacidity may be present in chlorosis, and it is precisely in this disease when complicated by gastralgia that the clinical picture of gastric ulcer is so closely simulated. Professor Riegel does not seem to appreciate clearly the form of gastralgia met with in chlorosis, and which was so well described by Professor Leube in the seventh volume of Ziemssen's *Encyclopaedia*. With respect to

[2] *Nothnagel's Encyclopaedia of Practical Medicine. Diseases of the Stomach.* By F. Riegel. Edited by C. G. Stockton, M.D. Authorized Translation under Editorial Supervision of A. Stengel, M.D. Philadelphia, New York, and London: W. B. Saunders and Co. 1903. (Roy. 8vo, pp. 835 21s.)

the treatment of ulcer, Professor Riegel commends Donkin's plan of keeping the patient fed by the rectum for as long as twenty-three days, and says that he does this not only in old and chronic cases, but also in recent ones, yet when he comes to describe his treatment in detail he says he keeps up rectal feeding only for six or eight days. Probably all would agree that after a recent haemorrhage the stomach had better be kept at rest, and nutritive enemata relied on for at least 48 hours, but after that the administration of liquid food, for example milk, by the mouth may be resumed, and experience has abundantly shown that patients so fed suffer no pain and rapidly get well. The treatment of cases of gastric ulcer does not ordinarily present any difficulty, and rectal feeding can only be justified by being shown to fulfil some condition in which the ordinary mode of feeding fails. Another point in which we do not agree with our author is in his want of confidence in milk. He says: "Unfortunately patients cannot be kept on a pure milk diet for a long period of time because the demands of the body cannot be satisfied by milk alone. The administration of milk diet is essentially a hunger cure, and causes the patient to lose considerable tissue." We do not find that patients lose "considerable tissue" on milk diet, but it is not clear what is meant by "a long time." Two or three weeks at most are required for the milk cure in the case of gastric ulcer, after that time the patient can begin to take ordinary food. Again, we dissent from the injunction that "coffee should never be allowed in ulcer, tea may be given." We cannot find either in the text, the index, or the table of contents any reference to flatulence and its causes, except a short section on fermentation which by no means deals with it adequately.

Another volume of *Nothnagel's Encyclopaedia*[3] contains an account of the diseases of the pancreas by Dr. L. Osler, of Vienna; diseases of the suprarenal capsule by Dr. E. Neusser, also of Vienna; and diseases of the liver by Drs. H. Quincke and G. Hoppe-Seyler. The section on diseases of the pancreas is very good and complete, and gives a better account of such conditions as acute haemorrhagic pancreatitis and pancreatic cysts than is to be found in any other publication with which we are acquainted. The chapter on the suprarenal capsules is short, but contains a great deal of information closely packed, and is quite brought up to date. On the other hand, we have experienced some disappointment in reading the pages devoted to diseases of the liver. Quincke seems to ignore much that has been written in France and Italy upon this subject, and although his omissions have been to some extent supplied by the American editors, the account remains incomplete. Hoppe-Seyler has contributed a very interesting historical account of gall stones, which appear not to have been described until the sixteenth century, when they were first mentioned by Antonius Benivenius, who died in 1592. The author traces the various references to them up to the beginning of the last century. He is perhaps rather summary in his reference to the surgery of the gall bladder, and fails to give sufficient credit to the late Mr. Lawson Tait for his early work in this direction. It is in the article on cirrhosis that Quincke's deficiencies are most marked. He scarcely admits the existence of any other cause but alcohol, or any other clinical type but the classical disease. He is opposed to early paracentesis, and he seems to have paid little attention to the efforts of modern surgery to relieve the ascites; however, in the latter respect the omissions are supplied by the American editor. We desire to add that the editing of this volume compares very favourably with that on *Diseases of the Stomach*. It is written in good English, and is free from the faults which disfigure the other.

The thirteenth and last volume of the *Encyclopaedia Medica*[4] happens to be one of the more interesting and valuable of the series, although there are included in the list of its principal articles one on the umbilicus and one on the uvula by a well-known laryngologist. The most attractive contribution is that from the pen of Mrs. Garrett Anderson on the subject of vaccination. It is uncommonly bright and interesting in its historical survey; it is cogent in its scientific reasoning and statement of fact; and its practical suggestions for improvements in the future, although not specially novel, are full of hope and promise. The four following points are offered by way of such suggestion:

> The administration of the Vaccination Act should be put into the hands of the local authority responsible for public health.
>
> Revaccination at school age should be made obligatory, subject to the conscientious objector clause, as in primary vaccination.
>
> An adequate supply of trustworthy lymph should be provided from Government laboratories, and private practitioners should be able to buy it.
>
> "Efficient vaccination" should be legally defined, and every certificate of vaccination should show if the vaccination has been efficient, or the reverse, and its date.

Among other important papers are the following: One on uraemia by Dr. Nestor Tirard; on uric acid by Professor T. H. Milroy of Belfast; on the general examination of the urine, by Dr. A. E. Garrod; on visceral pain by Dr. James Mackenzie, of Burnley, on vital statistics, by Dr. Arthur Newsholme; on water, by Dr. J. C. Thresh; on wry-neck, by Mr. Edmund Owen, and on the *x*-rays by Dr. Dawson Turner. A valuable series of articles on affections of the uterus are contributed by Dr. A. E. Giles, Dr. N. T. Brewis, Dr. W. Fordyce, Mrs. Scharlieb, and Mr. Bland-Sutton. Two tropical subjects, yellow fever and plague, are discussed by Dr. Andrew Davidson and Dr. T. S. Low, late medical officer on plague duty in Cape Colony, the latter presumably writing in place of Sir Thomas Fraser, President of the Indian Plague Commission. Considered as a whole, this *Enclyclopaedia* must be held to be somewhat unequal in merit (as perhaps was inevitable from the arbitrary character of its arrangement), but we have no hesitation in saying that it must prove a practical helpful *vademecum* for the busy medical practitioner.

Dr. BEVERLEY ROBINSON of New York has published in book form a series of papers that have appeared at various times in the *American Journal of the Medical Sciences*, under the title of *Essays on Clinical Medicine*,[5] which many practising physicians would, we believe, be glad to have on their shelves. One is on cirrhosis of the liver, three are wise and useful papers on the treatment of certain kinds of cough, on certain uraemic symptoms, and the treatment of consumption with creosote. Except that the author attaches too great importance, perhaps, to particular drugs, these therapeutical papers are excellent. Seven out of the eleven papers are on subjects connected with heart disease. They are all good, but that which arrests attention most is one on prognosis in heart disease. Of its discriminating tenour the following sentence may be taken as a sample.

> It is probable in many instances that the mere presence of organic heart disease does not materially shorten life or interfere notably with its reasonable enjoyments or with the fulfilment of one's duties or responsibilities.

The book is full of good points and calm reasoning. A mere enumeration of some of the other articles of the series will indicate the nature of all sufficiently well; the following are the more important: Minor Forms of Cardiac Dilatation, Clinical Study of Acute Myocarditis, Chronic Myocarditis and Fatty Degeneration of the Heart, Tuberculous Pericarditis, followed by Remarks upon Paracentesis and Incision.

The first volume of the thirteenth series of *International Clinics*[6] for 1903, although containing several articles of real interest, does not appear to contain any of great importance. Among the more noteworthy is one on aneurysm of the descending thoracic aorta by Dr. William Osler; on the treatment of chronic urethritis, by Professor Ernst Finger of Vienna; on pyloric obstruction, gastric dilatation, and gastric stagnation, by Dr. Max Einhorn; on bilateral resection of the cervical sympathetic in exopthalmic goitre, in which a degree of lasting relief almost tantamount to cure is recorded in four cases, and one on the general principles of embryology, by Dr. J. W. Ballantyne. The section entitled Progress of Medicine is not of great excellence; it may not only be described as too curt in its constituent parts, but those parts are hardly well selected, and are not always accurate; thus the experience in choledochotomy of A. W. Mayo Robinson (*sic*) is referred to.

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[3] *Nothnagel's Encyclopaedia of Practical Medicine. Diseases of the Liver, Pancreas, and Suprarenal Capsules.* Edited by R. H. Fitz, M.D., and F. A. Packard, M.D. Authorized translation under editorial supervision of A. Stengel, M.D. Philadelphia, New York, and London: W. B. Saunders and Company. 1903. (Roy. 8vo, pp. 918. 21s.)

[4] *Encyclopaedia Medica.* Under the general editorship of Chalmers Watson, M.B., F.R.C.P.E. Volume XIII. Ulceration to Zinc Poisoning. Edinburgh: Wm. Green and Sons. 1903. (Royal 8vo, pp. 590. 25s.)

[5] *Essays on Clinical Medicine.* By Beverley Robinson, A.M., M.D. Philadelphia: William J. Dornan. 1903. (Demy 8vo, pp. 171.)

[6] *International Clinics.* Edited by A. O. J. Kelly, A.M., M.D. Thirteenth Series. Vol. i. London: J. B. Lippincott Co. 1903. (Demy 8vo, pp. 314. 10s. 6d.)

OBSTETRICS AND GYNAECOLOGY.

During the last generation a great change has come over the teachers of midwifery in most of the medical schools of the world. Formerly a knowledge of how best to bring a child, living or mutilated, into the world through the natural passage was supposed to be his essential qualification. The obstetric teacher then thought it his business to acquaint himself with the observations of the great accoucheurs of the past. But at the present day histology and surgery seem to be considered the appropriate training for a teacher of midwifery. Judged by this test, no fitter person than Dr. Whitridge Williams[7] to be made an obstetric teacher could be found in either hemisphere. Were his knowledge of clinical midwifery equal to his acquaintance with histology and bacteriology he would have produced an epoch-making work. Retroversion of the gravid uterus is an important and not uncommon condition. The author does not mention that in the great majority of cases of incarceration of the retroverted gravid uterus, if the bladder is kept empty and the patient recumbent, the uterus will spontaneously rise. Sacculation of the pregnant uterus is described, but, the author says, "serious difficulties are to be expected at the time of labour." In another place he says, speaking of this condition, "spontaneous labour is out of the question." This is not the fact, for natural delivery has taken place in every case in which the process has been permitted by the accoucheur in attendance to do so. Dr. Whitridge Williams thinks that better results will be attained by laparotomy than by other methods of treatment. Before deciding on so grave a measure as laparotomy, the practitioner surely ought to have present to his mind the facts that if he keeps his patient in bed and her bladder empty her uterus will probably go up; and that if it does not, provided retention of urine is relieved, she may go to term and be safely delivered. We therefore regard the omissions we have pointed out as very serious ones. We have hinted that the author is greater as a histologist and a surgeon than as an accoucheur. In further illustration we may point to Chapter XXXI, on Dystocia due to Anomalies of the Expulsive Forces, in which there is no clear description of tonic contraction of the uterus, although there are sentences which show that the author has some knowledge of it. The reason is evident, for when we turn to the bibliography at the end of the chapter we find no mention of the classical paper of Braxton Hicks, On the Condition of the Uterus in Obstructed Labour, a paper which no one who teaches midwifery should omit to study, for it is the foundation of sound knowledge on the subject. It is easily accessible, having recently been wisely reprinted by the New Sydenham Society. Like many American writers on obstetrics, Dr. Whitridge Williams has never used Ramsbotham's decapitating hook. He recommends the comparatively inefficient decollator of Braune, which, apparently, he has used, and found scissors necessary to complete the operation. We trust he will pardon our suggesting to him to try Ramsbotham's hook, made and used as Ramsbotham advised. With it he will find he can cut through the neck in a time measurable by seconds, and he will not need to finish the operation with scissors. The student is told that sexual intercourse during the last month of pregnancy should be positively forbidden, as the author knows of at least one case "in which a severe puerperal infection has followed coitus during that period." It can only be by a very rigid method of exclusion that this common physiological act can be held responsible for such an effect—so rigid a method that we cannot conceive it practicable. Extrauterine pregnancy is a subject full of interest to the histologist and the surgeon. Dr. Whitridge Williams is both, and therefore he has given us an excellent account of the subject. His conclusion as to its etiology is "that there is no universal cause." "As a rule the history of the patient and a study of the specimen will afford a satisfactory explanation for its occurrence; but in not a few instances the underlying cause will remain as great a problem to us as to our predecessors." He estimates that about three-fourths of tubal pregnancies end in tubal abortion, about one-fourth in tubal rupture—a proportion of tubal abortions to ruptures much greater than was believed some years ago; and we think that the tendency is now to think tubal abortion yet more frequent. He differs widely from Lawson Tait in his estimate of the frequency of broad-ligament pregnancy. He has found this condition only once in fifty specimens of extrauterine pregnancy which he has examined. The treatment which Dr. Whitridge Williams recommends is abdominal section, if the condition is diagnosed or reasonably suspected before rupture or abortion, or if rupture followed by large intra-peritoneal haemorrhage has taken place. Expectant treatment if a pelvic haematocele has been formed, with vaginal incision if increase in size or symptoms of suppuration arise. In discussing the treatment in the later months Dr. Whitridge Williams makes one statement, upon which he bases his therapeutic advice, and which we think requires to be substantiated. He says, "Whatever the anatomical conditions, the mother is constantly exposed to the possibility of sudden and acute haemorrhage so long as pregnancy continues." The only justification which we find preceding this statement is the following (p. 551):—"In a small number of cases of broad-ligament pregnancy, secondary rupture into the peritoneal cavity may occur at a later period, and the patient may bleed to death." Now broad-ligament pregnancies, according to our author, only form about one-fiftieth of the whole, and in this fiftieth it is only in a small number that internal haemorrhage occurs. Nevertheless, it is on this very small danger of internal haemorrhage that the author bases the advice that "prompt laparotomy is the only conservative treatment." The best operative results show a death-rate of 31 per cent. The risk of waiting seems to us, on Dr. Whitridge Williams's own showing, far less than the risk of operation; so much less, indeed, as to make us suspect that we have misunderstood him, but we cannot read any other meaning into his words. With this exception the article appears to us an admirable summary of our knowledge. Dr. Whitridge Williams does not think that symphysiotomy has any great future before it; he expects Caesarean section to supplement it. He is not acquainted with the subcutaneous method of performing the operation; he quotes a method which we can from experience say is impracticable. He regards symphysiotomy as a very serious operation, not to be lightly undertaken. Nor is he in favour of the induction of premature labour. Caesarean section, he says, "would effect the saving of nearly all the children; whereas, by the induction of premature labour a much smaller number will be brought into the world alive, *many of whom are doomed to certain death or to lifelong afflictions*" (p. 343). The clause we have italicized applies to all children, however delivered, prematurely, or at full term. The mortality of premature children during the first two months of life, is, of course, higher than that of children born at full term. But is there a particle of evidence to show that the lot of those premature children who survive the first two months of their independent existence is any worse than that of children born at full term? We know of none: and believe that the statement of Dr. Whitridge Williams is without foundation in fact. The parts of the work which relate to bacteriology and antisepsis are excellent. The different kinds of fever in childbed are classified, not in clinical groups, but according to the organisms which may produce such fever. It may be questioned whether our knowledge of the different microbes and their effects is yet exact enough to make bacteriological diagnosis of great clinical utility in this kind of disease; but it is the method of the future, and its adoption in a textbook is a distinct step in advance. There is an excellent historical sketch of the evolution of the forceps. On the whole, the book is a most interesting and excellent treatise on its subject. It is throughout original, and originality implies inequality. The illustrations are admirable, and are nearly all new. The work can be recommended for careful study by every person who wishes to keep himself abreast of present knowledge. Although we have felt bound to indicate what we take to be faults, yet we are sure that no accoucheur can read the book without profit.

We observed in our notice of the first edition of Dr. Herman's *Diseases of Women*[8] that it showed much originality of treatment, comprising the advantages of a systematic textbook with those of a general clinical treatise like the *Clinical Lectures* of the late Dr. Matthews Duncan. Dr. Herman did not prepare his book until he had enjoyed many years' experience. The student is apt to be wearied by the monotonous

[7] *Obstetrics: a Textbook for the Use of Students and Practitioners.* By J. Whitridge Williams, Professor of Obstetrics, Johns Hopkins University, etc. New York and London: D. Appleton and Company. 1903. (Demy 8vo, pp. 845, 8 coloured plates, 630 illustrations. 25s.)

[8] *Diseases of Women: A Clinical Guide to their Diagnosis and Treatment.* By George Ernest Herman, M.B.Lond., F.R.C.P., Obstetric Physician to and Lecturer on Midwifery at the London Hospital, etc. Revised Edition. London: Cassell and Co. 1903. (Demy 8vo, pp. 900; 250 illustrations. 25s.)

uniformity of a textbook, which is also apt to lead him into vicious methods of investigating his cases, whilst collections of clinical reports are for opposite reasons unsuited to the learner. Dr. Herman knew how to eliminate or neutralize the evils, in an educational sense, both of systematic works and of the chronicles of the sick room. The revised edition contains little or nothing that is new. It is not enlarged, and in this the author has been wise, for too often new editions of popular works grow bulky. Above all, the evil example of filling the pages with "my results" in major operations is studiously shunned by Dr. Herman. Again, new ideas, discoveries, and operative methods may deserve the consideration of the expert yet be quite unsuitable to submit to the learner, who cannot judge such matters. Most of Dr. Herman's well-known views are maintained. He still teaches that deep interrupted sutures are best for the closure of the abdominal wound and objects to suture in layers; in this view many general surgeons agree; but he directs that the sutures should be removed on the sixth or seventh day; many surgeons consider that to ensure firm union they should not be disturbed for several days longer. His sound teaching on the treatment of uterine fibroids is unchanged, but he has modified his paragraphs on the operative treatment of those tumours. Myomectomy by enucleation is a dangerous operation to teach; nobody inexperienced in hysterectomy and ovariotomy should attempt it; the author is therefore right in pointing out its dangers, indeed, he might have used stronger terms. Dr. Herman describes Doyen's method of hysterectomy, but not without cautioning the student. His remarks on the fallacies of statistics of hysterectomy are as before, but a few recent researches by the advocates and opponents of operative treatment might have been noted, the same may be said of the passages on pelvic haematocele and extrauterine gestation. Dr. Herman still advocates the removal of the uterus as well when diseased appendages are taken away through the vagina, and under the circumstances to which he refers most authorities will agree with him. To cut off a pair of suppurating appendages and to leave in the peritoneal cavity two stumps, unhealthy tissue bearing ligatures which rapidly infect, is to court disaster. Dr. Herman is quite right to dwell on the possibility of hermaphroditism in cases of hernia of the "ovary"; indeed, he might have spoken even more forcibly. Neugebauer's statistics, which show how very often errors of sex have been detected at an operation for hernia in the adult should be borne in mind by the student and practitioner. The soundness and utility of *Diseases of Women* is unquestionable. It is eminently suited for the student, whether he be an unqualified youth preparing for examination or a qualified member of the profession who feels that he has forgotten his gynaecology. The new edition certainly supplied a want, as the former was out of print.

We reviewed the first edition of Professor DUDLEY'S *Principles and Practice of Gynecology*[9] in our issue of January 28th, 1899, p. 217. This, the third edition, contains about a hundred pages of new matter and many new illustrations. We may briefly epitomize the main features of the book. The author is, first and foremost, an operator. As a treatise on operative technique this book is altogether admirable, and should be well studied by every operating gynaecologist. The author has devised many small modifications of the commonly-practised operations, which may sometimes be found useful. The illustrations are excellent, and many of them new. For this reason the book is most valuable. But in other ways it is sadly behindhand. Lord Bacon said there were many with wits "far above mine own," who had been to the universities of Europe, and learnt "nothing there but to believe; first to believe that others know that which they know not, and after that themselves know that which they know not." Dr. Dudley, whether at a European or an American university, has learnt to "believe that others know that which they know not"—for instance, that gout, rheumatism, and lithomia cause pelvic disease; that repair of a split cervix can prevent tuberculosis; that lateral curvature of the spine causes menorrhagia; that anteflexion causes stenosis of the uterine canal and dilatation of the uterine cavity. Some of these statements have been shown to be untrue; others will be to general physicians incredible; and for none has the slightest evidence ever been brought forward. There are many tabular statements of the diagnostic points between different conditions which are faulty. Thus, for instance, no one nowadays in judging whether a tumour was ovarian would look for the so-called "facies ovariana," a term denoting an expression of suffering not produced until an ovarian tumour has existed longer than ought now to be allowed. The physical signs of pelvic cellulitis are not stated as they would be by one acquainted with the literature of the subject. Throughout the book the patriotic feeling of the author leads him to attribute to Americans, and claim as great improvements, many little things which gynaecologists on this side of the water have done without thinking it necessary to claim priority, and without supposing that they were making revolutionary changes.

[9] *The Principles and Practice of Gynecology*, for Students and Practitioners. By E. C. Dudley, A.M., M.D., Professor of Gynecology, North-Western Medical School; Gynæcologist to St. Luke's and Wesley Hospital, Chicago, etc. Third edition. London: Henry Kimpton. 1903. (Demy 8vo, pp. 701; 474 illustrations. 21s.)

TUMOURS.

THIS new edition of Mr. BLAND-SUTTON'S *Tumours Innocent and Malignant*[10] includes much that has been written by that authority since the previous issue was published. Thus we find an epitome of his opinions on fibroids complicating pregnancy. Turning to deciduoma, the reader will be somewhat surprised to discover that less than two pages are devoted to this subject; but the author, as an experienced teacher, evidently preferred not to dwell at length on unsettled details in association with this kind of new growth. Deciduoma malignum as a literary subject is still in a fetal condition developing in the bosom of medical societies, and what can be safely taught about it to the student is taught in this new edition. Unfortunately for the author, the valuable researches of Teacher and others, recently brought before the Obstetrical Society of London, were not made public until this issue was in the press. On the other hand, Mr. Bland-Sutton rightly teaches that primary cancer of the Fallopian tube is a "clinical entity"—a most remarkable fact when we bear in mind that it was unknown until the year 1888. Many cases of malignant disease clearly of pelvic origin and spreading with great rapidity must have arisen in an old dilated tube rather than in the ovary or uterus. In reviewing any work by the author of this textbook the critic is bound to seek first his views on diseases of the female genital tract. But Mr. Bland-Sutton is an excellent general pathologist, and this work has already been reckoned as standard on the strength of its clear teaching of the general pathology of new growths. The new edition fully maintains this reputation. Much new matter has been added concerning many types of abdominal and other tumours, which, being far less uncommon than was once supposed, are of considerable clinical importance.

[10] *Tumours Innocent and Malignant: their Clinical Characters and Appropriate Treatment.* By J. Bland-Sutton, Surgeon to the Chelsea Hospital for Women; Assistant Surgeon to the Middlesex Hospital, London. Third edition. London: Cassell and Co., Ltd. 1903. (Demy 8vo, pp. 568, 312 illustrations. 21s.)

PHYSIOLOGY.

IT appears from the preface that the rapid exhaustion of the last issue of Professor HALLIBURTON'S *Physiology* has necessitated a somewhat hurried preparation of a new edition.[11] As the old type was still standing the alterations in the text are only of a minor kind. The new matter has been introduced as an appendix of a little over thirty pages of small print dealing *inter alia* with the more recent work of Pawlow, although much of that was accessible in the German edition of Pawlow's work on the digestive glands before it got into an English garb. An expansion of Nussbaum's work on the kidney, the work of Starling and Bayliss on secretion and intestinal movements. We do not find reference to that of Delezenne. Osmotic pressures, and freezing points and their importance in physiology and practical medicine are also dealt with. Cerebral localization in the chimpanzee, as determined by Sherrington and Grünbaum, and Flechsig's study of myelination, which appeared now a good number of years ago in his famous lecture, are included in the appendix. As to the text itself, we still find the size of cells given in parts of an inch (p. 8). Epithelium can scarcely be described as destitute of nerves as a rule. Is mucin the chief constituent of the cementing substance of epithelial cells? (Fig. 132). A nerve preparation is given as from McKendrick. Perhaps it is time to give up classifying nerve fibres as efferent, afferent, and intercentral—above all,

[11] *Handbook of Physiology.* By W. D. Halliburton, M.D., F.R.S. Fifth edition (eighteenth edition of Kirke's *Physiology*). London: John Murray. 1903. (Demy 8vo, pp. 932; 692 illustrations. 14s.)

the last. The coloured diagram (Fig. 213) of the circulation is of a sickly tint. The sinuses of Valsalva are absent. The blood of the kidney does not go through sets of capillaries, as shown. The coloured figures of red blood corpuscles (Figs. 342 and 343) are singularly wide of the mark as regards colour. Nobody ever saw red corpuscles of such a colour. Compare also Funke's rich figure of haemoglobin with that on page 428, and there is a wide discrepancy. Some figures strike us as practically obsolete, and would be better omitted in the next edition—for example, Arnold's, of ending of nerve fibres in arteries; the thymus gland from an old edition of Kölliker, olfactory mucous membrane. There are also many better figures of salivary glands than those chosen. We have said enough to show that perhaps it might be well in the next edition to expurgate somewhat and get rid of some of the older illustrations.

NOTES ON BOOKS.

Ophthalmology.

The second edition of Chalmers Watson's *Practical Handbook of Diseases of the Eye*[1] is quite a small volume, consisting of 249 pages, with 31 illustrations and 9 coloured plates. In so small a compass the subject must suffer considerably from excess of compression, and so we find but few words describing important diseases and lengthy treatment. We are not altogether impressed with the usefulness of the book; as a cram to be read a day or two before an examination, it may enable a man who knows nothing of his subject to scrape through; but when knowledge is administered in such a compressed form we can hardly expect any one to remember what he has read for any length of time, and we should certainly advise students to rely on the larger and more interesting books that are within every one's reach rather than on a small book where there is hardly space to give reasons for any line of treatment, or explanations of the diseases described.

Dr. Freeland Fergus, of Glasgow, has published a small book on *Elementary Ophthalmic Optics*,[2] in which are found the essentials necessary for medical students in order that they may obtain a comprehensive knowledge of the subject. It contains no physiological optics at all, as the author considers that this subject is discussed at sufficient length in the ordinary textbooks on eye diseases. The chief part of the book consists of proofs and formulae for mirrors, lenses, etc., and the use of prisms. It is, perhaps, unfortunate that Dr. Freeland Fergus has given the book practically the same title as one published by Mr. J. H. Parsons in 1901, which really does describe the optics connected with the eye, while that under consideration does not do so, for a reference to the measurement of the angle of squint by prisms is the only true eye condition described. The book is written in a concise and readable style and will doubtless be of use to students preparing for examinations.

Dr. Barthélemy has written a small book on the examination of the eye from the point of view of the French Military Service.[3] The errors of refraction are described in detail, and the lenses required for their correction. The varieties of strabismus are mentioned, and the various things made visible by oblique examination are stated. The estimation of refractive errors by means of the ophthalmoscope is described, and the causes of inaccuracies both in this method and also in retinoscopy. The ophthalmoscopic examination of the eye, its principles, and the various ways of conducting it, both direct and indirect, are stated, while the chief lesions of the eye as revealed by it are given. These are illustrated by black and white plates which show as well as could be shown without colours the appearances met with in each condition. The final chapter is devoted to the test examinations required for the French Military Service. It will thus be seen that there is remarkably little in the book and we fail to find anything that could not be at once turned up in the first few chapters of an ordinary textbook.

[1] *Practical Handbook of Diseases of the Eye.* By D. Chalmers Watson, M.B., F.R.C.P.E. Second Edition. Edinburgh and London: William Green and Sons. 1903. (Fcap. 8vo, pp. 260; 9 coloured plates, 31 illustrations. 5s.)

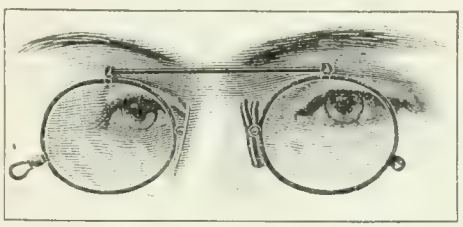
[2] *Elementary Ophthalmic Optics.* By Freeland Fergus, M.D., F.R.S.E., Surgeon to the Glasgow Eye Infirmary, etc. London: Blackie and Son. 1903. (Crown 8vo, pp. 115. 3s. 6d.).

[3] *De l'Examen de l'Oeil au Point de Vue de l'Aptitude au Service Militaire.* (The Examination of the Eye from a Military Point of View). Par Le Dr Barthélemy, Médecin-Majeur de 2nd Classe. Paris: A. Maloine. 1903. (Crown 8vo, pp. 247. 65 figures and 13 plates. Fr. 5.)

REPORTS AND ANALYSES
AND
DESCRIPTIONS OF NEW INVENTIONS
IN MEDICINE, SURGERY, DIETETICS, AND THE ALLIED SCIENCES.

MEDICAL AND SURGICAL APPLIANCES.

Pince-nez for Astigmatic Lenses.—We have received from Messrs. W. F. Stanley and Co., of 13, Railway Approach, London Bridge, a form of pince-nez suitable for carrying astigmatic lenses. In it the metal frames holding the lenses are held together by a bar of wire which has a certain amount of spring in it when bent. The point, however, of special note is the arrangement of the plaquet pieces, which are double; each is made fast by a pin in the usual position, so that there are really two on each side, all four of which have independent motion. The object of this is to secure a larger grip so that a better hold is obtained, while they can accurately adjust themselves to the shape of the nose. We have tried them and consider the claims made by the inventors by no means exaggerated, while they are so rigid that if they fit properly the lenses must be held straight in front of the eyes.



A Syringe for Paraffin Injection.—Mr. David M. Greig, C.M., F.R.C.S.Edin. (Dundee), writes: I have had constructed for me by Messrs. Down Brothers, Limited, a modification of Eckstein's syringe for the injection of paraffin in cases of sunken nose, etc. I think it will be found to be an improvement on the original, and I can specially recommend it to beginners and those who seldom have opportunities of practising this kind of work. The syringe is of solid metal with screw-on nozzles, and is cased in rubber (Fig. 1). In order to retain the heat as long as possible, I have added a rubber cap over the bottom plate of the cylinder. When the syringe, thoroughly heated, is filled with paraffin melted at 104°, it is found to keep the paraffin in a fluid state for about five minutes in a warm room, thus giving plenty of time to carry out even a delayed operation. In all such operations the difficulty is the tendency the paraffin has to solidify in the lumen of the needle, the unrubbered metal point of which is rapidly cooled to the body temperature on being introduced under the skin. When this occurs the reverse of the Bramah press is formed, and enormous force is required to expel this trifling plug from the needle. This I have overcome by having the piston rod cut with a screw thread. On the top plate of the cylinder (Fig. 2) there are two plates running in grooves, and kept apart by a spring. The adjacent ends of these plates are cut to fit the thread of the screw on the piston rod. When the plates are apart the piston can be



Fig. 1.

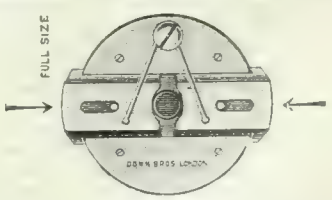


Fig. 2.

worked out and in as an ordinary syringe, but if the needle becomes blocked and it is necessary to apply force to the contents of the cylinder, the plates are approximated by the finger and thumb of the left hand, and catching the thread of the piston rod, the piston can then be screwed into the cylinder, and much greater pressure applied to the cylinder contents. The plug of solidified paraffin is thus easily forced out.

INDIA IN 1901.

THE REPORT OF THE IMPERIAL SANITARY COMMISSIONER.

THIS report, which is signed by Surgeon-General Sir Benjamin Franklin, K.C.I.E., fully sustains the high character of its predecessors, and presents the sanitary events of the year 1901 in a concise and readable manner. Useful summaries are given of scientific research and progress in regard to malaria, cholera, plague, enteric fever, and other subjects of prominent Indian interest. These are brought up to the date of compilation, and are therefore comparatively recent, while the report is mainly a commentary on the statistics and incidents of the year 1901, which is of exceptional importance on account of the census, some of the revelations of which are set forth and discussed in some detail. No information is supplied regarding lunatic asylums, hospitals, or dispensaries, the statistics of which supply some evidence regarding the public health. The cholera map which used to appear as a frontispiece has been omitted, and in its place a shaded map is inserted showing the increase and decrease of population in provinces as indicated by the census of 1901 in comparison with that of 1891. Two charts are added showing the variations of rainfall during the intercensal decennium. To these reference will presently be made. Brief summaries have from time to time been published in the BRITISH MEDICAL JOURNAL of provincial sanitary reports for 1901. In this article we propose to give a bird's eye view of the sanitary history of the year in series with similar articles relating to the four preceding years.[1]

GENERAL CHARACTER OF THE YEAR 1901.

The preceding year was one of the blackest in the history of India. Deficient rainfall, scanty crops, dear food, and prevailing pestilence caused serious sickness and mortality, low birth-rates, and high death-rates. In the year under notice conditions were favourable to health, and India displayed that marvellous power of recuperation which justifies hope in her darkest hour. The year was hotter and slightly drier than usual. The fall of rain was for the whole of India in defect (3.92 in.). The deficiency was not sufficient in most provinces to give rise to serious failure of crops except in Gujerat and the Deccan. Bengal, Assam, and Burmah received an excess of rain, and there was also excessive precipitation on the Western Ghats and Nilgiris. No information is given in the Sanitary Commissioner's report regarding the outturn of crops or prices of grains, but from provincial reports it appears that generally there was a change for the better in these respects throughout India. The financial prosperity of British India has rendered a large extension of irrigation works possible, and in these and in railway extension reside the means and hope of averting and relieving the famines of the future. Fortunately, famine in India is always more or less localized, and greater freedom and cheapness of transport will enable the areas of plenty to supply the deficiencies of the areas of scarcity. The frontier expeditions which seem to be an inevitable and annually recurring condition of Indian rule were this year represented by the Ogaden punitive force which employed an annual average of 236 native troops. The Chinese expeditionary force included an average of 727 European and 8,166 native troops, and in addition a garrison of 2,254 native troops was maintained in China. With these exceptions the political sky of the Empire was unclouded, and the population lived and worked under the usual sunshine of freedom and protection.

THE CENSUS AND DECENNIUM (1891-1900).

The census taken on the night of March 1st, 1901, disclosed a total population of the Indian Empire (including native States) amounting to 293,475,477. This figure includes certain areas the population of which, aggregating about 2¼ millions, was not enumerated in 1891, and is exclusive of some small portions of Upper Burmah and Baluchistan; a comparison of the numbered population of 1891 and 1901 indicates an increase of 1.3 per cent. (excluding the new areas). In seven of the eleven British provinces there was an increase of population varying from 21.2 per cent. in Lower Burmah to 1.6 in the United Provinces, and in four a decrease amounting to 12.0 per cent. in Ajmere-Merwara, 8.4 in the Central Provinces, 4.9 in Berar, and 1.7 in Bombay. Some of the native States show much higher declines. The maps to which reference has been made demonstrate a marked relation between deficient rainfall and decreased population. This is true as a general statement, but when the figures representing total provincial rates are analysed it is found that in the midst of an area of general decrease some districts and tracts exhibit an increase and vice versa. These local exceptions are found to depend on local conditions. In some cases excessive rainfall did harm, and in all the influence of emigration and immigration and of epidemic disease must be taken into account. The decennium included two bad famine years, and cholera and plague were exceptionally prevalent. Curiously the rainfall of 1891-5 is found to be in excess and that of 1896-1901 in defect over much the same areas, and the areas of defect are roughly those of famine and decreased population. A study of the results of registration shows a general agreement with census disclosures, but the influence of migration has to be taken into account, and analysis of provincial totals reveals great anomalies.

The decennial birth-rates and death-rates present great variations; the highest provincial birth-rate was 50.5 (Berar in 1899), and lowest 14.67 (Ajmere-Merwara in 1900). The highest death-rate was 119.9 (Ajmere-Merwara in 1900), and the lowest 15.9 (Lower Burmah in 1891). Between these extremes variations, provincial and annual, are remarkable and difficult of explanation. The report dwells on the relative mortality of males and females at different ages, as compared with English figures, recent and remote. The general conclusion is thus stated: "A study of the English charts shows the saving of life at the most enjoyable and useful ages which improvement in the environment has effected; and a comparison of the Indian charts suggests that analogous improvements might effect enormous saving of life in India, particularly the lives of children and young adults, and especially of women at the child-bearing age." Some figures are given relating to the proportions of the sexes at birth and the relative numbers of males and females in different provinces at different ages. These figures are probably more curious than correct. The prevalence of fever, cholera, small-pox, plague, and bowel complaints is also exhibited and discussed. Cholera caused 4,505,019 deaths during the period, and plague since 1896 had added a new and heavy burden to the death-roll.

VITAL STATISTICS OF 1901.

There are signs of progressive improvement in the registration of births and deaths, but the results must still be accepted as imperfect and to some extent fallacious. The birth-rate for the whole of India was 34.7 against 36.6 in 1900. The range was from 41.35 in the United Provinces to 16.10 in Ajmere-Merwara. To meet a possible objection that the rates are fallacious in consequence of the unequal proportion of females in the population of the several provinces, a calculation has been made of births on the number of women living between the ages of 15 and 40. The results of the computation agree fairly closely with the calculation on total population. The death-rate of 1901 was 29.6 against 38.6 in 1900. The provincial extremes were Bombay, 37.12, and the North-Western Frontier Province, 19.6; 521 males and 479 females died in 1900. The proportion of the sexes in the population is stated to be 519 and 491. The provinces differ considerably in respect to these proportions, but in every province more males died than females, and in all, except the Punjab and North-West Frontier Province, the male death-rate was higher than the female. The death-rates are calculated according to different proportions of the sexes and of age-periods in the several provinces, but the results do not substantially modify the usual data. Births exceeded deaths in all provinces except the Punjab births 35.6 and deaths 36.4; Bombay, 25.19 and 37.12; Coorg, 18.83 and 36.49; and Ajmere-Merwara, 16.10 and 33.13. The rates of 1901 were less than those of 1900 in all provinces except Coorg and Upper Burmah, and also lower than those of the preceding five years except in Bengal, the Punjab, and Coorg. The report contains an abstract of the provincial sanitary reports, but these have been already sufficiently dealt with.

PREVALENT DISEASES.

The mortality caused by "fevers" was low. The rate for all

[1] BRITISH MEDICAL JOURNAL, January 13th and November 3rd, 1900, pp. 89 and 1326; June 1st, 1901, p. 1369, and October 4th, 1902, p. 1074.

India was 18.73, against 22.87 in 1900, and 20.93 in the preceding five years. It is curious to notice how widely fever rates vary in different provinces. The extremes are 28.69 in Coorg and 7.90 in Madras. For the quinquennium the extremes are 36.03 in Ajmere-Merwara and 8.09 in Madras. Rural rates are slightly in excess of urban rates. The sale of quinine was somewhat less than in the preceding very feverish year. Efforts are being made to extend it. Preventive action is being taken in most of the provinces on the lines of modern science, but the information regarding it is vague and scanty. The mortality caused by bowel complaints usually follows the fever mortality. The rate for 1901 was 1.11, against 2.48, and a quinquennial rate of 1.51. Bombay presents the highest figure (3.16), and the N.W. Frontier Province the lowest (0.16). The urban mortality (3.19) is greatly in excess of the rural (0.94). There was a great abatement in cholera mortality, the rates of 1901 and 1900 being 1.20 and 3.70. There was a decrease in every province except Madras and Coorg. The highest rates were in Bengal, Assam and the United Provinces. No province was quite free of cholera; but in Northern and Central India the rates were very small. Assam maintains a bad pre-eminence in cholera. In six years out of ten this province gave the highest rates. It is also conspicuous in regard to bowel complaints. The tea coolie is an important element in the production of this excess. The provincial death-rate for cholera in Assam was 1.42, and the coolie-rate 2.17. Cholera mortality was higher in town than in rural areas, and higher among females than males. One striking experience is recorded regarding protective inoculation. Among coolies proceeding to Assam tea gardens there was an incidence of 8.36 in 275 uninoculated, and of 1.2 in 414 inoculated. No death took place among the latter. No new facts are recorded on the subject of causation. Fairs, feasts, and pilgrimages are still often associated with outbreaks. The use of potassium permanganate continues, but the evidence regarding its efficiency is very loose. The difficulty of identifying the cholera bacillus in water is alluded to. Major Firth attaches importance to the presence of a large number of fluorescent vibrios in water, but his observations have not been confirmed.

The small-pox death-rate was the same as in the preceding year—namely, 0.40; the rate for the preceding quinquennium being 0.46. The small province of Coorg shows a very high rate, but with this exception the fluctuations are slight. The practice of inoculation is said to linger in Sylhet and Orissa, and on the Punjab frontier, and is blamed for causing outbreaks. In some places natives are said deliberately to expose their children to infection. About 40 per cent. of the mortality is contributed by children under 10 years of age.

There was a large increase in the mortality caused by plague. The total for India was 283,788, against 92,807 in 1900. The Bombay Presidency contributed nearly one-half of the total, the City of Bombay returning 18,694 deaths. The province of Bengal comes next with 72,629, Calcutta contributing 7,883. The Punjab had 16,720 deaths, and Mysore 11,936. The figures for the remaining provinces are smaller, several returning no death. There was a gradual rise during the first three months of the year; a decline in April. The figures for May, June, and July were comparatively low, but thenceforward a steady increase took place. The influence in spreading the disease exercised by human intercourse obtained fresh illustration, and the belief in the agency of rats is gaining strength. Kolle and Martini aver that "rats are to plague what water is to cholera." Several instances are recorded of the outbreak of the disease in the vicinity of grain dépôts. On the other hand the agency of fleas is becoming more discredited. The disease evidently lingers in houses, and in some places women are said to have suffered more than men in consequence of their more domestic habits. Evacuation and disinfection of houses are allowed to be the most effective repressive measures, but opposition is encountered in carrying them out. No information is given regarding inoculation. Some interesting notes are recorded regarding the natural history of the bacillus pestis and its modes of entrance. The Himalayan mahamari has been investigated by Chaytor White, and pronounced by him to be plague. No evidence of importation from the plains was obtained.

Prisoners.

There was some reduction in the number of prisoners, which had undergone increase in the preceding year in consequence of famine conditions which always stimulate crime. There is considerable overcrowding in Indian gaols, which in view of the excess of phthisis and dysentery ought to be remedied radically, for the expedients now resorted to, such as occupying worksheds and building huts within gaol enclosures, are not to be commended. The statistics of 1901 indicate improvement; the sickness-rates are moderate, and the death-rate for all India—26.87—contrasts favourably with the preceding year—32.80—and the preceding quinquennium—29.97. Still a rate of 26.87, though less than that of the general population—29.46—cannot be accepted as satisfactory when we take into account the absence from gaols of the very young and very old, who contribute materially to swell the general mortality. The Andamans present the highest mortality—36.94—and Burmah the lowest 15.29. The Assam, United Provinces, and Punjab gaols had high rates; and the Bombay rate, 36.12, though lower than in 1900, must be considered excessive. Ague and bowel complaints were, as usual, the principal causes of sickness, and dysentery and diarrhoea, tubercle of the lungs, and pneumonia of mortality. Influenza was in excess and cholera in defect. The death-rate of the latter was 0.90 against a general rate of 1.21 for India, 0.20 in European, and 0.15 in native troops. More care in segregating new arrivals is considered desirable. There were only 63 cases and 10 deaths from small-pox. Ague caused 38 per cent. of total sickness. The prophylactic use of quinine was continued. Large doses twice a week were found to be more effectual than small daily doses. In the Andamans, where an outbreak of virulent fever occurred in the female gaol, "mosquito nets were found more efficacious than quinine." There does not appear to be much systematic effort to prevent malarial fever in gaols by operating on the breeding grounds of mosquitos.

Forty-one cases were diagnosed as enteric fever, of which 20 died. The figures for 1900 were 22 and 15. Mention is made of cases observed in the neighbourhood of gaols. Only 1 case of Malta fever was recorded. Cerebro-spinal fever is on the increase. There were 141 cases and 102 deaths. The admissions from 1896 have been 7, 13, 24, 29, 99, and 141. The most serious outbreaks were at Mung Rasul (47 cases), Bhagalpur (31), Allahabad district (25), and Sultanpur (8). The disease is apt to revisit gaols. Additional evidence is given of prevalence in the free population. The association of the disease with pneumonia has been observed. A severe outbreak of relapsing fever occurred in the Bijapur gaol (323 cases and 5 deaths). Outbreaks also occurred in the Bombay common gaol (31 and 9) and Jerrowda Central prison (2 cases). Epidemics in the free population have been observed in Bombay and Ahmednagar.

From plague there were 50 cases and 36 deaths. The Patna gaol had 18 cases and the Bombay house of correction 17. Other gaols of Bengal and Bombay show smaller numbers. Rats were simultaneously affected in the Patna and Bombay gaols. Inoculation was resorted to in several instances, and it is thought with advantage. There were 155 admissions for scurvy. Bombay and Burmah gaols suffered most.

The subject of tubercle in gaols is one of great importance. The death-rate of 1901 was 3.86, against 3.95 in 1900 and 2.98 in the decennium 1891-1900. The rate in European troops was 0.46 and in native 0.84. Arrangements are being made in many gaols for segregation, destruction of sputum, and open-air treatment. Pneumonia was less fatal, the mortality being 3.61 against a decennial rate of 4.27. Some medical officers consider the disease infectious and adopt precautions accordingly. The infectious nature of dysentery is also being recognized. There was a considerable reduction in the mortality both of dysentery and diarrhoea in 1901. Only 9 cases of beri-beri with 2 deaths were reported. The results of special census of the ova of intestinal worms as observed by several medical officers are detailed.

European Army.

Sickness rates were comparatively low, but invaliding high. The death-rate was 12.38, against 14.62 in 1900 and 16.21 in the decennium 1891-1900. Ague and venereal diseases were as usual the chief causes of sickness, and enteric fever and hepatic abscess of mortality. There was diminished mortality from cholera, enteric fever, heat stroke, tubercle of lung, and abscess of liver, and increased from pneumonia and dysentery. The admissions from the latter were, however, fewer. Madras and Bombay were the most unhealthy commands. Influenza was in excess. There were 12 cases of cholera, all fatal; 30 cases and 3 deaths from small-pox, giving a death-rate of 0.05, against a general rate of 0.40. Ague and remittent fever were less prevalent and fatal. Prophylactic measures are being adopted in a somewhat desultory fashion. Five cases of Mediterranean fever were

returned. There was a decrease in both morbidity and mortality of enteric fever. The admissions numbered 776, and deaths 202, against 970 and 289 in 1900. The admissions have steadily declined during the last three years. This is no doubt due in part to the scarcity of drafts, but 8,700 men joined in 1901, a fact which accounts for the increased rate of mortality in the first year of service. Data bearing on the causation of enteric fever are presented in considerable detail but no novel conclusion of importance emerges. It is thought that sanitary measures have in part caused the diminution. Attention is drawn to the influence of new arrivals on seasonal distribution. Only 3 cases of plague occurred with 1 death, and only 1 of cerebro-spinal fever. There were 28 cases of beriberi, 25 of which occurred in Burmah. The mortality from phthisis fell slightly and that of pneumonia rose a little, as also that of dysentery, which was worst in Bengal-Orissa. The stations of Barrackpore, Dum-Dum, and Meean-Mir furnished a large proportion of cases. There was a reduction in the mortality of liver abscess, which was also worst in Bengal-Orissa. Barrackpore was conspicuous among stations. Some interesting statistics are given regarding the relation between dysentery and liver abscess. There was a fall from 313 in 1899 and 298 in 1900 to 276 in the admission-rate of venereal diseases. Preventive measures are credited with the improvement. The death-rate of officers was 11.11 against 11.80 in 1900, and 15.94 in 1891-1900; of women 17.54 against 12.83 and 16.13, and of children 32.95 against 46.87 and 44.86.

Native Army.

There was a considerable reduction in mortality. The death-rate of the year was 13.89, against 18.57 in the preceding year and 16.62 in the preceding decennium. The rates indicating sickness were about the same, ague being as usual the chief cause. Pneumonia accounts for 25 and remittent fever 21 per cent. of deaths. The troops employed in China enjoyed good health; but those on frontier operations were sickly. There was a great rise in influenza admissions, which were more numerous than in the European army; but the gaols had nearly thrice as many. There were 35 cases and 19 deaths of cholera, and 55 and 4 of small-pox. Ague was specially severe in pioneer regiments employed in railway excavation in malarious valleys on the North Western frontier. *Anopheles* mosquitos were found in abundance in the neighbouring swamps and in the men's tents. "The prophylactic use of quinine does not yet seem to be sufficiently general, sufficiently systematic, early enough begun, or long enough continued." The admissions from enteric fever numbered 26 and deaths 15. The total fever mortality of native troops was to that of European as 30 to 49. The experience of the year does not add strength to the view that natives acquire immunity by being attacked in childhood. Six cases of Malta fever were returned, and 70 cases of plague with 41 deaths. The severest outbreaks were at Belgaum and Bellary. There were 28 admissions and 21 deaths from cerebro-spinal fever, against 3 and 2 in 1900. Evidence is given of the prevalence of the disease among frontier tribes. Scurvy cases numbered 391, against 398. The importance of fresh meat and fresh lime juice in treatment is strongly urged. There was a rise in the admission and death-rates from tubercle, and as usual Goorkhas suffered in largest proportion. Their proclivities and habits are held to favour infection. There was a decline in admissions and deaths from pneumonia. Regiments on frontier service suffered most. A peculiarly virulent type was observed in the Tochi valley, and horses and mules are reported to suffer severely there both from influenza and pneumonia. There was a fall in both dysentery and diarrhoea, and a considerable reduction in the prevalence of venereal diseases. From beri-beri there were 108 admissions in Madras regiments. The tainted rice and vegetable theory seems to be gaining ground; 560 cases of guinea worm were treated.

Vaccination.

The more favourable health conditions of the year permitted of a larger outturn of vaccine work. The number of operations amounted to 8,036,414 against 7,874,392 in the previous year, the rates per 1,000 of the population being 31.3 against 31.8; the rate for 1901 is calculated on a higher census basis. Estimating the birth-rate at 40 per 1,000, it is reckoned that about 33 per cent. of children born were vaccinated. The figures for various provinces vary considerably. Bengal and Madras show the best results, and Bombay, the Punjab, and Central Provinces the worst on account of famine and plague. The percentage of success in primary vaccination was 95, and in revaccination 65; revaccination amounting to about one-tenth of primary vaccination. Arm-to-arm vaccination is still largely resorted to in most provinces, but the use of bovine lymph is increasing. The best method of preserving lymph has not as yet been settled. The total cost of vaccination was Rs.11,32,257, and the average cost of each successful case two annas and a-half.

Sanitary Works.

The output and cost of sanitary effort constitute the best measure of its magnitude, and the record of sanitary work done in each province which this report furnishes, and of the money spent on it, leaves the impression that continuously a great anxiety to call into existence agencies and arrangements towards the amelioration of those conditions on which health and life, industry and production depend, possesses the minds and inspires the administration of the rulers of the Indian empire from the highest to the humblest. The report tells of no great sanitary enterprises, but it chronicles many new undertakings of a useful kind, and the extension and maintenance of those completed in past years; and it specifies large sums of money expended by municipalities and urban and rural authorities for purposes of cleansing and purification. To enter into details on this subject is beyond the scope of this article. Suffice it to say that the chapter on sanitary works is pleasant and comforting, though somewhat dry, reading, and betokens both purpose and progress.

Miscellaneous.

Under the head of "General Remarks" several interesting subjects are discussed in more or less detail. Owing to the prevalence of plague the pilgrimage to Mecca was on a limited scale, pilgrims being allowed to embark only at Karachi and Chittagong. Returning pilgrims were subjected to careful examination. No outbreak of epidemic disease except small-pox occurred among either class. The cost of a pilgrimage to Mecca has increased. A short account is given of the proceedings of the Royal Society Commissioners, Drs. Stephens and Christophers, with whom was associated Captain S. P. James, I.M.S., with reference to the prevention of malaria. The cantonment of Mian-Mir was selected as the field of observation and work. The *Anopheles culicifacies* was found to be the principal host of the malaria parasite and the irrigation watercourses its principal breeding places. The results of the operations carried out are shortly to be published in detail.

The question of the alleged increase of tuberculosis in India is critically examined in the light of recent statistics of troops and prisoners. It is held to be doubtful whether the apparent rise of sickness and death ratios does not depend on more accurate diagnosis.

The brilliant work done by Major D. Semple, M.D., at the Pasteur Institute, Kasauli, is detailed. Reference is made to the prevalence of lathyrism in the Central Provinces. Major Andrew Buchanan, I.M.S., has been deputed to investigate the matter. The increase of cerebro-spinal fever in gaols is again mentioned, and an opinion is recorded that the disease was, in 1901, widely spread among the general population of many of the provinces.

Samaritan Free Hospital for Women.—The following is the programme of lectures at the Samaritan Free Hospital during the winter term 1903. The lectures are given on Thursdays at 3 p.m.: October 8th, Mr. Alban Doran, Broad Ligament Tumours; October 15th, Dr. Roberts, Cases from the Wards; October 22nd, Mr. Malcolm, the selection of cases for Abdominal Section; October 29th, Dr. McCann, the Methods of Examination employed in Gynaecological Diagnosis (demonstration of instruments); November 5th, Mr. Alban Doran, Dermoids, Ovarian and Pelvic; November 12th, Dr. Lockyer, Haemorrhage at and after the Menopause; November 19th, Mr. Malcolm, Uterine Tumours; November 26th, Dr. Roberts, Cases from the Wards; December 3rd, Dr. McCann, the Methods of Examination employed in Gynaecological Diagnosis (demonstration of instruments); December 10th, Mr. Handley, Leucorrhoea; December 17th, Dr. Bell, Retroflexion and its Treatment.

The Medico-Psychological Association.—The examination for the certificate in nursing and attendance on the insane granted by the Medico-Psychological Association of Great Britain and Ireland will be held on Monday, November 2nd. A schedule, which can be obtained from the Registrar Dr. Alfred Miller, Hatton Asylum, Warwick, must be filled up and returned to him not later than Monday, October 5th.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1903.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, SEPTEMBER 26TH, 1903.

THE MEDICINAL TREATMENT OF DISEASE.

The value of drugs as a means whereby, in all forms of sickness, disease processes may be modified or arrested, and the sufferings of the patient alleviated or overcome, is a question of paramount interest alike to the patient and to the physician. The popular belief in the all-sufficing efficacy of drugs is widespread, and is not confined to any one section of the public. The aristocratic patient no more believes that his disorder can be cured without the aid of a prescription than his poorer fellow-mortal who, when ill, becomes a constant visitor at the hospital or dispensary in order to obtain the bottle of physic which he looks upon as indispensable to the restoration of his health.

The advance of civilization has done little or nothing to decrease the hopeful spirit which throughout the ages has prompted man to believe in the curative power of drugs; rather has it tended to increase his faith. The natural desire to escape from pain and death has begotten an ever-increasing demand for more weapons to combat the many ills to which flesh is heir, and the investigations and researches of erudite men in many departments of original work have ceaselessly been directed since the earliest dawn of science to the discovery of new and reliable remedies. Nor have those efforts been without victories which have conspicuously lessened the sum total of human misery and tended to the prolongation of life. Mercury and potassium iodide have shorn syphilis of some of its most gruesome consequences; quinine has proved itself the effective foe of malaria; digitalis has brought many cardiac diseases within the compass of curability; opium has robbed pain of its greatest terrors; and iron has given us the control of several varieties of anaemia. These are but a few of the instances that might be quoted to indicate the unchallengeable value of drugs in the progress of the healing art. But unfortunately the insatiable demand for therapeutic perfection is responsible for the advancement of the drug treatment of disease along lines which, in some instances, do not stand the test of proved experience and in others are reprehensible. The enterprise of drug manufacturers is mostly responsible for failure in the first direction; they often ascribe to new remedies virtues and powers beyond the limits of possibility, and thrust upon the market novelties for which they claim the pre-eminence of new discoveries before enough is known of them to justify any reliance upon the specific properties for which they are extolled. The unblushing effrontery of quacks gives, in the other direction, an evanescent popularity to nostrums which often possess no value whatever, and at best bear ultimately but sorry testimony to the power of exorcising the demon of disease which advertisement bold and wide had loudly and enticingly claimed for them. Both methods appeal to the existing wholesale worship of drugs; a worship which is rapidly becoming a serious drain upon the financial resources of our medical charities and a menace to the moral fibre of our national health.

It must be admitted that the crowds of patients suffering from functional and chronic maladies which frequent the out-patient departments of hospitals and dispensaries leave the overworked physician-of-the-day little choice but to go on repeating the medicine originally ordered for them without much more consideration than a desire to satisfy their demands and at the same time get through his work. They have come for the purpose of getting their bottles refilled with the physic which they find does not disagree with them, and which they implicitly believe is restoring their energies; and it is easier and more expeditious to write down "Rep. mist." than to investigate anew their physical conditions and modify the treatment in accordance with the indications which exist at each succeeding visit.

Such a slipshod method, though obviously wrong, is in no small degree fostered by the almost universal custom of providing hospital pharmacopoeias. The custom is condoned on the plea of convenience, and we are prepared to admit that this is its sole, though only a partial, justification. But, it may be asked, does this system conduce to the welfare of the patient? Does it not burden the finances of the institution with a load that is heavier, in most cases, than it ought to be? And does it not initiate the student who is attending out-patient practice into an undesirable cut-and-dry method of prescribing, while at the same time crippling any capacity for individuality on the part of the physician in the framing of the prescriptions which he is called upon to write? Putting on one side the financial aspect of the question, serious though that be in these days of multiplying demands upon the public charity, we are convinced that the present plan tends to make the patient too much the slave of the dispenser. As a secondary consequence, it encourages his credulity in the blatant claims of patent medicine vendors by giving apparent confirmation to his conviction that safety depends solely upon drugs, and that, if he can but find the right thing, and take enough of it, his recovery is assured.

The public do not understand the limitations of medicine, and require to be educated in the knowledge that Nature is the great "vis medicatrix," drugs being no more than her handmaidens. Neither do they appreciate the impairment of function which must ensue from a too liberal dependence upon the artificial assistance of substances, which, however useful for the purpose of helping Nature to resume her authority when this has been rebelled against by functional or organic disease, become positively inimical to robust health and vigorous life when resorted to as continuous essentials of existence.

For enlightenment the public must look to the teaching of the medical profession, but before we can expect to succeed in bringing about a reformation in popular habits, we must recognize the evils which exist in our present methods of dealing with the sick, and in order to cope with them must ourselves be better educated in the therapeutic art.

There is no getting away from the fact, to which in the columns of the British Medical Journal we have often adverted, that the existing system of medical education is sadly defective in the training it supplies on the important

matter of drug administration. A short course of practical pharmacy forms, it is true, part of the curriculum, but in how many schools is this class conducted with anything like the thoroughness that characterizes tuition in any other subject on which an examination must be passed before a qualification or degree can be obtained? A mere smattering of knowledge is the most that can be gained, under the present regulations, in the pharmacy class, and when the wards and out-patient rooms are reached, the routine plan of hospital formulae is all that remains for the student to depend upon for the mastery of a subject which, in his future dealings with the sick, demands more practical knowledge than any of the other "'ologies" which have engaged his attention during the five years of his training.

Even the literature of the art of prescribing is curiously inadequate. There are many excellent works on therapeutics which teem with prescriptions and long enumerations of diseases for which this, that, and the other medicament is suitable, but we know of few that are written for the more elementary purpose of initiating the student into the mysteries of chemical and physiological incompatibility, elegance of combination, and refinements of palatibility. The paucity of such works makes us welcome with special satisfaction the second edition of a book on *Practical Pharmacy and Prescribing* from the pen of Dr. James Calvert. It is concisely and clearly written, and supplies within moderate—perhaps too moderate—limits most of the important points which are essential to enable those who are destined to carry on our profession to raise it out of the formula-rut into which it threatens to fall, and to render them capable of ordering in an acceptable and chemically compatible form such combinations of drugs as are demanded by the necessities of the individual patient rather than by the generalizations which would pin to every disease a particular prescription. Dr. Calvert's book is capable of considerable elaboration, and we hope in a future edition he will, by expanding its scope, add to its usefulness; but, even as it now stands, it may be confidently recommended as a sound treatise on a subject which demands greater attention both on grounds of practical utility and professional necessity.

PSYCHOPATHOLOGY IN PRISONS.

The philosophic doctrine that our actions are free is generally based on the consciousness of freedom; and in its legal aspect on the sense of accountability or responsibility. That this consciousness of freedom exists is a psychical fact, and therefore a psychological examination of the conviction, an analysis of this psychical phenomenon, is a necessary preliminary to the philosophical inquiry.

It may be contended that the question of a transcendental ego or noumenal will behind, superior to the law of causation and capable of free choice, is not legitimately within the domain of pyschology; but it is manifest that if psychology, in unfolding and genetically explaining the phenomena of volition, prove that this mode of consciousness does not necessitate any such idea of a transcendental will, that in fact this sense of freedom may and does accompany actions which are absolutely determined, the psychological foundation is taken away from the doctrine of free will. This task Professor Hoche of Freiburg[1] has set himself to accomplish. He is frankly a determinist, entirely at variance with the Kantian doctrine of a self-determining will. He affirms that the observations of psychopathology must be taken into account in the normal psychology, because the mental activities of the insane do not differ intrinsically from those of the so-called normal, but only in degree; and that, moreover, there exist all gradations from the sane to the insane.

Now, the feeling of freedom exists in many forms of mental disease, particularly and to a high degree in mania, as to whose unfreedom of volition no doubt can exist, and this feeling of freedom, Dr. Hoche contends, is related to the central emission of motor impulses.

In the next place, the observations of psychopathologists show that in the empiric character much greater differences exist in permanent, deeply-seated, elementary qualities than is customarily recognized by theoretic psychology. The value, therefore, of conclusions based on the hypothesis that in all men there are certain psychical processes, particularly within the region of the emotions, which are for all men identical, is thus at once nullified, and with these necessarily, Dr. Hoche says, conclusions founded on the belief in an ever and everywhere present conscience. The conscience, says the author, exhibits the same variations as do other emotions. With the insane the conscience wastes, or it is subject to objectively unfounded fluctuations. Also in neurotic and borderland cases this variability of conscience is found.

The clear parallelism in fact between material and mental processes does not permit of such a distinction as that the principle of causality holds good only for the material and not for the mental side of these processes.

The practical importance of these doctrines lies in its relation to the penal treatment of that large class of malefactors—and only those with an intimate acquaintance with prison populations know how surprisingly large this class is—who are neither of normal mental and physical make-up nor actually insane, degenerates, hereditarily-burdened individuals, or, to use the prison term, the weak minded. A system of graduated punishments is, Dr. Hoche says, futile, and punishment at all unreasonable, and for these he would substitute individual treatment decided by the medico-psychological examination, and some form of sequestration so as to render them harmless to society.

We believe that those who have had experience in dealing with prisoners in this country would be very much disposed to agree with Professor Hoche on the ground that the separation of weak-minded from ordinary prisoners would conduce to better management of the latter class. Dr. Hoche has had wide experience in such matters, is the author of the important work on forensic psychiatry already reviewed in our pages,[2] and his views deserve the most serious gravest consideration.

[1] *Die Freiheit des Willens, vom Standpunkte der Psychopathologie.* Von Professor Dr. A. Hoche. Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. 1902. (Demy 8vo, pp. 40. 1s. 3d.).

[2] *Handbuch der gerichtlichen Psychiatrie.* 1901. Berlin: August Hirschwald.

THE SYSTEMATIZATION OF EFFORTS TO REDUCE INFANTILE MORTALITY.

The failure of sanitary efforts to reduce infantile mortality is the most unfavourable fact in the history of Great Britain in the last twenty years. It was not altogether unreasonable to expect that public health administration would have a very great influence in reducing infantile mortality to what may, under present conditions, be regarded as a normal standard—namely, one death under 1 year of age out of every ten born. But although the removal of privies and cesspools and of other nuisances,

the improved conditions of housing, the more cleanly habits of the people must have had some influence in the right direction; various social factors have been at work which have at least counterbalanced the good effect of sanitary improvements. These are, in particular, the greatly-increased urbanization of the population, the more frequent non-domestic employment of married women, and the increasing tendency of mothers to neglect their primary duty of nourishing their infants. The last is the most serious evil of all, town-living by itself not necessarily implying a greatly-enhanced risk of death during the first year of life. Whether due to unwillingness of mothers to perform this duty or to the practical difficulties involved in the industrial employment of women, the fact remains that artificial feeding of infants is a main cause of infantile mortality.

In another column we publish a brief analysis of communications made to the International Congress of Hygiene at Brussels, describing the organized efforts made in France and Belgium to reduce infantile mortality. With regard to France, there is little to add to the full account of the system which was given in the series of articles on the milk supply of large towns published in our columns last spring, and it will be seen that in Belgium similar methods are followed. In both countries the importance of medical supervision is more fully recognized than in this country. Sterilized milk for infants is now supplied by several municipalities in Great Britain, but hitherto there has been, in connexion with these efforts, so far as we are aware, no attempt to combine the provision of milk with a weekly medical consultation, involving a weekly physical examination and weighing of the infant, and an adaptation of its food to the special requirements of each case. This would be difficult to manage in England without the consent of the family practitioner. But is it not of the essence of the experiment, and is it not indispensable for its success, that such weekly observations should be made, and that the use made of the sterilized milk should be checked at frequent intervals? We are of opinion that efforts should be made to overcome the difficulties in the way of weekly medical examination in connexion with the supply of sterilized milk.

Stress also may be laid on the possibility of a supply of sterilized milk encouraging mothers not to suckle their infants. The particulars as to the means by which this danger is avoided in connexion with the French maternity charities are particularly interesting. It is open to doubt whether similar inducements could be held out in England among any except the very lowest class without exercising a pauperizing influence. But in connexion with the infants born in workhouses and those born in connexion with maternity charities, some further efforts ought to be made, and the methods adopted in France, although they should not be slavishly copied, are worthy of consideration, and may at the least suggest methods of procedure which will be consistent with the retention of self-respect on the part of the mother, while giving her infant an improved prospect of surviving the first year of its life.

The subject is one deserving of further study, of careful experimental work, and the co-ordination of measures, already in operation or about to be adopted, should be borne in mind in any attempts at extended work.

PATENT MEDICINES.

In the British Medical Journal of August 29th attention was once again drawn to the trade in patent medicines in general, and to some of its more decidedly undesirable features in particular. Since then four lay periodicals have dealt with the same subject, having been induced to do so more particularly by revelations made at recent inquests and other legal inquiries, and some of the comments made are worth quoting. Thus, the *Manchester Guardian* after commenting on an inquest held on the body of a child which had been taking "Jackson's Febrifuge," adds: "It may be questioned, however, whether the State might not do more to protect the ignorant. Nobody who knows anything of life in the poorer parts of a great town would seek to impair the limited but very real usefulness of the honest chemist in alleviating the hundred and one small ailments which a doctor does not want to be bothered with. But what the State might do is to insist that the nature and efficacy of patent medicines should be more clearly defined, so that people may not be induced to use such things indiscriminately when they feel ill. Blind confidence in nostrums of various kinds no doubt accounts for a great deal of illness that might be avoided, and in serious cases prevents life from being saved. It is useless to hope that the superstitious faith in medicine of any kind—and especially in medicine whose origin and components are a mystery—will be weakened by any disclosures. But the State, in consideration of the huge profits of the trade, might at least take power to supervise the trade announcements, and to prohibit the practice of claiming for a preparation such qualities as, the maker must know, are never united in any one drug or compound of drugs." Commenting on the same inquest, the *Sunday Chronicle* (Manchester) after some other remarks, says: "When we come to consider that the Government receive something over £300,000 annually from stamp duties on patent medicines, it is quite obvious that means should be taken to at least protect the ignorant classes from the deception of makers who know little or nothing about medicine, but a good deal about the gullibility of the people. It is quite feasible to expect that, in return for the stamp duties, the Government should exercise some supervision over these nostrums, and a department should be created to examine and analyse the decoctions before they are put on the market with the seal of approval or recommendation which a Government stamp gives in the eyes of the ignorant....Perhaps some member of Parliament will make the subject his own and force the hands of the authorities. The poorest classes are those so successfully duped, and they by reason of their straitened circumstances are the people most entitled to protection." The *Nottingham Guardian*, again, with reference to another inquest, says: "Thousands of adults seriously injure their health by the quantities of medicine they consume in the course of the year. The amount of money spent upon patent medicines of all kinds must run into millions, and in all probability the general consumption of such large quantities of drugs is one of the reasons why there is such a large increase in sickness, as is shown by the returns of all the large Friendly Societies. If all this mischievous 'stuff' could be poured down the sewers instead of down human throats, the world would probably be much healthier." Finally, the *Daily Graphic*, after devoting a long article to the subject of the abuse of drugs, as revealed in a recent case before a London magistrate, draws particular attention to the harm which accrues from the sale of medicated alcohols. These strong expressions of opinion by lay journals of repute in different parts of the country, although we might not be prepared to endorse them in every detail, support in every way the views expressed in our own columns in the article to which reference has been made.

POISONING BY TANNING LIQUOR.

Dr. Waldo, the coroner for the City of London and Southwark, held an inquest on September 15th with regard to the death of a workman at the tanning works of Messrs. Samuel Barrow and Co., Bermondsey, who died after falling

into a tanning pit. It appeared that the man was going to the watercloset, and while walking down the alley slipped and fell into the pit, which contained English bark liquor, but no skins. The pit was 5 ft. 4 in. deep and the depth of the liquor was 3½ ft. Dr. J. C. Bell, who first saw the man, said that he was shivering and very blue and cold. He had vomited brown liquid and could not speak many words; he appeared to be suffering from shock. The patient was admitted into Guy's Hospital, where he suffered from intense diarrhoea and died about four hours later. The necropsy showed that the body was well nourished, there was slight atheroma of the aorta and old pleurisy at the apex. Beyond this the internal organs were normal, with the exception of the stomach and intestines, which showed signs of irritant poisoning. Mr. Stanley Hodgson, M.B., House-Surgeon to Guy's Hospital, attributed death to the effects of an irritant poison producing collapse from vomiting and diarrhoea. Mr. James Gordon Parker, D.Sc. (Strassburg and Berlin), Director of the Research Laboratory of the Leathersellers Company, gave evidence that he had analysed the liquor into which the deceased had fallen; it contained liquor of bark and of the acorn cup of the Turkish oak, but no antimony, arsenic, or other poisonous substances which taken in a minute dose would be likely to cause death. It was stated in evidence that workmen were in the habit of drinking this liquor as a pick-me-up, and great surprise was expressed that it should have caused death. Mr. Hodgson stated that Dr. Stevenson had told him that he had found a somewhat similar case of death recorded in Germany about forty years ago, and Dr. Waldo informs us that on December 3rd, 1902, he held an inquest at Southwark upon a man aged 71, who was also a labourer in the same tannery. This man had fallen into a vat of liquor 6 ft. deep. Dr. Ashby, who attended him, found him pulseless and suffering from symptoms of shock; there was no diarrhoea or vomiting, and he was satisfied that death was due to the immersion, accelerated by chronic bronchitis. No necropsy was made, and the jury returned a verdict in accordance with medical evidence.

EMPLOYERS' LIABILITY AND ABUSE OF HOSPITALS.

LETTERS are occasionally received complaining of the action of employers who send injured workmen into hospitals, and in that manner evade their liability to defray the expense of their medical treatment. This complaint is only partially true. It would not apply where the workman chose to proceed under the Workmen's Compensation Act, for by that enactment the employer is required to pay a portion of the workman's wages during the time of his disablement. Where the latter preferred to recover under the earlier enactments a lump sum, which would include the medical expenses, it is true that if the workman had been treated in a hospital the employer might be released from some of his liability. But it is not easy to see how this could be avoided. More often than not employers insure against claims of this kind, and then it would be the insurance company that would reap the benefit. The welfare of the patient must be the chief consideration, and in many cases, owing to the nature of the accident or the character of the workman's home, there can be little doubt that it is for his benefit to go to the hospital, and that being so it is rather a secondary question whether any one gets an undue advantage through his not being treated at home. Medical practitioners sometimes benefit in this way, especially the holders of certain public appointments, where cases of a troublesome nature are treated at the hospital which otherwise they would have to attend to without extra remuneration. A certain amount of hospital abuse of this kind—if it can fairly be called abuse—seems almost inevitable under our existing system or want of system. They manage these matters much better in Germany, but meanwhile the object of reformers should be to do away with the numerous forms of abuse which none can defend, and which are harmful alike to the public and the profession.

LIVERPOOL INFIRMARY FOR CHILDREN.

A CORRESPONDENT writes: The Liverpool Infirmary for Children is now in process of demolition, and the in-patient work is being temporarily carried on in a neighbouring dwelling-house which has been structurally altered for the purpose. In some correspondence which has appeared in the local press the fear has been expressed that the building materials of the old structure, which have been sold to a contractor, may spread infection when used again. No danger of this kind need be anticipated. The external brick and stone, etc., are above suspicion, while the lath and plaster of the interior are being destroyed by fire. As proof that the faulty design of the old hospital was responsible for the frequent outbreaks of infectious disease, and not the impregnation of the materials with the germs thereof, it may be mentioned that for six months or more prior to its evacuation there had been no further cases. During this time, however, the two largest wards have been empty, and the cots in the others reduced to 30, instead of the normal 82. It need hardly be said that 30 beds are insufficient for a city of the size of Liverpool; and it is hoped that the foundation stone of the new hospital may shortly be laid. This, it is understood, is to contain 100 cots, while the nursing home is to be erected on a plot of land adjoining the new out-patient department, thus freeing the site for the hospital proper.

ANTIRABIC INOCULATIONS AT THE PASTEUR INSTITUTE, PARIS.

ACCORDING to a report by M. Eugene Viala in the *Annales de l'Institut Pasteur*, the total number of persons who underwent the antirabic treatment at the Pasteur Institute, Paris, in 1902 was 1,106. Of these, 3 died of hydrophobia; in 1 case the disease developed before the completion of the treatment. Omitting this case, the statistics for the year are as follows:—Persons treated, 1,105; deaths, 2; percentage of deaths, 0.18. The corresponding figures for previous years are as follows:—1886: Number treated, 2,671; deaths, 25; mortality, 0.94 per cent. 1887: Number treated, 1,770; deaths, 14; mortality, 0.79 per cent. 1888: Number treated, 1,622; deaths, 9; mortality, 0.55 per cent. 1889: Number treated, 1,830; deaths, 7; mortality, 0.38 per cent. 1890: Number treated, 1,540; deaths, 5; mortality, 0.32 per cent. 1891: Number treated, 1,559; deaths, 4; mortality, 0.25 per cent. 1892: Number treated, 1,790; deaths, 4; mortality, 0.22 per cent. 1893: Number treated, 1,648; deaths, 6; mortality, 0.36 per cent. 1894: Number treated, 1,387; deaths, 7; mortality, 0.50 per cent. 1895: Number treated, 1,520; deaths, 5; mortality, 0.33 per cent. 1896: Number treated, 1,308; deaths, 4; mortality, 0.30 per cent. 1897: Number treated, 1,521; deaths, 6; mortality, 0.39 per cent. 1898: Number treated, 1,465; deaths, 3; mortality, 0.20 per cent. 1899: Number treated, 1,614; deaths, 4; mortality, 0.25 per cent. 1900: Number treated, 1,420; deaths, 4; mortality, 0.35 per cent. 1901: Number treated, 1,321; deaths, 5; mortality, 0.38 per cent.

THE BRITISH ASSOCIATION.

THE report of the General Treasurer, Professor Carey Foster, presented at the final meeting of the General Committee, stated that the total number of tickets issued was 1,754. At the Southport meeting (1883) the number of tickets issued was 2,714. At the Belfast meeting in 1902 the number was 1,620, at the Glasgow meeting in 1901 the number was 1,912, at the Bradford meeting of 1900 the number was 1,915, and at the Dover meeting of 1899 the number was 1,403. Among the grants recommended were the following:—Zoology: Zoological table at Naples, £100; index animalium, £60; investigations in development in the frog, £15; and researches on the higher crustacea, £15. Physiology: The state of solution of proteids, £20; and metabolism of individual tissues, £40. The following resolutions by the Committee of Recommendations were agreed to:

That, as urged by the President in his address, it is desirable that scientific workers and persons interested in science be so organized

that they may exert permanent influence on public opinion in order more effectively to carry out the third object of this Association, originally laid down by the founders, namely, to obtain a more general attention to the objects of science, and a removal of any disadvantages of a public kind which impede its progress, and that the Council be recommended to take steps to promote such organization.

That the Council be requested to consider the desirability of urging upon the Government, by a deputation to the First Lord of the Treasury or otherwise, the importance of increased national provision being made for University education.

MEDICAL EDUCATION IN THE UNITED STATES.

The *Journal of the American Medical Association* of August 15th is largely devoted to the subject of medical education. We learn from it that the number of medical students in the United States for the year ending June 30th, 1903, was 27,615. Of this number, 24,930 attended the regular schools, 1,498 the homoeopathic, 848 the "eclectic," and 339 the "physio-medical" and nondescript schools. There was an increase in the attendance at the regular schools of 52 as compared with the previous year, and an increase of 1,094 as compared with the year which ended on June 30th, 1901. In the homoeopathic schools there was a decrease of 119 as compared with 1902, and a decrease of 185 as compared with 1901. Of the "eclectics," there were 848 registered, against 765 of the preceding year and 664 in 1901, showing an increase of 83 over 1902 and 184 over 1901. Those in attendance at the "physio-medical" and nondescript schools numbered 339, an increase of 98 as compared with last year, and of 115 as compared with 1901. The total number of graduates in medicine for the year ending June 30th, 1903, was 5,698, an increase of 699 as compared with the preceding year, but only of 234 over the number of graduates for the year ending June 30th, 1901. The decrease in 1902 is attributed to the lengthened course of study and the increased requirements of the State Boards. The number of medical colleges in the United States which grant the degree of M.D. is 154. Of these 121 are regular, 19 homoeopathic, 10 "eclectic," 3 "physio-medical," and 1, the National Medical College of Chicago, nondescript; the most distinctive feature of this institution is its accommodating character, as it professes to teach not only according to the tenets of the four "schools" mentioned, but also osteopathy. In addition to these schools there are three which give instruction in the first two years' work. Altogether, therefore, there are 157 institutions devoted to teaching medicine in the United States. There are fourteen cities which are privileged to possess four or more schools each, and in these cities eighty-four of the 154 schools have their local habitation. New York has the fewest medical schools in proportion to its population, while Chicago has the distinction of having the largest number of medical schools of any city in the United States.

EPIDEMIC DIARRHOEA DUE TO POLLUTED WATER.

The account given by the Medical Officer of Health to the Essex County Council of an extensive epidemic of diarrhoea in the Borough of Chelmsford is an interesting contribution to epidemiological literature, as outbreaks of this character are either of very rare occurrence or they escape observation. In this instance, had there been no county officer able promptly to investigate the outbreak, it would have been passed over, and in the annual report it would only have appeared as though the town had had a rather heavy death-rate from ordinary zymotic diarrhoea. Dr. Thresh, however, found that the outbreak was explosive in character, affected adults rather than children, although the mortality was chiefly confined to young children, was limited to a definite area supplied with water from a particular source, the portion of the town supplied from a different source escaping, and that it occurred within two or three days of the pollution of the supply, and as suddenly ceased when the cause of the pollution was discovered and removed. The pollution arose from the washing into a service reservoir of manurial matter from a road and patch of garden abutting on the reservoir during the storm of July 23rd. This tank or reservoir was not bricked up above the ground surface, and was not covered or otherwise protected. Unfortunately such tanks are not uncommon, and it is well that public attention should be directed to the risk of pollution, and to the possible results of such pollution. Had the garden adjoining the implicated reservoir been manured with excrement specifically infected, probably an appalling epidemic of typhoid fever would have followed the outbreak of diarrhoea. The Borough of Chelmsford is to be congratulated on having escaped such a calamity. One thousand four hundred sufferers from diarrhoea and fourteen deaths is a heavy penalty to have to pay for an oversight in the construction of a tank, but the suffering may not have been in vain if water authorities generally examine their works and promptly have all such defects remedied.

RECENT VIEWS ON APPENDICITIS.

Appendicitis is by now so firmly established a disease amongst us that a generation of medical men is arising which finds it hard to realize that the recognition of the frequency of this malady and the evolution of its rational treatment date back to well within a score of years ago. It is hardly half that time since a wordy warfare was waged with much acerbity on the question of nomenclature, while the diagnosis "of a little trouble round the caecum" was regarded as a somewhat daring pronouncement. It is far different now, when American ladies give dinner parties to a score of their appendixless friends, and send the gruesome details to the newspapers. But if our knowledge of the subject has greatly advanced, the last word with regard to it is very far from having been said. In connexion with this, Professor Howard Kelly's recent address to the Glasgow Obstetrical and Gynaecological Society is of particular interest. The eminent American surgeon, who has done so much towards improving the operative treatment of the disease, devoted his lecture to a generous appreciation of pioneer work in the same direction accomplished by our own countrymen; his researches have no doubt rescued from oblivion names which would otherwise have been forgotten in this connexion. He refers first to Dr. Parkinson's admirable account with necropsy of a case seen by him in 1812. He gives Dr. Parkinson the credit of having been the first to recognize diseases of the appendix as a fatal morbid process. Professor Kelly then summarizes the well-known papers by Blackadder, Copland, Hodgkin, Bright and Addison, and Burne. He lays particular stress upon the admirable scientific account given by Bright and Addison, but considers that the value of Burne's memoirs has been greatly overestimated. Of much greater interest is the account published in 1848 by Mr. Hancock of the first successful operation for appendicitis. In this case he opened the abdomen owing to the presence of pain in the right iliac fossa with local thickening and symptoms of peritonitis, but without evidence of fluctuation; he found an abscess to be present, which he drained. On the fifteenth day two faecal concretions were discovered in the wound, after which the patient completely recovered. Mr. Hancock argued with great skill that the presence of these concretions pointed to the appendix as the source of the disease, and that the successful issue of his case should induce the adoption of surgical interference in similar circumstances. No notice appears to have been taken of this striking communication, and it was not until eighteen years later that Dr. Willard Parker, of New York, undertook a series of operations which, when published in the following year, excited immediate attention, and may be regarded as the starting point of the modern handling of appendicitis. Almost at the same time that Professor Kelly was addressing a British audience on one aspect of the subject, Dr. Woods Hutchinson was communicating his views upon another department thereof to our American colleagues. Dr. Hutchinson is chiefly interested in the morphological and ontogenetical history of the appendix. He shows that it is essentially merely the distal third of the caecum which has undergone the process of atrophy and will eventually become extinct. In birds and herbivorous mammals the appendix is represented by a large voluminous and actively functional pouch; its

appearance seems to be related to the acquisition of terrestrial habits, and to the necessity of avoiding unnecessary loss of water in the faeces. As the purely herbivorous and particularly graminivorous diet become replaced in the animal scale by a less bulky and more highly nitrogenous and above all fleshy larder, the need for an appendix progressively diminishes, but it is only in man that this atrophy has, so to speak, assumed an acute form. The result has been a great liability of this organ to inflammatory diseases, while the surgeon may feel that in removing it he is only anticipating the work of Nature. Dr. Hutchinson calls attention to, and quotes with great approval, the method of treatment devised by Ochsner. This is essentially medical in character; it aims at preventing the diffusion of infection from the appendix by abolishing the peristalsis of the small intestines. This it is claimed can be effected by thoroughly emptying the stomach and then withholding all food, and as far as possible even drink, by the mouth. It is claimed that by this method the inflammation can be induced in a large percentage of cases to localize itself as a walled-in abscess in the caecal region. It is even suggested that the pus of this abscess may, under favourable conditions, be absorbed, and no trace of the disease remain save a few adhesions. Ochsner's statistics based on nearly 1,000 cases are said to show a decrease in mortality from 14.6 per cent. to 3.4 per cent.; this seems indeed a striking result, and the method may well be worthy of trial in England, even though the case-mortality may not be so high here—a circumstance which is probably due to the fact that our surgeons are on the whole not disposed to indiscriminate and early operation in the acute stage of the disease. But we think that Ochsner's statistics require very careful analysis, particularly from the point of view of diagnosis, before action is taken upon them.

THE GOVERNMENT LABORATORY.

THE report of the Principal Chemist (Professor T. E. Thorpe, C.B., F.R.S.) upon the work of the Government Laboratory for the year ending March 31st, 1903, does not contain very much of direct medical interest. Perhaps the most striking thing about it is that it brings home once more the truth of Mr. Gilbert's song which described that things are not always what they seem. This appears to be distinctly the case if they are judged by the titles by which they are entered by merchants in their Customs returns. Thus crushed bones were entered last year as "semolina," formaldehyde as "acetic acid," fruit juice as "tinned fish," ginger-bread as "paints," peas as "cabbage seeds and bulbs," sodium peroxide as "fancy goods," varnish as "iron goods," while "machinery" and "razor strops" turned out to be tobacco fumigating powder and sugar-coated pills respectively. Some 5,000 samples of publican's beer were examined, and 11.7 per cent. of them were found to have been diluted, but this is a somewhat lower average than has been the case in some recent years. Eleven hundred odd samples of beer and beer materials were examined for the presence of arsenic, and in the great majority of cases this impurity was either altogether absent or present only to the extent of very minute traces. In 44 cases, however, arsenic was found in quantity sufficiently appreciable to make it necessary to warn those concerned either not to use the materials or not to issue the beer for sale. The export of English-manufactured medicinal tinctures, perfumes, and flavouring agents, as checked by the number of samples submitted for examination in connexion with the Excise drawback of duty, appears to be increasing, the latter having risen from 11,000 in 1901 to nearly 13,000 in 1902. Of some 2,000 samples of imported butter which were examined, about one-third were found to contain boric acid as a preservative, while about one-third were artificially coloured. In detail, as regards different sources of supply, boric acid was present in 98 per cent. of the samples from Australia and Belgium, in 86 per cent. of those from France, in 78 per cent. of those from New Zealand, in 77 per cent. of the South American samples, in 45 per cent. of those from Holland, and in 43 per cent. of the samples from the United States. On the other hand, this preservative was only present in 1 per cent. of the samples from Denmark and Russia, in 2 per cent. of those from Norway, in 10 per cent. of those from Germany, and in 16 per cent. of the samples of Canadian origin. The imported milk examined was principally the condensed variety, and of this one sample from Holland was found to be machine-skimmed milk, though not so labelled, while one sample of sterilized milk from Italy and two from Holland were found to be deficient in fat, and one French sample of the same variety of milk contained added water. Of imported cheese, none of the 234 samples examined were found to be made of margarine, but in five cases the amount of fat was under 2 per cent. In reference to certain filters which were tested, attention is usefully drawn to the fallacy of testing filtering materials apart from their connexions. The former may be perfect, but if the latter are, or are likely to become, imperfect, as is frequently the case, the filter for practical purposes is worthless. Examinations undertaken for the Home Office in connexion with pottery manufacture seem to show that glazes compounded of the double silicate fritts recommended in the report of 1899 on "the employment of compounds of lead in the manufacture of pottery," are capable of giving results satisfactory from the point of view of the health of the workers as well as from that of the manufacturer. Another question investigated for the Home Office was that of whether along with the products of complete combustion in stoves used for heating workrooms, but unconnected with flues, there is any appreciable production of acetylene and carbon monoxide. Experiments were made with five popular varieties of such stoves, three using gas and two oil, with results that showed that while acetylene was produced by none of them, an appreciable amount of carbon monoxide was a product of all of them. The oil stoves gave both relatively and actually more CO than the gas stoves, and it is obvious that in rooms where stoves of either variety are used without flues, very free ventilation is desirable. The chief point of interest that remains to be noted is the summary of the work done in connexion with the "Sale of Food and Drugs Act." Ninety-five samples were sent to the laboratory by magistrates in cases where the accuracy of the report of the public analysts concerned was disputed by the defendants. In 14 of the cases the conclusions of the chemists at the laboratory differed from those of the public analysts; in 3 the samples arrived in such condition that they could not be examined, and in the remaining 78 the conclusions formed by the public analysts were in effect identical with those of the Government laboratory.

THE CAUSE OF CONSUMPTION IN CHILDHOOD.

IN a paper read before the Physico-Medical Society of Würzburg Dr. Dieudonné makes a very valuable contribution to our present knowledge of the etiology of consumption in childhood. Possibly the author was led to investigate the subject by the highly interesting results which Cornet, working under the guidance of Virchow, obtained in the course of numerous and carefully-conducted experiments. These results showed clearly that tuberculosis is most common in children who are between 1 and 2 years old, but forms, on the whole, a rare occurrence in the first year of life, and that in those who are between 3 and 4 years old the percentage of consumptives is decidedly lower. Since the publication of Cornet's researches the subject has been minutely studied by other investigators, amongst whom Jeill, whose observations were published, as far back as 1888, in the *Jahrbuch für Kinderheilkunde*, vol. xxxii, deserves especially to be mentioned. That investigator examined the reports of necropsies of 584 children who were under the age of 15 years. These children died from various causes, among which tuberculosis was a common one, and Jeill was able to ascertain that very few indeed of the patients who died of consumption were in the first year of life, but that those who were in the second or third year were numerous. These facts have been wholly or partly confirmed by several other observers. According to Brandenberg, who examined 203 cases, there were 18 per

cent. in the first year of life, 42 per cent. in the second, 21 per cent. in the third, and about 19 per cent. in the fourth; but a scientific explanation that could be regarded as satisfactory has been wanting, and therefore under these circumstances the paper already mentioned deserves special attention. Dr. Dieudonné states that he examined the dirt on the hands and the secretion in the nose of a number of children whose ages ranged between 9 months and 3½ years, and almost invariably found tubercle bacilli in the dirt and secretion also. With cultures of these bacilli, as well as the original secretion, he inoculated a series of guinea-pigs, the result being that the animals thus experimented on soon became infected with and eventually exhibited all the classical signs of tuberculosis. From these facts he concludes that the great frequency of consumption in children is largely due to the fact that parents in general, and especially those of the poorer classes, allow their young offspring to crawl about the floors on hands and knees. A child in this way soils his hands with dirt or dust which contains tubercle bacilli, and when he puts a finger up his nose he conveys the germs to the mucous membrane, whence they are conveyed by way of the lymph paths into the general system. A child crawls about the floor most frequently in his second year of life: in his first year the mother carries him in her arms when he is not lying in his cot, and when he is upwards of 2 years old he has generally got good use of his legs. This seems to explain how it is that so many children, who are afflicted with tuberculosis, are between a year and 2 years old, and that infants in arms are but rarely attacked by the disease. It would be premature as yet to draw definite conclusions from these interesting investigations, but parents would do well to observe the precautions which they suggest.

AN EXAMINATION IN SURGERY IN 1789.

Mr. G. C. Peachey, medical officer of health at Wantage, has published an interesting account of a local medical practitioner, which he entitles, *The Life of William Savory, Surgeon of Brightwalton*. This William Savory was no connexion of the late Sir William Savory, Surgeon at St. Bartholomew's Hospital and President of the College of Surgeons. The life is full of good things and not the least is his account of the examination he underwent at Surgeons' Hall for the diploma of membership. It is given verbatim and without comment, though readers of Smollett will see that the examination has not undergone much change in the fifty years between the examination of the fictitious Roderick Random and the real William Savory. Smollett has often been accused of caricaturing the examination, but this account shows that there was no need to do so as an unvarnished statement of fact was alone necessary: "1789, May 7th. I was examined at Surgeons' Hall and had the honour conferred on me to be a member of their body. This hall is a large pile of buildings in the Old Bailey Street. We were called into the room and examined one at a time. About a fortnight before I was examined I went to the Hall and entered my name in a book and paid 2s. 6d. When I entered the room I was a little timid by seeing the surgeons: however, I recovered of that dread and answered every question they asked me. The table they sit round is in the form of a semi-circle, the master sits in the middle and the two wardens each side, and three or four surgeons each side of the wardens, and the surgeons examine the pupils by turns. The master asked me where I received my instructions. I told him at St. Thomas's Hospital, and attended lectures under Mr. Cline. I was then ordered to Pile to be examined. Q. What are the common integuments? A. The cutis, cuticle, and rete mucosum. Q. What are the arteries? A. Vessels which carry the blood from the heart. Q. What comes first to view after the common integuments are off the abdomen? A. The linea alba. Q. How does the urine enter the bladder? A. By the ureters obliquely. Q. What are the parts in the thorax? A. The heart, lungs, pleurae, etc. Now I have asked you a few questions in anatomy I shall ask you a few in surgery. Q. Where would you cut off a person's leg? A. If below the knee I would amputate about 4 or 5 in. below the extremity of the patella. Q. But where would you make your first incision? A. A little below to allow for excess of contraction. Q. Where would you apply the tourniquet, and how would you stop the haemorrhage after the limb is amputated? A. I would apply the tourniquet on the middle of the thigh, because there the artery is nearer the bone, and I would stop the blood with a needle and ligature, and after that I would keep the skin forward with a bandage and apply dry lint and adhesive plaster. Q. Which side would you stand to amputate the leg? A. On the inside because of taking off the fibula first. Q. Supposing the patient is weak and low after the operation what would you give him? A. I would give him bark. Q. Suppose you have a stone in the urethra, how would you extract it? A. If it were impossible for me to get it out without making an incision, I would pull the prepuce over the glans, and make an incision the length of the stone through the teguments. It cost me £13 5s.; the diploma cost the 5s. We were all called in afterwards and took our oaths, and received a little pamphlet containing rules and orders; the next day we received our diplomas."

THE REGISTRATION OF DEATHS FROM ALCOHOLISM AND PROFESSIONAL SECRECY

It is a well-known fact that the entries of deaths from acute or chronic alcoholism in the Registrar-General's returns express only a small proportion of the total mortality caused by intemperance. When, therefore, we are assured in Mulhall's *Dictionary of Statistics* that the deaths from alcoholism are 0.54 per 1,000 total deaths from all causes in France, 2.60 in England, 2.36 in Norway, 3.83 in Belgium, and 6.25 in Sweden, we have no confidence that these figures accurately or even approximately represent the real facts as to this scourge of humanity. The paper read at the Brussels Congress by Professor Mahaim of the University of Lausanne is valuable in drawing attention to the deficiencies of the statistics of most countries relating to alcoholism, and in pointing out a "better way." The ordinary method of supplying death-certificates, he points out, pays no regard to *le secret médical*. Thus in England the local registrar of deaths may know the person whose death is returned as due to alcoholism; and although indiscretion on the part of registrars is probably very exceptional, it is obvious that much distress might be caused by unthinking gossip. Furthermore, the certificate has to pass through the hands of the family of the deceased, which renders it difficult and sometimes impossible to enter such causes of death as alcoholism and syphilis. According to Dr. Mahaim, in only two countries in Europe—namely, Switzerland and Denmark—is the secrecy of the medical certificate guaranteed. In Switzerland the death-certificates are made so that the registrar (*l'employé de l'état civil*) receives from the practitioner a numbered card. The corresponding name can only be found by making numerous inquiries in various offices of the Central Administration at Berne. This system has been in force for the 15 great towns of Switzerland for ten years, and for two years in the whole of Switzerland. In 1902, out of the total male deaths in Switzerland at ages over 20, 0.5 per cent. were caused by delirium tremens, which is 10 times the official number for France. If the deaths in which alcoholism was either the principal or a concomitant cause of deaths be included, then 441, or 10.4 per cent. of the total deaths of men over 20 years of age in the 15 towns of Switzerland were ascribable to alcoholism. This proportion varied only from 10 to 10.5 per cent. between 1898 and 1902. Taking alcoholism alone, whether acute or chronic, without including as above such diseases as cirrhosis of the liver, then in the 10 years 1891-1900 the percentage of total deaths due to this cause among men over 20 years of age varied from 2.2 to 3.1 per cent., or an average of 2.47 per cent. for the whole period. Dr. Legrain, President of the Union Française Antialcoölique, proposed at the Brussels Congress that a special rubric should be made of alcoholism in all official

statistical tables, with subdivisions enabling one to estimate not only alcoholism as a primary cause, but also as a secondary or indirect cause of death. It is clear that in the Swiss statistics given by Dr. Mahaim this plan has already been adopted, as it is only by the inclusion of deaths from cirrhosis of the liver, etc., under the heading of alcoholism that he is able to show that it causes over 10 per cent. of the total deaths of male adults. This method of classification has much in its favour; but the balance of argument is against its adoption. If one is to read into the name of the disease from which death has occurred a personal view, however probable it may be, of the causation of this disease, the way is at once opened to individual peculiarities of opinion and the production of erratic and incomparable statistics. Thus, in the instance already quoted, cirrhosis of the liver is probably nearly always due to alcoholism. It may, however, in exceptional instances have a different causation. It is preferable, therefore, to keep this disease separate from alcoholism, though the deaths from it may still "point a moral." Similarly, if a chronic alcoholic has died from peripheral neuritis following an attack of influenza, who shall decide which of the two toxins was the efficient cause of the disease? Enough has been shown to indicate that the statistician as such has nothing to do with theories of causation. He must put down the facts as given, not combining heterogeneous statements in a single group. There is much to be said, however, in favour of an improved method of registration of causes of death in England. The fact that the doctor has to hand the certificate of the cause of death to a near relative of the deceased who takes it to the registrar of deaths is a strong inducement to the doctor to soften down or entirely to omit any statement of cause of death which would hurt the relatives' feelings, and thus possibly cause friction between him and them. The proper course would be to pay a small fee for each medical certificate of cause of death, and insist on its being posted direct to the registrar. It is open to doubt whether it is necessary to have in England the duplicate system in vogue in Switzerland and Denmark. We are of opinion that a fee should be paid for each certificate, and we should welcome as preferable to the present arrangements the enforcement of a legal obligation on the practitioner to post to the registrar the certificate of death in a stamped envelope supplied to him. We believe that the majority of practitioners would feel relieved by the enforcement of such a plan.

THE CHEMISTRY OF NATURAL MINERAL WATERS.

DR. MEYERHOFFER'S lecture on the Chemico-Physical Condition of Mineral Waters,[1] delivered before the Congress of German Naturalists and Medical Men at Carlsbad in 1902, which has been issued as a pamphlet, is a review of the most modern chemico-physical doctrines in their bearings on the problems of the composition and therapeutic effects of natural mineral waters. The conditions of osmotic pressure and the "ionic" theory are specially considered. Meyerhoffer concludes that we are not yet in a position to determine exactly the state of the salts in even moderately complicated mineral waters. The analytical results expressed in "ions" may be nearer the truth than the results of the older analyses expressed in salts, and will be more correct the more dilute the mineral water is, yet the real state of the solutions, excepting in certain types of mineral waters, remains undetected. According to Meyerhoffer, the objection often heard that a doctor can make nothing of an analysis expressed in "ions," can be answered by the statement that it is in great part the "ions" rather than the salts that cause the reactions and the specific effects of mineral waters. Medical men ought therefore to be acquainted with the new views on the subject. In regard to the different action of mineral waters and their artificial imitations, the author lays stress on the view that some of the action of natural mineral springs may be due to the chemical effect of minute quantities of arsenic, iodine, etc., not present in their imitations, and he recalls the fact that minute amounts of both arsenic and iodine occur normally in the human organism. He alludes to the possible effect of "mineral enzymes" in mineral waters, analogous to the catalytic action of finely-divided platinum and colloidal metallic solutions. He points out, for instance, that the proportion of gold in sea water is much greater than that of platinum in Bredig's fluids, which can exercise a distinct catalytic effect. Many of these questions in regard to mineral waters will in time be answered by modern physico-chemical methods.

[1] *Die chemisch physikalischen Verhältnisse der Heilquellen*: The Chemico-Physical Constitution of Mineral Waters. By Dr. W. Meyerhoffer. Hamburg and Leipzig: Leopold Voss. 1902. (Demy 8vo. pp. 72. M. 1.)

SCHOOL TEACHERS AND INFECTIOUS DISEASE.

WE have received a copy of a memorandum on infectious diseases written by Dr. J. W. Allan, Physician at the Glasgow Royal Infirmary, for the purpose of instructing elementary school teachers under the School Board at Cathcart. The object of the pamphlet is not to furnish information respecting infectious diseases with the idea that the teacher should in any way take the place of the physician, but to call attention to signs and symptoms which come under the teacher's observation in the routine discharge of his duty. Hence many points are referred to only in a limited way—for example, rashes are not described in detail; nor is their distribution over the body indicated, which is as it should be. As an elementary guide to arouse suspicions in the mind of the teacher as to the onset of the common infectious diseases the memorandum may be useful. The chief premonitory symptoms of each disease are mentioned, and the length of incubation and quarantine periods. Another useful point is the emphasis laid upon the importance of the early detection of mild cases of disease, for not only is the point of importance in all epidemics, but it is that which particularly falls to the school teacher. The inclusion of typhus and plague appears hardly necessary, and it would have been well to amplify the remarks on such non-notifiable diseases as whooping-cough, measles, and chicken-pox. The part which the school teacher may play in the early detection of infectious disease is important, and perhaps has hardly received from sanitary authorities the attention it deserves. Something of the nature of this memorandum, with perhaps a little more amplification, might not unsuitably be issued by medical officers of health for the guidance of teachers and persons in similar positions.

CURETTE PERFORATION: OMENTUM IN THE UTERINE CAVITY.

OUR attention is often turned to the question of perforating wounds of the uterus, as it is related to important subjects such as malpraxis, criminal abortion, and the use and abuse of the curette and sound. It seems now certain that perforation of the uterine wall by an instrument is very frequent, whilst accidental "catheterization" of the Fallopian tube by the sound is rare, and experience has also shown that as a rule the results of perforation are not severe. Men are prone to be reticent about such accidents, which is perhaps the reason why the after-results are seldom recorded. Professor Küstner, of Breslau, has recently reported two cases under his observation within six years in one institution,[1] where a remarkable result of perforation was noted. We suspect that other cases must have occurred and yet remain unrecorded. The first patient was a multipara who had twice been under treatment for some form of pelvic inflammation; on each occasion the curette was employed, symptoms of peritonitis following the second application of that instrument. Irregular haemorrhages ensued, and at the end of two years the patient consulted Dr. Küstner. The uterine cavity was explored, and as its surface was suspiciously irregular, vaginal hysterectomy was performed. On drawing down the fundus a firmly adherent piece of omentum, as thick as a lead pencil, was found intimately adherent to

[1] Einheilen von Netzpartien in die Uterushöhle nach Perforation mit der Curette, *Monats. f. Geb. u. Gyn.*, August, 1903.

the uterus, so that it was ligatured and divided. The uterus was laid open and its interior was found to contain a polypoid fatty body as large as a bean and adherent to the adjacent mucosa. Its pedicle passed through the uterine wall at the fundus and was continuous with the adherent piece of omentum. The second patient was 53 years of age, in the summer of 1901 vaginal fixation of the uterus and a plastic operation on the vagina and perineum were performed for the relief of cystocele and retroversion. The patient went home from hospital relieved, but sanious discharge followed and her private doctor used the curette. The discharge growing worse, the patient came under Dr. Küstner's care in the winter of 1902. On exploring the uterus fatty tissue came away, so that the condition which existed in the previous case was suspected. Vaginal hysterectomy was considered justifiable, the operation proved difficult, partly owing to the previous vagino-fixation; adhesions were abundant and required ligature. As in the first case a kind of omental polypus was found in the uterine cavity, its pedicle being traceable through the wall into a piece of omentum strongly adherent to the fundus. Thus it is evident that omentum can enter the uterine cavity and set up discharge, and that the cause in the two known cases, both observed and recorded by the same competent authority, is perforation of the uterus by the curette. That accident is of greater importance than a pathological curiosity, yet it is well to remember that the latter is one of the results of curette perforation. It implies that in many more cases the omentum adheres to the wounded serous coat of the fundus and thus saves the general peritoneal cavity from infection.

THE BIOMETRICAL ASPECTS OF A SICKNESS TABLE.

The issue of *Biometrika* for June embodies an attempt by Mr. W. P. Elderton to apply the higher mathematical methods of Professor Karl Pearson to the graduation and analysis of a sickness table. It is becoming better recognized that "the whole problem of evolution is a problem in vital statistics," and that we have now to pass from the qualitative methods of the past to the quantitative methods rendered practicable by the application of mathematics to the problem. Without attempting to give the technical details of this paper, it may be described as an attempt to see if sickness may be referred to certain broadly marked periods of life corresponding to those which Professor Pearson showed were characteristic of mortality. Professor Pearson showed that the old age part of the deaths curve of Dr. Ogle's English life table could be represented accurately a Type III frequency curve having its origin at 71.5, and when this "old-age" curve was deducted from the deaths curve the end of the remainder could be fitted by a normal curve having its origin at 41.5. This was called the "middle-life" curve; and, when it was deducted, a "youth" curve of the normal type, with an origin at 22.5, was found. Following on a similar plan, Mr. Elderton found that the old-age sickness curve is much steeper, and has its origin some nine years earlier than the death-curve relating to the same period of life, the difference being very much less for middle age and youth. In other words, on the average, death, if it comes, follows quickly on sickness in early life, but in old age it may follow the model age of sickness by even nine years. The sickness statistics used in this investigation were those contained in the late W. Sutton's report on the mortality and sickness experience of Friendly Societies in England and Wales between the years 1856 and 1880.

PRACTICAL INSTRUCTION IN BALNEOLOGY.

We mentioned a short time ago the tour organized by Dr. Carron de la Carrière of Paris for the purpose of affording medical practitioners an opportunity of visiting some of the principal watering-places in the foot-hills of the Pyrenees. Last year a similar tour was made to the baths in Savoy, and other districts have been visited in previous years. In Germany, also, similar organized tours have been made annually for some years past, and early this month a party of some hundred and seventy German medical practitioners visited a number of the mineral springs of Western Germany. The tour began at Kreuznach, and among the many other places visited not the least interesting was Nauheim. The party was most cordially welcomed by the authorities of the various baths, who arranged that their guests should be able to combine amusement with instruction. The usual programme was that the party arrived by a special train about midday, and were welcomed by the local authorities at the station. After separating to establish themselves in various hotels and boarding houses, the members met at the Kurhaus Restaurant, where luncheon was washed down by the wines of the district. Thereafter an hour was devoted to hearing papers on the virtues of the local mineral waters, and the party then tramped off to see and taste the various springs and to inspect the baths and bottling establishments. At each halt the bath engineer or a local practitioner gave explanations. This promenade prepared the party for the discussion of dinner, which was followed by a visit to the Kurgarten, where a concert and firework display would be witnessed, and a Festtrunk, offered by the municipality, enjoyed. The festivities were sometimes kept up until a late hour, and the Kurgäste, themselves ordered to bed by their medical advisers at ten o'clock, were roused at midnight or indeed later by the strains of students' songs lustily sung by members of the party who refused to be bound by the rigid rule which the *Bad-arzt* seeks to enforce on his patients. Nevertheless the members of the party would be afoot early to catch the special train which was to carry them to the next spa. The party doubtless gathered much useful information and will have many pleasant recollections of the hospitality which they received, but a man who was not accustomed to "mixing his liquors" might look with some apprehension on the trials to which his stomach, to say nothing of his head, must be subjected during such a tour.

THE DEFINITION OF AN "ACCIDENT."

The definition of the term "accident" appears to be one of the most difficult, while it certainly is one of the most important questions arising under the Workmen's Compensation Act. Some of the judges have been found to give a narrow meaning to the term; others, actuated doubtless by the belief that the Act was really intended to be a scheme of universal compensation, have adopted a wider construction; but the most recent cases show a tendency on the part of the judges to give the term its ordinary meaning. In a recent Scottish case it appeared that a workman was injured through straining his back in replacing a derailed hutch. The Court held that the workman had suffered from an "accident" which entitled him to compensation under the Act. "If such an occurrence as this cannot be described in ordinary language as an accident," said Lord Kinnear, "I do not know how otherwise to describe it." In another case a workman was injured through jumping off a bogey in the course of his employment. Compensation was awarded, although it was proved that the shock which he sustained would probably not have proved fatal had he not been suffering from disease at the time. It was argued, but unsuccessfully, that death was due, not to the "fortuitous" element of accident, but to the disease. The House of Lords has recently approved both these decisions.

RURAL ISOLATION HOSPITALS.

A letter signed by Dr. T. M. Watt of Goxhill, published in the *Hull Times* of September 19th, contains a story which throws a curious light upon the practice with regard to its isolation hospital of at least one rural district council. Dr. Watt states that on March 21st he found a family of six children suffering from scarlet fever; he knew of no other cases at the time, and recommended the removal of the patients to the isolation hospital, especially as the father's tenancy was to expire at Lady Day. The suggestion was not acted upon, in order, Dr. Watt suggests, to save the rates. The family remained in possession until May, to

the great inconvenience of the incoming occupier. On April 25th the illness broke out in the next house, four children contracted the disease, and one died; one of the others was removed to the Hull Infirmary for operation. Since March there has been an epidemic of scarlet fever in the place, and Dr. Watt states that he has himself notified no less than thirty-three cases. Further, on July 10th, a case of typhoid fever occurred in the family of a labouring man. The father was attacked on September 1st and other children sickened on the 7th and 12th, yet still, as we understand, the district council refused to open the isolation hospital. It is difficult to see why an isolation hospital should be maintained at all if it is not to be used to receive infectious cases. Had the earliest cases of scarlet fever been at once isolated there would have been good reason to anticipate that the infection of other persons might have been avoided, and the prevention of epidemics in this way is the very best use to which an isolation hospital can be put. The matter is one which ought to engage the attention of the county council. Although, so far as we are aware, this body has not the advantage of the assistance of a medical officer, still it presumably has a public health committee, and it would be interesting to learn from that body the motives which have induced the district council to refrain from making use of its isolation hospital under circumstances in which it promised to be of such great utility.

PUBLIC HEALTH ADMINISTRATION IN WALES.

WITH the view, doubtless, of raising the standard of public health administration in North Wales, the Local Government Board has sought to combine the two populous districts which comprise the area of the Wrexham Union under one medical officer of health. This proposal became possible by the recent death of the medical officer of health of one of the districts. The Wrexham Rural District Council has, however, turned a deaf ear to the suggestions of the Local Government Board and has filled the vacancy. Whether the appointment will be confirmed remains to be seen. A similar state of things has arisen in Anglesea, where until recently there was a small combination of authorities. Now, however, a change has taken place, and one of the districts has dropped out of the combination and has appointed its own medical officer, but the Local Government Board has refused to confirm the appointment.

NATIONAL DEPOSIT FRIENDLY SOCIETY.

IN view of certain statements which have been made to us we think it well to recall the fact that the following resolution passed by the Council of the British Medical Association was published in the BRITISH MEDICAL JOURNAL of November 3rd, 1900, p. 1340:

That the National Deposit Friendly Society be informed that their scale of fees has not been approved by the Council of the British Medical Association, and that they be warned not to make such a statement in future.

PROFESSOR VON BEHRING.

PROFESSOR VON BEHRING, of Marburg, has been named an "Effective" member of the Prussian Privy Council, with the title of "Excellenz," which is virtually equivalent to our "Right Honourable." This distinction has very rarely been bestowed on members of the medical profession, and till now, we believe, the recipients have in Prussia been exclusively surgeons. We congratulate the discoverer of diphtheria serum on the well-deserved honour that has been conferred upon him. Whatever may be thought of the character and methods of the German Government in other directions, at least it cannot justly be charged with the imperviousness to ideas which makes certain other Governments incapable of realizing the vast importance to nations and to all mankind of the work done by scientific investigators.

IT is proposed to set up a monument in memory of the late Professor Nocard. Among the members of the committee formed to carry out the scheme are Professor Arloing, Professor Brouardel, M. Chauveau, Dr. Metchnikoff, and Dr. Roux.

DR. LOUIS C. PARKES, Medical Officer of Health for Chelsea, has been appointed by the First Commissioner Consulting Sanitary Adviser to His Majesty's Works and Public Buildings, in succession to the late Professor Corfield.

A MONUMENT to Charcot was unveiled with much pomp and circumstance at La Malou-les-Bains on September 20th and 21st. The ceremony was presided over by the Ministers of Public Instructlon and of Commerce.

THE International Statistical Institute, which is holding its ninth meeting at Berlin, has adopted a resolution recommending that the statistical department of each State should supply material upon which a tabular and cartographical statement of the density of the population in Europe could be founded.

IN a report of the meeting of the International Congress of Hygiene recently held at Brussels it was stated that M. Marmorek, of the Pasteur Institute, Paris, read a paper describing an antituberculous serum which gave promise of good results. We learn that M. Marmorek has decided to postpone for a time the publication of his discovery.

IN an article entitled "Some Open Scholarships and Prizes," which was published in the BRITISH MEDICAL JOURNAL of September 19th, p. 666, it was implied that the Ernest Hart Memorial Scholarship is vacant, and applications for it were invited. As a matter of fact the Scholarship is not at present vacant, and we desire to express regret for the inconvenience caused to some gentlemen by our oversight.

THE French Parliamentary Committee of Public Health has sent delegates to study the organization and working of sanatoria for tuberculous patients, and the methods of safeguarding the water and food supplies at Liége, Aix-la-Chapelle, Düsseldorf, Cologne, Hamburg, Berlin, Dresden, Leipzig, Frankfort, and Strassburg. M. Labussière will report on the water supplies, Dr. Meslier on the food question, and Dr. Dubois on the means adopted for the prevention of tuberculosis.

DR. A. BROWN RITCHIE has been appointed medical officer to the City of Manchester Education Committee, which has under its direction the whole of the schools in Manchester, numbering some 170. The incumbent of the appointment, the salary of which commences at £600 per annum, is required to give his whole time to the duties of his office, which is already one of considerable importance. Dr. Brown Ritchie was for several years one of the representatives of the Lancashire and Cheshire Branch of the British Medical Association on the Central Council, and was an active member of the Reorganization Committee. He has already, we understand, had considerable experience in the duties of his new office, having for some time had the supervision of some seventy schools. In the larger field of usefulness which now opens before him he may be expected to accomplish much useful work.

Ireland.

HEALTH OF BELFAST.

Annual Report of the Medical Superintendent Officer of Health.

THE medical superintendent officer of health has lately issued his annual report on the health of the city for the year 1902. It contains 49 pages, 3 charts, and 17 tables; 5 pages contain lists of streets where typhoid fever has occurred, 6 are devoted to the boundaries and to a short description of the 14 registrars' districts, 8 to the climatology of the year, 1 to

a quotation, and 2 are blank; this leaves 27 in which to deal with the health and physical well-being of 358,680 inhabitants. As in previous reports, maps and an index are wanting, and many matters of general and public interest which would very suitably have appeared in the public stocktaking of the health authorities are not mentioned. The annual report for 1902 on the health of the City of Liverpool contains 226 pages, exclusive of an appendix, with 2 maps, nearly as bulky as the whole Belfast report; it furnishes diagrams illustrating the spread of small-pox, and an index of 6 pages with about 200 entries. It is to be regretted that a larger and fuller annual report, such as is issued in most large towns—as Leeds, Manchester, Glasgow, or Cardiff—is not forthcoming in Belfast, since it would increase public confidence.

The population is estimated to have increased by 9,500 over that of 1901: the deaths numbered 7,577, being a decrease as compared with the previous two years; the births were 11,113; this gives a birth-rate of 30.5 and a death-rate of 20.7; both are declining. Although the death-rate shows a steady decline, which is very gratifying, yet it is the highest but one of the large towns in Great Britain—namely, that of Liverpool, which is given erroneously as 22.5, but should be 21.6. Table I, showing the notification of infectious diseases, gives a total of 3,143 notifications as compared with 5,120 in 1901; this is the lowest number of notifications since 1897, when the Act was adopted; the chief decrease is in cases of typhoid (1,044 cases as compared with 2,530 in 1901), a fall which is a matter of hearty congratulation; scarlet fever, diphtheria, and erysipelas have increased, but in no marked degree. The old anomaly in the working of the Notification Act is still present. Typhus fever, puerperal fever, small-pox and relapsing fever are all notifiable, and show a total of 55 cases and 4 deaths. Measles, whooping-cough, and diarrhœa are not notifiable, but 761 deaths were registered as due to this triad. Surely practical legislation should deal with 761 deaths in preference to 4. Does it not seem somewhat of a farce to include relapsing fever, with 1 case notified since the Act was introduced, and to exclude a highly-infectious disease like measles, with 349 deaths in one year?

In only one year (1898) did the deaths from typhoid fever exceed this number, and yet enormous expenditure has rightly been incurred in trying to stamp out typhoid; but apparently no real effort was made to stem the torrent of an epidemic which swept away 222 children in three months. The notes regarding District No. 3 are interesting:

It is situated in the high part of the city at a considerable elevation, with good wide streets, the greater number of the houses are comparatively recently built with fair attention to sanitary arrangements; notwithstanding this, the zymotic death-rate is high and typhoid fever very prevalent.

Of District No. 7 we read:

The sanitary arrangements have been woefully neglected in the past, the inhabitants are chiefly operatives, many of the houses are in a bad sanitary condition, situate below high water level and 4 ft. to 6 ft. below the level of the principal roadway adjoining. There is, however, but little sickness in this district.

This surely is a keen satire on much of our sanitation.

An epidemic of small-pox again threatened, but the authorities in the Public Health Department are to be congratulated on the very effectual precautions taken and the success that attended them; 30 cases altogether occurred, of which 19 originated in the union workhouse.

It is satisfactory to read that the Public Health Committee has been fully alive to the necessity for improved sanitation, and has replaced a large number of the old insanitary privies by watercloseta. A large number of inspections have been made, insanitary places have been closed, and house-to-house cleansing has been carried out.

In the two and a-half pages devoted to phthisis, a malady which caused 1,132 deaths during the year, there is no mention of any move on the part of the Health Committee to lessen this disease. The actual number of deaths is the largest ever recorded; if there be any fall in the mortality-rate it must be very small. No mention is made of other forms of tuberculous disease.

Occurrence of Typhoid Fever in Belfast.

Report by Dr. Lorrain Smith.

A report has just been published by Dr. Lorrain Smith, Professor of Pathology in Queen's College, Belfast, on the occurrence of typhoid fever in Belfast, and on the relation of soil contamination to this occurrence. Dr. Lorrain Smith has been working at the subject for some years, and the commission that he received from the Council to investigate the problem does infinite credit to that body. The report, which has aroused much interest, begins with a general account of typhoid infection, and then falls into three heads:

1. An account of the avenues of indirect infection.
2. The conditions of direct infection.
3. The sanitary history of Belfast in relation to typhoid fever.

In the first section water, milk, soil, air, defective house-drains, and shellfish are considered. Water is pronounced to be by far the most outstanding and important cause. Instances of epidemics are quoted which illustrate, among other points, the time during which surface pollution may be effective in causing an outbreak, the direct effect of spreading over the catchment area a layer of manure from the dungheaps of a city, the danger of putting too great a strain on the sand filters, and the possibility of the typhoid bacillus lurking in the blind ends of water pipes. Under the heading of direct infection is quoted Koch's dictum to isolate the individual affected with fever and to disinfect his excreta. Dr. Lorrain Smith lays emphasis on the supposition that the infection may be much more widely spread than the immediate circle of those who require medical attendance. He then gives a brief history of the sanitary regulations in Belfast. He shows that a large measure of sanitary improvement has taken place during the last twenty years; that the mortality has, on the whole, steadily fallen from about 25 to 21 per 1,000; that the death-rate from zymotic disease other than typhoid has also steadily fallen, but that the mortality from typhoid, which averaged 0.31 from 1881 to 1888, rose to 0.87 from 1895 to 1902.

From this it is clear that the sanitary rearrangement of the city has not resulted in failure; the general death-rate has decreased; the zymotic death-rate other than typhoid has decreased; but typhoid has more than doubled.

Typhoid has been endemic for the whole period, but in 1897-8 and in 1901 there were well-marked epidemics; and for these Dr. Lorrain Smith blames the Stoneyford water supply. Four cases of typhoid occurred in a farm in the Stoneyford area in January, 1897, and the epidemic commenced in March. In February, 1902, two cases occurred in the same area, and the epidemic of that year commenced at the end of March. During the eight years preceding 1899 the average death return from typhoid in Belfast was 0.31 per 1,000: during the fourteen years after that date it was 0.75. The Stoneyford water was introduced in 1888. No unbiassed observer can possibly cavil at Dr. Lorrain Smith's finding that the gravest suspicion is attached to the water supply, or to the first of his conclusions and recommendations that this course of the disease should be put beyond suspicion by immediate developments of the Mourne scheme, or by the purification of the Stoneyford and Woodburn supply. Dr. Lorrain Smith shows that sand filters, even of the best description, cannot be trusted, since they are liable to go wrong.

His next recommendation will also command general approval. Increased effort on the part of the public health authorities is required to remove the sanitary defects which exist in a large proportion of the houses, and special efforts should be made to control surface pollution. In some of the areas examined 48 to 61.2 per cent. of houses were proved to have defective drains, and although typhoid does not seem to have a heavier incidence in such houses, yet occasion for infection must exist to a much greater extent. Dr. Lorrain Smith's recommendation on this point is simply a statement that the public health authorities have not carried out their own regulations.

The third recommendation is also one of great practical importance: it is also founded on Koch's work. Hospital accommodation should be provided which will leave no one of any class an excuse for not taking advantage of it. Practically, all cases should be sent to a well-regulated hospital: it is only in such an institution that thorough and prompt disinfection can be carried out. The Union Fever Hospital is well regulated and admirably conducted, but as a matter of fact a very large majority of the well-to-do class will not avail themselves of it. Dr. Lorrain Smith therefore urges that other accommodation should be provided, either in the old buildings of the Royal Victoria Hospital till the Municipal Fever Hospital is ready, which will probably take five years, or in temporary wooden fever blocks. Recommendations on latent and ambulatory typhoid, on the sale of shellfish, on the regulations for the sale of milk, and on the keeping of pigs are also made, and will receive the support of every medical man and every intelligent person interested in the health of the city.

For the first time a broad, clear, intelligible and statesmanlike plan to stamp out a terror that has haunted the mind of every inhabitant for the last fifteen years has been put before

the City Council and the public. It is one that the profession can support in nearly every detail; it is essentially practical and commonsense. The fear will be that from the very simplicity, and also from the difficulty of forcing large public bodies to persevere in welldoing, the report, as many others of like nature, will be pigeonholed. The public, however, should understand that it is now proved that they are drinking water contaminated by sewage, that in many districts nearly 50 per cent. of the houses have defective drainage, and are, roughly speaking, insanitary, and that hospital accommodation for typhoid fever is miserably inadequate; that building on recently-made earth should be at once stopped, and that ashpit and privy cleansing should be carried out with renewed vigour.

PROPOSED DISTRICT FEVER HOSPITAL FOR BELFAST.

A special meeting of the Board of Guardians was held on September 18th to discuss the question of converting the workhouse fever hospital into a district fever hospital. The Board has the power to establish a district hospital under Section xc of the Local Government (Ireland) Act, 1898, and the meeting was called on the requisition of three members after an informal conference with the Health Committee of the City Council. The closure of the fever block of the Royal Victoria Hospital had brought matters to a crisis, and the object was to establish fever accommodation for all classes. After considerable discussion, a motion that the guardians take no action was carried by 13 to 4, and the project consequently fell through.

CATHOLIC UNIVERSITY MEDICAL SCHOOL.

Dr. Laffan, of Cashel, recently presided over a meeting of the Past Students' Union of the Catholic University Medical School in Dublin. Among resolutions passed was one claiming that "good faith should be kept with us in any future settlement of the University question, since specific promises of giving us degrees were made to us by the former University authorities." The meaning of this is not plain. The Catholic University authorities have never had the power to give degrees in medicine. The meeting further complained that they had not a "share in the government of the school we built up," such as "the students of legally chartered universities exercise over their schools through the medium of the University-governing bodies, to which they elect representatives." The University at present has no graduates: its students graduate in other places. The final resolution calls attention to the "manner in which the Maynooth resolutions, requiring the prelates and priests to give their hearty support to Cecilia Street men, has been ignored by many professing ecclesiastical advocates." It speaks for itself.

A CURIOUS OBJECTION.

The Roscommon District Council has refused even to consider an application for help in support of a visiting nurse under Lady Dudley's fund. The ground assigned was "that there was no necessity for such an officer, and that it was an attempt to interfere with the prerogative of the Sisters of Mercy." The project will not, we hope, suffer from the want of even the small support which the members could give. There is plenty of local sympathy with the movement, and no doubt the opposition will serve to stimulate subscribers.

GRANARD ECHOES.

The Master of Granard Workhouse having been dismissed by the Local Government Board, the guardians have reappointed him temporarily until October 5th, when the report on the recent inquiry will be considered. Dr. Maguire has received a testimonial of efficiency from the Cavan guardians, for whom he is doing temporary duty, and they have asked the Local Government Board to reconsider their decision in regard to him.

TEMPORARY ABSENCE OF DISPENSARY MEDICAL OFFICER.

At the meeting of the guardians of the South Dublin Union last week, a charge against Dr. J. P. Quinn of not having attended a "red ticket case," within reasonable time, was considered. The matter came up on the report of the Visiting Committee, who had investigated the circumstances, and who advised that Dr. Quinn should not be absent from his house for any considerable time without making arrangement for another medical man to act for him, and that he should pay his substitute. A good deal of personal feeling appeared to be aroused in the discussion, but ultimately the report was adopted by a large majority.

Scotland.

THE HEALTH OF GLASGOW: ANNUAL REPORT.

The report of Dr. A. K. Chalmers, the Medical Officer of Health of Glasgow, for the past year has just been issued. The Registrar-General estimated the population of the city in the middle of 1902 at 775,601, but taking the basis of his calculations on the inhabited houses Dr. Chalmers's estimate is 776,963, or 1,367 more. During the year 7,304 marriages were registered, as compared with 7,077 in 1901, the rates per 1,000 persons living being 9.38 and 9.26 respectively. This rate is, with the exception of last year, lower than any that has been registered since 1896. The number of births registered was 24,704, which represents a rate of 31.802, compared with 24.215 births registered during 1901, the rate then being 31.79. The number of deaths from all causes was 15,532—a death-rate of 20 per 1,000 living. Deducting the deaths, occurring chiefly in institutions, of persons whose usual residence was beyond the city boundary and adding the deaths of Glasgow citizens in Govan Poorhouse and in Knightswood Hospital, the number of deaths properly belonging to Glasgow was 15,054. On the medical officer's estimate of the population this represents a death-rate of 19.4 per 1,000. A similar death-rate was recorded in 1894, and these two years present the lowest annual rate yet reached. The reduction during 1902 was largely due to the lessened prevalence of the infectious diseases, which must be attributed in great part to the unusual meteorological conditions that prevailed. There was an almost continuously low temperature during the summer and autumn with a moderate rainfall, and such conditions seem to exercise a restraining influence on microbic life. The death-rate for 1902 represents a deduction in the number of deaths equal to 1,257 per million living, as compared with that for 1901. The death-rate from phthisis pulmonalis and the other forms of tuberculous disease was lower also, but in many of the other forms of disease that are classified the rates were increased, and this was especially the case in acute forms of lung disease other than phthisis. Of the total deaths 21 per cent. occurred in the first year of life, and 35.6 per cent. in the first quinquennium, compared with 22.9 and 40.7 in 1901. As further illustrating the effect of the climatic conditions that prevailed, it may be added that the proportion of deaths arising from diarrhoea formed only 9 per cent. of the total deaths occurring under 1 year in place of 15 per cent. in 1901, while respiratory diseases caused 23 per cent. of the deaths at this age in place of 18 per cent. the previous year.

Dr. Chalmers discusses in detail the infantile mortality. The number of infants dying under 1 year of age in 1902 was 3,168, which represented a death-rate per 1,000 born of 128, compared with 149 in 1901. Of these deaths 2,800 were legitimate, and 368 illegitimate children—a death-rate per 1,000 births of 126 among the legitimate, and 244 among the illegitimate. That illegitimate children in their first year should die at almost twice the rate of legitimate children only too faithfully reflects the systematic neglect to which many of them are exposed. The conditions of their birth almost preclude the hope that any degree of neglect by their guardians, short of actual criminality, can ever be effectively dealt with, and they are more frequently exposed than are legitimate children to the risks of unsuitable substitutes for their natural food. There are many agencies that take up the burden of protection of the neglected children of older years. It seems at least possible that some modificatien of the foundling hospital system would reclaim to useful work the lives of many illegitimate children that are at present lost through uncontrolled neglect. More than one-third of the total deaths of infants occur in the first month of life, the principal causes of death being scarcely disease in the ordinary sense, but rather defects in development and nutrition. Amongst the Scotch towns it is stated that the infantile death-rate in Glasgow is exceeded in both Aberdeen and Dundee, while in London, Liverpool, Manchester, and Birmingham the rate is also uniformly higher than in Glasgow.

During the year, 13,432 cases of infectious disease were registered and dealt with by the Health Department. This represents a case-rate of 17.3 per 1,000 compared with 27.8 in 1901; of the total, 4,947, or 37 per cent., were treated in hospital. Altogether, the report is satisfactory and encouraging, though many of the statistics given impress one with the great work that remains to be done in the battle against dirt and disease in our large cities.

THE RÔLE OF EYESTRAIN IN CIVILIZATION.

By George M. Gould, M.D.,
Philadelphia, Pa., U.S.A.

(Concluded from p. 666.)

The Ocular Symptoms.—One eye of De Quincey was kept closed in the latter part of his life when he was reading or writing, and is plainly divergent in his portrait. That proves a life of intense ocular strain. In the latter part of Wagner's life at least, the left eye was turned upward and outward, and the forehead wrinkled to keep the lid above the pupil. That demonstrates many years of grievous suffering. Parkman's photophobia was his first and most constant symptom during life; he also had blepharitis and Meibomian cysts. Pain in his eyes was as constant a symptom with Nietzsche as pain in the head and gastric trouble. Most people would think that because of these ocular symptoms such patients more certainly had eyestrain than the others without a single ocular symptom. This is not so. The almost universal rule is that the more severe the reflexes the more certainly the eyes themselves do not complain; or conversely, the more the eyes are injured by ametropia, the less the reflexes are shunted to other organs. That four out of eleven striking cases of eyestrain had severe ocular symptoms is highly exceptional, and shows that their defects were peculiarly irritating, and the labour to which the eyes were put was particularly severe. Parkman's photophobia was very exceptional. In old countries where patients do not have their errors of refraction properly and accurately corrected, one frequently sees patients with blue or coloured coquilles or "goggles" such as Parkman wore in the sunlight. Eyestrain frequently produces sensitiveness of the eyes to light, but in Parkman's case there was an extraordinarily high degree of it. Parkman avoided headache at least, if not gastric trouble also, by stopping near-use of the eyes. His "stirred-up head" with the least use of his eyes, would also stop when he ceased to work with eyes or brain. The most noteworthy of all the cases was that of Nietzsche, in whom eyes and brain suffered equally and coincidently, both more than the digestive system, and all ingravescent until his mind gave way. This demonstrates the marvellous balance and equal resistance of all his organs and powers. The eyes first gave way, then the mental mechanism.

Some other Symptoms.—Connected with the insomnia of eyestrain is the symptom of night terrors, bad dreams, restless sleeping, etc., noted in the child Wagner, and in almost every child brought to the oculist's office. Unless relieved in the one possible way it means a life of intolerable suffering. I have in a day cured a number of children of nocturnal enuresis by glasses alone. The fickle appetite, especially for breakfast, the anorexia of such children, is also indicative of the same morbid cause. Extreme sensitiveness to noise is an aspect of the symptom of insomnia that has been noticed. Complaint of the "nervousness" of patients, young or old, the "fidgetiness," etc., of the waste and rush of our modern nervous life, fills the newspapers and magazines. Much of it is due to eyestrain. As high a proportion as 50 per cent. or over of modern school children are pronounced backward or subnormal in physical and mental qualities. Child suicide, the most frightful symptom of civilization, and general insanity, are both mathematically in proportion to the number of hours of school study demanded.

A critic has spoken lightly of the vast amount of drugs taken by the Carlyles in their struggle to prevent or cure their diseases. Quain was scornful and said that drugs and gingerbread caused Carlyle's woe. Nietzsche's sister, as much as the beautiful soul can be, is harsh-toned when she alludes to her brother's drug taking. But what else could they do? Who would not do the same under the like provocation? And Mrs. Carlyle would have been happier if she had taken as much morphine as Mrs. Browning. It is indeed true that opium was a blessing to De Quincey, as he said it was.

Before stopping I wish to allude to facial eyestrain expression. Observant oculists notice it when some patients enter the room. It is not always present, just as ocular symptoms may be absent in the worst cases. I should say that the expression of the eyes and face is characteristically morbidized in 50 per cent. of such patients, especially the older ones. In children with eyestrain, anaemia, anorexia, and night terrors, it is, however, usually to be detected. It is not a result of heterophoria, the latent or the permanent turning of the eye outward, such as De Quincey and Wagner had. That is a different matter, and causes a different expression. It is an almost indescribable haunting signal, as exhausted and hopeless suffering, a sort of haggard, sunken look, telling a tale of pained, tired, and useless effort. In the later photographs of Darwin, of Carlyle, of Mrs. Carlyle, and of Whittier it is evident, and suggestions of it exist in those of others. (It was this look that first suggested to me many years ago that Carlyle was an eyestrain sufferer.) It is plainly present in the pictures of Beethoven, Tennyson, Mrs. Browning, etc. The "Bachelder eye" of Webster, Whittier, etc., I suspect was a result of the intensity and victory of the effort to compensate for the eyestrain present. Old painters sometimes reproduced the eyestrain expression more or less perfectly in their pictures of mediaeval saints and ascetics.

Lastly, I cannot forbear allusion to the influence eyestrain sequels have had on the growth during the last century of European spas and health resorts, springs and waters, sanatoriums, cures, establishments, etc. The histories of the search for health at these places by Wagner, Nietzsche, Darwin, Parkman, and Huxley bring vividly before the mind directly, and as much by indirection, that these resorts came into being largely, if not principally, in a pitiful attempt to cure eyestrain. Pleasure places and fashion resorts, one realizes often grew out of the superstition. The hunt for diet doctors and water doctors was so intense that its ludicrousness is almost as crying as its unavailing resultlessness, and both are only equalled by the pathos of it all.

Hydropathy, its gulls and its gullies, are still dismally echoing in the twentieth century. The peculiar kinds of diseases and of patients on which fatten a hundred forms of quackery, Eddyism, osteopathy, absent healing, and all the nauseating rubbish of several million maudlin American cranks and scamps, are also in big part due to an attempt to treat astigmatism by ignoring it, or by means of that potent article of the materia medica vulgarly named "tommy-rot."

Intercurrent Diseases.—Several of the patients—for example, De Quincey and Nietzsche—seemed extremely subject to influenza or colds; and especially Mrs. Carlyle. When not suffering from headache she was always suffering from colds or influenza—"eight influenzas annually," said Miss Martineau. They afflicted her all her life, most exasperatingly and most wearingly. I have not copied near all the excerpts which prove the continuousness and severity of these seizures. It is gratifying to be able to quote a great medical authority that such attacks of colds and influenzas

> may be due to micro-organisms, or local conditions in the air passages but these maladies, as we now know, both depend to some extent on a special predisposition in the sufferer, having its root in the nervous system, and both leave their stamp on that system and gradually undermine it.

Now here is a truth, or a glimpse of it, that deserves most careful pondering by the profession. In Mrs. Carlyle's case it is noteworthy that these colds and influenzas did not coexist usually with headache and sick headache; that they came on in a most unaccountable manner, without explainable reason, usually in winter, and remained long; and most remarkable that they ceased at the time of the great change in 57 or 62. Wet and foggy, or not, driving, sailing, or not, she is at this time "perfectly astonished with the impunity, etc.' All of Mrs. Carlyle's sick headaches were caused by eyestrain, a fact beyond all question. As little doubt can there be that no cause can more directly and infallibly upset and morbidize the nervous, mental, and nutritional mechanisms. It thus supplied the "nervous system" with precisely the predisposing condition Sir James Crichton-Browne gives as the cause of colds and influenzas. The inference is very suggestive that Mrs. Carlyle's influenzal attacks were the reflex results of eyestrain. The smile of incredulity with which the all-wise may receive the thought has nothing to do with its truth or falsity. In private practice the fact of the interconnexion of nasal and ocular diseases has often been noted. Illustrative cases have been published. The details of one such are of exceptional interest.

A healthy, clear-headed, intellectual man was given two pairs of spectacles for his myopic astigmatism, a stronger or higher correction for use at the theatre, driving, etc., a weaker correction for reading and daily or constant use. For a year his wife and daughter observed, without telling him, that whenever he wore the strong, or accommodation-exciting glasses, he "caught cold," with coryza, hoarseness, etc., which at once disappeared when the weaker lenses were used. He used the stronger ones but few times a year. When certain of the strange coincidence his wife told her husband. In the past ten years the cold has been produced in this way—a hundred or more times. Now, if his weaker glasses get

"crooked" or maladjusted, miscorrecting his axis of astigmatism by a few degrees, his cold promptly appears, to vanish in an hour after a visit to the optician.

Such cases of the inter-relation of nasal and ocular disease may be rare, but the careful diagnostician will always be on the look-out for them. Several of these patients also complained of paretic symptoms. It is not impossible that they were due to a reflex ocular neurosis, for I have had cases of numbness, aphonia, pareses, and partial paralyses of hands and arms due directly and beyond all doubt to severe eyestrain, and disappearing at once with relief of the cause.

Nietzsche, Mrs. Carlyle, and others had more or less constant rheumatism, and Parkman had life-long arthritis. A sound and healthy hip-joint, the supposed seat of neuralgia, has, I have read, been opened for toothache. Mumps may be located in the parotic or in the orchitic gland, and cases have been reported of transmigration to the brain. One who is careful to avoid the subtle demon of prejudice will not rush into dogmatism about the matter, either that such rheumatic affections may depend, or may not, upon eyestrain, that is, upon the ocularly-caused abnormalized nervous centres of control—vasomotor, reflex, or nutritional. There are multitudes of more seemingly absurd facts than that, well attested, too, by physiology and pathology. Throughout his eyestrain life from childhood on, Wagner was bothered by ever-recurrent attacks of erysipelas. How far that affection may also depend upon innervational and morbid vasomotor antecedents I do not know, and I suspect no other does.

The Heredity Theory.—When a certain class of medical and other scientists cannot explain a pathologic fact that is unduly troublesome, there is a hasty scuttling to the protection of the god of heredity. In one of these eleven cases, to the facts that the father died of typhus fever, that uncles and aunts had few children, and that the patient had sick headache, is ascribed her sick headache. That seems hardly scientific, and certainly does not explain her "climacteric insanity" nor her sick headache. Heredity is not at all understood, and has been unduly and illogically advanced to explain disease. It may fairly be said that it fails to explain more frequently than it explains, and the instances in which the supposed law is absolutely non-existent are more numerous than those in which it seems to give hints of a possible reason. Browning's physician acquiesced in the fatalistic necessity of his patient's headaches because in facial expression he resembled his mother. He forgot to ask where Browning's mother got her headaches, and if it were necessary to go back to Mother Eve! As all the world do not have headaches, it would follow that one-half exactly must have them (possibly correct!), and that Adam had none. From such childish science one can only turn with the evident question, What caused the headaches in the mother and in all ancestors?

The climacteric theory should have long since been abandoned. In order to apply to women it should have been noticed that the sexual climacteric is not synchronous with the climax of the symptoms. These grow more intense for about ten years after the menopause, and this fact makes a careful observer smile ironically at the pitiable hint of over-sexual-minded women patients, and of the professional opinion which has encouraged it. The mere cessation of a function not necessary to the life of the individual organism—hair growth, loss of teeth, loss of eyes, etc.; even the excision of arms, legs, uterus, etc.—does not produce positive symptoms. The *coup de grâce* of this ridiculous climacteric insanity nonsense is given by the very simple observation that the climax of the same kind of sufferings of men comes at the same age as in women, and if men have a sexual climacteric at that age, the genito-urinary surgeons have misinformed us.

A Physiologic Truth Ignored.—Concerning the eleven patients considered, of all earthly things, each most needed a simple optical device to have freed them, and to have turned the bitterest tragedy to perfect joy. All except one, inheriting the traditional and ridiculous prejudice, affected to scorn spectacles. For the rest, none except one could have obtained scientifically correct ones, and only in his old age; and he, alas, failed. Optics, opticians, scientists, physicians—all had forgotten that simplest of physiologic truths, that no muscle can be steadily and continuously innervated without pain, even for a few minutes. Of the ametropic eye the literary worker demands such an unrhythmic strain of innervation for consecutive hours, and for five, ten, and even sixteen hours a day. The intimate association of the eye with every organ of the mind and body, the amazing delicacy and complexity of the mechanism of vision itself, the absolute dependence upon it for safety and sustenance, makes accurate seeing the *sine qua non* of the life of the organism. Accuracy in this supreme function has been insured by the punishment, on Darwin's own principles, of the organism endowed with the faulty organ; the head cannot direct because of pain, and the stomach with unattached organs, will not supply food to any part of the machine because it cannot digest. The sole conditions of safe and useful existence, the mathematically picturing eye, being denied, Nature strikes work and refuses brain and digestion. That may sound somewhat transcendental and deductionist in logic, but if Darwin and Spencer and Huxley are correct in their science, it is exactly what takes place in the struggle for existence by the elimination and destruction of non-competing and unsuccessful organs and organisms. Science and medical science, flushed with bacteriology and surgery, and prepossessed, obsessed, almost, with the thought of the infectiousness of disease, may neglect this truth, but not for much longer, and already with danger and expense.

The Cause of Disease and the Cure.—Just now the cry goes up from a united profession, and is appealingly echoed by kings and prime ministers, "Discover for us the cause of cancer." The most famous man in the world would be he who should make the discovery, and he would be justly honoured. But might it not come out that after all our acclaiming we should be no nearer an effective therapeutics than now? We know at last the causes of the two diseases of the respiratory organs which kill more than any other two. Is their deadliness any less because of our knowledge? It emphasizes the measures of prevention, and proves they are proper, but tuberculosis and pneumonia kill as many as before. Prevention is not the same as cure; it is, of course, better, but the laws of prevention are learned by simple observation, seeing macroscopically rather than microscopically, and reasoning straight from that, *plus* effective putting into practice of the known needed thing. It is again the old question of morbid soil and morbid seed. Hygienic living remains still the one preventive of the pulmonic conditions which make pneumonia and tuberculosis possible. One of the most successful, one of the most potent preparers of the morbid soil for any infectious disease is eyestrain, and it will in time be recognized as such. There is no single more prolific source of the anaemia, denutrition, than eyestrain and its reflexes, which prepare the soil wherein may spring up the weeds of any disease.

Eyestrain and its results depend, first, upon the kind and degree of ametropia and muscle imbalance, the latter a secondary and rare factor. The low and slight astigmatisms and anisometropias are more injurious to the nervous system than high errors. High errors change character and occupation, low ones disorder nervous control and nutrition. This is because the low error can always be only temporarily neutralized or compensated for, while at the same time the attempt to neutralize can never be renounced. It is a true task of Sisyphus. Secondly, the results of eyestrain depend upon the kind of organism in which they occur. The chemic reaction depends upon the substance in which the reagent falls. If the resistances or vital powers are great the effects will be small, even of bad kinds of ametropia, while a small strain upon a morbidly unstable organism will end in disastrous consequences. The reflexes, like all forces, will take the line of least resistance, and wreak themselves on the less resistant organ. In an organism like that of Nietzsche, with splendid and equally resistant cerebral and nutritional systems, no one will give way, and the invader, not dreaming of desistance, the storming of all the defences continues until the defending general sacrifices himself for the cause of peace and to save his few remaining supporters. Rare as they are, such "victories" exist, and are the most lamentable of the results of the war of civilization. Thirdly, although but one of our eleven patients was a woman, the hurt of eyestrain generally is greatest in the female sex. For several reasons the incidence of the morbid effects of eyestrain falls far heavier upon women than men. Their organizations are more unstable, they are more emotional, and they are more sensitive to slight stimuli or inhibitions than men. These are powerful and effective reasons. I see other vague but real reasons why femininity of sex itself increases the liability, but I cannot even recapitulate them here. Outweighing all the others, however, the dominant cause of this seemingly unjust law of nature lies in the simple fact that women do most of the sewing, have more leisure for reading and handwork amusements, and because they live indoors far more than men. It is true that men are seizing

upon many of these occupations, tailoring, handicrafts, etc.; but that only makes the woman tragedy the more severe and bitter, as they are forced to other kinds of more enslaving eye labour. The suffering that is going on in conventual and educational institutions, and in the sewing rooms of the old countries, is literally appalling. A charity that would supply poor workwomen and workmen with the services of scientific oculists and scientific spectacles would stop more suffering than the combined almsgiving of the world. Fourthly: But the preceding conditions all depend upon a fourth. Eyestrain is wholly a disease of civilization. It is entirely an occupational disease. As an Indian or an African savage the ocular defects of any of the eleven patients would not have produced a single morbid result of the kind illustrated. Even a basket weaver or arrow chipper with the astigmatism of a Nietzsche would have found other work or been forced into it. He would have failed in the chase, or in any art requiring accuracy of vision, and the god of natural selection would have dispensed with him in the old terrible way; there would have been no pain or insanity. This is because the morbid results of eyestrain depend entirely upon use of the eyes within reading or writing, or hand distance. The more such use the more baneful the consequences. Civilization has multiplied a hundred or a thousand times the amount of such near-range work, and the multiplication still goes rapidly on. In making the eye, evolution never foresaw civilization, and that mechanism, created for accuracy of distant vision, is of all organs the one most glaringly ill-adapted for the near vision our modern life relentlessly demands. There are a few occupations in civilization, slowly being weeded out however, in which our eleven patients could have been happy if—and what an if that is!—if they could each have renounced the intellectual life. Under this proviso they could have been contented and useful citizens, for example, as osteopathists, mental-science healers, policemen, night watchmen, stage drivers, cattle drivers, cowboys, burglars, or even political bosses and senators, but they could not have passed a Civil Service examination or have been of intellectual service to their fellowmen.

"*Great Wits and Madness.*"—Dryden's famous couplet is a poor and untruthful variation of Aristotle's "No excellent soul is exempt from a mixture of madness," and of Seneca's *Nullum magnum ingenium sine mixtura dementiae.* The truth, the little truth, there may be in the sayings, consists principally of three constituent errors: (1) The people who accept such a psychology of genius and insanity are themselves incapable of knowing or understanding in what genius or madness consists, and view both as something alien. They are in no danger of illustrating either *ingenium* or *dementiae:* (2) they may drive the genius into dementia by their stupid unrecognition and even hatred: (3) a genius may go mad because of eyestrain. Mrs. Carlyle, tortured for forty years by excruciating bodily suffering, may, in the crisis of pain, and the mystery of it, gaspingly demand a promise that if she goes mad she shall not be put in a madhouse. De Quincey may prevent pain and insanity by opium; great alienists may assure Parkman he will soon be a maniac, and may class Schopenhauer and Wagner as such; Wagner may live in fear of it, and Nietzsche may be crushed into the horrible actuality of it. It all proves not the silly pathology of the proverb, but the sin and the want of medical science. A simple, or, rather, speaking in optical terms, a compound pair of lenses would have absolutely prevented the entire tragedy in each case.*

Influence of their Diseases upon the Character of their Work.—The life-work of De Quincey, the best classic scholar in Europe at the age of 14, in view of that marvellous beginning, must be pronounced pitiably disappointing. So far as its morbidness and other qualities were directly due to opium, they were also, I am sure, due to eyestrain. So far as he failed to utilize his great intellect the result was directly due to eyestrain. There cannot be any doubt that the pessimism, gloominess, injustice, exaggeration in style and judgement, dictatorial and overbearing harshness, the history in lightning flashes, etc., of Carlyle, are the consequences of the disease which made him write, as he said, with his "nerves in a blaze," "in a red-hot element which wastes the life out of me." That is to say, a fury of innervation had to be aroused to overcome the eye defect. This intensity was ruinous, and was, of course, followed by an equally morbid depression and exhaustion. A similar method and result was necessary in the cases of Wagner, Nietzsche, and was present in a minor degree in Huxley and others. Surely the frequent over-critical sharpness and acidity of Mrs. Carlyle's letters, and possibly of her conduct, were the cry of her suffering brain.

Darwin's lassitude, his lack of physical energy, the dragging step, and the spurred jadedness showing in face and walk, seems also present in his slowly-formed conclusions, and in a certain irresoluteness of style and matter.

In Huxley a love of polemics and a controversial harshness, etc., may have been due to the exasperation and intensity which his malady produced.

The naturally rugged and English intellect of Browning may have been directed to recondite metaphysical and ethical subtleties, and his expertness as a versifier almost destroyed, by the cause that set him to walking and working in Italy, instead of among Anglo-Saxon scenes and peoples, and to be satisfied with hastily-grasped truths that did not need the artist's reworking and polish. The change to England "had a most depressing effect." His involved and obscure sentences, abrupt breaks, interpolations, etc., are possibly the result of the eyestrain that would not allow finish and outworking. His MSS. show few corrections.

How much more perfect and wonderful might have been the almost perfect and always wonderful art works of Wagner if he had not had a quivering and suffering and exhausted nervous system! Instead of the contentions and unneeded controversialist prose writings, and especially the pessimism which is an almost inevitable result of a tortured and jaded nervous system, instead of frequent crudities and much overemphasis in his operas, we might have had a hundred times the number of heavenly things he has left us.

Parkman's affliction seems to have had little result upon his literary work except to limit tremendously his productivity. Unless overconciseness and prosaic sternness were consequent upon the prison-like narrowness of his necessities, the iron logic of his character defied all the cruelties of fate to change or modify his mind or the quality of its work.

Whittier was a true neurasthenic, without a single clinical symptom of what goes by the etymologically absurd name of neurasthenia. The sad apathy of his mind and body late in life is in sharp contrast with the fire of the earlier antislavery reformer and politician. His poetry reflects the altered necessities of his life.

Herbert Spencer escaped the fate that would have been inevitable with greater use of his eyes, but the limitations and materialism of his magnificent attempt at "syntheticizing philosophy" are too evident to need re-emphasis. The man who could not read German could not synthetize "philosophy" in the nineteenth century. And a man could never have learned German and mastered German thought, who, at the age of 83, could "read without spectacles."

The youth who at 24 was a German professor of philology, who had so splendid an organization, physical and intellectual, as had Nietzsche, who was forced to give up that professorship in ten years because of suffering of eyes, head, and digestive organs, and who at the age of 45 was steadily and fatally driven into insanity by his ingravescent atrocious eye defects coupled with love of knowledge, just at the time presbyopia was beginning its cruel exaggeration of misery—such a man and such a fate is the very limit of the awful and the tragical. If Nordau says it was all due to Schopenhauer or to unmentionable causes, the answer comes quick that pessimism is the almost inevitable outcome of years of the torture, the denutrition, the drained life-power, and the disappointment due to an eyestrain so atrocious as that of Nietzsche.

The Professional Blunder.—For twenty-five years the medical profession has had placed before it the evidences of the pathogenic results of eyestrain to the entire nervous and physiologic economy. The fact was first called to its attention in 1875 in a most reputable periodical and by a most trustworthy physician. There is no evidence in European literature, as far as I know, that any physician of England or of the Continent had ever read this article, or the hundreds that have followed it, or cared a fig for its teaching. The stomach specialist has continued to treat the special organ as if its functional diseases had no relation to the general system. Biliousness, like a wandering and very ancient mariner, transfixes us with his glittering and yellow eye, and lays his

* Three months ago a professional student from a great university came to me with a typical history of intense eyestrain which had forced him twice to renounce his intended career. Utter breakdown was again upon him. The cerebral and psychic symptoms were terrible. Suicide was constantly in his mind. He returned recently to thank me for his glasses and to say he is happy and studying hard, and that he stands scornfully smiling at the locomotive as it approaches him, while he has not the least hint of his old impulse to throw himself before it.

spell even upon the wedding guest of science; dyspepsia is drugged and studied, and headache is drugged and not studied. All the time spectacle-peddlers fill the land, ruined eyes and lives multiply, the patent medicine disgrace rules legislation, bitters grow more alcoholic, tons of headache powders are sold every year, and the carnival of Eddyism and blatant quackery goes more wildly on. And much if not the most of it all is due to neglect of the physiology of the eye and of its reflex neuroses, and carelessness as to the functional diseases which depend upon eyestrain. The deadliest blow that can be given to quackery in and out of the profession, to the patent medicine and Eddyistic humbugs is to prevent the dyspepsias, anemias, neurasthenias, and headaches which are caused by eyestrain, and whereon battens the multitudinous quack incarnadine.

Not the genius alone, but the common workman and workwoman should be in our mind. One is very likely to get a very distorted, or at least one-sided, idea of the rôle of eyestrain in the world if he sees it only from observing its disastrous effects in the case of great literary and scientific minds. The symptoms and the kind of tragedy it brings to the mechanic and the mechanic's wife; to the sewing-woman, clerk, housewife; to the lonely and distant settlers far from cities and oculists; to the millions of school children and college students; to professional men and women of all kinds—these are different calamities, and they present in each case a separate problem. The one fact common to high and low is that it morbidizes character, doubles suffering and personal burdens, lessens all productive capacity, depreciates the national valour, and validity, and wealth, and delays the advance of civilization. This last is its most evil effect, because every act and product of intellect is intermediated by vision.

Value to Nations and to Civilization of its Great Men.—The most valuable products and assets of a nation are confessedly not its material things, not those measurable in financial terms; they are not discussed in legislative halls, or much thought of by kings or presidents. Worth all of these things are the few literary and scientific geniuses that silently emerge in each century. How inestimably valuable were the men whose clinical lives we have hastily studied! And the amount and character of their intellectual product was limited and qualified by their bad health. Of their atrocious sufferings their contemporaries were incurious, and to them indifferent. The pathos and pity of it is appalling, whether we think of it as a personal matter or from the standpoint of the progress of civilization. How narrowly each escaped absolute failure to deliver his message, how fine the line between utter loss and the saving of even the wreckage; and there is added poignancy when one considers that it was precisely the act of doing their intellectual tasks that brought the suffering, that crippled and morbidized the results, and that brought the danger of absolute failure itself.

We must also remember that not these few only were they that were lost or ruined, or morbidized. By the very nature of the cases, in the vast majority of instances, the records are wanting from which to gather knowledge of the losses or hints of the failures. With only a little search eleven startling examples have been found. The evidence that has come to us in these eleven examples is too indefinite and unscientific as to details, although it leaves no doubt as to the fundamental and essential pathogenic factor. Had we but data concerning de Maupassant and his insanity, if we knew the facts about Swift, Chatterton, Keats, and a multitude of budding or blasted geniuses, many of whose names are unknown to us. For, wherever intellect has sought the solution of the mysteries of our life, wherever reason has attempted to lessen the world's load of suffering and ignorance, there may the eyes have been defective, upon which all results depended, all results to the worker and to the aftercoming workers, who we are. And so it comes to this that the geniuses, the instruments and makers of civilization, depend at last on the medical profession. At last and late we are rising to the measure of our opportunity and our duty.

Registration of Consumptives in America.—An ordinance has recently been passed in Kansas City which provides that all persons suffering from consumption in an infectious stage must be registered at the Board of Health, and must follow the instructions as to isolation and treatment made in each case by the city physician. It is believed that the law is aimed primarily at the negroes, among whom consumption is very prevalent, and who in their conduct on the streets and in crowds are said to show no care for the danger to public safety from the germs of the disease.

REPORT ON AN EXTENSIVE EPIDEMIC OF DIARRHOEA APPARENTLY DUE TO THE POLLUTION OF A PUBLIC WATER SUPPLY.

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Epidemics of diarrhoea due to the use of impure water do not appear to be of frequent occurrence. The few with which I am acquainted are referred to in my work on *Water and Water Supplies*, and, of these, some were attributed to the action of suspended mineral matter, and others to the action of bacteria derived from sewage, manure, or decomposing animal or vegetable substances, but none of these outbreaks appear to have been so extensive as the one to which I am about to refer, in which there have been over 1,000 cases and 14 deaths.

The epidemic affected the borough of Chelmsford and the village of Widford, and in order that the nature of the evidence implicating the water may be understood, a brief description of the water supply is necessary.

The town of Chelmsford includes the borough and portions of the parishes of Springfield, Great Baddow, Writtle, and Widford, which are in Chelmsford Rural District. The borough population at the last census was 12,580, and of the town, including the portions of the rural districts above mentioned, about 14,500. The central portion of the town is flat, and lies on the banks of the rivers Cann and Chelmer. During the past summer the recreation ground, near the market and station, and the meadows behind the High Street, have been flooded on two or three occasions. The water supply to the borough and Widford is derived from three different sources. A considerable portion of the town, all that lying to the west of the Shire Hall, is supplied from a spring in Admiral's Park, the remainder is supplied by a mixed water derived from a spring called Burgess well, which is very near the town, and a deep well. The water from the Burgess well is carried by gravitation to a tank at the waterworks, and the deep well water is pumped into the same tank. The mixture is then pumped into a reservoir on high ground just outside the town, and from here it flows by gravitation to supply part of the borough and Widford. The portions of the town situated in the rural district are not supplied with water from the borough mains. Springfield and Great Baddow have a public supply of their own, and the Writtle cottages are supplied by numerous shallow wells. The water mains throughout the borough are continuous, but near the Shire Hall there is a stopcock shutting off the mains to the west of the town, so that all the houses to the west can only be supplied with water from the Admiral's Park Spring, and those to the east can only receive the mixed water from the Burgess well and deep well. The two portions of the town, therefore, have entirely different water supplies, as during the present summer I am informed that the stopcock above mentioned has not once been opened.

The excessive prevalence of diarrhoea in the borough and in Widford came to my knowledge about August 20th, just after my return from my summer holiday, and on the 22nd I commenced a house-to-house visitation in Widford. This was done because I am the acting Medical Officer of Health to the Chelmsford Rural District Council. The results of the investigation showed that the outbreak had a sudden onset about a week before the August Bank Holiday, and July 23rd to 25th appear to have been the dates of the earliest cases. In 54 houses with a population of 250, all deriving water from the Chelmsford mains, cases of diarrhoea, and diarrhoea and sickness, had occurred in 25 houses; and 54 persons, or one-fifth of the entire population, had been attacked. The disease was not the usual autumnal diarrhoea affecting children chiefly, as the majority of the patients attacked were over 5 years of age. The age and sex distribution was as under:

	All Ages.	1 Year.	1 to 5.	5 to 15.	15 to 25.	25 to 65.	65.
Males	28	4	3	6	7	6	2
Females ...	26	2	5	8	1	10	0

Two deaths have occurred from "diarrhoea and exhaustion," both infants, one on July 29th and the other on August 26th, both after a few days' illness.

The symptoms described were similar in every case. Without any feverishness or other premonitory symptoms the patients experienced griping pains in the abdomen quickly followed by diarrhoea more or less severe, and lasting for from two to six days. In a few cases vomiting was very troublesome. The stools are described as having been most offensive in character. In some instances the symptoms were suggestive of ptomaine poisoning. Influenza was not prevalent, nor were any of the usual symptoms of that disease observed. The members of a family were usually attacked simultaneously or in rapid succession. Thus in the houses affected in the last week in July, 6 cases occurred in one, 4 in another, and 3 in a third.

Continuing the investigation, eleven cottages and two farms near the infected area in Widford were visited. These derived water from shallow wells. Amongst the inhabitants only one case of diarrhoea had occurred, and the patient was a girl who was in service in Chelmsford, and had been sent home because she was suffering from diarrhoea.

The inhabitants of Widford attributed the outbreak to the water supply, because it has of late frequently been so turbid as to be undrinkable until after long standing. A sample of water was taken from the cistern supplying a house in which three persons were ill and submitted to a bacteriological examination, the results of which will be referred to later.

The results so far obtained certainly were suggestive of the water supply being the cause. I therefore had a house-to-house visitation made in the portions of Writtle, Springfield, and Great Badow, adjoining the borough. In 42 houses in the Writtle portion only one case of diarrhoea had occurred during the previous six weeks, the patient being an infant in the teething stage. In the Springfield portion, which lies very low, and was more likely to have been affected by the recent floods, 70 houses and workshops were visited. In one house there had been 5 cases of diarrhoea; in the remaining 69 houses only three cases, and two of these were infants in arms. Five workmen in the workshops who resided in the borough had suffered from diarrhoea. In the Baddow portion 48 houses were visited, and only two cases of diarrhoea were heard of, and both these were people who worked in Chelmsford.

Omitting the persons working in Chelmsford, in 173 houses in the town, but beyond the limits of the water supply, there had been 9 cases of diarrhoea. Assuming five persons to a house, there were 9 cases amongst a population of 865.

Comparing the attack rate in the portions of the town in the rural districts deriving water from other sources than the borough mains, with the rate in the portion supplied from the mains, the results are as under:

Source of Supply.	Percentage of Persons Attacked.
Borough mains	21.5
Not from borough mains	1.0

In other words, the disease was over twenty times more prevalent amongst the users of the borough water than amongst those not using the water. The possibility of milk or any other article of food being responsible for the outbreak was carefully considered, but no evidence implicating anything but the water could be obtained. It must be remembered also that, although so far my investigations had been limited to my own district, I was fully aware that the outbreak at Widford was only a small part of the epidemic which had recently prevailed in the town. Inquiry made of all the medical men in the district revealed the fact that in no other part of the Chelmsford Union was there any extensive prevalence of diarrhoea.

The borough water supply was gravely implicated, but from the information given me by medical practitioners in the town and by others, there were strong reasons for suspecting that only the eastern portion of the town was affected—that is, the portion supplied with the mixed waters from the Burgess spring and the deep well, nearly all stating that they had had very few cases in the western district. At the industrial school, with 142 boys and 15 officers, not a single case had occurred. This school is in the western area, but is supplied with water from its own wells. On the other hand, in the only other large institution in the town—the workhouse—there had been numerous cases of diarrhoea, and it is supplied, in great part, with water from the implicated source. Suspicion, therefore, was chiefly directed to the mixed supply, and, with the permission of the Mayor, I visited and inspected the waterworks. I examined the deep well and the Burgess spring, and observed nothing indicating a possibility of their pollution, but I found that there was a small uncovered reservoir in the yard into which the water from the deep well had been pumped, and through which it flowed to mix with the water from the Burgess well in the larger covered reservoir. This small reservoir was not bricked up above ground level, hence during a heavy rain water from the ground around would run into it. Adjoining one end of this reservoir was a patch of garden ground on which flowers were being grown. This I found was manured from time to time with road scrapings. At the time of my visit the tank was not in use and at the bottom of it, on the side adjoining the garden, could be seen a little soil containing an abundance of worms. Further inquiry elicited the fact that this tank was in use until August 21st, when its pollution was suspected and the deep well water was at once diverted and pumped straight into the larger reservoir. There could be no possible doubt that with a very heavy rain soil washings could, and had, gained access to this tank, and such soil washings would contain innumerable bacteria, ova of worms, and other filth. The Widford inquiries elicited the fact that the epidemic commenced there between the 23rd and 25th of July, and a medical man in Chelmsford, who has probably attended the largest number of cases, definitely fixes July 25th as the date of the commencement of the epidemic. Reference to my rainfall records showed that after three rainless weeks 0.56 in. of rain fell on July 17th, 0.45 on the 19th, and no less than 2.1 on the 23rd. The outbreak therefore commenced within a few days of these heavy rains. On August 21st the water was diverted from the uncovered tank, and two or three days after this the epidemic came to an abrupt termination. On September 2nd another house-to-house visitation was made in Widford, with the result that I found the epidemic had entirely ceased, only one case having occurred during the previous week. The medical men also informed me that the epidemic in the town was at an end. The duration of the epidemic, therefore, coincided with the date of the pollution of the tank water, commencing within a day or two of the very heavy rainfall, and ceasing within a few days of the water being diverted from the tank.

Returning now to the sample of water collected at Widford towards the end of the epidemic period, I found this water contained so many bacteria that the gelatine plate was liquefied before I had the opportunity of counting them. As small a quantity of the water as 2 c.cm. produced acid and gas in McConkey's fluid, fermented lactose, curdled milk, etc. That it contained varieties of proteus and of the coli group of organisms, typical of the washings of manured soil, there could be no doubt. On September 2nd I took a sample of the mixed water from the same source, and examined it bacteriologically. This contained very few organisms, and gave none of the reactions which had characterized the previous sample. It was obvious, therefore, that between the date of the collection of the two samples the water had undergone a marked change, a change accounted for by the cutting out of the polluted reservoir.

The conclusion at which I have arrived is that about July 23rd the small reservoir became contaminated with pathogenic organisms from garden soil, that this contaminated water caused the epidemic prevalence of diarrhoea in the district throughout which it was distributed, (the local press estimates that 1,400 cases occurred in the borough, and from my own inquiries I have every reason to believe that this estimate is approximately correct and that the majority were adults), and that the cessation of the epidemic was due to the cessation of the pollution which resulted from the pumping of the deep well water direct into the larger reservoir. The distribution of the disease, the bacteriological examination of the water being used during the epidemic period, and the duration of the epidemic, all point in this direction, and, so far as I can ascertain, in this direction only. That a few cases of diarrhoea occurred outside the epidemic area is only what one would expect at this season of the year. A study of the death returns for the borough and district confirms the above conclusions. From July 1st to July 23rd no death occurred in the borough or district from diarrhoea.

	Number of Deaths from Diarrhoea.	
	Chelmsford.	Widford.
Week ending July 5th ...	... 0 ...	0
,, July 12th ...	... 0 ...	0
,, July 19th ...	... 0 ...	0
,, July 26th ...	... 0 ...	0
,, August 2nd ...	... 1 ...	1
,, August 9th ...	... 3 ...	0
,, August 16th ...	... 2 ...	0
,, August 23rd ...	... 3 ...	0
,, August 30th ...	... 3 ...	1
,, September 6th	... 0 ...	0
,, September 13th	... 0 ...	

During the epidemic period 12 deaths occurred in Chelmsford, 2 in Widford, and none in the remainder of the Chelmsford Union (see table, p. 761). Nine deaths were of children under 1 year of age, 4 of children between 1 and 2 years, and one of a woman aged 70 years.

In connexion with these deaths it is extremely significant that all occurred in the district to which the implicated water was supplied, no death from diarrhoea occurring in the area supplied by the Admiral's Park spring. I have no means of knowing exactly the population supplied from this source, but I find from the report of the late surveyor, dated March 25th, 1903, that the amount of water supplied from Admiral's Park was exactly half the total amount supplied to the town. This would indicate either that half the population is supplied from Admiral's Park or that one portion of the town is more freely supplied with water than the other. Assuming, however, that only 5,000 persons are supplied from the Park spring, and that the remainder of the borough and Widford village, with a population of 7,700, is supplied from the implicated source, we have:

	Deaths from Diarrhoea during Epidemic.
5,000 persons not using implicated water	0
7,700 persons using the implicated water	14
23,000 persons in the remainder of the union not using the implicated water	0

It has been suggested that the flooding of the low-lying portion of the town was in some way responsible for the epidemic. There appears to be no ground for such belief, since the low-lying portion of Springfield has not been affected, and the area probably most affected, Widford, is the highest portion supplied with water from the mains and the farthest from the flooded meadows. Against the water theory also has been advanced the argument that cases of diarrhoea have occurred in parts of the town not supplied with the implicated water and outside the borough area, but as I have shown, these are comparatively few, save in Widford, which is supplied with the water, certainly not more than would naturally be expected at this period of the year. Further arguments are that many of the persons attacked, a large proportion of whom are adults, do not admit drinking water, that the infants who died would not be great drinkers of water, and that if the water had been the cause many more people would have been attacked. These arguments are invariably brought forward in connexion with every outbreak of water-borne disease, and it is unnecessary to spend time in again demonstrating the fallacies which underly them.

It might also be urged that as there had been very heavy rainfalls earlier in the year during which soil washings probably polluted the water in the implicated reservoir, that if such soil washings were the cause of the disease, outbreaks of diarrhoea should have previously occurred. Why such was not the case we are not in a position to explain with certainty. Possibly the previous rainfalls had not been sufficiently heavy to carry soil into the tank. Or, again, people are apparently more prone to suffer from diarrhoeal disease in the autumn, and possibly the meteorological conditions which existed immediately prior to, and during, the outbreak had been such as to favour the development in the soil and water of some pathogenic microbe or microbes, or such as to impart to some organism a virulence which at other times it did not possess. In the report of the New York State Board of Health of 1898 there is an account of an outbreak of dysenteric diarrhoea traced to the use of soil-contaminated water, which the investigators attributed to the presence of the bacillus pyocaneus. Unfortunately I have been unable to undertake any investigation for determining what particular organism was the cause of the outbreak.

The Chelmsford water supply is not the only one liable to pollution with soil washings. During the past year I have had to investigate several complaints in different parts of the country arising from species of worms, lumbrici and naides being found in the water, and in each case I have traced these to washings from soil adjacent to tanks and reservoirs. I have seen one such case since the Chelmsford outbreak; but fortunately the soil was not manured, and probably on this account no ill-effects were traceable to the use of this water.

Since the outbreak the Corporation has had the water from each source examined by Dr. B. Dyer, and I am glad to find that he confirms my opinion that these show no signs of contamination.

The primary object of an investigation of this character is to ascertain the cause of the prevalence of disease, in order that, if discovered, it may be removed and be avoided in future, not only in one particular district, but in all, and in secondary degree it is made to ascertain whether the outbreak was due to negligence. In this particular instance I cannot blame the water authority, the Chelmsford Town Council. The tank which became infected had only recently been constructed under the supervision of a well-known water engineer,* and for a temporary purpose. It would no doubt have been wiser to have raised the edges well above the ground level, but I do not think, under ordinary circumstances, soil washings would enter the tank, but with a rainfall of over 2 in. in twenty-four hours, the conditions were unusual, and, the precaution above referred to not having been taken, led to the catastrophe. It is only right also that I should state that the moment the Water Committee heard that the water was suspected they visited the works, and, seeing that soil had been washed into the tank, had the water diverted from it immediately, and this had been done some days prior to my visit. This prompt action at once stopped the epidemic, and no doubt saved several lives and prevented much suffering. As soon as the turbidity of the water in certain mains was reported, the cause was investigated and steps taken which it is hoped will prevent its recurrence. I feel it likewise due to the Mayor to thank him for his courteous assistance during the investigation.

MEDICAL PRACTICE IN BUSSORAH.

We are indebted for the following interesting communication to Dr. W. R. Scroggin, of Bussorah, Turkish Arabia:

It may interest some of your readers to know something about Bussorah as about every two years a medical man is engaged to serve some of the English firms trading at Bussorah.

Usually a first-class passage is given by the P. and O. Company to Bombay and by the British India Company from Bombay to Bussorah. In some instances £60 has been given to enable the doctor to proceed to Constantinople there to obtain a Turkish diploma to enable him to practise anywhere in the Turkish Empire and the doctor then makes his own arrangement about his voyage or journey to Bussorah with this amount, but I was informed that the expenses then are more likely to be £90 than £60.

Formerly the Turkish Examining Board permitted the services of an interpreter, but now it is necessary that the candidate should pass the examination, which is said not to be difficult, in either the Turkish or French languages. As I did not know either of these languages, my appointment was arranged diplomatically by appointing me as Honorary Physician to the British Consulate at Bussorah, which carries no claim to continuous service, pension, or salary. I therefore had not to proceed to Constantinople to obtain the Turkish diploma. In many respects I consider it is better to obtain the Turkish diploma, which confers the privilege already mentioned, and would enable one to practise in Bussorah or elsewhere in the Turkish Empire if one severs his connexion with the firms or the British Consulate.

The firm of Gray Dawes, of London, negotiates the agreement on behalf of the firms in Bussorah. The salary given by the combined firms is £150 per annum, and a hint is given that the British Consulate may engage you at £80 per annum, and that as steamers call at Bussorah something more can be reasonably expected from them to supplement the salary, besides the private practice of the place. If particulars are inquired about, you will be told that house rent is high, and the wages for servants are high.

A decent house is very difficult to obtain, and the rent is at least £50 per annum. The servants are troublesome in every respect and cost at least £80 a year, so that there is not much left from the two salaries that the doctor can feel certain of. The shipping and the private practice depends upon the captains of the steamers and the doctor himself.

There are six or seven Turkish doctors officially connected with Bussorah, and these have the practice of the Turkish officials and their families. There is also an American medical missionary, who has a dispensary open daily, except Sundays, and enters into private practice also, but there are no general practitioners, though there are numerous quacks.

* Since preparing this report the engineer has submitted to me the plans, approved by him, showing that the brickwork of the tanks should have been carried 18 in. above the ground level. Had these plans been adhered to pollution would have been impossible. The borough surveyor (since dead) prepared the plans and I do not know who is responsible for the altered construction.

The voyage from London to Bussorah by P. and O. and the British India steamers occupies about a month. To those who have never been in the East the journey becomes interesting as soon as Port Said is reached if advantage is taken of going ashore at each place the steamer anchors at, but at Bombay it is possible that one may be transhipped from one vessel to another and away again in two or three hours. On passing the Persian Gulf ports one at last reaches Fâo, which is at the head of the Gulf and at the entrance to the Shat-el-Arab, the river formed by the junction of the rivers Tigris and Euphrates. Fâo is a small station, and the junction of the Indo-European and the Turkish telegraph lines. About forty miles up the river the steamer stops for a few hours at Mahommera, which is on the Persian side of the river, and where there is an influential Persian sheik who lords it for a considerable distance up the Karun river, which empties itself in the Shat-el-Arab. About twenty miles further up the latter river the anchorage of Bussorah is reached.

From Fâo to a considerable distance beyond Bussorah both sides of the river are covered with a forest of date palms dotted here and there with a few houses of some pretension, and small village huts. The scenery is very picturesque, and one imagines the coolness under the shades of the palms. The date trees extend inland from about a mile to seven or eight miles on either side of the river, but appear to extend a greater distance owing to the flatness of the country. The system of irrigation is very simple and effective, consisting of cutting creeks and channels at right angles to the river, and continuing to cut smaller and still smaller channels at right angles until oblong and square patches are formed, in which the date palms are planted about 8 ft. to 10 ft. apart. The rise of the river twice in twenty-four hours does the watering automatically. The manuring of the trees is done about once in two years, poudrette and stable refuse being used for the purpose. The date trees begin to flower about April. The Arabs fertilize the female date trees by cutting the male date fronds when they are about to open, climbing up the female date tree, and sprinkling the pollen of the male on to the female open frond.

The dates are matured in the month of September, when the exporting firms are very busy at their chadocks packing them into boxes, which are sent in thousands to various places in Europe, India, and America. It would be unwise to describe the operation of sorting and packing the dates by the dirty-looking Arab men, women, and children employed for the purpose. It is sufficient to say that the stalk heads of the dates are removed deftly and quickly by the pearly teeth while being packed. Dates, wheat, an inferior barley, and the large white millet and horses are the chief exports from Bussorah.

The English and other mercantile firms are on the left bank of the river, near the large creek which runs from Ashar, the Turkish military and naval head quarters, which is situated at its entrance, to the town of Bussorah, which is about 1½ mile inland. This creek is used for irrigation purposes, and is also the main drain of Bussorah, and evidence of its sewer properties can be very readily perceived when in the creek and the tide is low. The view along the creek, with houses and the date gardens on either side, and innumerable canoes plying up and down, is picturesque and interesting to see.

The town of Bussorah has a population of from 20,000 to 30,000, and there are from 1,000 to 2,000 military troops. The houses vary in size, the best of them being near the banks of the creek. The roads and streets vary much in size and are very irregular, the majority of them allow only one carriage to pass in the one direction, while others will barely allow a loaded donkey to pass along. There are several open spaces in the town converted into grain and other markets and coffee shops, where the solemn-looking Arabs and Turks congregate sipping their coffee and smoking the long-tubed kalion while transacting business and retailing the latest news. The market for the petty shops has covered-in streets; the benefit of the shelter is appreciated much during the hot summer days. The shopkeepers are either Mohammedans, Jews, or Christians. This being so it is best not to think of doing any shopping on Fridays, Saturdays, or Sundays, as many of the shops are closed on these religious days of the different communities. The streets and houses are not known by names or numbers. The houses are in the form of quadrangles more or less, having one entrance door from the road or street. Most of them consist of a ground and first floor, having a quadrangular space in the centre with rooms along the sides. This space is used as a small garden by the better houses; and serves as a central cesspool for the poorer ones, receiving the dirty washing and kitchen water. The odour from some of these cesspools will give one who is not used to the filthy smells a headache. They are cleaned out possibly in one or more years. The w.c.'s are generally situated close to the entrance doors or near the stairs ascending to the first floor, and as they contain a cloaca which has not been emptied for years their position are very perceptible to the senses. When emptied, the contents are used for the date and other gardens. The municipality has nothing to do with the cleaning out of the cloacas or cesspools, or seeing that they are kept clean. When an agriculturist needs any manure, he simply asks the occupants the privilege of removing the filth. There are no public latrines or urinals anywhere; the result is that open spaces, the date gardens, and the banks of the river and creeks are used for the calls of Nature. The roads and streets are kept fairly clean by the municipality, but the rubbish is thrown in open spaces in poorer localities, and hollows are filled up with the same.

Bussorah, though gradually improving in healthiness, is still considered unhealthy, so much so that I believe the Turkish officials receive an allowance through the unhealthiness of the place. The wonder is that it is not more unhealthy than it is. The inhabitants are difficult to deal with, and sanitary improvements can be only very gradually introduced. In 1901 there were a few cases of plague, chiefly near the banks of the river, though a very few occurred in the town. In one instance the plague doctor is said to have been informed of the presence of dead rats near a house said to have an infected patient. He desired to enter the house and examine the inmates, but was confronted by a man with a gun who dared him to enter his harem at the peril of his life. Naturally the doctor thought a manœuvre out of the castle was the most prudent thing to do. I became aware of a plague case in a house in the town and so informed the plague medical officer of the name of one of the occupants of the house. The house was visited by the doctor and a healthy substitute was presented for examination with the obvious result that no plague was discovered. It would not have done for the doctor to examine all the inmates or to inquire too minutely into the matter, and I was not asked to accompany him to identify the patient. If stringent measures were adopted there would have been a riot and the doctors would have been the first to be shot or assassinated.

Some years ago cholera appeared in a violent form in Bussorah, and the doctors were accused of introducing the disease by throwing sweetmeat about the streets. Some sweets were brought to the Governor by the mob, and one doctor had to eat them to prove their harmlessness, but this did not satisfy the people, and the Turkish doctor who was suspected most found it prudent to leave.

Malarial fevers, with the resultant anaemia, cachexia, and enlarged spleens, are most common. Repeated attacks of conjunctivitis with its sequelae on the lids, and ulcers with leucoma of the corneae are prevalent. A number of cases for the operation for cataract and iridectomy can be had. A few cases for entropion have also sought relief. I have seen about eight cases of calculus vesicae. Dysentery and diarrhoea prevail during the summer, and bronchitis and a few cases of pneumonia during the winter.

The difficulty in operating on the poor is that one has to accommodate the patient besides feeding him and doing all that is necessary. To a young doctor eager for practice this may not be a drawback, but it certainly entails considerable inconveniences. The people have faith in an English surgeon. Venereal diseases are fewer than one would expect here.

It is well for the doctor to bring out a stock of medicines from England, smaller quantities can be got on emergency from Karachi or Bombay. There is some difficulty and delay in passing medicines, etc., through the Customs House. Certain medicines—as cocaine, chlorate of potash, etc.—are entirely prohibited, but I received a hint that such drugs could be entered under a pseudonym on the list submitted for inspection. I have always received much courtesy and consideration from the Turkish doctors and officials.

There is a small English club here which is much appreciated, as after about a month Bussorah is felt to be excessively dull and monotonous. The hot weather commences about the end of April, and during the months of July and August the heat and mugginess make one wish that he had never seen Bussorah; the temperature gradually rises to about 114° in August. The cold weather commences in

November and extends to March, when it is most delightful: the minimum temperature recorded was 34°, but I have placed water at night on the roof of the house and found it converted into solid ice which did not melt until about midday in January, showing that the temperature must have been below freezing point Fahrenheit. During the summer the roofs of the houses, all of which are flat, are used for sleeping. As a rule the nights are tolerable on the roofs, even during the hottest time in summer. Locomotion is mostly by canoes on the river and creeks, there being only one tolerable road running from Ashar to Bussorah. There are some private carriages and a nondescript 'bus service along this one road.

The branch of the American Medical Mission Dispensary here is free on condition that the patients listen to a short chapter from the Bible and a prayer. It is said that during the ten years' existence of the whole of this Arabian mission in the Gulf and Arabia, they have only had one convert, who was promptly imprisoned. In the meantime colporteurs thrive on good salaries, and the mission finds employment for missionaries and doctors.

When I entered into my agreement I was engaged to serve four firms. This arrangement led to some difficulty about the payment of my salary. Let this be a warning to my successor. I agree with one of my predecessors, who is of the opinion that the firms in Bussorah obtain the services of the doctor dirt cheap, considering the feeling of exile, discomfort, monotony, and the intolerable and innervating hot weather. There is no dispensary provided, and the doctor has to visit the whole of the members of the firms scattered about some distance from each other at his own expense. The subordinate employés visit the doctor's dispensary for treatment, but when too ill must be visited by the doctor at their own residences. The doctor is not provided with an assistant in the form of a compounder even. It is the private practice only which one creates that is any inducement to remain in Bussorah, and this is obtained by one's own ability and tact. It is a great advantage to know French, which is spoken by a good number of the higher officials, and the sooner one acquires the colloquial Arabic the better it is for his patients and practice, and the doctor can be more independent of his corrupt interpreter servant. I have found the people very decent and respectful, and liked them better as soon as the prejudice was worn off, as I found them nothing as bad as they were represented.

ORGANIZED EFFORTS FOR THE DIMINUTION OF INFANTILE MORTALITY IN FRANCE AND BELGIUM.

INFANTILE mortality formed the subject of a paragraph in the inaugural address of S.A.R. Prince Albert to the International Congress of Hygiene and Demography at Brussels; and a brilliant contribution was read on the same subject by Professor Budin of the Faculté de Médecine de Paris. The members of the Sixth Section of the Congress voted the following conclusions: That being of opinion that the feeding of infants should be an object of constant solicitude to public authorities, this Congress considers that (1) charitable authorities should seek by every possible means to institute "consultations des nourrissons," under the direction of doctors; (2) for girls, from the middle school to the normal school, and especially in domestic schools, practical lessons on infantile hygiene should be established, particularly in connexion with the "consultations des nourissons;" (3) in every district directions as to feeding and the hygiene of infants, laying stress on the importance of breast feeding, should be given at the time of marriage and when a birth is registered.

"CONSULTATIONS DES NOURISSONS."

According to Dr. Budin's sketch of the subject, the first organized attempt in this direction appears to have been made by him in 1892, when he requested the Director-General of l'Assistance Publique to give instructions to mothers confined at La Charité to bring their infants to the hospitals once weekly, in order to persuade them to continue breast feeding, or, when this was impossible, to aid them by giving good sterilized cow's milk. The Conseil de Surveillance accepted this recommendation, but limited it to infants actually born in the Charity, and limited the distribution of milk to persons actually indigent. The procedure since then adopted by Dr. Budin was described at length in the BRITISH MEDICAL JOURNAL of April 25th, 1903, p. 974. Dr. Budin states that 94 per cent. of the infants are fed wholly or in part by breast, complete artificial feeding being permitted in only 6 per cent. of the cases. As a result, there has been an almost complete disappearance of mortality from gastro-enteritis.

OTHER SIMILAR INSTITUTIONS.

Similar consultations to the above have been organized in Paris, to the number of 26 in all. In 1895, on the initiative of M. Paul Strauss, le Conseil Général du Département de la Seine, organized similar consultations in the relief houses of the city and Département of Paris. As grants to recent mothers varying in value from 10 to 30 francs are given to a certain number of women, it was made a condition of the grant that the mothers should bring their infants at intervals of seven or fifteen days. If breast feeding is being well carried out the mothers receive the full amount of help; if it is necessary to give sterilized milk the expense of this is deducted from the grant.

In the provincial parts of France the above examples have been followed. The best known of these institutions is the Goutte de Lait directed by Dr. Dufour, of Fécamp. All the infants of the town are admissible, under three categories, a gratuitous section for the poor, a half-paying section for the working classes, and a paying section for others. Similar institutions have been opened throughout France, a list of these given by Dr. Budin including 20 towns.

In all the Gouttes de Lait not only are the infants examined and weighed, and the mothers instructed, but also the milk provided is analysed, so as to ensure its regular good quality. It has been objected to these institutions that (*a*) they favour the spread of whooping-cough and like diseases. This is easily provided against. (*b*) They favour artificial feeding. It is urged that the inducement for the mother to suckle her infant is diminished when she is supplied with sterilized milk. In the maternity charities this risk is small; the mother's breast feeding is well established before she leaves the hopital. In the dispensaries, or Gouttes de Lait, the duty of the doctor is much more difficult. Various devices have been adopted to counteract this tendency. At Rouen Dr. Panel has induced the municipality to provide 3 lb. (livres) of meat weekly to mothers who suckle their infants, and this example has been imitated at Bar-le-Duc, Varengeville, Appoigne, Arques, etc. At Saumur Dr. Levrand has two separate consultations—one for artificially-fed and one for breast-fed infants; in the former mothers pay for the milk supplied, in the latter they receive a douceur of 3 francs every fifteenth day when the infant is brought to be weighed.

From the above summary there is clearly concordance on the essential necessity for consultations at which (*a*) the infants are weighed, and (*b*) the mothers receive advice, as was fully pointed out in the series of articles published in our pages this spring.

SCHOOL FOR GIRLS.

The "consultations de nourissons" render further service by the diffusion of practical instruction to all concerned in the raising of infants. They can be utilized in training the future mothers. At Appoigny, girls (*jeunes filles*) follow the consultations, help in weighing the infants, and listen with attention to the conferences on hygiene held by Dr. Mocquot. We have already seen that this mode of action has been endorsed by the Administrative Section of the Congress at Brussels. The preceding example is gradually being followed elsewhere. Attempts are also being made to give practical instruction to mothers before they leave maternity hospitals, and elsewhere than in hospitals—for example, in connection with crèches.

MUTUALITÉS MATERNELLES.

Dr. Budin is of opinion that the deaths of infants in their first year ought not to exceed 90 to 100 per 1,000 births, and this is not too high a standard to adopt. That more than this can be achieved is shown by the experience of Mutualités Maternelles in connexion with which a primary fund is established by benevolent persons. Each woman pays a small weekly fee in view of her prospective accouchement, when she receives the attendance of a doctor and nurse, and during the next month a sum which amounts to 12 francs in Paris. When at the end of four weeks she brings her infant, who has been suckled, to the office of the society she receives a further sum of 10 francs. The result is that "infants no longer die in the first month of life." From 1892 to 1900, out

of 3,689 accouchements in connexion with the Mutualité, only 254 deaths of infants under 1 year have occurred, or 69 per 1,000, the proportion of infants breast-fed being 81 per cent.

Similarly at Vienne (Isère), out of 333 accouchements only 38 deaths have occurred, or 114 per 1,000, breast feeding having been secured in 78 per cent. of the cases.

In Belgium, similar institutions to those already described have been opened: of these, the one at Brussels is in connexion with La Société Protective des Enfants Martyrs, founded in 1892, apparently somewhat on the lines of the English Society for the Prevention of Cruelty to Children.

Laiterie Maternelle de Hodiment

This institution at Verviers may be taken as an example of this work in Belgium. The town of Hodiment—5,000 inhabitants—is at the centre of a dense agglomeration of towns, comprising Verviers, etc., and a total population of 80,000. The main industry is woollen manufacture, and a large proportion of the mothers are obliged to work in factories to supplement the family income. This involves entrusting babies to a grandmother, an older sister, or some neighbour. As in the Goutte de Lait at Fécamp, milk is provided which has been "maternized" by first removing a third of the creamed milk, and replacing this by an equal quantity of water containing 35 grams of lactose and 1 gram of salt to each complete litre. This milk, with its full amount of cream, is then bottled and submitted in an autoclave to a temperature of 102° C. for thirty minutes. All the infants receive the same milk, but this quantity varies in according with the following rule:

The first day the infant receives 50 grams, and an increasing amount of 50 grams daily up to the twelfth day.

12th day and the 1st month	600 grams
2nd and 3rd month	720 ,,
4th month	800 ,,
5th month	900 ,,
6th, 7th, and 8th month	1,020 ,,
9th and 10th month	1,140 ,,
11th and 12th month	1,200 ,,

The amount is varied in special cases. The milk is given out each day, the mother receiving nine bottles, one for each meal in the day. Four categories have been established for payment: A penny daily for the indigent, threepence for workpeople, fivepence for employés, and eightpence for those in easy circumstances. There are very few in the last category; "*tout le monde* wishes to be indigent!" On Wednesday of each week Dr. Van Pée, Physician of the Hospices Civils-Hodiment, consults with the mothers. Although only opened in September, 1901, in February, 1902, the establishment was supplying 250 infants with milk. At this dispensary there is no pecuniary inducement, apart from the cheap or gratuitous supply of milk, to continue regular attendance. Hence it is found that after infants have recovered from the illness which has induced the mothers to bring them, attendance is discontinued. This would be the chief difficulty in any attempt to engraft this excellent system in our English towns.

LITERARY NOTES.

Of the eccentricities of index and catalogue makers there is no end. The following recent examples are worthy of figuring in any collection of such curiosities. In a bibliographic publication entitled *Index Rosenwald* there appears, under the heading "Diabète," an entry to the following effect: "Zur Kenntniss des Phloridzin-diabetes," which is interpreted as "Etude du diabète de Phloridzi." We hope no inquiring Frenchman will be misled into searching for the writings of Phloridzi. The transformation of a chemical substance into a clinical investigator is a fairly remarkable achievement, but it by no means exhausts the ingenuity of our index maker, for under the heading "Diseases of the Skin," we find figuring among acne, calvities, etc. *le bouton de Murphy!*

Messrs. J. and A. Churchill will shortly issue a sixth edition of Dr. Galabin's *Manual of the Diseases of Women*. The work has been greatly enlarged, and contains twice as many illustrations as in the previous edition, namely, 284. Messrs. Churchill have also in the press new editions of Dr. Jellett's well-known books on *Midwifery* and *Gynaecology*. The latter work will be much larger than before, and will be profusely illustrated.

Dr. F. P. Henry, Honorary Librarian of the College of Physicians of Philadelphia, has written an interesting historical sketch of the library of that institution. He says that the library, which ranks second in point of size among the medical libraries of the world, dates from December, 1788, when Dr. John Morgan, the founder of the Medical Department of the University of Pennsylvania, presented twenty-four volumes to the College. The number of volumes is now 67,243, many of them being exceedingly old, first editions, and practically invaluable. The library is not only open to every one, whether physician or layman, for consultation, but the Fellows of the College have the privilege of taking out books for a fortnight and extending the time, if the book has not in the meantime been asked for, to a fortnight longer. With the new building, which the Carnegie Fund of £10,000 has made possible, the Library of the College of Physicians will doubtless enter on a new era of usefulness.

The American Journal of Orthopedic Surgery is the title of a new quarterly periodical which will replace the *Transactions* formerly published by the American Orthopedic Association. The *Journal* is intended to contain the papers read by members at the annual meeting, together with the discussions to which they gave rise. In addition to these, original papers on orthopaedic subjects by members and from outside sources will be published. The *Journal* will also contain abstracts of important orthopaedic books and articles. The editorial committee consists of Drs. R. W. Lovett (Boston), B. F. McKenzie (Toronto), and H. M. Sherman (San Francisco). The first number, which is before us, is excellently printed, and well and copiously illustrated.

In the *Johns Hopkins Hospital Bulletin* for August Dr. Waller R. Steiner contributes an interesting paper entitled Some Early Autopsies in the United States. The date of the first necropsy made in the United States is unknown. Toner, as the result of research, thinks that one made in 1691 by Johannes Kerfbyle, a graduate of Leyden, on Governor Slaughter, of New York, was the first recorded. Packard, in his *History of Medicine in the United States*, says that one made in 1674 was the earliest. Steiner says there are a number on record a good many years earlier than this. Winthrop in his *History of New England* says that one Marmaduke Percy, of Salem, was arraigned for the death of his apprentice.

> This boy was ill-disposed, and his master gave him unreasonable correction and used him ill in his diet. After, the boy gate a bruise on his head, so as there appeared a fracture in his skull, being dissected after his death.

The Maryland archives contain an interesting account of a necropsy made in 1643 on an Indian lad who was killed by his master, John Dandy. A jury composed of twelve men formed the inquest. Their foreman, George Binx, was a Licentiate in Physic, and probably performed the necropsy. There was, however, another doctor on the jury, Robert Ellyson, a barber-chirurgeon. The report reads as follows:

> We find that this Indian (named Edward) came by his death by a bullett shot by John Dandy, which bullett entered the epigastrium near the navell on the right side, obliquely descending and piercing the gutts, glancing on the last vertebra of the back, and was lodged in the side of Ano.
>
> foreman GEORGE BINX.

Fourteen years later Mr. Richard Maddokes and Mr. Emperor Smith, chirurgeon, viewed the body of Henry Gouge, who was thought to have been killed by his master, the above John Dandy. The eleven men who formed the inquest report

> that we can See nor find nothing about the Said head, but only two places of the Skin and flesh broke on the right Side of the head and the Scull perfect and sound, and not anything doth or can appear to us to be any cause of the Death of the said Gouge.

They also endeavoured to search the body, but could not possibly do it, it being "so noysome" to them all. Referring to the loss of the Reverend Mr. Danforth's three children, in an epidemic in 1659, Cotton Mather says that "the (until then unknown) malady of 'bladders in the wind-pipe' invaded and removed many children; by opening one of them the malady and remedy (too late for very many) were discovered." Dr. Steiner thinks that diphtheria and tracheotomy are probably here implied. Elsewhere in his *Magnalia* Mather makes the following note:

> As for Mr. Stone, if it were metaphorically true (what they proverbially said) of Beza, that "he had no gall," the physicians that opened him after his death found it literally true of this worthy man.

This necropsy on the Reverend Mr. Stone, who was assistant pastor of the first Church of Christ in Hartford, was probably performed by Dr. Bryan Rossiter, of Guilford, Conn., in July,

663. Rossiter's fame as a physician called him also to Hartford, in 1662, to ascertain by a necropsy whether the child of John Kelly was bewitched. The child was a girl, aged 8 years, who

was taken in the night following Sunday, March 23rd, 1661-2, with a violent attack of something like bronchopneumonia. In her delirium she cried out against Goody Ayres as choking her and afflicting her, and the last words the child spoke were to that effect.

Both her parents and the townspeople thought that her death was due to some preternatural cause. The town accordingly summoned a jury of six men to inquire of the cause or manner of her death. They reported on March 31st, 1662, as follows:

We, whose names are underwritten, were called forth and desired to take notice of the dead child of John Kelly, do hereby testify that we saw as followeth: The child was brought forth and laid upon a form by Goodwife Roscoe and Goodwife Whaples, and the face of it being uncovered, Goodwife Ayres was desired by John Kelly to come up to it and to handle it. The child having purged a little at the mouth, Goodwife Ayres wiped the corner of the child's mouth with a cloth, and then she was desired to turn up the sleeve of the arm, and she did endeavour to do it, but the sleeve being somewhat strait she could not well do it. Then John Kelly himself ripped up both the sleeves of the arms, and upon the backside of both arms, from the elbow to the top of the shoulders were black and blue, as if they had been bruised or beaten. After this the child was turned over upon the right side and so upon the belly, and then there came such a scent from the corpse as that it caused some to depart the room, as Gregory Wolterton and George Grave. Then the child being turned again and put into the coffin, John Kelly desired them to come into the room again to see the child's face, and then we saw upon the right cheek of the child's face a reddish tawny great spot, which covered a great part of the cheek, it being on the side next to Goodwife Ayres where she stood.

This spot or blotch was not seen before the child was turned, and the arms of the child did appear to be very limber in the handling of them.

GREGORY WOLTERTON.	The mark of THOMAS CATLINGE.
THOMAS BULL.	NATH. WILLETT.
JOSEPH NASH.	GEORGE GRAVE.

On the same day, that is, five days after the child's death, Dr. Rossiter opened the body at the grave, described the appearance of the organs, noted the absence of rigor mortis, and mistook the sign of beginning decomposition for something supernatural, as appears from the following protocol:

All these particulars underwritten I judge preternatural.

Upon the opening of John Kelly's child at the grave I observed:

1. The whole body, the musculous parts, nerves and joints, were all pliable, without any stiffness or contraction, the gullet only excepted. Experience of dead bodies renders such symptoms unusual.

2. From the costal ribs to the bottom of the belly in the whole latitude of the womb, both the scarf skin and the whole skin with the enveloping or covering flesh had a deep blue tincture, when the inward part thereof was fresh, and the bowels under it in true order without any discoverable pecancy to cause such an effect or symptom.

3. No quantity or appearance of blood was in either venter or cavity, as belly or breast, but in the throat only at the very swallow, where was a large quantity as that part could well contain, both flesh and fluid, no way congealed or clodded as it comes from a vein opened, that I stroke it out with my finger as water.

4. There was the appearance of pure fresh blood in the backside of the arm, affecting the skin as blood itself without bruising or congealing.

5. The bladder or gall was all broken and curded, without any tincture in the adjacent parts.

6. The gullet or swallow was contracted, like a hard fishbone, that hardly a large pease could be forced through.

BR. ROSSITER.

Fortified by these findings, John Kelly and Bethia, his wife, testified in open court on May 13th, 1662, as to the alleged persecutions of their child by Goody Ayres, according to the child's testimony. They state that the child after eating some hot broth with the wife of William Ayres, against their wishes, complained of pain at her stomach, her father gave her some angelica root which yielded her "present ease," but the relief was only temporary as sometime later she died. At a General Assembly held at Hartford, March 11th, 1662-3, the court allowed "unto Mr. Rossiter twenty pounds in reference to openinge Kellies child and his paynes to visit the Dep.-Governor and his paynes in visiting and administering to Mr. Talcot."

REVACCINATION IN ORANGE RIVER COLONY.

ATTENTION has recently been called in the BRITISH MEDICAL JOURNAL to the establishment of compulsory revaccination in the French Republic. We have now to record its institution in one of our Colonies—the Crown Colony of Orange River. The Legislative Council of the Orange River Colony has passed, under date June 11th, Ordinance No. 29 of 1903, "To Amend the Law Relating to Vaccination."

The Ordinance consists of twenty sections. Section V enacts that all children shall be vaccinated within 6 months of birth and that unvaccinated children under 12 years old brought to reside in the Colony shall be vaccinated within 6 months of commencement of residence. Section VI provides for revaccination. It states that—

It shall be the duty of the parent or person having the custody as aforesaid of any child to cause such child to be vaccinated or revaccinated, as the case may be, by a medical practitioner within the period of six months after such child shall have reached the age of 12 years.

Both primary vaccination and revaccination may be done by any medical practitioner, or parents may have either operation performed without charge by taking the child to a district surgeon or vaccinator. In the latter case they are required (Section VII) to bring back the child for inspection on the eighth day. Where the vaccinator is a private medical practitioner, the duty is laid on him (Section VIII) of inspecting the result on the eighth day. In the event of the operation having been unsuccessful, the private practitioner or district surgeon, or vaccinator, as the case may be, may direct that the child be again vaccinated and inspected. All lymph is to be taken from a healthy heifer (Section II), and is to be supplied free by the Government alike to official medical men and to private practitioners. The section (No. IV) providing for free lymph supply is as follows:

Lymph shall be supplied by the Medical Officer of Health for the Orange River Colony in reasonable quantities on application and without payment to district surgeons, vaccinators, and medical practitioners; the expenses of providing, keeping, and supplying such lymph shall be defrayed out of moneys provided by the Government for the purpose.

Penalities for neglect of vaccination are enacted in Section XIII. Where either vaccination or revaccination has been omitted "without reasonable excuse," or where a child has not been brought back for inspection on the eighth day, or certificates have not been forwarded, or the district surgeon or vaccinator has been obstructed in his duty, the person responsible "shall be liable upon conviction for every such offence to a penalty not exceeding five pounds, or in default of payment to imprisonment without hard labour for a period not exceeding fourteen days." Certificates of successful vaccination are provided for in Section IX, and of postponement or insusceptibility in Sections X and XI.

Resident magistrates, assistant resident magistrates, and special justices of the peace are required, where they have cause to believe that a child has not been successfully vaccinated or revaccinated, to summon the parent, and may inflict the above-mentioned penalty. Besides, an order is to be made for vaccination or revaccination within fourteen days. Failure to comply with this order is also subject to a penalty, but the whole section is qualified by the phrase "unless such parent or person can show reasonable ground for his omission." False certificates or entries by medical practitioners and district surgeons or vaccinators (Section XVI) involve a penalty not exceeding £100, and in default of payment imprisonment with or without hard labour for a period not exceeding six months.

In addition to vaccination and revaccination as thus provided for, Section XVII deals with the vaccination of contacts, and is as follows:

The Lieutenant-Governor may, whenever he shall deem necessary, order to be forthwith vaccinated all persons who have been or are suspected of having been in contact with or infected by any person suffering from small-pox or any disease suspected of being small-pox, or any clothing or other article capable of conveying the infection of small-pox.

It occurs to us that some difficulty may be experienced with regard to certificates under the ordinance on account of the definition of "successful vaccination." In Section II—"interpretation of terms"—it is laid down that "successful vaccination" shall mean "that the total area of vesiculation resulting from the performance of vaccination or revaccination shall be not less than half a square inch." Later on, Section IX requires that the operator, after having ascertained that the vaccination or revaccination has been "successful," shall give a certificate to that effect, and it has already been noted that where the operation is "unsuccessful" the operator may order its repetition. No provision appears to be made for certification of cases in which the vesicular area produced is less than half a square inch. Under the definition above quoted this would not be a "successful" vaccination, and if the operator were to certify it as "successful" he would appear liable to the penalties under Section XVI. But in a case where a genuine vaccinal result less than half a square inch in area has been obtained it is almost certainly impossible immediately afterwards to repeat the operation successfully. If the ordinance be

strictly interpreted, therefore, the only course in such circumstances would appear to be for the practitioner to grant a certificate of insusceptibility to vaccination, the insusceptibility being due to the vaccinal operation just previously performed, and resulting in vesiculation less than half a square inch in area. Obviously this would be rather an absurd certificate, as the protection conferred, though probably not very lasting, would for the time be quite genuine. The difficulty could have been got over by providing that the exact area of vesiculation obtained in every case of vaccination should be accurately stated in the certificate. Perhaps in administering the ordinance some way may be found to get over this apparent flaw in the drafting of it.

Meanwhile the outstanding fact is that Germany which is under an autocracy, and France which is a republic, and one of our own Crown Colonies, are all to have the benefit of revaccination on the same footing of systematic administration with primary vaccination, while in England, of whose Constitution we profess to be so proud, there is as yet no equivalent provision to protect the community against the ravages of small-pox.

NOVA ET VETERA.

ABDOMINAL SURGERY IN THE EIGHTEENTH CENTURY.

In a desultory ramble between the covers of a few early medical books I met two references to abdominal surgery which I am in hope may prove to be of interest to the profession. In giving them a publicity greater than that which possibly they already enjoy, I derive no little pleasure from the thought that some one thereby may be induced to make the acquaintance of the honest old surgeon of Frankfort from whose writings the excerpts are taken.

The first extract is from *Medical, Chirurgical, and Anatomical Cases and Observations*, by Laurence Heister, M.D., F.R.S. Translated from the German original by George Wirgman. Printed in London by J. Reeves, 1755, and is an observation of an abscess in the vermiform process of the caecum.

In the month of November, 1711, as I was dissecting the body of a malefactor in the public theatre of Altdorff, I found the small guts very red and inflamed in several places, insomuch that the smallest vessels were as beautifully filled with blood as if they had been injected with red wax in the most skilful manner, after Ruysch's method. But when I was about to demonstrate the situation of the great guts, I found the vermiform process of the caecum preternaturally black, adhering closer to the peritoneum than usual. As I now was about to separate it by gently pulling it asunder, the membranes of this process broke, notwithstanding the body was quite fresh, and discharged two or three spoonfuls of matter. This instance may stand as a proof of the possibility of inflammations arising, and abscesses forming, in the appendicula, as well as in other parts of the body, which I have not observed to be much noticed by other writers; and when in practice we meet with a burning and pain where this part is situated we ought to give attention to it. It is probable that this person might have had some pain in this part; but of this I could get no information. In such cases I look upon clysters prepared with emollient and discutient herbs, such as mallows, marsh mallows, and camomile flowers, and the like remedies against inflammations, boiled in milk, and used frequently, to be of excellent use, as they reach the part, and may resolve the inflammation, or bring the abscess to a suppuration, partly by their warmth, partly by their resolving and discutient qualities, opening the abscess, that the matter may be discharged by stool, and the patient hereby may be saved; which, when the parts in the abdomen become corroded, can scarcely happen, but death must follow.

This description of a pathological state of the appendix published some time before 1755—I am ignorant of the date of the German edition—is, I believe, the first clear reference to appendicitis. Dr. Kelynack, in his excellent monograph on the pathology of the vermiform appendix, makes no mention of a case earlier than that of a perforate appendicitis published by Mestivier in 1759, and in the exhaustive bibliography which he has compiled the name of Heister is absent. The extract is further of interest since in it the cardinal symptom of the disease is suggested and emphasized, and the treatment is laid down along the lines which must have remained for more than a century later those most likely to lead to a successful issue. This treatment again might no doubt be supplemented by stating that where a localized abscess formed and pointed it was opened and drained, for the origin of drainage was already obscured by a century's lapse; and concerning the incision, we know that the parallel treatment of nephrotomy for lumbar abscess due to renal calculus was practised in days as remote as those of Hippocrates.

The second extract is from Heister's *System of Surgery*, seventh edition, 1763. Heister first quotes Le Dau's experience, that with strangulated herniae and gangrenous gut "many patients have been recovered more by Nature than art," through "a spontaneous agglutination of the intestine with the ring of the abdomen." He then proceeds:

That the parts will thus agglutinate or join together is confirmed by a late observation of Ramdohrius, present Surgeon to his Serene Highness the Duke of Brunswick. He some years ago cut off a large part of a mortified intestine in a woman that had an incarcerated rupture, which broke of itself, and joining the two sound parts of the intestine together, he inserted one into the other, and tied them together loosely with a string; and replacing them in the abdomen drawed them by the string to the mouth of the wound, by which means the divided intestine inflamed and surprizingly united. The woman discharging her faeces afterwards, not through the wound but by the anus as before. The woman afterwards lived in a state of health, till in about a year's time she died of a pleurisy. Upon opening her the divided intestines appeared to be united with each other; of which he made a present to me, together with part of the abdomen to which they adhered. I now keep them in spirits, to convince such as are incredulous and of a different opinion.

I believe this to be the first record of successful enterorrhaphy by end-to-end union. The procedure would seem to have found few, if any, imitators at the time; even the boldest surgeons contented themselves with cutting away the gangrenous gut, and stitching the cut ends to the wound. Some practitioners withdrew entirely, and perhaps too sullenly, from such cases. Heister graphically relates how he accompanied Rau of Amsterdam—with whom for a time he was *in statu pupillari*—to a patient with an enterocele, and that when Rau opened the sac and perceived that the protruded intestine was already quite black and destroyed, "he would not proceed any farther in the operation, but told the patient he must die, and putting up his instruments went away without advising or undertaking anything more."

Whatever treatment was adopted the results do not appear to have been satisfactory. Heister on being called to such a case lugubriously observes, "I perceived it to be the *miserere mei*."

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PREVENTION OF CONSUMPTION.

London.

The Metropolitan Hospital London Saturday Fund last May adopted a resolution expressing the opinion that an effort should be made to increase the accommodation for persons suffering from tuberculosis in London and suburbs, and recommending that a committee of representatives of all organizations of workers in London should be formed with the view of considering the advisability of providing sanatoria within easy reach of London for the reception of tuberculous patients on terms that would be within the means of the working classes. Mr. W. G. Bunn has been appointed Honorary Secretary of this Committee, which will meet in November next to make arrangements for a further meeting to be held in January.

United States.

Massachusetts.—A new association for the alleviation of tuberculous disease and the education of the community as to the dangers of infection and the means of its prevention has been formed in Cambridge, Massachusetts. The objects of the Association is "to cure at home, if possible, persons suffering with tuberculosis; to relieve with food, as far as possible, all needy tuberculous persons, to educate the entire community in the care and prevention of this disease; to promote the establishment of hospitals for hopeless cases." A trained nurse will care for such cases of the poor as need her attention, free of expense, giving instructions as to the disposition of sputum and the formation of healthful habits. Various committees will have charge of the distribution of food, of lectures, of sanitation, etc.

Denmark.

The struggle against tuberculosis is being organized in Denmark as elsewhere. The Danish National Association for the Prevention of Tuberculosis, which was founded only two years ago, already numbers 30,000 members. On August 30th the first large people's sanatorium established under the auspices of the Association was formally opened at Silkeborg.

The institution is capable of accommodating 122 patients. Of these, 112 will occupy wards with a southern aspect, the remainder looking to the east and west. Not a single room has a northern outlook. Each ward holds from two to six beds, with an air capacity of 900 cubic feet for each patient.

AUSTRALIA.

Adelaide.—A conference of delegates from the Local Boards of Health of the State was, we learn from the *Australasian Medical Gazette* of July 10th, held recently to discuss a certain policy in regard to consumption. The decision was arrived at after a serious discussion, and was supported by nearly every medical officer of health present. The policy adopted was that Local Boards of Health should pay for the maintenance of curable patients in a new wing at Kalyra, to be built by the James Brown Trust, and that the Government should be asked to make provision for incurable cases at the old lunatic asylum on North Terrace or elsewhere. It also contemplated getting assistance from the general public by the formation of a local branch of the Association for the prevention of consumption. The alternative scheme was to appoint a deputation to wait upon the Government and ask it to undertake the whole work. Several Local Boards have already given their practical adhesion to the policy adopted by the conference, but the Port Adelaide Board has repudiated it. Our contemporary goes on to say:

"The resolution carried by the Port Adelaide Board is simply a reaffirmation of the scheme rejected by the conference, and the delegates plead for more consideration of the matter. Both schemes, however, were thoroughly discussed at the conference, and the matter was also thoroughly discussed by a committee of the local Branch of the British Medical Association, who decided that Belair was a suitable locality, and that the extension of Kalyra was the most feasible scheme to bring forward. If there had been any danger to the residents of Belair or to the visitors to this National Park the above decision would not have been arrived at by a representative body of medical men. As to who should find the funds to carry out the work, it is contended by the Port Board that the work is of sufficient importance to the whole State for the Government to undertake it. It would be necessary in any independent scheme to spend at least £10,000 on buildings, and to pay about £3,000 for annual maintenance; that would provide for 50 curable and 50 incurable cases. There would be not merely wards but administrative blocks to be built in two different localities; but there would have to be a medical officer appointed, in addition to nurses and servants. By carrying out the extension of Kalyra for curable cases, there is no initial expense, because the James Brown Trust is prepared to build a new wing, and the administrative expenses would be correspondingly reduced—£600 a year being sufficient to pay for the maintenance of 50 curable cases. In regard to the utilization of the old lunatic asylum for incurable cases, nobody contends that it is an ideal place, but the Government has practically offered to utilize it for that purpose, and if the building can be made at all suitable with the expenditure of a few hundred pounds, it is better to take what can be got without delay than to put off indefinitely what is urgently needed. In the old asylum these incurable cases would be so isolated in its own grounds, and so supervised as to their habit that they would constitute no danger to the public. Another point to be considered is that a home for incurable cases must of necessity be close to the city, for the simple reason that the relations of the unfortunate patients who belong to the poorest classes cannot afford to pay train fares when they wish to visit them. It is to be hoped that the Port Adelaide Board will fall into line, and see the force of making a possible present move in the right direction, instead of advocating an impracticable, or at least distant scheme."

THE PLAGUE.

PREVALENCE OF THE DISEASE.

INDIA.

DURING the weeks ending August 15th, 22nd, and 29th the deaths from plague in India numbered 3,613, 6,817, and 7,158 respectively. It would seem that the reappearance of plague in regular epidemic form has again set in. During the weeks mentioned the deaths from plague in the Bombay Presidency amounted to 2,838, 5,511, and 5,087 respectively. It is in this Presidency that plague continues to be most prevalent. During the week ending August 29th the number of deaths from plague increased in Central India to 178, in Hyderabad State to 345, in Berar to 162, in the Central Provinces to 51. Decreases were reported from: The Bombay Presidency, 5,087 deaths; Madras Presidency, 103; Mysore State, 487. In the Punjab the epidemic is virtually extinct. At Mhow and Indore plague is virulent, and as many as 10,000 persons have left Mhow. At Indore the camp bazaar is deserted and the schools closed.

CAPE COLONY.

The plague reports in Cape Colony during the weeks ending August 15th were as follows:

Port Elizabeth.—No cases of plague; no deaths; remaining under treatment, 2.

East London.—No cases of plague; no deaths; remaining under treatment, 2.

Queenstown.—No cases of plague; no deaths; remaining under treatment, 1.

At East London and at Queenstown dead rats continue to be found. In no other town in the colony are any dead rats found.

MAURITIUS.

For the weeks ending September 3rd, 10th, and 17th the fresh cases of plague in Mauritius numbered 28, 23, and 39, and the deaths from the disease 20, 17, and 28 respectively.

HONG KONG.

During the weeks ending September 5th and 12th the fresh cases of plague in Hong Kong numbered 1 and 4, and the deaths from the disease 1 and 4 respectively.

THE AGE-DISTRIBUTION OF ENGLAND AND WALES.

AMONG the facts and problems to which our attention has been drawn by means of the recent Census Reports one of the most important is the progressive change in the age-character of the population. It is a matter of much public interest and one deeply affecting the country's welfare and prosperity. Public attention was drawn by the Bishop of Ripon, in eloquent terms, to the conditions of life on which it depends in the debate which took place in the House of Lords on July 6th on the physical condition of the population. The change is entirely in the direction of a higher average age, and it is not special to any portion of the country. It is, however, more pronounced in the industrial districts, and the extent of its occurrence in London, Lancashire and the West Riding of Yorkshire, has already been pointed out in the pages of the BRITISH MEDICAL JOURNAL.[1] The recent publication of the summary tables in anticipation of the final report on the census of 1901 has now supplied us with the total number of persons of each sex living at different ages in England and Wales. A table giving the relative numbers of these, per 10,000 persons, at the last three censuses was published in the July number of the Journal of the Royal Statistical Society.[2] From these it is apparent that while the numerical relations of the two sexes in this country has scarcely altered, the proportion of persons under 15 years of age in each thousand of the general population has declined during the two last decades from 365 to 324, while the proportion living at the reproductive period of life—20 to 45—has increased from 349 to 380, and at the later ages from 188 to 196. The present predominance of persons in the prime of life will explain the recent decline in the mortality-rate to an extent greater than the increased average duration of life could possibly account for, and a marriage-rate based on a general population containing such an increased proportion of marriageable persons cannot be regarded as on all-fours with previous marriage-rates. When comparing either birth, marriage, or death-rates for the same place there will be an increasing margin of error unless due correction is made for the dissimilar age-constitution.

The greater expectation of life characteristic of the last fifty years would no doubt tend to modify the age constitution somewhat, but the chief, if not the entire, cause of the aberration peculiar to the two last decennia is to be found in the fact that the high natality which was the normal state until a few years before the taking of the 1881 census is no longer existent. The decline in the normal birth-rate that so abruptly began in 1877 has culminated in inflicting a permanent annual loss on the population of between 7 and 8 births per 1,000 persons. This fall has now apparently abated, as there has been little change shown in the rate during the last four or five years. Having been spread over nearly a generation, the results of this birth-fall upon the population will not be apparent in a direct and definite shape at any particular age-period in past or future censuses, but its incidence, already so plainly in evidence on the lower ages, will be progressive through the higher ages from decade to decade for the whole term of a

[1] Vol. i, 1902, pp. 664 and 1034. Vol. ii, p. 357.

[2] See *A New Life Table for 1891-1900*. By T. E. Hayward, Medical Officer of Health for Haydock, Urban Sanitary District.

lifetime, and there can be no doubt its cumulative effect on the population will be very great. When the transition period is complete, assuming the birth-rate keeps steady at its present low level, the age-character of this population will have approximated to that of France at the present time, showing a startling accumulation in it of middle-aged and aged persons. The following comparison of the relative age-distribution in England and Wales in 1891 and in France in 1806 will illustrate this :

—	15 Years.	15 to 40 Years.	40 to 60 Years.	60 Years and Upwards.
England and Wales ...	351	405	176	74
France	200	392	223	125

The actual results may differ from this in some degree, as the English birth-rate is still considerably higher than that of France, though the fall here was more abrupt and severe than in any other European country. The practical difficulties which have hindered the movement in favour of providing old-age pensions are rendered still greater by the prospect of an increasing proportion of aged persons in this country during the next geneartion. There are many other aspects in which the social change which these figures betoken may be regarded, but the effect upon the expansion of the Empire is probably the one which will have the first consideration. There can hardly be any difference of opinion as to the greater potentialities of a prolific race, or that in populations of equal numbers, the one that has the largest proportion of young and vigorous persons possesses more of the actual conditions essential to progress than the one more largely constituted of the mature and aged. "The hope of the world is in the young."

For further disclosures and additional light on the various problems and facts of the 1901 census, the final report must be awaited which is now in hand, and we are assured will be pressed forward with all the dispatch compatible with the exercise of the care which the importance of the work demands.

ANTITUBERCULOUS DISPENSARIES IN BELGIUM.

In both France and Belgium antituberculous dispensaries have been founded, which present features of interest in "*la lutte contra la tuberculose*," one of the main subjects of discussion at the recent International Congress of Hygiene and Demography at Brussels. A summary of the *modus operandi* of these dispensaries is here given, the facts being derived from papers read at the Congress and from the two following booklets presented to members of the Congress, *Guide de l'Hygieniste en Belgique* and *Ligue Nationale Belge contre la Tuberculose : Rapport Général sur le Troisième Exercice. 1902.*

The League mentioned in the last sentence has 4,000 members, and, besides its propagandist functions, has created eight antituberculous dispensaries, one at Mons provided with an open-air sanatorium. Over 3,000 patients have been examined, educated, and succoured in these establishments. The budget of the various branches of the League amounted to nearly 118,000 francs in 1903. It has been further enriched by a gift of 120,000 francs from M. R. Warocqué for the dispensaries of Mons and Charleroi in the province of Hainault. The fundamental object of the antituberculous dispensaries is to assist the prophylaxis of tuberculosis among the working classes and the indigent. The exact nature of the measures taken may be gathered from the following translation of the chief regulations governing the Dispensaire Warocqué :

(*a*) *Règlement Organique.*

1. The dispensary is open on three days weekly at 9.30 a.m.

2. Each patient is examined gratuitously, and consecutive help is given as soon as his indigence is established by an official visit.

3. The dispensary does not give medicines, and in no respect supplants the private doctor.

4. To this particular dispensary is attached a "station pour cure d'air," to which the director will send patients who are judged most fit to profit by this treatment.

5. The appliances and substances necessary for prophylaxis, as pocket spitcups, disinfectants, etc., are furnished gratuitously by the dispensary.

6. Help, in the form of food and even pecuniary assistance is given according to the resources of the establishment.

7. The dispensary is under the direction of a commission consisting of members selected from the "Comité de la Section." Certain officials or certain protective members can also form part of this commission.

(*b*) *Règlement d'Ordre Interieur.*

1. The visits to the dispensary to be made as above.

2. Every patient is furnished with a numbered card, which he must present at his visit on the day fixed by the director of the dispensary.

3. The patients must conform to the directions given by the director, on pain of losing all the advantages of the dispensary.

4. The use of a pocket spitcup and of antiseptics is obligatory always and everywhere. Infraction of this rule will ensure first a warning, and in the event of obstinacy, definite exclusion.

5. None of the forms of help accorded to patients may in any shape be turned to the profit of other persons.

6. A strict surveillance, to which the patients are enjoined to submit, will be exercised by a delegate from the dispensary to ensure that the prescribed measures are regularly carried out.

7. Patients must preserve with care all appliances trusted to them by the dispensary.

8. As many patients as possible will be admitted to the open-air treatment at Mons.

9. Such patients must preserve all furniture, etc., in that establishment from damage, etc.

10. The duration of open-air treatment is determined for each special case.

(Four other regulations also deal with the same question.)

The above summary of regulations indicates the lines on which one of the most recently opened and best organized of the Belgian antituberculous dispensaries operates. It presents an exceptional advantage in having an open-air sanatorium attached to it. The utility of the other Belgian dispensaries must be adjudicated in view of the absence of this important aid to cure.

The general procedure at the dispensary is as follows : (*a*) Each patient at his first visit is carefully examined, and exact details as to his history and physical condition (including physical signs, weight, chest measurements, respiratory power, presence of tubercle bacilli, etc.) are stated on a special sheet ; (*b*) a domiciliary visit is then made, and thus the exact social condition of the patient is ascertained. At this domiciliary visit the inquiries made are very similar to, though more extensive than, those made in well-organized towns in England in which the voluntary notification of phthisis is in operation. The following is a list of the chief subjects of domiciliary inquiry in connection with the Dispensaire Warocqué (Place du Chapitre No. 1, Mons) :

Name, address, age, civil state, marriage, age and sex of children, occupation, wage, and hours of work of father and mother and of children, income of family before and since illness, duration of illness, state of health of members of family, size, solar exposure, and healthiness of habitation, number of tenements in house, its sanitary condition, air space, number of rooms of the family, bed rooms of the family, number and size of windows, how many beds in each room and how many persons in each bed, how much available space and ventilation for the patient, does the patient work or remain at home ? how does he dispose of expectoration ? cleanliness of the dwelling and how effected, state of clothing and bedding, condition of workshop or factory, does the patient belong to any friendly society ? does he receive public or private relief ? date of inquiry, doctor, weight and height of patient, particulars of his case, action taken, results obtained.

The above is a brief summary of 43 heads of inquiry. For English inspection it would be too detailed and inquisitorial. We should prefer a smaller amount of information, limited to what would throw light on the origin of the case, and on measures to be taken for its amelioration and for the prevention of infection. Probably in practice this is what happens in the use of the above elaborate scale. Not every item is necessarily filled in.

(*c*) The domiciliary visits are repeated at frequent, but intentionally irregular, intervals. By this means the degree to which instructions are carried out can be efficiently checked. Thus, as Dr. Leutz, the Director of the Dispensaire Warocqué, states, "We know the smallest detail of the life of the patient. We know the members of his family, their resources, the cost of the establishment, the amount of private and public help, the hygienic situation of the dwelling, etc."

(*d*) By means of the visits made above and the entries on the *dossier*, the utility of the help given can be gauged. This help consists usually of 1 or 2 litres of pasteurized milk. When the condition of the patient is precarious the dispensary distributes, to the extent of its ability, articles of bed covering, even beds, when these are required to prevent the patient from infecting his bed companions. In some instances help is given for removal from insanitary dwellings, the first month's rent of the new dwelling being paid.

(*e*) The hygienic education of the patients is undertaken. The microbic character of their disease is explained, and the risks for others and themselves involved in indiscriminate expectoration. Exact instructions are given as to the management of spitcups and as to the daily cleansing of these. They are also instructed in the hygiene of the mouth and teeth : the washing of dwelling-rooms, of clothing, etc., is also emphasized. The above advice is given and repeated frequently, and it is found that *the patients follow it in exchange for the help which is distributed to them.*

(*f*) No symptomatic treatment is given. For this the patient con-

tinues, as before, to attend the doctor of public relief or of the mutual aid society.

From the above description it will be clear that the lines adopted are similar to those laid down by Dr. Calmette, who proposed a similar plan to the municipality of Lille, and assisted at the opening of such a dispensary at Liége, before he could persuade the authorities of Lille to adopt it. The dispensaries, in fact, have two distinctive characters, prophylaxis and philanthropy, and the chief value of the system consists in this combination. It may be urged that in the out-patient departments of general and special hospitals in this country similar work is being done, with medical treatment in addition to the provision of spitcups, etc., and the gift of cards of instruction as to prophylaxis. We have no wish to minimize the value of the prophylactic work gradually being organized in connexion with these hospitals: in some of them it is very well done, and under Dr. Ransome's directions at the Consumption Hospital of Manchester it was being well done years before these antituberculous dispensaries were inaugurated. In the English towns in which the voluntary notification of phthisis has been adopted and is in successful operation, the second element of the utility of antituberculous dispensaries constituted by domiciliary investigation is also being partially realized and on a greater scale than in Belgian towns. Where, as in the Brighton Sanatorium, treatment and training are given, the third element of success of the antituberculous dispensaries, that of practical help of monetary value, is being realized. It is only by the co-ordination of these various agents, instruction, home investigation followed by the removal of unfavourable conditions, and help in the direction of sanatorium treatment, or financial help at home through the agency of the Poor-law or the Charity Organization Society, or other charitable agencies, that the best results can be secured, and in the extent to which this co-ordination has been secured English hygienists may learn much from Belgian initiative.

ASSOCIATION NOTICES.

COUNCIL.

NOTICE OF MEETING.

A MEETING of the Council will be held in the Council Room of the Association, at 429, Strand (corner of Agar Street), London, on Wednesday, the 21st day of October next, at 2 o'clock in the afternoon.

August, 1903. GUY ELLISTON, *General Secretary.*

ELECTION OF MEMBERS.

ANY candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

THE Library is now reopened and available for the use of members.

GUY ELLISTON, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH: WEST BROMWICH DIVISION.—A meeting of this Division will be held in the Board Room of the West Bromwich District Hospital on Wednesday, September 30th, at 4 p.m. Agenda: To consider and report on resolutions referred to this Division by Council and Representative Meeting at Swansea (published in the SUPPLEMENT of the BRITISH MEDICAL JOURNAL of August 22nd, p. cxliii); election of representative on Branch Council; routine business. Members are requested to make a special effort to attend, as the meeting is important.—H. B. W. PLUMMER, M.D., The Terrace, West Bromwich, Honorary Secretary.

BORDER COUNTIES BRANCH: WEST CUMBERLAND DIVISION.—There will be a meeting of this Division at the Infirmary, Whitehaven, on Tuesday, September 29th, at 3.30 p.m. Agenda: (1) Chairman's address. (2) To discuss the Medical Acts Amendment Bill, the Vaccination Acts, and the resolution passed by the Representative Meeting at Swansea. (3) To discuss cases and exhibit pathological and other specimens. After the meeting there will be a dinner at the Grand Hotel at 5.45 p.m.—T. G. MATHEWS, 6, Scotch Street, Whitehaven.

NORTHERN COUNTIES OF SCOTLAND BRANCH.—The autumn meeting of this Branch will be held at the Grand Hotel, Elgin, on Saturday, October 17th (the hour of meeting and time table of trains will be stated on the circular which will be sent to each member of the Branch). Agenda: Minutes of meeting held at Strathpeffer. To discuss the draft Medical Acts Amendment Bill; (2) resolutions referred to the Branch for their consideration and report; these resolutions refer to the lines the Council has urged upon the President of the Local Government Board for improving the existing Vaccination Acts; (3) a resolution passed by the Representative Meeting at Swansea referring to representation on the General Medical Council, which has also been sent to the Branch for report. The draft Act and the resolutions were published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of August 22nd; it is hoped that members will consider the Act as well as the resolutions, as they are of importance to the profession. Dr. de Watteville (Kingussie) will open a discussion on the Prophylaxis of Phthisis, and several members have promised to take part in the discussion. The Honorary Secretary will feel obliged if members who wish to read papers at this meeting would kindly intimate their intention on or before October 10th.—J. MUNRO MOIR, Honorary Secretary.

SOUTH MIDLAND BRANCH.—The autumnal meeting of this Branch will be held at Bedford County Hospital, Bedford, on Thursday, October 14th, 1903, at 2 p.m., under the presidency of Mr. Audland (Wellingborough). Members wishing to read papers or show specimens should communicate at once with E. HARRIES JONES, Northampton, Honorary Secretary.

SOUTH-EASTERN BRANCH: REIGATE DIVISION.—The first meeting of this Division under the new Constitution will be held at the White Hart Hotel, Reigate, on Thursday, October 8th, at 4 p.m., Mr. Ernest C. Drake (Redhill) in the chair. Agenda: Minutes of a meeting held at Reigate June 18th. To decide when and where the next meeting shall be held, and to nominate a member of the Division to take the chair thereat. Papers have been promised by Mr. W. J. Walsham (Surgeon to St. Bartholomew's Hospital), Dr. W. S. A. Griffith (Assistant Physician-Accoucheur to St. Bartholomew's Hospital), and Mr. J. Smith Whitaker (Organizing Secretary to the Association). Members desirous of exhibiting specimens or reading notes of cases are invited to communicate at once with the Honorary Secretary. Dinner at 6 p.m.; charge 7s., exclusive of wine. The Honorary Secretary would be much obliged if members would kindly inform him by post-card whether they intend, if possible, to be present at the meeting, and if likely to remain to dinner. All members of the South-Eastern Branch are entitled to attend and to introduce professional friends.—W. A. BERRIDGE, Redhill, Honorary Secretary.

SOUTH MIDLAND BRANCH: BEDFORD AND HERTS DIVISION.—A special meeting of the above Division will be held on October 1st at 3.30 p.m. at the Bedford County Hospital, to consider the matters referred to the Division by the Council of the British Medical Association.—S. J. ROSS, M.B., 28, Mill Street, Bedford, Honorary Secretary.

SOUTH-WESTERN BRANCH.—The autumn meeting of this Branch will be held at the Guildhall, Liskeard, on Wednesday, October 7th, at 3 p.m., the President, W. T. Thompson, M.D., in the chair. Luncheon (by the kind invitation of the Liskeard members) will take place at Webb's Hotel, Liskeard, at 1.15 p.m., and members who wish to attend are requested to signify their intention to Dr. W. Hammond, Liskeard, on or before October 4th. The following communications are already promised: Dr. W. Hammond: Notes and Case of Fracture of Skull. Dr. Bushnell: Note on Life-History of Malignant Disease. Mr. Paul Swain: Sequel to a Case of Ovariotomy complicated with Pregnancy. Mr. C. Hamilton Whiteford: On Ethyl Chloride as a General Anaesthetic. Gentlemen wishing to join the Association and Branch are requested to communicate with the Honorary Secretary, Mr. G. YOUNG EALES, 1, Matlock Terrace, Torquay.

SPECIAL CORRESPONDENCE.

BERLIN.

The Cost of Medical Relief in Berlin.—The Suppression of Quackery.—Non-alcoholic Beverages for Railway Servants.—Overcrowding of the Medical Profession.

THE financial year 1902-3 of the Berlin Municipality has closed with a deficit of above 2 million marks (£100,000), one of the chief reasons being a great increase in the expenses for charity organization and relief, as well as for hospitals and care of the sick. Enormous sums stand against the several items in the great municipal "Housekeeping Book." Thus the poor-relief department is booked at 10,439,599 marks (close upon £522,000), homes for chronic sick and incurable paupers are down for 799,471 marks (£39,923), care and education of pauper orphans a million and a half marks (£75,000), family homes for destitute waifs and strays 370,712 marks (£18,535), houses of labour—not "workhouses" in the English acceptation of the words—653,718 marks (£32,685), municipal casual ward 447,100 marks (£22,355), making a total of 14 million and odd marks, or upwards of £700,000. Again, the net disbursements for "care of the sick"—that is, municipal hospitals, sanatoria, etc.—are booked at 7,561,052 marks (£378,052); whilst a no less important item, "care for the healthy"—that is bathing establishments, etc.—figure at 1,246,200 marks (£62,310).

Berlin citizens are apt to grumble at the high municipal rates they have to pay; but this can hardly be otherwise, where such enormous sums are spent in assisting, raising, and curing the needy and sick. In answer to a petition addressed to the Imperial Chancellor by the German Society for Com-

bating Venereal Diseases, Count v. Buelow has stated that, having given the subject of the petition full consideration, he has asked the Minister of the Interior to submit proposals for dealing with quackery, not in one special branch of medicine only, but in every branch.

The Prussian Railway Department is waking up to the importance of practical measures for encouraging the drinking of non-alcoholic beverages among its employés. With few very unimportant exceptions, all the Prussian railways belong to the State, so the field of action is a large one. Well-arranged machinery for cheap production of sparkling lemonades, and large coffee machines have been experimented with, and are now being set up in different railway workshops, as well as in resting and sleeping quarters for the use of railway servants. No profits are intended, so that cost prices only will be charged.

At this year's annual meeting of German medical practitioners in Cologne—a meeting devoted mainly to matters affecting the profession as a whole—a resolution was carried to the effect that, in order to guard against further overcrowding in the medical profession, a warning pamphlet be published and circulated among upper-class schoolboys shortly before the time of their matriculation.

LIVERPOOL.

Annual Report of Medical Officer of Health: Death-rate: The Outbreak of Small-pox: The Effect of Vaccination: Suggestions for Legislation: Provision of Sterilized Milk for Infants.—Failure to Notify Small-pox on Shipboard.—Opening of the University and the Medical School.—Medical Institution Dinner.

The report of the Medical Officer of Health for the year 1902 has lately been issued. It bears witness to a vast amount of work directed to the sanitation of the city, and indicates a general improvement in the health and conditions of life of the community. By the inclusion of Garston the area of the city has risen to slightly over 23 square miles, with an estimated population of 710,337. The rate of mortality—21.6—is still excessive, being surpassed only by Dublin and Merthyr Tydfil. In one important district, however—that of Sefton Park—the rate is only 12.6. The high death-rate is no doubt partly due to the fact that as many as 600 persons from surrounding districts have died in Liverpool hospitals. The mortality tables have been subjected to an elaborate analysis, which shows the extent to which a high death-rate in a district is related to the number of young children residing therein. As regards zymotic diseases, whooping-cough accounts for 407 deaths, and is second in fatality only to diarrhœa, which is credited with 611 deaths. This high fatality leads Dr. Hope to point out that it is necessary that some hospital provision should be made for infants suffering from whooping-cough, in which they could be received, together with the mother or other natural guardian, if necessary. No cases of plague were imported into the city, but in the early months of the year small-pox was frequently introduced by ships from abroad. The total number of cases notified as occurring in the city was 560, with 20 deaths. The outbreak aroused a good deal of attention while it lasted, and had it not been for the energetic action of the health department it might have become serious; but as a matter of fact, the extent of the outbreak was not great, and the small mortality indicates that the cases were as a rule mild in type, probably owing to the patients being mostly to some extent protected by vaccination in early life. The details of this outbreak and the steps taken to deal with it should be instructive reading for antivaccinists, of whom, happily, not many are to be found in Liverpool. The majority of "contacts" submitted to vaccination as soon as the cases were discovered, and of these not one developed small-pox; on the other hand, some refused to be vaccinated or only consented after a delay of some days, and in several instances they developed the disease. Of the 20 fatal cases, 7 were unvaccinated and 13 vaccinated, some very imperfectly. Not less than 80,000 persons, other than infants below 6 months of age, were vaccinated or revaccinated during the year. Dr. Hope offers some suggestions which deserve consideration on the part of those responsible for future legislation with regard to vaccination. He points out that vaccination, being one of the most important measures for the preservation of the public health, ought to be performed under the supervision of the Health Department, and that much practical inconvenience arises from its being in the hands of the guardians of the poor. At present it is the Health Department which receives notice of the existence of a case of small-pox, and which is responsible for the isolation of the patient and the disinfection of the premises; but before the one and only effectual procedure for the arrest of the disease, namely, the vaccination of contacts, is carried out, it is necessary to communicate with a subordinate officer of another body, who in turn has to communicate with the executive officer of that body. In this way a loss of valuable time is unavoidable. The fact that free vaccination is carried out by medical officers under the Poor-law authorities gives rise to an unwillingness on the part of some persons to submit to the operation under the belief that to do so would be equivalent to the acceptance of some form of parish relief. All these difficulties would be obviated if the health authority were made the vaccination authority. It is further suggested that in order to make provision for a suitable supply of lymph, dépôts for its manufacture and supply should be established in various parts of the country under Government control and supervision. The desirability of maintaining vaccination stations under certain circumstances is discussed, and the need for provision for revaccination is strongly insisted on. Of the deaths from diarrhœa, 68 per cent. were of children under 1 year old. In order to combat this excessive mortality dépôts have been opened for the supply of humanized sterilized milk. This system has been highly commended by the medical staff of the Children's Infirmary, and by other medical men of experience.

At the City Police-court, before the stipendiary, the captain of a steamer was recently summoned for failing to notify two cases of infectious disease. The vessel arrived in the Mersey from Buenos Aires on August 28th, and the captain did not notify the occurrence of any cases of disease on board. It was afterwards found that two sailors were at the time suffering from small-pox. The ship's log showed that the captain knew it was small-pox and had taken every precaution on the voyage, but he seemed to think that the infection only lasted about a week. He told the medical officer's representative that there had been two trivial cases of disease on board, but that they were quite recovered. A fine of 40s. and costs was imposed.

The opening of the session of the Medical Faculty of the University of Liverpool will take place on Thursday, October 1st, in the Arts Theatre, at 4 p.m., when an address will be delivered by Sir Dyce Duckworth. The formal opening of the University has been postponed till November.

The biennial dinner of the Medical Institution will take place at the Adelphi Hotel on Saturday, October 10th, at 7.30 p.m. The President, Professor Rushton Parker, will occupy the chair.

SOUTH WALES.

Outbreak of Typhoid Fever at Merthyr.—Precautions against Ankylostomiasis in Glamorganshire.—Small-pox.—University College, Cardiff.

An extensive epidemic of typhoid fever is now raging at Merthyr, and during the last three weeks over 80 cases have been notified. As many cases as could be admitted into the district council's infectious diseases hospital are under treatment there, but many, through lack of sufficient isolation accommodation, have to be treated at their own homes. It has been reported that the medical officer of health attributes the excessive prevalence of this disease to the consumption of contaminated cockles and mussels, and that this contamination took place with in the town on certain premises where these shellfish were being prepared for market. Inquiries have been made at the place whence these shellfish were first obtained, with the result of showing that no typhoid fever had taken place in that vicinity for a very long time, and that none of the persons handling the shellfish were suffering. Samples have been taken and are now undergoing bacteriological examination at the County Laboratory, Cardiff. Up to the present time the epidemic shows no signs of abatement, in spite of the untiring efforts of the officials of the Health Department.

At a recent meeting of the Sanitary Committee of the Glamorgan County Council, the county medical officer of health presented a report, from which the following is taken:

Although I am not aware that this disease has yet appeared amongst the coal miners of Glamorgan; but, having regard to their great numbers and the important part they play in the industrial progress and welfare of the county, I would suggest that—

1. A circular letter on this subject be addressed to each medical man

in the county, stating that any investigation of material from suspected cases will be undertaken at the Cardiff and County Public Health Laboratory, now suitably equipped for that purpose.

2. A handbill be prepared in both English and Welsh, and distributed among the coal miners of the county, pointing out how such a disease may be guarded against.

The recommendation of the county medical officer, which is a step in the right direction, was adopted. It will be remembered that the Glamorgan County Council was the first in the kingdom to frame, adopt, and enforce the following spitting by-law:

A person shall not spit on the floor, side, or wall of any public carriage, or of any public hall, public waiting room, or place of public entertainment, whether admission thereto be obtained upon payment or not.

Any person offending against this by-law shall be liable to a fine not exceeding £5.

One case of small-pox was notified from Penarth on September 12th. This case is supposed to have been imported from Cardiff, which had been free from the disease since the end of June. At the moment the county boroughs of Cardiff and Swansea, together with the administrative county of Glamorgan, are free from this disease.

There are six applicants for the Chair of Anatomy, Cardiff, and their fate will be decided before the end of the month. Professors Dixon and Conway will be entertained at a farewell dinner by their colleagues on the staff of the University College and Medical School. Professor Dixon is returning to his Alma Mater at Dublin, and Professor Conway proceeds to Manchester. Both leave with the best wishes of their colleagues and friends, after doing most excellent work during their stay at Cardiff.

CORRESPONDENCE.

THE WILLIAM CADGE MEMORIAL.

SIR,—It has been decided to perpetuate the memory of the late Mr. William Cadge by some permanent memorial in the cathedral of this city.

Subscriptions, which are limited to one guinea, and confined to the medical profession, may be paid to Dr. Beverley, Norwich.—We are, etc.,

W. H. DAY, *Chairman of the Committee.*
MICHAEL BEVERLEY, *Treasurer.*

Norwich, Sept. 24th.

Subscriptions have been already received from the following:

London.

Lord Lister.
Sir Thomas Smith.
Sir Hugh Beevor.
Sir Alfred Cooper.
Mr. Reginald Harrison.
Mr. Pearce Gould.
Mr. Rickman Godlee.
Mrs. Garrett Anderson.
Dr. Robert Barnes.
Mr. Howard Marsh.
Mr. John Langton.
Dr. Ernest White.
Dr. Constantine Holman.
Mr. Howse.
Mr. F. M. Evans.

Norwich.

Sir Peter Eade.
Sir Frederic Bateman.
Dr. Beverley.
Dr. Barton.
Mr. Robinson.
Mr. S. H. Burton.
Dr. Long.
Dr. Burton Fanning.
Mr. Donald D. Day.
Mr. Ballance.
Mr. W. H. Day.
Mr. Charles E. Muriel.
Mr. Joseph Allen.
Mr. F. Long.
Mr. G. Master.
Mr. Nance.
Mr. Morse.
Mr. Preston.
Dr. Cooper Pattin.
Mr. H. F. White.

Mr. F. Page, Newcastle.
Mr. Baumgartner, Newcastle.
Dr. Drinkwater, Edinburgh.
Mr. Charles Firth, Greenwich.
Prof. Clifford Allbutt, Cambridge.
Mr. Joseph Griffith, Cambridge.
Mr. C. P. Hooker, Cirencester.
Mr. E. A. White, Malmesbury.
Dr. F. A. Mills, Cookham.
Mr. Crowfoot, Beccles.
Dr. Barnes, Eye.
Mr. Morris, Halesworth.
Mr. Marriott, Swaffham.
Mr. Perry, Reepham.
Dr. McKelvie, Blofield.
Mr. D. W. Hughes, Wymondham.
Mr. Soffe, East Harling.
Dr. Dyer, Brundall.
Dr. Pembroke Minns, Thetford.
Mr. Mayo, Yarmouth.
Mr. W. E. Wyllys, Yarmouth.
Mr. H. Wyllys, Yarmouth.
Mr. W. Wyllys, Yarmouth.
Dr. Ryley, Yarmouth.
Mr. F. Worthington, Lowestoft.
Mr. J. C. Worthington, Lowestoft.
Mr. H. B. Walker, Lowestoft.
Mr. Shaun, Lowestoft.

ARE THE FEES FOR PUBLIC VACCINATION EXCESSIVE?

SIR,—Permit me to support the position and the statements of Dr. Ferguson in the BRITISH MEDICAL JOURNAL of September 19th, p. 689, and as a public vaccinator to protest against the proposed reduction in the minimum fee now paid for vaccination. I can confirm Dr. Ferguson's statement regarding the serious interference of the public vaccinator's duties with his private practice. So serious was this in my own case that I felt impelled to resign private practice altogether, and I now devote the greater portion of my time to the work of public vaccination. But if the fees now paid are to be reduced, what compensation is to be given for the loss of practice, and what for the still further diminution of income that must ensue?

Boards of Guardians, and even the members of our own profession, have no idea of the work of a public vaccinator who conscientiously discharges his duties; and it will be a great injustice if the Local Government Board inflicts upon us this threatened reduction in the amount of fees hardly enough earned, and for exacting and unpopular work.—I am, etc.,

September 21st. A WHOLE-TIME P.V.

SIR,—The letter by Dr. Ferguson, of Burnley, is instructive in many respects, and I think the facts he mentions will tend to show the incompatibility which exists between the general practitioner and the public vaccinator. It seems that either the public vaccinator is unnecessary, or that he should hold appointment as such in connexion with some other local government office in which his whole time is employed. The vaccination officer, another official in connexion with this admittedly unsatisfactory Act, can by issue of notices to the parents or guardians of the unvaccinated get (with legalized power) the certificate of successful vaccination. A large percentage of all vaccinations are now done by the general practitioner. The public vaccinator has to follow to a letter the instructions given, or he runs the risk of losing the grant now handed to him through the county council. In face of these facts I would suggest that the public vaccinator should not be a general practitioner, but should hold such appointment as registrar of births and deaths, and that he should also be the vaccination officer; thus combining the two appointments of public vaccinator and vaccination officer. In this capacity he would know of the unvaccinated, and upon giving notice could enforce the certificate to be forwarded to him, or could himself perform the necessary operation. For this he could receive a regular salary, and the grant could still be allowed, on a favourable report from the Local Government Board inspector.

This amalgamated office should be transferred to the control of the Sanitary Committee of the County Council, as then it would still further remedy that unpleasant stigma which pertains to all matters relating to Poor-law administration. This may be imaginary, but nevertheless it is a real injustice to the sensitive.

I think such suggestions as above would remedy to a great extent unsatisfactory death certification in addition to lessening the cost of public vaccination, and at the same time ensure the appointment of men trained in matters relating to statistics and State medicine.—I am, etc.,

Llantwit Major, Sept. 22nd. JOS. WM. GILL, D.P.H.Lond.

SIR,—I am glad to see Dr. Ferguson's letter in the BRITISH MEDICAL JOURNAL of September 19th, p. 689, which must convince any fair-minded person that the fees paid for public vaccination are not in any way exorbitant. He has given an accurate detailed statement of the difficulties public vaccinators have to contend with, nor is his description in the least overdrawn. I have myself been public vaccinator upwards of thirty years, and can confirm his statements.

There are one or two matters connected with this subject of vaccination which I should like to see made more satisfactory. A number of persons come to the public vaccinator's surgery for revaccination during epidemics of small-pox, and on inspection the public vaccinator finds one or two arms show primary vesicles (age 13 and 14 years). The people state they have been vaccinated in infancy, although the public vaccinator can find no distinct marks. Why should the fees in these cases be disallowed because these (apparent) primary vaccinations were not performed at the person's own residence?

Also, why should not all persons whose doors are found locked on three successive daily visits (after notice has been sent them by post) be deemed "refusals"?

A suggestion I should like to make, which would effect a much earlier vaccination of the children than now prevails, would be, that registrars send a list to public vaccinators of all children's names and addresses (with date of birth) whose parents, at the time of registration, desire the services of the public vaccinator. By this means the children would be vaccinated before four months old, and the shilling fee

charged on register, instead of waiting, as now, until the children are nearly five months old. If the parents desire "public" vaccination, I fail to see how this would affect the interests of private practitioners.—I am, etc.,

September 21st. SIGMA.

PROPOSED AMENDMENTS TO THE VACCINATION ACTS.

SIR,—As one who has taken a practical interest in the above, I beg to offer some suggestions. The report, which appeared in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of August 22nd, suggests that the Conscientious Section XX of the Act of 1898 be retained. I think this a mistake. If a parent and his medical adviser cannot decide as to whether or not an infant or adult shall be vaccinated, or revaccinated, it is difficult to see how a magistrate is to honestly decide. I take it the objection must be upon medical grounds only—that is, the health of the person to be vaccinated, the quality of the lymph used, and the cleanliness of the operator. I have a marked respect for those who have conscientiously objected to the evil results of some vaccinations. Since they began their agitation a marked improvement has followed as regards the selection of proper lymph and the operation.

2. The report recommends that a certificate of successful vaccination should state the number of "vesicles" and the area of the "vesicles" resulting from vaccination. Is it not a mistake to take notice of the "vesicles" or their area? Rather should we be guided by the area of the scar left after vaccination. At present there seems to be a widespread delusion as to the requirements of the Local Government Board (England and Wales) insisting upon four distinct vaccination scarifications. No. 7 of the "Instructions to Vaccinators under Contract," issued by the Local Government Board (England) is as follows: "In all ordinary cases of primary vaccination the public vaccinator must aim at producing four separate, good-sized vesicles, or groups of vesicles, not less than half an inch from one another. The total area of vesiculation resulting from the vaccination should not be less than half an inch square." This order refers only to "ordinary" cases and to "primary" vaccinations. Further, the second paragraph of No. 7 partly annuls the first part by stating that if the total area of vesiculation be half an inch square—that is, about the size of a halfpenny—this will be sufficient. It follows, therefore, that if one large scarification give the same area as four lesser ones the result must be the same. We must not trouble members of Parliament by juggling about the number of vesicles. The total area is the pivot of the question. But I further contend that the question of "vesicles" should be ignored *in toto*. Reference should be made only to the area of the resulting scar or cicatrix. Such a plan would simplify the work of the inspectors. By mixing up vesicles and cicatrix we mystify Parliament. Practitioners connected with small-pox hospitals state that the severity of an attack of small-pox depends very largely upon the size of the cicatrix left by vaccination. Therefore, let it be enacted that the efficiency of vaccination shall be one cicatrix not less than the size of a halfpenny, or half an inch square.

3. Definite provision should be made for the use of human lymph, but only in the form of "arm-to-arm" vaccination. A large number of practitioners are reverting to the old idea that human fresh lymph has the highest protective powers.

4. Should every registered medical practitioner resident in a union be appointed a public vaccinator? In other words, should private vaccinations cease? I suggest that every practitioner desiring to be a public vaccinator should be so appointed, and, further, that any other person vaccinating should be punished. If such a proposal be adopted the work of every vaccinator would be subject to the inspection of the present vaccination inspectors. There is at present a large amount of cheap and dirty private vaccination—a danger to the public health and public safety. I question if a practitioner can afford to pay 8d. for calf lymph, and then charge 1s. only for the vaccination and certificate.

5. The report proposes that revaccination be performed at from the tenth to the thirteenth year. This is too late. It should take place about the eighth year, or earlier if the parents so desire.

6. The report does not refer to the age for primary vaccination. The Act of 1898, Section 1, extended the time from the third to the sixth month. I would suggest that it be fixed at the twelfth month after birth. The report suggests that all lymph supplied by Government and private establishments be under Government supervision and guarantee. If by this is meant that only lymph developed and obtained in the United Kingdom be used, well and good, but it would be impossible to supervise the collecting of lymph—say in America or Germany.

7. Every practical person agrees that the Vaccination Acts should be administered by the local public health authority.

8. As to the fee. It would be much better in every way, and it would put an end to the ignorant remarks made by a few Boards of Guardians if a definite fee were fixed by the Act, just as is done in the Notification of Infectious Diseases and other Acts. I suggest that a fee of not less than 10s. 6d. be provided. By using the words "not less than," such would allow the authorities to pay a fee of over 10s. 6d. I consider there is too much "fooling" by some practitioners regarding vaccination. It is an operation, and sometimes a serious one. Some practitioners pooh-pooh it; call it "nothing," use very questionable lymph, employ a dirty penknife, and blow down a tube, having themselves rotten teeth and foul breaths. Others charge no fee, including the vaccination in a 5s., 10s., or 15s. confinement fee! More care makes fewer conscientious objectors.

The question of universal "free" (paid by the ratepayers) vaccination is to the public a purely commercial one. To the medical profession vaccination means a great financial loss. It ruins their "market." A vaccination fee means a few shillings; an attendance upon an illness from small-pox means at least ten pounds. If it can be shown that the annual cost of universal free vaccination is much less than is the upkeep of all the small-pox hospitals, such will help on universal vaccination and revaccination. I would suggest that a Parliamentary return showing such relative costs be prepared. It is to be hoped that the above suggestions will be thoroughly threshed out by all medical societies, and that their conclusions will be embodied, at an early date, into a draft Vaccination Bill.—I am, etc.,

Liverpool, Sept. 5th. ROBERT R. RENTOUL.

THE RÔLE OF EYESTRAIN IN CIVILIZATION.

SIR,—I am in the throes of a severe attack of "dispiritment," "shattered nerves," "stirred-up head," in fact I feel a whole "composite clinical photograph," for I have just read carefully and laboriously the whole five hundred and thirty lines of Dr. George M. Gould's production bearing the above title. My present symptoms of "innervational," "organismal," and general "neuroticism" revive the memory of many a five hundred lines of school days, but of any recent offence of which this present punishment—like to "some mediaeval or Oriental torture-chamber"—is the "causal nexus" I am ignorant. Dr. Gould would doubtless say it was the effect of eyestrain in reading so long a screed in small type. I am of opinion, however, that it was the result of mental nausea.

Following my usual practice, on receiving my copy of the BRITISH MEDICAL JOURNAL I looked through the contents column for any notes on eye-work, that should claim my first attention; and under "editorials" was the title of Dr. Gould's paper. But I find it appears immediately succeeding "Reports of New Inventions," and no more fitting place could be found for it; it abounds in invention of a curious type, both in verbiage, sequence, logic and hyperbole. An old saying aptly describes it: "It contains much that is new and true, but that which is new is not true, and that which is true is not new." A more extraordinary production in a scientific journal I doubt if I have read; it smacks more of the verbose effusions of those "journals" which puff new drugs or semi-quack treatments, with which our letter-boxes are gorged. I fear Dr. Gould must be suffering from a severe attack of the complaint he discusses following on too much retinoscopy, and my sympathy goes out to him in the thought of the night that must have followed the writing of the paper. How the phrases and adjectives must have pelted through his sleepless brain, and I doubt not ere morning light appeared he was feeling quite ready to be "gastrotomized" even without an anaesthetic!

There is no doubt of the seriousness to very many folk of "eyestrain," but to make this a kind of original sin, the source of all trouble, is folly indeed; and he who promises to cure his patient of all ailments of the nature so luridly set forth by Dr. Gould is courting ignominy. And the manner in which Dr. Gould tacks on eyestrain to the "biological clinics" of the eleven great men he names is, to adjust a phrase of his, "beseeching the question."

Man is, to borrow a theological tenet, dual—body and soul. If he keeps an even balance 'twixt these two, he is happy. If he battens his body, his conscience will give him many "pricks." If his soul holds sway, his poor neglected body will make itself uncomfortably felt. These men of genius whom Dr. Gould drags unwilling to his aid were—to our advantage—great of soul, of burning enthusiasms and energy. Was it to be wondered their poor bodies suffered neglect? We ordinary folk sometimes feel, or think we feel, a spark of genius; and how its fiery impetus upsets our commoner organs. Perhaps the working out of a fancied idea will wreck sleep and spoil digestion for days. It is eyestrain! How, then, can the company of a fascinating novel be borne with pleasure through the quiet hours of a whole night until daybreak?

Dr. Gould appears to have forgotten the old-timed and oft-repeated observations which gave the name "sympathetic" to the visceral nerves. How often have the small schoolboy's sphincters relaxed at the fear of punishment. Was it eyestrain, looking at the cane? I would he could see the procession to the lower regions of the Examination Hall when the doors open to admit candidates for examination. Is that eyestrain accessory before the act? How often have soldiers confessed to their experience in the face of the enemy? Was it eyestrain, searching for enemies amongst the boulders of the kopjes? Has Dr. Gould ever been in love? If so, he will probably remember the symptoms so graphically described by Horace in his jealous ode to Lydia:

> . . . . . vae meum
> Fervens difficili bile tumet iecur.
> Tum nec mens mihi nec color
> Certa sede manet, humor et in genas
> Furtim labitur, arguens
> Quam lentis penitus macerer ignibus.

But perhaps these symptoms are the result of eyestrain, the vision of the loved one, or as in Horace's case the sight of the charms—"Cervicem roseam, lactea brachia" of his rival Telephus!

If these things be so with ordinary mortals, if mental strain, enthusiasm, fear, imagination, or emotion be so disconcerting to the realms of the sympathetic system, how much more in the giants of intellect, giants of mind in common clay!

Dr. Gould deals with heroes who are gone from us. His pleadings cannot be put to the direct test. There is, however, one—an indirect one—which he might try. His experience will tell him how often astigmatism runs in families, particularly those small degrees which trouble high-strung cultivated folk. Can he show that the relatives of the hero-sufferers were astigmatic? I know this was not so in one case, for I had the honour to know the sons of one of the great men he numbers. They did not so suffer.

I fear that such a paper as that of Dr. Gould's is calculated to do much harm in throwing discredit on sound work.—I am, etc.,

Queen Anne Street, W., Sept. 19th. N. Bishop Harman.

THE SOUTH AFRICAN COMMISSION: THE MEDICAL REPORT.

Sir,—The report of the above Commission reveals a state of things against which the nation should take most stringent measures in order to prevent any possible recurrence in the future. As a Volunteer medical officer I consider either the Volunteer Medical Service should be a reality or some better system of establishing a national medical reserve be promulgated.

The main question is, in the dark hour of need, what is best: (1) To have a force that has been well trained, possesses the rudiments of discipline, and has worked on the requirements of the R.A.M.C., with which body it was intended to serve and whose wastage to augment; or (2) is it preferable to have the raw material of civilian association, so generally employed in the late war? In plain English, shall the Volunteer Medical Service be a reality, to be of service when the nation is imperilled, or shall we depend entirely upon civilian help? The general consensus of opinion is that, however well-intentioned the civilian aid may be, it lacks the discipline, knowledge, and experience required, and was in these respects much inferior to that of those who served and had had the discipline, teaching, and experience obtained by their training in the Volunteer Medical Service. Neither could it have been otherwise when we realize that:

1. The discipline exacted in the Volunteer service must be more than that which can be expected from civilians.

2. That the course of instruction required to be given to all obtaining Army Form E 596 is of a longer duration, of a higher standard, and more suitable to the requirements of active service in the field.

3. That the examination is more of a reality than that of civilian bodies.

4. That the experience gained by those who obtain B 596 is that of the drill hall and camp, and such knowledge acquired with discipline and under conditions similar to which would exist on active service. This the civilian is a stranger to, a stranger at the very time at which such environments are more easily assimilated than they can possibly be at a later period.

Now, what could be obtained from the Volunteer Medical Service as a medical reserve in the field without lessening its efficiency as a home force? At the present time there are the following units—56 yeomanry, 67 artillery, 19 engineers, 7 submarine, 1 electrical, and 218 infantry, a total of 368 units, or a matter of 368 medical officers and 6,600 rank and file as stretcher bearers. There are 47 bearer companies, or 201 medical officers and 2,867 rank and file; R.A.M.C.V., 87 medical officers and 2,800 rank and file, or a total of 656 medical officers and 12,267 rank and file.

Now, if the establishment of the bearer companies were increased from 61 to 100, with the extra medical officer requisite for a field hospital, an idea which is generally advocated, and which it is said only the niggardliness of the Exchequer delays, then there would be a force of 844 medical officers and 14,147 rank and file, the result a minimum of one-third, or 280 medical officers and 4,716 rank and file should be able and fit to take the field, and which force a month with the R.A.M.C. would render fit to go anywhere; whilst those unable or unfit to go on active service could quickly be brought up to the established strength by fresh civilian enlistment.

Surely such a procedure commends itself even as a matter of common sense more than sending purely civilian-trained material at once on foreign active service. Now, this can easily be carried out, so that the nation receives the best value for the money it expends, by:

1. Let the Government take the matter in hand vigorously and quite irrespective of red tape or social influence.

2. There is a Commission of inquiry now at work, and that Commission can easily ascertain if what this paper contains is true. If the contents of this paper are true, let them recognize and develop the Volunteer Medical Force on the best workable lines and make the service popular, and that with no niggard hand.

3. Let them create a high but possible standard of efficiency, and be prepared to pay for it. It is much better nationally to have a good article, even if somewhat more costly, than the present state of chaos. Substantial reforms are needed, not a sop in the pan.

What are the factors antagonistic? The chief is the general idea that throughout the entire Volunteer Medical Service that at present as in the past they have been badly treated, that they have grievances:

(*a*) That they have not received any share of honours which are bestowed (none too liberally) upon the combatant branches. A share was recommended by a former Commission, and since promised upon more than one occasion.

(*b*) In 1897, that of the large number of medical officers who did duty at the special request of the Director-General—there were no R.A.M.C. available—not a single one received the Jubilee medal.

(*c*) In 1899, when the war broke out and medical officers were wanted, for a volunteer medical officer to apply generally meant refusal, and in the few instances in which his services were accepted, it was at less pay than that of the civilian, and generally with loss of rank.

(*d*) In 1900, for the fourteen days and the month camps only one medical officer per unit was paid, and that at a time when such a lengthened training would have been invaluable.

(*e*) At the Coronation not a single volunteer medical officer as representing either the service or of societies representing the service received the Coronation medal, though coroners, etc., did.

(*f*) That the senior medical officers of volunteer brigades do not receive any staff allowances, though the A.D.C., also a volunteer, does.

(*g*) That only infantry medical officers can become brigade-surgeons.

The remedies are:

1. Make the Volunteer Medical Service a department on

the lines of the R.A.M.C., by gazetting all volunteer medical officers when they join a unit into a volunteer medical department; that will allow exchange, would throw the senior medical officers of brigades open to all; would also do away with the present most unsatisfactory system of all the medical officers being under the absolute sway of the officers commanding of their units, and so liberate a number of medical officers for duty elsewhere; often now some units have six medical officers, whilst others are short. "We cannot employ you in South Africa; your officer commanding may want you," could not then be urged.

2. Allow all volunteer medical officers seven to fourteen days' instruction with R.A.M.C. once in three years, with rank pay and allowances.

3. Give the senior medical officer the same allowances as the rest of the staff.

4. Create an honorary physician and surgeon to the Sovereign.

5. Place a volunteer medical officer upon the Advisory Board.

6. Place a volunteer medical officer at the War Office as a secretary to the Director-General for volunteer work.

7. Give a fair share of the honours now given only to combatant officers.

In conclusion, these ideas I have arrived at after thirty-five years' service from personal observation, assisted by some hundreds of letters from volunteer medical officers, and an intimate acquaintance of the wants as told me by those I have met on duty in camp, and at the Volunteer Ambulance School of Instruction.

I shall be very glad to receive ideas and tabulate them for evidence before the present Duke of Norfolk's Committee. The volunteer medical officer is especially calculated to form the reserve to the R.A.M.C.:

1. Because he has learned enough discipline and routine to take military medical duties.

2. Because he has passed in the duties of medical officer to regiments, bearer companies, and field hospitals, when he obtained Army Form E 564.

3. Because in many cases he has been or is on the staff of some hospital, even if only a small one. Purely civilian medical officers are unfitted, because they have had no special training, do not know the ropes, and cannot adopt easily the methods of treatment which the field necessitates.

I should much like to know the comparative results of the treatment of the R.A.M.C. *versus* that of civilians in the late war. I have more than a dim suspicion, even if you include that of the specialists, that the R.A.M.C. will be in front.—I am, etc.,

P. B. Giles,
Bletchley. Brigade-Surgeon-Lieutenant-Colonel.

A MINISTER OF HEALTH FOR INDIA.

Sir,—At times one sees proposals put forward in an indefinite way for the appointment of a minister of health as a Cabinet Minister in our home English Government, to co-ordinate the work now done in health matters by the English, Irish, and Scotch Local Government Boards, the Home Office, the Army and Navy Medical Services, and the various smaller official organizations.

No doubt amongst one of the first steps to be taken by the reformed British Medical Association will be a move in this direction. I desire to say that however important such a ministerial appointment may be in England, it can in no way whatever compare with the need that exists for such a health minister in India. By minister in the English sense I of course mean a member of council in the Indian official language, a member of the Council of the Governor-General of India, charged with supervision of the health conditions of India.

The want of such a personage is excessive, and I hope when the reformed British Medical Association gets a minister of health for England they will turn their energies to India, that most interesting land now suffering so vitally in health matters.

No person living as we do in England under free institutions, with a powerful press and public opinion, can in any way whatever imagine how important the status of a member of Council is in India. Not only is the pay and position good enough to tempt able men, but in a land governed by an authoritive régime as India is, it is the only certain way in which special matters can be brought directly under the notice of the Supreme Central Government of that Empire. All other subordinate official appointments in India are as nothing compared to the prestige of a membership of the Viceroy's Council.

I feel, therefore, that if any great step forward is to be taken as further developing sanitary matters in India, that educated and sympathetic medical opinion in England must combine to press on our Home Government, our Imperial Parliament, the need of dealing with the wants of India from a health point of view, by the appointment of the official I propose.

No average Englishman "who only England knows" can in any way imagine the strength, the enormous power of resistance to any political measure likely to, in any way, interfere with its own autocratic sway which abides in India Civil Service bureaucracy. I consider that nothing like this service exists in the world, as it is a highly-organized and well-recruited machine, run by very able men who know perfectly what they want, and where their service interests lie. I doubt if many of these officials have any great sympathy with an efficient sanitary service in India, and without a "Member of Council" I see no great hope of any real progress towards developing what I would call the "humanity department" of the Indian Government.

For any one studying the matter soon sees that sanitary work, either at home or abroad, is, after all, simply organized humanitarianism. It means giving rights and justice to those weakly ones who cannot speak or act for themselves, and hence it is a great element of freedom and justice for the world, and in no place will it be more so than in India, where human life is of little value.

The Director-General of the Indian Medical Survice, a Surgeon-General of the Indian Army, is at present the chief technical authority on sanitary matters in India. He is a poorly paid official, that is to say, he draws about Rs.2,800 per mensem, whereas a member of the Council would draw Rs.7,000 a month. The money payment represents very fairly the official status and power of the two classes of public servant. One is like the medical officer of the Local Government Board at home in England, the other can only be compared in influence and authority to a Cabinet Minister in importance; and I will go further and say that no Cabinet Minister, save perhaps the Prime Minister himself, has so much power, or so much influence as a member of the Viceroy's Council has in India. It is such a powerful minister I desire to appoint in India to replace the existing defective arrangements.

The Director-General, Indian Medical Service, is to-day simply a defectively paid and comparatively minor official, receiving a salary somewhat like a local magistrate and collector in India, and his status is perfectly defined by my comparison with the Medical Officer of the Local Government Board at Whitehall, London. The surgeon-general has no seat on the Viceroy's Council, has no personal opportunity of stating his views, can only be represented there by written reports or foolscap documents, and is not a living and speaking voice at the State deliberations, as the grave want of India assuredly demands, but is simply a comparatively small official in the eyes of the powerful and well-paid bureaucracy, who to-day form the Indian governing body, called the Viceroy's Council; and, of course, as long as his pay, rank, and status is what it is, he cannot be of very much higher importance.

I propose to choose from any branch of the medical profession at home or abroad, civil or military, the very best and ablest statesman-doctor, and send him to India as health minister to that land of surpassing and most pathetic interest now and for years past, suffering from so sad a death-rate and such low conditions of vitality. So far as I know, no man, not even Lord Curzon, has ever done so much for India as such a man, if he be really a man, can do in the future. The field is ripe unto the harvest, and what India needs is a great statesman-doctor, who, seated at the Viceroy's Council, will be able to urge forward sanitary reform for India, and educate English home opinion on the subject. The work he can do will be of enormous importance, not only in India directly, but indirectly to England; for whoever by his foresight, humanity, and sympathy with the Indian people makes that most interesting land happy, healthy, contented, and well-to-do, lightens in a marked degree that blood tax which the holding of India to-day places on the shoulders of the masses of the empire by the maintenance of a large English army there.

Without sanitary reforms there cannot be health, without health the weakly native cannot work, without work neither can he eat, and thus he may remain a hungry dissatisfied

man, only waiting for the day of national strain and imperial difficulty to attempt his betterment by any means whatever.

The official I propose will be charged with the duty of centralizing and putting forward all the knowledge of defective health conditions in India, and himself visiting and directing the work of sanitary progress in the way that a member of the Supreme Government alone can do. However much has been done in sanitary directions in India, vast room exists for further development, and the appointment and presence of a high State official to preside over such work will greatly urge forward all existing projects of reform, and I think largely stimulate the work being done, often under great local difficulties by the sanitary service of the Indian empire, a wretchedly-paid service, and one completely undermanned. The presence and the personal influence of such an official with the Central Government of India, will be a great influence for good, and I trust the British Medical Association will take the question up. No responsibility can be possibly greater than the responsibility that lies on the shoulders of the English people from their possession of India. The wakening up of that great empire to its true place in the world is the mission of England as the power which has subjugated this interesting race to her sway, and while attention is being given to military matters, law, public works, etc., the national health of India cannot be neglected.

The head of the Indian Medical Service, however able he may be, is still an Indian official, with all the many limitations that position surely implies; but what India needs is a far higher personage seated at the Viceroy's Council, and representing on that Council the views of England as to the care of her Indian children.

The British Medical Association is the one body which can secure the appointment of such an official, and I commend the matter to the attention of each of its 20,000 members.—I am, etc.,

Salisbury. GEORGE EVATT.

ENTERIC FEVER AND DYSENTERY IN SOUTH AFRICA.

SIR,—The reports recently published by Lieutenant-Colonels Bruce and Notter and Dr. Simpson on the etiology of enteric fever and dysentery in the late campaign are interesting but inconclusive. With regard to enteric fever, too much prominence has, I think, been generally given to its waterborne dissemination. Personally, I would go farther than Dr. Simpson, and express the opinion that by far the greatest factor during the war was the "ubiquitous and obscene fly." The number of carcasses of mules, horses, and oxen lying in different stages of decomposition by the sides of the tracks along which the columns marched day after day was legion, each one becoming a nidus for the propagation of myriads of flies.

For many months my bearer company was "trekking" practically as a field hospital with its brigade. On each trek the first case of enteric occurring was almost invariably a native, then other cases would follow among natives and white men, until by the time we touched a hospital to which the sick could be transferred—often a matter of three or four weeks—my accommodation, including ambulances extemporized from buck-wagons, was usually strained to the utmost, chiefly with enteric cases.

The objection of the native to the ordinary latrine is well known; no moral or physical enforcement of a latrine system among them was successful; possibly faecal matter was occasionally deposited in or near a "spruit," but by far more commonly an anthill, a piece of rock, or a dry donga was the spot selected. From thence enteric germs would be carried by myriads of flies to articles of food, or perhaps more often directly to and from the mucous membranes of the men themselves; for the South African fly is not content to "play tick" in the sunshine, like his prototype at home, but clings lazily to one's nostrils, mouth, moustache, or eyebrows until driven off. The numbers of flies congregating on the faces of the poor fellows in the later stages of enteric, when, as sometimes happened, muslin protectors were not available, was a painfully repulsive sight.

To my mind the plague of flies was the almost universal cause of the large number of enteric cases brought in by the columns, although every effort was made to mitigate it on reaching camp each day by burying all carcasses in the vicinity, covering all excreta and refuse with earth, improvising meat safes or placing meat in bags, muslin covers for milk, etc.

I fail to see how any separate organization of sanitary inspectors could have done more on trek, unless one were told off to every nigger to "shadow" him whenever he crept from under his wagon to select his improvised latrine. Doubtless under the same conditions the duststorms were occasionally factors of dissemination, but the one great curse was flies.

While I am not a believer in the waterborne etiology of South African enteric to any great extent—except, perhaps, in the towns—I feel satisfied that the muddy water usually obtained from the rivers, not to mention the vile green, stagnant stuff in the Boer "pans," was largely accountable for the dysentery, and in this connexion it is interesting to note that the investigations as to specific dysenteric germs have given negative results. One must therefore conclude that the ulceration is the result of irritation of the mucous membrane by foreign matters introduced with the water. Some of the credit doubtless should go to the wholesale consumption of "chupatties" dear to the Tommy's heart. These delicacies, composed of flour and water, fried in fat, have a consistence that can best be compared to that of a dozen of the toughest and most indigestible pancakes (minus the eggs) beaten together with a mallet.

Much might be done undoubtedly to improve the authorized water supply. This was effectually carried out in connexion with the medical units. I kept one man and two natives entirely occupied by this duty of boiling and filtering the water supply; but when one remembers that most of the troops were usually in extended order all day, for miles on either flank, "foot-slogging" with heavy kits in a broiling sun, I would defy that courteous and truthful feather-bed critic, Mr. Burdett-Coutts, even if assisted by his anonymous friend, the eminent but pugilistic Harley Street consultant, to prevent poor parched Thomas Atkins from drinking from the first muddy or stinking puddle he came across.

A word or two on the clinical aspect of dysentery. I should be glad to hear the general consensus of opinion on what I may call the "Dielfontein" treatment. At the time that I read of the results obtained at this hospital in the BRITISH MEDICAL JOURNAL, I happened to have several cases under treatment, and as they were not improving I gave it a trial, with such marked success that I adopted it generally. Most of my acute cases returned to duty in a little over a week, the more chronic ones were cured of their dysentery in about the same time, and sent down country convalescent, among them a Grenadier who had suffered more or less for six months in spite of all the usual remedies and dietary.

My plan was to begin by giving two drachms of the mag. sulph. every three hours in peppermint water, then, as blood and mucus decreased, 2 drachms every four hours, three times a day, twice a day, and once a day, until a week had elapsed without a symptom. Occasionally, when the tenesmus was severe I would give pulv. ipecac. co. gr.v at night, restricting the diet to milk and milk puddings, with occasional doses of port wine or brandy if there were much debility.

Two months ago I had, in a Militia camp, a recurrent case of chronic dysentery contracted in India three years before, and although the training did not allow of my speaking definitely as to ultimate results, the man on transfer was practically free from all symptoms and expressed himself as feeling better than he had ever been since his first attack.

It would appear as though, in addition to its aperient action in removing the irritant faecal matter from the lower bowel, the hydrogogue qualities of the drug act as a kind of warm—more or less antiseptic—lotion with which the ulcerated intestine is kept constantly bathed. Be this as it may, the practical fact remains that my results have been so markedly and uniformly satisfactory that I consider the *rationale* of the treatment deserving of extended investigation by therapeutists.—I am, etc.,

E. LUKE FREER, V.D.,
Birmingham, Aug. 27th. Surgeon-Lieutenant-Colonel A.M.R.

THE FOOD FACTOR IN EDUCATION.

SIR,—The article on the subject in the BRITISH MEDICAL JOURNAL of August 22nd omits mention of what I think chiefly concerns us as a profession in regard to the proper nourishment of children in its bearing upon the reported "degeneracy which is coming upon the people." It does not require the doctor or the medical journal to convince the intelligent public of the paramount importance of good feeding of the young to ensure a good physique in the adult, an axiom well understood by all breeders of animals, and not disputed in the case of children. Any deficiency in that respect, as in

the orphan asylums referred to, only requires to be pointed out to be appreciated, and the remedy is within the knowledge of every one.

There is, however, a factor in the insufficient nourishment and degeneracy of school children which comes directly within the sphere of our professional duty towards not only our patients, but the country. I refer to loss of appetite and of digestive and assimilative power in connexion with school procedure. Judging from my own experience during more than thirty years' practice in an educational centre I believe that few if any children eat as well during school time as in the holidays, and that a very considerable proportion have very poor appetites and are otherwise much below par when attending school. The cause of this is not far to seek. To begin with, school children, as a rule, lead a sedentary indoor life, being shut up in class rooms and at school work at home from six to nine hours a day, which, in winter, means practically the whole of daylight and two or three hours into the night as well. This of itself is recognized nowadays as a cause of physical degeneracy predisposing to phthisis and other diseases of debility, and is certainly detrimental to a healthy appetite. Then during school hours the pupils are subjected to whatever methods of procedure the teacher, who is not required to know anything of the laws of health or of brain action, and is anxious only to meet the requirements of the code and of the school inspector, may think proper to adopt; and to such treatment as his temper and ideas of discipline may prompt. This, in many cases within my knowledge, induces a condition of nervous strain which is most injurious to health and to future mental stability. Again, the most laborious part of school work, the learning of lessons, is usually thrown upon the evening, when the brain, exhausted by the day's activity, requires relaxation in preparation for sleep, and in many cases is carried far into the night under conditions of fear and anxiety in view of the consequences of imperfect learning, or of nervous excitement in competition for a prize.

Is it surprising that, under such conditions of life, health deteriorates, appetite flags, and development is defective? And is it creditable to our profession, as the only qualified exponents of the laws of health, that we see all this going on and speak no word of warning and advice? The remedy seems to me to lie in a nutshell, and is well worth the united action of the medical profession. It is to forbid absolutely either punishments or prizes as incitements to school work, and to limit school hours to four in the day, not consecutive. This would mean the doing away with home lessons and throwing the burden of teaching upon the teacher, and would bring school life within the limits of a healthy life.—I am, etc.,

Dollar, N.B. J. Strachan.

MEDICAL MISSIONARIES.

Sir,—As one with some personal knowledge of medical missions, both abroad and at home for more than twenty years, permit me to supplement the letter of your correspondent in the British Medical Journal of September 19th in one or two points where my own experience is not entirely in accord with his.

In the first place, it does not seem to me advisable that the devoted band of medical missionaries now in the field should be replaced by those who might offer simply as medical men "in sympathy with missionary work." The very first essential of a medical missionary, if the truest and best work is to be done, must be that he himself is a missionary, the full medical qualifications which he has received being a means to the end in view. It is true that his missionary work, in its sphere and method, differs from that of his clerical colleague, and reaches, in many cases, whole classes of the people who otherwise would be entirely untouched. The medical missionary is not, as a rule, placed in charge of general educational establishments, or of pastoral and church work. His special duties centre mainly in the hospital with its in-patient and out-patient departments; the visiting of the out-station dispensaries which may be manned by native assistants; the homes of the people; and, in some cases, the asylums opened for lepers. In such localities he finds ample opportunities for quiet, honest missionary work. Here, without any forcing of religion on unwilling minds, he exhibits Christianity in practical form, and opens the way for a full and frank discussion of its claims on the hearts and consciences of those thus brought within its influence.

In this respect, therefore, though agreeing with your correspondent that an adequate remuneration should be given to our medical missionaries, I should be sorry to see the medical members of our missions offered higher salaries than the clerical members, and I believe that the 700 medical missionaries now in the field from the British Empire, America, and the Continent would be the last persons in the world to desire it. There is a burden, I admit, in too many instances thrown upon the medical missionary which ought to be shared more than it is by the home organizations of our missionary societies—I refer to the collection of funds for the purchase of medicines and appliances, the building, repair, and general upkeep of hospitals, and the salaries of native assistants.

Your correspondent seems to have been unfortunate both in the scanty help given to his work by his clerical associates and the impressions he has gained of the characteristics of missionary committees. I should be sorry to think that the majority of medical missionaries have had similar experiences. For my part I believe the relationship to be usually of the most cordial nature, the clerical helping his medical brother by his friendly visits to the hospital, and the medical helping his colleague not merely by professional help in times of sickness, but by co-operation with him in enlightening his people in scientific and sanitary directions. Missionary committees also, as far as I have been able to judge them, are composed of reasonable individuals, who would certainly prefer their medical and other missionaries to limit their work, so as not to endanger health or efficiency, rather than to aim at tables of large statistics for their annual reports. I know how difficult it is for the medical missionary on the field to close his ears and harden his heart against the physical needs of the crowds of sufferers who throng his premises and seek his aid. All the more reason is there that in increasing numbers fully trained medical missionaries should be prepared and sent forth. All the more reason, also, is there that two medical missionaries should work together in the larger centres, which is now the aim of some of the societies.

If, as may surely be taken as proved, there is scope among our slum populations at home for medical missions, there is a wider sphere for such among the millions abroad, and that not only as a pioneer agency, but as a necessary adjunct to well-established missions in many lands.

I cannot do better in closing than quote a sentence on the subject written by the late Sir T. Grainger Stewart, of Edinburgh, in a communication to the late Sir Henry W. Acland, of Oxford: "The consecration of the healing art to the great work of extending the Kingdom of our Divine Master lends a fresh glory to our profession. The fact of this consecration gives to many a satisfaction of another and even of a deeper kind than that which springs out of the magnificent extension of knowledge which has marked the past half century."—I am, etc.,

E. Sargood Fry, M.B., C.M.,
Secretary Edinburgh Medical Missionary Society.

Edinburgh, Sept. 20th.

Sir,—I cannot agree with your correspondent, "Temperantia in Omnibus Rebus," as his experiences have been particularly unfortunate.

I was a medical missionary for four years in a Mohammedan town of close on 200,000 inhabitants; the nearest doctor was distant several hundred miles, consequently the area drawn upon for patients was very large. For more than two years I was single-handed with only the aid of native assistants. Some thirty to forty out-patients were seen daily and between 200 and 300 major operations performed in the year and every out-patient and in-patient heard the Gospel preached. Treatment and medicine were free to all patients, except the wealthy, of whom not more than five were seen daily, but from the fees of these the medical mission was entirely self-supporting, with about £100 to spare at the end of the year, which sum was set aside as a hospital building fund.

The work was hard and constant, the language study arduous, the climate very trying, but had I ten lives I would gladly give them to medical missions. I consider missionary societies are far better without medical men who are not in heart and life first missionaries. One hears much of the sacrifice of the missionary: to my mind the sacrifice lies not in going abroad, but in having to give up medical mission work in consequence of ill-health or other circumstances. There is no reason to become "a relieving machine," and any sensible Missionary Board knows, if the matter be put before it, that it is infinitely better for the medical missionary to

see a limited number of out-patients daily and diagnose each case with care, than to waste much medicine, time and influence, in prescribing a placebo to a large number of patients with questionable benefit. "To scamp work" is absolutely unpardonable, especially when one sees the implicit confidence placed in the medical missionary by the natives.

In closing, I would say, if the medical man is not attracted by the mission work and is willing to count the cost, he had better not be attracted at all.—I am, etc.,

September 22nd. ARABIA.

NURSING AS AN OCCUPATION.

SIR,—I have read with interest the letters in the BRITISH MEDICAL JOURNAL on the subject of nursing. Being myself a nurse I can speak from experience of the great and growing necessity for better organization (or I should say organization, for at the present time there is none) among nurses, especially those engaged in private work. Everyone who takes the trouble to inquire knows that it is more often the exception than the rule to find a private nurse who holds a certificate of three years' training from a recognized training school. They are more often the women who have failed in their hospital career, or perhaps have only gained their experience in nursing homes. These so-called nurses taking the same fees and position in private houses as the nurse who has graduated in a leading hospital and afterwards worked in special hospitals to gain experience in work not met with in her training school, but which it is necessary for her to know before she can conscientiously take up private nursing. I do not see how the position of certificated nurses can be improved until there is a central governing Board, which will organize for them, and to which they can appeal. If a Bill could be provided by Act of Parliament for the legal registration of trained nurses, a governing Board would be formed which would arrange and then demand a uniform training and issue a register of qualified nurses to which medical men could refer when engaging a nurse. A definite standard of education would be required, which, I venture to think, would be the means of getting a better class of women to take up this line of work. At present the better educated nurses prefer remaining in hospitals to subjecting themselves to the many petty annoyances they meet with in private nursing. A professional man's daughter who holds a certificate of training being treated in the same manner as a domestic servant, who has possibly had a few months' work in an infirmary or cottage hospital. If qualified nurses only were employed the demand would be greater than the supply, and the feeling which now exists in so many houses against trained nurses would be reduced to a minimum. A sensible, well-educated nurse is not the one who makes "suggestions" to the medical man with whom she is working; she finds quite enough to do with her own work in carrying out his instructions, which often requires a great amount of tact and perseverance, and she is only too glad to be free from further responsibility. A central governing Board could also arrange post-graduate lectures for nurses, according to the line of work they intend to undertake after they have obtained their certificate. Lectures on domestic economy would benefit all. A nurse direct from hospital finds many difficulties as a private nurse. The actual work is easy to her, but only experience can teach her how to "fit in" with the variety of people she meets, and to make the best of everything.

Those also who intend to be matrons and superintendents require help. At present many of them have to gain their experience at the expense of the institutions to which they are appointed.

In conclusion those women who take up nursing as an occupation, ought not to be the ones who think it will be an enjoyable life, or that the uniform is becoming, or whose chief idea is matrimony, for they will not make satisfactory nurses. But the women we want, and that succeed, must be well educated, practical, and domesticated, possessed with tact, patience, and adaptability, and above all courteous manners. I think when nursing is organized more women of this type will be anxious to join our ranks.—I am, etc.,

E. J. HURLSTON,
Member of the League of St. Bartholomew's Hospital Nurses.

September 19th.

SIR,—I am pleased to see that your article on "Nursing as an Occupation," appearing in the BRITISH MEDICAL JOURNAL of August 8th, has given rise to a discussion on the "State Registration of Trained Nurses." I consider that this subject is deserving of the especial attention of all medical men, chiefly for these two reasons: First, that we, as medical men, should do all in our power to help the nursing profession out of its present chaotic state, and to put it on a firm and practical footing, because the two professions have so much work in common; secondly, we shall be doing a greater duty to our patients if we try all we can to prevent their being left in the hands of inexperienced persons posing as so-called "trained" nurses.

I think that the above conditions can only be brought about by the "State Registration of Trained Nurses," for if any other means are adopted, I am sure friction will be continually arising; and, to my mind, control by the State is the only solution of the difficulty.

It will probably be asked, What benefits will the medical profession gain by this State registration? I think I can foretell a few of them.

In the first place, a register would be kept of all trained nurses—by trained nurses I allude to those who would have attained a certain standard in nursing recognized by the State. This register would be open to all medical men, so it would be easy to decide if a nurse were trained or otherwise.

Again, I suppose the State would lay down a certain curriculum, and examinations for all nurses to pass through before registration, thereby relieving the doctor of the trouble of making inquiries into the amount of training, etc., of the nurse; for as long as her name was on the register that would be sufficient for all general purposes.

Another important benefit would be the fact that nurses being under the authority of the State, they would be liable to be struck off the register for serious misconduct, so the medical man would have a certain amount of control over the nurse.

One of your correspondents on this subject, signing herself "A Hospital Sister," seems to think that medical men should find out the untrained nurses and refuse to recognize them. I am sure the medical profession have no wish to be the scavengers of the nursing profession; nurses generally would be the last to expect it, for their aim ought to be to eradicate that which is bad from their profession, and endeavour to produce only that which is good and serviceable. The same correspondent quotes the phrase about a "little knowledge," etc., most inapplicably I think; for how can an Act that would set forth a recognized training with examinations to be undertaken before registration be more dangerous to the public than the present state, in which women may get certificated in nursing after only one year's training and pose as so-called "trained" nurses? I am sure "A Hospital Sister" would not care to have her nurses considered as women possessed of the "little knowledge" which "is a dangerous thing;" then why should those trained after a nursing Act is passed be so called, for it is certain that the heads of the nursing profession would never allow—as far as is in their power—an Act to be passed whereby the training would permit a vast army of women to be let loose who have only this little and dangerous knowledge. Why the very suggestion is an insult to the nursing profession.

In conclusion, I think that those nurses who are making such a gallant fight for this "registration," should receive all the support possible from medical men, all nurses, and the public, for their fight is uphill and tedious, and it will be of no material benefit to themselves, but only to benefit the two above professions and the general public.—I am, etc.,

C. A. DOUGLAS BRYAN, M.R.C.S., L.R.C.P.

Leicester, Sept. 21st.

SIR,—For many years I have taken much interest in the subject of nursing—longer than one cares to state. My first experience after my student days was when I was house-surgeon to a provincial hospital. The matron was a good sound nurse, probably not trained, but placed in the position on account of her age and common sense. The help she had was from a nurse—we called her nurse, but she was not trained, nor had she come to be trained, but she would not have been a credit as a third-rate housemaid. My next experience was a large workhouse hospital, and with capable nurses, but most of them with little or no training, but good common-sense women, educated to about the same extent as a good housemaid in a gentleman's family. Although we had over 600 beds we did no training. At this time the Workhouse Hospital in Liverpool was doing good work in training, but trained nurses could not be obtained, and were not sought for vacant posts.

Since this time a great change has gradually come over the nursing world, and women who are ladies, and have been well educated, are induced to take up nursing as a profession. Three and four years are now required to train a nurse, and for the nurse to obtain a certificate. Yet we have nurses—I am afraid some are nurses through donning a nurse's uniform, others have a very short training in some small hospital and style themselves trained nurses. I am not going to say anything about such nurses, for some women are born nurses, but I do say that the time has arrived when the properly-trained nurse should be recognized by the public. This, to my mind, can only be done by State or some other form of registration.

Now if State registration was the order of the day, certain rules would be drawn up for admission to the register. Such registration would not guarantee "either the character or the attributes necessary to a nurse," but it would be a guarantee that the nurse had had a sufficient training. The nature of such training is a detail. I assume no nurse would be allowed to register unless she had had a minimum of three years' training. The schools of training would be like the medical schools, and would be sought after according to the amount of teaching and the standing of their certificates. Therefore no injustice would be done. A Bart.'s nurse, a St. Thomas's nurse, a Guy's or London Hospital nurse would of necessity rank higher than many of the provincial schools, but the provincial school certificate would be taken as a necessary qualification for admission to the register; then in time all the superficially-trained nurses would become extinct, and we should have nursing a profession, with a professional status. The medical, the veterinary, the pharmaceutical, and the dental professions all had to commence with the elimination of imperfectly-educated members by a system of examination and registration; then why not the nursing profession? The nursing profession is as noble as any of these; the best-educated women should be sought after, and enabled to have a distinctive mark of their education and training. Until some such system is adopted many able and competent women will either remain out of the ranks or seek some other means of employment. I am not saying anything about those already engaged in nursing; but I am sure all nurses who have had a proper course of training will admit that some means ought to be devised by which they can be known. This means State registration.—I am, etc.,

Wm. Berry, F.R.C.S.I.,
Senior Honorary Medical Officer to the Royal Albert
September 21st. Edward Infirmary, Wigan.

FELLOWSHIP OF THE ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

Sir,—Your correspondent in the British Medical Journal of September 19th, p. 691, attributes Dr. C. F. Knight's letter in the Journal of July 18th to chivalry. I believe and hope Dr. Knight was actuated by a nobler feeling than mere chivalry in desiring the Fellowship of the Royal College of Surgeons of Edinburgh to be opened to women—namely, pure justice. We do not wish or seek chivalry, but we do long for justice. To shut the doors of our public bodies and institutions against women is not justice.

Dr. T. D. Savill, in his letter in the Journal of July 25th, very rightly suggests that all diplomas and degrees should be open to women. Until this is done, and they are open on the very same terms to women as to men, justice lies dormant. Nay, I go further, and consider that the search for knowledge and truth of the hidden mysteries of life, which we still blindly grope for, will be hindered and retarded until justice awakes and stretches forth an impartial hand to all her sons and daughters alike.—I am, etc.,

Bayswater, W., Sept. 21st. M. G. I. Cadell, M.D., C.M.

THE F.R.C.P., M.R.C.P.Edin.

Sir,—It has for some time been apparent to gentlemen holding the above diplomas that they should look after their own interests, particularly when residing in England. I have no complaint against the London men casting a slur at the College of Physicians of Edinburgh nor do I blame them for keeping us out of nearly all hospital appointments, for I consider that they are only trying to help themselves in a struggle for existence. I think, however, we should try by every legitimate means to hold our own in the fight, and we can only do this by forming a society and meeting so many times a year to discuss our position and get acquainted with one another, so that when we make a move the whole force of the College of Physicians of Edinburgh residing in England will be at our back. I am always specially careful myself when advising a consultant to choose a F.R.C.P. or M.R.C.P.Edin. I think if my colleagues did likewise we should have a better chance.

If our numbers are too small to form a society we might ask the F.R.C.P. and M.R.C.P. of Ireland to join us, and thereby make our cause doubly strong. It will be interesting to learn the opinion of others before going further in this matter.—I am, etc.,

Manchester Square, W., Sept. 20th. Thomas Dutton.

SMALL-POX IN THE WEST INDIES.

Sir,—With reference to the controversy regarding the true nature of the epidemic prevailing in certain parts of the West Indies, and alleged in many of the islands to be chicken-pox, I send you a photograph showing three vesicles on the right arm of a monkey, which I inoculated with variolous matter taken from a case of so-called varicella at the Colonial Hospital. Four insertions were made by a series of cross scratches as in ordinary vaccination, two being with matter from vesicles six days old, and two from vesicles of the seventh day. Four days later there was a distinct raised papule surrounded by a zone of inflammation at the site of each insertion. About the sixth day (the day on which the photograph was taken) vesiculation, though not very perfect, was apparent, and scabbing commenced. As it is well agreed that chicken-pox is not an inoculable disease, one hopes that, in view of the success of this simple experiment, the last has been heard, among medical men at any rate, of the term varicella in connection with the present outbreak of small-pox in the West Indies.—I am, etc.,

George H. Masson, M.D., B.Sc., M.R.C.P.E.
Trinidad, July 31st.

*** The photograph mentioned is not adapted for reproduction, but, as stated by the writer, shows the vesicles clearly.

PUERPERAL FEVER.

Sir,—I would wish to have the experience of medical men as regards their treatment of cases of puerperal fever, and I also throw out a suggestion that each general hospital in London should have an isolated ward for septic labour cases.

I have lately had a bitter experience as regards a septic case to which I devoted most of my time, and had it not been for the kindness of my fellow practitioners in this district, who attended my other labour cases, I would have suffered considerably. It seems that no hospital in London will receive a puerperal fever case, and even the parish infirmaries fight shy of having anything to do with septic mischief; consequently a poor patient, in the majority of cases, dies from want of constant attention and skilled nursing.

Surely in the obstetric department of our large hospitals one isolated ward could be used for the admission of any septic cases sent in, where under proper nursing and care life could be spared. I am certain I am raising a question which will interest men in general practice whose experience of the difficulty of dealing with such cases as I state must be as bitter as mine has lately been.—I am, etc.,

Larkhall Rise, S.W., Sept. 1st. George D. Wilson.

OBITUARY.

WILLIAM TURNBULL, M.B., B.S.,
Newcastle-upon-Tyne.

Students of the University of Durham College of Medicine, Newcastle-upon-Tyne, will receive with deep regret the announcement of the death of William Turnbull, M.B., at the early age of 42. Until ten or eleven weeks ago Dr. Turnbull was to be found plodding away, as was his wont, in the dissecting room surrounded by interested groups of students, for he was both a successful demonstrator of anatomy and a much respected teacher. For several years past it was known to his intimate friends that Dr. Turnbull was the subject of aortic regurgitation, but it was only within the last three months that he began to feel unequal to his usual task. Quiet and unobtrusive, never pushing himself forward in any way, he unostentatiously discharged the duties assigned to him with a faithfulness that attracted the attention and gained for him the esteem of all. While his seniors in the College of Medicine placed implicit confidence in him, the students loved him. Professor Howden found in Dr. Turnbull a reliable substitute, for he was an able exponent of anatomy and

well read in physiology. By no one will his loss be more felt than by Dr. Howden himself.

During his last illness Dr. Turnbull suffered much from paroxysms of dyspnœa and anginal attacks. He was attended by Drs. Bolam and W. D. Arnison, and Professor Oliver, but notwithstanding all that human skill could do to relieve pain and insomnia, an unexpected syncopal attack in the early morning of September 20th brought to a sudden close this useful life.

Owing to the fact that the Third and Final Examinations for the degrees in Medicine and Surgery were being conducted this week, most of the Professors and Lecturers of the College of Medicine were unable to attend the funeral. The body was followed to its last resting-place in St. Andrew's Cemetery by Dr. Rankin Lyle, Professor Howden, Drs. Bolam, Beattie, Ogden, Clay, Messrs. Argus, Leech, etc., and by a large body of students. Much sympathy is felt for his sisters and brothers.

STAFF-SURGEON MAILLARD, M.D., V.C., R.N.

WE regret to have to record the death at Bournemouth on September 10th, of Staff-Surgeon William Job Maillard, V.C., M.D., R.N. Dr. Maillard received his medical education at Guy's Hospital where he was one of the most distinguished students of his year. He obtained the diplomas of M.R.C.S., L.R.C.P. in 1888, and in the same year graduated M.B.Lond., three years later he graduated M.D.Lond., and obtained the number of marks qualifying for the gold medal. He entered the navy in August, 1889. He served on H.M.S. *Blake*, then flagship of the North America and West Indies station, and afterwards on the *Hazard* in the Mediterranean. It was while serving on this ship at Candia on September 6th, 1898, he won the Victoria Cross under the circumstances officially related as follows: "During the landing of seamen from H.M.S. *Hazard*, Surgeon Maillard, who had disembarked and reached a place of safety, returned through a perfect deluge of bullets to the boat, and endeavoured to bring into safety Arthur Stroud, ordinary seaman, who had fallen back wounded into the boat as the other men jumped ashore. Surgeon Maillard failed to bring Stroud in only through the boat being adrift, and it being beyond his strength to lift the man (who was almost dead) out of so unstable a platform. Surgeon Maillard returned to his post with his clothes riddled with bullets, though he himself was unhurt." He was specially promoted Staff-Surgeon on June 2nd, 1899, for distinguished services, and the decoration V.C. was personally conferred upon him by Her late Majesty Queen Victoria. Very shortly after this signs of mental disorder began unmistakably to manifest themselves, and throughout his long and painful illness, which those about him knew could have but one result, he was devotedly nursed by his wife. What promised to be a brilliant and useful career has thus been cut short at the early age of forty, but not before Maillard had been able to shed lustre on the service to which he belonged, and to win the friendship and esteem of his comrades.

WE regret to have to announce the death of a faithful servant of the Association, Mr. J. N. HONEYMAN, who passed away after a long and painful illness on September 22nd. Mr. Honeyman, who had nearly completed his 78th year, had been in the service of the Association in one capacity or another for half a century. His connexion with it began in 1853, when his father, Mr. Thomas John Honeyman, was the publisher of the BRITISH MEDICAL JOURNAL, and collected the subscriptions of members. During the whole period from 1853 to 1878 Mr. J. N. Honeyman was responsible for the folding, stamping, and posting of the JOURNAL, and to the end of his life he was caretaker of the London offices of the Association, first at 36 and 37, Great Queen Street, then at 161A, Strand, and lastly at 429, Strand. Of Mr. Honeyman it may truly be said that he did the work which he had to do with his might and with his heart. Till a short time ago, though he knew that the hand of death was upon him, he was at his post early and late. He was held in the highest respect for the simplicity and integrity of his character by all who knew him, and by the many officers of the Association with whom he came in contact during his long period of service he was held in special regard for his amiable and obliging disposition.

THE new wing of the Mount Vernon Hospital for Consumption, Hampstead, is to be opened by the Marquis of Zetland, the President of the hospital, on October 27th.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: NORMAN L. RICHARDS, Staff Surgeon, and RICHARD W. STANISTREET, Surgeon, to the *Psyche*, September 23rd; WILLIAM A. WHITELEGGE, B.A., M.D., Staff Surgeon, to the *Duke of Wellington*, for the *Nelson*, September 23rd; WARREN G. WESTCOTT, Surgeon, to the *Argonaut*, September 28th; EUSTACE ARKWRIGHT, Surgeon, to the *Northampton*, for the *Cattiope*, September 28th; G. D. BATEMAN, Surgeon, to the *Skipjack*, lent, September 23rd; EDWARD C. SAWDY, B.A., M.D., Surgeon, to Plymouth Hospital, September 23rd; ALBERT X. LAVERTINE, Surgeon, to the *Wallaroo*, on recommissioning; PERCIVAL T. NICHOLLS, Surgeon, to the *Diadem*, September 23rd; and to the *Lizard* on *Wallaroo* recommissioning; EDWARD SUTTON, Surgeon, to the *Scylla*, September 23rd, and to the *Mildura* on commissioning; JOHN C. FERGUSON, Staff Surgeon, and PERCIVAL M. MAY, Surgeon, to the *Diadem*, for the voyage home, undated; ARTHUR E. KELSEY, B.A., M.B., to the *Scylla*, for the voyage home, undated; CHARLES C. MACMILLAN, M.B., D.S.O., Surgeon, to the *Diadem*, September 23rd, and to the *Tauranga*, on commissioning; EDWARD T. BURTON, Surgeon, to the *Defiance*, September 23rd (appointment to the *Cambridge* cancelled); MICHAEL J. SMITH, B.A., M.D., Surgeon, appointment to the *Diadem* and *Tauranga* cancelled; T. A. SMITH, M.B., to the *Royal Sovereign*, September 23rd; A. W. TREDELL, F. C. ROBINSON, and M. T. MALE, M.B., Surgeons, to the *Vivid*, for disposal, lent to Plymouth Hospital; J. S. H. ROONEY, Surgeon, to the *Vivid*, for disposal; R. THOMPSON, M.B., and E. A. G. WILKINSON, Surgeons, to the *Pembroke*, for disposal; R. KENNEDY, M.B., J. H. L. PAGE, and W. E. ORMSBY, B.A., M.B., Surgeons, to the *Duke of Wellington*, for disposal; ALOYSIUS F. FLEMING, Surgeon, to the *Wildfire*, for disposal, October 28th.

DEFECTS OF THE NAVAL MEDICAL SERVICE.

SPERO MELIORA writes: The leading article on The Medical Service of the Army, in the BRITISH MEDICAL JOURNAL of May 23rd, says: "We may fairly claim to have taken a leading part in the long struggle for the recognition of their just rights and the removal of the numerous causes of discontent which made the service a galling yoke to those who had to bear it," and now that its efforts have been crowned with success and the military medical service placed on such a satisfactory footing, could not the JOURNAL take up the cudgels on behalf of the sister service, and try to obtain for the medical officers of the Royal Navy some of the many advantages which are now enjoyed by their military brethren? The following are a few of the more important matters in which the senior service is far behind the army.

I.—*Rank.*

In the matter of rank the army surgeon is now in all respects on a level with other military officers. In the navy all that has ever been asked for is equal relative rank, and this has so far been denied. A surgeon on entry ranks with a lieutenant according to dates of commissions for his first eight years of service, but then has to mark time for the next four years, as it is not till he has completed twelve years' service, and passed the examination qualifying for staff surgeon, that he becomes entitled to rank with a lieutenant of eight years' standing. Naval instructors, on the other hand, obtain their increase in relative rank after eight years, the same as lieutenants, and their next increase after fifteen years, instead of after twenty as in the medical branch.

II.—*Control of Sick Berth Staff.*

The P.M.O.'s of naval hospitals have no power to deal with breaches of discipline on the part of the sick-berth staff that serve under them. An Inspector-General, who is supposed to rank with a Rear-Admiral, before he can get a man punished, has to report him to the executive authorities of the local depôt, and much time is wasted either in making out written statements and reports in connexion with the case, or in sending the offender, and probably several others as witnesses, from the hospital to the depôt. The scale of punishments for various offences and the instructions for the awarding of the same are so clearly laid down in the *King's Regulations*, that the control of his own staff might surely be entrusted to the P.M.O. of the hospital, who, although he has so far always been considered incompetent to deal with such minor offences as leave breaking and drunkenness on the part of his staff, would in civil life be eligible to occupy the bench and deal with considerably more complicated matters.

III.—*Specialist Pay.*

Unlike the R.A.M.C., no encouragement is given in the Naval Medical Service to officers to qualify in special subjects. A matter of daily increasing importance is dentistry, which has so far been treated in a very half-hearted manner. Surgeons on joining receive a certain amount of instruction in the subject while at Haslar, and leave with a smattering of dentistry, which in a good many instances is not put to much account afterwards, but an extra allowance would, I think, induce a certain number to take up this subject, and acquire sufficient knowledge to be able to do good work in the way of dental repairs. They should be required to give practical demonstration of their ability to do the work, and those drawing the allowance should be required to render returns showing the amount of dental work done. All necessary instruments and materials should, of course, be supplied by the service. In addition to this there should also be properly qualified dentists at the large naval hospitals to give the instruction above referred to, to act as consultants in the more difficult cases, and to do some of the dental work which is now so much needed.

This reference to dentistry is not meant to suggest that that should be the only "special subject." "Diseases of the eye," "skiagraphy," and the other subjects already recognized in the Army Medical Service should be similarly treated by the Admiralty.

IV.—*Charge Pay in Hospitals.*

As shown in the JOURNAL of May 23rd, officers of the R.A.M.C. in charge of hospitals draw charge pay ranging from £45 to £182 per annum according to seniority, but in the navy no such allowances are made until the rank of inspector-general is reached. In this case the charge pay is practically the same as in the corresponding rank in the army. The only allowance drawn by other medical officers of naval hospitals is one in lieu of provisions for themselves and their servants and for

Pay and Allowances of Medical Officers at Home.

Rank.	Pay. Per Diem.	Pay. Per Annum.	Servant Allowance.	Lodging Allowance.	Charge Pay. Per Diem.	Charge Pay. Per Annum.	Total per Annum.	Hospital Allowance in lieu of Provisions for Self and Servant and for Fuel and Lights.
	£ s. d.	£ s. d.			£ s. d.	£ s. d.	£ s. d.	£ s. d.
Surgeon, on entry	0 14 0	255 10 0	A half share in a marine servant at a cost of 10s. per month in lieu of an allowance	A cabin (in some cases as much as 7×12 ft.), or one room in naval barracks	—	—	255 10 0	30 0 0
,, after 4 years' full-pay service	0 17 0	310 5 0			—	—	310 5 0	,,
,, ,, 8 years' full-pay service	1 0 0	365 0 0			—	—	365 0 0	,,
Staff Surgeon, on promotion	1 4 0	438 0 0			—	—	438 0 0	52 0 0
,, after 4 years' full-pay service in rank	1 7 0	492 15 0			—	—	492 15 0	,,
Fleet Surgeon, on promotion	1 10 0	547 10 0	A marine servant at a cost of 15s. per month		—	—	547 10 0	52 0 0
,, after 4 years' full-pay service in rank	1 13 0	602 5 0			—	—	602 5 0	,,
,, ,, 8 years' full-pay service in rank	1 16 0	657 0 0			—	—	657 0 0	,,
Deputy Inspector-General	2 2 0	766 10 0	—	An official residence	0 10 0	182 10 0	766 10 0	67 0 0
Inspector-General	—	1,300 0 0	—				1,482 10 0	85 0 0

The Hospital allowance is given separately at the end as it is drawn by a very small proportion of officers, and the table would not be suitable to compare with the one giving the rates of pay in the R.A.M.C. and published in the BRITISH MEDICAL JOURNAL of May 23rd, if it was included.

The following are examples of the emoluments which may be obtained by medical officers of various ranks:

Surgeon (say of 10 years' total service):		Staff Surgeon (say of 12½ years' total service):		Fleet Surgeon (of over 20 years' service):	
Pay and allowances	£404 0 0	Pay and allowances	£491 0 0	Pay and allowances	£600 10 0
Specialist pay	*nil*	Specialist pay	*nil*	Specialist pay	*nil*
Charge pay	*nil*	Charge pay	*nil*	Charge pay	*nil*
Total	£404 0 0	Total	£491 0 0	Total	£600 10 0

It is only fair to add that there are a few home billets where medical officers below the rank of Deputy Inspector-General are supplied with official residences, such as dockyards, victualling yards and naval hospitals, about thirty in all, and that P.M.O.'s of flagships receive from 2s. 6d. to 5s. per day extra.

fuel and lights. These amounts are shown in the accompanying table, and are practically the same as the servant allowance *plus* the fuel and light allowance paid to military officers of corresponding ranks.

V.—*Medical Guard.*

It is the recognized custom in the present day when two or more ships are in harbour together for them to take it in turn to keep medical guard. This means that a medical officer of the ship having the medical guard has to remain on board and is always available in case he is required by any of the ships present. Although practically always carried out this system has not yet been embodied in the *King's Regulations* and the result is that some captains still insist on always having one of the two medical officers belonging to their own ship on board, although there may be nothing going on in the ship and the medical officer of the guard close alongside and capable of being on board within five minutes of a signal being made. The result of this is that the Fleet Surgeon or Staff Surgeon of a big ship may find himself worse off than a Junior Surgeon in a gunboat, as the former has to remain on board every other day, whereas the latter only has to do that when only two ships are present, and when there are more he has only to remain on board one day in three, four, or five as the case may be. To be kept on board every alternate day for the sake of red tape is very galling, more especially as it is generally only done in one or two ships in a fleet, and it should be clearly laid down in the *Regulations* that medical guard is to be recognised in all ships. If the above changes were made it is possible that the authorities would be able to hold the competitive (!) examination for entry into the Royal Navy Medical Service at regular intervals and announce beforehand the number of vacancies to be competed for, instead of, as at present, holding the examination two or three times a year at uncertain dates according as there appears to be a possibility of obtaining a few candidates, and then taking all who obtain qualifying marks.

DR. G. MCGREGOR (Portsmouth) writes: I should like to add a few words in support of the request of Dr. J. H. Bryant and Mr. Gerald Sichel for an inquiry into the administration of the Naval Medical Service and conditions of working of its officers. As a surgeon who served in H.M. Navy for ten years, I do not speak without some experience of Admiralty methods, and I endorse all that Mr. Sichel argues for. If I am not very much mistaken, it is not the first time that we have heard from "A Naval Medical Officer" of the fearfully overcrowded state of the profession on shore, and it seems to be his only reason why the navy should be contented with its present state. I, for one, would like to say that, having experience of both sides of the question, private practice is far preferable in every way to service in the navy at present, in spite of this "fearfully overcrowded state"; and even though "A Naval Medical Officer" may know all about the working of the Consultative Board, I am afraid he knows very little of the actual working of private practice, or he would not consider the navy "a very desirable service," and indeed, it is evident that in this opinion he is in a very small minority, otherwise there would not be so much difficulty in getting candidates to accept commissions. Possibly "A Naval Medical Officer" may remember my letter which was published in the BRITISH MEDICAL JOURNAL of August 30th, 1902, together with your very strong comments on it. In that letter I showed the antiquated and pitiable state of affairs that existed at Haslar, and no one could answer the charges of inefficiency that I then made, or say that there was the slightest exaggeration. It seems to me that the same antiquated methods exist in other affairs of the Naval Medical Service, and that we should be grateful to Dr. Bryant and Mr. Sichel for endeavouring to bring about some alteration, for the authorities do not seem inclined to take the initiative. If I were not afraid of trespassing too much on your space I could give a most glaring example which has recently come to my knowledge of an attempt on the part of the powers that be to ride roughshod over the conditions under which surgeons are entered, in their endeavours to keep up the numbers of their surgeons, but I think I have said enough to prove to intending candidates that the navy is very far from being "a desirable service."

ARMY MEDICAL STAFF.

LIEUTENANT-COLONEL THOMAS WILLIAM PATTERSON, D.S.O., late Army Medical Staff, died at Ramelton, Ireland, on September 2nd, aged 59. His commissions were as follow: Assistant-Surgeon, March 31st, 1866; Surgeon, March 1st, 1873; Surgeon-Major, March 31st, 1878; and Lieutenant-Colonel, March 31st, 1886. He retired from the service, June 5th, 1889. His war record comprises: The Afghan war in 1878-80 with the Kuram Valley Field Force including the expedition against the Mahsud Waziris (medal); the Soudan Expedition in 1885 (medal with clasp, and Khedive's bronze star); and the Burmese Expedition in 1885-7 as Senior Medical Officer with the 4th Brigade (mentioned in dispatches, medal with clasp, and appointed a Companion of the Distinguished Service Order).

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT-COLONEL E. H. FENN, C.I.E., to be Colonel, *vice* W. McWatters, retired, August 26th. Colonel Fenn was appointed Surgeon, September 30th, 1875; Surgeon-Major, May 13th, 1888; was granted the rank of Lieutenant-Colonel, September 30th, 1895; and made Brigade-Surgeon-Lieutenant-Colonel, October 1st, 1898. He was in the Afghan war in 1879-80, including the march from Kabul to the relief of Kandahar and the battle of September 1st (mentioned in dispatches, medal with clasp, and bronze decoration). He was attached to the Grenadier Guards during the Soudan Expedition in 1885, and was present at the action of Hasheen (medal with clasp, and Khedive's bronze star). He was nominated a Companion of the Order of the Indian Empire in 1894 and made Surgeon to the Governor-General of India in 1898, a position but recently vacated.

The undermentioned gentlemen are appointed Lieutenants, on probation, dated August 31st: ARTHUR C. H. GRAY, M.B., DOUGLAS P. WATSON, M.B., THOMAS S. DUDDING, CARRICK H. ROBERTSON, M.B., FRANCIS M. M. OMMANNEY, JOHN E. POWELL, ROBERT H. MACNICOL, M.B., OSBURNE JEVERS, M.B., DAVID D. PATON, M.B., SANTIAGO L. PALLANT, CHARLES R. BRADLEY, HUGH H. J. FAWCETT, THOMAS J. WRIGHT, GERARD A. KEMPTHORNE, JAMES T. MCENTIRE, M.B., STANLEY E. LEWIS, M.B., NORCOTT D'E. HARVEY, M.B., JOSEPH A. LONGLEY, M.B., NORMAN E. DUNKERTON, PATRICK J. HANAFIN, ARTHUR C. OSBURN, MARMADUKE C. WETHERELL, M.B., REGINALD T. COLLINS, WILLIAM MACD. MACDOWALL, FRANCIS J. TURNER, HAROLD C. HILDRETH, F.R.C.S.Edin., GORDON S. MACKAY, M.B., JOHN D. RICHMOND, M.B., FORBES M. G. TULLOCH, ERNEST M. GRANVILLE, M.B.

The undermentioned Lieutenants are seconded under the provisions of Article 349 of the Pay Warrant, dated August 31st: C. H. ROBERTSON, M.B., J. A. LONGLEY, M.B., N. E. DUNKERTON.

Colonel G. D. BOURKE, now Principal Medical Officer Peshawur District, Punjab, has been selected for appointment as Principal Medical Officer at Devonport, *vice* Colonel R. Exham, recently retired from the service.

Major A. A. SUTTON, D.S.O., has been appointed Senior Medical Officer West Africa.

EXCHANGE.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 3s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

A LIEUTENANT-COLONEL R.A.M.C., who expects to be ordered abroad early next year, wishes to exchange with an officer recently home.—Address, "Sey-Woon," c.o. Holt and Co., 3, Whitehall Place, S.W.

CAPTAIN H. D. MASON, R.A.M.C., Adjutant R.A.M.C.(Vol.) (Manchester), asks where he can obtain a detailed account of the French and German field hospitals and bearer companies, their *personnel* and equipment.

TIME AT NETLEY AS SERVICE FOR PENSION.

IN ARDUIS FIDELIS writes: Permit me to correct an important inaccuracy in the report of the Royal Navy and Army Medical Services Committee. Officers who entered the R.A.M.C. in intermediate years have not had

the privilege granted of counting their service at Netley for pension and promotion. It would be a great boon to many if this small concession was made.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL S. F. BIGGER, M.B., Bengal Establishment, is permitted to retire from the service, from September 1st. He was appointed Surgeon March 30th, 1878, and made Surgeon-Lieutenant-Colonel, March 30th, 1898. He was in the Afghan war in 1879-80, including the Zaimusht expedition and the capture of Zawa (medal); with the Chin-Lushai Expedifionary Force in 1889-90 (mentioned in dispatches, medal with clasp); with the Waziristan expedition in 1894-5 as Principal Medical Officer 3rd Brigade (clasp); and in the Tirah campaign in 1897-8, being present at the action of Dargai (mentioned in dispatches, medal with two clasps).

Lieutenant-Colonel D WILKIE, M.B., Bengal Establishment, is appointed to officiate as Principal Medical Officer Assam District.

X. I. M. S. writes: The London correspondent of the *Pioneer* has cabled to his paper a summary of the demands which have been formulated by the British Medical Association for the improvement of the Indian Medical Service, and the Government of India, on receipt of this, has hastened to notify to the press that the demands for increase of pay have been conceded, after rather more than the usual official evasion and delay.

I enclose a cutting from the *Times of India* of August 17th, and a precisely similar message was wired from Simla to the *Pioneer*, with the difference that the word "ridiculous" is altered to "beyond reasonable limits." The message, therefore, is the official view—the view of a Government whose stupid contempt for the advice of their expert medical advisers on matters relating to the public health and sanitation is responsible for the present waste of life from plague, cholera, and typhoid.

It is to be hoped that the demands of the Association may be regarded as the irreducible minimum, and that the Government of India may be taught, as the War Office was taught, that it is a fatal policy to treat an honourable profession with such marked contempt.

In its issue of August 19th the *Times of India* takes the opportunity of entirely dissociating itself from the views of their correspondent, which it states to be his own personal view, and not that held by the journal.

IMPERIAL YEOMANRY.

FREDERICK F. MACCABE, M.B., to be Surgeon-Lieutenant in the South of Ireland Yeomanry, September 12th.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

ARTHUR M. CONNELL to be Surgeon-Lieutenant in the 4th West Riding of Yorkshire, September 19th.

ROYAL ENGINEERS (VOLUNTEERS).

THE undermentioned gentlemen to be Surgeon-Lieutenants, in the 2nd Lanarkshire, dated August 1st: WILLIAM R. WILLIS, THOMAS D. LAIRD, JOHN LITHGOW, M.D., SAMUEL MARTYN, M.B., JOHN A. COOK, JAMES ANDREW, M.B.

VOLUNTEER RIFLES.

SURGEON-LIEUTENANT A. L. W. WHITEHOUSE, 3rd Volunteer Battalion the East Surrey Regiment, resigns his commission and is appointed Second-Lieutenant, September 19th.

JAMES C. HERBERTSON, M.A., to be Surgeon-Lieutenant in the 2nd (Renfrewshire) Volunteer Battalion the Argyll and Sutherland Highlanders (Princess Louise's), September 19th.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

MR. CHARLES ROBERTS, to be Lieutenant in the Manchester Companies, September 19th.

ENTERIC FEVER.

A LATE CIVIL SURGEON writes: It would appear to be a pity that Lieutenant-Colonel R. Huntley Nicholson (R.A.M.C. retired) should think fit to revive any misunderstanding which may have existed in a few of the less fortunate hospitals in South Africa, between the officers of the R.A.M.C. and the civil surgeons. It is obvious that in so large a body of men there must have been all types, from the very efficient to the very inefficient, both among the officers of the R.A.M.C. and the civil surgeons. It will be equally obvious that officers of the R.A.M.C., especially those who have served in India, must have seen a great deal of enteric fever, but it was not so obvious to every one in South Africa that each individual officer was equally capable of diagnosing the disease. I remember one instance where a case had been provisionally diagnosed on admission as myelitis—there was no pyrexia—by a civil surgeon. This case was promptly transferred by the principal medical officer of the hospital to the enteric division and officially diagnosed as enteric fever. The patient after some weeks certainly developed what looked like typical enteric fever. The other R.A.M.C. officers of the hospital did not agree with their principal medical officer in his diagnosis, but being junior held their peace. Now Colonel Nicholson himself would hardly wish to be judged with the rest of the R.A.M.C. on the eccentric performances of this and a few other senior officers of the corps, whose experience of enteric was so enormous as to be the despair of their brother officers. As to whether the term "simple continued fever" should be allowed or not is, I believe, still *sub judice*, but that the term was not a monopoly of civil surgeons will be manifest to Colonel Nicholson if he remembers that the diagnosis of the medical officers in charge of individual wards was liable to be revised by the R.A.M.C. officer in charge of the hospital, and then refers to the returns of the large hospitals in South Africa during the war. It is possibly not generally known that the civil surgeon arrived in South Africa under the impression that the *Nomenclature of Diseases* was a monopoly of the R.A.M.C., since the said civil surgeon would generally have received a copy of that work after he qualified, and his surprise was probably feigned. It is possible that he may have thought that the office of the hospital in which he worked kept a specially-abridged edition, as I have known a diagnosis which read in the wards as "acute phlyctenular conjunctivitis" to appear after passing through the office as "ulcer," a metamorphosis which no doubt saved the clerks much work, and did no one any harm.

HEALTH OF THE AUSTRIAN NAVY.

A REPORT on the Austrian navy[1] from the Austrian Ministry for War gives a complete and exhaustive analysis of the health of the naval forces during 1900-1. The average strength of the *personnel* during 1900 was 9,841, in 1901 10,000. At the end of 1899 there remained under treatment 262, and at the end of 1900, 270. During 1900 the total number under treatment was 5,240, as compared with 5,700 during 1901. A first table analysing the daily sick returns shows that the average daily number and the number of sick days per man of the total strength was lower in the two years reported than in the previous decennium. The number of deaths during 1900 was 51, equal to 5.18 per mille, and during 1900 36, equal to 3.6 per mille. Of these deaths 36 were from disease in 1900, 24 from disease in 1901; 7 were killed in action or from wounds received (China, 1900); 5 died from accidents in 1900 and the same number in 1901, and the suicides were 3 and 5 respectively.

Among the causes of deaths from disease tuberculosis ranked highest: pulmonary tuberculosis accounted for 13 in 1900 and 4 in 1901, 1 death occurred from measles and tuberculosis in 1900, and from pleurisy 3 died in 1900 and 2 in 1901. The greater number of invalided cases were also due to the same causes; 33 and 30 from lung tubercle, 17 and 16 from pleurisy. In 1900 disease was most prevalent during January, March, October, and November, in 1901 during July, October, January, and February. In 1900 there were epidemics of influenza and measles; in July, 1901, there was a large number of cases of gastro-enteric catarrh and of summer fever.

The comparative incidence of disease at the various naval stations, and among the different branches and ranks of the service is shown in tables. There are also extensive statistics of the different diseases, their results, their mean duration of treatment, the manner in which they affected the different ranks, the different land stations, and the different ships in commission.

At the outbreak of the Chinese war the battleship *Zenta* was in Asiatic waters, and supplied a detachment of 30 men with one officer and two cadets for duty on land. Of these, 4 were killed in action, including the officer. A further detachment was provided for the expedition to Peking, and later the *Maria Theresa*, the *Elizabeth*, and the *Aspern* joined the *Zenta*. A mine explosion on September 20th, 1900, killed 2 men and wounded 14, most of them severely; 8 of the wounded had rupture of the tympanum as well as other injuries. Among the wounded at Peking was an officer who was trephined in the English section of the international hospital for a shell splinter in the brain; it was successfully removed. At Tientsin a sailor received a small-bore bullet wound which penetrated the right triceps, entered the chest through the fifth right intercostal space, and found exit through the sixth left space, without giving rise to any serious symptoms.

On the ships there were a considerable number of casualties from heatstroke; on the *Maria Theresia* there were one death, six severe, and twenty-nine slight casualties from this condition; cases of cellulitis, often starting as a tropical eczema or from slight abrasions, were also common, especially among the engineers. All wounds were sluggish in healing. At the land stations in China venereal diseases were very prevalent, especially at Shanghai. With regard to heatstroke, the best prophylactic appeared to be the provision of extra rations; tea, diluted wine, and meat were issued in this way. The fatalities on board ship occurred from the following causes: Liver abscess (1), tuberculosis (2), suicide (1), septic infection (1), drowning (1), pleurisy (1), and carcinoma of the stomach (1).

The detachment which went to Peking suffered much from scarcity of good drinking water in the severe heat; the wells on the route were found to be inefficiently enclosed and very shallow; in the neighbourhood of Peiho they were all contaminated by surface water infected by numerous corpses. Acute diarrhoea was very common, and hardly a man of the detachment escaped this at one time or another; the use of boiled water was the only efficient prophylactic measure. At first the men suffered much from footsoreness, often with extreme oedema of the feet: later venereal complaints were the commonest troubles, and all the cases were severe and obstinate: typhoid occurred to a moderate degree; dysentery was common. In this detachment 2 deaths occurred from typhoid, 2 from dysentery, 1 from pneumonia, 1 from liver abscess. Of the 174 men on land service in 1900, 75 came under medical treatment; of 286 in 1901, 175 were affected in one way or another.

The account of the Chinese war casualties is followed by an extensive series of notes on the cases of the most important diseases throughout the whole naval service; from these notes we take the following: Typhoid fever: At the end of 1899 there were 11 cases under treatment and 52 new cases were treated during 1900. Of these 16 were discharged to duty, 25 were sent on leave, 7 died and 15 remained in hospital. In 1901 there were 16 new cases with 1 death; this is exclusive of the Chinese war cases of which there were 11 with 2 deaths. There were 10 cases of mixed infection with malaria and typhoid. Scarlet fever and measles: In 1901 there was an epidemic of scarlet fever, chiefly at Pola, 18 cases with 2 deaths. In 1900 and 1901 there were 113 cases of measles, 98 of which occurred at Pola. Influenza: In 1900, 232 cases; in 1901, 84 cases. Malaria: Microscopical examination of all suspected cases was carried out thoroughly during 1901, and in infected stations all apparently healthy individuals were also examined for the parasite. The beneficial results of this regulation showed themselves in the comparatively small number of return cases during the first half of 1902. Venereal complaints: There were 741 cases in 1900 and 823 in 1901, respectively 75 and 82 per mille of the whole force; most of the cases were traceable to want of proper regulations in the seaports. In China the principal medical officer instituted certain compulsory prophylactic measures which acted very beneficially; they consisted of local washing with antiseptic and astringent lotion. Respiratory diseases: These accounted for most of the invalided cases; an interesting case of pleuro-pneumonia with purulent posterior mediastinitis is related ending fatally, the exciting cause being exposure to severe cold and storm on board ship. Digestive system diseases: Tonsillitis was the most frequent com-

[1] *Statistischer Sanitats Bericht der Kriegs Marine fur die Jahre 1900 und 1901.* Zusammengestellt von der IX Abteilung der Reichs Kriegsministeriums, Marine Sektion. Wien 1902. V. Braumüller, Universitats-Buchhändler. Royal 8vo, pp. 238. (Statistical Report on the Health of the Navy for the Years 1900 and 1901. Compiled by the Ninth Division of the Imperial Ministry for War, Naval Section. Vienna, 1902.)

plaint from November to May, gastro-enteritis during the hot summer months. The suicides were 5 by hanging, 2 by shooting, and 1 by jumping from a second story. Among the cases of injury, notes are given of an interesting case of fracture of the atlas. The patient was a man aged 23, who fell to the deck from aloft. When admitted to hospital the head projected forwards and to the right; an attempt to reduce the deformity occasioned clonic spasm of the muscles of the face and upper limb; the deformity could be felt in the pharynx; there was no paralysis, and sensibility was unimpaired everywhere. Severe pains in the abdomen and bladder were present on the day following the accident, but were relieved by a cocaine-morphine suppository. The patient made a good recovery, being treated by weight extension, under which the deformity gradually disappeared.

The report concludes with analytical tables from the naval hospital and laboratories at Pola, with notes of interesting medical and surgical cases. In the laboratories 4,852 observations were carried out in 1900, 6,885 in 1901, consisting of urine analyses, sputum examinations, examinations of urethral secretions for gonococci, of tonsillar affections, of pus, hair, blood, vomited matter, stools (chiefly for typhoid by Piorkowski's method), urinary calculi, foreign bodies, etc. There are records also of numerous water analyses, chiefly bacteriological, and analyses of various chemical and commercial preparations. The work in the laboratories is on a large scale, and the observations include several of interest and value, which are, however, too lengthy for notice. The report as a whole is exhaustive and well arranged, and compares favourably with the similar compilations in other countries.

MEDICO-LEGAL AND MEDICO-ETHICAL.

MEDICAL MISSIONARIES AND PRIVATE PRACTICE.

SCRUTATOR, who writes from a city in Asiatic Turkey, asks for an opinion on the action of the Church of England Missionary Society in that city.

The Society, he writes, has established a dispensary here for many years, and it is in charge of an English medical graduate, who in addition to attending to the poor has a large practice among the well-to-do and rich; the fees from the latter classes all go to the Society's funds, the doctor receiving a fixed salary. Taking the latter at £30 per mensem and the income from the paying practice amounting to quite £60 per mensem, there is a profit to the Society of about £360 per annum. So far so good: but in addition to the missionary doctor there are two other medical men; one is a Scotch surgeon and the other is on the *Colonial Register*. These two latter have to pay a heavy wage to their dispensers; they have to import at great expense their own medicines (as there is no reliable pharmacy in the city), and they have necessarily to supply themselves with, and to keep up to date, a stock of instruments. On the other hand, the Church Missionary doctor gets his medicines, instruments, house, etc., at the expense of the funds of the Society; and I should like to inquire therefore as to whether the subscriptions which are collected to enable the Church of England Missionary Society to minister to the spiritual needs of the heathen and to give their poor medical relief are also intended to run the Society as a profit-making concern, to the serious detriment of one at least of its former subscribers.

*** Our correspondent authorized us to give his name and address to any responsible official of the Church Missionary Society. We therefore communicated with the Secretary of the Medical Department of the Society, who has forwarded the following memorandum by a recent occupant of the post of medical missionary in the city in question:

"Scrutator" seems to be under a wrong impression of the conditions under which the Church Missionary Society's doctor works. The latter has just the same expenses as the "Scotch surgeon," that is to say, he has to pay a "heavy wage" to his dispenser and other native assistants; he has to "import at great expense" his own medicines and surgical instruments, and pay the rent of his dispensary. All this he does solely and entirely by means of the fees which he gets from paying patients. Is not the "Scotch surgeon" at liberty to do the same? For he also has his "fixed salary," just as the Church Missionary doctor has, who, by the way, gets much less than the "£30 per mensem" supposed by "Scrutator" to be his allowance.

Furthermore, it is quite impossible for the C.M.S. medical missionary to refuse all paying patients. He makes no attempt to get them, and they form only about from 5 to 10 per cent. of the total number seen by him, the 90 to 95 per cent. being of the ordinary hospital class, and paying nothing at all. Moreover, both the "Scotch surgeon and the other" who is "on the *Colonial Register*" not infrequently ask the C.M.S. doctor to see paying patients of theirs in consultation. Is the latter to refuse on the ground that the patients are rich?

Some years ago when I was C.M.S. medical missionary in the city in question, the residency surgeon of that date told me he did not think that our practices interfered with one another to any appreciable extent, and I quite agree with his opinion. We each of us had as many patients as we could attend to, and I see no reason why it need be otherwise under similar circumstances at the present day, with a population of some 130,000 and only two European medical men, exclusive of Turkish doctors, namely, the residency surgeon (referred to by "Scrutator" as the "Scotch surgeon") and the medical missionary of the C.M.S. The medical man who is "on the *Colonial Register*" also has his fixed salary, and has a house in the native quarter and a large private practice.

Again, some residency surgeons whom I have known have not cared to be burdened with any practice amongst natives, and have refused to do anything outside their official duties. The result has been that at such times the medical missionary was the only available European doctor, and he cannot be expected to keep changing his practice with the varying moods of successive residency surgeons.

We regret the delay that has occurred in getting a statement from the Church Missionary Society in answer to "Scrutator." He complains that the society is making a profit, or, to use the elegant phrase to which we have become accustomed, is "sweating" the medical missionary, and also that the latter is subsidized by the funds of the society, and so is able to compete unfairly with the other practitioners in the city. These charges appear to neutralize one another. It appears to be admitted that a small surplus is earned by the medical missionary, and we are informed that this is being allowed to accumulate to form a fund for building a hospital in the city. We do not think it would be fair to say that the medical missionary should not take paying patients, as the residency surgeon, who is also "subsidized," takes them.

MEDICAL EVIDENCE AT INQUESTS.

MEMBER BRITISH MEDICAL ASSOCIATION (Plymouth) writes to say that in his district as in others reported in the BRITISH MEDICAL JOURNAL, the coroner appears to have ignored medical evidence and necropsies, and illustrates his contention by a case of death by hanging to which he was called when the body was discovered, but was not required to give evidence at the inquest; and he further suggests that such actions are unfair to the medical practitioner called in at the time.

*** If a coroner does not summon medical evidence at the inquest, the jury, if they are not satisfied as to the cause of death, have power to adjourn the inquiry and call such medical witness as they shall name in writing to the coroner. It is evident that the practice of coroners varies, but the value of the inquiry and the verdict as to the accurate cause of death cannot be satisfactorily ascertained unless the evidence of a medical man has been placed before the jury.

DIVISION OF VACCINATION DISTRICTS.

FEMUR asks for opinion and advice on the following questions: A. has been public vaccinator and district medical officer for the last sixteen years. A year ago the medical district was divided into two by the guardians. A. retains one part and B. gets the other. This reduces A.'s work but does not affect his salary. Now B. writes to the guardians urging them to divide the vaccination district also, and in spite of protests they appear to be determined to do it. This means that A. will lose £200 to £300 a year, and he has already lost much private practice in keeping the vaccination up. A.'s record is good, grants every time, etc. 1. Is it professional conduct on B.'s part to write to the guardians asking for an appointment that is not vacant? (A. only heard of the letter accidentally.) 2. Is it just towards A. to take away part of his work after sixteen years because another man wants it? 3. Has A. any remedy, either by compensation or by appeal to the Local Government Board?

*** 1. No. 2. No. 3. Yes, by appeal to the Local Government Board at once, as no division of districts can be made without its approval and the Board will require good reasons for the suggested change. The Association of Public Vaccinators might be consulted. No question of compensation would be likely to be entertained.

MEDICAL FEES IN VACCINATION PROSECUTIONS.

LEVIATHAN.—There is no scale of fees universally recognized and adopted. Our correspondent's best course will be to arrange with the vaccination officer for an agreed fee to cover loss and trouble in attending court and giving evidence.

THE EMPLOYMENT OF UNQUALIFIED PERSONS.

A. asks whether a practitioner may allow an unqualified person to dispense medicine, attend minor ailments and draw teeth in his surgery, and may administer gas while the said unqualified person extracts a tooth?

*** The prohibition of the employment of unqualified persons by the General Medical Council is qualified by the following: "But the foregoing notices do not apply so as to restrict the proper training and instruction of bona fide medical students as pupils, or the legitimate employment of dressers, midwives, dispensers, and surgery attendants, under the immediate personal supervision of registered medical practitioners." If the acts referred to are performed under the immediate personal supervision of the practitioner they would appear to be permissible.

DEATH VACANCY.

NAUHEIM.—A correspondent, who has bought a death vacancy, wishes to know in what way he may ethically obtain an introduction to the said practice.

*** The executors of the deceased may send out notices to all the bona-fide patients of the late practitioner, notifying the death, and giving the name and address of his successor. Great care must be taken in sending out such notices, and it is not justifiable to send them to all whose names appear on the books of the deceased, but only to those who, on account of recent attendance, or for other sufficient reason, can be fairly regarded as patients of the deceased at the time of his death.

CANVASSING FOR DOCTORS BY THE CLERGY.

PROTESTANT writes to complain that a Roman Catholic patient was advised by the priest to give him up and employ his neighbour and friend, Dr. X., who is a Roman Catholic. He very properly adds that he does not believe Dr. X. is aware of the priest's conduct, and he was sure that all honourable men would disapprove of such canvassing by their clergy.

*** If the matter occurs again we should advise our correspondent to speak to Dr. X., who will no doubt explain to the priest that such canvassing is highly distasteful to him and is calculated to do him more harm than good.

HOSPITAL ADVERTISEMENTS.

DR. B. H. NICHOLSON, Honorary Surgeon to the Hospital, writes that the correspondent who informed us that the Essex and Colchester General General Hospital continues to advertise the attendance of members of its staff was in error; by the wish of the staff of the hospital the practice has been discontinued.

MILEAGE CHARGES OF CERTIFYING FACTORY SURGEONS.

P. P. writes that he has been a certifying factory surgeon for thirty-two years. He has lately removed to another residence a little further from the factories; ought he to charge the mileage from his old residence or the new?

*** If he is entitled to charge mileage from his residence to the factories in question, he can only do so from the place where he actually resides, unless he is keeping on his former residence as a surgery from which he does most of his work. In the latter case he ought to reckon his mileage as before.

ASSISTANTS AS *LOCUM TENENS*.

A. and B. are partners, and C., the son of the former, acts as assistant to the firm at a regular salary. During the absence of A. or B. on their annual holiday ought C. to receive additional remuneration for extra work done? Previous to C. coming to the practice a "*locum*" was always employed.

*** Under such circumstances it is not usual for an assistant to receive extra payment. If an assistant acting as *locum tenens* for his principal has a large amount of extra work thrown on him, the latter often makes it up to him in some way—for example, by allowing him an extra holiday, or by making him a present, but the assistant has no claim to extra payment.

LIABILITY FOR FEES.

R. J. S. writes: A child knocked down by a Corporation electric tram is brought to my surgery by the conductor, and is attended by me for weeks. The parents deny responsibility, as also does the Corporation. Have I legal redress?

*** The conductor would be personally liable for the first attendance, but the parents for the after-treatment, and our correspondent might sue them in the county court. The parents have their right of action against the Corporation, and if its servants were proved to be in the wrong might recover damages and costs, including the medical expenses.

OPTICIANS AS OCULISTS.

A. G. complains that in the directory of one of our large provincial towns an optician who possseses no medical qualifications is put under the heading of "oculist," side by side with a medical specialist, and he asks whether nothing can be done to prevent a misrepresentation, the effect of which is to convey the false impression that the person in question is skilled in the treatment of diseases of the eye?

*** The title "oculist" is not specially mentioned in the Medical Act, but it would appear to come under such "name, title, addition, or description as would imply that he is recognized by law as a surgeon or practitioner in medicine, etc." The result of a prosecution would very much depend upon the view taken by the magistrate before whom the case was tried. It might be worth while to appeal to the publishers of the directory, who would probably listen to a request made by the local medical profession to keep opticians and oculists under separate headings.

MEDICAL ADVERTISING.

D. says he has been asked by the manager of a large laundry to place a card on the premises stating his fees to club patients and others, and he wishes to know whether this would be a proper thing to do?

*** We cannot approve of such a card. If done in one place it might be done in twenty, and would be undoubtedly advertising for practice.

D. D. P.—The ethical objections to advertising are as strong in India as in England, and the argument that it is necessary to do so in order to compete with quacks might be urged with quite as much force here as there. Whoever has to make a practice by building up a reputation must find it slow and uphill work, but we cannot admit advertising in newspapers as a legitimate means to employ in India or elsewhere.

BUYING AND SELLING PRACTICES.

H. E. D.—Our correspondent can of course write a letter of complaint to the General Medical Council, but he must support his allegations by affidavits. His soliciter will be able to advise him as to the proper mode of procedure, but he would do better, if he is a member, to consult one of the Medical Defence Societies, who will tell him whether the evidence he possesses would justify him in proceeding against the vendor in the manner he suggests.

MEDICAL AMENITIES.

W. M. G.—We do not think that our correspondent was treated with the courtesy which he had a right to expect either by the practitioner for whom he acted or by his representative. We think, however, that our correspondent would have been better advised had he ignored the discourtesy.

THE COURTESY CALL.

J. H.—As the object of the call is not to fulfil an empty formality, but to make the acquaintance of neighbours who must be colleagues and should be friends, our correspondent should call on each of the partners. If the three live in one house he should leave three cards, should he be so unfortunate as to find no one of them at home.

ADVERTISING FOR RESIDENT PATIENTS.

ENQUIRER.—Advertisements for resident patients should, in our opinion, be inserted only in the medical press.

A SMALL GRIEVANCE.

A.—Has it not occurred to our correspondent that Mrs. C. may have had some preference, such as women have, which C. would respect although he might not share it?

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF DURHAM.

THE following candidates have passed the Second Examination for the degree of Bachelor in Medicine in the subjects undernoted:

Anatomy, Physiology, and Materia Medica.—Honours—First Class: L. A. Clutterbuck, L.R.C.P. & S.Edin., L.R.C.P.L., College of Medine, Newcastle-upon-Tyne. Honours—Second Class: V. E. Badcock, College of Medicine, Newcastle-upon-Tyne; Florence Barrie Lambert, College of Medicine, Newcastle-upon-Tyne; F. C. Pybus, College of Medicine, Newcastle-upon-Tyne; N. A. Eddlestone, College of Medicine, Newcastle-upon-Tyne; R. W. Swayne, College of Medicine, Newcastle-upon-Tyne. Pass List: G. E. P. Davis, College of Medicine, Newcastle-upon-Tyne; G. Denholm, College of Medicine, Newcastle-upon-Tyne; H. Drummond, College of Medicine, Newcastle-upon-Tyne; S. G. V. Harris, M.R.C.S., L.R.C.P., D.P.H., College of Medicine, Newcastle-upon-Tyne; W. N. Johns, College of Medicine, Newcastle-upon-Tyne; A. C. H. McCullagh, College of Medicine, Newcastle-upon-Tyne; G. R. Philipson, College of Medicine, Newcastle-upon-Tyne; N. Spedding, College of Medicine, Newcastle-upon-Tyne; J. B. Williamson, College of Medicine, Newcastle-upon-Tyne; T. L. Wormald, College of Medicine, Newcastle-upon-Tyne.

The following candidates have passed the First Examination for the degree of Bachelor in Medicine in the subjects undernoted:

Elementary Anatomy and Biology, Chemistry and Physics.—J. E. Hanna, College of Medicine, Newcastle-upon-Tyne; J. W. Smith, College of Medicine, Newcastle-upon-Tyne; L. H. Walker, College of Medicine, Newcastle-upon-Tyne.

Chemistry and Physics.—R. M. Davies, College of Medicine, Newcastle-upon-Tyne; L. K. Edmeades, Guy's Hospital, London; G. R. Ellis, College of Medicine, Newcastle-upon-Tyne; J. Everidge, King's College, London; A. L. Forster, College of Medicine, Newcastle-upon-Tyne; Elizabeth Niel Havelock, College of Medicine, Newcastle-upon-Tyne; T. H. V. King, Guy's Hospital, London; H. M. Levinson, College of Medicine, Newcastle-upon-Tyne; S. D. Metcalfe, College of Medicine, Newcastle-upon-Tyne; T. D. Miller, M.R.C.S., L.R.C.P., St. Thomas's Hospital, London; C. J. Neilan, College of Medicine, Newcastle-upon-Tyne; E. D. Smith, College of Medicine, Newcastle-upon-Tyne; H. B. Stephenson, College of Medicine, Newcastle-upon-Tyne; G. Walker, College of Medicine, Newcastle-upon-Tyne; J. F. Young, Guy's Hospital, London.

Anatomy and Biology.—H. C. W. Allott, Guy's Hospital, London; E. P. H. Joynt, Guy's Hospital, London; H. F. Joynt, Guy's Hospital, London; R. E. I. Mason, College of Medicine, Newcastle-upon-Tyne, J. Paxton, College of Medicine, Newcastle-upon-Tyne.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE following gentlemen having passed the necessary examinations, and having conformed to the by-laws and regulations, have been admitted Members of the College:

G. C. J. Acres and W. A. Aldred, St. Bartholomew's Hospital; G. C. Adeney, St. Thomas's Hospital; C. A. Anderson, B.A.Camb., Cambridge University and St. Bartholomew's Hospital; W. F. Aunand, University College Hospital; W. Appleyard, Yorkshire College and General Infirmary, Leeds, and University College Hospital; H. Balme, King's College Hospital; T. St. J. Barry and F. Barton, University College and Royal Infirmary, Liverpool; E. L. Bartlett, St. Mary's Hospital; H. S. Bennett, St. Thomas's Hospital; K. Black, L.D.S.Eng., Guy's Hospital; W. E. Blacknall, Oxford University and King's College Hospital; P. R. Bolus, Guy's Hospital; A. H. Bradley, University of Birmingham; D. Brodie, St. George's Hospital; J. Burfield, St. Bartholomew's Hospital; R. M. F. Cameron, Melbourne University and St. Thomas's Hospital; W. W. Campbell, King's College Hospital; P. Campiche, M.D., Switzerland, Lausanne, Freiburg, and Berlin Universities; H. M. Churchill, London Hospital; F. G. H. Cooke, University College Hospital; J. S. Cooper, Cambridge University and Guy's Hospital; R. H. L. Cordner, St. George's Hospital; T. R. Couldrey, St. Bartholomew's Hospital; H. H. B. Cunningham, St. Mary's Hospital; H. S. C. Darbyshire, University College, Sheffield, and St. Thomas's Hospital; H. M. Davies, B.A.Camb., Cambridge University and University College Hospital; C. N. Davis, St. Bartholomew's Hospital; A. M. De Silva, Ceylon Medical College and London Hospital; A. H. Donaldson, Cambridge University and St. Bartholomew's Hospital; H. B. Drake, L.S.A.Lond., St. George's Hospital; E. S. Ellis, St. Bartholomew's Hospital; E. R. Evans, University College, Liverpool, and St. Mungo's College and Royal Infirmary, Glasgow; T. J. Faulder, B.A.Camb., Cambridge University and St. Bartholomew's Hospital; H. H. J. Fawcett, B.A.Camb., Cambridge University and St. Mary's Hospital; N. S. Finzi, L.S.A.Lond., University College Hospital; W. H. France, Westminster Hospital; C. F. Fraser, Guy's Hospital; J. Goss, B.A.Camb., Cambridge University and Guy's Hospital; C. B. Goulden, B.A.Camb., Cambridge University and Middlesex Hospital; E. R. Griffiths, Middlesex Hospital; R. G. E. Grote, Charing Cross Hospital; T. B. A. Haggard, B.A.Camb., Cambridge University and St. Bartholomew's Hospital; G. Hall and B. Hart, University College Hospital; P. Hardy, B.A.Camb., Cambridge University and London Hospital; R. N. Hart, B.A.Camb., Cambridge University and King's College Hospital; F. A. Hepworth, B.A.Camb., Cambridge University and St. Bartholomew's Hospital; W. P. Hingston, Middlesex Hospital; A. H. Hogarth, B.A.Oxon., Oxford University and St. Bartholomew's Hospital; E. L. Holland, King's College Hospital; G. W. C. Hollist, L.R.C.P. Edin., L.S.A.Lond., Guy's Hospital; C. M. H. Howell, Oxford University and St. Bartholomew's Hospital; C. H. M. Hughes, Westminster Hospital; G. Hughes, St. Bartholomew's Hospital; D. M. Humby, L.D.S.Lond., Middlesex Hospital; C. E. Iredell, Guy's Hospital; A. E. Johnson, Owens College and Royal Infirmary, Manchester; C. O. Jones, M.B., Ch.B.Vict., University College and Royal Infirmary, Liverpool; E. J. Jones, Owens College and Royal Infirmary, Manchester, and St. Thomas's Hospital; W. P. Jones, L.S.A.Lond., University College, Sheffield, and University College Hospital; K. N. Karanjia, Grant Medical College, Bombay, and University College Hospital; W. H. Lamplough, University of

Birmingham and St. Bartholomew's Hospital; R. Larkin, Guy's Hospital; C. H. Latham, St. Thomas's Hospital; D. Le Bas, St. Mary's Hospital; P. G. Lock, B.A.Camb., Cambridge University and St. George's Hospital; J. M. McIlroy, Queen's College and Royal Hospital, Belfast; R. M. Marjoram, University College, Bristol and St. George's Hospital; E. E. Maples, St. Bartholomew's Hospital; P. M. Matheson, B.A.Camb., Cambridge University and University College Hospital; N. S. Meiklejohn, St. George's Hospital; G. C. B. Mieville, University College Hospital; E. H. B. Milsom, Guy's Hospital; W. E. Muil, B.A.Camb., Cambridge University and Middlesex Hospital; A. R. Neligan and C. V. Nicoll, St. Bartholomew's Hospital; L. Noon, M.A., B.C.Camb., Cambridge University and St. Bartholomew's Hospital; H. Overy, M.B., Ch.B.Edin., Edinburgh University and London Hospital; P. A. Peall, Guy's Hospital; F. H. Pickin, University College, Bristol; F. J. Pierce, Charing Cross Hospital; A. P. Piggott, Guy's Hospital; H. W. Plant, B.A.Lond., Birmingham University; J. M. Plews, St. Bartholomew's Hospital; J. M. Pooley and P. H. Ramsay, St. Mary's Hospital; C. D. Pye-Smith, University College, Sheffield, and Guy's Hospital; R. C. Redmond, B.A., M.D. Kingstown, Kingstown and Ontario University, and University College Hospital; R. V. de A. Redwood, University College, Cardiff, and St. Mary's Hospital; R. W. Read, M.B., Ch.B.Aberd., Aberdeen University and King's College Hospital; C. H. Reinhold, Guy's Hospital; G. Q. Richardson, L.R.C.P.&S.I., Dublin, and Charing Cross Hospital; R. H. N. Rutherford, University College, Bristol; S. Riley and D. S. Sewell, Owens College and Royal Infirmary, Manchester; B. M. Sampson, St. Thomas's Hospital; F. B. Shettle, St. George's Hospital; G. R. Slade, B.C.Camb., Cambridge University and London Hospital; S. Spencer, Owens College and Royal Infirmary, Manchester; H. D. Smart, N. J. Spriggs, and F. L. Thomas, M.B.Lond., Guy's Hospital; R. J. P. Thomas, St. Bartholomew's Hospital; T. J. B. Thomas and L. L. A. W. Thomson, St. Mary's Hospital; W. B. Vaile, London Hospital; A. S. A. Van Buren, B.A.Lond., St. Bartholomew's Hospital; E. Ward, M.A. Camb., Cambridge University and London Hospital; L. Wayne-Morgan, University College, Cardiff, and Middlesex Hospital; W. T. Webb, University College, Bristol; J. H. Wells, St. Mary's Hospital; E. R. Wheeler and E. U. Williams, King's College Hospital; A. D. White, St. Bartholomew's Hospital; G. E. O. Williams, University College Hospital; T. J. Williams, University College and Royal Infirmary, Liverpool; R. H. C. O. Wisdom, Cambridge University and London Hospital; E. A. Wright, B.A.Camb., Cambridge University and St. Bartholomew's Hospital.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,908 births and 4,775 deaths were registered during the week ending Saturday last, September 19th. The annual rate of mortality in these towns, which had been 15.7 and 15.8 per 1,000 in the two preceding weeks, further rose last week to 16.5 per 1,000. The rates in the several towns ranged from 4.5 in Handsworth, 6.1 in Burton-on-Trent, 8.0 in in Hornsey, 8.3 in Bournemouth, 9.0 in Stockton-on-Tees, 10.3 in Walthamstow and in Blackburd, and 10.4 in East Ham, to 22.0 in Burnley, 23.1 in Hanley, 23.5 in Newcastle-on-Tyne, 23.6 in Warrington, 26.3 in St. Helens, 27.2 in Great Yarmouth, 29.5 in Bury, and 30.2 in Middlesbrough. In London the death-rate was 15.8 per 1,000, while it averaged 16.8 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 3.2 per 1,000 in the seventy-six towns; in London this death-rate was equal to 3.0 per 1,000, while among the seventy-five other large towns it ranged upwards to 7.0 in Great Yarmouth and in Sheffield, 7.2 in St. Helens, 7.4 in Hanley, 7.7 in Middlesbrough, 7.9 in Warrington, and 8.2 in Rotherham. Measles caused a death-rate of 1.5 in Newport (Mon.), and 3.1 in Warrington; scarlet fever of 1.7 in Bootle; diphtheria of 2.0 in Great Yarmouth; whooping-cough of 1.2 in Rochdale, 1.3 in West Ham, and 2.2 in Newport (Mon.); "fever" of 1.6 in Grimsby; and diarrhoea of 4.1 in Northampton, 5.0 in Great Yarmouth and in Preston, 5.2 in Burnley, 5.3 in Sheffield, 5.4 in St. Helens and in Bury, 6.3 in Hull, 6.4 in Rotherham, and 6.6 in Hanley and in Middlesbrough. Three fatal cases of small-pox were registered last week in York, one in London, and one in Liverpool, but not one in any other of the seventy-six large towns. The Metropolitan Asylums Hospitals contained 41 small-pox patients on Saturday last, the 19th inst., against 57, 49, and 46 on the three preceding Saturdays; 7 new cases were admitted last week, against 11, 6, and 9 in the three preceding weeks. The number of scarlet fever cases under treatment in these hospitals and in the London Fever Hospital, which had been 1,774, 1,796, and 1,772 at the end of the three preceding weeks, had risen again to 1,803 at the end of last week; 261 new cases were admitted during the week, against 199, 229, and 212 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, September 19th, 942 births and 527 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 15.1, 16.6, and 14.4 per 1,000 in the three preceding weeks, rose again last week to 16.1 per 1,000, but was 0.4 per 1,000 below the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 13.6 in Aberdeen and 13.9 in Perth, to 17.5 in Edinburgh, and 20.1 in Paisley. The death-rate from the principal infectious diseases averaged 1.6 per 1,000 in these towns, the highest rates being recorded in Glasgow, Dundee, and Paisley. The 236 deaths registered in Glasgow included 7 from measles, 2 from diphtheria, 7 from whooping-cough, 5 from "fever," and 7 from diarrhoea. Three fatal cases of diphtheria were recorded in Edinburgh, and 6 deaths from diarrhoea in Dundee.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, September 19th, 526 births and 332 deaths were registered in six of the principal Irish towns, against 456 births and 298 deaths in the preceding period. The mean annual death-rate of these towns, which had been 18.2, 16.5 and 16.2 per 1,000 in the three preceding weeks, rose to 18.7 per 1,000 in the week under notice, this figure being 2.2 over the mean annual rates during the corresponding period in the seventy-six English towns. The death-rates ranged in these six Irish towns from 13.6 in Waterford and 13.9 in Londonderry to 21.2 in Cork and 26.9 in Limerick. The death-rates from the principal zymotic diseases in these six Irish towns averaged during the week 2.1 per 1,000, or 0.6 less than during the preceding period. The highest point, 4.1, was reached in Cork, while Limerick and Waterford registered no deaths from zymotic disease at all. From small-pox no deaths were registered in any of the six towns. Dublin registered 1 death from scarlet fever, 6 from whooping-cough, 12 from diphtheria, 2 from enteric, and 5 from diarrhoeal diseases. Belfast had 1 from whooping-cough, 3 from enteric, and 14 from diarrhoeal diseases. Cork and Londonderry each registered 2 deaths from whooping-cough, and 1 or 2 from enteric and diarrhoea.

DISINFECTION AFTER INFECTIOUS DISEASES.

The Medical Officer of Health (Dr. Reginald Dudfield) has issued a circular letter to the medical practitioners of Paddington, in which he reminds them that the Paddington Borough Council in July last adopted a report from the Public Health Committee urging the need of disinfection after whooping-cough and consumption (phthisis). Disinfection, he remarks, is now required under the Public Health (London) Act, 1891, after measles. He requests practitioners in Paddington to co-operate in securing the carrying out of disinfection after cases of the above-mentioned diseases, as the general adoption of such precaution will be thereby greatly facilitated. And he notifies practitioners that if they will refer their patients to his department, of which the temporary offices are Howley Lodge, 112, Harrow Road, W., any necessary disinfection will be carried out free of charge.

REGISTRATION OF BARBERS IN NEW YORK.

The registration of barbers, in accordance with the Act passed at the last session of the New York Legislature, was completed on August 15th, and the President of the Board of Health has announced that the rules for barbers carrying out the provisions of the Sanitary Code required by the Act will be rigidly enforced as from September 1st. Among them are rules prohibiting the use of sponges and of powder puffs. Other rules are to the following effect: Combs, razors, clippers, and scissors must be thoroughly cleansed by dipping them in boiling water or other antiseptic after every separate use thereof. No alum or other astringent shall be used in stick form. If used at all to stop the flow of blood, such application must be made in the form of powder.

THE SANITARY INSPECTORS' EXAMINATION BOARD.

The next examination for certificates of qualification for appointment of Sanitary Inspector or Inspector of Nuisances under Section cviii (2) (d), of the Public Health (London) Act, 1891, will be held in London on Tuesday, January 19th, 1904, and the four following days. Particulars will be forwarded on application to the Honorary Secretary, William R. E. Coles, 1, Adelaide Buildings, London Bridge, London, E.C.

A DAIRY CONGRESS.

A Dairy Congress was held at Brussels under the presidency of Baron Peers after the meeting of the International Congress of Hygiene. The three principal questions on the programme of discussions were the following: International agreement as to the prevention of frauds in the sale of butter and margarine; the hygiene of milk and other dairy products; the formation of an international federation of dairy industries. Some 700 persons attended the Congress. Among those present were Professor Arloing of Lyons, and M. Chauveau. The Belgian Minister of Agriculture, M. van der Bruggen, welcomed the congressists in the name of the Government. Resolutions as to the safeguarding of the milk supply, especially in regard to tuberculous contamination, and as to the prevention of the adulteration of butter, were passed. It was decided that the next meeting of the Congress should take place in Paris.

QUARTERLY RETURN OF EPILEPTIC PAUPERS AS LUNATICS.

T. M. B., who is a district medical officer, asks the following question: "Are not epileptic paupers bound to be returned quarterly as lunatics?"

*** Our correspondent surely cannot imply that every epileptic ought to be regarded as insane. Only such as in the opinion of the medical officer are imbeciles or idiots, or show some undoubted signs of insanity should be classified as lunatics.

MEDICAL NEWS.

The annual dinner of the Incorporated Society of Medical Officers of Health will take place at the Holborn Restaurant on Friday, October 9th. The chair will be taken by the President, Dr. J. Groves, of Carisbrooke.

The autumn session of the Post-graduate College, West London Hospital, will be opened on Tuesday, October 13th, when Sir William Church, Bart., K.C.B., will deliver an address on medical education and post-graduate study at 4.30 p.m. Tickets to admit to the lecture can be obtained on application to the Dean, West London Hospital, Hammersmith Road, W.

The Martindale Memorial.—The Martindale Memorial Committee has arranged that the marble bust of the late Mr. William Martindale shall be unveiled, and formally presented together with the die for the Memorial Medal to the Pharmaceutical Society, at the Inaugural Sessional Meeting of the School of Pharmacy on Thursday, October 1st, 1903.

THE FREQUENCY OF INTESTINAL PARASITES.—At the Hygienic Laboratory of the United States Public Health and Marine Hospital Service the faeces of 500 insane patients have been examined microscopically, with the object of discovering the frequency of intestinal infection by various animal parasites. The results (*Bulletin*, No. 13, Hygienic Laboratory, May, 1903, Washington) shows that condition was present in 13.2 per cent. of the persons examined. There were 15 cases of uncinaria Americana or ankylostoma duodenale, 54 of trichuris trichiura, 4 of oxyuris vermicularis, 3 of strongyloides stercoralis, and 2 of ascaris lumbricoides. No evidence of infection with tapeworms, flukes, or coccidia was found. Amongst the patients who had been soldiers and had served in the Philippine Islands the frequency of infection was much above the average, reaching the high figure of 42.46 per cent.

BEQUESTS TO HOSPITALS.—Under the will of the late Miss Marianne Frances Hasker, of St. Leonard's-on-Sea the following legacies are bequeathed: £1,000 each to the Earlswood Asylum for Idiots, the Brompton Cancer Hospital, and the East Sussex Infirmary; £500 each to the Hospital for Sick Children, Great Ormond Street, St. Mary's Hospital, the London Hospital, Charing Cross Hospital, King's College Hospital, the Royal Hospital for Incurables at Putney, the Samaritan Free Hospital for Women, and the Chelsea Hospital for Women. The ultimate residue of her estate is to be held in trust for such hospitals and charitable institutions, and in such proportions, as the executors shall think fit.—The late Mr. Thomas Paul Potts, of Bishopton, Stratford-on-Avon, bequeathed £500 to the endowment fund of the Stratford-on-Avon Hospital, and £200 to the Stratford-on-Avon Nursing Home and Children's Hospital.

AMERICAN CONGRESS ON TUBERCULOSIS.—At a conference of the officers ond Advisory Committee of the American Congress on Tuberculosis, held in New Orleans, on May 7th, the previous arrangement to hold the Congress in St. Louis, in 1904, was changed, and it was decided that it should be held at Washington on April 4th, 5th, and 6th, 1905. As there is to be an International Congress on Tuberculosis at Paris, in 1904, it was deemed possible that some foreign delegates might be prevented from attending the Washington meeting on that account. One committee has been already arranged to have charge of the section on pathology and bacteriology. It is constituted as follows: Dr. Simon Flexner, chairman; Dr. William H. Welch, Dr. George J. Adami, Dr. Theobald Smith, and Dr. F. F. Wesbrook. Dr. George Brown, of Atlanta, Ga., is practically the executive officer of the Congress, and all who desire to present papers before the Congress should apply to him.

THE THERAPEUTICAL SOCIETY.—The first volume of the *Transactions* of the newly-instituted Therapeutical Society contains an account of its origin and formation, in addition to the scientific papers communicated to the Society, in its first session, with the discussions thereon, reports of which have already appeared in the BRITISH MEDICAL JOURNAL. In July, 1902, Dr. Robert Lee suggested that it was desirable a Pharmacological Society should be formed in connexion with the Apothecaries' Company, as there was no such society in London at that time, and the Apothecaries' Hall was well fitted for the meetings of the Society, as it was "provided with specimens of drugs and gentlemen well acquainted with their properties and uses." The Master of the Apothecaries' Company of that year resolved to endeavour to form such a society, and applied to the Court of Assistants to allow the Society, when formed, to have the use of the rooms in the Hall without charge, which was readily agreed to. At a preliminary meeting it was determined that the name of the proposed society should be changed from that of the Pharmacological Society to that of the Therapeutical Society in order that all modes of treatment, as well as that by drugs, might be considered. At the same meeting Sir William Thiselton-Dyer was chosen President of the Society. The need of a Therapeutical Society, it is held, was shown by the fact that there is no other medical society in London devoted to the investigation of the use of drugs and modes of treatment, a subject which concerns all medical practitioners. The Society will endeavour by corresponding members and others to obtain papers regarding medicinal plants and other substances which are used in other parts of the globe. Already there are corresponding Fellows of the Society in North America, Italy, South and Central Africa, and Australia, and it is hoped that others will join from other parts of the world. We cordially wish this, the youngest of the London medical societies, a long and prosperous life.

PRESENTATION.—Mr. Percy Newell, on leaving Crowborough, Sussex, where he had practised for twelve years, in order to reside at Bexhill-on-Sea, was presented by his numerous friends and patients at Crowborough with a handsome silver tea and coffee service, and an address on vellum. The presentation was made at Bexhill on September 10th.

MEDICAL VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BIRKENHEAD BOROUGH HOSPITAL.—Junior House-Surgeon (male), resident. Salary, £80 per annum.

BIRMINGHAM PARISH.—District Medical Officer. Salary, £350 rising to £400 per annum.

BRADFORD POOR-LAW UNION.—Medical Officer for the Sanatorium for Consumptives; resident. Salary, £100 per annum.

BRENTFORD UNION.—Medical Officer and Public Vaccinator. Salary, £110 per annum.

CAMBRIDGE: ADDENBROOKE'S HOSPITAL.—(1) Honorary Assistant Surgeon; (2) Assistant Surgeon, resident. Salary, at the rate of £30 per annum.

CITY OF LONDON HOSPITAL FOR DISEASES OF CHEST, Victoria Park, E.—Physician to Out-patients.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark.—(1) Four Clinical Assistants; (2) Clinical Clerks in Out-patient Department.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House-Physicians. Honorarium, £25 for six months.

JERSEY GENERAL DISPENSARY AND INFIRMARY.—Resident Medical Officer. Salary, £120 per annum.

LONDON COUNTY ASYLUM, BANSTEAD.—Junior Assistant Medical Officer, resident. Salary, £150 per annum.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Medical Officer. Salary, £180 per annum.

MANCHESTER SOUTHERN AND MATERNITY HOSPITAL.—Resident House-Surgeon. Salary, £60 per annum.

SAMARITAN FREE HOSPITAL, Marylebone Road, N.W.—Clinical Assistants.

SEAMEN'S HOSPITAL SOCIETY, Greenwich.—(1) House-Physician at Dreadnought Hospital; (2) Junior Resident Medical Officer at Dreadnought Hospital; (3) House Surgeon at the Branch Hospital. Salaries, £65, £40, and £50 per annum respectively.

SOUTHAMPTON INCORPORATION.—Resident Assistant Medical Officer of the Workhouse Infirmary.—Salary, £120, increasing to £150 per annum.

SOUTHWARK UNION.—Medical Officer for the Workhouse and Casual Wards. Salary, £105 per annum.

WESTON-SUPER-MARE HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

YORK DISPENSARY.—Resident Medical Officer. Salary, £120 per annum.

MEDICAL APPOINTMENTS.

AUBREY, T., M.B.Lond., M.R.C.S., District Medical Officer of the Bridgwater Union.

BOWDEN, J. B., M.D., M.S.Edin., Certifying Factory Surgeon for the Kidwelly District, Carmarthenshire.

BISHOP, C. E., M.R.C.S.Eng., L.S.A., District Medical Officer of the Shepton Mallet Union.

BRICE, Ernest, L.R.C.P., Honorary Life Member and Examiner to St. John Ambulance Association.

BROWN, J. Walter, B.A., M.B., B.Ch., Medical Officer of Health for the County of Hokiarga, New Zealand, and Native Medical Officer for the Hokiarga District.

CONDON, F. W., F.R.C.S., L.R.C.P.I., Certifying Factory Surgeon, for the Ballyshannon District of the Counties of Donegal and Fermanagh.

ECCLES, W. McAdam, M.S.Lond., F.R.C.S.Eng., Joint Lecturer on Anatomy, St. Bartholomew's Hospital.

GARSTANG, Walter, M.B., B.Ch.Vict., L.S.A.Lond., Honorary Surgeon to the Hulme Dispensary, *vice* A. Brown Ritchie, M.B., C.M.Edin., resigned.

LIGHT, Leonard W., M.R.C.S., L.R.C.P.Lond., Medical Officer and Public Vaccinator for the Bradwell District of the Maldon Union

MILLEA, William C., B.A., L.R.C.P.& S.Edin., Medical Officer of the South District of the Poplar Union.

NORMAN, R. H., M.D.Lond., B.S., M.R.C.S., L.R.C.P., Anaesthetist to the Tottenham Hospital.

RITCHIE, A. Brown, M.B., C.M.Edin., Consulting Surgeon to the Hulme Dispensary.

THOM, E. B., M.B.,Ch.B.Glasg., Certifying Factory Surgeon for the Linlithgow District of the county of Linlithgow.

ST. BARTHOLOMEW'S HOSPITAL.—The following appointments to the resident staff have been made:

House-Physicians.—Senior: E. L. Martin, W. W. Jeudwine, E. G. Pringle, F. H. Nokes, R. M. Ranking. Junior: A. H. Hogarth, H. U. Gould, J. E. Payne, N. Macfadyen, C. R. V. Brown.

House-Surgeons.—Senior: H. V. Wenham, V. G. Ward, A. M. Amsler, H. Love, R. C. Elmslie. Junior: N. E. Waterfield, H. Statham, A. S. Petrie, T. J. Faulder, L. Noon.

Resident Midwifery Assistant.—E. E. Young.

Extern Midwifery Assistants.—E. L. Farncombe (October to January), A. F. Alexander (January to April).

Ophthalmic House-Surgeon.—E. B. Etherington-Smith.

DIARY FOR NEXT WEEK.

FRIDAY.

West Kent Medico-Chirurgical Society. Royal Kent Dispensary, Greenwich Road, S.E., 8.45 p.m.—Clinical evening.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

BROOKS.—At Mile End Infirmary, Bancroft Road, London, N.E., on September 17th, the wife of J. Harley Brooks, M.D., M.B., C.M., Medical Superintendent, of a daughter.

FORMAN.—At Cloughton, Yorkshire, on September 6th, the wife of Bernard Gilpin Forman, M.B., of twin daughters.

HOUGHTON.—On September 22nd, at Clifford House, Wallisoote Road, Weston-super-Mare, the wife of Leonard F. Houghton, L.R.C.P.Lond., M.R.C.S.Eng., of a son.

LORD.—On September 18th, at Penlan, Colwyn Bay, the wife of Robert E. Lord, M.D., B.Sc.Lond., of a daughter.

WATKINS.—On September 16th, at Stonelegh, Newton-le-Willows, Lancs., the wife of Harold E. Watkins, M.R.C.S.Eng., of twin sons.

DEATH.

PILLOW.—On August 31st, Henry Pillow, M.D.R.U.I., of 41, Merton Hall Road, Wimbledon (late 1, Pembridge Gardens W.), aged 62 years.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aetiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

PHENAD would be glad to know of any place in London or Europe where the rays from radium are being tried as a cure for cancer.

R. S. wishes for the name of a small book or pamphlet dealing with the subject of diet suitable for the working classes.

MOTOR TRIKE would be glad of information respecting suitability of motor tricycles in hilly country practice, but where roads are well kept by steam rollers. Any information regarding type, engine, expense, etc., would be welcome. A motor bicycle is not desired.

HANDBOOKS ON INSANITY.

"CERTIFICATE" asks to be recommended a small handbook on insanity which would be of use to a general practitioner, one having special reference to the signing of certificates.

*** He would probably find Dr. Charles Mercier's *Textbook of Insanity* (London: Swan Sonnenschein and Co., 1902, 6s.), which was reviewed in the BRITISH MEDICAL JOURNAL, May 10th, 1902, p. 1153, suited for his purpose. Other suitable books are *Insanity and Allied Neuroses*, by Dr. G. H. Savage (London: Cassell and Co., 1891. 9s.) and *Clinical Lectures on Mental Diseases*, by Dr. T. S. Clouston, fifth edition (London: J. and A. Churchill, 1898. 14s.).

ANSWERS.

S. L.—The view in England is that the life of the mother is always to be preferred to that of the child. The treatment of labour obstructed by hydrocephalus is perforation.

IGNIS.—We find on inquiry that in the best and most modern type of crematorium there is no visible flame, and that the consumption of the body is effected by the glow of heated air.

NEMO.—Mosso's sphygmomanometer is made by the mechanician in Professor's Mosso's laboratory, Turin, and can be obtained from him. The cost is about £7. It is more adapted to original research in a laboratory than to clinical work. It is a large heavy instrument, and, with a recording drum, could hardly be carried from one side of a room to another except in a properly-constructed packing case.

JUNIOR PRACTITIONER.—We would recommend our correspondent to refer to the letters of our Sydney correspondent published during the last year or so. From these he will gather that the conditions of practice are very much the same in New South Wales as in this country; the conditions in other Australasian colonies are similar. Appointments are not numerous, and local men naturally have the best chance of obtaining them.

INCOME-TAX ABATEMENT.

RURAL DISTRICT.—Lecture fees, railway fares, and other expenses incurred in obtaining the D.P.H. are not an admissible deduction for income-tax purposes, nor can any abatement be claimed by reason that a M.O.H. is attending a course for the diploma. The point was dealt with in the BRITISH MEDICAL JOURNAL of June 20th last, p. 1444, in an answer to "Sana."

DIABETIC GANGRENE.

DIABETES.—No other treatment has, as far as we are aware, been suggested for diabetic gangrene than opium, codeine, or other sedative internally, and the application of antiseptic dressings to the limb until the line of demarcation has formed. Some cases have recently been treated by the administration of fresh pancreas, but so far, we believe, no satisfactory results have been attained. In some of these cases it has been shown that the diabetes is secondary to the gangrene.

THE UNIVERSITY OF LONDON.

MR. JOHN J. PICKLES.—The constructions put on the regulations on pages 510 and 523 of the BRITISH MEDICAL JOURNAL, September 5th, are we believe correct, but the regulations discussed refer, it should be remembered, to internal students only. Our correspondent is probably reading from a copy of the revised regulations for external students. In the introductory paragraph concerning London University (page 511) attention is carefully drawn to the fact that the regulations for such students differ in some respects from those for students attending at the constituent schools of the University.

THE BACTERIOLOGICAL DIAGNOSIS OF PLAGUE.

STUDENT asks whether there are any micro-organisms that could be mistaken for the bacilli of bubonic plague. We could have given him a more satisfactory answer if he had expressed his question more explicitly. A thoroughly competent bacteriologist can diagnose a case of plague with reasonable certainty; an imperfectly experienced person cannot, and it ought not to be necessary to say that it would be a piece of most reprehensible policy to entrust the diagnosis to a person of the latter type. Perhaps our correspondent refers to diagnoses based entirely on the morphological characters of the bacilli. If so, we may say that in typically-affected lymphatic glands a diagnosis may frequently be made directly from the morphological appearances of the bacilli; otherwise, cultural methods and animal experiments are requisite in addition.

CHRONIC DYSPEPSIA AND GASTRIC DILATATION.

J. F. S. writes: "Colonel, A.M.S." will perhaps find that attention to the quantity and frequency of meals would be of value in his case; 14 oz. of food, calculated in the solid form, would probably agree, if only two meals a day are allowed. Milk may be estimated to contain 8.3 per cent. of solid matter. The two meals should be taken at an interval of twelve hours or little less. See Rabagliati's *Aphorisms, Definitions, Reflections, and Paradoxes*, Bailliere, Tindall, and Cox, 1901. Residence at Vichy would be a somewhat doubtful experiment.

DR. HADDON (Denholm, N.B.) writes: In answer to "Colonel A.M.S. (Retired)," there can be little doubt that he will get no benefit from Vichy or any similar place until his stomach returns to a normal state. That can be effected most speedily by fasting from everything except water for a time. How long the fast should be continued could only be determined by the doctor attending during the course of the fast. A rest of some weeks might perhaps be required in such a case, but even one week might lead to an improvement. If he dare not fast—for I know the dread of fasting even among reputable members of the profession—then he might try fruit twice daily, say at 8 a.m. and 3 p.m. Ripe, sweet apples, raw or roasted, might suit him. If he cannot carry out treatment at home, he would find the Surrey Hills Hydro, at Caterham, the best place for him in this country; but if he sailed by the Royal Mail Steam Packet Company to La Guayra, in Venezuela, and went to Caracas for the winter, where he could live on papaw and other delicious fruits, he would recover, if recovery be possible without surgical interference.

*** If our correspondent has not taken the opinion of a surgeon accustomed to dealing with gastric cases, we should recommend him to do so.

BRITISH PRACTITIONERS IN SWITZERLAND, FRANCE, AND ITALY.

DR. J. F. CARRUTHERS.—(1) A qualified English practitioner desiring to practise in Switzerland, even if he desire to practise only among his own countrymen, is required to pass the Federal examination in that country. The degree of Doctor of Medicine does not give the right to practise. The Federal examination may be passed at Basle, Zurich, or Berne in German, and at Geneva or Lausanne in French. The applicant is advised to obtain from one of his teachers in this country an introduction to a professor at the university at which he proposes to pass the examination. His proper course would be to call upon the Rector of the University. We are informed that every information would be afforded, and that no difficulties are placed in the way of candidates. At the University of Zurich, the three examinations which it is necessary to pass are held as a rule at the following periods of the year:—First Examination: End of January and mid-September. Second Examination: End of January and mid-September. Third Examination: Beginning of January, end of May, and beginning of October. At Basle the next examinations are in October. At Geneva the examinations are held in the third week of October, and in the second week of July, at the opening and conclusion respectively of the winter and summer session. At Lausanne the examinations take place as follows:—First and second examinations: April and October. Final examinations: February and March, and June and July. (2) For practice in France the degree of M.D., obtained before a French faculty (Paris, Montpelier, Nancy, Bordeaux, Lyons, Lille, or Toulouse) is required. This regulation applies to Algiers. The degree, however, confers the right to practise only if it has been obtained on precisely the same conditions as those to which French students are subject—that is to say, before registration as medical students they must produce evidence of having passed the examination of the French diploma of Bachelor in Classical Education (Arts and Philosophy) and the certificate in Physical, Chemical, and Natural Science, and they must go through the regular curriculum of professional study, and must pass all the five professional examinations required of French students. The degree of M.D. is still obtainable by holders of British diplomas under the old conditions of exemption, at the discretion of the Minister of Public Instruction, from any preliminary examinations in Arts or Sciences and from portions of the professional curriculum and examinations. The degree obtained in this way does not, however, confer the right to practise in France. The wards of hospitals and laboratories are still freely open to foreigners; and for those who may wish to obtain the purely honorary M.D. degree the facilities offered in the way of dispensation from preliminary examinations are even greater than heretofore. Application for such exemption must be addressed to the Minister of Public Instruction, to whom the documents showing the examinations passed by the candidate in his own country and the degrees or qualifications possessed by him must be submitted. Fees to the amount of £69 must be paid. (3) For practice in Italy a foreigner must (*a*) obtain an authorization (*abilitazione*) from one of the Royal Universities of Italy; or, (*b*) if he desires to practise only among foreigners, he is at liberty to do so. New legislation is, however, threatened, by which it is proposed to restrict the right to practise in Italy to citizens of countries granting reciprocity to Italian practitioners. In Italy medical studies are conducted in Government Universities under the immediate supervision of the Ministry of Public Instruction in Rome. There are several Universities, one in each of the most important centres of the kingdom, such as Rome, Turin, Naples, Genoa, Palermo, Pavia, Pisa. There is only one medical degree in Italy, and it is that of Doctor in Medicine and Surgery. The title is conferred (by the Rector of each University) in the name of the King. The examination can be passed at any of the universities, and the students can transfer themselves from one to the other. An original thesis must be presented.

NOTES, LETTERS, Etc.

DR. ROBERT HARLAND WHITEMAN.

WE have received the following letter from Mr. Perry, a furniture dealer in the Hornsey Road. We publish the letter, as there may be some relative or friend of Dr. Whiteman (whose name is not in the *Medical Register* for 1903) to whom the information would be of interest. Mr. Perry writes:

"Excuse my writing to you for advice, but I think you are perhaps the only gentleman capable of giving it to me. I have found in the back of an old picture I bought amongst many others at a sale on Monday last a medical diploma relating to one Robertum Harland Whiteman, 1850, of the Edinburgh College (Collegium Edinburgense). The wording is in Latin; it has the Scottish stamp on, 10. 7. 50 over a blue seal, with £15 printed on it, also a red seal at the left-hand corner with two cupids on, with a fine engraving as a headpiece of two men in the nude, with coats of arms, shields, etc. I am writing you this small description so that you will recognize the degree. If you could assist me to discover the owner or nearest relative I should be obliged to you; or perhaps you could direct me to the district this doctor once belonged to."

GLOVES FOR POST-MORTEMS.

DR. ARTHUR HALL (University College, Sheffield) writes: I wish to call the attention of such of your readers as may have frequent necropsies to make, or the handling of specimens preserved in formalin, to the great value of what are known in the trade as "photographers' gloves." They are by far the best gloves for the purpose that I have yet come across, and I have tried almost every variety of surgical or *post-mortem* gloves that are on the market. They have the following advantages: They are easily slipped on and off, as they do not fit tightly; they are much less slippery when wet than rubber gloves; they have gauntlets which protect the lower forearms; they are lined with linen material so that they feel pleasant to the hands, and do not make them sodden with sweat like the tight rubber gloves; they are absolutely comfortable, even if worn for a long period; and, lastly, they are far more durable than the thinner kinds of rubber gloves. The comfort of being able to perform a necropsy satisfactorily, without the hands smelling at all afterwards, is very great, and for those to whom formalin acts as a irritant they are extremely useful. As I know there are many who, like myself, have given up the ordinary slippery rubber gloves as more bother than they are worth, and as under the name of "photographic gloves" they may never know of these, I write you these lines. I may add that I first discovered their existence whilst seeking for something for quite another purpose, namely, for the use of those who suffer from eczema of the hands. With these gloves they can have their morning baths, or otherwise wash and lather themselves in comfort without wetting their hands at all. I have obtained mine from Messrs. Down Brothers, St. Thomas's Street, Borough; possibly other makers sell them also. I can assure your readers that they are a great boon for regular use.

TREATMENT OF PROSTATITIS.

MR. FREDERICK J. FAGGE (Llanfairfechan) writes: My remarks in answer to "Prostate" had special reference to the erections connected with the prostatitis from which the patient suffered, the idea being that they were partly the result of acidity of urine, the gouty diathesis being the possible cause. That was the *rationale* of the treatment recommended. I treated a patient with continual painful erections on this plan with success, though unconnected with prostatitis: One effervescing citrate of lithia tabloid in a tumbler of warm water three times a day; a 5j of sulphate of magnesia with each dose of mercury, or enough to induce gentle action of the bowels, seeing that any accumulation in the rectum would be likely to increase the disorder. Belladonna and glycerine āā 3j passed up the rectum seemed to aid the case.

PILOCARPIN.

DR. WILLIAM ROPER (Bridport, Dorset) writes: A frequent use of this drug in South Africa for pneumonia, principally among blacks in Rhodesia and near Kimberley for about a year without a single death and uniformly good results, has led me to form different opinions with regard to its (1) action, (2) uses, and (3) dangers than those learnt from books. Most diverse opinions have been expressed about this drug. Under each of the three above headings I may be allowed to give some of my own experiences.

(1) *Action.*—In quite a few cases it has no effect whatever except in inducing perspiration. In the majority of cases it seems to have some effect in increasing the saliva: it also sometimes induces vomiting and purging. It would appear that without trying it there is no telling what its action will be besides that of perspiration. I recollect clearly the action of moderate doses of pilocarpin nitrate and muriate in my own case. Nitrate caused perspiration, vomiting, purging, and very slight bronchial expectoration; muriate caused perspiration only. Neither had the slightest effect on the saliva.

(2) *Uses.*—In South Africa a white man, an alcoholic with palpitation of the heart, nephritis, and habit of perspiration lost came for treatment. I injected hypodermically ½ gr. pilocarpin nitrate. I have never known this fail to induce perspiration, and although I have always stopped with the patients to give the antidote atropine if required, this has never been necessary; after this ½ gr. was given, this time by the mouth, without any effect, so hypodermically ½ gr. was again injected, with perspiration much more profuse than on the first occasion, and after this the habit of perspiration without drugs was quite regained; he became a man of free perspiration. Babies, instead of getting ipecacuanha or a mixture containing it, got pilocarpin, beginning with about $\frac{1}{60}$ gr., and increasing till they began either to perspire or expectorate, and got good results.

(3) *Dangers.*—I have never had any bad effects from its use. In a few cases the profuse salivation produced even by moderate doses has led me to think that if the patient was not strong enough to sit up and expectorate for an hour, there might be a danger of oedema from this cause. I could also understand that a profuse perspiration might in some cases be attended with collapse, but I have never noticed anything to make me think that it had any intrinsic action in depressing the heart, and I have given it in the early stages of pneumonia frequently to a patient as above stated of drinking habits with palpitation of the heart, and to a patient who had malarious fever, enteric, and pneumonia at one and the same time.

Can I offer a suggestion concerning its use in Bright's disease, particularly of the practice of using the weaker diaphoretics and other agents until the patient is getting *in extremis* and more or less waterlogged, and then in the absence of perspiration giving a full or moderate dose of pilocarpin in perhaps a hot pack? Pilocarpin in moderate doses under my own eyes may induce such a profuse salivation as to endanger oedema when the illness was thus far advanced.

A safer and quicker plan would appear to be to give pilocarpin in Bright's disease at the onset as the first diaphoretic in very small doses, and if no objectionable effects showed themselves, to increase the dose until the patient's skin acted, a result which in the vast majority of cases would be attained without the trouble of other agents—hot packs, etc. Perhaps these observations may lead, by ventilating the subject, to clearer opinions of a drug concerning which most contradictory opinions have been expressed. I hope to learn from any of your correspondents of any dangers, particularly cardiac, in the use of this drug whose value in pneumonia, particularly in the early stages, has been so frequently witnessed as to recommend its future use.

VACCINATION.

DR. J. REID (Southfields, S.W.) writes: I have lately seen a child who has been treated for six months without effect for eczema following on vaccination. It is confined to the face and head. As a scraping indicated that the disease was ringworm I put him under suitable treatment. As vaccination is blamed for many troubles the case may be worth recording. I may say that in 1882 I had an inveterate case of eczema which cleared up after the child was vaccinated.

LETTERS, COMMUNICATIONS, ETC., have been received from:

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Introductory Addresses

AT THE

OPENING OF THE MEDICAL SCHOOLS.

UNIVERSITY OF LIVERPOOL.

By Sir Dyce Duckworth, M.D., LL.D.,

Senior Censor and Treasurer, Royal College of Physicians of London; Physician and Lecturer on Clinical Medicine, St. Bartholomew's Hospital; Member of the Governing Body of the University of Liverpool.

REVERENCE AND HOPEFULNESS IN MEDICINE.

Mr. Vice-Chancellor and Gentlemen,—I do not suppose that many in my audience to-day can understand the sentiments or the peculiar emotion with which I enter on the pleasing and honourable duty of inaugurating the first Autumn Term of this Faculty. You may, however, try to imagine the feelings of one who, having been born in this city, and begun his preliminary studies in the humbler days of this School, returns, after the lapse of many years, to take part in a ceremony, memorable as this truly is to-day, when you formally meet here for the first time as the newly constituted Faculty of Medicine of the University of Liverpool.

Retrospect.

The retrospect and the outlook from my point of view are indeed amazing, if not overwhelming, and my feelings find for the moment a fitting expression in the words of the American poet:

> There are thoughts that make the strong heart weak,
> And bring a pallor into the cheek,
> And a mist before the eye.

and if, as he wrote again, "The thoughts of youth are long, long thoughts," certainly my wildest and longest thoughts never projected such a future for this School as it has attained, nor led me to conceive that I should ever occupy the position I have now the honour to hold as a member of the Governing Body of this University.

Let me offer my warm congratulations to my fellow citizens on their wisdom and energy in seeking and securing the Charter for their University. Lancashire men generally know what they want, and what they want they commonly contrive to get; and, further, with what they get they are proverbially generous. Hence, we may be sure that every possible assistance will be afforded from Liverpool to its lately federated academic sisters in their efforts to secure like privileges for themselves.

I should fail in my duty on this occasion if I forebore to mention the names of at least some men in this city who have a large claim on its gratitude for their prescience and untiring energy in promoting not only the welfare of this Faculty, but the establishment of the University itself. I specially indicate them because they are members of this Faculty, and also for the reason that they belong to that profession which, as I shall show presently, has always been foremost throughout the history of this city in promoting literary and scientific culture. I allude to my fellow-graduates, Sir William Banks, Dr. Davidson, and Dr. Caton, also to Dr. Glynn and Mr. Edgar Browne. I pay them this small tribute without any disparagement to the loyal and generous support afforded by others in this School, or the munificent benefactors amongst their wealthy and enlightened fellow-citizens. To the latter I, as a Liverpool man, offer hearty thanks, and it is certain that they rejoice already in the good fruit borne by their noble gifts. That you, and those who shall follow you here, may not forget some of the pious founders of this Alma Mater who have passed away, it is pleasing to find that their effigies, in bronze or marble, are already reverently placed within these walls.

It is not easy to realize that a few centuries ago the inhabitants in this locality were barely civilized. The nearest home of literature was in the Monastery at Monksferry, Birkenhead. As time wore on the town grew, and from its natural advantages became a centre of commerce, placing itself in touch by its mercantile navy with all parts of the habitable globe, supported by a larger contingent of the King's ships than now frequents its waters. It would be wrong to imagine that great commercial centres can have little in common with learning or the cultivation of the arts, for we have the witness to the contrary in the history of Athens, Venice, Florence, Genoa, and Pisa, to mention no modern instances, which could be readily adduced, and in the examples of Dante, Ariosto, Michael Angelo, Columbus, Galileo, and many others, who all sprang from commercial cities.

In 1791, Lord Erskine remarked of Liverpool: "This quondam village, which is now fit to be a proud capital for any empire in the world, has started up like an enchanted palace, even in the memory of living men." At that time William Roscoe, the self-taught scholar, a native and world-wide ornament of the town, was at work on his famous *Life of Lorenzo de Medici*, and later on he published the *Life and Pontificate of Leo X.* With kindred spirits in the persons of Drs. Currie, Dobson, F.R.S., Shepherd, and Traill,[1] he aided in founding the Literary and Philosophical Society and the Botanic Garden. The old infirmary,[2] then on the site of the present St. George's Hall, with its adjacent lunatic asylum—the latter largely promoted by Currie, attracted then, as its successors have done since, the beneficence of the town, while in the persons of Joseph Brooks Yates, Dr. Joseph Brandreth, Dr. John Bostock, F.R.S., and others, the lamps of literature and science were kept well alight in Liverpool.[3] We know that surgery was not neglected, for Mr. Alanson and Mr. Henry Park were eminent in their day, the latter being the first to advise the operation of resection of the knee-joint.[4] In later days, amongst public men of high eminence, natives of the town, may be mentioned the greatest orator of the Victorian era, William Ewart Gladstone, and the most eloquent of living bishops, my old schoolfellow, Dr. Boyd Carpenter. Nor can I forget that the great scholar and theologian, Bishop Lightfoot, and the brilliant Dean of Westminster, Arthur Penrhyn Stanley, received their earliest training here. It would be easy to prolong the list of our fellow-townsmen who have reached high places in all departments of professional life. No memory is treasured among us with greater affection and reverence than that of the wise and munificent philanthropist, William Rathbone.

In more recent times this city has had the advantage of eminent schoolmasters, amongst whom may be mentioned Drs. Iliff, Conybeare, Howson, and Dawson Turner. Nor have the claims of the fine arts and the provision of a public library been disregarded, as witness the foundations of the Walker Art Gallery and the William Brown Library, the latter much stimulated by the efforts of the late Sir James Picton.

With the establishment of University College in 1882, a new educational era may be said to have begun here, and owing to the public spirit and munificence of the Corporation and the wealthier citizens, endowments and necessary equipments have been showered upon this College in a fashion which has long put the metropolis of the empire to shame in respect of its University. Dr. Currie recognized the generosity of Liverpool when he wrote, in 1784, that "it is not the character of its inhabitants to let a plea for a public institution that can be proved to be useful or honourable fall to the ground for want of contributions to carry it on."

The result of those wise endowments has been, as it always will be, to secure a body of eminent teachers who are content with their vocation and able to give their best energies to their duties. But, as I shall show presently, there is still more to be done in this direction.

We may not forget the labours of those who have presided and toiled here during the earlier years of this College, when there was need for much patience and great powers of organization; and it may be fairly believed that but for their efforts there would have been smaller justification for the grant of an academic charter to this city. You have a professoriate which compares favourably with that of any of our universities, and an equipment in laboratories which few can equal and none surpass; and when I enumerate these advantages, and add, in respect of this Faculty, the opportunities for clinical study which the new infirmary, closely

[1] Subsequently Professor of Medical Jurisprudence at Edinburgh. I attended his lectures in 1863. He died before completing the course.

[2] The second infirmary was opened on the site of the present buildings in 1824. The foundation stone was laid in 1821 by Lord Stanley, grandfather of the present Chancellor of the University. The Fever Hospital was established by Drs. Rutter and Currie, aided by Mr. Roscoe.

[3] In 1798, Currie, however, modestly wrote that "we must look for celebrated men to future generations. Those that come after us will have some advantages that we have not had, especially in literature."

[4] Mr. Park was born in Liverpool in 1745, and placed at the age of 14 with one of the surgeons of the infirmary. Afterwards he became a pupil for three years of Mr. Percivall Pott at St. Bartholomew's Hospital. He was appointed Surgeon to the infirmary in 1767, and held that office for thirty-one years. He died in 1831. He may fairly be regarded as the pioneer of modern conservative surgery, but his success attracted little or no attention from surgeons for at least half a century afterwards.

adjacent, and the other new and improved hospitals in the city so richly afford, I may congratulate you as Liverpool students of medicine on your fortunate position.

Amongst the staff of teachers here in my time were Dr. Nevins and Mr. Hakes, whose recent deaths we have to deplore. They were both distinguished in their departments, and I owed much to the former, who was an admirable and lucid lecturer. I was proud to gain the medal in his class of materia medica. There are still with you three others, Dr. Cameron, Dr. Waters, and Mr. Bickersteth; the two former of these are recognized as cultured physicians, while the brilliant operative skill of the latter was only, if at all, surpassed by his and my old preceptor, Mr. Syme.

The New University.

This century will probably be remarkable as regards the foundation of several new universities in England. The wisdom of such a provision is, as you are aware, viewed with suspicion and misgiving in some quarters. These feelings arise from the fear that these new academic centres may decline from the older ideals of what such places should be, and become little better than mere technical schools to qualify youths for the special work of professional, commercial, or industrial life. Should this be the outcome of these new foundations, nothing, indeed, could be more disastrous or fatal to the cause of higher education in this country. To obviate any such declinature from the proper conception of a university, and to meet the objections not unnaturally felt by prudent and thoughtful men, it is incumbent on all who establish such new foundations to insist upon, and build up, a complete Faculty of Arts, which shall be the sole entrance gate to the further and specializing work of all the other Faculties. With that security, and with that alone, we may entertain no doubt as to the welfare and value of these institutions. With Sir Richard Jebb, whose authority all will recognize, I will say that

> It is of vital moment for all our higher education that the literary studies should hold their own. The bearing of such studies is not directed at once to utility or bread winning, but consists in the value of a discipline, intellectual and moral, derived from the works of the ancient Greek genius, with all their claims on the student of thought, of political society, of literature and of art, the Roman evolution of institutions and law, and the studies of modern history and philosophy. No university is complete which does not keep an honoured place for such studies as these. Let every regard be paid to the requirements of modern life, but let it also be remembered that there was a national need even more urgent than the preparation of special aptitudes. It was the need for a wider diffusion of such a liberal education as should train the intelligence, humanize the character, and form not merely an expert, but an efficient man."[1]

It may not be unnecessary to press home this matter here and now, and to let it be widely understood that the passport to a degree in any special Faculty is only to be obtained after completion of the Arts curriculum.

We hear much, perhaps a little too much, about original research in these days and the necessity for it, but, gentlemen, this matter does not concern you in your pupillary stage, and is to be left till you have, by full and wide learning, learned how to teach yourselves, mastered much of what is already known, and discovered what particular lines of inquiry you are qualified to pursue. It is to be hoped, however, that this school may find in your ranks some who shall one day bring credit to it in this respect.

These considerations are not, I venture to believe, out of place to-day, when I address many amongst you who are now at the outset of a career in medicine. To equip yourselves fittingly for that profession will demand some knowledge of the several sciences on which the science and art of medicine are based. I say some knowledge, for you cannot in the nature of things become expert, as students, in any one of them. Medicine has been well termed "a jealous mistress," and if you are tempted to linger by the way in undue prosecution of one or other of the preliminary scientific studies, you may be sure that you will lose your balance and never attain to excellence in practical medicine. The modern curriculum, while demanding adequate knowledge, yet affords none too much time for the work to be done. You may never venture to relax your efforts from to-day till such a time as you cease to face your examiners, and it should be your earnest endeavour to be ready for each appointed examination that awaits you.

Those of us who have had experience as examiners know well the difference between candidates who have had the benefit of a liberal education before they entered upon medical study, and those who, although showing aptitude, have not had that advantage. It is the difference between efficiency and expertness, between width and narrowness. The one has studied with ease, the other with difficulty, and the consequent disability is apt to remain with the latter throughout his career. As with the literary, so with the preliminary scientific part of your training; both should be accomplished before entering on the direct studies in medicine; and the tendency now, and for the future, is to remove the scientific work from the hospital schools altogether, and to relegate it to late school life or the first academic year in a university. In thus recasting the curriculum the student is set free to devote his whole time and energy to learning his profession and enabled to utilize to the full the opportunities afforded by his medical teachers and his hospital. He has four complete years wherein to do this. If he has properly availed himself in due order of such arrangements, he will find his work easier than it would be otherwise, and he will bring a stronger mental grip and a fuller intelligence to bear on it. Your lines are certainly well laid in this place for a curriculum such as this.

I pass on to remark in respect of hospital training that while we are justly proud of our new hospitals, which secure for the sick all that modern knowledge has supplied in the way of comfort, safety, and skilled nursing, it must be admitted that in some of them we have barely kept pace with the developments in clinical teaching which are now recognized as necessary. The best clinical teachers in England are as a rule the busiest men in the profession, and, their chairs being unendowed, it is possible for the allurements of private practice to weaken their assiduity in this branch of their work. It is not sufficiently realized that in many instances they are actually contributing largely to the education of their pupils, or foregoing even the small payments they might receive in order to secure better equipments for teaching them. Where, I ask, is anything like this carried out in respect of any of the other professions? I reply at once—nowhere. Let me, then, propound the remedy for this sorry state of matters. Our University clinical chairs should be endowed, and well endowed, to enable the fittest men to hold them and to devote more time and energy to this work. We find no particular modesty on the part of physiologists and pathologists when they seek for adequate endowments, and therefore those who direct clinical training must no longer remain averse from pleading for appropriate support to promote the best clinical work in any institutions which are as yet defective in this respect. It has been recently asked: "Do our hospital benefactors ever remember that they contribute nothing towards the support of scholars who are perpetually seeking and finding new means of alleviating or preventing the miseries which render hospitals necessary?" (Dr. Gee.) Bedside work in our hospitals needs some of the munificence of the wealthy to furnish both teachers and students with the best equipments wherewith to make progress. The hospital schools of medicine should henceforth be devoted entirely to the study of disease and the successful treatment of it, and no part of the energy of their staff should be expended on the teaching of ancillary subjects. You have wisely settled this arrangement here, and we look hopefully for similar provisions elsewhere in the immediate future.

I note that objections have been raised to the representation of this University on the General Medical Council of the United Kingdom, chiefly on the ground that there are already too many university representatives on that body. In my opinion the Council has become unnecessarily large, but so long as its present constitution remains unaltered, I can conceive of no more worthy institutions than the universities to elect the members of it. I feel confident, therefore, that you will not fail to secure a seat on that Council for a representative from this University.

Reverence in Medicine.

In addresses of this kind it is customary to unfold the long array of studies which lie before you, and to urge you to excellence in all them. Such a proceeding is no longer necessary, and I shall not follow it. Neither shall I repeat the well worn platitudes respecting the nobility of the profession you have chosen, or the prospects of hard servitude in it, with an assured moderate competence and a full measure of self-respect as a set off against the ingratitude and unconscionable exactions of the public; but I will try instead to raise your thoughts very briefly to-day to two

[1] Extracts from an address delivered at University College, Bangor, on Some Aspects of Modern University Education, June, 1903.

aspects of our work which appear worthy of consideration and likely to prove helpful and encouraging.

You have perhaps observed that the tone of my remarks thus far has been reverential in respect of those of our fellow-citizens who, either by way of intellectual gifts, personal service, or princely munificence, have at last secured for this mercantile centre the dignity and educational privileges of a complete university. And I have, no less, assumed a hopeful tone in my anticipations of the future which lies before you, and those who shall follow you, in regard to these new provisions.

Extending those two mental moods, and applying them more particularly to our meeting to-day, I propose to take for my text the subjects of Reverence and Hopefulness in Medicine. And first in regard to reverence. A distinction must be drawn between reverence and veneration and, again, between it and awe. Truly, there are awful things in medicine, but we, at all events, may never stand in awe of them in any but a reverent manner, one void of any feelings of dread. The reverence I have now in my mind relates rather to the great men who have preceded us in our calling, and to the work and influences they have left as our heritage. A habit of reverence is, indeed, everywhere becoming, but I venture to think it is less manifested in these days than was formerly the case. An absence of reverence may be safely regarded as a symptom of decadence in manners. The spread of democracy and an extension of education need not necessarily entail bad manners, or even any lapse from the better ones of the past, but those who have reached my time of life can testify to a somewhat prevalent spirit of irreverence, and a tendency to a laxity of manners and conduct which was certainly less marked in our earlier years. Such conduct, if not immoral, is at least significant of bad breeding. Good manners never savour, as it is sometimes supposed they do, of servility. With Kingsley I will say that "reverence for age is a fair test of the vigour of youth, and conversely, insolence towards the old and the past, whether in individuals or nations, is a sign rather of weakness than of strength," and I will add no more on this aspect of my subject.

In speaking of reverence as due to the great men who have enriched our profession in the past, I am not unmindful of the mental habit which prevailed, especially in the seventeenth and eighteenth centuries, when physicians reposed so blindly upon tradition, and were held in bondage by it; but it may be questioned whether the experimental methods which subsequently broke these fetters are not answerable for some negligence in regard to a study of the thoughts and characters of many of the great masters in medicine.

This is an age of active experimentation and research, and there is a tendency in such studies to engross the observer so fully with his own speculations and results that he is apt sometimes to overlook, or even disregard, the conceptions and work of those who have tried in former days to seek out truth. The marvellous aids with which modern science has furnished the investigator of to-day are apt to make him forget the slender equipment which was available for his predecessors and the difficulties of the problems which then faced them. He thus fails to realize the value and intensity of the mental acumen which alone carried them to such revelations as they made.

It was doubtless imperative for John Hunter in his day to say, "do not think, but try," but I venture to believe that now we may do well to think a little more, and perhaps try a little less, for, indeed, original research demands thought and no little calm meditation. The present tendency in the laboratory is to secure prompt results, and so we have many such laid before us, some of which, achieved in the absence of due meditation, are either immature or profitless.

The history of medicine has been too little taught and studied in England, and some measure of the failure to render due reverence to the work of the past is probably due to ignorance of it. We therefore gladly welcome the recent foundation of the FitzPatrick Lectureship on this subject in the Royal College of Physicians, which has removed a reproach too long merited in this country, and earned great credit for its instigator, Dr. Norman Moore. It is seemly that the names and achievements of those who have successfully built up the foundation and fabric of all that is true and certain in medicine should be known and regarded with reverence, and, in particular, that we should learn when we can what manner of men they were who did this, for assuredly there is a reverence due no less to the characters than to the accomplishments of men; and our reverence should reach to veneration when we find both of these nobly blended in any individual.

It is doubtless less easy to feel reverence for the best and ablest men we have known, and for those who have lived in more recent periods, than for the great luminaries of past centuries, but we have to judge them all by their work, by their power of unlocking the secrets of Nature, and by the evidence we have as to their personal qualities. Not seldom, in the absence of history, a man's achievements may afford a clue to his character. We may know little as to the personality of Hippocrates, Dioscorides, Aretaeus, or Galen, but we feel sure that they possess the full instincts of our art, and in each case a *mens medica*. In later days we have the materials for forming opinions as to what manner of men Vesalius, Morgagni, Ambroise Paré, Boerhaave, Scarpa, and many other gifted ones of our calling were.

I urge you to learn something of such men, and call on you to praise and reverence them; and, further, not to rest content with the mere knowledge of their names as you meet with them in the course of your reading, but by some study to realize the quality of their work in relation to the age in which they lived. You will gain much from such efforts. Coming to still later days, the lives and work of Harvey, Sydenham, and Glisson should enlist your interest, while the commentaries of Heberden, the lives and researches of John Hunter, Matthew Baillie, Laënnec, Bright, Graves, Addison and others, should awaken in you a fervid enthusiasm for your profession. Put away at once the idea that nothing is to be learned from a study of the old medical masters, that their work is effete, and little of it fit to bear the light of this twentieth century, but rather accept the opinion of Samuel Johnson, who affirmed that "if no use be made of the labours of past ages, the world must remain always in the infancy of knowledge; if every man were to depend upon his own unassisted observation for his knowledge of disease, every man would be marvellously ignorant, and the science of medicine would stand still, or cease to be."

I venture to suggest that in all examinations for the Doctorate in Medicine some part should relate to the history of medicine. This subject could hardly be dealt with in any previous examinations. Such studies as I have just urged will certainly tend to show you which way genius lies, and you will come to agree with Kingsley, who declared that he had no respect for genius where there was no strength and steadiness of character to support it. Let me add to all this, and inculcate the reverence that is everywhere due to the body of man in life or in death, whether in your daily intercourse in the world or in your relations with the sick, and especially in your studies in anatomy and pathology. In few vocations are men more compelled to revere and respect our common humanity than in ours, and we are never permitted to forget that our bodies, whether in vigour or in decay and repulsiveness, are designed to be temples of the Holy Ghost.

Hopefulness in Medicine.

I pass on to my second point, that of hopefulness in medicine. This period in the lives of most of you is truly one in which hope is a prominent feature, one in which little or nothing appears to blight or darken it. If you are not inspired by hope now you never will be. Cherish that gift now and always. You will be wise not to look too far ahead in your lives, but to take each day's work as it comes and make the best of it. Let your hopes, with an accompanying ambition, lead you to high aims at the beginning of your career, for "the realm of the possible was given to men to hope and not to fear in"; and as Dr. Currie has said—and Liverpool should ever venerate his memory—"no man can tell whither fortune and merit may lead him."

The present condition of our profession at home and throughout the empire is, I think, better fitted to inspire hopefulness for the future than has ever been the case. The entrance to it is better guarded now than formerly, and fewer men, though of higher attainments, are enrolled in its ranks. There must therefore be a larger and more remunerative field of usefulness before you. The fuller comprehension of disease, and the improved methods of treatment for the sick, should prove a source of satisfaction to all who enter the profession to-day, while the disclosures which await prudent research in competent hands, and the fresh application of them, may well inspire all of us with greater hopefulness for the future.

We look forward, for instance, with good hope to the investigations now in progress respecting the nature and origin of cancer—that ghastliest of maladies—and especially because

they are being conducted on wide and most searching lines, and are in the hands of men who are entirely competent to deal with so difficult a problem. With the discovery of the origin of cancer we may fairly hope to find the means for the prevention of it. The study of malaria on such lines has already proved fruitful in this direction, and no small part of the credit of this success is due to the labours of our countryman Manson, and to your distinguished professor, Major Ross, whom we are proud to have trained at St. Bartholomew's Hospital. The School of Tropical Medicine in this city, so well inspired by Sir Alfred Jones, is taking an active part in enlarging the knowledge of those grave maladies which so sadly disable and kill our brethren in various parts of the empire, and we take this work as an earnest of further achievements here, for no better centre for directing it exists anywhere in the three kingdoms.

I speak next of hopefulness in the conduct of diseases as a necessary equipment of all who practise our art. We have—and always have had—optimists and pessimists in medicine. I commend neither mood, for it is certain that each may be the outcome of ignorance or inexperience. While nothing is more damaging to a man's reputation that an unfulfilled evil prognosis, it fares badly with him who, not having recognized indications of danger, has consequently raised false hopes: yet there is a measure of hopefulness which is always becoming in our duties, which is potent to inspire action and to secure the highest efforts of all engaged in the service of the sick.

Those whose studies lie mainly in morbid anatomy and pathological processes may naturally be disposed to pessimism in medicine. We, who study disease in our fellow-creatures are more inclined to hopefulness, for we, happily, can often recognize a residuum of recuperative power in the body and its organs which, though gravely disturbed, are yet capable of restoration to normal or, at least adequate, functions.

Such hopefulness should be carried to the bedside of the patient, and its power is not small both in reinforcing remedial agents and in promoting recovery. With it lies much of the personal influence exerted by those who succeed well in practice, and the absence of it sometimes explains the failure of others, often able and accomplished, to impress or inspire their patients. Do not imagine for a moment that in thus urging a rational and wholesome degree of hopefulness in our professional conduct I am approaching the subject of that pestilent nonsense called "faith-healing," which in these days of widely spread religious indifference is captivating many silly people. I am much mistaken if Lancashire wits and common sense pay any heed to this American importation. It is truly deplorable to find that the sacred name of Christian is claimed for this method by persons whose education ought to be a safeguard against such preposterous folly. Perhaps the explanation may be found in the sage remark of John Hunter that "everything new carries a greater weight, and makes a deeper impression on a weak mind." We shall do better to take to heart the words of Peter Mere Latham: "Medicine, as it begins to touch upon higher interests, even the interests of life and death, should feel itself in alliance with higher motives than any which can be thought to help and quicken its pursuit as a mere science. Medicine claims a sort of moral respect in the handling; it calls upon the conscience as well as the intellect for more caution to avoid error and more fearfulness of overstepping the truth."

We may never omit to recognize the humanity of our profession, to pay reverence to the sick, and to cherish hopefulness in the relief of their despondency and sufferings.

Let me commend to you lastly some thoughts of distinguished men who attained excellence in their several spheres of work. Sir Joshua Reynolds declared that "those who were determined to excel must do their work whether willing or unwilling, morning, noon, and night, and they will find it be no play, but on the contrary very hard labour." For students of medicine each day's work must be done on that day. Time lost at the outset, and this is not an uncommon occurrence, is never recovered, and a full measure of work must be prudently combined with the necessary relaxation and recreation of the body.

"In the medical profession," wrote Dr. Addison, "all truly valuable and practical knowledge is to be attained by a proportionate sacrifice of time and labour, and, as a general rule, the one may fairly be measured by the other." Dr. Gooch remarked that "if the object of the student is to learn only what has been *said* on a subject, the pursuit of knowledge is an easy task, but if his object is to learn what is *true* on a subject, the pursuit of knowledge is the task of a lifetime."

As students you must know well some of your books, but you must no less come face to face with the facts you read about. You must see, handle, and arrive as far as possible at the real inwardness of all that is laid before you. Bacon has told us that "some books are to be tasted, others chewed and digested." Let all your knowledge be first-hand—of a quality, that is, which will at once ingratiate any examiners you may have to encounter. As you learn to study now, so will you go on in after-life, for we are all students to the end of our career. If your foundation is not now widely and firmly laid, you can look for no worthy superstructure hereafter, for Bishop Berkeley has told us that "he who would make a real progress in knowledge must dedicate his age as well as his youth, the later growths as well as first-fruits, at the altar of Truth."

And, happily, not seldom do we find fruitful work in our profession coming from men who have surpassed even the ordinary span of life, and yet have maintained their mental activity and enthusiasm after years of labour. Never be afraid of hard work, for it is the savour of life and the best of mental antiseptics, and, as Sir James Paget once said, "learn to believe in the consequences of it."

Yet, again, do not be downcast if your measure of ability is small, for it can be mightily reinforced by perseverance and assiduity. Let such as are diffident in this respect ever be inspired by this apophthegm: *Maximum mediocris ingenii adjumentum diligentia*.

Some of you will not fail in due time to enlarge your experience at other schools in this country and abroad. It is always profitable to continue study under new teachers, and not seldom is it a source of lifelong happiness to make friends amongst those who have been educated elsewhere. The metropolis of the empire presents a field of clinical opportunities which surpasses even the wealth of material to be found in this or any other great centre; while Paris, Berlin, and Baltimore afford attractions to all who are able and ambitious to add to their professional knowledge.

In this city, you are not without great advantages, both for work and recreation. The environments of this College may not be exactly uplifting or inspiring to-day, but we may believe that they were more so a century ago if we read the verses of a native whose affection for the town was certainly greater than his poetic power, for Mr. William Colquitt, a Bachelor of Arts of Christ's College, Cambridge, and a member of a family well known here at that time, thus expressed himself.[6]

> The Infirmary extensive is compleat,
> The rooms commodious, the assistance great:
> Here are green trees and walks 'midst herbs and flowers
> To reconcile the patients' restless hours.
>
> The public walks upon Mount Pleasant made
> Are set with verdant trees and flowers to shade:
> These rural bowers and prospects form a screen,
> Delightful in a summer's day serene.

Alas! these rural bowers and verdant trees no longer existed, even in my earliest days here; yet, under the enlightened spirit of a modern civic Corporation may we not hope and live to see such trees and walks as Colquitt described restored to this vicinity and to other parts of this city?

Even now, within easy reach, you can enjoy the purest air, and follow, or even compete with, some of your professors in prosecuting games and athletics, and so maintaining your health.

From this day onward, and throughout your careers in the profession, chequered as these surely will be, let me urge you in the solemn and beautiful words of Sir Thomas Watson, to remember that "in your most successful efforts, you are but the honoured instruments of a superior power." The motto of our dear old city, too, must not fail to rise sometimes in gratitude to your lips, *Deus nobis hæc otia fecit*, and then you may go on your way with a light heart for—

> Hope shall brighten days to come,
> And Mem'ry gild the past.[7]

Gentlemen, I wish for the future of all of you every success and happiness; that you may do credit to this Faculty, and show to the world what manner of men the new University of Liverpool can introduce to our profession.

[6] Poems, Chester, 1802.
[7] Moore.

ST. MARY'S HOSPITAL, LONDON.

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THE RELATIONSHIP OF THE MILITARY MEDICAL SERVICE TO THE CIVIL PROFESSION.

After some introductory remarks Dr. Warren Low said: The empire has just passed through a war of a magnitude such as it has not experienced for nearly fifty years, and within the last three months some of the lessons of that war have been crystallized in an essentially English manner, and delivered to us in blue paper covers, the result of the labours of a learned Commission. There is much food for reflection in these bulky volumes, and there is much that especially concerns us as members of the medical profession.

Without touching a host of details on which there is much to say, and which will doubtless lead to controversy in the future, the salient fact remains that we were not prepared in times of peace, in the matter of military medical *personnel* and equipment, for a war of the magnitude of that in South Africa; nor do I think that, in the present temper of the nation, we should be very much better prepared were the same to occur in the near future.

As a Secretary of State wrote, as far back as 1859, after a similar Blue Book had been issued on the subject of the medical arrangements of the Crimean war:

> England has always been jealous of standing armies. In their long struggle for freedom the people have found how important it is that they, as well as the Sovereign, should have a hand on the hilt of the sword of State. But armies, once feared by the people on account of their liberties, are now feared on account of their pockets. We do not like expenditure because we do not like taxes.[1]

That, I think, was the secret of our medical unpreparedness before the Crimea, and that was the cause of our want of preparation in 1899; it was not the fault of any department—it was the fault of the nation. Economy was the motive, and, naturally, the humanitarian department of the army felt it first and most acutely. Those who had the distribution of the money felt, as one witness expressed it, that everything except the trained fighting man could be purchased in the open market on the day: and that is practically what was done, and, as is usually the case, there followed on a period of injudicious parsimony a perfect saturnalia of lavish extravagance.

The medical arrangements of the campaign did not break down in the sense that some alarmists would have us believe; they were certainly not ideal, there was much that was obviously defective, and might have been remedied, but that they stopped short of an absolute *débâcle* was due to the superhuman exertions of the Royal Army Medical Corps, both officers and men, and to the Anglo-Saxon adaptability of some thousands of civilian doctors, nurses, and orderlies who were sent out in lavish profusion, but who, it must be remembered, were absolutely uninstructed in what their duties would be, and in the special features of their work.

However, out of this evil has come a certain measure of good. We have acquired at this fearful cost very many valuable lessons, and there are also certain other definite gains. By this time the man in the street is aware that England has been brought into closer union with her Colonies; but another union has taken place, and one that touches more nearly our own profession. We civilian medical men, who served in South Africa, realize that we have at last been brought into a closer contact with our colleagues in the military medical service.

The absence of militarism in England has had a peculiarly isolating effect on the soldier. The average Englishman, until lately, knew little about the army. He knew nothing of its habits, its traditions, or its history. He scarcely knew one regiment from another unless he happened to have a near relative a soldier. They were, generically, all soldiers to him, and he was singularly incurious as to anything further. This isolation, in a less degree, affected the army medical officer. Once he had obtained his commission he practically disappeared from the sight of his civilian contemporaries. In the old days he lived with the regiment and formed new ties and new friendships, necessarily military. The exigencies of foreign service and distant stations kept him out of touch with his old hospital, and he seldom had the companionship of members of his own profession, or the opportunities of listening to or joining in the technical discussions of a medical society. As a result he felt himself, to a certain extent, cut off from his civilian colleagues, and he practised his profession in his own way, only conferring with his military *confrères*, till there grew up an idea, among both civilian and military doctors, that in some mysterious way the practice of medicine, surgery, or hygiene in the army differed from that in vogue in the world at large, and that the soldier, both individually and in the aggregate, differed in his metabolism and the products thereof from the civilian. It is not difficult to understand how this isolation originated when we remember our national characteristics and the history of our Army Medical Service.

It would serve no useful purpose to go back further than the regimental surgeon, who is practically coeval with the formation of regiments, though it is interesting to learn that in the reign of Edward II, there was a chirurgeon with every 1,900 men, whose pay was 4d. a day, in addition to which he had the privilege of shaving the soldiers.[2]

But the history of the Army Medical Service practically dates from the regimental surgeon; he held the Sovereign's commission, which, in the early days, he bought, in the same way as did his regimental colleagues, and he was as much an integral part of the regiment as was the colonel.

Later, somewhere in the early half of the eighteenth century, he received an assistant—the surgeon's mate—but the latter was only a warrant officer, and did not receive a commission until 1796, when he was styled an assistant surgeon.

The regimental surgeon was responsible, apparently, to his military superiors for the medical care of his regiment, and, besides his pay of 6s. a day, he had an allowance proportioned to the strength of the corps for medicines, hire of hospitals, and the medical expenses of detachments and recruiting parties. On expeditions, and elsewhere, groups of regiments apparently formed hospitals, which were under the administration of the regimental surgeons. That these hospitals were sometimes very effective is instanced by a report on the hospitals established in the Low Countries in 1748 for the troops under the Duke of Cumberland. These hospitals were said to be a model of medical administration.

"The patients had separate and clean beds, frequent changes of linen, and were attended by well-trained female nurses; while hospital store-keepers and clerks, acting under the surgeons, furnished every requisite with promptness and regularity."[3]

A lengthy correspondence took place between the Duke of Cumberland and the home authorities with reference to the expenditure incurred in maintaining this establishment, and the official mind had certainly not then grasped the fact that the nation had incurred a certain responsibility towards the sick and wounded soldier.

These apparently effective arrangements are in marked contrast with those of the ill-fated Walcheren expedition, over sixty years afterwards, when in less than eight weeks, within a hundred miles of England, out of 40,000 men, 7,000 died of fever, and over 14,000 were wrecked in health for the remainder of their lives. Although the medical arrangements of this expedition were of the crudest description and totally inadequate, the responsibility of this enormous mortality rests rather with those answerable for the strategy than with those on whom the medical arrangements devolved. A well-known stanza aptly summarizes the history of the whole campaign:

> The Earl of Chatham, with his sword half drawn,
> Stood waiting for Sir Richard Strachan;
> Sir Richard, longing to be at 'em,
> Stood waiting for the Earl of Chatham.

The earliest trace of a distinct administrative organization is said to date from 1756, when Lord Barrington, as Secretary for War, was directed to establish a Hospital Board for the administration of the medical service of the army then intended to take the field, "in order that, under its direction, this part of the military service (including medicines, hospital stores, and other requisite provision for the sick, might be carried into execution with ability, regularity, and dispatch."[4] Mark you! "with ability, regularity, and dispatch," this was the mandate 150 years ago.

It was by a member of this Board that John Hunter was appointed in 1760 as a staff surgeon to the expedition to Belleisle, and again in Portugal in 1763. In 1790 he succeeded

[1] *Westminster Review*, January, 1859. Right Hon. Sidney Herbert, M.P.

[2] Fonblanque, *The Administration and Organisation of the British Army*. p. 32.

[3] Fonblanque, p. 38.

[4] Clode's *Military Forces of the Crown*, vol. ii, p. 463.

Mr. Adair as Surgeon-General and Inspector-General of regimental infirmaries. Later, a Physician-General was appointed, and the Inspector-General of Regimental Infirmaries made a separate office. There was thus established a dual system and a dual control; the Hospital Board under the Surgeon-General being responsible for the appointment of staff surgeons and physicians and hospital mates to the army, and also for the proper equipment and maintenance of what were known as general hospitals; while to a certain extent, independent of this control, was the system of regimental surgeons and regimental hospitals. That this gave rise to acrimonious disputes, chiefly as to the bestowal of patronage, one has only to read the correspondence of the time to ascertain. By a Royal Warrant dated 1798 the Surgeon-General's duties were extended, and comprised the election of all staff surgeons, regimental surgeons, and assistants, and the formation of the medical staff of every expedition which left the country. At the same time the Board was dissolved, and the three officers comprising it acted separately, each having distinct duties and patronage assigned to him, and each being held responsible for his own acts.

Mr. Thomas Keates, a surgeon at St. George's, succeeded John Hunter as Surgeon-General, and his conduct during his tenure of office was somewhat severely animadverted upon by a Commission of Military Inquiry, held in 1807. This inquiry, and the really very able defence of Mr. Keates, published under the title of "Observations on the Fifth Report of the Commissioners of Military Inquiry," 1809, is a most valuable source of information to any one who is interested in the military medical history of this period. A most interesting personage, whose existence is brought into considerable prominence by this Commission, is a gentleman styled the Apothecary-General, who, though not a medical man, held a Royal Patent to supply the army with drugs and instruments. His emoluments were 10s. a day, and he also claimed the right to make a legitimate profit on the goods supplied.

The Commission estimated this profit at something between 30 to 40 per cent. on the capital invested, but the Apothecary-General's estimate was the most modest one of 13 or 14 per cent.; in either case, when we consider that his bills amounted to between £60,000 and £70,000 per year, the office certainly appears to have possessed very solid advantages.

In 1810, probably as the result of the findings of this Commission, the posts of surgeon and physician-general were abolished, and a director-general of hospitals appointed, with two principal inspectors of hospitals to assist him, and with a few unimportant changes this arrangement lasted until the time of the Crimea.

It will thus be seen that in the earlier history of the Army Medical Service the highest administrative posts were given to civilians, and that the regimental surgeons' chances of promotion were few and precarious. Sweeping changes were made in 1858 as a result of a Commission, of which Mr. Sidney Herbert, afterwards Secretary of State for War, was a member. With the more recent changes, again the result of a Royal Commission's report, you are probably all familiar.

The status and pay of the R.A.M.C. officer have been improved, opportunities for study leave are to be granted, and, what is of even greater importance, in the earlier stages of their career officers may be seconded to hold posts in civil hospitals. It is to advances in this direction that we must look in the future for improvement in the Army Medical Service; and it will be by these means that the civil and military branches of our profession will be brought into closer union. But the establishment is still too small, even in peace; and in war I am told it would require the addition of about 500 medical officers before three army corps could take the field with their proper medical *personnel*. It is obvious that no Chancellor of the Exchequer would ever agree to such an increase, except in a national emergency; nor is there necessity for such an establishment except to meet the requirements of a great campaign.

> The true lesson of the war, in our opinion, is that no military system will be satisfactory which does not contain powers of expansion outside the limit of the regular forces of the Crown, whatever that limit may be.[5]

These words of the Commissioners, intended to cover the whole military system, apply with peculiar force to its medical service. Unlike any other branch of the service, the medical department possesses a reserve for war, of *personnel*, already trained in every professional requirement. There was, I believe, never any real difficulty in obtaining civil medical aid during the late war; 1,065 civilian surgeons were sent out by the War Office, and this does not include numbers locally engaged in South Africa, nor the staffs of the various civil hospitals and the excellent medical units sent with the Colonial contingents, constituting a reserve considerably in excess of the regular medical service, and though, as a rule, thoroughly efficient in the professional part of their work, still untrained as regards that amount of administrative knowledge which is bound to fall to the lot of a medical officer with an army in the field. The result was that, in a great number of instances, there was a division of labour, the purely professional work falling to the civilian, while on the regular officer devolved the drudgery of administration. In the future I understand that much of the administrative detail will be rendered less cumbersome; and more, I trust, will be handed over to some other than a R.A.M.C. officer; but of what is left, though of necessity in the higher ranks, it must remain with the regular officer, in the lower it should, I think, be more evenly distributed between the active and reserve members of the service. This should be done, if for no other reason, in order to obviate the comparisons between members of the same profession that were freely made by laymen in South Africa.

The feature of the late war was improvisation. We have it—on the authority of the Commission—that this ailment affected the strategy, the organization, and the equipment, throughout the whole service; while it was obvious to every one interested that this was the main obstacle to perfect success of what I may term the mobilization of the Medical Reserves. Almost any system of organization, had it existed in 1899, would have produced a body of civilians, selected with more judgement than could possibly be exercised in the wild rush that took place at the commencement of the campaign. Almost any system would have secured men who would have been, to a certain extent, cognizant of what was required of them, beyond their purely technical work, and who, in many cases possibly, would have known something of those with whom they were destined to serve; with the result, that a less number would have been required, and so considerable expense saved the State; while the work of the remainder would have been more even, more effective, and would have been performed more in harmony with the traditions of their colleagues in the regular service. It thus becomes almost a duty of any one, who, by some chance, has had opportunities of studying this matter, to assist in formulating a scheme that would tend to prevent the recurrence of the unpreparedness that existed in 1899. This must be my excuse for bringing the matter before you this afternoon. In the search for such a scheme of organization, one naturally turns to the custom of other nations. There is a prevailing belief that every able-bodied German has in his possession a card, on which are inscribed his exact orders with regard to rendezvous and equipment, in the event of mobilization. Whether this be so or not, the initial difficulty in comparing the military institutions of Continental nations with those of England is the system of universal service. On the Continent there is not that distinction between the military and civilian branches of the profession which exists here. Practically every civilian doctor has once been in the army and would merely revert to his former position in the event of war; while, in times of peace, both work side by side in the large State hospitals. In Russia a large part of the civilian practice is in the hands of the military doctors, and their military hospitals would appear to play almost the same rôle that our large voluntary hospitals do in this country.

Any proposed scheme, therefore, must be elaborated with special reference to the peculiarities of our voluntary system of military service, and must also keep in view the fact that the civilian in England is absolutely unacquainted with military organization, and even the minimal amount of administrative detail that is essential in the daily routine of military life. There are, I think, certain main principles which should be observed in formulating any scheme.

First, that any organization of the civil medical profession for war must have as its framework the R.A.M.C. If the simile did not lend itself to misinterpretation, I would like to suggest that the civilians should form the soft parts of a body, of which the R.A.M.C. would be the skeleton. It has been suggested that the various medical schools should each organize a medical unit ready to take the field; but I feel convinced that military units, organized and administered by civilians entirely, are neither economical nor really effective;

[5] Report of Royal Commission on War in South Africa, 1903, p. 83.

and, without in any way wishing to depreciate the work done by the civilian hospitals in South Africa, I cannot but think that in future, the care of the sick and wounded would be more economically provided for by one really effective administration than by the irregular efforts of private enterprise, however well intentioned; and I would suggest, though it is possibly outside the scope of my subject, that the efforts of the charitable should be rather directed towards the provision of such luxuries and comforts or aids to convalescence as a State service could scarcely be expected to provide. In this we could not do better than borrow the German plan of appointing a Commissioner, whose duty it would be to organize such efforts in order to prevent waste and overlapping.

The second principle is that any civilian absorbed into the R.A.M.C. for the purposes of a war should be as far as possible indistinguishable from the regular members of the corps. This is not the time to discuss the question of army rank for medical men. We must accept the system as we find it; and, since the R.A.M.C. officer has rank, so must the reservist, if we wish to avoid some of the anomalies of the late campaign.

Thirdly, in a profession such as ours, in which the environment of the individual—especially of the young individual—is constantly changing, we ought not to extend the period of liability for service for longer than a year at a time. This principle of an annual register I consider very important.

Fourthly, there must be some graduation of the civilians selected. In the late war there were only two grades—consultants and civil surgeons, as they were called. There were nine of the former, and, as I have said, over 1,000 of the latter. In the last class were all degrees of excellence and the reverse—the brilliant student and, possibly from the same school, his friend the chronic: the youth just qualified, and men, some of whom had ten to fifteen years of experience behind them. All were equal, all were asked to perform similar tasks; and there was seldom any selection exercised of men for work for which they appeared especially adapted. It is wonderful that such a want of system should have obtained even a semblance of success. This graduation should, I think, be based as far as possible on professional standing and attainments.

Lastly, it is important that each Medical Reserve officer, as we may call him, should know, within reasonable limits, the unit to which he would be attached on mobilization. He would then have some idea of the circumstances under which he would serve; and in many cases, as I shall show later, he would have had some opportunity of forming the acquaintance of those with whom, in the event of a campaign, he would be associated. The system of army corps lends itself particularly well to this arrangement, and there seems no reason why each reserve officer should not be attached to a certain army corps, and in many cases to a particular unit, and not be merely one of a list of names at the War Office for general service. These, then, are the main principles:

1. Organization with the R.A.M.C. as a framework.
2. For the Medical Reserve officer temporary rank equivalent to that of the regular R.A.M.C. officer.
3. An annual register.
4. Graduation according to professional standing.
5. Appointment to definite army corps, and if possible to units.

Three grades of professional standing suggest themselves:

A.—The class to which the civil surgeons in the late war mainly belonged—that is to say, men within the first two or three years of their qualification. In this case preference, as far as possible, would be given to those who had held resident appointments in any hospital; and of these between 300 and 400 would be required for three army corps, though the actual number called out in any campaign would naturally depend on its nature and duration.

B.—Members of the junior honorary staff, either medical or surgical, of the metropolitan and provincial hospitals. Certainly in another war we should have to realize the importance of the trained physician. In South Africa we had far too few; but in the stationary and base hospitals a few more men of the class to which the assistant physicians of our London and provincial hospitals belong would have been of the greatest value. With regard to his colleague, the assistant surgeon, his place would be in what in foreign armies are termed the field ambulances. In these days of specialism, however much we may regret the fact, it would appear difficult for a man to become a skilled operator unless he has devoted a considerable proportion of his time to the practice of surgery to the partial exclusion of other branches of his work.

The exigencies of general practice, and the varied nature of the Royal Army Medical Corps officer's work, prevent many men from acquiring this skill; but there are in the R.A.M.C. skilled operators who have had opportunities of extensive practice in such big hospitals as Woolwich and Netley and in some of the larger stations of India. It is to supplement, and not to supersede, men like these, that I would call up Class B.

Class C. would consist of a few of the heads of the profession, both medical and surgical, and with them I would include at least one eminent pathologist. These gentlemen would be attached to the large base hospitals, as presenting to them the greatest spheres of usefulness, and they would also be present for general advisory purposes.

The experience of the South African war has taught us that there is little difficulty in procuring men during a campaign, and I think, therefore, that a comparatively small inducement would keep the register of each class full during times of peace; while the justification of the extra expenditure involved would be the enormous saving of money effected by instituting an organized plan for a hasty improvisation at the outset of the war. Bearing this in mind, I would suggest the following details:

Class A.—During their year of service in the Medical Reserve the members of this class would undergo a month's training, if possible, in the field. For this they would receive £1 per day. In the event of mobilization each would be attached to a unit in a certain army corps, with the pay, allowances, and temporary rank of a lieutenant R.A.M.C. In the event of their re-enlisting for a third period of service, they would, on mobilization, receive the pay and rank of a captain R.A.M.C. I do not think that we could expect to keep this class on the register for more than four or five years from qualification, as they would then have settled down into practices which it would be difficult for them to leave.

Class B.—It is with this class that the greatest difficulty arises, as they have all fixed positions and responsibilities from which it is difficult for them to escape for any lengthy period. However, recent experience has shown us that in a national crisis either a feeling of patriotism or a spirit of adventure took many such to South Africa, while institutions like our hospitals exhibited considerable public spirit in keeping their appointments open for them during their absence. About fifty of these would be required for three army corps, with their equivalent base hospitals and lines of communication; and, as this number would be distributed over England, Ireland, and Scotland, it could not be said to deplete the staff of any one hospital. A small retaining fee would have to be paid to the members of this class, and, bearing in mind how occupied is their time, I would make the question of training optional. In many instances members of Class B would already have received training in Class A. On mobilization, each would proceed to a definite unit, with the style of a Major R.A.M.C., and with the pay and allowances of the senior members of that rank. The period of liability to service would again be a yearly one; but, as an inducement to re-enlistment and to training, I would suggest that after three periods of enlistment with training the officer would, on mobilization, take the rank and pay of a lieutenant-colonel.

For the last class, C, no adequate recompense could be made during times of peace for a lien on their services. But it would necessarily be a limited class, and would, I think, be considered a position of some honour. In the event of mobilization each would take the pay and rank of a surgeon-general. I have said nothing of the R.A.M.C. Militia, and Volunteers, as I consider these belong to their own services, and would probably themselves require a system of expansion such as I have outlined for the regular army. In the event of Militia or Volunteers proceeding abroad for active service, they would take their own regimental medical officers and bearer companies, but would probably rely on the regular service for the remainder of their medical requirements.

The question of a medical service for home defence would be, no doubt, simplified by the fact that there would be, in the event of invasion, compulsory service for all of us.

Gentlemen, such is the rough outline of a scheme for organization of the civil medical profession in time of war. I feel that it possesses many imperfections, but, as a foundation on which some workable scheme may be based, I believe it to be sound. I do not flatter myself that it is not open to criticism. I can hear the cynic ask, "Why pay every year

for what we can obtain, for very little more when the occasion arises, with always the possibility that such an occasion may never arise?" This has ever been the attitude of Englishmen; and, that it has been a false economy, one has only to read the reports of Royal Commissions from their earliest inception to learn.

[Dr. Warren Low concluded his address with some appropriate advice to the students.]

MIDDLESEX HOSPITAL, LONDON.

By WILLIAM HERN, M.R.C.S.,
Dental Surgeon, Middlesex Hospital.

THE RELATION OF DENTAL HYGIENE TO THE GENERAL HOSPITAL.

[ABSTRACT.]

IN welcoming the new students to Middlesex Hospital Mr. William Hern dwelt on the value of medicine as a calling in that it developed the highest faculties of man, and affords the widest scope for the exercise of courage, perseverance, tact, and human kindness. He referred also to the enhanced facilities now offered by the well-equipped laboratories and class-rooms lately opened at the Hospital Medical School for the acquisition of scientific professional knowledge.

One of the great differences between the medical methods of past and present times was the substitution for the old empiricism treatment based upon an inquiry into the causes of disease. The modern practitioner must resemble the farmer, who knew, and betimes destroyed, the sources of blight and mildew. From the utilitarian point of view the labours of the patient investigator into the causes of disease far outweighed in value the devotion and self-sacrifice of the unscientific philanthropist and guardian of the sick. The popular tendency was to ignore the causes of ill-health. Had the doctor, in *Macbeth*, complied with the king's request to find the disease of the Commonwealth, he must have pointed to the unsuspecting king himself. Martyrs to the results of evil habits and the thralls of dental disease seemed to regard their troubles as the thorns that must inevitably spring into being with the rose of life. Satisfaction in the possession of remedies for a complaint must not blind them to the necessity of doing all they could to render that complaint impossible. To this end the medical man required to impress upon the people the strict observance in every-day life of hygienic principles. Thus alone might the doctor's visits be rendered few and far between. A sick man's recital of his woes had usually reference to his symptoms only; the medical man's duty was to discover and treat the underlying cause.

Oral sepsis, that is, a foul and infectious condition of the mouth cavity, and dental caries or decay were affections of which it was most important to ascertain the origin. The mouth, being open to the air, moist and warm, and having distributed in it from time to time the débris of food (itself the habitat of minute organisms) served as a most efficient catchment chamber and breeding-house for rapidly-multiplying disease germs.

Following in the steps of Leuwenhoek, Gallipe, Miller, and others had been able to demonstrate that though some of the micro-organisms of the mouth were harmless to man, others might occur therein which had been identified as associated with maladies the most deadly to humankind.

The effect of the mischief-working germs on the gums was to produce inflammation therein which might lead to loss of teeth through suppurative inflammation, to general but minor disturbances of health, or to acute and fatal blood poisoning. That the worst possible results did not commonly follow on prolonged oral sepsis was because probably the patient by degrees became to some extent immune to his own poison.

Dental caries, or decay of the teeth, was a disease of all ages of the world's history, and most rife among civilized peoples. Nearly 80 per cent. of the children in industrial schools were found, in an investigation by the British Dental Association not long ago, to be subjects of it. Of some half-dozen theories advanced to account for dental caries, that which might be termed the chemico-parasitic, attributing the affection to the work of disease germs, was the one now regarded as tenable. The predisposing causes of caries—those which might be said to prepare the soil for the parasitic growths—included abnormalities in the form, structure, and position of the teeth, debilitating illnesses, congenital tendencies, certain occupations, the somewhat obscure influences coming under the head of "civilization," and last and mainly the diet, more especially one consisting largely of vegetable matter, and, it might be added, milk. But that which constituted the primary or exciting causes of caries was the form and situation of the various parts of the teeth, whether such as would retain decomposing and therefore infectious food débris, or such as being rounded or continually swept by the tongue and lips did not admit of the lodgement of particles. It followed from this that though the teeth of a robust man did not suffer in the same degree, they showed caries in the same positions as in the teeth of the sickliest and most weakly of mortals.

Experiments with sound natural teeth placed in various mixtures had evolved the following facts: Albuminous and fatty matters mixed with saliva and kept warm produced by decomposition an alkaline liquid non-causative of caries. Fermented starch and sugar yielded an acid solution which, like a weak solution of lactic acid, effected the first stages of caries; the second stage was accomplished by the solvent action of micro-organisms provided by the saliva. For the prevention of caries, therefore, the important desiderata were, first and foremost, regular and systematic sweeping of the teeth with toothbrushes stiff enough thoroughly to clear away food remnants, and secondly, the use of antiseptic mouth washes. That these measures and the consequence of their neglect had not been brought before the lower orders of society, their children especially, was a reproach to preventive medicine, if not to the State. Thousands of patients yearly sought the hospitals because of ailments directly or indirectly due to unclean mouths, caries, or loss of teeth. A State which could afford to control the drunkard, provide the poor with free education, and appoint ophthalmic surgeons to Board Schools should surely be able to organize some system of gratuitous dental supervision and treatment to supplement the necessary limited work of our few existing dental hospitals. If it should be impossible to institute State-aided dental dispensaries, there might at least be provision for instructing the children of the poor in oral hygiene. The cause no less than the effects of oral caries or sepsis must be constantly within the purview of the medical profession as a whole.

Knowledge of the importance of good teeth to the well-being of the body and instruction how best to preserve them should be imparted to all patients, especially the poor and ignorant; and the nurse who attended to the ablution of the body should see even more punctiliously to the cleansing of the teeth.

Acquaintance with dental pathology afforded valuable clues to the physician, the surgeon, and the throat, the ear, and the eye specialist in tracing the origin of maladies of the most diverse kinds: and he who by timely warning and advice sought to save his patients from the evil consequences of oral sepsis and dental caries was choosing the better part of medicine—the prevention of disease, which was better than the most brilliant cure.

SANATORIA FOR CONSUMPTIVES IN MADEIRA.—According to a foreign correspondent of the *Standard*, Prince Frederic Charles von Hohenlohe with Drs. Fraenkel and Pannwitz have recently passed through Lisbon on their way to Madeira for the purpose of choosing sites, in the central part of the island, for two sanatoria for consumptives and an hotel for people accompanying them. One sanatorium will be for wealthy people and the other for persons of the poorer classes. By concession of the Portuguese Government the buildings will be free from taxation, and no Customs duties will be levied on imported material used in their construction. As a *quid pro quo* the State is to have the right to a fifth of the beds in the sanatorium for poorer patients. The Portuguese Government has deputed a medical man to accompany the party. The buildings will be begun as soon as their report on the sites has been approved by the Board of Health.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—The following is a list of the officers and council for 1903-4: *President*, Dr. Seymour Taylor; *Vice-Presidents*, Mr. G. E. Twynam, Mr. W. P. Mallam, Dr. W. T. Gardner, Mr. C. B. Keetley, Mr. W. P. Barrett, Dr. G. H. D. Robinson, Mr. J. R. Lunn, Dr. E. Furniss Potter; *Council*, Dr. G. P. Shuter, Mr. R. Pollock, Dr. A. M. Ross Sinclair, Dr. A. Whitfield, Mr. Garry Simpson, Mr. Percy Dunn, Mr. McAdam Eccles, Dr. W. H. Walter, Mr. E. P. Paton, Dr. A. J. Rice Oxley, Mr. Tennyson Patmore; *Treasurer*, Mr. T. Gunton Alderton; *Secretaries*, Dr. C. Buttar, Dr. A. Elliot; *Librarian*, Mr. H. W. Chambers; *Editor of Journal*, Dr. Leonard Dobson; *Editorial Secretary of Journal*, Mr. J. G. Pardoe.

SEVENTY-FIRST ANNUAL MEETING
OF THE
British Medical Association.

Held in Swansea, July 28th, 29th, 30th, and 31st 1903.

PROCEEDINGS OF SECTIONS.

SECTION OF OBSTETRICS AND GYNAECOLOGY.

Professor William Stephenson, M.D., President.

INTRODUCTORY REMARKS BY THE PRESIDENT.

THE TREND OF OPINION IN OBSTETRICS.

The honour which the Council has conferred by asking me to occupy this chair is one I highly appreciate, not alone for myself, but for the recognition so given of the University in the far north with which I have been associated for more than a quarter of a century.

An important function of this Association is to mould and direct medical opinion. In the Sections isolated and distinct questions only are discussed; the President, however, has the privilege, in the first quarter of an hour, of dealing with the subjects in their broader and more general aspects, viewed in the light of practice more than that of science. The short time limit, however, throws difficulties in the way and permits only of the expression of a few thoughts to suggest thought and mark the trend of obstetric opinion.

Looking Back.

Those whose student days, like my own, date back forty years or more are conscious of great advance in the science and of many changes in the practice of obstetrics. The word gynaecology was not in use then. That branch has grown into a stately tree since we were young.

It is interesting to recall the process of change in ideas and opinions through which we have passed as we moved along with the times. The younger generation, though acquainted with obstetric history, can hardly realize the wonder of a successful case of ovariotomy; or the difficulty experienced in the endeavour to shake off the dread of opening the peritoneal sac; or the shock the mind received when it was first proposed to treat *post-partum* haemorrhage by the injection of very hot instead of cold water, as icy as could be got; or the astonishment and alarm that arose when Hamilton, of Falkirk, first demonstrated the saving of suffering and life to mother and child by the frequent use of the forceps. Those who have gone through this process of gradual mental moulding are perhaps the better for the experience. It acts like the brake to the free wheel of progress. 'Tis wise not to rush precipitately in where others have feared to tread. When light suddenly bursts on the darkness around us, it startles and may cause alarm; but as the eye becomes accustomed to it we see things clearly in their proper proportion and perspective, and modify our ideas accordingly. The mind may be convinced, but it is difficult to break at once with old habits of thought and action. Hence, perhaps, the much-to-be-regretted slow and still very imperfect adoption of strict antisepsis and asepsis in the general practice of midwifery.

Obstetric Interference.

A change of wide influence which is passing over the obstetric mind, and year by year is becoming more extended, is the freer acceptance and more frequent application of the principle of interference, as contrasted with the non-interference or delay in treatment so strongly inculcated in former times. We recognize an increasing number of conditions—in midwifery as well as in the diseases of women—where the risks and danger of temporizing are great, and we now interfere early, because we can do so safely and with benefit to the patient to a degree beyond the conception of our fathers. To them interference was a pious dread. Though conscious of a perilous condition of a patient, she was too often allowed to drift on into ever-increasing or recurring danger. Whether it be in the serious complications of pregnancy, in retarded or obstructed labour, in chronic affections of the pelvic organs, or in tumours of the uterus and ovaries, the problem of interference is ever coming up, and for its solution a higher standard of education is necessary than was deemed sufficient twenty years ago. It is not a question for experts alone, it lies primarily and largely within the sphere of the general practitioner. In gynaecology he need not have the knowledge of surgical technique or the necessary operative skill, but it is essential that he should have that amount of knowledge which will enable him to recognize the gravity of the condition, and know when to call in the services of the specialist. In midwifery the case is even stronger. He must not only be able to recognize the signals of danger and estimate the risk, he must in the majority of cases be himself the operator. The necessity for interference here often arises suddenly, without warning, and without time to summon assistance; he must act at once. It is important, therefore, that he should be master of obstetric technique as well as of general knowledge. This, again, demands a larger, more lengthened course of instruction than in many cases he has received.

Exaggerated Fears.

Whilst the principle of interference is being extended in one direction, the dread of it, I regret to find, is being revived in another. Much power for good in medical attendance is being relinquished and discouraged under what I believe to be much too exaggerated ideas regarding the introduction of sepsis by the medical attendant. The risk is one that can be guarded against, without abstaining from careful vaginal examination and those simple aids to labour that experience has taught may be employed with safety and benefit to the patient. Judging from textbooks, much of the teaching is in this respect bad. No wonder men have frequent recourse to the use of the forceps when non-instrumental aids to labour are mentioned only to be condemned. When they are taught that "all manipulations within the passages for the purpose of accelerating labour in normal cases are to be scrupulously avoided." Time does not permit of following out this point, I would simply remark that labour cannot be pronounced normal until it is completed. That in so-called normal cases there is often a tendency to drift very close to, if not into, actual danger; and that risks and injury, greater than by the use of the forceps, may result in a labour terminated by the natural powers, if some hours have been spent by the patient in ineffective effort which the practitioner could have saved with one finger. The counsel of "scrupulous avoidance" of aid is soon disregarded as the practitioner acquires experience; what is deficient in our books is the discussion of the how and the when aid should be extended.

The Need for Oral Instruction.

With the increase of knowledge our responsibilities as practitioners proportionately increase. Many a student passes into the practice of his profession with but a scanty outfit of learning. The instruction imparted in a three-months' course of midwifery is still in some quarters deemed to be sufficient. Some knowledge of the subject, I admit, may be taught in such a course, just as we find it compressed into the narrow limits of the smaller textbooks, "so handy in preparing for an examination." The one, however, in after-life, proves as deficient for the practitioner's needs as the other does for a book of reference in cases of difficulty. The profession has long been conscious of this deficiency, but the remedy sought to be applied is entirely in the wrong direction. Instead of increasing the amount of oral instruction, the cry has been to increase the number of cases the student should attend before he presents himself for examination, 20, 30, aye, say some, even 50. It is a great delusion to estimate a man's knowledge of midwifery by the number of deliveries he has conducted. Most men observe only what they have been taught, much or little, true or false, but nothing more—if even that. Hence the prevalence and tenacity of error, handed down from generation to generation. What is required is a fuller consideration of the needs of the general practitioner, not as regards the simple management of normal labour, but the forestalling of danger, and how to deal with the difficulties and complications he may at any time meet. Lectures, systematic and clinical, quickened by the influence of the living voice, and illumined by the personality and experience of the teacher, are the best mode of instruction. Textbooks are afterwards necessary and useful, but, to make a student dependent upon them largely or wholly is like the artificial rearing of infants on one or other of the substitutes for the natural milk of his alma mater. Textbooks, like proprietary infant foods, are showing a tendency to increase in number as well as in the commercial energy with which they are being pushed.

Can the Curriculum be Altered?

To remodel the medical curriculum of study is, I fear, as difficult an undertaking as to alter the fiscal system of an empire. My experience, fortunately, is that it is unnecessary to wait for legislation. Offer the facilities and students, as a rule, will avail themselves of them. In the Scottish universities the midwifery course has always been one of a hundred lectures. Year by year I have experienced increasing difficulty in overtaking the subject in that time; but now, voluntarily on the part of the students, the number of hours in Aberdeen has been increased by a half more, and the time over which the study extends has been doubled.

The student first attends a preliminary class, taught in summer by the assistant, in which normal labour only is dealt with. This enables him to begin his attendance on cases at the maternity. Before he enters the systematic class in the winter session he has thus acquired some knowledge of the subject, and is, therefore, better able to follow and grasp the teaching and appreciate the bearing of the scientific on the practical work.

Further, the class is divided into small sections, one of which in rotation attends the tutorial practical class in the museum for an additional hour each day. There they examine and handle the pelvis, normal and abnormal; by means of the cadaver and models they study practically the anatomy of the pelvic organs, the methods of examination, the mechanism of labour and the diagnosis of the lie of the fetal head; they deliver breech cases, and apply the forceps in normal and narrowed pelves any number of times. The museum is open to them at other times, so that they can pursue their practical studies by themselves. If properly conducted, this practical instruction enables the student to comprehend the subject more quickly, and he learns how to operate better than by many hours' burning of the midnight oil over books, however profusely they may be illustrated. It better fits him to meet his responsibilities in after-life than attendance on thirty or more cases, where all may be normal, or if, fortunately for him, some are complicated, he is not allowed to operate himself.

Such a class should be made compulsory in all the schools. It is not meant to supersede attendance on cases, but it gives him what he is not likely otherwise to acquire in the time at his disposal.

Obstetrics and Gynaecology.

In the present day there is a disposition to separate gynaecology from obstetrics. They are in a sense distinct, but they have so much in common, and are so wedded together in actual practice, that it is not good they should be put asunder. Yet a well-known obstetrician and gynaecologist lately said, "Gynaecology has made such progress that it has been divorced altogether from obstetrics;" and, again, "the diseases of women have drifted away absolutely and entirely from the domain of the physician into that of the surgeon pure and simple."

There is here a dangerous undercurrent of thought, arising from a straining and limitation of terms. Obstetrics is the older word. As used down to recent times, and still retained in the title Obstetrical Society of London, it embraced midwifery and the diseases of women and children. The cord has now been cut and paediatrics has attained an independent position. But you cannot so separate midwifery from the diseases of women, or divorce the consideration of the gravid from the non-gravid state. If the term gynaecology is to be used coextensive with the expression, "the diseases peculiar to women," then there is undoubtedly a medical as well as a surgical side—a fact too much, and in some instances "absolutely and entirely," lost sight of in the present day, especially in the textbooks. According to its etymology, the term includes all knowledge pertaining to the special functions of women, and, strictly speaking, pregnancy and labour are but a part of the larger subject. In ordinary language, a part is often taken for the whole, so when we speak of the class of midwifery or the Obstetrical Society there should be no limitation of the subject to the exclusion of the diseases of women.

Many a gynaecological case becomes surgical and operative, but the surgery "pure and simple" comes in only after the diagnosis is made. The subjects to be presently discussed in this Section are good illustrations of how medicine, surgery, and midwifery must all be brought into action in the solution of many of the difficult problems of gynaecology and obstetrics.

DISCUSSION ON THE MANAGEMENT OF PREGNANCY COMPLICATED WITH UTERINE FIBROIDS.

I.—Amand Routh, M.D., B.S., F.R.C.P.Lond.,
Obstetric Physician, Charing Cross Hospital, and Lecturer in Midwifery to the Medical School; Consulting Physician, Samaritan Free Hospital for Women and Children; Examiner in Obstetric Medicine at University of London, in Midwifery and Diseases of Women at Royal College of Physicians of London (Conjoint Board); etc.

Dr. Amand Routh said: One of the most interesting questions in medicine is the interaction between pregnancy and other concurrent constitutional or local affections. Amongst the local troubles which may complicate pregnancy are contracted or deformed pelves, malignant disease, and fibromyomata of the uterus. This morning we are concerned solely with the question of fibroids and pregnancy.

Danger of the Complication.

There is no doubt that in pre-antiseptic days the presence of fibroids was a cause of great maternal and fetal mortality. The following statistics, quoted by Staveley[3] prove this:

Table I.—*Showing the Mortality of Pregnancy Complicated by Fibroids Treated before Antiseptics were Introduced.*

Name.	Cases.	Mortality.	
		Mother.	Children.
		Per Cent.	Per Cent.
Süsserott[1]	147	53	66
Lefour[2]	286	49	77
Nauss	225	54	57
Jetter	215	30	?
Gusserow...	228	54	?

When these large mortalities are compared with about 6 per cent. in cases of contracted pelvis, the relative danger is very obvious. Danger arises from cases being improperly treated or not treated at all. The chief dangers may be enumerated as follows:

During Pregnancy.—Rapid enlargement of fibroids and its consequences, degeneration of fibroids, abortion and its consequences, haemorrhage and sepsis.

During Parturition.—Fetal malpresentations, obstruction, haemorrhage.

During the Puerperium.—Degeneration or extrusion of a submucous fibroid, sepsis and secondary infection of the fibroids.

When these and other complications are treated efficiently by modern antiseptic and surgical methods, the mortality becomes enormously reduced. Thus Pinard[4] gives 84 cases with a maternal mortality of 3.6 per cent. and a fetal mortality of 23.6 per cent. The object of this discussion is to eliminate methods of treatment which can now be safely and wisely abandoned, and to indicate the best modern methods and the circumstances where each is applicable.

I.—We will deal first with the effect of pregnancy upon the uterine fibromyomata. This may be discussed under the following heads:

(*a*) Growth of fibroids during pregnancy.
(*b*) Atrophy of fibroids during involution of uterus.
(*c*) Degeneration and extrusion of submucous fibroids after labour.
(*d*) Secondary infection of fibroids during the puerperium.

A.—Growth of Fibroids during Pregnancy.

It is almost universally stated that fibroids tend to increase rapidly in size during pregnancy. Many writers, and amongst them A. Donald,[5] have described cases where this increase of size led to serious pressure symptoms on the diaphragm and also caused albuminuria, but there is nothing to show in the account of most of these cases that it was the fibroid itself which so rapidly enlarged. Given large fibroids existing before pregnancy there would soon be an enormous tumour if pregnancy ensued, but, as C. H. F. Routh[6] showed in 1863, the individual fibroids might be but little increased.

Cullingworth[7] has drawn attention to the fact that during the enlargement of the pregnant uterus fibroids may soften and flatten out, and become less prominent and less resistant; or, to use Depaul's happy expression, they may undergo "*assouplissement*"; and Whitridge Williams[8] thinks the increase of size is due more to œdema than to actual hypertrophy. No doubt the growth of a fibroid depends upon its blood supply, which would vary according to its position relatively to the placental site.

B.—Atrophy of Fibroid during Uterine Involution.

It is said that fibroids diminish in size or even disappear during involution. In a few cases marked atrophy does occur, especially if there has been definite growth and softening during pregnancy. It is probable that softening during pregnancy must precede absorption afterwards.

There are several recorded instances of fibroids having entirely disappeared during involution, but I have not yet met with such cases. Playfair[9] narrated in 1877 a remarkable case of large fibroids, almost completely disappearing six months after his patient's first labour, but they increased rapidly again shortly after. The patient became again pregnant, but the fibroids, which became larger during the pregnancy, did not atrophy after her second confinement. Robert Barnes[10] and Leonard Sedgwick[11] have also described cases where atrophy, temporary in most cases, has occurred. Howitz[12] states that this atrophy only takes place during lactation. More frequently the intramural fibroids tend to get driven outwards during involution of the uterus, and become more definitely subserous, the uterus finally being about the same size, but more nodular than it was before the pregnancy.

C.—Degeneration and Extrusion of Submucous Fibroids after Labour.

Occasionally after labour a submucous fibroid tends to degenerate, and may even become necrotic, especially if the labour has been prolonged or tonic contraction has been present. A submucous fibroid may be extruded into the uterine cavity and may be expelled without serious consequences. Usually, however, in the process of extrusion, which may be as long as three weeks after parturition, the circulation of the fibroid is arrested and sloughing occurs, and if the fibroid be unable to be expelled through the cervix, sapraemia or septicaemia may follow and death ensue.

The following is a case in point:

Miss A. R., aged 40.

January, 1882. Large irregular tumour to navel. Amenorrhoea four months. Diagnosis: Four-months pregnancy in a fibroid uterus. There was a pedunculated subperitoneal fibroid at fundus and three subperitoneal fibroids on the anterior uterine wall, but the pelvis was free. The patient had also well-marked secondary syphilis dating from the time of her impregnation.

The patient went to full term, and was delivered by her local doctor by means of forceps.

On the third day she had a rigor and a temperature of 105°, and when I saw her again next day, a putrid, stringy fibroid, the size of a large orange, was found *in utero* and easily removed, but she did not rally and died on the twelfth day of acute septicaemia.

With our present knowledge this life might have been saved by hysterectomy if done when sepsis had declared itself.

D.—Secondary Infection of Fibroids during the Puerperium.

If infective organisms are present in a puerperal endometrium, submucous or even more distant fibroids are very easily infected, and fatal peritonitis may result. The softening which fibroids undergo during pregnancy renders them very liable to infection.

Although infection occurs readily after abortion, especially if artificially induced, it appears to be far more serious, though more rare, at full term.

II.—The effect of fibroids upon a coexisting pregnancy may be discussed under the following heads:

a. Do fibroids cause sterility?
b. Do fibroids predispose to abortion?
c. Do fibroids cause fetal malpresentations?
d. Do fibroids lead to inertia uteri or to *post-partum* haemorrhage?
e. Will the fibroids obstruct labour?
f. Do fibroids render the puerperium dangerous?

A.—Do Fibroids Cause Sterility?

The general view is in the affirmative, but it must be remembered in dealing with this question that pregnancy would be normally less frequent at the ages when fibroids would be most common.

Out of a list given in the Porro report[13] (1901) of 109 cases of hysterectomy performed for fibroids complicating pregnancy, the average age works out at 35 years. This age-average lessens materially the possible chances of the two conditions coexisting. Taking these facts into consideration, and viewing the numerous cases of this complication seen in actual practice, it seems probable that fibroids are not by any means a frequent cause of sterility, and it is possible that Mann's view that sterility is a cause of fibroids may be truer than the obverse and more usually accepted view.

Sterility in these cases is due mainly to the existence of changes in the endometrium as Whitridge Williams[5] shows, or to the presence of a polypoid or submucous fibroid, especially if there be also an associated metrorrhagia, or to altered relations of the ovaries and Fallopian tubes owing to asymmetry or torsion of the uterus.

In this connexion may be mentioned the extreme rarity of tubal gestation with a fibroid uterus. A case has been described by Cullingworth,[14] and six other cases have been collected by Parry[15] out of 500 cases of tubal gestation recorded up to 1875.

B.—Do Fibroids Predispose to Abortion or Premature Labour?

Probably they do not, although labour may come on a week or two before full term, and this view is supported by Hofmeier,[16] Kottmann,[17] Winckel,[18] and many others, whilst Horrocks,[19] Pasquali,[20] and others disagree.

Statistics seem to prove that the proportion of abortions with fibroids is very little greater than the normal average, which may be taken as from 20 to 25 per cent., though Malins[21] computes it as 18 to 19 per cent.

TABLE II.—*Showing Percentage of Abortions in Pregnancy Complicated by Fibroids.*

Name.	No. of Pregnancies.	Abortions.	
		Cases.	Per Cent.
Lefour[2]	307	39 =	12.6
Nauss	241	47 =	19.0
Kelly[22]	542	140 =	25.0
Pinard[4]	84	18 =	21.4
Total	1,174	264 =	21.6

Herman[23] is not convinced that fibroids cause abortion, though he thinks they often cause premature labour, and in confirmation of this view, Pinard[4] showed that out of his 18 cases which miscarried, only 5 aborted in the early months.

C.—Do Fibroids Cause Fetal Malpresentations?

The following table proves that this is unquestionable the case:

TABLE III.—*Showing Percentage of Various Presentations when Pregnancy is Complicated by Fibroids.*

—	Vertex.	Breech.	Transverse.	Prolapse of		Placenta Praevia.
				Limbs	Cord	
Winckel[18] ...	59.0	23.50	17.50	—	—	—
Toloczinoci	22.0	27.00	20.80	—	—	—
Olshausen[24]	53.0	24.00	19.00	—	—	—
Susserott[1] ...	58.8	23.50	17.60	—	—	—
Nauss ...	53.1	25.50	20.90	—	—	2.00
Chabazain ...	—	26.00	—	—	—	—
Lefour[2] ...	50.9	32.35	16.66	—	—	5.00
Norris[25] ...	—	—	—	4.7	6.80	—
Normal percentages ...	93.6	3.09	1.16	0.9	0.44	0.01

D.—Do Fibroids with Pregnancy Lead to Uterine Inertia or to Post-partum Haemorrhage?

I have watched many cases, at first with anxiety, when one or more fibroids have been present in the wall of the upper zone of the uterus, wondering whether contraction and retraction would suffice to terminate labour. In non-obstructive cases I have never had any trouble, but have thought it best always to give ergot after the birth, if uterine relaxation threatened.

Delay in labour, however, is the rule, and in non-obstructive cases is due to irregular uterine action, for with interstitial fibroids the various groups of muscle fibres cannot act co-ordinately.

There is no doubt that *post-partum* haemorrhage is more frequent than in normal labour. The placenta, apart from being praevia, may, as a result of a pre-existing "endometritis" be unduly adherent, and may then need manual removal, which in these cases is a very dangerous operation, and in Susserott's[1] pre-antiseptic days had a mortality of 62 per cent. This placental adhesion, though sometimes pathological, is also often physiological, for if the placenta be-

attached over a subjacent fibroid, efficient retraction of the placental site is obviously impossible.

E.—Are the Existing Fibroids Likely to Cause Obstruction during Labour?

This is a very serious question. We are usually consulted at about the fourth or fifth month, or later. We may find a large fibroid so displacing the cervix that the os externum cannot be even reached per vaginam, and it may be obvious that no child at or near term could pass this fibroid.

A definite opinion can be given on one point—namely, that owing to the steady growth of the uterus the fibroid will probably be spontaneously lifted out of the pelvis. This may even occur during labour, and Mann[27] has graphically described three cases where everything had been arranged to perform Caesarean section, which was however rendered unnecessary by the occurrence of spontaneous elevation of the fibroid during the second stage of labour, the deliveries thenceforward being normal.

Spontaneous reposition of the fibroid may occur gradually or suddenly, in which latter case it may be accompanied with a good deal of pain and some collapse.

In the event of the fibroid becoming lifted above the brim towards the end of gestation the presenting part descends into the lower uterine zone, and the cervix resumes more or less its normal position.

Nature's spontaneous efforts to remove the obstruction have often proved successful even when the accoucheur's repeated attempts at reposition have failed.

A powerful paper by Cullingworth[7] has shown the frequency of this spontaneous reposition: but it must be remembered that the pelvic tumour which may seem to be the only obstacle may become elevated, and yet, as occurred in my first case, a smaller fibroid may so bulge inwards at the internal os as to prevent normal delivery. Kreutzmann[28] has instanced a similar case.

The prospect of obstruction depends upon the position of the fibroid. If growing from the fundus or body, there will be no obstruction unless it has a very long pedicle. If the fibroid grow from the anterior part of the supravaginal cervix obstruction is rare, for the fibroid is usually above the brim, or is soon spontoneously elevated. If the fibroid grow from the posterior part of the supravaginal cervix obstruction may readily follow, owing to the liability of the fibroid to be arrested below the sacral prominence. In such a case the uterus often takes a half rotation so that one or other broad ligament lies to the front.

Occasionally these retro-uterine fibroids become adherent to the floor of the pelvis, and are then as immovable as intraligamentous fibroids, which are usually very firmly fixed to the pelvic floor. Cervical fibroids are the most obstructive of all, and, like intraligamentous fibroids, are entirely incapable of being spontaneously lifted out of the pelvis or of being pushed up from below.

F.—Will the Puerperium be Rendered Dangerous?

Involution is retarded, but not impaired. During the first week after labour "after-pains" have been noticed with undue frequency. The lochia, too, are increased in quantity and last longer.

The real danger to the patient during the puerperium is that the uterus may become septic. Portions of placenta are retained, decompose, and sapraemia or septicaemia may follow. The fibroids, as already stated, may then easily become infected and fatal peritonitis ensue.

TREATMENT.

I. *If the Patient is First Seen before Fetal Viability.*

If obstruction should appear to be probable attempts may be made to elevate the pelvic fibroid by gentle digital or hydrostatic pressure in the Sims or knee-chest position. Forcible reposition is to be avoided, as John Phillips[29] has insisted. He gives two cases showing the danger which may arise from torn adhesions and from bruising of the fibroid. Failing success, efforts may be renewed under anaesthesia. Prolonged or deep anaesthesia must be avoided, lest asphyxia lead to either fetal death or uterine activity. For this reason chloroform or the A.C.E. mixture is preferable to ether. We may also facilitate spontaneous elevation of the fibroid by having the foot of the patient's bed raised. This seems a small point, but is undoubtedly useful. Reposition of cervical or intraligamentous fibroids is impossible.

Thirty years ago the recognized treatment, if the pelvic fibroid could not be elevated, was the induction of abortion, for the only alternative methods of treatment were Caesarean section or instrumental delivery at or near full term, both methods then greatly dreaded owing to their high mortality. Now every writer considers that induction of abortion for pelvic fibroids should be definitely abandoned. The only exception to this advice is that of Baecker,[30] who advocates induction of abortion up to six weeks of gestation, but adopts an expectant attitude at all later stages.

Induction of abortion is very difficult if the os uteri is nearly out of reach, for the accoucheur has then no adequate means at his disposal to assist the delivery. Even if he can reach the cervix easily and can dilate it freely the uterine cavity may be so distorted, just above the os internum, that he may not be able to remove the afterbirth should it be retained. In fact, the easier it is to induce abortion the less necessary is it to interfere at all.

If there should be serious haemorrhage after abortion an attempt may be made to arrest it by packing the uterus with iodoform gauze, as advocated by our President, Professor Stephenson.[31]

Induction of abortion in these cases does nothing towards enabling the woman to have a living child in the future, and leaves the fibroid to be subsequently dealt with.

Having regard therefore to the relative infrequency of spontaneous abortion, and to the difficulty and danger of an artificial induction where there are obstructive fibroids, and further to the fact that any or all obstructive fibroids may be spontaneously elevated in the last three or four months of pregnancy or even during labour, it seems to be a corollary to adopt an expectant attitude. In the absence therefore of urgent symptoms, we should await spontaneous labour at full term, giving such assistance as may then be needed and treating the fibroids as may be then indicated.

As Kelly[22] says, "Two lives are involved, and operating during pregnancy where there are no urgent symptoms, on account of dangers which may arise, has no field here." The existing pregnancy may be the only chance of the woman having a living child, and she should therefore have every opportunity which her case affords of going to full term.

In the event of one of the emergencies already alluded to arising, an abdominal operation becomes necessary, and the choice would then lie between myomectomy and hysterectomy.

Myomectomy before Fetal Viability.

Myomectomy, according to John Phillips,[29] was first performed in 1879 by Knowsley Thornton[56] for a pedunculated subserous fibroid, but labour came on and death ensued. Myomectomy is now the ideal indication for treatment when pressure symptoms develop before fetal viability, and it should always be kept in mind as a possible alternative to hysterectomy when coeliotomy is performed before full term.

As however has been shown by Bland-Sutton[32] this operation "can only be hopefully undertaken in a very small number of cases."

If when the abdomen is opened the fibroids are found to be pedunculated, sessile, few in number and not deeply embedded, myomectomy is indicated.

Bland-Sutton[32] has noted a case where he successfully performed myomectomy in the fourth month only to find that after the puerperium the uterus "was tuberose with fibroids." These were not detected at the operation, and had evidently become more subserous during involution. The case points out therefore a further limitation to myomectomy, namely, that the operation should not be done if only some of the fibroids can be enucleated, whilst others are left *in situ*.

Sometimes, however, a fibroid may be single, sessile, and not deeply embedded, and yet is not suitable for myomectomy owing to its having a broad attachment, for if a large muscular cavity is left, it is difficult to close and still more difficult to keep closed owing to the tension present.

Cumston[33] cautions operators to avoid traction upon the tumour during enucleation lest the underlying chorion or possibly the placenta itself, should become detached.

Myomectomy has the advantage that the operator, whilst viewing that operation as the ideal one, can at any moment proceed to hysterectomy should enucleation prove impracticable or useless.

It further gives the patient a fair chance of a living child as a result of the existing pregnancy, and a possible chance of other pregnancies following. Cullingworth,[34] Boldt,[35] Bland-Sutton,[36] Apfelstedt,[37] S. Buckley,[38] A. Donald,[5] J. S. Gemmell,[39] and others, have shown that myomectomy can be done without interference with the pregnancy; but in spite of

such possible success, abortion is not uncommon after myomectomy, for in 33 cases collected by Staveley,[3] 10 aborted, or 30 per cent. Abortion is more frequent after the removal of sessile than of pedunculated fibroids. Thus 40 per cent. abort after the former operation against 6 per cent. after the latter.

The mortality of myomectomy up to 1894 was 16.6 per cent., but in 33 more recent cases collected by Staveley[3] the mortality was as much as 25 per cent.

Hysterectomy before Fetal Viability.

This is required after an incomplete abortion, where intractable haemorrhage or sepsis is present, especially if, owing to the uterus being tortuous, the placental site cannot be reached.

It is also required in cases where pressure symptoms are serious, where the fibroids are multiple or too deeply imbedded to make myomectomy possible or safe.

Bland-Sutton[38] gives a table of hysterectomies for pregnancy with fibroids performed in London recently from which I extract nine done before fetal viability. These hysterectomies were performed by W. Duncan and himself at the second month; by himself at the third month; by Harrison Cripps, Andrew Clark, and W. Duncan at the fourth month; Peter Horrocks and Alban Doran[35] at the fifth month; and Galabin at the sixth month, with a mortality of one mother only.

If, therefore, there is real danger in allowing the patient to go to term, hysterectomy can be performed without serious anxiety, but no operation should be performed before fetal viability unless imperatively demanded by urgent symptoms.

On reading the records of the numerous hysterectomies performed in these cases before fetal viability it seems evident that some of them, under suitable palliative treatment, could have been allowed to have surgical treatment postponed till a viable child were present.

Lewers[40] has drawn attention to the fact that patients during early pregnancy with pelvic fibroids will often complain of severe pain, but that with suitable treatment this pain may lessen, and may entirely disappear in a few weeks. He gives cases in proof.

Some hysterectomies have been done before fetal viability, owing to a mistaken diagnosis. A retro-uterine pelvic fibroid has been diagnosed as a dermoid, and, the abdomen being opened for its removal, a hysterectomy is then thought advisable; whereas, if it had been possible to make a correct diagnosis, an expectant treatment might have led to a living child being born at term by nature or art.

II.—*If the Patient is First Seen after Fetal Viability.*

Here, again, the indication is to leave things alone so long as the mother's life is not endangered. Reposition of any obstructing fibroid may be tried, even at full term, and cases are recorded where this has been successfully done as late as the second stage of labour. It must be remembered, however, that this reposition probably only postpones a radical operation to a later date.

Spencer Wells[41] (1867) described a case in which he was called to do Caesarean section, but succeeded in pushing up the obstructing fibroid, labour proceeding normally. Playfair[9] (1877) also described two equally successful cases. Beatty[26] (1840) described a most remarkable case of an obstructing fibroid getting gradually drawn up during the second stage of labour.

The difficulty of dealing with a large obstructing fibroid in those days, and the attendant anxiety, must have been very great. A terrible case is recorded (1835) by Montgomery,[42] where, after numerous attempts to replace the fibroid, Caesarean section had to be done, the patient dying two days afterwards.

One thing is quite certain: No attempt to drag a living child or even a mutilated child past an obstructing fibroid of any size by forceps or after version should nowadays be attempted, so great is the danger to the patient. If any one has any doubt of this, he only has to read records of cases where this had to be done thirty or forty years ago or more. It was then the only way to deliver the fetus at full term, for Caesarean section was almost always fatal, and hysterectomy was not dreamt of. A paper by Copeman,[13] of Norwich, in the *Obstetrical Society's Transactions* of 1871 is very interesting in this connexion, as showing what accoucheurs only thirty years ago had to contend with.

The following figures are all I can find as showing the danger of instrumental delivery or version in such cases, but they are very significant:

TABLE IV.—*Showing the Percentage Mortality of Minor Obstetric Operations in Labour Obstructed by Fibroids.*

	Forceps.		Version.		Embryotomy.	
	Mother.	Child.	Mother.	Child.	Mother.	Child.
Süsserott[31] ...	40.0	65.0	—	—	—	—
Tarnier	60.0	66.0	50.0	50.0	—	—
Chabazian ...	—	—	—	—	83.0	100.0
Lefour	25.9	43.0	60.0	77.7	55.5	100.0
Pinard (1901)[4] ...	—	—	—	—	11.5	100.0

If the patient be in labour, and the obstructing fibroid should show no tendency to rise, or if it be fixed in the pelvis, an operation is inevitable, and, except in the case of a cervical fibroid, abdominal section is necessary, for symphysiotomy is condemned by all in these cases.

Treatment of a Cervical Fibroid.—As already noticed, these fibroids cannot be either spontaneously or artificially elevated. They also displace the os uteri so markedly that any vaginal treatment of the pregnancy, short of enucleation of the fibroids, is impossible.

Munde,[44] Braxton Hicks,[45] and Lomer[46] have described successful cases of enucleation of cervical fibroids; but if these are large the risk of haemorrhage and of subsequent sepsis would make most operators now prefer Caesarean section followed by immediate panhysterectomy, or, if need be, by vaginal enucleation of the fibroid at a later date.

If the cervical fibroid be the only one present, its enucleation may be tried and, if easy, persisted in. Vaginal enucleation at full term should be followed by delivery by version or forceps, and Caesarean section need only be adopted if serious difficulty or haemorrhage arise. In all cases the operation should be postponed, if possible, till fetal viability.

Coeliotomy.—If it be decided to open the abdomen at full term for obstructing fibroids, Caesarean section should be the first step, for to allow labour to proceed by the uterine forces immediately after myomectomy would be very hazardous. Caesarean section should if possible be done at a selected date a few days before labour is due, but the operator should be prepared to operate at once if labour be anticipated, as it often is. There seems no need to induce labour by passing a bougie or by rupturing the membranes before the operation.

The steps of the operation after the delivery of the child by Caesarean section will vary according to circumstances. Several procedures are possible:

A. Caesarean section alone, leaving the fibroid tumours to be subsequently dealt with. Lewers[40] has this year described two cases of obstructing fibroid in which he performed simple Caesarean section at full term after watching his patient several months. In both cases the fibroids were single and deeply embedded, the one being cervical, the other supravaginal and posterior. As the fibroids had given no trouble before the pregnancy, he hoped they would atrophy during involution and do no further harm, and so decided to give the patient a chance of escaping hysterectomy. The disadvantages of conservative Caesarean section, apart from the fact that the fibroids are left *in situ*, are the risks of primary and secondary haemorrhage, and of sepsis and secondary infection of the fibroid. John Phillips[29] has also shown that degenerative changes in adjacent fibroids may occur if the sutures are placed too near to them. The conservative operation would, of course, always be justifiable if the operator did not feel himself expert enough to proceed with hysterectomy, or in cases where the patient was *in extremis*, or near the menopause.

B. Sterilization of the Patient.—To close the uterine wound and sterilize the patient by removing both ovaries. This has been done with the further object of promoting atrophy of the fibroids, but would not now with our present knowledge of its failures, especially in promoting absorption of fibroids in the lower zone of the uterus, be advocated. It is also sometimes impossible to remove both ovaries completely. Attempts at sterilization by removing portions of the Fallopian tube are not here indicated, for it would not influence the fibroids at all.

C. Myomectomy.—One of the reasons for choosing this operation before fetal viability is to allow gestation to proceed and so to save the child's life if possible. This indication

is at full term absent, but if all fibroids can be thus removed, the operation should be tried, especially if the woman is relatively still young. If this operation be done, it should be preceded by Caesarean section to save the uterus from muscular effort. If at the operation myomectomy is found to be unsuitable, the operator should proceed at once to perform hysterectomy.

D. Abdominal Hysterectomy.—This may be either: (1) Supravaginal hysterectomy with extraperitoneal treatment of the stump (Porro's); (2) supravaginal hysterectomy with retroperitoneal treatment of the stump (Baer or Chrobak); (3) panhysterectomy (Doyen).

Of these the first (Porro's operation) would only now be performed by experts in the event of uncontrollable haemorrhage, or to save time if "shock" were very great, or possibly in cases of sepsis as an alternative to panhysterectomy. In other cases the prolonged convalescence and the tendency to hernia would be sufficient reasons for the choice of an alternative operation.

Panhysterectomy, as opposed to supravaginal hysterectomy, seems to be absolutely indicated in comparatively few cases—for example, where the operation is being done for uterine sepsis, where the cervix is unhealthy, or where cervical fibroids are present, together with others, in the body of the uterus.

Herbert Spencer[47] (1902) prefers panhysterectomy to supravaginal hysterectomy for fibroid uteri even when complicated by pregnancy, because he thinks there is less risk of secondary haemorrhage, no risk of sloughing of the cervix, better vaginal drainage, and therefore less risk arising from infection of ligatures, and no chance of cancer or sarcoma developing in the stump. He does not think the longer duration of the panhysterectomy very important, nor does he think the ureters are more likely to be injured.

At the International Congress (Madrid, 1903) L. G. Richelot[48] of Paris strongly advised panhysterectomy on the ground that the portion of cervix left was liable to undergo malignant degeneration. If this were proved it would be a strong reason for panhysterectomy, but I do not know of any evidence showing that the cervix of a fibromyomatous uterus is specially liable to become the seat of a cancerous growth. Freund[49] says that cancer in the cervical stump is rare. On the other hand, panhysterectomy is stated by Cumston[33] to be a cause of incurable dyspareunia owing to adhesions forming at the vaginal *cul-de-sac*, and may also lead to severe dragging pains during and after defaecation owing to adhesions of the vaginal vault to bowel.

It is evident that, apart from cases where panhysterectomy is definitely indicated, there are many cases where it may be as safely performed as any supravaginal operation (see Tables VI and VII), and the choice of the technique may in such cases be safely left to the operator concerned.

Galabin and many other operators, including myself, prefer the modern supravaginal hysterectomy (Baer or Chrobak technique) with at least one of the ovaries left *in situ*, as the ideal operation at full term.

The stump should be dropped, carefully disinfected, and covered with peritoneum, but in ordinary cases no vaginal gauze drainage of the cervix (as Chrobak has advised) seems required. The short duration of the operation, the preservation of the integrity of the pelvic floor, and the fewer vessels to ligate, seem important points in favour of the supravaginal operation in suitable cases.

From personal experience in two successful cases in the eighth and ninth months, this operation seems to me to be simpler than removal of a similar-sized fibroid uterus apart from pregnancy. This is owing to the facility with which the uterus can be drawn outside the abdomen after the child is extracted, to the ease with which the peritoneum can be stripped from the uterus, and to the readiness with which the arteries are found and ligatured. These facts shorten the duration of the operation, and make the "shock" distinctly less than would be caused either by a more prolonged abdominal section for a similar-sized non-pregnant fibroid uterus, or even than usually occurs in a prolonged labour. It also permanently cures the patient of the fibroid, and gives her a healthy full-term child at the same sitting, with very much less risk of trouble in the puerperium than would be present either where a uterus is left with a fibroid *in situ* or even after a full-term myomectomy.

The following is a brief account of two cases (successful as regards both the mothers and children) of supravaginal hysterectomy at nearly full term under my own care.

Case I.[50]—T. M., a primigravida, aged 33, married five years. Admitted to Chandos Ward, Charing Cross Hospital, September, 1899. She complained of the abdominal tumour with three months amenorrhoea. On abdominal examination there was a large fibroid tumour occupying the hypogastric, umbilical, and right iliac regions. Just above the left Poupart's ligament a smaller fibroid nodule was felt, and between the two the uterine wall had an elastic feeling on palpation which suggested pregnancy. Per vaginam, the cervix was out of reach behind the symphysis pubis, and the sacral hollow and most of the true pelvis was occupied by a large impacted fibroid. A provisional diagnosis of a three months pregnancy in a fibroid uterus was made. She was kept in the hospital for five weeks, during which time unsuccessful efforts were made by digital pressure under anaesthesia, and by hydrostatic pressure, to elevate the impacted fibroid. After going out of the hospital for a time she was readmitted. The elastic portion of the uterus had increased in size, and "certain" signs of pregnancy were noted. The situation was explained to the patient, and as her desire to have a living child was great, and nothing was to be gained by operating then, it was decided to wait and perform a Caesarean operation when near full term. She left the hospital on February 9th, with instructions to return at once should pain supervene. On February 24th (thirty-three and a-half weeks of gestation) she had some severe abdominal pain, and was readmitted.

On examination per vaginam the large fibroid which previously occupied the pelvis had risen almost above the brim, and the cervix was now in nearly its normal position, and it was thought that labour would be natural. Attempts to induce labour by introducing a bougie, by Steele's hydrostatic dilator, and by rupturing the membranes, whilst apparently causing labour "pains," failed to produce any sensation of pain, except when the hydrostatic dilator was *in situ*. A well-marked caput succedaneum, however, was subsequently found, proving that the intermittent uterine contractions were really labour pains. As no real dilatation of the internal os took place, and as the fetal head was felt high up above the os internum resting on a bulging submucous fibroid, I performed Caesarean section after consultation with my colleague, Dr. Eden, and removed the uterus below the lowest fibroid, treating the stump by the usual retroperitoneal method, and leaving one ovary *in situ*. In this case the uterus was so twisted that its left broad ligament was in the line of the abdominal incision. Owing to the position of the fibroids I had to incise the uterus through the posterior wall, coming on to the placenta which I stripped off. The convalescence was uneventful.

Case II[51].—Mrs. P., a primigravida, aged 34. Married eight years. Admitted to Charing Cross Hospital October, 1901. Patient was evidently pregnant, with a large abdominal fibroid passing down into the pelvis on the right side. The cervix was high up in front behind the pubes, and the whole of the sacral hollow was occupied by large nodular masses narrowing the obstetric conjugate to less than one inch. This retro-uterine mass seemed under A.C.E. anaesthesia to be quite fixed, and as Nature did not in this case elevate it from the pelvis, as in the last case, I performed Caesarean section with Dr. Eden's assistance, and removed the uterus as in the last case ten days before labour was due. The retro-uterine tumour was found to be firmly adherent to the pelvic floor by vascular adhesions. Mother and child convalesced admirably.

Statistics.

Out of 1,099 cases of Caesarean hysterectomy operated upon after fetal viability reported since 1876, most of which are tabulated in the valuable Porro report issued in 1901, 110 were operations for fibroids, complicating pregnancy. The mortality of Caesarean hysterectomy by all methods at or near full term for pregnancy complicated by fibroids has dropped from 75 per cent. in 1880 to about 20 per cent. in the last ten years. (See Table V.)

I append several tables showing the mortality of various operations performed at full term for fibroids obstructing labour:

Table V.—*Showing the Percentage Mortality of Hysterectomy Performed after Fetal Viability by Various Methods.*

(Calculated from the Porro Report, 1901, pp. cciii and ccxxi).

Years.	A. For all Conditions.		B. For Fibroids.	
	Cases.	Mortality.	Cases.	Mortality.
1876-1881 ...	99	60.6	4	75.0
1882-1886 ...	152	44.0	6	33.0
1887-1891 ...	231	22.0	20	40.0
1892-1896 ...	304	14.1	44	20.4
1897-1901 ...	311	16.7	30	22.0
Total ...	1,097	24.6	110	27.5

The following table (VI) shows the greatly reduced mortality following the retro-peritoneal treatment of the stump and of the operation of panhysterectomy compared with the extra-peritoneal method in 106 cases where the method of operating is given:

TABLE VI.—*Showing Percentage Mortality of Abdominal Hysterectomy Performed near Full Term by Different Methods.*

(Calculated from Porro's Report, pp. i to cci and p. ccxiii, and from more recent cases.)

	For all Causes. 930 Cases.		For Fibroids. 107 Cases.	
	Cases.	Mortality.	Cases.	Mortality.
Extraperitoneal treatment of the stump (Porro)	819	25.1	64	31.3
Retroperitoneal treatment of the stump (Italian—affondamento del pediculo)	56	12.5	25	16.0
Panhysterectomy	55	25.4	18	21.0

The percentage mortality, after the removal of fibroid uteri apart from pregnancy, bears similar relations; thus Sanger and Herff give the following statistics:

TABLE VII.—*Showing Relative Mortality of Hysterectomies for Fibroids apart from Pregnancy.*

	Cases.	Mortality.
		Per Cent.
Extraperitoneal treatment of the stump	504	15.80
Retroperitoneal (affondamento) treatment	500	8.80
Panhysterectomy	544	9.01

The following table (VIII) shows the mortality of hysterectomy performed at the end of pregnancy for fibroids, cancer of cervix, and contracted pelvis respectively:

TABLE VIII.—*Showing Percentage Mortality of Hysterectomy (All Methods) Performed at or Near Full Term for Fibroids, Contracted Pelvis, and Cancer of Cervix.*

(Calculated from Porro's Report, 1901, pp. ccxxi and ccxxv.)

	A. Under All Conditions.			B. Under Favourable Conditions.		
	Fibroids.	Contracted Pelvis.	Cancer of Cervix.	Fibroids.	Contracted Pelvis.	Cancer of Cervix.
1876-1881	75.0	57.9	—	—	47.0	—
1882-1886	33.0	44.0	62.0	—	26.0	—
1887-1891	40.0	20.0	26.0	30.0	10.7	—
1892-1896	20.0	10.0	25.0	16.6	3.5	—
1897-1901	22.8	12.4	35.0	00.0	8.3	—
Average Mortality	27.5	23.3	35.4	15.3	14.2	10.5
Cases	109	822	65	52	528	19

It is worthy of note that in 16 cases in the five years ending 1901 stated in the Porro report to have been operated upon under favourable conditions, together with 2 cases reported since that report by A. Donald and myself—18 cases in all—the mortality has been *nil* (Table VIII).

During recent years comparatively few cases of supravaginal hysterectomy with extraperitoneal treatment of the stump have been performed after fetal viability for fibroids complicating pregnancy. Tables IX and X are complete lists to date of cases of supravaginal hysterectomy with retroperitoneal (or subperitoneal) treatment of the stump and of panhysterectomy.

III.—*Treatment after Labour.*

There still remain cases where labour has spontaneously occurred in fibroid uteri, or where no radical operation has been performed.

Post-partum haemorrhage may occur, and if it cannot be arrested by pressure or otherwise, hysterectomy may be required, but the most usual danger is sepsis.

In cases of sepsis, if the patient is seen very soon after infection, the uterus may be emptied of all blood clot and débris, douched with iodine and water, and have its lining membrane freely swabbed out with strong iodine paint (1 in 4). Curettage should not be employed, but a ball of gauze held in long forceps may be used to brush over the endometrium.

TABLE IX.—*Giving Supravaginal Hysterectomies performed after Fetal Viability for Fibroids complicating Pregnancy with Retroperitoneal Treatment of the Stump (Italian—Affondamento del Pediculo).*

Number in Porro's Report.	Date.	Operator and Locality.	Remarks.	Age.	Result. Mother.	Result. Child.
254	1887	Schroeder, Berlin	Utero-cervical fibroids	45	Lived	Lived.
290	1888	Ott, St. Petersburg	Enormous pelvic fibroid	30	Lived	Lived.
344	1889	Sanger. Donat Leipzig	Obstructing pelvic fibroid	34	Lived	Lived.
399	1890	Landau, Berlin	In labour 18 hours	28	Lived	Lived.
408	1890	R. Jahreiss, Augsburg	Obstructing pelvic fibroid: membranes ruptured 24 hours	40	Lived	Lived.
406	1891	Morisani, Naples	Craniotomy already performed	24	Died	Died.
449	1891	Leopold and Landau, Berlin	Retrocervical fibroid: full term	28	Lived	Lived.
1,070	1892	Fernandez, Lisbon	Cord prolapsed	35	Lived	Lived.
504	1892	Caruso, Naples	Fibroid of lower segment; in labour 2 days	38	Died	Lived.
576	1894	Renge, Göttingen	Fibroid partly intra-ligamentary: 2 days labour, full term	33	Lived	Died.
694	1896	R. Hamill, Philadelphia	Obstructing fibroid	(?)	Lived	Lived.
696	1896	Hofmeier, Würzburg	Obstructing fibroid; full term	25	Lived	Lived.
735	1896	W. J. Gow, London	Obstructing fibroid: eight months pregnant	37	Lived	Lived.
783	1896	Sanger, Leipzig	Obstructing fibroid, 2 days labour	36	Lived	Lived.
1,081	1896	Baer, (?)	—	37	Lived	Lived.
778	1897	Negri, Venice	Obstructing fibroid, 2 days labour: full term	44	Lived	Lived.
855	1898	Renge, Göttingen	Impacted fibroid, ninth month	39	Lived	Lived.
911	1899	Tibone, Turin	Obstructing fibroid: full term	36	Lived	Lived.
923	1899	Vitanza, Palermo	Obstructing fibroid in small pelvis; forceps previously tried: patient in grave state	36	Died	Lived.
960	1900	Amand Routh, London	Obstructing fibroid ten days before full term	33	Lived	Lived.
982	1900	Renge, Göttingen	Pressure on diaphragm, etc.	35	Died	Lived.
1,029	1901	Hofmeier, Würzburg	Obstructing fibroid; full term	45	Lived	Lived.
—	1901 Feb. 13th	A. Donald, Manchester*	Obstructing fibroid; eight months and a-half	43	Lived	Lived.
—	1902 Jan. 20th	Amand Routh, London†	Obstructing fibroid ten days before full term	34	Lived	Lived.

24 cases. Mortality, 4 = 16.6 per cent. Infants, 22 survived out of 24.

* *Obstet. Soc. Trans.*, 1901, p. 180. † Ibid., 1902, p. 41.

Should these measures fail to reduce the temperature, or if, owing to an obstructive fibroid, the uterine cavity cannot be efficiently explored, hysterectomy should be performed.

Gemmell[33] gives a very interesting case of acute sepsis where the patient recovered after hysterectomy had been performed on the eighth day after labour at full term.

Hirst[72] reports two cases where the endometrium became infected, and subsequently some fundal fibroids became inflamed. Hysterectomy was performed, in the one case six weeks after labour, in the other on the twelfth day, both patients recovering.

Prochownick[33] gives a recovery after supravaginal hysterectomy for sepsis in a fibroid uterus following the expulsion of a dead seven months' fetus with retention of placenta, and Stahl[34] records a recovery after supravaginal hysterectomy for sepsis from retained membranes. In this case he also enucleated a fibroid in the cervical stump, and five days afterwards removed the stump also.

Other operators have not been so successful, and it would appear that the longer the operation of hysterectomy is postponed after septic symptoms have declared themselves, the less likely is the patient to recover, if fibroids are present.

A few cases of myomectomy for sloughing fibroids after labour have been described, but they have nearly all proved fatal.

Cumston[33] has, however, described a case where a patient's life was saved by the removal of a gangrenous retro-uterine

fibroid by posterior colpotomy four weeks after labour, but here the pelvic peritoneum was shut off from the abdomen by adhesions.

TABLE X.—*Cases of Panhysterectomy for Fibroids and Pregnancy, with Fetal Viability.*

Number in Table Report.	Date.	Operator and Locality.	Remarks.	Age	Result. Mother	Result. Child.
462	1891	Fritsch, Breslau	Cervical fibroids; eclampsia	(?)	Died	(?)
553	1893	Mouchet, Lens	Obstructing fibroids. 2 labour	38	Lived	Died.
603	1894	Bossi, Geneva	8½ months	(?)	Lived	Lived.
613	1894	Leunander, Upsala	Obstructing fibroid (?)	31	Lived	Lived.
630	1895	Calderini, Bologna	Obstructing fibroid, ninth month (?)	42	Died	Lived.
641	1895	Pestalozza, Florence	Cervical fibroid	22	Lived	Lived.
648	1895	Guermonprez	Obstructing fibroid; full term; in labour 7 days.	34	Lived	Lived.
732	1896	Ribemont and Segond, Paris	Obstructing fibroid, ninth month	38	Died	Lived.
787	1897	Pestalozza, Florence	Pelvic fibroid; full term	38	Died	Lived.
799	1897	H. Boldt, New York	Obstructing fibroid	(?)	Lived	Lived.
836	1898	Barrow	Multiple fibroid, 8½ months	44	Lived	Lived.
887	1898	Gutierres	Obstructing fibroid; full term	(?)	Lived	Lived.
888	1898	Gutierres	Obstructing fibroid	(?)	Lived	Lived.
902	1899	Negri, Venice	Obstructing fibroid; end of seventh month	37	Lived	Lived.
903	1899	Wertheim, Vienna	Cervical fibroid	33	Lived	Died.
918	1899	Delassus, Lille	Obstructing fibroid	42	Lived	Lived.
962	1900	Eustache and Delassus, Lille	Obstructing fibroid: in labour 4 days; already infected	39	Lived	Died.
975	1900	Ribemont and Bazy, Paris	Obstructing fibroid; full term	28	Lived	Lived.
1008	1900	Kidd, Dublin	Obstructing fibroid; in labour 2 days; full term	40	Lived	(?)

19 cases. Mortality, 4=21 per cent.

If radical treatment be adopted for uterine sepsis with infected fibroids it is evident that the more radical the operation the better, so that any form of hysterectomy would be more likely to cure than myomectomy, and panhysterectomy would be preferable to the supravaginal operation.

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II.—Heywood Smith, M.D., M.R.C.P.,

President of the British Gynaecological Society.

Dr. Heywood Smith thought that if possible they should guard against the contingency of fibroids complicating pregnancy by discouraging the marriage of women known to have fibroids. With regard to small intramural fibroids he had seen a case where after pregnancy the tumour disappeared and several pregnancies ensued without any subsequent appearance of the tumour. He considered that it was not without risk to attempt replacement of a pregnant fibroid uterus, as it also was in certain cases after jamming to replace a retroverted pregnant uterus. There were fibroids and fibroids, and the whole determination of diagnosis and treatment depended on the size and situation of the tumour. If the fibroid was in the cervix he agreed with Dr. Routh that enucleation was dangerous as leaving a wound open to the possible attack of sepsis. With regard to the sterilization of the patient he preferred the excision of parts of the oviducts to the extirpation of both ovaries. He was against myomectomy as an ordinary rule, as where multiple fibroids existed it was very probable that several small ones would be overlooked which might subsequently grow. Lastly, with regard to hysterectomy, he was glad to see that Dr. Routh, both in his paper and his table of statistics, established the fact that subperitoneal hysterectomy gave better results than panhysterectomy; this was especially gratifying to him as he had for years contended for the advantages of subperitoneal hysterectomy, and he did not consider that the very small stump of cervix left in the latter operation tended to subsequent degeneration, epitheliomatous or otherwise.

III.—Murdoch Cameron, M.D.,

Regius Professor of Midwifery and Diseases of Women, Glasgow University.

Professor Murdoch Cameron said: I have no doubt whatever but that the apparent growth of a fibroid during pregnancy is due in most part to an enormous growth of muscular tissue, which is found to be diminished a few months after delivery. A physician who first detects the swelling during labour will, if he examines later, be much impressed with the great change, and may err in thinking that the fibroid has atrophied. The next pregnancy will reveal the same increase as observed in the previous pregnancy, showing that there has been no true disappearance of the fibroid condition. As regards the degeneration of fibroids, I think that, in the case of subserous growths at least, the condition is in one way due to siphoning of the vessels at delivery. I feel that sterility, although not constant, is very common, and might be taken as the rule. As regards obstruction, of course any development in the lower segment of the uterus will more likely form an impediment. Each case must be treated on its merits. In some induced labour will be advisable, in others hysterectomy with removal of ovaries and tubes may be chosen; and, where this has been done, I have never found any evil effect following the removal of the appendages. In conclusion, we should, I think, place no value on the statistics of cases as a guide to treatment, as in too many of the cases pregnancy has only been found as a complication, whereas what we have to deal with now is where the fibroid is the complication of pregnancy.

IV.—F. W. N. Haultain, M.D., F.R.C.P.Edin.,

Lecturer on Midwifery and the Diseases of Women, Edinburgh School of Medicine.

Dr. Haultain had listened with much pleasure to Dr. Routh's full exposition of this important subject, which at the present time, along with the treatment of fibroids generally, was perhaps the most debated point in gynaecology. He was, however, convinced, both from personal experience and statistical evidence, that fibromyomata were an extremely frequent cause of sterility. Fibroids were very common; complicating pregnancy they were comparatively rare. This to him was convincing proof. It was true that fibroids gave rise to symptoms in the later years of child-bearing life most frequently, but it was probable that they were present for many years before they gave rise to symptoms, and this accounted for the large number of cases of prolonged sterility where patients only consulted a medical man when symptoms or signs manifested themselves. The fact that the average number of children borne by women with fibroids was less than two not only showed that these tumours exercised an inhibitory effect on pregnancy, but also was strong proof that pregnancy had a

stimulating effect on the growth of fibroids, whereby after pregnancy was completed the tumour remained larger and more active and predisposed to subsequent sterility. There could be no reasonable doubt that they increased in size during pregnancy, and seldom involuted to their previous dimensions during the puerperium. It was quite possible to conceive, however, that uterine retraction after pregnancy might so interfere with their circulation that not only might they diminish in size, but even disappear entirely; this, however, was quite the exception. In many instances, from the interference with the circulation, sloughing of the growth resulted, which was one of the dangers of the complication. Retraction and contraction of the uterus also tended to make interstitial growths submucous and polypoidal, and on two occasions he had seen severe secondary *post-partum* haemorrhage result from the extension of such polypi some weeks after confinement. As regarded management, he could not agree with Dr. Routh's sweeping assertion that the induction of abortion should be abandoned. Each case must be treated on its own merits, and he had on three occasions induced abortion with the utmost success in cases where severe pelvic pressure symptoms, such as retention of urine, had been present. If no serious symptoms were present he agreed with Dr. Routh that the case should be left to full time and treated as the situation demanded; but there were cases where, when the tumour was above the ovum and yet serious symptoms of pressure supervened, it was easy to procure abortion and treat the growth afterwards by myomectomy (which he had done on one occasion), whereby the woman was saved from the loss of her uterus and might subsequently bear children. Even should the induction of labour prove futile if it were associated with untoward symptoms one was always in the position of doing the major operation of hysterectomy at any moment. Panhysterectomy for sloughing fibroids in the puerperium was the only treatment; this he had done successfully in a case on the fifth day after confinement. The subject was a wide and debatable one; each case was to be treated on its merits; dogmatic rules were impossible; hysterectomy, myomectomy, induction of abortion, or judicious inaction should all be at command, and were individually useful according to circumstances.

V.—Andrew J. Horne, F.R.C.P.I.,

Obstetrician, National Maternity Hospital, Dublin.

Dr. Horne said that the increase in size of fibromata during pregnancy was due to oedema rather than to any increase in growth, and he did not believe in their disappearance altogether after delivery. Fibroid tumours did not *per se* give rise to sterility, which was due to the endometritis or the results of pressure on the tubes and ovaries. Statistics were useless, as fibromata rarely occurred until after the thirtieth year. Dr. Horne was of opinion that pregnant women suffering from fibroma ought to be permitted to go on to full term, and then be guided by the complications that might arise. He quoted a case occurring under his own care in the National Maternity Hospital, Dublin. A woman aged 35 had been under observation for five years, suffering from a fibroma which reached to the level of the umbilicus. This woman became pregnant. On examination at the seventh month the fibroma filled the posterior *cul-de-sac* of the pelvis. The os uteri could be reached anteriorly with great difficulty. It was impossible to raise the fibroid from the pelvis by justifiable pressure. This patient was allowed to proceed to the full term of pregnancy. The day before labour came on he examined her with Professor Smith, under anaesthesia. They tried every means to push up the fibroma, with the patient lying on her back and side, and in the Trendelenburg position—but without avail. They decided to wait for labour pains to set in and be prepared to perform a Caesarean section, and, if necessary, a complete hysterectomy. Thirty-six hours subsequent to their examination labour commenced. Dr. Horne ordered an operation room to be immediately got ready, and said he would perform Caesarean section in two hours. On returning and making a vaginal examination he was astounded to find the os uteri was the size of a florin and the pelvic growth was gradually being raised up into the abdominal cavity. The patient delivered herself, by natural efforts, in ten hours, of a living child. There was no trouble during the puerperal convalescence. Dr. Horne did not dread *post-partum* haemorrhage, unless the tumour was submucous, and some cases of interstitial fibromata. Secondary haemorrhage was almost always due to the fibromata becoming pedunculated.

VI.—J. A. Rawlings, M.R.C.P.,

Consulting Physician, Swansea General Hospital

Dr. Rawlings said: The only point to which I wish to refer is the disappearance of fibroids after pregnancy. I am satisfied of the possibility of this. Ten years ago I attended a lady who had, as I believed, an unquestionable multinodular fibroid. Labour was difficult, there was great *post-partum* haemorrhage and severe after-pains for days. A few weeks after labour nearly all signs of the tumours had disappeared.

VII. T. W. Eden, M.D., M.R.C.P., etc.,

Assistant Obstetric Physician and Lecturer on Practical Midwifery, Charing Cross Hospital.

Dr. Eden desired to limit his remarks to two points. In the first place he was quite unable to agree with Dr. Heywood Smith that a woman with uterine fibroids ought to be advised not to marry. His experience had led him to an entirely different conclusion; he thought that fibroids were not a serious complication of pregnancy, as a general rule. He had seen a fair number of cases now, and on the whole he did not fear the complication. He had seen recently a case in which a fibroid nearly as large as the pregnant uterus itself at term had not in any way disturbed the course of labour and the puerperium. The patient had been previously advised that labour would be attended inevitably with the gravest possible dangers, and that the proper course would be to remove the uterus and fibroid altogether. Such cases made him unwilling to give the advice recommended by Dr. Heywood Smith. The second point he wished to refer to was to declare his conviction that fibroids very rarely required operation during pregnancy. He was entirely opposed to the induction of abortion as advised by Dr. Haultain. This operation was quite unnecessary in the majority of cases, and if the growth was so situated as to cause obstruction, then abortion was attended by great danger. A great deal was heard of "pressure symptoms" as caused by fibroids. He thought some precise definition of what was meant by "pressure symptoms" was much to be desired, for there was no doubt that the term was often loosely applied. He did not recognize such symptoms as abdominal pain and frequency of micturition as "pressure symptoms;" these symptoms were often met with in a normal pregnancy and were of no importance. But evidence of obstruction to the circulation in, or of pressure upon the nerves of, the lower extremities, were undoubtedly signs of pressure. Such symptoms might occasionally indicate operation during the pregnancy. But wherever possible he believed that cases should be left to term, and then only dealt with after it was evident that obstruction insuperable to the natural forces was present.

VIII.—T. Arthur Helme, M.D.Edin., M.R.C.P.Lond., F.R.S.E.,

Honorary Assistant-Surgeon, Northern Hospital for Women and Children, Manchester.

Dr. Arthur Helme gathered that the question of diagnosis did not come within the remarks of the opener of the discussion; although this was a most important matter, often presenting one of the most difficult problems to the gynaecologist, and having an intimate bearing upon the management, especially the question of abortion, he must content himself by merely mentioning the fact and alluding to a case which was at present under his care. He approved the general principle enunciated by Dr. Routh, namely, that the induction of abortion as a rule should be abandoned, though occasionally this course might be advisable. In the case referred to there were none of the usual signs or symptoms of pregnancy and though urged to extirpate the uterus on account of severe haemorrhage he (the speaker), being unable to exclude the existence of pregnancy, preferred to dilate the cervix in order to make a diagnosis if possible: having done so there was no difficulty in delivering a five months fetus and placenta; the patient did very well and was spared the discomforts of an operation. As to prognosis and treatment the discussion up to the present time showed the futility of attempting to frame definite rules as to treatment in so comprehensive a matter. For his own guidance he had divided fibroids complicating pregnancy into two distinct classes: (1) Those cases in which the fibroids grew in the corpus uteri; (2) those in which the fibroids grew in the lower segment. In the first group as a rule pregnancy ran a normal course, the difficulties were obstetrical rather than gynaecological and the chief dangers were in association with the abnormal implantation and separation of the placenta.

Such cases required only careful treatment at the time of labour, and he himself deprecated any surgical interference during pregnancy except in the rare cases where urgent symptoms arose from some accident, as, for example, the strangulation of a pedunculated tumour. Under these circumstances one would act on the ordinary rules of surgical procedure, the existence of pregnancy making no difference. He thought the tendency to remove subserous fibroids of the corpus during pregnancy ought to be condemned. The second group occupied quite a different position. Tumours growing in the lower segment were apt to become incarcerated in the pelvis, and might not only add to labour the serious complication of pelvic obstruction, but might give rise to "pressure" or other effects demanding immediate surgical relief during pregnancy. In such a case he had been compelled to extirpate the pregnant uterus (with fibroids) because the urethra was completely obstructed, and the patient was unable to evacuate the bladder. It was impossible to dislodge the tumour from the pelvis, even under anaesthesia, with the patient in the Trendelenburg position. Where, then, there were fibroids occupying the pelvis, rapidly growing, and offering such possible dangers, he thought it the right course, when the patient was seen before mid-term, to extirpate during pregnancy; but that it was their duty to explain the matter to the husband and wife and to give them the alternative choice of such a course, or, on the other hand, of waiting, if possible, to full term and then undergoing Caesarean section, followed or not by extirpation, as might be desirable. He had at present such a case, where the mother, at all costs, desired to have a living child. At the same time, he would not consent to allow a patient to wait for and go into labour in order to give a fibroid the off-chance of being drawn up from the pelvis into the abdomen, as fortunately happened in the case of Dr. Horne; and then, after exhausting attempts at labour, if the fibroid remained impacted, to subject the patient to a Caesarean section and possible extirpation, unless the additional risks were clearly appreciated and accepted by the patient and her husband beforehand. As to the method of hysterectomy to be adopted he thought that this must be largely decided by the individual preference of the operator. He himself preferred, whenever possible, to remove the entire uterus, and he also now removed both ovaries. His experience was that in those cases, where formerly he had left at least one ovary, there was apt to be subsequent painfulness of that ovary.

IX.—Frederick Edge, M.D.,
Surgeon, Birmingham and Wolverhampton Hospitals for Women.

Dr. Edge thanked Dr. Routh for his systematic statement of the subject and the light he had shed upon it. He had been first deeply impressed fourteen years ago by a case in which a single woman with a nodose uterus was confined and died of puerperal fever. *Post mortem* a septic, sloughing, subserous pedunculated fibroid was found, which could have been removed easily. If such a case of sepsis occurred now (this was fourteen years ago) he should perform panhysterectomy. At that time it was considered a case of puerperal fever, and therefore inoperable. In his experience the effect of pregnancy on the fibroids had been to cause considerable increase in their size, but this had been a gradual increase, and the *post-partum* diminution had likewise been proportionate with the decline in the size of the uterus for a few weeks, after which, especially when the fibroid had been subserous or in the fundus uteri, the fibroid reached what might be called its normal size and the uterus might diminish slightly more. As regards the effect of fibroids on pregnancy, he quite agreed that it was the altered endometrium and dislocation of the tubes and ovaries which generally produced sterility. But fibroids and sterility might rather be said to be due to causes of which some were common to the two. He had a case at present where the fibroid was interstitial in the right cornu and there had been two abortions at the fourth month. The absence of tubal pregnancy showed that the tubal mucosa must generally be sound. The labours in the cases where he had advised non-interference had been fair, somewhat protracted, but considering the anxiety of both patient and accoucheur, this might have been due to other conditions. In the case of sepsis, it was probably a combination of infection, upon a piece of tissue whose blood supply was temporarily deranged by the uterine contractions, with some trauma. In a case sent to him by Dr. Wills, of Brewood, at 6 months, the fibroid was in the posterior cervical wall and very fixed. He performed abdominal panhysterectomy after enucleating the fibroma, which was incarcerated in the pelvis. This was a difficult operation, and the patient was very ill for a few days, but she did very well. In a case of fibroid of the right cornu sent to him by Dr. MacCarthy of St. George's, Salop, he had a doubt as to the nature of the tumour. He explored, and finding it as stated, and the uterus about five and a-half to six months' pregnant, he closed the abdomen. She did very well in labour, and had not complained since of the fibroid, which he hoped to examine again soon and decide as to the course of action or inaction. In another case, sent by Dr. Cochrane, the fibroma was subserous at the left cornu, and he saw this at the sixth to seventh month. She was confined comfortably, and four weeks ago he removed the myoma very easily and successfully. His general notion was that unless the fibroid was cervical and fixed, it was well to leave the pregnancy to a natural ending, and not to meddle at the labour unless compelled to interfere, when the utmost care for non-infection should be taken. The treatment of the fibroid after the patient had passed through the puerperium successfully depended upon the general principles and the conditions of each case. When there was doubt as to the tumour during pregnancy, or there was puerperal sepsis in these cases, the only sure procedure was to examine the part thoroughly, which could only be carried out by abdominal section.

X.—Ewen John Maclean, M.D., M.R.C.P., F.R.S.E.,
Senior Gynaecologist, Cardiff Infirmary.

Dr. Maclean referred to a case in which a fibroid of the right broad ligament blocked the pelvis at the fifth month of pregnancy. Attempts at reposition under anaesthetic failing, an exploratory abdominal section was effected, and the tumour found irremovable with any degree of safety to the continuation of the pregnancy, a point of especial importance in this case, as the mother was very anxious to have a living child. About four weeks after the operation the tumour was found to have become raised out of the pelvis and the cervix had become quite central. She had a natural labour at full term. On the point as to whether pregnancy induced enlargement in fibroid tumours, he had lately had a case which convinced him that such enlargement did occur.

XI.—R. Nelson Jones, L.R.C.P., M.R.C.S.,
Obstetric Physician, Swansea General Hospital.

Mr. Nelson Jones said: I was very much struck with what Dr. Helme said, and I quite agree with him that the situation of the fibroid is the most important point. Tumours, in my judgement, of the upper half of the uterus are in many instances of little trouble to pregnancy. I have a case under my care with a fibroid the size of a plum in the posterior wall of the uterus. She has miscarried four times and carried three living children. The only trouble I have had has been haemorrhage (flooding) after the birth of the child, controlled by ergot administered at the end of the confinement. Another case I have is a fibroid, pedunculated and easily movable; this always rises up in the pelvis during gestation and gives no trouble. It is attached to the upper right side of the uterus. The fibroids which arise, grow, and are situated in the cervical region will give all the trouble in these cases complicated with pregnancy. Each case should be dealt with on its own merits as to hysterectomy or panhysterectomy.

XII.—J. Lamond Lackie, M.D., F.R.C.P.Edin.,
Gynaecological Tutor, Edinburgh Royal Infirmary.

Dr. Lackie narrated a case which illustrated the extraordinary way in which Nature overcame what at first seemed an insurmountable obstruction on the part of a fibroid. The patient went into labour within a few hours of Dr. Lackie seeing her, and since the cervix was high up above the pubes, and a fibroid occupied the pouch of Douglas, it was considered that Caesarean section would be necessary. However, before the preparations were complete, the cervix descended, the fibroid rose into the abdomen, and the woman was delivered spontaneously. Immediately afterwards the uterus became markedly retroverted and the fibroid once more sank into the pelvis, so that the placenta was removed only with great difficulty.

Reply.

Dr. Amand Routh, in reply, said he did not think that

marriage should as a general rule be discouraged, but rather that the age of the patient, the position of the tumour, and the condition of the endometrium were all to be considered, and she should be told what operations might be required if pregnancy supervened, if the rare condition of obstruction occurred. He thought one ovary should always be left in hysterectomy. He thought abortion should never be induced, but that, taking into consideration the rarity of obstruction at labour, all treatment should be postponed till full term unless urgent symptoms meanwhile supervened. He could not agree with Dr. Haultain that fibroids were a marked cause of sterility. Many women of 30 years and upwards were found to have fibroid nodules on the surface of the uterus at their confinement. He congratulated him on his case of sepsis after labour saved by hysterectomy. He disagreed with Dr. Helme that operations (myomectomy or hysterectomy) should be performed during pregnancy at the choice of the patient, but preferred always to wait till fetal viability if possible.

A CASE OF PERSISTENCE OF THE UROGENITAL SINUS,

WITH ESPECIAL REFERENCE TO THE LATER THEORIES OF THE MODE OF DEVELOPMENT OF THE FEMALE GENITAL TRACT.

By C. E. Purslow, M.D.Lond., M.R.C.P.Lond.,

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The following are the notes of the case:

N. W., aged 23, single, housemaid, admitted to the Queen's Hospital, July, 1902. Menstruation had commenced at the age of 13, and had always been regular, but attended by considerable pain, and this had been getting worse during the last three years: it was this symptom which had led her to seek medical aid. She had never had the slightest trouble with micturition, nor any other complaint than the dysmenorrhoea, and looked a strong, healthy, and well-developed young woman.

State on Examination.—The vulva and external genitals appeared normal, the pubic hair was well developed; on separating the labia there was seen to be an unusually well marked hymen, having a crescentic opening in front, which would admit the index finger; immediately within the hymen, but quite distinct from it, was a firm fibrous ring contracting the opening into the vagina, and just admitting the tip of the little finger, but the finger could not be forced through this narrowed part of the canal, which gave the impression of being about 1 in. in length. A catheter passed through the hymeneal opening readily into the bladder and urine was withdrawn. The clitoris was not enlarged.

As the patient intended to get married shortly it appeared to be advisable to relieve the constriction, and with this object an anaesthetic was administered, and she was placed in the lithotomy position. It was found impossible to force the finger through the constriction, so the latter was divided, together with the hymen, by deep incision with a bistoury, the finger being passed into the rectum to ascertain the position of the rectal wall and guard it from injury. After incision the orifice was well stretched until it would admit three fingers. It was then ascertained that the constricted portion communicated at its upper end with a capacious vagina, and that at the junction the bladder opened by an aperture which admitted the tip of the finger, and appeared to have very little sphincter power. There was no trace of a urethra. The patient was troubled with incontinence of urine when she first got about after the operation, but when seen some months later this was causing her very little trouble and only occurred on unusual exertion, and when seen nine months after the operation she reported that the incontinence had quite ceased to trouble her. She has not yet married.

Persistence of the urogenital sinus is a very rare abnormality and is due to an arrest of development; the parts retaining the arrangement which existed at an early stage of intrauterine life; little is said about it in the textbooks I have consulted, and the best descriptions I have been able to find are those by Pozzi and Hart and Barbour.

Pozzi,[1] after describing the condition known as atresia ani vestibularis, which is a persistence of a still earlier arrangement in the fetus, namely, the common cloaca into which the rectum, vagina, and urethra all open, goes on to say: "Hypospadias in the woman corresponds to an analogous but less marked arrest of development. The perineum will have undergone normal development, whereas the urogenital sinus will have preserved the arrangement it had in the embryo. In certain cases which constitute the first degree of the lesion the vulvar or vestibular canal is long and narrow like the urethral canal and receives the opening of the urethra and vagina fairly high up. It has been a mistake to consider this arrangement as a simple opening of the urethral canal at a high level, into a vagina which is narrowed at it, lower part."

In Hart and Barbour's *Manual of Gynaecology*, the following occurs: "Persistence of the urogenital sinus into which the bladder opens directly as the urethra has not formed in such cases; the vulvar orifice is contracted and opens into a long narrow vestibule."

I should like to draw attention to two points:

The first is as to the question of surgical interference. In none of the authorities I have consulted is any reference made to this point. The danger of incising, as was done in this case, appears to me to be that one may find the bladder opening directly into the upper end of the narrow canal by an orifice having little or no sphincter power, and any advantage gained by rendering the patient nubile is more than counterbalanced by the risk that she may suffer afterwards from incurable incontinence of urine. The observation of this case has led me to think that some of the cases recorded as instances of "urethral coitus with occluded vagina" would really belong to this class of malformation.

The second point of interest appears to me to be the bearing which the condition of parts as found in this case has upon the theories of the development of the hymen. I think I am right in saying that most authorities consider the hymen as a vaginal product—that is, Müllerian in origin. Thus, I will quote only *Quain's Anatomy*, tenth edition. In this it is stated that "the hymen begins to appear about the fifth month as a fold of the lining membrane at the opening of the genital passage into the urogenital sinus."

Now, it is at once clear that this theory cannot explain the existence of a well-marked hymen in my case, not at the opening of the genital passage into the urogenital sinus, but entirely outside the latter, and not connected in any way with the Müllerian tubes as represented by the vagina.

A new view has, however, lately been put forward by Dr. Berry Hart as to the development of the genital tract, and it appears to me that his view will fully explain the appearances found in my case, whilst it is impossible to make them conform to the older theory.

In a paper read before the Anatomical Section of this Association at the Manchester meeting last year, Dr. Hart brought forward his theory as to the development of the lower part of the genital tract, including the hymen. He took exception to the account usually given, and argued that the lower-third of the vagina and the hymen are not developed from the ducts of Müller.

After giving reasons drawn from dissections, he says: "I consider, therefore, the vagina as Müllerian in its upper two-thirds, urogenital sinus in its lower-third, and that the hymen is derived from the coalescence of bulbous proliferations of the Wolffian ducts." He sums up succinctly the question thus: "There are practically two views of the constitution of the adult female genital tract. We may, on the one hand, consider the tubes, uterus, and vagina to be developed from the Müllerian ducts. The vestibute is derived from the urogenital sinus. The hymen is a vaginal product. The Wolffian body and duct take no part in the normal development of the genital tract."

"The second view is that the tubes, uterus, and upper two-thirds of the vagina are Müllerian in origin, the lower third of the vagina and vestibule are derived from the urogenital sinus, and the hymen from epithelial proliferations of the lower ends of the Wolffian ducts."

The first of these views represents the one usually given in the textbooks, and the second is Dr. Hart's own view, and it will at once be seen that the arrangement of parts found in this case falls into line readily with, and is easily explained by, the second (or Dr. Hart's) theory, and it appears to me to supply strong confirmatory evidence of the correctness of his views.

Thus the vagina in its upper part, that is that formed from the Müllerian ducts, was fully developed.

The urogenital sinus, which should have undergone development into the lower part of the vagina and the urethra, had not done so, but had remained in the condition in which it is found at an early stage of fetal life. The hymen, on the other hand, which according to Dr. Hart's theory is developed from an entirely different structure, was very well formed.

References.

[1] Pozzi, *Treatise on Gynaecology* (New Sydenham Society's Translation).

SOME REMARKS ON THE MATERNAL CIRCULATION IN PREGNANCY.

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There are certain normal changes that occur in the quantity and quality of the blood during the course of pregnancy. The volume of the blood is increased and it is more dilute. It also

undergoes considerable alterations as a result of the fetal metabolism and excretion.

It is pretty generally agreed that whether on account of these blood changes, or only coincidently with them, a variable amount of hypertrophy of the heart takes place. It has been assumed, on quite insufficient grounds, that this cardiac hypertrophy is of a compensatory nature, and in support of this view it is stated that the arterial pressure is constantly raised in the pregnant state.

James Mackenzie has pointed out that although an increase may take place in the heart's strength during pregnancy, yet it frequently happens that the patient cannot exert herself with the freedom she possessed before conception. Therefore it cannot be laid down as a general rule that the hypertrophy of the heart is in any sense compensatory for the altered conditions of the circulation, though in some cases it must be admitted that a considerable degree of compensation does appear to be established.

In the majority of normal pregnancies, however, the amount of cardiac hypertrophy that occurs does not enable the heart to perform its additional work without overstrain, and consequently the whole organ becomes more or less dilated. The right side of the heart becomes dilated to a proportionately greater extent than the left, and obvious signs of this dilatation can be readily noted in a large number of pregnant and puerperal women.

Mackenzie directed attention to the fact that a pulsation of the jugular veins may be largely developed during pregnancy, and demonstrated that this symptom gives infallible evidence of dilatation of the right side of the heart. During the last eighteen months I have examined for this symptom most of the pregnant women who have been attended during their confinement by my dispensary pupils. I see these patients during the last two months of pregnancy, and they are generally again visited in the puerperium. Distinct pulsation of the veins was present in the majority, and occasionally the wave of blood thrown back into the neck was so great as to be visible from some distance. Commonly enough in these patients the external jugular veins could be observed to pulsate, but as a rule the pulsations were confined to the internal jugulars. These veins are never visible, and the carotids pulsate over the same part of the neck, but one recognizes the venous pulse by its peculiar heaving character. The venous pulsation, when once recognized, is quite a different movement from that produced by the carotid pulse; the venous wave is a gradual distension, the arterial wave is a sudden abrupt protrusion.

The venous pulse met with in normal pregnancy is due to the systole of the auricle, and thus occurs earlier than the radial pulse; the collapse of the vein, which is a more striking feature than its distension, will be found to be synchronous with the arterial pulse. If a graphic record is taken simultaneously with the radial pulse, these events in the venous pulsation are readily recognized. As the veins of pregnant women are usually greatly distended, these pulsations can be observed when the patient is sitting up in bed, but they become more marked when she lies down.

Accompanying this sign there is often found other evidence of dilatation of the cavities of the right heart. Systolic murmurs may be heard over the pulmonary and tricuspid areas, and not infrequently near the apex also. An apical murmur may lead one to suspect disease of the mitral cusps, but other physical signs must be present before one can definitely diagnose organic disease. I think it is probable that the greater number of murmurs heard over the precordia in a pregnant woman are of a functional character, and are really due to the dilated condition of the right side of the heart. Probably most of these murmurs are of tricuspid origin; the "safety-valve function" of these valves has been experimentally demonstrated, and clinically it frequently occurs. The cardiac dullness is distinctly extended in such cases, particularly to the right, and after delivery this side of the heart seems only slowly to resume its normal shape. Indeed it seems quite likely that an extra degree of dilatation, especially of the thin-walled right auricle, is produced by the strong bearing-down pains of the second stage of labour. This final over-distension of an already dilated right heart may help to explain the increased size of the venous pulse wave which is commonly to be noted in the first few days of the puerperium. The jugular pulse is most often found in multiparous women; and it may appear very early in pregnancy, so early sometimes as to be of value as a diagnostic sign of the condition.

As further evidence of the absence of a compensatory cardiac hypertrophy in normal pregnancy I may state that there is no constancy of the pulse in the different positions of the body. Even in primiparae there is a considerable quickening of the pulse and a fall in blood pressure when the upright position is assumed, and in multiparae these changes are exaggerated.

When a normal heart has become dilated as a result of pregnancy one does not always obtain direct evidence of it from an examination of the arterial pulse. In dilatation of the heart from other causes the radial pulse is always quickened and the blood pressure is very low, but in pregnancy it is common enough to find the pulse slow and of good pressure. A good firm pulse may be found in a woman who exhibits a large pulsation in her jugular veins. This is a remarkable feature about the dilated heart of pregnancy; the type of radial pulse is quite consistent with a left ventricular hypertrophy, and yet it is accompanied by other evidence which distinctly points to dilatation of the right heart.

The explanation is not by any means a simple one, but I think there are indications of some influence—possibly a toxic one—at work during pregnancy, whereby the arterioles have been stimulated to increased contraction. The peripheral resistance is thus greatly increased during pregnancy, and it must be remembered that the protective action of the cardiac and vascular reflexes is greatly interfered with. I refer to the fact that there is a constant source of pressure, in the shape of the enlarged uterus, acting directly upon the great vascular area of the abdomen. This factor cannot be altogether ignored, especially in primiparae with rigid abdominal walls, for it is fully recognized how important a part is played by the abdominal vessels in regulating the circulation by their function of relieving the over-filling of the arterial system. But the increased peripheral resistance so often found during pregnancy cannot be ascribed to this cause, otherwise a similar condition of the circulation would be present in many cases of abdominal tumour, and this is not so. The changes that take place in the maternal circulation during pregnancy would seem to be best explained by the theory that there is some vaso-constricting principle circulating in the blood which not only exerts its influence on the arteries and arterioles throughout the body, but also to a greater or less extent upon the heart itself.

It is not improbable that some such powerful and universal vaso-constrictor is generated during pregnancy, some substance which possesses very similar properties to those of the internal secretion of the suprarenal glands. Perhaps, as I have suggested in a former paper[1], the suprarenal secretion itself exerts an exaggerated influence upon the cardio-vascular system in pregnancy, an influence which, if insufficiently counterbalanced, may lead to such intense contraction of the renal vessels that the secretion of urine is very greatly diminished, or even entirely abolished.

The cardio-vascular phenomena which women exhibit at different periods of their pregnancy seem to me to bear an important relationship to the state of tone of the arteries and arterioles. The calibre of the blood vessels is regulated by mutually antagonistic sets of nerves, and is subject to marked variation. Normally the vessels are in a state of semi-contraction. The nervous system plays an important part in keeping up this vascular tone, but one must now recognize that there are other, and from the present point of view more essential, influences. I cannot now enter upon this question, but will merely say that there is abundant clinical and experimental evidence to prove that the arterial calibre is influenced in a most profound manner by the internal secretions of the suprarenal and thyroid glands. Suprarenal extract contracts the arterioles very greatly, and does so, apparently, partly by stimulating the nerve endings of vaso-constrictor nerves, and partly by acting directly on the muscular coat of the vessels themselves. Nothing is so extraordinary about its action as the smallness of the dose sufficient to do this: $\frac{1}{5000}$ gr. will constrict the whole arteriole field. The thyroid secretion, on the other hand, has been proved to influence the arterioles in entirely the opposite way. Iodothyrin is a specific vaso-dilator.

It may be assumed, then, that under normal conditions, apart altogether from the tightening or relaxation of the vessels exerted by the vasomotor centre, a balance is struck between these two internal secretions which results in a certain arterial tone. In various pathological states which are now well recognized it is certain that this balance becomes greatly disturbed, and the type of circulation which develops under such circumstances often clearly indicates which secretion is overacting, or is being insufficiently antagonized. A

proper equilibrium can in many cases be re-established by supplying to the tissues some of deficient secretion in artificial form.

A study of the circulatory phenomena observed throughout the course of normal pregnancy strongly suggests that there are frequent periods during which one or other of these opposing internal secretions gains the upper hand. In general it may be said that at the very commencement of pregnancy there is an increased functional activity of the thyroid. Hence the superficial blood vessels are dilated, the veins in the lower limbs and elsewhere become enlarged and painful, and palpitation and other vasomotor symptoms may appear. Sometimes at this time simple goitre may develop, and on rare occasions the symptoms of Graves's disease commence.

Some women, chiefly multiparous, appear to go to the end of pregnancy with evidences of a surplus of thyroid secretion throughout, and they are readily recognized, among other points, by the type of circulation they present. Briefly, some of the features are these: The pulse is quickened; the blood pressure is not appreciably raised; the arterioles of the skin are relaxed, leading to a subjective sensation of warmth, and a well-marked venous pulse is frequently present. There are evidences of dilatation of the right heart without any noteworthy left ventricular hypertrophy. In these patients the metabolic processes of the body appear to be stimulated, and there is no special tendency to break down; the secretion of urine is largely increased, and urea excretion is not markedly diminished. If albuminuria is present it bears no grave significance. Sometimes there is a considerable amount of general oedema which pits readily on pressure. Another interesting point is that patients with this type of circulation seem to be specially liable to severe haemorrhage during the third stage of labour.

There are other women, most commonly primiparae, who, after passing through the early months of pregnancy with evidences of an adequate or slightly overacting thyroid, begin to exhibit symptoms which indicate that the suprarenal influence on the arterioles is becoming too pronounced. Here, again, one can trace the gradual developement of definite circulatory features, and, coincidently, various other symptoms make their appearance. When there is only slight or not too long-continued over-action of the suprarenal secretion the pregnancy may still progress within physiological limits, but there are certain signs, now well recognized, which seem to mark the borderland between physiology and pathology. In extreme cases of this type one may note, in the latter months of pregnancy, that the pulse-rate has fallen considerably, that the radial artery is firm and resistant, and that the blood pressure is markedly raised. The superficial arteries are contracted. Evidences of right heart dilatation are not always present, for the left ventricle will be found to have undergone marked hypertrophy. A venous pulse is not generally present. Metabolism is diminished and is very liable to break down. The secretion of urine may be sufficient at first, or may even be increased; but it is of very low specific gravity, and the urea excretion is notably below the normal; later on the renal secretion may fail entirely. Albuminuria in cases of this type is a symptom of serious significance. Oedema may be entirely absent, or may be of a solid character, only pitting on firm pressure. Patients in whom this type of circulation is fully developed have no tendency to *post-partum* haemorrhage.

It is patients of this kind, however, who are liable to develop eclampsia; and it is of the highest practical importance to recognize the supervention of arterial contraction with consequent high-pressure pulse as an early clinical symptom of impending danger of this kind. There is no doubt about what should be done in such cases. The arterioles must be relaxed, and if necessary so fully relaxed as to alter this type of circulation to the other extreme. Thyroid extract is the ideal vaso-dilator for this purpose, but for an emergency a full grain of morphine, hypodermically, is the proper treatment. Aconite and veratrum viride will also bring about the vascular dilatation, and the same result follows precisely upon the infusion or transfusion of saline solution.

A certain proportion of women towards the end of pregnancy exhibit what may be called "pre-eclamptic" symptoms, although sometimes there may be no sequel in the way of eclampsia. I have noted, however, that such symptoms as persistent headache, vomiting, and diminished secretion of urine, are commonly associated with a high blood pressure and contraction of the superficial arteries. These patients often feel very ill, and I have now administered thyroid extract to a sufficiently large number to convince me of its value. The untoward symptoms invariably improve, and the transition from a condition of general malaise to one of well-being is often so marked as to suggest that this remedy supplies some important want to the maternal organism in certain disorders of pregnancy.

REFERENCE.

1 Eclampsia and the Thyroid Gland." *Trans. Edin. Obstet. Soc.*, vol. xxvi, 1900-01.

CLINICAL STUDY OF INTERNAL HAEMORRHAGE IN ASSOCIATION WITH ECTOPIC PREGNANCY.

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Internal haemorrhage is an accident of such common occurrence in association with the arrest of a fecundated ovum in some portion of the Fallopian tube that it may practically be regarded as an invariable consequence of this untoward event; it is an accident which is extremely prone to occur before the embryo is ten or twelve weeks old—that is, before the placenta has completed its development. This can hardly surprise us when we recall the physico-anatomical characters of the tube itself, and consider the changes which must take place in this structure in response to the irritative influences of an oosperm undergoing evolution.

The oosperm is a more or less globular body, and as it lodges in the tube it becomes grasped thereby as if by a belt, but at two of its poles it is, comparatively speaking, unsupported and unopposed. Until about the sixth week of its existence, when differentiation of the placenta takes place and greater specialization occurs, the embryo is nourished by the villous chorion in its entirety, and to meet the requirements of this structure even at this early stage, the vessels ramifying in the tube become correlatively enlarged and greatly altered. These vascular changes are, of course, most pronounced in the immediate neighbourhood of the embryonic sac, but they nevertheless extend to some distance beyond, and in the very early days of tubal gestation it is from these, so to speak, distant vessels that haemorrhage is most likely to occur, as the vessels in contact with the embryonic sac itself receive therefrom a certain amount of support—a support which suffices to retard in a measure their proneness to rupture.

During the evolution of uterine pregnancy we seldom witness the occurrence of external haemorrhage in consequence of any breach in the continuity of the maternal vessels before the sixth week, but in tubal gestation the maternal vessels in the disturbed area are so feebly protected and supported, and so badly adapted for any great physiological increase in their size, that they display a proneness to rupture spontaneously almost from the day the fecundated ovum becomes arrested in its abnormal situation. Moreover, if the villi destined to participate in the formation of the placenta happen to be located near or over one or the other free pole of the oosperm, the tendency to haemorrhage will be thereby unduly increased, for the condition obtaining will resemble that of a placenta praevia and of a placenta praevia under the most adverse circumstances. The veins are likely to be the chief offenders, and so long as the portions of tube located distally and proximally to the embryonic sac continue pervious, the blood poured out will tend to make its way either towards the peritoneal or the uterine cavity, or it may even be towards both, according as the ruptured vessel or vessels are located in the proximity of one or the other free pole of the oosperm.

In discussing the question of ectopic pregnancy in his *Diseases of Women*, p. 439, Lawson Tait states that "in a very large proportion of the cases there is a history of prolonged sterility and menstrual suffering." "Thus," he affirms, "we often have the history common to tubal mischief that after a first labour there was an illness with marked symptoms of pelvic trouble, then a long period of sterility, then the ectopic gestation, ending in rupture." And he adds: "In my clinical records of such cases I have laid special stress on this feature of their history as a guide to diagnosis." Again Parry emphasizes this same doctrine when he states that "women who have become pregnant with a child outside the uterine cavity frequently show a previous inaptitude for conception. The interval between marriage and the first impregnation is frequently long. If the woman has borne children a period

of sterility frequently precedes the extrauterine pregnancy." It is very evident, therefore, that there recently existed a belief that ectopic pregnancy was a phenomenon which was most apt to occur in women who had hitherto displayed a marked tendency to sterility, and who had, moreover, complained of symptoms indicative of some gross lesion of the pelvic organs. I desire, however, to warn you against attaching too much importance to these doctrines, since they may lead to error of judgement by causing us to pay but little heed to symptoms and signs which otherwise would have created a more profound impression upon us in our deliberations. My own experience precludes me from giving them prominence, for the records of my cases prove that tubal gestation occurs commonly not only in women soon after marriage, and who apparently were in the enjoyment of perfect health beforehand, but in women who had already borne several children, and who neither gave a history of any previous pelvic trouble, nor had shown any predisposition to sterility. It is, in fact, in the minority of cases that the kind of history referred to by Tait, Parry, and others can be elicited.

Pain is generally the first symptom noted during the evolution of a tubal gestation. The patient may or may not have missed a menstrual period, and may or may not have considered herself pregnant when, without warning of anything being amiss, she is suddenly seized with severe pain in the lower abdomen. This pain, although somewhat diffuse as a rule, may nevertheless be referred more especially to one or other side of the pelvis, and it occasionally is so intense that it excites vomiting. If concomitantly with the pain there should be a rapid extravasation of blood into the peritoneal cavity, there will then be manifested the usual signs of such an accident, namely, collapse, with a pulse which is difficult to feel and difficult to count; but it is well to remember that, quite apart from any great extravasation of blood internally, a more or less profound feeling of faintness may be induced apparently by the pain alone. Occasionally little or no pain may be complained of throughout, but when pain has once been experienced we are apt to have it recurring in attacks, and although these recurrences are no doubt correlated with fresh extravasations of blood, which are generally confined, I would nevertheless warn you that they are of no prognostic value, as in any given case we may find as many as four recurrences of severe pain in the course of three weeks, and yet the resulting haematoma in and around the tube may be no bigger than an orange. It sometimes happens that the appearance of a haemorrhagic discharge from the vagina is the first intimation to the patient that something unusual is going on, although in the majority of cases this discharge makes its appearance simultaneously with the first attack of pain. External haemorrhage from the vagina is a very constant and somewhat persistent symptom of tubal gestation. It varies greatly in amount, sometimes it is scanty, sometimes it is comparatively speaking free, and occasionally it presents the appearances of broken down rather than of fresh blood. In a small number of the cases this discharge makes its appearance coincidently with that of an expected and not unduly delayed menstrual period, but in the majority it is preceded by a more or less prolonged period of amenorrhoea. In the former class of case it may, in the first instance, excite no suspicion, unless it is accompanied by an unusual amount of pain, but eventually it will attract attention on account of its persistence, whereas in the latter the patient will in all probability become immediately apprehensive that she is not only pregnant but is threatened with abortion, and this apprehension may be the sole cause of her seeking medical advice regarding her condition. During the evolution of tubal gestation a decidual membrane is sometimes formed in the uterus, but it is a much less common association than the majority of authors would have us believe. It probably never is formed before the sixth week, but at any time thereafter it may be extruded from the vagina either as a complete cast of the uterus or in a more or less fragmentary manner as mere shreds. The expulsion of this membrane may take place coincidently with the first attack of pain, but more usually it is expelled later with more or less pain, and after external haemorrhage has been in existence a greater or less length of time. The extrusion may or may not be accompanied with any evident increase in the amount of the already existing external haemorrhage. Occasionally the subjects of ectopic pregnancy complain of pain during micturition, of difficulty in passing water, and even of retention of urine. The cause of these symptoms, I may here remark, is not always quite intelligible nor apparent, since the pain cannot invariably be attributed to adhesions which have formed, nor can the inability to pass water be ascribed to pressure, for I have seen retention of urine, due no doubt to some inhibitory influence, in cases in which the haematoma was no bigger than a filbert. Rectal symptoms are seldom noted, yet we occasionally find pain referred to the rectum both during and independently of defaecation.

When in any given case the symptoms first enumerated coexist they arouse in us more than a suspicion of tubal gestation, but, unfortunately, one or more are usually absent, and as those which are most commonly present, namely, pain and external haemorrhage, may be found in association with other and even chronic pelvic disorders, it is imperative that we should familiarize ourselves with those physical signs which may depend upon an extravasation of blood during the evolution of a tubal pregnancy, affording, as they often do, very valuable accessory information. It is, of course, very evident that these resulting physical signs will vary not only according to the amount of haemorrhage but according as the blood is poured out into a more or less confined space or has free vent into the abdominal cavity. In the latter case the haemorrhage is almost invariably a concomitant of immediate rupture of the tube, an accident which is prone to occur after the sixth and before the twelfth week of pregnancy. Under such circumstances a large amount of blood is generally lost, as stasis seldom takes place until it is evoked through the agency of a more or less profound state of collapse, and it is well to remember that this kind of arrest is, as a rule, very transitory, consequently, if the patient survives, as she commonly does, a first attack, which can be thus characterized, then a recurrence is extremely likely to prove fatal. In this group of cases no tumour may be detected either abdominally or in the pelvis and the physical signs may be entirely those indicative of severe internal haemorrhage, that is, of collapse, a condition which has been well described by the late Sir Wm. Savory in the following words: "The patient lies in a state of utter prostration. There is a striking pallor of the whole surface, most marked from its contrast to the natural colour of the face; the lips even are quite pale and bloodless. There is a cold, clammy moisture on the skin and often distinct drops of sweat upon the brow and forehead. The countenance has a dull aspect and appears shrunken and contracted. There is a remarkable langour in the whole expression, and especially in the eye, which has lost its natural lustre and is usually dilated. The temperature is considerably reduced, and if the person be able she will complain of feeling cold and perhaps shudder. Muscular debility is extreme—apparent at a glance in the condition of the lips and hands; occasionally even to the relaxation of the sphincters. The pulse is generally frequent, sometimes irregular, always very feeble, perhaps quite imperceptible. In this latter case, although the ear may detect the fluttering action of the heart, the pulse does not reach the wrist. The respiratory movements are short, feeble, or panting and gasping, "wanting the relief of sighs" sometimes imperceptible; although in the majority of such cases some action of the diaphragm may be detected by careful observation. Vertigo with dimness of vision supervenes. As a rule there is not complete insensibility. In the less extreme cases there is often nausea with vomiting. If, therefore, a patient—of whom it is known that she had considered herself from six to twelve weeks pregnant—becomes suddenly seized with severe pain in the lower abdomen and is found in a more or less marked state of collapse then in spite of the fact that no tumour can be detected the presumption is strong that we have to deal with a case of free haemorrhage in consequence of a ruptured tubal pregnancy and that if the life of the patient is to be saved we must act decisively and promptly. Happily, however, in a huge majority of the cases the blood extravasated in the first instance is confined and the symptoms and signs resulting therefrom are neither so distressing nor alarming as those we have just depicted, but we have to regret that owing to this fact the patient may herself consider them trivial and they may even fail to arouse in the medical attendant that amount of attention and careful consideration which such a condition demands. In this group of cases the blood may be poured out into the substance of the broad ligament by the tube rupturing somewhere along its attached border, that is, through the mesosalpinx, and the haematoma thus produced may be and often is large as the broad ligament, is an extensile structure, and the haemorrhage is rarely stayed until a large quantity of blood has been lost. Under

such circumstances the patient may be more or less blanched and the pulse may be somewhat increased in frequency, but the symptoms dependent upon this variety of extravasation are altogether less pronounced than when the haemorrhage is unconfined. The resulting tumour may rise up out of the pelvis and be felt abdominally in one or the other iliac region according to the broad ligament invaded. To the touch it is sometimes rather tender and the percussion note over it is variable, but it seldom is entirely dull, it may be more or less resonant, of course, on account of intestinal adhesions. The variation is due in some measure to the presence of gases given off by the blood.

On vaginal examination it is remarked that the uterus, which may or may not be perceptibly enlarged, is usually more or less displaced towards the opposite side and somewhat forwards. The pelvic portion of the tumour is not, as a rule limited to one or the other lateral fornix, but extends to a greater or less extent into Douglas's pouch. In its early stage it presents a somewhat diffuse outline, but it tends soon to assume a more or less globular shape. On account of the peculiar properties of blood the tumours formed more or less entirely of this material present a remarkable but characteristic sensation, to this, however, we shall again refer. A haematoma located in the broad ligament is, of course, a fixed tumour, and its presence serves to impair the mobility of the uterus. Per rectum some annular constriction of the bowel may be detected, and this is especially evident when the left broad ligament is the seat of the extravasation.

Again, and this constitutes by far the largest group, the haemorrhage, and even successive haemorrhages, may be confined in the tube itself, or may be confined thereat through the agency of inflammatory membrane with or without the aid of some of the abdomino-pelvic organs. In the former case the tumour is seldom large, and is commonly confined to the pelvis, whilst in the latter it may attain a great size and may extend high into the abdomen; in the majority of these, however, it is extremely probable that the blood extravasated in the first instance is more or less markedly confined to the tube. Clinically, we are unable to draw any hard-and-fast line of demarcation between these two classes, and as the physical signs of the one merge into those of the other we need not attempt to discuss these separately. The tube which harbours a growing oosperm does not long continue to be buoyed up in, but tends soon to fall to the floor of, the pelvis. In one of my cases the patient was cognizant of this change in position, as seven days prior to experiencing any other symptom indicative of the existence of a tubal pregnancy, she "felt something drop in the lower abdomen, and there and then locomotion was rendered irksome." Seven days after this occurrence a haemorrhagic discharge from the vagina made its appearance, and this was the first true symptom of the ectopic gestation.

A tumour presenting the characters we are about to describe may one day be detected in the pelvis, but, in consequence of a recurring and more extensive haemorrhage into it, it may extend to a greater or less extent into the abdomen, displacing in a more or less marked manner the uterus, which previously may have been undisturbed. The tumour, which is usually somewhat fixed, may be located laterally or posteriorly to the uterus. It may be globular or pyriform in shape, and occasionally it is even cake-like or collar-like in outline. It is sometimes closely incorporated with the uterus, consequently it cannot always be easily differentiated from this organ. The tumour imparts to the examining finger a sensation which is almost entirely peculiar to that of a haematoma. It is a sensation which is somewhat doughy and difficult to describe, but it is different altogether to that produced by any ordinary cystic or solid growth. It is a sensation which is significant of the substance inducing it, and when duly appreciated it is a sign of great diagnostic worth.

In many of the cases of tubal gestation—in those even in which the ovum has perished at an early stage of its existence - the breasts will display the appearances characteristic of pregnancy, and we may be able to obtain colostrum from them, but we must guard against placing too much reliance upon these and be content rather to regard them as valuable corroborative evidence.

Dr. Andrew J. Horne (Dublin) was of opinion that in the large number of cases of ectopic gestation Mr. Lawson Tait's dictum was still correct; but it followed a long period of sterility. The chief difficulty in diagnosis was before rupture occurred. Once the urgent symptoms developed as a rule the diagnosis gave rise to little doubt. He mentioned some cases bearing on these points.

Dr. F. W. Kidd (Dublin) stated that in his opinion the truth of the matter as regarded the period of sterility which existed before ectopic gestation lay half-way between the statement attributed to Lawson Tait and that of observers like Dr. Oliver, who had noted ectopic gestation following within a short period of marriage or previous gestation. One of the difficulties in dealing with these cases was that the patient did not present herself to the obstetrician or gynaecologist until "something had happened" in the shape of a rupture. Dr. Kidd narrated the course of a case where a primary rupture into the broad ligament was mistaken for a threatened abortion and treated for this accident. This case was afterwards operated on successfully between twelve and thirteen months after pregnancy must have occurred. This patient afterwards carried a child to full time, and was delivered safely per vias naturales.

Dr. Purslow (Birmingham) mentioned as difficulties of, and errors in, differential diagnosis which he had met with: (1) Intrauterine abortion, threatened or incomplete; (2) pyosalpinx; (3) uterine pregnancy, complicated with twisting of pedicle of a small ovarian cyst; and he narrated briefly instances of each of these which had come under his notice, and which had been diagnosed as ruptured tubal gestation. With regard to (1) he thought that particular attention should be paid to the occurrence of faintness in association with uterine haemorrhage and abdominal pain. The two latter symptoms suggested uterine abortion, and the severity of the pain should arouse suspicion that the case was not one of uterine abortion.

Dr. T. W. Eden said that although their knowledge of this condition had increased so much, they still were quite in ignorance of its causation. Anatomical examination of gravid tubes removed by operation did not support the view that salpingitis was a factor in its causation. He could not agree with Dr. Oliver that the haemorrhage from gravid tubes came from parts distant from the ovum, because anatomical evidence went to show that there was very little change in the tube except at the site of implantation of the ovum. Neither could he agree with him that decidual formation in the uterus was not usual and was rare before the sixth week; this might be true of the actual discharge of a decidual membrane, but certainly decidual formation in the uterus was practically invariable. He had frequently encountered difficulties of diagnosis in these cases, and regarded the exclusion of uterine abortion as the first step in diagnosis. Cases of furious haemorrhage such as those described by Dr. Oliver were rare; usually the bleeding was moderate in amount, and progressive or recurrent. These were the instances in which mistakes of diagnosis were possible. He did not wish to enter into the question of treatment, but his opinion was that there was a distinct field for expectant treatment in ectopic pregnancy.

Dr. T. B. Grimsdale (Liverpool) said that the previous history was variable, and was frequently entirely at variance with that usually described as the "classical history of long previous sterility." He thought that the presence of the decidua was of much importance and constancy, but that the chief guide to correct diagnosis lay in the physical signs. The temperature which was found in haematocele, apart from any suppuration, was a matter on which he asked for information.

Dr. R. G. McKerron (Aberdeen) congratulated Dr. Oliver on the subject which he had brought before the Section, and especially on the detailed manner in which he had discussed the diagnosis, which was certainly the most difficult point in connexion with ectopic gestation. Some difference of opinion had been expressed by previous speakers in regard to the importance of the history in diagnosis, and more particularly in regard to the existence of prolonged sterility. His own experience would lead him to agree with Dr. Horne in supporting the view of Lawson Tait that a history of previous sterility was usually found. Though valuable when present, he certainly would not attach undue weight to its absence when the physical signs suggested ectopic gestation. In a case which recently came under his own observation, though a history of eleven years' sterility was obtained, the condition was decided to be one of ovarian tumour with intrauterine pregnancy. From a diagnostic point of view the case was interesting, and he would briefly relate the details. The woman was 38 years of age, and had two children, the last eleven years before. Two months after the cessation of menstruation she complained of abdominal pain. There was

difficulty of micturition, and during the second month retention of urine. In the fourth month she had a severe attack of pain which led to an examination, when a tumour was found filling the pelvis. This was thought to be a retroverted gravid uterus. As it could not be pushed up, she was sent to the Aberdeen Maternity Hospital. She was suffering much pain and sickness, and was found to have a subfebrile temperature. A tumour occupied the abdomen, reaching to the umbilicus. During examination the left half of the tumour could be seen to stand out more prominently, and became much harder—clearly the uterus. The pelvis was occupied by a cystic mass which pushed the cervix forward and upward. Though there were features in the case which suggested extrauterine gestation, a diagnosis of ovarian tumour and intrauterine pregnancy was made on the following grounds: (1) The large size of the uterus and the vigour of its contractions; (2) the absence of vaginal discharge; (3) the occurrence of retention in the second month, which pointed to the existence of a considerable tumour at that period. On operation, the case proved to be one of extrauterine gestation. In regard to the treatment after rupture, he agreed with Dr. Eden that there was a large field for expectant treatment under which many cases did well in earlier days, but as regarded operative or non-operative treatment in individual cases, the conditions present must determine the decision.

Professor J. A. C. Kynoch (Dundee) thought that no great importance should be put upon the previous obstetric history in diagnosing the condition of ectopic pregnancy. Great care should be taken in examining those cases, as rupture of the tube might easily occur as the result of manipulation. High temperature associated with haematocele should not be accepted as an indication for immediate operation, as this might be present in the absence of any evidence of suppuration.

The President emphasized the importance of the old distinction between sudden diffuse haemorrhage into the peritoneal sac and the true haematocele where the bleeding, though at times considerable in amount, was slower in its escape and was early encapsuled. The one was due to rupture of the pregnant tube, the other to tubal abortion and the escape of blood from the still open abdominal end of the tube. The former fortunately was rare, the latter was more common than was supposed. Both were dangerous, but the one demanded immediate operation by abdominal section, the other could be left alone and watched. The majority of the latter cases recovered perfectly by simple rest, a few might eventually require operation and then preferably by the vaginal route. The presence of a haematocele by itself was no warrant for interference. The character of the pulse was the best indication. A rise of temperature, referred to by Professor Kynoch, was common, but if the pulse was favourable anxiety need not be felt. The rise might be accounted for by the absorption of blood products and the conservative peritonitic adhesions that were taking place.

Dr. Oliver, in reply, said that by several members two questions had been raised which were not included in the paper—namely, that of the causes of tubal gestation and the treatment of cases. Regarding the causes, he would like to refer members interested in the question to a paper of his own, entitled A Study of Fertilization, with reference to the Occurrence of Ectopic Pregnancy, which appeared in the *Edinburgh Medical Journal* last year; and to say that the inclusion of causes and treatment would have meant a paper extending far beyond the time allowed for reading. Rise of temperature in cases such as were included in this paper were occasionally seen, and without any evidence of retrograde change in the blood to account for the elevation of temperature. He was inclined to think the rise in these was due to the inflammatory disturbance which had been set up *plus* some individual peculiarity, for they found in a large majority of the cases a similar inflammatory disturbance, and yet no elevation of temperature. Collapse was sometimes noted suddenly in cases of chronic disease of the tube, and he attributed this to the escape of some, it might be merely a bead, of purulent material into the peritoneal cavity. Regarding the presence or absence of decidual membrane, it was merely intended at the present time to deal with this from the clinical point of view, but he was inclined to think it was never formed before the embryo was six weeks old, and that it was then produced in a reflex manner in consequence of the contact stimulus emanating from the chorionic villi destined to participate in the formation of the placenta, and no specialization of the villi took place until about the sixth week. Regarding the hypothesis set forth—that the haemorrhage in the earliest stage probably came from the more remote vessels rather than from those in the immediate neighbourhood of the oosperm—he founded it upon the fact that towards the free poles of the oosperm the vessels would be quite as large as where the oosperm was grasped by the tube, but the absence of support in the former tended to favour rupture at the earliest period. Opposing pressure retarded rupture of the vessels, as they did not so rapidly increase in size under such circumstances.

TWO SUCCESSFUL CASES OF CAESAREAN SECTION FOR CONTRACTED PELVIS IN DWARFS.

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Case 1. *History and State on Examination.*—M. K., aged 17½, single, was brought to me by Dr. Cochrane, of Porth, on January 28th of this year. She was an achondroplasic dwarf, 3 ft. 9 in. in height, and weighing 4 st. 12 lbs. The head was small with a comparatively broad biparietal diameter; there were no goitrous signs, no rickety beading of the ribs, and no special enlargement of the ends of the long bones. Fig. 1 shows that the short limbs were straight and symmetrical, and Fig. 2 shows the degree of lordosis which was present. The length of the femur was 11.2 in. to the 9.2 in. of the tibia, whilst the humerus measured 7.2 in., and the ulna only 0.4 in. less than that. The patient was a full-timed child, and is said to have been of average size and weight at the time of birth. She was the youngest but one of a family of twelve children, all her brothers and sisters being well developed. Her younger brother, who was 15 years of age, was nearly 6 ft. in height. There was no history of stunted growth in either the father's or mother's family. The mother was inclined to regard the diminutive proportions of the patient as the result of a fright she had some three weeks before the date of the confinement. The patient's ways and appearance were childish and her intelligence was fair. The catamenia had commenced at the age of 15, and had been fairly regular until July 12th, 1902. Since that date they had not recurred, and the physical examination left no doubt that she was now some six months pregnant with a live fetus. The following pelvic measurements were taken:

Diameters.	Inches.
External conjugate	6.4
Intercristal	8.0
Interspinous	6.8
Diagonal conjugate	2.5
True conjugate	2.0 (about)
Transverse of outlet	2.0
Transverse of inlet	4.0 (Saudstein half intercristal)

In view of these measurements I had no hesitation in recommending that the pregnancy should be allowed to develop, and that Caesarean section should be effected at or toward full term. The proposition was accepted by the mother on the condition that sterilization should be ensured at the time of the operation. It was estimated that the normal period of gestation would terminate on April 18th. The patient was admitted into the Cardiff Infirmary on March 24th, as I wished to keep her under observation, and also to treat the bronchial catarrh, which had been rather troublesome for some months. *Râles* and rhonchi were heard all over the chest, with some small crepitant *râles* over the left base. The expansion, however, was good and the temperature normal. Though the average pulse-rate was 108, the rhythm was regular and the heart sounds normal. There was no anasarca. The urine contained a trace of albumen. As the pregnancy advanced the belly became pendulous, and the uterus inclined to the right. (See Figs. 1 and 2.)



Fig. 1. Fig. 2.

Operation.—On April 16th, that is two days before the estimated expiry of the gestation period, I operated, being assisted by one of my colleagues, Dr. W. Martin and by the house-surgeons, Drs. Brownlee and Hyde. The anaesthetic (A.C.E. mixture and chloroform) was administered by Dr. Cyril Lewis. The position of the fetus was recognized by abdominal palpation as being L. O. A. with the head high over pelvic brim and not depressible into the pelvic cavity. A medium incision was carried through the parietes from a point a couple of inches above the umbilicus to within 2 in. of the pubes—about 8 in. in all. The dextraverted uterus being brought into mid-line, a 6 in. vertical incision was rapidly carried through its anterior wall into the amniotic cavity. The liquor amnii rapidly draining away and some spurting vessels in the uterine wall being controlled manually by the assistant, the child, somewhat cyanosed, was readily delivered by traction on the right knee. The cord being divided between two artery forceps, the placenta, which had been implanted on the upper posterior wall, and the membranes were removed, a finger passed into the cervical canal and the closure of the uterine wound commenced from above downwards. Interrupted sutures of No. 4 Chinese twist were passed at intervals of three-quarters of an inch and included the thickness of the uterine wall, missing the innermost layer and also including a margin of 0.5 in. on either side of the incision. A continuous fine silk suture was then used to invaginate the uterine peritoneum over the wound. An inch from the middle portion of each Fallopian tube was excised between separate ligatures. Hot saline solution poured over the uterus at this stage induced firm retraction, and the whole field of operation being laved with the solution, the parietal wound was closed in three layers with silk sutures, and sealed with gauze and collodion. The condition of the child soon became satisfactory under the usual restorative treatment. The infant was a male, and weighed 6.25 lb. The placenta was of the "battledore" type, the marginally inserted cord being thick and 17 in. in length. On the following day the pulse was 120, the respirations 35 to 40, the temperature 100°, and the cough very troublesome. By the fourth day the temperature was 102.8°, and the chest presented the physical signs of a general bronchitis, with pleuro-pneumonia over the left base. The steam tent and cotton-wool jacket, with stimulant expectorants, were employed with good result. On the evening of the seventh day the temperature fell somewhat suddenly to 99.8°, and a sense of chilliness, with faintness, was experienced. These were doubtless the evidences of a crisis in the pneumonia, which had in all likelihood been caused by the anaesthetic affecting the lungs, already weakened by chronic bronchial catarrh. The temperature did not rise again, and during the convalescence the chest condition gradually cleared up. Nourishment had been taken well from the first. The amount of lochia was not excessive, and the skin suture was removed on the sixth day. The union was rather soft in the lower third of the wound, but, considering the febrile disturbance caused by the pneumonia, the heal by first intention was a satisfactory one. The patient was allowed to get up on the thirty-fourth day, and she left the infirmary on June 7th, the temperature being normal, and the pulse-rate averaging 80. Three weeks later I made an examination and found the cicatrix sound, the uterus well involuted, and apparently adherent to the lower part of the scar, and the general condition good. At the present time both mother and child are healthy and strong.

Case II. *History and State on Examination.*—M. R., aged 35, married. I saw in April, 1903, also with Dr. Cochrane, of Porth. She was a rickety dwarf, 4 ft. 1 in. in height, with small and thick hands and feet, very short limbs, and marked genua vara. The date of the last period was uncertain, nor could the patient say when she had first felt "quickening," but she was convinced that she was now in the last month of gestation, and the physical examination supported this view. Her mother and two brothers were stated to be of similar configuration. She had had no miscarriages and no living child, but had undergone four embryotomies—the first in January, 1893, the second in September, 1894, the third in September, 1897, and the fourth in December, 1899—all at full time with the exception of the first, which had been at the eighth month. A tardy convalescence had followed in each instance. The pelvic measurements were as follows:

Diameters.

	Inches.
External conjugate	7.2
Intercristal	10.0
Interspinous	9.2
Diagonal conjugate	2.5
True conjugate	2.0 (about)

The patient dreaded the prospect of another embryotomy, and both she and her husband were anxious to have a living child. They assented to the proposition of Caesarean section, on the express understanding that the possibility of a future pregnancy should be provided against. She was admitted into the Porth Cottage Hospital, where, though there had been some frequency of micturition for the past few weeks, and other discomfort from the size of the uterus, the examination of the heart, lungs, and urine proved to be normal. The abdomen was very pendulous in the erect posture, and the fetal head was felt to be lowermost and well above the brim of the true pelvis. As the fundus was now well up to the xiphoid cartilage, I performed Caesarean section on April 25th.

Operation.—I again had the advantage of the assistance of Dr. W. Martin, and that of my colleagues, Drs. Cochrane and Weichert. Dr. Cyril Lewis gave the anaesthetic. The steps of the operation were similar to those detailed in the record of Case I. In cutting through into the amniotic cavity, free bleeding was encountered from the anterior implantation of the placenta, rendering it necessary to cut through that organ also. The haemorrhage obscuring the field of operation for the time being, the scalpel in enlarging the uterine wound downwards, nicked the chin of the fetus, but the wound was unimportant, and later healed by first intention. The child, a female, weighing 6 lb. 1 oz., showed all the evidences of being about full time. It was cyanosed on delivery, but recovered under appropriate treatment. Sterilization was effected as in Case I; the pelvis and field of operation washed with saline solution, the abdomen closed in three layers, and the wound sealed with collodion. The operation lasted thirty-five minutes, and the patient returned to bed with a pulse of 64. Convalescence was uninterrupted. The child was put to the breast on the third day and the stitches removed on the sixth day. The union in the lower part of the wound was soft, but primary healing was attained throughout. The patient was allowed to get up on the twenty-first day after operation, and went home a week later. At the present time both mother and child are strong and well.

The Indication for the Operation.

With a C.V. of 2 in. and an intertrochanteric diameter of the same length, as in Case I, the full time indication was clearly absolute for Caesarean section. A 2 in. conjugate is now one of the old landmarks which is included, as a matter of course, in the wider claim which the Caesarean operation has, in recent years, pegged out for itself. The most recent book on obstetrics [1] which may be taken as representing the present day consensus of opinion on this point states that, provided the mother is in good condition and that a suitable surgical environment can be arranged, the absoluteness of this claim extends to cases with a C.V. of 2.8 in. in any form of contracted pelvis.

At the discussion on The Modern Indications for Caesarean Section before this Section last year,[2] Galabin gave the absolute indication as C.V. 2.5 in. or less; Cameron the same, and the latter quoted Baudeloque 2.5 in.; Cazeaux, Tarnier, Naegele and Spiegelberg, 2 in.; Depaul, 2.25; Scanzoni, 3 in. The older authorities Barnes, Playfair, Leishman, 1.25 in. T. G. Stevens in a critical review on "Modern Caesarean Section" [3] quotes Leopold and Haake,[4] as giving the C.V. absolute indication of 2.4 in. or under and says that this figure is generally accepted.

It is clear from these records and from the writings of others, that the term "absolute" is now not infrequently used to qualify an indication for the operation which is undertaken with the vital interests of the child as well as those of the mother in view. Formerly, the indication was held to be present when no other means of delivery were possible. The scope of the indications now regarded as "absolute," has been enlarged at the expense of those which were pronounced "relative" and this is doubtless due to the highly favourable results of Caesarean section under modern aseptic conditions, and to the recognized maternal and fetal mortality attendant upon embryotomy and the induction of premature labour, respectively.

In the case under consideration, though the full time indication was as above stated, I had the opportunity of seeing the patient at the sixth month. She was weakly, suffering from chronic bronchial catarrh, dyspnoeic from the pressure of the enlarging uterus, and whilst there was no anasarca, she nevertheless had a rapid pulse and a trace of albumen in the urine. Apart from any operative procedure, the prognosis was not altogether good.

Induction of labour at the viable term, would, with her pelvic measurements, probably result in a very difficult embryotomy, or possibly a Caesarean section under unfavourable conditions. The consideration arose as to the justifiability of terminating the pregnancy. At the sixth month it would be possible to get the fetus through the pelvis. Such a proceeding, under the circumstances, could be undertaken only where was a strong presumption that the continuation of the pregnancy would be disastrous to the mother. Moreover, the induction of the abortion would supply definite maternal risks of its own, and weighing these as against the risks of Caesarean section under favourable circumstances, and after some three months' careful régime and medical treatment, I decided in favour of the latter.

In Case II the considerations were somewhat of a different order. The important pelvic diameter was here also estimated at 2 in., and the patient was near full term. She had, nevertheless, demonstrated her capacity of surviving four successive embryotomies, the first at the eighth month and the remainder at term. She dreaded a repetition of the operation, however, and her urgent desire, as well as that of her husband, was to have a living child.

Even with a considerably more roomy pelvis the time for induction of premature labour, with a reasonably good prospect of producing a viable child, was past. Indeed, had the case been seen earlier in pregnancy, and had the degree of

contraction been much less marked, the prospects for induction with a recognized fetal mortality of 30 to 36 per cent. (Galabin,[2] Charles[5]), would not have been alluring. And finally, symphysiotomy not being regarded as having a practical bearing on the case, the recommendation of Caesarean section was given and accepted.

Operation.

Though the pessary recommended by Cameron was not employed, in neither of the cases was the haemorrhage from the uterine incision disconcerting. In Case II, though the implantation of the placenta was anterior, the position of the child was left dorso-anterior. Cameron has noted that, in his large experience, when the position is dorso-anterior the placenta is posterior and vice versa.

The same authority has remarked[6] on the comparative frequency with which ventral hernia follows this operation. One would think that the longer incision required for the delivery of the uterus, prior to the employment of the fundal incision, would aggravate the tendency to this untoward sequel.

In both cases I was impressed with the facility which seizing and traction on the nearer knee confers on the act of delivering the fetus. For a moment I tried traction on a presenting arm in Case II, and a shoulder in Case I, but found it a loss of valuable time.

It was very interesting to notice the demonstration of an anatomical point referred to by Professor Stephenson,[7] namely, that after the complete retraction of the uterus, the peritoneum related to that organ is still in close relationship with the musculature, notwithstanding the great and sudden diminution in its superficies. In the region of the inferior segment, however, the redundant peritoneum becomes wrinkled like the folds of a loose stocking.

The anaesthetist, Dr. Cyril Lewis, reported that in both cases there was temporary pallor and increased frequency of pulse during the rapid incision and evacuation of the uterus. These symptoms of shock, however, soon passed off.

Sterilization.

As to the *morale* of this procedure, I am in entire agreement with the sentiments expressed by Spencer,[8] Nathan Raw,[9] and others. In both these cases, however, the consent to the operation was given conditionally to the sterilization being effected. I might have pressed for a free hand in the matter in Case I, but I reflected that my knowledge of certain facts in her social surroundings would justify me in regarding the procedure as usefully complemental to her intellectual deficiency.

I am indebted to Dr. W. D. J. Morris, Cardiff, for the photographs.

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Dr. J. REID (Bawdon) asked whether it was not absolutely necessary that an abdominal support and pad should be worn after operations of this kind with such a large incision so as to prevent a ventral hernia, and whether the use of such supports was not absolutely indicated; also whether Dr. Maclean considered that a gauze drain through the internal os was necessary in operations of this kind, certainly Dr. Maclean's method of passing the finger through the os saved unnecessary interference afterwards.

Dr. MACLEAN, in reply to Dr. Reid, said that the puerperal lochia were, in both cases, average and normal. He had no reason to regret the fact that he had used no gauze drain into the vagina. In view of the alleged greater tendency to ventral hernia following the operation it would be well to recommend the patient to wear an abdominal belt for a longer time than was customary after most abdominal sections.

A CASE OF HAIRPIN IN THE UTERUS, DISCOVERED BY THE *X* RAYS.

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THE patient, a married woman, aged 28, came to the out-patient department at the London Hospital on January 11th, 1902. She had had two children, and a premature labour two years and a-half previously. When asked what she complained of she said there was "a hairpin in the womb." Her account, which is probably not to be altogether relied on, was that the periods had been quite regular, and that her last period had occurred at the beginning of January, 1902. She said that on the morning of January 10th—the day before she came to the hospital—she had bearing-down pains, and noticed "the womb" coming down. She tried to put it back herself, and thought it was an "abscess." She endeavoured to open the "abscess" with a hairpin, and while trying to do this the pin slipped in, and she saw no more of it. She was sure it had not come out. She explained that at the time she used the hairpin she was bending forwards with her legs apart, and straining. When the hairpin slipped in she became alarmed, and came up to the London Hospital, where she was seen in the receiving room on the afternoon of January 10th. The receiving-room officer could find nothing particularly wrong, and referred her to the out-patient department, where I saw her on the next day.



Fig 1.—Radiograph of the uterus.

I examined her carefully in the usual way. There was a slight amount of bloodstained discharge in the vagina. On straining, a slight prolapse of the anterior vaginal wall was seen. The external os was a little more patulous than normal. The body of the uterus was only a little larger than normal, and was freely movable. Nothing could be felt suggesting the presence of a hairpin in either the vagina or the os uteri. I sounded the bladder carefully, thinking it possible that the hairpin might have passed into the bladder; but the result was negative; and, besides, she complained of no symptoms referable to the bladder. Finally I passed the sound into the uterus, but could feel no sensation such as might have been expected if the uterine sound touched a metallic body such as a hairpin. At this stage of the proceedings I was certainly of opinion that the patient had made a mistake, and that, if the hairpin had ever been passed in, it had merely been in the vagina, and had dropped out without the patient's knowledge. Before deciding to send her away, however, I thought it would be well to have a radiograph taken. Accordingly she was sent round to Mr. Harnack, who was in charge of the photographic department, and in about an hour's time he brought me round the radiograph which accompanies this paper. It showed quite well that there really was a hairpin somewhere about the centre of the

pelvis, with the points directed downwards and the blunt end upwards and to the right. The patient was then admitted to the hospital. At about 5 p.m. she was anaesthetised, and with strict antiseptic precautions the cervix was dilated with Hegar's dilators till I could get my finger in. The cervix was soft, and dilated easily. As soon as I could pass my finger to the region of the internal os I felt the hairpin, the points of which were tightly fixed into the uterine tissue at that level. It was easy to seize each point with a pair of small Wells's artery forceps. The points were then drawn together, and the hairpin was removed. A photograph of the hairpin with the Wells's forceps still attached to the points is shown at the top right-hand corner of the radiograph. It will be noticed that the blunt end of the hairpin lay high up in the uterus, and the points just at the internal os. So that if the patient, as she maintained, had been trying to open an abscess, she had evidently been trying to do so with the blunt end of the hairpin.

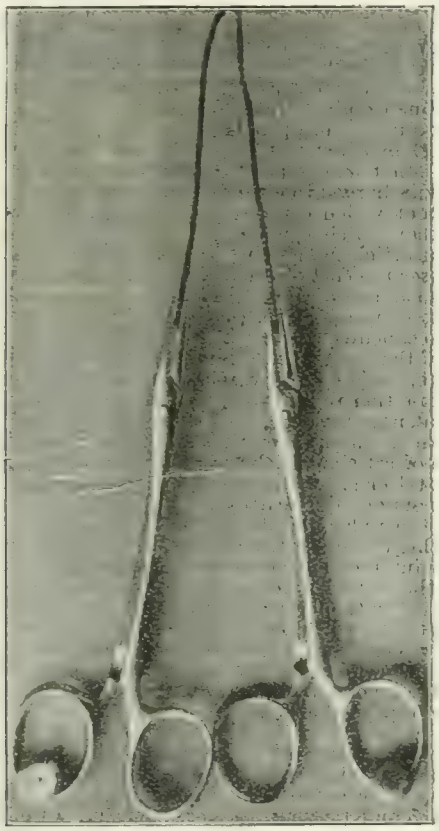


Fig. 2.—Hairpin with forceps attached to its points illustrating method of removing it.

After removing the hairpin the endometrium was carefully explored, and a mass of membrane and obvious placental tissue the size of a large walnut was removed. It should have been mentioned that in the out-patient department one of my clerks, who examined the patient after me, noticed a little white solid body on his finger. Subsequent examination of this microscopically showed that it was a piece of fetal bone. It is therefore quite certain that the patient had been recently pregnant, and was in fact in a state of incomplete abortion when she came to the hospital. It also seems practically certain that the hairpin was used with the intention of bringing on a miscarriage. The patient's temperature on admission was about 100°; and, though all the steps of the operation necessary to remove the hairpin were conducted as aseptically as is usual in dilating the cervix, she became very ill soon afterwards.

Thus on January 13th her temperature reached 105°, and on the 16th she had a rigor, and the temperature rose to 106°. She had a second rigor on January 20th, when the temperature rose to 104°. By this time there was well-marked evidence of pelvic cellulitis on the left side. On January 23rd the left ankle became painful, and gradually the left leg and thigh became much swollen; the circumference of the thigh measuring 5½ in. more than that of the other.

On February 24th it was evident that there was a large collection of pus on the inner side of the left thigh. On March 1st two incisions, about 7 in. apart, were made on the inner side of the thigh, and about 1½ pint of pus removed; a drainage tube was inserted, entering at one incision, and coming out at the other. On the 10th two incisions were made on the outer side of the left thigh, which was still much swollen, but no pus came out.

On March 22nd an incision was made into the left side of the vagina, where a fluctuating swelling had appeared, and a small amount of pus was let out. After March 31st the temperature was normal, and the patient convalesced, leaving the hospital on April 26th. There was still some oedema of the left leg, but the patient could walk with assistance. I saw the patient about a month later, when she came up to the hospital to report herself. She was then quite well.

Remarks.

While foreign bodies in the uterus are no doubt relatively rare, yet the absolute number of cases recorded is considerable. Thus F. L. Neugebauer has written a paper on Foreign Bodies in the Uterus (a translation of which is to be found in the *Revue de Gynécologie et de Chirurgie Abdominale*, vol. ii., 1898, p. 983) in which 74 examples are given.

As to the kind of foreign body found in the uterus, his cases may be classified as follows:

In 16	cases	the	foreign	body was a hairpin.
In 9	,,	,,	,,	pessary, or part of a pessary
In 6	,,	,,	,,	tent, or part of a tent.
In 5	,,	,,	,,	needle.
In 5	,,	,,	,,	piece of a gum-elastic bougie.
In 4	,,	,,	,,	goose's feather.
In 3	,,	,,	,,	piece of stick.
In 2	,,	,,	,,	piece of a sound.
In 2	,,	,,	,,	knitting-needle.
In 2	,,	,,	,,	piece of a catheter.
In 2	,,	,,	,,	piece of the pipe of a syringe.
In 1	,,	,,	,,	silver suture used at a previous Caesarean section.
In 2	,,	,,	,,	a leech.
In 1	,,	,,	,,	piece of metal candlestick.
In 1	,,	,,	,,	a chicken-bone.
In 1	,,	,,	,,	piece of twisted metal, probably a pin.
In 1	,,	,,	,,	piece of clay pipe.
In 1	,,	,,	,,	an indiarubber ball.
In 1	,,	,,	,,	a piece of whalebone.
In 1	,,	,,	,,	a wooden reel.
In 1	,,	,,	,,	a piece of straw.
In 1	,,	,,	,,	a piece of glass rod.
In 1	,,	,,	,,	a silk ligature.
In 1	,,	,,	,,	½ lb. of hair from a tow wig.
In 1	,,	,,	,,	an Apostoli's electrode.
In 3	cases	the	exact	nature of the foreign body is not stated.

74 cases.

In many of these cases a portion of the foreign body was in the cervix, or projecting into the vagina, when the patient came under observation, so that there was no difficulty in recognizing the presence of a foreign body. In others, however, this was not so, and the foreign body had passed completely out of sight.

Among the 16 cases of hairpin in the uterus, that recorded by Taunen most closely resembles my case in that he could not recognize the presence of the hairpin by ordinary methods of examination, even by using the uterine sound. It was only after dilating the cervix and passing in a curette that the hairpin was discovered.

In the large majority of the cases in which a hairpin has been found in the uterus, if not in all, it is certain that it had been introduced for the purpose of bringing on abortion. It is remarkable that in only 1 of the 16 cases did the introduction of the hairpin cause death (case described by Partridge, *American Journal of Obstetrics*, 1885). In 2 cases, where the hairpin was put in to cause abortion, it was artificially extracted; in one case where the woman was 2½ months pregnant, and in the other where she was four months pregnant, without interrupting the pregnancy (cases of Frintnight, *American Journal of Obstetrics*, 1887, and E. Hughs, *Medical Age*, 1886).

In 1 case Mescheede found a hairpin in utero at a necropsy. The patient had been admitted into hospital for rheumatism and hystero-epilepsy. There was no doubt the hairpin had been in utero a very long time (*Verein für wissenschaftliche Heilkunde, Koenigsberg*, 1873).

So far as I have been able to ascertain, the case I have recorded in this paper is the first in which the presence of a hairpin in utero has been discovered by the *x* rays.

SECTION OF PSYCHOLOGY.

ROBERT JONES, M.D., President.

PRESIDENT'S ADDRESS.

THE PRESIDENT delivered an introductory address on the Development of Insanity in Regard to Civilization, an abstract of which appeared in the BRITISH MEDICAL JOURNAL of August 1st, p. 267.

A DISCUSSION ON ALCOHOL IN RELATION TO MENTAL DISORDERS.

I.—THEO. B. HYSLOP, M.D.,

Medical Superintendent, Bethlem Royal Hospital.

DR. HYSLOP said: I am deeply sensible of the honour conferred upon me in being asked to open a discussion on the relationship of alcohol to mental disorders. At the same time, I fully appreciate the difficulties of dealing adequately with a subject which has so many aspects, ethical, physiological, psychological, and medico-legal.

At such a meeting of representatives of thought and experience in dealing with these weighty problems my difficulties in introducing suitable points for debate are considerable enhanced. In order, therefore, to facilitate discussion and provide material best to be dealt with here to-day, I have thought it prudent to eliminate from my present scope such ethical problems as have been adequately dealt with by other workers. I have also thought it advisable to leave out of consideration various statistical details which undoubtedly have formed in the mass a wealth of information, both in this and other countries, worthy of the serious consideration it has received from all classes.

By leaving these questions, therefore, my task has become considerably lightened, and I trust that a discussion upon some of the scientific aspects of alcoholism will prove to us all the more beneficial, inasmuch as it will be less diffuse in its bearings and more within the scope and experience of our scientific lines of thought and inquiry. I propose to-day to deal with the rôle of alcohol in the economics of the body and the mind, and I shall submit for discussion one or two of the problems which have during recent years engaged the attention of our most advanced workers.

The economic aspects of the question may be subdivided into those which are physical, mental, and political. The principle of abstinence places itself in direct opposition to customs which have received the sanction of ages. I refer to the burden of false and fatal courtesy and rule, the commonest, and to some the cruellest, of all despotisms, which few have the hardihood to withstand—namely, the practice of drinking as a token of friendship or for services performed. This is responsible for many of the pernicious shackles which enchain the mental life and energy of our empire. This sanction of ages has been productive of a sort of vested right—for those who have mercantile interests as incentives to intemperance—to live by the vices and follies of their fellow-men. Further, the far-reaching belief that alcohol is *par excellence* the nostrum and corrective essential to a proper metabolism in the gastro-intestinal system is, when injudiciously acted upon, productive of untold harm. This belief is often primarily due to advertisements based upon medical authority; and when we add to this testimony, the gratification of the senses and the excitement of the intellect and passions into inordinate activity, we little wonder why it is that alcoholic beverages have become the occasion of almost idolatry.

I submit that alcohol as a boon to the jaded and weary is like the quails given to the Israelites in the wilderness who by consuming them were visited by a pestilence. This pestilence, like the plague, treats all alike. The Alexanders who, after subduing a world by their power of arms, have been themselves conquered by alcohol, are too numerous to mention. It is needless to say that I here refer to excessive and habitual use of a nostrum which may or may not have a rôle for good in times of urgency and need. The investigations of Schwann, Cagniard-Latour, Cl. Bernard, Parkes, Wollowicz, Albertoni e Lussana, Binz, Zuntz and Berdez, Klemperer, Penzoldt, Mori, Nasse, Lallemand, Riess, Munk, and many others, would appear to bear out in part the advice of Paul to Timothy, "Drink no longer water, but use a little wine for thy stomach's sake and thine often infirmities."[1]

[1] But the wine here referred to was a pure wine and unfortified.

I also submit that alcohol may be used wisely in times of need as a stimulant, as a nutrient, and as an antipyretic. As a stimulant it is of false economy to the healthy and to those from whom further continued effort is necessary. As a nutrient, the experiments of Binz and others, and our everyday experiences, and the facts deduced from them, lead to the conclusion that alcohol, even in non-poisonous doses, exercises a depressing influence on the assimilating cells, apart from any dependence upon the influence of the brain or the vasomotor nerves. Similarly, alcohol given in non-poisonous doses lowers the temperature; yet it is quite possible that if taken in a large quantity of water it quickly eliminates by its strong diuretic action the bacterial products which play so important a rôle in fever and nerve disorders.

I venture to generalize by stating that the rôle of alcohol in the physical economy is in the healthy individual an evil one. Stimulating the worn-out machinery by improper fuel is unproductive of good labour. "Capital" which fulfils the whole of its office in the production in which it is engaged by a single use is called "circulating capital." Alcohol does more than this. It interferes with the "fixed capital," and the "wages fund" of the bodily institution is in consequence ultimately diminished.

The first quality of an article of commerce is its intrinsic value. Gresham's law, put briefly, is that "bad money drives out good"—that is, there is a double standard, and debts can be legally discharged in either of the two kinds of currency; therefore that which can be obtained at less cost will be preferred to that which can be obtained at a greater cost. The depreciated article will drive out the appreciated. For the poorer classes the cost of bad alcoholic beverages as compared with the good non-alcoholic has in great part resulted in the driving out of the good for the bad. Further, the wealthier classes who consume costly wines and solace themselves with the fallacy that they are stimulating trade, are in reality spendthrifts, and by the dissipation of money on articles which add neither to the bodily, mental, circulating wage, or fixed capital, not only cause a direct useless transfer of money, but also cause an indirect waste of labour and wage in the production of articles which are productive of no good results either mental or physical. I venture to state, therefore, that in the economy of the healthy body the use of alcholol is an abuse: in the unhealthy body its use may be likened to a loan with heavy interest, advanced to increase temporarily the wages fund essential for the production of immediate labour, without which loan for immediate use, and failing reinforcement to the "wages fund" from other sources within the internal bodily economy, physical bankruptcy is prone to occur. My contention is, therefore, that alcohol is only justifiable as a loan to avert physical bankruptcy, and it may help to tide over a bodily crisis until the bodily organism can *per se* repay the loan together with its accumulated interest.

It is now necessary to make more clear what is meant by the "accumulated interest" to be repaid, and for this purpose I must dwell for a few moments upon the rôle of alcohol in the vascular and nervous tissues. Alcohol is well known to produce increased vascularity with enlargements of the cerebral cortical vessels, with atheromatous, fatty, and other degenerative changes in their coats. The nuclei in the adventitia proliferate freely, and the protoplasm of the cell structure becomes fatty. Aneurysmal dilatations are frequent: and here and there are to be found collections of extravasated blood, haematoidin crystals, and sometimes fat embolisms. Associated with the vascular dilatation there is frequently an increased effusion of the blood plasma. In the degenerative processes due to chronic alcoholism the nuclear proliferation and overgrowth of the connective tissue cells appear to be closely related to the continued dilatation of the vessels and the consequent increase of exudation of the lymph into the tissues.

I have elsewhere[2] emphasized the fact that in every instance of cerebral degeneration due to alcohol we have to deal mainly with the part played by the inflammatory exudate, that of the alcohol in the exudate, and the combined effects upon the nutrition and metabolism of the nervous structures. We know that when dilated the walls of the vessels are weaker, the exudation of plasma is more readily induced, and the mechanism of dilatation appears, therefore, to be of primary importance. In ordinary inflammation the exudate contains a relatively smaller quantity of proteids than does the blood plasma—owing possibly to the selective activity of

[2] *System of Medicine*. Clifford Allbutt, vol. viii, p. 324 seq.

the endothelial cells, and in this case the extravasated leucocytes tend to undergo rapid destruction and dissolution. On the other hand, when alcohol is conveyed to the plasma the metabolism of the leucocytes is retarded—owing to the deprivation of the tissues of some of its oxygen; and retention and proliferation of the exuded material results. The using up of oxygen for the destruction of the alcohol is clearly, therefore, a retarding process in the proper metabolism and we have in this way a tendency to the development of more stable but less highly developed tissues.

We have abundant evidence of parenchymatous, cloudy, or granular swelling of the protoplasm of the larger cells of the cerebral cortex due to alcohol. Hitherto these appearances have been regarded as evidences of increased activity of the protoplasm. I would prefer to consider these changes as mainly due to diminished metabolism. The exact nature and disposition of the granules in the nerve cell, and what determines the relative coarseness or fineness of these so-called granules is as yet a matter for further investigation and it is not yet proved how far these varied appearances may be artificial. At first there is little or no change of the nucleus; but subsequently, if the metabolism be retarded for a long time cytolysis and cytoclasis of nucleus and nerve cell occur, thereby rendering cytothesis or regeneration of the nerve cell impossible.

It is not part of my object to discuss the various opinions held as to the true nature of the moniliform swellings of the dendrites and the loss of the lateral gemmulae said to precede the partial or complete disintegration of the cell structure. Berkeley had studied the lesions produced by the action of alcohol on the cortical cells of the brains of rabbits, but his conclusions are not convincing until we know more definitely the meaning of the so-called "thorns" and are satisfied that they are not organic structures insufficiently delineated by the methods of preparation. All these pathological data are of great interest, but the uncertainty prevailing as to the trustworthiness of silver preparations renders it unsafe to build too much upon them. Another source of difficulty rests in the fact that similar appearances have been found in paralysis agitans without insanity, and also in several other forms of insanity in which alcohol was not a factor of causation.

In alcoholic insanity various changes in the anatomico-physiological connexions between the neurons have been described by several observers. These changes are said by Andriezen to occur in the ultimate protoplasmic expansions and contract granules, and also in the ultimate naked fibrils (collaterals and terminals). "Beginning with softening and swelling of these contract granules, and also of the protoplasmic twigs on which they are situated, the earliest noticeable changes are due to coalescence of these into small irregular composites, recognizable here and there as a local coarseness. As the changes progress in coarseness and extent moniliform swellings appear along the course of the terminal protoplasmic twigs. These changes affect the cells of the ambiguous, long, pyramidal and polymorphic layers, but the chief stress of the lesions appears to fall in the regions of the molecular and submolecular plexuses and in that of the subpyramidal plexus." Andriezen regarded these early changes in the fine protoplasmic contract granules of the apical expansions as associated with the amnesia so characteristic of some forms of alcoholic insanity. The fine collaterals and terminals of the molecular, submolecular, and subpyramidal regions also become granulated and wrinkled in outline, with irregular swellings here and there.

To attempt to discuss all the clinical relationships between alcohol and mental perversions would be quite impossible here, so I shall confine myself merely to the consideration of those memory defects and perversions which are so characteristic. Any explanation of these defects must deal adequately with the physical as well as with the psychical aspects of the question; and I believe that we are gradually approaching the time when we shall be able to formulate some more definite relationship between cerebral and mental events.

This is primarily due to the elaboration of the hypothesis of nervous amoeboidism. This theory is now so well known that it needs no demonstration at my hands.

The neuron theory holds that every nerve cell with its protoplasmic processes, axis-cylinder process, and collaterals, is an anatomical unit, structurally independent of other nerve cells. The researches of Ramon-y-Cajal, Kolliker, Duval, and others, lead one to adopt the view of contiguity of the ramifications of the neurons, as against the view of the continuity entertained by Gerlach; but it is not yet proved whether these protoplasmic ramifications are susceptible of approaching to or receding from one another by virtue of their contractile properties. So long agoas 1890 Burckhardt suggested that these movements might possibly account for the differences in the functional states of nervous areas, and in 1894 Lepine suggested that possibly sleep might be due to the retraction of cellular prolongations, and thereby leading to their isolation from one another. In 1895 Duval argued that as the imaginations, memory, and association of ideas become more active under the influence of certain agents (tea, coffee, etc.), whose functions would be to excite amoeboid movements in the contiguous extremities of nerve cells, it was, therefore, conceivable that the ramifications did approach each other, and thereby facilitated the passage of impulses. Further, the numerous experimental researches on fatigued animals appear to show that fatigue of the nervous elements brings about the isolation by retraction of the cellular prolongations. The most able summary of the subject is that given by Ford Robertson in his *Textbook of Pathology*, in which he states that the present position of the controversy justifies the conclusion that no discovery that has yet been made really weakens the case for the neuron theory.

The neuron theory, if really true, offers a theoretical solution of the gross physical conditions underlying the various perversions of memory due either to alcohol or, in fact, to any other cause. Stimulation of the nerve cell, either direct or indirect, favours the activity of the protoplasmic expansions and renders the passage of the physical stimuli more easy and more frequent. On the psychical side we have the parallel series of phenomena as manifested in the brilliancy and rapidity of thought, the general exaltation of function, and increased faculty of re-representation.

This latter faculty often amounts to hypermnesia, and is comparable to the hyperaesthesia which precedes anaesthesia, and which, like it, terminates in loss or complete amnesia. The individual groups of neurons of various localities can be excited to undue activity in various focal lesions, or the failure of their functioning by contact may lead to innumerable varieties of physical and mental states, as seen in the partial amnesias and aphasias, but it requires some general and far-reaching circulatory or toxaemic factor to induce a general hypermnesia or amnesia. Alcohol will stimulate the activity of not one but every neuron, and the hypermnesia of the alcoholic person is general and far-reaching. Following that stimulation, however, there is exhaustion and retarding of the metabolism, essential to the life and active functioning of the neuron. Each subsequent stimulation, to be equally effective as a hypermnesiac (if I may coin the word), must be increased in arithmetical progression, and be in inverse ratio to the regression or retrogression of the potentialities of the neuron. The law of regression or retrogression has yet to be amplified and adapted not only to the psychical aspects of progressive loss of memory, but also to the physical counterpart, which assuredly must rest in the phenomena of contiguity and continuity of neighbouring neurons.

Not only does alcohol produce various degrees of amnesia, but drunkards are prone to be affected by various illusions of memory, termed *paramnesic* states. Paramnesia occurs more commonly in alcoholic insanity than in any other form of mental disorder. A simple image may appear as a recollection, or, more commonly, an imaginary image is recollected and referred to as a reality. An illusion or hallucination may have been the initial factor in the production of the paramnesia, there being an inability subsequently to distinguish between what was actually a false sensory perception and a perception founded upon an objective reality. An illusion may be revived, the fact that the primary illusion was imaginary, lost sight of, and, as a result, a belief that the present revival is based upon fact. In alcoholic cases the false memory usually refers to a visual image of persons or places seen, or to a motor or kinaesthetic image of actions performed. It would appear reasonable to assume that the starting points of the initial illusions or hallucinations were in the cells most immediately concerned with vision of kinaesthetic impressions respectively; but this would give no solution of the delusion as to the active reality of the object seen or act performed.

At present psychology is confused and I believe in error with regard to the revivability of what may be termed specific "qualia"—or perception of qualitative differences between sensations—without the aid of their respective stimuli and until this question is more definitely solved it is useless to attempt to explain many points with regard to the para-

mnesias. In any case an explanation must depend not so much upon the evidences of illusion and hallucination, as upon the existence of a negative lesion (Hughlings Jackson) which prevents the individual from correcting the positive symptoms. This negative lesion I believe to be due to disruption of the contiguity of neurons, to consequent failure of the comparing and associative faculty, and to isolation of the contributory processes (as represented physically in the neurons) essential to a proper seriality of thought.

I fear I may have exhausted your patience by having dwelt on this question so long, but I cannot but feel that on the neuron theory there rests a great responsibility, and many of the problems of mental physiology and pathology must reckon with it in future.

It now only remains for me to discuss briefly the relationship of alcohol to general paralysis of the insane. Mickle, in his work on *General Paralysis*, states that in his own cases alcohol, though perhaps rarely acting alone, has appeared to be by far the most frequent and efficacious cause of general paralysis. Thorneuf, Guislain, Hitchman, Hack Tuke, Marcé, and Magnan have also demonstrated the frequent occurrence of alcohol as a factor of causation, but none of them assert that alcohol *per se* is the sole cause. In cases quoted by these authors, as also in those described by Gambus, Lolliot, Nasse, and Sauze, there was, in addition to fatty degeneration of the organs and vascular atheroma, a diffuse interstitial sclerosis such as might readily be attributed to alcohol.

I do not for one moment desire to underrate the importance of alcohol as an adjunct in the causation of the degenerative processes of progressive paralyses. I merely go so far as to state that I do not believe alcohol alone is ever responsible for the disease we term general paralysis any more than it is responsible for tabes. General paralysis is, in its close etiological affinity to tabes, essentially a sequel to syphilitic infection, call it parasyphilis or metasyphilis, or what you will. The factor of alcohol when added to that of syphilis does not lead us to modify our diagnosis and prognosis very materially in any individual case; but when alcohol is said to be the sole factor, then even the most experienced of us hesitates to diagnose general paralysis, knowing as we do how almost invariably we are deceived. In those cases diagnosed as general paralysis due solely to alcohol, and which may progress to a fatal termination within the time allotted to general paralysis, the pathological findings are of varied interest and suggestive of etiological factors differing widely from the syphilitic types.

Bristowe, while studying the pathological changes met with among those dying insane, was much struck by the large number of cases in which chronic renal disease of a more or less advanced state was present. In general paralysis more particularly was this the case, and his statistics led him to believe that the relationship between general paralysis and renal disease was something more than a merely accidental one.

Kellogg[3] also believes renal disease to be frequently associated with insanity, and that the two affections are sometimes the common symptom of general vascular degenerations. He states that out of several hundred necropsies of the insane he has found renal disease in a "considerable percentage of cases," but he does not give any information as to the exact number of cases or the form of kidney disease. He points out, however, that if there appears, on close inquiry, a history of previous alcoholic excess in these cases, it is more consistent to regard both the renal and mental trouble as resultant symptoms of this antecedent cause.

Bischoff[4] has only seen two cases of uraemic insanity among 3,000 lunatics. He believes uraemic insanity particularly likely to arise in those who are hereditarily predisposed, or who are addicted to alcohol. The actual cause of the mental disturbance is more often the uraemic intoxication, but in a certain number of cases the insanity appears to depend upon the convulsive attacks. He also regards it as possible that the visual disturbances may play some part in the pathogenesis. Uraemic insanity usually runs the course of acute mania, from which it is distinguished by the epileptiform seizures. Bischoff also refers to katatonic conditions, occurring especially in those with strong hereditary predisposition. The prognosis is in all cases bad as regards life, but if the uraemic condition passes off, there is a considerable prospect of recovery from the mental impairment.

[3] *Textbook on Mental Diseases*, p. 97.
[4] *Wien. klin. Woch.*, 1898, No. 25.

Any defect in the renal system associated with arterial degeneration and a tendency to cardiac failure is apt to be attended by brain failure. Renal cirrhosis is frequently associated with adhesion and thickening of the dura mater. The pia mater is also apt to be thickened and opaque, and in some instances adherent to the cortex cerebri. When this is the case the lymphatic or vascular circulation is so impaired that symptoms of cerebral and mental degeneration appear.

Renal disease, therefore, is associated with insanity in two ways (1) acute transient delirious mania, or acute uraemic insanity; and (2) a progressive cerebral degeneration, with chronic renal disease as the primary cause. In this type the mental symptoms during the earlier stages vary from a mild dementia to mania or delirium. In due course, however, complete dementia results not unlike paralysis of the progressive type known as general paralysis of the insane.

I have seen many cases of mania with excitement, and even delirium, in which the pupils were contracted, reflexes diminished, and muscular tremors, followed later by convulsions. These cases, when extending over a period of two or three years, are apt to lead to the faulty diagnosis of general paralysis. Not infrequently, however, the kidneys are found to be normal, and the symptoms are due to an overproduction of toxic substances in the body and eliminated in the urine.

On careful analysis of the details of 200 cases of insanity due to alcohol admitted to Bethlem there were to be noted the comparative frequency of such symptoms as inequalities of pupils, tongue tremors, alterations and defects of speech, sluggishness or exaggeration of the knee-jerks, and not infrequently hemiplegias or other symptoms of arterial and cerebral degeneration. In no case uncomplicated with a history of syphilis could I discover absence of the pupillar reflex to light.

The cases diagnosed as general paralysis appear to me to have been of three types: (1) Parasyphilitic types which correspond most closely to the classical description of general paralysis with alcohol as an adjunct; (2) types of cerebral degeneration due mainly to vascular changes consequent upon kidney or arterial disease due to alcohol; and (3) types of associated mental and motor defects in which the kidney disease was merely coincidental, the mental and motor symptoms being due to other factors, such as sunstroke, malaria, post-febrile, and toxic states. The second and third types form what may for convenience sake be termed pseudo-general paralytic types, and run a totally different course from the first type mentioned.

It will, therefore, readily be seen that even progression to a fatal end does not necessarily mean general paralysis, and it will be of much interest to hear how far this contention that alcohol *per se* does not cause general paralysis is borne out by the experience of others.

II.—G. ARCHDALL REID, M.B., F.R.S.E.,

Southsea.

HUMAN EVOLUTION: WITH ESPECIAL REFERENCE TO ALCOHOL.

DR. ARCHDALL REID said: I imagine you will reprobate the paper I am about to read with the greatest heartiness and unanimity. I shall place before you a series of propositions which appear to me more or less self-evident and undeniable. But the conclusion they lead to is not self-evident, and has, indeed, been strongly denied. The strength of any chain of argument depends on the strength of its weakest link: the most effective way of proving the weakness of any chain is to snap that weakest link. The least effective way is to declare in general terms that the chain is devoid of strength. I venture, therefore, to commit the impertinence of directing your attention beforehand to the separate links of the chain rather than to the chain as an entirety—to the series of propositions on which my argument is founded rather than to the conclusion by which they are welded into a whole. If the propositions are individually true, then the conclusion follows inevitably; but if a single fact of deduction is erroneous, you can easily destroy the conclusion by demonstrating the initial error.

1. The first of these propositions is this: That all the races of mankind sprang originally from a common stock. I imagine no one will deny the truth of this proposition. It is embodied not only in all popular but in all scientific teaching. The truth of it is demonstrated scientifically by the fact that every race can interbreed with every other.

2. The second proposition is that all races of mankind since

their divergence from the common stock have undergone, and are undergoing, a continuous change. This is evident from the fact that though originally alike, there are now big races and small, white races and black, races highly resistant to this or that disease, and races less resistant, and so forth.

3. The third proposition is that these changes have been of an adaptive and progressive nature. In other words, every race has become especially fitted to the environment in which it has undergone evolution. Thus the Eskimo is to-day better able to resist cold than the Arab, who is better able to resist heat. The Londoner perishes of malaria in West Africa, the West African perishes of phthisis in London.

4. The fourth proposition is that this evolution has been due to the survival of the fittest; in other words, to the natural selection of congenital variations. To this proposition I do not expect immediate or complete assent. Many of my audience will deny, for instance, that the negro race has become black solely because naturally dark people survive and have offspring in the tropics in greater numbers than naturally fair people. They will maintain, rather, that the additional pigmentation in the skin which exposure to the action of the sun produces has been transmitted from parent to child, and that thus in the course of generations the original degree of pigmentation has been accentuated to almost absolute blackness. However, I do not propose to ask you to assent to the entire doctrine of natural selection. As to that, I content myself by remarking that belief in the doctrine in its entirety is now almost universal among that section of biologists who have devoted especial attention to questions of heredity and evolution. The only proposition in this connexion to which I shall ask you to consent is that certain phases of human evolution are due solely to the survival of the fittest.

5. The fifth proposition is that to some extent every individual human being differs congenitally from every other human being in physical and mental peculiarities—in height, in strength, in colour, and in mental vigour, for instance.

6. The sixth proposition is that parents on the whole tend to reproduce their like. Thus big people tend to have big children, and little people little children. When the ancestry is pure the reproduction of the parental trait is almost invariable; thus negro parents almost invariably have black offspring. When as regards any particular trait the ancestry is mixed the reproduction is less certain; thus among us the offspring of big parents may be smaller, or the offspring of fair people darker than their parents, nevertheless the rule holds in the great majority of instances.

7. The seventh proposition, which follows as a corollary to the fifth and sixth, is that human individuals differ in their power of resisting diseases, and the offspring tend with variations to inherit parental powers and weaknesses in this particular. Thus in England some people are much more resistant to phthisis than others. The truth that parents tend to transmit their powers or weaknesses to offspring is conspicuously shown by such facts as that the negroes as a race are more resistant to malaria than the British, whereas the British are more resistant to phthisis.

8. The eighth proposition is that races are resistant to any lethal disease precisely in proportion to the length and severity of the ancestral sufferings from it. Thus the British, who for thousands of years have been afflicted by phthisis, measles, and whooping-cough, are much more resistant to these diseases than the inhabitants of the Western Hemisphere, who have known them only during the last few generations, and who are now being exterminated by them.

9. The ninth proposition is that parental disease does not affect in any way, either for good or evil, offspring subsequently reproduced, at any rate through inheritance properly so called. I fear this proposition is not at first sight self-evident, and I am aware that the mass of professional opinion is against it. Plumbism, gout, phthisis, syphilis, and a host of other complaints have been alleged as causes of filial degeneration. Nevertheless I venture to insist that this prevalent professional opinion has no foundations save an ancient superstition, and a certain amount of bad observation which the superstition at first rendered inevitable. At the present day a mass of very weighty evidence can be deduced against it: (*a*) The laws of heredity which govern the lower animal and plant worlds do not differ from those which govern man. Biologists have found that the offspring of asexual reproduction are always exact copies of their parents, no matter what conditions the parents may have been subjected to. Thus the summer generations of aphides, which are produced by the female without the intervention of the male, are exact copies of the parent. So also plants propagated by grafts, suckers, and slips show practically no variation. On the other hand, the offspring of sexual reproduction vary always, and, it may be, enormously. Thus the puppies of a single litter may be of very different shapes, sizes, and colours. So also the variation of plants which arise from seeds are very great. Biologists have concluded, therefore, that the sole cause of variation, the sole reason why offspring at birth differ from what their parents were at birth, is the intermixture of dissimilar germ plasms, the union of dissimilar individuals resulting in offspring dissimilar to both. (*b*) Again, human beings undergo great changes between puberty and old age. Yet the offspring of aged people cannot be distinguished from those of boys and girls. (*c*) Most convincing of all, however, is the following: If parental disease affects offspring subsequently born then the variation thus produced is a congenital one. But, as is well known, congenital variations tend to be transmitted to descendants. Under such conditions a race afflicted by any disease would undergo rapid degeneration, and, ultimately, extinction. We know that this is not the case. On the contrary, disease, so far from weakening, actually strengthens a race afflicted by it. At any rate, it always strengthens the race unless the conditions are so severe that no time is allowed for the operation of natural selection. Indeed, gentlemen, if you consider the matter I think you will conclude that the universally-accepted doctrine of natural selection is incompatible with the doctrine that parental states of body and mind affect offspring subsequently born. If one is true the other cannot be true. All species are at times subjected to disease, heat, cold, want, hardship, and other injurious influences. If these affected offspring subsequently born there would be no room for natural selection, since there would be no favourable variations for natural selection to act on. All variations would be unfavourable.

10. The tenth proposition is that just as people differ in all other respects so they differ in their susceptibility to the charm of alcohol. This is a very important proposition, but the truth it contains is frequently ignored. We know that all drinkers are so susceptible to the charm that they crave intensely for excessive indulgence, whereas most moderate drinkers are so little susceptible that they do not crave for excessive indulgence. I know for instance that I never need to resist the temptation to get drunk. I simply have it not. I have no doubt that most people in this room are constituted as I am. Otherwise they must go about craving ardently for drunkenness, but strenuously resisting the temptation.

11. The eleventh proposition is that as a rule people drink in proportion to their desires. This is obvious. The greater the temptation the greater the liability to a fall.

12. The twelfth proposition is that alcohol when taken in excess is a poison and the cause of a large mortality. Of course like all other toxic substances it poisons most those who take it most in excess.

13. The thirteenth proposition is that parental intemperance, like disease, does not affect offspring subsequently born. I exclude of course the children of mothers intemperate while pregnant. I am discussing questions of heredity, and heredity is concerned with sperms and ova not with embryos. I am perfectly aware that it is a prevalent opinion that parental intemperance does affect offspring subsequently born, and that various statistics have been published in support of this opinion. But statistics drawn up by gentlemen who believe they are supporting an undisputed fact are very apt to be erroneous; the various sources of error are not sufficiently taken into account. I believe I am well within the truth in my belief that the statistics in question have been published mainly by gentlemen who worked before exact observations on heredity had been made or who were not aware of them. If it be true that parental intemperance affects offspring, then here we have an exception to an apparently universal biological law. However, to ascertain the truth definitely we have only to investigate the effect of alcohol on races which have long used it. If offspring are affected, then races which have long used alcohol should be degenerate and tending towards extinction. On the other hand, if offspring are not affected, then races which have long used alcohol should, through the weeding out of the unfit, be the least inclined to excessive indulgence—the least susceptible to the charm of drunkenness—of all races. The evidence on the subject is very clear. The Jews, Greeks, Italians, South Frenchmen, Spaniards, and Portuguese, who have longest had an abundant and continuous supply of alcohol, are the most temperate people on earth. North Europeans, and others who have had a less plentiful supply, are less temperate.

Whereas some savages and others who have had little or no experience of the poison are the most intemperate of all.

14. The fourteenth proposition, then, is that alcohol, like disease, is the cause of an evolution protective against itself. Drunkenness in the ancestry is the cause of temperance among the descendants. The case of alcohol is exactly paralleled by that of opium. Opium has been in use for many centuries in India. The Chinese have used it for 200 years. It has lately been introduced into Burmah, Australia, and some Pacific islands. Practically speaking, the natives of India never take it to excess; some Chinamen still take it to excess, though the majority are much more temperate than formerly, when enormous harm was done; the Burmans, Australians, and Polynesians take it to such excess, and perish in such numbers of it, that its use is universally forbidden to them, though permitted to foreign immigrants to their country.

15. The fifteenth proposition is that the causes ordinarily alleged for racial sobriety—climate, civilization, education, and so forth—are erroneous. I have not time to deal adequately with this point, but if any one disputes it I am prepared to furnish chapter and verse.

16. The sixteenth proposition is that repressive legislation is useless among civilized nations. It has been tried by scores of Governments on hundreds of occasions during thousands of years, and has universally failed except among the Mohammedans. With them the success, which has been only partial and can only be temporary, has been achieved by means which have made them barbarous as well as temperate. Moreover, the Mohammedans have substituted opium for alcohol. I fear in this instance also I have not time for adequate discussion. Once again I must content myself with a dogmatic statement of fact. But here, again, if the statement be disputed I am prepared with chapter and verse.

III.—CHARLES MERCIER, M.B.,

Lecturer on Neurology, Westminster Hospital,

DR. MERCIER said that Dr. Hyslop had opened for them the subjects of the basis of consciousness, double consciousness, the constitution of the neuron, and the symptoms of uraemia. There was another subject that he might usefully have included, and he could not but regret that he had not time to refer to the subject of the relations of alcohol to mental disease. He had assumed the part of *advocatus diaboli* with regard to alcohol, and had dwelt on its disadvantages. He regretted that he did not also point out its enormous value as a stimulant in states of exhaustion, and as a hypnotic in many cases of insomnia. Dr. Hyslop spoke of the structural changes that were believed to be produced in the neuron by alcohol, and adduced these changes as explanatory of the mnemonic defects that were observed in alcoholic insanity. Speaking after a good deal of study of the subject, Dr. Mercier most emphatically protested against the possibility of correlating specific changes in the structure of nerve tissue with specific changes in consciousness. Let it be granted that the dendrites became moniliform, and that thorny processes appeared on or disappeared from nerve fibres, and that the neuron underwent any other alteration that one chose to describe, did this structural change help them to understand why the patient in whose brain these changes were found suffered from a delusion of persecution or a mnemonic delusion? It did not, and no research into structural alterations would ever bring them together. The relation of alcohol to mental disorder Dr. Mercier believed to be most important, for by the administration of alcohol one could produce insanity at will, and the nature of the insanity that was produced could be modified by varying the dose and the rate of administration. The speaker then described the various forms of insanity produced by alcohol, and pointed out the very different effects that the same dose given at the same rate produced in different people. Dr. Archdall Reid had told them that the integrity of his chain of argument depended upon the tenacity of its weakest link, and that if they succeeded in fracturing a single link, his conclusions would fall to the ground. The admission was a dangerous one, but he (Dr. Mercier) would have no difficulty whatever in fracturing half a dozen of his links, and where would his conclusions be then? His very first proposition was a pure assumption and rested upon no evidence whatever. The various races of men might have arisen from one stock or they might not. Dr. Mercier did not see that the matter was important to Dr. Reid's argument, but Dr. Reid said it was, and he ought to know. The next point was the invariability of the product of asexual reproduction. Again, he did not see the relevancy of this proposition to Dr. Reid's conclusion; but if his conclusion did depend upon it, it was false, for the premiss was certainly not true. It was sufficiently well known that the nectarine originated as an asexual sport upon the peach tree. Other examples could be given, but to break down a universal affirmative a single negative instance was sufficient. Then he would like to have Dr. Reid's authority for his statement that South Europeans had been exposed to the influence of alcohol longer than the inhabitants of Northern Europe. It happened that the very earliest reference that they had to the comparative habits of the two races was that of Tacitus, who spoke of the intemperance of the Germans 2,000 years ago. Lastly, as to the inheritance of acquired characters, they all knew Dr. Reid's views, and they knew also the method of argument by which he and those who thought with him supported these views. They systematically begged the question. They stated dogmatically that no acquired character was inherited, and clamoured for an instance to the contrary; but when instances to the contrary were supplied to them, as they had been supplied in abundance, then Dr. Reid asserted that these instances proved nothing inasmuch as they were not acquired characters.

IV.—DAVID YELLOWLEES,

Late Medical Superintendent, Glasgow Asylum.

DR. YELLOWLEES greatly regretted that he had been unable to hear the papers, and could only speak on the characteristically clear and humorous review of them by Dr. Mercier. He agreed with him as to the varying results of alcoholic indulgence according to the mode of indulgence, but especially according to the temperament of the individual. Some men never got delirium tremens however long or deeply they indulged; others became insane after but brief indulgence; others continued habitually soaking until the suspicions and hallucinations of chronic insanity were developed; others did not even develop these, but sank gradually into chronic alcoholic dementia. One type of alcoholic insanity had often struck him—the melancholia occurring about the climacteric period in those who had been addicted to drinking in earlier life, as if the errors of youthful days had at last to be heavily paid for.

V.—T. N. KELYNACK, M.D.,

Assistant Physician, Mount Vernon Hospital for Consumption.

DR. KELYNACK referred to the perplexity and prejudice associated with the subject under discussion. It was a matter dealing with individual and racial decadence; and the work of numerous investigators had done much to quicken scientific research into the problems which surrounded alcoholism. Dr. Kelynack also dealt with the pathogeny of alcoholism, and urged the necessity for a wide outlook in discussing the subject; the importance of recognizing the great variation in individual reaction to alcohol, the influence of autotoxaemic states and derangement of nutritional processes brought about by alcohol, and also the very far-reaching indirect result of this toxic agent in leading to secondary infections. He urged the necessity of conducting "collective investigation" into the phenomena of the morbid psychology of alcoholism.

VI.—F. EDRIDGE-GREEN, M.D.,

London.

DR. EDRIDGE-GREEN said that in discussing the transmission of acquired characters a distinction must be made between those characters which were acquired through the desire of the individual, as for instance an improvement in the colour-sense and those which were accidental, like the loss of an arm.

VII.—A. T. SCHOFIELD, M.D.,

London.

DR. SCHOFIELD said that as Dr. Hyslop had thought it worth his while to pillory such an obscure individual as himself before such a distinguished audience, he thought it right to say he had already offered him a most graceful apology for attributing to him a remarkable sentence which he (Dr. Hyslop) never wrote. With regard to Dr. Archdall Reid, he seemed to revive an old fatalism which Dr. Schofield had fully believed had died out. He thought that, as a rule, what was transmitted were tendencies and not diseases. Now

tendencies could be resisted, and not only so, but if successfully resisted through three generations the very tendency was stamped out in the fourth.

VIII.—J. J. Ridge, M.D., B.Sc.,
Enfield.

Dr. Ridge said that Dr. Archdall Reid's propositions were claimed by him to be incontrovertible, and his conclusions were said to be necessary. But Euclid often used the method of disproving a proposition by showing that though every link was correct an absurd conclusion was arrived at. But several of the links had already been shown to be faulty, and Dr. Reid only showed the characteristic of Englishmen in not knowing when he was beaten. The fact remained that alcohol produced degeneration of the individual, and this, in the case of moderate drinkers, as proved by the results of life assurance societies, was slowly produced and did not show itself until after the age of 60. It was most important that the public should understand that very serious degenerative changes might be going on long before there was anything to demonstrate it superficially.

IX.—J. F. Flashman, M.D.,
Sydney.

Dr. Flashman said that Dr. Reid confounded himself in his own paper. He pointed out how all were subject to the influences of environment, and that it was by this power that the different races of man were produced. He then wished them to believe that the germ plasma was the only substance which was free from the influence of environment. But could they believe that germ plasma residing in and nourished by the body was uninfluenced by a diseased condition of the nourishing fluid—the blood. Dr. Reid made the further remark that if the pregnancy were influenced by parental disease the race would soon be exterminated, but he neglected to take into account the multitudinous opposing influences at work, such as those which the study of immunity brought to their minds. In regard to Dr. Hyslop's paper, he thought that he fell into a fallacy in asserting that alcohol restored the nerve energy temporarily. No such restoration took place, but the alcohol acted by abolishing only the sense of fatigue. The whole fabric of Dr. Hyslop's remarks seemed to rest on the shifting foundation formed by the amoeboid movements of the neurons. This was no more than a theory, and an almost discredited theory. He should like to hear Dr. Hyslop's references to the papers in which it was stated that Golgi, Cajal, and Lugaro supported such a theory.

X.—W. Ford Robertson, M.D.,
Pathologist to the Scottish Asylums.

Dr. Ford Robertson said that the available facts bearing on the question of the pathogenesis of alcoholic insanity warranted the conclusions formulated by Dr. Hyslop, and he admired the able manner in which he had discussed that part of his subject, which had only reached the stage of hypothesis. He would, however, go further than Dr. Hyslop had done in attributing importance to the effects of alcohol in damaging the defensive forces of the body, general and local, and so opening up the way to bacterial attack. With regard to Dr. Archdall Reid's sixteen propositions, he thought they bristled with fallacies. He was surprised that Dr. Reid had apparently never brought to bear upon his theories the results of the work of Dr. J. Beard of Edinburgh on heredity. Dr. Beard had clearly demonstrated that they had not merely to deal with continuity of a germ plasm, but with actual continuity of germ cells. The embryo was developed from one out of very many "primary germ cells," this one being sacrificed to form a suitable host for the others. On general physiological grounds they were justified in believing that these germ cells were affected by their nutritional conditions as other cells were. The onus of proof that these cells were unaffected by the general nutritional state lay with Dr. Reid. Dr. Reid had no right to place upon his opponents the burden of proof. On general grounds they must hold it as a working hypothesis that the germ cells were capable of being affected by toxins.

XI.—W. Lloyd Andriezen, M.D.,
London.

Dr. Andriezen said that alcohol acted as spur on a tired horse, and did more damage than was safely to be incurred. It abolished the subjective sense of fatigue and was therefore a dangerous beverage. Alcohol also deprived the tissues of oxygen, which was necessary for their normal functioning, and it produced disharmony of action between the cortical centres of various kinds. "Thorns" and "gemmules" were normal structures in the nerve cells (human and animals) as he had invariably found them present in Golgi and modified Golgi preparations. Amnesia, he said, could be correlated with changes in the gemmules and protoplasmic processes of nerve cells, also with intracellular changes in the cortex. He referred to detailed observations published by him on this subject in *Brain*, Winter, 1894. The theory of amoeboid movement was nearly all theory in his opinion. Alcohol was capable of producing hallucinations, and two cases of focal lesions to the primary cortical visual areas were cited by him in which the clinical history showed persistent and intense hallucinations of sight which he (Dr. Andriezen) said were likely to have been present during life, being unaware of the fact. Dr. Reid's remarks on "parental disease as not affecting for good and evil children of alcoholic subjects" were founded on misconception of Weismann's theory of the "isolation" of the germ plasma. Other agencies which similarly affected the offspring were syphilis and tuberculosis. The case of the "Jukes" family was cited as an example of the varying effects of alcoholism of the parents on the offspring. Crossing with good blood saved some members of this stock, but intermarrying produced extinction of the stock in three or four generations.

XII.—Heywood Smith, M.D.,
London.

Dr. Heywood Smith said he had noticed, especially in his work in diseases of women, that among female inebriates one characteristic symptom was that of lying. He would like to ask the members of that important Section whether it was that women, realizing that the result of their self-medication with alcohol was producing disease, felt shame at their action, and so were led to lie with regard to it; or whether observers had noticed his particular symptom (lying) in other subjects of insanity.

XIII.—Fletcher Beach, M.B.,
Physician, West-End Hospital for Nervous Diseases.

Dr. Fletcher Beach stated that there was one proposition in Dr. Archdall Reid's paper to which he took exception. He stated that intemperance in the parents did not produce deteriorating results in the offspring. Some years ago his friend Dr. Shuttleworth and himself inquired particularly into this subject, and among other inquiries which were made was the condition of the offspring of intemperate parents. A large percentage of the idiots admitted into the Darenth and Royal Albert Asylums were, as the result of inquiries, proved to be the children of intemperate parents. By intemperance he did not mean one acute attack, but where the individual had drunk in excess for years, and whose tissues were sodden with alcohol. He understood Dr. Reid to say that parental intemperance did not have a deteriorating influence on the germ cell, but surely an individual who had drunk alcohol largely for years, and whose tissues were sodden with alcohol, could not have as healthy a germ cell as a normal person. Another statement which he made was that no difference could be detected between the children of old and young parents. Dr. Fletcher Beach had, however, observed that there was a considerable difference, namely, that the children of older parents were nervous and delicate, whereas the children of young normal parents were invariably healthy. As regarded repressive legislation, he believed that it should be tried in moderation. Repressive legislation could only be well carried out when people were convinced that the law was a useful one, and it was to be hoped that as time went on and people became more educated in the subject, repressive legislation would not be so necessary.

XIV.—Wilfred Harris, M.D.,
Assistant Physician, Hospital for Epilepsy and Paralysis, Maida Vale.

Dr. Harris said that loose statements, without any form of proof, had been made that alcohol was a stimulant. On the other hand, he believed that the weight of evidence was that alcohol was not a stimulant, but a direct depressant and narcotic. The experience of men training for prolonged muscular efforts showed that when fatigue became extreme the administration of alcohol was a sure way of inducing immediate collapse and failure to reach the goal, as in swimming long distances or in Alpine climbing, where the only benefit found by guides in taking tourists up high peaks was to give Dutch courage to get a frightened tourist round a

difficult corner; but that if threatening collapse was due to muscular fatigue, and not to fright, no more certain way of producing failure to reach the goal could be found than to give the person a dose of brandy. With regard to Dr. Archdall Reid's assertion that parental disease had no effect upon subsequent offspring, he mentioned the occurrence of juvenile tabes and juvenile general paralysis in the children of syphilities, though no signs of congenital syphilis might be observable at birth. He also mentioned the case of a woman, completely paraplegic for three years, who then had a child, which, at the age of 18, was only about 4 ft. high, of obviously low intelligence, and the subject of hysterical torticollis.

XV.—James Stewart, F.R.C.P.,
Clifton.

Dr. Stewart said it was a matter of common observation among practical physicians that a very large proportion of inebriates had been the children of neurotic parents. In 44 per cent. of those treated at Dr. Stewart's private asylum, one of the parents or grandparents had taken alcohol to excess. In a large number of the remainder there was a history of either epilepsy or insanity or tuberculosis. The inebriate, as distinguished from the drunkard, almost invariably suffered from deficient memory. Hence the common saying that all inebriates were liars.

XVI.—Robert Jones, M.D.,
Medical Superintendent, Claybury Asylum;
President of the Section.

The President referred to the interest which the discussion of the papers of Drs. Hyslop and Archdall Reid were likely to arouse. The former had very amply considered the question of alcohol from the anatomical, physiological, and pathological standpoint. The amnesia referred to was a very characteristic symptom of those who were admitted into asylums suffering from the insanity of alcohol. The experiments of Kraepelin and Wundt showed very conclusively that there was marked physiological retardation of mental reaction as the result of alcohol, and this special resistance seemed to explain the delusions of persecution which characterized so often alcoholic insanity—the feeling on their behalf that the environment was so much against them. Dr. Hyslop's summary was that the use of alcohol was "abuse" in health. Dr. Jones's own feeling was that under the control of the reasoning and moral faculties alcohol under certain conditions was of advantage. With regard to Dr. Archdall Reid's paper, his subtle logic and interesting theories in regard to susceptibility and immunity had given him already a wide audience, but he was unable to appreciate his position that "disease strengthens," that alcohol was not prejudicial to the germ plasm, that parental disease did not affect for good or evil the offspring subsequently produced. His suggestion implied that alcohol was desirable, and that races who used it most were the highest and the most advanced in civilization. But this did not carry with it the conclusion that alcohol *per se* was a desirable product and to be used indiscriminately. They knew that diphtheria germs might be taken from the throat of every person in a diphtheria ward, although they might not have been attacked, such as ward maids and nurses. Also he was recently informed that in a large institution for the insane in America when there was no typhoid, whenever they had a dozen or so of new nurses then typhoid broke out among them. The conclusion showed the immunity enjoyed by the permanent population, but which made itself immediately evident among the unprotected. The same applied to alcohol. Among their own race a certain immunity had been established, but with new races unprotected alcohol played a sad havoc. But would any one say that typhoid fever and diphtheria were desirable and appreciated conditions? The same reasoning seemed to apply in regard to alcohol.

Replies.

Dr. Hyslop, in reply, said that one point omitted in his paper was the narcotic action referred to by Dr. Mercier, and he quite agreed that alcohol was of great use in the treatment of acute cases in which a narcotic action was desired. The habit of lying in the insane was very frequently due to alcoholic paramnesia, as already referred to in his paper. He thanked Drs. Ford Robertson and Andriezen for their criticisms, and felt that the discussion was more fitted for the consideration of experts in neurology and psychology than for the general public.

Dr. Archdall Reid, in reply, pointed out that he did not say the germ plasma was unaffected—he said germ cells were not affected. Alienists and biologists were in direct opposition in this matter of heredity. Alienists said their patients had often drunken parents. This was true, but if patients in hospital or people in workhouses were questioned, it would be found that quite as many people had drunken parents. These control observations alienists had neglected; also people with instability or other mental defects were frequently drunkards. Their children were defective because they inhibited defects of non-alcoholic origin not because the parents drank. The evidence of alienists was vitiated by confusion between *post hoc* and *propter hoc*.

PRELIMINARY NOTE ON THE ACTION OF THE BLOOD SERUM FROM CASES OF MENTAL DISEASE ON B. COLI COMMUNIS.

BY

A. V. Johnson, M.D., F.R.C.S.I., D.P.H., Assistant Medical Officer, and E. Goodall, M.D., F.R.C.P., Medical Superintendent, Carmarthen Asylum.

The following observations may be said to be based, in the first place, upon the commonly-accepted fact that mental states are influenced by the condition of the digestive tract, and in the second place, upon the experimental evidence brought forward by Lorrain Smith and others to show that the growth of the bacteria in the intestine, which is normally kept within bounds by the inhibitive powers exercised by the healthy intestinal walls, may become excessive and abnormal under conditions which impair the power of control. This inhibitory power is weakest in the large intestine.

Normal inhibition may not improbably be interfered with in the state of reduced health, which is commonly associated with the inception of mental disorders. Under these circumstances excessive growth of the B. coli communis may especially be looked for, and toxic effects are to be expected from the uncontrolled proliferation of the organism, which under normal conditions is harmless.

From the above considerations it seemed reasonable to examine in different cases of insanity the action of the blood serum upon cultures from mixed strains of B. coli communis, in order to ascertain whether, by the demonstration of agglutination, direct evidence could be adduced of the morbific influence of the B. coli communis in such cases, or indirect evidence of the like on the part of some other organism related to the B. coli communis, which latter, by virtue of such relationship, reacts to the blood serum by agglutination, although it may be in a lesser degree than the actual morbific organism would were that the subject of experiments.

Blood from 25 cases of insanity of various kinds was taken for the agglutination test, and in each case a control was made. None of the controls showed agglutination, except one, and in that one the clumping was only partial,

Of the 25 cases of insanity 11 were cases of acute mania, 6 of which were under three months' duration; these 6 gave a partial clumping with dilutions of:

1 in 100 in 4 cases.
1 in 50 in 1 case.
1 in 30 in 1 case.

One patient (G. L.) was in a condition of convalescence. The remaining 5 out of the 11 cases of acute mania were of under 4½ months' duration, and gave no clumping at all, the reaction being watched for one hour in each case; the dilutions used were:

1 in 100 in 1 case.
1 in 50 in 1 case.
1 in 30 in 3 cases.

One of the cases, G. W. F., was in a state of convalescence.

Of these cases one, J. A. M., a male, aged 27, being in his first attack, which had lasted four weeks, when the experiment was made, gave no clumping, the dilution being 1 in 30. But four weeks later, with a dilution of 1 in 100, evident partial clumping was observed.

Of 5 cases of melancholia which were examined, 1 case, which had lasted for a month, showed good clumping in three-quarters of an hour with a dilution of 1 in 100.

Three other cases of over six months' duration showed good clumping in three-quarters of an hour with a dilution of 1 in 100.

The remaining case of melancholia was of six and a-half months' duration and showed no clumping with a dilution of 1 in 100.

Summary of Separate Charts, showing Number of Leucocytes per 1 c.mm. of Blood found in Thirteen Different Cases of Insanity, counted once a Week One Hour and a-Half after Breakfast for a Period of Three Months.

	Initials of Patient's Names.	Age.	Number of Attack.	Form of Insanity.	Leucocytes in 1 c.mm. of Blood at Commencement of the Three Months' Observation.	Highest Number of Leucocytes Reached during the Three Months' Observation.	Number of Leucocytes found at the end of Three Months' Observation.	Duration of the Disease Previous to the Three Months' Observation.	Remarks.
1	Mrs. B.	[illegible]	1st	Acute melancholia	[illegible]	[illegible]	[illegible]	5 days	Quite recovered 4 months after commencement of disease. Slight increase of leucocytes before recovery.
2	Miss P.	[illegible]	2nd	Ditto	[illegible]	[illegible]	20,000	14 months	Never recovered. Died 2 years and 1 month after commencement of disease.
3	R. D.	38	2nd	Recurrent mania	10,000	15,000	10,000	4 years	Never able to count leucocytes in this case during an acute attack.
4	P. W.	57	1st	Chronic mania	20,000	20,000	10,000	38 years	Always violent, noisy, and dirty.
5	R. B.	42	1st	General paralysis of the insane	25,000	30,000	20,000	5 years	Periods of remission in which leucocytes diminished in number.
6	M. A. C.	38	2nd	General paralysis of the insane	25,000	25,000	—	2 days	Died suddenly 2 months after commencement of second attack. No necropsy allowed.
7	A. L. E.	16	1st	Acute mania	45,000	45,000	[illegible]	11 weeks	Had a bad attack of pneumonia 4 months after commencement of disease and became quite rational directly after.
8	Mrs. R.	43	1st	Ditto	25,000	35,000	[illegible]	3 weeks	Never improved. Died 5 months after commencement of disease.
9	R. T.	43	1st	Ditto	30,000	30,000	15,000	2 months	Has never recovered, but has periods of quiescence, during which leucocytes diminish in number.
10	A. A.	45	1st	Ditto	15,000	30,000	15,000	6 months	Still alternates. Leucocytes increasing during periods of violence and diminishing during quiescence.
11	E. A. R.	23	1st	Ditto	25,000	30,000	20,000	6 weeks	Discharged cured 9 months after commencement of disease, but did not improve for 6 months.
12	M. W.	42	1st	Ditto	20,000	35,000	[illegible]	14 days	No change for 9 months after commencement of disease, then became quite rational.
13	Mrs. M.	45	1st	Delusional insanity	25,000	30,000	30,000	2 months	No recovery. Delusions and restlessness still continue 14 months after commencement of disease.

Table of Agglutination of Mixed Strains of Bacillus Coli Communis with Sera from 25 Cases of Various Forms of Insanity.

	Initials of Patients' Names.	Age.	Number of Attack.	Form of Insanity.	Duration of Disease previous to Experimental Observation.	Results on Blood of Patients.	Results on the Control Blood.	Strength of Dilution Used.
1	M. D.	47	2nd	Climacteric insanity	1 month	Good agglutination in ¾ hour	*Nil.*	1 in 30
2	L. D.	55	1st	Acute melancholia	1 month	.. .. ..	Poor, partial	1 in 30
3	T. G. W.	30	1st	Acute delusional insanity, convalescing	2 months	.. .. ..	*Nil.*	1 in 30
4	R. D.	44	1st	Acute melancholia	6 months	,, ,, ,,	,,	1 in 100
5	P. B.	30	1st	Acute melancholia	8 months	,, ,, ,,	..	1 in 100
6	T. V.	40	1st	General paralysis of the insane	1 year	.. .. ..	..	1 in 100
7	H. D.	28	1st	Acute melancholia	2 years	.. .. ..	..	1 in 100
8	D. M. B.	35	1st	Acute mania	3 weeks	Partial	..	1 in 100
9	M. R.	31	1st	Acute mania	4 weeks	.. .. ..	..	1 in 100
10	G. L.	60	1st	Acute mania, convalescing	4 weeks	,, ,, ,,	..	1 in 30
11	S. S.	33	1st	Acute mania	6 weeks	,, ,, ,,	..	1 in 100
*12	J. A. M.	27	1st	Acute mania	8 weeks	,, ,, ,,	[illegible]	1 in 100
13	L. L. D.	28	1st	Acute mania	10 weeks	,, ,, ,,	[illegible]	1 in 50
14	O. R.	44	1st	Alcoholic mania	3 months	,, ,, ,,	..	1 in 50
15	E. D.	40	1st	Delusional insanity	1 year	.. .. ..	..	1 in 100
16	G. W. F.	28	1st	Acute mania, convalescing	1 week	*Nil* .. 1 hour	..	1 in 30
*17	J. A. M.	27	1st	Acute mania	4 weeks	.. .. ..	..	1 in 30
18	D. G.	20	1st	Acute mania	6 weeks	.. .. ..	..	1 in 30
19	J. H.	37	1st	General paralysis of the insane	8 weeks	,, ,, ,,	..	1 in 100
20	A. B.	24	1st	Acute mania	9 weeks	.. .. ..	..	1 in 100
21	W. B.	34	1st	General paralysis of the insane	9 weeks	,, ,, ,,	..	1 in 100
22	J. W. T.	21	1st	Acute mania	10 weeks	.. .. ..	..	1 in 50
23	Mrs. W.	29	1st	Puerperal mania	17 weeks	,, ,, ,,	..	1 in 100
24	C. T.	62	1st	Acute melancholia	6½ months	,, ,, ,,	..	1 in 100
25	T. L.	45	2nd	Recurrent mania	20 years	.. .. ..	..	1 in 100

In all the above cases a twenty-four hours' filtered broth culture, which had been incubated at 37° C., was used.
* One case (J. A. M.) did not agglutinate at all when the disease was only of four weeks' duration; but when tried again, when it was of eight weeks' duration, it gave a good partial agglutination.

Of 2 cases of delusional insanity, 1 was convalescent after a second attack lasting two months, and showed good clumping in three-quarters of an hour with a dilution of 1 in 30, the other was of twelve months' duration and showed partial agglutination with a dilution of 1 in 100.

One puerperal case of seventeen weeks' duration showed no agglutination with a dilution of 1 in 100.

One climateric case of four weeks' duration showed good clumping in three-quarters of an hour with a dilution of 1 in 30.

One case of alcoholic insanity of three months' duration showed partial agglutination with a dilution of 1 in 50.

Of 3 cases of general paralysis of the insane 2 were of over four months' duration and showed no clumping with a dilution of 1 in 100, and the third case, with a history of over six months' duration, showed good clumping in three-quarters of an hour with a dilution of 1 in 50.

In the final case of the 25 experiments, the blood of a recurrent maniac in an acute attack, which had lasted ten days, showed no clumping with a dilution of 1 in 100.

The summary of the above would thus be: Good agglutination shown in 4 out of 5 cases of acute melancholia, 1 out of 3 cases of general paralysis of the insane, 1 out of 2 cases of delusional insanity, and in 1 case of climateric insanity. Partial agglutination shown in 6 out of 11 cases of acute mania, 1 out of 2 cases of delusional insanity, and 1 case of alcoholic insanity. No agglutination in 5 cases of mania, 1 of melancholia, 1 of puerperal insanity, 2 of general paralysis

and 1 case of recurrent mania. This brings us to a result of agglutination present in 60 per cent. of all cases, 28 per cent. good agglutination, 32 per cent. partial agglutination; only one control showed a slight partial agglutination. The greatest number of both good and partial agglutinations were obtained from a virulent culture of B. coli communis with a dilution of 1 in 100.

Besides the experiments in agglutination, we have paid attention to a feature in mental research work, the importance of which has been pointed out by Dr. Lewis C. Bruce in an article on General Paralysis of the Insane. His method was followed, namely, the number of leucocytes per c.mm. of given blood was investigated and counted in a certain number of cases of insanity at regular intervals over a definite period of time.

To carry this out, 13 cases of various forms of insanity were taken—namely:

6 of acute mania.
2 of general paralysis of the insane.
1 of acute delusional insanity.
2 of acute melancholia.
1 of recurrent mania.
1 of chronic mania.

The blood was investigated once a week for a period of fourteen weeks, and was taken one hour and a-half after breakfast; the counting was done with a Thoma-Zeiss apparatus, 0.5 cmm. of blood being taken and diluted with a ½ per cent. solution of acetic acid in the ratio of 1 in 20 and the number of leucocytes counted in 160 squares under a ⅙ power. The leucocytes were principally found to be of the polymorphonuclear type, and the highest number of leucocytes was found in the cases of acute mania.

The charts accompanying this article will show the weekly number of leucocytes found in each case and the mental condition of the patient. The leucocytes were found to be in much greater numbers when the patients were passing through acute states, running then as high as from 30,000 to 40,000 per 1 c.mm. of blood, and falling again to 15,000 and 10,000 during stages of remission and in cases of recovery.

The cases taken for investigation were too few to admit of any conclusions being drawn, and therefore these experiments can only be looked upon as a preliminary to further research.

We have especially to thank Dr. Stewart of the Glamorganshire Asylum for kindly sending us blood from acute cases, and Dr. C. Lewis Bruce and Dr. W. Ford Robertson for many practical suggestions, as well as Professor McWeeney for the cultures of the B. coli communis.

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Dr. ROBERT JONES said that the Section, he was convinced, felt that it was under a considerable obligation to Miss Alice Johnson and Dr. Goodall for their interesting paper, supported as it was by careful and accurate records of personal observation, involving much work. It was encouraging to find ladies in asylums doing so much good work. Miss Johnson's researches in Egyptian exploration already showed that she had much versatile talent, and it was a pleasure to listen to so able a paper in another direction. Personally he desired to record his obligation to lady medical officers in asylums for much help and accurate work done.

ON THE NATURE OF FRAGILITAS OSSIUM IN THE INSANE.

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ALTHOUGH an undue brittleness and liability to fracture of the bones are present in the insane, and although the condition has long been recognized, the pathology of the morbid changes present in such cases has not received particular attention.

Undue softening of the bones in the adult has been described under various names, osteomalacia, mollities ossium, fragilitas ossium; in the young the corresponding condition is called rickets. It is of the morbid process as it occurs amongst the inmates of asylums that I wish to speak. It is most commonly present after middle life, a rapid increase in the number of cases occurs after 50; it might be said that, with the exception of chance cases, it is always present after this age. The change is more frequently present in females; and in some forms of mental disease it is more marked than in others. The ribs are by far the earliest and the commonest bones involved, then the flat pelvic bones, the vertebrae, the skullcap, and lastly the long bones. The morbid process is everywhere the same; there is atrophy of the hard bone, the Haversian spaces enlarge, encroach on one another, coalesce, and so form a loose cancellous bony tissue. The spaces may contain a large number of small round cells, but they are frequently almost or entirely empty. The change begins in the medulla and spreads outwards to the surface until the whole thickness is involved.

In order to find out the relative frequency with which fragility of the bones occurred in the different sexes and the different mental affections, an analysis of 200 cases from the *post-mortem* records of the Wakefield Asylum was made. The condition of the ribs was noted. No mechanical contrivance was used to estimate the strength of the bone; the conclusions rested on the ease with which fracture was produced by digital compression, and the amount of atrophy present. Such conclusions must necessarily vary slightly with individual observers and consequently detract a little from the value of the results. Idiocy or imbecility furnished 27 cases which varied between the ages of 6 and 78. With the exception of one case, no fragility occurred until after the 40th year. The exception was a male, aged 26, where the condition was noted as being only very slightly present. Of 11 patients dying after 40, fragility was present in 8 and absent in 3. Of the 8 cases 4 were males and 4 were females; of the 3, 1 was a male and 2 were females.

TABLE I.—*Appendix of Seven Tables of Measurements.*

No.	Age.	Sex.	Idiocy.	Imbecility.	Condition of Ribs.
1	6	M.	1		Fragilitas absent; no atrophy or softening.
2	14	M.	1		,, ,, ,,
3	18	M.	1		,, ,, ,,
4	19	M.	1		,, ,, ,,
5	19	M.		1	,, ,, ,,
6	20	M.	1		,, ,, ,,
7	21	M.		1	,, ,, ,,
8	23	F.		1	,, ,, ,,
9	24	M.	1		,, ,, ,,
10	24	F.		1	,, ,, ,,
11	26	M.	1		,, ,, ,,
12	26	M.		1	Fragilitas present (slight); softening present.
13	27	M.	1		,, absent; no atrophy or softening.
14	30	M.		1	,, ,, ,,
15	31	M.		1	
16	41	F.		1	,, present (marked); softening pronounced.
17	42	M.	1		,, absent; no atrophy or softening.
18	43	F.		1	,, ,, ,,
19	44	M.	1		,, present (slight); no atrophy or softening.
20	45	F.		1	,, ,, ,,
21	47	F.		1	,, ,, ,,
22	49	M.	1		,, ,, ,,
23	53	F.	1		,, ,, ,,
24	55	F.		1	,, absent; no atrophy or softening.
25	61	M.			,, present; atrophy and softening slight.
26	78	M.			,, present (slight).
27	49	M.			,, present (slight).

Chronic Mania.—Eighteen patients died of this. No fragility occurred up to the age of 44. After this age it was absent in only 2 males. Examination of the table showed that the morbid change tended to be more advanced in the females until the age of 59. (See Table II.)

Chronic Melancholia.—Seventeen patients died suffering from chronic melancholia—10 males and 7 females. The first case in which brittleness occurred was in a male, aged 25, where the change was noted as "very slight." Of the other 8 males, it was present in 7 and absent in 1. Of the 7 females, it was present in 6 and absent in 1; but, whereas it was always noted as being "slight" in the males, it was always marked in the females. (See Table III.)

General Paralysis.—Thirty-nine patients died of this disease, of which 14 were females and 25 were males. The change was present in 13 of the former cases, in 11 of which it was very pronounced, and in 2 it was only slightly present. The bones were regarded as sound in the remaining 1 case. The youngest patient was 22; the next case to show the condition was 32 years, between which age and 55 fragility was noted in the whole 12 cases, and was regarded as slight in 2 and very pronounced in the others.

In the 25 male cases, only 3 cases were noted as showing pronounced fragility. Their ages were 45, 50, and 53, and are important when compared with those of the females. In 10 cases the ribs were only slightly increased in brittleness, and in 12 cases they were regarded as normal.

Fragility.

	Number.	Marked.	Slight.	Absent.
Females	14	11	2	1
Males	24	3	10	12

On comparing the ages of the male and female groups, it is seen that the former are much older before the bones become affected, also that the change is much less severe in the male sex, and that it occurs in only about half the cases, whereas in the female sex it is almost the invariable accompaniment.

TABLE II.—*Chronic Mania.*

No.	Age.	Sex.	Condition of Ribs.
1	37	M.	Fragilitas absent; no atrophy or softening.
2	38	M.	,, ,, ,, ,,
3	41	F.	,, ,, ,, ,,
4	44	M.	,, ,, ,, ,,
5	44	F.	,, pronounced; atrophy and softening present.
6	45	F.	,, ,, ,, ,, ,,
7	47	M.	,, absent; ,, ,, absent.
8	47	M.	,, present; ,, ,, present.
9	51	M.	,, absent; ,, ,, absent.
10	52	M.	,, slight; ,, ,, ,,
11	52	M.	,, ,, ,, ,, ,,
12	59	M.	,, marked; ,, ,, present.
13	65	M.	,, ,, ,, ,, ,,
14	68	M.	,, ,, ,, ,, ,,
15	69	M.	,, ,, ,, ,, ,,
16	69	F.	,, ,, ,, ,, ,,
17	70	F.	,, ,, ,, ,, ,,
18	76	M.	,, ,, ,, ,, ,,

TABLE III.—*Chronic Melancholia.*

No.	Age.	Sex.	Condition of Ribs.
1	23	M.	Fragilitas absent; atrophy and softening absent.
2	24	M.	,, ,, ,, ,, ,,
3	25	M.	,, present (slight) ,, ,, ,,
4	37	F.	,, pronounced ,, ,, present.
5	44	F.	,, ,, ,, ,, ,,
6	46	F.	,, absent ,, ,, absent.
7	50	F.	,, increased ,, ,, slight.
8	51	M.	,, absent ,, ,, absent.
9	52	M.	,, present (slight) ,, ,, ,,
10	53	M.	,, ,, ,, ,, ,,
11	53	M.	,, ,, ,, ,, ,,
12	56	F.	,, pronounced ,, ,, present.
13	60	F.	,, present (slight) ,, ,, absent.
14	63	M.	,, ,, ,, ,, ,,
15	66	M.	,, ,, ,, ,, ,,
16	68	M.	,, ,, ,, ,, ,,
17	70	F.	,, pronounced ,, ,, present.

In dementia there is further evidence of the great preponderance of friability of the bones in females; 63 cases were examined, 23 were males and 40 were females; of the latter 36 showed the change and in 4 it was absent. In 31 of the 36 fragility was pronounced, and in 5 it was only slight. The ages showed that most of the cases occurred after 60; were slightly less frequent between 50 and 60, and infrequent before 50. The youngest case was 30, but the patient suffered from extensive tuberculous disease and was very emaciated.

In the males, 13 of the 23 cases showed increased fragility, in 6 of which it was pronounced, and in 7 it was slight. The first pronounced case was 59; the first slight one was 45.

Comparing the frequency of absence of the change in the two sexes, it was found to be as 9 males to 4 females. (See Table V.)

In epilepsy, fragilitas appears to be less frequently present than in some other forms of mental ailment. Of 18 cases of this disease 12 were males and 6 females. Of the latter only 2 subjects showed pronounced fragility; they were aged 48 and 67. The remaining 4, who died before the age of 48, had sound ribs. Of the 12 males only 2 were affected; one was a youth aged 23, who was probably not a true epileptic; the other was in a man aged 68. (See Table VI.)

TABLE IV.—*General Paralysis.*

No.	Age.	Sex.	Condition of Ribs.
1	21	M.	Fragilitas absent; atrophy and softening absent.
2	22	F.	,, pronounced ,, ,, present.
3	24	M.	,, present (slight) ,, ,, absent.
4	24	M.	,, absent ,, ,, ,,
5	30	M.	,, ,, ,, ,, ,,
6	30	M.	,, present (slight) ,, ,, ,,
7	31	M.	,, absent ,, ,, ,,
8	32	F.	,, present (slight) ,, ,, ,,
9	33	M.	,, absent ,, ,, ,,
10	33	F.	,, ,, ,, ,, ,,
11	34	F.	,, pronounced ,, ,, present.
12	34	F.	,, ,, ,, ,, ,,
13	36	M.	,, absent ,, ,, absent.
14	37	M.	,, present (slight) ,, ,, ,,
15	39	M.	,, absent ,, ,, ,,
16	40	F.	,, present (marked) ,, present.
17	40	M.	,, ,, (slight) ,, ,, absent.
18	43	M.	,, absent ,, ,, ,,
19	43	M.	,, ,, ,, ,, ,,
20	43	M.	,, present (slight) ,, ,, ,,
21	43	M.	,, ,, ,, ,, ,,
22	45	F.	,, ,, ,, ,, ,,
23	45	F.	,, pronounced ,, ,, present.
24	45	F.	,, ,, ,, ,, ,,
25	45	M.	,, ,, ,, ,, ,,
26	45	M.	,, present (slight) ,, ,, absent.
27	45	M.	,, ,, ,, ,, ,,
28	47	F.	,, pronounced ,, ,, present.
29	48	M.	,, present (slight) ,, ,, absent.
30	50	F.	,, pronounced ,, ,, present.
31	50	M.	,, ,, ,, ,, ,,
32	50	F.	,, ,, ,, ,, ,,
33	50	M.	,, present (slight) ,, ,, absent.
34	51	M.	,, absent ,, ,, present.
35	52	M.	,, ,, ,, ,, ,,
36	53	M.	,, pronounced ,, ,, ,,
37	54	F.	,, ,, ,, ,, ,,
38	55	F.	,, ,, ,, ,, ,,
39	69	M.	,, absent ,, ,, absent.

TABLE VI.—*Epilepsy.*

No.	Age.	Sex.	Condition of Ribs.
1	17	M.	Fragilitas absent; atrophy and softening present.
2	23	M.	,, present (slight); ,, ,, ,,
3	26	M.	,, absent; ,, ,, ,,
4	26	F.	,, ,, ,, ,, ,,
5	27	M.	,, ,, ,, ,, ,,
6	28	M.	,, ,, ,, ,, ,,
7	30	F.	,, ,, ,, ,, ,,
8	35	M.	,, ,, ,, ,, ,,
9	37	F.	,, ,, ,, ,, ,,
10	38	M.	,, ,, ,, ,, ,,
11	40	M.	,, ,, ,, ,, ,,
12	45	M.	,, ,, ,, ,, ,,
13	48	F.	,, ,, ,, ,, ,,
14	48	F.	,, pronounced ,, ,, ,,
15	56	M.	,, absent ,, ,, absent.
16	59	M.	,, ,, ,, ,, ,,
17	67	F.	,, pronounced ,, ,, present.
18	68	M.	,, ,, ,, ,, ,,

TABLE VII.—*Acute Mania.*

No.	Age.	Sex.	Condition of Ribs.
1	25	M.	Fragilitas absent; atrophy and softening absent.
2	50	F.	,, ,, ,, ,, ,,
3	55	M.	,, ,, ,, ,, ,,
4	64	M.	,, present; ,, ,, present.
			Acute Melancholia.
1	22	M.	Fragilitas absent; atrophy and softening absent.
2	30	M.	,, ,, ,, ,, ,,
3	32	F.	,, ,, ,, ,, ,,
4	34	M.	,, ,, ,, ,, ,,
5	39	F.	,, ,, ,, ,, ,,
6	49	F.	,, ,, ,, ,, ,,
7	53	M.	,, ,, ,, ,, ,,
			Delusional Insanity.
1	56	M.	Fragilitas absent; atrophy and softening absent.
			Locomotor Ataxy.
1	72	M.	Fragilitas pronounced; atrophy and softening present.

Cases that die of acute mania or melancholia do not show the morbid change so frequently. Only 1 male, aged 64, dying in acute mania showed the change; no case of acute melancholia was reported as showing the condition.

In one case of delusional insanity in a male the ribs were sound. In a case of locomotor ataxy, also in a male, the change was marked. (See Table VII.)

TABLE V.—*Dementia.*

No.	Age.	Sex.	Condition of Ribs.		
1	26	M.	Fragilitas absent:	atrophy and softening absent.	
2	30	F.	,, present	,,	,, present.
3	34	F.	,, absent	,,	,, absent.
4	39	F.	,, pronounced	,,	,, present.
5	40	M.	,, absent	,,	,, absent.
6	44	F.	,, ,,	,,	,, ,,
7	45	M.	,, ,,	,,	,, ,,
8	45	M.	,, present	,,	,, ,,
9	46	M.	,, absent	,,	,, ,,
10	46	F.	,, pronounced	,,	,, present.
11	47	F.	,, ,,	,,	,, ,,
12	47	F.	,, ,,	,,	,, ,,
13	50	M.	,, absent;	,,	,, absent.
14	52	F.	,, present (slight);	,,	,, ,,
15	52	M.	,, ,, ,,	,,	,, ,,
16	52	M.	,, ,,	,,	,, ,,
17	52	F.	,, pronounced	,,	,, present.
18	53	M.	,, absent	,,	,, absent.
19	54	F.	,, ,,	,,	,, ,,
20	54	F.	,, pronounced	,,	,, present.
21	55	M.	,, present (slight)	,,	,, absent.
22	56	F.	,, pronounced	,,	,, present.
23	58	F.	,, ,,	,,	,, ,,
24	58	F.	,, ,,	,,	,, ,,
25	58	F.	,, ,,	,,	,, ,,
26	59	M.	,, ,,	,,	,, ,,
27	59	M.	,, absent	,,	,, absent.
28	60	M.	,, ,,	,,	,, ,,
29	60	F.	,, pronounced	,,	,, present.
30	61	F.	,, ,,	,,	,, ,,
31	62	M.	,, absent	,,	,, absent.
32	62	F.	,, ,,	,,	,, ,,
33	64	F.	,, pronounced	,,	,, present.
34	65	M.	,, present (slight)	,,	,, absent.
35	65	F.	,, increased (marked)	,,	,, present.
36	63	M.	,, absent	,,	,, absent.
37	65	F.	,, present	,,	,, present.
38	56	M.	,, pronounced	,,	,, ,,
39	67	F.	,, ,,	,,	,, ,,
40	67	F.	,, ,,	,,	,, ,,
41	68	F.	,, ,,	,,	,, ,,
42	68	M.	,, present (slight	,,	,, ,,
43	68	M.	,, pronounced	,,	,, ,,
44	68	M.	,, slight	,,	,, absent.
45	69	F.	,, pronounced	,,	,, present.
46	69	F.	,, ,,	,,	,, ,,
47	69	F.	,, present (slight)	,,	,, absent.
48	69	F.	,, pronounced	,,	,, present.
49	70	F.	,, ,,	,,	,, ,,
50	70	F.	,, ,,	,,	,, ,,
51	70	M.	,, ,,	,,	,, ,,
52	70	F.	,, ,,	,,	,, ,,
53	72	M.	,, ,,	,,	,, ,,
54	72	F.	,, ,,	,,	,, ,,
55	73	F.	,, ,,	,,	,, ,,
56	73	F.	,, ,,	,,	,, ,,
57	74	F.	,, ,,	,,	,, ,,
58	74	F.	,, ,,	,,	,, ,,
59	76	F.	,, present (slight)	,,	,, absent.
60	76	F.	,, pronounced	,,	,, present.
61	76	F.	,, ,,	,,	,, ,,
62	77	M.	,, ,,	,,	,, ,,
63	84	F.	,, ,,	,,	,, ,,

From these data it is seen that:

1. In percentages cases those of dementia are the highest and those of epilepsy the lowest, whilst cases suffering from general paralysis do not present the change so markedly as might be supposed.

1. Dementia	77.7 per cent.
2. Chronic melancholia	76.4 ,,
3. Chronic mania	66.6 ,,
4. General paralysis	65.7 ,,
5. Idiocy and imbecility	29.6 ,,
6. Epilepsy	22.2 ,,

2. That the disease is much more frequent in the female sex and in whom it occurs at an earlier age than in the opposite sex.

3. That it is comparatively rare before the ages of 45 or 50, except in general paralysis, where it is oftener met with at a younger period especially in women.

4. That it is essentially a morbid change which occurs in late middle life and old age.

5. That it is not a marked pathological condition in the male sex who suffer from general paralysis.

6. And that it is seldom present in epilepsy.

In order to compare with these results cases of fracture occurring during life a number of cases were collected. In all 57 cases were found, of which 36 were females and 21 males. Of the females—

17	occurred in dementia.
9	,, epilepsy.
3	,, idiocy or imbecility.
2	,, chronic mania.
3	,, recurrent mania.
1	,, acute mania.

Analysing the various fractures we get:

Dementia.

No. of Cases.	Bone Fractured.	Ages.
8	Femur	54, 56, 59, 64, 72, 73, 73, 76.
3	Rib	49, 64, 68.
3	Radius	61, 63, 70.
2	Ulna	65, 79.
1	Fibula	49.

All the fractures resulted from some trivial cause such as a slip or fall or push from another patient. The large percentage of fractures of the femur in this mental state is noteworthy—all occur after the ages of 50.

Epilepsy.

No. of Cases.	Bone Fractured.	Ages.
2	Femur	36 and 54.
3	Radius	44, 50, 64.
1	Ulna	16.
1	Tibia and fibula	36.
1	Fibula	33.
1	Clavicle	43.

The causation of fracture in one case (radius) was a struggle. The other fractures were caused by fit-falls.

Idiocy and Imbecility.

No. of Cases.	Bone Fractured.	Age.	Cause.
1	Humerus	25	Unknown.
1	Radius	53	Accidental fall.
1	Femur	57	,,
	Chronic Mania.		
1	Radius	49	Accidental fall.
1	Radius and ulna	70	,,
1	Femur	86	,,
	Recurrent Mania.		
1	Fibula	26	Accidental fall.
1	Humerus	46	,,
1	Femur	47	,,
	Acute Mania.		
1	Second rib	55	Accidental fall.

These figures show again that in cases of dementia undue fragility of the bones is more marked than in any other form of mental disease, and constitutes nearly one-half the cases. Further, that the cause is usually of the most trivial nature, and that the longer bones are frequently affected; fractures of the femur form almost half the cases.

In epilepsy the cause is nearly always a fit-fall, and as this may be very severe, it cannot be taken as a reliable test for undue fragility.

Idiocy, imbecility, recurrent and chronic mania make up the total, and although the numbers do not show the pathological change predominating in any of these particular diseases, yet most of the cases are seen to occur after middle life.

On analysing the 21 cases of fracture occurring in the male sex, it was found that—

6	were cases of dementia.
6	,, epilepsy.
4	,, imbecility or idiocy.
2	,, melancholia.
2	,, senile mania.
1	was a case of delusional insanity.

Dementia.

Five cases showed fractured rib at the ages of 42, 52, 53, 54, and 57.

One case showed fracture of the acromion process of the scapula, aged 71. In 2 cases the causation was a struggle; in the others it was an accidental fall.

The figures for epilepsy (see Table, p. 823) show that there is less liability for the bones to break in men; that more violence is required to produce fracture, as in 38 per cent. of the cases the cause was accidental fall. Among the females this accounted for 69.4 per cent. The bones involved also show that the morbid changes are not so far advanced in men.

Epilepsy.

No. of Cases.	Bone Fractured.	Age.	Cause.
1	Ankle-joint	28	Fit-fall.
1	Elbow-joint	23	..
1	Radius and ulna	32	..
1	Tibia	28	..
1	Skull	34	..
1	Clavicle	56	..

Imbecility or Idiocy.

1	Skull	23	Blow.
1	Rami of jaw	35	Fit-fall.
1	Iliac crest	36	..
1	Metacarpal	59	Accidental fall.

Senile Mania.

1	Eighth & ninth ribs	63	Accidental fall.
1	Femur	84	..

Melancholia.

1	Humerus	40	Struggle.
1	Clavicle	47	..

Histology.—From the trophic influence possessed by the ganglia on the posterior spinal nerves, and from the probable influence these nerves have on the nutrition of the tissues generally, and also on the bones, special care was taken to note any histological changes in their anatomy in cases of advanced fragility and atrophy of the bones.

Case I.—A woman, aged 54, who suffered from dementia, was very thin and emaciated on admission, and in whom the bones at the necropsy were thin and papery. The cord, posterior spinal ganglia, and nerves, pieces of rib and muscle were hardened in formol 10 per cent., and mordanted in chrome-alum-copper and bichromate solutions according to the methods of Dr. Ford Robertson. The formol-hardened ganglia were cut in paraffin and stained with toluidin blue. The cells showed extensive disease, and were in a state of advanced pigmentary degeneration. The pigment was dark-brown in colour, sometimes occupied the entire cell, or was collected at one part of it, and caused bulging and distortion. The normal structure of the cell was obscured; the Nissl bodies were faintly stained, small and inconspicuous; many of the cells in these bodies could not be seen; the nucleus was eccentric and faintly stained; the nucleolus appeared as a dark dot. In the pericellular spaces and the intercellular substance was much small-cell infiltration. Sudan III or osmic acid had no affect on the pigment. *Weigert Pal.*—The nerve fibres on the distal side of the ganglia showed evidences of well-marked degeneration.

Case II.—Woman, aged 74, dement, showed similar changes in the posterior spinal ganglia to the preceeding; the cells were much distorted and deformed from accumulation of pigment. The interstitial substance appeared to be increased in amount and gave the section the appearance of sclerosis. In addition, the nerve cells showed round smooth globules which resembled fat.

Case III.—Male, aged 66, dement, ganglia showed deficient and irregular staining of the cell protoplasm; irregularity in the contour of the cells; pigmentary change well marked, but not so pronounced as in the former cases.

Case IV.—Male, aged 52, melancholic. Similar changes in the ganglia present. The pigment was of two kinds: (1) Light brown, scanty; (2) dark brown, almost black, intimately surrounded the nucleus and often obsured it altogether; it filled the greater part of the cell. Nissl bodies badly stained; often the merest outline of the cell remained.

Weigert-Pal's method in 3 cases of general paralysis, 1 case of melancholia, and 1 of Huntingdon's chorea, showed well-marked nerve-fibre degeneration and extensive alteration in the ganglia themselves. In another case of dementia no staining was retained in the fibres by this method either after mordanting in bichromate or chrome-alum-copper. In the former cases the medullary sheaths were broken up into small dark stained spots, the axis cylinders were exposed and broken. Individual fibres varied in their depth of staining; varicocities were present along the course of the fibres. In some cases the course of the nerve fibre was indicated by the empty neurolemnal sheath. The intercostal nerves also showed the change. In one case of general paralysis the anterior tibial nerve by Marchi's method showed in the course of its fibres little rows of blackened dots. Attempts to stain the terminal nerve fibres in muscle, bone, and periosteum were unsuccessful. In one case of dementia the spinal cord was examined, but the observations were not sufficiently numerous or conclusive, but indicate that they are fairly well marked evidence of gross change.

The conclusions from these histological changes are that there are well marked evidences of gross lesions in the posterior spinal ganglia, the sensory roots, and the peripheral nerves, and the probabilities are that the lesions in the mixed nerves are due to degeneration of the sensory fibres. How far this degeneration extends upwards has not been investigated.

These chronic degenerations must necessarily interfere with the physiological processes of bone formation and absorption by removing the trophic influences. As a consequence bone deposition will be interfered with more than absorption, and so the minerals will be carried away quicker than they are deposited. Those parts nearest the blood stream will be first interfered with, that is to say, the walls of the Haversian spaces. These will enlarge until they form the large spaces we see in a section of bone affected with fragilitas. The change beginning in the normally loose cancellous tissue of the medulla will come gradually to involve the more superficial dense bone until the whole of its thickness is permeated by porous bony tissue. Then as a result fracture occurs. Why the fragile change should be so often present in the ribs is easily explained from the fact that the ribs are the slimmest bones in the body. Also in the female sex, the bones generally being less strong, will be affected earlier than in males. The reaction was taken in about 30 cases at necropsy and in only 2 cases was it found distinctly alkaline. The others showed it to be neutral. No case gave an acid reaction, so that any substance like lactic acid can be discarded both for this reason and on the ground that if fragility was due to its presence it might be expected to affect the bone irregularly in its thickness whereas the change begins always in the centre and spreads to the periphery.

Lastly, the fact that pain on fracture is so infrequently complained of in such cases lends considerable weight to the idea that the process is dependent upon changes in the sensory tracts.

Dr. Mercier referred to experiments made with the instrument that he had devised for the purpose some years ago. There were many cases in which the ribs could be broken in the way described by the President with the finger and thumb, but, impressive as these were, they scarcely carried to an outsider the same conviction that could be produced by a numerical comparison of the number of pounds required to break a normal rib with the number of pounds required to break the rib under consideration.

Dr. J. F. Flashman said that in regard to Dr. Mercier's remarks on the difficulty of diagnosing fractures in the insane it must be remembered that, owing to the extreme softness of the bone, crepitus was often very slight or absent. He gathered that Dr. Smith attributed the changes in the bones to an impaired trophic influence through the peripheral nerves; but he had pointed out only changes in the posterior spinal roots and posterior spinal ganglia. Dr. Flashman would like to ask Dr. Smith whether he examined the anterior roots and anterior cornual cells for signs of degeneration. If he had not found such evidence of degeneration in these parts, which were looked upon as especially trophic in their influence, on what grounds did he come to the conclusion that the bone changes were due to a lack of trophic nervous influence, and not to direct action of some toxin on the bone marrow?

The President referred to the valuable record furnished by Dr. Maule Smith's paper. He would like a table of contrast with regard to fractures in the ordinary population, or the result of experiments as suggested by Dr. Mercier carried out with some mechanical contrivance capable of accurate record on the bodies of sane persons who died in institutions, and classified in ages which might serve as a standard, so that some definite conclusion in regard to the frequency of fractures in the insane might be arrived at. This was an age of statistics, and the proof of a proposition in a great measure depended on the conviction of the numerical argument. The question of pain was an important one, for it indicated the great care which needed to be exercised in respect of accidental falls and slight casualties which were so apt to occur in the insane. Dr. Jones stated that at Claybury the medical officer always carefully made an examination for fractured ribs in cases of slight accident or falls out of bed in epileptic fits. That softening or fragility did occur was an absolutely certain fact, which could be plainly demonstrated by taking the rib between the finger and thumb, and the exercise of slight pressure caused a fracture as if the rib had been the stem of a clay pipe. That this brittleness was brought forward as a plausible explanation for the layman was a grossly unfair statement, and it had no basis in fact. The tissues—osseous and others—of the general paralytic after almost a

year perhaps in bed, underwent marked trophic changes. The whole nervous system was affected in general paralysis, not only the cerebral but probably also the spinal, and in consequence there was marked degeneration of all the tissues, with occasional fractures, for which there was no cause in the history of an accident. Dr. Maule Smith's valuable records pointed to the fact that fractures in general paralytics were not the most common, but in other forms of dementia. His own experience confirmed that of Dr. Maule Smith in regard to epileptics, who, in spite of many falls in fits, rarely suffered from fracture of bones.

Dr. MAULE SMITH, in reply, said he had not compared the relativity of fracture in the sane and the insane, but in general, except in cases of sudden fracture from tumour growth, it was infrequent to hear of such growth. He had not had the pleasure of seeing Dr. Mercier's instrument, but the contrivance on the principle of the dynamometer was unsatisfactory. No changes were noted in the anterior roots or anterior cornual cells, but in one case there was degeneration in the cells of Clarke's column. Marchi's method gave a distinct reaction in the peripheral nerves in one case. It was difficult to see why the condition should be due to toxaemia when most of the cases occurred in old cases of dementia.

ON SOME SLIGHTER FORMS OF MENTAL DEFECT IN CHILDREN AND THEIR TREATMENT.*

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IN the present paper I propose to trace out some of the less obvious forms of mental abnormality in the young, and endeavour to show that, though slight, they are nevertheless defects calling for careful diagnosis and judicious treatment on the part of the doctor to prevent them passing into the more grave forms of mental disability.

In my three years' experience as examiner of children for admission to the special instruction schools of the London School Board, I had the opportunity of seeing the lighter shades of mental defect as compared with the more pronounced hues of amentia previously familiar to me amongst idiots and imbeciles. The difference, however, proved in the majority of cases to be one of degree rather than of kind, and one soon got to recognize types in a modified form with which one had been familiar though "writ large" in asylum practice. Thus, of cases approaching microcephalus, that is with heads measuring circumferentially 19 in. or less and of characteristic form, there were not a few (approximately 7 per cent.); large headed cases with a history of hydrocephalus (not merely rachitic) were less numerous (3 or 4 per cent.); mongoloid cases were fairly frequent (2 to 3 per cent.); scrofulous cases were very common (at least 10 per cent.); cases with indications of birth palsy or of infantile paralysis comparatively rare (about 2 per cent.), though probably more numerous in the newly established schools for cripples; cretinoid cases were much in evidence, especially in the East of London (2 to 3 per cent.); syphilitic cases bearing characteristic stigmata were comparatively rare (not more than 1 per cent.), whilst there were many post-febrile cases and a few of traumatic origin. There was a large group of cases one could only characterize as neurotic; and in many instances one could trace a blend (so to say) of different types. Epileptic cases came rather into a category by themselves for educational purposes; and of 470 cases seen by me for the London School Board I estimated that about 17 per cent. were fit to continue in ordinary elementary schools, and that 27.5 per cent. were so far mentally impaired as to need separate instruction in the special classes. In addition there were 40 per cent. requiring to be cared for in a resident institution for epileptics, and below these a residue of 15.5 per cent. only fit for hospital or asylums.

Such cases as the above were instances of specific mental defect, and the majority were in their essence congenital cases, though in some types no obvious signs were noticed till some time after birth. This is a feature in some cases of cretinism, the physical characteristics of which, with the exception of macroglossia, are rarely remarked before 9 months of age, though mental torpor may exist: also in inherited syphilis, the mental manifestations of which are often deferred until the period of second dentition. Amongst the poorer classes, but by no means confined to them, we see frequent examples of mental hebetude and backwardness not dating from birth but due to malnutrition detrimentally affecting the brain and nervous centres. In the London elementary schools signs of rickets are very common, and a rachitic form of feeble-mindedness has been described. It seems not unlikely that the bossed and thickened skull may by its curtailed capacity interfere with the due growth and development of the brain. The malnutrition of the brain structure itself is, however, probably a more potent factor in the mental backwardness present in some such cases. Rickets, of course, implies bad feeding in the early months of an infant's life, and the town-bred progeny of the lower classes (who are, alas, too apt to spend money in gin for themselves which should buy milk for the baby) are often both physically and mentally backward from this cause. Of late years not a few rachitic children of well-to-do people have come under my notice on account of their mental development not proceeding normally; and I fear the disinclination of modern Society mothers to suckle their offspring, babies being consequently to a large extent brought up on artificial chemically-concocted foods, has much to answer for in this respect.

A knowledge of the dietetic needs of the human infant is (I am glad to see) one of the subjects which health lecturers attempt to diffuse amongst the "masses," and in the more progressive communities of the New World (for example, New York) amongst the "classes" also; and it may be helpful to such laudable efforts to set forth that mental as well as physical ameliorations will result from judicious infant feeding. The children of the very poor of course suffer not only from the unsuitable quality but from the deficient quantity of their food, and due activity of brain cannot reasonably be expected when the blood stream which bathes it is attenuated owing to lack of nutrient material. Compulsory universal education has brought into prominence the existence of a large class of underfed school children, and from the standpoint of those interested in the mental progress of the rising generation, we cannot but applaud the charitable agencies which have set themselves to supplement the scanty dietaries of school children belonging to necessitous families.

I must not however weary you with generalities; let me give some specific instances of slighter forms of nervous and mental defect which have fallen under my notice.

A failing of which unhappily I have seen numerous examples, is the genital erethism frequently observed in quite young children of the neurotic type. Commencing, it may be, when the child is but a few months old, it too often becomes an incorrigible habit fraught with calamitous consequences.

The late Dr. Langdon Down in his Lettsomian Lectures on Some of the Mental Affections of Childhood and Youth, refers to morbid sexual erethism in infants being "too often induced by nurses who procure the quietness of their charge by means which, even if the mental health is not sacrificed, may lead eventually to grave moral delinquencies." While it it is well to keep one's eyes open to such a possible and not infrequent cause of a "bad habit," my experience rather points to its origin being in most cases the mere fidgetiness of the neurotic child, a pleasurable sensation in the genital organs being an accidental and spontaneous discovery. Nervous instability induces restlessness, appeased for a time, it may be, in this fashion; but nervous exhaustion results, and thus a vicious circle is established, eventuating in enfeeblement of will and mental power, so that moral means employed to check the habit prove ineffectual. I have known it to occur in a four months' old baby, the neurotic progeny of neurotic parents; and quite lately I was consulted about a lady 40 years of age, now mentally broken down, but formerly endowed with considerable intellectual ability, who averred in a note written when in full possession of her faculties, that she was never conscious of a period when she had not been addicted to the habit, which she declared she was powerless to resist. The practice is perhaps more common amongst quite young girls of neurotic heredity than is generally supposed, and mothers and their medical advisers should be on their guard as to this when obscure nervous symptoms, dark markings under the eyes in the mornings, flushings, etc., are noticed, for the quasi-erotic spasm may be produced in habitués by the mere friction of the thighs, as I have reason to believe occurred in two fairly intelligent girls, aged respectively 8 and 12, with regard to whom I was consulted. Securing the hands in such cases is of little avail; Hawksley's

*The paper was illustrated by numerous photographs of patients.

apparatus may do some good; but my own experience is that more benefit results from careful dieting with a minimum of butcher's meat, healthy outdoor occupation of an interesting character such as gardening, producing even a measure of fatigue, with constant judicious watching, than from any mere mechanical means. In boys, the insertion of safety pins through the prepuce as advocated by Dr. Yellowlees is sometimes effectual for a time, when moral and minor physical methods (such as blistering) have failed; but it must be borne in mind that cicatrizing sores are apt to produce an itching which may lead to a renewal of the habit. Circumcision is certainly useful in cases where the prepuce is contracted and irritation is produced by the accumulation of smegma, and the pelvic irritation produced by worms must not be forgotten. As regards medication I have sometimes prescribed, with apparent benefit, the fluid extract of salix nigra as a sexual sedative.

In neurotic children the occurrence of "obsessions" is sometimes marked. For instance, a boy of 8, fairly intelligent but highly neurotic, would repeatedly break off his conversation on matters of ordinary interest with the question, "Have you seen that walnut tree?" and if permitted would lead the unsuspecting visitor to a walnut tree on which he had set his affections above all the other trees in his father's beautiful park. In the middle of his studies he would break off into panegyrics upon that lovely walnut tree, and after a stay of a day or two in the house with him I felt much inclined to ask his father to have that tree cut down, so wearisome did the reiterated mention of it become. Another boy, aged 7, evinced a predominant passion for steam rollers and motor cars, and his lessons were constantly interrupted by inquiries about one or other of these mechanisms. Quite recently I saw a boy of 14 of the Mongoloid type whose speciality was the bones of the human frame, the Latin names of which he had correctly acquired, telling me the bones of his fingers were "phalanges," and so forth. It seems that his interest in this subject was aroused by hearing that the King (when Prince of Wales) had broken his *patella*, and this led to his being supplied with a picture of the skeleton with the names of the bones marked. He was decidedly backward in ordinary educational attainments, and as his osteological predilections (shall I say "obsessions"?) tended to his seeking enjoyment in churchyard meditations I felt bound to put in a caveat against his being allowed to indulge too much in the contemplation and study of bones. A weak mind is apt (in my experience) to become the victim of one overpowering idea if permitted to dwell too much on a single subject; and an all-round training of the faculties and interests is, in my opinion, as important in the case of abnormal as of normal children.

Upon the interesting subject of the moral obliquities sometimes displayed by neurotic children limits of time prevent one from more than casually glancing. Such children are occasionally reputed to be liars when they are not so consciously, being themselves carried away by an exuberantly romantic imagination. They are, it is true, sometimes thieves without apparent adequate motive, annexing things which are no earthly use to them and which they freely give away to others. Especially are such tendencies noticed at the trying epoch of pubescence, and I have known instances in which tendencies to misappropriation have passed away after the disturbing influences of puberty have subsided.

Hysteria in neurotic children has perhaps not been recognized so much by English writers as it deserves to be. Briquet, however, says that children probably represent even a third or fourth of the total number of hysterical persons. There is evidence, I think, of its occasional occurrence in quite early life, and Sir Thomas Barlow has recorded a case of hysterical analgesia at the age of 2 years and 9 months, while Goodhart refers to a decidedly hysterical girl of 11.

Several cases of cessation of speech (partial or entire) in children who have learned to speak, have come under my notice, and in the absence of any evidence of traumatism or inflammatory brain affections, I am inclined to regard these as of the nature of hysterical aphasia.

Case I is a little girl of nearly 3, who, having acquired a fair amount of speech from 18 months onwards, relapsed at the age of 2½ years without any apparent cause into the use of merely four words ("Mamma," "Nana," "There," and "More."). Sharing a luxurious nursery and an attentive nurse with a brother and sister, she seems to have found that these few words, with certain gestures, obtained for her all she wanted, and she had apparently made up her mind to say no more. But the introduction of a judicious *gouvernante* who professed not to understand what was wanted until the name of the desired object was mentioned, and who interested her little pupil in conversation about matters which appealed to her, soon brought a change; and now, after six months of this *régime*, she is beginning to speak freely.

Case II is that of a girl aged 11 who was a precocious baby and talked early, saying many words at 14 months. She had an abnormal memory, and learnt verses of hymns, etc., by heart at 2 years of age. She was made much of by her parents, but at 2½ years of age, without apparent cause, she had two fits, followed by restlessness lasting over two years, during which she gradually ceased to talk, and, except furtively to herself when she thought she was unobserved, she spoke no more for seven years. She had been for about a year at a school for feeble-minded and abnormal children, when she one day surprised the teacher, who was walking out with the pupils, by saying "Take me home." For some weeks after this she continued to ask audibly for what she wanted at meals, etc., but she has now relapsed again into habitual silence, requiring to be prompted to say anything. She is not at all deaf.

I could recount other cases of hysterical aphasia in children, some of the male sex, that have fallen under my notice did time permit, for example, one in a boy who ceased speaking at 4 years of age, after being frightened by a dog and suffering a subsequent attack of influenza, in whose case hypnotism was attempted without avail. But I must pass on to other portions of my subject.

The domination of a child's mind by morbid concepts issuing in insistent and strange fears, which have been generally classed as "phobias," is not uncommonly observed in nervous subjects. I have under my care a boy of 7 of neurotic antecedents who at an early age exhibited a frantic terror of the bath, and more specially of bubbles arising therefrom when he was immersed therein. This he gradually overcame, only to manifest what I may call a cynophobia (or kynophobia), that is, a most unreasoning fear of dogs however gentle they might be. Intellectually (that is, educationally) he was not much behind the standard of his age, and gradually he has been induced by gentle methods to overcome his nervousness, and even to fondle an Aberdeen terrier who goes walks with my little pupils. Formerly he would scream and run away when he descried a dog a hundred yards away down the street, but he now passes any dog he meets without any sign of terror. This illustrates the mode of treatment of such cases, that is, to familiarize the child with the object which has terrified him, much as a shying horse is pacified by being led up to and allowed to sniff at and listen to a motor car which has affrighted him. "Night terrors" are but an exaggerated form of the same tendency, and full doses of bromide at bedtime are often of value in breaking the vicious habit of waking in a fright, due attention being also given to the removal of any cause of digestive irritation and of mental overstrain.

A curious phobia sometimes seen in children is what has been called "mysophobia," that is, a morbid fear of soiling hands and dress, which causes anxious distress in the little patient, and may be compared with the hyperconscientiousness which one sometimes notices in pubescent girls.

I do not propose to enter upon the subject of the recognized insanities of children, which do not always come under the category of "slighter forms of mental defect." I may, however, just allude to the transient mental affection—sometimes maniacal, more often melancholic—met with in cases of chorea, which, being probably of toxic origin, is happily for the most part merely symptomatic and of a temporary character.

I should like to have said more about treatment but time does not permit. I can only add that in some cases not obviously cretinoid benefit seems to follow the cautious administration of thyroid, the more active metabolism produced inducing increased and more regular brain action. In this view I am glad to have the support of so eminent an authority as Dr. Clement Dukes, of Rugby, who has published cases in which merely dull boys have brightened up under its use. I need hardly dilate upon its marvellous effect in cases where the thyroid gland is known to be deficient or inactive; and I could tell of many cretinoid children doing well in the special schools after having been subjected to a course of thyroid treatment.

Dr. Fletcher Beach remarked that the question of feeding children was an important one. There was no doubt that many children—normal as well as defective—suffered from rickets from the use of improperly prepared foods, and in his opinion there was, at any rate, one food which should on no account be used. As regarded the neurotic spasm which was mentioned, he thought it was what was known as "habit spasm." He had seen a good many cases of this in

his hospital practice, and he was accustomed to treat them by means of the wet pack and a spark from the electric machine. There was no doubt that many cases could control these spasms if they chose, and by the use of this treatment he had seen good results. With reference to moral obliquity there was no doubt that many of the cases suffering from this affection displayed thieving tendencies. Unfortunately, at present there was no institution in which these cases could be placed. For some years he had advocated special institutions or colonies for cases of this type, in which they should be kept and taught to work on the farm or in workshops. At present these cases were apt to commit some crime, and then residence in prison—which was not the place for them—was the result. The use of few words by a child, he thought, was due to his being spoiled by his nurse or his mother. The child found that his few words, in many cases imperfectly articulated, were understood by the nurse and his mother, and he did not trouble to increase them. In such cases he thought the employment of a nurse who judiciously did not understand what the child said would in time lead to a more extended vocabulary. The question of night terrors was a very important one. He thought that many mothers were quite unaware of the terror and fear which nervous children experienced when required to go to sleep in the dark. Charles Lamb was a case of this kind, and he mentioned in one of his books the abject terror he experienced by being made to go to sleep in the dark. Dr. Guthrie related a case in which a child who was told to go to sleep in the dark, and that he need not be afraid because God was watching over him, said, "I wish you would take God away and give me a candle."

Dr. LLOYD ANDRIEZEN inquired about the "neurotic" type of child. Was it a type or a composite of types, comparable to other types like hydrocephalic, or microcephalic, or Mongolian imbecility? The photographs of "neurotic" children shown were those of bright and even promising children, but apparently these children deteriorated at puberty. Did these latter constitute a special subtype, and if so, what were the characteristic signs?

Dr. HELEN BOYLE said she felt very strongly that the importance of night terror in children was not sufficiently recognized by the parents and people in charge of them Many were started by some dietary indiscretion, and then. the terror started a neurosis if the child was not carefully watched and treated during attacks. She asked Dr. Shuttleworth if the "obsessions" in small children lasted and became a delusion in adult life. She had seen in the East-end babies fed on nothing but boiled milk, and very often such babies did badly.

The PRESIDENT considered the paper by Dr. Shuttleworth to be one of great sociological value, and it was from one who was especially well qualified to speak from his official position, in which he met with all the varieties of mental weak-mindedness in children. He could not but agree with Dr. Shuttleworth that the physical and mental deficiency from which so many children suffered originated in a failure of proper alimentary nutrition. He failed to see why, as they compelled children to sit in damp and ill-clad states daily for hours, they did not also feed them. He did not desire to introduce a political element into the discussion, but he referred to this on humanitarian grounds only. He was greatly interested in the neurotic class from which the large numbers of premature dementia in young persons arose. How to prevent this—that was, how to guide young persons rightly and properly over that great physiological crisis of their life—namely, that period so full of pitfalls and dangers between childhood and manhood or womanhood was a question of the highest possible import, not only to the educationalist and sociologist, but also to the practical physician. He would like to know from Dr. Shuttleworth whether there existed an accurate census of the proportion of weak-minded cases to the general population of school-going children.

Dr. SHUTTLEWORTH, in reply, agreed with the President as to the necessity that school children should be adequately fed in order to profit by education, and he was glad to say that the London School Board, though not in its corporate capacity but with the aid of the charitable, had done much to feed the more necessitous children entrusted to it for education. He quite agreed with Dr. Fletcher Beach's statements as to the necessity for some special provision for children of middle-class parentage afflicted with mental obliquity. Dr. Edridge-Green had asked for information as to the etiology of "Mongoloid imbecility." In Dr. Shuttleworth's experience such cases often occurred in families free from insane (or even neurotic) heredity, and in a large proportion of instances observed by him they were the last children of a large family, when it might be presumed the procreative powers were well-nigh exhausted. At any rate, some cause producing debility in the mother during pregnancy might be traced. Some cause arresting normal intrauterine development existed, and he looked upon the type as that of essentially unfinished children. Dr. Andriezen asked him to define a neurotic child: to this he would answer that the evidence of want of normal nervous balance characterized the type. This was seen by signs of irregular nervous action in the hands, face, forehead, etc., mentally by want of power of attention, not necessarily by lack of intelligence, but especially by defect of power of self-control. In reply to Dr. Helen Boyle he feared he could not state the exact proportion of children subject to obsessions who lost them as they grew older, but of course much depended on the training and the surroundings to which the child was subjected, and as a general principle the more interests aroused in the child, and the more occupations it could be engaged in, the more prospect there was of the morbid obsession being crushed out.

THE CLASSIFICATION OF INSANITY.

By CHARLES MERCIER, M.B.,
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MORE labour, and more futile labour has been expended on the classification of insanity than perhaps on any other department of the subject, and the futility of the labour is shown not less by the multitude of classifications that have been attempted, every writer on the subject having propounded at least one, than by the fact that not one of these systems has gained any general acceptance. Yet a workable classification of insanity is a necessity to the study of the subject. It is impossible to write about insanity without dividing up the subject matter, that is to say without classification, and although no one is obliged to write about it, yet the impossibility of writing without basing what is written upon a classification merely brings into prominence the impossibility of thinking systematically without a classificatory basis. Those who deprecate classification as a useless exercise of ingenuity are in the position of the practical men who despise theory, and are ignorant of the fact that they cannot walk across a room without basing their action upon hypothesis.

As our meeting will terminate before the end of the year, I do not propose to examine the systems of my predecessors, but to state first what conditions a classification ought in my opinion to satisfy, and second, to propose a system which appears to satisfy these conditions with a fair degree of success. The main cause of the failure of the classifiers of insanity has been the same as that which has brought so many other classifiers to grief. It is the endeavour to draw clear and sharp lines of discrimination between things which are in fact not sharply separated from each other. It is the implicit assumption that there are different insanities, whereas I hold with the utmost tenacity that there is but one. There is but one insanity, which exhibits itself in varying modes and in various degrees, and these modes and degrees merge and blend into each other, so that any classification must be what Whewell would call a classification by type rather than a classification by definition. In this mode of classification, "the class," says Whewell, "is steadily fixed, though not precisely limited; it is given, though not circumscribed; it is determined, not by a boundary line without, but by a central point within; not by what it strictly excludes, but by what it eminently includes; by an example, not by a precept; in short, instead of a definition we have a type for our guide."

The other main cause of the failure of proposed classification is the curious manner in which the classifiers, however ripe and extensive their experience of insanity, have laid aside and ignored their clinical knowledge whenever they sat themselves down to evolve a classification. Among all the innumerable classifications that have been proposed there has not been one, I will venture to assert not a single one, that has not set up mania and melancholia as primary, separate, independent, and usually antithetical states. Yet of all this multitude there was not one classifier who had not often and often seen these two states coexisting at the same time in the same case. Indeed there are few who have not actually described the combination, under the name of melancholia with excitement, melancholia agitata, or some

such name, and yet were unable to penetrate through the disguise of the different names in order to see those under these different names the thing—mania—was the same. True it is, as Professor Clifford Allbutt writes, we profess Aristotle, but we talk Plato. True it is that we are slaves and worshippers of words. Now, as aforetime, the word is with God, and the word is God.

Yet both melancholia and mania are very definite phases or forms or manifestations of insanity. Each is well characterized, at any rate, in its type. They are not, as is commonly supposed, antithetical to each other, but they are very very different from each other; they are in sharp contrast, and though they may appear together in combination, they often appear apart. They are among the commonest and best characterized phases of insanity, and it is clear that any scheme of classification which failed to include them, to distinguish them, or to accord to them a very prominent position, would be at once condemned. And yet they occur together at the same time in the same case, and when so occurring they do not constitute two coexistent insanities. They are not two maladies as pneumonia occurring with Bright's disease are two coexisting maladies. They form when thus combined but one insanity, of which the mania is as integral a part as the melancholia, and no one would dream, as in fact no one has dreamed, in spite of the patent and manifest fact that the patient exhibits the characters of both mania and melancholia, of asserting that he exhibits two maladies at once.

Having considered from the point of view of classification two such forms as mania and melancholia, always asserted and assumed to be distinct and contrasted, and yet, as we have found, contributing features to one joint malady, let us now take another case which is universally admitted to be equally distinct. Let us take the case of general paralysis. Than general paralysis there is no more characteristic or distinct or better marked instance of insanity. It differs specifically from all other kinds of insanity, and the different cases of general paralysis exhibit such general agreement among themselves in all essentials, and are so clearly distinguishable from all kinds of insanity other than general paralysis, that it is quite clear, and it is universally admitted, that we have here a true species, or what J. S. Mill calls a true kind, which has been, and must be, in any system of classification whatever allotted a primary position by itself. We do not find in this case that general paralysis unites with any other kind of insanity to form a different clinical entity. On the contrary, the case is either general paralysis or it is not, and if it be, it is general paralysis and nothing else.

But now we are confronted with the perplexing and confusing fact that a case of general paralysis may be maniacal; it may be melancholic; it may be first one and then the other, or it may be both together; and all the while it does not cease to be a case of general paralysis, but throughout all, and in spite of all, and before all, the patient is a general paralytic. He may be maniacal, but we do not call the case one of mania. He may be melancholic, but we do not call the case one of melancholia. The characters, whatever they are, which constitute him a maniac or a melancholic sink into insignificance beside the characters which constitute him a general paralytic. What, then, are the differences between these two sets of characters?

It seems to me that the differences are wide and clear, and that a system of classification which places mania and melancholia in comparison with general paralysis is precisely on a par with a classification of celestial phenomena which should place the dogstar in comparison with the precession of the equinoxes, or a classification of, say, botanical phenomena, which should compare an oak tree with the germination of the seed.

This seems to me to be the gist of the whole matter. Before you can classify you must compare, and in order to compare you must have a basis of comparison. There must be a likeness in kind between the things compared. You cannot compare an oblate spheroid with the flight of a butterfly; nor a stocking loom with the Atlantic Ocean, nor the *Times* newspaper with the frosty Caucasus. No comparison is possible, because there is no sufficient basis of similarity between the things compared. The same is the case between mania and melancholia on the one hand, and general paralysis on the other. You cannot include them in the same system of classification upon the same basis, because there is not sufficient similarity of nature between them to allow of a comparison. When you speak or think of mania or melancholia, you have in your mind a certain state, a certain set of symptoms that the patient presents at one time, and in so far as the concept of mania or melancholia is concerned, you make no reference to the course that it has taken or is likely to take, to its cause or its termination. When you have determined that a state of mania or melancholia exists, you have determined all that it is possible to determine of that aspect of the case. In your diagnosis of the existence of mania or melancholia you exclude from your consideration the element of duration. You regard the case as it now is. Your diagnosis deals with neither retrospect or prospect. You are determining merely the statics of the case. You have merely named a symptom.

But when you determine that the patient is suffering from general paralysis, the case is far otherwise. Your diagnosis means not merely that the patient is now in a certain state and presents a certain aggregate of symptoms which you group together, and to which you assign a specific title, but it means also that he has passed through certain stages to reach the condition in which he now is, and will pass through other stages in the future. You now take account of the element of duration. You consider the course of the malady as extending over time. You look to the retrospect and the prospect. You regard the present condition, not in itself alone, but as indicating what has happened and what is likely to happen. You look at the matter no longer from a statical but from a dynamical point of view. You regard the patient not merely as presenting a symptom, but as suffering from a disease. This is a most important difference in the point of view, and it is to the non-recognition of this difference that most of the difficulty and confusion of the classifications of insanity are due.

In my textbook I have pointed out this difference and have emphasized the distinction by calling the statical aspect the form, and the dynamical aspect the variety of insanity. Of course it does not matter in the least what names are applied to them so long as the distinction is recognized and borne in mind.

There is good evidence for the naturalness of this mode of classification in the fact that most of the forms of insanity, as thus defined, may be arranged in antithetic couples, as I will show in a moment.

The first form of insanity, however, is common to every variety and every case of insanity whatsoever. I have called it weak-mindedness, but I wish to guard myself against being supposed that by this term I understand an affection of mind alone. The proper term to designate what I mean would be reduction, understood in a Jacksonian sense. By weak-mindedness I mean that the patient is reduced to a lower level, both of mind and of conduct, and that he exhibits this reduction partly in the deficiency of certain capabilities of both orders, and partly in excess of activity on lower levels, arising from lack of the control of those capabilities which are deficient. Thus viewed, and thus understood, it does not appear likely that any one will in these days question the existence of weak-mindedness in any and every kind and case of insanity. It is the common form, the basis of all kinds of insanity, and every manifestation of insanity is a phase of weak-mindedness. Strictly speaking, it is not a form—it is the nature of insanity; but as in many cases we meet with deficiency alone, or almost alone, unaccompanied, or but little accompanied, by over-action on lower levels, it is not improper to speak of this weak-mindedness, pure and simple, as a form of insanity.

The next of the statical kinds of insanity, which I call forms, is that of melancholia, or depression of mind, which is so universally recognized as a distinct kind, and is so universally contrasted with mania as if this were its natural antithesis. And here I must promulgate another heresy. Melancholia and mania are in no sense antithetical. The plain proof of this is that they may coexist, as already stated, in the same case at the same time; and, apart from this very practical proof, it is manifest upon consideration that they cannot constitute a true antithesis, for the one connotes a state of mind, while the other connotes a phase of conduct; and what I have already said about the necessity and the possibility of comparison applies here also. It is not possible to compare a state of mind with a phase of conduct and predict that they agree or differ. States of mind must be, can be, compared with states of mind only, and phases of conduct with phases of conduct. The proper antithesis to melancholia or depression of mind is not mania, but exaltation of mind. And that this is the true antithesis is apparent,

not only on the face of it, but by the fact that they never appear together. They are mutually exclusive; and while mania may be combined with melancholia, it may be totally absent in exaltation. There is an excited or maniacal exaltation, and there is an exaltation that is as quiet, and sober, and reticent as any depression can be. Here, then, in depression and exaltation, we have our first antithetic couple of the forms of insanity.

Though mania has not its antithesis in melancholia, yet it has its proper antithesis, which is and must be, like itself, not a mode of feeling, but a phase of conduct. The natural antithesis of mania or excitement is stupor or lethargy, and in this antithetic couple we find two more of the forms of insanity. The excitement is sometimes exhibited in impulsive bursts of outrageous violence, and it is instructive to note that these occur more frequently out of stupor than out of any other form of insanity.

For the next pair of forms we go back to states of mind, and we find them characterized by obsession on the one hand and by facility on the other. In the first, the patient's mind is dominated from within by a craving so imperious that it overbears all resistance, and takes the place of adamantine determination. In the other, the will can scarcely be said to exist; the patient tamely submits to and obeys every behest without pausing to question the authority from which it comes.

We may give to suspicion the next place among our forms, and its antithesis of overtrustfulness is not uncommon, either in the sane or in the insane; but it is scarcely sufficiently well marked, or, at least, I have not met with it in a sufficiently well-marked degree to entitle it to be considered a form of insanity.

The next form of insanity is delusion, which I need not consider at length, since I have classified and analysed delusional states in my published works. Delusion is always accompanied by some degree of confusion of mind, which may also exist alone, and then constitues another form of insanity.

Finally, I think that moral perversion is entitled to rank by itself as a true and independent form of insanity.

All of these forms, it will be seen, are of the nature of symptoms. They may exist in combination with each other, except, of course, with their respective antitheses, and any one form may be found in several or many different varieties. Varieties of insanity are very different from forms. If the latter take rank merely as symptoms, along with such states as dropsy or convulsions, or dyspnoea, the former may take rank with diseases, in that their essence lies in their progress, in the course that they run, in the changes or lack of changes that they present with the lapse of time. Such are the insanity of general paralysis, of alcohol, of epilepsy, of the times of life, of the puerperium, etc. Of these I wish to draw attention to two only.

The first of these is acute insanity, which I divide into five or six types—maniacal, melancholic, suicidal, sexual, and resistive, to which may be added stuporose. I need not describe these types of the variety, which are all familiar to you, but I desire to point out the appropriateness and naturalness of regarding them as subtypes of one variety, so many features have they in common. In fact, as is manifest from what has been said, they may be regarded as a variety in which one form or another may be the most prominent symptom, but in which every case presents many features common to all the types, each type being due to the exaggeration of one feature. All are acute in the sense both of severity of symptoms and brevity of duration. All are or may be destructive, dirty in habit, suicidal, resistive, sexually abnormal, and in every type refusal of food is common.

Among the objections that have been made to this mode of classification, the most serious of all has not been pointed out by any of my critics. I will therefore myself state it. It is that while acute insanity is classed as a variety, yet it may be, and indeed must be, looked upon as a form also, since it is common to general paralysis and several other varieties. This must be admitted, but I do not think that the admission need vitiate the classification. It is to be remembered that the object of a classification is to reproduce in our minds the divisions of the subject that occur in Nature, and where the natural divisions are obscure, where the actual groups are not distinct, but merge and blend into one another, then it is not a defect but a merit in the classification that it reproduces these transitions. This is the case in the matter under consideration. The basis of the classification is the element of duration. The form is the insanity regarded as it exists, the variety is the insanity regarded as it progresses; but even to settle the form some duration must be taken into account. We cannot settle upon the form by observation of an instantaneous snapshot. We must regard the case for a time, though only for a brief period of time. Now to diagnose acute insanity we must regard the case for a longer time than is required merely to diagnose a pure form such as mania or melancholia, but we need not include in our purview so long a duration as is necessary to regard the case as one of general paralysis or climacteric insanity. Acute insanity stands intermediate between forms and varieties, and may be regarded as in one group or other, according to the circumstances of the case.

The other variety to which attention is to be directed is dementia, to which exception has been taken, as I think unnecessarily. It is true that our clinical group of dementia is very much of a dustheap into which is thrown every case that we cannot otherwise classify, but then the term is ambiguous. It is used to connote the form of negative weak-mindedness in which there are no positive over-actions to stamp the case with a specific character, and it is used to connote the variety in which over a period of time this form is the most usually presented by the patient, but in which from time to time there are intervals in which there is excitement or manifestation of some other form of insanity.

Upon the whole, I contend that this classification is a thoroughly natural one, in that it corresponds with the actual facts, that it is easily applied, and that where its divisions are not clearly distinguished it faithfully reproduces the similar want of distinction that exists in Nature.

Dr. David Yellowlees expressed his admiration for Dr. Mercier's keenness of intellect and clearness of expression, but in this case he was too metaphysical, and protested too much. The real truth was that a perfect classification demanded perfect knowledge. They did not yet know enough to attain to anything like a perfect classification, and it seemed useless to attempt it yet. They all knew how utterly imperfect their present symptomatic nomenclature was; how the conditions were often mingled in the same case, varying at different parts of its progress, and justifying a different label. Yet, with all its most obvious defects he did not feel that they yet knew enough to formulate a perfect classification or to discard the time-honoured though defective nomenclature.

Dr. W. Lloyd Andriezen agreed with Dr. Mercier as to the importance and the necessity of a classification; it was the systematization and unification of knowledge, and served as an aid to further knowledge and to progress in diagnosis and treatment. He deprecated the preponderating value attached to the metaphysical psychology of the past; it only served as a bar to progress and was an encouragement to the speculative theorist. "The pathway to psychiatry," said Griesinger, "is not through the dark portal of metaphysics; we have tried that way in the past and found it wanting." A classification was of value in proportion to the depth and breadth of its foundation, its comprehensiveness and suggestiveness, its recognition of deep-seated affinities not always obvious to superficial examination, and its agreement with facts both etiological, clinical, and anatomico-pathological. He had for the past twelve years paid particular attention to this subject, and in the *Journal of Mental Science* for April, 1899, he had propounded a system of classification of insanity which he believed satisfied the conditions laid down. The basis for his classification was the evolutionary one, and on this basis he divided the insanities into five main groups. The insanities were disorders or maldevelopments of the cerebral organization concerned with psychical (intellectual and moral) functions which in their unity and harmony of action constituted the normal personalty—the ego. But the ego was the product of slow and gradual evolution, it passed through many stages of development, and it was obvious that morbid changes might occur and affect it, and did occur and affect it at all stages of its evolution from the fetal (vegetative) to the sexually mature (adolescent) and adult stage. The insanities thus produced varied correspondingly. On this evolutionary basis he recognized the insanities as divisible into five great classes, namely, (*a*) Aphrenia, or arrests of cerebral (psychical) development with arrest of evolution of the personality—this comprised the various types of idiocy of low, medium, and high grade. (*b*) Oligophrenia, or feebleness of cerebral (psychical) development with a parallel defect in the evolution of personality—for example, imbeciles of various grades and the feeble-

minded. (*c*) Paraphrenia, a group which included the hosts of "anomalies" and "perversions" of cerebral (psychical) development in which arrest of evolution was less marked than in the groups (*a*) and (*b*). The characteristics of this group, however, were the disharmony and want of balance of the psychical development, with marked anomalies of mind and conduct of a grave character. This comprised a vast group of the insanities to which the term "degenerative" should rightly be restricted. It included cases of mental obsessions and irresistible impulses—for example, agoraphobia, *folie du doute*, kleptomania; cases of what he would term delusional egomania—for example, the so-called *folie raisonnante*, and psychopaths of litigious, erotic, and jealous types; cases of moral and sexual perversion—for example, uranism and "moral insanity"; cases of congenital criminality, both of the active and of the neurasthenic types—for example, Lombroso's "congenital" criminal in the narrow sense and Benedikt's neurasthenic criminal; and cases of chronic delusional insanity, evolving into a system of delusions eventually transforming the sense of identity—for example, the paranoia of Mendel and the *delire chronique* of Magnan. The fourth great group was designated (*d*) Phrenopathia. In this was included the insanities occurring in brains of nearly full development—that was, the post-adolescent or adult brain—the subjects of which in childhood and youth enjoyed comparative mental health. This group comprised the host of the so-called "acquired" insanities, a designation which would be justified when the subclasses were mentioned, namely, the vesanic group of insanities—mania, melancholia, mixed manio-melancholic insanity, recurrent mania; the toxic group—insanities of alcoholism, plumbism, morphinism; the microparasitic infective group—the deliriums of influenza, scarlet fever, cerebro-spinal meningitis, puerperal mental confusion; the diathetic group—insanities of myxoedema and acromegaly; the devolutional group—climacteric insanity and senile insanity; the traumatic insanity following injury to the skull and brain; the organic insanity resulting from cerebral tumours, haemorrhages, and softenings; and the paretic group comprising the various forms of general paralysis. On the borderline common to the groups of paraphrenia and phrenopathia there existed the characteristic premature dementia—dementia praecox—of puberty and adolescence, a class which would perhaps be more properly included under phrenopathia. The group of insanities associated with special neuroses, for example, epileptic and choreic insanity, also belonged to the phrenopathic class, which thus included some eight or nine subdivisions. The fifth great division was (*e*) Lipophrenia, or dementia in its various subterminal and terminal forms. The insanities thus regarded fell into groups which assumed a serial or tree-like form, showing clearly that the evolutionary basis of classification harmonized with facts. For at the foot of the tree or series lay aphrenia or idiocy, higher up the stem was placed oligophrenia or imbecility. Higher up appeared the branches of "degenerative" insanities or paraphrenia; and highest in the genealogical tree appeared the branches of the "acquired" insanities or phrenopathia. The various subdivisions of these main groups could then be made on any basis which seemed best to collate and harmonize the facts, for example, an etiological subdivision of the toxic insanities, a psychological subdivision of the vesanic insanities, and a pathological subdivision of idiocy. But the fundamental basis of classification was, of necessity, the evolutionary one. The classification propounded by Dr. Andriezen had been included by Dr. Savage in the article on Insanity (Classification of) in the *System of Medicine* edited by Professor Clifford Allbutt, and he hoped it would be increasingly useful to alienists and neurologists.

Dr. J. F. Flashman said he only wished to defend terms which he commonly used, and which he thought Dr. Mercier had treated with unmerited scorn—he meant the terms "mania" and "melancholia." Dr. Mercier from his point of view saw them as one and the same, but Dr. Flashman maintained that there was another point of view from which they stood out distinctly from one another. Mania was a condition in which the patient was the prey to every objective impression; whereas the melancholic neglected objective impressions, and was the prey to his subjective conditions. Excited melancholia he held was quite distinct from acute mania, for the excitement in the former was due, not to stimuli from without, but was the expression of the intense misery of the patient's mind.

Dr. R. H. Cole thanked Dr. Mercier for having brought the subject of classification before the Section. Speaking from a practical point of view, he had found Dr. Mercier's divisions into forms and varieties as meeting a present want for teaching and clinical purposes, which might be amended as pathological knowledge advanced. The evolutionary divisions advocated by Dr. Andriezen seemed to require a simpler nomenclature for general purposes.

The President spoke of the very lucid, terse, and practical hints made in his paper by Dr. Mercier in regard to the classification of insanity. Dr. Mercier mentioned the futility of the attempts made by every tiro to bring forward a classification, at the same time recognizing the usefulness—even the necessity—of an accurate systematization of the knowledge of this disease. Dr. Jones referred to the difficulty there was in the diagnosis of some cases of melancholia, which might, on the same day, by different authorities, be described as suffering from a state of mania. It had been suggested by some American authorities that some of these cases should be classified as those of mania-melancholia, and his own experience certainly supported this suggestion, and the difficulty there was in nomenclature under the varying systems of classification at present in vogue. He could not help thinking that Dr. Mercier's classification was a little too metaphysical; his forms and varieties appeared also to be somewhat interchangeable. Naturally, the proper and ideal classification was a pathological one, but pathology had not hitherto enlightened them as to the cause of many forms of insanity; indeed, nothing was known of the pathology of acute insanity, such as were the pure psychoses. Dr. Mercier, in spite of what he said, leaned to the practical and useful classification of recognizing an acute insanity. The question of the evolution of mind had certainly to be considered in the appreciation of the different forms of insanity, and he thought that too little attention had hitherto been paid to this aspect.

DISCUSSION ON THE CURE AND TREATMENT OF INCIPIENT INSANITY.

I.—David Yellowlees, LL.D., M.D., F.F.P.S.G.,
Consulting Physician, Glasgow Royal Asylum; Lecturer on Insanity, Glasgow University.

Dr. Yellowlees said: Incipient insanity may be defined as the mental condition during the period between the first manifestations of mind disorder and their development into certifiable insanity. The term is sometimes used to include also cases where the insanity though obvious is of very recent origin and has not become fully established or confirmed.

The symptoms shown during the incipient period vary indefinitely in their intensity and duration; the treatment must be suited to the individual case and therefore varies indefinitely also.

The general indications for treatment are obvious enough: Removal as far as possible of the cause of the illness, removal of the patient from the conditions and persons associated with the commencement of the illness, wise medical treatment, experienced nursing, pleasant companionship and surroundings that morbid thoughts and feelings may be forgotten in a healthy mental atmosphere, and improvement alike of body and mind by good food, sufficient outdoor exercise, and suitable occupation and amusement.

It is easy to lay down general principles, but their value depends on their application and on their wise adaptation to each individual case. The excitement of commencing general paralysis cannot be treated like the beginnings of anergic stupor, nor the early suspicions of climacteric melancholia like the onset of *mania a potu*.

The treatment must of course be non-asylum, and it is beset with not a few difficulties. First of all the patient must consent to your treatment, for you have no power to enforce it. He probably does not recognize his condition or his danger, and can see no need for the arrangements which you propose for his welfare. He may entirely refuse to leave his home and family, a course usually so desirable, however much you urge it, and may even suspect that you have some sinister motives for wishing to get him away. He may angrily demand why you seek to treat him as a lunatic and desire you at once to cease your attendance and your hateful interference in his affairs.

If he agrees to follow your counsel the difficulties increase. A suitable place for his temporary residence is not easily found, or it is too costly to permit of his remaining there

long enough to secure his recovery. A suitable attendant is difficult to get and expensive to retain; his presence is often most irksome to the patient, and often greatly deprecated by the friends, because of the talk it occasions among inquisitive neighbours. These practical difficulties are only too familiar to us all. They entail endless trouble and responsibility on the medical attendant, who fervently wishes his patient were better—or worse, for if worse he would be readily certifiable and could be sent to an asylum.

If the means are sufficient and the patient acquiescent there is little difficulty, in ordinary cases, in carrying out private treatment efficiently, at least in Scotland. The lunacy law of that land expressly authorizes the physician on his own sole certificate to place a patient whose insanity is not confirmed, in any private house and under any guardians he may select for a period not exceeding six months, for care and treatment. This invaluable provision has saved many a patient from the asylum during the last twenty years. In no case has this power been abused, and some similar provision will doubtless be made in the next amendment of the lunacy law of England. If the patient does not recover within six months, yet does not require asylum treatment, he can, when duly certificated, be placed, by the authority and subject to the inspection of the Lunacy Commissioners, in the same or any other private home approved by them.

In patients of the poorer class this provision cannot often be taken advantage of, and in that class home care soon fails; it quickly becomes an impossible burden or an unsafe risk, and the only recourse is the asylum. It cannot be questioned that in many such cases the asylum could be avoided if proper outside care were attainable.

Mental wards attached to all our general hospitals is one remedy suggested. It is argued that as mental cases come to the dispensaries of a hospital for advice they would also come to a mental ward for treatment if such wards existed. The argument is plausible but unsound. The advice given at the dispensary is doubtless the best possible, but the mental ward is not the best possible for incipient insanity, and for some cases it is quite unsuitable.

A quiet melancholic who only required removal from home, rest, quiet, and nourishment, might do quite well in such a ward; but what could it do for commencing adolescent insanity, with its constant restlessness and its boundless energy which demand an outlet in outdoor exercise and occupation?

The patients could not, of course, be detained against their will in such a ward, and those who demanded their freedom would be the least fitted for it. For some carefully selected cases who were anxious to be treated, such wards might answer well enough, if no better places could be found; but their usefulness would be very limited, and they could do but little to meet the public need.

The idea that a hospital ward for incipient insanities would save the patient from the obloquy—as it is so wrongly deemed—of an asylum deserves little weight, for they would be called lunatics just as much in the one place as in the other, and any place where mentally-disturbed persons are associated will be called an "asylum." Our efforts should rather be directed to show the public that the obloquy is unjust and cruel, and that there is no more disgrace in going to a mental hospital for brain disorder than to a general hospital for any other bodily ailment.

The relation of mental wards to the administration and arrangements of a general hospital, as regards space, trained nurses, outdoor exercise, and the feelings of other patients is deemed outside the scope of this discussion.

Another idea in reference to the care and treatment of incipient and recent insanity has assumed fresh prominence of late, and well deserves fullest consideration. It is certainly true that many transient cases of insanity—especially alcoholic cases—are now promptly sent to asylums, only because there is no other legal way of caring for them. Their recovery often occurs within a fortnight, and might as easily and as speedily have been attained elsewhere at far less trouble and cost had any suitable elsewhere existed.

Hence the idea that all large asylums should have an entirely separate reception or probation house, to which all apparently or temporarily insane paupers in their area might in the first instance be sent. The grave cases would be promptly sent on to the asylum, the recent and transient cases being retained for curative treatment for a strictly limited period, say one or two months, in the hope of early recovery. This system has long been in use in Paris, where all pauper lunatics are first sent to St. Ann's Hospital, and there either recover, or are thence distributed, if necessary, to the other larger asylums. Of course, this scheme refers only to pauper patients, and is not required for private cases—although it could be utilized for them also as voluntary patients—and an enormous saving of public money would be effected by its adoption.

The house, by whatever milder name it might be called—such as a hospital for nervous disorders—would be essentially a cure asylum for recent cases, and should be fully equipped with every means for investigation and treatment. It must also be under the jurisdiction and inspection of the Commissioners in Lunacy.

The resident physician, by whom all the cases would be sifted and allocated or treated, must be a man of the first rank and with wide experience of insanity in all its phases. If this idea be thoroughly carried out it will certainly reveal and correct the great defect of our past lunacy administration. It will show that the system which habitually places recent cases amid a multitude of chronics is a grave error; it will show that every large or populous area should have its small "cure" hospital or hospitals for recent cases, where every possible effort should be made to attain recovery, and that the transfer to the "home" or "colony" asylum should not be made unless it is obvious that the case will be grave and prolonged, or until all the efforts to attain recovery within a limited period have proved in vain. The "cure" asylum would be small and would be costly in its provision and maintenance but its recovery rate would be very high and every additional recovery relieves the State of a lifelong burden, and amply compensates for the cost. The large "home" or "colony" asylum, which would still be a place of cure for prolonged recoverable cases should be well in the country, surrounded with ample grounds, and capable of indefinite enlargement, as the need for it arose. Its expenditure for care and maintenance should be little more than half the average rate of our county asylums, and the saving of public money would be enormous, without injury, or even with benefit, to the chronic patients.

II.—ROBERT JONES, M.D.,

Medical Superintendent, London County Asylum, Claybury; President of the Section.

THE PRESIDENT congratulated the Section on the presence of Dr. Yellowlees whose great experience justified the opinion which all held that any statement on his authority would be certain to carry conviction not only to the medical profession but also to those laymen who were responsible for providing this ever-increasing accommodation for the insane. In the whole range of professional experience there was no problem more difficult of solution than the early treatment of insanity. It was hoped that the discussion of last year might have resulted in Dr. Clouston's recommendation that the Edinburgh Royal Infirmary would open one of its wards for their reception, but as Dr. Yellowlees had said there were so many varieties of insanity which were unsuitable for this treatment, and this was especially so with a common variety, namely, adolescent insanity. The suggestion that Dr. Yellowlees had made that probation houses should be erected for large areas in the country was a good one. Dr. Jones certainly thought the early treatment should not be that of an asylum and he very cordially endorsed what Dr. Yellowlees had said. He feared that there was no possible future prospect of release from the increasing financial burden of lunacy which he felt in the light of present-day civilization was destined further to increase unrelentingly. He was certain, however, that a permissive clause like that in vogue in Scotland would be a most valuable addition to the means of treating early or incipient insanity in the better classes, and he hoped this would be the case in any future legislation relating to the insane.

III.—R. S. STEWART, M.D., D.P.H.,

Deputy Medical Superintendent, Glamorgan County Asylum.

DR. STEWART said that the economical aspect of the question of treatment of cases of insanity was one which really did not concern them as medical men. The reception houses for recent and acute cases had not only no advantage except from the economical aspect, but were really not to be compared as a curative institution with the well-regulated county asylums. The suggested segregation of the curable was a grave injustice to those who might not be so fortunate as to belong to that class. The condition to which an asylum

would be reduced if no curable cases were permitted within its walls would be unspeakably deplorable.

IV.—Helen Boyle, M.D.,
Hove.

Dr. Helen Boyle said that the chief difficulty was in getting patients certified by friends, who would very soon object quite as much to any form of notification if accompanied by any inspection of the houses in which they lived. Would it not be possible to have a system by which a case of incipient insanity could be seen by one of a large body of alienists all over the country appointed possibly by the Commissioners, and who should be allowed to give a certificate, as in Scotland, for detention under ordinary care for one or three to six months or more, according to the view taken of the case? There might be a certificate something after the fashion of a postponement of vaccination, and be in fact a postponement of certification, to protect the person under whose care the patient was placed. There should be no limit, or a liberal one, as to the number taken, for patients undoubtedly as a rule did better when they were brought together, and were much more easily treated. Many cases were better treated in the town than in the country, there being more in the town to look at and to produce interest in the patient.

V.—J. F. Flashman, M.D.,
Sydney.

Dr. Flashman described the method of treating acute cases in New South Wales, especially the work done by the reception house. Arguments were also advanced in support of Dr. Yellowlees's proposal; especially it was pointed out that the proportion of medical officers to patients could be increased, and such a centrally-situated hospital could possess far better therapeutic arrangements such as baths staffs, etc., than could be afforded by each county asylum.

VI.—W. Douglas, M.D.,
Goudhurst, Kent

Dr. Douglas said that although there had been a number of discussions on the early treatment of incipient insanity, and medical men who had studied the subject had arrived at definite conclusions, it was very necessary to keep "pegging away" until public opinion and the Legislature enabled the proper treatment to be carried out. In the several discussions at which he had been present, he never remembered to have heard the subject treated so shortly, clearly, and concisely as now by Dr. Yellowlees. For that they owed him many thanks. As to the cost of treatment, the difficulty was solved for the rich and poor, but for the middle classes there were in this respect great and trying difficulties. In the early treatment of incipient insanity it was clearly obvious that all cases could not be properly cared for in a special ward in a general hospital, for that meant rest and confinement—suitable, no doubt, for a certain number of cases, but utterly unsuitable for very many early and doubtful cases for which employment and exercise in the fresh air were necessary adjunets if improvement and cure were to be effected, so that material diminution in the large number of cases of insanity might reasonably be looked for. Some who had spoken seemed to think Dr. Yellowlees suggested houses of reception for early cases directly connected with asylums. He understood Dr. Yellowlees differently—that he meant that they should not be connected with asylums. With that he quite agreed, for to connect them directly with asylums would help to continue the misunderstanding of the public in these matters. Even unfair prejudice must be considered. He agreed with Dr. Mercier that it was unwise to restrict medical men to the care of only one patient. By increasing the number of which he might have charge cost was lessened, and an improved environment more easily obtained.

VII.—R. H. Cole, M.D., M.R.C.P.,
London.

Dr. Cole considered that some relaxation or amendment of the present law with regard to single private patients in the early stages of treatment was highly desirable. Abuses were far from uncommon, resulting from non-certification of borderland and other cases which the public and profession alike were unwilling to class under lunacy owing to the minor degree of mental unsoundness or its temporary nature. There might, perhaps, occasionally be an ethical, if not a legal, excuse in neglecting to adopt a judicial reception order, and thus refusing to comply with the present state of the law. Some system of registration and visitation of the cases in question would be a sufficient remedy for the existent defect, and be a safeguard to possible abuses.

Reply.

Dr. Yellowlees, in closing the discussion, expressed satisfaction with the interest shown in his remarks, and with the discussion they had elicited. He explained that persons admitted into the reception hospital as voluntary boarders would be private patients, not paupers—for whom this mode of admission was ineligible on account of difficulty connected with their chargeability. He corrected the mistaken views of one speaker with reference to persons labouring under incipient or unconfirmed insanity who were in Scotland placed in a private house under private care, on the certificate of their physician, for a limited period. These patients were not cast off and left to the care of these private guardians; they were placed with them expressly "for care and treatment," and these were directed and supervised by the medical man who so placed them; this was the guarantee for the patient's welfare. He had for many years advocated this scheme of dual asylums, and was extremely glad that the London County Council had resolved to provide a preliminary or reception hospital such as he had indicated; but he learned to-day with great surprise and regret that it had actually been proposed to place this reception hospital under the care of a neurologist. If any post in the realm demanded a wide and practical knowledge of all the types and all the manifestations of mental disorder assuredly it was this post. With all esteem for neurology in its own domain, he was certain that no neurologist, unless he had lived and worked for years among the insane, could possibly possess such experience, and without it no physician could properly and promptly sift and allocate the cases, or wisely treat the apparently temporary cases which remained in the hospital in hope of early recovery. Such cases were often the most difficult, often the most deceptive, often the most suicidal, and he could not believe that the London County Council would listen to the proposal to put them under the care of a neurologist. He thought that the reception hospital should not contain more than 100 to 200 beds, that one such hospital or more should be provided for every large area, and that they should be quite apart both from the general hospital and from the asylum. His idea was that many of the patients brought to the hospital would not remain there a single day, but be at once passed on to the asylum, which could thus never sink to the deep level of dull dementia so properly deprecated, and that the residence of those retained in hope of early recovery—they would be largely alcoholic cases—should not exceed six weeks. They should be admitted to the hospital on a single medical certificate, a second being granted if they were retained more than one week, or when they were sent on to the asylum. He quite agreed that the undoubted stigma attached to asylum care by the public could not, and should not, be left out of consideration in deciding as to the best treatment in any individual case, but the public must nevertheless learn that the stigma was cruel and unjust. He entirely disagreed with those who said that the physician had nothing to do with the cost to the public of rate-supported patients. The public had a right to demand that lunacy administration should be as economical as was consistent with full efficiency; and he sincerely hoped that this right would never be painfully forced on their attention by a long period of commercial depression or by the stress of a prolonged war. He was satisfied that the scheme he had sketched would would effect a great saving of public money, and would at the same time be the best for the patients. He was very glad to hear that reception hospitals had been adopted in New South Wales, and that the colony had begun on right lines.

PSYCHO-THERAPEUTICS.

By A. T. Schofield, M.D.,
London.

Dr. A. T. Schofield read a paper on the use and abuse of psycho-therapeutics. He said psycho-therapeutics did not occupy the place its importance demanded in either the education or the practice of the medical profession. The general trend of thought for many years had been towards

science and specialism, and to this, no doubt, the great advance in medicine was due. It was not, however, without its dangers. What was gained in depth was often lost in breadth, and intense occupation with a part loosened our grasp of the whole.

The various organs of the body had been sometimes studied pretty much as if they were parts of a motor car, and modern physiologists, in spite of their amazing accuracy in details, failed as a rule to present the unity of man or to give the idea that the personal factor played any part in the organism. Psychotherapeutics was scarcely mentioned in textbooks. In one work of 2,360 pages it is true that nearly three pages alluded to it, but this was an exception, for other works, though speaking of every conceivable agency of cure, made no mention of it, in spite of the fact, which could not be denied, that the mind played some part in the cure of every disease—a fact not true of any other curative agent.

The second proposition was as follows: The force of mind in therapeutics, though largely ignored by the profession, was successfully exploited and abused by quacks everywhere in the present day. The secret of the success of quackery was that it effected cures, and unfortunately the public placed a higher value on cure than on diagnosis. One chief reason why psycho-therapeutics had not been more used has been the psychological limitations of "mind." It was indeed only thus that one could account for the abortive experiments of Sir James Paget, who apparently limited mind to consciousness. He said:

> In hysteria there are many who cannot bring about a mimicry of disease by any effort of imagination or direction of the mind. Among these I am happy to count myself. I have tried many times carefully, but always failed.

So, said Dr. Schofield, would all others, for conscious effort was powerless here. It was the unconscious mind alone that could produce true mimicry of disease. It was indeed the discovery of this truth that convinced him that neuromimesis was not malingering, a suggestion which had been the cause of great cruelty in the treatment of these unfortunate cases. Hysteria was a mental disease, and if the mind were limited to consciousness the mimicry it produced must be consciously produced, which constituted fraud, and it was only when the neuromimesis was admitted that it was possible to understand how mimicry could be mental and yet unconscious. If this were true he would submit that while insanity was a disorder of the conscious mind, the unconscious mind remaining sound, hysteria was a disorder of the unconscious mind, the conscious mind being sound. It was not that there are two minds; the mind was but one, and consciousness the faculty by which some of its actions were discerned and guided.

In consequence first of the value of its use, and secondly the evils of its abuse, psycho-therapeutics should have its proper place in the study and practice of medicine. He advocated no system, but seeing quackery rampant, and conscious that a great power was abused which was but little used in medicine, he pleaded earnestly for the teaching of the force of mind. The study of the sound mind in connexion with bodily disease was practically virgin soil.

Dr. YELLOWLEES was much interested in Dr. Schofield's paper, and reminded the author that psycho-therapeutics was the fundamental method of treatment as practised by alienist physicians.

RESOLUTION.

The following resolution, proposed by Dr. GOODALL, seconded by Dr. YELLOWLEES, was passed by the Section:

> That the designation of this Section be that of "Psychological Medicine," as formerly, and not that of Psychology.

OPENING OF A NEW WING AT THE WATFORD HOSPITAL.—A new wing of the district hospital at Watford was opened by the Duchess of Bedford on September 26th in commemoration of the coronation of His Majesty King Edward VII. In formally declaring the new wing open the Duchess of Bedford said that to be able to assist even in a small measure in a movement which had for its object the alleviation of suffering was one of the highest privileges that could fall to any man or woman. The new portion of the hospital contains two new wards of six beds each, with various offices, a dental operating room, and a dark room for *x*-ray work. The whole is lighted by electricity and heated on the medium-pressure hot-water system. Nearly the whole of the £4,300 required has already been contributed.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

THOMSEN'S DISEASE.

THOMSEN'S disease is so rare a malady that it is my duty to record a case I saw on September 29th. The patient is a vigorous man of 40 years of age, of very active habits, both in his calling and in games. The affection is confined to the little finger of the right hand, and has existed as long as he can remember. He has found it especially inconvenient in cricket and hockey, as the right little finger is apt to clip the handle of the bat, and must be released with the other hand. He has never heard of any such disability in any kinsfolk.

The matter was named to me by chance in a consultation on certain minor disorders of no present importance. The only affection of health which might concern the Thomsen's disease is that he is subject to dead fingers if he washes in cold water; and he has certain other small discomforts which may indicate some instability of neuro-vascular governance. He is a keen but not morbidly nervous man. The affected finger and its joints and muscles, and the parts about them are perfectly normal in appearance, and the defect, though so narrow in area, corresponds precisely to the description of the disease by Dr. Hale White in my *System of Medicine*. The patient readily demonstrates the disorder: the flexion seems slow, and completes itself with a snap, then the flexed finger is immovable for some seconds, so that habitually he releases the finger with the other hand. If he waits in persistent effort it gives way rather suddenly and opens again with a snap or "clasp-knife" action.

Cambridge. T. CLIFFORD ALLBUTT.

POISONOUS EFFECTS OF RICINUS COMMUNIS.

THE following case may not be devoid of interest to practitioners generally and toxicologists in particular as furnishing yet another instance of the potency of the toxic substance contained in the seeds of the ricinus communis.

Shortly after 2 o'clock on August 19th a porter, aged about 50, employed on the London and North-Western Railway at Euston Station was brought to my house in a cart, obviously very ill. He then told me that while sweeping out a railway truck he had picked up and eaten two seeds which he said he took to be "kernels" of some kind. Half an hour after he had eaten them he was overcome with giddiness to such an extent that he was unable to stand, and shortly after vomited eight times in rapid succession.

Some half hour later, when he was brought to me, he complained of throbbing in the temples, pains in the head, giddiness, nausea, slight fullness and pain in the stomach, and a sense of dryness and constriction in the throat. His face was very pale; his forehead and cheeks covered with beads of sweat; his lips were blue, his pupils dilated, and his whole face bore a pinched and anxious expression. The rest of his skin was moist and cold. His respiration was slightly quickened and pulse 84.

He now told me that he had two "kernels" similar to those which he had eaten in his possession, which I thereupon examined and took to be rather dried-up specimens of the seeds of the castor-oil plant, both from their external appearance and on breaking the outer husk, from their peculiarly unpleasant odour, suggestive of the well-known flavour of the oil. No sooner had he handed these to me than he again vomited, and in the matter thus expelled I found several portions of the beans. I then hoped that as he had already vomited profusely before this might prove to be the last of the poisonous material, but as his condition did not improve, I evacuated the contents of the stomach, discovering two more small fragments mingled with some blood-stained mucus, after which he seemed greatly relieved. As no further symptoms of poisoning supervened and his condition steadily improved, I sent him home and saw him on the following day, when he said that he felt comparatively well but rather weak.

In order to verify the correctness of my view with regard to the nature of the seeds, I sent the two given me to Dr. Thomas Stevenson, of Guy's Hospital, with merely a description of the physical signs and symptoms. He has since very kindly written confirming my opinion, and at his suggestion I have ventured to send you the above for publication.

London, N.W. W. J. BURROUGHS, M.R.C.S., L.R.C.P.

REVIEWS.

ANATOMY.

The many excellencies of Professor Cunningham's *Manual of Practical Anatomy*[1] are so well known that the book no longer requires recommendation; but though the previous editions were well adapted to fulfil their purpose, the present volume is still more perfect, for many of the figures which were present in the earlier editions have been replaced by others more in accord with our present knowledge of anatomical relationships, and the text has been revised and made still more concise and direct than it was before. Experience has shown that the plan of the dissections is one which can be conveniently carried out by students, and the descriptions of the methods to be pursued are so precise that, having once mastered the landmarks and the use of the scalpel, any student should be able to carry on his work with very little aid from demonstrators, whilst at the same time, as he reads the descriptions of the structures he has exposed, he will acquire a very full knowledge of the anatomy of the human body. Indeed, the descriptions are so full that the student who reads them may easily fall into the error of believing that he can learn all that it is necessary for him to know of anatomy by the perusal of his practical manual. If he avoids this mistake, and recognizes that a proper appreciation of the continuity of parts cannot be obtained by a consideration of them in segments, then there is no practical manual from which he could obtain more valuable and concisely-stated information. In connexion with the illustrations, it is pleasing to note that very many of them have been drawn from dissections which it is within the power of a student to reproduce—a circumstance which will of necessity increase his interest in the work.

Professor Merkel's description of the respiratory organs[2] constitutes the first part of the sixth volume of the series of handbooks of human anatomy which are gradually appearing under the editorship of Professor Karl von Bardeleben. In this section of the volume dealing with the alimentary and respiratory systems, as in the sections of other volumes which have previously appeared, there is not only a very full account of all the details of the anatomy of the organs, described as they are met with in the human subject in their adult condition, but also an exhaustive account of their development, and a short sketch of the general arrangement of the organs in other vertebrates. The illustrations are numerous and good, and the volume will be of great value to specialists in diseases of the larynx and respiratory organs as well as to anatomists, for, in addition to the descriptions of anatomical relations, it includes a consideration of the more important variations and a very complete account of the blood vessels, nerves, and lymphatics, and of the minute structure of all parts of the system; whilst for those who wish to consult the original articles on which the various descriptions are based a full bibliography is appended. It is interesting to note that whilst Professor Merkel admits that a considerable amount of variation exists with regard to the relation of the anterior border of the left pleural sac to the middle line, nevertheless he is of opinion that, as a rule, it deviates distinctly towards the left side, to such an extent that there is a small interval at the inner end of the fifth intercostal space where the pericardium is uncovered by the pleura.

Professor Disse's monograph on the urinary organs,[3] published as the first part of the seventh volume of Professor Bardeleben's handbooks, fully maintains the high reputation which the preceding sections have established. After a general consideration of the urinary organs of the vertebrata, in which the mesodermal nature of the Wolffian duct is strongly insisted upon, a description is given of the position and attachments of the kidneys, including a clear and succinct account of the perinephric fascia, on which so much stress has recently been laid in connexion with the subject of displacement of the kidneys. This section concludes with an account of the relations of the kidneys to the other abdominal viscera, and of the hepatic, gastric, and pancreatic impressions, the latter being spoken of as if they were permanent and regular features of renal anatomy. The description of the relations is followed by a very full account of the structure of the kidney substance and of its vessels and nerves. In the succeeding chapters the renal pelvis, the ureters and the bladder, and the development of the kidneys, the ureters, and the bladder are dealt with, and the volume concludes with a description of the position and structure of the suprarenal bodies. The account of the bladder and its relations is, in many respects, less complete than one might have expected in a volume of this class, and more particularly so with regard to the relations of the organ in different stages of distension, but the development of the organs is very fully dealt with in an extremely interesting manner.

Dr. Oskar Schultze's atlas and introduction to topographical and applied anatomy constitutes the first volume of Lehmann's medical atlases,[4] and consists of a large number of plates and figures, accompanied by short descriptions in which attention is drawn only to those points which are of direct importance from a practical aspect, the *Atlas* being intended especially for the practitioner who desires to refresh his memory with regard to the anatomical relations of the parts of the body which are most likely to require attention in the course of his daily practice. Both the figures and the descriptions in the *Atlas* are admirably adapted for their purpose, for the descriptions, as a rule, are short and clear, and deal only with the more important facts; many of the figures are not only beautiful examples of the lithographer's skill, but also very precise and correct representations of anatomical relations. At the end of each section a number of questions are introduced to enable the reader to grasp more forcibly the bearing of the relationship of the anatomical facts he has been considering to the practice of his profession. The book, on the whole, therefore, is worthy of great praise, at the same time it must be noted that some of the figures are not quite correct and others are too diagrammatic or exaggerate the conditions usually met with, and in some of the descriptions in the text preciseness has been sacrificed for the sake of brevity. For example, in Plate 4 a very distinct pharyngeal tonsil is shown in the lateral wall of the pharynx behind the Eustachian tube, and no adenoid tissue is represented in the roof of the pharynx, whilst in Fig. 23 the pharyngeal tonsil is shown in the roof only, and this confusion of depiction is amplified by the statement in the text, which asserts that the tonsil is situated mainly in the roof, but extends also into the fossae of Rosenmüller in the lateral walls. Again, in Fig. 63 the apex of the gall bladder is represented as directed downwards, and the union of the cystic and hepatic ducts seems to be taking place behind the first part of the duodenum, whilst neither of these things occurs in the normal human body. On the whole, however, the *Atlas* may be cordially recommended, for the errors are comparatively few, whilst the good points are numerous; it will form a valuable addition to the library of the practitioner, for it provides a well illustrated and brief summary of the anatomy of those parts of the body with which he is most likely to have to deal.

The second section of the anatomy of the nervous system[5] constitutes the tenth section of the handbook of anatomy edited by Professor von Bardeleben, and in it Professor Zeihen deals with the anatomy of the pons, the cerebellum, and the mid-brain in a most comprehensive way. He discusses the question of the limits of the several segments in a most broad-minded manner, pointing out that whilst the limits between the mid-brain and the pons are fairly well defined in the embryo, no clear line of demarcation is determinable between them in the adult on account of the overlapping which occurs in the course of development. The volume includes full descriptive accounts of the macroscopical and microscopical anatomy of the pons and cerebellum, and, in addition, succinct surveys of the comparative anatomy of the various parts. The figures are numerous, and some of them all that

[1] *Manual of Practical Anatomy.* By D. J. Cunningham, M.D., F.R.S., etc. Vol. i. Upper Limb, Lower Limb, Abdomen. Third edition. Edinburgh and London: Young J. Pentland. 1903. (Crown 8vo, pp. 605, 205 illustrations. 10s. 6d.)

[2] *Handbuchs der Anatomie des Menschen.* Sechster Band. *Darmsystem.* Erste Abteilung: Athmungsorgane. Von Friedrich Merkel.

[3] *Harn- und Geschlechtsorgane.* Erster Teil: Harnorgane. Von Professor Disse. Jena: Gustav Fischer. 1902. (Roy. 8vo, pp. 182 and 170; 89 and 86 illustrations.)

[4] *Lehmann's medizinische Atlanten.* 1 Band, Atlas und Grundriss der topographischen und angewandten Anatomie. Von Dr. Oskar Schultze. Munich: J. F. Lehmann. 1903. (Demy 8vo, pp. 156, 70 coloured plates, 23 illustrations.)

[5] *Anatomie des Nervensystems.* Bearbeitet von Professor Ziehen und Professor Zander. Zweite Lieferung. Makroskopische Anatomie des Gehirns, von Professor Ziehen. Jena: Gustav Fischer. 1903. (Demy 8vo, pp. 174, 117 illustrations. M.6.)

could be desired, but many are too black and indistinct to be either pleasing or satisfactory; this is more particularly the case with regard to the reproductions of photographs of transverse sections intended to display minute structures. These might with advantage be replaced by more diagrammatic representations; or, if that is deemed inadvisable, they should be accompanied by outline figures in which the main points might be more readily grasped.

The first seventy-eight pages of Dr. TRIEPEL's introduction to physical anatomy[6] are devoted to the consideration of elasticity and stability under the influence of tension, pressure, bending, and torsion. The various problems are clearly stated, and the arguments are facilitated by the use of numerous illustrative diagrams. In the remainder of the volume the elasticity and stability of the various tissues of the body are dealt with in detail in an interesting and explicit manner, but the questions raised are perhaps more of scientific than practical importance, inasmuch as the experiments whose results are considered were made chiefly upon tissues removed from the body, and they cannot therefore be more than an indication of what might occur to tissues subjected to similar influences during life.

The good and bad qualities of the second edition of the *Textbook of Anatomy*,[7] edited by Dr. GERRISH, and compiled by the editor and other American authors, remain very much as they were in the first edition, and it must be admitted that the authors have succeeded in their attempt to produce a book occupying a position between the extremes represented on the one hand by pocket manuals, and on the other hand by encyclopaedias. But the area between the two limits is wide, and though the volume before us is large, its contents, so far as the text is concerned, lie much nearer the former than the latter boundary. The authors have not been entirely successful in their attempt to eliminate all facts which have no known practical bearing, but they have certainly avoided the introduction of many which are not only interesting and instructive, but also of direct practical importance, and it is surprising that in a book intended to be practical, no attention is paid to epiphyseal lines and their relations to the capsular ligaments and to the articular surfaces of the joints. After noting in the preface that "Emphasis has been laid upon the most important facts, obscurities have been clarified," it is somewhat disappointing to read in the description of the movements of the shoulder-joint the following statement:

> The great freedom of motion at the shoulder, by which the arm can be raised so as to be nearly vertical, is in part due to the movement of the scapula, which always accompanies movements of the shoulder-joint. Both abduction and flexion over 90 degrees are due to rotation of the scapula, by which the glenoid cavity is turned outward and upward or forward and upward.

The disappointment is due to the fact that no mention is made as to the joints at which the movement beyond 90 degrees takes place, or of the means by which it is produced, and they cannot be considered unimportant from a practical point of view. The illustrations, many of which are reproduced from Testout's *Anatomy*, are numerous, and the majority are effective, but some, and more particularly those representing surface views of the heart, differ as much from the organs they are supposed to represent as they do from the descriptions which accompany them. The markings of the muscular attachments to the bones are carefully and well executed, and form a valuable addition, and the diagrams of the muscles are admirable. The book will appeal chiefly to those who are content to have a fair knowledge of things as they are, but who have no desire to inquire into the why or wherefore of their being so.

Dr. ROCKWELL's *Anatomy*[8] is intended, according to the title page, to serve as a manual both for students and practitioners, but it cannot be recommended to either, in preference to other well-known textbooks and manuals, for although Dr. Rockwell, as he says, has followed *Gray's Anatomy* closely, "both in order and in description," he has only succeeded in producing a less useful book than the original, and a less compact book than the series of notes published under the title of the *Pocket Gray*. In his preface he states that, whilst he does not design it to replace the larger textbooks, "he has endeavoured to present in it, in a briefer and more readily accessible form, all the more important facts which they contain." Such a statement naturally leads to the inference that briefness will be obtained by limiting the scope of the volume to accounts of those facts which may be considered to be of practical importance. This, however, is not the case, and the author has secured what he believes to be "a briefer and more readily accessible form" for his material by reducing the number of illustrations to such an extent that his account of so important an organ as the ear is accompanied by no figures, whilst at the same time he includes amongst "more important facts" unnecessary and unscientific methods of recognizing the side to which carpal and tarsal bones belong, and an account of the extrinsic and intrinsic muscles and ligaments of the pinna.

[6] *Einführung in die physikalische Anatomie.* By Dr. Hermann Triepel, Privat-docent und Prosektor am anatomischen Institut in Greifswald. Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. 1902. (Roy. 8vo, pp. 232, 3 plates, 23 figs. 6s.)

[7] *A Textbook of Anatomy by American Authors.* Edited by F. H. Gerrish, M.D. Second edition. London: Henry Kimpton. 1903. (Roy. 8vo, pp. 944; 1,003 figures. 32s.)

[8] *Anatomy.* By William H. Rockwell, jun., M.D. Series edited by Bern. B. Gallaudet, M.D. London: Henry Kimpton. 1903. (Demy 8vo, pp. 620, 6 illustrations. 10s.)

BACTERIOLOGY.

Professor HEWLETT's little book on *Serum Therapy and Bacterial Therapeutics*[9] contains a concise account of the preparation and therapeutic use of antitoxins and antiserums; antirabic inoculation, vaccine lymph, antityphoid, and antiplague vaccines are also dealt with. There is a useful introduction on immunity and antitoxin formation, in which Ehrlich's "side-chain" theory is clearly explained. In discussing the important question of dosage in the administration of diphtheria antitoxin, the author expresses the opinion that the dose should range from 3,000 or 4,000 units to 8,000 units. If more be given, he advises the injection of small amounts at short intervals rather than a single massive dose. In any case of suspected diphtheria he urges that antitoxin should be given at once, without waiting for the result of the bacteriological diagnosis; and in cases which do not come under observation until after the second or third day he recommends that the first dose should be administered intravenously. The value of diphtheria antitoxin as a prophylactic is illustrated; and, for this purpose, a dose of 500 units is advised. In commenting on the disappointing results which have hitherto attended the use of antiplague serum in India, as exhibited in the unfavourable report of the Indian Plague Commission, Professor Hewlett expresses his belief that this want of success was partly due to the use of insufficient doses. Professor Hewlett's opinion on this point is worthy of respect, and it is possible that, as he and others have suggested, with the use of larger doses and the employment in certain cases of intravenous inoculation the remedial value of antiplague serum would be considerably increased. As a general outline of the principles and practice of serum-therapy Professor Hewlett's interesting little volume ought to prove valuable both to students and practitioners.

We regret that, owing to an oversight, we have not hitherto taken the opportunity of noticing the textbook of *Practical Bacteriology*[10] by Dr. H. J. CURTIS. It has already won for itself a place in many of the laboratories of the medical schools, and is, in fact, based upon lessons in practical bacteriology originally given in the laboratory at University College, London. The course adopted is such as is generally required by those working for the diploma in Public Health, but the needs of clinical bacteriological teaching have not been lost sight of. Minute details of technique have been mentioned, in order to make the book a genuine guide to the student. A number of subjects also are dealt with which do not find a place in bacteriological textbooks as much as they might. For example, Dr. Curtis has useful chapters on yeasts and fermentations, moulds, ringworm, favus, malaria, and elementary methods of cancer research. These matters are not, of course, strict bacteriology, but they are of great importance to the student of that science, and a statement concerning them brings into the book many useful laboratory methods. Indeed, the volume is packed full of laboratory teaching, stated briefly and clearly, and we are not surprised to learn of its popularity with students. The weakest part is the section dealing with the examination of air, water, soil,

[9] *Serum Therapy, Bacterial Therapeutics, and Vaccines.* By R. T. Hewlett, M.D., M.R.C.P., D.P.H.Lond. London: J. and A. Churchill, 1903. (Crown 8vo, pp. 262. Illustrated. 5s.)

[10] *The Essentials of Practical Bacteriology.* An Elementary Laboratory Book for Students and Practitioners. By H. J. Curtis, M.D., B.S., F.R.C.S. London: Longmans, Green, and Co. 1900. (Demy 8vo, pp. 277. 9s.)

and milk, which is certainly inadequate to the subject and to the ostensible object of the book—namely, the training of students in bacteriology as it concerns the public health. The chapter on tuberculosis and leprosy needs amplification and revision, and there are four or five questions of public health bacteriology of great importance upon which the book is altogether silent. But let us not be misunderstood. The author has, in our opinion, succeeded in quite an exceptional degree in producing a short, practical, elementary compilation for the beginner in bacteriology. It is condensed and clear, and the teaching appears to be sound and up to date from a bacteriological point of view.

Dr. Dhingra assures us in his preface that he has planned his *Elementary Bacteriology*[11] "to meet the ordinary requirements of Indian students and practitioners," but after a careful perusal of the work we cannot help thinking that the author has sadly under-estimated even the ordinary requirements of his prospective readers. The book itself consists of two parts. In the first the author briefly describes the morphology of bacteria, and indicates their broad biological characters, outlines the theory of spontaneous generation, discusses the fermentative and putrefactive activities of micro-organisms, and then passes on to some brief notes on antiseptics, disinfectants, and the preservation of food-stuffs—all this in the space of fifty-two small pages of large type. The second part, of slightly greater length, is devoted to individual consideration of some dozen pathogenic bacteria, a few details—not always reliable—being given of the life-history of each, the malarial parasite, and the amoeba dysenteriae—the B. dysenteriae of Shiga, be it noted, is dismissed in less than a dozen lines. One appendix (*a*) describes some details of elementary technique, whilst a second (*b*), of three pages, gives an account of "Snake Venom and Antivenomous Serum." The illustrations, all old acquaintances, are derived from other textbooks. The book appears to be an attempt to combine a popular presentation of some of the elementary facts of general bacteriology with a few details of the more strictly medical aspect of the science, and the result from either point of view is unsatisfactory.

THE CANADIAN MEDICAL ASSOCIATION.

The Canadian Medical Association held its thirty-sixth annual meeting at London, Ontario, on August 25th, 26th, 27th, and 28th. The number present was above the average, for 271 members registered their attendance, the majority being from the Province of Ontario.

President's Address.

Dr. W. H. Moorhouse, of London, Ont., in his presidential address, dwelt upon the importance of such meetings to the medical practitioner, and urged a still larger and more representive attendance. He stated that the chief elements or main essentials of an Association were: First, the ethical side, by which the members were united and harmony promoted among them, through settlement of internal differences and a clearer appreciation of the duty of one member towards another. Secondly, the scientific side, by which a higher state of efficiency in matters appertaining to practice might be obtained. Thirdly, organization to resist aggression from outside sources.

The Registration Act.

After advocating more thorough preliminary training for students, the President went on to rebuke the Province of Quebec for its rejection of the Dominion Registration Bill. He said that since five provinces had accepted the Bill, and as Quebec showed no signs of withdrawing from its "dog-in-the-manager" policy, these five provinces should force the measure through, in order that the whole country might not suffer from the perverseness of a limited section of the medical men of the Province of Quebec.

Patent Medicines.

Patent medicines and proprietary preparations next came under the Presidential ban. The speaker pictured the evil habits frequently contracted, leading up to confirmed inebriety, morphinism, and the various drug habits, and showed that many of the so-called secret preparations so largely advertised suggested evil thought and provoked curiosity in the minds of youth, and often contaminated them. He advocated a law by which all makers of patent medicines should be obliged to put the formula, qualitative and quantitative, upon the package.

In conclusion, he called attention to the duty of the practitioner to himself, advising frequent holidays, together with the cultivation of some hobby which would occasionally take his attention away from routine work.

Section of Medicine.

The address in Medicine was delivered by Dr. H. A. McCallum, in place of Dr. James Stewart, of Montreal, who was absent on account of illness. Dr. McCallum chose for his subject the Lymph Circulation in Modern Medicine. In the course of his address he referred to the anatomy of the lymphatics as described by recent observers—Sala, McCallum, and Sabine, as well as Ranvier, had independently come to the conclusion that the lymphatic system was a modified portion of the circulatory system; that it grew backward from the subclavian vein by the process of budding, gradually invading the tissues; that the ends of the lymphatics were blind, like the lacteal and intestinal glands; and that they had no physical connexion with the tissue spaces. The importance of this circulation in the solution of some of the problems of medicine was pointed out. It was a field of inquiry which would amply repay careful investigation.

The chief discussion in this Section had reference to typhoid fever, but no views of special interest were developed.

Surgical Section.

On the surgical side Dr. J. Alex. Hutchison presented a paper on perforation in typhoid fever. He reported five operations in the past seven years, the first of which resulted fatally, while the fifth and most recent was successful. Operation was only performed in the earlier cases after well-marked symptoms of general peritonitis had developed, but in the last case the perforation was recognized at once and the operation performed within two hours. The right inguinal incision, as in appendicitis, was advised, as it permitted the rapid exposure of the ulceration and early completion of the operation, thus lessening the degree of shock.

Dr. Secord (Brantford) read a paper on Thrombosis of the Femoral Veins following Aseptic Laparotomy. The case reported occurred after an operation for double inguinal hernia. The wounds healed without any septic complication, but on the twelfth day thrombosis of the left long saphenous vein was noticed. The complication delayed the convalescence, but the patient made a good recovery. The etiology of the condition was discussed and the literature on the subject considered, with the result that the following conclusions were drawn:

1. No etiological factor is alone responsible for the occurrence of this complication.
2. The rôle of infection in otherwise non-infective cases does not appear to be an important one.
3. Conditions of sudden decrease of pressure dependent upon the operation probably have a causative influence.
4. Treatment should be prophylactic, as by avoidance of unnecessary traumatism, of haemorrhage, or of suddenly decreased tension, as by having the wound area well supported by firmly applied dressings.

General Meeting.

At the general meeting the question of municipal sanatoria for consumption was discussed, and a resolution sent to the Government of the province asking that this provision be made.

Another resolution urged the Government to establish a department of public health.

The Association also agreed to invite the British Medical Association to hold its 1905 meeting in Toronto.

Vancouver was selected for the next Canadian Association meeting, and Dr. S. T. Tunstall of that city was elected President.

Outbreak of Typhoid from Eating Shellfish.—An outbreak of typhoid fever, probably due to the consumption of sewage-contaminated shellfish, is reported from the neighbourhood of Merthyr Tydfil. No less than thirty patients have already been removed to isolation hospitals, and one death has occurred. An investigation of the conditions leads to the conclusion that the cause of the epidemic is to be found in contaminated cockles which were on sale in Merthyr market some six weeks ago. The actual source of the contamination has not, however, been located.

[11] *Elementary Bacteriology.* By M. L. Dhingra, M.D., C.M., Edin. London: Longmans, Green, and Co. 1903. (Cr. 8vo, pp. 145, 27 illustrations. 3s.)

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1903.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, OCTOBER 3RD, 1903.

THE REMODELLED ANNUAL REPORT OF THE REGISTRAR-GENERAL.

The annual report of the Registrar-General of Births, Deaths, and Marriages in England and Wales, dealing with our national vital statistics for the year 1901, has just been issued, and its greatly improved form and contents fully justify the title of this article. This is the first annual report in which the name of Mr. W. C. Dunbar, C.B., the newly-appoined Registrar-General, appears, and he may be congratulated on having signalized his appointment by arranging that Dr. Tatham's annual review of the causes of death during the year shall appear over that gentleman's own signature. This arrangement secures responsibility and credit for the review in question, and will give the medical profession confidence in the published statistics and the deductions from them. The arrangement is the more happy, inasmuch as it constitutes a reversion to that which held good in the early years of Dr. Farr's epoch-making work in the same office.

Mr. Dunbar informs us that he has adopted this course "as it occurs to me that the medical practitioners of this country, on whose generous co-operation the accurate compilation of vital statistics so largely depends, will, in this way, more readily appreciate the fact that the particulars they contribute concerning the causes of death are analysed, and the results authenticated, by a member of their own profession." It is but fair that the "generosity" of the medical profession in giving death certificates without payment should be recognized. There is, we believe, no other profession which would even under legal compulsion give information possessing so high a degree of accuracy gratuitously; and unless in return for this work the medical profession can secure more efficient protection against various forms of quackery, they may reasonably demand the same payment for death certificates as is already given for the notification of cases of infectious disease.

Mr. Dunbar, in another part of his annual report, alludes to and attempts to justify the protracted delay in its issue. It deals with the vital statistics of 1901, and it is published in the second half of 1903. We give full credit for the excellent series of reports which are issued at shorter intervals and with little or no delay. The weekly returns are models of promptitude, and give most valuable information respecting the great towns. The quarterly returns and the annual summary are likewise promptly issued, and give a large mass of information respecting the urban half of our population. And, so far as the present annual report is concerned, there is much to be said in excuse for the unfortunate delay of its issue. The death-rates of previous years have needed recalculating in view of the detailed results of the recent census, and there has been important alteration in the tabulation of causes of death. But we hope that in future it may be possible to issue the annual report within nine months of the year with which it deals.

We cannot agree with the Registrar-General that, in the absence of the annual report, "the need for current information as to the state of the public health in general, and as to the progress of epidemic diseases in particular, is effectively met by the series of returns above alluded to." While endorsing the Registrar-General's remark that "although the detailed annual reports should, no doubt, be issued as promply as possible, it is even more important, in view of their permanent character, that none of the care hitherto exercised in compiling them should be sacrificed for the sake of early publication," we are still unconvinced that accuracy and promptitude would be incompatible if the work of the General Register Office were rearranged with this object in view.

Dr. Tatham's contributions to the Registrar-General's annual report deserves study in detail, and will doubtless receive it from all students of vital statistics. We are especially gratified to find in nearly every page an increased recognition of the modifying influence of variations of the proportionate numbers of the two sexes and at different ages in each population on death-rates, corrected death-rates being given for the different counties for all causes together, and for diseases of importance to public health like enteric fever, pneumonia, phthisis, and cancer. There is thus being built a superstructure of statistics from which the ordinary sources of fallacy have been eliminated and which will be strictly comparable in successive years and for different localities.

The tabulation of causes of death has been modified and improved, class-groups having been abandoned. No other plan is consistent with the present state of knowledge. Medical practitioners will do well to note the list of unsatisfactory names of diseases, which are "branded" by being printed in italic letters. Thus *diarrhoea* should be further defined. *Phthisis* should have the prefix "tuberculous." *Cancer* should when practicable be more accurately defined as sarcoma or carcinoma. Convulsions, syncope, dropsy, apoplexy, hemiplegia, are names of symptoms not of diseases and should gradually disappear from death certificates.

One particularly gratifying feature of Dr. Tatham's reforms is the greater importance given in the table headings to the various forms of tuberculosis. It will now be practicable to ascertain the death-rate in any county separately from each of the following: pulmonary tuberculosis, tuberculous meningitis, tuberculous peritonitis, tabes mesenterica, all other tuberculous diseases; and the same facts (without rates) are given for each registration district.

We have no space to particularize further, but are confident that medical officers of health and many others interested in our national vital statistics will be grateful to Dr. Tatham for the valuable data which he has now made available.

THE INDIAN MEDICAL SERVICE.

In articles published in the British Medical Journal of January 31st last, page 263, and on March 14th, page 635, we set out at some length the grievances with regard especially to pay, promotion, and pension under which the

Indian Medical Service has for some years laboured. The matter was investigated by the Royal Naval and Military Committee of the British Medical Association, and a memorandum drawn up by that Committee for presentation to the Secretary of State for India, and for circulation among members of Parliament and to the Universities, was printed in the Supplement of the Journal of August 15th.

We publish in another column an official memorandum, dated India Office, October, 1903, which sets out certain alterations effected in the conditions of the service. One of the points to which the Association called attention was the deficient pay of officers of the Indian Medical Service—a deficiency rendered all the more striking by the recent improvement in the pay of officers of the Royal Army Medical Corps. The new regulations deal with the military branch only, but we are glad to recognize that they show a disposition to deal more liberally with the officers of the Indian Medical Service, although the increases which have been sanctioned are not very large.

A lieutenant who is permitted by the Secretary of State to hold a hospital appointment in this country will receive no pay during his tenure of office, but if he be detained by illness in this country he will be paid at the rate of £200 a year from the date on which he would otherwise have embarked. A lieutenant's commission will in future date from the date on which his course of instruction commences, and he may be promoted to captain on completion of 3 years' full pay service, but he will be required after 18 months' service to pass an examination in military law and military organization. The unemployed pay of a lieutenant in India will in future be Rs. 420 a month, in place of Rs. 350, while when placed in permanent medical charge of a regiment his pay will be Rs. 500, in place of Rs. 450; on promotion to captain, if in substantive charge, he will receive Rs. 550, in place of Rs. 450; after 7 years' service there is an increase from Rs. 600 to Rs. 650, and after 10 years' service from Rs. 600 to Rs. 700. The pay of a major after 15 years' service who is in substantive charge is increased from Rs. 800 to Rs. 900, and of a lieutenant-colonel from Rs. 1,000 to Rs. 1,259. A lieutenant-colonel who has 25 years' service will in future receive Rs. 1,300 if in substantive charge, and if specially selected for increased pay Rs. 1,400. The pay of one surgeon-generalship is raised to Rs. 3,000, from Rs. 2,700.

In justice to the officers now serving, the new regulations as to pay ought to have a retrospective effect from the date on which increased pay under the recent warrant was granted to officers of the Royal Army Medical Corps in India.

With regard to pensions, certain increases have been sanctioned. Thus, an officer retiring after 17 years' service will receive a pension of £300 instead of £290 a year, and after 20 years' service £400 instead of £365. Formerly a colonel could not claim an extra pension (£250 per annum) until after 5 years' active employment in India in that appointment. In future an extra pension of £125 per annum will be granted after 3 years' active employment, while £250 will be granted, as before, after 5 years' active employment.

It was pointed out in the memorandum of the Royal Naval and Military Committee, and in our articles, that, owing to the block in promotion and the abolition of administrative appointments, no officer could expect promotion to an administrative appointment until he had had about 30 years' service, and that in consequence many officers were retired under the age clause before it was possible for them to earn the increased rate of pension. The new regulations provide that a lieutenant-colonel who has been specially selected for increased pay if he attains the age of 55 years before he becomes entitled to the pension for 30 years' service may be retained until completion of such service. The memorandum does not state how many officers of the grade of lieutenant-colonel it is intended thus specially to select, so that the extent to which this new provision will meet the grievance to which we have called attention cannot at present be estimated.

Paragraph 12 of the new regulations provides that for distinguished service in the field an officer in the Indian Medical Service may receive substantive or brevet promotion; hitherto brevet promotion has not, we believe, been recognized.

Following the precedent set in the case of the Royal Army Medical Corps, it is now provided that specialist pay at the rate of Rs. 60 a month will be granted to officers below the rank of lieutenant-colonel who may be appointed to certain posts, and another clause provides that extra furlough may be granted to officers desirous of pursuing special courses of study at the rate of one month's furlough for each year's service up to 12 months in all. The number and nature of these specialist appointments is not stated, and this is a serious omission. There is room for the institution of a very considerable number, and, if the provision is interpreted in a liberal spirit, it will materially improve the condition of the service, and thereby contribute to bring about a spirit of contentment in the military branch.

We regret to observe that the memorandum does not contain any indication of the intention on the part of the Government of India to bring about an amelioration of the grievances of medical officers in civil employment, who number we believe more than one-half the officers in the Service. The paragraph referring to civil employment stands as it has stood for many years, and it would appear to indicate that there is no intention to give increased pay. Apart from the injustice involved in this omission the difficulty already experienced in getting officers to join the civil branch of the Service will be aggravated by the prospects of increased pay granted in the military branch. If it is not the intention of the Government of India to improve the prospects of officers in civil employ this will be a most short-sighted policy, and we hope that before long new regulations with regard to the civil branch may be issued which will place the pay of officers in that branch on a more satisfactory footing.

In this brief review we cannot do more than refer to two other points. One is the failure to recognize the desirability of giving the Director-General I.M.S. the rank of Lieutenant-General to correspond with that held by the Director-General of the Army Medical Department in India. The other point is that the paragraph as to honours and rewards stands in the new regulations as it did in the old, and there is no indication that there is an intention that purely professional work of a high order of merit should qualify an officer of the Indian Medical Service to receive such distinctions.

ISOLATION HOSPITALS.

There have been published in the British Medical Journal during the past six months three cases regarding isolation hospitals which illustrate the unpleasant results that may accrue to authorities from neglect to give adequate thought to the three main points which constitute

the elements of a successful hospital—namely, site, structure, and arrangements for administration.

Of defects as regards site we have an example in the case of Chapman v. the Gillingham District Council, which resulted, as reported in our columns on April 4th, 1903, in the sanitary authority being mulct in damages to the extent of £250. The authority had in this case such excuse as is offered by the fact that the hospital was temporary, merely intended to meet a pressing emergency, and that therefore it was put up on the first site that offered. No such excuse, however, of haste can be put forward by the authorities of either Hereford or Folkestone, both of which towns have figured recently in the courts, the one directly and the other indirectly. Of these cases accounts were given in the Journal of September 19th, p. 695; while one is an example of defect of structure, the other is one of defect in administrative arrangements.

In the Hereford action it will be observed that a member of the public successfully defended a claim of the authority by a counter-claim based upon a plea of neglect on the part of the authority in the performance of its duty. A child of the defendant suffering from scarlet fever had been a paying patient in the authority's isolation hospital, and its return home was followed by five other cases in the family to which it belonged. This, according to the defendant, was due to the neglect of the authority to provide a discharge block, the result being, it was claimed, that the child took infection home with it. The court by its verdict, appears to have accepted this view, though curiously enough no one on either side seems to have tried to make anything of an admission that the child when discharged was suffering from a "running ear." Subsidiary points in the case were whether the indoor staff (consisting of a trained nurse-matron and two young servants for eleven patients), was adequate, and whether the charge of £1 10s. a week, in the case of a patient for whom medical attendance was not provided, was a just one.

The Folkestone case was of a different nature. The action was brought by a medical man for fees for attendance on the child of a visitor from London which fell sick of scarlet fever, was removed to the isolation hospital, and therein treated as a private patient by the plaintiff. The defendant, who lost his case, had declined payment on the ground that he had already paid the charges of the sanitary authority. The latter were at first two guineas a week, but on remonstrance were reduced to one. For the plaintiff, Dr. Larking of Folkestone gave evidence to the effect that the sanitary authority did not provide medical attendance at its isolation hospital and that the patients therein had to make medical arrangements for themselves just as if they had remained at home. This evidence called forth some unpleasant commentaries from the judge on the interpretation put upon the law by the local authority, and subsequently led to some correspondence in the local press. In spite, however, of what was said in this correspondence in defence of the authority, it appears obvious that Dr. Larking's evidence represented correctly the common belief of medical men in Folkestone. In fact, though an arrangement has now been made by which the authority pays fees to the medical officer of health for any patients whom he may treat in case of non-attendance by any other medical man, patients unable to pay fees were before commonly either passed on to the parish medical officer or treated as a matter of charity by the medical men responsible for their removal from their homes. The latter arrangement was, of course, discreditable to the authority, and the one which has been substituted for it cannot be considered satisfactory.

The occurrence of two such incidents at important towns such as Folkestone and Hereford, in which isolation hospitals have existed for a considerable number of years, makes it obvious that some of the questions connected with isolation have received inadequate consideration. No hospital of this character can be considered structurally complete if it has not a discharging block, consisting of at least an undressing room, a bathroom, and a redressing room; and, whether the authority believes such an addition to be absolutely essential or otherwise so far as avoidance of infection is concerned, consideration of its own repute should cause every authority to provide it, in order that in a disputed case such as that at Hereford nothing may appear to have been neglected.

Every authority, also, should of course appoint a medical man to take charge of its isolation hospital, and pay him a specific sum for that duty, in addition to and not as part of any sum he may receive for other duties he may perform for it, if any. He should be in formal charge of the whole hospital, and *ipso facto* of every patient admitted who does not specifically request permission to be attended by his own medical man. Even when the latter is the case, the medical officer should remain responsible for all details connected with the formal discharge of the patient, and he should also be responsible for seeing that such additions are made to the nursing staff of the hospital as may from time to time be desirable, even in the absence of any direct request for further assistance from the nursing matron.

The fees mentioned both in the Folkestone and Hereford case also call for remark, since they indicate an inaccurate conception of the motive of isolation. Removal to an isolation hospital should be regarded by the authorities not as a boon to the patient but as a concession by the latter to the interests of the public, as indeed in many cases it is, and as a general rule no payment at all should be asked. Payments of a pound or thirty shillings cannot represent anything like the real cost of a private patient, nor in the aggregate can such sums seriously diminish the final cost of such hospitals to the ratepayer; on the other hand, payment, however inadequate, leads a patient to expect more than the authorities can provide in default of regular pay-wards. When the latter exist as they do at some isolation hospitals, the fees should be sufficient to cover the whole cost of special maintenance and nursing, and when such special wards are neither provided in the original plan of the hospital nor can be temporarily organized for a special case, "paying" patients should not be admitted at all.

THE EXPANSION OF THE ASSOCIATION.

The signs of increased vigour manifested in nearly every part of the complex organism of the British Medical Association show clearly that the new Constitution supplies a machinery which answers the purpose for which it was devised. The Branches and Divisions are displaying an activity which augurs well for their future usefulness. In many places the honorary secretaries and other officials are instituting a systematic propaganda which has already had the result of considerably increasing the membership, and which, if kept up and reinforced, will in time, there is reason to hope, bring the whole profession practically within the fold of the Association. Copies of circulars issued with this object by Dr. Alfred Cox, Honorary Secretary of

the North of England Branch; by Dr. Calwell, Honorary Secretary of the Ulster Branch; by Dr. Raven, Honorary Secretary of the Isle of Thanet Division of the South-Eastern Branch; and by Dr. Ballance, Honorary Secretary of the Norwich Division of the East Anglian Branch, have been brought under our notice, and we may be allowed to say that they are, each in its way, admirable examples of what such missionary leaflets should be. Doubtless many other Secretaries have been equally active. We have just received a copy of a similar circular issued by Dr. Rowland Fothergill, Honorary Secretary of the Wandsworth Division of the Metropolitan Branch. In this, as in the others, the main features of the new Constitution are explained and the advantages of membership of the Association effectively set forth. Dr. Rowland Fothergill suggests that the circular might be used in other districts, and that by a combination of many small orders, the cost to each Division of printing the circular might be reduced. Any honorary secretaries of Divisions who may be disposed to act on his suggestion may obtain full particulars of his scheme on application to him. It must be borne in mind, however, that local conditions vary so much that an appeal which might be very successful in one place would have little or no effect in another. It may be mentioned that copies of the circulars referred to can be supplied by the Organizing Secretary to honorary secretaries who may wish to have them.

THE PROGRESS OF CREMATION.

Sir Henry Thompson, Bart., will open the new crematorium at Birmingham next week, and the foundation stone of the crematorium to be erected by the City Corporation will be laid by the chairman of the Sanitary Committee in the course of a few days. The City crematorium will be erected in the City of London Cemetery at Little Ilford, East Ham, and it is intended for the use of all, whether resident in the City or not. The estimated cost of the building is £7,000, and the object of the Corporation is to bring cremation within the means of the poorer classes. The crematorium recently erected at Golder's Green, just beyond Hampstead Heath, has been for some time in working order, and already 116 bodies have been cremated there. The arrangements at this crematorium have reached a very high pitch of perfection. There are two furnaces fed by coke, and the actual consumption of the body is brought about by overheated air, the temperature within the cremation chamber reaching about 2,000° F. Provision has been made for the erection of further cremation chambers should they be required in the future. The buildings are boldly designed in the Italian style, and very substantially built; the chapel or hall for religious services is finely proportioned, the floor is of black and white marble, and the walls are wainscotted to about 5 ft. A columbarium has been provided in an attached building, which will afford space for about 2,000 urns. The crematorium stands upon a site of 12½ acres, and it is, we understand, the intention of the proprietors to lay out the ground in an ornamental manner, and to provide sites for monuments.

THE DISTRIBUTION OF HOSPITALS IN LONDON.

It is stated that at a meeting on October 12th, the Governors of King's College Hospital will be asked to approve of the scheme for removing the institution from its premises in Portugal Street to a new site in South London. The scheme as stated in a note upon the subject in the British Medical Journal of August 29th, p. 479, has already received the approval of the Council of King's College and of the Committee of Management of the hospital, and is frankly supported by the medical and surgical staff. It is to be hoped, therefore, that the Governors will not fail to afford promptly that final sanction which is essential before anything further can be done in the matter. It is anticipated that a sum of about £300,000 will be required, but under the circumstances it is believed that no great difficulty will be found in raising this sum.

THE MEDICAL DEPARTMENT OF THE ROYAL NAVY.

We have received from the Director-General of the Medical Department of the Royal Navy a copy of the revised Regulations for the Entry of Candidates for Commissions in the Service. Unfortunately, the document, which is dated August 29th, reached us too late for insertion in the Educational Number of the British Medical Journal, which was published on September 5th. The principal changes may be summarized as follows: A candidate who at the time of passing the examination for entry into the medical branch of the Royal Navy holds or is about to hold an appointment as resident medical or surgical officer in a recognized civil hospital may be allowed to serve in such civil appointment provided that the period of such service after the date of entry into the Royal Navy does not exceed one year. Pay from naval funds will be withheld from officers while thus serving, but the time concerned will reckon for increase of full and half pay while on the active list, and retired pay or gratuity on retirement or withdrawal, except that no officer will be allowed to retire on a gratuity until he has completed four years' service exclusive of the time spent as resident medical or surgical officer. The eligibility of this appointment will also be decided by the Medical Director-General. Medical officers in charge of the following hospitals and sick quarters—Haslar, Plymouth, Chatham, Malta, Hong Kong, Bermuda, Jamaica, Portland, Yarmouth, Haulbowline, Cape, Gibraltar, Yokohama, Esquimault, and Ascension—are granted charge pay at the following rates: Inspectors-general, 10s. a day; deputy inspectors-general, 7s. 6d. a day; fleet surgeons, 5s. a day; staff surgeons, 2s. 6d. a day. The junior officer instructing the sick berth staff at Plymouth will receive an allowance of £50 a year. The most important change of all is the option allowed to officers of withdrawing from the service after four years' service on a gratuity of £500. Should an officer leave the service after four years with a gratuity of £500, he will be required to join the reserve of naval medical officers for a period not exceeding eight years. During this period his name will appear in the Navy List, he will be allowed to wear naval uniform under the usual regulations applying to officers on the retired and reserved lists, and he may place R.N. after his name. He may choose his service in the reserve, as follows: (1) He may simply enter the reserve with power to give six months notice of his intention to resign his position, the total period of membership, however, not to exceed eight years; (2) he may bind himself to remain in the reserve for four years, receiving a retaining fee of £25 per annum, and at the expiration of this time he may again bind himself to serve for another four years, receiving the same retaining fee; (3) he may enter the reserve for the first four years, and then, by renouncing his retaining fee, volunteer to continue membership for another four years. Officers of the reserve will be liable to serve in the Royal Navy in time of war or emergency. When called up for such service after the expiration of any period unemployed they will immediately receive the rate of pay to which they would have been entitled after four years' service, namely, 17s. a day. Officers serving in the reserve who during re-employment are injured on duty, or lose their lives from causes attributable to the service, come under the same regulations as regards compensation for themselves, or pensions and compassionate allowances for their widows and children as officers of the same rank on the permanent active list.

THE ETIOLOGY OF LEPROSY.

We have received three special reports from Dr. George Turner, Medical Officer of Health for the Transvaal, in which fish, contagion, and heredity respectively are dealt with as a cause of leprosy. Dr. George Turner differs from Mr. Hutchinson as to fish eating being the cause. He has investigated the subject very thoroughly, and arrived at the conclusion that there were in the Pretoria Leper Asylum fewer cases of leprosy amongst the class which

habitually eat fish than amongst those who do not. The patients were of all races and sexes, including whites. The figures relating to the consumption of fish and the incidence of leprosy among male and female coloured lepers appeared to Dr. Turner to corroborate the statement of Sir Godfrey Lagden that fish eating is not usual in their own country, but an acquired habit. It was found that 64 per cent. of the coloured males had not eaten fish, whereas 85 per cent. of the women, who frequent the towns less than men, had not done so. Dr. Turner points out that there are several misleading statements in Mr. Hutchinson's paper on Leprosy in South Africa.[1] For instance, Dr. Murphy is quoted as saying that in 1898 (this is a misprint in Dr. Turner's report for 1895) there were only 30 lepers in the Transvaal. Dr. Turner is certain that no one even now can say how many lepers there are in the Transvaal. In out-of-the-way parts of Africa among the native races lepers have to be looked for; they do not expose themselves. Dr. Turner has made numerous journeys through the Shangaan country, where leprosy is very common, but has never met with a case. According to Sir Godfrey Lagden, many years Commissioner at Maseru, the Basutos have no word in their language for leprosy; they either use a Sasutized form, or speak of it as the Hottentot disease. Leprosy appears to be fairly common in Basutoland, and Dr. Turner has seen many Basuto lepers. The Basuto, in Basutoland, does not eat fish; he never fishes and will not eat fish given to him by others. Dr. Turner has had many Basuto boys in his service, and he has never been able to persuade any of them to eat fish. Dr. Turner expresses his conviction that contagion is the most usual means by which leprosy is spread. He also alludes to vermin as a cause of infection, an idea which has occurred to others also. With regard to heredity he points to the figures he has collected as tending to show that heredity may be one factor in the spread of the disease. Nevertheless he doubts the influence of heredity, if the term is used in the same sense as it is employed in respect of syphilis, namely, that children born of syphilitic parents are apt to suffer from the disease. It is to be hoped that Dr. Turner will supply reports from time to time of his further investigations of the subject.

[1] *Lepra*, vol. ii, fasc. i, p. 1.

THE CAMPAIGN AGAINST TUBERCULOSIS.

In all schemes for the amelioration of unhealthy conditions of the people, which necessarily show little result until they have been in operation for a considerable time, there is the risk that before the scheme can be completed public interest may wane and the enthusiasts have difficulty in getting funds or helpers. The campaign against tuberculosis, started with enthusiasm throughout the kingdom only a very short time ago, has apparently in some parts of the country already begun to feel the chilling effects of public indifference. A correspondent writes from a large town which has an excessive mortality from consumption that he is quite unable to obtain support in the work of the prevention of tuberculosis there. As he says, it is practically impossible for a medical man to carry on an active campaign alone. The interest in the work seems to be confined to the press and to some "bodies." Personal interest would appear to be, at the best, latent. It is not an easy matter to revive this personal interest in the inevitable absence of obvious and startling results. Something might be done, however, by bringing before the eyes of the public a sketch of the scheme of the preventive campaign which will at once show its comprehensive nature, its careful organization, and the part delegated to the various public bodies and public institutions, as well as the assistance which may be afforded by private individuals. If the individual can be made to realize that in following out the directions put before him for the prevention of consumption in the factory or in the household he is not working alone, but is, in conjunction with many others, both public officials and private persons, taking part in a well-planned and organized attack on a most fatal preventable disease, he will be encouraged to continue his work. Such a plan for the combined action of public bodies and private individuals in the campaign against tuberculosis has been drawn up by Professor Dr. Pannwitz, Secretary-General of the German Central Committee for the Prevention of Tuberculosis. The main requirements are shown to be (1) a knowledge of the existence and whereabouts of all cases of tuberculous disease; (2) the isolation of such cases as may be a source of danger to others. To carry out these requirements there are special measures, such as notification, precautions to be observed by patients at home or at their work, and removal to special institutions for the cure of early consumptives or the isolation of advanced cases. With regard to each measure recommended, he points out the part to be carried out by the various public bodies, and by individuals or private societies. The whole is arranged in tabular form, allowing a comprehensive glance at the scheme as a whole, and making easy a reference to the special duties allotted to any particular public organization or class of individuals. Such a table, applicable to the institutions of this country, might with advantage be prepared and widely distributed by the National Association for the Prevention of Consumption and other forms of Tuberculosis.

THE EXPERIMENTAL INOCULATION OF SYPHILIS.

The question whether syphilis is strictly confined to man or can be transmitted to animals has long exercised the minds of observers. Many have been the attempts to inoculate monkeys, for instance, with the virus, but hitherto the results obtained have not been considered decisive, except perhaps by some of the experimenters themselves. The late Dr. Martineau of Paris, for instance, was apparently quite convinced he had succeeded. But to go over the ground from the historical point of view would need a good deal more space than could be spared. A discussion on the subject was raised recently in the Paris Academy of Medicine[1] by a paper on experimental researches carried out on anthropoid apes by Drs. Roux and Metchnikoff. A young female chimpanzee was inoculated by scarification in the preputial fold of the clitoris with material obtained from a syphilitic primary sore of about a month's duration. The same day the animal was inoculated about the right eyebrow with syphilitic virus from ulcerated mucous plaques of the penis which had developed in the neighbourhood of a healed hard chancre. Five days later the chimpanzee was again inoculated in another part of the preputial fold of the clitoris with scrapings from an indurated syphilitic sore three days old. No immediate local result ensued at the seat of the inoculations; but on the twenty-sixth day a small oval clear vesicle made its appearance at the point of the first inoculation in the preputial fold of the clitoris. The vesicle was surrounded by a zone of redness which was not well defined. During the succeeding days the vesicle gave way to a depressed ulcer, with distinct induration of the surrounding tissues. The floor of the ulcer was more or less circular, and of a yellow-ochre hue. This was soon followed by the formation of a pseudo-membrane with well-defined borders. Moreover, inguinal adenitis developed, having the characters of the enlargement of glands customary in syphilis. The animal had been under observation for forty-six days since the inoculation, but no secondary symptoms had as yet developed. Professor Fournier, who had been asked to examine the chimpanzee, expressed a decided opinion that the sore was syphilitic. The appearance of secondary symptoms would be decisive, but Dr. Du Castel pointed out that their non-appearance might indicate merely that anthropoid apes were perhaps relatively immune to the poison. The ultimate result of the experiment will be awaited with great interest, for, if it should turn out successful, beyond doubt some of the problems connected with syphilis may be solved. An important point in the present case would be to reinoculate the chimpanzee at some future time and observe the local and general effects. Anthropoid apes in our latitudes are liable to succumb to

[1] *Bull. de l'Acad. de Méd.*, Troisième Serie, Tome iv, No. 30, 1903.

tuberculosis, but with care they can be sometimes kept alive for a comparatively long period. Another point is the high price of anthropoid apes in the market—a fact which will limit the number of experiments.

MALPRAXIS IN AMERICA.

To judge from the cases which occur from time to time in the numerous courts of the various States of the Union, actions for malpraxis appear to be more common in America than in this country. It is difficult to suggest any reason why this should be; but it may be that cases which in this country would not be considered sufficiently important for the law reports find their way into the official law reports of the United States. Some of these cases cannot fail to be of interest to English practitioners. The rules applicable to the solution of the question, What degree of skill is to be expected from a physician or surgeon? are similar to those recognized in English courts. Thus, in a recent case in Alabama it was declared that the law imposes upon a physician the duty of exercising that degree of skill and competency which physicians ordinarily exercise and possess, and a physician is not liable for failure to exercise the highest degree of skill in his treatment. This principle was followed in a case in which the plaintiff's hand and lower arm were amputated, and it was alleged that more of the arm than necessary was removed. The only surgeon who gave evidence said that although he thought more of the arm might have been saved, it was a matter of judgement in which surgeons of equal experience differed. A verdict was accordingly directed for the defendant. On the other hand, in an action for malpraxis brought against a medical man who apparently held himself out as a specialist in cancer, the following principles were laid down. A physician holding himself out as having special knowledge and skill in the treatment of particular diseases is bound to bring to the discharge of his duty to a patient employing him as such specialist not merely the average degree of skill possessed by general practitioners, but that special degree of skill and knowledge possessed by physicians who are specialists in the treatment of such disease, in the light of the present state of scientific knowledge. The question when a physician becomes a specialist is not one of law, but one of fact primarily for his own determination; but when he holds himself out as a specialist it becomes his duty to use that degree of skill which such a practitioner should possess. In justification of the alleged negligence the physician apparently attempted to prove that other cases treated by him in a similar way had been successful; but the Court held such evidence inadmissible. The note of the case does not say whether there was a verdict for the plaintiff or the defendant; to judge, however, from the principles above stated, it must have gone hard with the physician. We feel confident that in so far as the judge ruled that a specialist undertakes to effect a complete cure his opinion would never have any weight in an English court. In another curious case an action was brought against a physician for malpraxis. The injury consisted in suppuration following an operation of curettement, which involved the subsequent removal of the ovary. It was decided that it was unnecessary to ask the jury to say whether the negligence of the defendant was the proximate cause of the injury, as the probability of injury in such circumstances was apparent as a matter of law.

THE CHORLTON UNION AND VACCINATION.

According to an account given by the *Manchester City News* of the last fortnightly meeting of the Board of Guardians of the Chorlton Union, Dr. Worswick, a member of the Board of Guardians and also of the medical profession, seems to have taken up a rather remarkable attitude in regard to some items of the medical expenditure of this Union. The principal business of the meeting was to consider the estimate of the Board's expenses for the forthcoming half-year, the details of which are given in the account. After the discussion thereon had apparently closed and the half-yearly budget been approved, Dr. Worswick referred to what he called the growing tendency of the guardians to pay the debts of the people in every way. As examples, he instanced a nursing home and dispensaries, asking why the Board should contribute to dispensaries when it had its medical staff. No mention of contribution either to dispensaries or to a nursing home appears in the estimates as given, so it is not obvious to what Dr. Worswick can have referred, but his further remarks on expenditure were more explicit. The guardians, he said, were paying something like £2,000 a year for vaccination, whilst any medical man would take on the whole job for £500 a year. Instead of this, however, the Board's medical officers were receiving 5s. a case, whilst the private practitioner had to do it for half a crown. Probably the worst feature of the case was that these medical officers went touting for a job amongst the private practitioner's patients, using the argument, "You will have to pay your own doctor half a crown; we get 5s. a head from the guardians, who also spend about £80 a year in paying for lymph." What this really meant, said Dr. Worswick, according to the paper from which we are quoting, was that the guardians were subsidizing men to go to people's houses and ask all private doctors' patients to go and be vaccinated free of charge. How far Dr. Worswick's remarks are correctly represented by the paper from which we derive this account we cannot say, but it is, in any case, to be regretted that he should have made a speech capable of reduction by the reporter of a paper of good repute, such as the *Manchester City News*, to terms such as those which we have quoted. Dr. Worswick, however little he may have studied the cost of vaccination and the general bearings of the method of its performance upon the public health, should be aware that it is inaccurate to represent the present receipts of public vaccinators, whether at Chorlton or anywhere else in the Northern Midlands just now, as anything but temporarily inflated; nor can we believe that there is any foundation for the accusation of touting for cases which he brings against the present public vaccinators of the Union. It may, of course, be that Dr. Worswick holds strong views that vaccination would be better performed by salaried medical officers, but this is not the view of the Legislature: nor, even if it were, could it be pretended that the time of one medical officer would suffice for the efficient vaccination of a population of the size of that within the union of Chorlton.

SEWER-GAS POISONING.

A curious case of sewer-gas poisoning occurred last week in connexion with some sewerage work in Union Street, Southwark, which entails the substitution of a new for an old sewer. Part of the work is so far complete that the roadway is filled in again, and in this finished section some men had been engaged during the night clearing out odd bricks and accumulated building rubbish. About 7 a.m. they knocked off work and proceeded along the sewer to the manhole. When only a few yards from this, they seem to have walked into an accumulation of sewer gas, and one after another they dropped down insensible to the number of five. A sixth man, who was only partially overcome, managed to reach the manhole and shouted for assistance, which was quickly accorded by a party of navvies working close at hand. After an unsuccessful effort had been made by one of their number, another navvy named Leonard Dallimore, got down, taking a rope with him, and one by one, sent the men to the surface. During this process he wore no handkerchief or other face protection, and the time during which he was exposed is uncertain. On completing his task and emerging from the sewer he could only say that he felt "queer" and that he could not have remained down much longer. On being brought to the surface, artificial respiration was applied to the unconscious men by some men of the Fire Brigade, to which an alarm had been given, and as soon as signs of life returned the five men were removed to Guy's Hospital. Under treatment there they quickly recovered and had all been discharged after three days. During their treatment in hospital the clinical features observed

were very few and nothing was discovered which throws any distinct light on the nature of the gas by which the men had been affected. Some of them vomited while in the surgery, and one after removal to the ward, and all of them were in a state of semi-collapse, sufficient in one case to render the use of oxygen desirable. When reaction set in, they were all of them very incoherent and drowsy, and remained so until next day, when some complained of much headache. No blood from any of the cases appears to have been examined, but spectroscopic examination of the urine of the patients did not afford any evidence of destruction of red blood corpuscles. This negative observation, so far as it goes, seems to counter-indicate sulphuretted hydrogen as the active constituent of the sewer gas in this case. This is somewhat curious, for it is so constantly present in sewer gas, and lethal in such minute quantity, that in descriptions of sewer-gas poisoning many writers of textbooks confine themselves to detailing the effects of sulphuretted hydrogen alone. It is understood also that Dr. Stevenson went to see these cases, and from their appearance and rapid recovery expressed the opinion that the cause of their collapse in the sewer could not have been sulphuretted hydrogen. The precise cause of their condition therefore remains somewhat of a mystery.

THE PARASITIC THEORY OF CANCER.

PROFESSOR SCHÜLLER, of Berlin, has published another pamphlet[1] in support of the theory of the parasitic origin of malignant growths. The bodies which he regards as cancer parasites have an appearance suggesting certain forms of protozoa; these, it is claimed, have been observed in cancerous tissue, and have further been cultivated in such tissue when transferred without cooling to sterile tubes, and kept for some time at blood heat. It is also stated that although the forms which are regarded as the parasite in different stages of its growth can be found in the contents of the stomach in cases of carcinoma, yet the examination of the stomach contents in numerous cases of other gastric affections failed to show any of these bodies. In order to establish the theory that a disease owes its origin to a special parasite it must be shown: (1) that the parasite is always present in the blood or tissues of sufferers from the disease; (2) that it has been successfully cultivated outside the body in pure cultures; and (3) that after inoculation of an animal with the pure culture the disease is reproduced, and the parasites can be found in the body of the animal so inoculated. Professor Schüller cannot produce such evidence, but while the question whether cancer is due to an infective cause can be decided in the affirmative only by the discovery of a parasite that will answer to the three tests above mentioned, it is worth while to consider the *a priori* grounds which make for or against the probability that the disease is thus produced. The tendency of cancer to affect parts of the body which have been the seat of long-continued irritation cannot be disputed, and a blow or injury is often stated by the patient to have been the starting point of the growth, but this may perhaps be set down to the natural tendency to suggest a cause for his malady. The fact, however, that cancer is prone to occur in a part which has been the subject of injury or of chronic irritation scarcely militates against the theory of a parasitic origin; the event would be analogous to what occurs in miners' phthisis and in the numerous other cases in which the continual inhalation of irritant particles has prepared the lungs for the attack of the tubercle bacillus. A more weighty argument against the probability of discovering a cancer microbe is to be found in the fact that carcinomata only constitute one group of the tumours which are found in the human body, while in the case of some of these a microbic cause is out of the question. The clinical features of cancer are strongly suggestive of a disease with an infective cause. Nothing is more characteristic of malignant disease than its tendency to spread and to form secondary growths, and every surgeon observing a case of disseminated cancer must be struck by its analogy with cases of a truly infective malady, such as tuberculosis. The number of observers in all countries who have noted cases of "cancer houses," in which several cases of the disease occurred in the course of a few years, is considerable. Mr. D'Arcy Power not long ago published some very striking instances. The probability of the discovery of an infective cause would be even greater if it should be established, in addition, that cancer not only occasionally affects the successive inhabitants of a house, but that limited districts everywhere exist in which the disease is exceptionally prevalent. Certain villages in which the mortality from malignant disease is disproportionate have been noted by Dr. Lloyd Jones and Mr. D'Arcy Power in this country, and by many foreign observers; while in recent articles in the BRITISH MEDICAL JOURNAL on the geographical distribution of cancer Dr. Alfred Wolff gave reasons for thinking that this disease is very generally distributed in a patchy manner, most countries containing districts in which the cancer mortality is always abnormally high. On the whole, the probability that a specific cause of cancer will be found seems to be increasing, although, as has been indicated, there are serious difficulties in the way of those who are ready to assume the existence of a cancer microbe. Hitherto certainly no one of the so-called parasites has been established as the cause, but the possibility of the existence of such a micro-organism is sufficiently great to induce the hope that the search for it will be actively continued.

[1] *Abhandlungen aus dem Gebieten der Krebsforschung und verwandten Gebieten Parasitäre Krebsforschung.* Von Professor Dr. M. Schüller. Heft I. Berlin: Vogel and Kreienbrink. 1903. (Demy 8vo, pp. 44. M.2.)

POST-OPERATIVE AND CLIMACTERIC PAROTITIS.

THE occurrence of parotitis after abdominal section, especially ovariotomy, has been studied by several authorities. Stephen Paget, Rüttermann, and others have written papers on the subject. Moericke attributes the complication to a sympathetic relation between the ovaries and salivary glands; the bacteriologists maintain that it is the result of infection from the seat of operation; whilst Pfannensteil traces the parotitis to infection from the mouth. Martin considers that this buccal infection is at least promoted by dryness of the mouth due to the anaesthetic. Carious teeth have been noted in several cases. As a rule, post-operative parotitis is observed after ovariotomy. This raises the question as to whether it is caused by some stimulus to a special and hitherto undefined part of the female genital tract. M. Condamin[1] reports a case where the left parotid inflamed after the curette had been applied for the removal of a fleshy mole. There was no local infection and no evidence of any trouble in the ovaries. Dalché[2] has recently published a yet more suggestive case in which attacks of parotitis occurred periodically in a woman nearing the menopause; she had not undergone any operation, she was not a victim to "minor" gynaecology, and her teeth, tongue, and buccal mucosa were healthy. This patient was 44 years of age, stout, and neuro-arthritic. After attacks of flushing the period disappeared for three months, then reappeared and was associated with severe neurasthenia. For a year afterwards until the time she consulted M. Dalché, periodical and very tender swelling and redness of both parotids occurred, usually once a month, sometimes at a shorter or longer interval. There was but little fever, fouling of the tongue, or dryness of the mouth. The pain was very distressing. In a few days the parotitis disappeared. There was no renal disease, and nothing morbid in the genital tract beyond a slight degree of chronic metritis, which had never been treated. M. Dalché likens this climacteric parotitis to the albuminuria sometimes seen in association with amenorrhoea and dysmenorrhoea, and to hepatic congestion, with or without cholelithiasis, which occasionally complicate abnormalities of menstruation. Moericke's theory seems to a certain extent sup-

[1] Des Parotidites Consécutives aux Interventions dans la Sphère Génitale de la Femme. *Semaine Gynécologique*, June 2nd, 1903.

[2] Parotidite d'Origine Genitale à la Menopause, *La Gynécologie*, August, 1903.

ported by this case. Genital and buccal infection were apparently excluded, although Dalché thinks that germs in the mouth might perhaps have played a secondary part. Vasomotor troubles, possibly excited by a genital auto-intoxication, might, in his opinion, explain the case.

A BOHEMIAN DOCTOR'S EMOLUMENTS.

In the German daily papers one often comes across advertisements inviting medical men to apply for some official appointment, and some of them throw a curious light on the financial aspects of medical practice in some parts of Europe. The following, taken from the *National Zeitung*, is an example of many:

> The death of the district surgeon has rendered the post he occupied vacant. Those who may desire to offer themselves as candidates for the post are informed that the late surgeon received 200 krones (£8 15s.) per annum from the Provincial Council, and 88 krones (£3 13s. 6d.) from the District Committee. Further, there is a beautiful residence situated in a romantic neighbourhood, and there is a mineral well in the vicinity. The place is within an hour's walk of three railway stations. Candidates must send in their applications within the next thirty days.

For this desirable post, worth £12 8s. 6d. a year in hard cash, there was a goodly number of applicants. Perhaps it was the mineral spring that tempted them, or the romantic situation of the house, but we cannot exactly see of what use the three railway stations would be to the occupant of such a professional paradise, for it is not to be supposed that he would ever desire to abandon his position, and as for holidays—well, who so fortunately situated would ever want a holiday? We can scarcely offer our congratulations to the gentleman selected to fill such a post.

THE LYMPH CIRCULATION IN MAN.

In a communication read recently before the Royal Society, Dr. George Oliver suggests a means for studying in man variations in the amount of tissue lymph. He has found that the rolling of a tight rubber ring over the finger from the tip to beyond the interphalangeal joints not merely empties the blood vessels but also clears away any tissue fluid present in the skin and subcutaneous tissues. The blood, however, returns instantly, and therefore a puncture made just before removing the ring yields blood *per se*, whereas a puncture made without previous compression of the finger liberates a certain portion of the lymph in the surrounding areolar tissue and causes a dilution of the blood in consequence. Hence the reading of the difference in the percentage of the corpuscles or of the haemoglobin before and after the use of the ring provides a measure of the tissue lymph. Applying this method of observation, Dr. Oliver finds that the ingestion of food causes a rapid flow of lymph into the tissue space which reaches its minimum in an hour, and then gradually subsides, ceasing to be apparent after 3 to 4 hours. In the present communication, which is only a preliminary note, other useful applications of the method are indicated, and we look forward with interest to a detailed publication of Dr. Oliver's researches on the subject.

THE LISTER INSTITUTE OF PREVENTIVE MEDICINE.

The Governing Body announce that the necessary legal formalities in connexion with the change of name of this institute have now been completed, the Board of Trade having santioned the new name. The institute will, therefore, in future be known as the "Lister Institute of Preventive Medicine." The address, Chelsea Gardens, S.W., remains the same.

INTERNATIONAL CONGRESS OF SCHOOL HYGIENE.

An International Congress on School Hygiene is to be held at Nuremberg from April 4th to 9th, 1904, under the presidency of Professor Griesbach, of the University of Strassburg. The Congress is under the patronage of His Royal Highness Prince Ludwig Ferdinand of Bavaria, M.D. The General Secretary is Dr. Paul Schubert, to whom all communications relative to the congress should be addressed. A full programme will be issued at the end of December.

The fact that Sir Frederick Treves, Serjeant-Surgeon to the King, is staying at Balmoral Castle has given rise to certain rumours, which we are glad to know are entirely unfounded. The King was never in better health than at present, and is able to go out shooting, deer-stalking, etc., daily, in all weathers.

We are asked to state that the annual dinner of the old and present students of the Faculty of Medicine of University College, London, will be held at the Hotel Cecil, Victoria Embankment, on Monday, October 5th, at 6.30 for 7 p.m. The chair will be taken by Dr. Walter Rigden. Further particulars can be obtained from Mr. Raymond Johnson, 11, Wimpole Street, W., or Dr. H. Batty Shaw, 7, Devonshire Street, W.

Dr. C. J. Cullingworth will give an address at the opening meeting of the Manchester Medical Society, to be held at the Owens College, Manchester, on Wednesday, October 7th, at 8.30 p.m. His subject will be "Charles White, F.R.S., a great Provincial Surgeon and Obstetrician of the Eighteenth Century." Mr. Charles White, as the readers of Mr. Whitehead's address as President of the Association last year in Manchester will remember, was one of the founders of the Manchester Royal Infirmary, and a man who in other ways took a large part in the life of Manchester at that epoch, and won for himself a leading place as a surgeon in the North of England. Dr. Cullingworth, who practised for more than twenty years in Manchester, and who was for six years secretary of the Manchester Medical Society, will no doubt have much that is interesting to say with regard to the life and work of Mr. Charles White.

The first meeting of the Medical Society of London of the present session will take place on Monday, October 12th, when the President, Dr. de Havilland Hall, will deliver an address, and a paper will be read by Dr. G. A. Gibson on adaptation and compensation. A clinical meeting will be held on November 9th, when Sir R. Douglas Powell, Bart., will introduce a discussion on the action of medicinal and other remedies in cardiac failure. On December 14th a discussion on functional albuminuria will be introduced by the President, who will be followed by Dr. Rose Bradford, F.R.S., and Dr. Samuel West. There will be a discussion on the use of serum and other inoculations in pyogenic infections on January 11th, introduced by Mr. W. G. Spencer and Dr. A. E. Wright; and another on pelvic lesions in relation to abdominal diagnosis, introduced by Dr. Handfield-Jones, on January 25th. The Lettsomian lectures on aseptic surgery in theory and practice will be delivered by Mr. C. B. Lockwood during February, and the annual oration will be given by Sir Isambard Owen on May 16th.

Scotland.

LUNACY IN GLASGOW.

Is Insanity Increasing?

The annual report on the certification of lunatics for the year ending May 15th, 1903, has just been issued by Dr. John Carswell, the Certifying Physician in Lunacy to the Parish Council of Glasgow. During the year 840 applications were made to the inspector of poor on behalf of persons supposed to be insane. Of these 549 were certified as insane and sent to one or other of the Lunacy District Board's asylums, as compared with 565 the previous year, and 535 the year before. Of the uncertified cases, 291 in number, males as usual contributed the majority, which is equal to saying that they constituted the bulk of the cases of delirium tremens treated in the special observation wards at Barnhill Poorhouse. Of the 549 cases certified 162 had suffered from previous attacks of insanity. The remaining 387 represent the actual number of first attacks certified during the year, which is 19 less than last year, the proportion per 100,000 of the population being 65.5, compared with 70 last year. This is satisfactory, and seems to indicate a more promising movement as regards the actual production of insanity.

As to the important question, "Is insanity increasing?"

Dr. Carswell makes a very careful inquiry, and in the discussion of his facts and figures comes to a more cheerful view of the lunacy situation than has been customary of late. Statistics show a steady increase in the numbers resident in asylums, so that there may be more registered lunatics, but there is not necessarily more insanity. To illustrate this Dr. Carswell takes the numbers of persons aged under and over 45 years of age, who became insane for the first time during the years 1901-3, and as insanity is rare under 15, except in the form of imbecility or idiocy, he omits the cases under 15. The figures given show that during the three years under review there has been no increase of insanity at ages from 15 to 45. But on comparing the production of insanity under 45 with that for ages over 45 it appears that all the increase has come from ages over 45, and this movement corresponds with what seems to have been the general tendency in Scotland during the last 10 or 15 years. Further, from statistics given it is shown that the production rate keeps stable both in males and females at all ages under 45, and although it increases at ages over 45, no violent fluctuations occur until the age period over 60. Therefore, at all ages under 60 the sex distribution indicates that whatever influences the production of insanity operates equally on both males and females. During the young and active period of life the industrial classes in Glasgow and in places similarly circumstanced have practically no struggle for existence. Employment for them is usually abundant, and with prudent habits their health is almost completely protected by public authority. Consequently, insanity during the earlier active periods of life is not increasing, and its rate of production is not high. The real struggle for existence among the working and labouring classes only begins in middle life and towards later years. The competition then begun finds the drunken and the incompetent unequal to the new conditions, and insanity is one of the forms in which such incompetence is expressed. Moreover, the public have come to use the asylums more frequently for the care of persons who might have been otherwise cared for under easier and simpler industrial and domestic conditions. Influences have therefore been in operation during the last 50 years—social and philanthropic—which have had the effect of improving the condition of the people, and at the same time filling the asylums. The contradiction is only apparent, and the increase is an increase of lunatics under public care, but not an increase of insanity. The recovery-rate of asylums has gone down coincidently with the changes in the character of the admissions. There is consequent accumulation of incurable lunatics, and the need that now exists for merely custodial care for a considerable proportion of the patients is more apparent than formerly. In fact, our conceptions of the character of the accommodation required for the care of the insane stand in need of some revision.

The Glasgow District Asylums.

It is now five years since the two large parishes, which comprised the main part of Glasgow were united and the parochial authority became the Parish Council of Glasgow. The two large parochial asylums of the city then came under the management of the Glasgow Lunacy District Board, composed of members of the Parish Council. The Board is fortunate in possessing two such suitable and well-equipped institutions as the asylums of Woodilee and Gartloch, and the annual reports which have just been published by the medical superintendents show that excellent work is being done.

Woodilee Asylum.—The admissions to Woodilee Asylum during the year numbered 280, and at the end of the year there remained 885 patients in the asylum. There had been discharged as recovered 126; there were boarded out or transferred, 49; and there were 99 deaths, leaving an increase of 4 patients as compared with the previous year. Dr. Hamilton Marr, the superintendent, calculates the recent average increase of patients admitted into the Glasgow asylums as about 1.2 per 10,000 of the population, and refers to the increasing proportion of the readmissions. In 31.3 per cent. of the new cases there was a history of intemperance, and the fact is pointed out that alcoholic excess may be a factor in the causation of insanity in others than the alcoholic subjects, partly by association and partly by heredity. Dr. Marr in this connexion mentions the practical failure of the Inebriates' Act of 1898. So long as habitual drunkards are not convicted of drunkenness four times in one year, they are not habituals in the eye of the law, and the habits of the majority of inebriates make them safe from coming within the scope of the Act. Moreover, if the drunkard has to be placed in an asylum he usually recovers too soon for the restraint of that institution to have any chance of permanently eradicating his evil habit. In his report Dr. Marr refers to two important new departures in the work of the asylum during the past year. The establishment of a reception house into which all the new cases are admitted, and the opening of a consumption sanatorium. The reception house accommodates 20 patients and is entirely separate from the other asylum buildings. Every patient on admission is treated in this house and the length of residence there depends on the mental condition. The plan is found to work admirably, and should be specially favourable to the early recovery of the curable cases. The consumption sanatorium contains 62 beds and is being fully made use of. By the isolation of all the tuberculous cases not only can their proper treatment be carried out but a dangerous source of infection is removed from the other inmates of the asylum.

Gartloch Asylum.—In his annual report for 1902-3 Dr. Parker, the Medical Superintendent of this asylum, states that on May 15th, 1903, there were in the asylum 621 patients, an increase of 34 compared with the previous year. There had been admitted 285; there were discharged as recovered 114; there were boarded-out or transferred 66; and there were 70 deaths. Alcohol is again mentioned as the principal cause of illness, either directly or indirectly, in the cases admitted. In this asylum also there is now a well-equipped consumption sanatorium, and Dr. Parker refers specially to the good result already being shown. The asylum has now been open for six years, and there have in these years been an unusually large number of deaths from tuberculous disease. This high proportion of deaths from phthisis in a new institution was no doubt due to the widely-spread infection amongst the transfers from the old poorhouse wards and other asylums which formed the bulk of the early admissions. That this was so is shown by the fact that the deaths due to tubercle in the first year were no less than 27.2 per cent. of the total death-rate. The average for the past five years has been 20 28 per cent. of the total deaths; while this year there were only 6 deaths from tuberculous disease, or 8.5 per cent., a result no doubt partly brought about by the sanatorium treatment and isolation.

Small-pox in Glasgow.

For some considerable time Glasgow has had perfect immunity from small-pox, but in last week's returns of infectious diseases a case of small-pox is recorded. The patient was discovered in a model lodging-house on the south side on September 21st, when he was removed to the hospital. He arrived in Glasgow on the 12th, sickened three days later, but no medical advice was sought until the 21st. Every precaution is being taken to prevent the spread of the disease, but a model lodging-house is an unfortunate place for the infection of small-pox to be present in even for the shortest time, and it will not be surprising if some other cases follow.

Ireland.

Granard Workhouse.

The guardians of this union appear to be determined to flout the authority of the Local Government Board, and it must be admitted that this body has invited resistance by its display of weakness. The master, having been dismissed by sealed order, was at once appointed *locum tenens*. The Board telegraphed, calling attention to the penalties Mr. O'Beirne rendered himself liable to, and this was followed by a letter to the guardians stating "that any payments which may be made in respect of the salary and cost of rations issued to Mr. O'Beirne since the receipt of the sealed order will be liable to be disallowed." Mr. O'Beirne declared that he would pay the 3s. 6d. a week allowed him; and a guardian observed, "We will keep him in spite of them. There will be no evictors here next week," alluding to the meeting at which the matter is to be further considered. The medical officer asked for an additional nurse to meet an emergency, and the question was asked, "How is it the nuns could nurse sixty-five patients and his trained nurses cannot do it?" In the end notice of motion was given to call on Dr. Kenny "to apologize for any insults he may have, intentionally or otherwise, offered to the nuns lately employed as nurses in the infirmary; and also that if this apology be given, his lordship, Dr. Hoare, be petitioned to allow the nuns to take up their position in the infirmary again."

THE MEDICAL ARRANGEMENTS IN THE SOUTH AFRICAN WAR.

The gist of the report of the Royal Commission on the South African War, as far as it related to the arrangements for the care of the sick and wounded, was given in the British Medical Journal of August 29th, p. 484. Since then the minutes of the evidence taken by the Commission have been published in three volumes.[1] A review of the more important parts of the evidence will show the facts on which the Commissioners based their recommendations, and will enable the reader to judge for himself as to the soundness of their conclusions. We propose to summarize the evidence under the following heads: (1) Military; (2) Medical Officers; (3) Civilian Surgeons.

Evidence of Military Officers.

Field Marshal Earl Roberts.

Lord Roberts, in reply to a question as to the medical service, said: I think the medical department suffered under, perhaps, greater disabilities than the other army departments. It was very far from being prepared for expansion, and yet within a few months it was called upon to provide officers, non-commissioned officers, orderlies, and nurses for an army three or four times the size of that for which its establishment had been estimated as sufficient. It had been calculated that it would be enough to arrange for medical aid for 4 per cent. of the troops employed in war, whereas it turned out that the calculation should have been for 10 per cent. Nevertheless, had it not been for the sudden outbreak of an epidemic, which is inevitable in war, the department would, in all probability, have proved equal to the occasion; and that the outbreak should have reached dimensions with which we were unable to cope was due rather to the arduous character of our operations and the nature of our lines of communication than to want of efficiency and zeal on the part of the medical officers and their assistants. It was impossible, under the circumstances, to give the medical supplies precedence on the railway and to bring up reinforcements of *personnel*. The experience of former wars has shown that during the vicissitudes of a long and arduous campaign the victims claimed by disease are far more numerous than those that fall from the enemy's shot and shell; and the records of history tell of appalling losses from sickness, often from preventable causes. In the Crimean war, in February, 1855, out of a mean strength of 30,910 for the month, 13,608 men were lying in hospital, and during a period of only seven months, from October, 1854, to April, 1855, out of an average strength of 28,939, there perished in hospitals or hospital ships 10,053 men from sickness alone. If we compare these figures with those from South Africa, I think it will be seen that the Army Medical Department carried out its arduous work in such a skilful manner that the rates of mortality were thereby lessened. The South African troops were in the field for two and a-half years. From first to last we sent out nearly 400,000 men, and for a long period an average of nearly 250,000 men were under arms. The total deaths from sickness up to May 31st, this year, were, in round numbers, 13,750, and the numbers invalided during the war were 66,500. With regard to civil surgeons Lord Roberts said that he knew it had always been found necessary that the military hospitals should have a proportion of Army Medical Corps men; this was so for many reasons, such as returns, discipline generally, and carrying on the work in an army manner. Asked as to the strength of the Army Medical Corps, he said the corps before the war was below its establisnment, and it had been found that even with its establishment it was too weak, by the fact that it had been increased since, and that there was a proposal to increase it still further. The greatest pressure was at Bloemfontein in the months of April, May, and June; May was the worst. That was mainly due to the epidemic of enteric. He got to Bloemfontein on March 13th, and during the first week there were no deaths from enteric: it began on the 2nd, and it increased gradually, very nearly in regular proportion, until about the middle or end of May. The total number of admissions from March 13th to June 13th, 1900, for all cases was 16,167, and of those 4,667 were enteric cases that is to say, one-fourth were enteric cases, roughly speaking. The deaths from all causes were 1,030, and of those 891 were enteric, all but 159 were from enteric within that time. On arrival at Bloemfontein they were without tents, and every endeavour was made to find buildings to put the sick men into. There was no great difficulty the first week, because no great number were sick, but when they came pouring in afterwards there was tremendous difficulty, not only in finding accommodation, but in finding sufficient beds, hospital clothing, and everything necessary for hospitals. They took every available space, and the people themselves helped very much; the nuns gave up all their space available for hospitals. As far as he could judge, everything was done that could be done, but the railway was not open, and they had to wait and get things up by degrees. Everything had been collected by railway from Capetown as far as Naauwpoort, the junction of the two lines from Port Elizabeth and Capetown; and when the railway was opened there was the greatest difficulty in arranging how the things should be forwarded on; some articles, not perhaps so urgently required as others, had to be brought away first, because they had to be got rid of before the others could be got hold of, but as far as could be managed, hospital comforts were brought up without delay. They had a very short supply of all kind of provisions; also of supplies of ammunition, clothing, and tents; they had to get all these up by degrees. The demands for actual hospital necessaries were met throughout; he never heard of any complaint as regards medicines or necessary things in hospital. The same remark applied throughout the war in other places. He thought the whole service worked satisfactorily.

Evidence of Lord Kitchener.

Being asked what he had to say as to the medical service, Lord Kitchener said: The criticisms on the medical service during the war were, in my opinion, unfair. An army marching in a new country cannot be supplied with medical appliances to meet more than the recognized proportion of sick and wounded. It is the old question of "bullets or pills," and the proportion laid down cannot be altered without affecting the efficiency of the army. If, then, an epidemic amongst soldiers occurs, the army, if distant from its base, cannot be at once prepared to meet it with every appliance, and with necessary accommodation, and special steps have to be taken to meet the contingency for which the army is advisedly unprepared. At a moment of epidemic the medical service was severely criticized during the war. No doubt some mistakes were made, but I do not consider that on the whole the medical service was in any way inefficient, and in the later phase of the war the arrangements for sick and wounded were in every way admirable. The professional ability of medical officers is not entirely satisfactory. They do not seem to take sufficient advantage of local resources to supplement what the army provides, and in my opinion the Royal Army Medical Corps rather fails in point of administration, and a good deal too much stress is laid on the preparation of multifarious reports and on compliance with innumerable regulations. They should also understand that the medical side of their profession comes first, though a soldier-like spirit of discipline is naturally required.

Lord Kitchener, in reply to further questions, said that he had a sufficiency of medical officers. In this statement he included civil medical officers. There would not have been anything like enough if there had been only the Army Medical Department.

Evidence of other Officers.

Sir Elliott Wood stated that he had a high opinion of the way in which the Medical Department worked, and he saw a great deal of its work, especially in the early stages of the war. He thought the medical officers did all they possibly could with the means at their disposal, and he believed they would have done better at Bloemfontein—for instance, if transport had been available—because there were a number of things that the Medical Department asked them to do for them that they could not do, because they could not get the stores up.

Colonel Sir W. D. Richardson stated that there were no deficiencies of supplies for hospital use. In May and June, 1900, a great many letters appeared in the papers, and there was a deal of fuss about the sickness amongst the troops, and different people said that there was a want of supplies. Of course, they meant supplies generally, and hospital supplies included equipment, machines, instruments and appliances, as well as food supplies. They had largely increased the

[1] *Minutes of Evidence taken before the Royal Commission on the War in South Africa*, vol. iii. Presented to both Houses of Parliament by command of His Majesty. London: Printed for His Majesty's Stationery Office, by Wyman and Sons, Limited, Fetter Lane, E.C. And to be purchased, either directly or through any bookseller, from Eyre and Spottiswoode, East Harding Street, Fleet Street, E.C., and 32, Abingdon Street, Westminster, S.W.; or Oliver and Boyd, Edinburgh; or E. Ponsonby, 116, Grafton Street, Dublin. 1903. (Cd. 1790.) Price 4s. 5d.

supply of medical comforts from time to time when he found the consumption was in excess of the scale that had been fixed by the Director-General before they went out, and that was done with the concurrence of the Principal Medical Officer. There might, no doubt, have been particular cases of some deficiency. He made a full report, with supporting documents, to the Royal Commission appointed to consider and report upon the care and treatment of the sick and wounded in the South African campaign, in which he showed that from the week they arrived at Bloemfontein straight on, the reserve of hospital supplies at Bloemfontein was constantly increased. Directly they got to Bloemfontein he took everything there was in the town; he commandeered everything at fair prices that they fixed, and they got everything they could. As far as his supplies went, the reserve quantity on which the medical officers could always draw was increasing instead of diminishing. He did not think the men's teeth were ruined by the hardness of the biscuits; he thought it was entirely a question of liver or stomach. The men's stomachs got affected, probably by the cold, and that acted on their teeth.

Evidence of Medical Officers.

Evidence of Surgeon-General Sir W. Wilson, K.C.M.G.

Surgeon-General Wilson, who was Principal Medical Officer in South Africa from the beginning of the war to the end, stated that when he was going out he wanted 10 per cent. of beds for all the troops in South Africa—it did not matter whether the troops were on the lines of communication or in the field—and he was promised that. The army corps went out all right, according to regulation, and the field units were particularly good; nothing ever appeared like them before, as regards the bearer companies and field hospitals. The first few general hospitals were also good, but as they went on, the Royal Army Medical Corps orderlies ended practically with the Fifth Division. After that, the bearer companies and field hospitals that went into the field only consisted of untrained or partially-trained men, with probably one officer, and the rest civil surgeons. The later general hospitals were particularly poor in Royal Army Medical Corps, and they were Royal Army Medical Corps that were picked up last; they were not the men selected for good service to go out first, and they were rather poor. He was speaking of the tail end of the officers who went out with the last general hospitals. The Natal army went complete as far as field hospital and bearer companies were concerned, and, in fact, when the Second Division, two brigades of the Third Division, and the Fifth Division went to Natal, that took the half of the Royal Army Medical Corps from him—that was to say, about 40,000 men had about 1,000 non-commissioned officers and men attached to them. He wanted 9,000 at least, so that on the Cape side the framework he had was very weak and very small. The military authorities, particularly at Bloemfontein, did all they could to provide transport, subject to the military exigencies. He never had an insufficiency of medical supplies the whole time, and he had supplies of everything in the country, if he could only move it, but that was extremely difficult. It took No. 2 Hospital, for instance, over two months to go to Pretoria. The equipment was in the trucks all the time. The engines were short particularly; the truckage was short but the engines were worse. As to the efficiency of the officers, he, of course, valued his own officers the most, as they knew what was wanted. Of course, some of them were better at one thing than another, but they were evener than the civil profession. Of the civil profession, he had some experts in surgery and some experts in medicine, but they were not general men; they were not all-round men that he could put anywhere. The officer was a more general man, and he went in for sanitation and for everything, so that he was a more useful man than the civilian, taking them all round. The civilian was useful when he could keep him strictly to his own line and not take him beyond. He thought that for sanitary work there ought to be a branch attached to the office of the Principal Medical Officer. There used to be a sanitary officer, and he was very useful. At present, every medical officer is a sanitary officer, and that was quite right, but there ought to be experts attached to the army as well, men whose opinion would have greater weight than that of the ordinary practitioner. The practice of having a sanitary officer was discontinued immediately after the Egyptian War of 1882. He believed the Commander-in-Chief at that time, thought it was unnecessary, and thought that every medical officer ought to be an expert himself. What was wanted was certain sanitary authorities, men of European reputation, and whose opinions could not be set aside. He could not speak too highly of his own officers and of a great number of the civil surgeons. They always had a sufficiency of supplies, but at Kimberley and at Ladysmith, though they always had medicines, they had to prescribe according to the medicines they had. For instance, if a man wanted to be put to sleep he could be put asleep with one thing almost as well as with another, but they had always had enough. He inquired into that carefully after the sieges, and they said there was never any hardship or never anything approaching want—they wanted for no drug that could save a man's life. He was distinctly of the opinion that the sick did not suffer. As regarded food, the sick did not suffer from any deficiency. They were principally enteric cases, and the best treatment for enteric was starvation. There was a deficiency of bedpans and commodes for a short time at Bloemfontein, and they made the most of it at one hospital—a hospital the staff of which did not get on well together. As a rule, the enteric cases did not require bedpans; the ordinary symptom of diarrhoea was absent in it as a rule. They had the full equipment provided by the regulations. They added wherever they could; they seized on everything in every town and bought everything. Asked whether, in his opinion, from the experience of the war, the amount provided by the regulations was deficient, Surgeon-General Wilson said that of these things there should be an increased number, but at the same time it was very hard to dogmatize about what occurred in South Africa, as what occurred there would probably never occur in any other part of the world they would go to. They had a certain number of bedpans, and so on, for a proportion of 500 patients in a hospital, but in every one of their hospitals they had to arrange for about 900 or 1,000 sick, or even more, for a short time in certain places. Then probably, a few weeks afterwards, the whole thing would die down, and those hospitals would be comparatively empty. When a wounded man was brought in, according to the regulation there were no clothes to put him into. He remedied that very early by calling on the Red Cross for pyjamas, and they used to supply every one of these field hospitals with generally 100 pairs. After a short time the Ordnance did this for him as well. He did not think the men were ever so dirty as they were in South Africa; they were covered with lice picked up on the veld. The number of sick and wounded was estimated at 10 per cent. The actual percentage Surgeon-General Wilson put down at 8. It was less than the estimated number all round, but it was higher in Bloemfontein for a time, but that was cleared off very much quicker than anyone would have thought. A difficulty was that some inhabited areas were insanitary to begin with. The African was very dirty, and the endemic disease from which he was suffering was undoubtedly enteric; he suffered from it in his own kraals. The Kaffir attendants they had, and the men who were doing sanitary work, suffered very much from enteric; all the drivers suffered from enteric also, and they had to get up Kaffir hospitals for them, and enteric was their own disease. There was no doubt whatever about this, because he had *post-mortem* examinations made of the Kaffirs, and he had doubtful cases examined, and they were all enteric. It was the disease of the country. He also knew that the Boers suffered very much from it, and in every town that he went through and inquired about they had the enteric season; it ended generally in April or May up in Orange River Colony and the Transvaal. It was the height of the enteric season when they arrived at Bloemfontein, and Cronje's force was suffering very much from enteric fever while they were watching Lord Methuen, and Lord Methuen was suffering too, although not so much. In the later stages of the war they were able to do everything for their own stations wherever the troops were permanently stationed, and in every camp and in every blockhouse (and he thought there were about 7,000 of them) they had means of boiling water, and, moreover, they went to a tremendous expense and trouble in boring to make wells. At Kroonstad, particularly, he would be afraid to say how many thousands of pounds the Engineers spent trying to get water from deep wells; they did get it after a while, and in all those places the enteric practically disappeared. What used to get it up in some of those places, like Kroonstad and Middleburg, was the columns coming in; a column came in dead tired, and then squatted themselves down wherever they were able to in camp, and they were careless of the ground. They used to bring

in enteric with them, and no doubt disseminated it amongst the garrisons; but, taking things as a whole, the garrisons and blockhouses were free from enteric in the last year, and anything they got could be traced to the columns, and the columns gave them great worry. He tried various ways, but he could not manage the columns; they were marching very rapidly; sometimes they used to leave their field hospitals and bearer companies behind them, or at least the medical units; they used to march very quickly, and the medical units used to pick them up as quickly as they could by going across country in the same direction, and then the men used to drink anything they could get hold of. The men themselves could not boil water, as they had not the means; there was no fuel in the country, no wood, nothing. He had been supplied with officers to look after two army corps, say, 80,000 men, and they had not enough to look after that number even; but, instead of that, they had 250,000 men to look after, besides camp followers. The work was scattered all over half a continent. With regard to nurses, of whom they had plenty, he said the employment of them in large numbers was a new departure. He engaged all the nurses he could get out there. One of the greatest difficulties they had about the nurses was to accommodate them, and to get servants for them. They could get any amount of good trained nurses. He could count the failures on his fingers. He had a long way over 900 altogether, and he had 800 or 900 at one time. A woman would always require a certain amount of accommodation; she must have bedroom equipment and everything else, and she must have servants. It was absolutely impossible to get female servants in South Africa. He got Kaffirs, and finally hospital orderlies in some instances. Asked if he had any suggestion to make as to the supply of drugs and dressings in military hospitals, he said that as regards them there was very little to alter. It was a mistake to carry every kind of medicine. Every medical officer and every medical man had his own drugs, curiously enough, and he used very few. The only hitch came in if a civil surgeon did not see the whole of the twenty drugs he used, he thought he had none at all. Some of the civil surgeons wanted some new drugs; there were always new things coming in, and they wanted to try those, and very often they were got for them to prevent grumbling. The instruments were very good, as far as they went. They wanted more, and they bought them. The medical officers were supplied, as a rule, with the most modern type of instrument. A new instrument differed more or less from the old instrument simply in the handle. The old handles were like the handles of penknives, and they were hard to clean, but the new instruments were all prepared for aseptic surgery, so that they could be washed without leaving crevices for any discharge to gather in. He had never seen a case of instruments which could be washed or disinfected as a whole. He had heard something about such cases being supplied to the Russian and German armies, but he had not looked into them. They were all put together into the sterilizing apparatus. Asked whether any special provision was made for the chance of an outbreak of enteric in South Africa, Surgeon-General Wilson said he always looked forward to it, and feared it. At first all that was done was that Pasteur-Chamberland filters were sent with the troops, but the supply failed; every company was supposed on going out to carry its own filter, and the company officers were supposed to see that the men got filtered water from the Pasteur-Chamberland filters, but so many troops went out that the trade was not able to supply them. The Pasteur-Chamberland filter would, in his opinion, have been a protection if it had been used.

Colonel Gubbins, who was Principal Medical Officer of the Sixth Division up to July 26th, 1900, and afterwards Principal Medical Officer of the Pretoria District and the Northern Line of Communication, said the mobilization worked very easily and very satisfactorily. The Royal Army Medical Corps was wholly insufficient at the start in *personnel*, but as regards equipment, medical or otherwise, there never was the least difficulty. They did not sufficiently provide for those tremendous outbreaks of both enteric and dysentery. The food supplied by the Army Service Corps was always excellent. The milk was always a difficulty everywhere, but his experience, both in Bloemfontein and Pretoria, was that the authorities did the best they possibly could; they collected all the milk into a central dépôt and distributed it from there; and later they had a sterilizing dépôt where all the milk was collected, sterilized, and then distributed to the hospitals with excellent effects. There was another unit which this war had brought to notice which he had never seen mentioned before, and that was the convalescent camp—the half-way house between the general hospital and the fighting line. They had a large convalescent camp at Pretoria capable of holding 600 men, and when men were discharged from the general hospitals, of which they had four, with 2,700 beds, they found that for men who were not fit to return to the ranks or go out on trek this convalescent camp of the greatest possible assistance. All that the men wanted, as a rule, was good food and rest. The convalescent camps were the greatest success; they supplied hospital orderlies to a large extent, clerks, servants, and men of that sort who have to be found in the army, and in that way they relieved the fighting units. Asked whether any great difficulty need ever be anticipated in getting drugs and medical stores promptly in the event of war breaking out, Colonel Gubbins stated that he had been engaged in reconstructing a scheme for the provision of a hospital with 20,000 beds in London in case of an invasion, and he had had to inquire all over London of different firms, both with regard to ordnance and medical equipment, and he did not anticipate the smallest difficulty. He thought it would be a mistake to store up a huge amount of supplies, medical and ordnance. Medical supplies were perishable articles, and as to ordnance supplies they might not go to war for twenty or thirty years, when they would be obsolete. He mentioned as an instance that there was a pattern bedstead brought out in the time of the Crimea called "The Macdonald." They had it in their hospitals still, and they could not get rid of it. He worked out a table some years ago to determine, judging by the normal waste, when they would get rid of it, and it was found that it would take 1,100 years to work off the present stock.

Colonel W. Johnston, R.A.M.C., who was Assistant-Director of the Army Medical Service until May 31st, 1901, stated that he had to do with the mobilization of the 8th Division, the 4th Cavalry Brigade, and the seven general hospitals, besides all the private hospitals, the Princess Christian's hospital train, and also for 30 Militia battalions. The only difficulty they had was to get thoroughly suitable officers and thoroughly suitable men, because they had sent all their best officers and all their best men before. Moreover, they took a much larger proportion of civil surgeons than formerly because there was not a sufficient number of officers of the Royal Army Medical Corps to meet the demands. There was no difficulty in getting civil surgeons. He sent out a large number of nurses. They increased the number of nurses very much. They got the nurses from the Army Nursing Service Reserve. This was an organization most useful to them, and it supplied them with really capital nurses. A great deal of trouble was taken in choosing them. Questioned as to the existence among military officers of a feeling of distrust of the army medical officers, Colonel Johnston said he was afraid that the feeling referred to existed because, by some, the medical officer in the army was expected to be a Treves in operative surgery or an expert in some other branch of the very first class. He was quite certain that the army medical officer was, as a rule, superior to the general practitioner; but what they compared the poor army doctors with were the most specialized and experienced men. Of course, they could not expect to have the same opportunities as those men who were operating every day of their lives, but they must recollect that these men never did anything else. The feeling was very detrimental and very painful to every member of the medical service. Asked what proportion of the medical men employed in the war were civilians, roughly, Colonel Johnston said there were 9 consulting surgeons, 476 medical officers, and 385 civil surgeons; that is, 394 to 476, about 75 per cent.

(To be continued.)

SOME PROBLEMS OF VETERINARY SURGERY.

Mr. J. Astley Bloxam, F.R.C.S., late Senior Surgeon, Charing Cross Hospital, delivering the inaugural address of the new term at the Royal Veterinary College on October 1st, congratulated the students upon having passed their preliminary examination. The standard was high, but, he said, was not quite so difficult as in the medical profession at present, and he suggested that it should be raised to a still higher standard. Speaking as a Governor, he assured them that the purposes af the foundation had not been altered during the last century, the object still being to bring into a regular system that important branch of medicine which regarded

the treatment of diseases incident to horses and cattle. He traced the early history of the College from the days when Professor St. Bel, a Frenchman well known as an anatomist, became its first Professor, and the Fleet Ditch formed part of the College boundary. Recalling the admirable services of the distinguished Principals, he extolled those of Professor Simonds, who was associated with Sir George Brown in stamping out the cattle plague, and Edward Coleman, William Sewell, and Charles Spooner were in turn mentioned, and likewise the present Principal, Professor McFadyean.

Innumerable evidences existed of the interest invariably shown by medical men and surgeons in veterinary service. John Hunter, one of England's most distinguished physiologists, arranged for students of the College to attend hospital lectures; and attached to the first diploma granted in 1794, entitling a Mr. Edward Bond to practise the veterinary art, were the signatures of Henry Cline, John Abernethy, Astley Cooper, and Everard Home. And amongst the students examined in the third year was, he was pleased to find, an "Edward Bloxam, Life Guards." During the first half-century of its existence the College granted diplomas, but it was now exclusively a teaching institution for the Royal College of Veterinary Surgeons. The Governors recognized that it was wise to prevent competition between a number of degree-granting bodies which would tend to lower the standard of veterinary education; but the fact that there was only one qualifying degree or diploma in veterinary science contributed to bring the standard to a dead level, and deprived students of exceptional ability of the incentive to further study.

It was believed that the institution of a higher degree by the University of London would do much to stimulate research in matters connected with the physiology and pathology of the domesticated animals. A resolution had been passed by the Governors, H.R.H. the Duke of Cambridge presiding, that the Senate of the University of London should be approached to institute a special degree in Science, the examinations for it to embrace such subjects as may be considered essential for the higher education and training of veterinary surgeons.

Mr. Bloxam briefly summarized the curriculum of the College, and dwelt on the value of the lectures and demonstrations in teaching the students how to form conclusions. One day, he hoped, greater attention would be paid to aseptic surgery, and he impressed upon operators the importance of anaesthetics, which not only eliminated time as a factor, but spared suffering animals pain, whilst nerving the hand of the surgeon to do its delicate task. Animals were not able to tell the doctor how they felt, and in this respect the veterinary surgeon worked at a manifest disadvantage. It was therefore incumbent upon him to be most diligent in observing symptoms.

He suggested, too, the possibility of nourishing animals in a better way than they now possessed. Many problems awaited solution in which the veterinary profession could help the medical man in the treatment of human diseases. For instance, why were certain new growths, which much resembled cancer, more common in grey horses than in others? And why did new growths, resembling sarcoma, occur in dogs after injuries? Such inquiries bore closely upon the investigation of cancer in the human subject. He strongly advocated a better system of housing animals, enforced by stricter sanitary inspection, and he threw out the suggestion that in antiquated buildings and exhausted land there might lurk the undiscovered contagia of certain diseases. The causes of anthrax, glanders, and swine fever were known; but the contagia of cattle plague, foot-and-mouth disease, and others all remained to be discovered. No one would question the wisdom of stopping the importation of live cattle from the Argentine, whilst the danger of the reintroduction of foot-and-mouth disease existed, having regard to the declining numbers of our live stock. It was a vexed question, but he did not anticipate that Canada, notwithstanding that the Dominion was remarkably free of disease, would secure the relaxation of present restrictions placing it on an equality with Ireland, for the reason that a strict eye could not be kept by veterinary inspectors upon imports from a great distance. Rabies, he hoped, had been stamped out, there having been no case since last October, but it would be premature to conclude that this was so, for a similar immunity had been observed previously, and rabies had declared itself five months after the animal was bitten and on May 28th, 1902, a man died of hydrophobia at Garnet, Carmarthenshire, who had been bitten two years previously. As regards imported dogs, owners were no longer at liberty to isolate them at home for the required six months after landing. The dog must be detained upon premises approved by the Board of Agriculture in the occupation of a veterinary surgeon; and in London most of the foreign dogs imported are taken to a sanatorium near Croydon. The proceedings of the recent congress of medical and scientific men at Brussels on the question of the communicability of tuberculosis from animals to human beings were next discussed. The Conference was of opinion that human tuberculosis was perfectly transmissible from one person to another, and recommended hygienic measures for the prevention of the propagation of animal tuberculosis to the human species. We are, said Mr. Bloxam, still awaiting the results of inquiry. Dr. Koch's discovery of the bacillus of tuberculosis had proved that the disease was produced by contagion, and was not mainly due to heredity. The new theory led to the hope that consumption might after all be curable and yield to the application of rigid hygienic principles. It was clear that the same conditions applied both to human beings and animals. In animals the presence of tuberculosis could be proved by tuberculin inspection, and the animal killed at once. But then it was a question of cost, so many animals being tuberculous or glandered. Mankind, on its part, would not submit to extermination for the benefit of the surviving race, and asked for a cure for consumption. They had still to find it. In conclusion, he recalled the fact that until the beginning of the last century the Government made an annual grant to the College; and it still supported the Irish Veterinary College. He thought that the State should recognize the importance of veterinary service to mankind at large, and advocated the establishment of a farm for convalescent animals, and a place where sound animals could be studied.

He said no doubt the profession had made great advances, and more particularly during the last twenty years, and the veterinary surgeons who had been educated in this and the other veterinary colleges had rendered great service to the country, notably in dealing with the contagious diseases of animals. There could hardly be a doubt, however, that if veterinary education was to march with the times, and if this country was to bear its part in the advancement of veterinary knowledge in the future, the State must follow the example set by other countries, and contribute handsomely to the equipment and upkeep of the veterinary schools.

THE EDUCATIONAL PROGRESS OF PHARMACY.

AT the opening of the Pharmaceutical Society's School of Pharmacy, on Thursday, October 1st, 1903, Dr. Joseph W. Swan, F.R.S., congratulated the students on the excellent opportunity the School afforded them for the scientific study and practice of pharmacy. He could not help contrasting the position of British pharmacy to-day with the inferior position it occupied at the time of his first contact with it sixty years ago.

The institution by the Pharmaceutical Society of the School of Pharmacy had contributed towards the improvement of the scientific education of the chemist: his reputation could rest on no better foundation than superior technical and scientific knowledge. The educational progress of pharmacy under the auspices of the Pharmaceutical Society had been a happy exception to the rule of our general educational want of progress. The events of the last sixty years illustrated in a remarkable manner the enormous advantages of education. They showed conclusively that our want of thoroughness in education and the consequent want of imagination and capacity to appreciate the value of scientific research had caused us immense national loss. The period (exactly covered by the work of the school) had been without parallel for its industrial and economic results, and, superficially regarded, they seemed to falsify the contention of the beneficial effects of education. For, sixty years ago, we were an unlettered race, a large percentage of the population being unable to read or write. But it must be remembered that we had had many accidental compensations which for a time had neutralized and hidden the educational weakness of our position. At the outset we had the good fortune to have among us a number of men of genius, who by their inventions and their enterprise in connexion with the extended use of steam-power for manufactures, for railways and iron steamships, had, with the help of our abundant coal, raised Great Britain to the highest pitch of industrial

prosperity. These great results of British invention and enterprise had been obtained before the influence of education in the creation of rivalry and competition were felt as they were now. All the advantages of our initiative were exhausted, our industrial rivals were now armed with our own weapons, and they had added to their effectiveness the enormous force of superior education in their use. We were now menaced by the imminent danger of industrial ruin, unless at this late hour we repaired the fault of our former and continued neglect by immediately taking the necessary steps to put our house in educational order. We had lately been told by Sir Norman Lockyer that the cost would be heavy, but the cost of education, when carried out in the most liberal manner, if even lavishly carried out, was as nothing in comparison with the benefits it was capable of conferring through the improvement of our industrial position.

He was glad to see that a somewhat higher standard of preliminary general education was being demanded of the students before admission to the Minor Examination. He hoped they would not only study to pass examinations, but for the love of knowledge. If looked at in the right way, they would discover that their work contained within itself the elements of refined pleasure.

In concluding, he reminded the students that they were more than prospective members of an honourable calling, that they were actual members of a great community that, measured by the greatness of its achievements, by the force it exerted in bringing about those social and industrial changes identified with civilization, was the greatest in the world.

CONTRACT MEDICAL PRACTICE.

Shipley.

We learn that for some years past negotiations have been in progress between the medical officers of the Oddfellows medical clubs and the officials of these clubs in Shipley. The dispute has now come to a climax, and the following particulars will be read with interest.

All the medical men in Shipley with the exception of one are medical officers to the Oddfellows, and any Oddfellow who is in the medical club has had the right to select any one of them as his medical attendant for twelve months. The terms were 4s. a head per annum for all attendances, together with a proportion of the levy fee for initiation certificates, which amounted to less than 1s. per initiation.

The first note of discord arose in September, 1901, when the medical officers were asked to grant initiation certificates for females at the same rate. Several thought that it further indicated the intention to form female medical clubs, consequently a meeting was held to discuss club practice in general. It was decided to take no steps until the annual circular was sent for signature, when a note was sent to the secretary of the Oddfellows, in which the following terms were asked:

1. Fee for certificates for initiation of females, 2s. 6d.
2. Fee for attendance on males, 5s. a head per annum.
3. Major operations to be charged at the same rate as the Board of Guardians' scale.
4. No females or juveniles to be accepted as club patients.
5. No adults with weekly earnings of over 35s. to be admitted.

At the request of the Oddfellows the medical men agreed to meet a deputation to discuss the new rules, and at this meeting the rules already submitted were modified thus—namely, that the fee be 5s. a head per annum with no responsibility for accidents, or 6s. with full responsibility in case of accident. The wage limit was dropped. On December 12th the medical men were notified that the modified rules could not be entertained. Ultimately, after another meeting with the deputation, the Oddfellows agreed to pay 5s. a head without attendance on accidents, except the emergency attendances. In case of accident the patient was to go to hospital or become a private patient. The initiation fee for certificates for females was fixed at 2s. 6d.

Now that terms were agreed on, it became necessary to discuss the conduct of practice relative to clubs, and, after meeting the deputation about the end of January, 1902, the medical men decided that each member should have a card with his name, address, selected doctor's name, and the name of the lodge printed thereon. On the back of the card were printed the hours and other conditions of practice, including a rule to the effect that the medical man reserved the right to refuse any member who was put on his list.

Things went on well enough till October 7th, 1902, when a notice was sent by the Oddfellows, giving a year's notice from January 1st, 1903. Apparently, the bone of contention was the rule reserving the right of the medical officer to refuse any member. About the end of the month another meeting was held with the deputation, and as the rule objected to seemed rather arbitrary, a rider was offered to the effect that if the rule were found to be a hardship to any member, the case should be brought before the medical officers by the district officers.

Nothing further was heard until July 6th, 1903, when new conditions were sent, in which the Oddfellows sought to establish female medical clubs at 5s. a head, and to abrogate rule and rider anent refusing any member. The medical men replied that they would not under any conditions accept female clubs, but would further modify the rule objected to by adding that it had no reference to a wage limit.

In September, 1903, the Oddfellows notified that these terms were refused, but that the chance of accepting their terms was still open. The medical officers replied that unless female clubs were abolished they would not discuss the matter further; consequently the services of the medical officers will terminate at the end of the year. It is understood that the Oddfellows intend to bring one or two men into the district at a fixed salary and allow private practice.

This brief summary contains no reference to the misrepresentations made to the men by the district officers, nor to the fact that the officers have never given the medical officers an opportunity to meet the men, in spite of repeated requests. It seems strange that Friendly Societies so often try to get over their medical difficulties by importing blacklegs, a principle which they so much deprecate when it is applied to any trade dispute.

We should advise any medical man to apply to Dr. Eames, Secretary of the Shipley Medical Union, before accepting any post advertised by the Shipley Oddfellows.

ROYAL ALBERT ASYLUM, LANCASTER.

Quinquennial Festival.

It is the custom of this charity, now the largest voluntary institution for imbecile and feeble-minded children in this country, to celebrate each quinquennial period of its existence by a festival meeting at Lancaster. This, the seventh of the series, was held on September 23rd, the Right Honourable Sir John T. Hibbert, K.C.B., Chairman of the Central Committee, presiding at the business meeting, and the Earl of Derby, K.G., at the festival luncheon which followed. During the morning the asylum was open for inspection by subscribers and others, who had thus the opportunity of seeing for themselves the excellent accommodation provided for patients of all classes, and the school and workshop training actually in operation. From the annual report (thirty-ninth), which contains seventeen full-page illustrations, we learn that on June 30th, 1903, there were in the institution 590 patients, 398 being boys and 192 girls. It is expected that the number of patients will soon be increased to about 630, and it is considered that the institution and its branches, making full allowances for modern hygienic requirements, have accommodation for a total number of 650 patients. We are glad to notice the moderation of this estimate, as in such establishments it is most important to avoid overcrowding. As regards finance, the gross receipts from all sources for the year amounted to £33,602 9s. 7d., including £21,963 18s. 6d. on maintenance account and £10,991 10s. 2d. to the sustentation fund. From the first it has been a maxim with the Committee of Management never to run into debt, though in one memorable balance-sheet the margin to the good on the year's working was only £1 11s. 1d.! On June 30th, 1903, the credit balance was £1,977 17s.

The financial success of the institution has been largely due to the energy of the Secretary, Mr. Diggens, who, since the resignation of the medical superintendentship by Dr. Shuttleworth in 1893, has also acted as Principal, having served the institution altogether 38 years. From his report we learn that on July 1st, 1902, there were in the asylum 574 patients, and that during the ensuing 12 months there were 103 admissions and 87 discharges and deaths, bringing the number of patients up to 590, which figure also represented the average number resident during the year. He again urges the importance of remembering that the asylum is a training institution, and not a place simply for the care of hopeless cases. He refers to the petition to the Home Secre-

tary arising out of a resolution passed last year in the Medical Section of the International Congress for the Welfare of Children, in which it was sought to move His Majesty's Government to appoint a Royal Commission with reference to legislation for the mentally defective and epileptic, especially as regards permanent care. The matter has unfortunately been shelved, but the importance to society of its authoritative consideration, and the widespread interest which happily now exists with regard to the feeble-minded, will, we trust, before long compel adequate attention to the subject.

The report of the Resident Medical Officer (Dr. A. R. Douglas) gives some interesting medical statistics. He states that the degree of intelligence manifested by the majority of the 103 patients admitted compares favourably with previous years. Of the 57 patients discharged, 20 had much improved, and 23 to a less extent. The death-rate had been considerably above the average—namely, 5.1 on the average number resident, the excessive mortality being attributed to a severe epidemic of influenza and its debilitating consequences. Sanitary improvements in progress, causing disturbances to floors and walls, with distribution of ancient dust, are also mentioned as contributory causes to a state of *malaise* which showed itself in the prevalence of sore throat, diarrhoea, and even enteric fever. But of all causes of mortality tuberculosis in some form is the most potent, 14 out of 30 deaths being attributed thereto. A modified open-air treatment is advocated for such cases. One death is attributed to epilepsy, and there are 77 epileptic patients in the asylum, and 4,184 fits have been recorded during the year, a large diminution in the frequency of fits being ascribed to the beneficial effect of the special provision made for epileptics in the new "Ashton Wing."

At the annual meeting Sir John Hibbert congratulated the subscribers on the success of the institution, which had received since its foundation in 1864 nearly half a million (£467,000) in donations, legacies, and annual subscriptions. He referred to the gratifying results of training in many discharged patients who had been sent out into the world able to earn their own living. He cited the cases of two expatients who served in the Boer war; of a tailor who was making 33s. a week, and of a girl who was earning 5s. 6d. weekly as a domestic servant. The systematic after-care of cases improved by training was a great desideratum, and he trusted that the time was not far distant when the county or other public authorities would provide suitable custodial working homes for those who had had the benefit of training, but yet could not be expected to compete successfully in the ordinary labour market. Colonel Foster and Sir W. E. M. Tomlinson, M.P., also addressed the meeting, and the proceedings terminated with the distribution of long-service medals by the Countess of Bective to members of the staff, including the Principal and the Resident Medical Officer; and of certificates by Lady Hibbert to those who had passed examinations in nursing, etc., after a course of lectures given by Dr. Douglas.

At the luncheon, Lord Derby gave a comprehensive review of the public and private provision for imbeciles and feeble-minded in this country, showing that for a total of at least 40,000 persons belonging to these categories in England and Wales, special residential accommodation existed for not more than 6,200, 3,200 being of the juvenile class. The provision for defective children in special instruction classes in connexion with elementary day schools was growing, no less than 3,000 being now provided for by the London School Board. He referred also to the new workshops in course of erection at the Royal Albert Asylum through the generosity of Mr. Herbert Storey. Sir John Hibbert mentioned that 2,357 patients had been admitted to the institution since its opening in 1870, and that an aggregate of 1,328 had been trained there, of whom 342 had been much improved, 496 moderately improved, and 372 slightly improved.

The proceedings came to an end after the proposal of the health of the Principal, Mr. Diggens, who, in his reply, gracefully referred to the services of the present Medical Officer, Dr. Douglas, and to the first Medical Superintendent, Dr. Shuttleworth.

It is gratifying to add that a practical outcome has resulted from the remarks made at the meeting with regard to the needful provision for cases of tuberculosis, two members of our profession and of the Central Committee, Drs. Paget Tomlinson, of Kirkby Lonsdale, and Wingate Saul, of Lancaster, having promised substantial aid, the first £100 "to set the ball rolling," and the latter to provide at his own cost a shelter in the grounds. Finally, any inmates found suffering from advanced phthisis or likely to communicate infection to others will be isolated, much as if suffering from one of the acute infectious diseases.

CENTRAL MIDWIVES BOARD.

We have received the following summary of the proceedings of the Central Midwives Board at their meeting on September 24th from Mr. G. W. Duncan, Secretary:

A meeting of the Central Midwives Board was held at the Board Room, 6, Suffolk Street, Pall Mall, S.W., on September 24th, when the following business was transacted:

1. Dr. Champneys was re-elected Chairman of the Board until the first meeting in the month of April, 1904.

2. A letter was read from the Clerk of the Council enclosing a sealed copy of the rules as approved by the Privy Council, August 12th, 1903.

3. The Secretary reported that the rules and forms were now printed and ready for publication, and were on sale at Messrs. Spottiswoode and Co., Ltd., 54, Gracechurch Street, E.C., and 5, New Street Square, E.C. Prices: Rules, paper covers, 6d., post free 7d.; stiff boards, 8d., post free 9d.; forms, 1d. each.

4. The Secretary was instructed to complete the registration of the rules and forms so as to preserve the copyright.

5. A letter was read from the Honorary Secretary of the Manchester Southern and Maternity Hospital, enclosing an application for recognition as a training school for midwives under the regulations of the Board. The further consideration of the matter was adjourned, and the Secretary was instructed to ascertain meanwhile whether the application of the hospital included a request for the recognition of their certificate as a sufficient qualification under Section 11 of the Act.

6. Applications were read from registered medical practitioners for recognition as teachers under Section C (3) of the rules. The Secretary was directed to obtain further particulars from the applicants.

7. Several applications were read from ladies desiring to be trained as midwives at a nominal fee. The Secretary was instructed to refer any such applicants to the Association for Promoting the Training and supply of Midwives, 12, Buckingham Street, Strand, whence all information relative to the training and work of midwives might be obtained.

8. It was unanimously resolved on the motion of Mr. Parker Young:

That the best thanks of the Central Midwives Board be, and are hereby, given to the Privy Council for their kindness in placing office accommodation and the use of the Board Room at the disposal of the Board during the time they were without offices.

9. The "Suggestions to County and County Borough Councils" as to the working of the Act (including the delegation of powers) were further considered and amended. The Secretary was instructed to inform the county councils that the suggestions would, when finally approved, be forwarded to any council desiring a copy.

COOKING CLASSES IN ELEMENTARY SCHOOLS IN GERMANY.

The teaching of cooking in schools in Germany was first introduced by the Grand Duchess of Baden, daughter of Kaiser Wilhelm I. The first school was founded by her in Carlsruhe some four or five years ago. Here practical teaching is given, not only in cooking, but also in needlework, dressmaking, gardening, gymnastics, drawing, and designing—in short, in most branches of work useful to women. Other schools of the same stamp quickly followed this one in many large towns of Germany, the most important being the Lette Verein School in Berlin. Teachers trained in these schools give instruction at the municipal and high schools in different towns, even in the smallest, the children being compelled to learn cookery.

The classes we are about to describe are held at Kreuznach, the system being precisely that followed in the larger schools. Each class consists of twenty-four pupils, these being divided up in groups of four. Two hours once a week are devoted to each class, and every day two dishes are taught; as each day a fresh lot of pupils attend the same two dishes are taught throughout the week. Thus, each child can master some eighty or a hundred recipes in the year, the German holidays being much shorter than those in our schools. The room in which the lessons are given is very completely fitted up. At

one end of it are three stoves which are used in winter; gas rings, being cooler, are used in summer. The gas is conducted out of the room by tubes overhead. At the opposite end are three deal tables with drawers, in which are kept short knives, forks, and spoons, while hung on a rail at either end are kitchen cloths. Down one side of the room are sinks with taps of water, and utensils, such as tubs, brushes, cloths, etc., for washing-up purposes. Two of the sides of the room are devoted to cupboards, in which are kept pots, pans, saucepans, basins, and innumerable articles used in the cooking operations, while on one shelf are neatly arranged the children's exercise books and pens and ink.

The teacher's desk, and a table, on which are laid out the materials to be used at each lesson, occupy the fourth side. Before the lesson begins, a number of pots are filled with water and placed on the gas fires to heat. There being three tables and twenty-four girls, the latter arrange themselves in eights, each taking possession of a three-legged stool kept under the tables. The first part of the lesson being an oral explanation of the dish about to be cooked, the children sit down round the tables and listen attentively, for when she has finished explaining, the teacher asks them questions to see that they have understood. On a blackboard is written the lesson of the day and the price of the materials. During the oral explanations, the teacher shows them with real materials how to prepare the ingredients, such as slicing beans, stoning fruit, etc., for each dish.

Now the stools are put away, and one out of each group of four fetches the materials and bowls of water in which to wash the things. They take their knives, and, having placed a plate on a square of oilskin between each two workers so as to keep the tables as spotless as possible, the real work begins, and all hands are busy peeling, slicing, or chopping. As each thing is finished it is carefully washed and carried over to the saucepans on the fire as the time comes for each ingredient to be used. Great care is taken to sweep the tables every now and then, and when the first dish is on the fire the floors are carefully swept. This is to instil into the children habits of orderliness and tidiness.

Then comes the next dish. The same thing happens, and when that is put on the stove the children get out their note-books and pens and ink, and they again seat themselves round the tables, this time to write down to the dictation of the teacher the recipes of the dishes they have just prepared. At the end of each recipe a list of the materials required, with quantities and prices, is entered. These books are kept until the children leave school, when they are handed over to them. All the cooking taught is simple, practical, and inexpensive, so that in after-life it may be of real use to the children, who are mostly poor.

Now it is time to lay the tables, for the children are allowed to eat what they cook—except such things as jams and preserves, which are kept and used by degrees. Certain things like cakes the children are allowed to take home, but the schools being supported by the muncipality out of the rates in no case are the children made to pay for the dishes they eat or take away.

The tables being laid the food is dished up, and each quartette eats what it has cooked. The teacher often lunches with them, so as to teach them good behaviour at table, and as she herself selects the materials for the dishes (the money being refunded by the municipality) they are the best of their kind.

In the Lette Verein School in Berlin dinners are specially cooked by the pupils for the poor. The dinners are put into enormous tin vessels kept hot by steam in specially-constructed omnibuses, which are driven to particular streets in the poorest quarters. There they stand while the people bring out their vessels and carry away a capitally-cooked dinner for 20 or 30 pfennigs.

Another excellent idea of the Grand Duchess of Baden's is a contrivance for keeping the people's dinner hot. They have more time in the early morning for cooking than at midday, when, perhaps, to get backwards and forwards from their work to their house, to cook and eat their dinner they have only an hour. So the food is cooked in the early morning before they start for their work. A box has been previously made of deal, lined with flannel or felt, the lid overlapping the box, and having a couple of good fastenings to keep it as airtight as possible. The box is filled with hay and into this are packed the covered dishes (tin or china) in which the dinner of perhaps meat and potatoes, or pudding, has been placed. The lid is fastened, and when the tired worker comes home he finds a good hot meal awaiting him, for by this contrivance the food keeps really hot for hours.

We commend this idea to our own labouring classes. The cooking glasses in our Board schools might not only be made self-paying by following the example of the Lette Verein School in Berlin, and supplying wholesome meals to the poor by means of the omnibus system, but the physique of the nation might thereby be improved and many a human being saved from hunger or perhaps the public-house, not having the time or the courage to cook a meal when they arrive home hurried and tired.

ENTRANCE SCHOLARSHIPS.

Guy's Hospital Medical School.—The following Entrance Scholarships and Certificates have been awarded: Senior Science Scholarship for University Students: £50, Mr. C. W. Greene, B.A., Emmanuel College, Cambridge; Certificate to Mr. H. L. Deck, Sydney University Medical School. Junior Scholarships in Science: £150, Mr. H. A. Sanford, Guy's Hospital; £60, Mr. L. T. Baker, Dulwich College; Certificates to Mr. W. Johnson, Guy's Hospital, and Mr. V. Townrow, University College, Sheffield. Entrance Scholarships in Arts: £100, Mr. J. R. Perdran, Royal College of Mauritius; £50, Mr. S. J. Darke, Owens School, Islington; Certificates to Mr. G. B. Cockrem, King's School, Canterbury, Mr. A. N. Gullick, Felsted School, and Mr. A. G. W. Owen, University College, Bangor.

ASSOCIATION NOTICES.

COUNCIL.

NOTICE OF MEETING.

A Meeting of the Council will be held in the Council Room of the Association, at 429, Strand (corner of Agar Street), London, on Wednesday, the 21st day of October next, at 2 o'clock in the afternoon.

August, 1903. Guy Elliston, *General Secretary.*

ELECTION OF MEMBERS.

Any candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

The Library is now reopened and available for the use of members.

Guy Elliston, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

Aberdeen Branch.—The annual general meeting of this Branch will be held in the Grand Hotel, Aberdeen, on Saturday, October 17th, at 1.30 p.m.—J. F. Christie, 230, Rosemount Place, Aberdeen, Honorary Secretary.

Birmingham and Midland Counties Branch: Coventry Division.—The first annual dinner of this Division will be held at the Queen's Hotel, Coventry, on Tuesday, October 6th, at 7 p.m. After dinner the President (Dr. Milner Moore) will deliver his Presidential Address. Any member may introduce one or more medical guests. The cost per head (excluding wine) will be 6s.—E. H. Snell, Knighton House, Coventry, Honorary Secretary.

Metropolitan Counties Branch: Wandsworth Division.—The first sessional meeting of this Division will be held at Worple Hall, Wimbledon, on Thursday, October 22nd, at 8.30 p.m. The Medical Act Amendment Bill, Vaccination Resolutions, and Ethical Rules for the Division will be considered, as well as other business. Mr. Whitaker, Organizing Secretary, will attend. Members will see by the sessional card they receive that the Committee has arranged for subjects for discussion, or papers to be read, alternately at each monthly meeting in various centres during the winter months. It only remains for the members themselves, by attending these meetings, showing cases, taking part in the discussions, introducing non-members, and suggesting further topics for consideration to make them instructive and attractive. A small social dinner will precede the meeting at Clapham in November to meet Dr. Hale White, and if this is a success others will be arranged for in Wimbledon and Wandsworth in February and April respectively.—E. Rowland Fothergill, M.B., Torquay House, Southfields, S.W., Honorary Secretary.

Northern Counties of Scotland Branch.—The autumn meeting of this Branch will be held at the Grand Hotel, Elgin, on Saturday, October 17th (the hour of meeting and time table of trains will be stated on the

circular which will be sent to each member of the Branch). Agenda: Minutes of meeting held at Strathpeffer. To discuss the draft Medical Acts Amendment Bill; (2) resolutions referred to the Branch for their consideration and report: these resolutions refer to the lines the Council has urged upon the President of the Local Government Board for improving the existing Vaccination Acts: (3) a resolution passed by the Representative Meeting at Swansea referring to representation on the General Medical Council, which has also been sent to the Branch for report. The draft Act and the resolutions were published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of August 22nd; it is hoped that members will consider the Act as well as the resolutions, as they are of importance to the profession. Dr. de Watteville (Kingussie) will open a discussion on the Prophylaxis of Phthisis, and several members have promised to take part in the discussion. The Honorary Secretary will feel obliged if members who wish to read papers at this meeting would kindly intimate their intention on or before October 10th.—J. MUNRO MOIR, Honorary Secretary.

SHROPSHIRE AND MID-WALES BRANCH.—The annual general meeting of this Branch will be held at the Salop Infirmary, on Tuesday, October 13th, at 3 p.m. Members who wish to bring forward any business, to read papers, or to show cases or specimens, are requested to communicate with the Honorary Secretary not later than Wednesday, October 7th.—HAROLD H. B. MACLEOD, College Hill, Shrewsbury, Honorary Secretary.

SOUTH MIDLAND BRANCH.—The autumnal meeting of this Branch will be held at Bedford County Hospital, Bedford, on Thursday, October 14th, 1903, at 2 p.m., under the presidency of Mr. Audland (Wellingborough). Members wishing to read papers or show specimens should communicate at once with E. HARRIES JONES, Northampton, Honorary Secretary.

SOUTH-EASTERN BRANCH: REIGATE DIVISION.—The first meeting of this Division under the new Constitution will be held at the White Hart Hotel, Reigate, on Thursday, October 8th, at 4 p.m., Mr. Ernest C. Drake (Redhill) in the chair. Agenda: Minutes of a meeting held at Reigate June 18th. To decide when and where the next meeting shall be held, and to nominate a member of the Division to take the chair thereat. Papers have been promised by Mr. W. J. Walsham (Surgeon to St. Bartholomew's Hospital), Dr. W. S. A. Griffith (Assistant Physician-Accoucheur to St. Bartholomew's Hospital), and Mr. J. Smith Whitaker (Organizing Secretary to the Association). Members desirous of exhibiting specimens or reading notes of cases are invited to communicate at once with the Honorary Secretary. Dinner at 6 p.m.: charge 7s., exclusive of wine. The Honorary Secretary would be much obliged if members would kindly inform him by post-card whether they intend, if possible, to be present at the meeting, and if likely to remain to dinner. All members of the South-Eastern Branch are entitled to attend and to introduce professional friends.—W. A. BERRIDGE, Redhill, Honorary Secretary.

SOUTH-WESTERN BRANCH.—The autumn meeting of this Branch will be held at the Guildhall, Liskeard, on Wednesday, October 7th, at 3 p.m., the President, W. T. Thompson, M.D., in the chair. Luncheon (by the kind invitation of the Liskeard members) will take place at Webb's Hotel, Liskeard, at 1.15 p.m., and members who wish to attend are requested to signify their intention to Dr. W. Hammond, Liskeard, on or before October 4th. The following communications are already promised: Dr. W. Hammond: Notes and Case of Fracture of Skull. Dr. Bushnell: Note on Life-History of Malignant Disease. Mr. Paul Swain: Sequel to a Case of Ovariotomy complicated with Pregnancy. Mr. C. Hamilton Whiteford: On Ethyl Chloride as a General Anaesthetic. Gentlemen wishing to join the Association and Branch are requested to communicate with the Honorary Secretary, Mr. G. YOUNG EALES, 1, Matlock Terrace, Torquay.

SPECIAL CORRESPONDENCE.

PARIS.

Death of M. Théophile Roussel.—Is Syphilis an Accident under Employers' Liability Act?—Proposed Monument to the late Professor Nocard.—Annual Meeting and Dinner of the Continental Anglo-American Medical Society.—Vital Statistics for August, 1903.

M. THÉOPHILE ROUSSEL, Senator of the Department of La Lozère, died on September 27th, at the advanced age of 87 years. His long life was devoted to work, and his name goes down to posterity as the author of the laws for the protection of children. Théophile Roussel studied medicine at the University of Paris, was interne in the hospitals, and took his doctor's degree in 1845. In 1849 he went into politics, and was elected to the Assemblée Législative as representative of La Lozère. He was then and all his life remained a Republican. During the Empire he left public life, and practised as a physician till the restoration of the Republic, when we again find him representing the people, and supporting M. Thiers. Always attracted by social questions, he took the initiative of a proposed law on the suppression of public drunkenness in 1872. Struck by the fall in the birth-rate, and by the continued increase of juvenile offenders, Théophile Roussel came to consider the questions relating to the lot of abandoned and maltreated children as being of the highest social interest, and demanded urgent legislative measures for the future welfare of the democracy. The law of 1874 on the protection of young infants put out to nurse, and the law of 1889 on the protection of children morally abandoned and ill-treated, are the work of Théophile Roussel. In 1881 he was appointed reporter for an inquiry ordered by the Senate on Private and Public Charities: the report he drew up is most complete, and is, in fact, a standard work on the subject. On December 20th, 1896, his friends and the public bodies solemnly celebrated his jubilee in the large amphitheatre of the Sorbonne, M. Barthou, the Minister of the Interior, being in the chair. In recognition of his great public services to the State the Minister handed to him the gold medal of the Assistance Publique, and a silver medallion from the service of Inspection of Infants in the department of the Seine, on which was engraved "Pour la France." Théophile Roussel was a member of the Académie de Médecine from 1872, and of the Académie des Sciences Morales et Politiques from 1891.

An interesting case has recently been brought before the tribunal of the Seine, under the French Employers' Liability Act, with regard to accidents occurring during work. A glass-blower contracted syphilis at the works by using the blow-pipe contaminated and passed to him by another workman, and asked for an annuity of £30. For the defence it was urged that the "misadventure" constitutes a disease and not an accident. The tribunal did not give the workman the satisfaction he sought, as he did not prove that the affection was contracted during his work at his employer's; moreover, medical certificates were produced from the family physician and from the senior physician of the St. Louis Hospital stating that the young workman accused of transmitting the disease was free of all symptoms. Although the workman lost his case the tribunal none the less admits that syphilis contracted by means of a contaminated professional instrument is an accident of work if the method of the transmission of the disease can be proved.

The friends and pupils of the late Professor Nocard propose to erect a monument to his memory. For twenty-five years he worked without ceasing in his laboratory at Alfort, and made many important discoveries. Many will remember his spirited reply to Professor Koch at the International Congress on Tuberculosis in London. Subscriptions may be sent to M. Mollereau, 63, Rue de Paris, Charenton, Seine.

The annual meeting of the Continental Anglo-American Medical Society will be held at the residence of the Hon. Secretary, 1, Rue d'Aguesseau, on Tuesday, October 6th, at 5 p.m. The annual dinner will be held the same evening at the Hôtel du Palais d'Orsay, when the chair will be occupied by M. Maurice de Bunsen, Chairman of the Committee of the Hertford British Hospital.

From a table of comparative statistics recently presented to the members of the Conseil d'Hygiène in the Department of the Seine it is satisfactory to note the decrease in the following transmissible diseases during the month of August: Typhoid fever shows 144 cases in 1903, against 210 in 1901; small-pox, 45 cases in 1903, against 152 in 1901 and 31 in 1902; diphtheria, 258 cases, against 309 in 1901 and 319 in 1902. Measles reach the high figure of 376 cases.

SOUTH WALES.

University College, Cardiff.—Tuberculosis in Cattle.

THE Council of the University College, Cardiff, met on Thursday, September 24th, under the presidency of Sir Alfred Thomas, M.P., to finally consider the applications for the two Professorships rendered vacant by the resignation of Professor Dixon (Anatomy) who has become Professor of that subject in Trinity College, Dublin, and Professor Conway (Latin) who has accepted a Professorship at Owens College, Manchester. Mr. D. H. Slater, M.A.Oxon., was appointed to the Latin Chair, and Mr. D. Hepburn, M.D., C.M.Edin., to the Chair of Anatomy. The former has been Assistant Professor and Lecturer in Latin at Glasgow University since 1901, and the latter has been for many years the University Lecturer on Regional Anatomy and Principal Demonstrator on Anatomy in the University of Edinburgh. In the evening the departing Professors (Drs. A. Francis Dixon and Conway) were entertained to a farewell banquet at the Royal Hotel by the members of the Council and staff of the College. The chair was occupied by Sir Alfred Thomas, M.P., President of the College, and the vice-chair by Principal E. H. Griffiths, F.R.S.

The Cardiff and Allied Butchers' Association have passed a resolution that on and after November 1st next they will not buy bullocks without a guarantee.

CORRESPONDENCE.

DRUGGING THE OUT-PATIENTS.

Sir,—The description of out-patient work given in your leading article on the Medicinal Treatment of Disease in the British Medical Journal of September 26th draws attention anew to two points familiar to those of us who have for thirty years or more been endeavouring to get the out-patient department reformed in accordance with the dictates of common sense and of modern medical views as to the treatment of disease, the first of which is that the slipshod method described is, of course, obviously wrong, and the second is that the out-patient physicians (and surgeons?) are responsible for keeping it up. Which of them can defend the system of "rep. mist." on any grounds but those of ease and quickness, which you give, and which of them can answer the questions you ask about it except in an adverse sense? If, then, the system (1) does not conduce to the welfare of the patients, (2) does burden the finances of the institution with a load that is heavier in most cases than it ought to be; and (3) if it initiates the student attending out-patient practice into an undesirable cut-and-dry method of prescribing, while crippling any individuality in the framing of prescriptions, it stands self-condemned, and a nice ethical question arises as to how far the position of medical men who aid in carrying it on is defensible. They may urge, and truly, that the only way to become physicians and surgeons to their hospital is through service in the out-patient department, but the hope of personal advancement is hardly a sufficient plea for honourable men.

The stopping the indiscriminate supply of drugs to out-patients has long been a chief point in the demand for reform; and, personally, I am of opinion that one of the main obstacles to that and other reforms asked for by the profession is to be found in the opposition of the medical and surgical staffs of hospitals and dispensaries.—I am, etc.,

Dulwich, Sept. 26th. H. Nelson Hardy.

THE LEPROSY DISCUSSION.

Sir,—The full report of the Leprosy discussion at the Swansea meeting, which appears in this week's British Medical Journal, does not give my concluding remarks in reply to those who had taken part in it. It also gives a communication by Mr. Hillis, which was not read, and with which I make acquaintance to-day for the first time, and to which, obviously, I had no opportunity of replying. I shall, however, regard both these omissions as good fortune if you will now permit me to make reply to the discussion as it appears in your pages. I should like to do so in some detail, and to be allowed to expand considerably what I really said. The importance of the subject must plead my excuse for thus seeking to trespass on your valuable space. If I may, without seeming to presume, go a little further, I should like to ask you to open your columns to further communications from those who took part in the debate, and, indeed, to all who are interested in the question. The subject is, I think, ripe for free and full discussion, and should be threshed out. Sir Patrick Manson did me the honour to compare me to "John the Baptist, or one of the old prophets preaching in the wilderness, and no one regarding," but he is, I think, somewhat in error. The public is at present listening with much interest, and it awaits, not without some impatience, the light and guidance which it expects from our profession. There can surely be no more appropriate place for such discussion than your pages. I send you now an instalment of my reply, as I should have liked to have made it if time had allowed, and will, if permitted, finish it next week. Let me first point out a curious misprint which occurs at page 704, col. 1, line 23, which it is desirable to correct. I am made to say respecting the Funchal leper house that "*many rooms* have to be closed." It should have been that the home itself "*may soon* have to be closed."

I will now take the speakers seriatim.

Dr. Fernando, of Ceylon, is reported to have said that his experience in that island had led him to views quite opposite to my own in regard to segregation. On what grounds he based these opposed views we are not told. My memory is that he quoted several instances in which leprosy had spread to several members of the same family, and these he adduced as proofs of contagion. In my reply at the time I pointed out that examples of family prevalence in countries in which leprosy is common prove nothing as regards contagion, since it is at least equally reasonable to suspect some sort of food or, in some instances, commensal communication. I am myself fairly well acquainted with the facts as regards Ceylon, having visited the Leper House, Colombo, and also having, under the auspices of the Medical College, taken part in a public meeting for discussion of the subject.

The facts are briefly these. There is comparatively little leprosy in the island, but it is widely spread. Whilst in the adjacent island of Minicoy it attains a proportion of 150 per 10,000 and on the mainland of India of 5, in Ceylon it is only 2. It has been present more or less from very distant times, and there is no proof of either increase or diminution. It affects chiefly the regions near to Colombo; the west coast, and especially the tea plantations. It is almost unknown in the northern, but is excessive at Batticalao, a fishing port on the east coast. It is thought to be more common in the upland districts adjacent to the coast than on the coast itself. There has never been any compulsory segregation, nor, indeed, until recent years, any attempt at segregation. The present leper home, an admirably arranged institution, is almost new, and was, I believe, built under the initiative of one who is still with us, Sir William Kynsey. The medical officers assured me that nothing in the least suspicious as regards contagion had ever occurred there.

It puzzles me to see where Dr. Fernando finds in such facts any support for his belief in the efficacy of segregation or in the doctrine of contagion. How does he explain the very small prevalence in spite of the absence of precautions? If the disease were contagious in the sense in which he seems to imply, the whole peasant population of Ceylon would soon be affected, yet the ratio of prevalence remains about the same from year to year, and there are never any local outbreaks. Now these general facts appear to me to give strong support to the fish hypothesis. There is no large section of the population in Ceylon for which the use of fish as food is either forbidden or encouraged by religious creed. It is eaten by every one who can afford it, but it is dear and, in comparison with other countries, scarce. It is used as a condiment (with rice, etc.) rather than as nutriment. The shores of Ceylon do not afford for the most part good fishing grounds, and a large part of the fish which is consumed is imported in a half-salted state from India and some of the adjacent islands. Minicoy, which is reported to eat four fish meals a day, has a leprosy ratio of 150. Ceylon, which gets only a taste, when it can, to flavour its rice, has a ratio of less than 2. To this it may be added that for many centuries Minicoy has carried out segregation measures, whilst Ceylon has neglected them.

I come next to the observations of Dr. Abraham, than whom there is no British authority who has more thoroughly mastered the facts or dealt more candidly with them. I am delighted to note that he joins me in regarding what he terms the "terrible leper prisons" (Robben Island, etc.) as "monstrous" when used for the detention of cases in the early stage, and that he would on no account surrender to the tender mercies of the Cape Colony law the poor creatures who now seek refuge from it in England. He also admits that in this country we never see instances of contagion, and that his retained belief in the possibility of it is based not upon evidence, but upon theoretic considerations. With many others he believes that a bacillary disease must *ipso facto* be a contagious one. I shall discuss this point later on, and will leave it for the present. As regards the use of the expression *de novo* to which Dr. Abraham objects, I feel with him that it is an unfortunate one and I employ it only because we have no better. It is now I should think well understood by all who engage in this discussion that *de novo* in reference to leprosy means simply that the disease had in that instance originated independently of either inheritance or exposure to risk of contagion. We might perhaps use the term "sporadic" for such cases, but I doubt whether it would be an improvement. It would probably suggest much greater rarity than is the fact as regards the cases which we now call *de novo*. A large majority of the cases occurring in South Africa are in the sense in which I have used the words *de novo* ones. It might perhaps convey a yet clearer impression of the facts to say that leprosy occurs sporadically over the whole of South Africa; but in other countries, where the disease has been longer established and is more common, the term might be objected to, although in these latter there still are plenty of cases which, so far as the evidence goes, are *de novo*. After all it is a matter of words only, for Dr. Abraham and all other observers admit, I believe, that the cases which have been so designated are of frequent occurrence in all countries where leprosy is known.

They are, I chance to know, at present giving much concern to our contagionist friends in Norway. There, as elsewhere, perverse patients will persist in asserting that they have had no leper progenitors, nor ever chanced to meet anybody who was suffering from the disease.

From Dr. Abraham's own arguments, I may turn to the very interesting letter which he read from the pen of our mutual friend, Dr. Ehlers. Dr. Ehlers, as all concerned in the leprosy question know well, has travelled much in pursuit of knowledge. He has visited Iceland more than once; he knows Norway, and he is at home in Crete and other Mediterranean haunts of leprosy. A fearless love of truth and a willingness to record all facts, whether for or against their own theories, are, I think, characteristics of the Scandinavian mind, and it is possible that some who read Dr. Ehlers's letter may think that he is a witness who gives evidence against his own client. He presses me to explain what kind of fish I suspect, and in doing so mentions several different ones which he says that he has found in different countries accredited as causing leprosy in those who eat them. The Icelanders, he says, attribute it to halibut; the Greek islanders to tunny, and the negroes of the Danish West Indies to the "king fish." Now these facts exactly fit my theory, for I have always held that it is not any particular species of fish, but that all fish food in a state of commencing decomposition is to be suspected. In different countries it will always be that kind of fish which is most abundant, most eaten by the poor, and most often "cured" by salting or drying.

Dr. Ehlers challenges me to define the term "badly-cured" fish. Well, I mean fish so imperfectly dried or salted that it will not keep sweet. It was to such, I presume, that Dr. Ehlers himself referred when he wrote of the Icelanders: "But their drying of the fish is insufficient. The fish keeps moist, and is finally eaten in many places in an absolutely half-spoiled condition" (see back page 703). I mean also such fish as is described by Dr. Danielssen in the quotation which I have given (see same page).

As regards improvements in the method of fish curing, Dr. Ehlers concurs with what I have stated so far that he writes: "It is clear that the fish is better treated, better cured, now than a hundred years ago." On the authority of one of the largest importers of Norwegian fish I am informed that within much more recent periods very great improvement has taken place.

I need not follow Dr. Ehlers's statements as to the recent decrease of leprosy in Iceland, or attempt to controvert his inference that such decrease has been caused by a leper law passed in 1899. This question was dealt with in my address, and the facts as to Norway and Iceland are of the same character as those in many other places. Leprosy is now well known to disappear before "advancing civilization." If in the meantime leper homes have been established, the advocates of segregation credit them with the improvements, but it is always equally probable that it has really been caused by improvements as to food. Norway and Iceland are advancing in civilization and their food supply is improving.

Dr. Hansen, for Norway, and Dr. Ehlers, for Iceland, claim that the recent diminution has been brought about by segregation measures. On the other hand I have claimed that they may be credited to "advancing civilization" in other words to the diminished consumption of bad fish. How do these authorities explain the disappearance of the disease from the Orkneys and Shetlands where no adequate segregation measures were adopted? How do they explain the utter failure of such measures in Minicoy, the Sandwich Islands, and many other places?

We come next to Dr. Sandwith's remarks. He gives us very important facts gathered in his long experience of disease in Egypt. He tells us that leprosy is not now dreaded as contagious, whereas in Mohammed's time the injunction went out to avoid a leper as you would a roaring lion. Other observers, notably Zambaco Pasha, had previously made similar statements informing us that throughout Egypt lepers were accustomed to mix freely with their friends.

Now leprosy was once so common in Egypt that it was called the offspring of the Nile, and was known in neighbouring countries as the "Egyptian disease." It is now so rare that observers who had not been behind the scenes have denied its existence. What has led to its decadence, and at the same time to the remarkable change of creed as to its being contagious? Clearly not segregation, for there has been no approach to it, and the contagionist may indeed be perplexed to suggest any reason why the disease should not still be increasing. In Alexandria and Cairo and at Port Said it has free play, and might do its worst, but nothing follows. The believer in the fish hypothesis is, however, not wholly at sea. He suggests that Egypt has come under the influence of two religious creeds, both of which are adverse to the consumption of badly-cured fish. The Coptic Christian has a third of his year devoted to rigid fasts, during which the use of fish is forbidden; and the Muslim is a cleanly feeder, who prefers vegetables, and for the most part scrupulously avoids all tainted articles. Thus we have the converse of what happens in Roman Catholic communities, where the creed leads to the consumption of fish in whatever condition it can be obtained, and with the opposite result. Thus St. Mark and Mohammed have between them almost driven leprosy out of Egypt. They have encouraged agriculture and repressed the trade in fish, their precepts having in long lapse of years had all the effects of a preferential tariff. Dr. Sandwith puts the ratio of leprosy in Egypt at 4 per 10,000, but this is far higher than any facts in my possession justify, and I shall be much interested in learning what regions are included. He bears testimony to the fact that much fish is still eaten, and that not infrequently it is in bad condition, thus well accounting for what leprosy still exists.—I am, etc.,

London, W., Sept. 29th. JONATHAN HUTCHINSON.

SIR,—I regret I was not able to get to Swansea to join in the discussion on leprosy, as I had intended. That is my reason for venturing to trouble you with this letter. I have so recently dealt with the whole subject of leprosy[1] that I need not go into details in this place.

I have read Mr. Hutchinson's latest pronouncement on the etiology of leprosy.[2] He has not proved that the fish theory is right. Nor has he shown that leprosy is not contagious; on the contrary, for his commensal communication is merely calling contagion by another name.

As to the *de novo* theory, which was well to the fore in pre-bacteriological days, when pathogenic micro-organisms were undiscovered, I thought it had long been relegated to the limbo of things done with.

According to Mr. Hutchinson apparently, lepers who deny ever having eaten fish are not to be believed, but their statement as to never having seen a leper must be taken as an incontrovertible fact. Some time ago I called at a house to look up a leprous case that I wished to keep under observation. I was informed that the patient had moved. Now let us suppose my informant, who knew nothing about the nature of the case, were to develop the disease at some future time (a very unlikely thing in the circumstances, I may add) and were to be questioned as to having been in contact with a sufferer, the answer would certainly be a stout denial. But as to fish eating, the answer would as surely be a ready acquiescence. What would such evidence be worth?

I cannot agree either with Mr. Hutchinson's remarks as to the general trend of observation in Norway being still opposed to belief in contagion. They do not accord with the opinions expressed by Dr. Lie of Bergen in conversation with me on the spot.

I agree with Mr. Hutchinson on one point, and that is the injustice of adding to the misfortune of leprosy the utter misery of forcible and lifelong seclusion from family and friends. This is especially dreadful in some cases—detention on Robben Island, for instance; and perhaps more so for the family and friends than for the lepers themselves, for in advanced nodular cases the latter often become apathetic. A European I saw at the receiving hospital near Honolulu, when I visited the Hawaiian Islands, did not appear to mind being there very much. The recent scandal in connexion with a case of leprosy in New South Wales demonstrates what cowards the Public Health Acts are tending to make of people generally in the face of contagious diseases, both in our Colonies and at home. This is all the more anomalous seeing that nothing whatever is done in the way of dealing with syphilis, a disease which, as far as my observation goes, is on the increase in London since the South African war.

Lepers should not be dealt with on hard-and-fast stereotyped lines all the world over, but every case should be dealt with on its merits, and all the circumstances taken into account. Forcibly to drag Europeans, or those of European descent, especially in the early stages of the disease, to an island for the term of their natural life, as appears to be the case in South Africa, is unworthy of a British colony in the twentieth

[1] *Quarterly Review*, April, 1903, p. 384.
[2] BRITISH MEDICAL JOURNAL, September 26th, 1903.

century, and an outrage on humanity. Above all, the public needs enlightenment with regard to leprosy, which has acquired a dread significance among us, owing mainly to well-known passages of the Old Testament.

In my mind there is no doubt that leprosy is an infective contagious disease due to the bacillus leprae discovered by Armauer Hansen.—I am, etc.,

Upper Gloucester Place, N.W., Sept. 27th. GEORGE PERNET.

NURSING AS AN OCCUPATION.

SIR,—The editorial article in the BRITISH MEDICAL JOURNAL of August 8th on Nursing as an Occupation, and the correspondence to which it has given rise, deserve the careful consideration of all who are interested in the nursing of the sick. That so much of that correspondence should have turned on the question of the State registration of trained nurses was almost inevitable, for until nurses are granted powers to organize and regulate their profession, and so can attack the root of the troubles which at present beset their work, the discussion of side issues can serve no useful end.

Many misconceptions have, in the past, obscured the real issues which are involved in the demand of trained nurses for legal registration. It is well, therefore, at the outset, to make it plain that the movement is primarily an educational one, although it undoubtedly has other aspects.

In any discussion upon nursing matters it is important to remember that nursing, in the modern acceptation of the term, has been evolved by the immense advances made by medicine and surgery during the last half century, and that it has grown in importance and usefulness coincidently with the development of those sciences. It has, therefore, become necessary that the modern nurse must be educated on lines which are capable of developing her powers of scientific accuracy in observation and report, as well as her technical skill and her personal responsibility and conscientiousness in the fulfilment of her duties.

The necessity for skilled assistance in the execution of modern medical and surgical methods of treatment has caused the great and ever-growing demand for women specially educated to undertake and carry out efficiently such responsible work. But here we are at once confronted with the fact that the term "trained nurse" has at present no definite meaning, seeing that there is no minimum standard to which such nurses are required to attain, and no uniformity whatever either in the length or the methods or the subjects of nursing education; so that, as a matter of fact, any woman can to-day describe herself and can pretend to act as a trained nurse.

Those who desire that a more uniform and complete system of education for nurses should be adopted are often accused of advocating instruction which is merely theoretical; but the advocates of nursing reform are possessed of an accurate knowledge of the subject, of the present position of nursing affairs, and of the great and growing need for such reform. They realize keenly that efficiency demands the production of the best practical workers, but also that these cannot be obtained unless they possess a sound foundation of theoretical knowledge; and, moreover, wide experience has proved not only that practical ability must be based on such theoretical knowledge, but also that the latter should be acquired before the nursing pupil begins her practical or clinical training.

It is believed by those who have most carefully considered the question that nursing education in the future can only be properly systematized in this country by obtaining an Act of Parliament which would provide for the formation of a Central Nursing Council, representative of all the interests involved, which would define and enforce a minimum and uniform curriculum of nursing education throughout the United Kingdom; which would appoint examiners, and confer a recognized qualification in nursing upon those who attain to the required standard of knowledge and efficiency; which would maintain a public Register of the nurses so qualified, and would possess the power to remove from that Register the name of any nurse who proved herself unworthy of professional trust; thus maintaining the professional discipline which is every year becoming more and more essential amongst the more than 70,000 women engaged in nursing the sick.

A Bill on these lines is now being drafted by the Society for the State Registration of Trained Nurses, and will, at an early date, be sent to medical and nursing bodies throughout the country inviting their consideration and suggestions concerning it; and the Society is hopeful that the measure will receive sympathetic attention, because there is reason to believe both that the value of trained nursing is generally recognized by the medical profession, and that the consequent need of efficient education and proper organization of nurses under a central disciplinary body is becoming more and more apparent.

It is asserted by a correspondent of the BRITISH MEDICAL JOURNAL that uniformity of nursing education is impossible, because this would mean the virtual extinction of all hospitals and institutions not recognized as training schools, and would therefore inflict great hardships on many small provincial hospitals which are doing invaluable work for the sick poor. This argument not only ignores the broad grounds of public benefit and professional efficiency, but from some personal knowledge of the subject I do not consider that these fears are even well-founded. On the contrary, it is probable that not only would the resources of all general hospitals capable of giving adequate instruction in nursing be more completely utilized than they are at present, but the valuable clinical field afforded both by the special and smaller provincial hospitals which are now too often used for partial and insufficient training, could easily be made available for the better and more complete education of trained nurses. Indeed, the system of training nurses in the future should provide for the co-operative classification of the medical charities. It is becoming more and more apparent that with the modern and systematic arrangement of cases, patients received into the general hospitals for the most part suffer from ordinary medical or surgical disease or injury; whilst a nurse's knowledge to be adequate requires that she should be also trained in the care of infectious, obstetric, and other special cases. Consequently, a system of education which provides for the co-operation of groups of hospitals as nurse-training schools offers the ideal educational method for the future; and thereby both the usefulness and the reputation of special and small general hospitals would be not diminished, but greatly increased.

When nursing education is controlled by a Central Nursing Board, it appears probable that the course of nursing education would fall into three main divisions; for example, there would be preliminary training schools where the theoretical principles underlying the practice of nursing would be taught; such, for instance, as elementary anatomy, physiology, and bacteriology, personal and domestic hygiene, domestic science, dietetics, the preparation of practical appliances required for the treatment of the sick, the practice of bandaging, and the best aseptic methods of preparing instruments and dressings.

Incidentally, a question which I trust will soon receive the attention of the medical schools, is, whether the present education of the medical student prepares him—as he certainly should be prepared—to direct and supervise the work of the nurses who will, in future, act as his assistants, in the best methods of practical care of the sick. A quarter of a century ago medical students discharged many of the duties which nurses now carry out in the hospital wards, and they thus learnt by practical experience how the details, which they would be subsequently called upon to order in private practice, should most efficiently be performed. Whilst it does not fall into the department of the man of science to perform such duties, it is surely desirable that he should be expertly conversant with them, and thus be capable of instructing and supervizing any subordinate officer, either medical or nursing, in all the details involved in the care of the patients for whom he is responsible. Is it right or dignified that those medical students of the present day who realize their want of acquaintance with such methods should be compelled to depend on the goodwill of matrons or sisters for any instruction they desire in important practical details of their professional work? I confess that it appears to me that this is a very important matter, and that it represents a point at which medical and nursing education converge, and where they could be usefully conducted along the same lines in preliminary schools.

The next and the most important step in the education of a nurse would be practical instruction in hospital wards in the actual care of the sick; and, finally, in order to qualify those who desire higher posts in the nursing world, post-graduate courses are undoubtedly required in which special instruction both in the art of teaching and in the details of hospital superintendence would be given by qualified instructors. It is also essential that trained nurses engaged in private and in district nursing, and in other branches of the work, should be

enabled to obtain post-graduate instruction, and so keep in touch with modern improvements and methods.

In short, therefore, preliminary clinical and post-graduate training is required in order to organize modern nursing education in the best and most complete manner.

Space will not permit of any exhaustive consideration of the industrial aspect of this question, but it must be pointed out that the present condition of affairs is cruelly unjust to well-trained nurses. Not only have they to compete industrially on equal terms with the half-trained or wholly ignorant women who are able to assume the same title as themselves, but they have also to bear the public distrust occasioned by the behaviour of many of such women. A black list, now in my possession, shows a most painful and constantly-increasing record of women posing as nurses who have been convicted of various criminal offences ranging from theft to murder.

It must not be overlooked that the educational aspect of the nursing question is keenly appreciated both in our Colonies and in the United States of America. In the latter, indeed, preliminary and post-graduate courses are already in operation in connexion with many educational institutions. And in three of our Colonies and in four of the American States registration has been enacted by law. In New Zealand and Victoria a minimum curriculum has been defined, and uniform nursing examinations are conducted, the subsequent registration of successful candidates being in the former case undertaken by the State, and in the latter by a voluntary professional authority. In New South Wales it is proposed that Parliament at an early date should consider similar legislation, and in Cape Colony and Natal Acts of Parliament have been passed providing for the education and registration of trained nurses. It is therefore earnestly to be hoped that the United Kingdom, which can fairly claim to have been the birthplace of modern nursing, will not much longer lag behind its daughter nations in the promotion of nursing reform.—I am, etc.,

ETHEL G. FENWICK,
President, International Council of Nurses.

Upper Wimpole Street, W., Sept. 28th.

SIR,—Your article upon Nursing as an Occupation,[1] and the subsequent letters point out clearly the present chaotic condition of the nursing community, and therefore emphasize the need of State registration.

This term I take to include not only the actual Register published under State control, but also the construction of a uniform curriculum of nursing education, the appointment of a public examining body, and the creation of a central controlling and disciplinary authority.

The measure is perhaps more urgently required on behalf of nurses trained in the smaller provincial than in the larger schools. The certificate from the latter (which are few and well-known) carries its own recommendation, whereas the well-trained nurse from the small county hospital, little known outside its immediate neighbourhood, is too often the one who suffers injustice, not only in competition with her sisters from the well-known hospital, but even more so with women trained for a few months at some cottage hospital of imposing title.

As to the difficulty of fully training nurses in the smaller schools, may I point out that this can be easily overcome by affiliating the smaller provincial hospitals (for nursing purposes) with those for children, and special diseases, in the same neighbourhood? This plan of supplementing different branches of work is already carried out successfully in several institutions—thus, the Seamen's Hospital, Greenwich, sends its nurses for women's work to Soho.

As matron of a provincial and special hospital I do not speak without knowledge as to the necessity of a "hall-mark," such as State registration, for nurses; not only for their own sake, but also to prevent grievous injury to the sick, and the fraudulent representation of themselves as nurses by unscrupulous persons who thus impose upon the general public.

I get numberless applications from women anxious for "a few months' training so that I can earn my living as a nurse without having to waste three years in a general hospital."[2] A few weeks ago I had an application for holiday duty from a self-styled nurse whose one qualification appeared to be the proud possession of "some indoor uniform, a cloak, and a bonnet"!—I am, etc.,

Bournemouth, Sept. 25th. HELEN TODD.

[1] BRITISH MEDICAL JOURNAL, August 8th.
[2] A quotation from a would-be probationer's application.

THE CAUSE OF CONSUMPTION IN CHILDHOOD.

SIR,—On page 750 of the BRITISH MEDICAL JOURNAL of September 26th you refer to the interesting researches of Dr. Dieudonné, from which he concludes "that the great frequency of consumption in children is largely due to the fact that parents in general, and especially those of the poorer classes, allow their young offspring to crawl about the floors." I beg to refer you to my annual report on the health of the Borough of Southend-on-Sea for the year 1901, page 52, where, in commenting upon tuberculous diseases, I wrote as follows:

"I have already urged the importance of notification of pulmonary phthisis, but I will here bring forward two weighty additional arguments in favour of this important preventive measure:

"(*a*) Where, through want of knowledge, a consumptive spits carelessly about the floors, *crawling infants run innumerable risks of being infected through small cuts or cracks in the hands.* Instances of such infection have come under my personal observation.

"(*b*) A milker may be a consumptive. It is, unfortunately, a common habit for a milkman to spit on his hands preparatory to milking. *The introduction of tubercle bacilli into the good milk of an innocent cow may thus be brought about.*"

I have italicized the two important points, and it will be noted that the first is identical with the conclusions arrived at by Dr. Dieudonné two years later.—I am, etc.,

J. T. C. NASH,
September 27th. Medical Officer of Health for Southend-on-Sea.

THE RÔLE OF EYESTRAIN IN CIVILIZATION.

SIR,—"When I use a word," Humpty Dumpty said in rather a scornful tone, "it means just what I choose it to mean—neither more nor less." Your readers may judge for themselves whether Dr. George M. Gould has "gone one better" than Humpty Dumpty and has applied his method to the facts of the lives of great men, but his adaptation of the phraseology of Macbeth and conversion of *incarnadine* from a verb into an adjective proclaim him a Humpty Dumpty-ite and more, for the Master is recorded to have said "adjectives you can do anything with, but not verbs."—I am, etc.,

September 26th. JABBERWOCKY.

P.S.—"Impenetrability, that's what I say."

*** Readers will doubtless remember Humpty Dumpty's explanation that "I meant by Impenetrability that we've had enough of the subject."

FELLOWSHIP OF THE ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

SIR,—Dr. Cadell's letter in the BRITISH MEDICAL JOURNAL of September 26th has called my attention to a communication in the JOURNAL of September 19th from Mr. S. Wesley Wilson, who was, I believe until recently, the Registrar of the Irish Branch of the General Medical Council, and therefore ought to have some acquaintance with the Medical Acts. Mr. Wilson's "administrative" bogey is effectually disposed of by the Medical Act, 1876, 39 and 40 Vict., cap. xli.—I am, etc.,

Edinburgh, Sept. 28th. CHARLES FREDERICK KNIGHT, M.D.

THE F.R.C.P., M.R.C.P.EDIN.

SIR,—Many of your readers will doubtless remember the very amusing speech on "Trusts" made by the Hon. Mr. Horace Porter at the last annual dinner of the Medical Society of London, wherein he jocularly congratulated the medical profession on being safe from such a bogey. Mr. Porter did not reckon with our Scotch confrères, for in your last issue appears a summons from one of them calling the clansmen together to form a "Trust" against the hated Saxon, who here, in their own London, have presumed to set up in practice. And, lest his Scotch "Trust" be too weak, he proposes to absorb the smaller Irish "firms," and so force the Saxon into professional bankruptcy. Many "small traders" from the Colonies have dared (!) to join "the struggle for existence" here in London. Why not press them into the "close corporation" and so make the "ring" complete?

Verily, the idea of a united Empire of Greater Britain spreads fast, but it evidently has not yet reached Manchester Square, W. I am, etc.,

DONALD ARMOUR, M.B.(TOR.).

Harley Street, W., Sept. 28th.

SIR,—I would suggest to Dr. Dutton the advisability of forming an association of Fellows of the Royal Colleges of

Edinburgh with a view to safeguard their interests, and at the same time promote a fraternal spirit. Much, too, might be done in the way of endowment of lectures, as at the London Colleges.—I am, etc.,

J. Dickinson Leigh, M.D., F.R.C.S.E.

Cockton Hill, Bishop Auckland, Sept. 28th.

THE WILLIAM CADGE MEMORIAL.

Sir,—Will you kindly allow me to supplement the first list of subscribers to the above by the following names which were unfortunately omitted:

Mr. Butlin, Harley Street. Dr. Elliston, Ipswich.
Dr. Fielding, Norwich. Dr. Watson, Norwich.

—I am, etc.,

Norwich, Sept. 24th. Michael Beverley, *Treasurer*.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

THE INDIAN MEDICAL SERVICE.

We have received, by the courtesy of Surgeon-General Sir William Hooper, the following memorandum on the position of officers, to be appointed to His Majesty's Indian Medical Service, showing the alterations in the conditions of service:

India Office, October, 1903.

1. This memorandum is based on the regulations in force at the present time. They are subject to any alterations that may be determined on.

Passage to India.

2. Officers on appointment are, when possible, provided with passage to India by troop transport; when such accommodation is not available, passage at the public expense is provided by steamer, or a passage allowance granted, if preferred. A charge for messing during the voyage is made at the rate of 2s. a day. This payment does not include the cost of liquors, which are charged for as extras.

3. Any officer who may neglect or refuse to proceed to India if ordered to do so within two months from the date of leaving Netley, or within 14 days of the termination of his hospital appointment if the Secretary of State for India has permitted him to hold one, will be considered as having forfeited his commission, unless special circumstances shall, in the opinion of the Secretary of State in Council, justify a departure from this regulation.

Pay Previous to Arrival in India.

4. The rate of pay drawn by Lieutenants of the Indian Medical Service previous to arrival in India is 14s. a day, but a Lieutenant (1) who has been permitted by the Secretary of State to hold a hospital appointment will receive no pay while holding it: (2) who is detained by illness in this country will be paid at the rate of £200 a year from the date on which he would otherwise have embarked until the date of embarkation, and at the rate of 14s. a day during the voyage to India. (For rates subsequent to their landing in India, see paras. 16, 17, and 18.)

Pay at the above rate is issued in this country up to the date of embarkation, and an advance of two months' pay at the same rate is also made prior to embarkation, which is adjusted in India in accordance with the rate laid down in para. 16.

Grades and Precedence.

5. The grades of Officers in the Indian Medical Service are six in number, namely:

1. Surgeon-General.
2. Colonel.
3. Lieutenant-Colonel.
4. Major.
5. Captain.
6. Lieutenant.

Promotion.

6. A Lieutenant's Commission dates from the day on which his course of instruction commences.

7. A Lieutenant may be promoted to Captain on completion of three years' full-pay* service from date of first Commission, but after completing 18 months' service, and before promotion to the rank of Captain he will be required to pass an examination in military law and military medical organization, the result of which may affect his promotion.

8. A Captain is promoted to Major on completion of 12 years' full-pay* service.

9. A Major is promoted to Lieutenant-Colonel on completion of 20 years' full-pay* service.

* See, however, para. 42.

10. All promotions from the rank of Lieutenant-Colonel to that of Colonel, and from the rank of Colonel to that of Surgeon-General, are given by selection for ability and merit.

11. On appointment as Honorary Physician or Honorary Surgeon to His Majesty an Officer below the rank of Colonel is promoted to that rank, remaining supernumerary until absorbed.

12. For distinguished service in the field an Officer of the Indian Medical Service may receive substantive or brevet promotion.

Tenure of Office in Administrative Grades.

13. The tenure of office of Surgeon-Generals and Colonels is limited to five years.

14. Colonels, if not disqualified by age, are eligible either for employment for a second tour of duty in the same grade, or for employment in the higher grade of Surgeon-General by promotion thereto.

15. Absence on leave in excess of eight months during a five years' tour of duty involves forfeiture of appointment.

Pay and Allowances.*

16. The following are the monthly rates of Indian pay drawn by Officers of the Indian Medical Service from the date of their arrival in India:

Rank.	Unemployed Pay.	Grade Pay.	Staff Pay.	In Officiating Medical Charge of a Regiment.	In Permanent Medical Charge of a Regiment.
	Rs.	Rs.	Rs.	Rs.	Rs.
Lieutenant	420	350	150	425	500
Captain	475	400	150	425	550
,, after 5 years' service ...	475	450	150	545	600
,, after 7 years' service ..	—	500	150	575	650
,, after 10 years' service ...	—	550	150	625	700
Major	—	650	150	725	800
,, after 15 years' service ...	—	750	150	825	900
Lieutenant-Colonel ...	—	900	350	1,075	1,250
,, ,, after 25 years' service	—	900	400	1,100	1,300
Lieutenant-Colonel specially selected for increased pay ..	—	1,000	400	1,200	1,400

Notes.—*a.* Unemployed pay is drawn by Officers of less than 7 years' service who are not holding officiating or substantive charge of native regiments. Officers of more than 7 years' service draw grade pay alone when unemployed. Staff pay is the pay of a command, and is drawn in addition to grade pay.

b. Horse allowance is granted to Officers in substantive charge of cavalry regiments at the rate of Rs. 90 a month to Lieutenant-Colonels and Majors, and Rs. 60 a month to Captains and Lieutenants.

17. The principal administrative appointments are held by Colonels and Surgeon-Generals on the following consolidated salaries:

Colonels, from Rs. 1,800 to Rs. 2,250 per mensem.
Surgeon-General - 2 @ Rs. 2,200 ,,
,, 2 @ Rs. 2,500 ,,
,, 1 @ Rs. 3,000 ,,

18. Specialist pay at the rate of Rs. 60 a month is granted to officers below the rank of Lieutenant-Colonel who may be appointed to certain posts.

19. The salaries of other substantive medical appointments in the Civil and Military Departments are consolidated, and vary from Rs. 400 to Rs. 1,800 per mensem.

20. Qualified Officers of the Medical Service are also eligible for appointments in the Assay Department. The salaries of these appointments are from Rs. 600 to Rs. 2,250 per mensem.

21. Officers are required to perform two years' regimental duty in India before they can be considered eligible for civil employment.

22. Except in the administrative grades, and in certain special appointments, medical officers are not debarred from taking private practice, so long as it does not interfere with their proper duties.

* Note to paras. 16 to 20.—Under present arrangements, officers of the Indian Medical Service who are not statutory natives of India receive exchange compensation allowance, to compensate them for the fall of the value of the rupee. The allowance consists of an addition to their salaries (subject to certain limitations) equal to half the difference between their salaries converted at (1) 1s. 6d. the rupee, and (2) the average market rate for each quarter.

23. No Officer, however employed, can receive any staff allowance in addition to the pay laid down in para. 16 unless he has passed the examination in Hindustani known as the "Lower Standard." The passing of this examination does not of itself bring any increase of pay to an officer, unless appointed to a substantive or officiating charge; but failure to pass disqualifies an officer, even when holding such substantive or officiating charge, from receiving any portion of the staff allowances of the appointment.

24. Surgeon-Generals and Colonels, on vacating office at the expiration of the five years' tour of duty, are permitted to draw *in India* an unemployed salary of Rs. 1,200 per mensem in the former, and Rs. 900 in the latter case, for a period of six months from the date of their vacating office, after which they are placed while unemployed on the following scale of pay:

	Surgeon-General. Per diem. £ s. d.	Colonel. Per diem. £ s. d.
After 30 years' service on full pay...	2 5 0	1 14 0
,, 25 ,, ,, ...	2 5 0	1 10 0
,, 20 ,, ,, or on promotion, should this period of service not be completed...	2 0 0	1 8 0

LEAVE RULES.

(*Paras.* 25 (2) *to* 29 *apply only to Officers in Military Employ.*)

25. Officers of the Indian Medical Service, below the rank of Colonel, may be granted:—

(1.) Privilege leave under such regulations as may from time to time be in force.

(2.) Leave out of India, for no longer period than one year, capable of extension to two years' absence from duty, on the following pay:—

	£
After arrival in India, on first appointment ...	200 a year.
After the commencement of the 5th year's service for pension	250 ,,
Ditto, ditto, 10th ditto	300 ,,
Ditto, ditto, 15th ditto	400 ,,
Ditto, ditto, 20th ditto	450 ,,
Ditto, ditto, 25th ditto	500 ,,

(3.) Leave in India, but for the period of one year only, on full military pay and half the Staff salary of appointment.

26. No extension of leave involving absence from duty for more than two years, whether taken in or out of India, can be granted except on specially urgent grounds and without pay.

27. An officer unable on account of the state of his health to return to duty within the maximum period of two years' absence, unless he is under para. 26 specially granted an extension of leave without pay, is placed on temporary half pay or the retired list, as the circumstances of the case may require. An officer is also liable to be placed on half pay or the retired list should his health require an undue amount of leave, whether in or out of India.

28. Leave may be granted at any time, but solely at the discretion of the civil or military authorities in India under whom an officer may be serving.

29. An officer on leave, whether in India or out of India, is required to rejoin at once on being recalled to duty, unless certified by a Medical Board as unfit to do so.

30. Officers of the Administrative Grades may be granted one period of leave not exceeding eight months during their tenure of appointment.

31. Extra furlough may be granted to Officers desirous of pursuing special courses of study at the rate of one month's furlough for each year's service up to 12 months in all.

HONOURS AND REWARDS.

32. Officers of the Indian Medical Service are eligible for the military distinction of the Order of the Bath, and for other orders, British and Indian, and for good service pensions.

Six of the most meritorious Officers are named Honorary Physicians, and six are named Honorary Surgeons to His Majesty.

RETIRING PENSIONS AND HALF PAY.

33. Officers of the Indian Medical Service are allowed to retire on the following scale of pension, on completion of the required periods of service:

	Per Annum. £
After 30 years' service for pension...	700
,, 25 ,, ,, ...	500
,, 20 ,, ,, ...	400
,, 17 ,, ,, ...	300

34. Service for pension reckons from date of first commission, and includes all leave taken under the rules quoted in paras. 25 to 30. (*See also* para. 42.)

35. A Surgeon-General, after three years' active employment in India in that appointment, is entitled to retire upon a pension of £350 per annum, in addition to that to which he may be entitled under the above scale.

36. A Colonel is entitled, after three years' active employment in India in that appointment, to retire upon a pension of £125 per annum, in addition to the pension to which he may be entitled under the above scale, and after five years of such employment on an additional pension of £250 in all.

37. In each of the above cases stated in paras. 35 and 36 eight months' absence on leave is allowed to count towards actual service in those grades. (*See* para. 30.)

38. A Surgeon-General or Colonel who has completed his term of service and has reverted to British pay may reside in Europe, at the same time qualifying for higher pension.

39. With a view to maintain the efficiency of the service all officers of the rank of Lieutenant-Colonel and Major are placed on the Retired List when they have attained the age of 55 years, and all Surgeon-Generals and Colonels when they have attained the age of 60 years. But a Lieutenant-Colonel who has been specially selected for increased pay, if he attains the age of 55 years before he becomes entitled to the pension for 30 years' service, may be retained until completion of such service; and in any special case, where it would appear to be for the good of the service that an officer should continue in employment, he may be so continued, subject in each case to the sanction of the Secretary of State for India in Council.

40. Officers placed on temporary or permanent half pay under para. 27 are granted the British rate of half pay of their military rank as under:

Rank.	Rates of Half Pay. Per Diem. s. d.	Per Annum. £ s. d.
Lieutenant-Colonel	11 0	200 15 0
Major	9 6	173 7 6
Captain	7 0	127 15 0
Lieutenant	3 0	54 15 0

Officers cannot retire *in India* on half pay (No. 45, February 28th, 1865.)

INVALID PENSIONS.

41. An officer who has become incapacitated for further service in India on account of unfitness caused by duty may, after he has been two years on temporary half pay, be granted an Invalid Pension on the following scale:—

	Per Annum. £
After 16 years' pension service	272
,, 15 ,, ,, ,, ...	252
,, 14 ,, ,, ,, ...	232
,, 13 ,, ,, ,, ...	212
,, 12 ,, ,, ,, ...	192

42. Time (not exceeding one year) passed on temporary half pay reckons as service for promotion and pension, in the case of an officer placed on half pay on account of ill-health contracted in the performance of military duty.

43. Officers of the Indian Medical Service are liable, after retirement on pension before completing 30 years' service, to recall to military duty in case of any great emergency arising, up to 55 years of age.

WOUND PENSIONS.

44. Officers are entitled to the same allowances on account of wounds received in action and injuries sustained through the performance of military duty otherwise than in action as are granted to combatant officers of His Majesty's Indian Military Forces holding the corresponding military rank.

FAMILY PENSIONS.

45. The claims to pension of widows and families of officers are treated under the provisions of such Royal Warrant regulating the grant of pensions to the widows and families of British officers as may be in force at the time being.

46. The widows and families of officers are also entitled to pensions under the Indian Service Family Pension Regulations, for the benefits of which all officers must, as a condition of their appointment, subscribe from the date of their arrival in India.

In the following table we have placed side by side the rates

of pay under the old and the new regulations, for purposes of comparison:

Rank.	Old.		New.	
	Pay.	Subsistence Rate Charges.	Pay.	Subsistence Rate Charges.
	Rs.	Rs.	Rs.	Rs.
Lieutenant	300	450	420	560
Captain	500	450	475	560
,, after 5 years' service...	450	560	475	700
,, after 7 years' service...	450	560	525	936
,, after 10 years' service...	500	560	550	700
Major	640	800	750	800
,, after 15 years' service...	675	800	750	900
Lieutenant-Colonel	850	1,000	900	1,250
,, ,, after 25 years' service	—	—	900	1,300
,, ,, specially selected for increased pay	—	—	1000	1,400

SURGEON-COLONEL J. RICHARDSON, retired, Indian Medical Service is appointed Honorary Physician to His Majesty, *vice* Surgeon-General W. R. RICE, C.S.I., deceased, September 26th.

Lieutenant-Colonel ROBERT GEORGE MATHEW, late of the Bengal Establishment, died in London on September 21st, aged 62. Entering as Assistant-Surgeon, October 2nd, 1865, he became Brigade-Surgeon, March 18th, 1890, retiring the same year.

The death is announced of Captain PERCY ALFRED BROWNE, M.B., as having occurred at Banuu on September 5th. He joined as Lieutenant, June 28th, 1900, and was made Captain, June 28th, 1903.

ROYAL NAVY MEDICAL SERVICE.

FLEET SURGEON J. P. J. COOLICAN has been placed on the retired list, September 23rd. His commissions are thus dated: Surgeon, August 21st, 1883; Staff Surgeon, August 21st, 1895; and Fleet Surgeon, August 21st, 1903.

The following appointments have been made at the Admiralty: CYRIL J. MANSFIELD, Staff Surgeon, to *Briton*, September 24th; D. P. CHAPMAN, Surgeon, to the *Melampus*, lent, October 3rd; HUGH W. MACNAMARA, Staff Surgeon, to the *Sans Pareil*, October 5th.

ROYAL ARMY MEDICAL CORPS.

MAJOR H. P. BIRCH is placed on temporary half pay on account of ill-health, September 26th. He joined the department as Surgeon, August 4th, 1883, becoming Surgeon-Major twelve years thereafter. He was with the Soudan expedition in 1884-5 (medal with clasp and Khedive's bronze star) and in the South African war in 1902.

Lieutenant F. L. HENDERSON resigns his commission, September 26th. He was appointed Lieutenant on probation, September 1st, 1902.

Colonel WILLIAM BRIGGS ALLIN, M.B., Chief Medical Officer, Bombay and Nagpore Districts, died recently at Landour, India, from bronchitis, at the age of 52. He entered the service as Surgeon, February 4th, 1877; became Surgeon-Major, June 15th, 1885; was granted the rank of Lieutenant-Colonel, September 30th, 1893; and made Brigade-Surgeon-Lieutenant-Colonel, July 22nd, 1896, and Colonel, November 29th, 1900. He was in the Afghan war in 1879-80 (medal); with the Nile expedition in 1884-5 in charge of a field hospital at Gakdul Wells (mentioned in dispatches, medal with clasp, Khedive's bronze star, and promoted to be Surgeon-Major); and in the South African war in 1899-1900 as Principal Medical Officer, Field Army, Natal, and of a section of the lines of communication, being present at the relief of Ladysmith (mentioned in dispatches, promoted to be Colonel).

Surgeon-Lieutenant-Colonel ROBERT VACY ASH, M.D., died at Morecambe, Lancashire, on September 18th, aged 58 years, suddenly. He was appointed Assistant-Surgeon, September 30th, 1871; Surgeon, March 1st, 1873; Surgeon-Major, September 30th, 1883; and Lieutenant-Colonel, September 30th, 1891; retiring from the service, November 18th, 1891. He was in the Zulu war in 1879 (medal); in the Egyptian war in 1882, including the battle of Tel-el-Kebir (medal with clasp and Khedive's bronze star); and with the Burmese expedition in 1886-7 (mentioned in dispatches, medal with clasp).

EXCHANGES.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 3s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

A LIEUTENANT-COLONEL R.A.M.C., who expects to be ordered abroad early next year, wishes to exchange with an officer recently home.—Address, "Sey-Woon," c.o. Holt and Co., 3, Whitehall Place, S.W.

A Field Officer R.A.M.C. under orders for India next November desires an exchange to remain at home another year.—Address, "Judex," c.o. Holt and Co., 3, Whitehall Place, London, S.W.

TIME AT NETLEY AS SERVICE FOR PENSION.

MAJOR R.A.M.C. writes: With reference to the note in the BRITISH MEDICAL JOURNAL of September 26th, by "In Arduis Fidelis," I quite think with him that it would be a concession greatly appreciated by the few affected if the time spent at Netley were allowed to count to all officers. Those who went before and those who came after count the time, but I do not. Can nothing be done in the matter?

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

MR. CORBET W. OWEN to be Surgeon-Lieutenant 1st Cheshire and Carnarvonshire, September 19th.

MEDICO-LEGAL AND MEDICO-ETHICAL.

THE GUEST HOSPITAL, DUDLEY.

CORRESPONDENCE with regard to a dispute which has occurred at the Dudley Hospital has been submitted to us for an opinion. We are of opinion that the resident medical officers were justified in tendering their resignations, and, indeed, that under the circumstances no other course was open to them. They should not, however, have left the hospital without notice. The right course would have been to ask the Board to release them as soon as possible from a position which was plainly untenable, but their obligation to their patients compelled them to remain until substitutes had been accepted. It would not be unprofessional conduct for other practitioners to apply for the posts left vacant by these resignations. With respect to the cause of the trouble, we have come to the conclusion that Mr. Messiter should not have ordered the readmission of the patient without having ascertained the whole of the facts; he admits that he would not have done so had he known all that had happened. Patients are not expelled from hospitals without strong reasons, and there was no apparent ground for precipitate action which seemed to show want of consideration towards the resident medical staff and the nurses, whose power of maintaining order in the wards is destroyed when gross misconduct on the part of a patient is overlooked.

BONESETTER *v.* DOCTOR.

UNDER this heading a report of an inquest appears in a recent issue of the *Sheffield Daily Telegraph*, in which a local bonesetter was employed to treat a child who had suffered from an injury to the elbow. Four days after, a duly-qualified medical practitioner was called in, as the child's arm had got so bad. He stated at the inquest that the arm ought never to have been bandaged, that there was no fracture and that the tight bandaging had stopped the circulation and blood-poisoning had set in; that the arm had to be amputated, and that the child died from blood-poisoning and improper treatment. The bonesetter elected to give evidence, and stated that when he examined the child the elbow was slightly swollen and very hot and inflamed, and there seemed a deep fixed pain at the centre of the elbow caused by a fall, and he at once suspected an incomplete fracture. He placed around the elbow cotton wadding and bandaged the arm, but not tightly; he gave a lotion to be applied every four hours, and requested that the child should be brought again in a week's time. He had practised as a bonesetter for the last twenty years. The coroner in summing up is reported to have said "that the jury had to satisfy themselves that the bonesetter had treated the case properly. If so, he was not guilty of manslaughter. There used to be an idea abroad that if a man treated a case who had not passed a medical degree and death ensued he was responsible, but that had been exploded." The jury did not retire, but at once concurred in a verdict of accidental death.

*** We do not agree with the statement of the coroner as regards the responsibilities attached to bonesetters and other unregistered practitioners who undertake the surgical or medical treatment of others, especially when death is either accelerated or caused by improper or unskilful treatment. Surely if a registered medical man is held responsible, how much more should the unregistered person be held liable for the consequences of his acts.

EMPLOYERS' LIABILITY.

A CORRESPONDENT inquires whether he can legally charge the employer for attending to one of his workmen who was injured while at his work. He attended the workman as his club doctor, but as the employers would have to pay him under the Employers' Liability Acts if the injured person were not a member of a club is he necessarily disentitled because he is the club doctor?

*** As our correspondent is the workman's club doctor he can have no claim against the patient. If the latter were not a club patient his claim would be against him, and not the employers, although under the Acts referred to the injured workmen might recover from them the doctor's charges.

CONSULTATIONS.

DR. JOHN HADDON (Denholm, Roxburghshire, Scotland) writes: In your leading article in the BRITISH MEDICAL JOURNAL of September 10th on The Profession and the Public this sentence occurs: "No medical practitioner has the right to refuse to call in a second opinion when asked to do so, and although we are quite aware that such regrettable exhibitions of perversity as that complained of may happen, they are due to the bad temper or vanity of individuals, and not to any rules recognized by the profession. Recalling my experience of practice, I venture to question the dictum that the general practitioner has no right to refuse to call in a second opinion. Suppose that in a case, say, of typhoid fever, which is running a perfectly normal course, and in a mild course withal, the general practitioner is asked to have another opinion, even though the particular second should not be named by the friends of the patient, would the general practitioner be justified in permitting a second opinion, either for the good of his patient or his own reputation? If the general practitioner has not the confidence of his patient and his friends, if they cannot trust him when he tells them that all is going well, and allows them to bring another practitioner, he is doing an injury to the reputation of all general practitioners, and lowering their status in the eyes of the public. In spite of being charged with having a bad temper, or being vain, as the writer of the article would charge me in such a case, I would retire rather than disturb my patient with a consultation, throw away money needlessly, and allow another—perhaps incapable of diagnosing the disease—to have the chance of interfering with my treatment. Specialists are no doubt necessary, but those who set up as consultants, and are successful, even as such are not all so superior, either from an ethical or purely professional point of view, as the public are apt to think; and, too often, the general practitioner has reason to regret having had a consultation, even when he asked for it and named the physician himself.

*** We cannot agree with our correspondent. He claims to be the sole judge of the need for a second opinion; but, on the other hand, the public contends that two heads are often better than one, and

that even when everything is going on all right it is a great satisfaction to the family to be assured of this, and to have their doctor's opinion and course of treatment confirmed. A neighbourhood must indeed be unfortunate where a consultant cannot be found acceptable to both parties from an ethical as well as a professional standpoint.

DEATH CERTIFICATES AND INQUESTS.

JUSTICE writes to say that that in the district in which he lives (Lambeth) the coroner is in the habit of ignoring the services of the medical practitioner first called to a case, who has been in the habit of reporting the same, but employs a stranger to the district to make the *post-mortem* examination, and give evidence at the inquest. Under these circumstances our correspondent is desirous of knowing whether he would be justified in ceasing to report cases in which he considers an inquest necessary and issuing a certificate stating the cause of death to the best of his knowledge and belief, and leaving the registrar of deaths to report to the coroner should he see fit to do so?

*** If our correspondent elects to follow the course he has suggested we do not know that any legal objection could arise, so long as the certificate states the exact cause of death, not omitting to state the primary causes, especially if arising from injury or any unnatural conditions. No certificate should be given unless the certifying practitioner has been in attendance upon the deceased person, and has been enabled from his own personal knowledge and observation to diagnose the cause of the death.

A QUESTION OF FEE.

A CORRESPONDENT asks what would be a reasonable fee for tapping a patient for cardiac ascites. The operation requires to be done once a fortnight, the distance to be travelled is three-quarters of a mile, and the usual visiting fee is 5s.

*** If the patient is fairly well to do, 2 guineas, as suggested by our correspondent, would be a reasonable charge.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF LONDON.

Two courses of lectures in Advanced Physiology will be given at the University during the present session. Commencing on October 16th, Dr. F. W. Mott, F.R.S., will lecture on The Structure and Function of the Cerebral Cortex, and on October 20th Dr. Buckmaster will lecture on The Blood.

Instead of Dr. Buckmaster's lecture on October 13th as advertised, Dr. A. D. Waller will lecture on The Anaesthetic Action of Chloroform and Ether.

Admission to the lectures is by ticket, to be obtained from the Academic Registrar.

UNIVERSITY OF DURHAM.

THE following candidates have passed the Third Examination for the degree of Bachelor in Medicine:

Honours—First Class.—L. A. Clutterbuck, L.R.C.P. & S.Edin., L.R.C.P.I., College of Medicine, Newcastle-upon-Tyne.

Honours—Second Class.—Olga Alberta Schicle, London School of Medicine for Women; R. I. Douglas, St. Bartholomew's Hospital, London.

Pass List.—J. H. Cooke, College of Medicine, Newcastle-upon-Tyne; W. Cowden, College of Medicine, Newcastle-upon-Tyne; H. B. Cunningham, College of Medicine, Newcastle-upon-Tyne; W. E. Falconar, College of Medicine, Newcastle-upon-Tyne; S. J. Fielding, College of Medicine, Newcastle-upon-Tyne; W. P. A. Hardwicke, L.S.A., College of Medicine, Newcastle-upon-Tyne; A. H. Hogg, College of Medicine, Newcastle-upon-Tyne; B. W. Lacey, Guy's Hospital; F. R. H. Laverick, College of Medicine, Newcastle-upon-Tyne; W. E. C. Lunn, College of Medicine, Newcastle-upon-Tyne; S. L. McBean, College of Medicine, Newcastle-upon-Tyne; F. H. Moxon, College of Medicine, Newcastle-upon-Tyne; C. D. Relton, College of Medicine, Newcastle-upon-Tyne; W. Seymour, College of Medicine, Newcastle-upon-Tyne; F. T. Simpson, College of Medicine, Newcastle-upon-Tyne; F. R. Snell, St. Thomas's Hospital, London; T. J. S. Suffield, L.R.C.P., L.S.A., London Hospital; E. Tate, College of Medicine, Newcastle-upon-Tyne; Janet Arthur Vaughan, London School of Medicine for Women; T. Visser, College of Medicine, Newcastle-upon-Tyne; E. Young, St. Mary's Hospital, London.

SOCIETY OF APOTHECARIES OF LONDON.

PASS LIST, September, 1903.—The following candidates passed in:

Surgery.—W. V. Braddon (Section II), Cambridge and Manchester; W. H. Bush (Sections I and II), Guy's Hospital; K. R. Jay, Royal Free Hospital; A. Jurriaanse (Sections I and II), Leyden; P. S. Klots, Leyden; L. W. Roberts, Middlesex Hospital; S. H. Ryan (Sections I and II), Manchester; A. Turner (Section II), Charing Cross Hospital.

Medicine.—J. E. L. Bates, Guy's Hospital; W. H. Bush (Sections I and II), Guy's Hospital; L. E. Ellis (Section II), St. George's Hospital; A. H. Falkner (Section II), Cambridge and St. Mary's Hospital; A. Jurriaanse (Sections I and II), Leyden; N. O. Roberts (Section I), Cambridge and St. Mary's Hospital; F. Robinson (Sections I and II), Manchester; S. H. Ryan (Section I), Manchester; F. J. Waldmeier, London Hospital; J. W. Watson (Section I), Manchester.

Forensic Medicine.—J. E. L. Bates, Guy's Hospital; W. V. Braddon, Cambridge and Manchester; A. Jurriaanse, Leyden; E. H. Price, Birmingham; N. O. Roberts, Cambridge and St. Mary's Hospital; F. Robinson, Manchester; S. H. Ryan, Manchester; R. Wallace, Glasgow; R. Watson, Glasgow.

Midwifery.—W. B. Harris, St. Mary's Hospital; A. Jurriaanse, Leyden; R. Reynalds, Bristol; F. Robinson, Manchester; S. H. Ryan, Manchester; A. Williamson, Royal Free Hospital.

The Diploma of the Society was granted to J. E. L. Bates, L. E. Ellis, and A. Jurriaanse.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8,229 births and 4,707 deaths were registered during the week ending Saturday last, September 26th. The annual rate of mortality in these towns, which had been 15.7, 15.8, and 16.5 per 1,000 in the three preceding weeks, declined again last week to 16.3 per 1,000. The rates in the several towns ranged from 5.3 in Hornsey, 7.1 in Devonport, 7.6 in Tottenham, 8.0 in East Ham, 8.2 in Handsworth and in King's Norton, 9.7 in Newport (Mon.), and 9.8 in Wallasey, to 21.0 in Rotherham, 21.4 in Hanley and in Newcastle-on-Tyne, 22.5 in Middlesbrough, 23.2 in Hull, 23.4 in York, 24.0 in Bootle, and 24.7 in Merthyr Tydfil. In London the death-rate was 15.4 per 1,000, while it averaged 16.7 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 2.6 per 1,000 in the seventy-six large towns; in London this death-rate was equal to 2.1 per 1,000, while it averaged 2.8 in the seventy-five other large towns, and ranged upwards to 5.1 in Merthyr Tydfil, 5.3 in Willesden, 5.5 in West Ham and in Middlesbrough, 5.8 in Burnley, 6.0 in Bootle, and 6.0 in Preston. Measles caused a death-rate of 1.2 in Blackburn; scarlet fever of 1.1 Swansea, 1.3 in Rhondda, 1.6 in Grimsby, 1.7 in Bootle, and 2.0 in Tynemouth; diphtheria of 1.0 in Leyton and in Burnley; whooping-cough of 1.4 in Coventry and 2.2 in Newport (Mon.); "fever" of 2.4 in Grimsby and 2.9 in Merthyr Tydfil; and diarrhoea of 3.9 in West Bromwich, in Aston Manor, in Bolton, and in York, 4.2 in Burnley, 4.3 in West Ham, 4.6 in Rotherham, 4.9 in Willesden and in Stockport, and 5.0 in Preston. One fatal case of small-pox were registered last week in London, one in Birmingham, and one in Liverpool, but not one in any other of the seventy-six large towns. The Metropolitan Asylums Hospitals contained 20 small-pox patients on Saturday last, September 26th, against 49, 46, and 41 on the three preceding Saturdays; 1 new case was admitted during last week, against 6, 9, and 7 in the three preceding weeks. The number of scarlet fever patients under treatment in these hospitals and in the London Fever Hospital, which had been 1,796, 1,772, and 1,803 at the end of the three preceding weeks, had further risen to 1,886 at the end of last week; 293 new cases were admitted during the week, against 229, 212, and 261 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, September 26th, 910 births and 550 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 16.6, 14.4, and 16.1 per 1,000 in the three preceding weeks, further rose to 16.8 per 1,000 last week, and was 0.5 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 12.0 in Greenock and 13.1 in Leith to 18.6 in Perth, and 20.1 in Dundee and in Aberdeen. The death-rate from the principal infectious diseases averaged 2.4 per 1,000 in these Scotch towns, the highest rates being recorded in Paisley and Perth. The 247 deaths registered in Glasgow included 4 which were referred to measles, 2 to scarlet fever, 4 to diphtheria, 7 to whooping-cough, 5 to "fever," and 22 to diarrhoea. Two fatal cases of diphtheria and 2 of diarrhoea were recorded in Edinburgh. Six deaths from diarrhoea were registered in Aberdeen, 4 in Dundee, 4 in Paisley, 2 in Leith, and 2 in Greenock.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, September 26th, 498 births and 322 deaths were registered in six of the principal Irish towns, against 526 births and 332 deaths in the preceding period. The mean annual death-rate of these towns, which had been 16.5, 16.2, and 18.7 per 1,000 in the three preceding weeks, fell to 15.8 per 1,000 in the week under notice, this figure being 0.5 less than the mean annual rate during the corresponding period in the seventy-six English towns. The death-rates ranged in these six Irish towns from 3.9 in Waterford and 12.6 in Londonderry to 22.7 in Dublin and 24.0 in Cork. The death-rates from the principal zymotic diseases in these six Irish towns averaged during the week 1.3 per 1,000, or 0.8 less than during the preceding period. The highest point, 2.5, was reached in Belfast, while Londonderry and Waterford registered no deaths from zymotic disease at all. No deaths from small-pox, measles, scarlet fever, or typhus were registered in any of the six towns, but Dublin had 1 death from diphtheria, and Belfast 2 from whooping-cough, while from enteric Dublin registered 1, and Belfast 2, deaths. In both these towns there seems to have been a considerable amount of diarrhoeal disease, 14 deaths being registered from this cause at Dublin and 13 at Belfast.

HOUSING OF THE WORKING CLASSES ACT, 1903.

THE Local Government Board has addressed a circular to town councils and urban district councils drawing attention to the provisions of the new Housing of the Working Classes Act, 1903, which has introduced some important amendments into the law relating to the housing of the working classes. The provisions respecting borrowing powers and repayment of loans are considerably amended by Section 1 of the new Act. The effect of subsection (1) of this section is to extend the maximum period for the repayment of loans raised for the purposes of the principal Act, or any Acts amending it, to 80 years, leaving the actual period for repayment, subject to this limitation, to be determined as heretofore with the sanction of the Board. The next subsection will prevent any loans raised for the purposes of the Housing Acts from being taken into account for the purposes of the limitations on borrowing above referred to. The Board state that they propose in future as a general rule to allow the full term of 80 years for the repayment of money borrowed for the purchase of freehold land, and 60 years for the repayment of money borrowed for the erection of buildings under the Housing Acts, where the circumstances are such that this may properly be done. Where money has been borrowed in recent years for these purposes, they will be ready to consider applications for sanction to the reborrowing of the outstanding balances for 80 or 60 years (as the case may be) from the date of the original borrowing, if the money has been borrowed on terms which will admit of this. The new Act also provides for appeal to the Board by ratepayers in the event of the local authority doing nothing. This provision is an old

one, but has been slightly improved. Certain points in procedure, modification of schemes, closing orders, cost of demolition, and letting houses for the working classes, are also incorporated in the new Act. As Sir S. B. Provis says, there are now very considerable powers placed in the hands of local authorities, and the Board trusts the effect will be to stimulate councils to exercise their powers in this matter.

OBITUARY.

JAMES FERGUSON, M.B., C.M.

By the death of Dr. James Ferguson one of the leading practitioners in the city has been lost to Perth. He had for some time been in poor health, but it was only a week before his decease that serious symptoms developed. Indeed, it was only on September 4th that he attended the funeral of the late Dr. Macaulay, apparently with years of useful work before him.

Dr. Ferguson had an extensive practice, and was much respected by the public and his colleagues in the profession. He began life in the commercial world, but turned to medicine, and served for two years in the Perth Infirmary as House Surgeon. Afterwards he entered on general practice, and was appointed on the visiting staff of the same institution, making several contributions to medical literature. Later, Dr. Ferguson was elected President of the Perthshire Branch of the British Medical Association, having previously acted as Secretary. In the endeavour to improve secondary education in the city he also served on the School Board, but had soon to retire in consequence of the pressing professional claims on his time. His chief public work was as Certifying Factory Surgeon, and as Principal Medical Examiner for the General Accident Assurance Corporation. Dying at the age of 53, while in his prime, Dr. Ferguson will be much missed by a large circle of friends.

Our Aberdeen correspondent writes: The death of Dr. Alexander Bain, which occurred on September 18th, will be regretted, not only by those students of psychology to whom his writings appeal, but also by many generations of Aberdeen graduates who came to a greater or less degree under the influence of his teaching during his twenty years' tenure of the Chair of Logic in the university. His personality was not such as to lead to intimate social intercourse between himself and any large number of his students and admirers; but the recognition by the whole university of his European reputation as a philosopher and the appreciation of his interest in university affairs found expression in his election to the Lord Rectorship after his resignation of the Chair of Logic. Up to very recent times his *Mental and Moral Science*, published in 1868, was a textbook very widely used, and though the current of psychological thought and teaching has in these latter days set away from the empirical school, yet *The Senses and the Intellect* and *The Emotions and the Will*, published in 1855 and 1859 respectively, established the position of Bain as a very honourable one in the history of English psychology. He has died after a life of 85 years. He had for some time taken little active part in public affairs, but many will realize that the university has lost one of her most distinguished sons—one who in his own generation added much to her fame.

We regret to have to record the decease of Mr. David Illtyd Jones, which took place on September 25th at Southsea. Mr. Illtyd Jones was the second son of the late Rev. J. Jones, Vicar of Abergwessyn, and a brother of Dr. Arnallt Jones, M.D., J.P., of Aberavon, as well as of the Rev. Ifor Jones, of Llandovery College. Mr. Illtyd Jones was educated at Llandovery College during the wardenship of the present Bishop of St. Asaph, and was a frequent attendant at the reunions of his old school. He received his professional education at Edinburgh and left his medical school with the diplomas of L.R.C.P., L.R.C.S.Edin., and L.M., L.F.P.S.Glasg., in 1892. He was a member of the South Wales and Monmouthshire Branch of the British Medical Association, and practised for some time at Aberavon, Kidwelly, and Abergwynfi. He had recently gone to Southsea for a change of air, and was there seized by an illness which proved rapidly fatal. He was a man of fine physique, so that his death at the early age of 39 years is a surprise as well as a matter of deep regret to the large circle of friends and patients to whom his genial disposition and kindly manners had endeared him. He leaves a widow, a daughter of the late Colonel Charles Pasley Roberts of the Royal Horse Artillery. His body was interred in Pentlergaer Churchyard in the parish of Llangyfelach, Glamorganshire, on Michaelmas day.

MEDICAL NEWS.

A fire broke out in the top room of an empty ward at Fisherton House Asylum, Salisbury, between 8 and 9 p.m. on September 21st. It was speedily extinguished by the asylum fire brigade.

A course of Gresham lectures on digestion will be given by the Gresham Professor of Medicine, Dr. E. Symes Thompson, at Gresham College, Basinghall Street, E.C., on October 6th, 7th, 8th, and 9th, at 6 p.m.

The lectures at the National Hospital for the Paralysed and Epileptic, Queen Square, will be resumed on October 6th, at 3.30 p.m., when Dr. Beevor will give a lecture on cerebral localization.

The memorial stone of the new buildings of the Royal Waterloo Hospital for Children and Women, Waterloo Bridge Road, will be laid by H.R.H. The Duchess of Albany on October 26th, at 3 p.m.

M. Duclaux, Director of the Pasteur Institute, Paris, asks us to state that the courses of chemistry applied to hygiene and practical analysis will begin in November. Full particulars may be obtained on application to the Institute, 26, Rue Dutot, Paris.

Medical Magistrates.—Dr. William Duncan, Obstetric Physician to the Middlesex Hospital, has been placed on the Commission of the Peace for Buckinghamshire by Lord Rothschild, Lord Lieutenant of the County.—Dr. Richard Caton has been appointed to the Commission of the Peace for the city of Liverpool.

Samaritan Free Hospital.—A series of lectures, mainly on diseases of women from a clinical aspect, will be delivered on Thursdays, at 3 p.m., throughout the coming autumn at the Samaritan Hospital. The lectures, free to medical practitioners, will be given by members of the staff, the first on Thursday next. The clinical resources of the hospital are, as is well known, considerable.

The Harben Lectures before the Royal Institute of Public Health will be given in King's College, London, by Professor Ferdinand Hueppe, of Prague, during October. On Thursday, October 8th, the etiology of infectious diseases from the standpoint of natural science; Monday, October 12th, hygienic lessons to be derived from the serum treatment; and Thursday, October 15th, tuberculosis. Members of the medical profession are admitted to the lectures.

The autumn meeting of the Northern and Midland Division of the Medico-Psychological Association will be held at the Northumberland County Asylum, Morpeth, on Friday, October 9th. Dr. Macdowall, who will entertain the members at lunch, will explain the advantages of providing villas for a considerable proportion of pauper patients, and an opportunity will be afforded for visiting the new villas. Subsequently papers will be read and the members will dine together at the Station Hotel, Newcastle-on-Tyne, at 7.15 p.m.

MEDICAL VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BEDFORD COUNTY HOSPITAL.—Senior House-Surgeon, resident. Salary, £100 per annum.

BRENTFORD UNION.—Medical Officer and Public Vaccinator. Salary, £110 per annum.

CAMBRIDGESHIRE, &c., ASYLUM.—Second Assistant Medical Officer, resident. Salary, £120 per annum.

CUMBERLAND AND WESTMORLAND ASYLUM, Garlands.—Senior Assistant Medical Officer, resident. Salary, £150, rising to £180 per annum.

DERBY COUNTY ASYLUM, Mickleover.—Junior Assistant Medical Officer, resident. Salary, £120, rising to £150 per annum.

DUBLIN: ROYAL CITY OF DUBLIN HOSPITAL.—(1) Physician; (2) Surgeon.

GREAT YARMOUTH HOSPITAL.—House-Surgeon, resident. Salary, £90, and £10 yearly for lectures to probationer nurses.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House-Physicians. Honorarium, £25 for six months.

LEICESTER INFIRMARY.—Clinical Clerk, resident. Honorarium, £10 10s. for six months.

LIVERPOOL: HOSPITAL FOR WOMEN.—House-Surgeon. Appointment for six months. Honorarium, £37 10s.

LIVERPOOL INFIRMARY FOR CHILDREN.—Assistant House-Surgeon, resident. Salary, £30 for six months.

MARGATE: ROYAL SEA-BATHING HOSPITAL.—Resident Surgeon. Salary as junior at the rate of £80 per annum, and as senior £120 per annum.

METROPOLITAN HOSPITAL, Kingsland Road, N.E.—(1) Physician; (2) Assistant Physician.

ST. BARTHOLOMEW'S HOSPITAL, E.C.—(1) Physician: (2) Surgeon.
ST. GEORGE'S AND ST. JAMES'S DISPENSARY, King Street, W.—Honorary Physician.
ST. MARY'S HOSPITAL FOR SICK CHILDREN, Plaistow, E.—(1) Resident Medical Officer; (2) Assistant Resident Medical Officer. Salary, £100 and £80 per annum respectively.
STAFFORD: COTON HILL LUNATIC ASYLUM.—Assistant Medical Officer, resident. Salary, £125, rising to £175 per annum.
WESTMINSTER HOSPITAL, Broad Sanctuary, S.W.—Fourth Assistant Physician.
WESTON-SUPER-MARE HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.
WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House-Physician, resident. Salary, £100 per annum.
YORK DISPENSARY.—Resident Medical Officer. Salary, £120 per annum.

MEDICAL APPOINTMENTS.

BROWN, John, M.D., D.P.H Vict., Univ. Manchester, reappointed Medical Officer of Health for the Borough of Bacup, also Physician to the Southall Isolation Hospital.
GARLAND, E. C., L.R.C.P.Edin., M.R.C.S.Eng., reappointed Medical Officer of Health for the Urban District of Yeovil.
HARDY, Francis Alex., M.D., C.M., Medical Officer and Public Vaccinator to the Fulbeck District of the Newark Union and to the Leadenham District of the Sleaford Union.
HARRISON, E. H., M.B., Certifying Factory Surgeon for the St. Neots District, Huntingdonshire.
LESLIE, W. L. A., M.B.Aberd., Assistant Medical Officer to the Grahamstown Asylum, South Africa, *vice* A. B. S. Powell, resigned.
LANGMORE, H. R., M.B., B.C.Cantab., District Medical Officer of the Wallingford Union.
LAW, R. R., M.D., B.C., Clinical Assistant to the Chelsea Hospital for Women.
MYAN, E. J., M.D.McGill, L.R.C.P.& S.Edin., District Medical Officer of the Easington Union.
SHAW, Raymond Henry, M.S., M.B.Dunelm, Assistant Surgeon to the Great Yarmouth Hospital.
SNELL, E. H., M.D., B.Sc.Lond., D.P.H.Camb., F.R.S.E., permanently reappointed Medical Officer of Health to the City of Coventry.
THOMAS, W., L.R.C.P.& S.Edin., District Medical Officer of the Anglesey Union.
THOMAS, W. E., M.D., Medical Officer of the Workhouse of the Pontypridd Union.
TURNER, G. J. K., M.B., C.M.Aberd., District Medical Officer of the Dulverton Union.
WALLIS, Charles Edward, M.R.C.S., L.R.C.P., L.D.S., Dental Surgeon to Feltham School under the London County Council.
WORTS, Lewis, L.R.C.P.& S.Edin., Assistant Medical Superintendent and Dispenser at the Croydon Infirmary.
YOUNG, C. Y., M.D., M.Ch., Clinical Assistant to the Chelsea Hospital for Women.

DIARY FOR NEXT WEEK.

WEDNESDAY.

Obstetrical Society of London, 20 Hanover Square, W., 8 p.m.—Specimens will be shown by Mr. Alban Doran (for Dr. Batchelor, Dunedin) and others. Short communication: Dr. Hellier: Case of Abdominal Pregnancy secondary to partially-ruptured Pregnant Tube. Papers: Mr. Malcolm: An Operation for Extrauterine Fetation between the Third and Fourth Months of Gestation, with removal of a living Fetus and much Trouble from Haemorrhage during Convalescence. Dr. Lockyer: A Case of Ruptured Tubal Gestation in which the Ovum continued to grow for about Four Months, the Gestation Sac becoming implanted on the Omentum.

THURSDAY.

British Gynaecological Society, 20, Hanover Square, W., 8 p.m.—Specimens will be shown by the President, Dr. Macnaughton-Jones, and others. Cases: Dr. Macnaughton-Jones: (1) Notes on a Case of Coeliotomy on a Patient for the Third Time; (2) Extensive Cellulitis after Hysterectomy. Dr. Hodgson: Incarcerated and Irreducible Femoral Hernia in a Woman.

North London Medical and Chirurgical Society, Great Northern Central Hospital, Holloway Road, N., 9 p.m.—Professor R. J. Hewlett on Insects as Carriers of Disease.

FRIDAY.

Clinical Society of London, 20, Hanover Square, W., 8.30 p.m.—Sir Dyce Duckworth, and Mr. H. T. Butlin: A Case of Erosive Gastric Ulcer with Severe Haematemesis: Operation; Recovery. Dr. Frederick Taylor (President): A Case of Acute Pancreatitis. Mr. Anthony A. Bowlby, C.M.G.: A Case of Acute Pancreatitis.

POST-GRADUATE COURSES AND LECTURES.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C.—Lectures will be delivered at 3.30 p.m. as follows: Tuesday, On Cerebral Localization; Friday, On Cerebral Circulation.

Samaritan Free Hospital for Women, Marylebone Road, N.W., Thursday, 3 p.m.—Lecture on Broad Ligament Tumours.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 2s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

BAINES.—On September 22nd, at 31, Boundary Road, St. John's Wood, London, N.W., the wife of Edward Baines, M.B.Cantab., of a daughter.
HORNER.—On September 24th, at 77, Church Hill, Walthamstow, the wife of C. J. Horner, M.R.C.S., L.R.C.P., of a son.
O'REGAN.—On September 12th, at 57, Cocksane Street, St. John's, Newfoundland, the wife of Staff Surgeon M. J. O'Regan, R.N., H.M.S. "Calypso," of a daughter.
STRATTON.—On September 23rd, at 198, Jamaica Road, S.E., the wife of J. Ernest Stratton, M.D.Lond., of a daughter.

MARRIAGES.

ANGUS—ARNISON.—At St. James's Church, Newton Hall, Stocksfield-on-Tyne, on September 23rd, by the Rev. A. Swire, Rector of Newton Hall, Henry Brunton Angus, M.B., M.D.Dunelm, F.R.C.S.Eng., eldest son of J. Acworth Angus, M.R.C.S. Eng., L.S.A.Lond., Newcastle-on-Tyne, to Maude, youngest daughter of the late J. S. Arnison, Sandiford House, Newcastle-on-Tyne.
EMMS—ROSE.—On September 19th, at St. Mary's Church, Cleobury-Mortimer, by the Rev. S. F. P. Anderson, Vicar, Harry Robert Emms, M.R.C.S., L.R.C.P., to Carrie, eldest daughter of William Rose, Esq., Cleobury-Mortimer.
HARDENBERG—WEALL.—On September 24th, at St. Andrew's Church, Watford, by the Rev. Canon Reich, Vicar, assisted by the Rev. O. Cockrem, LL.D., and the Rev. R. J. Glenn, Edward Francis Herman Hardenberg, M.B., L.R.C.P., M.R.C.S., of Dutfield House, Watford, to Annie Margaret Graham (Daisy), second daughter of John Weall, of Rutland Lodge, Watford.
WILSON—FELL.—At Old Esk Parish Church, by the Rev. J. Stewart White, Vicar of the Parish, assisted by the Rev. W. Smith, Vicar of Whitehouses, Thomas Watson Wilson, M.B., Ch.B., to Irenia, daughter of R. Fell, Esq., Crook, co. Durham.

DEATHS.

BLACKSTONE.—On September 27th, at 6, Albert Terrace, Regent's Park, N.W., Joseph Blackstone, M.R.C.S.Eng., in his 65th year. Service at St. Mark's Church, Regent's Park, on October 1st, at noon.
ROSE.—On September 23rd, at 31, St. Mary's, York, Robert Duncan Rose, F.R.C.S.Edin., aged 71.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aetiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

H. L. D.—Can the nebular theory of the production of solar heat be applied to the case of radium? Reference *Encyclopaedia Britannica*, vol. xvii, page 3116.

VIATOR would be glad to know if any successes have been recorded in the treatment of chronic atrophic rhinitis by radium. What is the best treatment for a case that has lasted nine years in which various sprays and the electric needle, etc., have used, but the crusts still form?

ANSWERS.

SURGEON-MAJOR REGINALD SLEMAN writes: With reference to Captain Mason's question in the BRITISH MEDICAL JOURNAL of September 26th, page 781, I beg to state that he will find the information which he requires in a book compiled by Lieutenant-Colonel F. Howard, late Army Medical Staff, entitled *Handbook of the Medical Organisations of Foreign Armies*, and published at 1s. by Harrison and Sons, of St. Martin's Lane, W.C.

ATTENDANCE ON SEAMEN, R.N.

D.P.F.—A medical practitioner treating a Royal Navy seaman or marine at his residence for a disability arising from causes beyond his own control should apply for the remuneration of his professional services to the Secretary of the Admiralty, Whitehall, S.W., when his claim will be fully considered.

EARPLUGS FOR SEA BATHING.

MESSRS. FROST AND HARRISON (Eltham Road, S.E.) write: In reply to your correspondent "Xema" in the BRITISH MEDICAL JOURNAL of July 25th, p. 228, we have supplied for some time a flexible rubber plug for keeping water out of the ears while bathing, and they appear to be very successful.

DR. ROBERT HARLAND WHITEMAN.

DR. W. F. SHEARD (Putney) writes with reference to Mr. Perry's letter published in the BRITISH MEDICAL JOURNAL of September 26th, p. 788: Robert Harland Whiteman, High Street, Putney, L.R.C.P.Edin. 1859, L.S.A. 1835, formerly Medical Officer and Medical Officer of Health, Putney, died some twenty or more years ago, was succeeded by Dr. Walker as Medical Officer of Health. I think he had a wife; no family, but an adopted daughter, Miss Buck.

DR. SIDNEY VINES (Mossley, near Manchester) writes: There is an entry in Churchill's *Directory* for 1875—"Whiteman, Robert Harland, High Street, Putney, S.W., L.R.C.P.Edin. 1859, L.S.A. 1835, Medical Officer of Health, Putney," etc. I often wonder what happens to all the old diplomas.

MOTOR TRICYCLES.

DR. W. BLACK JONES (Llangammarch Wells, Breconshire) writes: In reply to "Motor Trike," probably he would find that the Singer motor tricycle (2½ h.p.) would suit him well. I have had one for the last nine months and notwithstanding the difficulties I have to contend with in the shape of long and steep hills and bad roads generally the machine works very satisfactorily. I am able to do all my practice on it, and find it very reliable, the only trouble it gives me is an occasional fouling of the ignition plug from over-lubrication, which can be remedied in a few minutes. I can run over 85 miles on a gallon of petrol.

DR. A. STANLEY DUKE (Haslemere) writes: "Motor Trike" cannot do better than try a Singer tricycle. A gallon of petrol, costing at the present time 1s. 7d., will run the machine in a hilly district for ordinary professional visiting for one week. The cost of lubricating oil for that period is so small as to be hardly worth counting. That is to say, at the cost of about 1s. 7d., you can depend on covering 80 miles. I am not quoting maker's statements, but actual experience during the past nine months. I have ridden my machine 1,400 miles, and the front wheel, which in a Singer takes most of the weight and all the driving strain, now requires a new tread cemented on the cover. Beyond this no outlay at the present time appears necessary. The machine will take hills of "one in ten" with help. I may say I first had a motor bicycle of the same make for six months, but find the tricycle better for medical work because of the entire absence of sideslip. I think the absence of belt, battery, and their concomitant risks is a point for consideration for a medical man in a country district.

RIBERI PRIZE.

MAJOR GEORGE S. THOMSON, I.M.S.—The Turin Academy of Medicine announces that it will award the Riberi prize of the value of £800 to the author of the best work in the field of medical science, printed or in manuscript, composed in the course of the five years 1902-7. If two or more works are adjudged equal in merit, preference will be given to those tending to improve the hygienic conditions of Italy. The works

offered in competition must be written in either Italian, French, or Latin. Printed works must be of later date than 1901, and two copies must be sent post paid. Manuscripts must be legibly written, and will remain the property of the Academy, the authors having the right of having copies made at their own expense. If the prize is awarded to a work in manuscript, the author must publish it and send two copies to the Academy before he can receive the prize. The latest date for the presentation of works is December 31st, 1907. Intending competitors who may require further information should apply to the General Secretary, Dr. B. Silva. We are unable to state to whom the last prize was awarded; indeed, we do not know if any award was made.

Practice in South America.

Mr. J. W. Lindsey, M.B. (Villa Concepcion, Paraguay) writes: In answer to the question of "Viator" in the British Medical Journal of July 11th regarding medical practice in South America, the following points may prove of some help: In all the Republics of South America every foreign medical man must pass an examination for the revalidation of his European diploma. In the Republics of Uruguay, Argentine, and Paraguay the regulations are so strict and the examinations so severe that now it is almost an impossibility for a foreigner, especially an Englishman, to gain admission. Italians and Spaniards form the bulk of the qualified medical men, and their clique generally sets itself to oust the Englishman. The examinations cover the whole range of medical study and practice, from the most elementary subjects to the most advanced and practical. The teaching is all of the French and Italian schools of medicine, and English or German candidates generally find themselves somewhat handicapped for that reason. Should, however, an Englishman have the good fortune to be admitted, even although he be but a mediocre man, his success and fortune are secured. English doctors have a great reputation, and South Americans will pay them any fee they ask. If the Englishman finds himself in some ordinary-sized town with nothing but Italian or Spanish colleagues he may reckon on making a very comfortable fortune within ten years. Except in the larger towns living is very cheap, about half the cost it is in England. There are many malarial districts, but on the whole the climate is excellent, and most Englishmen, if they live straight, enjoy splendid health.

Ethyl Chloride.

In reply to two correspondents we may say that ethyl chloride may be given as a general anaesthetic by means of a Breuer's mask. This is essentially a facepiece similar to those in common use, supplied with two apertures at the truncated apex. One is an expiration valve, the other is fitted with a metal semicircular ball, and this contains cotton wool, on which the ethyl chloride is sprayed from a properly-valved cylinder of the anaesthetic. About 5 c.cm. in the case of adults produce anaesthesia lasting from one minute and a-half to double that time. In children 1 c.cm. or 2 c.cm. will prove sufficient. The period of induction varies from fifteen to twenty seconds. Exception is taken to Breuer's apparatus owing to the tendency there is to freezing of the cotton wool and blocking of the tube leading into the facepiece. As the only indication is complete exclusion of air and employing only a known quantity of the ethyl chloride, no need arises for any special apparatus. When a prolonged anaesthesia is desired the patient is allowed to fill the lungs with air and a fresh supply of ethyl chloride given before consciousness returns. The consensus of opinion is, however, averse to using this anaesthetic for cases which require prolonged narcosis. As to safety, Wood and Cerna, who investigated the subject in 1892, say: "It is probable that if it should come to be employed in practical medicine as an anaesthetic there would be a record of sudden deaths through cardiac failure proportionally even more numerous than those caused by chloroform." Luke gives the mortality as 1 in 4,500. Various anaesthetics, the controlling factor of which is ethyl chloride, have been introduced and sold under the fancy names of kelene, narcotile, anaestile (for local anaesthesia), and somnoform. This last contains bromide of ethyl itself, a body possessing powerful and dangerous peculiarities. The principles guiding the use of such of these as are suitable for producing general anaesthesia are the same as those given above.

NOTES, LETTERS, Etc.

The Tallerman Treatment.

A surgeon practising in London informs us that he recently recommended a patient who was not well off to try the Tallerman treatment. He subsequently recommended the patient to discontinue the treatment (1) because he did not see much improvement; (2) because the patient could not well afford it; (3) because she had a chance of going into the country. The patient subsequently received the following letter:

The Tallerman Treatment,
Institute, 50, Welbeck Street,
Cavendish Square, London, W.
September 23rd, 1903.

Madam,—We are obliged for yours of yesterday's date covering cheque, value 5 guineas as per enclosed statement, duly receipted.

It is much to be regretted that you have decided to discontinue your treatment, and we beg to enclose for your perusal medical reports and literature, in which you will find many cases analogous to your own. There is no method of treatment in existence that can even begin to do, in joint troubles, what the Tallerman treatment does so successfully, but, as to whether the case will require 5, 10, 20, or 30 treatments must depend entirely upon the mischief which has been allowed to accrue under drug, surgery and other methods.

On consideration, it must occur to you that it is scarcely reasonable on your own account to reject a method of treatment, because four or five hours' use of it does not appear to you to be followed by benefit. Your knee has been affected some two years, getting gradually worse: you have been under medical treatment some twelve months, the knee has been fired twice, you have been kept in bed ten weeks and blistered. The results show that the progress of the trouble has not even been arrested, you were in greater pain during the five weeks prior to your coming to us than you had previously been.

In chronic cases Mr. Tallerman will not permit any patient to be accepted for a shorter course than ten treatments, but, as you had been attended by a medical man, your case did not come under his notice as it would otherwise have done. Your case might have required two or three courses before substantial benefit resulted.

In the literature sent you herewith you will find in the case of Miss S. (see 6th Annual Report of the Tallerman Treatment Free Institutes, page 29) that it was pronounced, like many others, absolutely incurable; in fact, cases never come to us until they are regarded as incurable.

In your case one decided improvement was evident, the skin acted after the second treatment, and after the fifth it acted most freely. It is in the notes of your case, and the nurse states that before commencing this treatment your skin never acted, not even in the tropics; this distressed you at times very much. That is the first step, and it goes a very long way in relieving a limb of many of those morbid conditions which set up disease.

So confident is Mr. Tallerman that your case should respond to his treatment, that he is willing, if you come up to town and follow his instructions, to have you treated under his own supervision. The question of fees is a secondary consideration to the reputation of his treatment, and he will have it left to you to pay what you consider to be the value of the benefit you may receive, so that if you do not consider yourself benefited, you need pay nothing.

Mr. Lewis A. Tallerman spent some years in the Australian Colonies, and, having heard you are from New Zealand, he takes a special interest in the case; hence the above proposition, which has never previously been made to any one.

Yours faithfully,
(Signed) Pp. The Tallerman Apparatus Co.,
M. Lister, Secretary.

Scientific Phrenology.

Dr. Bernard Holländer (Queen Anne Street, W.) writes: In your esteemed Journal of September 19th there has appeared an editorial calling attention to my recent book on *Scientific Phrenology*. I do not know whether the article is inspired, or reflects only the reviewer's opinion, and will not take up your space by replying to the opinions expressed by the writer, since I have anticipated all such criticisms in Chapter x of my work on *The Mental Functions of the Brain*. If I nevertheless appeal to your sense of justice to allow me a few words in reply, it is because your review opens up a serious question in medical ethics—namely, the personal liberty of a qualified physician to write and discourse on doctrines which are not generally accepted by the profession, though they embody the results of honest research and observations, and are published in perfect good faith. To quote you verbally, you say: "We cannot but think it unfortunate that such doctrines should be promulgated by a member of the medical profession in works intended for lay readers."

May I first of all remind you that it is only two years since I published the above-mentioned large work on *The Mental Functions of the Brain*, containing an immense amount of information and carefully-selected data on localization of function and brain disease? It was none of my doing, in fact it came as a surprise to me, that the work was reviewed in so many leading articles by the lay press, for it is a medical work and was intended to bring before the proper medical authorities facts to which I have given life-long attention and about which I feel convinced that they will bear investigation. However, I cannot force any one to examine what he does not wish to examine and must admit that the attitude of the profession as a whole, notwithstanding the individual support and encouragement I received, is still as unfavourable to an examination of the doctrine as it was in the days when it was still denied that "mental operations take place in and through the brain."

Now, the subject of the second book, though a continuation of the first, is not a purely medical one, and its philosophy is of interest and very great importance to other men of culture besides medical men. Am I to be debarred from contributing my share to the problems of education, of criminal sociology, and to other questions which affect the welfare of mankind, simply because I have the honour to be a member of the medical profession? You must admit that I do not write for the vulgar, that I proceed perfectly openly, that in my work I invited the proper authorities to investigate and test what I profess to be able to do, that there is no secret remedy which I hold, but that I regard my doctrines as aids to diagnosis and use them as such.

The progress in cerebral physiology, particularly as regards the mental functions, has not been such that medical men can afford to ignore the results of investigations arrived at by other methods than that of vivisection and microscopical work, to which alone many seem to confine the term "scientific." You say that "it is quite true that in forming an estimate as to character the trained observer will not disregard the size and shape of the head." But by what method can he do so at present, and what information do they convey to him, when our authorities are not even agreed whether, in order to form an estimate as to the intellectual capacity of a man, they should take a measurement of the entire head, or of the frontal or prefrontal lobes alone. And this want of knowledge, after hundred years of research, simply because the method adopted by Gall and revived by me has never been put on trial.

It does not seem to me a particularly moral proceeding of a profession which exacts such a high standard of ethics from its members to shut the doors to investigation, to make discussion impossible, to prevent the author from being heard or read, and yet to denounce the work in such vague terms that no reply to them is possible. These are tactics which delay the recognition of truth, if they do not prevent it, and they show a want of toleration in a profession generally regarded as "noble minded."

I believe there is a clause in the charter of our colleges guaranteeing "liberty of thought" to its members, as to which perhaps you will enlighten me. Englishmen love their freedom, but I fear that there is no nation on whom the fetters of convention weigh so heavily as on the British, and no profession which has restricted individual liberty to such an extent as the medical.

*** We are bound to accept Dr. Holländer's statement that he was surprised that his first book should have been reviewed in the lay press; he must have been still more surprised at seeing the favourable extracts from these reviews reproduced in advertisement form at the head of his work on "scientific" phrenology. His chief complaint against our review appears to be that its terms are too vague to allow of reply. In order to obviate this objection we will point out one or two matter which we regard the work as showing a lapse, to put it in its mild terms, from professional good taste. In the first place we would infe

Dr. Holländer that it is not in England considered proper for a medical man, when writing expressly for the lay public, to quote from his professional case-books, as is done for instance on pages 122 and 133 of the book referred to. Secondly, it is surely somewhat misleading for any one professing expert scientific knowledge to state to the public that: "It is a universally accepted fact that the size of the brain is a measurement of mental power" (page 251). Thirdly, the author in several places, for example, pages 295 and 106, makes virulent attacks upon vivisection, which naturally affords no support to the fanciful theories put forward by him. We consider that the chief danger of his book is the effect which it may have upon the non-scientific reader. Medical men are hardly likely to take it seriously.

TREATMENT OF PROSTATITIS.

MR. FREDERICK J. FAGGE (Llanfairfechan) writes: In my last letter to you on the above subject, published in the BRITISH MEDICAL JOURNAL of September 26th, p. 783, I find there is an error—printer's, I believe—on the fourth line from the bottom. It is put "Sulphate of magnesia with each dose of the mercury." It should have been, Mag. sulph. with each dose of the citrate of lithia as often as required. As regards the use of belladonna and glycerine as a suppository I am afraid I must plead guilty to one of your correspondents as to want of accuracy in direction. What it should have been was a small portion of equal parts of glycerine and ext. belladonnae should be inserted in the rectum each night. I specially wish to mention this, as I once had a case in which I ordered the same prescription for irritation about the neck of the bladder, and it resulted in symptoms of belladonna poisoning appearing about two hours after the insertion. I should also have added that I ordered g. x of potassium bicarbonate in ʒi of infus. buchu three times a day, alternately week or fortnight with the lithia tabloids.

THE MISSING LADY DOCTOR.

MR. E. F. HICKMAN (57, Courtfield Gardens, South Kensington, S.W.) writes: In reply to the many suggestions made to me, and for which I feel very grateful, I beg to say I am also of opinion it would be most desirable to obtain a suitable memorial, signed by as many persons as possible, presented by an influential deputation to the Secretary for Home Affairs (the Right Honourable Arctas Akers-Douglas, M.P.), praying for a public inquiry into all the circumstances relating to the sudden disappearance at noon of August 15th last of my dear daughter Sophia Frances Hickman, M.D., at the time she was devoting all her energies to the public service of this country as an unpaid resident medical officer of the Royal Free Hospital, one of the most important and necessary public hospitals of London. It is incomprehensible a young woman doctor, in the very best health both mental and physical, of evenness of temperament and strength of character, united to all her family and friends by close ties of kindred and affection, devoted to her work as a physician, fond of helping the poor, and completely happy and useful in every respect, should suddenly disappear at noon from the hospital in the centre of London several weeks ago, and not have been heard of since. It will be a great disgrace to this country should she not be recovered and the matter allowed to be hushed up. If so, no woman will be able to feel safe in future in the London streets in broad daylight. The co-operation of judges, bishops, members of Parliament and of the medical profession, clergymen of all denominations, and other influential men and women, should be obtained to make a powerful appeal to the Home Minister for a public inquiry. No time should be lost.

HEPATIC PHLEBOTOMY.

FLEET-SURGEON W. EAMES (H.M.S. *Mars*, Channel Squadron) writes: In reference to the subject of blood-letting in cases of congested and enlarged liver as mentioned by Mr. Cantlie in his paper on Liver Abscess published in the BRITISH MEDICAL JOURNAL of September 19th, I would point out that at the annual meeting of the British Medical Association in 1888, the late Dr. Harley read a paper styled Hepatic Phlebotomy or Liver Blood-letting by Trocar and Cannula, which he suggested as a novel and original procedure, to be adopted in cases of acutely congested and enlarged liver, as met with in the tropics, thus effectively reducing the chances of abscess formation in such cases; but, as was shown by the late Lieutenant-Colonel Ryan, R.A.M.C., Dr. Harley's idea, as a method of treatment, was anticipated by several years by Maclean, who in his lectures to surgeons on probation at Netley, recommended direct blood-letting from the liver in cases of acute congestive enlargement as met with in India and the tropics. It would be interesting to know to what extent this procedure has been adopted in the cases mentioned and with what result as a preventive in abscess formation. The varying length of needles used by Mr. Cantlie, in accordance with the anatomical points mentioned by him, would appear to establish in respect of dangerous haemorrhage an assured safety for liver puncture.

TOXIC EFFECTS OF HEROIN.

DR. W. J. YOUNG (Cambridge) writes: "Giving heroin to a lady recently I was surprised to observe the development of a macular and papular rash with cerebral symptoms—drowsiness, mental dullness, and a sort of nightmare each night. The whole of the symptoms rapidly disappeared on stopping the drug. The dose given was ½ gr. every four to six hours.

THE CULEX OF THE BRAIN.

CERTAIN daily papers are an endless source of amusement and wonderment. They are frequently much more comic than the alleged comic periodicals. In the issue of September 25th of the *Daily Mail* there was an item headed "*X* Rays and Epilepsy, from our own correspondent in New York." We are therein gravely informed that a powerful *x* ray is directed at the patient's head. This may pass. But the climax is reached when it is stated that the rays soothe the culex of the brain. As every student of anatomy knows, the nomenclature of the various parts of the brain is not child's play. Now, in addition to marine monsters, to wit, the hippocampus, and, it may be added, the major and minor of the breed, we have the gnat. Cortex is, of course, what is meant; but how is that cheerful unintellectual biped, the man in the street, to know that, especially when he is having his breakfast, and has no time to consult his old *Encyclopaedia*? It is, indeed, a case of straining at a gnat. But was it worth while discovering America to have this sort of news cabled to us at great expense? The only thing that can be said in its favour is *que ça désopile la rate*, as Rabelais would have said.

SECTION OF OPHTHALMOLOGY.

ERRATA.—In the paper on the Mechanism of Accommodation in Man, by Dr. Karl Grossmann, which was published in the BRITISH MEDICAL JOURNAL of September 26th, p. 726, in Fig. 4 B, the lens was represented as having moved upwards only, whereas it had moved upwards and laterally. In Fig. 5 *d*, the three points should not have been in a straight, but in a curved line. In the description under Fig. 5 two final letters had fallen out. At p. 730, column 2, line 6 from the bottom, "$\frac{3}{5}$ and $\frac{3}{7}$ dioptrics" should read "2.5 and 3.5 dioptrics."

LETTERS, COMMUNICATIONS, ETC., have been received from:

A A.B.; Mr. T. Adams, London; Alpha; Mr. D. Armour, London; Apollinaris Company, Manager of, London; Ajax; Professor T. Clifford Allbutt, Cambridge. **B** C. W. Branch, M.B., St. Vincent; Messrs. F. L. Borthwick and Co., London; Miss E. Bradley, Reading; Dr. St. R. Bennet, Chatel Guyon; Dr. M. Beverley, Norwich; Dr. F. Bushnell, Plymouth; T. I. Bonner, M.B., Shipley; Miss E. Beatty, Dublin; Dr. C. E. Beevor, London; Messrs. F. Bayer and Co., London; Dr. W. W. Black, Liverpool. **C** Cyclist; Dr. H. A. Caley, London; Dr. J. A. Calsantarients, Scarborough. **D** Mr. A. S. Duke, Haslemere; Mr. G. W. Duncan London; Disappointed; Dr. T. W. Dewar, Dunblane; Mr. J. Dickinson, Bishop Auckland; D. R.; Dr. E. Deanesly, Wolverhampton; Dr. R. Daniel, London. **E** Dr. F. Edge, Wolverhampton; Esemes. **F** Dr. R. Fullerton, Glasgow; Mrs. B. Fenwick, London; Mr. A. L. A. Forbes, London; E. R. Fothergill, M.B., London; Messrs. Fuerst Bros., London; Mr. J. Forster, London; Mr. F. T. Fagge, Buxton. **G** Mr. T. P. Gostling, Worcester; Mr. G. P. Gaskell, London; Miss A. J. Gardner, M.B.; Edinburgh; G. M. S. **H** H. L. D.; H. T. Herring, M.B., London; Mr. E. F. Hickman, London; Mr. F. Haydon, London; Dr. W. Harris, London; Dr. T. J. Horder, London; Mr. H. N. Hardy, London; Mr. G. F. Hilcken, London; Surgeon-General Sir W. Hooper, London; Mr. J. Hutchinson, jun., London; Hon. Sydney Holland, Royston. **J** Dr. W. B. Jones, Llangammarch Wells; Mr. J. Johnson, Bideford; Dr. J. A. Jones, Aberavon. **K** King's College, Secretary of, London; Dr. C. F. Knight, Portobello. **L** J. W. Lindsey, M.B., Paraguay; T. D. Luke, M.B., Edinburgh; Mr. S. R. Lister, King's Lynn; Dr. V. W. Low, London; Leviathan; Mr. J. Lawrence-Hamilton, Brighton. **M** D. M. Macdonald, M.B., Dunkeld; F. C. Madden, M.B., Cairo; Dr. C. Mercier, London; M.; Messrs. J. M. Mitchell and Co., Glasgow; Mr. J. J. Mackay, London; Mr. G. H. Makins, C.B., London; M.D. and a Father; M.O.H.; Dr. C. Murray, London; Mr. F. E. Miall, Bradford; Mr. H. Mills, London; Medical Society of London, Secretary of, London. **N** National Association for Prevention of Consumption, Secretary of, London; Dr. J. T. C. Nash, Southend-on-Sea; R. E. Newton, M.B., Perth, W.A. **O** Mr. E. M. Owen, Guildford; Obstetrical Society, Secretary of, London. **P** Dr. A. Pick, Carlsbad; Mr. G. Pernet, London; Dr. B. Pierce, York; Dr. W. R. Parker, Kendal; Mr. S. Paget, London; Pharmaceutical Journal, Editor of the, London; Pro Bono Publico; Dr. J. Prie, Leamington; Paul Pry; Mr. E. J. Parry, Hurstpierpoint; Dr. R. Purdon, Belfast; J. G. Pardoe, M.B., London. **R** Mr. W. F. Reckitt, London; Mr. C. F. Rudd, Stalham; Royal Waterloo Hospital, Secretary of, London; R. C. **S** Mr. J. L. Stretton, Kidderminster; Mr. F. G. Scott, London; Dr. R. S. Stewart, Bridgend; Mr. R. R. Sleman, London; Mr. W. F. Sheard, London; South of the Tweed; Sceptic; Mr. H. de Styrap, Shrewsbury; Dr. E. H. Starling, London; Dr. E. H. Snell, Coventry; Mr. L. B. St. Bastian, London; Messrs. W. B. Saunders and Co., London. **T** Miss H. Todd, London; A. P. Thom, M.B., Geraldton, W.A.; Dr. J. C. Thomson, Hong Kong; Tibia. **V** Mr. S. Vines, Manchester; Viator. **W** Dr. F. J. Waldo, London; Dr. W. Wingrave, London; Mr. G. D Wilson, London; etc.

BOOKS, ETC., RECEIVED.

Animal and Vegetable Fixed Oils, Fats, Butters, and Waxes; their Preparation and Properties, and the Manufacture therefrom of Candles, Soaps, and other Products. By C. R. Alder Wright. Second edition, edited by C. Ainsworth Mitchell. London: C. Griffin and Co., Limited. 1903. 25s.

Medico-Psychological Association of Great Britain and Ireland. A Revision of the Statistics presented by the Committee on Tuberculosis. By T. A. Chapman, M.D. London: Adlard and Son. 1903.

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Adeno-Myome des Uterus. Von Thomas S. Cullen. Berlin: August Hirschwald. 1903.

Home Nursing. By Bernard Myers, M.D., C.M., M.R.C.S., L.R.C.P., etc. London: Baillière, Tindall and Cox. 1903. 2s. 6d.

Amaury. By Alexandre Dumas. Translated by Alfred Allinson. London: Methuen and Co. 6d.

Georges. By Alexandre Dumas. Translated by Alfred Allinson. London: Methuen and Co. 6d.

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The Prince of Thieves. By Alexandre Dumas. Translated by Alfred Allinson. London: Methuen and Co. 6d.

Robin Hood the Outlaw. By Alexandre Dumas. Translated by Alfred Allinson. London: Methuen and Co. 6d.

The Three Musketeers. By Alexandre Dumas. Translated by Alfred Allinson. London: Methuen and Co. 1s.

Manchester Medical Handbooks. Handbook of Surgical Anatomy. By G. A. Wright, B.A., M.B.Oxon., F.R.C.S. and C. H. Preston, M.D., B.S.Lond., F.R.C.S., L.D.S.Eng. London and Manchester: Sherratt and Hughes. 1903. 4s. 6d.

Practical Nursing. By Isla Stewart and Herbert E. Cuff, M.D., F.R.S.S. Vol. II. Edinburgh and London: William Blackwood and Sons. 1903. 3s. 6d.

Scheme for the Differential Testing of Nerves and Muscles for Use in Diagnosis. By J. Montgomery Mosher, A.M., M.D. Albany, New York: Brandon Printing Co. 1903. 1 dol.

*** In forwarding books the publishers are requested to state the selling price.

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An Address
ON
THE MEDICAL CURRICULUM.

Delivered on October 1st, 1903, on the Occasion of the Opening of the Winter Session of the Medical Department of Yorkshire College.

By E. A. SCHAFER, LL.D., F.R.S.,
Professor of Physiology, University of Edinburgh.

Gentlemen,—There is no subject which will require more careful consideration in the settlement of the educational details of the new University of which Leeds is to be the centre than that of the choice and arrangement of the curriculum to be required for the degrees in medicine, and I therefore make no apology for introducing this as a subject of the address which I have been honoured by being asked to deliver to you to-day. An exceptional opportunity presents itself: you have, within certain limits, a *tabula rasa*, and it behoves the authorities of the future university to mark it in the manner best calculated to promote the advance of medical science and the efficiency of medical teaching. If, from an experience acquired as a teacher and examiner in various universities during a period of more than a quarter of a century, I can help in the promotion of these objects, by pointing out virtues which may be emulated here, and failings which may be avoided there, I shall at least feel I have done something to assist in the modelling of what will, we all hope, become one of the great centres of learning of the kingdom and empire.

The University Ideal.

But whilst endeavouring to sketch out what subjects should form part of the medical curriculum of a university, and to appraise their relative order and value, I do not propose to place before you an ideal which is unattainable under the circumstances of place and time, and, more important still, of finance in which you find yourselves, although it would be easier to construct an ideal curriculum than to plan one out within the limits of present-day practicability. I suppose that curricula now being established in some of the newly-endowed American universities will more nearly approach the ideal than is possible anywhere upon this side of the Atlantic. In the Johns Hopkins University at Baltimore no student is admitted as an undergraduate in medicine who has not previously passed a special examination in arts and science, and the knowledge required for this examination is such as will be productive of the greatest amount of benefit in preparing for the medical sciences properly so called. It includes amongst other things a reading knowledge of French and German, and a thorough practical study of the preliminary sciences. The medical curriculum proper extends over at least four years, so that a period of study of not less than six years in all is required of the student before he can receive the university stamp in the form of a degree in medicine. A similar principle has lately been established for Harvard, and it seems likely that all the American universities of the highest rank will follow suit. It is certainly not a little remarkable that the American universities, when placed in the possession of adequate endowments, make no attempt to increase the number of their graduates by a lowering of standards—a method of procedure which I believe may still be observed in operation in some which are not yet in that favourable condition, and which has, I fear, not been universally avoided in our own country—but aim entirely at attracting students both by the thoroughness and efficiency of their teaching and by the facilities for post-graduate study and research which they offer in all departments of science and medicine. The natural result of this must be that these universities will not only obtain the pick of the American students, but will, as years go on, attract students—as they already have begun to attract professors—from other countries, so that eventually the centre of gravity of medical science will become shifted westward. This must certainly be the result of the development of the universities in the States, which will eventually take the part which was played by the universities of Italy in the Renascence, and by those of Germany in more recent times. Unless, by the munificence of the private benefactor, or direct and adequate endowment by the State, our own universities are placed upon a footing which shall render it possible for them to compete, by thoroughness of equipment and the adequate provision of a staff qualified in the highest manner both for teaching and research, with those which are now, by virtue of the possession of these requirenda, outstripping us upon the other side of the Atlantic. But the object of this address being not so much to place before you an ideal at present impossible of attainment as to offer practical suggestions regarding the manner in which a medical curriculum may be planned out under actually existing circumstances, let us turn our attention to this.

It may be premised that every university should endeavour so to arrange its teaching and examinations as to render it possible for all students who have conscientiously followed the teaching, and who have worked steadily during their period of study to obtain the degree which marks a certain standard of efficiency. This is the pass standard, and the medical degree in many universities is restricted to this standard, which, however, varies considerably in different centres. I myself think that it is not only right for a man who has shown himself superior to his fellows in learning to be able to have that superiority recognized by an honours degree, but that the promotion of higher teaching in the university suffers from the absence of such degrees, since, if there is but one standard, and that not a particularly high one, the teachers will be chary of offering and the pupils impatient of receiving knowledge which both know will not be required for an examination. I do not, however, propose to divert the course of your attention along by-paths which lead in the direction of special or honours degrees, which, when all is said and done, must at best concern only a small proportion of undergraduates, but will try and confine it to the manner in which the requirements for a pass only should be met.

The Standard of a University Degree in Medicine.

In the first place I would insist that a university degree in medicine should invariably—although in some instances it is not so—be a sign of higher attainments than a mere qualification to practise. I do not think there is any fear that the new University which is to be set up here will depart from this principle, or is in the least likely to go back upon the traditions of the Victoria University of which it is one of the offspring. I will assume that the medical degrees will, as they should do, confer a real distinction and indicate a fair amount of scholarship. To attain this or any other university degrees, it is necessary to pass through certain stages of prior education, and to produce evidence, by examinations or otherwise, that in certain stages a certain proficiency has been acquired. Of these stages the elementary and secondary are common to most degrees, and the subjects embraced by them are regarded as essential elements of a general education. How far this may be true for all of them, I am not now prepared to discuss at length. We still follow in some respects the traditions handed down to us from the Middle Ages regarding the education of our boys. It is no longer considered essential that a member of Parliament should introduce from time to time a quotation from Virgil or Ovid into his speeches, and probably only a minority of the members are now able to understand such a quotation were it forthcoming. But a certain smattering of a "little Latin and less Greek" is still regarded, whether rightly or wrongly, as part of the education of a gentleman. This is a social tradition which is deep-rooted, and although real scholarship in the classical languages is rare, in spite of the vast amount of time which is devoted—during school and university life—to their study, it is kicking against the pricks to suggest that subjects which will be more useful to a man in after-life might, even as a form of mental training—and that is the reason now usually given for the retention of the prominent position occupied by the classics in our large secondary schools—take their place with advantage in the school curriculum. If as much time were to be devoted to the acquisition of a knowledge of French and German as is given to that of Latin and Greek, the result would at least be the acquisition of knowledge which would in nine cases out of ten prove an important advantage in a man's subsequent career, and most emphatically is this the case if that career is to be the profession of medicine. The Latin and Greek which is learned at school by most boys is in 99 cases out of 100 useless to them in their future occupations, and even in the medical profession, where terms derived from those languages are largely employed, a very small acquaintance with them is sufficient for understanding such terms. It is merely commonsense to insist that it is better to have a useful acquisition than one which at the

best is purely ornamental; but experience teaches that when we oppose commonsense to tradition the latter usually comes off victorious. There is, indeed, nothing so hard to eradicate as a long-standing tradition. It has often happened before, and may happen again, that clinging to traditions has barred the way of advancement of whole communities and races of mankind.

NATURAL SCIENCE IN SECONDARY SCHOOLS.

I suppose it will be even more difficult to obtain the general introduction of the teaching of natural science than of modern languages into secondary schools in the place of a large part of the time now occupied by classical studies. It is appalling to think that many people who pass as highly educated have absolutely no knowledge of any of the sciences except, perhaps, mathematics; that most leave school and the university and remain throughout life entirely ignorant of such fundamental and everyday subjects as the composition of the atmosphere, of water, and of the soil, the operations of physical and chemical agencies, such as produce heat, light, sound and electricity, the relationships between electricity and magnetism. They know nothing regarding the structure and mechanism of any plant or animal, and and least of all of the structure and mechanism of their own body, although they often profess a profound knowledge of an intangible entity which they assume to inhabit it. Nature is to them a sealed book. Her forms and colours may produce impressions of pleasure, but they care not to inquire why. Their "ignorance is bliss," they find it "folly to be wise." They "ask not proud philosophy to teach" them what things are. They probably still believe that the earth and all things therein were created in six days; they resent the idea of a quadrumanous ancestry, and are convinced of the existence of an inferno somewhere in the bowels of the earth and of a paradiso somewhere in the sky above them, although how that can be arranged conveniently for the inhabitants of the antipodes they do not trouble to conceive. I do not assert that there are people who pass socially as educated persons who still retain the idea which was imparted to us all in our childhood that the moon is made of green cheese; but at any rate I am perfectly sure that there are a vast number who have not the slightest inkling what any of the celestial bodies are composed of, and many more who could not for the life of them say how it is possible to arrive at a notion regarding their nature. A certain proportion of people pick up a smattering of knowledge regarding some of these things from the hearing of occasional lectures at philosophical institutions or from the perusal of articles in the reviews and journals or even in magazines. But the general fact remains that the ignorance, not of the populace alone, but of the so-called educated classes, regarding all matters relating to science is—I can find no other word for it—appalling. Small wonder that Christian Scientists, antivaccinists, antivivisectionists, *et hoc genus omne*, flourish in a soil so fertile!

But whatever may be thought about it as a subject of general education, a knowledge of the sciences is an absolutely essential preliminary to the study of medicine, and because such knowledge is not imparted in our schools, it has become necessary to incorporate into and in so far to burthen the medical curriculum with courses of preliminary science. At least a year of the precious time which might be devoted to the study of medicine is thereby occupied by subjects which could be equally well acquired before the study of medicine is actually begun. This is only partly due to the fact that secondary schools do not lay themselves out to give instruction in science. For even if they did so, and if the education they gave were as thorough and practical as it should be, and as it undoubtedly is in a very few exceptional instances amongst English public schools, the rules of the General Medical Council would render the taking of it in schools nugatory. For there is, as you are aware, a regulation of the General Medical Council to the effect that no course of instruction which has not been attended subsequent to registration as a medical student should be permitted to count in fulfilment of the requirements as to science courses necessary for qualification. In other words, a student may have gone through at school or even at college a thorough course of instruction in the natural sciences, and is yet unless he happen to have had himself registered beforehand as a student of medicine—debarred from presenting himself at the preliminary scientific examination for the medical degree of a university until he has again attended the same courses in the medical department after registration. You are further doubtless aware that this regulation is at the present moment being defied by the Royal Colleges of Physicians and Surgeons. Whatever the motives of the Royal Colleges may be, I confess that they have my entire sympathy in the action they have taken, and I trust the result will be that this registration of medical students will be either ended or mended, for as it at present stands it is a direct discouragement to the teaching of science in schools. But although the main fault lies with the General Medical Council in maintaining a regulation the utility of which has long been a negative quantity, one cannot exonerate the universities themselves in the matter; indeed, I am not sure that the continuance of the regulation is not the result of the large representation which the universities possess upon the General Medical Council. For many, if not all, of the universities insist that registration by the General Medical Council shall precede attendance on any course which is required for their medical degree, although such registration has nothing whatever to do with the university, and should be unnecessary so far as a university degree is concerned. The regulation is certainly an advantage to the university, in so far that it compels the attendance of more students upon the science courses of the medical curriculum, and brings in more fees to the university chest or to the university teachers. But, gentlemen, this should not be the aim of a university. Its only aim should be the encouragement of learning, and in no way can this be better attained than by influencing the course of teaching in schools which send people to the university. The present system of insisting upon the science subjects being taken at the university is detrimental both to the schools and to the universities. It is detrimental to university teaching, because it compels teachers of university rank, who should be engaged in giving instruction in the more advanced parts of their subjects, and in prosecuting and directing research, to devote most of their energies to the teaching of such elementary parts of their science as could be quite as readily imparted by properly qualified science masters in schools. It is detrimental to the schools, because it opposes an obstacle to the pursuit of science teaching in them, by withholding recognition of such teaching, so that boys who might well be occupied in acquiring, whilst still at school, a knowledge of the sciences which they will need, are led rather to continue to work upon lines which will be of little or no use to them in their subsequent career in medicine.

I suppose that most intelligent boys of 16 who have been properly taught would have no difficulty in passing the preliminary examination in arts which is required for any medical degree or diploma, since they have by then acquired a sufficient knowledge of classics and other subjects of general education. But it is customary to keep boys of the upper classes at school until 18. The years from 16 to 18 are two of the most important years of life. Intelligence is by then fully developed, memory is retentive, attention readily concentrated. Nevertheless these two years are ordinarily occupied by an extension of instruction in the same subjects as occupied the earlier years; or, if there is any change, it is in the direction of the exclusion of all other study but that of classics and mathematics, the former usually greatly preponderating. As I have already said, these studies can be of no conceivable advantage in after-life to 99 out of 100 boys. But supposing that this time of life were occupied not as an exception but as a regular thing—in all schools by similar systematic instruction in one or more branches of science, as it is now customary to give in classics. Will any one contend that such general instruction of all boys in the principles of science—instruction which I would emphasize must be of a thorough and practical nature—would not be an incalculable gain? No one would be a worse man of business, a worse lawyer, a worse clergyman for possessing a little accurate knowledge of the nature of things. As compared with the acquirement of a little classical learning, the gain to the individual would be great, to the community still greater. But for the future medical man the advantage of such a course is preponderating. Even if a part only of the two years were devoted to science study, he would be able to acquire before leaving school for the university a far better knowledge either of biology or of chemistry and physics than he does in the meagre amount of time which is often allotted to those subjects in the crowded medical curriculum.

I am, it will be seen, a strong advocate of the relegation of the teaching of the preliminary sciences of the medical curriculum to the school period. But I recognize that it is at present impossible by reason of two circumstances one being that most schools are not yet organized for the proper

teaching of science, and the other that the regulations of the General Medical Council and of the universities directly or indirectly discourage such teaching. Were this disability removed I am convinced that the other circumstance would in the course of time right itself. Schoolmasters are not an obstacle. They will teach whatever it is to the advantage of their pupils to learn. But until the universities encourage—cease, I ought to say, to discourage—the teaching of science in schools, it will not be adequately taught there. I trust that your new University at least will do what in it lies to promote this reform—one of the most important, I believe, which can be instituted—not only in the interests of the medical profession in this country, but in those of the community at large.

The Preliminary Sciences and the Medical Curriculum.

You will be saying to yourselves that I have got away to the ideal, which I promised to avoid, and in a sense that is true, for it is impossible to suppose so fundamental a change in school teaching to be within the range of early possibility. We must, in the meantime, take things as we find them—that is to say, take students and begin their training as medical men at a stage when they are in most cases still entirely ignorant of any of the natural sciences, and it is for these that we must plan out our medical curriculum. In it must therefore be included the so-called preliminary sciences—that is, physics, chemistry, and biology. But if the student can produce evidence that he has attended a sufficient course of instruction in any or all of these subjects, and can pass a qualifying examination, he ought to be exempted from any further attendance in that subject or subjects, whether previously registered or not. For if he were able to pass in all, this would at once enable him to proceed with what may be termed the medical curriculum proper, and he would have the advantage over his fellows either of obtaining his degree within four years instead of five, or of being able to devote one year more than they to actual medical subjects. At present, in the vast majority of instances, these preliminary sciences have to be included in the five years' curriculum, which must also include anatomy and physiology, pharmacology and pathology, hygiene and forensic medicine, midwifery, surgery, and medicine.

In devising a plan of study and examinations which shall embrace all these subjects, it seems a mere platitude to say that they should be taken, not haphazard, but in a regular sequence; that one subject or class of subjects should lead up to another; that no part of the curriculum should be begun until the parts which should rightly precede it have been mastered. The reason for including physics, chemistry, and biology in the medical curriculum is that anatomy and physiology, especially physiology, can only be understood by those who have previously acquired a knowledge of these preliminary sciences. Physiology is the physics and chemistry of the living organism, and it is obvious that it cannot be studied before, or even along with, these subjects; they must first be mastered. It is therefore clear that the first part of the curriculum must be given up to physics, chemistry, and biology, and it is impossible to allow less than one year to those subjects; they cannot be learned in less time, and I doubt whether any student can obtain such a mastery over them even in a year as will enable him to follow out the physical and chemical problems which are presented by the animal body. Here, once more, comes out the supreme importance of rendering it possible to acquire the necessary knowledge of at least a part of these subjects at school.

Human Anatomy and Hospital Attendance.

For the knowledge of physics and chemistry required for study of physiology is not, as is sometimes assumed, a mere smattering, but should be a very accurate knowledge of certain parts, and a good general knowledge of the whole. A year is the very least time that must be set aside for the preliminary science subjects, and as physics and chemistry are without doubt the most important and also the most difficult of these subjects, two terms out of the three which constitute the academic year must be given up to them, the remaining three being devoted to biology. It is usual to study physics and chemistry in the two winter terms, and biology in the summer, and this arrangement is natural and convenient. These subjects, which have little in common, should not overlap; this is, indeed, a general principle, which may be laid down regarding all subjects of a curriculum. It is far better that the student should have his mind saturated with one subject than that he should attempt to master at the same time others which are not immediately cognate.

In some medical schools—as at Edinburgh and Dublin—it is customary to recommend students to begin the study of human anatomy in the first year. This would be an excellent arrangement were any of the subjects of the science preliminary disposed of prior to the commencement of the curriculum, but without this proviso it only serves to overload the work of the first year, and to prevent the student from devoting all his time and energies to the sciences which are essential both to the understanding of physiology and to the proper appreciation of human anatomy. Under present circumstances it is absolutely to be condemned. Let the student first surmount the difficulties of the preliminary sciences and it will then be time for him to attack the intricacies of human anatomy.

The preliminary sciences having been, we will assume, overtaken in the first year, four years out of the five remain. How are these to be apportioned, and what is to be the order of study? The subjects which must be mastered during these years are multifarious, but allow of division into three groups, the first of which embraces anatomy and physiology, the second pathology and pharmacology—which may in a sense be looked upon as an extension of the first two—and the third, medicine and surgery in all their branches. In considering the order of study the relations which these subjects bear to one another must be kept in mind. Surgery and medicine are based upon anatomy and physiology; they cannot be studied or understood without a previous and thorough knowledge of anatomy and physiology. It is as absurd to attempt to teach medicine or surgery before anatomy and physiology have been mastered as to endeavour to teach algebra before arithmetic. I well remember the time—it seems to me only the other day, but it is really five and thirty years ago—when I entered University College, London, as a student of medicine. It was then customary at all medical schools in this country for the students, at the same time that they were studying anatomy, physiology, and chemistry, to attend the clinics in the wards and the operations in the theatre—to "walk the hospitals," as it was then termed. We usually followed round the wards those members of the staff who had titles to their names; we applauded the dexterity of the surgeon who could whip off a limb or crush several stones before one could say "Jack Robinson." We studied human nature of all sorts in the out-patient department, but of knowledge which was likely to prove of value to us in our future profession we acquired not one iota! It was impossible for us to understand even the language which was used in describing symptoms of disease, and if a physician, ignorant of our status, addressed to any of us a question bearing upon the case he was discussing, we could only blush with confusion in our entire ignorance of the subject. Our fond parents thought no doubt that we were imbibing useful knowledge, and were interested listeners when we enumerated the operations we had witnessed and the various maladies with which we had made acquaintance, already looking upon us as budding Listons or Jenners, soon to be as competent to cure and qualified to kill as the best: "The dear boy is beginning early to acquire a practical knowledge of his profession," they would probably remark.

I am afraid some of us fostered this delusion, for it did not come amiss to many to idle about the hospital rather than to work strenuously in the dissecting room and in such laboratories as were then available, or to read up anatomy and physiology in the library. But there were others who early discovered that the time spent in the wards during those first years was wasted, and who soon discontinued the attendance at the clinics, resolving to defer such attendance until the subjects which were necessary for obtaining any benefit from it were finished with; and these, I am sure, include all those of my fellow students who have risen to eminence in the profession. Not long after the time I am alluding to discontinuance of attendance at the hospital during the years devoted to the study of the preliminary sciences and of anatomy and physiology became general, the practice being discouraged by the rising generation of physicians and surgeons, and it was ordained that no one might have a clerkship or dressership until he had passed his examinations in anatomy and physiology.

I believe that the practice in other schools, with which I am less familiar, has followed similar lines, and that at most if not all the English schools, both in London and the provinces, it is unusual for the student to attend the hospital

clinics or to hold any hospital appointment until he has mastered the subjects which alone will enable him to benefit by the instruction given there. I do not know and have not inquired what may be the case here, so that if I am treading upon any present toes in making these remarks and comparisons it is done accidentally. But I do know that the ancient system still prevails in most of the Scottish universities, and notably in that with which I am myself connected. In Edinburgh the student of medicine is still at this present day *incredibile dictu!* not only permitted but even actually enjoined by the Faculty of Medicine to attend lectures on surgery and clinical surgery, and to take up his dressership of surgical cases during his second winter. Remember that when he begins this work he has hardly begun to dissect, and we may fairly assume that he knows next to nothing of anatomy; he is only just beginning to study physiology and is entirely ignorant of pathology. He may go straight from the dissecting room to an operation or to the dressing of a surgical case, and this in the very cradle of Listerism! I have, indeed, heard it stated by a professor of anatomy that the condition of the subjects in the modern dissecting room is such as to be by no means unfavourable to the promotion of asepsis. This may be so—I admit I have only the evidence of my olfactory sense to contradict it—but I confess that that for me is sufficient, and were I a surgeon or even only a patient, I would prefer to have my antiseptics administered in some other form.

This is an extraordinary instance of the survival of the unfittest, and, so far as I can ascertain, has not one single point to recommend it. It is sometimes suggested in its favour that the study of surgery lends itself to anatomy; this has even been advanced as an argument for the adoption of the Edinburgh system. But the argument is only applicable where there is already a thorough knowledge of anatomy, and if this knowledge is non-existent the applicability fails. The argument might equally well be applied to all the sciences which are preliminary to the study of medicine. No doubt its relationship to physiology, pathology, and forensic medicine lends interest to chemistry—it is, indeed, on this account that chemistry is a necessary part of the education of a medical man. But no one would seriously contend that these subjects should therefore be studied at the same time with that science. It has also been suggested that it is a good thing for a medical student to come in touch as early as possible with disease and its treatment. *Cui bono?* Better far return to the old apprenticeship system, which has had "its day and ceased to be," for under this a certain amount of rule-of-thumb knowledge of diagnosis and treatment was undoubtedly acquired. At least it did not interfere with the acquisition of knowledge which is now rightly regarded as essential, but which was formerly looked upon merely as subsidiary, the knowledge of the sciences upon which medicine and surgery are based. For, bear in mind that there is a vast difference between the point of view from which medicine and surgery were regarded then and now. Then—and I am speaking of a time extending far beyond the middle of the last century—medicine was looked upon as an art—"the art of healing" is a term which still perpetuates this aspect—and as such it was practised. The individual experience of its practitioners counted for much more in proportion than can ever be the case again. It is now every day becoming less of an art and more of a science. *Ceteris paribus*, the young practitioner may be, or ought to be, a better doctor than the old one. Not that I would underrate the value of experience also. But the phenomena of disease cannot any longer be considered apart from their causes, and a knowledge of these is only to be obtained through pathology and bacteriology—sciences which progress by leaps and bounds, so that each year sees important advances in them. The only argument in favour of the Edinburgh system of taking surgery during the second winter which has ever appealed to me came from one of my students, who said: "You see, sir, we have to be signed for it, and we get it over early."

THE PLACE OF ANATOMY AND PHYSIOLOGY IN THE CURRICULUM.

On the other hand, the disadvantages of the system are only too apparent. While little or no surgery can be properly learned on account of the want of a previous knowledge of anatomy and physiology, the time which is required to be given up to surgery and clinical surgery renders it absolutely impossible to give adequate attention to anatomy and physiology. Lectures on surgery and clinical surgery and hospital work occupy three hours a day, and one hour more must be reckoned for the copying out of notes and the reading up of cases: at least half the working day devoted to a subject which cannot be properly learned or taught on account of ignorance of the sciences upon which it is based! And unless the student takes out his surgery again towards the end of his curriculum—as many of them do—whatever else he may be, he will be a very poor surgeon. There is, therefore, no advantage, from the point of view of surgery, to compensate for the interference with the study of anatomy and physiology. The second year is that which is naturally occupied by these subjects, and the student should devote himself to nothing else, for they are, in all conscience, subjects of sufficient magnitude. Physiology used to be looked upon as quite secondary in importance to anatomy, and it was considered sufficient to attend one or two courses of lectures upon it, whereas anatomy had to be studied both with the aid of lectures and by dissections. It is, however, now recognized that a thorough knowledge of physiology is of equal importance with a knowledge of anatomy, and that it is not sufficient to teach the subject by means of lectures, but that all parts of it should be studied in a practical manner. For this and dissections the whole time of the second *annus medicus* is necessary. For advanced knowledge a further year of study would be required, but for the acquisition of a sound knowledge of the principles of physiology based mainly upon practical work and demonstrations, one year, provided it were not broken in upon by other subjects, would for most students be sufficient. I have no desire to magnify my subject. Because I am myself a physiologist I do not think it is necessary that every medical student should become one. Although I admit the importance—actual and prospective—from a scientific point of view, of the study of such parts of the subject as electrophysiology or the mode of production of visual illusions, I do not think it is possible or desirable to require an acquaintance with all the details of these from a candidate for a pass degree in medicine. But it is absolutely necessary that every student should rightly comprehend the chemistry of food and digestion, the physics of the circulation and respiration, the structure and action of secretory glands, the nature of muscular contractions, the operations of the nervous system. He should be taught how to investigate physiological problems for himself, so that he may be able to apply the knowledge which he acquires to the investigation of similar problems under the abnormal conditions induced by disease. All this can be, and is, done systematically in well-organized medical schools—it is done, as I well know from my experience as a former examiner, excellently in this school. I doubt, however, whether here or in any other medical school in this country a sufficient amount of time is given to the practical study of physiology. But if his whole time during only one year were to be given to physiology, unfettered by any other studies, except such a cognate subject as anatomy, the student could become saturated with the principles and methods of the science, and a single year would probably suffice for many, although others might require somewhat longer. I am convinced that more benefit would be obtained from working almost wholly at the one subject for an entire year than during two years with the interpolation of other subjects.

The case of anatomy is more difficult, the difficulty arising mainly from the impossibility of getting through the dissection of the entire body within a less time than one summer and two winter sessions; this is largely owing to the lack of a sufficient amount of material. It is well known that the teaching both of anatomy and of operative surgery is hampered in this country on this account. I do not know why we should compare unfavourably in this respect with other countries; but I suspect it lies in the working of the Anatomy Act. At any rate the evil is a serious one, and the attention of the Government should be called to it. For without adequate provision for the practical study of anatomy, the study of medicine and surgery must unquestionably suffer. Let me impress upon you, in drawing up a plan of curriculum, the vital importance of keeping apart one solid year for the study of physiology and anatomy alone. It may be necessary to encroach somewhat upon the following year to complete the study of one or both of these subjects, especially that of practical anatomy; but this is not too much time to demand for acquiring a knowledge of the two sciences upon which the whole of medicine and surgery are based. Do not be misled by the specious argument that medicine and surgery are a ter all the subjects a knowledge of which is alone required in practice, and that on this account the largest part of the medical curriculum ought to be occupied by them. Remember that this is the one and only opportunity that the student

will have of acquiring a knowledge of these "ground sciences," whereas he will be continuing all his life to study surgery and medicine. But his study of these will be to little purpose unless it is controlled by an adequate acquaintance with anatomy and physiology.

In insisting so strongly upon the necessity of postponing the study of surgery and medicine until anatomy and physiology are mastered, I am, I daresay, flogging a willing horse. It is quite probable that in this city, the medical school of which has long occupied an honourable position amongst the schools of medicine in the United Kingdom, any suggestion of a return to the old and pernicious practice which is still persistent farther north would be scouted as inconsistent with that proper concatenation of subjects which should be the basis of every curriculum. But I am credibly informed that in a sister city, the university of which is in a similar condition of transition—a vigorous attempt, fortunately unsuccessful, was made to modify the curriculum in what I will call, for the sake of brevity, the "Edinburgh" sense, and it is well therefore to be on guard in this matter.

Pathology and Pharmacology.

Supposing the way to be cleared by the courses of anatomy and physiology having been completed, and the examinations in these subjects passed, the student is equipped for the study of pathology and pharmacology, and may also begin to work at medicine or surgery in the wards. Of these two I would myself give the preference to medicine, as fitting in better with the study of pathology and pharmacology. Besides, it is for various reasons undesirable that the work of the pathological laboratory and attendance in the deadhouse should be concomitant with attendance on operations and the dressing of surgical cases. It is, I know, an almost universal practice to take dresserships in surgery before clerkships in medicine, this being, I presume, one of those traditional usages which die hard. But I know of no valid reason for the practice, and I believe the sequence pathology, medicine, surgery to be better. The exact arrangement of the other subjects belonging to the final part of the curriculum matters less. Some of the special subjects may be taken earlier, others later. The relative importance of these special subjects is a question about which, as about many others connected with the curriculum, there is by no means a consensus of opinion. But I think that most would agree that it is undesirable to expect as much time to be given to the teaching of such subjects as midwifery as to medicine, to pharmacology as to pathology. Materia medica in the strict sense ought not to be part of the curriculum. If a man intends to be a chemist as well as a doctor he should hold the pharmaceutical diploma. A knowledge of the raw materials of pharmacy is of no value to the student. As a rule it is crammed up for examination and speedily forgotten. But a scientific acquaintance with the action of drugs under both normal and abnormal conditions is quite another story, and pharmacology must in future have its due position in the medical curriculum, and may very conveniently follow physiology, of which it is in a sense an extension. As with all other practical subjects, the teaching in pharmacology should be largely of a practical nature. Lectures upon practical subjects are of much less value than practical work in a laboratory. They at least can be replaced by reading; that cannot. It is true that here and there one meets with a lecturer who has the faculty of imparting information in a manner which makes it stick in the brains of his hearers, and here and there with a student who can retain more of a subject from the hearing of a lecture than from the reading of the same subject in a textbook. But these cases are rare. More sound knowledge of almost any scientific subject can be obtained within a limited time—and the time devoted to medical studies is very limited—by properly directed reading, accompanied and illustrated by thorough practical work and numerous demonstrations than from any course of lectures however long. Fortunately the tendency of the present day is to encourage the development of the practical side of teaching. But it is often forgotten in doing so that unless time is found for the practical courses by cutting down the number of lectures, the hours of work become unduly prolonged. The number 100 for a course of lectures seems to be a sort of fetish in many universities, as if there were a special virtue in that number or some multiple of it. In these days of good textbooks lectures have largely lost the importance they formerly had. Yet we find the newest university—that of Birmingham, the medical curriculum of which is planned in many respects on excellent lines—requiring two attendances on complete courses of lectures on anatomy, medicine, and surgery—no fewer than six hundred lectures on these subjects alone! This, gentlemen, is one of the failings which I would have you avoid.

The Order of Examinations.

Let us briefly consider the order and place of the examinations. Examinations are necessary evils; it is not possible, I believe, to devise any means of testing the knowledge of candidates for a medical degree which is to confer a diploma to practise to which far more important objections could not be urged. Nor can the same objection be taken to practical as to written examinations. A sound practical knowledge cannot be crammed; it must be acquired by actual experience. But in most subjects a practical examination is insufficient, because it is rarely possible to cover enough ground in the available time. Nevertheless, the practical side of the examination should be made to preponderate, for it is the best test of real knowledge. Account may also be taken, as is done in the University of Birmingham, of the manner in which the work of the practical courses—including, of course, the clinical courses—has been performed. With this combination a fair estimate of the capabilities of the student could in all probability easily be arrived at.

To understand the existing examination system the manner of its development must be borne in mind. In the beginning certain persons or collections of persons (corporations and universities) were privileged to ascertain the qualifications of those who desired to practise medicine. The candidates were not required to submit evidence of having passed through any particular course of study, but were expected to satisfy those to whom the above privilege had been accorded, or ultimately their nominees—whom we should now call the examiners—that they possessed an adequate acquaintance with medicine, surgery, and the preparation and action of drugs. The candidate was always apprenticed to some practitioner—himself a graduate or licentiate of one of the corporations—who gave the necessary instruction, which might be, and ultimately usually was, supplemented by attendance at a private school of anatomy as well as in the wards of a hospital. There was for a long time but one examination, all the subjects examined on being taken at one sitting. You will find an amusing account of such an examination, evidently taken from the life, in *Roderick Random*. Precise knowledge of detail was not expected, or did not exist, and the efforts of memory needed to recall the various subjects of the examination would not therefore be great. But as knowledge of things medical became more extensive, and especially after it had begun to be recognized that a regular sequence of instruction was necessary, more defined courses of lectures began to be prescribed, and it was found convenient to subdivide the subjects of examination, and to hold this in two parts at definite intervals; anatomy, with a little physiology, being the main subject of the first part, and medicine, surgery, and midwifery those of the second. It is along these lines that the evolution of medical examinations has proceeded. There is a constant tendency to subdivide, and in subdividing to get past the earlier subjects of the curriculum before proceeding to the later ones. It is now usual in many universities to examine first of all in the preliminary sciences of chemistry, physics, and biology—the last again being often taken separately; secondly, in anatomy and physiology, with materia medica thrown in; thirdly, in pathology; and lastly, in medicine, surgery, and midwifery.

Along the same lines it appears to me the evolution of the examination system will continue; indeed, I see no sufficient reason why the process of subdivision should be confined to groups. If a student has attended the prescribed courses upon any subject, why should he not be allowed to present himself for examination in that subject? There is, I know, an impression in some minds that the taking of subjects in this way has a tendency to cheapen the degree. That it will tend to render a degree easier of attainment I am prepared to concede, and to my mind that is a very strong argument in favour of the adoption of the plan. But that it will tend to lower the standard of knowledge required for the degree I altogether deny. On the contrary, it will raise that standard, for a student would certainly be better able to master one subject at a time, and the standard of examination in each subject might easily be higher than with the group system. Even under this system there has grown up a tendency in many quarters towards disintegration of the groups. Thus in the University of Edinburgh, and in other universities which

might be named, although the subjects which are grouped together under the headings of first, second, third, and final examinations are supposed to be taken together, a large amount of latitude is permitted with regard both to the deferring of certain subjects of a group and to the acceptance of a subject in which a sufficient standard is judged to have been attained, even when the pass standard has not been reached in other subjects for which the student presents himself at the same time for examination. Thus for the so-called second professional examination, the subjects of which are anatomy, physiology, materia medica, a student may not only defer presenting himself in materia medica, but may be credited with a pass in only one of the other two subjects of the examination—may, that is to say, pass in anatomy alone or in physiology alone. It would, I think, be better to take a step further and permit the student to present himself in the one subject only. This indeed he sometimes does in an irregular way—riding for a fall in anatomy for example, in order to get through his examination in physiology; but he thereby incurs the stigma of having failed in the subject which he had not really prepared for, and which he had no idea of passing.

But it might be argued that in many cases two or more subjects are so interdependent that from the educational point of view, it would be a bad arrangement to allow them to be taken independently. This argument applies more strongly to anatomy and physiology than to any other of the subjects in the curriculum. Physiology, at any rate, cannot be properly studied without a previous knowledge of anatomy. This anatomy need not, however, necessarily be human anatomy, for the previous study of comparative anatomy is all that need be required for the understanding of physiology—which is, in fact, very largely comparative physiology.

If the subjects of the curriculum were directed to be taken in regular sequence, the principle being as much as possible preserved that every subject is disposed of—as regards both study and examination—before the next subjects are attempted, I venture to think that a much more thorough knowledge of each subject would be attained with far less strain on the mind of the student. Above all there should be no long interval of time between attendance on the courses of study and examination in a subject. The examinations should come whilst the student is fresh from study, for it is impossible to keep up indefinitely the details which are demanded in examinations, and the deferring of the examination often leads to neglect of work during the course of study, followed by a feverish attempt to cram up the subjects during the few weeks before the examination. We have experience of this in Edinburgh, where the students take out their courses of physiology and practical physiology—including histology—during the second year, but are not permitted to present themselves for examination before the end of their third winter; that is to say, they may be ready in all respects by the end of the second summer, but must wait another nine months before they can be examined in the subject. This is unfair on the student and it operates detrimentally upon his work. For human nature being what it is, it is improbable that a man will devote himself with the same earnestness to the study of a subject which he will not be examined upon for nearly two years as he would were the examination to come at the end of the courses he is attending. It is a distinct hardship that students who may have completed their courses either in anatomy or in physiology by the end of the second *annus medicus* are prevented from presenting themselves for examination in either of these subjects for nearly a year. I put this before you as one of the examples which should not be followed in framing the curriculum for your university.

An important principle to be kept in mind in settling the periods of examination is to so arrange matters that there shall be no year, and if possible no term of study, without its corresponding examination or examinations. For as has just been pointed out, do what you will to urge the necessity of work, many students will not work except with a view to the immediate exigencies of an examination. If the examinations for each subject are to be taken separately, they would necessarily come even more often than at the end of each *annus medicus*. And if subjects require a second year of study—as with practical anatomy—there should always be an examination at the end of the first year or at the end of the first winter. This may be elementary, or it may embrace a part only of the subject, but it will serve to stimulate work during that year, and render the student better able to attack the work of the second year. Take, again, the example with which I am most familiar, that of Edinburgh. The student there during his second year is studying anatomy and physiology, in which he cannot be examined before the end of his third winter, and surgery, for which the examination comes at the end of the fifth year. The result is that a number of students, who have not at that early stage in the curriculum yet acquired a full sense of responsibility, yield to the tendency to procrastination which is inherent in most of us, and devote a large part of their energy during the second *annus medicus* to the recuperation of their physical forces. The result is excellent so far as university athletics are concerned, but is much less successful from the academic standpoint. I would strongly urge in the real interest of the student, whose future career does not depend upon his proficiency as an athlete, that this should not be possible. In saying this I would not be understood to imply any discouragement of athletics, which in my judgement should play an important part in the amenities of every university. But they are not the most important element, and should never be allowed to interfere with the main purpose of a student's career. By all means encourage all those manly games, the pursuit of which has given a characteristically healthy tone to university life in this country, but let this pursuit take its proper place in the curriculum, and do not let it at any stage override the pursuit of knowledge.

THE ORDER OF THE CURRICULUM.

In conclusion I will in a few words sketch out what I should regard as, in existing circumstances, the best manner in which the subjects of the medical curriculum can be arranged. Supposing that a student enters in October, as most do. In his first winter he would study only chemistry and physics, and would present himself for examination in those subjects at the end of the winter. In his first summer he would take a course of biology, including the lower forms of plant life, but mainly founded on comparative anatomy; a course of botany strictly so called is in my judgement not essential to a scheme of medical education. The examination in biology would immediately follow. The second winter would be occupied by courses of lectures on anatomy and physiology, by courses of practical physiology, and by attendance in the dissecting-room; the second summer by attendance on practical histology with such expository lectures as might be considered necessary, and by a continuance of dissection. At the end of this summer the student should be allowed to present himself for examination in physiology if he is sufficiently prepared. A certain number will be able to do so, while others may need to defer the subject for six months; if this is done, an advanced course may be taken in the following winter. The third winter will be occupied by dissections and anatomical demonstrations, and by lectures and practical instruction in pharmacology, which would follow naturally upon the courses of physiology. Those students who have completed their dissection of the body by the end of the first winter term, that is, by Christmas, might be permitted to present themselves then for examination in anatomy—otherwise they would defer the examination until the end of the second term (Easter). The examination in pharmacology would naturally come at the end of the third winter.

After anatomy and physiology are finished, clinical work may be allowed to begin with the holding of a clerkship in one of the medical wards, to be followed by a dresserships in the surgical wards. Such appointments should always be continued during the vacations. During the third summer a course of pathological anatomy and histology—lectures and practical—would be taken as well as a course of bacteriology, and this would also be a suitable time for including the subject of public health—examinations in these subjects coming at the end of that summer. The fourth winter would be occupied by medicine and therapeutics, and by general pathology, including practical work in experimental and chemical pathology; the interest in these subjects would be enhanced by the previous attendance in the medical wards and in the *post-mortem* room. The examination in pathology would come at the end of the fourth winter, and certain parts of medicine might now also be taken. The fourth summer session would be occupied by attendance on midwifery, and on a separate three months' course of instruction in the special diseases of women and children, to be followed as before by examination in those subjects. Practical midwifery would be attended at any time after the systematic instruction had been taken.

The fifth winter would be devoted to attendance on systematic surgery, surgical anatomy, operative surgery, ophthalmic medicine and surgery, and diseases of the ear, nose, and throat. The use of anaesthetics and instruction in vaccination might also be conveniently taken at this period. The course of systematic surgery would extend over six months, but the other courses would each occupy not more than half that time. At the end of this fifth winter would come the examination in surgery. The April vacation and summer of this fifth year would be devoted to attendance at a fever hospital and an asylum, to lectures on mental diseases and on forensic medicine, and at the end would come the examinations in forensic medicine and the final examination in medicine.

The curriculum as here planned out can readily be modified to meet the case of instruction in surgery being taken before instruction in medicine, if this—the more usual course—were preferred. In that event a dresserships would precede a clerkship, the fourth winter would be devoted to the surgical subjects and to pathology, and the whole of the fifth year to medical subjects: the examination in surgery being taken at the end of the fourth winter, and all the examinations in medicine at the end of the fifth year.

The student is now equipped with his degree of M.B., B.S., and thereby receives his qualification to practise. In some universities he passes after a certain period of time to take up his M.D. or M.S. without further examination or other test of work or knowledge. In the University of London before its reorganization a severe examination was demanded before either of these titles were conferred. In the Scottish universities and in the universities of Germany and most foreign universities, it has long been the custom to demand the presentation of a thesis upon some subject in medicine or surgery or in one of the related sciences. This is a custom you will do well to follow in this university, for it has the undeniable advantage of promoting research, and has in the past been productive of a large amount of original work, which, although it may sometimes have been mediocre, has in many cases proved of a high order of merit. As an alternative to the presentation of a thesis, the candidate may be allowed to present himself for examination, such examination being either in general medicine or surgery or in some special branch which the candidate may himself select, such as midwifery, gynaecology, ophthalmic surgery, or public health. In this way encouragement is afforded to specialization after a general knowledge of medicine and surgery has been acquired. In some of the best American universities specialization is encouraged even for the work of the pass degree. We are also, of course, familiar in this country with the specialization which is necessary for the diploma of a dental surgeon. But for those who are to receive a diploma to practise medicine and surgery, a thorough groundwork in all branches of these subjects seems requisite, even if they intend to practise in only a limited branch. The time of the ordinary curriculum is fully occupied in furnishing this groundwork; nor do I think that any of the subjects I have enumerated could well be omitted from a general course of medical education which is to confer the diploma to practise.

I will not apologize for having taken up time with these details, for it is only by the plotting out of details that the working of general principles can be illustrated. These principles, however, must not be lost sight of in considering the arrangement of the details, and I will therefore again state them in the briefest possible terms: (1) The relegation of some or all of the preliminary scientific subjects to the year or two preceding entry in the medical school; the examination in these subjects should be not only permitted but encouraged before entry; (2) the maintenance of a proper sequence of subjects, so that in no case should any subject be begun until those on which it is founded have been mastered: (3) the breaking up of the examinations, and the taking of the examination in each subject as far as possible immediately after the courses of instruction in that subject are completed. I am confident that the carrying out of these principles will greatly lighten the curriculum, which in its present form is a grievous burthen on the student, and that so far from having a tendency to lower the standard of knowledge it will help to raise this standard, although rendering the degree more easy to obtain. It is, as you will see, no unattainable ideal which I have set before you, but a plan of study and examination which is easily capable of realization. The medical school in Leeds is for its size one of the best appointed, and the hospital with which it is connected is one of the noblest in the kingdom. The opportunity which presents itself of carrying out such a plan may never recur. "There is a tide in the affairs of" institutions as of "men which taken at the flood leads on to fortune," but if left to ebb will leave them stranded in obscurity. Let it be yours to steer the good ship which is entrusted to you free of the shoals of obsolete tradition into the clear channels which have been buoyed by science, along which the tide of progress is now swiftly flowing.

SEVENTY-FIRST ANNUAL MEETING

OF THE

British Medical Association.

Held in Swansea, July 28th, 29th, 30th, and 31st 1903.

PROCEEDINGS OF SECTIONS.

SECTION OF SURGERY.

EDMUND OWEN, M.B., F.R.C.S., President.

DISCUSSION ON PRACTICAL EXPERIENCE REGARDING THE MOST SATISFACTORY METHODS OF PERFORMING INTRA-ABDOMINAL ANASTOMOSIS.

I.—G. H. MAKINS, C.B., F.R.C.S.Eng.,
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MR. MAKINS said: The strides made in intestinal surgery have placed us to-day in a position to perform satisfactorily and safely so many operations on the digestive tract that the use of statistics going only a few years back is misleading; therefore, although certain statistics are offered for your consideration, it is evident that the most important matter in this direction must be looked for in the remarks from the members taking part in the discussion. Again, it must be remembered that this discussion limits itself as far as mortality is concerned to the one element of sufficiency of the suture.

I propose to make a primary division of the subject under the two following headings:

(*a*) What form of anastomosis is safer and to be generally preferred.

(*b*) What method of union should be chosen.

(*a*) *Is Axial or End-to-end Union, or Lateral Union the more Satisfactory.*—This question is one which has from time to time been frequently raised, notably by Senn, but even now can hardly be said to be definitely settled. Treating the question broadly, it may be first premised that axial union is best limited in application to portions of intestine that are provided with a complete peritoneal investment and a sufficient mesentery, thus to the small intestine, and to the transverse and central part of the sigmoid portions of the colon. The lateral method, on the other hand, is applicable to any portion of the intestinal tract provided only that sufficient length and mobility exist to allow of the desired arrangement of the bowel ends. These conditions are rarely absent except in the case of the lower part of the sigmoid flexure or in the presence of adhesions.

Let us now turn to the theoretical advantages offered by either method. The *axial* method gives an ideal result, both from the physiological and the cosmetic point of view. One joint only has to be made instead of three, hence are gained both saving of time and the limitation of risk of leakage to one source. On the other hand the nutrition of the line of suture is not so well assured; danger of leakage is somewhat greater, and this, if not sufficient to give rise to fatal infection, yet may give rise to sufficient reactionary effusion around the joint to cause later cicatricial contraction; and lastly, the possibility of the formation of a diaphragm or permanent stricture must be borne in mind.

In approaching the consideration of the method of *lateral anastomosis*, it should be remembered that it is the "natural" one, which from time immemorial has proved itself effective against leakage and diffuse infection in the vicarious communications occuring as a result of the process of ulceration either between contiguous portions of the alimentary tract, or between the alimentary tract and neighbouring viscera—

for example, colon and gall bladder, bladder and rectum, etc.

Taking, then, Nature as our guiding light, we may shortly sum up the advantages of lateral approximation. The approximation is one of plane peritoneal surfaces without interruption or the formation of folds or the need for any invagination. The incision needed for the communication is made at the terminal portion of the blood supply, and hence interferes with the nutrition of the bowel as slightly as possible. The communication may be made as large as the surgeon desires and the tendency to subsequent contraction is slight. Disparity in the lumen of the two portions of bowel to be united is a matter of no importance and necessitates no special procedure. No danger exists as to the production of a temporary diaphragm, neither is there a probability of a secondary obstruction of this nature. The chances of leakage are less than in end-to-end anastomosis, as a lateral anastomosis avoids the danger of the mesenteric border or aspect answerable for so long a list of failures in the early history of these operations. This, moreover, is of importance not only with regard to free leakage liable to give rise to widespread infection, but also with regard to the more limited infections liable to be followed by local inflammatory effusion and danger of subsequent external cicatricial contraction.

The lateral method allows the possibility of effecting the re-establishment of the lumen of the bowel at some distance from the neighbourhood of the primary operation. Thus if local infection takes place at the field of operation, the anastomosis may be made far enough off to escape any danger from neighbouring suppuration. This is of especial importance where the subperitoneal plane of connective tissue has been freely opened up, or where drainage of the field of operation is considered advisable or necessary. It is also of importance in some cases of gangrene of the gut.

The most obvious, and a real disadvantage of the lateral method in many cases, is the additional time demanded for the accomplishment of the three lines of suture necessary. Less important is the temporary difficulty occasionally met with in the passage of contents from the dilated to the contracted portion of the bowel. This difficulty is perhaps best illustrated by the cases of short-circuiting in which it has been found necessary to reopen the abdomen and cut off the proximal portion of the bowel just beyond the point of anastomosis to relieve persisting signs of obstruction.

It should be borne in mind that the line of suture most likely to leak in lateral anastomosis is that closing the blind ends, a fact that seems to point to the conclusion that if an axial union has been made this also would have failed.

Lastly, as to the method of *lateral implantation*. This is to be particularly recommended in cases where marked disparity exists between the portions of bowel to be united—for example, in ileo-colostomy, or for the insertion of the duodenum, as in Kocher's pylorectomy. It possesses three very considerable advantages:

(1) That no danger of creating a diaphragm exists, even when two or more tiers of stitches are employed.

(2) That two lines of suture are substituted for the three necessary in a lateral anastomosis, hence a saving both of time and one possible chance of leakage.

(3) Isoperistalsis is assured.

The danger of subsequent intussusception, although it has been raised is so slight as to be negligible.

In summing up this question, I would say axial union is indicated in any part of the small intestine, when there is no inconvenient disparity in the lumen of the two ends of bowel concerned, when the lumen of each is of sufficient size, and when the bowel wall is in good condition.

That axial union may be employed in either the large or small intestine has now been satisfactorily demonstrated in thousands of cases, even where small and large gut have been united. Thus in a series of 11 cases of enterectomy published by Mr. Littlewood in the *Lancet* of May 30th, 1903, a mortality of 27.27 per cent. occurred (slightly under the 30 per cent. usually met with), end-to-end or axial union being made in all, and once between ileum and ascending colon.

Ileum and ascending colon	1
Ascending and transverse colon	2
Transverse and transverse	2
Transverse and descending	3
Descending and descending	1
Sigmoid flexure and rectum	1
Rectum to rectum	1
	11

In a twelfth case a lateral anastomosis with closure of the cut ends failed.

Of the three fatal cases recorded, in only one was the suture (descending colon to descending colon) demonstrated as insufficient.

Twelve resections of the bowel with only three deaths (25 per cent.) for intussusception, by von Eiselsberg[1] are even more striking. These were all axial unions with Wölfler's stitch of ileum to colon, the lumen being, if necessary, adapted either by partial closure of the colic opening or oblique section of the ileum.

In the mixed series of statistics representing 50 axial unions of the intestine for all causes performed at my own hospital, the percentage mortality amounts to 67.3 per cent.

Lateral anastomosis, when practicable, is the more suitable operation for employment in the case of the large intestine, and this especially when the enterectomy has to be performed for the removal of a growth. Many reasons may be advanced in support of this opinion. Naturally, the colon possesses a weaker wall in comparison with the solid nature of its contents than the small intestine, the blood supply is less abundant and peristalsis is less active, whereby a tendency to stagnation is furthered. In cases where old-standing obstruction has had to be compensated for by hypertrophy, these characteristics are exaggerated, and the hypertrophied upper end, which at the immediate moment of operation offers some help as a support, as a splint is an actual disadvantage. As indicated by its pale colour, the blood supply of the hypertrophied bowel is comparatively poor, and the difference in resistance offered by the proximal and the distal end is opposed to the insurance of a good joint by the stitches. Again, lateral union not only obviates the disadvantage accruing from the necessity of uniting surfaces uncovered by peritoneum, but also that dependent on the irregular surface due to the normal sacculation of this portion of the bowel, since the actual union may be made by approximating the longitudinal muscle on the free margin of the bowel, which is always plane.

Lateral implantation offers all the advantages to be attained by lateral anastomosis, but its employment is for the most part confined to cases in which disparity in size of the portions of bowel to be joined is marked, for example, ileo-colostomy.

The recent statistics of St. Thomas's Hospital show a mortality of 50 per cent. for axial and of 30.7. per cent. for lateral unions. As far as my personal experience goes I hold that lateral union is generally safer than axial, and is preferable both in the case of the large and sometimes of the small bowel, and that the main advantage offered by axial union, if not the only one, is the saving of time which is effected by its use.

I am sorry that I am not in a position to offer any more novel exemplification of the permanent result obtained after lateral union of the small intestine than the drawing of von Frey, now become classical, but I believe the diagram fairly represents the late result of the process, and seems to me to realize all we could wish even from the cosmetic point of view.

In considering the statistics before us we must bear in mind that the main point in question is the sufficiency of the suture. In the two series of St. Thomas's results it is important to note that in the early one, of 36 cases in which the state of the suture was recorded, leakage occurred in 9, or, 25 per cent., while consequent obstruction followed in 5, or 13 per cent.

In the second series, mainly as a result of improved technique, in 66 cases leakage occurred in 11, or 16 per cent., and consequent obstruction in none. On the other important point as to how far the occurrence of immediate infection depends on the method of suture chosen, I am unable to offer any reliable statistics.

The time at my disposal will not allow more than mention of the importance of the preliminary preparation of the patient in the way of thoroughly unloading the bowel and ensuring the absence of any avoidable distension. A few words must be said, however, as to the preliminary steps in any operation for the suture of the bowel: The abdomen having been opened, the necessary examination is first made, the portion of gut to be removed or united is drawn forward or sufficiently freed to be brought readily without the abdominal cavity, clamps are applied on the proximal and distal sides of the site of operation, and the peritoneal cavity and the abdominal wound are then carefully shut off.

First, with regard to the use of clamps. These are generally to be preferred to digital compression as both more cleanly

[1] *Langenbeck's Archiv*, Band lxix, 1903, p. 19.

and effective. Digital compression should, in fact, only be used either in emergencies or when the shortness of the mesentery renders it the only convenient method. In cases where a portion of intestine has to be removed two pairs of clamps are needed for each end, in order that escape of bowel contents be prevented, and prior to their application the intervening portion of gut should be emptied as completely as possible by careful pressure. As to the form of clamp to be employed, individual preferences no doubt exist. Personally I very much prefer Doyen's clamps, in the case of the intestine made somewhat more light than the usual French pattern. The length of handle, by resting across the wound, is of considerable use in holding up the ends of the intestine and preventing their retraction into the abdominal cavity. When a shorter and smaller form is desirable, Lane's clamp or the modified Dieffenbach's forceps known by my name are convenient. The next step consists in the shutting off of the area of operation from the general peritoneal cavity. Neighbouring viscera may be protected by the insertion of layers of gauze; in the practice of my own hospital, pads of sterilized gauze previously made up in two convenient sizes are usually employed, and for the cut margins of the abdominal parietes strips of gauze in the form of rolled plugs. The latter are convenient, as adapting themselves more readily and closely to the angles of the wound and to the fixed clamps. It should perhaps be emphasized that contamination of the parietal wound is of even more importance than that of the peritoneum itself, since it is unnecessary, and the complex cut surface of the abdominal wall is less easily cleansed than a surface of serous membrane. These preliminary measures having been effected the mesentery is dealt with. It is better to deal with it at this moment for two reasons: First, we get rid of a source of free bleeding and the consequent risks of the spread of infection by fluid, prior to the opening of the bowel, and the dissection may need to be extensive if the removal of glands forms a part of the operation and necessitates interference with the plugs; secondly, the point at which the mesentery is divided must, in the interest of the best possible nutrition, strictly determine the position of the section of the intestine.

In other cases, notably those of growths of the gut, the condition of the mesentery itself will determine the amount of bowel to be removed. In cases where the bowel itself is the main feature, as in gangrenous hernia, the question arises as to whether the corresponding portion of mesentery should be removed or not. The condition of the mesenteric vessels as to the amount of thrombosis and possible infection of the clot are here the main elements to help in the determination. It is probably safer in all bad cases to remove a central wedge; in others the mesentery may be folded so as to interfere with the general blood supply as little as possible.

The intestine now being free, an additional layer of gauze is laid beneath the point to be divided and the gut cut through. Each end as it is divided is carefully cleansed with a dry sponge, and the free part of the lumen is first treated in like manner and then wiped over with a disinfectant (1 in 10.000 mercuric chloride), care being taken not to use sufficient fluid to allow of any running into the wound: it is then laid aside wrapped in gauze prior to the application of the suture.

To proceed to the consideration of the *best method of union*. As generally preferable I shall first deal with methods of simple suture. The requirements from any method of suture may be shortly enumerated as follows: (1) Security; (2) evenness of coaptation of a sufficient peritoneal surface; (3) rapidity in application; (4) avoidance of the production of a diaphragm; (5) protection as far as possible of the structure of the bowel wall itself from infection; (6) the avoidance of any complete perforation of the bowel wall.

Two tiers of suture are desirable, first for security, secondly for the protection as far as possible of the bowel wall from infection by the intestinal contents, and thirdly to obviate as far as possible the development of either immediate or consecutive obstruction of the lumen. On the score of security some surgeons prefer that the inner tier should include the whole thickness of the bowel wall (Albert). This is however unnecessary, and has the definite disadvantage of producing a larger fold, as well as carrying a possible source of infection more deeply into the joint.

A purely mucous suture is sufficient and greatly to be preferred. The ideal method of passage of this tier is by passing the needle on the submucous aspect in the same way that Lembert's peritoneal stitches are introduced. I used to employ this method, but it is troublesome to apply when the bowel wall is thin and when a continuous stitch is used. A stitch passing through the mucous membrane has been shown to be equally safe and effective, and as easier of application, is to be preferred. The mucous suture protects the structures of the bowel wall from infection, does not produce the projection of valves of mucous membrane into the lumen of the bowel, and obviates any chance of the formation of a granulating ring within the intestine capable of undergoing secondary cicatricial contraction.

The outer tier of suture may be either serous (Lembert), or sero-muscular (Wysler). Experience has shown the classical Lembert's suture to be sufficient with a normal condition of the peritoneum: the general consensus of opinion is, however, rightly in favour of sero-muscular stitches for this tier, as giving additional strength and security without materially adding to the risk of diaphragm formation. The sutures should include about $\frac{1}{2}$ in. of tissue in axial unions, in lateral approximations $\frac{5}{8}$ in. may be included. The most even coaptation is attained by simple interrupted or continuous sutures. They are therefore to be preferred to such stitches as Halsted's mattress stitch, the tightening up of which throws the sutured area into a series of plications.

The simple interrupted stitch is probably the most efficient of all, but the length of time needed for its completion and the number of knots left are both objections of some weight. A continuous stitch is the most rapid whether of the simple running or of the blanket variety. The blanket stitch has some advantages in security, and the tendency to approximation of the two ends of the line of suture is not so strongly marked as in the running stitch. The simple running stitch is, however, the most rapid of all, and provided it is not used in too long stretches is probably the best for general application.

Then with regard to the *production of a diaphragm* and obstruction. Every form of suture causes a certain line of projection into the lumen of the gut in axial joints, and in this particular every form is inferior to Murphy's method of union, which nearly reaches the ideal. Given, however, the necessity of a slight projection, is it of practical importance? Provided that the suture has not involved too great a width of the bowel wall, it may certainly be disregarded. In an excellent paper by Neuweiler[2] the decrease in the frequency of this consequence to suture has been clearly shown to correspond with the common adoption of methods in which too great an area of bowel is not involved. He points out that since 1891 he has been unable to collate any published cases, while of six fatal cases published in the decade prior to that date, which he considers critically, he apparently rightly refers the obstruction to the fact of the small calibre of the bowel dealt with, since four of the cases were sutures for the cure of faecal fistulae, and a fifth was in a child.

The common immediate cause of the obstruction is an oedematous swelling of the mucosa, usually the result of infective inflammation; but a too tightly-drawn continuous suture, or union of a free margin of unsutured mucous membrane in lateral anastomoses, has also been credited with its production.

It is clear, then, that the first and most obvious precaution is not to include too great an area in the suture; the second to preserve the mucous membrane and the bowel wall as far as possible from the chances of infection. Both these requisites are offered by the Wölfler's method of suture.

Two further methods of guarding against the occurrence of diaphragm formation should, however, be mentioned.

1. *The removal of mucous membrane*, especially when this, as is sometimes the case, is redundant. This procedure was originally proposed (Moreau-Boutard, Morisani, Chaput, Vella) as a means of ensuring the apposition of the corresponding layers of the intestinal wall, and Mr. Littlewood[3] in his paper apparently still considers this an advantage gained. He habitually removes about $\frac{1}{4}$ in. in axial unions. Probably the more important effect is the creation of a slight degree of tension from within which tends to hold patent a lateral anastomosis opening, and in axial unions to oppose the projection of the fold produced by the outer tier of stitches towards the lumen of the gut.

2. *Oblique section* of the bowel wall. Oblique section of the bowel for reasons of nutrition must not encroach on the mesenteric border, and this limits us to a form of union necessitating a sharp angle, the apex of which is towards the mesentery, or a lateral oblique section (Jeannel), which results in a lateral projection. Jeannel's comment on his

[2] *Langenbeck's Archiv*, Band lxix, p. 861.
[3] *Lancet*, vol. i, 1901, p. 1817.

own procedure is that its result is an actual lateral approximation.

It is, however, doubtful whether the oblique section is ever advisable of both segments of an anastomosis. It can only be necessary when the bowel is small or very much contracted, and here a free lateral anastomosis is to be preferred as both simpler and safer.

Lastly, with regard to *completely perforating sutures* (Connell, etc.), it is clear that perforation is unnecessary for security, it has not been definitely shown that knots towards the peritoneal cavity are a serious danger, while there can be no manner of doubt that a perforating suture is a possible path of infection from the lumen of the bowel, both to the structures of its wall and to the peritoneal cavity, and with some conditions (notably chronic inflammation) of bowel is much to be feared.

Wölfler's method of suture by one sero-muscular and one mucous layer appears fully to meet the desiderata for either axial or lateral approximations. For an *axial union*, the necessary preliminaries having been carried out, fixation threads are introduced in such a manner as to avoid complete perforation of the entire thickness of the bowel wall, and the ends are held in proper lateral apposition. The first half of the sero-muscular tier of stitches is then introduced. The importance of this layer in giving fixity to the further manipulations, and also in protecting the aspect of the bowel, now to be hidden from view, from infection during the completion of the remaining stitches is obvious. The mucous stitch is now completed in two halves, a long end being left to the silk at the point at which each stretch of continous suture commences and terminates, both as a landmark and for subsequent connexion.

The last half of the sero-muscular layer completes the union of the bowel, and the union of the mesentery completes the operation. A wedge-shaped interval in the mesentery is as a rule to be preferred, and in the suture approximation of peritoneum should be aimed at, care being taken at the same time that the stitches do not occlude vessels running near and parallel to the cut margin.

In a *lateral anastomosis* the same method of stitching is employed, but some variation exists in the best methods of application of the clamps, either a long clamp is applied across a knuckle, or a short length of bowel is cut out by the application of two clamps.

The first line of suture having been inserted (the importance of this in limiting the immediate spread of infective material is specially to be borne in mind) the sutures to cross the ends are passed, and the serous and muscular coats are incised for the required extent. The vessels which spurt are carefully secured before the mucous coat is incised and the serious risk of spreading infection has arisen.

The mucous membrane is now incised and the mucous suture proceeded with. If the clamps in gastro-enterostomy are not effective, the edges of the mucous membrane must be well held up during the insertion of this tier to avoid as far as possible the escape of any stomach contents. The final sero-muscular tier is now inserted and the tying of the terminal stitches completes the operation. Longitudinal incisions are always to be preferred, whether for gastro-enterostomy or lateral union of intestine.

Treatment of the Free Ends in Enterectomy.—These may be dealt with by several methods: (1) By a mucous and sero-muscular layer, just as in an axial anastomosis; (2) by a ligature applied to the mucous membrane, and the tied end invaginated by a pursestring suture; this is not easy when hypertrophied gut has to be dealt with; (3) by invagination, effected by strings drawn out of the anastomosis slits and the application of a simple ligature on the mucous aspect. This affords an example of occlusion of the intestine by a simple ligature applied on the most satisfactory aspect, the serous surface being firmly approximated. The use of the invaginating strings, however, increases the chance of sepsis; (4) Laplace's straight forceps may be used both as a clamp and as an aid to the introduction of the suture.

Contraction of the Opening in Lateral Anastomoses.—This was apparently observed in a considerable number of cases in the early history of the operation, more commonly in gastro-enterostomies than any other form.

In some hundreds of published enterostomies by simple suture, however, Neuweiler[4] only found four instances of serious contraction. These were in a femoral hernia case in which there appeared doubt whether the original opening had not been too small as well as too near the mesenteric margin, two cases in which Senn's plates were used and no mucous sutures employed, while in the fourth, an ileo-colostomy, the original opening was too small.

Neuweiler also collected and criticized 20 cases of secondary contraction of gastro-enterostomy openings. In four cases contraction of the openings was only assumed, and two of these were Senn's plate operations without suture of the mucous membrane.

Three cases were operated upon by Postnikow's method in which the size of the opening depends upon the somewhat uncertain action of caustic and subsequent sloughing.

In 5 cases the openings were apparently originally too small. In 4 cases no mucous stitch was used. Of the remaining 4 cases in 2 the original opening was too small and in 2 others the result was attributed to adhesion of the margins.

In posterior gastro-enterostomies the question of contraction of the opening in the transverse meso-colon has also to be considered as a source of obstruction.

Since 1895 few cases have been published, hence it is to be inferred that with improved methods contraction of the opening is not of so common occurrence.

It may, I think, be fairly assumed in most of the cases of secondary contraction published that careful suture of the mucous membrane and a large enough initial opening might have prevented the bad result. To these precautions may be added the excision of a sufficient amount of the mucous membrane, as recently advocated by Mr. Littlewood.[5] The removal of the oval area and suture of the tightened mucous membrane exert a certain tension on the opening and practically hold it patent. In point of fact in gastro-enterostomies and enterostomies by lateral approximation the mucous membrane is sometimes so redundant as to offer an actual danger and impediment to union by tending to prolapse between the surfaces approximated by the superficial line of sutures, and in my own experience a leakage was clearly traceable to this cause.

Use of Omental Grafts.—These may be employed as an additional precaution for secure union, or as a curtain to prevent diffusion of infection where leakage is feared.

In the consideration of the methods of simple suture I have tried to show that the danger of leakage, if the suture is properly made and the bowel in a healthy condition, is not great, but that the chief risk lies in contamination of the field of operation.

The source of infection manifestly lies in the opened lumen of the bowel, and I should therefore shortly refer to at least two of the methods by which this risk is sought to be minimized. I would first mention that of O'Hara.

The bowel is clamped in such a manner as to include the entire lumen, the points of the clamp not passing beyond the mesenteric border. The gut is then cut off close to each clamp, the two approximated, and a continuous sero-muscular suture brings the surfaces of the bowel immediately beyond the clamp together. When the suture has been brought almost to the free border the last few loops of the stitch are left loose to allow of the withdrawal of the clamps, in the act of doing which the point of each is swept round into the lumen of the gut to make sure that no stitches have perforated. The last few loops are then tightened up and the operation is complete. In a lateral anastomosis the area of bowel necessary for the opening is clamped up in the same manner and cut off prior to the insertion of the second row of stitches.

Great as are the advantages of thus securing the field of operation from any risk of contamination from escaping intestinal contents, yet they can hardly be held to counterbalance the fact that no mucous stitch is employed, and thus the patient neither gets the advantage of protection of the bowel wall from the chances of infection, nor escapes the risk of secondary union or subsequent cicatricial contraction of the granulating edge. Lastly, when the union depends on a single line of suture, in itself perhaps a danger, rather more projection into the lumen results than in a Wölfler's suture.

The second type of operation is perhaps best illustrated by the method of Souligoux. Here the portion of bowel wall which needs to be removed for the purposes of the opening is first crushed with a powerful clamp, and then to make its future destruction the more certain it is rubbed over with potassa fusa. This method is said to have given excellent results. I can only say with regard to it that it also seems to me to have the grave defect of not ensuring a primary union of the mucous membrane, and, besides incurring the risk of

[4] Loc. cit.

[5] *Lancet*, 1901, vol. i, p. 1817.

infective inflammation of the bowel wall, also leaves a granulating edge, with the risks of possible direct union or secondary contraction. Dr. Souligoux himself, although expressing confidence in his method, does not consider such a procedure necessary in the hands of experienced surgeons.

Suture Aided by Some Means of Mechanical Support.—The methods may be divided into two classes:

(*a*) In which the support is afforded by *forceps* employed merely during the actual insertion of the stitches and immediately removed. One method of this class, O'Hara's, has been already shortly referred to in the consideration of the avoidance of contamination of the fields of operation. The second, Laplace's, is more complicated to carry out, and to both the criticisms already made are applicable.

(*b*) In which the support is afforded by means of a *bobbin* introduced into the lumen of the bowel. This method is of great interest historically as perpetuating that of Les Quatre Maitres (Archimateus, Petrosellus, Platearius, and Ferrarius), introduced as far back as the termination of the thirteenth century. In 1884 the decalcified bone support was introduced by Neuber, the author of the drainage tube of a similar material, and since then the form of bobbin has been variously modified. The bobbin method has certainly the mechanical advantages of affording an even support during the introduction of the stitch, in allowing the stitch to be accurately tightened without fear of encroaching unduly on the calibre of the bowel, and in furnishing a temporary canal, the patency of which is assured. If, moreover, the material used in its construction is capable of softening and rapid disintegration, no serious objection can be raised to its employment. In fact, the question resolves itself into one of personal preference and custom.

By the kindness of Mr. Mayo Robson I am enabled to furnish some recent results obtained by himself where the decalcified bone bobbin has been used:

—	Cases.	Deaths.	Per Cent.
Posterior gastro-enterostomy... ...	125	5*	4.8
Hour-glass stomach	11	0	—
Pyloroplasty	22	0	—
Enterectomy	31	9	29

* In all suture sufficient.

(*c*) Coaptation of the bowel by means of mechanical devices. In connexion with this method I shall only mention one—that which has proved itself the most enduring, has attained first-class results, and upon which all other modifications had been founded. In principle Murphy's button aims at an ideal result, immediate union of plane surfaces of peritoneum without the aid of stitches, and with the avoidance of any projecting fold into the lumen of the bowel.

To illustrate the general success of the methods in practised hands, it is only necessary to quote some results obtained by Dr. Murphy himself, and most kindly furnished for this occasion.

863 operations with 261 deaths, a mortality of 30.24 per cent.

	Cases.	Recovered.	Died.	Per cent.
Cholecyst-duodenostomy for cholelithiasis	113	101	11	9.70
Cholecyst-enterostomy for malignant disease	37	9	28	75.60
Gangrene of gall bladder	3	0	3	—
Biliary fistula	1	1	0	—
Obstruction of common duct ...	1	1	0	—
Axial anastomoses of intestine ...	507	358	149	29.38
Lateral anastomoses	8	4	4	50.00
Gastro-enterostomy	193	128	65	33.24

The advantages which have been claimed are: (1) Rapidity of application; (2) applicability in difficult regions, where the insertion of sutures is difficult or impossible; (3) the avoidance of even a minimal encroachment on the lumen of the bowel by the presence of a diaphragm; (4) the fact that its application is possible to bowel in a condition in which sutures cannot be expected to hold securely; (5) that an immediately patent lumen is assured; (6) that feeding by the mouth can be commenced at once; (7) that the results obtained justify the contention that the button method is as good as any.

With regard to the first four of these contentions I think no exception can be raised. With regard to the last three, it may be remarked that the use of the bobbin equally assures the temporary patency of the canal, which again is not in danger if a simple suture has been properly applied. With a properly applied suture feeding by the mouth with small quantities of fluid nourishment and considerable quantities of warm water may always be safely commenced as soon as danger of anaesthetic sickness is passed.

Far from completely justifying the claim of always furnishing a patent canal, it must be borne in mind that the button has proved a danger by allowing the arrest not only of foreign bodies, but even of hard faeces in a channel not subject to the influence of peristalsis. Thus cases have been placed on record of obstruction by apple pips (Waring), a plum stone (Fieber), a cherry stone (Wölfler), grape stones (Villard), etc., and others by faecal masses alone.

To obviate this danger free purgation and the employment of abdominal massage have, in fact, been recommended. The large buttons have also been accused of causing kinking and obstruction by their weight alone, hence the employment of aluminium by some surgeons (Meyer, Marwedel, etc.).

As to the last contention, there seems to be no doubt that in certain positions the button method is decidedly less satisfactory than suture. The testing of the results obtained by the use of the button by the collation of published statistics can, however, give no reliable information, since in the practice of so many surgeons the button is reserved for cases in which either the general or the local conditions are considered too unfavourable to allow either the time for, or preclude the possibility of, effective suture.

As to the disadvantages incumbent on its use:

1. The introduction of a non-absorbable foreign body into the intestinal tract. This cannot be looked upon as a theoretical statement in the light of practical experience. A very large number of cases of non-passage or late passage of the button have been put upon record. In a large proportion of these, it is true, no serious complication has resulted, but in others troublesome vomiting has followed the retention of the button in the stomach after gastro-enterostomy, while ulceration and perforation of the intestine have been observed as a result of the retention in the lower parts of the intestinal tract (Wölfler, Mikulicz, Moynihan, etc.).

With regard to the causes of retention of the button, it must be allowed that Murphy's contention that normal distensible openings are no obstacle to its use has been in the main justified, since cases are on record in which the button has passed through the pylorus, and no instance of its being retained by the ileocolic valve have been observed. On the other hand, in some cases it has been found resting in portions of the intestine where no obvious reason for its arrest could be discovered. In others it has been retained in consequence of the external pressure exerted by adhesions, and in many cases it has fallen into the stomach after gastro-enterostomy, or into the *cul-de-sac* formed by the caecum, or portion of intestine representing it after lateral anastomoses. For the latter danger no corrective has been suggested, and in the case of gastro-enterostomy the modification by which the intestinal segment of the button is made heavier (Murphy), or supplied with projecting wings (Weir), do not seem to have met with general appreciation. It must be added, however, that the danger of retention of the button after anastomoses of the stomach with the intestine is much greater under some conditions thon others. Thus it has been shown by Neuweiler,[6] by the examination of a large number of published cases, that in gastro-duodenostomy the button is usually passed on by the duodenum as a result of the dependent course taken by that part of the gut, and the good peristaltic conditions which exist, and also that retention of the button is much less likely when the posterior operation of gastro-jejunostomy is chosen, again ostensibly from the more directly dependent position of the efferent gut. Since, however, the main explanation of the tendency to fall towards the stomach lies in the greater resistance and slower destruction of the gastric element of the joint, the tendency to arrest on the proximal gastric aspect cannot well be avoided. As to obstruction occasioned by a lodged button, it should be added that Neuweiler, in examining 1,000 cases published in recent literature, found none recorded.

I shall make no comment on the various close modifications of Murphy's button, such as Doyen's, or those in which elastic pressure has been substituted for the spiral spring: but a word must be added as to the employment of absorbable buttons. These have been devised by many surgeons, among others by Czerny, Mikulicz, Wölfler, Franck, Boari, Storp, and Sultan.

It must be borne in mind that these are in no way comparable in principle to the absorbable bone bobbin or temporary splint already dealt with. The passage or absorp-

[6] Loc. cit.

tion of the bobbin cannot take place too early, and is of no import as far as the permanent union of the bowel is concerned. With the button, on the other hand, the firm fixation of the apparatus until it has fulfilled its objects—continuous coaptation until union on the peritoneal aspect is complete, and complete destruction of the portion of bowel wall held between the segments—is indispensable for success.

Up to the present the absorbable buttons have failed to fulfil the necessary conditions, since they have either been absorbed and loosened too quickly, or when less soluble they have disintegrated too slowly and irregularly, with the result that rough irritating fragments have been left in the bowel in place of the smooth non-irritating button.

As to failure of union and perforation by the button: These are in the main to be attributed not to the principle of the method, but to one of two causes: (1) To an inefficient application of it, due to inexact approximation of the two segments from want of sufficient pressure to bring them home, or the production of too large folds by the primary pursestring suture and consequent irregularity in the union. (To overcome the latter difficulty Mr. Mayo Robson enters the button through a small slit, which is closed by suture.) Or (2) the condition of the bowel wall, which here may be, perhaps, more often than in the cases where suture is selected, the element of failure.

Although the first explanation sufficiently exonerates the principle of the method, I think it must be regarded as an evidence that Murphy's button needs a certain amount of familiarity in its application if uniform good results are to be attained, and this is no doubt one of the actual objections to its use.

As to the addition of sutures, in principle they are unnecessary, and have in the past possibly been mainly used in cases in which from the local conditions the operator had little confidence in his joint. Although, therefore, Murphy's contention that sutures tend to favour the occurrence of perforation is probably scarcely justified, still there is no doubt that if the gut is in fairly good condition and the button well applied the employment of stitches is superfluous and does not tend to the production of an ideal result.

Lastly, a very large and weighty consensus of opinion shows that in certain situations the employment of the button is contraindicated. Among these should be especially emphasized, anterior gastro-enterostomy, from the tendency to retention of the button; and the large intestine, both on account of the irregularity of its wall, the absence in many parts of a complete peritoneal covering, and the solid nature of its contents. It may also be safely laid down that in all cases of lateral anastomosis a larger and freer opening is to be attained by methods of suture than by the button.

II.—E. STANMORE BISHOP, F.R.C.S.Eng.,

Honorary Surgeon, Ancoats Hospital, Manchester.

MR. STANMORE BISHOP said: Although the study of the reunion of divided intestine has occupied the attention of the profession since the earliest times, it it only since antisepsis, and especially asepsis, have been rendered possible by the combined work of Pasteur and Lister that anything like successful work could be accomplished. When simple free opening of the peritoneal cavity was almost certainly followed by death, it was practically hopeless to expect that work demanding any further interference could result in recovery; especially, as in our total ignorance of the true cause of the frightful mortality associated with such work, the duration of exposure of the peritoneal cavity was looked upon as the chief factor. Every moment of time was, we believed, of such importance that everything else was sacrificed to rapidity. Insufficient and unfinished work was of less fatal import than delay; the abdomen must be closed again at the earliest possible moment, and five minutes extra exposure was thought more likely to be fatal than a leaky union carried out in bowel which was itself in a state of impending gangrene. It has therefore been necessary to reconsider entirely our ideas of intestinal surgery within the last 30 years, to unlearn absolutely most of what was formerly considered proven, and to reconstruct afresh a system upon which we might safely rely. Considering the short time which has elapsed, the progress already made has been very great, but there are still unsettled points, mainly in technique, which cannot perhaps anywhere be so satisfactorily discussed as at this, the great annual Congress of British surgeons. Some of these points, following Mr. Makins, I venture therefore to lay before you.

But before doing this, I should like to make a suggestion. All writers upon intestinal anastomosis, all operators who attempt to describe their work, have felt the want of some term which would describe without unnecessary circumlocution that portion of the intestine which lies immediately opposite to the mesenteric insertion. When describing the use of his button, for instance, Murphy wishes to indicate the point of commencement of the pursestring suture which binds the intestine to each half of his appliance: or Maunsell needs to point out the position of the longitudinal incision through which the invaginated gut is drawn, all such writers either use the words "the convex border," "the convexity," or "the free border," terms which are not sufficiently definite since every part of the circumference of the living bowel is more or less convex, whilst such living bowel has no border properly so-called; or phrases such as "the point in the bowel opposite to the mesenteric insertion," "that part of the bowel which is furthest from the mesentery," etc., which are tedious and verbose. If you look at a vertical section of the bowel with its mesentery, I think you cannot fail to be struck by its resemblance to a vertical section of a tumour with its pedicle; any surgeon wishing to direct attention to that point of the tumour furthest from the pedicle, would speak of its fundus. The same term is used to denote that portion of the uterus furthest from the vaginal insertion, or that portion of the bladder furthest from the urethra; structures which equally answer to the pedicle of their respective viscera. My suggestion is that we should borrow this term, and when speaking of the point in the intestinal wall directly opposite the mesenteric attachment, we should speak of the fundal point. A succession of such points along the intestine would give us the fundal line, and in what I have to say further, I shall with your permission, use these terms, which I think can scarcely be misunderstood.

The cases upon which I propose to base three points for discussion are taken from my notebooks for the last thirteen years and are twenty-two in number. They are all associated with end-to-end or end-to-side union. I have had no experience of lateral approximation, which I regret the less since that subject has been already so thoroughly placed before you by Mr. Makins. Cases requiring excision of intestine are largely due to hernia, and it is remarkable how seldom such an operation is required in cases of pelvic tumours. I have never found it necessary in the very large number upon which I have operated. (See Tables, pp. 882-83).

The first point is the question as to the use of mechanical appliances, such as the Murphy button, or the various forms of decalcified bone bobbins, which are intended to remain in the bowel until union of the divided ends is complete. Surgical opinion seems to be very divided on this question. Some surgeons appear to use these appliances in every case and every situation; others—I judge from what I hear—appear to find a kind of virtue in a sort of righteous repudiation of them on all occasions. They look upon the use of these appliances as a confession of want of skill, and suggest that as the surgeon becomes more expert, he will cease to need them. It seems to me, however, that the question turns upon quite other considerations, which are illustrated by the three following cases:

The first case to which I shall refer—No. 1—was that of a young woman, aged 26, with a strangulated femoral hernia, who came to me in August, 1897. The part actually strangulated was gangrenous at the time of the operation, and was situated about the junction of the jejunum and ileum. It was excised, and the cut ends reunited without any bobbin by the Czerny-Lembert suture. Everything went on satisfactorily for the first few hours, then vomiting returned, and the patient died on the second day. Necropsy showed distension of the proximal segment, with collapse of the distal, whilst on cutting across the line of union the inturned edges of the gut were found to be swollen and oedematous, almost entirely blocking the lumen. There had been no leakage, but some plastic adhesions to surrounding coils were present.

Similar cases are recorded by Neuweiler,[1] in which the same Czerny-Lembert suture was used without any bobbin, with identical results. Roser, Stelzner, Winiwarter each report a case. Braun carefully cut away all redundant mucous membrane before applying the internal suture, but a similar oedematous swelling of the diaphragm ensued, with the formation of a valve-like condition which obstructed the faecal circulation and produced a fatal result. It would appear that this is a danger which occurs at an early period after union, for all these cases ended fatally on or before the fourth day, my own proved fatal on the second; and it seems probable that the condition is only temporary, and that if the normal calibre, or anything like it, could be maintained for a while, as it would be by the centrifugal pressure of a decalcified

bone bobbin, this danger might be averted. Another and an important point to note is that all these cases were cases of union of small intestine. If such a condition occurs in the large bowel it would not be so likely to produce a fatal block, in consequence of the greater calibre of that portion of the intestinal tract. I have not been able to find a single case of the kind in the literature of the subject.

The second case—No. 18—was a case of pylorectomy for pyloric carcinoma. This patient was a typical case for this operation. The growth was confined to the pylorus and did not affect the stomach wall. There were no enlarged glands. At the operation the mass could be easily withdrawn from the abdominal cavity, and every step of the operation could be carried out with ease in full view. Wölfler's operation was done, the upper part of the gastric opening being sewn up by a continuous Lembert suture, the duodenum attached to the lower segment, and united by Wölfler's suture. During the operation the pulse and respiration failed twice, but responded to transfusion, artificial respiration, and strychnine hypodermics. Again, the immediate effect was most encouraging. She passed flatus the next day and there was but slight chloroform vomiting. On the third day, however, the face became pinched and there was some rigidity of the recti muscles. This condition, however, improved, until on the seventh day sudden collapse occurred with increase in the area of liver dullness. Death followed on the fifteenth day. *Post mortem* a large subphrenic abscess was found communicating with the stomach by an opening in the line of union, the edges of which had a partially digested appearance, and which was situated at the point where the vertical and circular lines of suture met.

On the other hand, here is another fatal case in which a bobbin, one of my own, was used.

The third case—No. 19—was that of a woman, aged 62, suffering from carcinoma of the sigmoid flexure. She was seen first on September 18th, 1902. On opening the abdomen the carcinomatous stricture was easily found, was annular, and extended for rather less than an inch. It was removed without difficulty, and the two ends were reunited over one of my bobbins, after free exit had been permitted of large quantities of gas and some faeces from the greatly distended descending colon. Once more the immediate result was all that could be desired; the patient bore the operation well considering her age; the reaction was good, the pulse regular and fairly full. The bowels moved twice during the next 24 hours, and some food was taken, but from 30 hours after the operation, when the last stool was passed, she began to retrograde. The descending colon began again evidently to fill up, and the patient died on the fourth day. No necropsy was allowed, but the course of events pointed clearly to blocking of the bone tube by masses too large and too hard to be forced through.

These three cases illustrate, I think, the whole question. Reflection upon them, and others like them which have been recorded by various operators, suggests the following considerations.

The whole intestinal tract is not, for surgical purposes, of the same character. It differs in various parts, not only in construction but in the character of its contents, and from an operative point of view the latter difference would appear to be of very great importance. The contents of the small intestine, taken as a whole, are liquid: those of the large solid, or in such a state as easily to become so. But this is not all; the fluids contained in the stomach—duodenum and jejunum especially, and for a variable extent in the ileum—have certain chemical and digestive properties; these become less accentuated in the lower ileum, and are absent in the caecum, colon, sigmoid, and rectum. When the divided bowel ends are sewn together, the material thrown out as a uniting medium is exposed to some extent to the action of whatever happens to be contained in the lumen of the gut. If the suture is weak at any point, this exposure is of course more likely to occur. Peristaltic action is more constant and persistent in the upper part of the small intestine than in the large, owing again to the liquid character of its contents. The openings through which the sutures pass are therefore exposed to a more frequent repetition of strain and alteration in the small intestine than in the large. This, however, is compensated to a great extent by the more severe strain which they have to resist in the latter. It is, however, especially the liquid and pepto-chemical character of the contents of the stomach and small intestine which constitutes the main danger against which some protection of the line of union is needed, and this is supplied by the bone bobbin if properly made. The *post-mortem* appearances in Case 17 showed not only a weak point in the suture, but the edges of the opening at this point had a semi-digested look, and I have no doubt that this process rendered abortive any attempt that otherwise might have been made by plastic adhesions to limit the escape of the gastric contents, even if it had no part—as I think it had—in starting the lesion.

On the other hand, the lumen of the bobbin in the sigmoid flexure undoubtedly became blocked by hard faecal masses, which might have passed through an intestine which was flexible, such as would be left by simple suture, but could not be driven through a rigid tube such as is formed by any apparatus in this situation. Graff and Duvivier[1a] record similar results after the use of the Murphy button in the same situation. We are therefore, I conceive, forced to the conclusion that whilst decalcified bone or other bobbins are advisable, if not absolutely necessary, in anastomoses of the stomach, duodenum, and small intestine, where they neutralize the tendency to oedema of the inturned bowel ends, and consequent obstruction of the lumen of the gut in the early stages, where they also protect the new uniting medium from the digestive or chemical action of the contents of the gut, they are entirely out of place and distinctly harmful in the large intestine. The successful cases in my list, in almost all of which this rule was observed, would seem to confirm and justify this distinction. Such cases as No. 9 in which a portion of the transverse colon, or No. 10, in which a portion of the sigmoid flexure was removed and reunited by simple suture, both followed by recovery on the one hand; Nos. 5 and 16, in which divided small intestine was reunited over Allingham's bobbin, No. 14 in which the same section of gut was united over Robson's, No. 15 over Murphy's bobbins, each followed by recovery; No. 17 an ileocolostomy, and No. 22 a gastro-enterostomy, in both of which my own bobbin was used with success, on the other, all seem to attest the value of this distinction.

As the question for discussion includes only those cases in which anastomosis has been performed, the cognate question as to the best treatment of strangulated hernia, whether by open division of the gut, as Lawrence[2] and Mitchell Banks[3] advise: division of both gangrenous gut and stricture, as Spence[4] directs; formation of an artificial anus, and subsequent use of the enterotome, or secondary resection and suture, as in the cases collected by Mr. Makins;[5] or resection and immediate suture, as advised by Helferich,[6] Lockwood,[6a] and Kendal Franks,[7] can hardly be raised; but it may be permissible to draw attention to the fact that in the eight cases of this kind in my list this latter proceeding was only followed by two deaths; the number is, of course, too small for any comparison with existing statistics of other methods. Indeed, these cases differ so much from one another in the constitution of the patients, their previous treatment by taxis or other, the aseptic or other surroundings of the patient at the time of operation, the possibility of transfusion if required, the after-treatment, and so many other details which all assist in obtaining success, that I have a deep distrust of statistics in these matters, and prefer to leave the cases to be considered singly. Personally, I have a very strong belief in the advisability of immediate resection and reunion.

But, if bobbins are to be used, it becomes a matter of some difficulty to choose between the large number which have been devised. I have here a large and fairly representative collection. Murphy's button occupies a place by itself. It is perhaps most quickly applied, and when properly made gives a rapid, safe, and reliable union. It was originally devised[8] to save suturing entirely, which is the manœuvre which occupies most of the time expended. Many surgeons, however, prefer to place a row of sutures outside, and then its superiority in point of rapidity of application is not very apparent. It has, moreover, certain very definite drawbacks. It is heavy, and has produced kinking of the bowel. It acts by producing sphacelation of the parts included in its grip. By the courtesy of Professor Stewart of the Royal College of Surgeons I am able to exhibit a very beautiful specimen showing the actual position of the parts. As you see, it is a vertical section of a bobbin and of the two ends of the reunited intestine *in situ*. The sphacelation so produced, and which it is assumed ceases at the circumference of the bobbin, does not in actual fact always cease there, and cases are recorded by Abbe[9] and others in which the gangrene has extended beyond and the bobbin has sloughed out. It is also assumed that when free it will pass down the intestinal canal and be voided with the stools. When used in gastro-enterostomy it has, on the contrary, found its way into the stomach and remained there, or been removed by a later operation. In some cases of enterectomy it has not been recovered, but has apparently remained *in situ* or been retained in some distal portion of the gut, as in the caecum. Murphy himself considered these latter occurrences as of no importance, but other surgeons, I fancy, will not feel comfortable as to their patient's prospects until they have again regained the instrument. Other objections will no doubt occur to the minds of those

Cases Illustrating Mr. Stanmore Bishop's Paper on Intestinal Anastomosis.

No.	Name.	Age.	Sex.	Condition.	Operation.	Date.	I. R.	L. R.	Synopsis of Cases.
1	S.	39	F.	Rectal carcinoma	Colotomy. Vaginal excision. Reunion, upper with lower ends by interrupted sutures	Oct. 27, 1899 Nov. 12, 1899	R.	Died, Jan., 1901	Rectum converted into narrow tube for about 2 in., leaving 1 in. of healthy tissue above anus. A fortnight after colotomy the affected bowel was removed by longitudinal incision through the posterior vaginal wall. The peritoneum was opened, and, with some difficulty, the upper extremity of the rectum was brought down and united to the lower end by interrupted sutures. Some suppuration. Vaginal sinus remained, persisting till death. Recurrence of growth. Death from exhaustion.
2	I.	54	M.	Strangulated ventral hernia.	Excision. Murphy's button.	Aug. 8, 1901	D.		Ventral hernia for 20 years. Previous operation for pyonephrosis, leaving persistent fistula. Acute pain in hernia and vomiting for 4 days; no passage of gas or faeces. Tumour tense, with prominent subcutaneous veins. At operation, gangrenous omentum and small intestine found. Both resected, and bowel reunited by Murphy's button. Death on second day. Gradual failure.
3	S.	53	F.	Rectal carcinoma	Colotomy Vaginal excision, union upper and lower end Stanmore Bishop's suture	Jan. 30, 1893 Feb. 13, 1893	R.	Lost sight of	Abdominal discomfort for 2 years. Blood from anus four and two months before examination. Loss of flesh for 12 months. Healthy bowel for 2 in. above anus; rectum above blocked by growth. During colotomy, upper extremity explored from abdomen. Excision of cancerous portion through posterior vaginal wall, and reunion of upper and lower extremity by my suture.
4	E. C.	23	F.	Chronic intussusception.	Maunsell's method	Apr. 6, 1894	D.		Noticed a lump on the left side at her confinement 9 months before examination. Had complained for 7 weeks of severe intermittent pain, which, for the last 3 weeks had become continuous. Constipation alternating with diarrhœa for 4 weeks. No passage of blood. Occasional vomiting. Hard, elongated mass in left lumbar and iliac regions. Rectal examination, negative; pulse, 140; T., 97 6°. Vertical incision, left semilunar line. Greatly swollen, descending colon, sloughy in patches; tore on touch, and showed greyish sloughy intussusceptum; this removed by Maunsell's method, and open colon sewn to skin wound. Death within 12 hours. *Post mortem.*—Junction found to be near hepatic flexure.
5	B. A.	57	F.	Strangulated femoral hernia.	Excision. Allingham's bobbin	Oct. 25, 1894	R.	One year later, well	Femoral hernia for 2 years. Irreducible for 4 days. Vomiting 3 days. Taxis frequently tried. Sac contained faecal-smelling fluid. After disinfection, neck of sac divided, and bowel drawn out; 4 in. to 5 in. removed with wedge of mesentery. Reunion over Allingham's bobbin. Transfusion required with strychnine hypodermics. Flatus in 24 hours. Distension of abdomen 10 days later with griping pain passed away after castor oil. Went home 30th day.
6	T.	61	F.	Rectal carcinoma	Colotomy Kraske, Stanmore Bishop's suture of upper and lower ends Colotomy closed	Dec. 6, 1898 Dec. 20, 1899 Jan. 30, 1899	R.	6 months later, well	Frequent desire to defaecate, and passage of blood and mucus for 10 months. Loss of weight for 3 months. Nodular growth 3 in. from anus. Upper extremity not felt, but demonstrated from above during colotomy. Rectum then felt to be supple down to last sacral vertebra. Kraske's operation 14 days later with removal of 5 in., the upper and lower extremities of the gut being reunited. Some suppuration, and one suture extruded by wound. Colotomy closed 1 month later. Stool passed by normal route 24 hours later.
7	F. I.	26	F.	Strangulated femoral hernia	Excision of 7 in. small intestine. Czerny-Lembert	Aug. 11, 1897	D.		Femoral hernia for 5 years. Irreducible 3 days. Taxis repeated 4 times. Sac contained foul, bloody fluid. Small opening in gut. After disinfection, gut drawn out; 7 in. small intestine removed. Reunion by Czerny-Lembert suture. Vomiting returned in 36 hours. Flatus passed next day, but not after. Death on second day. Oedematous swelling of internal diaphragm. Bowel above distended; collapsed below.
8	L.	47	F.	Rectal carcinoma	Colotomy Excision from below leaving sphincter	Dec. 12, 1898 Jan. 8, 1899	R.	Lost sight of	Three years' difficulty in defaecation, with temporary distension and pain. For 9 months passage of blood and mucus, loss of control for 2 months; pain worst in left inguinal region, is spasmodic, and followed by diarrhœa. Two in. above anus an irregular circular contraction, with nodules in rectal wall below. Colotomy, followed 3 weeks later by excision, leaving sphincter. Bowel brought down and united.
9	G. N.	60	M.	Umbilical hernia	Excision of 6 in. of transverse colon. Stanmore Bishop's suture	Dec. 19, 1899	R.	Well, June, 1901	Umbilical hernia for 3 years. Temporary obstruction 12 months since, followed by rapid enlargement. Several slighter attacks since. Five days previous to examination, increase of size and sensation of numbness and cold in hernia. Vomiting 3 days. Constipation 5 days. No taxis. Lateral vertical incision at side of mass, opening neck of sac. Bowel and omentum much entangled and bluish. Loop of transverse colon with omentum removed, and reunited with own stitch without bobbin; Cushing's suture externally. Flatus passed on second day, faeces on third. Rapid convalescence.
10	W. S.	43	M.	Adenoma of sigmoid flexure	Colotomy Maunsell's method Closure of colotomy	Mar. 27, 1900 April 19, 1900 July 3, 1900	R.	Well, June, 1903	Constant tenesmus, with passage of mucus. Intussusception felt high up per rectum. Loss of flesh. No vomiting; no distension. Colotomy followed by Maunsell's operation 14 days later. Closure of colotomy 4 months later. Delay due to bronchitis. Flatus passed in 24 hours, faeces on fifth day.
11	G. W.	58	F.	Littre's femoral hernia	Excision. Reversed Lembert	Feb. 22, 1901	R.	Well, June, 1903	Hernia for 5 months. Irreducible 4 days. Vomiting 3 days. Taxis tried once. Lipoma found on operation attached to front of sac. Only part of a knuckle of bowel involved, but impending perforation at this point. A wedge-shaped piece of bowel excised, not involving the mesenteric border. Reunion by reversed Lembert sutures, 2 rows. Flatus in 32 hours, faeces in 48 hours.

12	M. L.	31	F.	Rectal carcinoma	Colotomy Weir's excision of rectum	June 10, 1901 Sept. 27, 1901	D.		Pain felt at anus for 3 years. Loss of blood per anum for 12 months, with loss of weight. At upper extremity of rectum a circular, hard mass, which invaginated downwards. Fourteen days after colotomy, an attempt made to remove growth through the rectum. Failure. Growth in rectum increased. Three months later, Weir's operation. Sigmoid flexure could only be brought down to 2½ in. under ten tens, and floor of pelvis could not be re-covered by peritoneum. Drainage through perineum by gauze and drainage tubes. Death on third day. Pelvic cellulitis and septicæmia.
13	W. L.	10 mo.	M.	Intussusception	Maunsell's method.	Oct. 5, 1901	D.		Sudden fretfulness and pain 4 days before examination. Castor oil given. No further action of bowel. One small amount of blood passed per anum; paroxysmal attacks of pain with appearance of firm swelling in right iliac region from time to time. Vertical incision in right semilunar line, and intussusception of ileum in ascending colon found. Maunsell's operation. Emptying of distended coil of small intestine. Death same day.
14	N. F.	17	F.	Strangulated inguinal hernia	Excision. Robson's bobbin	Oct. 14, 1901	R.	Well, June, 1903	Hernia irreducible for 3 days. Repeated taxis. Bowel found tense and black. At bottom of constricted line was small opening, but no faeces in the sac. Five to six inches of small intestine removed. Transfusion. Bowel reunited over Robson's bobbin with layer of reversed continuous Lembert suture externally. Flatus passed next day. Griping pain until 7th day.
15	E. S.	50	F.	Strangulated femoral hernia	Excision. Murphy's button	Jan. 27, 1902	R.	Well, June, 1903	Hernia for 12 years. Strangulation 2 days. Taxis 4 times. Faeces in sac. Bowel collapsed. Transfusion thrice, with strychnine hypodermics. Thorough disinfection with bichloride in spirit and peroxide of hydrogen. Division of Poupart's ligament. Bowel drawn out and excised. Ends united by Murphy's button. No external suture. External wound packed with iodoform gauze. Prolonged convalescence. Button passed on 18th day.
16	C. C.	54	F.	Strangulated femoral hernia	Excision. Allingham's bobbin	Mar. 2, 1902	R.	Lost sight of	Hernia for 10 years. Irreducible for 3 days. Vomiting 2 days. Congested, blackish omentum and small coil of brownish-red intestine, deeply indented at the line of constriction and extremely thin; one or two black spots on surface of loop. Loop excised, but not mesentery. Ends of bowel reunited over Allingham's bobbin with row of Cushing's suture externally. Gradual recovery. Flatus passed in 40 hours, faeces on 4th day.
17	F. H.	—	M.	Carcinoma of caecum	Ileo-colostomy. Stanmore Bishop's bobbin	June 15, 1902	R.	Well, June 15, 1903	Recurrent attacks of obstruction with pain for 12 months; at first, general; later, localized in right inguinal region. Four main attacks; no vomiting unless purgatives were taken. Any food taken within a short time was then rejected. No true obstruction during these attacks, but stools became infrequent, hard, and difficult to pass; 25 years previous had an attack of "inflammation of the bowel," with tenesmus and passage of blood. Loss of weight. At operation, caecum found nodular, hardened, and adherent to posterior abdominal wall; limit of induration not clearly defined. Ileum divided 4 in. from the ileo-caecal valve; distal extremity closed; proximal extremity tied over one of my ileo-colostomy tubes, and inserted into caecal line of ascending colon. Flatus passed in 18 hours, faeces after enema on second day; 18 months later, no return of pain, but mass in right iliac fossa larger, and patient losing weight.
18	A. W.	38	F.	Pyloric carcinoma	Pylorectomy. Lembert and Wölfler's suture	Apr. 5, 1902	D.		Four years previously severe dyspepsia, which disappeared after voyage. Discomfort after meals for last year. Six months ago slight swelling in right hypochondrium; gradual increase since. Intermittent vomiting of sour material for 12 months. Loss of weight 6 months. On examination, movable rounded mass at site of pylorus, size of hen's egg. At operation pylorus much enlarged, hard, nodular, free from adhesions; no enlarged glands. Removed. Wölfler's operation. Transfusion twice, with hypodermics of strychnine. Flatus passed next day. 3rd day, pinched face, with rigidity of upper end of recti. Improvement on 4th day. 5th day, apathetic, with incontinence of urine. Collapse on 7th day. Death on 8th. *Post mortem*. Peritoneum healthy below pylorus, which was firmly adherent to the anterior wall. Subdiaphragmatic abscess, continuous with opening at angle between circular and vertical gastro-duodenal sutures.
19	M.	60	F.	Carcinoma of sigmoid flexure	Excision. Stanmore Bishop's bobbin	Sept. 21, 1902	D.		Severe pain in epigastrium and right hypochondrium one month before examination, followed by intermittent griping pain, borborygmi, and visible peristalsis. No passage of faeces or flatus for 14 days. Increasing distension. At operation, intestine distended down to sigmoid, where large volvulus existed. At base of this a tight nodulated stricture, the portion of sigmoid below being collapsed. Bowel above isolated and opened; large quantities of gas and some faeces escaped. Stricture excised, and bowel reunited over one of my bobbins. Drainage opening in bowel above closed. Reaction good. Bowels moved twice during next 24 hours. Urine passed naturally. Thirty hours after operation, bowels ceased to act; the abdomen remained supple, but descending colon became more and more defined, and appeared to be filling up. Enemata ineffective. Death on 4th day; no necropsy.
20	T. W.	62	M.	Strangulated inguinal hernia	Excision. Stanmore Bishop's bobbin	Dec. 18, 1902	R.	Well, July 1, 1903	Scrotal hernia for several years. Irreducible for 24 hours; great pain and vomiting. On incising sac, brownish serum escaped. Large amount of omentum, 6 oz. in weight, removed; thickened and indurated at neck of sac. Below, loop of dark brown small intestine, with one or two black spots. About 10 in. removed. Bowel ends reunited over my bobbin; row of reversed Lembert sutures externally. Flatus passed on second day; normal stool, in which was some altered blood on fourth day. Still wears a truss.
21	R. R.	8	M.	Intussusception	Maunsell's method	Mar. 18, 1903	R.	Well, June, 1903	Pain on rising, 12 hours before operation. Bowels moved with great pain. No blood or mucus. Mass felt in right umbilical region, size of small orange. Twisted coil of intussusceptum small intestine found. Maunsell's operation. Small fibrous tumour found in intussusception. Lembert's suture to opening in fundal line. Flatus passed next day; 19 days later, sudden pain with vomiting returned. Bowels twice moved. No lump could be felt, but face was pinched, and pain increased by manipulation. Abdomen again opened, and several bands and adhesions divided. No trace of suture or line of union seen. Recovery uninterrupted.
22	R.	47	M.	Pyloric carcinoma	Gastro-enterostomy. Roux's method. Stanmore Bishop's bobbin	May 15, 1903	R.	Well, July, 1903, except for progressive growth of carcinoma.	Dyspepsia and diarrhœa for 3 years. Loss of weight 3 months. Epigastric pain extending to either side and between scapulæ. Large amount of offensive flatus. Pain increased by food. No vomiting of blood. Occasional vomiting of large amounts of sour, offensive fluid. Some gastric dilatation. Mass felt in site of pylorus. Gastro-enterostomy by Roux's method, using my ileo-colostomy bobbins, and reinforcing by two rows of Cushing's suture. Mass is mainly duodenal, spreading downward into third portion; stomach not affected. Out of bed on eighth day, but still complains of flatus, and 2 months later is weaker and losing weight.

present but I have no time to dilate upon them. These appliances certainly cannot be absorbed or digested.

I am able, by the kindness of Dr. Jacob Frank[9], of Chicago, to present here to-day his coupler, which, as far as I know, has not previously been shown in England. This, you will see, is based upon Murphy's pattern, but is intended to evade most of the objections I have mentioned. The two metal shoulders of the Murphy button are here replaced by absorbable decalcified bone, and the metal stem and spring are represented by a rubber tube, the two ends of which are sewn to the shoulders. The bowel ends are slipped over the shoulders, and confined between them and around the central tube as in the Murphy button by pursestring sutures, the shoulders being pulled apart to permit of this. When they are *in situ*, the natural resiliency of the rubber tube clamps the intestinal ends between the two bone ends. When these parts become softened, the attachments of the tube loosen and the tube itself passes on down the intestine. Being smaller than its lumen and compressible, it is not likely to cause any later obstruction by its presence, and the bony shoulders are so softened and digested that they too pass easily. I have no experience of its use, but it is highly spoken of by American surgeons. The only difficulty which I have found in experiments upon the cadaver is in slipping on the second intestinal extremity, whilst maintaining traction upon the bobbin, but that, no doubt, is due to my own unfamiliarity with the appliance. With it I show also a very useful instrument which Dr. Frank has also devised, an enterometer, by which the calibre of the bowel at any point can be determined, and a suitable size of bobbin be chosen.

The other bobbins shown are those of Robson,[10] Jessett,[11] Allingnam,[12] Ball,[13] Jackson Clarke,[14] McLellan,[15] Cozens-Bailey, Paul, and my own. The forms of the latter I show have been modified by Down Brothers at my desire from the original form, as permitting the ends of the gut to approximate more easily. Each of these various forms of bobbin has its admirers, for good reasons. Perhaps I may add that I think the best bobbin should possess these characteristics. It should be easily introduced, it should be of such a shape that the tightening of the pursestring sutures in the ends of the gut automatically approximates them, it should give a solid and reliable support, it should adequately protect the line of union from all possible contact with the contents of the lumen of the gut, and it should place the ends in such a position as to render any further suturing easy, rapid, and even. The same form is not likely to suit all positions; for instance, the best form for end-to-end union, as in enterectomy, is not likely to be the best for end-to-side union, as in ileo-colostomy or gastro-enterostomy. Any one who will critically examine these different models will be able to judge how far they each of them fulfil these various indications.

For ordinary enterectomy I have endeavoured to obtain a bobbin which should be easily introduced, as Jessett's and Robson's are, by the conical shape of their ends; and should combine with this the advantage of Allingham's, that the tightening of the pursestring suture around them should at the same time approximate the bowel ends which they control, which advantage is not to be obtained with the two former. By bevelling out the central declivity, so to speak, the redundant tissue produced by such tightening is allowed to lie snugly, whilst more room is provided for it, as in Murphy's button. This, moreover, renders it practically impossible that any of the bowel contents can reach the uniting line, and the bobbin cannot possibly be dislodged from its position. In ileo-colostomy, however, the end which enters the colon, if left as in the first form, would be redundant, and might injure the opposed mucous membrane. Moreover, the course of the faecal material here is that of a small drain emptying itself into a large one, and, having once passed through the bobbin, will fall away from it, therefore the extra projection is not required. In gastro-enterostomy by Roux's method, also, it is an advantage that the gastric opening of the bobbin should lie almost flush with the internal surface, so that there may be no pool of retained gastric contents lying around it. I have, therefore, for these two purposes had a separate form made, in which this portion of the bobbin is cut away and the opening widely flared so that it resembles a vase; this rim I also find very convenient for slipping into the longitudinal cut in the stomach or in the fundal line of the colon, and the retaining suture previously placed around the intended opening draws it tightly around this neck of the appliance. Both these bobbins I have had opportunities of using on the living patient in Cases 17, 20, and 22, and I have found them in every way fulfil my expectations. Another form I devised for use in pylorectomy, after my experience already detailed of simple suturing. The wide shield-like gastric segment is intended especially to protect the spot which has always been found, as in my case, to be the most likely to yield, probably because the vascular supply to this point is the most likely to be defective—namely, that at the junction of the vertical and circular sutures. On the cadaver it answers well, but so far I have not been able to test it in actual practice. It also is made upon a similar plan to the others, but modified for its special purpose.

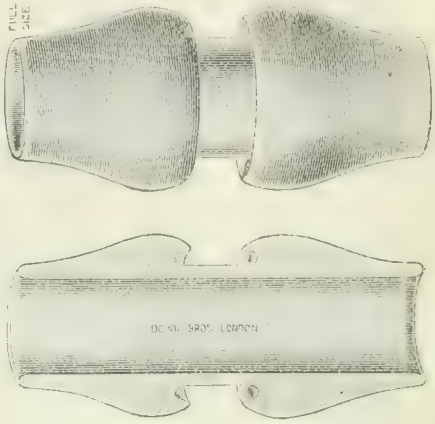


Fig. 1.—Bobbin for enterectomy.

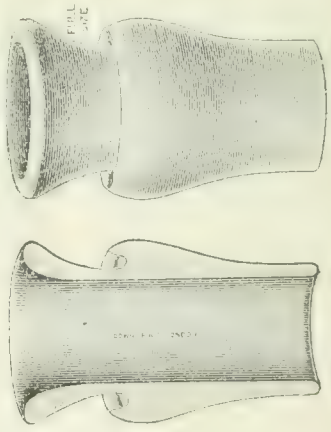


Fig. 2.—Bobbin for ileo-colostomy and gastro-enterostomy.

I have said that bobbins are inadmissible in my opinion in the large intestine, but I have one form here which should probably be exempted from that dictum. Dr. Wackerhagen[16] of Brooklyn has most courteously presented me for the purpose of this meeting with a set of his wafer supports, and the moulds upon which they are made. These supports are made of dough, modelled upon these various moulds, and are baked upon them. When baked, the moulds are sprung out of them, and they are then used in the same way as those made of decalcified bone. As they commence to soften and disintegrate from the moment of use, they will not produce the obstruction which follows the use of the bone or metal tube, and therefore might with safety be used in situations where the others would become blocked by hard faeces. There can be no doubt that the presence of some support enables the surgeon to apply his sutures more evenly, and therefore more safely, but the very transiency of their presence contra-indicates to my mind their use in the small intestine, where they would give but little protection, and that little for too short a time.

It may be noticed that I have said nothing of Senn's[17] plates, or of their representatives in potato, turnip, raw hide, or segmented rubber, nor have I included them in this collection. The union formed by these appliances is ungainly and awkward. The bowel so united forms a large, unwieldy mass which it is difficult to return into the abdominal cavity

without an otherwise unnecesarily large opening. The prospect of adhesions of the coil containing them to surrounding coils and consequent later obstruction is increased, and, as far as I can judge from current literature, they have had their day, and are being wisely given up.

The idea of a support upon which to suture has evolved various instruments which are designed merely for this purpose. As soon as the suture is completed they are then to be withdrawn. Of these the simplest is O'Hara's[18] forceps: Laplace's[19] and Vidal's are similar to each other; but Vidal's[20] method introduces another question; and that brings up the second point for discussion. In cases which are simply sutured, and in an exaggerated form in cases sutured upon appliances of this kind, a diaphragm is left inside the gut, which may later cause difficulty in the free passage of the intestinal contents. How should this diaphragm be regarded, and if it is thought advisable to remove it, how can that best be done? Murphy's button crushes this off. Jacob's coupler is supposed to act in the same way. O'Hara's forceps is believed so to devitalize the parts contained in its grip as to lead to separation later. Vidal and Doyen go a step farther; they deliberately crush the bowel by powerful forceps until its wall consists only of peritoneum and some portion of the submucosa. When this has been done, Vidal ties each of the attenuated ends by a special knot, capable of removal when suturing is almost complete. He then inserts his special clamp through a new opening outside, blade by blade. When joined, the distal rings of his clamp stretch this attenuated wall, so that each looks like a drumhead with a small bunch in the centre. Applied to one another, and the forceps locked, suturing is performed around the edges of the clamp; when almost complete the closing threads are pulled loose and withdrawn, the small opening through which they pass closed, then each clamp is separated from its fellow, and its two halves disunited and separately withdrawn. The small openings, one on each side, through which they have passed are sewn up, and the diaphragm, being thin and completely crushed, is left to separate by itself. Horace Grant,[21] of Louisville, has devised a clamp which contains a concealed knife, similar, he says, "to an Otis urethrotome," which, when the suturing is done, is protruded and made to cut off this diaphragm. I have not been able to obtain a specimen of this instrument and cannot say that I understand its method of action. It is, however, figured in Wyeth's *Textbook of Surgery*, and possibly some here present may be able to explain its *modus operandi*. I confess that I do not like crushing the intestine in any way. There can be no doubt in the minds of those who have seen it done that such crushing greatly increases the shock to the patient, and the condition is already in the majority of instances bad enough. What is needed is everything that will minimize the tendency to collapse, nothing that may increase it. Only the most urgent need for rapidity induces me even to use Murphy's button, as I have done in two cases, one with a good result, one followed by death. In the latter case (No. 2) it was, however, impossible to say whether the use of the appliance precipitated the fatal result. The strangulation had already lasted four days and the extremities of the patient were cold at the time of operation. If then crushing is to be avoided, as I think it should be, can anything be done in the way of application of sutures which may minimize the tendency to this diaphragmatic formation or remove it after union of the ends of the gut?

Before tendering any remarks on this question, I wish to show an instrument devised by Dr. Lee,[24] of America, which has been obtained for me by Mr. Herbert Down, of Down Bros.—to whom also I am indebted for the very complete array of intestinal instruments I am able to show—and which is extremely ingenious. It can be used in intestine of any calibre, and when introduced holds the gut at any desired degree of tension in such a manner as to render the application of sutures easy, equable, and rapid, without undue strangulation. It can also be easily removed when the suture is complete.

I have here several diagrams showing the various sutures which have been used in this work. As you see they are very numerous; but they all fall into certain groups, the division of which greatly facilitates their consideration. Many are entirely obsolete, being founded upon an entire ignorance of the primary necessity of immediate union of the serous surfaces in the first instance. Some attempted to unite the bowel wall with each layer approximating its fellow of the opposite end, some to unite mucous surfaces, several to produce union between mucous and serous surfaces: all therefore were bound to fail; the only point worth noting about them is the fact that the germs of almost all of the present methods are to be found amongst them—thus the sutura quatuor magistrorum over a trachea, and the sutures of Sabatier and Bell over cardboard and a roll of tallow are evidently the forerunners of the present bone bobbin, whilst the method of Henroz is evidently a futile endeavour to provide a rapid mechanical union such as nowadays is supplied by the Murphy button.

Modern methods on the other hand may be divided into those which penetrate and those which do not penetrate the entire wall. For many years surgeons entertained a holy horror of the former. I am not sure that this horror does not even yet prevail in many minds. All kinds of dire results were supposed to follow the penetration of the gut lumen by a suture, and I well remember the opposition which I encountered in 1887 when I first proposed such a method. Since that time, however, Halsted[22] has demonstrated admirably the necessity in all suturing of obtaining a firm hold upon the submucosa, the only portion of the wall of the intestine which is capable of resisting the effect of peristalsis in causing the yielding and tearing loose of the thread. Any surgeon who has attempted to carry out this principle upon intestine in the *post-mortem* room, or upon living animals to secure this layer will acknowledge that it is practically impossible to be certain that his thread does not penetrate one of Lieberkuhn's follicles, and does not therefore communicate with the intestinal lumen. If Halsted's suture is safe, and numerous cases in very various hands have testified to this safety, it necessarily follows that the danger of such communication has been greatly over-rated. If we add to this, the old well attested fact, first pointed out by Thompson, and confirmed by Travers, Benjamin Bell, and Dupuytren, as well as by later writers, as Byrom Robinson,[23a] that all sutures, however placed, unless absorbed *in situ*, which few are, sooner or later find their way into the lumen of the gut, and are thrown out of the body by that route, we shall agree, I think, that there is no good reason against through-and-through suturing, if other advantages are to be gained by it. Such advantages are, first, the certainty of perfect apposition during the period of union; and, secondly, such a union that tearing away by the action of peristalsis is practically impossible.

M. G. Connell[24] in 1892, and C. N. Dowd[25] in 1902, have both introduced sutures which, like my own, penetrate the entire gut at every stitch, and cases have been published both by themselves and others proving their entire safety. Indeed, it may now fairly be said that the unsafe suture is the one which yields before union is complete, either because of its own weakness, or more often because it grips only tissues, such as peritoneum and muscular layer, which cannot be depended upon to resist the strain of peristalsis. Rosenthal[23b] estimated that 50 per cent. of all deaths following suture of the intestine were due to yielding of the sutures, and Connell and Halsted insist that this is due in all cases to non-enclosure of the submucous layer. If we consider that all these penetrating sutures are separated from the peritoneal cavity by the angle formed by the inturned ends, and therefore by the whole thickness of the gut, and that within twenty-four hours they are still further embedded by a layer of plastic lymph, thrown out by the irritated peritoneal coat, we must admit, I think, that the fear of septic peritonitis in consequence of their employment is very slight indeed, whilst the risk of later yielding at any point, which has always been the cause of leakage and consequent septic peritonitis in the cases on record, is immensely decreased.

But whilst this may be said of all perforating sutures, I do not think that it will be claimed that by either McConnell's, C. N. Dowd's, Maunsell's, or Kürschner's sutures any particular effect is produced later upon the diaphragm which we are considering. That this diaphragm is gradually removed by my own this series of specimens obtained from dogs upon whom this operation was performed will, I think, demonstrate. These dogs were all submitted to excision of various portions of the gut. The gut ends were then reunited by the suture shown in this diagram. After recovery they were killed by chloroform at various dates—fourteen days, one month, two months, etc., from the time of excision. As you will see, at each succeeding date, as the sutures separate, they carry with them more and more of the obstructive ring, until the internal surface of the bowel becomes once more smooth and even. In the dog which was killed at the end of twelve months, neither I nor the Curator of the College of Surgeon's Museum could detect internally or externally the

line of suture; and as it was obviously impossible to preserve the entire bowel for inspection, it was thrown away. In two of my cases this suture was used with excellent results. In Case 9 a piece of the transverse colon was removed from an umbilical hernia. The ends were reunited in this way, and the suture reinforced by another row of Cushing's right-angled suture outside, a suture to which I will refer later. Flatus passed within forty-eight hours and faeces on the third day. Recovery was rapid and uneventful. In Case 6 an excision of a portion of the rectum was done, and the upper end brought down and united to the lower by this method. The patient left the hospital in ten weeks convalescent, and she was in good condition six months later, but has since been lost sight of. I have had two other cases, equally successful, but the notes are not to hand, in which this form of suture was used.

There are two reinforcing sutures which are worthy of attention. Probably the suture most used is the Lembert, but it does not appear that its reversed form, in which the knots become buried as they are drawn tight, has found as much favour as it would appear to deserve. Both are shown in this diagram, and the neater appearance of the result in the reversed suture is very evident.

The other suture is one introduced by Cushing,[26] and is called by him the right-angled suture. This also buries itself as it proceeds, and therefore greatly decreases the risk of post-operative adhesions. It is, however, a continuous suture, and is probably improved if knotted, as Dowd suggests, at every third or fourth insertion. It is practically Gely's suture, only made with one needle instead of two.

Ease, regularity, and rapidity in suturing are greatly increased, whatever sutures are used, by the employment of Allis's basting forceps.[27]

There is but little time in which to refer to the third point—the advisability or otherwise of preliminary colotomy when portions of the large intestine have to be removed for malignant disease. The one disadvantage of this manœuvre is of course evident enough. Instead of one operation, the patient has to face three—the colotomy itself, the excision of the affected portion of gut, and the subsequent closure of the colotomy opening, but the advantages gained are so great as in my opinion to overbalance this entirely. In some cases, as suggested by my friend Mr. Wilson, of Manchester, when the meso-colon or meso-sigmoid is long enough at the point of constriction, two of these operations might be combined. The growth itself might form the apex of the portion of gut withdrawn, especially if seated in the sigmoid. After the surrounding union was firm, that is within forty-eight hours, it might be removed along with a sufficient amount of healthy bowel, and when everything had again become normal, so far as contraction of the previously-distended proximal extremity was concerned, the two ends might again be freed from the anterior wall and united. Several things, however, would have to be favourable in order to accomplish it. The location of the obstruction must be known. It is no doubt the experience of others, as it has been my own, that many of such cases only come to the surgeon when obstruction has been complete for some days, when the abdomen is uniformly distended, and the situation of the growth can only be surmised. Such was the case of a doctor, aged 52 years, in June, 1902, who came to me after ten days' obstruction, with his abdomen like a huge barrel, tightly distended, and in which it was impossible to detect anything until several days after colotomy had been performed and the tension relieved. Then the growth must not be adherent to parts around, nor should there be any mesenteric enlarged glands.

The meso-sigmoid—for it is in this region that most of the growths capable of treatment in this way are situated—must be sufficiently long not only to permit of the exit of the intestine affected, but of a sufficient amount on either side to permit of the section being carried far enough from the growing neoplasm. It would not be possible for all these favourable circumstances to be found in many cases, and therefore it will still be necessary in most cases to face the three operations. Preliminary colotomy, however, transforms a patient who, with tensely distended abdomen, is in a very unfit state to bear any operation but the most rapid, into one who can safely stand the necessary manipulations of an anastomosis: the parts themselves can be made clean before division; they can be kept so after it, and only when the union is firm and reliable need they be called upon to resume their normal functions. Such a series of operations were carried out in Cases 1, 3, 6, 10, and 12: in 3, 6, and 10 with perfect results, and I am able to show a photograph of the last case, that of a man aged 43, from whom I removed a sigmoid adenoma, which had produced an intussusception, by Maunsell's method, fourteen days after a preliminary colotomy, closing the latter three months later, and restoring the faecal circulation to its normal route. In Case 1 the colotomy wound was not closed, as death occurred from exhaustion, and in Case 12 a Weir's excision was carried out. This was the first and only time I have attempted this operation, and my experience of it does not render it very probable that I shall repeat it. In the case in question, however, it appeared to be the only operation which offered any, even the least, chance of success. The operation is a tedious one: there is too much tension upon that portion of gut which is brought down, drainage is apt to be incomplete, and in my case it was found impossible once more to cover the raw connective tissue surface in the pelvis with peritoneum. The patient died of sepsis on the third day. Such a case is, I think, no evidence one way or the other on the question of the advisability or not of preliminary colotomy.

For the sake of clearness allow me to recapitulate the points to which I have referred.

1. It is suggested that the terms "fundal point" and "fundal line" will be useful for purposes of description as defining that portion of the intestine which is opposite to the mesenteric insertion.

2. The use of decalcified bone bobbins is advisable in operations for union in the gastric region and the upper part of the small intestine, mainly because they act as a protection during the early stages of union, and because the intestinal contents in these segments are liquid, and possess certain chemical and digestive properties, from which the line of union in these regions needs to be protected.

3. The use of such appliances is doubtful in the lower small intestine, and is absolutely contraindicated in the large, mainly because of the solid or semi-solid nature of their contents. This objection does not apply to Wackerhagen's wafers, which indeed are to be restricted to these segments of the gut.

4. In choosing a mode of suture, that one is to be preferred which gives the most perfect security against leakage in consequence of its yielding to the peristaltic strain, exposes itself the least, and so minimizes the irritation and consequent adhesion of surrounding peritoneal surfaces, by which later obstruction may be produced: and which removes the inevitable diaphragm formed by the necessary inturning of the bowel ends, so as to leave a smooth internal surface.

5. The use of forceps, such as O'Hara's, or the preliminary crushing of the intestine, as in Vidal's or Doyen's methods, all of which are based upon the idea of producing sphacelation of the inturned edges of the gut, are of very doubtful value, are associated with unnecessary risk of later perforation, and should not be preferred to simple suturing or to suture over some absorbable and protective appliance.

6. In cases where a neoplasm or other obstruction has to be removed from the large intestine, the prospects of success are greater if a colotomy above the seat of the obstruction can be previously carried out.

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III.—JORDAN LLOYD, F.R.C.S.Eng.,

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MR. JORDAN LLOYD thought that simplicity of operation was the first essential in any method of anastomosis, and he had himself abandoned all complicated procedures in favour of

that by simple continuous suture in tiers. He used for this purpose common sewing needles and common sewing silk, such as was to be found in the sewing basket of every industrious housewife. Wherever practicable he thought lateral anastomosis should be the operation of choice, except where the intestine was divided completely through for any reason; then end-to-end operation was to be preferred. The details he followed were practically those of Doyen: First, a sero-muscular suture of the posterior surfaces; secondly, a mucous suture, taking up the mucous membrane only and uniting first the posterior part and then the anterior, and finally a sero-muscular suture of the anterior surfaces. Rapidity of execution was a matter of practice, and the time taken over a well-executed simple suture operation was not much longer than that by the most rapid of the mechanical methods. The dangers of operation varied with its situation in the length of the bowel and the lesion for which operation was called for, and although peritonitis was the chief danger of these operations, Mr. Jordan Lloyd had had deaths from internal haemorrhage on more than one occasion.

IV.—Edward Deanesly, F.R.C.S.Eng.,
Assistant Surgeon, General Hospital, Wolverhampton.

Mr. Deanesly said: In every variety of anastomosis the essential points aimed at are simple and agreed upon by all surgeons, namely, a strong watertight junction, perfect coaptation of peritoneal surfaces, and as little as possible obstruction of the lumen. Perfect coaptation of the mucous and muscular coats, though desirable, especially in the case of the former, is not essential. Next in importance to a sound junction I place the avoidance of soiling the field of operation by escape of visceral contents, and after that the performance of the whole operation as expeditiously as possible. In my opinion, although time is important in abdominal operations, its importance has been exaggerated, and the time saved by the use of mechanical devices, such as buttons and bobbins, is too little to outweigh the disadvantages attached to their use. My experience of intra-abdominal anastomosis includes (1) direct end-to-end union of small intestine after resection of gangrenous bowel; (2) secondary end-to-end union of large intestine after colectomy and temporary artificial anus; (3) gastro-enterostomy, anterior and posterior; (4) lateral anastomosis of small intestine to sigmoid and of transverse colon to sigmoid; (5) lateral implantation of small intestine into small and large intestine. In all these operations I have employed no special forceps or special instruments of any kind, and have uniformly used two continuous silk sutures for each anastomosis, the one suture including all the coats and the other through the sero-muscular only. Both for lateral anastomoses and lateral implantation I employ transverse incisions in the bowel and not longitudinal incisions, which, when they contract, cause a greater diminution of the calibre of the bowel than transverse incisions. It is essential, in order to secure rapid sealing of the junction, to have broad surfaces of peritoneum in apposition. This entails a considerable inversion of the first suture, or row of sutures; or, in the case of end-to-end union, invagination of the smaller into the larger portion of bowel. In either case the inverted seam necessarily forms an internal projection or diaphragm, more or less obstructing the lumen. The effect of this is greatest in end-to-end union, and as the width of the diaphragm depends on the distance between the two rows of sutures, it is important not to make this too great. I do not know how much small intestine it is possible to invaginate without causing dangerous obstruction, but I have been deterred by fear of this from making even a short complete intussusception of a gangrenous piece of small intestine, although it could have been easily carried out.

V.—R. C. Elsworth, M.D., F.R.C.S.,
Surgeon, Swansea Hospital.

Dr. Elsworth said he had had some experience of Murphy's button, and found it satisfactory. Failure with the button was, he thought, due to defective methods of using it rather than to defects in the button itself. The button should be of suitable size, and the gut should be spread as evenly as possible over the apposing surfaces; the halves of the button should be pressed tightly home, so that the full force of the spring should come into play and thereby prevent traction from incomplete division of the gut. Personally, he always put in a few points of supporting suture outside the button, including the sero-muscular coat. He had had recently six successful consecutive cases with Murphy's button, most of them under unfavourable conditions.

VI.—J. Basil Hall, F.R.C.S.Edin.,
Surgeon, Royal Infirmary, Bradford.

Mr. Basil Hall said: So far as my own practical experience of intra-abdominal anastomosis is concerned I may at once say that, although at one time an advocate of the bone bobbin, I have grown to prefer simple suture alone, and for some time past I have abandoned all mechanical aids excepting on rare occasions when great speed in completing an operation has been required, and then I have used the Murphy button. I now always use a double continuous suture, the sero-muscular of silk, and the inner suture of catgut, which penetrates all the coats. The subsequent formation of a diaphragm is always due, I believe, to faulty suturing. It has been frequently urged that the bone bobbin helps the operator by forming a splint on which to work. I cannot see, however, that it can be of much practical use in this respect, because the bobbin is not placed *in situ* until the suturing is nearly completed. I believe that the good results that have undoubtedly been obtained by its advocates have depended upon their skilful suturing, and not upon any intrinsic value the bobbin possesses.

VII.—George G. Hamilton, F.R.C.S.,
Surgeon, Royal Infirmary, Liverpool.

Mr. Hamilton said that in Liverpool the suture had almost entirely displaced mechanical support. He used largely continuous suture with fine silk. He was the first to use Murphy's 1½ in. button in the large bowel; that was in 1894, and the case was still alive. There was one method in moribund cases and one in the less acute. Paul's glass tubes were most valuable in the former. He related a case where a carcinoma of the sigmoid had become attached to the hepatic flexure, necessitating the removal of the greater part of the large intestine. The cut ends of the bowel were brought out side by side, and the large spur was clamped later, and subsequently the bowel was stitched across, the skin wound being afterwards closed. The patient was alive and well.

VIII.—Sinclair White, M.Ch., F.R.C.S.,
Senior Surgeon, Sheffield Royal Infirmary.

Mr. Sinclair White said: The ordinary conditions calling for intra-abdominal anastomosis may, from an operative point of view, be divided into three groups. In the first group we have gangrene of the bowel, extensive wounds of the intestine or mesentery, irreducible intussusception, and removable malignant growths of the intestine, exclusive of the caecum. All these conditions require resection of a portion of the bowel, and in all the cut ends are more or less equal in diameter. These cases are, I think, best dealt with by end-to-end anastomosis. The second group comprises removable growths of the pylorus, caecum, and possibly some of the malignant strictures of the colon, where, after resection, there is a marked disparity in the diameters of the two ends. For these lateral implantation is the ideal method. The third group consists of cases where short-circuiting of the intestinal tract is the procedure of election. It includes inoperable malignant disease of the stomach and intestines, producing symptoms of chronic obstruction, non-malignant obstruction of the pyloric outlet, and intractable cases of gastric ulcer. For union I employ almost exclusively two rows of simple continuous sutures, an inner one of catgut for the mucous membrane, and an outer one of fine silk or gossamer silkworm gut for the musculo-peritoneal coats. In lateral implantation of the ileum into the ascending colon I sometimes use Murphy's button. The substitution of the continuous for the interrupted form of suture is, I believe, the most important advance in intestinal surgery that has been made in recent years. It greatly shortens the time necessary for the performance of an anastomosis, provides a better apposition of the edges, and does away with an enormous number of knots, the failure of any one of which might jeopardize the result of the operation. I have performed intra-abdominal anastomosis 75 times, with the following results: Gastro-enterostomies (1), for non-malignant pyloric obstruction, or for chronic gastric ulcer, 24 times, with 23 recoveries; (2) for severe haematemesis twice, with a fatal result in both cases; (3) for inoperable malignant disease of the pylorus 7 times, with 4 recoveries; resection of the caecum and colon for malignant disease 17 times, with 5 deaths; resection of small intestine for gangrene 6 times, with 4 deaths; resection of

small intestine for extensive wounds of the bowel, or mesentery, 4 times, with 3 deaths; trans-sacral resection of the upper and middle portions of the rectum for cancer 15 times, with 4 deaths.

IX.—A. B. Mitchell, F.R.C.S.I.,
Surgeon, Royal Victoria Hospital, Belfast.

Mr. Mitchell said that he used and preferred simple suture without any mechanical support to the anastomosis, the suture being applied in the continuous form. In lateral anastomosis he thought that the best method of closing the end of the gut was to oversew it and then, after invaginating, to apply a second row of sutures. In lateral implantation he always made his incision into the bowel in a transverse direction, parallel to the course of the vessels, and not in the usual longitudinal direction.

X.—A. W. Mayo Robson, F.R.C.S.Eng.,
Emeritus Professor of Surgery, Yorkshire College, Leeds.

Mr. Mayo Robson said: I am, generally speaking, in favour of the suture in methods of anastomosis of the hollow organs, but I have found a support, such as the bobbin which I employ, of value in protecting the union, although I do not think it a necessity. The methods employed should be considered under the three headings of simple suture, supported suture, and the Murphy button. The Murphy button I consider a distinctly dangerous appliance; if it is used in order to save time it is probably employed exactly in those cases where it is most harmful, cases that is to say where, owing to the desperate condition of the patient, there is little or no plastic material formed and consequently a tendency to leakage. The methods of suture described have been very numerous, but they may for all practical purposes be reduced to two, the interrupted and the continuous; I prefer the continuous suture, taking in all the coats of the intestine. The question as to which is better, the simple or the supported suture, must be answered by the collection and comparison of large numbers of cases. I prefer the end-to-end anastomosis as a general rule, and the advantages which I consider attached to the use of the bobbin are, first, that it provides at once a continuous channel; secondly, that it protects the line of suture from contact with and damage from the intestinal contents; thirdly, that it provides a splint around which to suture; and, fourthly, that it obviates risk of subsequent closure of the opening. I once had an opportunity of examining a case of cholecystenterostomy three months after operation by the Murphy button and found that the opening had closed.

XI.—W. H. Horrocks, F.R.C.S.Eng.,
Surgeon, Bradford Royal Infirmary.

Mr. Horrocks said that Mr. Deanesly had referred to the question of invaginating considerable portions of gangrenous bowel; in his experience this could be done with impunity and without any fear of consequent obstruction.

XII.—F. F. Burghard, M.S., F.R.C.S.Eng.,
Surgeon, King's College Hospital.

Mr. Burghard said: I do not think there is any doubt that the ring or diaphragm which sometimes causes obstruction after axial union is due to the turning in of too much bowel wall by the second row of sutures. I have not found after the use of a continuous suture passing through all the coats that haemorrhage is a complication to be feared.

XIII.—Edmund Owen, F.R.C.S.Eng.,
Consulting Surgeon, St. Mary's Hospital; President of the Section.

The President said that the meeting might congratulate themselves on a highly satisfactory morning's work. What had been especially desired by the Council was that the discussion should be expressive of the personal experience of each surgeon. Having listened to the discussion he was confirmed in the view that he had for some time held—namely, that as time went on there would be a diminishing use of buttons and bobbins—that simplicity in apparatus as well as in methods was being rapidly established. He held strongly, however, that to Dr. Murphy, of Chicago, was due a great deal of the advance which had been made in the last decade in connexion with the surgery of the abdomen. The energy, the ingenuity, and the success which had attended his work had had a great influence upon practical surgery. Personally he (Mr. Owen) preferred, where possible, end-to-end splicing of the intestine to the method by lateral anastomosis, and he thought that Mr. Makins, in his excellent address, had been a little unfortunate in his appeal to Nature in connexion with his support of the lateral method. Though he wished to be perfectly respectful, he thought that Nature was apt to be a bit of a bungler in the matter of lateral anastomosis, and that though she might thus effect an intercommunication, this was very apt to degenerate into a mere fistulous opening. On the other hand, as Mr. Deanesly had remarked, when she had been operating successfully by the axial method, as in certain rare cases of intussusception which had recovered after sloughing had taken place per anum, her success was indeed most remarkable. He could assure Mr. Makins and Mr. Bishop that the result of their introduction of the subject could not but have a considerable and an enduring effect upon those who had been present, and in the name of the Section he returned them hearty thanks.

DISCUSSION ON THE TREATMENT OF ADVANCED TUBERCULOUS DISEASE OF THE KNEE-JOINT.

I.—G. A. Wright, B.A.Oxon., F.R.C.S., Professor of Systematic Surgery, Owens College; and Surgeon, Manchester Royal Infirmary.

and

W. F. Haslam, F.R.C.S., Surgeon, Birmingham General Hospital.

Professor Wright said: My colleague and I, after consideration of the most useful course to adopt in introducing this subject of the operative treatment of tuberculous disease of the knee-joint, decided to share our obligations with all the hospital surgeons attached to the medical schools of the United Kingdom in so far as they were willing to allow us to do so, and we issued a sheet of inquiries to some 240 gentlemen, of whom 75 were kind enough to reply. We desire to express our real gratitude to those surgeons who were good enough to take the very considerable trouble involved in answering our inquiries, and we are able to assure you that, though it would be perhaps invidious to mention names, the list includes many of the most eminent surgeons in this country, not omitting the last President of the Royal College, whose experience on this subject is probably unrivalled anywhere.

The expressions of opinion and statements of practice that we have received may thus be taken to represent fairly the position of the question at the present time, and the wisdom of your Committee in selecting the subject for discussion is shown by the remarkable divergences of view held and essential differences in methods practised by those who have kindly replied to our queries.

In order to utilize as much as possible the short time at our disposal, Mr. Haslam and I arranged to divide the subjects between us, and it fell to my share to consider:

1. The indications for operation.
2. The choice of operation.
3. The method of operating if the choice has fallen upon erasion.
4. The question of a mobile joint after erasion.
5. The amount of shortening resulting from operation.
6. The primary seat of the disease.

For the collation of the other answers Mr. Haslam is mainly responsible, and in his absence I have worked them in their order on the sheet.

I think the most useful course I can take will be first to summarize the answers received to our inquiries, and, secondly, to give you the results of my own experience in so far as I have record of it. The replies were in short as follows. We have, of course, had to edit and bring into line the answers to some extent, but we have tried not to misrepresent the views of any of our correspondents.

Question 1.—Indications for Operation.

(*a*) Disease progressive or stationary for a few months in spite of treatment (48).
(*b*) Suppuration (21).
(*c*) Softened ligaments and displacement (19).
(*d*) A social position making adequate treatment difficult (12).
(*e*) Age over 15 years (4).
(*f*) Duration of disease of over six months (3).
(*g*) Presence of breaking down foci or sinuses or local bone disease (3).

(*h*) Failure of iodoform injection (3).
(*i*) Any positive evidence of disease, however early in hospital cases (2).
(*j*) The presence of advanced synovial disease if the patient is in good health (1).
(*k*) Advancing tuberculosis with failing health (1).
(*l*) Pain on pressure over the tibia (1).

It will be seen that while some surgeons would operate at the very earliest stage of the disease, probably it would not be unfair to say that the general view of our teachers is that progressive disease, in spite of adequate treatment, especially if suppuration or commencing dislocation is present, are the main undoubted indications for operation.

Question 2.—The Choice of Operation.

It appears that 26 practically employ excision only.
14 employ erasion only.
18 ,, erasion in the young.
14 ,, excision in adults.
7 ,, erasion in early or synovial disease.
4 ,, excision in bone disease.

One replies that he does erasion if there is too much bone disease for excision, an answer at first sight paradoxical, but not so if the explanation is that, where bone disease is so extensive that a section in excision high enough to remove it all would mean a useless limb, it is wiser to preserve all sound bone.

Another reply is excision if possible, but erasion if the child is too young and erasion is possible.

One surgeon advises erasion if there is no suppuration, and amputation if there is.

I should conclude from the replies that a majority would prefer erasion in young patients with early disease, but about an equal majority would excise in adults, especially if disease is advanced. At the same time, it is quite clear that a considerable number of surgeons always do excision, and rather more than half as many always do erasion.

It is interesting to find that partial operations are not, apparently, in favour.

Question 3 (a).—Incision for Erasion.

At least 11 different incisions are employed.
Horseshoe through ligament (19).
Transpatellar (17).
Transverse, without stating whether transpatellar or not (7).
Horseshoe ditto (8).

One or two employ a curved incision above the patella, or an "H," or a longitudinal, or a Kocher's "J," internal or external, or two lateral incisions, or a vertical median, or a horseshoe with one long limb.

Several use two or more methods.

The horseshoe incision, with division of the ligament or of the patella, seems to be the generally approved method.

Question 3 (b).—Method of Dealing with the Patella in Erasion.

Only four surgeons habitually remove the patella. The rest preserve it, with or without paring or scraping it if possible, and only remove it if compelled by disease. Two remove the cartilage.

It is clear that opinion is strongly in favour of preserving the patella if possible.

Question 3 (c).—The Crucial Ligaments.

A large majority preserve the crucial ligaments if possible, though about 1 in 3 advise their removal if diseased.

About 1 in 12 excise them completely, and the same number advise division and suturing.

One reply advocates excising the joint if the ligaments have to be taken away, and another gags open the joint to facilitate cleaning it. One or two other methods, such as preserving the posterior but sacrificing the anterior are mentioned.

Question 3 (d).—Bone Lesions, how Dealt with.

There is no great difference of opinion here. Nearly all surgeons seem to scoop, gouge, or scrape out local foci, a considerable number apply some antiseptic—iodoform, carbolic acid, or zinc chloride, and in a smaller number (about 10 per cent.) the answer is excision.

Question 4.—The Use of a Tourniquet.

Twenty-nine surgeons use the tourniquet; 30 do not; 7 use it usually; 3 occasionally, 1 uses it always in the young and never in the old and 1 only uses it in anaemic cases; 24 remove the tourniquet before dressing the wound and 12 do so after, and various other plans are adopted. Probably the balance of opinion is rather in favour of the use of the tourniquet and of removing it before applying the dressings, that is, of arresting haemorrhage by ligature or means other than the mere pressure of the dressing.

Question 5.—Drainage.

Drainage is employed in all cases by 20; in bad cases only by 6; usually by 6; if disease is extensive by 3; if there is much oozing by 1; sometimes by 2. The ends of the incision are left open by 6. Drainage is not used at all by 20, seldom by 8, and 1 surgeon applies pure carbolic acid all over the wound then packs it with gauze but does not put in any sutures, at the end of a week the packing is removed and if there are any foci of recurrence these are scraped and the wound treated as before. The process is repeated till the surfaces are healthy and the wound is then sutured.

The materials used by those who employ drainage are india-rubber tubing, gauze, silkworm gut, catgut and in 2 cases glass tubes.

Drainage is dispensed with in most cases by the third day. Opinion seems to be fairly evenly divided between the advantages and disadvantages of drainage.

Question 6.—Dressings.

Twenty-six out of 65 replies show the use of aseptic dressings; the rest use some form of antiseptic.

Question 7.—Splints.

A considerable difference of opinion evidently exists as to the best form of splint to use, but from the returns received it appears that a back splint in some form is used by most surgeons. A simple back splint is used by 23. Two use an interrupted back splint, 4 use Gooch's splinting, and 2 a metal back splint. It is not clear from the replies in what proportion the back splint has a footpiece, or how it is fixed on the limb, though in some few returns plaster-of-paris bandages are mentioned. Five surgeons use back and side splints. Special named splints are used by 20 as follows: Heron Watson's by 7, Howse's by 6, Thomas's by 6, Gant's by 1, Thompson's by 3, Golding Bird's by 1. Many other appliances are used by individual surgeons, and the time the splint is kept on seems to vary from ten days to five years.

Question 8.—The Tendency to Flexion and the Means of Combatting it.

There seems to be a very general consensus of opinion that flexion does occur after operation, for only 3 replies state that the writers have had no experience of it: 1 has not had any difficulty in his own cases, 2 gave a direct negative to the question. Three surgeons have no special means of preventing flexion, 1 encourages slight flexion, and 1 has more often seen hyperextension. Two reply that wiring or pegging the bones prevents it, 1 says that if you know how to use a Thomas's splint it does not occur. Two replies state that flexion does not occur in adults, and 1 of these attributes it to rapid growth about puberty, the other believes the flexion occurs at the epiphyseal lines. Division of the hamstrings, suture of the ligamentum patellae, and the preservation of a mobile patella, are other means recommended. Prolonged fixation by leather, poroplastic, or Thomas's splints, seem to be the generally accepted means of preventing flexion.

Question 9.—Method of Dealing with Flexion (a) when Union is Fibrous.

Various methods are recommended. Twenty advocate forcible straightening under an anaesthetic, 13 the use of a weight and extension, 17 some cutting operation; of these 7 advise excision, 1 a section through the line of union, 2 tenotomy or re-excision, 3 reopen the joint, and 4 remove a wedge of bone. Amputation is recommended by 2 if the case is bad. Six advise the use of a splint.

When union is osseous there seems to be but little difference of opinion. Thirty advise the removal of a wedge-shaped piece of bone, and 17 advise resection, which no doubt would mean an operation identical with the former. Two would remove a wedge from the lower end of the femur, and 3 perform an osteotomy. Two would not perform any operation till adolescence. 1 would amputate if the condition was bad, 2 deprecate any forced extension, 1 points out the necessity of operating in two stages in these cases, since the vessels are shortened, and 1 would leave the case alone.

Question 10.—Mobility after Excision.

The great majority (35), of those who practice erasion make no attempt to obtain a mobile joint afterwards. Though nearly half as many employ some active (6), some passive (4), and some both active and passive (6) movements. A few leave the joint to be shaken loose by the patient if it should so chance. The attempt to obtain mobility is by some limited to cases of slight disease, and the time at which the attempt should be made varies from three to eighteen months. The reasons assigned for refraining from any attempt at procuring movement are the fear of the limbs becoming flexed, and the fear of recurrent disease.

Question 11.—Comparative Shortening in Erasion and Excision.

As to this question there is no general consensus of opinion, and the most opposite beliefs are expressed.

Six replies state that no shortening occurs in either excision or erasion if the epiphyseal line is uninjured.

Thirteen say there is no shortening after erasion.

Eight say that after excision the shortening is variable or slight.

Seven appear to put the shortening after excision at from 1 to 1½ in.

Others put it at 2 to 5 in., or say the result in this respect is bad.

Other statements are that it is less in erasion, that in erasion it ranges from ¼ to 1 in., that in excision it is proportionate to the amount of bone removed (7) or that the extent of shortening depends upon the angular deformity.

One reply is that shortening very frequently occurs after erasion.

One of our correspondents states that in children after excision shortening varies from 1 in. to 5 in., and after erasion from ¼ in. to ¾ in., increasing if there is bone disease, while in adults after erasion there is ¼ in. to 1 in., and after excision ¾ in. to 2½ in. One surgeon says that there is some compensating growth in children after excision.

If the operation of excision is performed by rounding the femur and hollowing the tibia, the resulting shortening is said to be under 1 in.

Question 12.—Influence of Age upon the Choice of Operation.

The answers to this question show that there is a considerable difference of opinion.

Twenty-three favour excision in adults, and 11 erasion in the young child. To these must be added 4 who would erase during the growing period, and 1 who only erases in children.

One does not like erasion under 10, and 1 performs excision under 16. Seven erase under 16, and 1 under 18. One prefers erasion in adults; 2 excision over 10. One would excise up to 40, and amputate after that age; 1 erases only in adolescents and adults up to 30. Three say the younger the case the less suitable is it for formal excision; and 1 that the best results are obtained in children. One advocates amputation in cases of adult tuberculosis in a working man; 2 excise all cases; 5 practically consider age is of little or no importance, and 1 that age is most important, recommending erasion in early life and avoiding early excision.

It is tolerably clear that as far as the question of age goes the majority would perform erasion in children and limit excision to adults.

Question 13.—Direct Fixation of the Ends of the Bone in Excision.

Thirty-two replies are against any direct means, while 41 sometimes or always use some method of fixation. Of these, 15 use metal pins, 7 bone or ivory, 16 wire, and 3 use screws; a few employ sometimes one method or material, sometimes another—for example, catgut, silk or kangaroo tendon. One hollows the tibia and makes the femur convex so that they fit accurately.

No settled conclusion as to the best means to employ can be arrived at from the replies.

Question 14.—The Fate of the Patella in Excision.

Forty-two remove it, 12 leave it unless diseased, 8 leave it if possible, 4 remove the cartilage, and 1 more also shaves off the front of the femur and applies the one to the other. One deals with it as in arthrectomy, and 1 pegs it to the tibia if it is healthy.

The majority therefore remove the patella in excision but an important minority preserve it.

Question 15.—The Primary Seat of Disease.

In the opinion of 25 surgeons the origin of the disease is most commonly synovial, and 5 reply that it is only synovial. Fifteen say that it begins most commonly in bone, and 1 that it always begins in bone; while 18 think it may start in either tissue.

One reply is that the primary lesion is most commonly in bone in adults, while 3 say most commonly synovial in adults.

One answers that it is perhaps more often synovial in children, and 3 that it is chiefly epiphyseal in children.

Mention is made of disease beginning occasionally in the perisynovial cellular tissue, and the occurrence of latent bone disease is noticed. In cases where the bone is primarily involved in the experience of 3 surgeons the femur and in 3 the tibia is most often attacked.

This completes the analysis of the replies, and as unfortunately for us my collaborator, Mr. Haslam, is detained in London at the College of Surgeons, the task of personally introducing the discussion to you falls entirely upon me, though Mr. Haslam has done a share of the work. I propose, therefore, to make some general remarks upon the subject, and then to answer our own queries, that is, to range my views alongside those I have already given you, and so all can be conveniently discussed together.

In 1902 my friend Dr. Byers of Wilmslow, formerly Resident Medical Officer at the Manchester Children's Hospital, chose for a thesis the subject of erasion of the knee-joint in children and its results. He followed out a series of cases, 63 in number, which had been operated upon by my colleague Mr. Collier or myself between the years 1889-99, and from his careful and valuable work, with Mr. Collier's consent, I am able to give some of the results of our experience, since a joint paper in 1889, in the *Annals of Surgery*, recorded 37 earlier cases, or, rather, there are 34 cases, since 3 appear in both lists.

My first trial of erasion was in January, 1881, and the case was published in the *Lancet* of December that year; this was the first recorded case of erasion. In this instance the patella was turned aside, not divided. Greig Smith, whose early death was so great a loss to surgery, had operated on an elbow in 1880, but had not published a report; and at the British Medical Association meeting in 1881, Cross of Bristol advised early incision with antiseptic precautions, so as to examine the joint and remove the diseased part. He mentioned a case in which he had taken away nearly the whole of a carious condyle, and thought that such an operation, which left a synovial membrane and a movable joint, was infinitely preferable to resection of the whole joint. This, of course, is in no way erasion.

In 1882 I again described the operation and showed 2 cases at the Liverpool meeting. In 1885 I published 16 cases in the *Medical Chronicle*, and in the same year Volkmann described the operation as arthrectomy. Since that time you, Sir, and others have done much to bring erasion into favour.

As I am anxious not to trespass beyond my time limit, I propose now to take the list of questions on the paper distributed to the members, and give my own views.

Question 1.—Indications for Operation.

If I take the question of indications for operation, I should say that if there is no improvement after three months' careful treatment of a tuberculous knee, or if there is evidence of caseation, operation is the best course. I fully realize that the great majority of patients with tuberculous knees can be got well without operation. It is mainly a question of the stage at which the patient is first seen. Occasionally an acute case occurs, progressing as rapidly in a few weeks as the ordinary case does in as many months. These require immediate erasion.

If I am asked what do I take to be evidence of caseation, I should say chronicity and local doughiness on palpation, with local pain and tenderness.

If these are indications, what are contraindications for erasion? I think the answer may be given shortly that it must not be done too late—that is, the local disease must be removable; septic infection in conjunction with tubercle enormously increases the chances of failure, and the patient's health must not be so far broken down as to preclude a long operation, though our President has pointed out how great an improvement in general condition may rapidly follow such an operation.

I do not mean that advanced disease is a bar to erasion,

but that it increases the risk of failure. We saw this in our earlier cases, where several failed in this way.

If a case has been allowed to go on till so-called "abscess" forms, I think it is best dealt with in stages—that is, the abscess should be thoroughly cleared out first and the wound closed, and subsequently after healing has taken place, usually by primary union, the joint is erased. This plan has great advantages, but is not of course applicable when the whole joint is suppurating. If the case is still further advanced and sinuses exist, it may be still possible to render the parts aseptic by excision of the walls of the tracks and the use of powerful disinfectants, of which turpentine is one of the best.

Question 2.—Operation.

I very rarely perform excision at any age if erasion is mechanically possible, and the limb can be straightened either at once or gradually. In looking over records I find I have hardly ever excised a knee in the last 10 years and not many before.

Question 3.—Method of Erasion.

(*a*) I now do the transverse transpatellar operation with a vertical upward incision occasionally added to facilitate removal of disease tracking up the subcrural sac. I usually divide the aponeurosis on each side of each half of the patella for an inch or more to facilitate exposure.

(*b*) I clean, preserve and suture the halves of the patella usually with two silk sutures passed through the ligament and the quadriceps expansion, that is, across the line of section of the patella.

(*c*) The crucial ligaments are left if possible, but taken away if their retention entails a risk of leaving tuberculous matter behind.

(*d*) Superficial bone lesions and deep but local ones are scraped or gouged away as may be required.

Question 4.—Tourniquet.

(*a*) I use an elastic tourniquet so as to operate with the tissues unobscured by bleeding.

(*b*) I sometimes remove it before dressing, sometimes not. I do not think it very much matters, but to apply the dressings firmly saves time, and therefore shock and the loss of blood is about the same either way.

Question 5.—Drainage.

I now never drain unless the wound is known to be septic, but if I do not tie any vessels I leave the ends of the wound not tightly sutured so as to allow blood to escape.

Question 6.—Dressings.

I dress with sublimate or biniodide gauze and wood-wool wadding.

Question 7.—Splints.

I put the limb in a wooden back splint with two side splints for about three weeks, and then either put it in a Thomas's knee splint or put it up in Paul's splinting with plaster of paris. I prefer the former. The Thomas's splint is kept on for at least two years, and as much longer as may be necessary.

Question 8.—Prevention of Flexion.

I advise the use of a rigid appliance such as a Thomas's knee splint for at least two years, assuming that mobility is not sought.

Collier's suggestion of keeping the patella mobile is worth further trial. There is no doubt that flexion is the great source of failure in getting a permanently good result. My own experience amply proves this. Its occurrence is easily preventable, but it is difficult to see what we can do, for it is only when the patient is lost sight of and removes the splint that it takes place. Flexion, it must be remembered, occurs after excision as well as after erasion, unless similar precautions are taken to prevent it.

Question 9.—If Flexion has Occurred How do you Deal with it (a) When Union is Fibrous.

(*a*) I try gradual extension or elastic pressure. Failing this forcible straightening under chloroform; failing this, if there is backward displacement I open up the joint, and, if necessary, excise to allow of the limb being straightened.

(b) When Osseous.

I usually do an osteotomy with or without removal of a wedge from the femur above the joint.

Question 10.—Mobility.

I seldom try for a mobile joint, but if I find some mobility exists I let the patient try to "shake it loose," always being on guard against the occurrence of flexion.

Question 11.—Shortening.

Byers examined 41 cases of erasion, and found shortening in 6 of them, ranging from ¾ in. to 2 in. The ¾ in. was 3½ years after operation. One had 1 in. shortening 3¾ years after operation, 2 others had 1 in. 5½ and 7½ years respectively after erasion, 1 had 1½ in. 11 years after, and 1 2 in. shortening 11½ years after. In several of these bone was removed at the time of operation, and so, as Watson Cheyne has shown, synostosis may have occurred at the epiphyseal line. There was no relapse of disease in any of them.

It will be noticed that none of the 41 cases had been operated on since 1899.

Shortening does occur in some cases, but not in the great majority, after erasion. When it does, it is probably due either to premature synostosis of the epiphyseal line or to disuse of a flexed limb.

As to shortening in excision, it must, of course, exist, unless overgrowth of the limb occurs subsequently, and this is probably very exceptional, though no doubt it may take place, as it does in certain cases of disease, and sometimes after erasion.

Question 12.—Age.

Unless compelled, I never do an excision in a child, but should have less objection to it in an adult, though I always erase in adults if I can.

Question 13.—Direct Fixation.

I very seldom excise at all, but use no direct fixation when I do.

Question 14.—Fate of the Patella.

I leave the patella in excision unless it is diseased, and have sometimes bridged the limb bones with it.

Question 15.—Primary Seat of Disease.

I think the great majority of cases of tuberculosis of the knee are primarily synovial. I think the presence of "latent" foci in the bone is exceptional.

It is perhaps fair that I should give as far as I can the actual results of the operation I advocate, and I will therefore as shortly as possible deal with the 37 cases recorded in the joint paper by Mr. Collier and myself already referred to, and the 60 (as 3 are in both sets) recorded by Dr. Byers, making 97 in all. Besides these I have records of 25 more erasions operated upon by myself at the Royal Infirmary and elsewhere, of which 7 cases were under 15 years and the rest between 16 and 44.

Of the 97 at the Children's Hospital—

63 healed soundly.

5 had sinuses.

3 were excised.

10 were amputated with or without previous excision; 9 of these were before 1890, that is, were in our earlier cases.

8 had shortening, 5 of 1 in. or under, 3 over 1 in.; 1 of 4 in. due to excision of wedge for flexion.

3 had lengthening.

12 had slight flexion.

26 had considerable or much flexion.

8 had some active mobility.

3 were incomplete.

9 were not traced. One of these has since been found; his knee is flexed and there is a sinus; excision will be necessary, as an osteotomy has failed.

7 are known to be dead; of these 1 died of shock, 1 of scarlet fever a week after operation, 1 of scarlet fever a few weeks after operation, 1 of tuberculous meningitis 7 months after operation, and the others from 1 year and nine months to 6 years after from causes not connected with the operation. (Note.—These 4 are included in the other figures as regards the local condition.)

Of 25 erasions performed at the Royal Infirmary and elsewhere during the years 1890-1902 inclusive, I have results as follows:

Amputation	2
Soundly healed	16
Sinuses	1 (this patient died of phthisis three years after operation)
Not traced	6

As to shortening, 12 have none; 4 have ½ in. or less; 2 have much shortening, due to removal of a wedge, or osteotomy for flexion. All are stiff. Flexion is present in 3 slightly, in 3 much.

Another case was intended for erasion, but the fixed flexion made it necessary to remove so much bone that the operation became more nearly an excision. This patient did badly, and the limb was ultimately amputated by another surgeon.

Erasion is, in the opinion of a good many surgeons, a useful operation, and I may be forgiven if I say that it would have been still more in repute if all who attempted it had done it

properly. It is a tedious, troublesome process, but unless all the disease is removed a successful result cannot be looked for, and to this in very great degree I attribute the failures both in my own practice and in that of others; but I hope some of those surgeons who always excise will reconsider the question and try erasion again; they must at least acknowledge that erasion has improved the process of excision, and the old operation of excision without complete removal of tuberculous synovial membrane is dead.

In concluding my remarks, I wish to acknowledge my obligations to my friend, Mr. Collier, for allowing me to use his cases freely, and to Dr. Byers, without whose labours it would have been impossible for me to give any report of the actual after-results of most of the operations; Mr. Roberts, our surgical registrar; and my present house-surgeon, Mr. Stansfield, have also given me valuable help. I should like also again to express my regret at the absence of Mr. Haslam, whose work would have made the introduction to the discussion much more complete. And, finally, Sir, I must express my gratitude to you and to the members of the Section not only for inviting me here, but also for listening so patiently to me.

II.—J. WARD COUSINS, F.R.C.S., M.D.Lond.,*

Senior Surgeon, Royal Portsmouth Hospital.

DR. WARD COUSINS said: Acute tuberculous inflammation of the knee is not a common form of the disease. The osseous structure of a joint may be the seat of a tuberculous inflammation, and the position of the tuberculous infiltration may be indistinct until softening takes place. As soon as the infective changes reach the synovial membrane they may extend suddenly to all the structures of the joint. The disease sometimes advances in the direction of the articular cartilages; softening and erosion of this structure soon follows, and then the inflammatory changes issue in chronic caries, abscess, imperfect arrest, and finally ankylosis. Acute disease may result from sudden infection of the joint through injury. A tuberculous centre may be ruptured into the capsule, diffusing the infective material over the whole synovial membrane and exciting suppurative inflammation with great rapidity. The treatment of this serious condition consists of free incision and antiseptic irrigation and long protection of the limb. In the early stages of tuberculous knee-joint disease it is often possible to discover localized deposit. There may be little pain or lameness, but the joint may be in some part swollen with the capsule thickened and the bones enlarged, without any indication of softening or suppuration. By a well-marked incision near the neck of the femur or head of the tibia, search can be made for a spot of tuberculous infiltration with the result that a caseous cavity is often found and a small sequestra removed. By detecting and cutting out latent centres of tuberculous disease the articulation is saved from irreparable injury and a more serious manipulation under conditions far less favourable.

The semilunar cartilages are seldom the seat of primary disease, for as a general rule the morbid process has its origin either in the synovial structure or the articular extremity of the bone. Softening of the infiltration occurs within it, and inflammatory reaction takes place around it and the infective changes extend to all the structures of the joint—sometimes through the superficial cancelli to the outer layer of the bone, and then superficial caries and slow suppuration are the result. At another time the morbid process advances in the direction of the articular cartilages, softeningand erosion of these structures follow and then inflammatory changes which issue, unless checked by surgical treatment, in chronic abscess, caries of bone, and imperfect arrest of the disease. Now in these cases of advancing tuberculous disease, surgery offers the only scientific method of treatment.

Complete arthrectomy or erasion of the knee-joint.—The operation consists of the complete removal of the diseased synovial membrane, and is especially indicated in cases of chronic obstinacy and slowly-advancing tuberculous disease without suppuration, the patient being free from other complications. For the complete exploration of the recesses of the articulation and the excision of deep infiltrations of the synovial membrane, a free division of the ligaments and capsule is necessary. The whole of the pulpy granulation tissue must be dissected off and the ligaments and cartilages carefully scraped. It is absolutely necessary to remove every particle of the diseased synovial membrane, and all tuberculous foci in the bones must be cleanly cut out with the gouge. Care must also be taken to prevent any remnants of the infective tissue being left behind on the raw surfaces and the accidental reinoculation of the disease through the medium of the fresh incisions.

After careful splint treatment for a few weeks the joint will require protection and support for a long period to ensure a good and permanent result and prevent flexion of the limb. A sound and useful limb may be anticipated in many cases with the retention of some useful mobility. The operation of erasion is free from the risk of shortening and arresting the growth of the leg, and therefore it is especially suitable for children and young patients with good power of repair and only a limited amount of tuberculous disease.

Excision of the Knee-joint.—I prefer complete resection of the joint in all cases after puberty marked with permanent disablement, distortion, and the carious remnants of old infiltrations. Even in the advanced stages of knee-joint disease excision will often prove of lifelong benefit to the patient. My method is to open the joint freely and remove as thin a layer of bone as possible from all the articulating surfaces. The gouge is used for cleaning out any infiltrations and then the patella is partially or wholly removed, according to the extent of the disease. After cleaning every recess in the capsule the bones are jammed together as tightly as possible and the wound closed except at the extremities. In about two or three months the limb is securely fixed in plaster and after some time a leather support is adjusted and worn persistently for about two years.

It is useless to practise excision of the knee in the advanced stages of tuberculous disease, not from the fear of deepening the infection, but from the feebleness of the vital power which has been slowly giving way by prolonged suffering and the chronic septic condition of the system. The treatment of joint disease has made great progress during the last twenty years, and we can trace it mainly to the progress of pathological science. But the science of surgery is destined to progress, and before us there are great possibilities. Late operations are always attended with increased risk; still, exceptional cases occur occasionally in which interference appears to be the better course. There are certain cases of chronic tuberculous disease of the knee, attended with secondary centres and general infection of the system, in which the vitality of the tissues and the residue of constitutional vigour appear sufficient to warrant an effort in the direction of conservative surgery. Twelve years ago I excised a knee-joint for a lad of 10, who had never been able to walk from what looked like hopeless disease, with suppurating sinuses and extensive tuberculous caries. He, however, slowly recovered, and he can now walk ten or fifteen miles without fatigue.

Excision is not a good operation for young children. The best results are obtained between 15 and 40 years. I have excised the knee-joint in a man of 52 years of age, and also in another of 49 years. One is still working well as a bricklayer and plasterer, and the other as a gardener. We must select the right time for operation and prepare our patients so that they may be ready to go through long and tedious treatment. Sometimes I keep my patients waiting years and in the meantime get them about on a Thomas's splint. Two months ago I operated on a lad of 16 years and he had then been under my care seven years.

III.—C. B. KEETLEY, F.R.C.S.,

Senior Surgeon, West London Hospital.

MR. KEETLEY said that it should be recognized that the conditions of operative treatment were somewhat different in adults and in children; in children great care had to be taken not to encroach on the epiphyseal lines, and this consideration necessitated the removal of the minimum amount of bone possible. He thought that the distinction between excision and erasion was not a true one; in every case the question of importance was that all disease should be removed; if this were not possible then amputation was called for. Erasion he considered a bad term. The operation should be a careful dissection, chiefly with the knife and scissors. Asepsis was of very great importance. In one suppurating case where the removal of the disease necessitated leaving a large gap in the lower end of the femur, he had obtained a very satisfactory result and healing in a fortnight without a sinus remaining by filling up the defect with a flap containing the patella and the soft parts around it. Cavities gouged out of the upper end of the tibia he lined with Thiersch's grafts, as it was of the first importance to obtain quick healing without leaving any sinus.

* This paper was illustrated by photographs.

IV.—K. W. Monsarrat, C.M., F.R.C.S.E.,
Surgeon, Northern Hospital, Liverpool.

Mr. Monsarrat said: I have recently followed the subsequent history of ten cases of advanced disease of the knee-joint on whom I operated during a period of about eighteen months in 1900-2, more than a year having elapsed since operation in the most recent. So small a number is of no value statistically, but will serve to illustrate one or two points in the discussion. These cases have raised in my mind two questions: first, after erasion, what is the prospect as to recovery from the disease; secondly, what is likely to be the value of the limb for purposes of locomotion? With regard to the first, I will only say that I have found erasion a satisfactory operation as a method of thoroughly eradicating the disease; and by erasion I mean, generally speaking, the display of the whole of the interior of the joint and the removal with the knife, scissors, and if necessary the spoon, of all structures showing the appearance of disease. In the second place, what is the value of the limb as a leg? In none of my cases was there recovery to the extent of a movable joint. The argument against attempting to retain mobility is based on two grounds—the risk of recurrent disease and the risk of a certain degree of permanent flexion. If these risks can be avoided, the question will require rediscussion.

In three of my cases troublesome flexion occurred; in these three alone I exposed the joint by dividing the ligamentum patellae; the others were not troubled by this complication, and all of these were erased after transverse section of the patella. I believe that flexion is always likely to occur when the integrity of the extensor is interfered with, and that it can be largely discounted by leaving this intact. Trans-section of the patella fulfils this condition, provided firm bony union is obtained, and it is also fulfilled by Kocher's method. The former affords ready access to all parts of the joint, and is only open to the objection that it introduces the complication of a transverse fracture, which, if by any chance bony union does not follow, damages the extensor to as great an extent as section of the ligament. Kocher's method I have performed only on the cadaver, and have found difficulty in obtaining by it satisfactory access to the tibial surface and the posterior recesses of the joint.

Of late I have employed a method of exposing the joint which, I think, combines the advantages of giving access to every part and of leaving the extensor entirely intact. A long median vertical incision exposes the quadriceps expansion, the patella and the ligamentum patellae. The ligament is split vertically exactly in the middle line, the patella sawn through in the same direction, and the tendon of the quadriceps also split vertically upwards for 2 to 3 in. Perfect access is at once obtained to the suprapatellar pouch and the lateral reflexions of the synovial membrane with the limb in the extended position. The joint is then flexed, and each half of the bisected extensor apparatus retracted laterally to the outer and inner aspects of the femoral surfaces. Full flexion and a complete exposure of all parts of the joint are thus obtained. When all disease has been removed the joint is again extended, the halves of the patella fall naturally together, and are fixed with a single wire stitch, and continuous sutures above and below the patella bring together the bisected tendon and ligament.

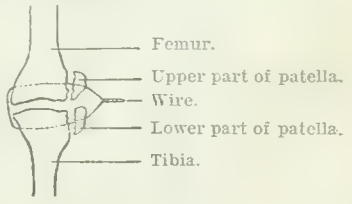
The second risk is that of recurrent disease. It is, of course, necessary to keep the joint at rest after erasion as long as there is any doubt as to complete recovery from the disease. The tuberculin test should prove valuable in affording information as to the safety of attempting movement. I employed it in three of these cases, not exactly for this purpose, but in order to assure myself that in forcibly correcting flexion I should run no risk of rekindling disease. I think that if employed when the retention of mobility is in question it might save valuable time.

I must leave it to others to speak dogmatically on this subject and confine myself to recapitulating what I conceive to be the limits of safety in attempting to obtain a movable joint after erasion, namely, an intact condition of the extensor, freedom from disease as verified by the tuberculin test and where it has been possible to save the crucial ligaments. A large number of cases that come to operation do not fulfil the last condition. In these, after thorough erasion, so much bone should be removed, and only so much, as will give a satisfactory apposition of exposed femur to exposed tibia.

In answer to one or two of the questions in the synopsis of Mr. Wright's paper, in erasion I use no tourniquet, but arrest any haemorrhage there may be by pressure and torsion. I employ a small gauze wick drain, remove this at the end of about twenty-four hours, and then place the limb in plaster for a week. I then remove the sutures and again apply the plaster splint. With regard to the seat of origin of the disease, I think that the great importance of the early recognition of tuberculous foci in the neighbourhood of the lower femoral epiphysis cannot be too forcibly urged. It may, I think, be assumed that a surgeon who finds that he has to deal with such a focus, confined to the bone, will proceed to deal with it by operative measures without delay. It is, therefore, somewhat remarkable that one finds so little record in the literature of the eradication of such foci. Cases sent to hospital have usually passed the stage of bone disease and the opportunity of saving the joint has gone by.

V.—A. H. Tubby, M.A., F.R.C.S.,
Surgeon, Westminster Hospital.

Mr. Tubby said: There are no cases which promise such a field for successful operation for tubercle as affections of the knee-joint, for the tubercle is localized, it is near the surface, and ought to be readily removable. At the time of operation in an average case everything promises well, but the after-history of these cases is very disappointing, and there are three causes of ultimate failure and disappointment. These causes are return of the disease, shortening of the limb, and flexion of the limb. The return of the disease is due either to too late operation or imperfect removal of the disease. The greatest care should be taken in operating, and no trouble is too great to ensure absolute removal of every particle of diseased tissue. Shortening of the limb arises from interference by disease with the epiphyseal line or trenching on the growing line at the operation. The question of flexion is one of great difficulty. Its causes are to be sought in the following: Disease of the joint affects reflexly the extensors more than the flexors, and the extensors waste more than the flexors. Therefore the latter start with a mechanical advantage before the operation. If from faults at the time of operation the knee be put up not quite straight, but a little flexed, then the mechanical advantage of the flexors commences, and this increases not directly with the number of degrees of the angle, but as the square of the degrees of flexion. Another contributory cause of flexion is imperfect or fibrous ankylosis. In order to obviate flexion, I have tried the following plans: (1) Retaining the patella after dividing it transversely and removing all diseased parts, the anterior aspects of the femur and tibia are sawn off, and so, too, is the posterior surface of the patella. The four portions of bone are then united by a stout silver wire thus:



The wire is cut short and bedded down in the front of the patella and left in for so long as it does not cause irritation. Union takes place between the patella, tibia, and femur. (2) Another method of lessening the tendency to flexion is to excise portions of the biceps and inner hamstring muscles, about an inch of each being removed, and this can be done by merely carrying backwards the extremities of the anterior semilunar incision. (3) The plan of performing a muscle-grafting operation in order to equalize the flexors and extensors has been suggested by Lange. It consisted in dividing the biceps and the semi-membranosa and semi-tendinosa at the level of the knee-joint, and bringing the proximal ends forwards, attaching them to the top of the patella. I think that a combination of plans (1) and (3) will be found to give the best results so far as the avoidance of flexion is concerned. I should like to ask what is Mr. Wright's experience as to ankylosis after erasion and excision? Is it entirely fibrous, or mixed fibrous and osseous, a shell of bone being formed on the outside, or is the union entirely osseous?

VI.—Sinclair White, F.R.C.S.,
Senior Surgeon, Sheffield Royal Infirmary.

Mr. Sinclair White had found that nearly all his hospital tuberculous knees eventually came to excision, no matter

how carefully and patiently they had been treated. For this reason he was an advocate of early excision. Apart from the many months of enforced idleness that conservative treatment entailed, and the fact that a large percentage of cases so treated failed, the result obtained at best was a weak and more or less stiff joint, liable at any time to a recrudescence of the disease from slight injury or enfeebled health, and not to be compared with what followed successful excision. He had excised the knee-joint for tuberculous disease during the last five years 31 times without a fatality, and in every instance with excellent result; 28 of his cases had bony ankylosis, and in three there was firm fibrous union. The majority of his cases were in adults, but several were children. In these latter he had been careful to remove only diseased bone and cartilage, but in the adult he always practised a formal excision. He did not use a tourniquet, and never employed drainage, but left the last $\frac{1}{2}$ in. of the transverse wound open on each side. The bones in all cases were wired together. Where sepsis existed he treated the wound for five minutes with a solution of 1 in 1,000 iodic. hydrarg. before closing it. The limb was encased in a back splint with footpiece and two side splints, and swung from a cradle. The first dressing was seldom disturbed for ten days, by which time the wound was healed. Each patient was provided with a light poroplastic splint, extending from the tuber ischii to the ankle, and this was worn for at least a year. Firm ankylosis was essential to a good result, and preserving the crucial ligaments interfered with this. He failed to see any difference, other than of degree, between erasion, so called, and excision. It was desirable to preserve the patella in young children in order to strengthen the bond of union. He was of opinion that tuberculous disease of the knee usually began as a local infection of the synovial membrane, and that if operated on soon after its appearance the disease might be eradicated without loss of mobility or stability, but the opportune time was nearly always occupied by attempts at cure on non-operative lines. The enormous value of fresh air and sunlight in all tuberculous knees, whether operated on or not, should not be lost sight of.

VII.—H. BETHAM ROBINSON, M.S., F.R.C.S.,

Assistant Surgeon, St. Thomas's Hospital; Surgeon, East London Hospital for Children.

MR. H. BETHAM ROBINSON considered it undesirable, especially in adults, to put on a tourniquet. It was much better to stop the haemorrhage with hot saline as the operation proceeded. If the tourniquet was used, and especially if this was removed after the dressings were applied, there was great liability to subsequent haemorrhage; the dressings then had to be removed under a disadvantage leading to greater shock and a serious risk of infecting the wound. An important point to be dealt with was what to do in adults. In a working man, where there were indications of destruction, especially when associated with a general health not above suspicion, it was the quickest way in the end to remove the limb at once. This in the majority of cases would have to be done later when the conditions were unfavourable. Should erasion or excision be done and the most favourable result obtained, the limb would be stiff and a hindrance to most occupations.

VIII.—A. B. MITCHELL, F.R.C.S.I.,

Surgeon, Royal Victoria Hospital, Belfast.

MR. MITCHELL considered that operative interference should be undertaken earlier and that in many instances Thomas's knee splint, though a very excellent and useful one, was a source of danger, as once it was applied the case was often expected to recover without other assistance; and in this way disease frequently progressed till nothing but a very extensive operation could afford any chance of success. The discussion showed that the whole question of the treatment of tuberculous disease of joints was still in an unsatisfactory condition.

IX.—H. A. LATIMER, M.D.,

Consulting Surgeon, Swansea Hospital.

DR. LATIMER favoured excision as against erasion, holding that a complete access to all foci of disease must be obtained, and a free removal of all morbid material must be made if a cure of the disease was to be obtained.

X.—G. B. FERGUSON, M.Ch.Oxon., M.D., F.R.C.S.,

Surgeon, Cheltenham General Hospital.

DR. FERGUSON said that he had found excision a very satisfactory operation in adults; he always used antiseptics freely during the course of the operation and thought that this added greatly to the success of these operations. He considered that firm fixation was best ensured by wiring the femur to the tibia; in his cases flexion had not been a troublesome complication and he attributed this to his practice of always wiring.

XI.—EDMUND OWEN, F.R.C.S.,

Consulting Surgeon, St. Mary's Hospital; President of the Section.

THE PRESIDENT said that those present were grateful to MR. WRIGHT not only for the way in which he had opened the debate, but also for the great trouble and labour with which he had obtained and collated the views of so many British surgeons. He ventured, however, to express the opinion that inadequate attention had been paid to those cases of advanced disease of the joint in which the adoption of conservative measures seemed unlikely to be attended with success, though Mr. Robinson had directed attention to this matter. Mr. Cousins had said that he, practically, had never had occasion to amputate for advanced knee-joint disease. Possibly this might be partly due to the fact that that gentleman's work was carried on in the salubrious atmosphere of Southsea, but he (Mr. Owen) agreed with Mr. Robinson in saying that amongst the cases in the hospitals of London amputation in the lower third of the thigh was not infrequently the only method of dealing with advanced tuberculous disease of the knee—it was quite possible to carry conservative treatment too far. For his own part, he liked to have a good look at the patient before he examined the knee, and this comprehensive survey sometimes told him at once that he had before him a patient who certainly was not suitable to undergo excision. The great feature about amputation was that as soon as it was done the patient began to improve, and all his troubles were safely put behind him. A good many of those who had taken part in the excellent debate had spoken as if an excised knee were a splendid thing in itself. As a matter of fact, however, the rigid limb was always in the way, and he had much sympathy with the man who, speaking from experience gained in the case of a friend with an excised knee, demanded that his own tuberculous limb should be amputated. The discussion of that morning had done something to clear away a misunderstanding in connexion with the meaning of "erasion." Two practical surgeons (Mr. Cousins and Mr. Keetley) had expressed the difficulty which they met with in practice in saying where erasion ended and excision began. This, the speaker affirmed, was valuable testimony to the thoroughness with which they carried on their work. The old classical excision was a thing of the past. The surgeon of to-day removed only the diseased tissue from the knee, and if in doing this he took away articular surfaces of bone, he was, in effect, doing an excision—the excision of the present time—and he invariably completed the operation by cutting or scraping away every particle of diseased tissue. This was erasion. Thus the excision and the erasion in advanced cases were parts of the one operation, and it was impossible to separate them. No one had done more than Mr. Wright in establishing erasion as an admirable surgical procedure.

XII.—JORDAN LLOYD, F.R.C.S.,

Surgeon, Queen's Hospital, Birmingham.

MR. JORDAN LLOYD looked upon excision of the knee-joint in the young adult as one of the most satisfactory operations in the whole range of surgery. Results in children were less satisfactory chiefly because of the flexion which was liable to follow, but this flexion was rarely seen in the adult; it was due to unequal growth at the epiphyseal lines as well as to contraction of flexor muscles. Absolute fixation of the joint at the time of operation and for a long period subsequently was an essential of prime importance.

REPLY.

MR. WRIGHT said in reply that the class of case alluded to by Mr. Ward Cousins was hardly the one under discussion, as it was an extra-articular epiphysitis, and the affection of the joint suddenly was an accident as it were. Incision of a chronic tuberculous joint was not suitable treatment. The other points raised in the discussion were for the most part not replied to, as time did not permit, but the question of

flexion was again mentioned, and it was pointed out that it occurred after excision as well as after erasion, and that the preservation of a free patella and consequent power of extension of the leg upon the thigh by muscular action as suggested by Collier would be good, but the difficulty was in keeping the patella free. Mr. Wright did not think vertical section of the patella would get over the flexion difficulty. Of the points raised by Mr. Tubby, Mr. Wright said erasion took three-quarters of an hour to an hour to do properly. The uniting material in excision was certainly bony sometimes, and in erasion probably fibrous. Mr. Wright strongly opposed the view held by some of the speakers that operation was necessary in most cases. He did not think more than 10 per cent. required operation if treatment by Thomas's splint was properly carried out from an early stage. Mr. Wright contended that the results of erasion proved absolutely that the disease could be entirely removed by that operation, that hidden foci were rare and usually recognisable at the operation, that a cavity in the bone was no bar to the success of erasion, and that a section of bone involved immediate and actual shortening, and in addition an increased liability to arrest of growth. In reply to Mr. Owen's advocacy of amputation, Mr. Wright strongly dissented from the view that a patient's position was worse with a stiff knee of his own than with an artificial limb. He thought there was the greatest difference between excision and erasion, especially during the period of growth. Mr. Wright's figures proved that after erasion shortening was exceptional and slight and the functional result excellent. He opposed altogether any return to the old routine plan of amputation.

A NEW ROUTE FOR POSTERIOR GASTRO-JEJUNOSTOMY.

Illustrated by Twelve Cases.

By J. Basil Hall, M.C.Cantab.,
Surgeon, Bradford Royal Infirmary.

In September of last year I published in the *Lancet* a report of four cases in which I had performed a posterior gastro-jejunostomy by a new route which I believed to possess certain advantages over that usually adopted. In the method which I advocated, and which for convenience of description I shall call the supracolic operation, the posterior wall of the stomach is reached through an opening made in the gastro-colic omentum instead of the transverse mesocolon. To the four cases originally published I now wish to add eight cases of gastric ulcer in which I have adopted this supracolic operation, and my experience in these cases convinces me that this method has much to recommend it. It is certainly easier to carry out, entails less manipulation and peritoneal exposure, and is consequently better borne by patients who are not infrequently in a state of great enfeeblement and exhaustion.

The gastrocolic omentum is a thin, practically bloodless, membrane, the remnant of the primitive mesentery of that part of the alimentary canal which ultimately becomes the stomach. In perforating it, therefore, there is no fear of interference with vascular supply, as is the case in transverse mesocolon. Moreover, there is no risk of contraction of the opening causing pressure on the loop of jejunum, and hence no necessity for suturing the margins of the aperture to the stomach wall, a procedure recommended in the case of the mesocolon.

It is scarcely necessary to point out that in adopting the supracolic route the amount of manipulation and peritoneal exposure is reduced to a minimum. In cases where the stomach is greatly dilated its posterior wall can certainly be easily reached through the transverse mesocolon, but when the stomach is small and fixed the operation is by no means an easy one, and it is especially in these cases that the advantage of the supracolic route is most striking. An incision of 3 in. at once exposes the gastro-colic omentum. The loop of jejunum is hooked up with the index finger and clamped. A fold of the posterior wall of the stomach is drawn through the aperture in the gastro-colic omentum, and, after shutting off the peritoneal cavity with gauze, the anastomosis is completed outside the abdomen. In making the anastomosis I use a double row of continuous suture, an inner one of catgut to unite the cut edges, and including all the layers so as to control any bleeding points, and an outer serous suture of silk. I have given up all mechanical appliances, because I find I can do better without them.

In this, as in the old anterior operation, the loop of jejunum lies in front of the colon. I do not believe that this is any disadvantage; indeed, I am strongly of opinion that the objection raised against this arrangement is entirely a false one. I have had the opportunity of examining two subjects *post mortem* on whom gastro-jejunostomy had been performed for malignant disease. In both the jejunum lay in front of the colon and I failed to satisfy myself that any compression of the loop could be exercised by the latter. I have also come to the same conclusion after performing the operation on the dead body and then inflating the colon. As a matter of fact, the loop of jejunum lies well to the left, almost over the splenic flexure and descending colon. I have also recently had the opportunity of reopening the abdomen in a patient on whom I had previously performed gastro-jejunostomy by the supracolic route. An omental graft which I had laid over the line of union at the first operation had become rolled into a stout cord which was compressing the small intestine and causing attacks of pain. After removing it, the symptom ceased. At this second operation I had a good opportunity of noting the disposition of the parts; I found that the jejunal loop lay well to the left, almost over the descending colon, and I could not satisfy myself that it was possible for any mutual pressure to be exercised by the transverse colon and the loop. Lastly, I may say that after a systematic search I have failed to find any record in the literature of gastric surgery of any instance in which it has been demonstrated that such pressure has occurred after an anterior operation, and I am therefore inclined to think that this objection is purely a theoretical one, which practical experience has shown to be groundless.

Among the 12 cases which I have arranged in the form of a table (p. 896), with a brief record of each, there was no fatal result. In every instance recovery has been rapid and uneventful. The marked absence of vomiting after operation has perhaps been the most striking feature. The first 4 cases have already been published.[1] Three of these are alive and well; one is dead from extensive carcinoma.

Case v and Case vi are most striking examples of the success which may attend operations even when the patient is reduced *in extremis*. In Case v the patient, after three years' constant illness and suffering, only weighed 6 st. 3 lbs., and I hesitated to undertake the operation. She now weighs 8 st., does all household work, takes all ordinary diet and a good deal that is extraordinary also, and is in robust health.

Case vi is, I think, an even more remarkable example. I first operated upon her on May 26th, 1902, for a gastric ulcer which had perforated four hours previously. She had had symptoms with several attacks of haematemesis for ten years. There was a large spreading ulcer on the posterior wall, perforated at one point at the lesser curvature near the oesophagus. The perforation was the size of a threepenny bit. I could only imperfectly close it by suture, but sealed it by laying some omentum over it. She recovered after a tedious convalescence, but the symptoms of ulcer continued, and three months later she had two sharp attacks of haematemesis. In October last she was in the most miserable condition possible. Constant pain and tenderness made it impossible for her to wear ordinary clothes and she vomited everything. Her weight was reduced to 6 st. 4 lb. I performed gastro-jejunostomy on October 31st. I have seen this patient quite recently. She is now about 9 st. in weight, and has never had another symptom. I should certainly have passed her without recognition in the street.

Of the next three cases it is perhaps somewhat too early to speak. Up to the present time, however, they have all progressed well, and I do not anticipate any further trouble, because in my experience I have found that after gastro-jejunostomy, if trouble occurs at all, it comes comparatively early, certainly within three or four months.

In Case x the condition found on opening the abdomen was a most peculiar one. The tumour was perched, so to speak, on the lesser curvature, but adherent to the liver and other structures behind. In shape and size it was very like a penny bun; it was pink and fleshy in appearance, without any signs of degenerative change anywhere. The under surface was closely adherent to the stomach, in which a large ulcer was present opposite the centre of the tumour. The presence of a tumour was never suspected prior to operation, and I had no opportunity of testing for hydrochloric acid afterwards. The future history alone can decide its nature.

In all my cases I have adopted the plan commonly practised of giving the loop of jejunum a half turn to the right, so that the peristalsis of the gut shall travel in the same direction as that of the stomach. In Case xi, I found on completing the anastomosis that, owing to a misunderstanding with

Twelve Cases of Gastro-jejunostomy by the Supracolic Route.

No.	Case.	History.	Condition when Seen.	Condition found at Operation.	Latest Report.
1	J. C., labourer, aged 48 years. Bradford Union Hospital	Typical history of dilated stomach for 2 years. Has been a heavy drinker. No haematemesis. Under medical treatment 4 months without much benefit	Tall, powerfully-built man, but much wasted. Only weighs 8 st. Stomach seems enormous. On one occasion after introducing 5 pints of fluid, 172 oz. were siphoned off. Sarcinae. Free HCl.	Greatly dilated stomach. No pyloric stricture or ulcer. Gastro-jejunostomy by supracolic route performed. May 21st, 1901	Last heard of at the end of 1902. In excellent health. Weighs over 11 st.
2	W. A., cabdriver, aged 39 years. Bradford Union Hospital	Five years ago suffered from typical symptoms of pyloric stenosis. Pyloroplasty was performed at a hospital in another town. Symptoms returned within 15 months. Grown steadily worse during the last 3 years	Weighs 9 st., used to weigh 13 st. Severe pain after food, relieved by vomiting. Vomit like pure yeast. Sarcinae and free HCl. Stomach much dilated. Sound scar of old operation	Greatly dilated stomach. Pylorus closely adherent to liver and buried in adhesions. Will easily admit the index finger. Gastro-jejunostomy by supracolic route. August 20th, 1901	Last seen September, 1902. In perfect health. Weighs over 12 st.
3	M. W., married woman, aged 26 years. Bradford Royal Infirmary	Noticed tumour in abdomen 3 months ago, and had pain, and vomiting after food. Vomited everything. No haematemesis. Rapid emaciation	Very emaciated. Weighs 6 st 8 lb. Tumour (pyloric) size of penny bun. Visible peristalsis. Well-marked succussion splash. Free HCl and sarcinae	Dilated stomach. Ulcer at pylorus. Tumour is apparently simple inflammatory effusion. Some rather large glands along lesser curvature. Gastro-jejunostomy by supracolic route. December 18th, 1901	Disappearance of tumour in 6 weeks. Three months later in good health. Weight, 8 st. Seven months later large malignant mass in abdomen.
4	A. H., woolsorter, aged 43 years. Bradford Royal Infirmary	Four years' history of stomach troubles. Vomiting and pain after food. No haematemesis. Has lost 3 st. in weight. Six weeks' medical treatment has not produced much benefit	Thin. Looks ill. Stomach dilated. Well-marked succussion splash. Vomits after food almost invariably. Vomit contains free HCl and sarcinae	Stomach dilated. Adhesions round pylorus and duodenum. Duodenal ulcer. Bore operation badly. Gastro-jejunostomy by supracolic route. November 14th, 1901	Had pain in left side at irregular intervals. Subsequent laparotomy revealed an omental cord compressing jejunum, which was divided. Pain ceased and patient is now well.
5	A. H., single woman, aged 20 years. Seen with Dr. Clough, of Bingley	Gastric ulcer symptoms for three years. Haematemesis once. Practically under treatment the whole time. As soon as ever systematic treatment is stopped patient is as bad as ever	Extremely feeble and anaemic. Only weighs 6 st. 3 lb. Constant epigastric pain and great tenderness. Cannot wear corsets. Vomits after every meal	Ulcer on lesser curvature close to cardiac orifice. Local peritonitis. Ulcer is on posterior wall. Gastro-jejunostomy by supracolic route. October 20th, 1902	Seen in June, 1903. Weighs 8 st. Eats anything. Quite well.
6	E. W., single woman, aged 39 years. Seen with Dr. Beetham, of Bradford	Gastric ulcer 10 years, with haematemesis on two occasions. Ulcer perforated on May 26th, 1902, when I first operated on her. Recovery took place, but ulcer, which was a large one, did not heal. Haematemesis in August, 1902, twice	Miserable condition. Weighs 6 st. 4 lb. Cannot wear anything round the waist on account of tenderness. Walks with body bent forward. Constant pain and vomiting	Stomach adherent posteriorly and about lesser curvature. Ulcer has healed where the perforation occurred, but lower down on posterior wall is an ulcerated area deeply punched out and adherent to the aorta. Gastro-jejunostomy by supracolic route. October 31st, 1902	July, 1903. Never had another symptom. Looks 15 years younger. In perfect health. Gained 2 st. Eats anything and everything.
7	S. M., married woman, aged 22 years. Seen with Dr. Dearden, of Bradford	Dyspeptic symptoms, with vomiting, for 7 years. Was in Bradford Royal Infirmary a year ago for gastric ulcer, and seemed to get well, but relapsed in a few weeks. No haematemesis	Very anaemic and badly nourished. In wretched health. Constantly vomiting. Epigastrium very tender. Cannot wear corsets. Is totally incapacitated for ordinary household duties	Stomach large and walls very thin, almost transparent. Upper part of posterior wall and lesser curvature adherent behind, apparently site of small ulcer. Gastro-jejunostomy by supracolic route. February, 1903. By oversight interior of stomach not examined so that presence of ulcer not actually proved	Put on weight considerably. Has been very well so far, and takes ordinary food. Seen June, 1903. Ceased taking iron, and not been so careful the past week or two, and is now rather anaemic.
8	M. G., married woman, aged 25 years. Bradford Royal Infirmary	Symptoms of gastric ulcer for 7 years. Pain and vomiting after food, been severe during past 6 months. Spent her time latterly "in and out" of hospital. No haematemesis	Anaemic. Not wasted. Very tender spot in the epigastrium. Vomits frequently after food	Stomach fixed and adherent to liver above and to abdominal wall. Small ulcer at lesser curvature surrounded by much cicatricial tissue. Slight hour-glass contraction. Gastro jejunostomy by supracolic route. March 12th, 1903	June, 1903. Has had no pain since operation. Takes ordinary food, and is in good health.
9	M. H., married woman, aged 31 years. Bradford Royal Infirmary	Flatulence and distress after food, 5 years. Severe pain during past 12 months. Taken nothing but liquids for a year. Medical treatment given little relief. Little or no vomiting	Unhealthy appearance. Is very neurotic and amount of suffering is difficult to estimate. Objective symptoms not marked. Some epigastric tenderness and severe pain after food	Stomach slightly dilated. Walls thin and atonied. Ulcer on posterior wall close to pylorus. Pylorus narrowed by cicatricial contraction but admits little finger. Gastro-jejunostomy by supracolic route. March 19th, 1903	June, 1903. Is taking solid food. Constipation has much improved, but still complains of sense of flatulence.
10	S. S., woolsorter, aged 33 years. Seen with Dr. Rawson, of Bradford	Violent haematemesis 9 years ago, after which gastric ulcer symptoms gradually became worse up to 10 months ago, when he had severe haematemesis which nearly proved fatal. Was in hospital and improved sufficiently to go home, but has grown worse since	Anaemic, thin, and feeble. Has only taken milk for a long time. Solid food brings on vomiting. Stomach not dilated. No tumour evident. Marked resistance and tenderness over epigastrium	On the lesser curvature is a cake-like tumour of fleshy appearance and about 3 in. in diameter. It is overhung by the liver. It is partly excavated in the centre by a large ulcer in the stomach the size of a dollar. The stomach is adherent posteriorly. The lymphatic glands are large, but the appearances are not suggestive of carcinoma. Gastro-jejunostomy by supracolic route. April 9th, 1903	June 20th, 1903. Has put on flesh rapidly, and is taking ordinary food. Has had no symptoms since operation.
11	R. N., labourer, aged 42 years. Bradford Union Hospital	Pain in stomach 14 months. No actual vomiting, but retching after food. Severe attacks of pain at times and sense of loaded stomach. Obstinate constipation. No haematemesis. Lost 2 st. in weight	Very sallow and anaemic. Foul tongue, feeble and emaciated. Well-marked succussion splash. Fairly comfortable on liquid food, but is steadily losing weight	Small ulcer on lesser curvature and well-marked hour-glass contraction. Ulcer adherent to liver. Gastro-jejunostomy by supracolic route. April 25th, 1903	June 20th, 1903. All symptoms have disappeared, and patient is in excellent health. Takes ordinary food.
12	[illegible]	Chronic dyspepsia for 20 [illegible]. For past year much [illegible] after food, and vomiting, [illegible] ed some relief until [illegible] eful dieting. [illegible] Has only [illegible] and food for some weeks, and grown very thin	Very obvious pyloric tumour, size of small orange. Feels movable. To the left of it is a large dilated stomach showing visible peristalsis. Well-marked succussion splash. Emaciation	Dilated stomach. Massive ring-like stricture 2 in. from pylorus, adherent posteriorly when there is an ulcer. The growth has all the appearances of carcinoma. Gastro-jejunostomy by supracolic route. May 6th, 1903	June, 1903. Patient is up and about, and entirely relieved of her symptoms, and she takes ordinary food.

my assistant, I had failed to carry out this important step. Fearing that regurgitant vomiting might ensue in consequence of this mistake, I performed a lateral anastomosis between the proximal and distal limbs of the loop about 4 in. below the stomach communication. No ill-effects followed this accident and the patient is now in excellent health.

In conclusion, I would urge a trial of this method of operation by the supracolic route. I am confident that it combines the advantages of both the anterior and posterior operations, whilst avoiding their disadvantages. It is especially useful where there is a small contracted stomach or where that organ is fixed by adhesions. Any one who tries it cannot fail to be impressed with the fact that it is a less severe procedure than the posterior operation as usually performed, and the results in the cases which I now place before you are, I think, sufficiently conclusive to show that there is no insuperable objection to the method.

REFERENCE.
1 *Lancet*, September 6th, 1902.

ONE DANGER OF GASTRO-ENTEROSTOMY.

By W. McAdam Eccles, M.S.Lond., F.R.C.S.Eng.,
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All surgeons and most physicians are agreed at the present day that gastro-enterostomy, without or with simultaneous pyloroplasty, is indicated in most cases of pyloric obstruction of a simple nature, producing definite signs and symptoms. The danger of the operation should be but slight, and its mortality is still on the decrease, while its beneficial results in these simple cases are distinctly on the increase. Any circumstance, therefore, that may be considered a danger should be carefully reviewed and if possible avoided. It is for this reason that I have ventured to record a case which demonstrates one course of a fatal result which is not, so far as I can see, sufficiently alluded to in most authorities on the subject of gastric surgery. Untoward results after gastro-enterostomy arise for the most part from peritonitis, either septic or perforative. The former is due to direct infection at the time of the operation, while the latter most commonly arises from defective suturing at the anastomotic area.

There is at least, however, one other manner in which perforative peritonitis may be induced, and it is to this that I wish to draw particular attention. Many of the cases of simple obstruction at or near the pylorus are due to the contraction of scar tissue, the outcome of previous ulceration in the neighbourhood. In some of these instances there has been extensive ulceration, and the formation of a considerable amount of adhesions outside the viscus, so that both before and even during the operation it is difficult or well-nigh impossible to be certain whether the case is one of a simple or malignant nature.

I may instance a case of this kind which has lately been under my care while doing duty at the London Temperance Hospital. I was asked by Dr. Soltau Fenwick to see a man, aged 64, by occupation a waiter. Two years previously he had been in the hospital with well-marked signs of dilatation of the stomach, together with a mass in the region of the pylorus. He was strongly urged at that time to submit to a gastro-enterostomy but refused. He went back to his employment and lived on ordinary diet, though with a great amount of discomfort, often only relieved by lavage. His pain came on chiefly about two hours after food, and was succeeded by vomiting, which tended to give him abatement of his trouble. Although very thin on his second admission he had not in reality lost much weight.

On further examination he was found to have a greatly dilated stomach, in which irregular peristalsis travelling from the left to the right could be set up by manipulation. There was a marked succussion splash; his tongue was large, flabby, and coated, his extremities inclined to be cold, and he complained sometimes of cramps in the legs but had no definite tetany.

The patient having consented to operation and having been carefully prepared, under chloroform the abdomen was opened in the middle line above the umbilicus. Owing to the history of the case it was considered to be one of simple pyloric obstruction. When the parts were exposed the region of the pylorus was found to be the site of extensive adhesions, causing all the tissues to be so matted together that it is almost impossible to determine their exact relationship. Posterior gastro-enterostomy was decided upon, and in turning up the stomach with the great omentum, it was noticed that this could not be accomplished quite as easily as usual on account of the fixity of the pyloric end. There were no other points of interest in the operation, which was performed in a little over half an hour. The patient was only slightly collapsed at the end of it, a saline injection into the rectum soon restoring him.

All vomiting ceased, and he was placed on nutrient enemata until the third day, when these were diminished, and liquid nourishment allowed by the mouth. He progressed well, with normal temperature and pulse, and feeling much gratified by the operation until the tenth day, when the superficial sutures were removed. On the morning of the eleventh day his temperature went up to 101° F., and he began to vomit. All food by the mouth was stopped. He complained of pain over the region of the pylorus. The next day his temperature reached 102° F., his pain was worse, and some blood had appeared in the vomit. The vomiting continued, and bright blood began to be ejected. He was given adrenalin and turpentine by the mouth, and morphine hypodermically. In spite of these he still vomited blood, and on the fourteenth day had a profuse haemorrhage, was infused, but died.

The necropsy revealed that there was no general peritonitis, but that there was purulent lymph on the upper surface of the liver and between the liver and stomach. The anastomosis between the jejunum and the posterior wall of the stomach was perfect, free from any adhesions, and thoroughly water-tight. About the pylorus there were numerous adhesions of long standing, drawing the site of the aperture up towards the liver. About this region there was some extravasation of blood, extending down in front of the second portion of the duodenum. When the parts had been removed the pylorus was found to admit only the tip of the little finger. Immediately beyond this aperture there was a deep annular ulcer, eroding the whole thickness of the wall of the bowel and laying bare posteriorly the hepatic artery. On the prominence of this there was a recent perforation about 2 mm. in diameter. This was evidently the source of the fatal haemorrhage.

From the foregoing it will be seen that the undesirable termination of the case was in no way connected with a perforative peritonitis due to imperfect suturing at the place of anastomosis, but to one probably the result of the manipulations necessitated by the delivery of the stomach for the purpose of operation. The stretching of the parts thus produced caused a fresh extension of a partially-healed duodenal ulcer, which led to perforation and peritonitis, and to haemorrhage of such an extent as to close the scene.

It is possible that, had a less extensive disturbance of the parts been effected, all would have proceeded well, and it is a question whether an anterior gastro-enterostomy might have been better in this case.

What should certainly be learned from it is that the utmost gentleness must be employed in all cases where there is much tethering of the parts by adhesions in the neighbourhood of the pylorus, and if necessary an anterior gastro-enterostomy rather than a posterior should be performed in such circumstances.

Mr. Sinclair White (Sheffield) considered that posterior gastro-jejunostomy involved the very disturbance of the parts of which Mr. Eccles's paper demonstrated the danger; he always performed the anterior operation and placed the anastomosis as close to the attachment of the gastro-colic omentum as possible,

Mr. A. B. Mitchell (Belfast) did not think that Mr. Basil Hall's procedure offered any advantage over the ordinary posterior operation, and thought it preferable that the jejunum should be passed through the mesocolon than through the omentum, as Mr. Basil Hall recommended. He thought that gastro-jejunostomy had been performed much too frequently for gastric ulcer; he had found the plan of infolding the ulcer quite satisfactory in several cases.

Mr. C. B. Keetley (London) thought that the proposed supracolic method had all the disadvantages of the anterior operation; constipation was often a troublesome feature of these cases, and with a distended colon he thought obstruction of the jejunal loop would be very likely to occur.

Mr. T. H. Openshaw (London) agreed with Mr. Basil Hall that there were advantages in carrying the jejunum through the omentum; he had carried out the same procedure himself and thought it much simpler than the ordinary posterior operation. In gastric ulcer he considered excision or infolding the ulcer were very satisfactory methods of dealing with it.

TWO CASES OF ASCITES SECONDARY TO ALCOHOLIC HEPATITIS TREATED SUCCESSFULLY BY OPERATION.

By SINCLAIR WHITE, M.Ch., F.R.C.S.,
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CASE I.

History and State on Examination.—Mrs. B., aged 38, seen in consultation with Mr. Reckless, of Sheffield, in July, 1902. She was practically a teetotaller, and quite healthy, until four years previously, when she gave way to drinking habits. Since then she has been a confirmed alcoholic, drinking large quantities of brandy or whisky daily. Morning sickness and anorexia have been pronounced for upwards of two years. In March, 1902, her feet and legs began to swell, and a few weeks later ascites supervened. By June 1st the abdomen was so much distended that paracentesis was deemed necessary, and 16½ pints of straw-coloured fluid were removed. The fluid steadily reaccumulated, and at the end of June tapping was again performed, 10½ pints being removed. When I saw her (July 23rd) she was greatly distended, had orthopnoea, and complained of pain over the region of the liver. The urine was scanty and high-coloured, but otherwise normal. The tongue was fairly clean and the bowels acted naturally. The pulse-rate was 98 per minute, and regular. The distended condition of her abdomen precluded an accurate examination of the liver. The epigastric veins were unduly prominent. There had been neither jaundice nor haematemesis, nor could a history of syphilis be elicited. She was removed to a surgical home and operated on July 29th, just one year ago.

Operation.—The abdomen was opened by a 5-in. medium incision above the umbilicus, and a second small median wound was made 2 in. above the pubes for a glass drain tube which passed down into the pelvis. After most of the ascitic fluid had escaped, the various abdominal viscera were examined. The liver was hard and nodular but about normal in size. Its surface was marked by numerous bands of white fibrous tissue. The great omentum was gathered up into an irregular mass ½ in. thick, which felt hard and shotty. The spleen was adherent to the parietal peritoneum, but appeared to be of normal size and consistence. All the other abdominal viscera, so far as could be ascertained by palpation and inspection, were healthy. The under surface of the diaphragm and the upper surface of the liver were vigorously rubbed with gauze wrapped around the hand until the peritoneal surfaces showed uniform but slight oozing of blood. The anterior border of the liver was then stitched to the diaphragm by three fine silk stitches, one through the mesentery of the gall bladder and one on either side. The peritoneum lining the anterior abdominal wall all around the larger wound was next detached and turned back. As it was found to be impossible to separate the peritoneum from the posterior layer of the recti sheaths, the latter was raised with the peritoneum, leaving the posterior surface of the recti muscles exposed. The stripped area would be about 24 square inches in extent. Against this the anterior surface of the great omentum was fixed by half a dozen point sutures of fine silk. There was free bleeding, but this was after some delay overcome by employing hot sponge pressure. The wound in the abdominal wall was now closed by through-and-through silkworm sutures. The operation lasted one hour, and produced considerable shock, the pulse-rate on its completion being 136 per minute.

Progress.—The pulse-rate steadily improved until it became normal on the fourteenth day. The temperature rose to 99.4° F. on the day following the operation; thereafter it was about normal. After the anaesthetic effects had disappeared there was no sickness, and the bowels acted naturally on the fourth day. The glass drain tube was removed on the sixth day. Aspiration of fluid through it was practised every six hours, but after the second day the amount of fluid drawn off did not exceed 2 oz. per diem. The wound healed aseptically and the sutures were taken out on the fourteenth day. The amount of urine secreted during the first twenty-four hours after operation was 4 oz., during the second 9½ oz., during the third 24 oz., and thereafter from 30 oz. to 40 oz. daily. For a few weeks after the operation a small amount of fluid could be detected in the peritoneum, but at the end of six weeks it had entirely disappeared and there has been no recurrence. She steadily gathered strength and was able to resume her duties at the end of three months. At the present time she is in robust health and weighs nearly 11 st., whereas just before operation her weight was 7 st.

CASE II.

History and State on Examination.—E. H., aged 34, unmarried, seen in consultation with Dr. Duncan Gray Newton, of Sheffield, in June, 1902. There was a history of excessive alcoholism for several years, with gradual loss of flesh and strength. Morning sickness and want of appetite had been present for more than a year. Ascites with oedema of the legs and feet developed four months previously, and she had been tapped three times in six weeks. The abdomen was greatly distended with fluid, and she could not sleep except when in the sitting posture. She complained of pain and tenderness over the liver. She was markedly anaemic. The limbs were much wasted and the skin inelastic and wrinkled. There had been no jaundice or haematemesis, and syphilis could be excluded. The urine was scanty and somewhat irritating, but was free from albumen and sugar. The heart's action was feeble and irregular, the pulse-rate varying from 100 to 120 per minute. The temperature ranged between 98° and 100° F.

Operation.—She was moved to a surgical home and the abdomen opened on July 7th. The liver was slightly enlarged, hard to the feel, and streaked with bands and patches of fibrous tissue. The omentum was irregularly thickened and its veins enlarged and distended. The other abdominal viscera did not present anything uncommon to the examining hand.

Progress.—The operative procedures detailed in the first case were carried out, but the drain tube was kept in for four weeks, the amount of fluid removed through it daily varying from 4 to 8 ounces. A week after the tube had been taken out there was evidence of fluid re-accumulating in the lower part of the abdomen, and on reopening the tube track about a quart of thin inodorous pus escaped. A rubber drain tube was inserted and worn for another three weeks. The patient during this time was in an unsatisfactory condition, having evening pyrexia, a fast feeble pulse, and mild night delirium. At the end of two months she began to improve in her general condition, and soon after was able to go into the country, where she steadily gathered flesh and strength. Ascitic fluid, confined to the lower left portion of her abdomen, could be detected for several months after the operation, but as she grew stronger this became less obvious. At the present time it would be difficult to recognize in her the prematurely aged, emaciated, and waterlogged patient of a year ago. She has grown quite plump, has regained her natural colour and her good looks, and is stronger than she has been for many years. A small ventral hernia formed in the site occupied by the drain tube, and as it was causing her a good deal of discomfort it was closed by a plastic operation one month ago.

Both patients were hotel occupants, and had unlimited opportunity for indulging in alcoholic excesses.

Talma of Utrecht and Drummond of Newcastle-upon-Tyne share the distinction of having, each independently of the other, conceived the idea of invoking surgical intervention for the amelioration of ascites secondary to chronic interstitial hepatitis. Their work on this subject is a beautiful instance of the value of logical deduction when based upon accurate clinical and *post-mortem* observations. Noting, as had been noticed by previous writers, that in a certain percentage of patients who had died from well-marked cirrhosis of the liver there was entire absence of ascites, they sought a reason for the suppression in these cases of this usual sequel to the disease, and soon satisfied themselves that it was to be found in the formation of a number of new venous channels developed in adventitious adhesions between the upper abdominal viscera on the one hand and the opposing parietal peritoneum on the other. These newly-formed veins supplemented the normal anastomosing branches between the portal and general venous systems to such an extent that the obstruction to the flow of blood through the portal vein and its hepatic branches was compensated for and the mechanical factor in the causation of ascites nullified. This discovery naturally suggested that in cases of cirrhosis accompanied with peritoneal effusion the ascites might be cured by creating adventitious union between the viscera that return their blood to the liver and the abdominal parietes. Talma, whose observations take priority in point of time over those of Drummond, was the first to apply the knowledge he had gained for the relief of ascites. Unfortunately his first two cases died: the first one, operated on for Talma by Van der Meulen in 1889, from shock, the second one, operated on by Schelkey in 1891, from sepsis. A third case of Talma's, operated on by Lens in 1892, recovered from the operation, but cannot be considered a success as death took place five months later from recurrence. The failure of these early cases threw the operation for a time into the background, and we have to wait until 1895 for the first successful case, which was operated on by Rutherford Morison, who had become a co-worker with Drummond. This patient enjoyed good health for two years, and then died in a comatose state two days after an operation for ventral hernia. The necropsy showed numerous band-like adhesions, containing veins as large as the radial artery, between the liver, spleen, and intestines on the one hand and the parietes on the other. Morison's success had the effect of bringing the operation again into prominence, and during the last seven years it has been performed probably many hundreds of times.

Exact statistical data respecting its mortality and the percentage of cases in which it has effected permanent good are still wanting, and cannot very well be forthcoming for a few years yet. Dr. Greenough, of Boston, has recently collected particulars of 105 cases of cirrhosis of the liver with ascites due either to alcohol, syphilis, or malaria, that had been operated on previous to May, 1902. Of these 31 died within thirty days of the operation, but it is quite likely that in some of these death was not the direct result of the operation: 29 recovered from the operation and lived upwards of thirty days afterwards, without showing any improvement; 44 showed some improvement, but in many of these the interval that had elapsed between the operation and

report was very short; 16 out of the 44 were known to have died at periods ranging from one to twenty-four months after operation, and only 9 cases were alive and free from ascites more than two years after operation. The operation has been adversely criticized, and the validity of the theory on which it is based disputed. According to some pathologists the peritoneal effusion in cirrhosis of the liver is not to any appreciable extent the result of pressure on the portal vein and its hepatic branches, but is rather to be looked upon as an effort on the part of Nature to cast off from the blood certain poisonous substances which the damaged liver cells are no longer able to metabolize into urea and similar excretory bodies. Others, while admitting that pressure on the portal vein and its branches is a factor in the production of ascites, contend that in uncomplicated cases of cirrhosis ascites does not appear until the final stage of the disease, and that its advent should be looked on as a sign of approaching death. They further assert that the cases of ascites benefited by operation are those produced by chronic peritonitis, with or without perihepatitis, and that when cirrhosis coexists it is in an early stage, and has not as yet seriously damaged the liver functions. The scope of the present paper does not admit of a detailed consideration of these hypotheses, but the testimony of competent observers, who during operation have been able to satisfy themselves by sight and by touch that well-marked cirrhosis was present in patients who subsequently recovered and remained free from recurrence of the ascites, is not easily set aside. Talma and Drummond merely claimed for the operation that it would cure or relieve ascites by providing an abundant anastomosis between the portal and systemic veins; but there is good reason for believing that it will accomplish more than this.

The additional blood supply to the surface of the liver which it brings about can hardly fail to benefit the nutrition of the hepatic cells, which are known to possess regenerative power of a high order. Indeed, so strongly has this view taken root that the principle has already been extended to the kidney, decortication of which is now practised with apparently remarkable success in chronic Bright's disease.

The operation is a severe one, and, having regard to the damaged condition of the patients who undergo it, must necessarily involve considerable danger to life; but Dr. Greenough's mortality figure of nearly 30 per cent. is much too high, and if the operation is to have a permanent place allotted to it the death-rate must not exceed 10 per cent. This can be attained only by a judicious selection of cases and by a rigid observance of aseptic methods. It should rarely be undertaken after the age of 55 years. The patient should have no other serious organic disease, and, in particular, the kidneys should be sound. Jaundice and mental aberration are two most ominous signs in cirrhotic ascites, and their presence should preclude surgical interference.

Before proceeding to operate the patient should be tapped once, or oftener. In a few cases this alone will effect a permanent cure of the ascites, and in all it will help the operator to gauge the personal equation of his patient, besides enabling him to make a more exact examination of the abdominal viscera. A patient who will not stand repeated tappings would most certainly succumb to epiplorrhaphy. What evidence we have tends to show that ascites, with enlargement of the liver, offers a more promising field for operation than when it is due to atrophic cirrhosis.

Prolonged drainage of the peritoneum adds undoubtedly to the risk of sepsis, unless great care is bestowed on the after-treatment; on the other hand, by keeping the upper part of the abdomen relatively dry it should materially facilitate the formation of satisfactory adhesions. Those who do not employ drainage advise—when necessary—subsequent tapping from time to time, until the new collateral circulation has been established. On the whole, I think it is better to drain for a week or two.

In conclusion, I would sum up our knowledge of the subject as follows:

1. There is indisputable evidence that cirrhosis of the liver, accompanied by ascites, is not always a hopeless disease.

2. The ascites can be permanently cured in a considerable percentage of cases by operation.

3. There is reason for thinking that the operation of epiplorrhaphy may not only cure the ascites, but also lead to partial regeneration of the damaged liver cells.

4. Tapping alone has occasionally cured ascites, and should be tried once, or oftener, before proceeding with the more serious operation.

5. The operation of epiplorrhaphy is a formidable one, and should only be undertaken in selected cases.

6. The divergent opinions respecting the significance of ascites in cirrhosis of the liver are best explained by assuming that the disease has more than one type, and that while in one class of cases, owing to the damage sustained by the hepatic cells, the patient is hopelessly incurable by the time ascites has appeared, in a second, and probably more numerous class, the incidence of the poison has fallen more especially on the hepatic connective tissue, leading to injurious pressure on the portal venous system and peritoneal effusion before the liver cells have become seriously damaged.

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NOTES OF A CASE OF OPERATIVE TREATMENT FOR CIRRHOSIS OF THE LIVER.

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History.—C. C., male, aged 53, was admitted into the Cardiff Infirmary, under Dr. Herbert Vachell, on November 24th, 1902. He is a sergeant instructor, and has been in the army since youth, going to India at the age of 18. He has always drunk freely—beer and spirits. In 1869 he was in hospital in India with "liver complaint." He had two attacks of malaria in India. In 1881 he had enteric fever in South Africa. He has never had venereal disease and was in good health a year ago. He then began to feel weak with loss of appetite; he got thinner, and has lost 20 lb. during the past year. His abdomen began to increase in size eight months before admission. It got smaller at first under medicinal treatment, but during the last two months it has rapidly grown larger. Weakness has increased; cough: no haematemesis.

State on Admission.—Looks ill; extremely thin; cannot walk. Ascites; abdomen greatly distended. Umbilical and left inguinal herniae with sacs distended with fluid. Breathing laboured; constant cough; signs of fluid at bases of both lungs. Some enlarged veins over upper part of abdomen. Slight oedema of feet. Urine: no albumen, specific gravity 1025; average daily amount, 20 oz. He was given digitalis, potassium acetate, diuretin, and mist. alba. Three days after admission (on November 27th) the abdomen was tapped with a Southey's trocar and 24 pints of ascitic fluid removed. The edge of the liver could then be felt 3 fingerbreadths below the margin of the ribs. December 13th.—Fluid has gradually reaccumulated. Tapped again, 16 pints. January 6th, 1903.—Tapped, 22 pints. February 7th.—Tapped, 15 pints.

Operation.—February 12th. Abdomen has refilled. Mr. William Sheen operated to-day after consultation with Dr. Herbert Vachell. Fluid thoroughly evacuated by an incision below the umbilicus, and a 5-in. incision then made between ensiform and umbilicus. Very troublesome bleeding from enlarged veins in the abdominal wall, round ligament as big round as the little finger. On opening the abdomen the great omentum was found much thickened and curled up, and attached to the parietes by a transverse line of stout separate adhesions. The liver was large and nodular; the spleen was enlarged. The liver and spleen were vigorously rubbed with gauze mops. Three sutures were used further to unite the omentum with the parietal peritoneum. The upper wound was closed in layers and sealed, and into the lower wound a glass drainage tube was inserted with a strand of sterile gauze down it. The whole of the abdomen was strapped down quite flat with overlapping bands of broad strapping. The patient stood the operation well.

Progress.—Next day his temperature was 98.4°, pulse 90. About 1 oz. of fluid was sucked out of the tube every hour. Subsequently the amount of fluid became gradually less. The tube was removed on the ninth day after the operation. On February 26th the upper wound was unsealed and the stitches removed: it was soundly healed. On March 4th the lower wound was healed and the patient got up. Abdomen quite flat; general condition much improved; has put on flesh. Urine more abundant and of lower specific gravity; fluid at lung bases becoming absorbed. On April 8th he was discharged, wearing a belt. He was then only troubled by the inguinal hernia, which gave him pain. This patient subsequently went to Norwich. He writes from there on June 17th: "Only the pains I have told you (in his back and hernia), otherwise I am in capital health, and sometimes feel as well as ever . . . I have had to let my belt out 1 in. during the past two months."

I record this case for two reasons: First, because natural processes anticipated to a considerable extent the usual operative procedure; and secondly, because of the successful result so far attained. The numerous strong vascular bands of adhesions formed between the omentum and the parietal peritoneum were obvious to all who watched the operation. They suggest that the artificial formation of such adhesions

is not in itself sufficient to prevent reaccumulation of fluid. More importance as curative measures should, I think, be attached to the continuous drainage and to the firm strapping. I cannot say how the drainage acts: possibly its benefit is in part due, as has been suggested,[1] to the formation of new vascular channels around the drainage tube track. Undoubtedly the firm strapping is of value by keeping peritoneal surfaces in contact and so favouring adhesions, and by driving all remaining fluid down into the pelvis where it can be drained away.

Whatever be the theoretical considerations which militate against this operation, there is no doubt but that our patient was very greatly benefited. Carried into the hospital in a state of extreme weakness, he was able to leave a fairly strong and a healthy-looking man. We hope to readmit him at some future date, with a view of doing a radical cure of his hernia. Further, I consider that if there were any reaccumulation of fluid it would be quite proper to reopen his abdomen and again drain it.

SEPARATION OF THE ACETABULAR EPIPHYSIS OF THE FEMUR.

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During the autumn of last year it fell to my lot to have two cases of old injury to the hip-joint admitted under my care into St. Thomas's Hospital, in which I made the diagnosis of traumatic separation of the acetabular epiphysis, and proved the correctness of the same by operation.

It cannot be gainsaid that these cases, as well as those of fracture through the narrow part of the neck, are often unrecognized, and one is suspicious that in many a case, especially in a young subject where, after an injury to the hip there is some eversion and limitation of movement, a diagnosis of disease of the joint is made on somewhat insufficient evidence.

Another reason leading to an erroneous diagnosis is the fact that after an injury there may not be complete crippling and the patient comes under notice for the subsequent deformity. Such being the case I feel that any information leading to greater certainty in establishing the diagnosis of this injury warrants my bringing these cases before you.

We must bear in mind the ossification of the upper part of the femur. The neck of the femur is an extension of the diaphysis practically to the margin of the acetabulum. At a year old, when the ossific nucleus of the head first appears, the ossification from the diaphyseal centre has reached the base of the great trochanter and is extending through the lower part of the neck, almost to the future epiphyseal line. Just after the centre for the great trochanter appears in the fourth year the whole of the neck is bony, and subsequently as the centre for the head spreads and the neck increases in length, the intervening epiphyseal cartilage becomes gradually reduced to a narrow line, which becomes completely obliterated at the twentieth year, when union takes place. Up to this date, then, separation may be effected, and it is with this injury my paper deals. A point to note is that the acetabular epiphysis, or rather the epiphyseal line, is nearer the greater trochanter posteriorly than in front.

With these preliminaries I will now detail my cases and comment on the important points afterwards.

Case I.

H. P., a lad aged 15, was admitted under my care into St. Thomas's Hospital on November 10th, 1902, and gave the following history:

History.—Twelve months before he slipped on a piece of green stuff and fell sideways on to his left hip. He seems to have taken no particular notice of his injury, and walked about afterwards without any discomfort. Three months after he began to limp, and there was pain from time to time. Ten days before coming to the hospital (one month before admission) he slipped off the kerbstone and could not stand up. Nothing particular was elicited on examination, and he was sent home in a long outside splint.

State on Admission.—On examining him on his back the pelvis was raised a little on the left side without any lordosis. The left limb was slightly adducted, and there was marked eversion with flattening of the front of the thigh. The great trochanter was very prominent, moved with the thigh on rotation, and was raised half an inch above Nelaton's line. On turning him over the buttock was flattened and the gluteal fold raised. Voluntary external rotation was good, but internal rotation was almost *nil*, and abduction also. He could flex the hip-joint a little without moving the pelvis. In the upright position the left anterior superior spine was lower than the other, and the prominent great trochanter was almost on the same horizontal level with it posteriorly. There was a slight curvature of the spine with the lowered pelvis. No signs of any other deformity, rickets, or history of tubercle. The *x*-ray photograph showed that the epiphysis was separated and that the neck of the bone was in relation with its upper and anterior part.

Operation.—On November 24th I exposed the hip-joint from the front: projecting against the front of the capsule was the neck of the femur. The capsule was incised internal to the ileo-femoral ligament, and it was then found that there was a separation at the epiphyseal line, the end of the neck being rotated forwards against the front of the capsule. The main part of the head was in relation with the posterior part of the neck and no union had taken place between them. The head was removed after splitting it up, and the joint was washed out with saline. After removing the head passive inversion could be effected without any resistance. The capsule was stitched with interrupted silk sutures, the fascia likewise, and the skin with horsehair. The limb was put up with the normal amount of eversion in plaster-of-paris breeches.

Progress.—Except for a slight rise of temperature during the first three days and some pain it was uneventful. On December 15th the wound was dressed and found healed; the stitches were removed. On December 22nd massage was started, and he could to a small degree flex and invert his limb. He was kept on his back till January 9th, when he was allowed up on crutches with a patten on the other foot. He left the hospital on January 14th, and since that date I have kept him under observation. There has been a gradual improvement in the amount of inversion and flexion and the great trochanter is about ½ in. above Nelaton's line. It it only during the last few weeks, that is, six months after the operation, that I have allowed him to put his weight on the limb. It is too early yet to judge the effect of this, but I should hope that having allowed so long an interval since the operation, there will be a decidedly lessened chance of slipping up of the neck on to the dorsum.

Case II.

S. P., aged 17, was admitted under me into St. Thomas's Hospital on October 14th, 1902.

History.—His family and previous history were quite satisfactory. In July, 1902, he noticed that he could not walk properly, especially in the morning. There was no pain, but he seemed to limp a little as if the left leg was shorter. On September 22nd he fell over, with a bucket of water in his hand, on to the right hip. He was unable to get up on to his feet because of the pain in his left hip. He was brought up to the hospital, and on examination it was determined that the relation of the great trochanter to Nelaton's line and the length of the limb were not altered. There was great rigidity of the thigh muscles, and difficulty was experienced in flexing the thigh on the abdomen. An anaesthetic was given and then the rigidity all disappeared. There was free movement in all directions, and no crepitus could be elicited. After this the patient was able to walk though with some difficulty, but he said his hip was much easier than it was before. He was allowed to go home on crutches, told to keep quiet, and to come up immediately if he felt any pain. For this reason, however, he did not have to come, but he paid several visits, saying each time that his walking was improving. The marked eversion of the limb was noticed still to persist, and this led to fresh measurements being made, when it was found that the top of the great trochanter was ½ in. above Nelaton's line. A skiagraph was taken, and it was found that there was a separation of the acetabular epiphysis. He was accordingly sent into the hospital.

State on Examination.—After admission, on more critical examinatio it was seen that he walked with a marked limp, the body reclining over to the left side. When standing, the thigh and foot were decidedly everted and the left side of the pelvis lowered: the left anterior superior spine was anterior to the other side. There was flattening of the buttock. When on his back it was seen that there was marked abduction and fixation; on attempting flexion there was only a very slight range of movement without raising the pelvis. There was found on measurement a full ¾ in. shortening of the limb, which agreed with the amount of elevation of the great trochanter above Nelaton's line. The great trochanter was very prominent, and its anterior part was ½ in. more posterior to the anterior superior spine than on the other side.

Operation.—As it was evident from the deformity and fixation that something must be done to get a more useful limb I determined to explore the joint, which I did on October 30th. The anterior incision was used, and, keeping to the outer side of the sartorius, rectus, and iliacus, the capsule was exposed. This was bulged forward by the displaced neck of the bone, and it was incised longitudinally internally to the ilio-femoral ligament down to the inner end of the intertrochanteric line. The prominence was then seen due to the convex inner end of the neck rotated forwards. This was not very rough, and it was plain that separation had taken place at the epiphyseal line. The posterior part of the neck was in relation with the upper part of the epiphysis, the latter projecting below the neck. This relation of parts confirmed what had already been seen in the skiagraph. With further external rotation and flexion it was found that there was no union between the two, so the head was removed, with some difficulty, piecemeal with an elevator and scoop after splitting it up with cutting forceps. Most difficulty was experienced in the removal of the posterior portion. The joint was then washed out with normal saline, by inward rotation the inner part of the neck was placed in the acetabulum, the capsule was stitched up with four interrupted reindeer tendon sutures, the fascia was sutured with catgut, and the skin

[1] F. Tilden Brown, *Annals of Surgery*, August, 1902, p. 191.

brought together with horsehair and trout gut. Over sterilized dressings plaster breeches were placed with extension.

Progress.—There was nothing to relate after, as, except for a rise of 1° on the night of operation, his temperature was normal. On November 28th the splints were removed and the wound was healed, so the stitches were taken out. There was some superficial irritation of the skin, which was soon righted with zinc oxide ointment. The limb was in good position although stiff, but slight voluntary movements at the hip of internal and external rotation, and flexion were possible. On December 10th it was noted that the above movements could be performed to a greater degree, and the limb was in good position. He left the hospital on December 21st on crutches, with instructions that he was not to put his leg to the ground for six months. This he has faithfully carried out, and within the last month I have allowed him to discard his crutches. Through a small range he is able to internally rotate his limb, and also to flex it; there is very slight external rotation above the normal, and the trochanter is raised ½ in. above Nelaton's line. There is very little limping on walking, and the inequality of the limbs has been neutralized by a thick sole.

In addition to these cases I would associate the following which have come under my notice:

A. E., aged 19, a labourer, came to my out-patient department on March 25th, 1899, giving the following history. Three years before he had a fall on his right hip, but he was able to get about afterwards with a limp. Some eighteen months after he noticed that there was some unusual fullness over the front of the right hip. He now came complaining of some pain in the hip and the limping. On examination there was wasting of the front of the thigh and flattening of the buttock. There was some undue fullness over the front of the joint external to the femoral vessels; the great trochanter was prominent and was 1 in. above Nelaton's line. On rotation it moved through a smaller circle than the other one, and at the same time there was some soft creaking to be obtained over the joint. The foot was abnormally everted and the power of internal rotation was almost lost; flexion of the hip was almost perfect; abduction was much impaired. He would not come into the hospital, and I lost sight of him.

E. P., aged 15, came to my out-patients on October 25th, 1899. He had fallen off a bicycle three months before, and hurt his right hip, but he had been able to walk ever since. For the last two months he walked lame, and for the past six weeks it had been painful. On standing it was noticed that the right anterior superior spine was lower with some lordosis, and that the limb was everted. On measurement the limb was ½ inch shorter than its fellow, and by this amount the great trochanter was raised above Nelaton's line. The great trochanter was prominent and more posteriorly placed. There was no rigidity of the joint, but a fair range of flexion; there was some fullness in the front external to the vessels. The buttock was flattened, but the gluteal fold was not obliterated. He also did not come into the hospital.

E. S., aged 19, came to my out-patients on January 14th, 1901. He had a fall six months before of 50 ft. coming down on his feet; he was unconscious for three days. Since the injury he had got about limping a little. On standing he leaned to the right side and his trochanter was prominent; the anterior superior spine was lowered, and the gluteal fold, which was still present, was lower, but curved upwards on the outer part. When on his back the anterior superior spines were level, and marked shortening was evident. The thigh was flattened and everted; inversion and abduction were very limited. The prominent great trochanter was 1½ in. above Nelaton's line; it was not thickened, and although its upper part was posterior to the other side, it was rather nearer the anterior superior spine. On extension and rotation soft crepitus was elicited. Voluntary flexion was good. He was admitted into the Clayton Ward, and operated on by my senior colleague, Mr. Bernard Pitts. After exposing the interior of the joint by the anterior incision, with the addition of a transverse cut outwards, the separated surfaces of the neck and the epiphysis were scraped, and an attempt was made to fix the two fragments by a screw passed through the trochanter inwards. As this was not successful a screw was placed vertically in each portion, and these were wired together. Although there was some suppuration, when the screws and wire were removed later it was found there was some union between the two fragments. When seen at a later date the result was noticed to be most satisfactory. As a sailor he was able to climb a mast readily.

D. H., aged 17, was admitted under me into the hospital on October 29th, 1901. Twelve months before he fell about 6 ft. on to his feet, and then had severe pain in his right hip, and stayed at home for three days. He went to a local hospital, and was put in splints for eight weeks. On leaving the hospital he was lame, and his condition had in no way improved before coming to St. Thomas's. He thought he had walked a little lame for a few days before the accident. No evidence of rickets or other disease. On admission the right thigh was everted, and the great trochanter prominent; the latter was 1¾ in. above Nelaton's line. There was some fullness over the outer part of Scarpa's triangle. A certain amount of flexion was possible at the hip-joint, but all other movements were very limited. A skiagraph showed undoubted separation of the acetabular epiphysis, the neck of the bone being especially in relation with its upper part. He did not wish to have anything done, and left the hospital.

Now, in the cases which have just been given in detail it has been satisfactorily established by *x*-ray examination and by operation in two of them that the diagnosis of separation of the acetabular epiphysis previously made was the correct one. To summarize the points on which a diagnosis may be made, we notice that in adolescence there has been an injury to the hip, usually of somewhat a trivial character, after which the patient begins to limp, generally without any pain to speak of. Examination shows that there is deformity: the great trochanter is prominent and raised above Nelaton's line; the limb is markedly everted, and at the same time there is almost complete loss of the power of inversion: there is interference with flexion and abduction, but there is not the rigidity of disease, and over the front of the joint there may be fullness external to the femoral vessels; the gluteal fold as a rule is present and tends to curve upwards at its outer end.

The cases reported of epiphyseal separation are very few and far between, and if reference is made to them it will be noticed that in some of them the correct interpretation had not been apparent at first. A study of them will show a very marked resemblance between their clinical histories and those I report.

However certain we may feel that a lesion has occurred in the neck of the femur, it is a matter of considerable difficulty without a skiagraphic examination to exclude a fracture through the narrow part of the neck. It had become almost a fixed idea for us to hold that such a fracture only occurred in elderly subjects. Nothing has been further from the truth, as Royal Whitman has emphasized in his instructive papers in the *Annals of Surgery*. He says (November, 1902) that "in addition to twenty cases of fracture of the neck of the femur in childhood and adolescence that I report, I have seen during the past year five cases in early adult life (28 to 45 years)." Russell, of Melbourne, has also drawn attention to the same fact. During the past year four such cases have come under my own notice.

Upon what points are we to rely for distinguishing between a fracture and a separation of the epiphysis? It goes without saying that normally after the age of 20 the latter cannot occur. Whitman says, "I have always contended that when subjected to direct violence, the neck of the femur should break at its weakest part, or about its centre, rather than at the epiphyseal junction: for this is the thickest part of the bone, and it is protected by a strong rim of cartilage, which is far more elastic than the bone. Moreover, that free motion at the hip-joint, except in abduction, when there are ¾ in. shortening of the limb, as in the majority of the cases that I have reported, is an almost positive indication that the injury does not involve the articulating surface of the head of bone. For if there were true epiphyseal separation that would explain this shortening, the irregularity within the joint would cause far more serious functional derangement." Again "in childhood the neck of the femur will give way at some distance from the epiphyseal junction. In adolescence, however, the newly-formed bone about the epiphyseal cartilage is apparently a weak point."

All these cases of separation of the epiphysis that I report have occurred in adolescence, and the question is now presented to us whether normally the newly-formed bone about the epiphyseal line at this period of life is less resistant, or if there is not some pathological change contributory to the separation. From the perusal of these cases we have fair evidence from the history previous to the injury that all was not right; there are complaints of vague pains, limping, etc. This being accepted, it has been put forward by Springel, Whitman, and others that the change is the same as that giving origin to the deformity of coxa vara. This latter is particularly met with during the same period, and it is considered that the bending takes place in close relation to the epiphyseal line rather than in the neck itself, as occurs in much younger subjects. In them it is undoubtedly due to rickets, and is usually associated with the other evident and common deformities from this cause. By some it is regarded that the change in the bone in these adolescent cases is also of a rachitic nature: in one of my cases the bone was histologically examined for this purpose, but the report was not conclusive.

It is worth noting that in all the cases I have quoted the patient has been able to get about after the injury; this, I would point out, may also occur with undoubted fractures through the narrow part of the neck in adults without apparent impaction, as shown by the *x* rays, and in fact it was the latter disclosed where there was some disability of the joint that such an injury had previously occurred.

Should one of these cases of separation of the epiphysis present itself some time after the accident the diagnosis between this lesion and coxum varum will have to be made. The latter I use in the singular because it is only then it

would have to be considered, and, what is more, frequently only one hip is affected.

The clinical evidence of coxum varum is that usually after some indefinite pain about the hip-joint for a varying period we find abduction, flexion, and internal rotation are all of them limited, there is a greater amount of external rotation than normal, and the great trochanter is raised above Nelaton's line; at a later stage there will be more marked fixation of the hip. Such a clinical picture has a very close likeness to the injury, but with the latter we might expect more eversion, greater raising of the trochanter, less fixation of the joint, and some fullness external to the femoral vessels; skiagraphy would settle the question.

If the case is seen immediately after the accident the question of coxum varum hardly comes in; attempted rotation should produce crepitus, rough or soft.

Again, as stated at first, many of these cases of injury, whether epiphyseal separation or fracture, are wrongly considered to be tuberculous disease of the hip-joint and given appropriate treatment. In the early stage of such disease the great trochanter is normally related to Nelaton's line; there should be more pain, especially at night, and starting of the limb, the anterior thigh muscles should waste more and the flattened buttock is associated with effacement of the gluteal fold.

The treatment adopted in these cases was to clear the separated epiphysis out of the acetabulum, as has been advocated and done by others. In having to treat a case immediately after the accident I should be disposed forcibly to abduct and invert the limb so as to bring the neck in relation with the lower and posterior part of the epiphysis, maintaining the position by plaster-of-paris breeches. Whitman advocates this forcible abduction for the cases of fracture through the narrow part of the neck, and reports very satisfactory results. With separation at the epiphyseal line, should union be obtained, one could hardly hope for such success, for the repair material is much more likely to hamper proper movement in the acetabular cavity. In the late cases, as an alternative to removing the epiphysis, after opening the joint and freshening the fractured surfaces, it might be attempted to pass a long screw through the outer side of the trochanter along the length of the neck into the epiphysis. This, the ideal method, is not easy, and, what is more, a very poor hold is got for the screw in the epiphysis. Presuming, then, that removal of the epiphysis is accepted as the correct treatment, it may be urged that the condition is not much improved, and that there is the same tendency for the femur to slide up on the dorsum. I have hoped in my cases, by keeping them off their feet for six months, to overcome this tendency. Certainly I am so far not disappointed, and in addition there is a much greater range of voluntary movement, including the power of some internal rotation and abolition of the excessive external rotation of the limb.

In conclusion, I would maintain that the following points are established in the paper:

1. That we have to deal with genuine cases of separation of the acetabular epiphysis.
2. That injury, although it determines the separation, is aided in its effect by an antecedent change at the epiphyseal line.
3. That this pathological change is presumably similar to what occurs in the coxa vara cases of adolescence as suggested by Springel.

ULTIMATE RESULTS IN A SERIES OF EIGHTY-EIGHT CASES OF FRACTURE OF THE TIBIA AND FIBULA.

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THOUGH the treatment of fractures of the tibia and fibula is a subject which has been several times brought before the notice of the profession during the last few years, I am not aware of any recently-published records of the after-results of these injuries, and the object of this communication is to place before you an account of the ultimate results obtained in a series of 88 cases of simple fracture of the tibia and fibula, and also to suggest for your consideration some modifications in the usual practice of treating these fractures. My impression is that the majority of hospital surgeons are satisfied that the results obtained by the ordinary methods of treatment are satisfactory, or at all events are sufficiently good to render any change in the treatment usually adopted unnecessary. It is true that several surgeons who have recently written upon this subject express themselves as being dissatisfied with the results obtained, yet no two of them agree as to the remedies suggested. For example, one surgeon, believing that the impaired utility of the limb after a fracture of the bones is largely due to haemorrhage into, and inflammatory thickening of, the soft parts at the seat of the fracture, advocates the early employment of massage. Another surgeon, believing that spasmodic muscular contraction is a very important factor in preventing the correct apposition of the broken fragments, practises tenotomy, while a third surgeon, being convinced that the subsequent utility of the injured limb will be directly proportionate to the accuracy of the reduction of the fracture, does not hesitate to cut down upon the fractured ends and to fix them together with wire or a screw.

In the hospital where the cases I have investigated were treated, situated as it is close to Liverpool docks, we have to deal with a large number of fractures, and as we therefore have a somewhat exceptional experience in the treatment of broken legs I hope I am justified in assuming that the results obtained are at least equal to the average results obtained elsewhere.

The majority of these patients were under the care of my colleagues, and I have to thank them for kindly allowing me to make use of their cases, and I have also to thank Mr. Arthur Walker for the time and trouble he has taken in furnishing me with the *x*-ray photographs. I have personally examined the after-results in 88 cases of fractured tibia and fibula and a brief account of each case is given in the tables on pp. 904-5.

These tables are much the same as those I published in the *Lancet* in September of last year, but I have eliminated the cases of simple fracture of the fibula alone and have added other cases, so bringing the list up to date.

In almost every instance the patient was an adult male and the fracture was a so-called simple fracture and not complicated by a wound of the big blood vessels, by a dislocation, or by a joint being involved, except, of course, in the cases of Pott's fracture. I have only included a few fractures in females because I wished to ascertain how far a man's wage-earning capacity was interfered with after a simple fracture of the tibia and fibula; in other words, how long he would be off work, and how far he would be able to resume his former employment. This will, of course, depend very largely upon the man's trade.

I do not propose to refer to the cases in detail but will merely state the conclusions I have come to, which are briefly as follows: The way in which the subsequent utility of the limb is influenced by the line of fracture is very noticeable. In all the cases of transverse fracture the utility of the limb was completely restored, and the average length of time the men were off work from the date of the accident was from three and a-half to four months. In the cases of oblique fracture, on the other hand, in several instances the utility of the limb was seriously and permanently impaired, and so greatly depreciated the wage-earning capacity of the individual. In the vast majority of the cases of oblique fracture, however, the men were able to resume their former work, though many complained of weakness and pain in the limb. So far as I can estimate it the average length of time the men suffering from oblique fracture of the tibia were off work was about seven months.

Remember, gentlemen, we are dealing with simple uncomplicated oblique fracture of the tibia and fibula, and the fact that a labouring man after such an accident will probably be unable to resume his work for seven months is a matter demanding careful consideration. And that in a certain, though, fortunately, small proportion of cases, the subsequent utility of the limb should be so seriously impaired as to prevent the men following their former occupation, is a still more serious matter.

So much for the results obtained. I now wish to say a few words as to the treatment of these fractures. I have reason to suppose that if a man with a simple fracture of the tibia and fibula, whether the fracture is oblique or not, be admitted into any hospital in England, the great probability is that after the fracture has been "set," the limb is fixed in a back splint with a vertical footpiece and side splints. I am perfectly well aware that other methods of splinting are employed, but the one which I have mentioned is, I believe, the most usual one.

I do not know whether any gentleman present has ever had the curiosity to try the ordinary back splint with the vertical

footpiece on himself, but I have and have found the position a forced one and uncomfortable. A forced one, for the reason that when a person is lying on his back the natural tendency is for the feet and legs to rotate slightly outwards, the feet at the same time falling slightly forwards. What, then, happens when we apply this splint for an oblique fracture involving the lower one-third of the tibia? The foot is securely fixed to the vertical footpiece and prevented from rotating outwards, but the limb above the point of fracture, not being so securely fixed, does rotate slightly outwards, and so the broken ends of the bone are not in accurate apposition. Nor is this all; an endeavour is also made to bring the heel in contact with the footpiece (fortunately it is difficult to keep it there), and the calf muscles thus being put on the stretch, any slight overriding of the broken fragments is necessarily increased.



Fig. 1.

The form of splint (Fig. 1) which I have found most generally useful for fractures of the tibia and fibula, including cases of Pott's fracture, is a back splint with a foot piece, but the footpiece instead of being vertical is inclined outwards to an angle of 70° and with the same inclination forwards: and at the suggestion of Dr. Dukes, of Rugby, I have given it a slight "varus" twist. A splint so shaped permits of the foot and leg being fixed in the natural position of rest. The patient is more comfortable in a splint of this description, and as no endeavour is made to force the foot into an unnatural vertical position, there is much less tendency to the formation of a sore over the heel. Moreover, the tendo Achillis not being in a state of passive tension (as is the case when the vertical footpiece is used), the tendency to overriding of the fragments is lessened.

The legpiece of this splint should be of such a length as to permit of the knee being bent, and, after the application of side splints, to allow the leg and splint to be swung from a cradle.

But whatever form of splinting is employed, I feel sure that in a certain proportion of cases of simple fracture of the tibia, more especially when the fracture involves the lower one-third of the bone, and is of the oblique or spiral character, try as one will, even with the patient under the influence of an anaesthetic, one will fail to obtain a satisfactory apposition of the broken ends of the bone, because it is practically impossible by splints alone to get the broken ends in accurate position and to keep them there. If any one doubts the accuracy of this statement, let him have an *x*-ray photograph taken of such a fracture after the splint has been applied. I wish this was much more frequently done than it is at present, and when there are facilities for doing so I would suggest that it be always done in doubtful cases.

What is it that prevents the replacement of the fragments? After some experience in operating upon these cases, I feel sure that Mr. Lane is correct when he says: "Spasmodic muscular contraction affords a very slight and transitory obstacle to the replacement. It can be measured and placed in abeyance for the time being by putting the patient under an anaesthetic. In simple oblique fractures the chief obstacle to replacement of the fragments in accurate apposition is haemorrhage into and inflammation of the soft parts." And I would add another factor—namely, the piercing of adjacent muscles and fascia by the sharp ends of the broken bone.

We are all agreed that the more completely a fracture is reduced the better, and the question is how far we should carry our surgical carpentering in the mending of broken bones. Looking at a broken bone in the light of the *x* rays, one is perhaps apt to assume too much the attitude of the carpenter, and long to wire or screw the fragments together, and so make a good job of it, forgetful of the fact that broken bones have a remarkable faculty of mending themselves in a way that the leg of a table is incapable of. If one is not satisfied with anything short of "accurate apposition," then every fracture of the tibia, whether transverse or oblique, must be cut upon and wired or screwed. But is such a procedure either necessary or justifiable?

If the result of my investigation into the after-results of fractures of the tibia or fibula prove anything, they certainly demonstrate that "accurate apposition" of the broken ends of the bones, however desirable, is not essential for the complete restoration of the utility of the injured limb. At the same time I am sure, speaking as a hospital surgeon with a labouring man as a patient, that there are a considerable number of cases in which operative treatment is not only justifiable, but urgently called for.

In deciding for or against an operation in any individual case the employment of the patient and the position and character of the fracture as determined by the *x* rays should be carefully considered. If the fracture is situated in the upper two-thirds of the tibia, the line of fracture will probably be transverse and operative influence is seldom called for. If, on the other hand, the lower one-third of the bone is involved and the line of fracture is oblique or spiral-shaped, I would suggest that if after the fracture has been "set" two-thirds of the fractured surfaces are in contact and, provided there is no rotatory displacement, an operation is not called for in the majority of such cases, but if these conditions cannot be obtained the broken ends should be exposed and fixed securely and accurately together. In cases of a doubtful nature the employment of the patient will probably turn the balance for or against an operation. If an operation is decided upon, the sooner it is performed the better, for delay only adds to the difficulties: after several weeks the inflammatory effusion into the soft parts in the neighbourhood of the fracture renders the correct apposition of the fragments a matter of considerable difficulty. I do not propose to deal with compound fractures, but cannot refrain from expressing my firm belief that in compound fracture of the tibia the fractured ends of the bone should always be exposed, and, if thought necessary, fixed in position by means of a wire or screw.

Passing now to the consideration of the cases of Pott's fracture. Here, again, I maintain that the *x* rays, if available, should be employed, for in a few hours the swelling of the foot and ankle makes it practically impossible to estimate correctly by ordinary means the exact nature of the injury and the relative position of the broken bones.

From the 31 cases in which I have been able to trace the subsequent history it would appear that the prognosis after this injury is more serious than after a simple fracture of the tibia and fibula. Though in the majority of the cases of Pott's fracture the utility of the limb was completely restored, in seven instances the men were subsequently unable to resume their former work. The average length of time off work was from four to five months.

Under an anaesthetic a satisfactory reduction can usually be effected, but, failing this, the sooner an operation is performed and the fractured bones fixed in position the better. Later operations are attended with considerable difficulty and apt to be disappointing. I recently operated for a severe Pott's fracture three weeks after the accident, and, though wiring of the fibula considerably improved the position of the foot, the functional utility will, I am afraid, never be completely restored.

From *x*-ray photographs which I have had taken of Pott's fracture, I would say that the usual defect remaining after reduction is a slight displacement outwards and backwards. The splint which I have already described will be found especially useful for this class of fracture, for if the foot is forced into a vertical position the tension on the tendo Achillis will tend to exaggerate the already slight displacement of the foot backwards.

In a Pott's fracture, as in a Colles's fracture, the essential thing is to effect an immediate and complete reduction of the deformity, and, once this is accomplished, the particular form of splint used is not a matter of very great moment.

In conclusion, whilst advocating that many simple fractures could with advantage be made compound, I am reminded of the warning recently given by a distinguished surgical knight to the younger and enthusiastic surgeons of the present day to be more sparing with the use of the knife. But this reproof, if I remember rightly, referred more especially to abdominal surgery, and I feel convinced that if some of the perhaps too zealous surgical carpentering and plumbing at present

Cases of Fracture of the Tibia and Fibula.

No.	Name.	Age	Admitted.	Fracture.	In Hospital.	Off Work.	Result and Remarks.
1	T. C.	55	April, 1897	Tibia and fibula, lower $\frac{1}{3}$, oblique	5 weeks	11 months	Working as before (boiler maker).
2	C. R.	61	April, 1897	Tibia and fibula, lower $\frac{1}{3}$	5 weeks	6 months	Working as before (porter).
3	E. T.	50	Sept., 1897	Tibia and fibula, middle $\frac{1}{3}$	9 weeks	?	Working as before, but lighter work, as cannot walk far (carter).
4	R. B.	57	Oct., 1897	Tibia and fibula, lower $\frac{1}{3}$, oblique	6 weeks	6 months	Working as before (porter).
6	T. Q.	47	Nov., 1897	Tibia and fibula, lower $\frac{1}{3}$, oblique	8 weeks	$4\frac{1}{2}$ months	Working as before (driver).
6	H. M.	48	March, 1898	Tibia and fibula, lower $\frac{1}{3}$	4 weeks	7 months	Working as before (labourer).
7	J. C.	53	May, 1898	Tibia and fibula	8 weeks	5 months	Working as before (stageman).
8	J. F.	65	May, 1898	Tibia and fibula, lower $\frac{1}{3}$	6 weeks	5 months	Cannot go aloft as a rigger. Working as a labourer.
9	C. S.	30	July, 1898	Tibia and fibula, lower $\frac{1}{3}$, oblique	4 weeks	3 months	Working as before (warehouseman). Seat of fracture distinct. Some overriding of tibia. Slight shortening, but not sufficient to cause lameness.
10	J. G.	60	July, 1898	Tibia, lower $\frac{1}{3}$	4 weeks	5 months	Working as before (carter).
11	J. W.	33	Aug., 1898	Tibia, lower $\frac{1}{3}$	6 weeks	5 months	Working as before (porter).
12	T. R.	38	Aug., 1898	Tibia and fibula, lower $\frac{1}{3}$	10 weeks	10 months	Working as before (mason). Foot swells after day's work.
13	W. C.	38	Sept., 1898	Tibia and fibula, lower $\frac{1}{3}$	4 weeks	3 months	Working as before (foreman).
14	W. B.	59	Nov., 1898	Tibia and fibula, lower $\frac{1}{3}$	5 weeks	3 months	Working as before (sailmaker).
15	T. R.	19	Dec., 1898	Tibia and fibula	4 weeks	3 months	Working as before (labourer).
16	F. D.	59	Dec., 1898	Tibia and fibula	6 weeks	4 months	Working as before (coachman).
17	J. A.	30	Feb., 1899	Tibia and fibula, lower $\frac{1}{3}$, oblique	5 weeks	?	Five months after the accident he was in the workhouse. Leg and ankle swollen; not able to put foot to ground; walking with crutches.
18	E. C.	33	March, 1899	Tibia and fibula, lower $\frac{1}{3}$, oblique	5 weeks	4 months	Walking fairly well, but walking with a limp; some over-riding of fragments. Working as before, but leg painful after a heavy day's work (labourer).
19	M. M.	26	April, 1899	Tibia, lower $\frac{1}{3}$	3 weeks	3 months	Seat of fracture distinct; result very satisfactory. Working as before (labourer).
20	W. S.	49	May, 1899	Tibia and fibula, lower $\frac{1}{3}$, oblique	3 weeks	8 months	Considerable callus at seat of fracture. Not able to work; walking with a stick, November, 1899.
21	A. C.	21	May, 1899	Tibia and fibula, middle $\frac{1}{3}$, comminuted	5 weeks	5 months	Not able to resume former work of mounting ladder and carrying bricks. Is working as dock labourer.
22	J. Y.	17	June, 1899	Tibia	8 weeks	4 months	Working as before (labourer).
23	W. W.	25	May, 1899	Tibia and fibula, lower $\frac{1}{3}$, oblique	5 weeks	8 months	Not able to resume work, as leg swollen and painful. *X*-ray photograph shows obliquity of fracture (labourer).
24	J. S.	26	July, 1899	Tibia and fibula, lower $\frac{1}{3}$, oblique	3 months	8 months	As no union a month after admission, operation performed. Ends of tibia resected, and fixed in position by means of a plate with screws, which was removed a month later. Result very satisfactory. Working as before; can go up and down stairs easily, movements of ankle free.
25	T. D.	21	Aug., 1899	Tibia and fibula, at junction of middle of lower $\frac{1}{3}$	8 weeks	6 months	Admitted on first instance on May 1st, and as no union, readmitted August 5th. End of bone exposed and screwed. Utility of limb perfect. He has resumed former work (bargeman).
26	I. H.	33	Dec., 1899	Tibia and fibula, lower $\frac{1}{3}$	1 month	7 months	Has resumed former work (carter). No obvious deformity; walks well.
27	J. C.	42	Jan., 1900	Tibia, about the middle	50 days	5 months	Working as before (dock labourer). Can go upstairs without pain. Leg as useful as before.
28	J. B.,	56	Feb., 1900	Tibia and fibula, lower $\frac{1}{3}$, oblique	$2\frac{1}{2}$mths	8 months	Much callus at seat of fracture. Leg bent slightly outwards. Working as before. Labourer. Cannot go upstairs without pain (January, 1901).
29	M. C.	24	Mar., 1900	Tibia and fibula, lower $\frac{1}{3}$, oblique	6 months	7 months	Marked projection of lower end of upper fragment. Walks well, and leg quite useful, but leg and ankle swell at night (January, 1901).
30	G. L.	44	May, 1900	Tibia and fibula, lower $\frac{1}{3}$, oblique	65 days	Not yet able. Jan. 13, 1901	Heavy man, bad fracture, much swelling and bruising, large bulla formed. Had been drinking. Slight delirium tremens (January, 1901). Walking with a stick, considerable swelling of leg, much thickening at seat of fracture. Movements of ankle impaired.
31	P. M.	42	July, 1900	Tibia and fibula, lower $\frac{1}{3}$, oblique	5 weeks	Not yet able. June 19, 1901	Lower end of upper fragment projecting inwards. Considerable callus, ankle painful and swells at night; walks with difficulty.
32	J. A.	43	Aug., 1900	Tibia about the middle	27 days	2 months	Working as usual (labourer). Considerable callus, which, however, is well above the tendons.
33	H. T.	39	Aug., 1900	Tibia and fibula, lower $\frac{1}{3}$, oblique	38 days	Not yet able. Feb. 17, 1901	Boiler maker. Outline of limb fairly good; lower end of upper fragment projects inwards; foot and leg swell at night time. Walks with difficulty.
34	J. C.	52	Nov., 1900	Tibia about the middle	4 weeks	2 months	Has resumed former work (water inspector). Result perfect as regards function. Marked callus at seat of fracture, which, however, is well above tendons.
35	J. N.	43	Dec., 1900	Tibia middle and also lower $\frac{2}{3}$	6 weeks	11 months	Seat of double fracture distinct, much callus, outline of limb good. Walking as well as ever and has resumed former work (dock labourer).
36	A. M.	17	Jan., 1901	Tibia and fibula about middle	4 weeks	8 months	Walked too soon after discharge, and tibia bent forward. Was readmitted in April, 1901, and operated upon by Mr. Harrison. End of bone screwed. Final result excellent as regards function of limb, which is as useful as ever. Much callus, which, however, is well above tendon. Has resumed former work (labourer).
37	A. K.	49	March, 1901	Tibia and fibula, lower $\frac{1}{3}$, oblique	10 weeks	9 months	May, 1902. She has been walking for about five months. Now considerable limp; heel drawn up and has to wear cork inside boot. Foot and ankle swollen. Seat of fracture distinct; lower end of upper fragment projecting inwards.
38	M. H.	31	April, 1901	Tibia and fibula, lower $\frac{1}{3}$, oblique	8 weeks	7 months	As fracture oblique and *x*-ray photograph showed bad position, operation performed April 24th. End of bone exposed and screwed. Result very satisfactory; walks well and has resumed former work (labourer).
39	J. E.	32	April, 1901	Tibia and fibula	4 weeks	3 months	Lower end of upper fragment projecting. Useful leg, walks with slight limp. Pains in leg and foot; ankle swells at night. May, 1902.
40	M. R.	38	May, 1901	Tibia and fibula, lower $\frac{1}{3}$, oblique	6 weeks	3 months	Position of fragments unsatisfactory; but declined operation. July 14th, 1902. Now walking well and without limp or pain; movements of ankle free. Seat of fracture distinct and marked. Projection at bone end of upper fragments inwards. Considerable amount of callus. The leg for ordinary purposes is as good as it was before the accident.
41	M. C.	14	May, 1901	Tibia and fibula, long and spiral-shaped fractures	9 weeks	7 months	While in hospital much swelling of leg, and was afraid the result would not be good, though the position of the fragments as shown by *x*-ray photograph was fairly satisfactory. May, 1902. The leg is still slightly swollen, but he walks well and can run without pain or limp.
42	P. C.	36	June, 1901	Tibia and fibula, lower $\frac{1}{3}$, oblique	6 weeks	8 months	Walks with marked limp; not able to do any work as leg is weak and ankle painful. Goes upstairs with difficulty. Lower end of upper fragment projecting. May, 1902.
43	F. B.	16	July, 1901	Tibia, just below middle, transverse	7 weeks	$4\frac{1}{2}$ months	Working as before (engine-cleaner) and limb as useful as ever. Not much callus, which is about tendons. May, 1902.

Cases of Fracture of the Tibia and Fibula—(Continued).

No.	Name.	Age	Admitted.	Fracture.	In Hospital	Off Work.	Result and Remarks.
44	J. S.	32	July, 1901	Tibia, lower ⅓, oblique	19 days	6 months	Walks well and without limp; limb quite useful for ordinary purposes, but cannot run. Has resumed former work as groom. Lower end of upper fragment projects inwards. Leg swells after long standing and some pain in sole of foot. (June, 1902).
45	A. I.	19	Dec., 1901	Tibia and fibula, at junction of middle with lower ⅓	3 months	6 months	Much callus at seat of fracture and lower end of upper fragment projects inwards. He walks well and without any limp, says leg is quite strong and useful. Has resumed former work of stage-porter.
46	P. McM.	61	April, 1902	Tibia and fibula, lower ⅓, oblique	5 weeks	13 mths. and not yet able	Warehouse porter. Walks with a stick, leg and foot swollen and oedematous. Marked projection inwards of lower end of upper fragment.
47	A. I.	43	May, 1902	Tibia and fibula, lower ⅓, oblique	7 weeks	5½ months	Milk dealer. Lower end of upper fragment projects inwards. Working as before, but cannot walk far as leg feels weak.
48	H. McM.	24	July, 1902	Tibia, lower ⅓, transverse	3⅔ weeks	3 months	Dock labourer. Satisfactory result; working as before accident.
49	J. B.	47	Aug., 1902	Tibia and fibula, lower ⅓, oblique	3 weeks	4 months	Labourer. Line of fracture distinct. No pain or swelling. Working as before.
50	J. W.	25	Sept., 1902	Tibia, middle ⅓, transverse	12 weeks	4 months	Carter. Leg as useful as before.
51	J. C.	44	Sept., 1902	Tibia, middle ⅓, transverse	5 weeks	4 months	Labourer. Marked thickening at seat of fracture, but leg as useful as before.
52	J. M.	42	Dec., 1902	Tibia and fibula, lower ⅓, oblique	9 weeks	6 mnths. and not yet able	Labourer. Still walking with crutches. Marked projection inwards of lower end of upper fragment. Foot and ankle swollen.
53	G. H.	38	Dec., 1902	Tibia middle ⅓, transverse.	6 weeks	4½ months	Driver. Seat of fracture difficult to detect. Limb as useful as before accident.
54	J. B.	18	Jan., 1903	Tibia and fibula, lower ⅓, oblique	4 weeks	4½ months	Carter. Working as before. Position good. No pain or swelling.
55	G. P.	35	Jan., 1903	Tibia and fibula, lower ⅓, transverse	4 weeks	3½ months	Joiner. Limb as useful as before.
56	L. G.	21	Jan., 1903	Tibia middle ⅓, transverse	3½ weeks	4 months	Labourer. Position good. No pain or swelling. Working as before.
57	F. D.	35	Jan., 1903	Tibia middle ⅓	4 weeks	4½ months	Labourer. Limb as useful as before accident.
				Cases of Pott's Fracture.			
1	R. A.	55	Jan., 1897	Pott's	5 weeks	1 year	Very unsatisfactory; walks with a stick and unable to resume former work (carter).
2	J. S.	45	July, 1897	,,	5 weeks	7 months	Not able to resume former work.
3	J. C.	38	Aug., 1897	,,	4 weeks	4 months	Working as usual (coalheaver).
4	J. T.	27	Oct., 1897	,,	3 weeks	4 months	Working as usual (carter).
5	B. F.	43	Jan., 1898	,,	7 weeks	4 months	Working as before (labourer).
6	W. C.	28	Feb., 1898	,,	5 weeks	4 months	Resumed former work (fireman), but limps and ankle painful.
7	J. N.	32	July, 1898	,,	3 weeks	3 months	Working as usual (labourer).
8	J. M	49	July, 1898	,,	3 weeks	3 months	Working as before (overseer).
9	P. H.	32	Sept., 1898	,,	3 weeks	3 months	Working as before (coalheaver).
10	J. M.	23	Nov., 1898	,,	4 weeks	3 months	Working as before (labourer).
11	S. F.	21	Nov., 1898	,,	5 weeks	4 months	Working as before (labourer).
12	P. K.	26	Dec., 1898	,,	4 weeks	3 months	Working as before (labourer).
13	H. H.	61	Feb., 1899	,,	4 weeks	7 months	Not able to resume former work as carter.
14	J. S.	38	May, 1899	,,	4 weeks	4 months	Working as before (labourer).
15	I. J.	27	Nov., 1899	,,	1 month	3 months	Working as before (coalheaver). Movements of ankle free; some thickening of external malleolus. Doubtful if true Pott's.
16	J. K.	38	Feb., 1900	,,	38 days	9 months	Much thickening of external malleolus. Working as before (labourer), but not yet full time, as ankle swells and is painful. (January, 1901.)
17	R. N.	30	Mar., 1900	,,	1 month	3 months	Working as before (coalheaver). Some flat foot and pain in leg and foot after day's work. (January, 1901.)
18	G. G.	23	June, 1900	,,	4 weeks	3 months	Working as before (labourer). Some thickening of external malleolus.
19	R. B.	37	July, 1900	,,	15 days	3 months	Working as before (waterman). Thickening of external and also of internal malleolus. Position of foot good, walks well.
20	C. R.	32	Aug., 1900	,,	25 days	Not yet able. Jan. 20, 1901	Cannot resume former work as dock labourer. Walks badly and much pain in ankle, which swells at night; cannot go upstairs. A month ago bought small cart and tries to earn a living (January, 1901).
21	A. H.	35	May, 1901	,,	3 weeks	5 months	Marked thickening of internal malleolus. Very satisfactory results; working as before (labourer) (May 1902).
22	W. I.	25	Nov., 1901	,,	6 weeks	3 months	Working as before (carter). No pain or inconvenience from fracture (May, 1902).
23	J. O.	31	Jan., 1902	,,	6½ weeks	6 months	Carter. Foot displaced outwards; marked deformity of fibula at lower third; considerable thickening of internal malleolus. Not able to do former work, working as a labourer. Walks with a limp.
24	W. W.	21	Feb., 1902	,,	6 weeks	3 months	Labourer. Thickening of bones at seat of fracture. Working as before.
25	J. S.	47	March, 1902	,,	2½ weeks	5 months	Labourer. Some thickening of internal malleolus. Working as before.
26	P. S.	51	April, 1902	,,	5 weeks	6 months	Labourer. No obvious deformity; walking well. Working as before.
27	J. C.	54	April, 1902	,,	5 weeks	5 months	Labourer. Working half-time since October. Position of foot good; much thickening of external malleolus; ankle painful and swells after working.
28	W. T.	56	Aug., 1902	,,	5 weeks	5 months	Labourer. Position of foot good. Working as before.
29	W. W.	63	Nov., 1902	,,	6 weeks	6 months	Carter. Some thickening of internal malleolus. Working as before.
30	T. H.	53	Nov., 1902	,,	8 weeks	4 months	Labourer. Position good. Movements of ankle free. Working as before.
31	F. L.	23	Dec., 1902	,,	8 weeks	4½ months	Leg as useful as before accident. Working as before.

bestowed upon the abdominal viscera was directed to the mending of broken legs it would be better both for the welfare of patients and for the reputation of surgeons.

Mr. H. Betham Robinson, from what he had heard, thought some of the difficulties would be removed by a more extensive use of the plaster-of-paris (Croft's) splints. By their use the patient was kept in no fixed position, and could move about without displacing fragments, especially if the splints extended well above the knee-joint.

Mr. Reginald Harrison said that for same time he was surgeon to the hospital where Mr. Murray had collected his cases, and the difficulties of obtaining a good result in many casee of fracture of the tibia had occurred also in his experience. In many such cases he had tenotomized the tendo Achillis; he had never seen any evil results from this procedure, and it was often very useful in overcoming deformity and facilitating the retention of the fragments in good position.

Mr. C. P. Childe (Southsea) remarked that he did not approve of Mr. Murray's splint, because it did not include the knee-joint. He thought that as a large portion of the musculature inserted into the os calcis was attached also above the knee-joint, any apparatus dealing with these fractures should include both the knee-joint and the ankle-joint.

Mr. A. H. Tubby said the point which appealed most to him was the prolonged disablement, as found by Mr. Murray, after the accident, amounting in some cases to seven months. The speaker thought that if it was found difficult to bring the fragments into good position in spiral, oblique, and compound fractures, the lesion should be cut down upon and the fragments screwed or wired. It was true that there was some

risk added in doing so, but the surgeon should be prepared to advise the patient to accept the added risk in view of avoiding prolonged incapacitation from work.

Mr. R. H. ANGLIN WHITELOCKE (Oxford) said that one point he thought of the greatest importance was that in oblique fractures of the tibia portions of muscle and fascia often became interpolated between the ends of the bone. Unless this was removed, satisfactory union would not follow. In such cases he urged the necessity of the open method of treatment and suturing the ends together. The dangers of the open method were not great with ordinary surgical care.

Mr. ALFRED SHEEN thought that fixation in plaster of paris soon after the injury was the best method of obtaining a satisfactory result; he kept patients with fractures of the tibia in hospital only a few days and had never found any disadvantage in the practice.

Mr. JORDAN LLOYD agreed with Mr. Murray that the interests of abdominal and other major surgery were liable at the present time to draw attention away from such conditions as simple fractures, and he would not be surprised to learn that the results of the treatment of fractures were worse now than some years ago.

Mr. MURRAY, in reply, explained further the advantages he claimed for the splint which he used, and pointed out that it allowed some rotation outwards of the lower fragment which brought it into line with the upper when the limb was in the position of rest; the knee-joint could be easily controlled if necessary. He agreed that a considerable proportion of oblique fractures of the tibia were best treated by open operation, and he had submitted many of his cases to this treatment during the last few years.

(To be continued.)

ON THE PROTECTIVE EFFECT ACHIEVED BY ANTITYPHOID INOCULATION AS EXHIBITED IN TWO NEW STATISTICAL REPORTS.

By A. E. WRIGHT, M.D.,

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IN the *Lancet* of September 6th, 1902, I gathered together and set forth in a synoptical table all the statistics which were available up to that date with regard to the effect of antityphoid inoculation. In a special supplement appended to the same issue I marshalled the materials for the critical estimation of the value of each of the statistics. I have recently, through the kindness of Sir William Taylor, K.C.B., Director-General of the Army Medical Service, obtained permission to publish two further statistical reports which have been received at the War Office during the last twelve months.

The first statistical report deals with the incidence of typhoid fever and the death-rate from the disease in inoculated and uninoculated soldiers in India during the year 1901. The second deals with the incidence of typhoid fever in the inoculated and uninoculated in Lord Methuen's column at the Modder River, South Africa, from December, 1899, to March, 1900.

TABLE I.—*Showing the Incidence of and Death-rate from Typhoid Fever in the British Army in India during the Year 1901.*

	Average Strength during the Year.	Cases of Typhoid Fever.	Deaths from Typhoid Fever.	Incidence-rate.	Death-rate.
				Per Cent.	Per Cent.
Uninoculated	55,955	744	199	1.33	0.36
Inoculated	4,883	32	3	0.66	0.06

We learn from this table that antityphoid inoculation diminished the incidence-rate of typhoid fever by one-half and the death-rate by five-sixths.

A further point of interest in the table is its testimony to the duration of the protection afforded by antityphoid inoculation. It may be premised in this connexion that the number of inoculated in the table above represents a falling off of 1,100 from the figure of the previous year—a falling off due to the practical suspension of antityphoid inoculations. It follows that the statistics here in question refer almost exclusively to men inoculated in 1898, 1899, and 1900. So far as they apply to men inoculated in 1900, they confirm the statistics of that year, which showed that the protection conferred by inoculation in 1899 showed no signs of diminishing in 1900. So far as the statistics of 1901 refer to a residue of the 4,000 men inoculated by myself in India in 1898-9 they amplify previous statistics to the extent that they suggest that the protective effect of inoculation continues for a minimum of three years.

The second statistical record applies, as already mentioned, to Lord Methuen's column during a limited period of the South African war. It was furnished by Surgeon-General Townsend, C.B.

TABLE II.—*Showing the Incidence of Typhoid Fever in Lord Methuen's Column at the Modder River, South Africa, from December, 1899, to March, 1900.*

	Number.	Cases of Typhoid Fever.	Incidence-rate.
			Per Cent.
Uninoculated	10,981	257	2.3
Inoculated	2,535	26	1.0

It will be noted that the table testifies to a diminution of the incidence-rate by more than half during the period of observation. It would seem legitimate, in view of statistics set forth above and of previous statistics, to infer the continuance of a similarly diminished rate of incidence during the whole of these men's service in South Africa. It will be noted also that this table discloses nothing with regard to the case-mortality of the inoculated and uninoculated attacked by typhoid fever. This omission is, no doubt, due to the fact that the sick were transferred to hospitals at the base, and passed out of Surgeon-General Townsend's ken. We may probably, in view of statistics in Table I *supra*, and of those included in my synoptical table infer that there was here superadded to the diminution in the incidence-rate of typhoid also a diminution in the death-rate.

REVIEWS.

THERAPEUTICS.

TEN years have elapsed since the first edition of Dr. HARE'S *System of Practical Therapeutics* was published.[1] In our review of that work (BRITISH MEDICAL JOURNAL, 1892) we took occasion to point out that while it formed a satisfactory guide to modern treatment in general, it might yet have attained greater usefulness by still closer regard to details. The work now appears in three substantial volumes, each comprising close on 900 pages, and a vast number of subjects are treated by many writers, with a fullness of detail that should satisfy the largest clinical appetite. All the earlier articles have been revised, and nearly half of the total have been written afresh or are entirely new. In the first volume, the broader lines of therapy are considered, opened by an article by Dr. Horatio C. Wood on general therapeutic considerations, marked by strong common sense. Dr. Remington deals with prescription-writing in an article which deserves careful study in the interest of the dispensing chemist no less than in that of the patient. In discussing general sanitation, Dr. Baker advocates strong legislative measures somewhat ahead of the present state of public opinion. He would prevent all preventable diseases by local authority, but, as he himself admits, public opinion is as yet hardly educated up to the point of acceptance of wholesale restraint. Dr. Burney Yeo, one of the few English contributors, writes of nutrition and foods, and the subject of general exercise is discussed by Dr. Hartwell in an article interesting from the physiological point of view, though it does not throw much light on the uses of exercise as means of treatment in disease. Articles by Dr. Mitchell on rest cure and by Dr. Rockwell on electro-therapeutics will not strike the English reader as being in any way in advance of familiar home textbooks. The uses of the *x* rays are hardly mentioned, while the light treatment of skin affections obtains no mention either in this place or in the article in the next volume on the treatment of skin diseases. Hydrotherapy, climate, and mineral waters are next dealt with, the information on the two latter sub-

[1] *A System of Practical Therapeutics.* Edited by Hobart Amory Hare, M.D. Second edition, three vols. London: Williams and Norgate, 1903. (Demy 8vo, pp. 2,595, 638.)

jects being naturally derived more from American than from European sources. A well-illustrated article by Mr. R. E. Moore sets forth all that it is needful to know on the subject of massage and graduated movements. The use of photography, while it robs the subject of some of the glamour conveyed by such terms as "effleurage" and "petrissage," adds greatly to its practical value. Of the value of formaldehyde as a superior disinfectant to sulphur, Dr. Coplin sets forth some striking facts. To these articles on general subjects follow a series of papers on general diseases, those of the thyroid gland taking precedence, from the pen of Dr. Meltzer. In this article, as in several others throughout the volumes, where certain diseases are described for which no satisfactory treatment has as yet been devised, the writer has filled many pages with a general account of the diseases themselves. To this may in some measure be attributed the enormous expansion of the work from one volume into three. In the case of thyroid diseases other than myxoedema no less than 54 pages are occupied in arriving at a result barren so far as treatment is concerned. In a practical work of reference such redundancy is irritating to the busy reader. The first volume concludes with a series of papers on gout, rheumatism, diabetes, syphilis, and tubercle. The treatment of syphilis by excision of the chancre and other vigorous methods would appear to be somewhat more radical than that in vogue in this country. The prophylactic and general treatment of tuberculosis would seem to be identical with our own; but it may be noted that a useful attempt is being made in America which might well be universally imitated, to regard the expectoration of sputum as a natural excretory function which should be practised with the same regard to decency and privacy as in the case of other necessary excretory functions. In the second volume the treatment of fevers, typhoid, malaria, variola, scarlatina, etc., is first dealt with. Dr. Hare enters at some length into the question of the utility of baths in typhoid fever, and sets out the arguments for and against their use, but it must be admitted that the balance of evidence is against rather than in favour of their frequent employment. Influenza is discussed in association with tonsillitis and acute rheumatism by Dr. Packard. The remarks on the precautions necessary with respect to the treatment of the complications of influenza are particularly worthy of note. With the description of the treatment of diphtheria, by Dr. Crandall, most British physicians would cordially agree, more especially with the writer's warning against too much local treatment. Space will not admit of reference to the many articles on diseases of the thoracic and abdominal organs, or of those of the brain and spinal cord, contained in this volume. Each is written by an author who has had special experience in the subject. The third volume deals exclusively with surgical affections and is equally practical in its scope with its companion volumes. Of the work as a whole, the only adverse criticism which can be suggested is in respect of its bulk. The writers of the various articles have evidently been allowed a somewhat free hand, and discursiveness in the discussion of favourite topics has been the result. Had the practical aspect of the work been kept more constantly in mind, two volumes would doubtless have sufficed to contain all that is of real practical value. As it is, readers will find an account of much that is useful in medical treatment and of much that is useless, and need seldom be at a loss to distinguish the one from the other. The work is well produced and well illustrated, and deserves as warm a welcome in this country as was accorded to its predecessor ten years ago.

We have to congratulate Professor Cushny on the fact that his *Textbook of Pharmacology and Therapeutics*[2] has so rapidly attained to a third edition. Many minor additions have been made to the text, while of more importance are the accounts given of recent experiments on the food value of alcohol, of certain differences in the action of members of the digitalis series, of the subarachnoid injection of cocaine, and of the active principles of the suprarenal gland. Taken as a whole, the volume represents our present knowledge of the physiological action of drugs in a manner which is unsurpassed by any other work of the kind, but, as in the former editions, the therapeutical section leaves much to be desired, and this, not only in the amount and kind of the actual information given, but too frequently in the direction of any attempt to establish a connexion between the action of a drug and its application in disease. As in previous editions, great care and accuracy have been shown in printing lists of official preparations (*B.P.* and *U.S.P.*), and in compiling the bibliographical references.

In *Les Médicaments*[3], Dr. Alfred Martinet has not attempted to compile a systematic treatise on therapeutics, but has selected a small number of important drugs—thirteen in all—the action and uses of which he discusses according to a somewhat novel plan. They include quinine, bromides, arsenic, mercury, opium, digitalis, and antidiphtherial serum, and each is considered under two chief headings, "The When and Why of Administration" and "The Manner and Form of Administration." The subheadings are numerous, and differ somewhat according to the necessary differences in the points raised for discussion. They are stated in large print as assertions or queries, the paragraphs which follow constituting the reasoned justification or answer to each. The forms and methods of administration are given at great length with detailed formulae—a very useful and practical feature of the book. The pharmacology and therapeutics are exclusively based on the teaching of French writers, a circumstance which may be regarded as an advantage or a drawback according to the requirements of the reader. Although the opinions and practice are often at variance with those current in our own country, yet the book may be recommended as a very clearly expressed and practical exposition of the actions and uses of the drugs of which it treats.

Dr. Rakhaldas Ghosh's *Treatise on Materia Medica and Therapeutics*[4] is a marvel of condensation. The author, who died recently, was a self-made man of humble origin, who raised himself by sheer force of ability and industry to a leading position among the native medical practitioners of Calcutta. He was a distinguished student of the Calcutta Medical College, and held resident appointments in the College Hospital with great credit. He devoted the power of application—with which he was so richly endowed—to the preparation of this book, which he had almost completed at the time of his death. The work consists of two volumes; the first was published in 1901; the second has recently appeared. It was revised and completed by Lieutenant-Colonel C. P. Lukis, M.B., F.R.C.S., of the Indian Medical Service, Professor of Materia Medica and Therapeutics in the Calcutta Medical College. Volume I is a systematized exposition of the science and practice of pharmacy and of the action of drugs. It is admirably arranged, and we have seldom met with a treatise in which so much information is given in so small a compass, and so methodically, clearly, and accurately. It has, we believe, been adopted as a textbook by some medical schools in India, and it is certainly very well fitted for such a purpose, and might with advantage be used as such in any country or educational institution. It is based on the *British Pharmacopoeia*, but not limited to that work. Volume II is a pharmacopoeia, and describes in alphabetical order articles and preparations, their source, characters, composition, preparations, actions, and uses. The same talent for logical arrangement and economy of words and space is shown in this as in the previous volume. It is, nevertheless, very detailed and complete. The inclusion in it of a considerable number of the more useful articles of the Indian materia medica enhances its value. Some information is given regarding the use of these substances by Vaids and Kavirajs, practitioners of the Hindu system of medicine. A very useful feature in this volume is the addition of "prescribing hints" to the description of each article, indicating how it may be most elegantly, palatably, and effectively administered. The author, in writing on the uses of drugs, draws largely on his own experiences.

Dr. Emil Wieland's monograph on the action and efficacy of diphtherial serum in cases with laryngeal obstructions requiring operation[5] contains the record of a lengthy series of observations which he has made at the children's hospital at

[2] *A Textbook of Pharmacology and Therapeutics; or the Action of Drugs in Health and Disease.* By Arthur R. Cushny, M.A., M.D. London: Rebman, Limited. 1903. (Demy 8vo, pp. 756. 17s. 6d.)

[3] *Les Médicaments*, Par le Dr. Alfred Martinet. Paris: C. Naud, 1903. (Demy 8vo., pp. 284. Fr. 4.)

[4] *A Treatise on Materia Medica and Therapeutics, including Pharmacy, Dispensing, Pharmacology, and Administration of Drugs.* By Rakhaldas Ghosh, L.M.S., Calcutta University, Lecturer on Materia Medica, Calcutta Medical School. In 2 vols. Calcutta: Hilton and Co. 1903. (Cr. 8vo, pp. 860. 7s. 6d.)

[5] *Das Diphtherieheilserum, seine Wirkungsweise und Leistungsgrenzen bei operativen Larynxstenosen.* Von Dr. Emil Wieland. Berlin: S. Karger. 1903. (Roy 8vo, pp. 93.)

Basle. By a comparison of the hospital mortality statistics in the periods before and after the introduction of serum-therapy, he succeeds in showing that, particularly in the severe cases requiring operation, the use of the serum had a decidedly beneficial result. His statistical inquiry supports the views now generally held as to the importance of early inoculation, there being a progressive increase in the mortality corresponding to each day's advance in the disease prior to treatment. Dr. Wieland lays much stress on the favourable influence which serum inoculation exerts upon the actual site of the disease. Both from clinical observation and necropsies he finds clear evidence that it inhibits further growth of the membrane and causes that already formed to loosen and clear up, particularly in cases treated early. With regard to the cases which terminated fatally in spite of early application of antitoxin, Dr. Wieland found no reason to suspect that the serum used was of inferior quality, since in every instance a well-marked local reaction was demonstrable; death was due to the intense virulence of the infection and the consequent rapidity with which toxin was formed and absorbed. We do not find much that is new in Dr. Wieland's observations, but they are a useful addition to the large amount of evidence which has already accumulated in favour of the use of antitoxin in the treatment of diphtheria.

Dr. B. PRESCH's work on physical and dietetic therapeutics[6] is an excellent handbook on the subject for practitioners. The information is arranged under the headings of the various diseases and affections, in alphabetical order, beginning with "adipositas," "agrypnie"—that is, asomnia—etc., and ending with "variola" and "vitium cordis." Besides this, there is a carefully-compiled appendix containing practical details of hydrotherapeutic methods, mechano-therapy, electro-therapy, special dietetic procedures, hypnotism, and blood-letting. During recent years many important works on physical and dietetic therapeutics have been published in Germany, including the great *Handbuch der Ernährungstherapie und Diätetik*, edited by Professor von Leyden, and the *Handbuch der physikalischen Therapie*, edited by Goldscheider and Paul Jacob; two editions of the *Lehrbuch der klinischen Hydrotherapie*, by Dr. Max Matthes, and the large *Lehrbuch der Balneotherapie*, by Dr. Julius Glax. Yet the present work of Dr. Presch is sure to appeal to practitioners, not only in Germany itself, but also to those in other countries who read German. It is concise, clearly written, and convenient for reference. The information given is eminently practical, and, though no space is given to matters of merely literary and historical interest, frequent reference is made to such authorities as W. Winternitz, Buxbaum, Matthes, and von Noorden, whose opinions and methods of procedure are quoted. The author points out that he has, especially in his observations on hydrotherapy and exercises, tried to make his directions suit the means of ordinary practitioners in town and country, whilst complicated apparatus, only to be found in great institutions, is merely referred to. We find that the modern methods of treating pulmonary tuberculosis are discussed at considerable length. Under tabes dorsalis Fraenkel's "compensatory movement" treatment is alluded to, and under heart diseases Schott's exercises are described after Bezly Thorne, whilst practical information regarding artificial effervescent baths is contained in the appendix on hydrotherapeutic methods. The author has not always confined himself to methods of treatment, but under the heading Obesity he has also (like C. von Noorden) discussed the indications for treatment, that is, the conditions under which it is advisable to attempt to make the patient thinner, and when this should not be attempted. Practically all physical and dietetic methods used in treating disease are considered, and the book might almost be termed a concise treatise on therapeutics by methods other than drug-giving.

In the second edition Dr. MATTHES's textbook of clinical hydrotherapy[7] has been considerably expanded. It contains 70 more pages than the first edition, which appeared in 1900. The plan of the work remains the same, but each chapter has been brought up to date, and some parts have been practically rewritten. Water is still most generally employed as a means of applying heat and cold, but treatment by hot mud, hot air, electric-light baths, sand baths, etc., is likewise considered. More than two-thirds of the whole book is devoted to special hydrotherapy—that is to say, to the choice of hydrotherapeutic procedures in various diseases and morbid conditions. About 44 pages are given to hydriatic treatment of febrile infectious diseases (excluding of course pulmonary tuberculosis), and about the same number to diseases of the nervous system; but the disorders of metabolism are dealt with in 14 pages. The large sections on surgical affections, ophthalmic diseases, and gynaecology are contributed, as before, by Drs. P. Cammert, E. Hertel, and F. Skutsch respectively. English patients with chronic rheumatoid arthritis (arthritis deformans) commonly come in for a great deal of douching and thermal treatment, either at their homes or at health resorts, and the remarks on p. 405 are of interest in this connexion:

> In arthritis deformans hydrotherapeutic procedures of the most various kind are employed, and probably there is no application within the limits of hydrotherapy which has not been tried, recommended, and adopted in practice against this disease. But it is just the variety of measures which have been employed that shows how powerless on the whole are our methods of treatment in this affection.

The various divisions of hydrotherapy are admirably discussed and summarized in the different chapters of the work, which can be recommended to all who desire concise information (not dogmatic statements) on the subject.

Professor BIER's work on hyperaemia as a remedy,[8] which is dedicated to Professor von Esmarch on his 80th birthday, is not so original as its title at first suggests; in fact it is for the most part an argument in favour of the value of very well known local remedies in the treatment of local diseases. The chief method recommended for inducing hyperaemia is the local hot-air bath. Professor Bier also uses a flat or round india-rubber bandage put on so as to compress the veins lightly and thus cause venous congestion in the limb; limbs so prepared may be introduced into the hot-air chamber. Another method is a modification of Junod's boot. The apparatus consists of a glass tube into which the limb is placed, the openings are closed by rubber diaphragms and the air exhausted by an air pump. He refers to the use of dry-cupping, rubefacient liniments, blisters, and the red-hot cautery brought near to the skin, as means for inducing local hyperaemia. In the section of the book devoted to the special applications of these means he deals chiefly with surgical conditions, particularly tuberculosis and other joint affections. The book is a systematized account of methods which are more or less generally followed and appreciated in this country, but some of the suggestions contained in it are novel and perhaps are worth a trial.

NEURO-PATHOLOGY.

EVERYWHERE throughout the central nervous system, white substance and grey, small cells are to be met with which by their size, shape, and staining reactions are indistinguishable from leucocytes. They are more numerous during development than in adult life, and though generally of irregular distribution are often arranged in rows proceeding inwards from the pia and sheaths of vessels. Every section through the cord or grey cortex shows numbers of these cells. They have heretofore been described as free nuclei, but according to Dr. KRONTHAL[9] are migrated leucocytes and—and this is the kernel of Dr. Kronthal's book—form the first stage in the development of the nerve cell. The leucocytes having broken through the epithelial sheath of the central canal reach the mass of nerve substance. Here they come under different conditions, and with their altered environment their function is changed, part of the cell supplying framework and part subserving purely nervous function. These leucocytes or free nuclei may be surrounded by a variable amount of protoplasm. Coalescence occurs generally of two cells, occasionally of more, and the confluence tends naturally to the accretion of the protoplasm of each (synkaryosis, His.). These cells resulting from coalescence have not so far been considered in relation

[6] *Die physikalisch-diätetische Therapie in der ärztlichen Praxis.* [Physical and Dietetic Therapeutics in Medical Practice.] By Dr. Bernhard Presch. Lief. I to VI. Würzburg: A. Stuber. 1903. (Roy.8vo, pp. 674. M.2 each Lief.)

[7] *Lehrbuch der klinischen Hydrotherapie für Studierende und Aerzte.* [Textbook of Clinical Hydrotherapy for Students and Doctors.] Von Dr. Max Matthes. With contributions by Drs. P. Cammert, E. Hertel, and F. Skutsch. Second revised edition. Jena: G. Fischer. 1903. (Royal 8vo, pp. 480; 68 illustrations. M.8.)

[8] *Hyperaemie als Heilmittel* [Hyperaemia as a Remedy]. Von Professor Dr. August Bier, in Greifswald. Mit 10 Abbildungen. Leipzig: F. C. W. Vogel. 1903. (Demy 8vo, pp. 220; 10 illustrations. M. 10).

[9] *Von der Nervenzelle und der Zelle in Allgemeinen* [The Nerve Cell and the Cell in General]. Von Paul Kronthal. Jena: Gustav Fischer. 1902. (Demy 8vo, pp. 274; 6 chromolithographs, 3 photographic tables, and 27 illustrations. M. 16).

to the small cells, and have been thought of pathological import, whereas Dr. Kronthal affirms that they are merely stages in the development of the nerve cell so called. The fact that these cells are found in normal individuals favours Dr. Kronthal's theory. The nerve cell or neuron is, in fact, not a cell at all in a biological sense, possessing, as it does, nuclear substance outside the nucleus and having, further, no power of reproduction, thus being at variance with two fundamental characteristics of a cell. Dr. Kronthal is thus in accord with those who regard the neuron, not as a physiological unit with its functional centre in the nucleus, but as a collection of units with their functional origin at the periphery. This really important book is divided into two parts, the first part being concerned with the biology of the nerve cell, the methods of staining and fixing employed by the author, and a description of the plates in which the development of the nerve cell nucleus from the migrated leucocytes is shown. The second part, forming the bulk of the book, deals with cells in general and their comparison with nerve cells. The author restricts the term "protoplasm" to the cell *minus* the nucleus and foreign matter, but considers the term would be better discontinued as the morphological and biological concepts involved are not the same. Morphologically all inside the cell is living. Biologically it is not. As to whether the formed or the unformed elements of the cell are the living, the author maintains that the formed are the living, the unformed substance nourishment, and cites in this relation an experiment of Hammer's in which karyokinesis was noted as occurring in pieces of gill cartilage from salamander maculata five hours after removal. It is impossible, he says, for the formed elements to get their kinetic energy from the normal saline solution, therefore they must have got it from the unformed. Space does not permit us to enter into the many interesting physiological and psychological deductions concerning relations of form and function, sensibility, anaesthesia, etc., but this book undoubtedly merits recognition as a careful, thorough, and in many directions original, work on the subject.

Dr. Nonne who speaks from great experience at the Eppendorf Hospital, gives in the seventeen lectures comprised in the book he has recently issued[10] a comprehensive and thorough account of diseases of the nervous system due to syphilis. Cerebral syphilis, syphilitic meningitis, ocular palsies, their symptomatology, morbid anatomy, and differential diagnosis take up the first seven chapters. In the eighth chapter, on pyschoses and neuroses in syphilis, some pages are given to epilepsy (tardiva) of syphilitis origin. In the twelve cases which have come under the author's personal observation this etiological hypothesis appears to have been arrived at by a process of elimination of the ordinarily accepted causal factors. The attacks were indistinguishable from those of true epilepsy, but neither preceded or followed by dreamy states or other psychical anomalies or character changes. In none of his cases, nor in fact with any of the cases quoted as observed by others (Erb, Dinkler, Rumpf, etc.), with the exception of Fournier, had antisyphilitic treatment any effect whatever. Dr. Nonne, therefore, considers these attacks to be not due to the immediate action of syphilis but to be, like tabes and general paralysis, of metasyphilitic causation. Five lectures are devoted to general paralysis, diseases of the cord and tabes dorsalis. The relationship of syphilis to general paralysis and to tabes is very carefully examined, and the most recent statistics compared. With regard to general paralysis, the large percentage of paralytics in which syphilitic infection has been proved, and the fact that the proportion of general paralysis to the population rises and falls with prevalence of syphilis, are commented upon. With regard to syphilis and tabes, statistics vary from 19 per cent. (Oppenheim) to 91 per cent. (Fournier). Dr. Nonne considers that greater care is necessary in seeking for evidence of a past infection, and mentions in this relation that Storbeck found only 24 per cent. of certain syphilitics in his cases of tabes, and, adding one half of the doubtful cases, a total of 36 per cent.; and that Erb, reviewing Storbeck's statistics, showed that the percentage was really 60. After a careful review of conflicting opinions, Dr. Nonne concludes that syphilis is the most important etiological factor, but not a condition *sine qua non*. Lectures on syphilitic diseases of the peripheral nerves, hereditary nervous diseases, and a short chapter on therapeutics bring to a close a painstaking and valuable work. Notes of cases are freely given, the illustrations though few are excellent, and there is a comprehensive and thorough bibliography.

The attempt to give within the 600 odd pages of a small octavo volume a complete account of the diagnosis and treatment of diseases of the nervous system could only meet with qualified success, and this is the most obvious criticism of Professor Vires's handbook.[11] The arrangement is alphabetical, the symptomatology, etiology and differential diagnosis are with rare exceptions condensed into one page or less, and the rest is given entirely to treatment. The book is in fact a dictionary of treatment, wanting, however, that complete bibliography which would have made it really valuable, and which is here represented by the scantiest footnotes. The book is nevertheless of much interest, and from abscess of brain to vertigo replete with information.

[10] *Syphilis und Nervensystem.* Von Dr. Max Nonne. Berlin: S. Karger: and London; Williams and Norgate. 1902. (Royal 8vo, pp. 458; 42 illustrations. 14s.)

NOTES ON BOOKS.

The new edition of *St. Thomas's Hospital Pharmacopoeia*[12] presents several novel features. In the list of formulae we notice several noticeable advances in the art of pharmacy. We may specially mention glycerinum atropinae, which is prepared with atropine sulphate, and has replaced the old glycerinum belladonnae; it is a much cleaner preparation, does not stain the skin or clothes, and has the great advantage of being constant in strength. Linimentum atropinae replaces linimentum belladonnae in an analogous manner. Glycerinum bismuthi, which is used for preparing mistura bismuthi, consists of freshly precipitated bismuth carbonate suspended in glycerine; owing to the finely divided state of the bismuth no suspending agent is required when the mixture is prepared. Under the title "emulsio paraffini" an aseptic shaving cream is introduced, which facilitates the shaving of skin areas before surgical operations and obviates the use of shaving brush and soap. More than one hundred pages are devoted to useful notes on official and unofficial remedies. Poisons and antidotes are treated of, and thermometric, neutralization, and other tables given. The book is very neatly got up, and of convenient size for carrying in the pocket.

We have received a little pamphlet, by Dr. Culver James, entitled *England's Future.*[13] which consists of a brief essay on the proper relations of England to the Colonies and reprints of certain letters to the daily press. Its principal interest for us lies in the fact that it is from the pen of a medical man, and that although the essay was originally published some twenty-three years ago, it reads exactly as if it had been written yesterday. The importance of strengthening the bonds between the Colonies and the Mother Country is urged, the entire failure of England to convert the world to free trade views pointed out, preferential tariffs in favour of the Colonies suggested, and the institution of a representative national and Pan-Britannic Assembly and a form of universal military service advocated. In short, this prescient little pamphlet does not fail to include any of the views which during the last few months have been included in the programme of the Greater Britain party, and, in spite of the early date of its birth, is a very clear summary of the larger political questions of to-day.

[11] *Maladies Nerveuses, Diagnostic-Traitement.* Par Professor J. Vires. Paris: Masson et Cie, and Montpellier: Coulet et Fils. 1902. (Crown 8vo, pp. 613. Eleven illustrations. Fr. 8.)

[12] *Pharmacopoeia of St. Thomas's Hospital.* Compiled under the direction of a Committee of the Medical and Surgical Staff. By Edmund White, B.Sc.Lond., F.I.C., Pharmaceutist and Teacher of Pharmacy to the Hospital. New Edition. London: H. H. G. Grattan. 1902. (32mo, pp. 180. 2s. 6d.)

[13] *England's Future.* By W. Culver James, M.D. Third Edition. London: Harrison and Sons. (Crown 8vo, pp. 32. 3d.)

Order of the Osmanieh.—The King has been pleased to grant Dr. F. M. Sandwith permission to accept the 3rd Class of the Order of the Osmanieh, conferred upon him by the Khedive of Egypt in recognition of valuable services rendered by him.

The Odontological Society of Great Britain is prepared to receive application for grants in aid of the furtherance of scientific research in connexion with dentistry. Further particulars can be obtained from the Honorary Secretary, Scientific Research Committee, Odontological Society, 20, Hanover Square, W.

REPORTS AND ANALYSES

AND

DESCRIPTIONS OF NEW INVENTIONS

IN MEDICINE, SURGERY, DIETETICS, AND THE ALLIED SCIENCES.

MEDICAL AND SURGICAL APPLIANCES.

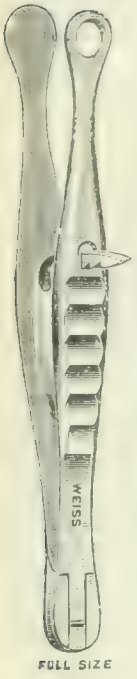


Fig. 1.

An Improved Tarsal Cyst Clamp.—Mr. John R. Rolston, (Surgeon, Royal Eye Infirmary, Plymouth, and Ophthalmic Surgeon, Royal Albert Hospital, Devonport) writes: Messrs. Weiss and Son have made for me an eyelid clamp for use in operating on tarsal cysts, which, from an extended trial, I venture to think is an improvement on any other.

Fig. 1 gives a general idea of its size and construction. The blades are detachable, and it can be obtained with the opening in the female blade either 9 mm. or 6 mm. diameter. For hospital use I advise the former.

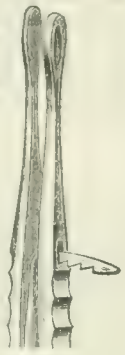


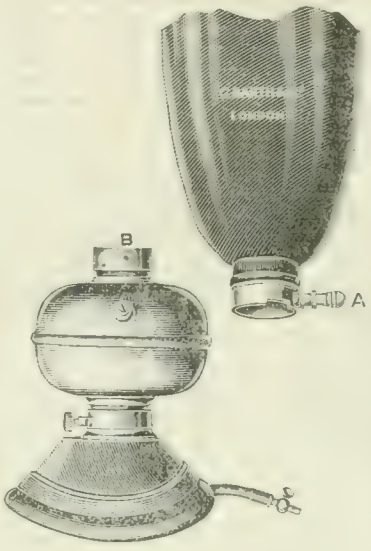
Fig. 2.

Fig. 2 shows the space between blades when they are clamped as closely as possible. It admits of the eyelid being firmly held without being unduly pressed or bruised.



New Form of Guillotine.—Messrs. Arnold and Sons have patented a new form of guillotine shown in the illustration, for which they claim great advantages over those at present in use. The object of the improvement is to provide an instrument which can be operated by the closing together of two pivoted arms by means of the thumb and finger, after the fashion of a pair of scissors, this being a motion which is capable of ready and accurate control by the hand of the operator, in contradistinction to the construction commonly adopted. It is an advantage that the motions of the two knives in the act of cutting should be as nearly equal as possible, and that the point of cut should be at the central part of the frame upon which the knives work, and this is one of the objects attained. A further object is to arrange the mechanism by which the knives are operated so that the mechanical advantage thereby given increases as the knives approach each other—that is, as the knives advance to their work the power exercised over them by the hand of the operator is mechanically increased.

Large Bore Ether Inhaler of the Clover Pattern.—Mr. G. W. Bampfylde Daniell, M.R.C.S.Eng., L.R.C.P.Lond., late Anaesthetist to the Tottenham Hospital, etc. (Edinburgh), writes: The illustration shows Dr. F. W. Hewitt's large bore ether inhaler of the Clover pattern, to which I have had certain slight changes introduced, by means of which nitrous oxide can be administered as a preliminary to ether after the same fashion as that often used with the ordinary Clover's portable ether inhaler, that is, the gas being admitted to the bag through a tap in the angle-piece. Chloride of ethyl can be conveniently administered for the same purpose by this apparatus, as described below. There being no angle-piece to Dr. Hewitt's modification, the tap difficulty has been got over by the following simple device. The metal bag-mount has been made deeper, and through the centre of its lower half a hole has been drilled. Round this hole is fixed a short metal tube over which fits a metal plug terminal (A) and to the latter is attached the india-rubber tubing conveying the nitrous oxide gas. Through the distal end of the central tube of the ether chamber—on which the bag-mount fits—a hole is also made, of the same size as the other (B). A little below this and to one side, is fixed a small metal stud, the use of this being to limit the rotation of the bag mount, which it does by reason of a small portion ($\frac{3}{4}$ in.) of the lower milled edge of the latter being filed away to a depth of about $\frac{1}{8}$ in. In adjusting the bag mount to the ether chamber, it should be so placed that the stud is in this notch. By rotating the bag mount to the left as far as it will go, the two holes come opposite each other and the gas can then enter the bag. By rotating in the reverse direction, the one hole slides past the other and thus the entrance is cut off. Oxygen can of course be given with ether in the same way. If it is decided to give ethyl chloride instead of nitrous oxide, all that is necessary to do is to remove the rubber gas tubing from the metal plug terminal and replace it by a small graduated glass phial, to which is attached a short piece of rubber tubing, having first measured into it a definite dose of the ethyl chloride. By gradually tipping up the phial, which can easily be done on account of its rubber tube, the fluid will enter the inhaler slowly, so that the vapour is presented at first much diluted, thus making the induction of anaesthesia less unpleasant to the patient, and quite satisfactory to the administrator, as coughing, holding the breath, etc., and struggling are avoided. The patient will not be conscious of any smell of the drug if the apparatus be properly managed, and especially if this form of tap be closed at the time the facepiece is applied. On the other hand, the ethyl chloride can be projected into the inhaler through (A) direct from the bottle, but this for some reason is not so good. The above-mentioned phial is the same as that used by Dr. Hewitt in his special gas and ethyl chloride apparatus. I have used this apparatus exclusively for the last seven months with results which are satisfactory, both as regards the nitrous oxide-ether sequence and that of the ethyl chloride-ether sequence. I have also used it a number of times for the administration of ethyl chloride alone, and it has this advantage—that ether can be used in succession, without any other apparatus, should it be required. I would like to add that my instructions were faithfully carried out and admirably executed by the makers of the instrument, Messrs. G. Barth and Co., of 54, Poland Street, London.



The annual meeting of the Medico-Legal Society will be held at 20, Hanover Square, W., on Tuesday next, at 9 p.m.

Introductory Addresses

AT THE

OPENING OF THE MEDICAL SCHOOLS.

KING'S COLLEGE.

By Sir John A. Cockburn, M.D., K.C.M.G.

THE BIOLOGY OF IMPERIAL FEDERATION.

[Abstract.]

Sir John Cockburn said that the world-wide possessions of Great Britain presented an unparalleled field of activity for every well-equipped medical student, and science itself owed much to the facilities for travel and research afforded by so vast and varied an area. Who could say what every department of knowledge would have missed if Charles Darwin had been born in an inland country like Switzerland, and had not enjoyed the opportunities for investigation, into all forms of life in every climate, which were thrown in his way in the navy of the greatest sea power.

Speaking of the growth of the Empire, he said that to the physiologist this unconscious working out of destiny was no strange matter. He knew well that Nature was ever chary of entrusting vital operations to human intelligence. All authorities were now agreed that there was a close analogy, if not identity, between the laws which governed the evolution of living beings and societies. Some even affirmed that a preliminary study of biology was necessary for the comprehension of sociology. Undoubtedly by such a course many phenomena which appeared paradoxical to the ordinary observer would be readily explained. The history of Australian federation furnished an example of such a paradox. The advocacy of some form of union originated even before the process of fission of Queensland and Victoria from the Mother Colony of New South Wales had taken place.

The simultaneous working of these apparently contrary forces of separation and union, however, was no puzzle to the biologist. To him differentiation and integration appeared as the complementary manifestation of the same evolutionary force, and he recognized that the union resulting from the co-operation of the differentiated Colonies was on a far higher plan of organization than if previous segmentation had not taken place. Similarly, when in the latter half of the nineteenth century statesmen set themselves deliberately to bring about the separation of the Colonies, it seemed as if the knell of the Colonial Empire had been tolled; whereas studied apathy and neglect at headquarters proved to be but the necessary conditions to develop strong, self-reliant, mobile, and firmly-attached members of the empire. It was merely a step in the devolution and decentralization necessary to produce the variation of a highly-developed organism.

The dictum of Turgot that Colonies were like fruits which clung to the tree only till they ripened did not hold, except in the case of simple social organisms. The Greeks, whose form of government was limited to a single city, knew no other method of colonization than by complete separation. The parallel to this was to be found in the unicellular protozoon. In higher and more complex structures subdivision was not attended with separation; the cells, although differentiated, remained attached to one another and performed various but co-ordinated functions. And here doubtless was to be found the parallel to the Colonial Empire of Great Britain. The concession of complete powers of self-government and local freedom had created sturdy individualities ready to be brought into co-operation and collective strength by the integrating force now so strongly manifested.

With regard to this consolidating process all undue haste should be avoided. In pathological processes which went from bad to worse, it was often necessary to bear in mind the maxim "when in doubt, operate"; but in physiological processes, where Nature usually guaranteed the result, the opposite was the rule; for example, it was well known that meddlesome midwifery was bad. Imperial federation must be a growth not a manufacture. "From lower to the higher next not to the top was Nature's text." At the same time, it must be borne in mind that Nature herself ran rapidly through stages of evolution which previous experiences had rendered familiar. Australian federation was a gradual growth, although eventually the constitution was framed in the space of a few months. It was in reality the result of ages of evolution; from the Achaean and other ancient leagues through the modern instances of the United States, Switzerland, Canada, and Germany, just as the embryo presents an epitome of the history of the race and passes through in a few days stages which thousands of ages in the first instance were required to accomplish.

Sir John Cockburn continued: At one time in our lives we all had tails and gill clefts in our necks, but we did not remain long in that condition. In ascending to Imperial federation, if we heedfully follow in steps already trodden our progress may be comparatively both swift and sure. We know that our union must be on the federal plan; no other is so flexible and firm or so suitable for maintaining a vast territory under that local self-government which constitutes the genius of our race, and from which is derived our colonizing power. Eventually there will be a pan-Britannic federal constitution with an Imperial Parliament consisting of a Senate representing the component nations, and an assembly with representatives in proportion to the population of each; together with untrammelled trade throughout the whole. But this goal is far distant and none of us may live to see the day. Meanwhile we must so traverse the intervening territory that each step may bring us nearer to it. The colonial conferences of 1887, 1897 and 1902 did much to prepare the way. In future these are to be periodical. Mr. Chamberlain, strong yet ever cautious, prevented many difficulties by consulting the Colonies in all questions affecting their interests. An advisory council consisting of representatives in London of the self-governing colonies might with advantage be formed as a stepping stone to an imperial council. The desire for closer union was never so strong as at present and advantage should be taken of it to extend in every direction mutual interest; this is the soil in which sentiment permanently flourishes, otherwise it is an exotic which a frost may kill. The strange heresy which prevents natural affection from manifesting itself in the channels of trade is rapidly dying out and the way will soon be open for such reciprocity as will eventually lead to intra-imperial free trade. Common prudence dictates that adequate steps should be taken to secure our supply of daily bread. At present Great Britain depends for nourishment on foreign sources which must be seriously affected or interrupted by a European war or possibly even by market operations. We are in the position of a patient whose supply of nutrient fluid is insufficient for his needs and requires to be sustained by a continuous transfusion of blood from other individuals. In an age of progress every social organism must either advance to a higher stage of organization or must retrogress. It is true we stand at the parting of the ways but there can be no doubt as to the course that will be pursued. It cannot be that the Empire in the recent thrill of realization attained self-consciousness only to witness its own decay. The divinity which has shaped our ends through so many ages can safely be trusted to guide our steps to the higher life of relationship which has ever been clearly our destiny.

UNIVERSITY COLLEGE, LONDON.

By Ernest H. Starling, M.D., F.R.S.,
Jodrell Professor of Physiology.

LONDON'S DEBT TO MEDICINE.

[Abstract.]

University College is one of the last schools to retain the function of an introductory lecture, and each year one of the members of its Medical Faculty is appointed by his colleagues to give a lecture on some subject which shall be of interest to all members of the school. I had hoped that on this occasion we might have had the advantage of an address from one of our distinguished *alumni* across the Atlantic, but, this being impossible, I have to take my turn in inflicting on you a lecture for which you will not be "signed up." In undertaking the task I have been aided and encouraged by the conviction that in this case the lecturer speaks, not as a physician or surgeon or physiologist, but as a member and representative of a body of men whose joint objects are the advance of medicine by research and the training of men who shall carry a knowledge of the science and the practice of the art throughout the British Empire. Every man's thoughts are to a large extent the resultant of his environment, the greatest factor in which is his colleagues; so an introductory address by any one of us may serve as an expression, not only of individual opinions, but also of certain of the hopes, faiths, and tendencies of the whole institution. It has seemed to

me, therefore, that it might be opportune to try and sum up what we owe to ourselves and to our profession.

At the beginning of this new session every one of us is commencing a new epoch, but the greatest intellectual awakening of all lies in store for those of you who are forsaking the school task to gain a glimpse during one short year into the romance of science. During the next few months the grey-green environment in which you have grown up will reveal itself in a new aspect. Those of you who have eyes to see will recognize that you have not seen until now, and that in the whole world there is nothing which is ugly or uninteresting. The following two years of your life will be taken up with the study of man. In anatomy, from lectures, books, but chiefly by practical work, you will gain an exact knowledge of the manner in which the body is built up. The functions of each organ and the laws which regulate and co-ordinate the activities of the various parts you will learn in the department of physiology. During the study of this latter science, which is the most difficult of all, you will, I hope, learn one thing which should influence your whole future studies: I mean scientific method and the attitude of mind which is a necessary condition of this method. Its first attribute is humility—a consciousness of the immense disproportion between what you know and what has yet to be known. Such an attitude will cause you to regard every case as something new and to be studied. Even if you make no discoveries, every case will bring to you something new, and so long as you continue a man of science every year of your life will make you a better practitioner. Many of the facts which you will learn in physiology will seem to have little relation to the problems in the wards; but that will not matter if you learn in the physiological laboratory to regard every case as a problem to be studied by exact methods.

If, in this way, you pursue the science while you are practising the art of medicine, I believe that there is no one of you who will ever regret his choice of a profession. Though few will obtain the money value of their services, all will make a livelihood, and some may attain a fortune and the social recognition of professional success. The same, however, can be said for most professions. Your special ground for congratulation is that in your profession your work will be your pleasure. The possession of power over life and death, the power to bring comfort and relief to other men in their times of need, far outweighs any money equivalent. Medicine is really the aristocrat of professions, since every one of its members works in the first place for his own pleasure, and only in the second place for monetary gain. This will be your debt to medicine—namely, your livelihood, and a life spent not in the pursuit, but in the possession, of pleasure.

Still greater is the debt of the community at large: for from the practice of medicine, and through the improvements in hygienic conditions which owe their origin to practitioners of medicine, the duration of life has been increased ten years. The profession being paid merely for its care of disease, almost the whole of the work it has done in the prevention of disease has been a free gift to the community. Thus there is a twofold debt to medicine, on the part of the profession and on the part of the public. What is the currency in which this debt ought to be paid? It is quite evident that it devolves on us, the trustees for the medicine of to-day, to point out how this debt is to be paid. It is our duty to see that our trust thrives, and to ensure that the science of medicine shall be handed over to the next generation in a better condition than we received it from our fathers. For medicine is a live thing, and one that is only commencing its period of active growth. Its ultimate aim is the understanding of all the factors involved in the normal life of the individual, and in the deviations from the normal which constitute disease. Already the slight glimpse we have obtained into the conditions of the infective process has enabled us to prevent animal diseases by vaccination and to cure diphtheria and hydrophobia, and has indicated the paths along which we are to seek the prevention and cure of all infective diseases. But in all cases, for one thing that we know there are a dozen unknown which demand explanation; and the growth of medicine—the acquisition of control over life and death—depends on the assiduity and intelligence with which we seek to diminish their number.

What part do we in London take in this work? It is not possible to answer this question with any sense of satisfaction to our national pride. In no other country does the general practitioner receive so thorough and practical a training as in England, and in no other country are the ordinary medical practitioners such efficient and honourable masters of their craft. If we consider, however, the vast mass of material that passes through the London hospitals during the year, the actual contributions to the advance of medical knowledge which we glean therefrom are inadequate. It is true that the English physiological school is an active one and will bear comparison with that of any other country, but the function of this school is the discovery of general principles, and its results can serve only for a foundation on which the whole of scientific medicine must be laboriously built up. Many questions are crying out for solution, and all that is wanted is work in the wards by men trained in laboratory methods and willing to spend laborious days in their application to the problems of disease.

One would imagine that in London, with its Medical Faculty of over 400 members, all attached to schools of medicine, there would be no lack of such men. Yet such is not the case. Under present conditions a man, when he obtains a position on a hospital staff, even if not before, engages his consulting rooms at a high rental in some fashionable quarter. He imagines it is more to his advantage to wait for the crumbs which fall from the great man's table than to spend his time in adding to our knowledge of medicine. As a matter of fact, unless he has private means, this premature assumption of the rôle of consultant compels him to spend all his spare time scraping together the means for maintaining the appearance of affluence which is supposed to be a necessary condition of success as a consultant. In the course of years, with increasing income, a certain amount of leisure becomes possible, but it is too late; the man has wasted the reproductive years of his life, has lost touch with the exact methods of the laboratory, has been left behind by the advances of the collateral biological sciences. He may now become a respected West-end consultant; he will never add anything to the science of medicine.

Of the few men in London who are *making* medicine, but a small proportion have the care of patients or are in actual contact with the problems of disease. They have little influence on medical affairs or education, and are practically unrepresented in the College of Physicians or on the Council of the College of Surgeons.

The reason for this state of things is twofold. First come the absence of academic ideals in London, and in the second place, the absence of adequate provision which may enable our best men to devote their early years to the advance of their profession by conscientious study and wholehearted research. Our medical corporations have grown up from trade guilds, our medical schools from a system of apprenticeship, and we have not yet been able to wipe off the traces of the trade brush with which they were tarred.

How are these conditions to be remedied? We must do two things, namely, introduce or strengthen the academic ideals in medicine, and alter or provide material conditions so as to enable the best among our students to devote their reproductive years to the advancement of the science of medicine. In Germany, where the medical schools have grown up inside the universities, the whole organization in the medical, as in the other, faculties is devoted to giving their first-class men a training which shall render them as fit as possible for adding to our knowledge of medicine. While the ordinary man goes into practice with a training far behind ours as regards its practical side, those who are ambitious to attain a high rank in their professions are content to spend ten to fifteen years as assistant to a professor of medicine or of one of its branches. No clinic, whether for in-patients or out-patients, is regarded as complete, without its suite of laboratories. The professor-director of the clinic may have, as at Munich, about a dozen assistants—some voluntary, some paid. Of these some are engaged chiefly with the care of patients, while others are working out in the laboratories the problems presented by groups of cases in the wards, the activities of the whole band being directed and co-ordinated by the head of the clinic. There are naturally grades in the assistantship, and the extent to which any worker can take his own line naturally depends on his abilities and his previous training. The leading motive of the institute is research—the acquisition of control of disease by increase of knowledge—and all the workers devote their whole time to this common end. In fact, their professional advancement depends on the success and diligence with which they carry out this work of research during their earlier years. It is not, therefore, to be wondered at that so many of the advances in our science

come from Germany. When the men who have served this long apprenticeship receive their reward of a professorship, they come to this position with a rich store of clinical knowledge and of experience in methods of investigation, and with a throng of questions to be worked out amid their larger opportunities. It is quite evident that a man in this position and after this training, with twenty or thirty hands to aid him, can if he chooses restrict himself to the setting of questions for research, and by taking private practice reap a golden harvest as the result of his pre-eminent knowledge and experience. Since, however, he is provided by the State with a modest competency as professor, there is no necessity for him to take any private practice at all, and many of the more active workers in that country confine such work to one or two hours in the day, the whole of the rest of their time being devoted to the wards and laboratories. It is to the lack of some such organization and not to any inherent superiority of the German intellect that our sheep-like condition in things medical is due.

How, then, are we to obtain the benefits of this system without sacrificing those of our own? No change should be introduced which could in any way impair the admirable training of our practitioners. For to teach the craft of medicine we need not only men of scientific attainments, but also those of ready hands and brains who, like the practical engineer, can apply the latest scientific discoveries, but yet by disposition are loth or unable to follow up a difficult causal nexus in a scientific problem. To remodel all our medical schools after the German system would be like throwing the baby away with the bath water. The work to be done is one of addition rather than of replacement.

The development of a school for the advancement of medicine could best be, and ought to be, undertaken by the University of London. Such a school must be in connexion with a hospital, in the control of which the University should have a prominent position. It might be founded by a modification of one of the existing medical schools, the remaining eleven being quite sufficient for the undergraduate teaching of London. In close connexion with it should be laboratories for experimental physiology and pathology, for bacteriology, for medical chemistry, for normal and morbid histology. I should be inclined to make no separation in any of these departments between normal and morbid, since there is no dividing line between the two sets of processes, and there is no principle which does not apply to both. The research of these principles would be the chief work of the laboratories, but the work would be excited and invigorated by the constant arrival from the hospital of problems which had arisen in the investigation of actual cases of disease. In addition to these experimental laboratories, there should be—preferably in the hospital building itself—a series of what I may call observational laboratories, rooms little, if at all, inferior in size to the wards themselves, where the conditions of the patients could be investigated with a scientific precision. This investigation would involve the possession of the trained technique which is at present demanded only of those who have to teach medical students in their early years, and would demand the provision of laboratories fitted up for graphic recording, chemistry, bacteriology, and the various optical methods of investigation. Every special department, whether for in-patients or out-patients, would present special problems, and would therefore require its own laboratory. In each case the head of a department, whether hospital ward or out-patients, would be a university professor and director of the associated laboratory. In appointing him, the senate of the university would have regard in the first place to the eminence of the man and to the degree in which he had advanced his special subject by research. Provided that he was capable of inspiring those working under him, I should place no restriction on the extent of his private practice, since it is quite certain that a man whose life has been spent in the advancement of his subject would not sacrifice his life's work to the love of gain. Many a man, by an expenditure of an hour a day in his department, would produce more than another of duller calibre who passed his whole time in the direction of his pupils. But private practice should not be a necessity. You will remember Bacon's wise caution that the "most able and sufficient men for the generating and propagating of sciences" cannot be got, "except their condition and endowment be such as may content the ablest man to appropriate his whole labour, and continue his whole age in that function and attendance, and therefore must have a proportion answerable to that mediocrity or competency of advancement, which may be expected from a profession or the practice of a profession. So as, if you will have the sciences flourish you must observe David's military law, which was, 'That those which staid with the carriage should have equal part with those which were in the action.' So readers in sciences are indeed the guardians of the stores and provisions, whence men in active courses are furnished, and therefore ought to have equal entertainment with them."

In each department the professor would need the assistance of many workers, among whom the routine work in the care of patients and the conduct of the laboratory would be divided, but who would also be engaged in carrying out special lines of research proposed to them or approved by the head of the department. Some of these would be assistants appointed and paid by the university. The rest would be post-graduate students, men from all parts of the empire. There is no doubt that some of these men would make the advancement of medicine their life's work. The majority would, however, consist of men who, with the intention of practising later, recognized that five years spent in the thorough and patient study of disease is a better preparation for their life's work than kicking their heels in an empty consulting-room or writing superficial reports of isolated cases which can have no influence on the progress of medicine.

Such a school, while furnishing a means by which we could play our part in the international struggle against disease, could detract in no way from the present advantages of our London medical schools. Rather would it add to their efficiency by serving as a school for their teachers, a goal for the ambitions of their best men, and a centre for the spread of the scientific spirit throughout the whole medical profession.

It may be said that such a scheme would cost money. Of course it would. But the general public is already intensely interested, both from selfish and altruistic motives, in the increase of our control over disease. Every man in London, rich or poor, is indebted to some medical man, and influenced by his opinions. If the profession once realized its failings toward medical research and were unanimous in their advocacy of some such scheme as I have proposed for their remedy, there would not be the slightest difficulty in obtaining the necessary funds.

I have made no attempt to-day to draw up a detailed scheme for a post-graduate school, as I have wished rather to invite your attention to the gaps in our London medical edifice and to point out the general lines along which we must proceed in order to fill them up. The important thing at present is for the profession in London, and especially the Medical Faculty of the University, to recognize the need for such a departure.

Some of you may think that I have put my case too hardly, and that my complaint is least of all justified in this theatre, since at University College scientific achievement has always been regarded as the best recommendation for the hospital staff. But I would remind you that my title is "our debt to medicine." We shall not arrive at this by dwelling upon our assets. The endeavours which are being made for the scientific study of disease in our schools are steps in the right direction, but are insignificant when compared with the sacrifices made in other countries for the advancement of medicine. We want to be ahead of and not behind these nations, and it is not by dwelling on our perfections that we shall achieve reform or awaken Londoners to the needs of the medical profession. Confession and repentance must precede amendment, and a consciousness of our deficiencies is a necessary preliminary to carrying out any scheme for their remedy.

CHARING CROSS HOSPITAL.

[Sir Charles Wyndham presided on October 1st at the opening of the Charing Cross Hospital Medical School. After the Dean, Mr. Waterhouse, had read his report and Sir Charles Wyndham had presented the prizes, he delivered an address. After some introductory remarks, in the course of which he recalled the fact that he was a legally qualified member of the medical profession, Sir Charles Wyndham continued as follows:]

Gentlemen,—My first counsel to you may seem commonplace: most good advice is. I would urge you to put before and above everything else the primary virtue of loyalty to your profession. I do not mean mere sticking to one another. Valuable as this quality is, it may mean or may degenerate into nothing better than trade-unionism or the slavish

bondage of etiquette to the prejudice of weightier matters. I mean loyalty to the great ideals of the profession. You cannot put them too high. You cannot have too exalted a conception of the vast importance, the nobility, I would almost say the sanctity, of your vocation. There is none to surpass it in the purity and unselfishness of its aims, the multitude of points at which it touches life or the intimacy of its relations to the community, the household and the individual. "Man," said Bacon, "is the minister and interpreter of Nature." The medical art is the minister and interpreter of man. Your influence over the lives, thoughts, pursuits and desires thus laid before you will be enormous. You will be conversant with the simple annals of the poor and the inner lives of the great. You will be welcomed as a friend in the cottage and you may stand on the steps of a throne: blessed by the lowly; desired, even sometimes feared, by the mighty. More to Louis XI than all the remonstrances of his counsellors, the denunciation of his confessor, the relics of the saints, or the leaden images of the Virgin above his brow, was the uplifted finger of his physician. And the interaction of body and mind is such that no one can treat the one without treating the other too.

There have been some extremists who have held that all bodily states are pure creations of the mind; others that all mental states are merely products of the physical organism; or, as Condorcet tersely puts it, "Virtue is a gas and poetry a secretion." Each of these extreme theories has long since been discarded, and it is now recognized that by processes, mysterious in origin but discernible in action, mind and body determinate and mould one another, whilst the empire of medicine dominates both for the preservation of the lives and happiness of its subjects. In exact proportion therefore to the vastness and stringency of this empire is the responsibility of its administrators and the need for those essential qualities of watchfulness, tact, sympathy, and discretion. But do not let this seduce you into even the faintest suspicion of misusing the dominion which you will necessarily possess over the lives and interests of those committed to your charge—whose habits, modes of thought, and human weaknesses will be an open book to you. It is because this danger is so insidious that the law in its wisdom has placed the relation of doctor and patient in the same category as those existing between the priest and penitent—the solicitor and client; not because doctors, solicitors, and priests are dishonourable men or undeserving of grateful recognition, but because the mere existence and intimacy of the relation raises of itself the presumption of supremacy on the one side, subjection on the other. Do not forget either that you are frequently the repository of private and family confidences, often withheld from the friend or the priest, the husband or the wife, the son or the father; needing on your part the utmost delicacy and discretion. It is sometimes dangerous even to whisper to your nearest and dearest the secrets of the sick room.

On the other hand, do not cultivate reticence at the expense of other and equally important qualities. Science demands courage also from its votaries. I do not mean physical courage. It is quite unnecessary to speak of physical courage when addressing a body of young Englishmen entering a profession whose annals blaze with the records of heroism on land and sea, at home and abroad, on the field of battle, in the hospital, the wilderness, and the slum. I mean moral courage. In this age, when the smaller vices are multiplying, each with its attendant Nemesis of disease, have the courage to call things by their proper names. If a patient courts death or misery by drink, drugs, or vicious life, tell him so in the plainest terms. Do not disguise the truth by some euphemistic Greek phrases ending in "itis"—phrases which fall weakly on one coward's ears and issue lightly from another coward's lips. To gloss over the vice which causes, nay is, the disease, and thereby encourage its continuance, is high treason to your profession. There are occasions when silence is not golden—cases to which an agreeable bedside manner is less appropriate than a dash of the caustic, sturdy honesty of an Abernethy. These moral requisites of your calling are summed up in the embracing virtue of loyalty—to your profession, to your patients, and to yourselves. No less exacting, however, are the demands made by your vocation upon the intellectual side of your nature. Never was there a time in the history of the healing art when greater alertness and versatility of mind were required by its practitioners to cope with the ever-increasing rapidity of development. Life as it is to-day, when we contrast it even with what it was in the early part of the Victorian era, has become a thousandfold more complex, and it will tax all your energies to keep abreast of this growing complexity. New pursuits, new habits, new vices and their consequences, new diseases, on the one hand have provoked new theories; new methods, new remedies on the other. Each successive invention, whether for utilitity or amusement—railways, lawn tennis, cycles, motor cars, even the fascinating game of bridge, if too fascinating—the growing recourse to opium, chloral, morphine, cocaine, ether, and other deadly poisons—each has carried with it its special ailment and demands its special treatment. Increasing variety of disease demands at your hands increasing resourcefulness; and it will be your own fault if, with such armouries and stores as are ready to your hand, you are caught by the enemy tripping.

At the same time everything will depend upon yourselves. Material resources will be nothing without the individual brain. Lectures and books are mere baggage unless properly applied, whilst there is one book of which not this or any other institution has the copyright—the vast volume of human life which lies open to the exploration of any of you. And it is worth every effort on your part. You will have the sympathy and appreciation of every one to help you. Never has your profession stood higher in man's estimation than now. You have on the one hand the most practical Sovereign of the day, our King faithfully interpreting to you the sentiment of his subjects, and on the other hand the voice of the nation to sustain you. The large space you occupy in men's minds and hearts is, as you see, reflected in modern literature and art. The physician has outlived the satire of Molière. To-day the painter, the novelist, and the dramatist vie with each other in doing homage to his character. Remember the sensation caused by the picture which a few years ago adorned the walls of the Academy—the doctor fighting for his patient's life through the long watches of the night and inch by inch disputing the ground with Death. As on canvas so in print and upon the stage the physician and the surgeon are proclaimed the friends of men to be loved for the good they do, not, as used to be, the enemies to be feared for the evil they may do. But do not forget that though you start with the goodwill of men and with vast scientific achievements and discoveries at your back, there are still many unsolved problems to stir your ardour. Alexander's lament need not be yours; there are still many worlds for you to conquer. Though you wend your steep triumphal way to the Capitol with many a captive bacillus at your chariot wheel, there are many more which still elude your vigilance and do not own your sway. Which of you, I wonder, is destined to win imperishable fame as the discoverer of the definite cure for our national scourge, consumption? Whence will come the living radium to burn out that fell destroyer cancer?

Gentlemen, it may not be given to all of you to establish epoch-making discoveries, or write great books, or become fashionable physicians. Harley Street is not long enough to accommodate every one of you, but it is open to all of you to descend into the arena and contribute your quota to the ceaseless conflict. For many as are the mysteries which the healing art has fathomed of late, they are as nothing beside that vast, bitter, unplumbed ocean of human disease which still ceaselessly throbs and tosses on the rocky bed of pain and moans around you with its many voices.

ST. GEORGE'S HOSPITAL.

THE introductory address at St. George's Hospital was given by Dr. Dakin, the Obstetric Physician. He alluded to the improvement which had taken place of late years in the class of men who practised medicine, especially in his own branch, and said that obstetrics had shared fully in the general advance shown by medicine. Puerperal fever was now an entirely preventable disease, but this fact, unfortunately, was not fully recognized by those in supreme authority. During the last 40 years the proportion of known cases of the disease to births had not decreased. It had even increased, although as a disease of lying-in hospitals it was now unknown. The importance of the disease was not limited to the number of deaths it caused, for many women who recovered were crippled for life. Its continued persistence, in the speaker's opinion, was due to three causes: first, ignorant and dirty nursing; secondly, imperfect appreciation of the principles of antiseptic midwifery by many of those who began a medical career before the value of these principles had been fully realized; thirdly, that a worthy place was even yet denied to the teaching of midwifery in the curriculum of the medical student.

LONDON SCHOOL OF MEDICINE FOR WOMEN.

The opening address of the London School of Medicine for Women was given by Dr. Elizabeth Pace, who sketched the history of the medical women's movement from its inception. Its leading events were the admission to the *Register*, some 60 years ago, of Dr. Elizabeth Blackwell, who had studied in America, shortly followed by the granting of its licence by the Apothecaries' Hall, London, to Mrs. Garrett Anderson. Since after that no further qualifications were obtainable in London, aspirants moved to Edinburgh, but failing there to obtain the necessary facilities they returned to London, where in 1874 the first medical school for women was opened in Handel Street. In 1877 the Royal Free Hospital agreed to supply the clinical teaching it required, and in 1876 Mr. Russell Gurney's Bill enabled all British licensing bodies to give diplomas to women. In 1878 the London University admitted women to degrees in all subjects, but the Scotch Universities did not yield until 14 years later. The English Colleges of Physicians and Surgeons and Oxford and Cambridge alone now kept their doors closed. The school of late years had greatly developed, and now formed one of the constituent schools of the London University.

OPENING OF THE WINTER SESSION IN THE MEDICAL SCHOOLS.

ST. BARTHOLOMEW'S HOSPITAL.

The old students' annual dinner took place in the Great Hall on Thursday, October 1st, Mr. Bruce Clarke occupying the chair. The company numbered 183 in all. The Chairman, in proposing the toast of "The Hospital and Medical School," referred to the crisis through which the hospital had lately passed, spoke of the close union which existed between the hospital and the school, and urged the necessity of pathological research as the basis of practice. The Treasurer was unavoidably absent, but Mr. Alderman Alliston in a lively speech spoke hopefully of the future, and warmly acknowledged the feelings expressed by the school towards the lay administration. Dr. Gee, in proposing "The Guests," described the late attacks as "very skilfully engineered by nobody out of nothing," and in coupling the name of Sir Arthur Rücker with the toast, represented the satisfaction with which the medical school found itself part of the University of London, and of its cordial wishes for the University's success. Sir Arthur Rücker (Principal of the University) described the great progress which the University had already made, and warmly complimented the hospital on the work of Mr. Butlin as Dean of the Faculty of Medicine. Mr. Butlin proposed the health of "The Chairman," and the latter that of the Secretary of the dinner, Dr. Herringham, to whose exertions the success of the evening was largely due.

CHARING CROSS HOSPITAL.

The annual dinner of the past and present students of the Charing Cross Hospital was held in the Grand Hall of the Hotel Cecil on October 1st. Mr. C. Carter Braine was in the chair, and covers were laid for about 120 guests. The Chairman, in proposing the toast of "The Charing Cross Hospital and School," referred with satisfaction to the fact that, as the anaesthetist to the hospital, he was now considered a member of the medical staff with a seat on the Medical Committee. Commenting on the great loss that the hospital and school had sustained through the retirement of their Senior Physician, Dr. Green, and of their Senior Surgeon, Mr. Astley Bloxam, Mr. Braine congratulated Dr. Mott and Dr. Murray on their promotion to be Physicians to the hospital. To fill the vacancies on the out-patient medical staff Dr. W. Hunter and Dr. Cecil Bosanquet had been appointed, and the place of Mr. Bloxam had been taken by Mr. Waterhouse, while to fill the vacancy thus caused on the out-patient surgical staff Mr. H. S. Clogg had been chosen. The total number of students in attendance at the hospital during the past year had been 172. A complete transformation had taken place in the hospital through the extensive rebuilding operations, and they would have in a few months a service of 300 beds and an institution as nearly approaching perfection in construction as was possible. Dr. F. W. Mott, in replying to the toast, reminded those present that though they might envy the buildings and appointments of the medical schools in the provinces, it had to be remembered that it was not the bricks but the brains inside that made a school successful. He was sure they were all glad to learn that the connexion of Dr. Green with the school as a teacher did not terminate with his retirement from the staff, because his colleagues to mark their appreciation of what he had done had instituted especially for him the post of Emeritus Lecturer on clinical medicine. Continuing, Dr. Mott said that 30 years ago he first heard the name of Dr. Green at University College when he read his book on *Pathology*, and he well remembered what a stimulating effect that work had upon him. After Dr. Fennell had also replied, Mr. Waterhouse proposed the toast of "The Visitors." He described the address delivered that afternoon at the hospital by Sir Charles Wyndham as a most memorable one in the annals of medical schools of London. He also announced that Sir Charles Wyndham had invited the 172 students of Charing Cross Hospital to fix a date to visit his theatre, when he would be delighted to receive them. In the course of the evening a reply was sent to Sir Charles Wyndham accepting the invitation. Mr. Freyer responded for the visitors, and, after Mr. Stanley Boyd had proposed the health of "The Chairman," a suitable reply from Mr. Braine concluded a very successful evening.

GUY'S HOSPITAL.

The annual dinner was held in the dining hall of the Students' Club, Dr. Pye-Smith, F.R.S., Consulting Physician to the hospital and President of the Club, in the chair, and about one hundred past and present students being present.

Dr. Pye-Smith, in proposing "Prosperity to the Students' Club," alluded to the phenomenal success of the School during the past year, especially at the London University; the published pass lists showing that 85 per cent. of Guy's students were successful as compared with a percentage of 45 per cent. at the other schools. He also congratulated the students on their successes in the field of sport during the past year, in having won nine out of the eleven challenge cups, which included the Rugby football cup, both Association football cups, the cricket cups, the cross-country cup, shooting cup, etc., a record which had never before being equalled or even approached by Guy's or any other hospital. He alluded to the importance of cultivating the body as well as the mind, and pointed out the happy association of the successes at the London University with those in the field of athletics. Speaking as he did at the end of a long career, he congratulated the present generation of students upon the improved conditions under which they were able to pursue their studies and their sports as compared with those prevailing when he entered Guy's; among other facilities he referred particularly to the splendid library due to the munificence of Sir Frederick Wills, one of the hospital governors.

Dr. Frederick Taylor then proposed the health of the guest of the evening, Mr. Robert Gordon. Mindful of the motto of the founder of the hospital, "*Dare quam accipere*," Mr. Gordon from the time he first became a governor had known how to give, and amongst his many benefactions were included the endowment of the Gordon Research Lectureship in Pathology, and the building of a new balcony to the surgical wards, which would prove of immense benefit to the patients.

Mr. Robert Gordon, who met with a most enthusiastic reception, in a feeling speech said that that night he felt he had come into the inner circle of Guy's life, and he appreciated what that meant as he had never done before. On the subject of education, he deprecated the tendency to cram, which characterized much of the teaching of to-day, and led to inefficiency. He was happy to think that men did not leave Guy's with a smattering of learning, but were stamped with the hall-mark of the true article.

Mr. Bonsor, in proposing the health of Dr. Pye-Smith, referred to that gentleman's advice at the time he, Mr. Bonsor, became Treasurer—to keep the hospital out of debt. He was afraid that he had not been able to follow that advice, nor did he regret this, for it would not have been for the good of any one to have left undone the great works which had been accomplished at Guy's since 1896.

Dr. Pye-Smith returned thanks in a charming speech, in which he referred to the epigrammatic nature of the remarks of the previous speakers, and offered a definition of an epigram:

> Omne epigramma sit instar apis: sit aculeus illi;
> Sint sua mella, sit et corporis exigui.

and translated as follows: "An epigram should be a little

thing, Small as a bee, with honey and a sting." He concluded with a saying attributed to Alphonso of Castile: "Old wood to burn, old books to read, old wine to drink, old friends to converse with."

ST. GEORGE'S HOSPITAL.

THE annual dinner of the St. George's Hospital Medical School was held on Thursday, October 1st, in the Whitehall Rooms of the Hôtel Métropole. The chair was occupied by Dr. Clifford Allbutt, Regius Professor of Physic at the University of Cambridge, who, in proposing the toast of the evening, expressed his conviction that the time had come when more research work must be accomplished at the great hospitals of the metropolis. The ordinary clinical material should be used, not only for the benefit of the patients attending the hospitals, but for the purpose of guiding scientific thought and enriching medical science. In this way it would be possible to make medical discoveries which would inevitably promote the well-being of the general public. To their infinite credit the Governors of St. George's Hospital had approved the principle that the medical men who gave their entire time to the services of the hospital in positions such as that of medical registrar should do so free from financial embarrassment. That was a new departure, and they were all agreed that it was eminently calculated to advance English medicine.

The toast was responded to by the Dean, Dr. Arthur Latham, who said he was glad to state that St. George's Medical School still stood at Hyde Park Corner. (Loud cheers). Success had attended their efforts in every department during the past year, and the prospects of continued success were never greater. Over fifty men in the school had obtained qualifications during the previous year, and no less than 86 per cent. of the men who had presented themselves at examinations had passed. As Professor Allbutt had said, owing to the enlightened policy of the Governors, St. George's Hospital Medical School was now in a position to offer greater facilities to men who wished to devote themselves to medical and surgical research after obtaining their qualifications than any other hospital in England.

A number of other toasts were honoured. Professor Sims Woodhead, responding to the toast of "The Guests," said that he esteemed it a great honour to be allowed to dine with St. George's men. He congratulated the school on its well-deserved success and on its virility.

During the evening it was suggested that a hearty greeting should be sent to Dr. E. A. Wilson, who was icebound in the Antarctic Circle on board the *Discovery*. The suggestion met with the approval of the Chairman and the enthusiastic endorsement of everybody attending the banquet.

KING'S COLLEGE HOSPITAL.

THIS dinner was held at the Hotel Cecil on Thursday, October 1st, and it proved to be a highly successful and interesting function, the chair being occupied by C. H. Allfrey, M.D., F.R.C.S., of St. Leonards-on-Sea. The Chairman was supported by the Rev. A. C. Headlam, D.D., Principal of King's College, London, Sir John Cockburn, K.C.M.G., M.D., who in the afternoon had given at King's College the opening address, the majority of the present staff, and a large number of past and present students, covers being laid in all for 120. Early in the evening complimentary messages were conveyed to and received from the past and present students of Charing Cross Hospital, who were at dinner in one of the adjoining halls of the hotel.

After the toast of the King had been duly honoured, the Chairman proposed "Prosperity to King's College and King's College Hospital." After speaking of the hospital in the days when he entered it in 1857, at the time when Todd, Budd, Farre, and Fergusson were members of the staff, he alluded to the fact that he was the first house-surgeon at the time of the opening of the present hospital. He contrasted the conditions at that time with what obtains at present, particularly in the matter of laboratory accommodation. The medical staff were unanimously agreed that the old hospital which had done so much good work had had its day, and must be replaced by a building more in accordance with modern ideas, and in a situation where it was more needed. The recent improvements in the Strand neighbourhood had largely denuded that district of its poorer inhabitants, and from the point of view of the medical school a due supply of clinical material would be more readily forthcoming in a more densely populated portion of London. Though all must regret the severance of old associations, it was impossible not to see that the transference of the hospital to a new site was necessary both in the interest of the public and of the medical school. The foundation of a King's College Hospital Masonic Lodge was mentioned as a means of strengthening that *esprit de corps* which had always characterized the students of King's.

The response to the toast was given by the Principal of the College.

The remaining toasts were "The Navy, the Army, and the Auxiliary Forces of the Empire," proposed by Professor W. Watson Cheyne, C.B., F.R.S., and replied to by Colonel A. T. Sloggett, C.M.G.; and that of "The Chairman," which was proposed by Professor Urban Pritchard, M.D. The evening was enlivened by some capital songs rendered by Messrs. Turtle, Reid, and Hughes.

LONDON HOSPITAL MEDICAL COLLEGE.

THE 119th session of the Medical College was opened on Thursday, October 1st, with the usual old students' dinner, held in the Library of the College, Mr. Lewis Mackenzie, F.R.C.S., of Tiverton, being in the chair. Over one hundred old students sat down to dinner, among those present being Mr. W. Douro Hoare, Chairman of the College Board; Mr. Jonathan Hutchinson, F.R.S., Dr. Sansom, and others.

The Chairman, in proposing the health of "The King and Queen," emphasized the great interest shown by Their Majesties in hospitals in general and the London Hospital in particular. The King had taken the greatest possible interest in the "London Hospital," and had lately opened the out-patient and special departments, which were now in full use; while the Queen had most graciously presented the apparatus for the Finsen light treatment, besides giving large sums in money, and most graciously showing a personal interest in the working of the hospital.

The Chairman, in proposing the toast of the evening, spoke of the numerous improvements carried out since he was a student, and particularly the improvements which had lately been completed. He said he rejoiced greatly in being able to repeat the words of the Chairman of the previous year, when he congratulated the old "London" students upon the continued improvements in the hospital and College, and also that he was able, as was the case last year, to mention honours that had been conferred on a member of the staff.

Last year the Hon. Sydney Holland, Chairman of the hospital, who was present, enumerated the number of improvements then completed, including the isolation block, the pathological institute, and new operating theatres, five in number. This year he was able to refer to another addition—namely, the new out-patient and special departments, which had been opened last summer by Their Majesties the King and Queen. In speaking of that new building as the out-patient department, he said that he felt that these words scarcely conveyed to old "London" students what it really meant. It was, in fact, an accumulation of special hospitals in every department in one building. He heartily congratulated the old students present on the numerous improvements that had been made to the old hospital, and the numerous benefits that were now open to the younger generation which was taking their place. He particularly alluded to all that had been done by the House Committee not only for the patients but for the staff and students. In alluding to the honour conferred upon the Senior Physician, Sir Stephen Mackenzie, he said that it was perhaps as popular an award of high honour as could have been made, and that he was sure that all present would deeply regret that their old colleague was not with them on that occasion. It was unanimously resolved to send a telegram from the table congratulating Sir Stephen Mackenzie upon his knighthood, and wishing him long life to enjoy it.

Mr. Mansell Moullin, the Senior Surgeon of the hospital, in replying, stated that although he could not count back so many years of the hospital as Mr. Lewis Mackenzie, he could remember the hospital a quarter of a century ago, and could fairly bear out the Chairman's statements of all that had been done. The hospital was indeed now thoroughly up to date in every way.

Mr. Jonathan Hutchinson also spoke, saying that he probably had had more experience of the London Hospital and hospitals in general than any one else present, and could thoroughly endorse the remarks made by the Chairman.

ST. MARY'S HOSPITAL MEDICAL SCHOOL.

The annual dinner of the past and present students was held in the Whitehall Rooms, Hôtel Métropole, on October 2nd, Dr. R. Farquharson, M.P., in the chair. There was a good attendance, 175 being present.

After the usual loyal toasts, the Chairman proposed "Prosperity to St. Mary's Hospital Medical School," saying the toast recalled old memories to him as a physician and former student of the hospital. The progress of St. Mary's during the last forty years had been extraordinary, and he attributed this to the strength of its staff, and the high traditions of work and duty which it had established. He recalled the services of the late Mr. Samuel Lane and Mr. James Lane, to whom the hospital owed so much, and congratulated the school on retaining the services of the third generation in the person of Mr. Ernest Lane. Many years ago Lord Randolph Churchill, when speaking of the hospital, commented to him on the absence of a suitable frontage. This disability no longer remained now that the new wing, with its fine frontage on Praed Street, was approaching completion. They must cherish the high ideals of their school, and good luck would come to those who worked for it.

The Dean (Dr. Caley), in reply, referred to the increasing influence of the past students in every department of professional work. Simultaneously with the completion of the new wing, the hospital authorities were doing everything possible to bring up to date the older portions of the hospital—the installation of the electric light now in progress and the reconstruction of the *post-mortem* room were instances of this. The same process had been going on in the medical school, notably in connection with the pathological, physiological, and chemical laboratories. Their aim was to combine sound organization with steady expansion. Like most metropolitan medical schools the number of new students had been steadily declining, but this year the tide had turned and there was a substantial increase, and the prospect for the near future was distinctly cheering.

Captain Leonard Rogers, I.M.S., replied for the past students and Mr. J. B. Rous for the present students.

Mr. Herbert Page gave the toast of "Our Guests," coupled with the names of Mr. Harben, Chairman of the Hospital Board, and Sir Arthur Rücker, Principal of the University of London. Mr. Harben had only recently been elected chairman of the Board, but no man was so much entitled to that position by his knowledge and practical interest in the hospital and medical school. The great end for which he strove was duality in unity, and in Mr. Harben's hands this end was assured. Sir Arthur Rücker was a most welcome guest, for they all knew that he was devoting himself to the Herculean task of the reorganization of the University of London, aiming to weld together into one whole the various teaching institutions of our great metropolis, to make the University something better than a mere Examining Board—a school of universal knowledge, an Alma Mater for the rising generation.

Mr. H. A. Harben, in reply, referred to the essential unity of the hospital and medical school, since a well equipped school that could retain the services of eminent and able teachers was an indispensable adjunct to a first-class hospital. He was quite sure that at St. Mary's everything would be done compatible with their resources to attain the highest possible standard. He was fond of comparing the medical with his own calling of the law—both required the exercise of high intellectual qualities, an intimate knowledge of human nature, and a high standard of professional honour; but he thought the doctor had the harder task, as the lawyer brought his mind to bear on facts ascertained by others, while the doctor had to ascertain the facts himself as well as interpret them.

Sir Arthur Rücker congratulated the school on the increase of its students, and was glad to say that there had been a general increase in the University entries; for example, in June there were 700 more, and in September 400 more, candidates for matriculation than in the previous year. The work of co-ordination had received stimulus from the work of Dr. Waller in relation to the higher teaching in physiology.

Sir William Broadbent, in proposing the Chairman's health, congratulated him on his varied and successful career—first as a surgeon in the Coldstream Guards, then as physician to St. Mary's, and of recent years in Parliament, where he had worked hard to increase the efficiency of the army and other Government medical services.

The Chairman, in replying, said that many years ago he had severed his connexion with St. Mary's Hospital with great regret, and that was only atoned for by anything he might have done to promote the welfare of the medical profession.

MIDDLESEX HOSPITAL MEDICAL SCHOOL.

Adhering strictly to precedent, the past and present students of the Middlesex Hospital and their friends assembled on Thursday, October 1st, at the Trocadero Restaurant to celebrate the commencement of the academical year. There was a good attendance, 141 sitting down to dinner, under the chairmanship of Dr. William Pasteur, Physician to the hospital. The guest of the evening, the Hon. Mr. Justice Wills, had presided during the afternoon at the opening ceremony in the Medical School, distributing the scholarships and prizes with most charming geniality and interest. Lord Sandhurst, having resumed his old position in the direction of affairs as Chairman of the Weekly Board, was also present with other members of the governing body and of the consulting and active staff.

After the usual loyal toasts had been duly honoured, that of the "Services" was proposed by Sir Richard Douglas-Powell, who referred to numerous officers in all branches of the public service who had received their medical education at the Middlesex Hospital. Lieutenant-Colonel M. W. H. Russell responded, alluding to the services of the Medical Department in the field during the recent war, and acknowledging the appreciation of the *personnel* of criticism which had fallen on the former system of the Royal Army Medical Corps, and referred to the recently extensive modifications and reforms.

The toast of "The Middlesex Hospital and the Medical School" was then given by the Chairman, who dwelt upon the steady progress of both, and referred to the recent additions and improvements, which rendered the school not only complete in all essentials but placed it in the first rank in regard to research and laboratory equipment.

Lord Sandhurst, K.C.S.I., Chairman of the Weekly Board, replied on behalf of the hospital, mentioning his unbroken association with medical organization, since the interval between his former and present tenure of the chairmanship had been devoted to the Presidency of Bombay during a period of plague and famine; there he had still further proof of the devotion and sympathy of the members of the medical profession.

Mr. John Murray, the Dean, spoke on behalf of the Medical School, the achievements of which he had narrated in the afternoon.

"The Health of the Past and Present Students" was proposed by Dr. Sidney Coupland in an excellent speech full of reminiscences of an earlier phase of hospital work, and was replied to by Mr. Edward Norton and Mr. W. A. Rees, representing respectively the former and present pupils of the school.

"The Health of the Visitors" was proposed by Mr. Stephen Paget in a humorous and appropriate speech, and responded to by the Hon. Mr. Justice Wills and by Mr. Wilhelm Ganz, under whose direction, with the assistance of Mr. Bovett, Mr. Hugh Peyton, and Mr. Charles Deacon, a most enjoyable musical programme was given.

With the toast of "The Chairman, Dr. William Pasteur," proposed by Mr. Pearce Gould, and feelingly acknowledged, a most enjoyable function terminated shortly after 11 p.m.

UNIVERSITY COLLEGE HOSPITAL.

The annual dinner of old and present students of the Faculty of Medicine of University College, London, was held on October 5th at the Hotel Cecil. Dr. W. Rigden was in the chair, and covers were laid for about 140 persons. Dr. Roberts proposed the health of Mr. John Tweedy, whose unavoidable absence they all regretted, and referred to the fact that he was the first oculist who had had the honour of filling the post of President of the Royal College of Surgeons. The Chairman, in proposing the toast of "The Medical School and University College Hospital," gave an interesting historical account of these institutions, and concluded by reference to the question of medical defence being taken up by the British Medical Association; in his opinion that work would be better done by voluntary societies. In replying to the toast, Dr. S. Martin, the Dean, referred to the need in England of men being attached to medical schools, and put in a position to investigate thoroughly the processes of disease and well paid for their work. He would give the plan of making University College a post-graduate institution hearty support if it meant that

research in medicine would be promoted by the University of London and if the necessary funds were forthcoming. Commercially, it would pay London to provide the funds for such research. After Mr. Christopher Heath had proposed the Chairman's health and Dr. Rigden had replied, the toast of "Mr. Johnson and Dr. Shaw, the Honorary Secretaries of the Dinner," was given by Dr. Rayner. Mr. Johnson briefly replied. In the course of the evening Dr. Beevor, Dr. Stoddart, and Dr. Roberts sang several songs.

ST. THOMAS'S HOSPITAL.

The old students' annual dinner was held on Friday, October 2nd, at the Hotel Cecil, Dr. C. J. Cullingworth being in the chair. The gathering was a large one, 152 being present. Among those unable unfortunately to be present were the Treasurer of the hospital, Mr. J. G. Wainwright, owing to ill-health, the Lord Bishop of Rochester, Sir Arthur Rücker, and Dr. Colman.

After the usual loyal toasts had been duly acknowledged, the Chairman proposed "St. Thomas's Hospital and its Medical School," showing in the course of his speech how the hospital was being kept to the fore by the recognition of the governing body that all modern improvements must be introduced so as continually to ensure that the treatment of their patients should be the most satisfactory possible. He coupled with this toast the names of the Senior Almoner (Mr. A. P. Boyson), who replied on behalf of the Treasurer, and expressed the desire of the governing body to do their best, and Dr. H. G. Turney (the Dean), who replied on behalf of the Medical School. He pointed out the satisfactory progress that had been made in all directions during the preceding school year, of the efforts of the staff to maintain a high standard of teaching as evidenced by the new clinical theatre, by the extension of the pathological department, and by the increased opportunities offered for post-graduate work.

The Chairman's health was proposed by Dr. Sharkey, who in suitable terms expressed the feelings of his colleagues and of old students towards the Chairman, and said how from the moment Dr. Cullingworth left Manchester he became "a St. Thomas's man."

The Chairman, in a few words, thanked all present for the honour that had been done him, and said how he valued the good wishes that had always been extended to him.

After the dinner the gathering resolved itself into a *conversazione*, when old friendships were renewed, and reminiscences of student life thoroughly enjoyed.

UNIVERSITY OF BIRMINGHAM.

The winter session of the Medical Faculty of the University of Birmingham was commenced on Monday, October 5th. The opening of the session was inaugurated by a *conversazione* held by the Dean and members of the Medical Faculty.

The reception took place at 7.30 p.m., the Dean, Professor B. C. A. Windle, receiving the guests. Among those who were present were the Principal of the University, Sir Oliver Lodge; Sir Victor Horsley, who was to deliver the inaugural address; Professors Carlier, Saundby, Bennett May, Barling, Leith Foxwell, Taylor, Morrison, Whitcombe, Priestley Smith, and a large number of the various lecturers and demonstrators in the School.

Invitations had been issued to, and accepted by, more than three hundred medical practitioners of the city and surrounding districts, and these with many others, past and present members of the Birmingham Medical School, attended.

After the reception the members adjourned to the large Medical Theatre, when under the presidency of the Dean, and before a large audience, Sir Victor Horsley delivered his inaugural address. The address, which dealt with the aims and means of a modern university, will be published in full in a future number of the British Medical Journal. Like all addresses given by Sir Victor Horsley it showed a consummate mastery of the subject with which it dealt, and was full of sound advice. Sir Victor particularly laid stress on the imperative need of universities in the present day of State aid—a need which must be satisfied in the near future if the objects and aims of their existence were to be fulfilled.

The address was listened to with wrapt attention. At its close, the Principal of the University, Sir Oliver Lodge, rose and proposed a hearty vote of thanks to the giver of the address. He fully endorsed the remarks Sir Victor Horsley had made as to the specialization of universities, and assured him that the University of Birmingham welcomed the advent of new universities. State aid was at present the urgent need of practically all universities, and if he did not feel very sanguine that such aid would before long be forthcoming, he would soon weary of university finance and the difficulty there was in collecting money for their pressing necessities.

Professor Barling seconded the proposed vote of thanks, which was carried by acclamation; and Sir Victor Horsley said a few words in reply.

After the address an informal *conversazione* was held. Demonstrations were given by the curators of the museum on the more recent specimens added to the museum. Dr. Miller showed slides illustrating experimental tubercle in the rabbit. Professor Carlier exhibited a number of physiological slides.

VICTORIA UNIVERSITY, MANCHESTER.

The Victoria University, Manchester, continues the corporate existence of the old Victoria University, and on Tuesday, October 6th, the Whitworth Hall, Owens College, was the scene of a simple but impressive ceremony to inaugurate the new stage of the history of academic and university life in Manchester. In the absence of the Chancellor, Lord Spencer, the Vice-Chancellor, Principal Hopkinson, presided over the ceremony.

The Vice-Chancellor expressed the view that the old university had been of the greatest service to the districts to which it has administered, but it was possible to frame a broader constitution for the new University than could have been done a quarter of a century ago. In the new University one great factor was the representation of the municipal authorities on its Governing Board, and the hearty co-operation that was expected to spring up between them. Everything pointed to development of all the Faculties, and especially of the Medical Faculty, when the new Royal Infirmary was erected on its new site. For the first time the Lord Mayor of the city had become an *ex-officio* governor of the University, and the latter was now entering on a new era of greater freedom and responsibility. Its policy would be one of "wise opportunities," and every means be sought to adapt its actions and policy to the new conditions. It fame was not merely that of a local institution, and it drew its scholars from nearly all parts of the world. The new constitution was a consummation of the ideals of those who took the most active part in the agitation which led to the original foundation of the Victoria University, and thus enabled the students of the Manchester College to obtain degrees in their own town. The University, as newly constituted, still remained Victoria University. It was the same corporate body; but the conditions under which it would be governed in the future would be very different from those under which it had been working hitherto. One of the colleges had separated itself from them, and in the course of a year, at the longest, the other college would have separated also. He was not altogether sorry that the aspirations of those who took an active part in founding the first University were not successful at the time, because he believed the association of the other colleges had been without disadvantage to Owens College, and that if they had then had to frame a constitution for a university situated in a great centre of population, they would not have been able to frame so broad and liberal a constitution as now. Circumstances political circumstances at any rate—had altered, and, above all, Parliament in its wisdom had seen fit to entrust a large part of the duty of directing education to the city and county authorities, and they all recognized that the co-operation of those bodies with the governing body of the University was a necessary factor of success. They had under the new constitution greater freedom, and thus could adapt themselves to new conditions, and in framing a university policy they should always keep before them a clear idea of what they wished to become. He was not one of those who believed that it was possible to erect a university by laying it down like an ironclad: but little by little, by making its influence felt in the centre in which it was placed, it would grow in repute and fame, and eventually, they hoped, take a high position as one of the leading universities of the world.

The Lord Mayor and other members of the Corporation then gave the University their benediction, and promised to help it by every means in their power, and the Chairman of the Royal Infirmary Board spoke as to the double purpose served by hospitals. Primarily they had to provide for the treatment of the sick poor, but another and hardly secondary object was to provide clinical instruction for the medical

practitioners of the future. This, in fact, was as intrinsic a part of the work of the infirmary as the care of patients themselves.

The Master of Peterhouse (Dr. A. W. Ward) referred to those who had, a quarter of a century ago, worked and laboured for the establishment of a university in Manchester, referring to the work of Sir Henry Roscoe and others, and recalled the fact that the present Chancellor (Lord Spencer) was largely instrumental in obtaining the Supplemental Charter in 1883 whereby the old University was enabled to confer degrees in medicine and surgery. Concluding with a brilliant peroration, he addressed the numerous body of students at the back part of the hall, and hoped that they would be more fortunate than their predecessors, but still in some respects be like them—like them in possessing the spirit of hard work, and the spirit of loyalty, and in using their opportunities, and fearlessly—but not fearlessly of God—acquiring knowledge, and that wisdom which is greater than knowledge.

Sir Henry Roscoe referred to the small germ from which the mighty University had sprung, and considered the growth of Owens College one of the most remarkable facts of educational history.

Sir James Bryce stated that though he still had some doubts as to the wisdom of founding so many new universities, he had never doubted the fitness of Owens College to be a university. Like Bacon, it seemed to have taken all knowledge to be its province, and was the first of the educational colleges to admit women on the same terms as men.

YORKSHIRE COLLEGE, LEEDS.

The opening address at the Medical Department of the Yorkshire College, delivered on October 1st, by Professor Schäfer, of Edinburgh, is published in full at page 869. In the evening Professor Schäfer was entertained at dinner by the practitioners of Leeds and the surrounding district. It was clear to all that Professor Schäfer only lacked opportunity to become as renowned as an after-dinner speaker as he is as a physiologist.

ST. VINCENT'S HOSPITAL, DUBLIN.

Mr. R. F. Tobin, one of the surgeons, delivered the introductory address at the opening of the winter session in St. Vincent's Hospital, Dublin, on Tuesday, October 6th. He dealt at some length with the grievances of the Poor-law medical officers. In and out of season the profession had tried to force this question on the practical attention of the Government, but in vain. The all-importance of the issue and the lethargy of their rulers constituted the justification of the attitude of the profession towards the Poor-law Medical Service. Not in the interests of the individual or of the profession, but of the public weal, he said "join the great medical association, and for the present, at least, leave the Poor-law Medical Service alone.

A vote of thanks was moved by Dr. Hickey (New Ross), seconded by Dr. Cosgrove (Kilcock), and carried. Dr. M. F. Cox presided.

ENTRANCE SCHOLARSHIPS.

The following entrance scholarships have been awarded:—

St. Mary's Hospital Medical School.—Natural Science Scholarship, £145: G. E. Oates, St. Paul's School. Natural Science Scholarships, £78 15s.: (1) J. E. L. Johnston, Epsom College and St. Mary's Hospital; (2) W. E. Haigh, Bradford Technical College. Natural Science Scholarship, £52 10s.: D. W. Daniels, Wyggeston Schools, Leicester. University Scholarships, £63: (1) W. A. E. Dobbin, University College, Cardiff: (2) E. Beaton, Portsmouth Grammar School and Caius College, Cambridge. Epsom Scholarship: C. G. Galpin.

London Hospital Medical College.—First Prize, Entrance Science Scholarship, £120: Mr. W. H. Palmer. Second Prize, Entrance Science Scholarship, £60: Mr. J. E. Scudamore. Third Prize, Entrance Science Scholarship, £35: Mr. J. P. Johnson. Anatomy and Physiology Prize, Scholarship open to students of Oxford and Cambridge: Scholarship, £60, Mr. H. S. Souttar, University of Oxford; Proxime Accessit Hon. Certificate, Mr. H. L. J. Austin, University of Cambridge.

King's College, London (Faculty of Medicine).—Medical Entrance, £50: W. T. Briscoe and W. D. Sturrock (equal). Sambrooke (Science), £100: E. Gauntlett. Warneford (Arts), £100: O. J. W. Adamson.

CONTRACT MEDICAL PRACTICE.

Successful Medical Co-operation.

The Medical Aid Association which was started at Rawmarsh and Parkgate, on April 1st, 1901, came to an end on September 30th, 1903. The medical practitioners of the district asked for a fee of 5s. a member per annum for males of any age, and having stood most loyally together they have now the satisfaction of seeing the end of this objectionable association. As it had all the advantages to be derived from the official patronage of many of the Friendly Societies, and frequent laudatory references in a section of the local press, its collapse and the success of the local professional co-operation must be encouraging to others who are elsewhere engaged in a similar contest.

PREVENTION OF CONSUMPTION.

Manchester.

According to the *Cheshire Observer*, the Sanitary Committee of the Manchester City Council has given careful consideration to a proposal made by the Cheshire Milk Producers' Association that the Corporation should grant compensation in respect of animals slaughtered under inspection by the Corporation veterinary surgeon on account of tuberculosis of the udder. A deputation from the Association recently waited upon the Committee, and urged that some part of the loss caused by the enforced slaughter of these animals should be borne by the Corporation. The Milk Producers' Association had invariably advised farmers to notify promptly any disease of the udder that might occur in their cattle, and also advised them not to sell a cow after it had been condemned by the authorities.

The Sanitary Committee has not seen its way to accede to this proposal, but as a result of inquiries it has been found that certain insurance companies are willing to insure farmers against the risk named in the farmers' proposal.

THE PLAGUE.

Prevalence of the Disease.

India.

During the weeks ending September 5th and 12th the deaths from plague in India numbered 9,690 and 13,088. Out of twelve infected districts in eight plague is increasing, namely, in the Bombay Presidency where the deaths for the week ending September 5th numbered 7,544; Central India, 1,174; Berar, 233; Madras Presidency, 124; Central Provinces, 65; Punjab, 31; Calcutta, 17; and Bengal, 11. In the Hyderabad State during the week mentioned plague mortality decreased from 487 to 410, and in Bombay City from 94 to 81.

Cape Colony.

During the weeks ending August 29th and September 5th and 12th the plague reports in Cape Colony were as follows:

Port Elizabeth.—Fresh cases 1, 0 and 1; deaths, 0, 0 and 0; remaining under treatment, 2, 2 and 3.

East London.—Fresh cases, 0, 0 and 1; deaths, 0, 0 and 1; remaining in hospital, 0, 0 and 0.

No fresh cases of plague and no deaths from the disease occurred in any other town in the Colony.

Mauritius.

During the weeks ending September 24th and October 1st, the fresh cases of plague in Mauritius numbered 47 and 57, and the deaths from the disease 39 and 37 respectively.

Hong Kong.

During the weeks ending September 19th and 26th the fresh cases of plague numbered 1 and 2; and the deaths from the disease 1 and 2 respectively.

China.

From Niu-chwang, on September 14th, a severe epidemic of plague is reported to have occurred during the previous month. Several hundred deaths are reported, but the precise figures are unobtainable.

At Peitang, a town situated six miles north-east of Taku, plague and cholera are reported to be epidemic. Neither Taku nor Tien-tsin, however, has been affected by either disease.

Brazil.

From Rio de Janeiro, on September 14th, it is reported that there has been a recrudescence of plague, as many as 60 persons being under treatment in hospital. During the week ending October 6th 15 deaths from plague occurred in Rio.

Bequests to Hospitals.—Under the will of the late Mr. Walter Evans, of Darley Abbey, Derby, £1,000 has been left to the Derbyshire Royal Infirmary, £250 to the Derby Children's Hospital, and £500 to the Devonshire Hospital, Buxton.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1903.

SUBSCRIPTIONS to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, OCTOBER 10TH, 1903.

ANTIVIVISECTIONIST "STATISTICS."

THE columns of the daily press have recently contained a copious correspondence on "serum and disease," in the course of which our national mortality statistics have been called upon to support the statement that "the figures published at Somerset House continue year after year to show that the death-rate declines in those diseases for which the laboratory professors do not proffer their wonderful serums, and goes up in the diseases to which they apply them." This audacious statement is made by Mr. Stephen Coleridge, who continues his attempts to mislead the public, although his misstatements have been repeatedly exposed. There could not be better instances of logical irrelevancy and *suggestio falsi* than in the statement quoted above. It is irrelevant to argue that if the death-rate from a disease has increased, a new method of treatment which has been employed in that disease has been less successful than the treatment formerly employed.

Before such an argument can be based on the total death-rate from diphtheria per thousand or million of population, it is clearly incumbent upon the person advancing it to show that the patients who have died had been treated with that remedy at all or at a reasonably early stage of the disease. It might happen that all the fatal cases of diphtheria or none of them occurred among patients treated by antidiphtherial serum. What a triumph it would be for Mr. Coleridge if he could show that out of a given number of cases of diphtheria treated by antitoxin a larger number died than out of a given number treated under otherwise similar conditions without its aid. The fact that Mr. Coleridge does not attempt to put his statements to this obvious test indicates the futility of his whole argument. He is guilty of irrelevancy by advancing the death-rate from diphtheria per million of population as a measure of the efficiency of the treatment of the disease by serum; and he is further guilty of *suggestio falsi* by basing on this irrelevant argument the statement quoted above.

Mr. Coleridge is either profoundly ignorant of the epidemic movements of diphtheria or he knowingly suppresses facts having a most important bearing on his statements. He assumes that these epidemic movements are governed solely by the activity of public health administration or by the success of therapeutic measures. In the latter respect, according to him, the medical profession is much less successful than before it adopted the use of antidiphtherial serum. If, however, he had taken the trouble to inquire into the matter he would have discovered how fallacious it is to argue on the incidence of an epidemic disease year by year in the country as a whole. The epidemic curve for England and Wales is compounded of a large number of curves for different towns and districts which have reached their maxima in various years. Obviously, therefore, the curve for the country as a whole is "smoothed out" and does not represent the true epidemic course of the disease. Thus Mr. Coleridge implies that because antidiphtherial serum was "invented and put on the market in 1894," and because in 1891 the death-rate from diphtheria in England and Wales was 173 and in 1901 it was 273 per million of population, that therefore the "death-rate goes up in the diseases to which' the laboratory professors apply their wonderful serums.' But if he consults the table on p. xii of the Annual Summary of the Registrar-General for 1902 he will find that in London diphtheria attained its maximum death-rate of 740 per million of population in 1893, declining with the introduction in 1894 of antidiphtherial serum, until in 1902 it was only 250 per million of population. How is it, then, that the use of a remedy—we will assume it has been used equally in London and in the provinces (it has probably been used in a higher proportion of cases in the metropolis) which has been followed by a steady fall in the diphtheria death-rate in London has been followed by a much smaller fall of this death-rate in the provinces? The simple answer is that the epidemic reached most parts of the provinces after it had spent its full force in London. If Mr. Coleridge cares to pursue his investigation of metropolitan death-rates from diphtheria, he will find that in Finsbury the death-rate from this disease was 112 per 100,000 in 1893, and that it then steadily declined; that in Battersea it was 106 per 100,000 in 1893, declining to 10 in 1902; while, on the other hand, it was 117 per 100,000 in Chelsea in 1896 and 101 per 100,000 in the same year in Camberwell, only declining in these boroughs after 1896.

If we are to assume, as Mr. Coleridge does, that therapeutical success is the determining influence in producing these varying death-rates, it follows (on the assumption of fairly equal use of antidiphtherial serum as a remedy) that in two metropolitan boroughs this remedy caused a lowered and in two other metropolitan boroughs it caused an increased death-rate from diphtheria.

But it may be argued that the lowered English death-rate from diphtheria since 1893 is nevertheless still higher than in earlier years before antitoxic serum was known. Mr. Coleridge instances a death-rate of 173 in 1891 as compared with 273 in 1901. He might have gone further back and given the death-rate of 94 in 1872 the year of minimum mortality from diphtheria. It would have been still more satisfactory had he pursued his historical studies back to the year 1859, in which the English death-rate from diphtheria was 520 per million of population, a figure never afterwards reached. Thus in 1859 a death-rate from diphtheria occurred which was 78 per cent. higher than that of any year following the introduction of antitoxic serum as a remedy for this disease. On the antivivisectionist hypothesis this is only explicable on the supposition that the anticipation of the discovery of antitoxin thirty-five years later served to send up the death-rate from diphtheria, although its actual introduction in 1894 was followed by an immediate decline in the death-rate.

The fact is that diphtheria is a disease which, like influenza, becomes epidemic at irregular intervals; there have been only two great epidemics in England since statistics became available, one culminating in 1859 and one

in 1893. The absurdity of inferring that because the death-rate from a disease has increased (though in the instance of diphtheria it has actually declined since Mr. Coleridge's test year — 1894) the remedies for this disease are inefficient is patent. It would be equally absurd to say that because the death-rate from violent causes per million living has increased from 516 in 1888 to 540 in 1901, the increased precautions now taken in connexion with our Factory Acts, fire appliances, street regulations, and so on have been valueless. This can only be proved from the above figures after it has been shown that the causes of violent deaths have not operated to an increased extent in the more recent year, neutralizing a portion of the effect of the measures employed for their prevention.

Sufficient has been said to show the irrelevancy of the diphtheria death-rate as a test of the therapeutic value of antidiphtherial serum, unless—which has not hitherto been attempted—it is first proved that other factors, including those known under the general name of epidemicity, have not at the same time been operating in increasing the death-rate from diphtheria, or in preventing it from declining to the fullest possible extent. We have shown the falsity of the statement that the diphtheria death-rate has increased in England since antidiphtherial serum was introduced. The *suggestio falsi* that the use of this serum increases the fatality from diphtheria can only be proved by separating the statistics of those diphtheria patients who are treated with or without serum and those who are thus treated early and late in the disease. Abundant statistics of this kind are available. Mr. Coleridge carefully avoids them; he cannot be ignorant of them. The only true test of the success of treatment is the fatality or case mortality from it under a given treatment. It is a well-known fact that in the hospitals of the Metropolitan Asylums Board diphtheria has frequently broken out among the convalescent scarlet fever patients. In the years 1891-94, from 36.7 to 57.9 per cent. of the post-scarlatinal patients attacked by diphtheria died; in the years 1896-1902 the fatality fell to from 3.7 to 6.1 per cent. Before the introduction of antidiphtherial serum, "diphtheria assisted in producing the fatal issue in over 12 per cent. of the scarlet fever deaths;" after its introduction the deaths caused by post-scarlatinal diphtheria were reduced almost to the vanishing point. We have quoted these figures particularly because they are not open to the objection that milder cases of diphtheria are now more frequently diagnosed and notified than formerly. These are cases under skilled observation from the beginning; and those who are responsible for fever hospital administration have no doubt that the immense saving of life indicated above is due to antidiphtherial serum and to that alone.

Of course, Mr. Coleridge will continue to place "reliance on the Registrar-General's impartial figures in preference to those collected by persons who have theories to advance or serums to push." The medical superintendents of our large fever hospitals are entitled to at least equal credence with Mr. Coleridge. They are not restricted to any one line of treatment. The medical profession, as well as the Metropolitan Asylums Board, would welcome any treatment for diphtheria which could be shown to be more successful than that by serum. But with practical unanimity those who have used this serum are certain of its value, a value which is greater in proportion to the promptitude of its employment; and until Mr. Coleridge can advance more veracious statement and more relevant arguments than those he has hitherto employed, he will not prevent the continued administration of the most important remedy hitherto discovered for diphtheria.

HYGIENE OF GIRLS' SCHOOLS.

In an article under the title the Food Factor in Education, published in the British Medical Journal of August 22nd, attention was directed to the fact that not only in elementary schools, but also in proprietary and even public schools for boys, the dietary was often inadequate or ill adjusted. It appears well to recur to the subject, with special reference to schools for the daughters of well-to-do people. The subject is of great importance, since of late years a vastly greater number of girls are sent to boarding schools than was the case twenty or even ten years ago, and also because the whole character of a girl's education has been changed. The residential governess who could teach anything, from embroidering and singing to French and mathematics, has passed away; the standard in the best girls' schools in now practically the same as in boys' schools, and the subjects of instruction not very different. It is only natural that this should be the case in view of the fact that women now win their way into the medical profession and obtain posts in the civil service, in houses of business, as librarians, secretaries, and inspectors, and in addition take their share of work on public boards and committees. As is shown by the lists of the universities which have thrown their examinations and degrees open to women, a large and increasing number of girls are candidates, and many of them obtain distinguished positions.

How many break down on the way we do not know; apparently there is an impression that in boarding schools for girls of the well-to-do classes the general plan of the studies and the diet are all that can be desired. For instance, a recent writer, comparing the children of the well-to-do with those of the working classes, wrote: "They leave home a little later, they are perfectly fed, and they obtain when out-of-doors an equivalent of a sound gymnastic training." We fear that this is a very optimistic view. No doubt children of the rich leave home later than the children of the poor, but it is a well-recognized fact that they are far from being perfectly fed. Fees are paid for their schooling which entitle them to good feeding, but as a rule most girls complain that the meals are not palatable. There is nothing to find fault with in the quantity given, but too little attention is paid to its quality. Day after day meat is served too tough to be eaten, and there is in England a rooted custom in boarding schools of filling the girls up with dumplings, boiled meat puddings, dough-nuts, and boiled pastry. This is unfit food for children doing much brain work, and digestive troubles, anaemia, and muscular weakness often following as a consequence. When meat is only given once a day it should at least be of the very best quality; when it comes up raw and served without any attempt at making it appetizing, small wonder if tired girls after a long morning of brain work are often too nauseated to touch it. A good deal of blame is to be attached to directresses of schools for not keeping better cooks. It would only mean a difference of a few pounds a year, and the improvement in the health of their girls would be worth ten times that amount. We are supposing the present system of feeding really exists from thought-

lessness or from false economy, for we should be sorry to think that too tempting food is kept back on purpose.

Girls' schools are not behind boys' in the matter of "tuck." Every pupil takes hampers back to school with her at the beginning of the term, containing biscuits, cakes, fruit and often more substantial delicacies. These are usually eaten for supper, as practically no supper is provided, and we may remark that if milk is given to children during the morning it is usually charged to the parents separately. Bullying often goes on to get the food from the simpler ones, and a locked cupboard in the matron's room in which these things were kept in a first-class school, has been known to be broken open by the girls in search of food. If well-born girls, at an expensive "first-class" school, descend to stealing food, they cannot be what might be called "perfectly fed." As the mental and physical strain increases, the quality and quantity of the food should improve, but it is a fact that it does not.

In girls' schools much attention is now given to physical culture; not only do they go through regular courses in the gymnasium, but they play games such as cricket, football, hockey, and practise swimming, riding, fencing, rowing, skating, and dancing. These exercises all tend to improve their physical and moral strength, and should be encouraged, provided each child is subject to periodical medical examination, so that she shall not be allowed to do more than is good for her. Here again enough care is not exercised, and delicate children, too timid to protest, are compelled to join in exercises too tiring for them. A judicious distinction should be made between these and the lazy and indolent. A girl has often to pass through the critical period of her existence while at school, and if she is allowed to over-exert herself she may be rendered delicate for life. She cannot be expected to judge of the ill-effects upon her health of too violent exercise or too concentrated brain work; therefore special care should be taken by those who are responsible for her education. Provided intelligence is exercised, physical culture in every form cannot be too highly commended. It makes the mind healthy, aids in the development of the body, and girls who are wisely managed in this respect suffer far less from indifferent health than they did in the days when they led more sedentary lives. As possible mothers of a future vigorous race the physique should be jealously cared for and the brain not overworked. A woman can always continue to educate herself, but a bad constitution is incurable.

Large schools have special dangers. The girls should be divided into several groups under the care and superintendence of special governesses or house mistresses. In a school of, say, sixty managed under the usual system, or want of system, the girls cannot receive the individual care and attention necessary for them. The responsibility rests with the superintendent or head mistress, and the governesses are not anxious by interfering to make themselves disliked either by her or the girls. The whole school, irrespective of strength or weakness, will go to the playground and there they will all join in games possibly excellent for some but bad for others. If such a school were divided into four groups, each consisting of fifteen girls, and if each group were under the special charge of a mistress in a separate house, there would be some chance of their getting individual attention. She could better watch over their health, and if she saw that any of them were flagging or out of sorts she would see that they were not obliged to exert themselves more than was good for them. Each house would be almost like a small home, and the children would benefit morally, for the governess would get to know their characters and use her influence for good. They could be taught cooking, and might be allowed to entertain each other at the different houses. Their very sewing could be done with the object of making pretty or useful things for their house. They could read the newspapers in the common room and know something of current events. Then again, one group could challenge another in matches lending the stimulus of competition to their games. They might have gardens, which again would encourage competition. The system of separate houses exists at Cheltenham, and some other girls' schools where the numbers are too vast to cope with in one building. But the plan might be extended to schools of from, say, 50 to 100 boarders with the happiest results. It might be argued that the cost would be a drawback, but the plan supposes four smaller houses instead of one great one. The real difficulty would perhaps be to get suitable heads of houses, for women with special qualifications would be required. They should be self-reliant, tactful, fond of children; they should have a knowledge of hygiene, and should be able to talk with their charges upon ordinary subjects of interest. We venture to believe that such women exist, and that, given the opportunity, they would throw their whole heart into the task, thereby making the school life of both mistresses and girls more pleasant and profitable, for in this way the care and comfort of a home would be combined with school life.

INTERNATIONAL VIEWS ON THE PREVENTION OF TUBERCULOSIS.

A CONSIDERABLE share of the time of the Administrative Hygiene Section of the International Congress of Hygiene and Demography was taken up with the consideration of the administrative measures capable of being taken by public authorities in *la lutte contre la tuberculose.* A conspectus of these views presents many points of interest. Representative hygienists from the chief European countries read reports of what was being effected in each of these countries, and the reports indicate a somewhat wide diversity of opinion as to the most urgent and most efficient measures which are practicable. This is not surprising when we remember the complexity of the factors which have led to the enormous reduction of the mortality from phthisis in England. It is natural that some hygienists should lay special stress on the importance of measures directed to the removal of the evil sanitary and social conditions which in the past have caused so much mischief, and that others should be equally impressed with the importance of the direct control of infection. The two views do not involve any conflict of action. The occurrence of infection under certain conditions is admitted by all, and all can, therefore, unite in helping to prevent it, as well as in remedying overcrowding and defects of sanitation. On the question of the notification of phthisis there is some advance of opinion. While Dr. Brouardel, the French reporter to the Congress, does not distinctly recommend it, and Dr. Moeller representing Belgium is equally silent, Professor Pannwitz representing Germany, was of opinion that there ought to be obligatory declaration of change of abode by those having infectious discharges, an obligation which is stated by the Swiss reporters, Drs. Schmid and Carrière, to exist already in Davos. The English reporter, Dr. Newsholme, described the successful opera-

tion of voluntary notification of phthisis in certain English towns, and dwelt on the significance of the recent success of Sheffield in obtaining Parliamentary powers for the compulsory notification of phthisis.

Several of the reporters dealt with alcoholism as an important cause of tuberculosis. Dr. Brouardel's views on this point are well known, and Professor Landouzy laid it down as an axiom that "*l'alcoöl fait le lit de la tuberculose.*" In Switzerland, where the distillation of alcohol is a monopoly of the Federation, this doctrine receives practical application; for the profits must be returned *pro rata* to each canton, who in their turn must spend one-tenth of the sums received on an anti-alcoholic campaign, open-air treatment of consumption and holiday colonies being allowed to be included under this head. Dr. Niven has advanced the probable view that public-houses cause consumption, not merely by producing alcoholism, but by multiplying the chances of direct infection.

The inverse relationship between social comfort and tuberculosis was brought out by several reporters. Dr. Faber, of Copenhagen, was able to show a decline in the mortality from tuberculosis in that city in twenty-five years from 3.1 to 1.8 per 1,000, and he gave the first place in causing this reduction to the general increase of wages, involving, as it has done, improved conditions as to housing, etc., among the working classes. The English reporter drew attention to Sir Hugh Beevor's Hunterian Oration, in which he showed that the curves of price of wheat and of mortality from phthisis followed each other almost exactly. At the same time Dr. Newsholme expressed the opinion that this was not simply and solely a question of the price of food, but of improved comfort in every respect, especially as regards housing and clothing. The true association, in fact, was between poverty and tuberculosis, for "poverty not only prepares the soil, but also increases the closeness of contact and the frequency of opportunities for infection."

We have no space to speak of the holiday colonies for children which are in special vogue in Switzerland. Antituberculous dispensaries were fully discussed in our issue of September 26th, p. 769. There is nothing more in these antituberculous dispensaries than is already partially practised in an uncorrelated fashion in England; but the lesson to be derived from our study of these dispensaries is of the increased value of which direct and indirect preventive measures become possessed when they are properly co-ordinated so that there is no overlapping, no waste of energy, and no antagonism of effort.

There is an almost complete consensus of opinion that hospital treatment of consumptive patients is the key of the tuberculosis problem. The views of Germany on this point are well known. Even in Belgium antituberculous dispensaries are regarded as a relatively inefficient preliminary to sanatorium treatment: while Dr. Faber, of Copenhagen, concludes that "from a prophylactic as well as from a humanitarian and economic standpoint it is important to supply hospitals in such numbers that all applying can be admitted." The English experiment of admitting patients to a sanatorium for training rather than for cure was described; and Koch's statement at the London Tuberculosis Congress was quoted. Koch expressed the opinion that without doubt the exceptionally great decline of tuberculosis in England was owing in great part to the considerable number of special hospitals for consumption in England. When this statement was taken literally it was obvious that the number of special consumptive hospitals in England could not have had any considerable effect in bringing about the observed reduction. It was shown, however, that if workhouse infirmaries be included among the institutions for the treatment of consumption the case is otherwise. Thus, taking the example of Brighton, about 18 per cent. of the total consumptive cases are treated in the workhouse infirmary for close on a year before their death. In other words, during the most dangerous part of their illness they are not a source of danger to their families. While it is true that the isolation in workhouse infirmaries is not in every instance satisfactory, it is relatively greatly superior to what can be secured in the houses of the poor. We have here a factor in the reduction in the mortality from tuberculosis in England to which attention has not been sufficiently drawn, and it is one the extension of which is well within the range of sanitary administration.

[1] British Medical Journal, May 23rd, 1903, p. 1222.

THE RECONSTRUCTED CABINET.

The reconstruction of the Cabinet, if that is the right word to use, has placed a reformer in the office of Secretary of State for War. Mr. Arnold Forster, a grandson of Dr. Arnold, the Head Master of Rugby, and the adopted son of Mr. W. E. Forster, has been Parliamentary Secretary of the Admiralty since 1900, and has done good work in that office. He won his reputation as a critic of War Office administration and an advocate of army reform. He comes into office at a time when great improvements have recently been made in the position of the Royal Army Medical Corps, but he has a great task before him in placing the sanitary administration of the army on a satisfactory footing. The Secretary of State for War is advised in such matters by the Army Sanitary Committee, and to some extent by the Army Medical Service Advisory Board; we venture to think that the former Committee might be strengthened by a larger infusion of the lay element. We hope that Mr. Arnold Forster will give his attention to the need for the early appointment of sanitary specialists in all important army commands, so that the responsible authorities may have at hand expert opinion upon the innumerable questions affecting the health of the army which are continually arising. Mr. Brodrick, who vacates the office of Secretary of State for War, to succeed Lord George Hamilton as Secretary for India, will also, we hope, realize that among the problems which await his attention some of the most important are those having reference to the public health of India. There can, we fear, be no doubt that the rulers of that country, including the majority of the members of the Indian Civil Service have a very inadequate appreciation of their duties towards the people of India in this respect. Not only have we to recognize that the long-continued prevalence of plague is a reproach to the sanitary administration of the country, but the repeated outbreaks of cholera and the endemic prevalence of enteric fever and malaria call for the serious consideration of those who are in a position to take measures to bring these diseases under control. In regard to malaria alone there is an immense field for work, and we trust that one of the first steps that Mr. Brodrick will urge upon the Government of India is the appointment, sanctioned by the regulations issued the other day, of specialists in sufficient number to investigate the causes and prevalence of malaria in various districts of India. Climatic and other conditions vary so greatly in that vast peninsula that there can be little doubt that the means that should be taken to check, if not haply to abolish, these diseases must be different in different localities. The appointment of the Honourable Alfred Lyttelton, K.C., to succeed Mr. Chamberlain as Colonial Secretary has taken the political world by surprise. Mr. Lyttelton, who was Chairman of the Transvaal Concessions Commission, has also had other experience of Colonial

matters, and is known as a man of wide sympathies. The statesmanlike appreciation which Mr. Chamberlain showed of the importance of sanitary administration and of the need for investigation of tropical diseases will, we trust, be a characteristic of his successor also; in some of the Colonies, indeed, these questions are more pressing than any others.

THE FIRST ACT OF THE UNIVERSITY OF LIVERPOOL.

THE annual gathering to inaugurate the session of the medical school is always an event of interest in Liverpool not only to the medical profession, but also to the larger public which is interested in higher education. This year, however, the interest was unusually great owing to the circumstance that the Faculty of Medicine is now a Faculty of the new University of Liverpool, and that the opening ceremony of the Faculty, which took place on October 1st, was the first public function of the University since its foundation. The attendance was unusually large, and the address of Sir Dyce Duckworth, reported fully in our last issue, was listened to with rapt attention, and called forth frequent applause. The proceedings were opened by the Vice-Chancellor (Principal Dale), who observed that the University of Liverpool began its work that day, but that there would be no general celebration of the opening until early in November, when it was hoped that a formal inauguration, in which all the Faculties would take part, might be arranged. The Faculty of Medicine had a sound and strong claim to have the first voice in speaking from that platform, for the University of Liverpool was built on the foundation of University College, which in its turn owed its existence to the Royal Infirmary School of Medicine and to those who had founded it. To have taken part in that work appeared to have conferred the blessings of perpetual youth and vigour, and they were glad to see still among them those who as young men took part in the beginning of a movement which had done so much for higher education in Liverpool. He would remind the citizens and their representatives that they had their part in establishing the University, and he ventured to say that in it the citizens would have a new source of just pride. In conclusion, he expressed to Professor Paterson, who had retired from the office of Dean of the Faculty after nine years' service, the gratitude of all who had the welfare of the Faculty and of the University at heart. Professor Moore, the Dean of the Faculty, then presented his annual report, which showed an increase in the number of students entering. Sir Dyce Duckworth then delivered his address, after which the Lord Mayor proposed a vote of thanks to him. Dr. Glynn, Professor of Medicine, seconded, and after a few words from Sir Dyce Duckworth the proceedings terminated.

UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE.

THE movement for providing new buildings for this College has now advanced a stage, plans having been submitted to the College Council for its final decision at a meeting held on Monday last. The plans selected will now go before the Cardiff Corporation, who are providing the land, and will in due course be exhibited at the Town Hall. The great difficulty which the College still feels is, of course, the pecuniary one. The estimated total cost of the new buildings is £224,355, and of this sum only £70,000 is in hand. It is to be hoped that the time it has taken to collect this sum is no indication of that which will be needed to find the balance of £154,000. The scheme affords the moneyed men of Cardiff and South Wales generally an excellent opportunity to exercise liberality and promote the interests of higher education in the district, and it is to be hoped that the College will become in closer touch with the people of the South Wales mining valleys. The plans show that it is intended to make ample provisions for the teaching of science in all its branches—namely, physics, engineering, metallurgy, chemistry, physiology, medicine, and public health. It is gratifying to find that the College authorities, in conjunction with the county councils of Cardiff and Glamorgan, intend to erect a public health department, where the work, commenced some years ago and now carried on in temporary premises, will be continued. It is stated that the administrative block, the Viriamu Jones research laboratory, and the public health block will be the first to be erected. A research laboratory, where problems in connexion with public health and other allied problems can be fully investigated is wanted in South Wales. The College session opened on Tuesday last, but this year there was no inaugural address given in connexion with the medical school.

UNIVERSITY COLLEGE, DUNDEE.

A BAZAAR in aid of the funds for the erection of a building for the students' union of University College, Dundee, will be held in the Drill Hall, Dundee, on October 15th, 16th, and 17th. In connexion with this a quarto volume elegantly bound in snuff-coloured cloth has been edited by H. Bellyse Baildon, M.A., Ph.D., and R. Cochrane Buist, M.A., M.D. It bears a title, *The Meal-Poke*, somewhat enigmatic to the Southron until he remembers Sydney Smith's suggestion that the *Edinburgh Review* should bear as a motto a Latin verse signifying that the writers cultivated the muses on a little oatmeal. Mr. Baildon has contributed some prefatory verses in very broad Scotch, and has been good enough to append to them a note reminding us that "Tradition tells that each Meal Monday the Scottish student returned to College with his poke replenished and his heart refreshed." He assures us that:

> Baith rich and puir are fain to gi'
> To ony students' meal-poke.

The men of pencil and pen have responded nobly to the appeal. Mr. Barrie, or Mr. J. M. Barrie, M.A., LL.D., as he is gravely called in the table of contents, sends a "confession," which seems to amount chiefly to this, that he had at first resolved to refuse to contribute to *The Meal-Poke*. Mr. Andrew Lang dives into Knight's *Andreapolis*, with, as he tells us, "a melancholy grin," and fishes out from there certain historical reminiscences, including that of a misguided John Johnstoun, who ventured to be sarcastic about St. Andrews. Miss Annie S. Swan contributes a short story entitled "Three Pictures," and Dr. Andrew Balfour a copy of verses entitled "Gib at Dawn," probably a reminiscence of his recent voyage on the way to take up his appointment at Khartoum. Mr. T. M. Davidson contributes a lyric drama entitled "Demeter and Persephone," and Dr. R. C. Buist writes a charming article entitled "The Confessions of a Lutheran City," in which he relates a strange custom which he tells us is still maintained in Hanover. Formerly at each gate of the town was a box in which the entering or departing traveller was wont to put money as a token of thanks or the earnest of a good journey. The boxes have now been replaced by angels, of which there are ten at the ways of chief exit. The gifts are still placed in boxes held by the angels, and the money is wrapped up in paper bearing some inscription. Dr. Buist quotes a number of these, some of them exceedingly quaint and human. The volume is profusely illustrated, among those who have contributed drawings being Mr. Ogilvy Reid, Mr. G. S. Ferrier, and Mr. W. D. Mackay. We wish the volume and the bazaar every success, and that the last lines of Mr. Baildon's prefatory verse may bring good luck to many:

> The leal folk, the leal folk,
> Wha pit into oor meal-poke!
> Guid luck befa' them ane an' a'
> Wha pit into oor meal-poke!

THE PROPOSED UNIVERSITY OF SHEFFIELD.

AN application for a charter of incorporation for a university in Sheffield is now before the Privy Council, and the fund for the endowment of the University has recently received some important contributions. The Duke of Norfolk, who is the ground landlord of a large part of Sheffield, has given £8,000, and Sir Frederick Mappin, M.P., and Sir Henry Stephenson have each given £5,000. The

Tramways Committee has also given £5,000 out of the reserve fund accumulated from the profits made on the tramways since they were taken over by the Corporation of Sheffield.

CORRECTNESS OF THE *MEDICAL REGISTER*.

Every year a certain number of medical men practising in the United Kingdom find themselves seriously inconvenienced by the fact that their names have been erased from the *Medical Register* owing to their failure to notify the General Medical Council of a change of address. Apart from the inconvenience to individuals which thus arises, it is a matter of great importance to the profession that the *Register* should be correct, since it is the only official list of persons legally qualified to practise. Under a system which has now been in force for some time the Registrar of the General Medical Council sends out every year, during the period when there is no election of direct representatives, a circular of inquiry to one-third of the practitioners on the *Medical Register* residing in the United Kingdom from whom no communication had been received during the previous twelve months. We are informed that this year such circulars were sent to all practitioners from A. to G. inclusive. Any practitioner whose name begins with any letter from A. to G. who has not received a circular should communicate at once with Mr. H. E. Allen, LL.B., B.A., Registrar of the General Council of Medical Education and Registration, 299, Oxford Street, London, W. Any registered practitioner who has changed his address should notify the fact to Mr. Allen, and should be careful to notice that a postcard is received in acknowledgement. Any one who is doubtful whether his address on the *Register* is correct or not should send an inquiry to the office of the Council without delay. We are informed that there would appear to be some occasional confusion between the *Medical Register* and the *Medical Directory*. The *Medical Directory* is an exceedingly useful publication, but it is in no way official, and it is essential to take care that notification of any change of address is sent promptly to the General Medical Council which is the guardian of the *Medical Register*. An illustration of the confusion is afforded by a letter received this week from a registered practitioner in Ireland, who complains that though he notified the change of address to Dublin where he registered, he received no reply, and the proper address was not "inserted in the *Medical Directory*." This, however, may have been a slip of the pen, for we notice that the address of our correspondent which appears in the *Medical Register* for this year is not the same as that at the head of his notepaper. If he notified the Branch Council in Dublin early enough last year to permit the correction to be made in the current issue of the *Register*, we think that he has a distinct grievance, and in any case we would counsel him and any other reader who may be in the same position to communicate at once with Mr. Allen.

THE OPENING OF THE OYSTER SEASON, 1903.

Under this heading an interesting notice has been issued by the Fishmongers Company, and is published in the report of the Medical Officer of Health of the City of London for the nine weeks ending September 12th. The notice sets out that the Fishmongers Company has for some time past had under its serious consideration the condition of the oyster industry and the danger to public health arising from sewage-contaminated beds and layings. The order of statement of evils, namely (1) injury to the oyster industry and those engaged in it, and (2) danger to the public health, is, although perfectly proper from the view point of the Fishmongers' Company, not that which we would have adopted. All the same, we may be, and are, grateful to the Company for inspecting oyster layings and having oysters bacterioscopically examined. It is further stated that no oysters from condemned places will in future knowingly be allowed to be placed on the market for sale until the insanitary conditions have been removed. The notice goes on to say that a Committee of oyster merchants, planters, and others has met frequently at the Company's Hall, and has pledged itself to use every effort in its power to ensure that none but healthy oysters from known uncontaminated sources should be placed on the market for sale. The Fishmongers Company by its action in this matter has done such excellent service in the public interest, and has so far succeeded in mitigating an evil which the responsible authority, the Local Government Board, has hitherto ignominiously failed to remedy, that we hesitate to criticize its present circular notice. This notice clearly, however, as Dr. Collingridge points out, is insufficient protection to the public, "who have no means of knowing whence the oysters they purchased from any particular establishment were obtained. Either all oyster merchants should be pledged, or the names of those who have subscribed to this manifesto should be advertised." A certain amount of typhoid infection is still being caused by contaminated oysters, cockles and mussels; though when the records of the present year are completed it will, we believe, be found that in connexion with the disfavour into which shellfish have fallen, the typhoid mortality has been phenomenally low. It is a pity therefore that the clerk to the Fishmongers Company, in answering a letter from Dr. Collingridge to the above effect, thinks that his suggestion is "hardly practicable, as it would give these traders an undue preference." And why not? It ought to be the object of all good citizens to help the conscientious trader and to protect the helpless purchaser against the unscrupulous vendor of poisoned food. Is it too late for the Fishmongers Company to revise their decision on this point? By doing so, and by acting vigorously on the lines suggested in Dr. Collingridge's letter, it would be conferring an immense boon on the public. Meanwhile the public are not protected. To quote an article in the British Medical Journal of August 8th, "There is an implied obligation on the part of local authorities to protect the public against unwholesome and dangerous foods. This obligation in the present state of the law they are unable to meet. Consequently, a serious amount of disease is caused, many lives are lost, and great and unnecessary expense is incurred, not only by private families, but also on behalf of the ratepayers by local authorities in the hospital treatment of cases of enteric fever, owing to the insufficiency of the powers with which local authorities are at present endowed."

A NEW FORM OF NARCOMANIA.

Whatever may be said of other branches of human knowledge it can scarcely be claimed that there is nothing new under the sun as regards at least some forms of narcomania. Quite an original species of this vice was discovered by Major Jennings, D.S.O., during the recent operations in South Africa, and the rough notes which he made upon the subject at the time are given by him in the *Journal* of the Royal Army Medical Corps for October. It consists in the eating of cordite with which the Lee-Metford cartridges are charged, and the effects appear to be so unpleasant that it is difficult to understand how the habit should gain any hold upon individuals. Cordite consists roughly of about 58 parts of nitro-glycerine, 37 parts gun cotton, and 5 parts of mineral jelly; while acetone is used as a solvent, but does not enter largely into the composition. Each cartridge contains 60 cylindrical strands of cordite, each strand measuring 1¼ in. in length and one-twenty-fifth of an inch in thickness. By way of experiment Major Jennings, after discovering the existence of cordite-eating among a certain number of men, sucked a quarter of a strand for two minutes. He found that the diminution in its size after this time was scarcely appreciable, but nevertheless it caused the most racking, splitting headache he had ever felt in his life, which lasted quite thirty-six hours, and was accompanied by hammering and ringing noises in the ears. Its taste was sweet, pleasant, and pungent. From inquiries among the men its effects appeared to differ somewhat when sucked and when taken in solution. Dissolved in tea, it produces an almost immediately exhilarating effect "inciting to almost demoniacal actions." If many have

partaken of the beverage all begin talking at once, each seemingly anxious to inform the other of everything that has happened to him since his birth. This condition is followed by heavy sleep and stupor, lasting five to twelve hours according to the quantity taken. To awaken the subject it is often necessary to slap his face, punch or shake him, and awakening is accompanied by severe dull, boring headache, muscular twitchings, and protrusion of the eyes. Even, however, when fully awakened the cordite eater does not seem to realize his surroundings for many hours. It is as an addition to beer that cordite appears to produce its worst effects. It then excites a quarrelsome, destructive mania in an otherwise peacefully disposed individual, and produces immediate intoxication in a man who can commonly consume as much as four or five pints of beer without exhibiting a trace of having done so. If taken in quantity insufficient to produce sleep it makes him not only quarrelsome but brings out the worst traits in his character. A possible clue to the inception of this habit is given by the fact that a large number of the men seem to have used cordite as a means of lighting pipes in default of matches. When thus used it gives a sweetish flavour to the tobacco, but causes great dryness of the throat, followed by headache. Others of the men seem to have first tasted the cordite out of curiosity. Major Jennings's account includes notes of communications made to him by various men, in all of which are found statements as to the exceedingly unpleasant after-effects. One of them said that he first became aware of this use of cordite from one of his comrades asking for something to straighten him up because he had been sucking it, and he also observed that some of the men became very elevated after taking a very small quantity of beer, though they could formerly take a large quantity of it without effect. Cordite, by itself, said this man, does not seem to make men crazy, but only induces a very heavy sleep. But taken with beer or spirits it brutalizes the mildest man and makes a temporary maniac of him. He also added that he had noticed that it apparently aged a man rapidly, and made him extremely negligent of his personal appearance. The existence of the vice first became known to Major Jennings from the suggestion of a regimental non-commissioned officer that a certain man had possibly been taking cordite in order to escape service; but in concluding his notes Major Jennings suggests that the effects are so exceedingly unpleasant that none but the most depraved would ordinarily resort to it as a stimulant, and that no man could escape service through its means except by the exchange of service for incarceration as a hopeless lunatic, or for death by *felo de se*.

SPITTING AND EDUCATION.

IN his last report Dr. Collingridge, the Medical Officer of Health for the City of London, has some observations on the steps which might be taken to teach the young idea how not to spit. He states that, with the view to checking this nuisance among children, it has been suggested that the School Board authorities should instruct their teachers to warn their pupils of the danger of the practice. Dr. Collingridge commends the idea, and adds that the School Management Committee of the Board has already had its attention called to the matter by a private individual. He expresses the opinion that a very useful purpose would be served if the Corporation of the City of London would direct the attention of *all* governing bodies of schools in the City to the advisability of their taking active steps in the direction of checking the evil amongst scholars under their charge. He thinks it unquestionable that the habit is commonly acquired in early life, and that if young offenders were punished for indulging in such a filthy practice it would be speedily discontinued. We entirely agree with his further observation that it is not too much to expect that the hearty co-operation of all teachers would be secured in an endeavour to stamp out the evil. We notice that Dr. Collingridge puts the word "all" in italics; he would like all governing bodies of schools in the City to be addressed, and here again we entirely agree with him; it is not only in elementary schools that this disgusting and dangerous practice appears to be followed, almost in a spirit of bravado, by many boys.

SANITATION IN THE WEST OF IRELAND.

PROBABLY no portion of the United Kingdom exhibits so low a standard of living as is to be found in the West of Ireland. The new Land Act is full of promise, and the Congested Districts Board, with its limited means, has sprinkled and encouraged industries of various kinds along the Atlantic seaboard of Ireland. Notwithstanding the visit of the King the tourist season has turned out a poor one, and that precious but precarious source of revenue has this year left expectations unfulfilled. Worse still, the harvest has been ruined by the storms of rain and wind which have beaten with special fury on this rock-bound shore. The outlook in the matter of crops is as bad as it was in the disastrous year 1879. Some of our readers who may have attended the meeting of the Association in Cork that year will recall the pitiable aspect of the country districts of counties Kerry and Cork then presented. A recent trip from Donegal, through Connemara to Bantry, has filled us with dismay, though not entirely unmixed with hopefulness. The poverty and squalor to be met with in parts of Mayo and Galway are appalling to any one acquainted only with the pauperism of Britain. Yet there is cheerfulness—even gaiety—in these sorry homes, and, what is more surprising, the children present a remarkably healthy appearance. The town of Galway betrays painful evidence of banished trade and departed glory, and is a city of ruins, though the fishing community of the Cladagh, with its promiscuously grouped cabins and its primitive ways and quaint conservatism, on closer inspection reveals unsuspected evidence of competence and healthiness. As in Thackeray's time, the fowls and pigs still share the amenities of the living room with the family, the peat smoke seldom effects an exit by the recognized channel, the bed is often of straw, and drainage is conspicuous by its absence. Yet these folk live mostly in the open air, whose mildness and moisture, thanks to proximity to the Gulf Stream, seems favourable alike to vegetation and mankind. Around Cork is found evidence of advance upon the state of things obtaining in 1879. Cottages are better built, husbandry is more thriving, and the natural wealth of that pastoral country seems to be more assiduously utilized. The Congested Districts Board has worked by precept and example. The herring fisheries on Lough Swilly have been developed; home spinning and weaving are to be found in many a Connemara hamlet, and the technical instructor has, by means as various as bee-keeping and lace making, induced a habit of industry and aroused keen interest and application. Government subsidies to steamship companies have improved communication with the islands along the coast, and the enterprise of the railways has catered for visitors in a fashion that has removed the reproach which formerly attached alike to travel and accommodation in the sister isle. Typhus fever still claims an occasional victim even in the far west, though tubercle is relatively rare. The population is still going down—the depletion of emigration, not of disease. That this decadence may ere long be checked and a brighter day dawn for Ireland is a sentiment recently expressed by the King and endorsed on both sides of St. George's Channel.

LEPROSY IN NORTHERN NIGERIA.

As an addendum to the discussion on leprosy at the Annual Meeting, an account of which appeared in the BRITISH MEDICAL JOURNAL of September 26th, a paper by Mr. Tonkin in the *Empire Review* is of interest. This gentleman was medical officer of the Hausa Association and gained much experience of the phenomena of leprosy amongst uncivilized and semi-civilized races during an expedition into the Central Sudan. One of the most interesting discoveries of this expedition was that in the true Sudan, which extends right across the broad part of Africa from the valley of the

Nile on the east to within a few days' journey of the Atlantic seaboard on the west, and especially in that part known as Northern Nigeria, in the subjugation of which Sir F. Lugard is now engaged, there exists a leper field of vast extent. In this part of Africa, just south of the Great Sahara desert, Mr. Tonkin, browned by the sun, and, as he says, yellowed by disease, lived and travelled for a year, and being a fluent linguist, and looking—with shaved head and in native dress—like an ordinary Barbary merchant, he was able to gain the confidence of the people and to investigate matters with ease. Besides the hundreds of lepers with whom he made merely passing acquaintance, he was thus able to obtain full details of 220 cases from the patients themselves and from their friends. The disease appears to be so common among the various native races of this region that they have got used to it, and despite its repulsive character take no pains to avoid either the disease itself or its victims. They regard it, in short, as one of the stable things of Nature, and the chance of catching it as one of the ills to which flesh is inevitably heir. He found therefore that its victims were in no way shunned, but allowed to take part in the ordinary life of the community so long as they were able, sharing at table, selling and cooking food, and not seldom marrying. Both the disease itself and its victims seem to be regarded, in short, much as were "scrofula" and phthisis in England not many years ago, and between the behaviour of the latter exhibition of tuberculosis and leprosy Mr. Tonkin endeavours to establish some comparison. Mr. Tonkin was unable to discover any evidence of hereditary tendency to the disease. There was a history of anterior incidence of the disease among the progenitors of the same family in only 10 per cent. of all the cases into which he was able to inquire exhaustively, and the percentage of cases among the children of known lepers seems to have been no greater. Mr. Tonkin, however, was at no loss to find what seemed to him a sufficient explanation of the extensive prevalence of the disease, and discusses in his paper both the direct and predisposing causes. The former appeared to be that the ulcerative form of leprosy is particularly common and the bacillus scattered broadcast. The laundry woman is almost unknown, and the well-to-do man when he gets tired of his garments, or they get too soiled to please him, simply gives them away or sells them. The consequence is that body clothing, so long as it will hold together, passes from man to man, however foul it be. Sleeping mats also and allied articles are also used promiscuously, and the net result is that enormous numbers of the people constantly have the bacillus leprae at least upon, if not within, their skins. In the course of time something occurs which depresses vitality, and the bacillus thereon is enabled to obtain a hold upon the system of an individual in the pores of whose skin it may have rested quiescent for years. Mr. Tonkin mentions that he was much struck by the frequency with which the onset of the disease was dated from the year or so after the occurrence of a personal disaster, or of some public calamity, such as a famine, pestilence, or war: and states that it is particularly in women during lactation, in young men who have been wounded or injured in brawls or raids, in war slaves freshly brought into captivity, and in persons generally who have had severe illness that the disease is apt to make its first appearance. As a contributing cause Mr. Tonkin points to the diet of the people. The country, up to the time of his investigations, had been the prey of slave traders, and quite 80 per cent. of the people had a narrow vegetable diet almost devoid of nitrogen. In consequence the people were habitually full before they were fed, with the result that they were little able to resist morbid influence of any kind, and their cutaneous tissues in particular exceedingly prone to disease. Much the same lack of nitrogen, he points out, will be found to exist if the constituents of the ordinary diet of the poorer classes in all notably leprous regions at the present day are set down upon paper, and he suggests that much the same deficiency existed in the diet of the poor of England in the days when leprosy was rife.

THE MARTINDALE MEMORIAL.

A portrait bust of the late Mr. William Martindale, formerly teacher of pharmacy at University College Hospital, and at one time President of the Pharmaceutical Society, has been presented to that Society by the Martindale Memorial Fund Committee. Mr. Carteighe, the Treasurer of that Committee, in presenting the bust to the Society at the opening of the winter session of the School of Pharmacy in London last week, said that Mr. Martindale was more widely known throughout the world than any other pharmacist: he was not only a distinguished pharmacist, but a lovable man, and the appeal for subscriptions to a fund to commemorate his memory had met with a ready response, not only in this country, but in the Colonies. Mr. Martindale had not only been a member of the Council and President of the Society, but an examiner for ten years, and the Committee thought that the most appropriate and fitting way to perpetuate his memory was to place a marble bust in the room where he had so often acted as examiner. Further, with the view of stimulating excellence in manipulative pharmacy, with respect to which there was in these days a tendency towards loss of skill, it had been resolved to found a medal which should be given every year to the most successful pupil in practical pharmacy. The President, in accepting the gifts of the Committee, said that he knew no one who more deserved the honour that had been paid to his memory than William Martindale. Dr. W. H. Martindale briefly expressed the thanks of himself and the other members of the late Mr. Martindale's family to those who had paid honour to his father's memory. Mr. Carteighe added that the bust was the work of a pharmacist, Mr. Taubman, who had devoted himself to art. The bust is a characteristic portrait, producing well the handsome and somewhat melancholy features of the original, who was well known to many generations of students of the Medical Faculty of University College. The medal bears on the obverse a portrait of Mr. Martindale, and on the reverse a suitable inscription.

THE BIRMINGHAM CREMATORIUM.

The Birmingham Crematorium was opened by Sir Henry Thompson, Bart., on October 7th. The building has been erected at Sheldon Coppice, three and a-half miles from the centre of Birmingham, on the road to Walsall. It is of brick and stone, with tile roof, and stands in grounds laid out with trees and shrubs. Letters were read from the Bishops of Lichfield, Worcester, and Coventry expressing their sympathy with the undertaking, and Sir Henry Thompson delivered an address, in which he dealt with the history of the movement from its commencement in January, 1874. He said that during 1902 5,520 bodies were known to have been cremated in various crematoria throughout the world. He congratulated the promoters of the Birmingham Crematorium on the success of their efforts and expressed the opinion that the Act passed last session would lead to a large development of the system. Burial authorities were now empowered to erect crematoria out of corporate funds, and he believed that public opinion was tending in that direction. The rules and regulations issued by the Home Office under the Act were very stringent, and many felt that they might impede the spread of the movement: on the whole, however, it seemed wiser to err on the safe side, especially as some still had a lingering dislike to cremation, which must be treated with respect and tenderness. The rules and regulations had been drawn up after very exhaustive inquiry, and would lead to detection of poisoning or foul play in the first instance, whereas, in the case of earth burial, many bodies were buried without any medical certificate at all, and it was only when very strong suspicion existed that an order from the Secretary of State was obtained to exhume the body. Sir Henry Thompson then detailed the precautions that were required to be taken before a body was cremated, and said that it had long been his opinion that the most dangerous place for a poisoner to send his victim would be the crematorium, for it was almost certain that the inquiries

which would be instituted would lead to the discovery of the crime. He then declared the crematorium open. Lieutenant-General Calthorpe moved a vote of thanks to Sir Henry Thompson, and congratulated him upon the success of his advocacy of the cause. The resolution was seconded by Mr. Charles Harding and carried unanimously. Votes of thanks were then passed to Mr. Frank Osborn, the architect; Mr. J. E. Wilcox, the engineer; and Mr. M. N. Phelps, the Honorary Secretary, for their services. Alderman Cook then proposed a vote of thanks to Mr. G. J. Johnson, the Chairman, and strongly advocated on sanitary grounds the establishment of crematoria in large towns. Dr. Alfred Hill, in seconding the resolution, expressed the opinion that poisoning was more likely to be detected in bodies that came for cremation than under the system of earth burial. Cremation was a cleanly and sanitary mode of disposal of the dead, whereas decomposition in the earth was very revolting, as every one who had seen a body after it had been buried two or three years knew. The resolution was carried, and the visitors, who included Dr. Robertson, the new Medical Officer of Health for Birmingham, Dr. A. Bostock Hill, and Dr. S. Herbert Perry, deputy medical referee, then inspected the buildings. The furnace consists of two parts, one in which ordinary gas coal is produced and the other the incinerating chamber where the gas is burned with a sufficient admixture of air to complete the cremation. The air is forced into the chamber by means of blowers through tubes in which it is raised to a high temperature by the waste heat from the incinerating chamber. In this way complete cremation is obtained without smell, smoke, or direct contact of the body with fuel. The temperature of the chamber is between 1,800° and 2,000° F., and the cremation is effected in about an hour and a-half. The ashes, untouched by human hands, are removed through a small aperture into the urn placed to receive them. The total cost of the crematorium, including land, chapel, furnaces, and lodge, has been about £6,000.

MILK ADULTERATION.

On September 30th at the South Western Police-court a case of alleged milk adulteration was prosecuted by the Battersea Borough Council. Mr. Cassel, the Public Analyst, certified the milk in question to be adulterated to the extent of 12 per cent. of added water. Mr. Cameron, the Government analyst, declared it to be perfectly pure. Mr. Rose said that he must be guided by the superior authority, and, therefore, dismissed the case, awarding the defendant £3 3s. costs. In commenting upon the case the magistrate is reported to have said that he was satisfied that the same milk had been analysed by both analysts. Mr. Rose suggested the advisability of holding a conference in which analysts should confer and arrive at some common method of working, not only in the interests of science but also in the interests of justice. On the whole, it would appear that both analysts in this case are reliable workers, and that there is some probability that the same milk was not examined by both of them. Possibly it was a different sample altogether, possibly a mixture. Certainly it was an exceptional case, and we think neither the magistrate nor the milk trade need feel much disquietude. It is a well-known fact that analysts detect, in the nature of things, a very small percentage of the total mass of adulteration. In the long run there can be no doubt that it is the public rather than the milk purveyors who need protection. Nor are such exceptional cases, which occur occasionally, to be met by a conference of analysts. As it is at present, most analysts use similar methods. But variation in method is by no means an undesirable thing. It is the standard that requires attention, and it is well known that the Government standard is a low one, permitting of considerable manipulation of milk within the limits of the law. Under all the circumstances, therefore, we do not see in this case the gravity which it is reported the magistrate declared that he found in it. Out of thousands of expert analyses discrepancies must occasionally occur. If they occurred frequently it would be another matter altogether.

THE INDIAN MEDICAL SERVICE.

In commenting last week on the new regulations governing the conditions of service in the Indian Medical Service, we pointed out that they did not touch the rates of pay of officers in civil employ. We learn on inquiry at the India Office that no alteration has up to the present been made in these rates, but that the question is now under the consideration of the Government of India.

Owing to the appointment of Dr. C. J. Martin to be Director of the Lister Institute of Preventive Medicine the Chair of Physiology in the University of Melbourne is vacant. The new Professor will be required to commence work on March 1st, 1904. Particulars can, we understand, be obtained on application to the Agent-General for Victoria, 15, Victoria Street, S.W.

At a meeting of the Birmingham Health Committee on September 29th, Alderman Cook, who presided, reminded the members that on the following day Dr. Hill would cease to be the Medical Officer of Health for the city. The Chairman spoke in terms of high commendation of Dr. Hill's long and valuable services, and Dr. Hill, in reply, acknowledged the courtesy and kindness which had invariably been extended to him by the Committee. The new occupant of the office, Dr. Robertson, was then introduced to the Committee and cordially welcomed.

Ireland.

The New Victoria Hospital, Belfast.

The winter session of the Medical Faculty of Queen's College, Belfast, will open on Tuesday, October 20th. Dr. J. Walton Browne, Chairman of the Medical Staff in the Royal Victoria Hospital, will deliver the opening address in the new out-patient department at 11 a.m., when it is expected that a large number of medical men in the province will be present in addition to the students, both to show their respect to so highly esteemed and popular a teacher and to give a hearty send-off to the clinical teaching in its new home. The new hospital has now been working for two weeks, and although some minor points have required rectification, the general arrangements and plan come up fully to the high expectations originally formed. Before the day of removal the patients had been diminished to all but the most urgent cases, so that under 80 remained to be transported. This task was commenced at 8 a.m. and was finished at a little after 10 a.m. The City Council and Union Infirmary kindly lent their ambulances, and the tramway company offered as many trams as were required. Colonel Deans, M.D., the Superintendent, had charge of the movement, and nothing could have been more efficiently or skilfully carried out.

Health of Belfast.

At the monthly meeting of the City Council of Belfast the Medical Superintendent Officer of Health submitted his usual report. Three hundred and thirty-three cases of zymotic diseases had been notified, of which 123 were typhoid and 80 simple continued fever, 61 scarlet fever, 38 erysipelas, and 27 diphtheria. There were 1,072 births and 580 deaths, of which 106 were due to zymotic diseases and 75 to phthisis. The annual death-rate from all causes was 16.8. Deaths in childhood under 1 year old were most numerous in districts Nos. 2, 6, and 12, and were due to diarrhœa in the bottle-fed. Professor Lorrain Smith's report was brought under discussion, although the Health Committee asked that it should be adjourned till next meeting, when a full report would be laid before the Council by the Committee. From the remarks of several of the speakers it was evident that there was a fear that the report would be pigeon-holed, but a definite promise was made that it would be on the agenda paper of the next meeting.

The Fever Hospital Question at Belfast.

The Health Committee has again petitioned the Board of Guardians to hold a conference to discuss

the advisability of converting the present Poor-law Union fever hospital into a district fever hospital. A very large section of public opinion is against this course. It would be no doubt a cheap, but by no means an efficient way out of the difficulty. It is, and always has been, considered part and parcel of the Poorhouse hospital, and it seems difficult to understand how giving it a new name and opening a new door will work the transformation in the feelings of the artizan well-to-do classes. The site now fixed upon for the City Fever Hospital was disapproved of as being impracticable, and petitioned against by about eighty medical men on two occasions, and finally thrown out in full Council meeting. Lastly numerous warnings have been given that this proposed district hospital for fever, if carried, will not be made use of, and so one of the most important recommendations of Dr. Lorrain Smith is being cast to the winds before the report itself has come before the Council for discussion.

Granard Union.

The Granard Guardians have passed a resolution requesting Dr. Kenny "to give an acceptable apology to the nuns lately employed in the infirmary for any offence which he may have given them" and promising "to meet the reasonable demands of the doctor in the management of the house, and to do all we can to make things work more smoothly." They also appointed the master for one month, declaring that he had not got fair play.

Scotland.

Opening of the Winter Session at the Edinburgh Schools.

The anatomical department was opened for the winter session on Thursday, October 1st, in the University and the various extra-academical schools. The other medical classes open on Tuesday next, October 13th. The best wishes of a large number of former students in the University Anatomical Department are with Dr. David Hepburn in his promotion to the professorship at Cardiff. He has had a long connexion with that department, has done good work as senior demonstrator, and has been an invaluable henchman, for a good many years back, to Sir William Turner.

The New Edinburgh Fever Hospital at Colinton Mains.

In giving his report to the Edinburgh Town Council on September 22nd, Mr. Lang Todd, Convener of the Public Health Committee, said it was impossible to fix a date for the opening of the hospital, which had been formally opened in the middle of last May by His Majesty the King; but that everything was being hurried on as rapidly as possible. Since that time matters have advanced so far that Wednesday, October 7th, was set apart for an inspection of the new hospital by members of the medical profession, who were there by formal invitation. From 12 to 6 30 the hospital was open, and parties of those present were conducted through the buildings by the medical superintendent. On Thursday, Friday, and Saturday the general public will be admitted to the hospital and conducted over the buildings by officials.

Scarlet Fever Epidemic.

At a meeting of the Edinburgh Town Council on Tuesday, October 6th, Mr. Lang Todd reported that the hospital returns showed 364 patients in the City Hospital, as against 192 at the same period last year. The scarlet fever patients numbered 223, as against 100, and in both typhoid and diphtheria the cases were at least double what they were at the corresponding date of last year. From what he had said once or twice, the Council would be aware that they had been dreading this epidemic of scarlet fever. It had been increasing week after week, and the reopening of the schools had rather tended to increase the number of the cases. In the week ending midday, September 26th, 34 cases were notified; while in the week ending October 3rd, 49 cases. During the past few weeks there had been 252 notifications, and they had been taking into the hospital rather more than 85 per cent. of all the notifications they had received. On Friday last he got a notice from the medical officer of health saying that if matters went on as they were doing it would be impossible to conduct the hospital in its present condition, and that they would require a portion of the new hospital for occupation. Thus far the epidemic does not appear to be of a virulent type, as only one death occurred in each of the two weeks ending September 26th and October 3rd.

Edinburgh Royal Infirmary.

Dr. A. Lockhart Gillespie has been reappointed Medical Registrar and Dr. E. Scott Carmichael Surgical Registrar, both appointments for yearly terms. Drs. Edwin Matthew, George Lyon, and Edwin Bramwell have been appointed Clinical Tutors to the University medical wards. Dr. George Freeland Barbour Simpson has been appointed Clinical Assistant to Professor A. R. Simpson in the Gynaecological Department, Dr. Malcolm Campbell to Dr. D. Berry Hart in the same department. Dr. W. B. Drummond has been appointed Clinical Tutor to Dr. Bruce; Dr. Alexander Goodall has been appointed Assistant to Dr. James; Dr. W. T. Ritchie to Dr. George Gibson; Mr. Herbert Shepherd to Professor Annandale; Mr. J. D. Lithgow to Dr. R. Mackenzie Johnston; and Mr. H. Torrance Thomson to Mr. Cotterill.

Three Months' Crime in Edinburgh.

The Chief Constable's quarterly report for the period ending September 30th is psychologically and ethically interesting. During September no less than 12 persons took their own lives, or vainly attempted to do so, in the city of Edinburgh. What the determining factor was it is difficult to say. Last year, in the corresponding quarter, there prevailed a homicidal mania, and 6 persons were done to death, including that popular Volunteer officer and Extra-Academical Lecturer in Chemistry, Colonel Ivison Macadam. In no case was the death penalty exacted. Another point is new in these reports. During the month of September 33 courtesans appeared at the bar of the police-court to answer for their conduct. One wonders what good will be accomplished by this newborn zeal on the part of the criminal authorities. Certainly the condition of Princes Street and George Street any day after 5 o'clock is a disgrace to any civilized community. If the new activity of the police cleanses the streets somewhat, the community will be grateful. As to crime generally there was a marked diminution. During the quarter 2,687 cases passed the bar of the police-court. This was 472 cases fewer than in 1902, and 1,000 less than in 1901.

Low Death-rate in Edinburgh.

The death-rate for the week ending October 3rd was 14 per 1,000. In the second week of September the death-rate reached the very low figure of 11, while at the same time most of the nursing institutions in the city were heavily pressed with work.

James Murray's Royal Asylum, Perth.

The 76th annual report of this admirably managed institution has just been issued, and as usual the report of Dr. Urquhart, the physician superintendent, affords most interesting and valuable information. The average rate of admissions from 1865 till 1901 inclusive was 31 per annum. For the year ending March 31st, 1903, the number was 56, a number only equalled in 1899. Two shelters for consumptive patients were erected during the year, and one or other has been occupied since they were opened. Unfortunately the number of these patients continues high as compared with former years. The causes of insanity, its curability, the list of physical diseases as causative of or complicating the mental malady, recoveries, the unrecovered, the deaths and their causes, accidents, escapes, occupations and amusements, restraint, general health, etc., are in turn dealt with.

Small-pox at Leith.

A vessel arrived at Leith from Smyrna on October 4th with a case of small-pox on board. The man, who was the third engineer, was removed to the small-pox hospital at the Links, and precautions taken to prevent the spread of the disease.

The Medical Profession in Italy.—In Italy as elsewhere the medical profession is overstocked and the number of practitioners is steadily increasing. The number at the present time is given as 22,139 as against 18,984 in 1882. Of medical women there are now 20, while in 1882 there were only 2.

THE MEDICAL ARRANGEMENTS IN THE SOUTH AFRICAN WAR.

(Continued from page 851).

EVIDENCE OF CIVILIAN SURGEONS.

Professor Ogston.

PROFESSOR OGSTON stated that he had seen something of foreign systems. At one time he was well acquainted with the Austrian system. His knowledge of the German system was much more recent, but within the last three years he had not been much in touch with it. The Russian system he knew only to such an extent as it could be learnt by a visitor who went to the country on purpose to study it. He went to South Africa in December, 1899. He did not go to Natal; his experience was limited to the Cape Colony side. The general impression produced by observation and conversation with others, joined to previous knowledge of it, led him to conclude that the country was prepared only for wars of very limited extent, and had not an army medical service organized to any such degree as would be required in the case of a very large war such as a European war, or such as the war in South Africa proved to be. The provision of officers and men was quite inadequate. He should judge they had provision for about 40,000 of an army, straining their provision to the utmost, whereas there were a couple of hundred thousand perhaps altogether to be provided for. He was in South Africa from the beginning of January, 1900, to July, 1900. He imagined that, including the troops of all kinds, the local troops, the Imperial troops, and the Colonial troops, and those also connected with the army who had to be accommodated with medical attendance, there must have been a number closely approaching to a couple of hundred thousand. His opinion was formed from information obtained from officers and others, but very much from what he saw himself. He visited Gatacre's column, which at that time was lying before Stormberg, after the reverse. He visited French's column, which was at that time lying at Rensburg, detained by the Boers opposite Colesberg, and he also served with the Modder River column, first of all visiting it, and then afterwards being attached to it for some months, and accompanying Lord Methuen's column across country from Kimberley to Boshof, Hoopstad, Bothaville, and Kroonstad. When the wounded came back to Modder River from Paardeberg the provision of officers and men of the Royal Army Medical Corps was very deficient. There was exceeding difficulty in dealing with the sick and wounded both in the convoys and at the hospitals at Modder River. There were at Modder River on one occasion 800 men, sick and wounded, brought back from Jacobsdal and the Paardeberg direction in one day. They had to be accommodated in two field hospitals, which had only equipment for 100 men each. The field hospitals at Modder River had to act as base hospitals, but they endeavoured to evacuate their wounded as quickly as possible to what was the real base, Capetown, or the supplementary bases at De Aar and Orange River, and some even to Naauwpoort, because the congestion became so great that some had even to be sent roundabout to Naauwpoort, towards the Port Elizabeth line. The field hospital accommodation at Modder River was undoubtedly insufficient. The tents with which they were provided there should not have had more than 4 sick and wounded men in them, and they had many more than that; they had sometimes 7, and more, in a tent all through the hospitals. The tent was an ordinary bell tent, he should think 10 ft. across, some with double and some with single roofs. There were 800 sick and wounded, and accommodation for 200. Asked what was done with the other men for whom there was no room, Professor Ogston said they were all so fully occupied that he did not know what became of the balance. He knew the tents were gathered in from all sources, some of them marquees, and they managed to put them all up somehow. As a matter of fact, they were all accommodated under canvas. They were very short of surgeons at the Modder River. The surgeons, besides attending to their field hospital duties, had to attend to the convoys down country, and a number of them were constantly away upon that duty, so that on some occasions there were in one of the field hospitals only two or perhaps three surgeons to attend to all that number that flowed into it. Besides the deficiency of doctors, there was a decided deficiency of hospital orderlies. With regard to the quality of the non-commissioned officers and men employed as hospital orderlies, he said the non-commissioned officers and men could not be accused of any lack of zeal and devotion. The way in which they sacrificed themselves to do what they could was beyond all praise; but many of them came into the corps untrained, and most of them were utterly unaware how to deal with a sick man, or of what was an absolute necessity for him. There were, of course, exceptions, but they were few. Most of them seemed to have joined, whether they were regulars or volunteers, with the idea that their duty would be to go into the field behind an advancing regiment to pick up the wounded, to stop their bleeding, and to carry them to the tents; and then when they found their duties were nothing so brilliant as that, but consisted in the tedious watching night and day over men who were sick, delirious, and dying, and when their comrades were taken ill daily and dying around them, they often lost heart. It required, in fact, a quiet heroism that very few of them possessed to enable them to carry out their duties, especially in attending on the sick and the fever cases, which were very numerous. Asked if the hospital orderlies were careful about disinfectants, Professor Ogston said disinfection was almost absolutely unknown. The men knew nothing about disinfectants, they had no training in keeping themselves disinfected; in fact, it seemed to him that many of them looked upon it as a species of cowardice if they attended to such things as avoiding infection. The hands were not disinfected, the utensils used for typhoid evacuations and so forth were not disinfected; when they were emptied out into pits they were not disinfected, and the wards were not disinfected. The sick and the typhoid cases were sent down to the base when they were able to be moved, many of them still suffering from diarrhoea, without any washing or disinfection of their bodies or clothes. Besides the hospital trains, they were sent down in ordinary trains, corridor trains, which were used, of course, on occasion for others; in those cases there was no disinfection whatever attempted, and consequently the disease was very widely spread. The orderlies cooked, and this increased the risk. One could see some of them washing their kettles in filthy puddles and scraping them with the infected earth around, and although careful instructions were issued to them and posted up in the buildings, wherever a building was available, there was no staff to compel attention to them, and as the men had not been trained those instructions had not become a part of them, as ought to have been the case, with men entrusted with their duty, and hence sanitation was, practically, entirely neglected. Asked if he thought the doctors did their best to inculcate prudence in these men, the witness said he did not think it was possible for men to have done more than the doctors did. They toiled night and day. He had seen them going days without their food that they might attend to those who were coming in or evacuate those going down country. There was absolutely no want of the most unselfish devotion on the part of the officers, but they could not do everything. Absolutely no blame attached to them in connexion with this matter. Asked to state his views as to the training of hospital orderlies, Professor Ogston said they could not be instructed unless they themselves received courses of instruction in attendance in hospitals where sick were being treated in times of peace, and where they would acquire the practical knowledge which a doctor and a nurse acquired that would be of use to them in a campaign in attending to the sick. He would suggest that hospital orderlies in this country should be trained very much as the Germans trained them. They were constrained after their war of 1870-1 to reorganize their Army Medical Department, and on purpose to do so they now had their orderlies of the Army Medical Corps carefully instructed in time of peace in all the duties that would fall to them in time of war—attending on the wounded, attending on the sick, handling sick, washing sick, disinfection, and so on; and for that purpose they had special courses of training. They have large field days, on which they were trained as far as possible in all of those things. They had much larger and better managed military hospitals than ours, and in them not only the officers, but the non-commissioned officers and men, received a training that was superior to what existed, so far as he knew it, in our army. The method of training of orderlies was to be found in the German *Friedens Sanitäts Ordnung*. Female nurses were employed in the German army to a very considerable extent. They also had female cooks in the German army, and the consequence was that the cooking for sick men, men suffering from dysentery, typhoid, and so forth, where the feeding was the main part of their treatment, was very much better than was possible with

our male orderlies. Our military hospitals did not treat the whole of their sick. Our military hospital system had been cramped and pared down to such a degree that it no longer formed a field where officers and men could be trained in peace for their duties in war. His impression was that in Lord Randolph Churchill's time an attempt was made to introduce economics into the army, and that that was done almost exclusively by cutting down the hospitals and medical establishments of a kindred nature, and for that they suffered now. In Russia also there were large military hospitals where all kinds of cases were admitted. They were used for the civil population as well as for the military. They had eye cases, ear cases, fever cases, cases of ordinary sick in the medical wards, cases of ordinary surgical injuries and diseases. They had even gynaecological cases in their military hospitals, and in them the officers were, therefore, real professional men. They were medical men who were proud of being medical men, and they esteemed it a higher distinction to be an accomplished medical man than to hold any officer's rank. They were interested in their profession, and they were trained in the most recent knowledge regarding it. They were, in fact, equal to civil medical men in every capacity, and they were provided with orderlies and nurses, and so on, and were, therefore, capable of importing into war all the attention that a sick or injured man claimed in time of peace. He thought that a country like ours was bound to aim at giving to every sick and wounded man in a campaign, as far as was practicable, the same skill and attention as a civilian sick or injured man received in time of peace. Asked if he meant that from want of experience the army medical officers were not equal to the civilian surgeons, Professor Ogston said that was precisely what he thought. They were not equal to the civil surgeon simply from want of practice. They were as a class superior to the civilian doctor; they were of a higher standard, selected by examination, but the moment they entered the army they were cut off from all practice of their profession. No man could practise medicine or surgery unless he was continually at them. Things advanced rapidly, improvements were continually introduced, and the man who did not find his daily work amongst them could not be equal to the civilian. If they were to deal in the same way, say, with engineers or artillerymen, and, after subjecting them to a testing examination on purpose to attain the highest class of men, were to cut them off from all knowledge of engineering and guns, projectiles, and so forth, they would turn out a very inadequate force in time of war, and it was precisely similar—he said it in all seriousness—with regard to medicine and surgery. The army medical men in Russia demanded, and were provided with, all the most modern equipment on a scale that did not exist in our army. Bacteriology did not exist in our army, save, he supposed, in the case of that eminent man Professor Wright, of Netley, and a few others. There was no possibility of obtaining bacteriological investigation anywhere in South Africa, save, he supposed, by applying to the civilians there, and he was not aware that that was ever done. There was no Bacteriological Department at Wynberg. There was no bacteriologist sent with the troops who advanced to the front, and it was not even possible in a case of doubtful typhoid fever to apply the well-known Widal's test, which enabled one to know whether a man was going to have typhoid, and to provide either for his early evacuation to the base before the dangerous stage set in, or to treat him where he was should that be desirable. There were no microscopes; there were no special instruments. If a man suffered from a suppurating ear there was no means of diagnosing it in those field hospitals. Asked as to the system in Germany, Professor Ogston said that every medical man in the army, however remotely posted, could at set intervals apply to be admitted for a time to the practice of civil hospitals. He thought that one or two years in every ten they were entitled to do so, and if they showed any interest in their profession, or ability in it, they were permitted to do so, or rather ordered to do so. They then left their post, and were attached for that time to civil hospitals as house-surgeons, attended to all the instruction in them, had wards if they were sufficiently high in rank and showed ability, became teachers of the civilians, and were put on a par with civilians in all respects. In Russia the same thing obtained: every officer there could, after ten years' service, apply to be admitted to the civil hospital, to serve for two years, during which he could learn and instruct others, could teach set courses, afterwards become a professor in the large military hospital, could be appointed to the civil hospital in some of the provincial towns, where he still carried on his profession, and kept up his knowledge, and yet was available in time of war. It would be quite possible to give the army medical surgeons opportunities of practice in our hospitals. It was the mere question of expense, and the utility of it was so obvious that the expense, were it properly known, would not be permitted to stand in the way. In the military hospitals a good deal more might be done than at present by treating those connected with the army, the children and the women in them, and even by admitting civilians. Medical officers should also be granted study leave and opportunities of keeping up training equally with that of any civilian. He did not think the difficulties here would be great. There were a number of provincial hospitals where very admirable medicine and surgery was carried out, where he thought they would welcome such a set of men as our junior army medical officers, who might be permitted for a period of a year or so to serve in them as house-surgeons. In time of peace the army suffered from trivial complaints and slight accidents, and the experience of the army medical officers was necessarily limited. Reverting to the defective equipment of hospitals, Professor Ogston said there were no serums for the treatment of disease in any of the hospitals from Wynberg outwards. There was an *x*-ray apparatus at Wynberg; but there was none at De Aar, for instance, there was none at Modder, there was none at Kimberley, and there was none at Sterkstroom. That was a thing that in those hospitals was absolutely necessary. He did not, of course, suppose that a flying column could by any possibility carry the apparatus with them, with ease at any rate; but that in stationary hospitals, stationary for a considerable time, it should have been provided, he did not hesitate to say. There, again, a difficulty came in, he thought, though he could not speak from individual experience in this, that, when they were sent out, the army medical officers, from want of familiarity with them, were unable to use them. They had not instrument makers or electricians, as they had in the German army. There were instrument makers attached to every force in the German army, who repaired and looked after those things. He believed that there were no such men attached to our forces. There might be one at Netley, but they were not a recognized part of every force. As regards equipment, everything was very antiquated. The lights of the hospital were inadequate for the purpose of nocturnal operation, and they were utterly inadequate for searching for the wounded in the field. On the Continent they used and tried in the army all kinds of modern lamps, paraffin lamps, acetylene lamps, and such better sources of illumination. He did not think such a thing existed anywhere in our forces. It was absolutely impossible to perform satisfactorily an operation by night with the equipment that was provided, say, at Modder River. Regarding antiseptics, there was much less wound septicity than there was, say, in the Soudan campaign, at which he also was present, owing, he supposed, to the small bullets, and to the pure surroundings in which the wounds were often inflicted; but, of course, there were a large number of septic cases—not a large proportion, but a large number—and the instruments and appliances for the treatment of them according to modern antiseptic ideas were limited and inadequate and old-fashioned. The sterilizers were too small for the work. They might have sterilized an instrument or two, but not the number that was required in doing such operations as often had to be done there. The irrigators for flushing wounds with antiseptics were too small. In Russia they provided their army in a campaign with little portable stoves and irrigators by which they could prepare under the most adverse circumstances for the carrying out of an antiseptic operation adequately. They had their instruments there all arranged so that they could be boiled in those little very portable stoves and sterilizing apparatus. Even the cases in which they were contained were made of vulcanite, so that they could be popped into the sterilizer and all boiled. In the army in South Africa each instrument or two would have had to be sterilized by itself, and the instruments they had were not suitable for sterilizing, as they had wooden handles, which would have boiled off, and altogether they were old. They would have been for the most part rejected in such hospitals as we have in every town of any magnitude in Great Britain. There was a very great contrast between instruments brought by the consultants and those supplied to the army surgeons. Splints were often wanting and very deficient in quantity and quality, and other apparatus was wanting. Dressings were often wanted, but that might have been a

question of the difficulty of supply; and even as to drugs and stores, which were stated to have been pretty well provided, that was not his experience. The drugs were provided evidently according to a formula that was out of date. That referred to the drugs and surgical and medical stores, and they were not forwarded in such a way as to be of the best service to the sick and wounded. When things ran short at Modder River they got up boxes, weighing perhaps 80 lb., and when these were opened it was found that one of them would contain cans of glycerine and another cans of spirit, and to open those boxes and get out what one wanted in suitable quantities for distribution where they were needed was a matter almost of impossibility. The drugs were such as would have been found fifty years ago in a chemist's shop, bottles of tinctures and infusions, instead of compressed tabloids. No doubt tabloids were sent out, probably very abundantly when the difficulties began to be felt, but the Army Medical Department ought to have been organized beforehand with a view to supplying all those in the modern portable form of tabloids. The Russian army carried almost exclusively tabloids; wherever it was possible they had the condensed drugs in the tabloids, whether for internal or external use. The Army Medical Department seemed at first to pride itself on being entirely adequate to conduct the campaign without any external aid. They did not seem to have heard that ever since the American War between the North and the South every big campaign had had as a marked feature the employment of voluntary aid—that in the Franco-German campaign of 1870-71, the Russian campaign of 1878, the American war in Cuba, and everywhere, voluntary aid was a great feature with civilized nations, and a thing the existence of which could not be overlooked. They had made no provision whatever to deal with that, and seemed rather to resent its appearance. Eventually they were glad to get the civil surgeons to make up for the deficiency of their own officers, but he did not think that their aid, even at first, was welcomed with any cordiality. The Army Medical Department was jealous of the Red Cross Society from the very first, and impeded its usefulness, as well as that of other voluntary agencies. There was even an order issued that no army medical officer was to apply to the Red Cross Society for anything unless it had been sanctioned by his superior authorities. That of itself was almost prohibitory. He thought there should have been, as in Germany, a Commissioner appointed by the War Office, whose sole function was to organize voluntary aid. He had a series of well-conceived instructions as to how voluntary aid was to be admitted, organized, and utilized. He arranged that it should be taken advantage of in every way, that the funds should be directed in the most useful channels, instead of being allowed to find their efficiency by haphazard channels; and he arranged for the employment of ladies who wished to nurse, to attend the wounded or to arrange for communication of the wounded and sick with their friends, and also to organize regular refreshment stations for the assistance of men who were being transported by convoys or trains and refreshment and provision of luxuries. All that was entirely wasted in the South African war, and the people did not know what to give. If they gave goods, the chances were that they were ill-selected and were laid aside; and if they gave money the chances were that it went to the Good Hope Society of the Red Cross Society, who were paralysed by want of organization in connexion with the Army Medical Department, and the money was really almost thrown away. The duties of the German Commissioner were fully laid down in *Kriegs Sanitäts Ordnung*. There should in future be some enlightened official, with a staff, appointed to deal with voluntary aid, to organize it in time of peace, and to deal with it in war. As regards the sick transport, Professor Ogston said that in Germany they had trains for the wounded, and they had trains for the sick, and what he saw in South Africa convinced him that it was of the utmost importance that we should have trains for fever. He thought that if the question of sick transport had been well thought out beforehand it could have been better done in South Africa. The trains in South Africa were as well done as care and zeal could manage, but they were not what they should have been. They were dreadful things for a man with a bad fracture, or even for a patient badly ill with fever, to travel in some hundreds of miles; nearly all the cases of typhoid, which were transported when seriously ill, either died or had very dangerous complications, perforation, or haemorrhage, from being transported in those trains. The hospital trains were good, but even they might have been improved in many respects with regard to the shaking. The other trains that were used to carry the sick and the wounded (and only a small proportion of them were carried in the hospital trains) were very badly arranged for the purpose. There were convoys of sick with dysentery and diarrhoea, and even typhoid fever, sent down by them, and sometimes there was no water in the train, sometimes even orderlies were absent. The carriage latrines were utterly unsuitable, no water even sometimes in them, not disinfected, and sometimes the wounded were transported in improvised trucks. Hardships must occur in war, but it made one very sad to see a man getting his leg and his elbows and his head knocked about in a springless truck when he was ill and suffering, and, perhaps, wounded. The railway trucks probably had some springs, but they were such as would suit coals, not men, merely to prevent damage from jolting, and not provided for the carriage of men. Sometimes those trains were sent away without food for the sick and wounded. Asked as to the sanitary arrangements in the German and Russian armies, Professor Ogston said that in Germany the Army Medical Department, detailed for sanitary purposes, arranged for the water supply immediately any place was arrived at. The water supply was tested by the bacteriological and chemical departments, even on expeditions, and wherever an impure source was found it was closed or labelled, or a sentry put over it, and where a good source of water supply existed, indications were put up as to where it was, pointing for the men to go to it. In our army in South Africa, regarding the water supply, scarcely anything of that kind was done. There were no sentries put over impure sources. There was no indication by which a thirsty man could learn that a pure source was within his reach. The water supplies towards the front were not tested chemically or bacteriologically, and measures to secure their being cleaned and kept clean were not instituted. They did sometimes post sentries over them, but he supposed the sentries were not trained in sanitary matters, and probably did not know what to do, because the men would drink water and wash things where it was not right for them to do so. The watercarts were not regularly disinfected, and they were sent under drivers who filled them at the most convenient places, which were not always the most desirable. Regarding latrines, and so on, in Germany that was most minutely cared for. The series of regulations laid down and practised regarding latrines in the field would be found in the *Kriegs Sanitäts Ordnung*. In our army in South Africa, from want of a proper sanitary staff, such regulations were very ill attended to, and often not at all. One would camp where a previous expedition had passed, and there was nothing to mark where they had had their slaughter house or their latrines. When they arrived unexpectedly at any place there was no one whose duty it was, or at least who found it possible from want of underlings, to look after the situation of the latrines. The disinfection of latrines was attempted, but not practised in the thorough way in which it would have been had they possessed a proper sanitary corps, with men trained to those duties to carry out the officer's instructions. Some of the officers had the duty of being sanitary officers attached to them, and he had seen the same thing in Egypt; but what could one man do? In a camp where he had no men whom he could trust to carry out his instructions the name was nothing. A sanitary corps was very badly wanted. Professor Ogston further expressed the opinion that in our army there should be some class of men very highly trained, so as to be upon a footing somewhat equivalent to the nursing sisters, who would receive a thorough instruction in regard to anatomy, physiology, and disease generally, almost like medical men, and who would, of course, receive correspondingly high pay, because upon them a vast deal of responsibility would devolve. They should be able to deal nearly as a doctor would with all the questions that arose regarding the management of the sick, to superintend them during the night, to observe dangerous phases, to look after their proper disinfection by the orderlies, after the proper sanitation of the hospitals, and after diet, and so forth, and able also intelligently to do dressings and assist the medical officers. The proper education, either on those lines or similar lines, of the non-commissioned officers of our Army Medical Corps was most desirable. The men who entered it at present were not of a class superior to the ordinary soldier, and they ought to be to carry out such work as theirs. The Russian *Feldsher* was trained for three

years. He received a similar training to a doctor but he took no doctor's degree. He was fit to do minor operations, to do all dressings, to understand about temperature and pulse, and all the registration that was necessary regarding the sick, the analysis of their excretions, and everything concerning their treatment on the points he had already mentioned. The Russian *Feldshers* were a most valuable set of men, who, so far as he knew, did not exist in any other army of the world. Asked whether he thought Mr. Brodrick's scheme a good one, Professor Ogston said he thought it had the elements of good in it, but he did not think it was catholic enough. The one point which he thought saved it all was that he associated with the Army Medical Department a number of skilled civil doctors and surgeons who would be able, knowing what was constantly going on, to advise the Army Medical Department, to keep them informed of what might be, and therefore to assist what probably would be. That committee favoured special study leave, but to a very limited degree, not in his opinion adequate. They did not go into the question of army medical surgeons being attached to civil hospitals. Speaking of the ambulance wagons, Professor Ogston said they were not suitable in South Africa. They were old wagons, fitted to contain only two, and, save the springs of the wagons, they had nothing to deaden the jolt to a wounded man. On several occasions he saw what torture they were to a wounded man. They were not nearly so good as the Russian, and German wagons, and, even compared with the Cape wagons, they were very inferior. Then the stretchers were the same old stretchers they had known such a long time, and might have been improved upon. The field hospitals furnished by private individuals were very much superior to the English. In the German army, in time of peace, they provided huts on well-known, well-studied systems, capable of being packed into boxes and carried, and put up anywhere: and those huts, which were of all sizes, were taken out in their field manœuvres and elsewhere, and in a campaign. England had not one of those, and there was the very greatest want of them, as the storms of rain, with lightning, blew down sometimes the whole of the tents in a hospital where the wounded were lying, and they had to pick them grovelling out of the mud with the aid of the illumination of the lightning. Full information regarding the German huts would be found in the *Kriegs Sanitäts Ordnung* and the *Friedens Sanitäts Ordnung*. He was of opinion that much of the inefficiency in the treatment of the sick and wounded during the war in South Africa was owing to the antiquated methods in existence at the commencement of the war in the Army Medical Department. He considered that sufficient care had not been given to be sure that the medical officers were well instructed in modern methods, both as regarded surgery and medicine, and he thought that it would have been quite possible to have done so here, as it was done to a large extent in Germany. He conceived it to be absolutely impossible that there could ever be a proper Army Medical Department in this country until the medical officers and non-commissioned officers and men were allowed to discharge daily in time of peace the duties that they would have to discharge in time of war. They ought to be encouraged to obtain the most up-to-date knowledge of medicine and surgery in its most modern form in the hospitals. He thought those officers, when in these hospitals, should be continued as members of that department as regards pay, privileges, and emoluments—just as if they were on active service. When they had to expend money in special courses of training, they ought to have some means of enabling them to recoup themselves for that. They should also be sent abroad to study the most modern researches, particularly in connexion with their own department, and their expenses should be paid for that too. The medical men in the army had to complain very much of their standing in the service a few years ago. Things were better now. As to remuneration, he believed that at the present instant they were sufficiently paid, and that there were no complaints on that score; but their position as men of science was not yet adequately provided for. Under the system that had been in operation up to the beginning of the South African war a medical officer was cut off to a great extent from his own profession, and a number of them naturally looked upon themselves as officers, and aimed at being officers, in the army. They had not the honest pride in their profession which would have made them greater men than officers in the army, and which was only obtainable by a man who loved his profession and was constantly educated in it, who appreciated its advances, and had every facility for acquiring a knowledge of them. In the German or Austrian army the military medical officer was proud of his position, and he was regarded there as at least equal with the other officers of the army in every respect. Things could never go right until it was so in the British army. Asked what he would recommend with regard to that, to bring it to the same point, Professor Ogston said hospitals should be cultivated and fostered in every respect in connexion with the army; that alone would bring about everything else. Speaking of female nurses, he said they were at first refused, save perhaps at Capetown, but they were of enormous value when they were introduced nearer the front. In the Soudan campaign and in the South African campaign the difference between a hospital where a woman had been introduced and one that was left to the orderlies was incredibly great. The eye told it at once upon entering—cleanliness, tidiness, care, with charts of temperature, all that was desirable was carried out very much better where women were present. He did not think there was anything to prevent women going much nearer the front than had hitherto been assumed to be possible; if the proper class of women were enlisted into the Army Nursing Service, scandals such as would otherwise exist need not exist. They had as much courage in positions of danger as men, and the good that they did, not merely in the ways he had mentioned, but in regard to the impression they produced, the hopefulness they conveyed to the sick men who were in danger of death was almost beyond words to express. Asked whether, having regard to different regiments or different contingents, there was a greater number sick from fever in the one or in the other, looking to their physique or intelligence, he said that in the turmoil of the South African war statistics of a reliable kind were scarcely obtainable; he could see, however, that nearly all the Army Medical Corps men took ill: in the few months he was attached to one field hospital nearly all the men died or were invalided from disease, and of nine officers who at different times were attached to it only three escaped typhoid fever or being invalided, several died, and one of those who escaped had just had typhoid in India, so that he was probably immune. He thought that was owing entirely to the defective method of disinfection. Asked as to the medical arrangements in the Colonial contingents, he was told unanimously by those who knew that they were vastly superior to the English. With regard to the proportion of medical officers to an army, he considered that 5 per cent. had been proved by the experience of other nations to be necessary; 3 per cent. was decidedly too small. It meant a catastrophe either threatening or occurring. He admitted that so large a proportion as 5 per cent. would be a very serious burden to provide for in times of peace, assuming that these men were to be on the permanent staff of the Army Medical Corps; but if they were of so much importance to the army as they were they must be provided. It really became a question how, if practicable, the remedy could be provided without relying solely upon the permanent men. Asked if, in order to provide for having men ready in the event of war quickly, he thought it a practical suggestion that the Government might in some way bring in many of the young men qualified by the medical schools by giving them some grant, and then, in consideration of that, having a call upon them at once in the event of war, Professor Ogston said it would be quite practicable to do so, even if only in connexion with the Volunteer Force. Every medical man who had not served in the German army as a doctor, but who was practising as a doctor, received annually from the German War Office an inquiry whether he was willing to serve in case of war, and if so his place was allotted to him, and he received some acknowledgement adequate to secure his services. All the university professors were similarly treated. The most eminent civil medical professors held military rank, and they had to give courses to the younger medical officers in the army, and they had places allotted to them also as consultants in the event of the outbreak of a war, and in acknowledgement for that they had a certain military status and certain emoluments. It would be found in the *Friedens Sanitäts Ordnung* that those consultants had a certain position in the army in the event of the outbreak of war, which was fully determined and recognized, and adequate. In the case of the British nation, the principle was perfectly applicable, and it would have this further advantage, that whereas in a prolonged war, such as that in South Africa, the eminent consultants served only for a short time, and were nearly all home at the end of six months or so, and the supply

of very high-class consultants fell off very much towards the end of the war—as it would do in any long-continued large war. If it were part of a duty for which they received consideration in time of peace to serve in war, there would then be an assurance of the quality being maintained all through, however prolonged the campaign might be. By such a plan as that a very fine class of men indeed would be obtained, but he would like to see the Army Medical Service in such a position that it could not be surpassed even by them. He thought such a principle was the only practicable way of meeting the demands that would come about in the event of war without the country incurring any very great additional expense in connexion with it. Asked if he would only contemplate the officers of the Army Medical Corps going to hospitals where there was much to learn from the surgeons and medical men who were in charge, Professor Ogston replied in the negative. He added that so many of the young men who joined the army were of a very high class indeed intellectually, and they would even in provincial hospitals unprovided with teachers acquire most valuable information for themselves. Many of them were burning to do it when they joined the army. They had been trained to investigate and think, and they were turned out with their minds active and modern. They went into the army, and at once they were surrounded by an impassable wall. They could do no work, they had no materials for doing work, and they felt themselves lost. He thought that if there had been a properly-organized Army Medical Corps at the commencement of the war and during the war, a great number of soldiers' lives might have been saved to the country which were lost. It was therefore false economy to starve the Army Medical Corps. He considered that money spent on the Army Medical Corps was really true economy. He thought certain charges made against the Royal Army Medical Corps did a great deal of harm; whether they were right or wrong, they were made at a wrong time and in a very wrong way. He feared that a feeling of distrust of the army doctors as compared with civilian practitioners existed amongst the military officers. He thought that feeling would be removed if the military doctors had the training which he suggested they should have, because a number of them were men so superior that they were recognized on all hands as being at least equal to the civilians, and there was no distrust regarding them. Asked whether he thought that if there had been a sanitary staff at the early part of the war in South Africa and during the war there might have been a good deal of disease prevented, Professor Ogston said there was no reason why in a campaign the mortality from zymotic disease should be heavier than in a large town.

(To be continued.)

AUTOMOBILES FOR MEDICAL MEN.

THE number of inquiries which have been addressed to us during the past year or more has shown that automobiles and the possibilities which they present have a considerable attraction for a large number of medical men. Until recently, however, the high prices charged by makers of repute for their cars, seemed to put them out of the reach of most practitioners. But so much capital has been thrown into the industry in this country during the past year or two that the trade has made vast progress, and cars are now being put upon the market by good makers at prices which bring them well within the area of practical medical politics. What the ultimate effect is likely to be, especially in the case of scattered practices, and of those which are commonly classed as "unopposed," it is difficult to foretell, but in any case the interest of medical men in the matter is likely to greatly increase. We have therefore thought it worth while to pay special attention to the motor reliability trials which have recently been concluded at the Crystal Palace, and later on may make an opportunity of dealing in detail with their result from the point of view of the possible medical purchaser. The final reports of the judges will not be issued for some weeks, but in the meantime some notes upon the nature of the trials and the method of their conduct may be of interest to many readers.

These trials are the outcome of a feeling that the motor industry, if it is to continue to flourish, must depend less upon the production of playthings for the rich than upon the provision of vehicles which will directly appeal to the business instincts of all those who have to move about in a carriage of some kind. They were designed, therefore, in such fashion as to give manufacturers an opportunity of proving the claims of their cars to be regarded as the best means of ordinary transport, not less in point of certainty, safety, and economy than of speed and ease, and at the same time to ensure that a report of the results by competent and unbiassed judges should be put into the hands of the public. This report, read with intelligence and due comprehension of the various points at issue, will undoubtedly form an invaluable guide to any medical man to whom the substitution of a car for horses may seem desirable, and who desires to effect his purchase uninfluenced by the prejudices of friends in favour of one car or another, and to be at the same time in a position to check the statements of sellers and manufacturers.

The general system of trial, in the application of which the Automobile Club exhibited remarkable powers of organization, was as follows: An aggregate of something over 10,000 marks was divided between the seventeen or eighteen practical points, perfection in which goes to make a car a desirable possession, and to obtain any marks in respect of any of them, each car entered had to submit to tests of so trying a nature that it is somewhat remarkable that makers found courage to enter their cars at all; especially as they knew that the results obtained would be published in comparison with those of other makers. During the whole period that the trials lasted—some ten days—the cars remained under the observation of officials of the club, and could not be approached by their owners except in the presence of one of the official observers; and if, during the work of the trials, the slightest repair or readjustment was found necessary, it inevitably led to loss of marks. Special trials were made to prove such points as the break-power of cars, dust-raising, hill-climbing power and ability to stop and recommence an ascent, but the longest trial and that which in some respects is of most general interest, was that of reliability in action. To test this each car entered had to run a distance of over 1,000 miles at a regulated speed over ordinary roads carrying its full complement of passengers or an equivalent weight. No cleaning or washing of any sort was allowed, nor any stoppage except at the recognized halting places, under a penalty of loss of a definite number of marks for every minutes' delay. As an instance of the stringency of the rules, one of the cars upon which our representative travelled lost a serious number of marks simply because it had to stop some minutes in order to put in more oil when within 50 yards of the end of a straight run of 150 miles. It should be noted that the whole of the cars competing, some 105 in number, were submitted to precisely the same tests, though for the purpose of classification they were divided into six or seven classes according to their selling price, and that a very large proportion of the low-priced cars seem to have come through this portion of the trials successfully. Too much weight, however, cannot at present be attached to this point, since an important detail of this particular trial is that the cars after the completion of all the tests had to be left at the Crystal Palace for thorough examination by the judges of the condition in which they remained, and the result of this is not yet known. Perhaps not the least interesting point of a general character in connexion with the trials is the care taken to ensure a scientific adjudgement of marks, and it explains the length of time which will elapse before the final report is issued. Thus the formula for determining hill-climbing marks is as follows:

$$\text{No. of hills} \times \frac{C}{(1{,}500 + \text{price in £})^{(6 + \text{No. of passengers})}} \times \text{average grade per cent.} \times \text{speed in miles per hour.}$$

The result of this calculation will be the number of marks won by the car in this test, stated as a decimal part of 1,000; C being a special constant which will be applied to all cars alike.

LITERARY NOTES.

WE see it is stated in the American journals that Dr. G. Frank Lydston is about to publish a work entitled *The Diseases of Society*, in which the questions of crime and the social evil will be discussed.

Heft 1-3 of the Fourteenth Band of the *Skandinavian Arkive für Physiologie* constitutes a *Festschrift* issued by Tigerstedt's former pupils in memory of his fiftieth birthday. Tigerstedt is well known by his works on the circulation of blood, his well-written textbook, and his numerous researches upon respiratory exchanges. The Sondén Tigerstedt respiration chamber is one of the largest extant. It was a great loss to Carolinska Institutet when Tigerstedt

was called to Helsingfors, but his membership of the Nobel Committee brings him frequently to Stockholm and to the home of his former work. Professor Santesson writes on the effect of glycerine and veratrine upon the skeletal muscle of the frog, Max Okerblöm upon the physico-chemical relations of animal fluids and tissues, Professor Johansson and Gunnar Koraen on the effect of varying conditions upon CO_2 output during positive muscle activity, and Ehrström on phosphorus metabolism in adult men. Landergren contributes a paper upon the metabolism of albumen, Willebrand on blood changes during muscular work, and there are other works by Bergman, Hultgren, Sivén, von Wendt, Andersson, and Grönholm.

ASSOCIATION NOTICES.

COUNCIL.

NOTICE OF MEETING.

A Meeting of the Council will be held in the Council Room of the Association, at 429, Strand (corner of Agar Street), London, on Wednesday, the 21st day of October next, at 2 o'clock in the afternoon.

August, 1903. Guy Elliston, *General Secretary.*

ELECTION OF MEMBERS.

Any candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

Members are reminded that the Library and Writing Rooms of the Association are fitted up for the accommodation of the Members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 a.m. to 5 p.m. Members can have their letters addressed to them at the office.

Guy Elliston, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

Aberdeen Branch.—The annual general meeting of this Branch will be held in the Grand Hotel, Aberdeen, on Saturday, October 17th, at 1.30 p.m.—J. F. Christie, 230, Rosemount Place, Aberdeen, Honorary Secretary.

Border Counties Branch: North Cumberland Division.—A meeting of this Division will be held at the County Hotel, Carlisle, on Friday, October 23rd, at 8 p.m.—Norman Maclaren, 23, Portland Square, Carlisle, Honorary Secretary.

Border Counties Branch: Scottish Division.—A meeting of this Division will be held on Friday, October 16th, at 5 p.m., in the Galloway Arms Hotel, Newton-Stewart. Business: Consideration of the draft Medical Acts Amendment Bill. Paper on the Use of Adrenal Chloride Solution in a Country Practice, by Dr. M'Kie. Dinner will be served at 7 p.m. Members wishing to dine will kindly notify Dr. M'Kie not later than October 15th.—George R. Livingston, M.B., 35, Castle Street, Dumfries, Secretary.

Dorset and West Hants Branch.—The next meeting of this Branch will be held at Bournemouth on Wednesday, October 14th. The business meeting will be held at the Royal Bath Hotel at 3.15 p.m. Agenda:—Election of officers for 1904, namely: President, Vice-Presidents, Honorary Secretary. Place of the May meeting. On the recommendation of the Branch Council the following rule will be proposed for adoption by the Branch: "Each candidate for election to the Association shall furnish a certificate from two members of the Association to whom he is personally known." Discussion: The Treatment of Acute Abdominal Disorders: to be opened by Mr. Vernon, one of the Vice-Presidents. Communications:—Dr. Lawrie: Five Successful Hysterectomies for Fibroid Disease in one Family. The President: Demonstration of Crookes's Spinthariscope, with a few words on the new element—radium. Lunch at the hotel at 2 p.m.; charge 3s. 6d. each. Members intending to be present are requested to notify their intention to Dr. Davison, 16, Bath Road, Bournemouth, by Monday, October 12th.—William Vawdrey Lush, M.D., Weymouth; C. H. Watts Parkinson, Wimborne, Honorary Secretaries.

Metropolitan Counties Branch: Wandsworth Division.—The first sessional meeting of this Division will be held at Worple Hall, Wimbledon, on Thursday, October 22nd, at 8.30 p.m. The Medical Act Amendment Bill, Vaccination Resolutions, and Ethical Rules for the Division will be considered, as well as other business. Mr. Whitaker, Organizing Secretary, will attend. Members will see by the sessional card they receive that the Committee has arranged for subjects for discussion, or papers to be read, alternately at each monthly meeting in various centres during the winter months. It only remains for the members themselves, by attending these meetings, showing cases, taking part in the discussions, introducing non-members, and suggesting further topics for consideration to make them instructive and attractive. A small social dinner will precede the meeting at Clapham in November to meet Dr. Hale White, and if this is a success others will be arranged for in Wimbledon and Wandsworth in February and April respectively.—E. Rowland Fothergill, M.B., Torquay House, Southfields, S.W., Honorary Secretary.

Northern Counties of Scotland Branch.—The autumn meeting of this Branch will be held at the Grand Hotel, Elgin, on Saturday, October 17th (the hour of meeting and time table of trains will be stated on the circular which will be sent to each member of the Branch). Agenda: Minutes of meeting held at Strathpeffer. To discuss the draft Medical Acts Amendment Bill; (2) resolutions referred to the Branch for their consideration and report: these resolutions refer to the lines the Council has urged upon the President of the Local Government Board for improving the existing Vaccination Acts; (3) a resolution passed by the Representative Meeting at Swansea referring to representation on the General Medical Council, which has also been sent to the Branch for report. The draft Act and the resolutions were published in the Supplement to the British Medical Journal of August 22nd; it is hoped that members will consider the Act as well as the resolutions, as they are of importance to the profession. Dr. de Watteville (Kingussie) will open a discussion on the Prophylaxis of Phthisis, and several members have promised to take part in the discussion. The Honorary Secretary will feel obliged if members who wish to read papers at this meeting would kindly intimate their intention on or before October 10th.—J. Munro Moir, Honorary Secretary.

North Lancashire and South Westmorland Branch: Kendal Division.—The autumn meeting of this Division will be held at the Secretary's house on Wednesday, October 14th, at 3.30 p.m. Agenda: (1) To consider and report on resolutions referred to this Division by Council at Swansea, respecting the proposed Medical Acts Amendment Bill. (Members are advised to study beforehand the Supplement of the British Medical Journal, August 22nd, p. cxciii.) (2) The resolution of the Council for improving the existing Vaccination Acts (p. cxcvii). (3) The resolution respecting representation on the Council (p. cxcviii). (4) Contract Practice in Kendal: a paper by Dr. Cockill. Members will observe that the meeting is important, and they should make a special effort to attend.—P. F. Sturridge, Honorary Secretary, Stramongate House, Kendal.

Southern Branch: Portsmouth Division.—The next meeting of this Division will be held at 5, Pembroke Road, Portsmouth, on Tuesday, October 13th, at 3.30 p.m. Members wishing to show any cases or pathological specimens are requested to communicate at once with J. G. Blackman, Honorary Secretary, Poplar House, Kingston Crescent, Portsmouth.

Shropshire and Mid-Wales Branch.—The annual general meeting of this Branch will be held at the Salop Infirmary, on Tuesday, October 13th, at 3 p.m. Members who wish to bring forward any business, to read papers, or to show cases or specimens, are requested to communicate with the Honorary Secretary not later than Wednesday, October 7th.—Harold H. B. Macleod, College Hill, Shrewsbury, Honorary Secretary.

South Midland Branch.—The autumnal meeting of this Branch will be held at Bedford County Hospital, Bedford, on Thursday, October 15th, at 2 p.m., under the presidency of Mr. Audland (Wellingborough). Agenda:—Dr. Buszard: On Hyperpyrexia. Dr. Hicheus: A Case of Chloroma, with specimens. Mr. Gifford Nash: Four Cases of Enterectomy for Malignant Disease. Luncheon will be provided by Messrs. Dudeney and Johnston, High Street, Bedford, at 1 p.m. prompt. Members wishing to have lunch must inform the Honorary Secretary not later than Monday, October 12th.—E. Harries Jones, Northampton, Honorary Secretary.

Southern Branch: Salisbury Division.—The next meeting of this Division will be held at the Infirmary, Salisbury, on Wednesday, October 28th, at 8.15 p.m., preceded by dinner at the County Hotel at 7 p.m. Members wishing to read any papers or show any cases are requested to communicate as soon as possible with J. E. Gordon, Honorary Secretary, 52, Endless Street, Salisbury.

Staffordshire Branch: North Staffordshire Division.—The second meeting of this Division will be held at the North Stafford Hotel, Stoke-on-Trent, on Friday, October 16th. The Chairman, Mr. Spanton, will take the chair at 4.45 p.m. Agenda:—Minutes of the last general meeting. Correspondence. Exhibition of Living Cases. Notes on a Case of Malignant Disease of the Liver, by Dr. R. Hughes. Report by Dr. Hind as Representative of the Division to the annual meeting at Swansea. Pathological Specimens. To discuss the Medical Acts Amendment Bill, the Vaccination Acts, and the resolution passed by the Representative Meeting at Swansea (published in the Supplement to the British Medical Journal of August 22nd, p. cxciii). To decide the place of holding the next meeting. Dinner, 7 p.m.: charge, 5s. This meeting being important in view of the discussions referred to the Division by the Council, it is hoped that every member of the Division will be present.—Reginald Alcock, High Street, Hanley, Honorary Divisional Secretary.

Ulster Branch.—The autumn meeting of this Branch will be held on Wednesday, October 28th, in Derry. Any member having any papers to read, or any business to bring before the meeting, should kindly communicate with Dr. Calwell, 1, College Square North, Belfast.

SPECIAL CORRESPONDENCE.

BERLIN.

Professor Behring's Address on Tuberculosis.—Medical Ethics.

This year's Congress of German Naturalists and Medical Men, which was held in Cassel from September 21st to 26th, had its sensational "event" in Professor v. Behring's address on "Tuberkulose-bekämpfung" (the fight against tuberculosis). In this he gave expression to opinions in direct opposition to Professor Robert Koch's as regards bovine and human tuberculosis, and held out hopes that a specific prophylactic, comparable in its wide range of action to Jenner's small-pox prophylactic, would before long be available in the form of immune cow's milk (*Immun-milch*). Behring's experiments in this direction have been going on for years, meeting with ready acquiescence from large cattle owners in Germany and Austria. He and his assistants have hitherto been able to carry out the work alone, but it has grown too large and complicated and too important to be left in private hands, and at the present moment the question of State management is under consideration. Several conferences have already been held, and though nothing positive is known as yet, well-informed persons are of opinion that the last interview between Professor v. Behring and Ministerial-director Althoff (of the Prussian State Medical Department), which took place at a halfway station between Marburg and Berlin shortly after the close of the Cassel Congress, has clenched the matter, and that the Prussian State will before long undertake the organization and supervision of cattle immunization on a large scale.

The Prussian "Ministerial Journal for matters connected with the Medical Profession" has published a number of judicial decisions given by the medical court of honour, some of which are of general interest. No. 1 decides that misdemeanours of which a medical man may be guilty outside his profession are subject to the jurisdiction of the court of honour. Another decision runs as follows: "Neglect of the necessary care in making out a medical certificate, even in a single case only, suffices to justify the sentence that the doctor in question has been unconscientious in the exercise of his profession." And a third decision—more important, perhaps, than all—establishes that the mere fact of business association with a quack constitutes an offence against professional honour.

NEWCASTLE-UPON-TYNE.

College of Medicine.—The Infirmary Buildings.—Caisson Disease.—Death of Barnard S. Proctor, F.I.C.

The winter session opened quietly on October 1st. On this, as on the two last occasions, there was no public ceremony. The real work of the session may now be said to have begun. The students are turning up remarkably well. The following is the list of scholarships for last year: The gold medal for the best thesis of the year has been awarded to Robert Tilbury Brown, Captain R.A.M.C., the subject of his essay being "A Bacteriological Study of Asylum Dysentery." Hermann Woolfe gained the Dickinson Scholarship, and T. W. Maddison the Charlton. The Gilson prize was secured by G. E. Lloyd, and the Luke Armstrong by David Young. D. R. Gunns obtained the Gibb scholarship. The Stephen Scott scholarship was found to be more difficult to award. G. G. Turner and Lachlan Frazer have been bracketed as scholars, the former receiving £40 and the latter £35, while to G. B. Turtle has been awarded a prize of £5 out of the Stephen Scott Scholarship Fund.

Within the last few months the new infirmary buildings have made considerable progress. The exterior of the Nurses' Home is now completed. Workmen are busy pushing on with the internal work, as the housing of the large staff of nurses of the Royal Infirmary at the present time is rather a difficult matter owing to the absence of sufficient suitable accommodation within a reasonable distance of the present infirmary. The fact that there are now 550 workmen employed on the new buildings that are being reared on the Leazes explains the rapidity with which progress has of late been made. Owing to pressure and the want of adequate accommodation for the various out-patient departments in the Royal Infirmary it is more than likely that a special effort will be made to push on with the particular portions of the buildings of the Royal Victoria Infirmary that are to be set aside for this purpose. As is the case with most new buildings, the expenditure is likely to be very much greater than the amount specified in the contract.

A large engineering firm is at present busy making excavations for the new high-level railway bridge which is to span the Tyne. Already three men, suffering from the effects of having worked in the cylinders under compressed air, have been admitted into the Royal Infirmary. In each instance the symptoms came on several hours after the men had left work.

A fortnight ago there passed away at Westbury-on-Trym, Bristol, at the ripe age of 73, Mr. Barnard S. Proctor, formerly of the firm of Messrs. Proctor, Son, and Claque, pharmaceutical chemists, Newcastle-upon-Tyne. To the younger generation of students of the Newcastle College of Medicine Mr. Proctor could scarcely be said to be known, but there are many medical men scattered up and down the country who retain pleasant memories of their old teacher. In 1869 Mr. Proctor was appointed Lecturer on Pharmacy in the University of Durham College of Medicine. For twelve years he occupied the chair, an appointment which gave him the opportunity of publishing in book form his well-known and much-appreciated *Lectures on Pharmacy*, a book which has passed through at least three editions, and which added to his reputation as a scientific pharmacist. On retiring from the chair the University of Durham, in order to mark its appreciation of his services, expressed its desire to bestow upon him the degree of Master of Arts, an honour which he did not see his way to accept. In his own walk of life Mr. Proctor stood remarkably high, and in matters pharmaceutical his advice was often sought. Beneath a quiet and retiring manner there were a kindly heart, a sympathetic spirit, and a love of truth which endeared him to those who had the privilege of knowing him. Mr. Proctor married Miss Gray, a niece of Michael Faraday. In his retirement at Westbury Mr. Proctor enjoyed the friendship of an old colleague of the Council of the Newcastle College of Medicine, the Rev. Canon Waite, formerly Rector of Norham-on-Tweed.

CORRESPONDENCE.

THE (PROPOSED) MEDICAL ACTS (AMENDMENT) BILL.

Sir,—I have read with great care the draft of the above Bill, and also the very full and interesting letter of Dr. O'Connor thereon. These documents are now before the Divisions; and although I strongly feel with Dr. O'Connor that much redrafting is necessary, we cannot wait before it is submitted to the Divisions.

To my mind the question before us resolves itself into two heads, and as we cannot have much time to debate them they must perforce be taken together. I have already laid my views before my Division, and they will appear in its report, but I desire through your columns to lay them before a larger constituency.

The first head is essentially a second reading debate, and involves the whole principle of the Bill, and to that I will first address myself.

I shall commence by taking exception to the title. If the General Medical Council is to include a registered dental practitioner, why does it not control dentistry as well as medicine, surgery, and midwifery?

The main objects of the Bill being the regulation of practitioners, it is for us to see by what machinery it is proposed to regulate, whether that machinery is efficient, and whether the increased tax which it is proposed to levy upon us will ensure the working of that machinery automatically. Further than that, it must be a matter of strict inquiry whether the provisions of the Bill will reach without doubt all classes of unqualified practitioners, whether under the aegis of a company or not, and without the necessity of proving any false pretence on their part.

Passing then into the committee stage we have to consider in detail some provisions of the Bill which are open to criticism. First of all the reason of the multiple vote is at once obvious. The practitioner who possesses only the State qualification will have but one vote; should he take a degree or diploma he will be further entitled to other voting powers. It is of course a moot question whether any departure from the principle of "one man, one vote" will be acceptable to Parliament. It is also hard to justify the inclusion of a dental representative unless more powers are given in the Bill to deal with dental surgeons.

Without entering into the many drafting details quoted by

Dr. O'Connor, most of which will have to be adopted, attention may next be directed to Clause XVI which provides for the appointment of "assistant examiners." At the present time the General Medical Council possess the power of inspection of all examinations and it would appear that the additional power here sought is a needless irritant to the corporations who are not likely to favour the Bill and who should be spared any unnecessary reforms.

In Clause XXVIII, subsection 3, the net has been widely cast, but for some reason, probably inadvertence, no mention is made of life insurance which should certainly be included.

We now arrive at Clause XXXIV, which is most objectionable and the weak points of which have already been pointed out by Dr. O'Connor. These points cannot be too strongly emphasized, as the effect of the clause will be to harass and annoy the legitimate practitioner who requires a brief holiday and will utterly fail to touch the people whom it is intended to reach. This clause as it stands must be deleted, and I trust that the force of opinion will convince the drafters of the Bill of its unworkable character. Surely also any clause which takes the place of Clause XXXIV should apply to the dental profession as well as to the medical.

The definition in Clause XXXVI (b) is not yet wide enough, and should be so added to as to prohibit the administration of anaesthetics by any unqualified persons or by dentists not registered.

Finally, the clause which proposes that those whose names are erased should lose their degrees and diplomas is deplorably weak (Clause XXV, 2), and should be so drafted as to make the deprivation follow *ipso facto* upon erasure.

Accept my apology for so long a letter, which I trust may suggest some further ideas to the Divisions.—I am, etc.,

West Bromwich, Oct. 5th. HERBERT MANLEY.

THE DIVISIONS.

SIR,—The replies of the various Divisions respecting the proposed Medical Acts Amendment Bill, etc., submitted to them are now being awaited by the Council of our Association. May I be permitted to suggest that, in connexion with such replies, the proportion of members of the respective Divisions taking part in the meeting or meetings at which the business referred to had been discussed should be added? It appears to me only reasonable and right that this information should be before the Council when what purports to be the opinions of the Divisions come to be considered by that body. Upon general grounds, also, such a record might, it occurs to me, be useful and instructive to ourselves.—I am, etc.,

October 6th. A CHAIRMAN OF DIVISION.

THOMSEN'S DISEASE.

SIR,—Concerning the case which I reported in the BRITISH MEDICAL JOURNAL of October 3rd, p. 836, under the title of "Thomsen's Disease," my friend, Dr. Parkes Weber, kindly writes to me:

I think it is worth while questioning whether it could be possibly an instance of the curious condition known in German as *schnellenden Finger*. I have seen two samples of this rare condition, and it seems to me to fit in with your description.

The disorder referred to by Dr. Weber has been named also "trigger" or "snap" finger, and I have always supposed it to be a disease of tendon or sheath, of traumatic origin, and curable by surgical means. I could find no sign in my patient of any such lesion, and the disorder had existed from early childhood. His finger, after flexor action is slowly established and the extension has reached a certain point, certainly completes extension with a flick; but this must be the case in any such instance when resistance is overcome rather suddenly. In the only case of Thomsen's disease I have seen—one in which the forearm only was affected—the extension of the elbow was completed in this sudden fashion as the critical angle of flexion was passed. The "trigger" phenomenon then may not be specific, but may appear in all or many such reluctant extensions, and under "trigger finger" more than one pathological condition may be included. I admit that in my patient the area of the affection is narrowly limited, but the area of Thomsen's disease is very variable. Your readers may be interested to hear further comments on cases of this kind from Dr. Parkes Weber. Certainly I should be, as my experience of them amounts practically to nothing.—I am, etc.,

Cambridge, Oct. 3rd. T. CLIFFORD ALLBUTT.

ISOLATION HOSPITALS.

SIR,—Most medical officers of health will, I am sure, agree with the greater number of your remarks in the issue of October 3rd, p. 84, on isolation hospitals. But to one paragragh—the last—of your leading article some exception may be taken. Rate-supported isolation hospitals truly enough find the reason for their existence, not in any desire of getting sick people well, but in a hope of preventing others from becoming sick. And so far as a person, removed to an isolation hospital at the instance of a medical officer of health, surrenders his liberty for a time in the interests of the public, so far is he morally entitled to the gratuitous exhibition of every solicitude on the part of the sanitary authority.

No doubt it is an excellent thing that at certain isolation hospitals "special paying wards" should be available for the reception of persons who may or may not be local ratepayers, and who are willing to pay for indulgences from the sanitary authority to which they may feel no legitimate claim. But the provision, by a small borough or district council, of an isolation hospital equipped with "special paying wards" for cases of enteric fever, scarlet fever, and diphtheria is financially a serious matter. I doubt very much whether, having regard to the financial conditions by which local authorities are bound in purchasing land and erecting buildings, a sum less than 3 or 4 guineas a week would clear, as you say any sum charged should clear, the "whole cost of maintenance and nursing" in the "special paying wards" of such an isolation hospital as the average district council can provide. I am certain that such a sum would be inadequate to prevent a charge on the rates in the event of the special paying wards being only occasionally occupied.

Now there are many persons to whom a weekly charge of 4 guineas a week is prohibitive, and who are perfectly well able nevertheless to isolate their children at home with safety to themselves and to the public.

Many such persons seek admission for themselves or their children to rate-supported isolation hospitals, not because of any sense of public duty or any regard for the public health, but from purely selfish motives. They do not want "special paying wards" and so forth; but they shrink from the annoyance of having little Tommy at home in the top bedroom for six weeks; they wish to avoid the social inconvenience involved by the performance of maternal duties towards a child sick with "the fever," or "perhaps the servant will give notice," and "the spare room is wanted for other purposes."

If we clear our minds of cant we find that very seldom is the removal of a patient to an isolation hospital urged by the patient's relatives in the public interest, and that the percentage of cases removed, which are removed because in the opinion of the medical officer of health isolation *cannot* be properly carried out at home, is in many places far less than may be thought.

It is obviously unfair that the whole cost of the maintenance and nursing of persons who are unable to pay such charges as you suggest for special paying wards, and yet have none but selfish reasons for admission to rate-supported isolation hospitals, should be borne by the rates. Such a proposal would be the application of the crudest socialism in the interests of a few selfish individuals. No; persons whose removal is ordered or advised for the proper reasons by the proper responsible official—the medical officer of health should be maintained and nursed without direct charge. Ratepayers or their children, on the other hand, who are admitted for reasons other than those of the public health, should be charged at a weekly charge based on the rateable value of the ratepayer's dwelling-house.

For persons who are neither local ratepayers nor under the guardianship of local ratepayers, and who are admitted in interests other than those of the public, a fair weekly charge should be made, based on the average cost of maintenance and nursing in the wards to which they may be admitted—special or ordinary.

As a matter of fact, revealed only too clearly by the recent "regrettable incidents" at Hereford, Folkestone, and elsewhere, the conditions under which small isolation hospitals are provided and maintained are by many persons imperfectly understood. Private practitioners who have had, since their student days in charity-supported general hospitals, no experience of institutional life or administration, are sometimes unjust in their judgements of the actions of colleagues who are the responsible servants of local authorities. They forget, moreover, the disciplinary relations which must necessarily exist between the responsible head and the sub-

ordinate staff of a rate-supported hospital. The consequence is that miserable misunderstandings, such as appear to have arisen at Hereford and Folkestone, do frequently arise, and the responsible officer has his position weakened rather than strengthened by the action of those professional brethren from whose opinion he would wish to derive support when advocating before our local rulers sanitary and administrative reforms.—I am, etc.,

Barnes, S.W., Oct. 3rd. F. GRAHAM CROOKSHANK.

SIR,—In your leader dealing with this subject you speak of the "unpleasant results which may accrue to authorities from neglect to give adequate thought to the three main points that constitute the elements of a successful hospital, namely, site, structure, and arrangements for administration."

Are we then to infer that, in your opinion, the occurrence of "return cases" is referable to the neglect to provide "up-to-date" hospital accommodation and administration? Surely not; for this would be a wholesale condemnation of the sanitary authorities of nearly all the large towns and cities in the United Kingdom, not one of which is provided with "a successful hospital." The aggregation of the infective sick in large permanent hospitals never has been, and never can be, successful. The utmost that can be claimed for the system is that it has ministered to the convenience of a section of the public.

I have for a long time been convinced that the blame cannot be put on administration, and I have always tried to make this clear for two reasons: in the first place such a suggestion would be cruelly unjust to those having charge of these institutions who would be put constantly on their defence (as in the Hereford case) and in the second attention would be diverted from the real causes of the failure of these pest houses miscalled isolation hospitals. The failure is universally acknowledged, the cause of that failure awaits Government inquiry. Instead of facilitating inquiry what has been the attitude of the Public Health profession? Almost to a man they have sought to bolster this bad system up with pseudo-scientific arguments such as the nonsense about "epidemic wave periodicity"—an argument that carries with it a confession of failure.

In this city where we have an "isolation" hospital in every sense "up-to-date and thoroughly equipped"—where administration has been carried out with nervous energy—where money has been lavishly spent in a desperate effort to make "isolation" appear to be some sort of success—what do we find after thirty years of compulsory notification? The sanitary authority is disheartened, the impossibility of avoiding "return cases" openly confessed, medical men on the Health Committee pouring ridicule on the system, a consensus of opinion amongst medical men that nothing but harm has accrued, and the fact that now few cases of scarlet fever are admitted.

For some reason, not far to seek amongst the findings of bacteriology, hospital-discharged patients remain not only in a highly infective but in a protractedly infective condition. So far as the former is concerned, we know that the Ditcham inquiry revealed the fact that the very contacts of a hospital-discharged case of mild scarlet fever are capable of spreading both this disease and diphtheria over a wide area and in a deadly form! As to the latter, the case mentioned by Mr. Shirley Murphy, which, we are told, on being discharged from one of the hospitals of the Metropolitan Asylums Board, went about for six or seven months establishing new centres of diphtherial infection, may be instanced. We know that such things are unknown amongst the home-treated, and we are aware that they are not the happenings of the unexpected.

Surely it is the very irony of fate that after thirty years of finings, imprisonments, and persecutions the public should now be found turning against sanitary officials their own weapons. That the Hereford example will be followed elsewhere is beyond question. Equally certain is it that sanitary authorities will be driven to repudiate responsibility for the unavoidable. Then the attention of those who have charge of the public health will at last be compelled.—I am, etc.,

Nottingham, Oct. 5th. EDWARD DEAN MARRIOTT.

SIR,—Under the above heading in your issue of September 26th, taking as your authority a letter signed by Dr. T. M. Watt, of Goxhill, which appeared in the *Hull Times* of September 19th, apparently without any endeavour to ascertain the correctness or otherwise of the statements it contained, you proceed to criticize the conduct of the Glandford Brigg Rural District Council. As their responsible Medical Officer of Health, will you kindly allow me space for reply?

Dr. Watt commences his letter by stating "On March 22nd I found a family of six children down with scarlet fever and advised their removal to the isolation hospital."

The facts are as follow: Immediately on receipt of the notification I visited and found five of the children running about freely desquamating. The only remaining child was being nursed on the mother's knee. The house is a farmhouse situated about three-quarters of a mile from the village of Goxhill. It is separated from the public road by a high wall and gate. In front there is a large yard and behind are the fields belonging to the farm. There was ample accommodation in the house. They were some 200 yards distant from their nearest neighbours. Taking all these circumstances into consideration, I did not advise their removal to the isolation hospital. I gave directions as to disinfection and isolation, and left printed instructions. I called several times afterwards to see that my orders were obeyed. The inspector also made frequent visits, and supplied disinfectants. That the fever should have broken out thirty-five days after in a house 200 yards away only illustrates that the most elaborate precautions may sometimes fail. Dr. Watt complains of the inconvenience caused to the incoming occupier. This man applied to the Council for compensation, which they have granted subject to the approval of the Local Government Board. The recent cases mentioned by Dr. Watt, as he himself says in his letter, occurred during the absence from home of the medical officer of health. At the time I was on a visit to the South of Ireland, Dr. F. Goodman, by permission of the Council, acting as my deputy. On September 4th Dr. Watt telegraphed to the Local Government Board as follows: "Will you order open to-day infectious hospital here? Scarlet fever epidemic for month. I have urged authorities in vain. Three cases in one tavern. Isolation impossible.—Dr. Watt." On September 6th I received a telegram from Dr. F. Goodman stating that the Local Government Board required a report in reply. I started for home by the first train, and, travelling without breaking my journey, reached Brigg on Tuesday, September 8th. On the 9th I visited Goxhill, and also New Holland, where an epidemic of diphtheria had just broken out. On September 10th I sent in my report to the Local Government Board. I visited the house where Dr. Watt states typhoid fever prevailed, and arranged for the children who were not ill to be boarded out at the expense of the Council.

In conclusion, I may mention that our district is a large one—area, 124,157 acres, with a scattered population of 23,823—and that the whole time of the medical officer of health is not given up to the duties of that office.—I am, etc.,

GODFREY GOODMAN, M.O.H.
Rural District Council of Glanford Brigg, Department of the Medical Officer of Health.
October 6th.

SIR,—Referring to your annotation of last week under this heading will you allow me to state that I had it personally from a district councillor that the Council declined to open our hospital because of the expense, and that they were waiting at the time in hopes that the epidemic would die out? Moreover, the mother of the typhoid family reported to me that the medical officer of health, in reply to her own and her sick husband's wish that the stricken ones should be removed, told her that the Council were willing to board out the healthy children, but they would not open the hospital because it would cost £10 a week. The unfortunate woman had imposed upon her, in addition to all her load of other work, the task of canvassing the village personally to seek lodgings for these healthy ones, but her efforts were in vain. For this service to the Council she received no remuneration. Since I wrote my letter I have notified six fresh cases of scarlet fever. I append the only notice I have seen of my narrative of facts. It appeared in the *Hull Times*, and is a sample of what we may expect if we bestir ourselves in behalf of the welfare of our fellow-citizens.

Sir,—Mr. T. M. Watt's fiery verbiage in the *Daily Mail* of Thursday would be somewhat startling did not residents in the district know all the circumstances. As matters now are, the Rural District Council have, no doubt, a complete answer to the allegations of Mr. Watt, but knowing that gentleman they might not think it worth while to reply. Perhaps it might be advisable to knock 95 per cent. off Mr. Watt's assumptions and off his self-blown trumpeting about his being "a zealous private medical officer of health."—I am, Sir, etc.,

September 19th, 1903. INO.

—I am, etc.,

Goxhill, Sept. 30th. THOS. M. WATT.

NURSING AS AN OCCUPATION.

Sir,—I hope I yield to no one in my respect for nurses and in my determination to do everything that lies in my power to advance their interests and their work. But I try in vain to understand what advantages would accrue to trained nurses or to the public if an Act of Parliament were obtained for the legal registration of trained nurses, and, as far as I can gather, the opinion of the matrons of almost all the best training schools is opposed to it.

What is the object in endeavouring to provide a "uniform" standard to which all nurses must conform when there is certainly scope for a considerable variety in the class of women employed as nurses, and in the amount of technical knowledge that it is necessary for them to possess to enable them to discharge the very varied duties which are assigned to them? No one denies that there are a number of unsatisfactory nurses, and that the public suffers accordingly at their hands; but how would the establishment of a register on which the names of all nurses who had reached a "uniform" standard of technical proficiency were inscribed tend to alter this fact?

When one takes the trouble to inquire into the causes of complaint against trained nurses, it is comparatively seldom that ignorance of a nurse's technical duties is the source of the grievance. Is it not almost always the fact that the trouble has arisen from a want of temper, tact, patience, or adaptability, or that she has lacked that courteous manner which is one of the most essential qualifications for a nurse? But even the ardent advocates of a legal register for trained nurses admit that this register could only guarantee that a nurse's technical qualifications were in accordance with the "uniform" standard which it is suggested should be set up by some central governing Board. The general attainment of this "uniform" standard bristles with difficulties. Three years in one hospital, for instance, is a very different training to three years in another. In any large hospital where care is taken that a nurse's work shall be varied she can be well trained in a much shorter period. In some hospitals ten years would not give any proper training. But three years at such a hospital would entitle an untrained woman to be "hall-marked" as trained. But even if the training at all hospitals were equally good, how is a register going to serve as a practical guide to medical men, and the public, for discerning who is and who is not suitable for the work or position for which a particular nurse is required?

We are all agreed that it is impossible to find a sufficient number of really good nurses to meet the innumerable demands for them, but that is no reason why in our annoyance and disappointment we should adopt so fallacious a remedy as the State registration of trained nurses.

It is admitted that no examinations could ascertain, and no register record, whether a nurse is observant, unselfish, self-controlled, and good-tempered, yet any woman lacking these qualifications could never be fit for the care of sick persons, and so could never rightly be regarded as a trained nurse, even though she may have attended lectures and passed any of the theoretical tests which would entitle her to be registered.

No medical man, I hope, would wish to send a professional nurse to take charge of one of his patients solely on the grounds that her name was on a register. He would quite well know that that register could not possibly testify how far the nurse in question was personally suitable to become an inmate of the household of his patient. How then, as some of your correspondents suggest, would a register help a medical man to decide that the woman is a fit person to carry out the manifold duties which she is deemed technically qualified to undertake? Can he not ascertain now by letter, telegram, or telephone all particulars about a nurse whom he wishes to employ, when she has furnished him with the name of her training school and other credentials? He will wish to know both sides of a nurse's qualifications, or, at any rate, the friends of the patient will require to do so, or they run the risk of being subjected to much annoyance by having an untrustworthy or unconscientious or a disagreeable nurse in their midst. It would be small consolation to them to be assured that an unsatisfactory nurse's name was duly enrolled on the legal register.

What medical man or other sane person has the time to spare, or is going to take the trouble, to have the name of an unsatisfactory nurse removed from the legal register? We all know that a nurse may be very unsatisfactory indeed from the patient's point of view and from that of the household in which she is working, without being guilty of such gross misconduct as would enable her name to be erased from a legal register. A nurse might be in every way objectionable, if not worse, but who is going to run the risk of an action for libel by taking steps to get her removed? The bad nurse would remain on the register and the public be lulled into a false feeling of security. They would think "She must be all right, she is on the register."

Who selects which doctor they would employ by consulting the *Register*, even though it is a safeguard where medical men are concerned to be able to consult the *Medical Register* if the technical qualities of a medical man are called into question?

It is a mistake to endeavour to organize the profession of nurses and the profession of doctors on the same lines. It is no disparagement to his personal qualities to say that the technical knowledge of a doctor counts first. I have no desire to underrate the importance of the technical knowledge of the nurse, because I state most emphatically that—apart from specialism—in the large majority of cases the extent of her actual technical knowledge is of secondary importance to her character as a nurse.

But my contention is that you do not need "uniformity" of technical qualifications in trained nurses. It is necessary to be able to ascertain what technical qualifications a nurse possesses, and it is folly to say that this cannot be done effectually in these days by demanding a nurse's certificate of training, or by applying direct to the hospital where the certificate was gained.

I note that the advocates of registration wish to stop any unregistered nurses from being employed, but are there not innumerable cases where a partially-trained nurse is fully adequate to the requirements, providing that the woman herself is satisfactory, and that her training has been thorough as far as it goes? How many medical men prefer employing nurses who are well known to them, and who have given personal satisfaction to themselves and to their patients, even when their technical training has not been completed in a recognized training school, to employing other nurses who hold a full certificate of training, but who are not personally as well adapted to the work.

Health and a variety of other considerations may prevent a woman from continuing a hospital career, and yet her inability to continue in hospital work may not necessarily imply any failure in capacity, and she may easily prove more excellent in private nursing than many others whose technical qualifications are complete.

It is the very fact that there is room for such a variety of nursing knowledge and experience to supply the manifold needs of patients, and to meet the very different conditions under which nursing of all sorts and kinds has to be done, that renders a register unnecessary in the first place and undesirable in the second.

Is not the present chaos and the difficulty of securing really competent nurses due to the comparative dearth of good nurses, that is, in proportion to the demands for them? In what respect will a register remedy this? Registration is not the process by which the chaff can be separated from the wheat. On the contrary, it will give the chaff undue value.

The incompetent and unsatisfactory women who pose as nurses, and whose work and conduct tend to bring such unfair discredit on their fellow nurses will no longer be employed when a sufficient number of competent nurses exist to meet the demand for them.

For many years better class women have taken up nursing, and will continue to do so, but the general public hardly realize how many of the right type are needed if the inferior are to be crowded out. Queen Alexandra's Imperial Military Nursing Service, Queen Alexandra's Military Nursing Service for India, Queen Victoria's Jubilee Nurses, the Colonial Nursing Association, the Poor-law Infirmary Nursing, the hospitals of the Metropolitan Asylums Board, not to speak of the asylums and many other openings, make increasing demands for the best. Is it any wonder that the best nurses are not forthcoming in sufficient numbers, even though the hospitals produce a steady supply of them year by year?

Is it not true that the perplexity of to-day is not so much to ascertain who is and who is not a properly qualified competent nurse for the particular position which has to be filled, but the difficulty of securing her? Is it not true that the inferior nurse is employed because a sufficient supply of the best is not yet to be had?

Many of our hospitals have been under-staffed for long

years, and therefore have not produced a sufficient number of the best nurses, whereas openings for the best have increased in every direction.

I find it impossible to believe that a register would effect any improvement in the existing conditions. It would only tend to mislead the public further if they are taught to regard it as a guide to enable them to secure the right woman to enter their household when they need the services of a good nurse.—I am, etc.,

Knesworth House, Royston, Oct. 7th. SYDNEY HOLLAND.

SIR,—May I say a few words in reference to the most interesting correspondence on the subject of registration of nurses now taking place in your columns, from the point of view of the unprofessional public? A short time ago I was called on to assist in filling certain important nursing posts at a few days' notice, and though I adopted the means advocated of communicating immediately with the matron of the hospital at which the applicant had trained, the replies were in some cases so delayed by accidental circumstances, or so insufficient, that certain candidates had, at some hardship to themselves, to be put out of account. In addition to this, some had practically nothing official to show for the truth of their statements, and others appeared on inquiry to have had training only in certain branches of their profession. Now, what would members of School Board or Education Committee think of being called on to make important appointments under such conditions? The suggestion that they should obtain all information as to competency by minute personal investigation would seem absurd. We must recollect, too, that to the ordinary man or woman the "certificates" of an obscure nursing home may mean much the same thing as those of Guy's or of Bart.'s; in any case, to discover the inadequacy of a nurse by correspondence or otherwise would never occur to most people, and to put such a duty on a doctor is, as Mr. Bryan points out, an unfair proposal. Probably we do not realize how often a private nurse is sent to nurse, for example, fever cases, who has been trained in a hospital where she has never seen a case of fever at all. The difficulties of fixing a standard of regulation are, of course, very great, but surely not so great as to make it impossible if sufficient care and thought are bestowed on it. A register of nurses is even now in existence under the Local Government Board for Scotland, and surely this principle is capable of further development. Such a register might not give us all information about the qualities of a nurse, but it would at least guarantee that she had satisfactorily completed her educational course and had since done nothing to justify her name being struck off the roll. This to the non-professional employer would mean much, and further inquiries could of course still be made privately if desired. For these reasons I trust that in the interests of the public a measure for the registration of nurses may soon be brought forward.—I am, etc.,

Auchterarder, N.B., Oct. 1st. E. S. HALDANE.

SIR,—As one who has been a trained nurse for nearly a quarter of a century, will you give me space to urge a few of the reasons why State registration for nurses should claim our best efforts to obtain it? State registration has a formidable sound, but it means this, I believe—that trained nurses alone should have the right to that title, and that others using it would be liable to punishment; in other words, giving the nursing profession a legal status. Further, it means that an examining body would have to decide who were fit to obtain that honourable title; the reasons are chiefly these:

1. Protection of the public against fraud in the shape of women in cloaks and bonnets claiming to be nurses.

2. The protection of nurses themselves, who, having been trained for three or more years, find themselves confronted with a body of women who have never undergone any discipline, bodily or mental, to fit them for their work, yet claim often larger fees and walk off with the particular work for which they have so laboriously trained themselves.

3. To raise the standard of nurses and nursing by making that standard uniform in as far as giving those only a right to be called trained nurses who have passed an examination under a central authority. This alone would be a great step towards helping the large and increasing body of nurses from provincial hospitals to gain the recognition which they deserve.

4. To have such a central body as could be entrusted with disciplinary powers to strike off the roll the names of such as have proved themselves unworthy members.

Difficulties are urged—and difficulties there certainly are—but difficulties are not reasons.

Much more I could say but for fear of encroaching. I will only beg of medical men and nurses to study the question seriously and from all points of view, not only their own. One objection urged is that it would affect those now working, but there is always a clause in new measures to prevent their affecting "vested interests" and to insure that they only come into operation slowly.—I am, etc.,

CHRISTINA FORREST,
Matron, Victoria and Bournemouth Nursing Institute and Home Hospital, Bournemouth; late Sister at Guy's, and Matron, York County Hospital.

Bournemouth, Sept. 29th.

SIR,—I have read with much interest the correspondence of the last few weeks on "Nursing as an Occupation." Personally, I cannot understand how there can be two opinions as to the expediency of nurses continuing to do all in their power to procure better organization of their profession. To those who have adopted nursing as a profession, and given valuable time to becoming proficient in it, it is heartrending to see the discredit brought so often upon their work by those who are nurses only in name and uniform.

As long as we remain in our training schools we do not realize the necessity for a uniform standard of professional education and training. It is when we come to hold posts as matrons of smaller or special hospitals, and are by necessity brought into contact with nurses belonging to private nursing institutions or working on their own account, it is then that we see why the public has such reasonable grounds of complaint against us.

The best nurses remain in hospitals: of this there is no doubt. I believe, however, that by a more uniform system of education, and by all nurses being required, at the end of their three or four years' training, to pass an examination arranged by a Central Board of Examiners on which they themselves are, of course, represented, that the profession will gain a tremendous advantage. Most nurses are so fully occupied, and are so apt to think only of what concerns their immediate interests, that it is difficult to find the time and energy required to work for the "good of the whole." We want to sink our differences of opinion and loyally unite for the benefit of the profession.—I am, etc.,

KATE RICHMOND,
October 6th. Birmingham and Midland Hospital for Women.

THE LEPROSY DISCUSSION.

SIR,—I continue from last week my comments on your report of this important discussion:

Sir Patrick Manson, (page 705).

Respecting the observations of Sir Patrick Manson I have but little to say. He asks for more precise information as to how the bacillus gets into the fish; but this is a question which I am sorry to say cannot at present be answered. At a meeting of the Epidemiological Society Sir Patrick avowed his disbelief in the contagiousness of leprosy, and he now adds that in "some very indirect way fish is undoubtedly associated with leprosy," and, further, that leprosy and tuberculosis are similar diseases. He and I differ, therefore, only as to the greater or less directness of the association of fish with leprosy, and, as he declines to be considered one of my disciples, I can only say that I am proud to profess myself one of his.

Dr. Sambon, (page 705).

I am in some difficulty in replying to Dr. Sambon's communication because it is certain that either your reporter has misunderstood his meaning or Dr. S. has misunderstood mine. There are, moreover, some obvious misprints. Dr. S. says that to admit that the phenomena of leprosy are caused by a bacillus, and to believe that the disease is caused by eating bad fish, involves a contradiction. He does not explain in what the contradiction lies, and I may confess that I do not see it. If he means only that it is improbable that the same bacillus should at one time be saprophytic and at another a true parasite, I may say that it is an aspect of the question which has not escaped attention. It is an objection, however, which amounts only to a statement of improbability. There are organisms which are believed to sustain this duplicate rôle, and I would submit that our knowledge of the life-history of either the tubercle bacillus or that of leprosy is as yet far from complete. The best authorities all believe that the tubercle bacillus can be conveyed in milk and meat, and if so why not that of leprosy in fish? My belief is that infants nursed by leprous mothers do receive the bacillus in the breast milk. If Dr. Sambon will read what I have

written at page 702, he will see that the suggestion that the bacillus exists as a saprophyte in decaying fish is not the only one under consideration. It may be that some element in the fish stimulates the bacillus of tuberculosis to an erratic development. Recent researches give some probability to the conjecture that the tubercle bacillus is of very common occurrence and may be present in apparently healthy persons. My own position is not, however, in any way dependent upon any bacteriological theories. These are of extreme interest but they must be worked out hereafter and by abler investigators than myself. I am content to hold that in some way, as yet not understood, the eating of bad fish causes leprosy and that the one essential measure for the prevention of that disease is the disuse of that article. To this conclusion as it seems to me the facts which have been collected irresistibly point.

That there may be an intermediary host, as Dr. Sambon suggests, is possible. Dr. Ashmead, of New York, long ago, accepting the fish theory, suggested that mosquitos serve as intermediaries. I do not think that there is much probability in the suggestion, and am much more inclined to believe in reception by the stomach as the one sole mode of access. If mosquitos or flies could convey the germs, why should attendants in leper asylums always escape and why should not the disease be infinitely more common than it is, for the period during which a leper would be a source of danger must extend over many years?

Dr. Sambon agrees with Dr. Abraham and myself as to "the horrors of segregation in leper asylums," but "feels bound to admit it was through the cruel and pitiless measures of segregation enforced during the Middle Ages that leprosy was almost swept out of Europe." Surely he need not feel himself bound to admit any such absurdity. No one in the least conversant with the literature concerning leper houses can possibly believe it. The leper homes were houses of charity into which it was a privilege to enter, and from which misconduct might lead to expulsion. They never received more than a small proportion of the lepers of the district, and the rest were left to such modified isolation—often none at all—as the prejudices of their friends might enforce. On this point Dr. Creighton is an unprejudiced and well-informed witness, and he has given his verdict without reservation. Besides such evidence it is also to be borne in mind that leprosy has disappeared in numberless places where neither popular sentiment nor legal enactment enforced any isolation whatever.

Apart from the statements which I have commented on, Dr. Sambon's short address is replete with statements and assumptions which are, I think, errors. He writes: "The peculiar geographical distribution of leprosy, its steady increase in certain regions, its steady decrease in others, its disappearance from many parts of Europe, where it was very prevalent at one time; its sudden appearance and rapid spread in islands and countries previously immune, are all facts which do not agree with Mr. Hutchinson's theory." Now it so happens that they are precisely the facts upon which that theory rests; and if Dr. Sambon will come to detail on any one of them, I am quite ready to discuss it with him. When he further adds, after admitting that the mode of transmission of leprosy is unknown, that "there is no doubt that another leprous man is its usual source," he assumes that which is really exceedingly doubtful. He adds: "They know for a positive fact that each patient might become a centre for other groups of cases." Now, before "a positive fact" can be announced, it must be determined not only whether the thing "might be," but whether it occurs. I appeal to the experience of the Norwegian lepers imported into the United States, where not one ever became a centre for other groups. I appeal also to present experience in Paris and London, both of which cities receive plenty of lepers without any centres of contagion ever being established. It is of no use whatever to quote instances of apparent contagion from places where the disease is common, and where, consequently, food-production may be suspected. To give support to Dr. Sambon's assertions cases must be produced showing that lepers have gone into non-leprous districts, and that without the development of any new fish industry or the introduction of any new creed a leprous patient has proved a focus from which the disease has spread. There are thousands of instances in which no such spreading occurred, but with the single exception of Dr. Benson's case in Ireland I know of none in which it did. After all, in Dr. Benson's case commensal communication may easily have occurred. At the Cape the establishment of a Malay fish-curing dépôt was the precursor of leprosy and the disease, so far as is known, began *de novo* in a Dutch farmhouse. In the Sandwich Islands the advent of Chinese and the formation of a fish-curing establishment were again the antecedents of the outbreak. In Colombia the first victim was a Roman Catholic priest, and the fearful prevalence of the malady since experienced there has been coincident with the ascendancy of that Church. It is little less than ludicrous to cite, as if they were proved examples of contagion, instances of the simultaneous or consecutive occurrence of several cases of leprosy under the same roof in a place where both leprosy and fish-eating were common. In places where the disease is rare it is seldom or never concentrated at particular spots, and a large majority of the patients persistently deny that they had incurred any exposure to contagion.

Mr. Cantlie (*page 705*).

Mr. Cantlie gives strong evidence against contagion, citing the case of a woman who had lived twenty years in a leper village, and had had in succession three lepers as husbands, yet remained herself free. I may remark that Mr. Cantlie had some years ago, in his prize essay on leprosy in China, borne clear testimony as to the inefficacy of segregation and the absence of proof of contagion. The facts which he mentions "in which contagion seemed to play a part" go no further than those alluded to by Dr. Fernando and many others, and prove only that conditions permitting of contagion existed. A girl (European, but living in China) attended upon her father, who was a leper, and herself became the subject of the disease. We need not, however, infer contagion in the ordinary sense in such a case. It may have been commensal communication, and, what is probably yet more likely, both father and daughter might have eaten of the same food.

Mr. Cantlie very properly reminds us that so long ago as 1892 he drew attention to the similarity between tuberculosis and leprosy. I do not know who was the first to point out this similarity. Dr. Abraham wrote about it some years ago, and it is a fact with which my own mind has long been familiar, and concerning which I have often spoken in public. Dr. Ransome of Bournemouth devoted a special lecture to this topic some years ago, and Sir Patrick Manson has repeatedly referred to it. Mr. Cantlie is quite correct in saying that this opinion, "at one time derided," is becoming more widely entertained at the present day, and I shall myself be much surprised if the expression "Fish-eaters' tuberculosis" be not recognized as appropriate for leprosy before many years have passed. It would, I think, imply clearer knowledge of both maladies. The views recently advanced by Professor Behring are of much interest in respect to this matter.

Mr. Hillis (*page 705*).

Mr. Hillis is the author of an excellent clinical account of leprosy as he observed it in British Guiana. It is a book which I have constantly by me, and to which I am much indebted. He is, however, a man who has great confidence in his own opinions, and when he begins by warning his readers to mistrust my conclusions as being those of a mind prepossessed by a fixed theory, I cannot help feeling inclined to reply by a *tu quoque*. The man who in 1881 wrote respecting the fish theory "it is desirable that it should once and for all be laid aside," thus wishing to preclude all further discussion of it, may fairly claim to some knowledge as to the probable influence of preconceived opinions upon the reception of evidence. Nor perhaps would it be possible to illustrate the force of such opinions better than by quoting Mr. Hillis's concise statement that "Mr. Hutchinson's argument briefly amounts to this: All lepers have probably eaten fish during their lifetime, therefore leprosy must in some way be caused by a fish diet." Mr. Hillis now quotes approvingly his own sentence: "This theory should now be laid aside as obsolete," and asks: "Has anything occurred since 1881 to make it necessary to rewrite it?" Well, in the first place, the theory was *me judice* anything but obsolete in 1881, and it has, I would submit, received since then many very remarkable contributions of fact in its support. At that time it was confidently stated that in India and elsewhere there were districts and communities which suffered from leprosy and did not eat fish. I feel justified in stating that no authoritative assertion of that kind now remains unconfuted, and in several instances the confutation has carried with it important evidence in the opposite direction. Will Mr. Hillis tell us that a prevalence of leprosy of 150 per 10,000 in Minicoy, of 500 in Kaligoan, both of them fishing centres, as contrasted with a general ratio for India of only 5, and for Ceylon of only 2, are facts of no signi-

ficance? Will he explain to us how it has happened that Roman Catholic Colombia with its fish fasts has in spite of attempted segregation a terrible ratio, whilst in Egypt, under religions which discourage fish-eating, the disease, in spite of absolute neglect of segregation, has almost died out? Will he tell us why the Salsette Christians, an insignificantly small community, suffer from leprosy in such terrible disproportion to their Hindu and Moslem fellow countrymen, if it be not that they are fishermen and Roman Catholics? Will he explain why leprosy in all ages and in all places dogs the footsteps of Roman Catholic missionaries and fills the asylums which their Church so liberally provides, and why it has claimed so many victims even in the priesthood itself? Does he dispute the fact that leprosy spread over Europe with the advance of Christianity, that it attained its acme during the ascendency of the Roman Catholic Church, and began to decline with the decay of its authority, being finally brought to an end by the Reformation? Can he controvert the statement that the Greek Church in Mid-Russia remained wholly free from leprosy at a time when its Catholic neighbours had a leper house for every large town? The answers to the questions which I have put, will, I think, convince Mr. Hillis that much new knowledge as regards the fish hypothesis has accrued since 1882.

Mr. Hillis asks what about Thibet, where fish is almost unknown in the mountainous regions, and yet leprosy prevails. My answer is that fish is eaten in Thibet, and that in a bad condition, and that although leprosy prevails, it is only to a small extent. He appeals to Roman Catholic Ireland, but whilst I would remind him that leprosy as a matter of fact did linger longer in Ireland than in Protestant England, and that Ireland does still now and then supply a sporadic case, I would also venture to ask whether he is sure that the Irish peasantry do at present consume much cured fish. Do they not rather keep their fasts on potatoes, and is the compulsory abstinence from flesh food one which really causes much change in their ordinary dietary? Above all, may I ask him if there is throughout Ireland a single dealer who would dare offer tainted fish, or a single peasant who would buy it? I commend to Mr. Hillis the extracts given at page 703 as to Norwegian and Icelandic fish, and ask him whether anything of that kind can now be found in Ireland.

As regards the Indians in British Guiana who hunt and fish and yet remain free from leprosy, it may be suggested that as they live inland they hunt rather than fish, and that they do not import cured fish. The Warrow tribe, which suffers and are said not to be so exclusive, have no doubt not only commingled and intermarried but have eaten of the same food as the other inhabitants who suffer from leprosy. The facts as cited prove nothing for contagion, but rather, inasmuch as the leper settlement is on the mouth of the Pomeroon and it is there that the Warrows go, they suggest much in favour of the fish hypothesis. In many parts of the world it is on record that whilst inland Indians, usually hunters, escape leprosy, those who go to the coast suffer from it. It is not the eating of fish freshly taken which is under suspicion, but the use of that which has been partially cured.

Mr. Hillis writes, "My own experience of leprosy extends over 20 years as visiting physician to a large leper asylum, and it is directly opposed to Mr. Hutchinson's." Now I cannot see how he makes that assertion good, and rather suspect some confusion between "experience" and opinion. His experience rightly interpreted must, I think, have been in full support of my views. He was in a country where leprosy was abundant, and where the eating of salt fish was also customary in all classes. So much was the latter the case that even in the leper asylum of which he writes salt fish occurred in the diet-table five days a week. It is perhaps not without its meaning that the medical officers of that asylum recorded their disbelief in recoveries. The greater part of the inhabitants of British Guiana live near the coast. They have but little animal food excepting salt fish and salt pork. It would be interesting in the face of such facts to know in what respects Mr. Hillis considers that his experience obtained there was in disaccord with my views. Some expressions in his letter might give the impression that his work in re-establishing the belief in segregation had been successful. It would be of interest if he will tell us whether this has really been the case. His book is dated 1881 and in 1888 the surgeon-general of the colony reported that leprosy was still increasing.

The Pretoria Blue Book.

I may perhaps be permitted to refer here to a not unimportant document recently issued by the Government office at Pretoria, as it is a reply to what I had written as to the fish theory in South Africa. It is from the pen of Dr. Turner, the able Superintendent of the Leper Asylum at Pretoria, a gentleman who has I know devoted much attention to the study of leprosy both on Robben Island and elsewhere. He endeavours to controvert my views, but he perhaps prudently confines his examination of them to his own region. Having taken down the statements of the patients in the asylums under his observation he finds that a considerable number deny having eaten fish. This, however, is a kind of evidence which I feel obliged to absolutely reject. For this rejection I have given, I think, sufficient reasons at p. 703. If it be alleged that it is not fair to reject such evidence, I can only reply that the controversy is not one of mere disputation, but an endeavour honestly to arrive at the truth for practical purposes. It may seem ungracious to tax a large number of persons with untruthfulness, but it may yet be that there are good grounds for doing so. It is, at any rate, an extremity to which contagionists as well as believers in the fish hypothesis are driven. Dr. Hansen says plainly that when a Norwegian peasant who has become a leper asserts that he has never been exposed to risk of contagion he (Dr. H.) does not believe him, and I say pretty nearly the same when a Hottentot, Cape boy, or Hindu denies having ever eaten fish. I think, however, that I may claim a preponderance of probability on my side, and may allege that the incredulity of my friend is not nearly so well justified as is mine.

In many cases in which patients deny having been exposed to contagion, it is, on account of the rarity of the disease in their districts, wellnigh impossible that they should be wrong; whereas in the case of denial of fish-eating it is always possible they may be speaking the truth, and that the taint may have been derived by commensalism. Thus, then, I venture to put aside Dr. Turner's elaborate display of percentages of confessions and denials as being really of no value whatever. His other argument is based on the asserted fact that the Malay race, noted as fishermen, does not suffer from leprosy so much as some others. The reply to this is that the Malays catch the fish and "cure" it; but it does not follow that they are more prone to eat it in bad condition than are their customers in distant parts to whom it is sent. Nor is the fact that leprosy may appear to be somewhat erratically distributed in South Africa of much moment. It is impossible to assert that local statistics are quite trustworthy; and, even if the leprosy maps which have been constructed were quite reliable, it might still be plausibly urged that more detailed local knowledge would very probably explain the apparent anomalies.

About the broad facts as to leprosy in South Africa I cannot feel the slightest doubt. It began subsequent to the introduction of salted fish as food, and in a family of Dutch farmers, who no doubt used it as such. It was for some time chiefly prevalent near to the fishing villages. It travelled slowly inland and northwards along lines of trade. It still affects chiefly the farm labourers, and they are those for whom chiefly salt fish is procured. It has affected many labourers who have worked at the mining centres, and these labourers are precisely those for whom supplies of "sack-fish"[1] are liberally provided. I feel quite certain, from personal inquiry, that there are no facts as to leprosy in South Africa which can be cited as destructive of the fish hypothesis, whilst there are many which strongly support it.

I have now dealt with the whole of your report of this discussion, and ought to close what I fear has proved a very prolix commentary on it. There remain, however, Mr. Pernet's letters and the Pretoria Blue Book, to which you devoted a short article in the BRITISH MEDICAL JOURNAL of October 3rd. If you can indulge me a little further, I should much like next week to add a few words on these. In the meantime, as regards the latter, let me say that when Dr. Turner asserts that the Basutos do not eat fish, he is utterly wrong.

I am, etc.,

Cavendish Square, W., Oct. 7th. JON. HUTCHINSON.

THE FOOD AND OTHER FACTORS IN EDUCATION.

SIR,—I am in general agreement with Dr. Strachan's remarks on the topsy-turvy manner in which school education is conducted. What father does not from the bottom of his heart pity the tired and imperfectly-oxygenated boy who has to settle down to an arduous spell of work after the brief

[1] "Sack-fish" is a term applied by South African labourers to a coarse and badly-cured fish which is sent about the country in sacks.

respite of his evening meal—work, moreover, which even an industrious boy cannot complete by the time he should be in bed? It has always appeared to me that schoolmasters do not teach enough, but leave the hardest work to be done unaided in the evening. With the conscientious boy this undue prolongation of the hours of study only too surely tells its tale in the manner indicated by your correspondent.

The cruelty of the existing school system does not end with the term. As though the schoolmaster was afraid his pupils should have unalloyed joy in their holidays and their brains a chance to recuperate, a "holiday" task, like St. Paul's thorn in the flesh, is sent to buffet them. To my knowledge this instrument of cruelty hangs like a spectre over the whole vacation and serves the purpose of a killjoy. If it is necessary that the savour of school should ever be present, and that the open book of Nature is not considered good enough for holiday education, then give the boy a classic, such as one of the works of Thackeray or Scott, to read, so that he may be entertained as well as instructed.

I am sure I shall have the great majority of parents with me when I affirm that the holidays should be curtailed some three weeks in the year and the present amount of work spread over that additional time. But this would possibly not suit the masters.

Having some boys in public schools I will sign myself, yours, etc.,

September 26th. M.D. and a Father.

Sir,—Dr. Strachan indicts education (or is it only our present system?) as tending to check appetite and assimilation. Granting that "few children eat as well during school time as in the holidays, and that a considerable proportion have very poor appetites while attending school," is it certain that they are any the worse? Are we always better for the extra feasting due to Sunday's leisure? Neglect of food, it is true, may be carried to excess, but the fault is not common. Indeed, an undue reliance on food is a popular belief, almost amounting to superstition. If an active brain does detract from appetite, is it not possible that it may prevent repletion and plethora? And is not mental cultivation one of the elements of health? Surely in North Britain few will deny it. "To limit school hours to four in the day, not consecutive," would be somewhat difficult even in Dollar, which boasts some educational advantages. In most places it would be out of the question. If children are too delicate for either rewards or punishments, and cannot be kept indoors for a few hours a day, we are in a parlous state indeed.—I am, etc.,

Bradford, Sept. 28th. Philip Miall.

OPTIONAL VACCINATION STATIONS.

Sir,—A very slight alteration would make a great difference in the working of the Vaccination Acts. It is the substitution of "may" for "shall" in regard to the place of operation. Many parents, I believe, would prefer to bring their children to the vaccination office, and some are indifferent. All engaged in carrying out these Acts know well that there are many homes which are far less suited for vaccination than a well-ordered office. Let parents have the option then. This would go far to meet the outcry against the expense of the present plan. Of course the fees are no more than the trouble warrants, but in cases where this is lessened by the operation being done at the public vaccinator's office half fees would suffice, relieving the rates and fairly remunerating the public vaccinator. This alteration would place this official in a more dignified position; at present there is a great risk of his being looked upon by the public as a sort of rival to the "tallyman" and touting for custom. In the other case he would occupy the position of an official ready to do work in an official way, but also empowered to relax the rule of attendance at his office on the expressed desire of the parents.

I think any one who has had experience of the work will see wherein lies the difference; at least, that is how it strikes yours, etc.,

A Public Vaccinator of over Thirty Years.

October 2nd.

PROPOSED AMENDMENTS TO THE VACCINATION ACTS.

Sir,—I am very much surprised with Dr. Rentoul's letter. I should have thought he would have been aware of the fact that the Local Government Board has long had ample reasons for recommending four vesicles, which combined generally cover rather over half a square inch; that the four small vesicles produced by the Local Government Board lymph have not near so much local irritation as one large one. Personally, I hope the Local Government Board will never sanction the one-vesicle system, as the public now thoroughly understands that all public vaccinators must seek to obtain four vesicles; and the public, finding that the fresh Government lymph used within forty-eight hours of its being received is, in 95 per cent. of cases, free from any troublesome sequelae, the number making application for this lymph is rapidly increasing. Never, I hope, will the Government return to or sanction the use of human lymph, and I very much doubt whether any considerable number of general practitioners—certainly not public vaccinators—consider it superior to glycerinated calf lymph under Local Government Board supervision.

To appoint any or every medical man, so desirous, as a public vaccinator, and so compel him to seek to obtain four separate vesicles, would make his income from vaccination so small as in no way to compensate him for loss of practice, by offending patients who only sanction the insertion in one, and at most in two places, to say nothing of the enormously increased work which this system would place upon the already overworked inspectors. Very few medical men only vaccinate one child with one tube of lymph: any ordinary tube full, or three-fourths full, will vaccinate three or four children, and produce four vesicles in each if allowed some little time for absorption. As an instance of (in some cases) its rapid absorption, I accidentally touched the finger of a child's mother with the moistened point of the needle I was using, which produced a typical vesicle the week following, although the finger was washed and wiped with boric wool within one minute afterwards.

It is to be regretted that all medical men do not use the necessary antiseptic precautions in vaccinating. Some may possibly be "dirty" in their methods; but the principal cause of failure lies in keeping the lymph too long before use. I have known medical men use lymph which has been in their pockets for nearly three weeks. Better that all such cases be handed over to public vaccinators, then we should have fewer conscientious objectors, which class, I believe, are a diminishing quantity.

I suppose such cases as the following frequently occur in the experience of public vaccinators. At the home of a child I vaccinated there sat at the fireside the father of the child looking on demurely and using language more forcible than polite. When I rose to leave I bid him "Good morning." He said, "Stop; I thought you were going to 'cut' this baby": and having satisfied him that the vaccination was completed he immediately sent for a 9-year-old from the Board school, stating that he had sought work and removed from town to town for several years to escape what he had been told by antivaccinators was "cruelty."

On requesting an antivaccinator (in whose neighbourhood small-pox had broken out) to have his four daughters vaccinated (ages from 11 to 21), I was promptly ordered off the premises. Fourteen days afterwards I received a note from the same gentleman "to kindly visit and vaccinate himself, wife, and three younger daughters," stating (on my arrival) that he had been given to understand that there was no fear of infection if not residents on small-pox premises. The eldest daughter had commenced with small-pox and was removed.

No doubt these and similar experiences will materially tend to diminish the number of antivaccinators.—I am, etc.,

September 28th. G. M. S.

ASEPTIC SILENCE.

Sir,—In the British Medical Journal of September 19th you have a paragraph on Dr. Mendes de Leon's remark before the Amsterdam Gynaecological Society that speech is septic. Although you agree with the truth, there is still a vein of raillery in your comments which is perhaps only too much in accordance with our surgical prejudices.

Antisepsis is our religion, asepsis we have adopted, and consequently we are not generally prepared to adopt all its attendants. Gloves are fairly general in suitable cases. Sterilized smocks are common; but veils are open to ridicule. I have used them for several years after their introduction by Mickulicz, of Breslau. I use square veils of two-fold gauze, with upper and lower strings carried above the ears and round the neck respectively. These do not muffle speech and they catch spots of saliva which persons, especially some, eject on speaking. The nose is not veiled, hence the clearness of speech, because it is a natural filter.—I am, etc.,

Wolverhampton, Sept. 22nd. Frederick Edge, F.R.C.S.

MEDICO-LEGAL AND MEDICO-ETHICAL.

ST. THOMAS'S HOSPITAL: DEATH FROM SHOCK.

At the Lambeth Coroner's Court Mr. Troutbeck held an inquiry on October 6th concerning the death of Julia Ehrmann, aged 67, who died from shock whilst undergoing an operation at St. Thomas's Hospital on October 3rd.

The first two witnesses examined were relatives of the deceased, and they testified that the operation was undertaken with their full knowledge and consent, and that the nature of the risk incurred was fully understood by the patient.

Dr. H. Spurrier, Obstetric House-Physician at St. Thomas's Hospital, gave evidence of the admission of the patient, who was suffering from a sarcomatous tumour of the uterus, reaching to the level of the ensiform cartilage. The tumour weighed 23 lb.

Mr. H. C. Crouch, one of the anaesthetists to the hospital, then gave evidence. The operation was performed under chloroform, and as the last stitches were being put into the abdominal wall the pulse of the patient was noticed to be failing, and the heart stopped beating. Transfusion was performed, and every effort made to resuscitate the patient, but without success. Until the pulse failed at the end of the operation the patient took the chloroform surprisingly well.

Dr. W. W. H. Tate, one of the obstetric physicians to the hospital, explained why it was necessary the operation should be performed, and stated that the permission of the relatives and of the patient was first secured.

Dr. L. Freyberger, who made the necropsy, said that externally the body was wasted and pale. There was no obstruction of the air or food passages. There was a secondary deposit in the lung from the growth. The heart was small, very friable, and perfectly empty. The liver was large and pale. The kidneys were cystic, and the stomach empty. The bowels were empty and contracted, and the bladder was half full.

Mr. Troutbeck explained to the jury the circumstances and nature of the case. The operation was undertaken to afford the patient temporary relief and the anaesthetic had nothing to do with the death. The patient was suffering from marasmus in consequence of the growth, and succumbed to shock at the operation.

The jury returned a verdict that the patient died from shock, and that the operation was properly undertaken and advised.

WARNING TO MIDWIVES.

ACCORDING to the *Staffordshire Sentinel* an inquest was held recently at Longton into the death of Ann J. Robotham, who died three days after her confinement. Before evidence was taken the coroner asked Dr. Dawes to explain for the benefit of the jury the reasons which had led him to ask for an inquest. These were, in effect, that the cause of death being blood poisoning, he thought it desirable that an inquiry should be held, not from a desire to punish the midwife, who had previously done good work, but in order to warn midwives of the danger they ran in not taking full antiseptic precautions. Formal evidence having been given, Dr. Dawes showed that the deceased's state was at first quite satisfactory, but that symptoms of blood poisoning then developed. The midwife had a sore eye, and probably made a vaginal examination after rubbing it, and thus conveyed infection to the patient; she need not have made any examination at all, and in any case should have disinfected not merely washed her hands. The midwife, being called, denied having made an examination, although the patient said she had, and stated that her eye was bandaged up all the time. In reply to the coroner, Dr. Dawes said there were excellent midwives in Longton, but some of them were not sufficiently careful, and it was as a warning to them that he had desired the inquest to be held. The coroner said that the jury would agree with him that the inquiry was a desirable one, and the latter brought in a verdict of death from blood poisoning, asking the coroner to caution the midwife.

LUNACY LAW AND PRACTICE.

PRO BONO PUBLICO writes: I should be glad of your opinion as to the circumstances under which it is justifiable to sign an urgency certificate in lunacy. I recently received an urgent summons to a young lady whom I had not previously attended, on the ground that she had a "head attack," and that as she refused to go to an asylum as a voluntary patient, as she had done on one or two previous occasions, my certificate was required. On arrival I was met by the mother and brother of the patient, and requested to at once fill up an urgency order, which it appeared had been brought by the nurse from the asylum, the authorities of which had been previously communicated with. I interviewed the patient for upwards of an hour, but was unable to find any reasons which in my opinion necessitated immediate removal to an asylum. I think the patient was certainly "queer," but she was not violent, had no suicidal tendency, was not acutely ill, and had good accommodation at home. Under these circumstances I declined to sign the urgency form, but suggested that the ordinary procedure of two independent certificates should be followed. This was met by a curt refusal on the part of the relatives, and I was informed that if I did not see my way to doing what they wished, my further services would not be required. I have reason to believe that the patient was removed the same day, but whether certified or not I have been unable to ascertain. It appeared to me that there was no urgency in the case at all. I should also be glad of your opinion whether, under the circumstances, I am entitled to claim a fee, and if so what would be a fair fee to ask, the mother of the patient being a lady of good position.

*** If the account given is full and complete, and not open to modification on grounds not communicated, our correspondent seems to have acted with discretion under the circumstances, and to have avoided an abuse of the Lunacy Act. For his trouble we believe him to be entitled to a fee; and a fair fee to ask would be one of nearly the amount he would have charged had he signed the certificate.

NEWSPAPER NOTICES OF MEDICAL PRACTITIONERS.

A CORRESPONDENT, in anticipation of a complaint having reached us respecting an article published in a local newspaper wherein his name figured, desires to disclaim all connexion with it, and encloses an apology from the editor, who expresses his regret that the article might be construed as an advertisement. The editor, moreover, states that he regarded the subject as one of public interest, and that he obtained his information entirely from an outside source. We think our correspondent acted quite rightly in promptly protesting against the article, and we believe that if editors were always informed that such notices are distasteful to the subjects of them they would be much less frequent than they are.

"GOODWILL."

A. B.—The senior partner in a practice is retiring, and under the partnership deed he is entitled to a year and a-half's purchase. He also owns the house from which the practice has been carried on for many years. He has offered to sell the house to his partner for a sum larger by one-third than he gave for it. This offer being declined, he says he will sell it to another medical man practising in opposition. Is this right? Can he legally do the practice this harm and still claim to be paid for goodwill?

*** The devolution of the house on the termination of the partnership ought to have been settled in the partnership deed. If the house is the property of the outgoing partner, and his control over it is not limited by any clause in the partnership deed, he is entitled to fix the price. If the remaining partner refuses to buy he has the right to sell elsewhere. "Goodwill" has been defined by Lord Eldon as "the probability that old customers will resort to the old place," so that without a transfer of the business premises, "goodwill" in the strict sense can hardly be said to be sold. What the outgoing partner is paid for is probably for discontinuing to practise in the neighbourhood and doing all in his power to transfer his patients to his successor. If there is a clause in the partnership deed to this effect, payment might be witheld on the ground of its violation, but good legal advice as to the construction of the deed ought to be taken.

FEES OF MEDICAL WITNESSES.

M. will be entitled to the usual fees allowed by the Crown to witnesses in criminal cases for giving evidence, both at the police court and at the assize court, on his making application for them, such fees varying according to the nature of the evidence which he gives: that is to say, whether his evidence is directed to questions of fact or is expert evidence.

THE TRANSFER OF CASE BOOKS.

ALPHA.—The case books had better not be transferred because they must refer to numerous persons who have ceased to be under treatment and may contain information which was imparted in confidence, but the vendor ought to give the purchaser a list of his patients and supply him with any information in his power respecting the cases under treatment.

DEATH CERTIFICATION.

ENQUIRER.—We can hardly think that the opinion attributed to the coroner to the effect that it was illegal for a medical man to give a death certificate in the case of a patient whom he had only seen once during his last illness before death can have been correctly reported. We are advised that not only is a medical man justified in giving a certificate under the circumstances, stating to the best of his knowledge and belief the cause of death, but is required by the Births and Deaths Registration Acts so to do under penalty.

PROFESSIONAL CHARGES.

E. W. B. writes: I am attending, at the request of his employers, a man who sustained an accident whilst at work. He lives outside the district of the medical man appointed by the employers to attend cases of accidents occurring at their works. The man is suffering from severe crush of the chest, and likely to be invalided some time. What charges am I entitled to make?

*** "E. W. B." should charge the ordinary fees which he is in the habit of taking from his private patients in the district. He should keep an account of the number of journeys (and of the medicines, etc., if these are supplied by him), as he may be asked for it at the end of the illness.

DIVISION OF VACCINATION DISTRICTS.

TIBIA.—If the guardians decided, by resolution, after consideration of the public vaccinator's position and in the public interest, to divide the vaccination district as well as the medical relief district twelve months ago, and if B.'s acceptance of the Poor-law appointment was on the explicit condition that the vaccination of his district would be transferred to him after twelve months, he would be fully justified in writing to the guardians reminding them of these facts. We rather incline to believe that, wherever possible, the Local Government Board's policy is one of dissociation of vaccination from Poor-law work.

OPTICIANS AS OCULISTS.

J. M. M.—As the matters have been already dealt with as far as possible by the BRITISH MEDICAL JOURNAL, we have referred them to the Ethical Committee.

PRIVATE DISPENSARIES.

AJAX.—Private dispensaries are ethically very objectionable, and not the less so because no charge is made to the patients. Such an advertisement in a local newspaper would be as nearly as possible a direct advertisement of the practitioner concerned.

PROFESSIONAL SECRECY.

D. R.—Our correspondent is justified in concealing the nature of the disease, provided he can stop all intercourse between the parties without disclosing the facts.

OBITUARY.

WILLIAM JOHNSON WALSHAM, F.R.C.S.Eng., M.B., C.M.Aberd.,

Surgeon, St. Bartholomew's Hospital.

We deeply regret to record the death of this accomplished surgeon, which occurred early on Monday morning, October 5th, after a rather prolonged illness, at his residence, 77, Harley Street.

Born in London on June 27th, 1847, Walsham was the eldest son of Mr. William Walker Walsham, of Wisbech, Cambs. He was educated privately under the Rev. Dr. Johnson, of Highbury. He had one brother, Dr. Hugh Walsham, well known in association with skiagraphy, and he married in 1876 Edith, elder daughter of Mr. Joseph Huntley Spencer, of Hastings. Both his brother and his wife survive him.



Mr. Walsham, after a preliminary education in pharmacy, entered St. Bartholomew's Hospital as a student in May, 1867. From that date till incapacitated by illness last summer he worked unceasingly at his profession. He carried off several prizes—the Senior and Junior Scholarships, Practical Anatomy, etc., and was Dresser to Mr. Luther Holden. Before qualifying at the College he spent some terms at Aberdeen, and took the two medical degrees of that University, as well as the M.C. After qualifying as M.B.Aberd. and M.R.C.S. in 1871 he filled the appointment of House-Physician to Dr. Francis Harris, and next year was House-Surgeon to Mr. Holmes Coote. In 1873 he was made Assistant Demonstrator of Anatomy to the Medical School, and a few years afterwards was appointed full Demonstrator. He soon became recognized as a very successful teacher, and when he was elected Assistant Surgeon in 1881 he applied to surgery what he had learned as an anatomist, at the same time favouring all the new methods which revolutionized surgical teaching and practice during the last quarter of the past century. Thus whilst giving full attention to antiseptics and helping actively in the improvement of operative methods, at first especially in the domain of orthopaedics, Walsham maintained some of the best principles for which a past and less bold generation of surgeons were so celebrated. He made regional surgery light, comprehensible, and, above all, easy for the learner to remember, after the manner of Holden, not overlooking a really scientific consideration of anatomical relationships, running in the lines of Hilton. He also availed himself largely of literature as an aid to surgery. First he prepared a Surgical Pathology, a kind of educational catalogue of the museum of his hospital. It was based on an excellent system of instructive description of each specimen judiciously grouped under well-defined general headings. In other words, he developed the method of Paget, who had already doubled the value of the Museum of the College of Surgeons by preparing a catalogue which for the first time made a systematic study of that famous collection practicable to the student. He also prepared numerous monographs and shorter communications, which he submitted to medical societies, on orthopaedic and many other subjects. His early appointment as Surgeon to the Metropolitan Hospital allowed him to develop his talents as an operator. His practice of ligaturing and dividing large arteries as well as several other innovations are familiar to the profession. His name, however, was most widely made famous by his excellent *Surgery: its Theory and Practice*, which appeared in 1887, and is still deservedly popular. It rapidly replaced more than one celebrated textbook, and has now just reached its eighth edition. Mr. W. G. Spencer was associated with the deceased author in the preparation of the last issue of this great educational work. It is no small credit to Walsham that he was the author of a book which teachers strongly recommended from the first, and which from its original edition until that recently published has always been popular with the student, qualified as well as unqualified.

In March, 1898, on the retirement of Sir Thomas Smith, Walsham was appointed full Surgeon to St. Bartholomew's Hospital. His later work must be familiar to our readers. He wrote much that will for long be of special value on the vermiform appendix and its disorders, special because, unlike many a dexterous young operator, he set forth his views as a man of mature experience, long familiar with the anatomy, relations, and anomalies of that structure. A determination to understand thoroughly his subject before discussing and writing about it was one of the most marked features in his character. That quality being combined with great manipulative ability, Walsham was, from the first, a good surgeon as well as a good operator, in that respect as well as in many others a model to be followed by many able men among us.

Walsham held many appointments on examining Boards, including those of the College of Surgeons. He was Lecturer on Surgery to the Medical School of St. Bartholomew's Hospital until a few months since, when he resigned owing to failing health. He was a member of the British Medical Association, Vice-President of the Section of Anatomy and Histology at the London meeting, 1885; and Secretary of the Section of Surgery at the Brighton meeting, 1886.

Never of robust physique, Walsham was addicted to overtaxing his strength in a conscientious discharge of his numerous duties and an unceasing pursuit of knowledge. He was by habit abstemious, and liked exercise; in holiday time he would cycle for hundreds of miles along British and Continental highways and byways. For some months before taking his summer holiday his health failed steadily. For

three weeks he stayed at Grindelwald in company with Sir Lauder Brunton and Dr. Mitchell Bruce. As the rarefied atmosphere did not agree with him, he was taken to Wiesbaden on August 27th; on the following day serious symptoms of breathlessness developed. He was attended by Dr. Pfeiffer and by his brother Dr. Hugh Walsham, who was summoned from England to be with him. Sir Lauder Brunton also came from Switzerland on two occasions to see him. As the symptoms showed no signs of abating, it was deemed advisable to bring the invalid home on September 25th. On his return to town, Sir Lauder Brunton, Dr. Goodhart, and Dr. de Havilland Hall were unremitting in their attentions. Throughout last week the patient's weakness increased, and he became very restless, but passed away peacefully in his sleep early in the morning of Monday, October 5th.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

School of Instruction, Haslar.

The session of the School of Instruction of the Royal Naval Hospital, Haslar, terminated on September 30th, when the prizes were distributed to the batch which entered in May last by Admiral J. Durnford, C.B., D.S.O., Junior Lord of the Admiralty. The following is a list of marks gained by the respective officers:

	Marks.		Marks.
Surgeon A. W. Iredell ...	4,238	Surgeon E. S. Wilkinson ...	3,128
,, F. C. Robinson ...	3,998	,, R. Kennedy ...	3,053
,, C. E. C. Child ...	3,892	,, E. A. G. Wilkinson ...	3,039
,, M. T. Male ...	3,826	,, J. H. L. Page ...	3,017
,, C. H. Dawe ...	3,601	,, W. E. Ormsby ...	2,984
,, R. Thompson ...	3,620	,, J. J. H. Rooney ...	2,979
,, W. K. D. Breton ...	3,545	,, A. F. Fleming ...	2,678

The prizes were awarded to:

Surgeon F. C. Robinson, gold medal.
,, A. W. Iredell, silver medal and books.
,, C. E. C. Child, microscope.

The Director-General, Sir Henry Norbury, K.C.B., read the report of the instructors in the medical school, and complimented the officers who had been under instruction on the manner in which they had applied themselves to their studies, and their general good conduct. He referred with deep regret to the untimely death of one of their members, Surgeon Illingworth, which had taken place during the session. He expressed his gratification at the presence of Admiral Durnford, an officer to whom the Royal Navy Medical Department owed a debt of gratitude, for during his term of office he had worked hard to understand its requirements, and his untiring efforts for its improvement had been attended by success.

Admiral Durnford then distributed the prizes, and said: It gives me much pleasure to present the prizes on this occasion, and I am glad of the opportunity thus afforded to make the acquaintance of the surgeons who are about to start on their active naval career. The report which has been read is most satisfactory. Two things at once strike me, first the credit that reflects on the officers concerned, who have worked well, and whose conduct throughout the course has been so satisfactory; and, secondly, the credit that is due to my old friends Fleet Surgeons Kirker and Bassett-Smith, whose capacity and teaching ability are well known and very much appreciated. A report such as has been made will be received with much satisfaction by the Board of Admiralty. The Director-General has alluded to the great interest I have taken in the Medical Department since I have been associated with it. To this I would say that among my various duties no other has been as interesting, and that in my endeavours to deal with the many questions relating to the medical, hospital, and nursing service, I have been most willingly and ably helped by the Director-General and his department, and that it is a good deal due to their steady work that the various proposals have been brought to a satisfactory conclusion. I need not call attention to your choice of the medical profession—one second to none, and affording special opportunity of doing good attached to no other. I sincerely congratulate you on having selected the naval service, and offer you a warm welcome. Looking back to the time I first went to sea, about forty years ago, no reminiscence is more vivid than my recollection of the medical officers' work in my first ship on an occasion when, cut off from nurses, hospitals, and their professional brethren on shore, they pulled us successfully through a serious outbreak of small-pox with a simple devotion to duty which all must admire. I have also seen them with the same satisfaction on active service, and may not inappropriately call your attention to the heroic conduct of Staff Surgeon Maillard, who was awarded by his Sovereign the coveted distinction of the Victoria Cross, and whose loss we have this month to deplore. A fine young and distinguished officer with high professional attainments, who showed a true devotion to duty, you will, I am sure, join with me in deep sympathy for his widow in her great loss. Perhaps there is some silver lining to her cloud of sorrow in the recollection of such great bravery. The doctor in a ship holds a unique position of friend and adviser, and very much depends on him. There are many little things he can do in the matter of his duty in connexion with the health and comfort of the ship's company, their food, etc., and a captain who has a good adviser in the medical officer is materially helped in conducting the service efficiently. Let me say from experience that any suggestions in this direction are welcome. I think you will find it very useful to study the language on the foreign station where you may be serving, and, when possible, qualify as interpreter. Of course it will be your main object to keep fully qualified in your professional duties, and, with this view, to attend at hospitals frequently, both at home and abroad, and, when your services can be spared, to undergo post-graduate courses, the expenses of which are now defrayed by the Government. A number of changes and considerable improvements have taken place during the last few years, and others are in hand. It is desirable that, in accordance with the permission recently promulgated, surgeons should qualify for staff surgeon after five years' service in order to obtain early advancement. I am glad to say, turning to the naval hospitals and sick quarters, that the reports are quite satisfactory, and these institutions should afford you much valuable professional opportunity. We have received from the Consultative Board, an institution to which the Board of Admiralty is much indebted, a very satisfactory account of the condition of this hospital. They report that "Much care and thought has been expended on the operating rooms, and the fitting-up of these is thoroughly modern and well adapted for its purpose. The plan of providing a second room for dressings, and for cases surgically unclean, is excellent," and as regards equipment "That the hospital is well supplied with the most modern instruments and appliances," and that respecting the equipment for ships and for active service "The instrument cases for supply to ships are in all respects most satisfactory, the contents are well assorted, and the instruments throughout of the most modern and aseptic type. The same may be said with the cases of surgical dressings." I cannot pass this subject without mentioning the great advantage we possess in having obtained the services of such eminent men of the medical profession to advise us, whose able services are given practically gratis. I would urge you not to permit any little personal difficulties and disappointments to unduly occupy your minds, but rather strive to assist in successfully solving the great naval problem as to how the navy can best be prepared for war. The treatment of wounded, and maintaining the crews in a good state of health, are subjects needing your careful study and attention. I will not further detain you, but conclude with impressing upon you that the efficiency and conduct of the Naval Medical and Nursing Services will be what the medical officers make it, and that honest work with zeal for the service and your professsion is sure to lead to advancement, with good and responsible appointments. I wish you all a happy, useful and prosperous career in the great service to which you belong.

A vote of thanks was then proposed to Admiral Durnford by Inspector-General Coppinger, M.D., R.N., and the proceedings terminated by a luncheon in the fine mess room of the officers.

HIS MAJESTY'S HOSPITAL SHIP *MAINE*.

[From a Naval Correspondent.]

Before entering on a description of the up-to-date hospital ship *Maine*, it may be of interest to quote from "The first Regulations and Instructions relating to His Majesty's Service at Sea. Established by His Majesty in Council. At the Court of St. James's the 7th day of January, 1730."

Hospital Ships. I. Ships, appointed for Hospitals, should have the Gun Deck entirely set apart for the Reception of Sick Men, which shall be flush, without any Cabbins or Bulkheads, except a Deal or Canvas one (to Roll up) for seperating such as have Malignant Distempers, from the rest. The said Deck is to hold all the necessary Cradles with the Bedding; and two Pair of chequr'd Linnen Sheets shall be allowed for

every Bed. And Scuttles shall be made in the Sides, in convenient Places, for Air.

II. Besides the Physician, there shall be in the Hospital Ship an able and experienced Surgeon, with four Mates, and six Men Assistants, a Servant to the Surgeon, a Baker, and four Washermen, all supernumerary to the Complement.

III. The Captain of the Hospital Ship shall subsist the men under Cure, out of the best and newest Provisions in the Ship and with fresh Meat as often as the same can be procured.

IV. When any Men are well enough recovered to return to their Ship, the Captain of the Hospital Ship shall put aboard their Ship's Signal and a Weft, that a Boat may be sent for them.

Hospital ships were in use in the Royal Navy prior to this date. The hospital ship *Maine* was presented to the Admiralty by Mr. B. N. Baker, of the Atlantic Transport Company, a citizen of the United States. "May it be an emblem," he said, "of the cordial relations existing between the two countries."

The *Maine* is an iron screw steamer of 2,228 tons, with a speed of eleven and a-half knots, built at West Hartlepool in 1887 as a cargo and cattle boat for the Atlantic Transport Company; she was subsequently altered and fitted as a hospital ship, by philanthropic American ladies, for the treatment and transport of the sick and wounded of the South African war and the Chinese military operations, as will be in the remembrance of many. Since her presentation to the Admiralty she has been of the greatest service for the transport of the sick and hurt of the Mediterranean fleet to Malta Hospital, and of invalids from there to England, under the care of naval medical officers. Formerly foreign invalids had to be transported thence by men-of-war or troop ships or merchant vessels, where their treatment and comfort could not be so well attended to, the accommodation in such ships leaving much to be desired.

When first dispatched to the Mediterranean station there was soon evidence that many of the arrangements could be improved upon, and, on the representation of her medical officer, the Admiralty, with great and judicious liberality, have now dispatched her to the Mediterranean fleet equipped with every possible provision, of the most approved and modern description, for the efficient treatment of the "handy man," sick or hurt, in the service of his country at sea.

The iron lower hospital deck, subsequently planked over, has been carefully covered with linoleum, safeguarded against any leakage beneath it. The two tiers of fixed iron cots have been reduced to one, with a consequent reduction of the number of patients, between decks, from 170 to 126—an advantageous reform. Every cot, as heretofore, has in it the full equipment of bedding and clothing always ready for incoming patients, all extra bedding and clothing being readily procurable. The main deck hospital ports, formerly worked from the upper deck, are now readily manipulated from the hospital ward.

Electric-heated kettles and food warmers are provided in the wards, and steam coil-heated vessels. The wards are efficiently lighted by electric incandescent lamps. The former wood spar double awning fittings over the fore and after upper deck are now supplemented by ample side awnings, on spar booms, when at anchor in warm climates; the lavatory arrangements have been enlarged, and though supplied with all approved sanitary provision, it would be a further reform were they effectively cut off from the hospital wards.

At length provision has been made for the efficient segregation of infectious cases by the provision of a special and detached ward, a mortuary, and a bacteriological laboratory has been built on deck.

Attached to the original operating room is one furnished with antiseptic arrangements, including an excellent operating table, with a Macintyre couch for radiography, for which Röntgen-ray equipment is supplied.

Abundant fresh provisions are carried in the refrigerating chamber, for sea service, including sterilized milk. A machine for making and bottling aërated waters has been latterly supplied to the ship.

The hospital staff is most perfectly organized, and, according to naval routine, station bills, in conspicuous situations in the wards and ladder-ways, specify each person's duty, at all times and on all emergencies.

The medical staff consists of a fleet surgeon and surgeon—a most enviable appointment, and a most valuable and instructive one for the latter officer. There is a sufficient naval sick-berth staff, and, as in the Royal Navy of George II, washermen. There is also a Washington Lyon's steam, hot and dry disinfector, and a laundry, including a steam mangle, or calendering apparatus.

The Maltese crew's berthing has been greatly reformed, as also the latrine arrangements.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been made at the Admiralty: James C. Dow, M.B., Fleet Surgeon, to the *Hawke*, September 30th; James W. O. Underhill, M.B., Staff Surgeon, to the *Duncan*, October 10th; William J. Stitt, Surgeon, to the *Duncan*, to join on station; G. M. Lerick, Surgeon, to the *Bulwark*, September 30th; Warren G. Westcott, Surgeon, to the *Vivid*, for disposal, September 28th; G. C. Cross, Surgeon, to the *Renard*, lent, October 3rd; Francis Bolster, B.A., M.B., Surgeon, to the *Pembroke*, for disposal, lent to Chatham Yard, October 3rd.

The Medical Consultative Board of the Royal Naval Service is at present constituted as follows: President, The Medical Director-General of the Navy, Sir Henry Norbury, K.C.B. Members: Mr. G. H. Makins, C.B., F.R.C.S., Dr. W. H. Allchin, F.R.C.P., Dr. H. G. Rolleston, F.R.C.P. Secretary: Staff Surgeon William J. Colborne, R.N.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel A. Baird, M.B., F.R.C.S.Edin., retires on retired pay, October 3rd. He was appointed Surgeon, February 3rd, 1883, and Surgeon-Major and Lieutenant-Colonel twelve and twenty years later respectively. He served with the Bechuanaland expedition in 1884-5; in the operations in Zululand in 1888; with the Chitral Relief Force in 1895 (medal with clasp); and in the South African war in 1899-1901, including the relief of Ladysmith (mentioned in dispatches).

Lieutenant-Colonel R. D. Donaldson, M.D., also retires on retired pay, October 3rd. His commissions are thus dated: Surgeon, March 6th, 1880; Surgeon-Major, March 6th, 1891; Lieutenant-Colonel, March 6th, 1900. He has no war record in the Army Lists.

Captain A. C. Lupton, M.B., from half pay, to be Captain, with precedence next below M. M. Lowsley, September 5th. His first appointment dates from January 28th, 1898, and he was placed on temporary half pay on account of ill health, September 5th, 1902.

Lieutenant D. D. Paton is seconded, under the provisions of Article 349 of the Pay Warrant, October 1st.

Lieutenant-Colonel E. W. Mapleton, M.B., retires on retired pay, October 7th. He was appointed Surgeon, September 30th, 1873; Surgeon-Major, September 30th, 1885; was granted the rank of Lieutenant-Colonel, September 20th, 1893; and made Brigade-Surgeon-Lieutenant-Colonel, November 20th, 1896. He served in the Boer war of 1881: in the Soudan campaign in 1885 (medal with clasp, and Khedive's bronze star); and in the South African war in 1899-1900 as Senior Medical Officer on the Lines of Communication, and took part in the defence of Ladysmith as Principal Medical Officer, and was afterwards Principal Medical Officer of a Division (mentioned in dispatches).

Colonel G. D. N. Leake, Principal Medical Officer, Thames and Woolwich Districts, has been appointed an Administrative Medical Officer in India.

Captain A. F. Heaton retires from the service with a gratuity, October 7th. His first commission dates from January 29th, 1895; that of Captain, January 29th, 1898.

Memorandum.—Lieut.-Colonel T. J. P. Holmes, M.B., retired pay late Army Medical Staff, to be Colonel under the provisions of Article 664 of the Pay Warrant, October 3rd. Entering the service as Assistant-Surgeon, April 1st, 1867, he became Surgeon, March 1st, 1873; Surgeon-Major, April 1st, 1879; was granted the rank of Lieut.-Colonel, April 1st, 1887; and made Brigade-Surgeon-Lieut.-Colonel, May 3rd, 1893. He has no war record.

Exchanges.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 8s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

A Lieutenant-Colonel R.A.M.C., who expects to be ordered abroad early next year, wishes to exchange with an officer recently home.—Address, "Sey-Woon," c.o. Holt and Co., 3, Whitehall Place, S.W.

A Lieutenant-Colonel, R.A.M.C., arriving in England in December next on completion of full Indian tour, will exchange with an officer under orders for South Africa, or one now serving there.—Address, "Sculap," c.o. Messrs. Holt and Co., stating terms.

THE KANO-SOKOTO CAMPAIGN.

An Army Order recently issued from the War Office states that the King has been graciously pleased to approve of the Africa General Service Medal, with clasp inscribed "Nigeria, 1903," being granted to the Imperial and Colonial forces employed in the Kano-Sokoto military operations between January 29th and March 15th, 1903, both dates inclusive, provided that the claims of the officers and soldiers are approved by the Commander-in-Chief.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

Surgeon-Major A. H. Robinson, M.D., 3rd Kent (Royal Arsenal), to be Surgeon-Lieutenant-Colonel, October 3rd.

Surgeon-Captain W. E. James, 1st Monmouthshire, resigns his commission, October 3rd.

ROYAL ENGINEERS (VOLUNTEERS).

Surgeon-Captain G. H. Ward-Humphreys, 1st Gloucestershire, resigns his commission, October 3rd.

VOLUNTEER RIFLES.

Surgeon-Lieutenant K. Mack Douglas, M.D., 9th Volunteer Battalion (Highlanders) the Royal Scots (Lothian Regiment), to be Surgeon-Captain, August 14th; Surgeon-Lieutenants J. Mowat, M.B., and J. Cumming, of the same battalion, to be Surgeon-Captains, August 31st.

Surgeon-Captain J. O. Sankey, 2nd Volunteer Battalion the Oxfordshire Light Infantry, to be Surgeon-Major, September 26th.

Farquhar Gracie, M.B., to be Surgeon-Lieutenant 1st Dumbartonshire, September 26th.

Surgeon-Captain J. G. FRASER, M.B., 10th Middlesex (Bloomsbury), to remain supernumerary while in command of the 5th London Volunteer Infantry Brigade Bearer Company, July 25th.

THE VOLUNTEER AMBULANCE SCHOOL OF INSTRUCTION.

THE winter session of the school commenced on Monday last at the headquarters of the London Rifle Brigade kindly placed at the disposal of the Senior Medical Officer by Lieutenant-Colonel Lord Bingham. There was an excellent muster of all ranks in both the advanced and junior classes and Brigade-Surgeon-Lieutenant-Colonel Giles announced that no more would be taken in either class after the next lecture. The officers who take part in the instruction are Surgeon-Majors W. Culver James, R. R. Sleman: Surgeon-Captains E. M. Callender, E. W. St. Vincent Ryan, C. S. de Segundo, A. Ducat and J. A. Masters. The competition for the challenge bowl presented to the school by the late Surgeon-General J. B. Hamilton will take place on December 7th.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

MR. R. C. PUNNETT, of Gonville and Caius, has been appointed Demonstrator of Comparative Anatomy in the University.

The Chair of Physiology.—The Professorship of Physiology is now vacant by the resignation of Sir Michael Foster, K.C.B., which took effect at Michaelmas.

Addenbrooke's Hospital.—Professor Howard Marsh has been elected Surgeon to Addenbrooke's Hospital. Mr. Hubert Higgins, M.A., has resigned the office of Assistant Surgeon at the hospital. Under the recent Act of Parliament the election will be made by the General Committee of the hospital, subject to confirmation by the Court of Governors.

UNIVERSITY OF LONDON.

Convocation.

IT is officially announced that the meeting of Convocation, which under ordinary circumstances should be convened for Tuesday next, October 13th, will not be held, as no notices of business for it have been received, and no business can be entertained at any meeting unless notice thereof has been previously given.

Advanced Physiology.

A course of eight lectures on the blood will be given in the physiological laboratory during the Michaelmas term by Mr. G. A. Buckmaster, M.A., M.D., on Tuesdays beginning on October 20th, at 5 p.m. The lectures will deal with the morphology of the blood, origin and structure of the chromocytes, leucocytes, and blood platelets (thrombocytes), haemacytosis, relation of the plasma to the form constituents of the blood, determination of the distribution of alkali in the blood, of the specific gravity, electrical conductivity, and viscosity; isotonic value of blood serum; precipitins, lysins, and cytases of the blood; the biological test for blood, determination of the quantity of blood in the body; polycythaemia and other changes in the blood which are observed at high altitudes.

On October 16th Dr. F. W. Mott, F.R.S., will begin, at 5 p.m., a course of eight lectures on the structure and functions of the cerebral cortex.

Any member of a London school of medicine, whether an undergraduate of the University or not, is entitled to a card of admission on application to the Academic Registrar at the University, South Kensington.

Advanced Botany.

A course of eight lectures on the relation of the composition of the plant to the soil in which it grows will be given by Mr. A. D. Hall, Director of the Rothamstead Experimental Station at the Chelsea Physic Garden during the first term of the session. The lectures will be given on Tuesdays, at 3 p.m., commencing on October 13th.

Research Statistical and Biometric Laboratory.

This department, which is under the direction of Professor Karl Pearson, is assisted by a grant from the Worshipful Company of Drapers. Its aim is to provide exact training in both observation and computation. Lectures are given in both elementary and advanced statistics, and the general theory of statistics is so developed as to be of service not only to biometricians, but to those who propose in the future to deal with social economic or vital statistics. A registration fee of 1 guinea is required from research students.

UNIVERSITY COLLEGE.

Dr. Morris W. Travers will begin a course of eight experimental lectures on experimental research at low temperatures on Monday, October 26th, and Mr. Soddy, M.A., a course of twelve lectures on radioactivity on October 13th. The laboratory of the department of chemistry is provided with a complete apparatus for spectrum work, and Mr. E. C. C. Baly, F.I.C., will give a course of lectures on spectroscopy and spectrum photography in November and February. Further particulars can be obtained from the Secretary of the College, Gower Street.

GUY'S HOSPITAL MEDICAL SCHOOL.

Mr. A. E. Boycott, M.A., M.B., B.Ch., B.Sc.Oxon., Fellow of Brasenose College, has been appointed Gordon Lecturer in Experimental Pathology in succession to Dr. E. W. Ainley Walker, resigned.

UNIVERSITY OF GLASGOW.

THE following have passed the First Professional Examination for the degrees of Bachelor of Medicine (M.B.), and Bachelor of Surgery (Ch.B.) in the subjects indicated (B., Botany; Z., Zoology; P., Physics; C., Chemistry):

W. W. Adamson (Z., C.); A. Anderson (B., Z., P., C.); D. Anderson (B., P.); J. M. Anderson (B.); J. Atkinson (C.); R. I. Binning (Z., C.); R. R. Bow (B., P.); J. L. Boyd (B., P.); M. Buchanan (B., C.); J. Cairncross (Z., C.); J. Cairns (B., P.); W. R. Cammock (B. P.); T. H. Campbell (B., P.); J. Carrick (B., P.); A. B. Cluckie (Z., C.); J. H. J. V. Coats (Z., P., C.); J. Cook (B., P.); A. J. Couper (Z.); J. R. Craig (B., P., C.); C. A. Crichlow (B., P.); N. Davie (Z., C.); A. Dick (C.); J. A. Doctor (C.); J. Dunbar (C.); D. Duncan (B., P.); L. J. Dunstone (B., P.); A. W. Eadie (Z., C.); W. M. Elliott (B., P.); A. Fairley (B., P., C.); T. L. Fleming (Z.); T. Forsyth, (Z., P., C.); W. L. Forsyth (B., P.); J. Fotheringham (B., C.); G. M. Fraser (Z., C.); S. N. Galbraith (B., P.); B. Gale (B., P.); H. M'V. Gossman (Z.); R. Govan (Z., C.); H. M. Granger (B., Z., C.); J. V. Grant (B. C.); J. D. Gray (Z., C.); T. E. Gray (B., P.); W. C. Gunn (B., C.); D. Hamilton (Z., C.); T. Harkin, (Z., C.); J. M. Henderson (B., P.); J. H. Hislop (B.); W. A. Hislop (Z.); A. Hogg (B. Z.); B. Hutchison (B., P.); A. J. Hutton (B., P.); A. M. Kennedy (B., P.); C. L. Kerr (B., Z., P. C.); R. Lauder (P.); D. C. M'Ardle (P.); P. C. M'Arthur (Z.); E. B. Macaulay (B.); A. M. Macdonald (B., P., C.); A. T. I. Macdonald (B., P.); J. M'Donald (C.); N. MacInnes, M.A. (B. Z. P.); W. C. Mackie (B., P.); A. D. M'Lachlan (Z., C.); D. C. Maclachlan (B., Z., P., C.); W. E. M'Lelland (B., Z., P.); J. W. M'Leod (B., P.); J. M. M'Millan (B.); D. I. M'Naughtan (Z.); A. N. R. M'Neill (B., P.); M. M. MacRae (Z., C.); J. M'Vittie (B., Z., P., C.); A. Maguire (B., C.); D. Manson (B., P.); J. H. Martin (B., P.); D. R. Mathieson (Z., P.); H. Matthews (Z.); W. S. Melville (Z., P., C.); J. W. Miller (C.); T. Millor (B., C.); J. R. Mitchell (Z., C.); H. W. Moir (B.); R. C. Muir (B.); A. C. Munro (B., P.); A. A. Murison (C.); I. Papiermeister (B., P.); R. M. F. Picken (B., P.); D. Purdie (B., P.); R. Rae (B., P.); D. M'K. Reid (C.); D. Renton (P., C.); B. Robertshaw (B., Z., P., C.); T. D. C. Ross (Z., C.); A. Scott (B., P.); G. W. Scott (B., Z.); R. E. Selby (B.); J. A. Smith (P., C.); J. Steedman (C.); A. W. M. Steele (P.); J. A. Stenhouse (B., C.); C. K. Stevenson (B., P.); E. E. Stewart (Z.); J. Stewart, M.A. (Z., C.); L. Storey (B., Z., P.); H. C. Storrie (B.); J. A. Struthers (C.); J. M. Taylor (B., P.); R. S. Taylor (Z., C.); D. A. Thomson, M.A. (B., C.); H. J. Thomson (B., P.); J. A. Thomson (Z.); M. Turnbull (P.); J. M. Walker (Z., C.); T. C. D. Watt (Z.); H. White (C.); C. P. Williamson (B.); D. M'G. Wilson (B., P.); F. R. Wilson (B., P.); G. Y. Yardumian (B., P.); H. Young (B., P.); J. Young (B., P.); M. Young (B., P.).

Women.—M. G. Forrest (Z.); M. H. D. Kelly (B., Z.); A. H. Macalpine (B., Z.); A. M'Crorie (Z.); F. Morrison (B., Z.); J. I. Robertson, M.A. (B., Z.); O. Robertson (B., Z.); M. E. Rutherfurd (B., Z.).

The following have passed the Second Professional Examination in the subjects indicated (A., Anatomy; P., Physiology; M., Materia Medica and Therapeutics):

G. A. Allan (M.), G. V. Anderson (P.), J. H. Baird, B.A. (M.), H. Barr (M.), G. D. M. Beaton (A., P.), G. T. Bogle (A.), C. Burns (A.), D. L. Carmichael (A.), J. P. Carmichael (M.), C. G. A. Chislett (P., M.), D. Clark (P.), T. G. Copestake (A.), A. D. Cowan (P.), H. W. Dempster (A.), J. S. Dunn, M.A. (M.), E. J. Dyke (M.), H. W. Dyke (M.), E. J. Fitzgerald (A., P.), T. H. Forest (P.), J. Glaister (A., P.), A. Graham, B.Sc. (M.), J. I. Greig, M.A. (A., P.), W. Grier (M.), C. F. D. Hammond (A., P., M.), J. Hammond (M.), S. H. Harris (A.), J. D. Hart (A., P., M.), F. Hauxwell (P., M.), L. Hislop (P.), A. Hunter (A.), J. Hunter (A., P., M.), H. S. Hutchison (A., P.), W. B. Jack (M.), A. E. Jones (P.), P. J. Kelly (M.), W. L. Kirkwood (M.), R. W. Leckie (P.), G. H. Logan (A.), P. Lowe, M.A., B.Sc. (A.), T. M'Cosh (M.), D. M'Ewan (A., P., M.), H. A. Macewen (M.), J. D. Macfie (A.), J. Macintyre (A.), W. Macleod (M.), H. MacNaught (A., P., M.), N. S. MacNaughtan (P), W. H. Manson (A., P.), K. May (M.), J. Moffatt (A.), J. D. Nisbet (A.), T. T. Rankin (M.), J. Reid (A., P.), W. Ronald (M.), A. C. Russell (M.), J. Stevenson (M.), A. A. Stewart (P., M.), D. Stewart (M.), J. L. Stewart, M.A. (A. P., M.), T. Strain (M.), W. A. Stuart (M.), J. R. Sutherland (A., P., M.), T. Thom (M.), W. L. Walker, M.A. (M.), G. Young (M.), J. Young (P., M.).

Women.—J. T. Clark (M.), M. T. Gallagher (A.), K. R. M. Lucas (P.), E. Oversby (P., M.), C. G. Thomlinson (A., P., M.).

The following have passed the Third Professional Examination in the subjects indicated (P., Pathology; M., Medical Jurisprudence and Public Health):

S. C. Adam (P., M.), A. B. Aitken (P.), H. G. Anderson (M.), J. R. S. Anderson (P.), R. D. Bell, M.A. (P., M.), T. Brodie (P., M.), R. B. Carslaw, M.A. (M.), D. W. Davidson (P.), T. T. M. Dishington (M.), R. M. Donaldson (P.), G. H. Downie (P., M.), H. H. Fulton (M.), D. J. G. Grant (P., M.), G. M. Gray (M.), A. R. F. Hay (P., M.), A. Y. Hutchison (P.), A. Innes (P., M.), J. R. Kerr (P., M.), J. Kerr (P.), J. B. M'Cabe (M.), D. C. M'Cormick (M.), N. M'Dougall (P.), T. D. M'Ewan (M.), D. Macfadyen (M.), J. M'Farlane (M.), A. S. M. Macgregor (P., M.), M. M'Intyre (M.), C. G. Mackay (P., M.), R. MacLeod (M.), J. Marshall (P., M.), D. R. Mitchell (M.), G. D. Muir (M.), J. Murdoch (P., M.), F. A. Murray (P., M.), T. Orr (M.), H. H. Patrick (M.), J. Pearson (M.), A. M. Pollock (P.), A. M. Pollock (M.), J. Porter (M.), W. M. Rae (P.), D. S. Richmond (P.), J. W. Richmond (P., M.), C. Ross (M.), J. M. Ross (M.), J. Samson (M.), W. H. Sieger (M.), R. W. Simpson (P., M.), G. G. Smith, B.Sc. (M.), J. A. Somerville (P.), J. W. Thomson (M.), D. W. Wilson (M.), G. Wilson (P.), J. Wyper (P.),

Women.—B. S. Alexander (P.), R. Campbell (M.), E. L. Chapman (M.), M. L. M'Neill (P.), M. W. Millar (P., M.), E. J. M. Pryce (P., M.), A. M. Yates (P., M.).

Mr. Robert Stewart M'Kim, M.A., has passed the First Professional Examination for the degrees of Bachelor of Medicine (M.B.) and Master in Surgery (C.M.).

ROYAL UNIVERSITY OF IRELAND.

THE examiners have recommended that the following candidates be adjudged to have passed the First Examination in Medicine:

D. R. Acheson, Queen's College, Belfast; A. R. Boyd, Queen's College, Belfast; W. Browne, Queen's College, Belfast; J. D. G. Burke, Queen's College, Galway; P. P. Connolly, University College, Dublin; J. D. Cummins, University College, Dublin; T. P. Dillon, Queen's College, Cork; J. S. Doyle, University College, Dublin; E. H. Flanigan, University College, Dublin; P. Flynn, Queen's College, Galway; T. S. S. Holmes, Queen's College, Belfast; J. B. Horgan, Queen's College, Cork; F. Keane, Queen's College, Cork; R. Lavallin, Queen's College, Cork; T. P. Linehan, Queen's College, Cork; J. C. Macaulay, Queen's College, Galway; W. McCready, Queen's College, Belfast; R. J. MacFeeters, Queen's College, Belfast; R. A. McLaverty, Queen's College, Belfast; F. F. MacMahon, University College, Dublin; P. O'Callaghan, University College, Dublin; J. J. O'Kelly, B.A., University College, Dublin; E. O'Reilly, University College, Dublin; W. L. O'Reilly, University College, Dublin; R. A. Smith, Queen's College, Cork; A. L. Stevenson, Queen's College, Belfast; D. Stevenson, Queen's College, Belfast; H. C. Swerty, Queen's College, Cork.

The examiners have recommended that the following candidates be adjudged to have passed the Second Examination in Medicine:

Upper Pass. N. M. Donnelly, Catholic University School of Medicine; C. R. Harvey, Queen's College, Belfast; V. J. McAllister, Catholic University School of Medicine; A. V. McMaster, Queen's College,

Belfast; C. B. Pearson, Queen's College, Cork; R. V. Slattery, B.A., Catholic University School of Medicine.

The above candidates may present themselves for the further Examination for Honours.

Pass.—J. Barrett, Catholic University School of Medicine; D. Boylan, Catholic University School of Medicine; H. L. Bristow, Queen's College, Belfast; F. X. J. Callaghan, Catholic University School of Medicine; G. Calwell, Queen's College, Belfast; H. Carson, Queen's College, Belfast; J. M. A. Costello, Queen's College, Galway; J. Dunlop, Queen's College, Belfast; J. L. Dunlop, Queen's College, Galway; J. J. Flood, Catholic University School of Medicine; J. J. A. Gannon, Queen's College, Galway; W. S. Graham, Queen's College, Belfast; P. J. Grogan, Queen's College, Galway; J. J. Hollywood, Catholic University School of Medicine; J. Horgan, Queen's College, Cork; C. G. Knight, Queen's College, Belfast; T. J. McAllen, Queen's College, Belfast; J. McCausland, B.A., Queen's College, Galway; R. A. M. L. McCrea, Queen's College, Galway; T. J. Magill, Queen's College, Belfast; T. F. O'Doherty, Catholic University School of Medicine; H. J. O'Sullivan, Queen's College, Cork; P. Reid, B.A., Queen's Colleges, Cork and Galway; P. B. Ridge, Queen's College, Cork; C. H. G. Ross, Catholic University School of Medicine; T. Tobin, Queen's College, Cork; W. Whitfield, Queen's College, Belfast.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

At a stated meeting of the President and Fellows of the Royal College of Physicians of Ireland, held on Friday, October 2nd, Dr. Thomas Greenhalgh, L.K. and Q.C.P., 1868, was admitted to the grade of member of the College.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

QUALIFICATIONS OF BURGH MEDICAL OFFICERS OF HEALTH FOR SCOTLAND.

M. writes: An appointment for M.O.H. for a burgh of about 1,200 inhabitants in Scotland is being made. The Local Government Board declines to sanction the appointment of a registered practitioner not holding a qualification in public health. Is the position of the Board taken in accordance with statute law?

Section XV Public Health (Scotland) Act, 1897, states: "No person shall be appointed as the medical officer of any burgh or of any district other than a burgh, unless he possesses the qualifications set forth in Section LIV of the Local Government (Scotland) Act, 1889 (52 and 53 Vict. c. 50)."

The Section LIV of the Local Government (Scotland) Act, 1889, referred to, is as follows: "(1) No person shall hereafter be appointed the medical officer of any county or district or parish, unless he is a registered practitioner; (2) no person shall after the first day of January, 1893, be appointed the medical officer under the Public Health Acts for a county or district or parish which contained according to the last published census for the time a population of 30,000 or upwards, unless he is qualified as above mentioned, and also is registered on the *Medical Register* as the holder of a diploma in sanitary science, public health, or State medicine under Section XXI of the Medical Act, 1886; (3) no person shall, except with the express consent of the Board of Supervision, be appointed as the sanitary inspector for a county unless he has been during the three consecutive years preceding his appointment the sanitary inspector of a local authority under the Public Health Acts; (4) every medical officer and every sanitary inspector appointed under this Act or under the Public Health Acts shall be removable from office only with the sanction of the Board of Supervision."

In a footnote in the *Handbook of Public Health* edited by Mr. Patten MacDougall, legal member of the Local Government Board for Scotland, it is stated: "The qualifications set forth in Section LIV of the Local Government Act, 1889, are that the medical officer shall be a registered medical practitioner, and that he shall be registered on the *Medical Register* as the holder of a diploma in sanitary science, public health, or State medicine, under Section XXI of the Medical Act, 1886. Under the 1889 Act this latter qualification is not required, save in the case of the medical officer of the county or district or parish having a population of 30,000 or upwards; but the effect of this Act appears to be to extend the requirement to all appointments of district medical officers. It already applies to burghs under Section 77 (1) of the Burgh Police Act, and the smaller burghs experience great difficulty in obtaining a medical officer with the necessary qualifications. Sometimes no medical man so qualified can be found within reasonable distance of the burgh. If the county medical officer possesses the qualification probably the best course in such cases is to appoint him, arranging that in his absence any duties of an urgent nature shall be performed by a resident substitute."

We understand that the Local Government Board will not agree to the appointment of a medical practitioner as medical officer of health of any burgh, however small, unless he holds the diploma of public health. Clause LIV above quoted is rather obscure and it might be differently interpreted, but this would have to be done by a decision of the Law Courts.

POPLAR AND STEPNEY SICK ASYLUM DISTRICT.

The annual report of the managers of the Poplar and Stepney Sick Asylum District for the year ending Lady Day, 1903, is well prepared. The statements in it are all perfectly clear, the tables of statistics are of a thoroughly practical character, and no ratepayer can complain that, with this report in his hands, he is not in a position to tell exactly what is going on in the institution to the upkeep of which he perforce contributes. None of the details given are of strictly medical interest, but certain facts mentioned bring home to the reader what an immense amount of invaluable clinical material is at present unutilized in medical education. Thus in this asylum district there are in the principal building at Bromley 770 beds in addition to 78 at the branch asylum at Blackwall, with a daily average of 668 patients in the one establishment and of 75 in the other. At the larger asylum the percentage of deaths to admissions during the year was 21.5, while the average duration of treatment of each patient was fifty-eight days. At the smaller asylum the duration of stay was very much longer, and from this and one or two other points it is concluded that the cases treated there are of a permanently bedridden character. The gross cost for maintenance, salaries, lighting, warming, and establishment charges was £1 4s. 6½d. a week for each inmate, that for food alone being 8s. 2d. The medical staff consists of a medical officer and two assistants, while a matron and two assistants, together with a large number of sisters, nurses, and probationers are responsible for the nursing. There seems to be about 7 patients to every working member of the nursing staff.

HINTS TO MOTHERS.

A Correspondent has sent us a copy of a card which has been prepared by the Medical Officer of Health for the County of Hertford for distribution by medical men and others either to women after confinement or generally to those who are in charge of young children. It is entitled "Hints on the Feeding and Care of Infants," and printed as it is in large type and on thick cardboard with a loop ready for attachment to the wall, it is undoubedly a very useful publication. It deals briefly and tersely with the following subjects: Feeding, cow's milk and barley-water, bottles and comforters, cleanliness and fresh air, special precautions, when the child ails, hand feeding, barley-water, prepared foods. The card is headed by a kind of brief text to the effect that 2,736 infants have died in the County of Hertford during the last four years, and by a quotation of the King's saying, "If preventable, why not prevented?" The annual loss to the country from preventable infant mortality is of course enormous, and those who have had much to do with the poorer classes need no argument to convince them that the ignorance of the average woman, not alone of the working classes, on the proper way to bring up children is stupendous. It seems, therefore, as if it might be a good thing if the medical officers of all counties adopted a corresponding plan of disseminating sound notions upon the subject. A copy of the card under notice can, it is understood, be obtained upon application to the Clerk of the Peace, Hertford.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,067 births and 4,424 deaths were registered during the week ending Saturday last, October 3rd. The annual rate of mortality in these towns, which had been 15.8, 16.5, and 16.3 per 1,000 in the three preceding weeks, further declined last week to 15.3 per 1,000. The rates in the several towns ranged from 6.3 in Handsworth, 7.6 in East Ham, 7.8 in West Bromwich, 7.9 in Aston Manor, 8.2 in Willesden, 8.6 in Hornsey, 8.7 in Northampton, and 9.0 in King's Norton and in Wallasey, to 20.2 in Swansea, 20.3 in Middlesbrough, 20.9 in West Hartlepool, 21.0 in Wigan and in Salford, 21.9 in Rotherham, 22.1 in Great Yarmouth, 22.6 in Merthyr Tydfil, and 23.1 in Newcastle-on-Tyne. In London the rate of mortality was 14.1 per 1,000, while it averaged 15.9 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 2.4 per 1,000 in the seventy-six large towns; in London this death-rate was equal to 2.2 per 1,000, while it averaged 2.5 per 1,000 in the seventy-five other large towns, and ranged upwards to 4.3 in Coventry and in Bootle, 4.4 in Merthyr Tydfil, 4.7 in Southampton, 5.2 in Burnley, 5.5 in Middlesbrough, 5.9 in Walthamstow, 6.0 in Great Yarmouth, and 6.6 in Hanley. Measles caused a death-rate of 1.6 in Warrington; diphtheria of 1.4 in Reading; whooping-cough of 1.3 in York and in Rhondda; "fever" of 1.5 in Merthyr Tydfil; and diarrhoea of 3.3 in Aston Manor and in Stockport, 3.4 in Walthamstow and in Bootle, 4.1 in Hanley, 4.3 in Southampton and Coventry, 4.7 in Burnley, and 5.5 in Middlesbrough. The mortality from scarlet fever showed no marked excess in any of the large towns. One fatal case of small-pox was registered last week in Hanley, and one in York, but not one in any other of the seventy-six towns. The Metropolitan Asylums Hospitals contained 21 small-pox patients at the end of last week, against 46, 41, and 29 at the end of the three preceding weeks: 1 new case was admitted during the week, against 9, 7, and 1 in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 1,772, 1,803, and 1,886 on the three preceding Saturdays, had declined again to 1,877 on Saturday last; 235 new cases were admitted during the week, against 212, 261, and 293 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, October 3rd, 881 births and 566 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 14.4, 16.1, and 16.8 per 1,000 in the three preceding weeks, further rose to 17.3 per 1,000 last week, and was 2.0 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 13.7 in Leith and 14.3 in Greenock to 18.6 in Perth, and 18.8 in Dundee. The death-rate from the principal infectious diseases averaged 2.0 per 1,000 in these towns, the highest rates being recorded in Leith and Perth. The 277 deaths registered in Glasgow included 3 from measles, 5 from whooping-cough, 4 from "fever," and 21 from diarrhoea. Three fatal cases of diphtheria, 2 of whooping-cough, and 5 of diarrhoea occurred in Edinburgh. Five deaths from diarrhoea were recorded in Dundee, 5 in Leith, 2 in Aberdeen, and 2 in Greenock.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, October 3rd, 553 births and 312 deaths were registered in six of the principal Irish towns, against 498 births and 322 deaths in the preceding period. The mean annual death-rate of these towns, which had been 16.2, 18.7 and 15.8 per 1,000 in the three preceding weeks, rose to 19.02 per 1,000 in the week under notice, this figure being 3.72 above than the mean annual rate during the corresponding period in the seventy-six English towns. The death-rates ranged in these six Irish towns from 15.8 in Cork and 16.4 in Belfast to 20.2 in Londonderry and 23.2 in Limerick. The death-rates from the principal zymotic diseases in these six Irish towns averaged during the week 1.1 per 1,000, or 0.2 less than during the preceding period. The highest point, 1.9, was reached in Waterford. In Belfast 2 deaths from scarlet fever, 3 from whooping-cough, and 1 from diphtheria were registered but no other deaths from these causes, nor from small-pox, measles, typhus, or simple continued fever were registered in any of the six towns, and with the exception of the above, and of 2 cases of enteric at Dublin and 1 at Belfast, the zymotic death-rate in the six towns was caused entirely by diarrhoeal diseases.

MEDICAL NEWS.

THE annual dinner of the Association of Public Vaccinators of England and Wales will take place at the Hotel Cecil, London, W.C., on Friday, October 23rd, at 7 p.m.

THE first Hunterian Society's lecture of the session will be delivered by Dr. W. Hale White on October 14th, at 8.30 p.m., the subject being Some Clinical Considerations concerning Enlargement of the Heart.

MUNICIPAL ASYLUM FOR INEBRIATES.—The first public asylum and sanatorium ever erected by a town council on the Continent has recently been completed by the Town Council of Dresden. Only such persons will be admitted as offer a prospect of cure. At present accommodation is provided for fifteen patients.

SIR SYDNEY WATERLOW, Chairman of the Distributing Committee of the Metropolitan Hospital Sunday Fund, states that further sums have been received since the distribution in August, and that when all church collections notified have been received the total collection for the year will exceed £63,000, that being the largest amount received by the Fund in any one year since it was first started by him in November, 1872.

THE epidemic of small-pox which has so long afflicted Manchester may now be considered at an end. It is now a month since the last case was notified and over seven weeks since the last death. The outbreak began in September, 1902, so that it may be said to have lasted a year, during which time the number of cases notified was 408, of which at least three-quarters occurred in those frequenting or living in common lodging-houses.

PRESCRIPTION BY TELEPHONE.—At Helsingfors in Finland medical practitioners, it is said, dictate their prescriptions to their patients through the telephone. The patient has to repeat the prescription after dictation, and each prescription is marked with a number corresponding to that under which it is entered in the practitioner's case-book. The system seems at first sight to be fraught with greater risks of evil consequences even than those which Mr. Idris has attributed to the dispensing of drugs by doctors. It is true the danger of fatal mistakes is minimized by a provision of the law which forbids the prescription of toxic substances by telephone. Nevertheless, there remain large possibilities of results, to say the least, unpleasant arising from this mode of prescribing.

THE DEPARTMENTAL COMMITTEE ON VACCINATION ADMINISTRATION.—The Departmental Committee appointed by the President of the Local Government Board to inquire and report with regard to the payments made to public vaccinators and vaccination officers under the Vaccination Order, 1898, met on October 1st, heard the evidence of Mr. Joseph Brown, President of the Association of Poor-law Unions in England and Wales, Mr. F. W. Dimbleby, Senior Vice-President of the Association, and Mr. A. F. Vulliamy, a member of the Association and Clerk to the Ipswich Board of Guardians. The Committee has already heard the evidence of the official witness, Mr. W. W. Conolly, Principal Clerk of the Public Health Department of the Local Government Board.

GLASGOW SOUTHERN MEDICAL SOCIETY.—The first meeting of the Society for the Session 1903-4 was held on October 1st, when the following gentlemen were appointed office-bearers for the year:—*Honorary President:* Sir J. Halliday Croom, M.D., F.R.C.P. *President:* Dr. Thomas Richmond. *Vice-Presidents:* Dr. J. Fraser Orr and Mr. A. E. Maylard. *Treasurer:* Dr. Thomas Forrest, 1, Moray Place, S. *Secretary:* Dr. Andrew Wauchope, 190, Crown Street. *Editorial Secretary:* Dr. James Weir, 24, Abbotsford Place. *Extra Members of Council:* Drs. Dunning, Halliday, and Kelly. *Seal-keeper:* Dr. G. H. Edington. *Court Medical:* Drs. McGillvray, Leask, Monro, Stewart, and Stockman. *Representative on Victoria Infirmary Board:* Dr. C. E. Robertson. It was arranged to hold the annual dinner on Thursday, October 15th.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the Executive Committee of the Medical Sickness Annuity and Life Assurance Society was held at 429, Strand, London, W.C., on September 25th, Dr. de Havilland Hall in the chair. The accounts presented showed a satisfactory sickness experience for the summer months. During the spring there was, as usual, a heavy disbursement on account of sickness claims, but the lightness of the claims both in number and duration during the months of July and August has nearly balanced the extra payments made in the early part of the year. The result so far is appreciably better than at the corresponding date in last year. The number of those members who are permanently disabled continues to grow. Over £2,000 per annum is now being paid by the Society to members of whom there is little hope that they will ever be able to resume professional work. In addition to the ordinary reserves a special sum is set aside to secure these "chronic" cases, and at the valuation of the business to be made at the end of the current year a large amount will be earmarked for this purpose. Prospectuses and all particulars can be obtained on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

THE LEBANON HOSPITAL FOR THE INSANE.—The fifth report of the Lebanon Hospital for the Insane at Asfuriyeh, near Beyrout, states that last year, being the third of its actual work, was one of success and progress. Two new buildings are in course of erection, and are designed for acute cases among women and men respectively, and the managers hope to be soon in possession of a compact property of 60 acres. The estimated annual expenditure on maintenance is £2,000, and of this sum some £600 was received last year from the friends of patients. Stress is laid upon this fact, since it seems to indicate a change of tone toward the care of the insane on the part of the native population, and to be a proof of the confidence with which the hospital is now regarded. It is observed also that the Turkish authorities give the institution every encouragement and assistance. The report of the Medical Superintendent, Dr. Wolff, shows that 65 patients were admitted during the year, bringing the total treated during the year to 97. Of these, 57 were males and 40 women. The patients discharged numbered 58, of whom 11 were cured, 15 improved, 24 not improved, and 8 died. Among the patients were 3 Mohammedan women, and the greater number of all the patients came from Beyrout and the Lebanon. He notes that the commission of criminal acts under the influence of mental disorder appears to be more rare than in Europe. Besides an executive committee in Beyrout, the institution has committees in London, Philadelphia, and Switzerland. The London Secretary is Mr. Francis Brading, 35, Queen Victoria Street.

MEDICAL VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BIRMINGHAM GENERAL HOSPITAL.—(1) House-Physician; (2) House-Surgeon. Appointments for six months. Both resident. Salary at the rate of £20 per annum.

BRIDGNORTH AND SOUTH SHROPSHIRE INFIRMARY.—House-Surgeon, resident. Salary, £100 per annum.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—House-Surgeon, resident. Salary, £140 per annum.

CUMBERLAND AND WESTMORLAND ASYLUM, Garlands.—Senior Assistant Medical Officer, resident. Salary, £150, rising to £180 per annum.

DUBLIN: ROYAL CITY OF DUBLIN HOSPITAL.—(1) Physician; (2) Surgeon.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark.—(1) House-Physician, salary £80. (2) House-Surgeon, salary £70. Both resident.

GORDON HOSPITAL FOR FISTULA, Vauxhall Bridge Road.—House-Surgeon, resident. Honorarium, 15 guineas for six, and 40 guineas for twelve, months.

GOSFORTH CITY ASYLUM.—Assistant Medical Officer, resident. Salary, £140, rising to £160 per annum.

GREAT YARMOUTH HOSPITAL.—House-Surgeon, resident. Salary, £90, and £10 yearly for lectures to probationer nurses.

HOSPITAL FOR WOMEN, Soho Square, W.—(1) House-Physician. Salary, £30 for six months. (2) Clinical Assistants.

ISLINGTON HOSPITAL AND DISPENSARY.—House-Surgeon, resident. Salary, £120 per annum.

LIVERPOOL INFIRMARY FOR CHILDREN.—Assistant House-Surgeon, resident. Salary, £30 for six months.

MARGATE: ROYAL SEA-BATHING HOSPITAL.—Resident Surgeon. Salary as junio at the rate of £80 per annum, and as senior £120 per annum.

MIDDLESEX HOSPITAL.—Second Assistant in the Clinical and Bacteriological Laboratories. Salary, £100 per annum.

NEWCASTLE-UPON-TYNE: UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.—Demonstrator of Anatomy. Salary, £120 to £150 per annum.

NOTTINGHAM CHILDREN'S HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House-Surgeon, resident. Salary, £100 per annum.

PADDINGTON GREEN CHILDREN'S HOSPITAL.—(1) House-Physician; (2) House-Surgeon. Appointments for six months. Both resident; and salary at the rate of 50 guineas per annum.

SAMARITAN FREE HOSPITAL, Marylebone Road, N.W.—Clinical Assistants.

SOUTHAMPTON: ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

STAFFORD: COTON HILL LUNATIC ASYLUM.—Assistant Medical Officer, resident. Salary, £125, rising to £175 per annum.

TAUNTON AND SOMERSET HOSPITAL.—Resident Assistant House-Surgeon. Salary at the rate of £50 per annum.

TORQUAY: TORBAY HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum, and £5 for nurses' lectures.

WESTMINSTER HOSPITAL, S.W.—Assistant Pathologist and Curator of the Museum. Salary, 100 guineas per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House-Physician, resident. Salary, £100 per annum.

MEDICAL APPOINTMENTS.

ARGLES, E. E., M.R.C.S., L.R.C.P.Lond., Second Assistant Medical Officer to the St. Marylebone Infirmary.

BALLANTYNE, Thomas, M.B., Ch.B Glasg., Junior House-Surgeon of the Blackburn and East Lancashire Infirmary.

BRAINE-HARTNELL, C., M.R.C.S., L.R.C.P., Clinical Assistant to the Chelsea Hospital for Women.

BRIGGS, Walter, M.B., Ch.B.Vict., Senior House-Surgeon of the Blackburn and East Lancashire Infirmary.

BROWN, R. C., M.B., Honorary Anaesthetist to the Alfred Hospital, Melbourne.

BROWNE, J. Walter, M.B., B.Ch.Dub., Port Health Officer for the Port of Hokianga, New Zealand, *vice* Dr. Wheeler.

CURTIS, J. C., L.R.C.P., L.R.C.S., Clinical Assistant to the Chelsea Hospital for Women.

DARBYSHIRE, D. H., M.R.C.S., L.R.C.P., Health Officer at Buckland Hill, West Australia.

DUNCAN, A., L.R.C.P. & S.Edin., Certifying Factory Surgeon for the Moorfields District, co. Antrim.

EDWARDS, J. T., M.R.C.S.Eng., L.R.C.P.Lond., House-Surgeon to the Aberystwyth Infirmary and Cardiganshire General Hospital.

FLYNN, Ignatius J., M.D., M.S.R.U.I., Health Officer at Bunbury, West Australia.

HARVEY, Richard R., M.B., Ch.B.Melb., Health Officer at Norseman, West Australia.

HENRY, Claud D., M.B., B.S.Camb., Police Surgeon at Wellington, New Zealand, *vice* John Teare, M.B., B.S.Vict., resigned.

HEWITT, T. H., L.R.C.P. & S.I., District Medical Officer of the Bridgnorth Union.

LLEWELLYN, R. F., M.B., M.Ch.Syd., Government Medical Officer and Vaccinator at Braidwood, New South Wales, *vice* H. L. Cummings, L.R.C.P., M.R.C.S., resigned.

PEARSE, T. Frederick, M.D., F.R.C.S.Eng., M.R.C.P.Lond., D.P.H.Camb., Lecturer on Hygiene at the Medical College, Calcutta.

ROUGHAM, J. A., M.B., B.S.R.U.I., Health Officer at Narrogin, West Australia.

SHELMERDINE, H., M.B., C.M.Edin., District Medical Officer of the Petersfield Union.

SMITH, C. V., L.S.A., District Medical Officer of the Gainsborough Union.

SMYTH, S. R., L.R.C.P. & S.I., District Medical Officer and Public Vaccinator of Moora, West Australia.

WARD, B. J., M.R.C.S., L.R.C.P.Lond., First Assistant Medical Officer to the St. Marylebone Infirmary.

DIARY FOR NEXT WEEK.

MONDAY.

Medical Society of London, 11, Chandos Street, Cavendish Square, W.—8 p.m., General Meeting; 8.30 p.m., Ordinary Meeting. Dr. F. de Havilland Hall, President, Opening Address. Dr. G. A. Gibson (Edinburgh.): Adaptation and Compensation, with Lantern Demonstration.

TUESDAY.

Society for the Study of Inebriety, 11, Chandos Street, Cavendish Square, W., 8 p.m.—Sir William Collins will open a Discussion on the Institutional Treatment of Inebriety.

WEDNESDAY.

Dermatological Society of London, 11, Chandos Street, Cavendish Square, W., 5.15 p.m.—Demonstration of Cases of Interest.

South-West London Medical Society, Bolingbroke Hospital, Wandsworth Common, S.W., 8.45 p.m.—Dr. P. J. Freyer: On Some Practical Points in the Treatment of Enlarged Prostate.

THURSDAY.

Harveian Society of London, Stafford Rooms, Titchborne Street, Edgware Road, W., 8.30 p.m.—Clinical evening: Cases will be shown by Dr. W. J. Harris, and Messrs. P. L. Daniel, T. Crisp English, Francis Jaffray, and E. Laming Evans.

FRIDAY.

Society for the Study of Disease in Children, Hotel Cecil, Strand, W.C., 5.30 p.m.—Papers: Mr. R. Clement Lucas: Strangulated Hernia in an Infant. Mr. J. H. Chaldecott: Chloride of Ethyl Anaesthesia. Mr. Albert Carless: Cases of Lymphangeiomata. Dr. T. Porter Parkinson: Paralytic Chorea. Mr. J. Jackson Clarke: Association of Certain Deformities with Affections of the Throat.

POST-GRADUATE COURSES AND LECTURES.

Charing Cross Hospital, Thursday, 4 p.m.—Surgical Cases.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C.—Lectures will be delivered at 3.30 p.m. as follows: Tuesday, Rheumatism and the Nervous System; Friday, Methods of Examining Cases.

North East London Post-Graduate College, Tottenham Hospital, N., Thursday, 4.30 p.m.—Clinical Lecture on the Value of Symptoms in Thoracic Disease.

Post-Graduate College, West London Hospital, Hammersmith Road, W.—Lectures will be delivered as follows: Tuesday, 4.30 p.m., Medical Education and Post-Graduate Study; Wednesday, 5 p.m., Practical Medicine; Thursday, 5 p.m., Hernia; Friday, 5 p.m., Electro-therapeutics.

Samaritan Free Hospital for Women, Marylebone Road, N.W., Thursday, 3 p.m.—Lecture on Cases from the Wards.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

EYRE.—On September 30th, at Wandle House, Wandsworth Common, to Dr. and Mrs. Eyre, a son.

MCCALLUM.—On October 4th, at Highgate View, Kendal, the wife of A. J. McCallum, M.B., F.R.C.S.E., of a son.

POWELL.—On October 3rd, at Calverton Lodge, Stony Stratford, the wife of Cecil Powell, M.A., M.B. Cantab., of a son.

WROUGHTON.—On September 29th, at Wetheral, near Carlisle, the wife of William Hamilton Wroughton, M.R.C.S.Eng., L.R.C.P.Lond., of a son.

MARRIAGES.

EWART—GREEN.—On September 2nd, at St. Philip's and St. James's, Oxford, by the Rev. C. J. Burrough (cousin of the bride), David Ewart, M.B., Ch.B., F.R.C.S.E., of Chichester, to Mabel, second daughter of the late Mr. T. Green, The Willows, Desmond.

LE FEVRE—WESTERTON.—On September 8th, at St. John's Church, Bulawayo, by the Ven. Archdeacon Beavan, William Philip Le Fevre, son of Edmond Philip Le Fevre, of Blackheath, S.E., to Florence, second daughter of Charles E. Westerton, of Rondebosch, Capetown.

MILLER—LORIMER.—On October 6th, at St. George's United Free Church, Edinburgh, by the Rev. Alexander Whyte, D.D., assisted by the Rev. Donald Miller, D.D., Genoa (father of the bridegroom), and the Rev. John Kelman, Junior, Hugh Crichton Miller, M.A., M.D.Edin. & Pavia, San Remo and Aviemore, Inverness-shire, to Eleanor Jane Campbell, eldest daughter of J. Campbell Lorimer, Esq., K.C.

DEATH.

HEARD.—On September 30th, Herbert John, youngest child of John Heard, L.R.C.P.Lond., M.R.C.S.Eng., of 66, London Fields East, E. Dulwich.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Axiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

QUERIES.

J. C. B. asks for practical experience of the efficiency of Langfield's system of heating and ventilating residences. Are fires necessary in sitting-rooms during any part of the year?

BEARER COMPANIES, ST. JOHN AMBULANCE.

HON. SURGEON S.J.A.B. asks for experience of the bearer companies, St. John Ambulance Brigade. To him it appears that there is in the *personnel* of the S.J.A.B. a splendid reserve for the R.A.M.C. if properly arranged. His division has been asked to send in volunteers to one of these companies, and he would like to know more about them from those who know their work.

ANSWERS.

ONE WHO WOULD LIKE TO KNOW THE REASON WHY has failed to verify his communication with his name.

ANXIOUS INQUIRER.—The terms of the Geneva Convention are published in the *Manual of Military Law*, War Office, 1894 (London: Eyre and Spottiswoode. 2s. 6d.). Some of the provisions of the Convention were published in the BRITISH MEDICAL JOURNAL, December 16th, 1899, p. 1699.

THE F.R.C.S.EDIN. EXAMINATION.

L.R.C.P.—Our correspondent would probably find the following books sufficient for his requirements: In surgical anatomy: Article on Surgical Anatomy in *Quain's Anatomy*, Appendix, tenth edition (London: Longmans, Green, and Co. 1856. 6s. 6d.); and Anatomy in its Surgical Aspect, as found in *Gray's Anatomy*, fourteenth edition, edited by T. Pickering Pick (London: Longmans, Green, and Co. 1897. 36s.); or Cunningham's *Anatomy*, second edition (Edinburgh and London: Young J. Pentland. 1896. 25s.). In midwifery: *Treatise on the Science and Practice of Midwifery*, by W. S. Playfair, M.D., F.R.C.P., ninth edition (London: Smith, Elder, and Co. 1898. 28s.); *Difficult Labour*, by G. E. Herman, M.B., F.R.C.P., new edition (London: Cassell and Co. 1901. 12s. 6d.); *The Science and Art of Obstetrics*, by T. Parvin, A.M., M.D., third edition (Philadelphia: Lea Brothers and Co. 1895. 18s.); *A Manual of Midwifery*, by A. L. Galabin, M.A., M.D., fifth edition (London: J. and A. Churchill. 1900. 15s.): *A Textbook of Obstetrics*, by B. C. Hirst, M.D., second edition (London: W. B. Saunders and Co. 1900. 21s.). We are unable to give the names or addresses of "grinders."

ETHYL CHLORIDE.

DR. T. D. LUKE (Edinburgh) writes: In the BRITISH MEDICAL JOURNAL of October 23rd I notice some remarks on ethyl chloride, and I am quoted as giving the mortality of this anaesthetic as 1 in 4,500. This statement, I know, appears in my *Guide to Anaesthetics*, published last year, but the mortality was calculated from figures available about two years ago really. Since that time ethyl chloride has been given an enormous number of times, and Seitz alone has published records of 12,500 with only one death. In all the fatalities which have occurred under ethyl chloride—and there are only four or five on record—the patient has been suffering from some grave cardiac or respiratory disability, and, as Dr. Hewitt puts it in the September issue of the *British Dental Journal*, we are now entitled to consider "that ethyl chloride is a comparatively safe anaesthetic," as safe, all things considered, as ether. I should now put the mortality at something between 1 in 10,000 and 1 in 15,000, but, of course, as with all anaesthetics, much depends on the experience of the administrator. The findings of Wood and Cema on the physiological side in 1897 have, I think, been since largely disproved by Ruegg of Basle. Employed in its own sphere, namely, for inducing anaesthesia only prior to ether or $CHCl_3$, and for brief dental or throat operations, ethyl chloride is undoubtedly very much safer and more convenient than chloroform. It is, I am glad to say, being largely used in the throat wards of the Edinburgh Royal Infirmary in place of bromethyl and chloroform. As regards inhalers I would warn those who have not tried ethyl chloride not to begin to administer it by means of Brewer's mask. This apparatus is more suited to a place in a museum than an operating theatre, and the failures to anaesthetise, formerly commonly attributed to ethyl chloride, were unquestionably due to the use of this apparatus, the freezing of the cotton-wool and other defects. It cannot be too firmly insisted that if ethyl chloride is to be given and a good reliable anaesthesia is wanted, an inhaler free from any cotton-wool or lint should be used. If mere analgesia it needed, a small handkerchief crushed in the palm of the hand freely impregnated with the drug and held close over the patient's mouth will do. But as a general rule an Ormsby (as Dr. McCardie recommends), a Clement Lucas's inhaler (Down Bros.) without any sponge, or the special arrangement adapted from a Clover's inhaler, described by me in the *Lancet* July 15th, should be used. The drug has no more action on the rubber bag of the inhaler than ether has; and where only 4 c.cm. to 5 c.cm. is sprayed into the bag, this amount volatilises so quickly as to scarcely come in contact with the rubber in a fluid state. Ethyl chloride is now put up in glass

bulbs holding 3 c.cm. and 5 c.cm. respectively by several firms, and these are exceedingly convenient for those not practised in using it from a flask.

NOTES, LETTERS, Etc.

THE TALLERMAN TREATMENT.

WE have received the following letter:

re Tallerman Treatment.

Sir,—My attention has been called to the fact that you have inserted in the BRITISH MEDICAL JOURNAL of October 3rd a letter which the Secretary of The Apparatus Company had written to a lady who was recently under treatment at the Institute in Welbeck Street.

Letters written under such circumstances would be treated in the ordinary way as private and also privileged communications, and it therefore seems a most unusual course for you to have published the same. I have in this respect especial reason to complain because there are several observations in the letter which, although they would probably be understood by the patient and Dr. Stephen Paget, the surgeon who had recommended her to undergo treatment, might be misconstrued by your readers. It therefore becomes necessary for me to further explain, and I must ask you to insert this letter containing the following explanatory remarks in the next number of your JOURNAL.

Paragraph 4 states: "In chronic cases Mr. Tallerman does not permit any patient to be accepted for a shorter course than ten treatments, but as you had been attended by a medical men your case did not come under his notice as it would have done."

From this it might be inferred that patients were treated here without medical introduction or approval, whereas the contrary is the case, seeing that up to the present time no cases have been treated without medical recommendation. The Secretary of the Company should have said—"As you were attended by a medical man your case did not come under Mr. Tallerman's notice." I wish to say further that Mr. Paget called at this institute and arranged for the treatment of the patient, and he attended twice with the patient; he also gave his instructions to the nurse that the patient was to be treated five times, and then she was to see him. Such circumstances do not require interference on our part.

There are three classes of patients who attend here: (1) Those who come without any introduction whatever, having heard of the treatment from some one who had benefited by it. These patients are referred to some medical man or another unconnected with the institute, whom they can consult, obtain a letter of introduction to us, paying the fee for same; without such letter of introduction they would not be accepted or treated. (2) Patients who come with a letter of introduction from their ordinary medical man. (3) Patients whose medical man attends with them, either on every occasion or when he thinks fit. In the latter class of case we do not interfere unless occasion renders it necessary. The first and second class of cases are usually seen by me and instructions for the treatment given to the matron.

With respect to fees, it is very well known to medical men that we have our fixed charge, but we have never refused to reduce those fees when cases have been represented to us by a medical man as deserving. It would not be difficult to indicate cases in which treatment has been given absolutely free.

Dr. Stephen Paget sent us three cases prior to the last one; in one there was a reduction of fees; in another half fees were charged; the third was simply a severe sprain, and was treated some six times. All the cases benefited. Dr. Paget did not allow the Tallerman treatment to be tried in this chronic case, when he stopped the treatment, when it might be said it had scarcely commenced, and it would have been time enough to have stopped the attendance of the patient after explaining the circumstances to us, and finding that we refused to make such concessions as would allow the patient to go on.

I object altogether to the unceremonious manner in which Dr. Paget thinks he may send a patient to us and withdraw her when he chooses, without the common courtesy of seeing us with respect to it.

The Tallerman treatment, as you are aware, has been most favourably reported upon and recommended by the highest medical authorities, and as I have said before we have not up to the present time treated any cases except they are medically recommended.—I am, Sir, your obedient servant,

LEWIS A. TALLERMAN.

Tallerman Institute, Welbeck Street, W.

THE CAUSATION OF CANCER.

A LAY correspondent, "J. M. D.," asks us to publish some suggestions which he offers as to the causation of cancer. His letter is too long for us to print in full, so we extract from it what appears to be the main points. The writer thinks that the phytophthora which attack the potato, the tomato, and several other plants of the natural order *Solanaceae* may also produce cancer in human beings, and suggests that the consumption of plants belonging to this class may produce in the body a condition favourable for the growth of the infective parasites. He compares the incidence of the potato disease induced by the peronospora infestans with the incidence of cancer. Cancer is said to be induced by excessive nourishment; peronospora in potatoes is thought to be produced by excessive nutriment in the soil. Cancer seldom affects the young, and peronospora, too, seldom attacks young tubers. Cancer statistics indicate that the disease is commoner in low than in high altitudes; the same fact is also true of potato disease. Limestone districts are said to be especially cancer-free; lime treatment has been found beneficial in diseases of turnips. In Ireland, the land of the potato, cancer is remarkably prevalent.

THE DISCUSSION ON ALCOHOL AT SWANSEA.

DR. G. ARCHDALL REID (Southsea) writes: In the report of my reply to the discussion on my paper at the Swansea meeting there is an obvious error. I do not know how far I may have been responsible for the statement that "he did not say the germ plasma was unaffected—he said the germ cells were not affected," but in any case it is nonsense. If the germ plasma is affected the germ cells must be affected also. Readers who have followed the recent prolonged discussion in the *Lancet* will recognize that I merely maintain that germ cells (and plasma) were not permanently affected, since we have no reason to suppose that of all the cells of the body, germ cells alone are incapable of recovery after illness. One other point needs explanation. I stated that disease "actually strengthens a race (not an individual) exposed to it." As I have explained at length in my volume *Alcoholism: A Study in Heredity*, a disease or any other injurious agency only strengthens the race exposed to it against that particular agency. Thus malaria has strengthened the race exposed to it against malaria and against malaria alone.

ERRATUM.—In the annotation on the etiology of leprosy in the BRITISH MEDICAL JOURNAL of October 3rd, p. 844, column 1, line 13, for "Murphy" read "Impey."

LETTERS, COMMUNICATIONS, ETC., have been received from: **A** Mr F. Addiscott, London; Mr. H. E. Allan, London; Professor T. Clifford Allbutt, Cambridge; Dr. W. H. Allchin, London; A bino; Anxious. **B** Mr. H. N. Barnett, Belfast; Mr. S. Boyd, London; Mr. L. A. Bidwell, London; Mr. P. S. Blaker, London; H. H. Bywater, M.B., Preston; A. E. Boycott, M.B., Hereford; Messrs. F. Bayer and Co., Manchester; Dr. J. G. Blackman, Portsmouth; Dr. C. Buttar, London; Dr. H. C. Bastian, London; Mrs. Bourne, Eastbourne; B. W. G.; Messrs. W. H. Bryson and Co., Cheltenham; Mr. W. B. Bennett, Liverpool. **C** Sir J. A. Cockburn, K.C.M.G., London; Miss F. N. Connell, London; G. E. J. Crallan, M.B., Bournemouth; Mr. E. R. Carling, London; Dr. W. Collingridge, London; Dr. F. G. Crookshank, London; Mr. W. E. Cornwall, Melbourne; Dr. T. Cahill, London; Dr. H. A. Caley, London; Mr. J. A. Clubb, Liverpool; Chairman of Division. **D** G. H. G. Davie, M.B., Manchester; Dr. T. W. Dewar, Dunblane, Dens; Mr. H. J. Dillon, Ennascorthy; Mr G. W. B. Daniell, Edinburgh; Dr. A. Duke, London; Director-General of the Medical Department of the Admiralty, London; J. F. H. Daily, M.B., Ventnor, I. of W. **E** Enquirer; E. W. B. **F** Miss C. Forrest, Bournemouth. **G** Messrs. W. Green and Sons, Edinburgh; Dr. J. G. Gray, Glasgow; Mr. C. Greenwood, London; Mr. A. Godley, London. Dr. J. Galloway, London; Mr. J. E. Gordon, Salisbury. **H** Hon. Sydney Holland, Salisbury; Miss E. S. Haldane, Auchterarder; H. T. Herring, M.B., London; Mr J. Hutchinson, jun., London; Dr. W. P. Herringham, London; Mr W. H. Hall, Tunbridge wells; Hon. Surgeon S.J.A.B.; Sir W. R. Hooper, London; Mr. A. Holmes, Manchester; Hospital Sister; Mr. F. C. Hett, Brigg; N. B. Harman, M.B., London. **I** Inquirer. **J** J. D.; Dr. E. Jepson, Durham; Miss J. Johnson, Bideford; J., A.M.S. retired; J. C. B.; J. A. P. B.; E. B. Jago, M.B., Rawmarsh; E. H. Jones, M.B., Northampton. **K** Dr. J. Kerr, London; Mr. C. B. Keetley, London. **L** Mr. J. Lawrence-Hamilton, Brighton; Mr. C. C. Lord, Liskeard; Mr. H. Lyle, Liverpool; Dr. O. E. Laurie, Redruth; Dr. W. V. Lush, Weymouth; T. D. Luke, M.B., Edinburgh; Liberia; Dr. T. G. Lyon, London. **M** Dr. A. Macfadyen, London; Dr. R. W. Marsden, Manchester; Dr. D. McKenzie, London; Mr. H. Markby, Morley; Musalman; Mr. B. E. Matthews, London; Mr. E. D. Marriott, Nottingham; M.O.H.; Dr. R. Maclaren, Kenmore; Mr. W. J. Morton, London; H. Manley, M.B., West Bromwich; Medical Officer of Health. **N** Mr. J. Neal, Birmingham; Dr. T. North, London. **O** One who would like to know the reason why; Sir I. Owen, London; Mr. J. O'Keefe, Harrogate. **P** Polwarth: Public Vaccinator of over Thirty Years; Mr E. J. Pritchard, London; Miss S. Palmer, M.B., Ludhiana. **R** G. A. Reid, M.B., Southsea; Dr. J. V. Rees-Roberts, London; Reg. B.; Miss K. Richmond, Birmingham. **S** Sunderland Infirmary, Secretary of, Sunderland; Simple Simon; Dr. E. H. Starling, London; Mr. E. A. Schafer, Edinburgh; Mr. M. Scott, London; Sardam; Mr. A. R. Sieveking, Harrow; Dr. A. J. Sharp, Whitby; Dr. G. A. Sutherland, London; Messrs. G. Street and Co., London; Mr. R. R. Sleman London; Dr. J. F. W. Silk, London. **T** T. M. B.; J. W. Taylor, M.B., Bristol; Sir H. Thompson, Bart., London; Mr. H. S. Tunnard, London; Dr. W. Tate, London; Mr. L. Tallerman, London. **V** Mr. W. Vincent, East Dereham. **W** Mr. T. W. Watt, Goxhill; O. Williams, M.B., Glandovey; Messrs. Wallach Brothers, London; Dr. F. Willcocks, London; Dr. W. E. Wynter, London; J. Weir, M.B., Glasgow; Dr. B. F. Willoughby London; Sir H. G. Walpole, K.C.B., London; Mr. F. P. White, Coventry; Mr. S. W. Wilson, Aberystwith; Dr. H. F. Waterhouse, London; Mr. C. G. Watson, London, etc.

BOOKS, ETC., RECEIVED.

Diät-Vorschriften für Gesunde und Kranke jeder Art. Von Dr. J. Borntraeger. Vierte verbesserte und erweiterte Auflage. Liepzig: H. Hartung und Sohn. 1904. M.2.

Die Gallensteinkrankheit, ihre Ursachen, Pathologie, Diagnose, und Therapie. Von Spezialarzt Dr. F. Schilling. Leipzig: H. Hartung und Sohn. 1904. M.1.80.

A Textbook on Operative Surgery. By Warren Stone Bickham, Phar.M., M.D. Philadelphia, New York, and London: W. B. Saunders and Co. 1903. 25s.

A Textbook of Obstetrics. By Clarence Webster, M.D.Edin., F.R.C.P.Edin., F.R.S.Edin. Philadelphia, New York, and London: W. B. Saunders and Co. 1903. 21s

Mankind in the Making. By H. G. Wells. London: Chapman and Hall, Limited. 1903. 7s 6d.

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An Address

ON

THE PURPOSES AND MAINTENANCE OF OUR UNIVERSITIES.

Delivered on October 5th on the Occasion of the Opening of the Winter Session of the Medical Faculty of the University of Birmingham.

By Sir VICTOR HORSLEY, F.R.S., F.R.C.S.,

Surgeon, University College Hospital and the National Hospital for the Paralysed and Epileptic; Chairman of Representative Meetings and of the Medico-Political Committee of the British Medical Association.

Sir Oliver Lodge, Dr. Windle, Ladies and Gentlemen:

The occasion on which you have invited me to address you is one of welcome which the University of Birmingham offers to its new and old students. I gladly take a share in your gathering, for the present time is one most interesting to those who are concerned in forwarding, as much as their powers serve, the standard and scope of medical knowledge and practical science in this country.

University Reform and New Universities.

A consensus of opinion is rapidly being arrived at throughout the country to the effect that not merely secondary education but the technical education of the learned professions can only be adequately raised by a thorough reformation and extension of our present universities.

This, therefore, is the era of new universities and feeling as I do strongly that a university college can never by itself obtain sufficient public support until it is an active constituent part of a university I esteemed it a privilege to respond to the invitation of the University of Birmingham which is the leading instance at the present moment of this important evolution of our educational institutions and the most striking example of local munificence and energy on the part of the citizens of a great city in support of university education.

The establishment of new universities is, however, not occurring without opposition of a curious kind. Some antagonism we can well understand, because owing to the commercial value which is, unfortunately, placed on university degrees at the present time, every new university has an opponent in the establishments already existing. To my mind this was clearly illustrated by the recent movement in the city of Liverpool, whose strenuous effort to follow your example and develop its University College into a university has just succeeded. The action of Liverpool was resisted by the University of Cambridge and by the recently reorganized University of London.

But one ground of opposition to the Liverpool University was the fear expressed by Professor Rücker on the occasion of the hearing of the Liverpool petition before the Privy Council that among the multitude of universities the general standard of university education would tend to fall.

We must all sympathize with such an apprehension, and perhaps this might be a real danger to the departments of the general or elementary sciences, but it certainly could not be so in a faculty of applied science like medicine if the one-portal system were established in which a qualifying State medical degree is given for an average standard of educational ability. For then each university could flourish in proportion to its merits, and its degrees would have an absolute value not cheapened by competing, as at present, with the corporate Colleges of Physicians and Surgeons. But on this point I must not anticipate what may more conveniently be discussed a little later.

Attitude of the Education Department.

Though we may rejoice that your success and that of Liverpool means the furtherance of university teaching, we have to recognize another form of opposition, and we have to overcome a great deal of ignorance and obstruction in quarters which should be the very last place to harbour such evils. This latest and most regrettable antagonism positively comes from what should be our strongest source of help—namely, the Education Department of the Government.

As I have already said the very foundation of the Birmingham University was an object lesson in itself and an evidence of the general desire among the people for improvement in their national instruction.

This feeling among the people, however, is not shared by some of our rulers. In no more remarkable manner is this displayed than in the recent speech of Sir William Anson, the Warden of All Souls College, Oxford, and the Parliamentary Secretary of the Board of Education. Perhaps it was but the Oxford view of educational life which is far too often expressed in the tones of a superior person that influenced Sir William Anson in his remarks, but nothing could have been more unfortunate than his dictum at Manchester that what we want before we ask for universities is "an intelligent population."

As the statements of Sir William Anson may not be in your memory I will quote them from the *Times* report and would only preface my quotation by reminding you that under the present Government the whole direction of the Education Department has been placed in the hands of those whose ideas are regulated by the sterile training in dead languages and somewhat moribund systems of philosophy unfortunately characteristic of an old university like Oxford.

Sir William Anson began by referring to the recent address by the President of the British Association for the advancement of Science. After making a misleading comparison between founding universities and building battleships, and saying that "learning" should be a common possession, he commenced his bitter opposition to the founding of new universities as follows:

> The fear he (Sir William Anson) entertained was that, unless we began at the beginning, and built up for ourselves an intelligent population insistent in the desire to put its power of mind to the best results for their own benefit and the benefit of the country to which they belonged, the professors of these new universities would devise many inventions, but that foreign countries would reap the benefit of them in the future as they had done in the past. (*Times*, September 17th, 1903.)

To many this must read like official Chinese.

It does not seem to have occurred to the Parliamentary Secretary that to the ordinary person the more obvious way of obtaining an "intelligent population" is to provide it with the highest and best means of educating itself, and to increase and multiply those means in the midst of each populous district for the convenience of students. Not so Sir William Anson; he not only expects the population of these islands to become intelligent without opportunities of instruction, but he goes further and actually deprecates the founding of new universities, because, although he said learning should be a common possession, he also said that it would never do to have professors in our country making discoveries and inventions because foreigners would copy us. The consideration that we would be the first to derive great benefits from the said discoveries and education by our university professors does not seem to have entered into this Mongolian chain of philosophic doubt.

Probably none of us would ever have dreamt to what a state Government official life can reduce any one if we had not had before us the dreadful revelations of Lord Lansdowne's administration of the War Department. But, prepared as we might be for any degree of narrow-mindedness born of red tape, it seems to me shocking that the leading expert of the Government's Education Department should hostilely attack not merely the present evolution of universities, but also the very earnest and carefully thought out propositions for the support of universities which the President of the British Association put forward with fresh force and interest.

From all this it is unfortunately clear that the War Office is not the only Government department in a state dangerous to the interests of the country.

It has also been reserved for Sir William Anson to raise the barren and worn-out strife between classical and scientific education. In addressing the British Association, Sir Norman Lockyer pointed out, first, the immediate necessity of the Government recognizing that the general question of providing university education is a national and not local business; and, secondly, the fact that the financial support of the universities is an Imperial duty, and one which cannot be left to private enterprise and benevolence. It was, in fact, with a fine disregard of the conventional feelings of the Treasury that Sir Norman Lockyer developed his second point, and proved that it was the duty of the Government to find the means whereby new universities could be furnished and maintained.

Far from sympathizing with Sir Norman Lockyer's valuable contribution to the politics of education, Sir William Anson attacked him, as I have said, on the barren field of classics

versus physical science, and in his anxiety to disparage the unanswerable reasoning of the President of the British Association Sir William Anson asserted that "the pendulum had swung too far in the direction of scientific study as against other literary and historical subjects."

It is really most depressing to hear such ideas emanating from the head of a Government office and from a man who is supposed to inform the Cabinet and the nation officially of the condition of the teaching institutions throughout the kingdom. Sir William Anson must be perfectly well aware of the bitter cry of the science departments of the universities and university colleges throughout the kingdom. How can the physical science laboratories of our universities be considered to be too favoured by public opinion when their equipment and buildings leave so much to be desired and their endowments are so meagre that some twenty-four million pounds, it is estimated, must be expended to bring them into line with the universities of America or the Continent. His own University of Oxford at this very time is face to face with a deficit which, if it be not met speedily, must cripple the efficiency and needs of the science laboratories and the ever-increasing requirements for the education of its students. Where, then, is the truth of his statement that the pendulum has swung too far in favour of physical science?

Certainly it is most unfortunate for the nation that the educational policy of the present Government is directed by officials holding such reactionary views as those which the speech of Sir William Anson reveals in every line. Let us hope that when the greatest statesman of our generation is placed by the country in his proper position as Prime Minister and leader of the nation a change will come over the spirit of our Education Department. Until that millennium arrives we can only urge in season and out of season on the Government what to us, who have to work and know the difficulties of that work, are glaring truths, but to Parliamentary Secretaries of Education are apparently impenetrable mists.

THE CLASSIFICATION OF UNIVERSITIES.

But we may admit that with the privilege of possessing a university there come responsibilities and duties. A university, really to deserve the name, must have equally represented in it not only the most advanced teaching in the subjects it has chosen to teach, but must make ample provision for original research and investigation.

In relation to the first of these two duties of a university, every one who advocates the increase of universities must consider a preliminary point which has already been raised by Sir Philip Magnus. It is whether we could not classify the universities, and whether it is not convenient that some subjects should be dealt with at some universities and not at others. Of course, there is no question but that many universities by their situation are specially fitted for the development of certain subjects. Your university has set an example in this by developing faculties in engineering, and commerce, and in mining. The latter subject reminds one of the early attempts of the Government to meet the scientific necessities of the country by a school of mines, which was placed in London where there are no mines. That school, though forming a nucleus for a Government department, soon had to take upon itself duties which the universities, with extraordinary blindness, had omitted to provide for, and the School of Mines consequently develop[ed] not as a School of Mines so much as the National Cen[tral] School of Physical Science.

Now we see, some fifty years later, that every town must have its central school of physical science, and surely it also follows that the development of special teaching in mining would best proceed in the Universities of Birmingham, Manchester, etc., where the subject can find immediate illustration and the lessons in it bear immediate fruit.

Compare our own Faculty of Medicine. It is obvious that the highly-specialized and final subjects of internal medicine, of surgery, ophthalmology, etc., cannot be properly studied except in large centres of population like Birmingham and London; whereas the early and more fundamental subjects, such as physiology and anatomy, can be taught as well in places of smaller and quieter life such as Oxford and Cambridge. If, then, universities devote themselves to the development of special departments, it must become the custom for students to move from university to university to secure the best training. Every one is agreed now, I think, that this, which is a fairly old German custom, should be the rule; that it not only offers the opportunity of study in its most advanced state, but also it removes the monotony and grooviness which is an inevitable consequence of staying a number of years in one school of thought. The University of Birmingham is in the forefront in this particular, for it suggests that the fifth year of the student's career may be spent at any other school.

Agreed as we all are that the learned professions—medicine, law, education, engineering, etc.—should obtain their education in a university, there is one very grave disadvantage of the present system of medical education, at any rate, which affects the character of all our universities most seriously. I mean that owing to the financial shortage under which the universities in this country have to work there is an attempt to carry on the medical faculty by means of the student's fees. To this I shall again refer later in discussing the absolute necessity of obtaining State aid for universities. I now want to point out how this evil particularly affects the medical faculty. The inhabitants of every locality who wish their sons or daughters to practise medicine should have the opportunity of obtaining locally the necessary university education for them on the higher grade, but at the present time the universities are competing against each other to obtain students, actually though perhaps not so openly expressed, for the purpose I mentioned before—namely, that the fees of those students are requisite to the financial maintenance of the university. To complete the offer to such students each university gives degrees in medicine, bachelor or doctor, and these degrees under the present law confer upon the holder the statutory right and qualification to practise medicine. That is to say, a university degree which ought to be a high standard hall mark of knowledge is used simply as a certificate that a person has complied with the requirements of the Medical Acts for the purposes of the State. It may not have occurred to many of you that the medical profession is, like the legal profession, virtually immediately under the government of the State. But such is the case. The Medical Acts provide that a medical practitioner must pass an examination which is considered reasonably adequate by the General Medical Council in the subjects of medicine, surgery, and midwifery, and the various universities throughout the kingdom hold such examinations, which differ not a little in grade of knowledge, but when any persons pass such examinations they receive a degree. The old mediaeval corporate bodies, the Colleges of Surgeons and of Physicians, still existing in the three capitals of the United Kingdom, also hold examinations of a rather lower grade than those of most of the universities, but the certificates or diplomas of these bodies, like the university degrees, qualify persons to practise medicine. Thus the universities compete against the lower standard of the corporate bodies. The net result is naturally a tendency to level down, and in this respect Professor Rücker's fears are justified until we get the one-portal system carried into effect.

THE ONE-PORTAL SYSTEM IN MEDICINE.

The University of London alone of all the universities recognized this fact now thirty years ago and obtained an Act of Parliament to take power so that it should not give a degree in medicine unless the candidate had previously passed a qualifying examination which by the terms of the Act meant one of the examinations of the corporate Medical Colleges. If this Act had ever been put into force by the University a great step forward in medical education would have been taken and we should have arrived more quickly at the one-portal system which has long been the desire of medical reformers and which the struggle now going on between the General Medical Council and the corporate bodies emphatically shows is an urgently required improvement in our educational system. As we have already seen the State recognizes that it must be served by proper qualified medical men.

At the present time there are no less than twenty-three educational bodies holding examinations and issuing diplomas professedly qualifying the persons obtaining them to practise medicine. Of course it is impossible that the examinations held by these bodies can be in any way uniform. In 1886 an Act of Parliament was passed to amend the original Medical Act and to secure through the General Medical Council uniformity in the requirements and grades of these examinations.

The General Medical Council is a body composed of a representative of each of these twenty-three institutions, it also has a few members among its numbers who represents the Crown, that is, the central Government of the country,

and a few members who represent the medical profession as a whole, and are elected by the profession. I have the honour to be one of these representatives. Unfortunately the corporate bodies who also send representatives do not elect their member in the Council, as they ought to do, through the voice of their diplomates or graduates, but only by their councils. The result is that there is no popular expression of opinion in the educational decisions of the General Medical Council, but only a conflict between the opposing commercial interests of different corporate bodies. This state of things could, of course, have only one end—namely, chaos. That is precisely the present position of affairs in medical education at the present time. The College of Surgeons and College of Physicians of London have defaulted against the statute—that is, against the Medical Acts—and refuse to recognize the authority of the General Medical Council. The *casus belli* is that the General Medical Council considers their examinations in physical science urgently need reform, or, to use the expression of the medical statutes themselves, the Council decided on a resolution which I moved and carried in the last session, that "the courses of study and examination to be gone through in order to obtain the qualification" of the Colleges "are not such as to secure the possession by persons obtaining such qualifications of the requisite knowledge and skill for the efficient practice of their profession."

As a necessary consequence of this defection on the part of the English Colleges the Irish educational bodies have similarly intimated to the General Medical Council that they do not consider themselves bound to obey the decisions of the Council. This miserable situation, which could not exist for a moment if these important educational matters were in the hands of the graduates or diplomates of the corporate bodies instead of the small groups of men who compose their councils, is not without its ridiculous side, because although these revolting Colleges of Surgeons and Physicians have cut themselves off from their allegiance to the General Medical Council, they take care not to withdraw their so-called representatives therefrom, a course which most people would consider the only honourable and straightforward one for these bodies to pursue.

The only cure for this very discreditable state of affairs is precisely the course which I said earlier ought to have been adopted by the universities originally in regard to medical degrees, that is to say we must have a new statute, a Medical Acts Amendment Bill which shall establish a one-portal system for the medical profession. This would mean that a single and the same examination would be held at each of the capital centres, the certificate of having passed which would be the guarantee to the State that a man was properly qualified to practise medicine, surgery, and midwifery; such certificate would carry with it the title of doctor and alone (or with such modifications as may be necessary for the purposes of Imperial federation) admit to the *Medical Register*.

The universities then would be at liberty to pursue their own paths of highest medical education. Their medical degree (I use the word in the singular, advisedly) would be the stamp by which the possession of a higher knowledge of medical science would be known to the public.

Each university would, as before said, develop in proportion to its merits.

University Medical Degrees.

Permit me now to say a word on our university medical degrees. The University of Birmingham is a new university, and therefore can do things and strike out new paths which are difficult to the dry and hide-bound statutes of some of our older universities. What I should like to see the University of Birmingham do would be to abolish its degree of Bachelor of Medicine altogether. It is only retained as part of the highly undesirable system of competition with the other qualifying bodies to furnish an examination of average grade to qualify a man to practise. Let the University of Birmingham fix what it considers to be a standard of sound and high-class medical education, and give to the student who successfully passes the various tests of that standard, the M.D. of Birmingham.

At the present time throughout the kingdom all the universities have the so-called degree of Bachelor of Medicine, and again a so-called Doctorate or M.D., but the majority of them, after they have examined a candidate for the M.B. degree, make no real further test of a candidate for the M.D. degree. In one university at least the M.D. is given practically for cash down, and in most of the others on the presentation of a thesis, and some of these theses, I know, having been present at their manufacture, to be no test of a man having improved in knowledge to any marked degree than when he took his M.B. This absurd position is dictated by the miserable need of attracting students for the qualifying examination of M.B., in the forlorn hope that their fees will pay for their education. The climax of the nonsense of the present position is reached when a Bachelor of Medicine goes into practice at once, as he often does. The public, as we have said before, call him Doctor. His university—at least mine does—tells him quite gravely that he is not to call himself Doctor So-and-So. Then, again, in England the custom is to regard the diplomas of the corporate bodies as equivalent in professional value to the degrees of the Scotch Universities, but the public hold the degree of a university in greater esteem. The result is that the present chaos of medical degrees and diplomas is a congeries which simply breeds among the owners of such diplomas envy and malicious criticism of the real value of their neighbours' so-called qualifications.

The universities as foci of pure learning ought to be raised above such a quagmire. "It is not the function of a university to turn out mechanically a certain number of qualified medical practitioners. It may find under the present system, as Cambridge has done, that it has collected a number of medical students, but is not able properly to teach them anatomy. The function of a university is to provide the highest class of education, irrespective of the number of students which may happen to come.

State Aid for Universities.

This brings me to the crux of the university question as far as, at any rate, the Medical Faculty of many of the universities is concerned, namely, finance. Every one, except perhaps Sir William Anson, is agreed that a university must equally develop its two sides—first, the systematic educational side, secondly, provision for original research. Further, that every professor should be an original investigator, spending a considerable part, I suggest at least three-quarters of his time, in the laboratory assisting in or carrying on research work. I doubt whether it is fully realized in this country how completely the prosperity and reputation of the university depends upon the kind and amount of research work which is carried on in its laboratories. It certainly is not in the least recognized how absolutely medical science is dependent upon the free development of the ordinary physical sciences for its advancement. It is always difficult for the public to appreciate this, and they think that it is possible for any one to sit down and directly discover some new procedures for the treatment or alleviation of disease. Of course there are those of a still lower level of intelligence who think that medicine and surgery can be advanced by simple observations of the unfortunate sufferers in hospitals, and who are entirely oblivious to the fact that medical science is simply a branch of applied physical science. Perhaps the most striking object lesson of this kind is the Roentgen rays, which we owe to pure physics and nothing else. But the main object of developing original research in a university is not only that beneficial discoveries will result therefrom, but that the concurrent existence of the most advanced scientific progress shall react upon the systematic teaching as it always does, and will keep that up to a proper university level and save it from sinking to the grade of a qualification.

To finance a university therefore means that we are to provide for systematic education, and we are to provide for extensive laboratories for the carrying on of original investigation. Where is the money to come from? At the present time the nation is under the delusion, for this is neither more nor less than a delusion, that the universities flourish on two sources of income: first, private endowments and benevolence: secondly, the fees of students.

Now, in the first place I do not know any university, in England at any rate, which can truthfully be asserted to flourish financially. Cambridge has been begging for years, and unfortunately with much reason. We have it now announced that Oxford is faced with a considerable deficit. The teachers in the University of London are most of them miserably underpaid or practically have to return all the slender income they derive to the particular school they belong to. In the old days, in the time of the Hunters, when medical education meant some anatomical dissection and a few lectures, and when the apprentice acquired his clinical knowledge by rule of thumb experiments on the action of drugs on the living bodies of the patients whom his principal attended, there was little or no financial trouble in medical education. What is going on now? Why, as Professor Ray

Lankester said many years ago at the Mansion House, the public must realize that the growth of science is rather to be measured by geometrical than arithmetical progression. And in the relatively short space of time since I entered as a student at University College under my old teacher, Sir Oliver Lodge, now your principal, the laboratory accommodation in my school has been quadrupled and is yet insufficient. How, may I ask, has private benevolence or subscription lists met the needs of the universities I mentioned? I maintain that the present system of expecting this source of income to be adequate has entirely broken down.

In saying this, I am not in any way depreciating the wonderful energy and spirit of your Chancellor and his supporters in this great city. What was necessary to start a great university you have accomplished. The thesis I am now maintaining is that if you look around you at other universities you will see that you cannot rely on private munificence to maintain your university or to develop and extend its laboratories in a manner which the advance of science and your competition with the rest of the world will require. If, then, the first source of your income is insufficient, far more inadequate is naturally the sum that you may hapily derive from the fees of students. The cost and maintenance of laboratories is and must always be far in excess of any subscription towards their maintenance that those who are working in them can offer. The fees which a student can afford are really but a slender contribution to the provision of such means of learning as a university must in the future offer. Moreover, I suggest that it is most unjust to expect that the parents or guardians of a medical student should bear the heavy expense of a professional education. Why should science workers be taxed in fees which are not demanded for education in literary or commercial livelihoods? The ranks of the professional classes are not filled with recruits from the well-to-do. That the cost of the five years' education of a medical man is a specially heavy tax, and that the average income he may derive from his professional career is not a just equivalent, is shown by the steady diminution in the number of medical students which has now been going on for something like a decade. In speaking of this diminution in the number of medical men available for the services of the State I should like to point out, in passing, that it is also partly due to the utter lack of interest shown by the central Government in the care of human life, and that until the Medical Acts are justly altered so that the scandals of quackery and unqualified medical practice are put an end to fewer and fewer persons will be able to afford the trouble and expense of studying for five years to obtain a position, an educational qualification for which is demanded of them by the State, but the advantages of which the State refuses to guarantee or to secure to those who have fulfilled the requirements laid down by statute.

If, then, your sources of income for maintenance are inadequate it is a fair question to ask what is the alternative? That question has been answered by Sir Norman Lockyer in a way which is far better than anything I can put forward and that answer is, of course, State aid. It may be suggested that while we have before us the greatest fiscal question that can be raised it is impossible to secure attention for financial matters of a lesser grade. I must say that in this I can see no reason, that to us as a nation questions of education are always as vital as any other, that in short as Dr. Macnamara recently urged in Edinburgh, there is no justification for allowing the fiscal question affecting the empire to overwhelm the education question. Sir Norman Lockyer pointed out that an adequate initial State aid for the universities including vast amounts for construction would be a sum roughly estimated at twenty-four millions. The provision of this from a nation like ours which spends every year close on 190 million pounds in injuring and pauperizing itself with alcohol would be nothing. In fact the introduction of legislation to provide for this essential of education is a duty which presses heavily on a Government which does nothing to protect the people from drink, that greatest cause of poverty and crime, or to prevent the nation annually throwing away its millions in the gutter.

I have not yet seen any detailed criticism of Sir Norman Lockyer's powerful appeal to the nation except that by Sir William Anson, but no doubt plenty will meet him with the usual outcry against State aid. Should that form of opposition arise, I hope it will be generally understood that the principle of State aid to higher education has been admitted for a number of years. Mason's College, like the other university colleges, has received an annual pittance from the Treasury, and the Faculty of Medicine knows what limitations and restrictions were originally placed on the mode of allotment of this money to university purposes. What would be a reasonable fear on the part of the Houses of Parliament might be the artificial maintenance of a weak university, or the making of provision for a subject therein, under local circumstances which were not favourable to the development of that particular department in the university. But all questions of administration such as these would naturally be adjusted by the provision of a university bureau in the Education Department, and probably a considerable economy would be attained if by means of such a bureau there was effected co-ordination and reorganization of the Medical Faculties in some of the old universities, with full consideration, as already said, of the capacity of each university to develop given subjects.

Is not, however, the actual situation this? A sum of about £25,000,000 is required to place our university system of education on a merely efficient basis. Private benevolence and the fees of students cannot provide this sum. Where, then, do the arguments of those who oppose State aid on principle apply? They have nothing to offer, nothing to propose.

CONCLUSION.

To sum up, I suggest that while the British Association for the Advancement of Science is endeavouring (according to the scheme recently determined upon) to educate public opinion on the necessity of making this a prominent political question, the universities should co-operate by conference and agree upon a definite programme of state aid to the universities to be pressed upon the Education Department.

If Birmingham took the initiative in this, as in other great national movements, it would, by ensuring success, add a wreath to the civic crown which this great city so worthily wears.

An Address

ON

MEDICAL LEGISLATION AND EDUCATION.

Delivered at the Opening of the Winter Session of the Post-Graduate College, West London Hospital.

BY SIR WILLIAM SELBY CHURCH, BART., K.C.B.,
President of the Royal College of Physicians of London; Senior Physician, St. Bartholomew's Hospital.

AFTER some introductory remarks, Sir William Church continued as follows:

It is interesting to look back to former years when first medical education was seriously considered by the leaders in the profession and public men. Few of us realize that the subject of medical education has been in the crucible for seventy years. In the year 1834 a Committee of the House of Commons was appointed to inquire into "the laws, regulations, and usages regarding the education and practice of the various parts of the medical profession in the United Kingdom." This Committee never made a report; it took, under the chairmanship of Mr. Warburton,[1] M.P. for Bridport, a very large amount of evidence for the three divisions of the kingdom; that for England was printed and is extant, that for the other divisions of the kingdom was never printed, and is supposed to have perished in the flames which consumed the Houses of Parliament in 1834. A very large portion of this mass of print is taken up with evidence regarding the quarrels which went on for so many years between the Licentiates and Fellows of the Royal College of Physicians and the Members and Council of the Royal College of Surgeons. All this is now ancient history and of no interest to anybody, but the Committee's labours bore some fruit, although it was long in ripening. Notwithstanding the absence of any report, the work of the Committee attracted a certain amount of attention, and men of public spirit and foresight had their minds directed to the anomalous state of the practitioner of medicine and the dangers the public

[1] Mr. Henry Warburton was a philosophical Radical. He was educated at Eton and was a scholar of Trinity College, Cambridge. He was elected member for Bridport in 1826, and the following year moved in the House for an inquiry into the funds of the Royal College of Surgeons. He was Chairman of the Parliamentary Committee on the Study of Anatomy, which led to the passing of the Anatomy Act in 1832.

was under from its inability to distinguish among the practitioners those who had received some training from those who held no diploma of any sort. Six years later Mr. Warburton laid before the House of Commons a Bill for the Registration of Medical Practitioners. So far as I know no action was taken on Mr. Warburton's Bill. Four years later, in 1844, Sir James Graham and Mr. Manners Sutton prepared and brought in a Bill for the Better Regulation of Medical Practice throughout the United Kingdom. The need for some central controlling power to regulate medical education and to see that no one who had not some professional training and proper education was included in our ranks was self evident, and his Bill also gave power to the central authority to remove from amongst us those who were unworthy to be members of an honourable profession. It took fourteen years more before the fruit was ripened, but Sir James Graham's Bill was virtually the same as that which passed in 1858 as the Medical Act. From the date of Sir James Graham's Bill until the passing of this Act, the position of the medical profession and its relation to the commonwealth continually occupied the attention of Parliament.

There can be no doubt of the enormous benefits which the Medical Act of 1858, the Dentists Act of 1878, and the amending Act of 1886 have conferred on the public and the profession. The status which the latter now occupies is far higher than that formerly held, and the public has profited both from the better education of the practitioner and from being able to discriminate between those legally qualified to practise medicine and the irregular adventurer.

The General Medical Council, although I am not always in agreement with its views and actions, has undoubtedly done good service in equalizing the medical examinations throughout the United Kingdom; and it has shown, on the whole, a wise discretion in the recommendations it has made as to the course of studies to be carried out in the medical schools, in accordance with the advances which have taken place in scientific knowledge. Its disciplinary powers have also been of great advantage in raising the tone of our profession.

It is interesting to observe that exactly the same questions and difficulties met the promoters of improved means of registration and medical education seventy years ago as exercise the profession now. Then, as now, the greatest differences of opinion were expressed on the value of apprenticeships, the need for an improved preliminary education, and the want of clinical teaching. It was advanced then, as now, that the supply of medical practitioners was much beyond the demand, and various proposals were made for restricting the numbers entering the profession. In fact, although the times are changed, the fundamental questions and difficulties remain the same.

It is almost impossible for us to conceive the state of, I will not say the medical profession, but of medical practice in the country at the time when the Select Committee took evidence. Apparently any one could call himself surgeon or apothecary, and could obtain equal advantages with those who held diplomas from the corporate bodies like the Royal Colleges and had undergone an examination and possessed a certain amount of education. One of the questions which most deeply moved the mass of the profession then, as now, was Should there be penal laws which gave a monopoly of practice to those who held qualifications and prevent their being interfered with by the unlicensed? In my opinion our fathers acted wisely, and I feel sure that in our day our Legislature will be equally sensible; to me it appears that it would be a most unwarrantable interference with the personal liberty we all value so highly for the State to say that you shall not receive advice as to your health and well-being from any person from whom you think you may obtain benefit.

We who are conversant with disease and its nature, and the pathological conditions on which it depends, can hardly place ourselves in the position of the laity. Their complete ignorance causes them still to consider disease as something foreign to the body which can be driven out by sufficiently powerful means, and they fail to recognize that the majority of the chronic ailments they suffer from are due to changes and degenerations in their own tissues, which it is beyond the power of physicians to remove.

There is no subject on which the general public is so ignorant and credulous as medicine, and this is not to be wondered at when we consider the history of our art, and how it arose. The earliest medical practitioners of whom we have any knowledge—the family of the Asclepiads—claimed to be descended from a god, and that something divine was attached to them. Although in the brightest times of Greek learning, medicine, as we see from the writings of Hippocrates, was singularly free from superstitious observances, yet the part played in the public and domestic life of Greece by oracles, dreams, omens from birds, beasts, and the phenomena of Nature, must have caused divination to have played an important part in illness. In the later days of Greek learning, when the knowledge of anatomy and therapeutics was at its highest level, in the times of Galen and Aretaeus, we know from their writings that methods which we can only regard as superstitions were in use in the treatment of the sick. The accounts of miraculous instances of healing in the early days of Christianity and the virtues ascribed to the relics of holy men at a later period fostered the belief that the art of healing was the gift of God, and this belief is by no means yet extinct.

Healing by suggestion occupied a very prominent although unrecognized position in the practice of mediaeval times. Even Harvey appears to have had faith in the therapeutic virtues of the bone of a stag's heart, and touching for the King's evil persisted in this country until the reign of George I. Those who are students in folklore know how deeply the belief in witchery and sorcery had permeated all classes of men and was fostered by the total absence of what I may call the scientific mind among the learned of the Middle Ages. They devoted their mental powers to metaphysical questions, and, like the Greek philosophers, entirely neglected experimental investigation into the phenomena of Nature.

I fear you will think that I have wandered far from my subject. I thought that the brief sketch which I have given you of the genesis of the Medical Act and the changes which have taken place in the position and education of our profession would be interesting at the present time when the development of medicine appears almost to necessitate fresh educational methods for the fit preparation of those who intend to make it the study and business of their lives.

Of the importance of an acquaintance with the sciences, such as physics and chemistry, as a preparation for the study of medicine we are all agreed, but we are not equally of one mind how that desirable knowledge should be acquired. To me it seems advisable that the preliminary education before students enter on their medical course should necessarily embrace the principles of chemistry and physics. A student then would enter on his anatomical and physiological studies prepared by his earlier work to make the best use of his time. Biological chemistry, pathology, and bacteriology demand so much time and are so valueless unless a man has a certain amount of practical experience while studying them that the present five-years course is insufficient for any unless they are exceptional men to obtain more than a mere smattering of any of them. We must remember that for what may be termed the highest branch of medicine—sanitary science and public health—a post-graduate course is now required, only those who hold medical qualifications being admissible to the examinations held by the various licensing bodies for the diploma of Public Health.

By a process of natural development, even more than by the artificial and arbitrary regulations made by corporate bodies, the medical profession long ago fell into three great classes more or less distinct—physicians, surgeons, and apothecaries—who at a later date developed into general practitioners. The complexity of medicine is now so great that, although these three classes remain fairly well marked, the two first are being divided into smaller groups. It has, however, been wisely decided by the Legislature that no one should be admitted to the *Medical Register* who has not passed a competent examination in the three subjects of medicine, surgery, and midwifery; consequently we now all begin our medical lives as general practitioners, and it is not until after we have been admitted to the ranks of the profession that we specialize in any way. It is evident that it is impossible for any one to attain to the highest degree of technical knowledge and skill in all departments. General practitioners, the most useful and trustful of all our profession, are as a rule exceedingly well up in their work. I am filled with admiration when I consider how seldom they are found incompetent; think of the responsibility which they have—liable to be called on, especially those practising in country districts, to treat single-handed every sort of emergency, sudden illness, a broken limb, a general smash, an alarming *post-partum* haemorrhage, or a placenta praevia, or as medical officer of health to combat a sudden outbreak of epidemic disease. Yet competent as most of them are to deal with

these emergencies of practice they would be the first to repudiate the title of specialists. In the progress of the evolution of medicine, the differentiation of physicians and surgeons naturally took place, and all honour must be given to the surgeons who have raised their art from the position of a handicraft subservient to the physicians to that in which it now stands, higher possibly in the estimation of the public than medicine.

Specialism and specialists are terms which are very much misused nowadays. The true specialist, whether he be physician or surgeon, is one who, with a wide knowledge of all, has paid especial attention to some particular branch or branches of medicine, such as sanitation or public health, mental diseases, gynaecology, ophthalmology, etc.; not, as the public appear to think, the man who has fixed his attention on a single organ of the body. In surgery, where to a greater extent than in medicine manual dexterity is required, surgeons in large centres of population are able to make particular study of certain classes of operations in which by constant practice and most careful attention to details, they are enabled to improve the methods and obtain greater success. It is the success of these honoured and honourable men which has led the public to make a demand for specialists, a demand which meets a ready response, although I fear the quality of the article supplied is very inferior to that which the public thinks it is obtaining. A certain number of these so-called specialists are no doubt honest and honourable men, but by directing their thoughts exclusively to a limited range of subjects have lost all sense of proportion; and I fear that no inconsiderable number trade rather on the ignorance of the public than on any superior knowledge of their own. Of all quacks the worst are those who are duly qualified to practise, for, by their position as doctors, they bring discredit on the profession. All of us who have reached a certain age have seen how these quacks vary with the fashion of the day; at one time all ills the flesh is heir to arise from acidity or gout, and in the other sex from versions, malpositions, and ulcerations of an internal organ; at another time adenoids or supposed phimosis is at the root of all disorders of childhood; at another exploratory operations on the abdomen are the panacea for all internal derangements. Mankind is alike everywhere and in all classes; its credulity does not grow less with advancing times; if we have lost our belief in miracles and relics, we need only look at the advertisement pages of any newspaper to see that our credulity has taken another form.

The time which can now be allotted in the five-years course is too short to enable the average man to spend sufficient time in clinical and practical work. It is essential for the student not only to have general experience in the wards, but to have attended, and if possible held the post of clerk or dresser in, the special departments. Those who are fortunate enough to obtain posts after qualification in our large hospitals, especially those with medical schools attached, are virtually enjoying post-graduate study of the best kind, but it is a minority of men who can obtain the advantages of holding such posts. This country, as in other educational questions, has, I am afraid, been behindhand in organizing post-graduate teaching of any sort. In the United States a large proportion of those attending the Arts course at the Johns Hopkins University are post-graduates, and I am informed that nearly one-third of the medical students are qualified men.

The first attempt at organizing anything of the nature of medical post-graduate study in London was made as long ago as 1888 or 1889; a notice used to appear in the medical papers above the signature of Dr. Fletcher Little; but it was not until about ten years ago that the West London Hospital course was started. The earlier attempts appear to have failed mainly because they took the form of lectures and did not embrace hospital practice. It is in this respect that the West London School is able to offer so much more valuable assistance to qualified men than such institutions as the Polyclinic or the other hospitals at which occasional lectures or demonstrations are given. You have gradually built up a complete medical school, and by confining yourselves to qualified men have not interfered with or given cause for jealousy to any of the existing medical schools. The practice in the hospitals attached to the great medical schools in London is open to qualified men, but it is not possible to meet their requirements. The teaching for the junior students is necessarily different from that most suitable for those further advanced. Any considerable number of senior men attending the clinical practice of our medical schools has always—and rightly—been resented by the junior students.

That there is not only abundance of room for post-graduate teaching no one can deny; it is in truth urgently needed. After qualification a man makes up his mind in what department he prefers to do special work. If he intends entering on general practice he knows in what subjects he is weakest and can obtain with you the opportunity and assistance for strengthening his knowledge and supplying his deficiencies, for there is no way by which this can be attained equal to closely following the practice of a large general hospital. There are many subjects now which it is essential for a man to know something of which are not suitable for him to spend much time over as a junior student. As instances I might mention the application of electricity to the diagnosis and treatment of diseases or injury, and the manipulations necessary for the examination of gynaecological, orthopaedic, or ophthalmic cases. If opportunities for increasing their stock of knowledge are advantageous to those just entering on their professional life, they are no less so to those who have been placed in circumstances which rendered it difficult either to gain new knowledge or to keep up that which they possessed. Especially useful is it to those who have joined our public services; from the nature of their work it is impossible for them under ordinary circumstances to gain varied experience for want of opportunity.

In times of peace the work of the R.A.M.C. officers is necessarily without much variety; even if attached to a large home hospital the field for observation is much more limited than that presented in large civilian ones, and, excepting during war time, the larger operations in surgery very rarely come under their notice. Nothing struck me more forcibly, when visiting the hospitals in South Africa, than that in many instances the older and higher in the service the officer was, the more of a soldier and the less of a doctor he appeared to be. This doubtless arises from the large amount of official non-medical work that they have to get through. A P.M.O.'s duties are so largely executive that some of them scarcely did any true medical work themselves. This disability which many of the R.A.M.C. officers felt and complained of is now, I trust, remedied, as the Advisory Board has recommended that study leave should be periodically granted to all officers to enable them to attend civilian practice at intervals during their career. By doing this we are adopting a course which has been in practice in other countries.

In the Royal Naval service the position is much the same. Commissioned to a ship whose complement consists of healthy men in the prime of life, the officers' opportunities for gaining experience are limited. It has been my lot as one of the assessors of the Gilbert Blane medal to read the logs of a considerable number of naval officers, and excepting when they have been on active war service there is a great monotony in their medical reports. No doubt they, and officers of the R.A.M.C., when on foreign service, have opportunities of studying certain forms of tropical disease, but here again the similarity of cases is such that the temptation to fall into a rule-of-thumb treatment of them is hard to resist; nevertheless I should not be doing justice to a distinguished branch of our profession if I did not bear witness to the excellence of some of the work it has been my duty to go through. Naval officers, I am informed, have not been slow to avail themselves of the opportunities you offer them, and I feel sure that those of the sister service will do the same when it is known how much you can offer them.

In case there should be any one present who may think that in the remarks I have made I have only had present to my mind the advantage of our profession, and not given due attention to the purposes for which this hospital was founded and for which it is supported—the relief of sickness and suffering in its neighbourhood—I should like to say that there can be no greater benefit conferred on the patients who receive relief at an hospital than the attachment to it of a school of clinical medicine.

Teachers must always be learners, and there is no incentive to a teacher so great as the presence of students anxious to learn. You can have no greater safeguard against mismanagement or against slackness and inattention on the part of the staff than the presence of students; they form a body it may be of kindly but of severe and uncompromising critics, ready to expose the shortcomings and failures of their teachers. I can unhesitatingly say that the character and quality of the medical treatment in hospitals with medical schools attached to them compares favourably in every way with those in which the work is done without the publicity which necessarily exists when clinical teaching is carried out in the wards and out-patient departments.

You have an excellent staff, earnest in their work and anxious to maintain and increase the reputation of your hospital. You have the material and a certain amount of means for carrying out educational work. I trust that in the near future it may be possible for the lay authorities to give increased facilities for teaching and research; and I would venture to remind the supporters of this institution that whilst a few more beds or an increased number of out-patients might relieve a certain small amount of local sickness and suffering, that would hold but a small proportion to the benefit which increased knowledge obtained within these walls might confer on suffering humanity throughout the world.

In conclusion, I wish all prosperity to the West London Hospital and its post-graduate school.

SEVENTY-FIRST ANNUAL MEETING
OF THE
British Medical Association.

Held in Swansea, July 28th, 29th, 30th, and 31st 1903.

PROCEEDINGS OF SECTIONS.

SECTION OF OBSTETRICS AND GYNAECOLOGY.

Professor William Stephenson, M.D., President.

(Concluded from p. 915.)

DISCUSSION ON THE PATHOLOGY AND TREATMENT OF TUBERCULOSIS OF THE UTERUS AND ADNEXA.

I.—James H. Targett, M.S., F.R.C.S.
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The general interest which has been excited in the subject of tuberculosis during recent years has caused the various branches of our profession to study it anew in relation to their special work. In the case of gynaecology, this subject has been much neglected; for, though the existence of genital tuberculosis has been known for more than a century, yet it was not until 1886 that serious attention was drawn to it by the writings of Professor Hegar. In 1894 Whitridge Williams gave a careful account of the various lesions so far as they affect the pelvic organs, and since that date the contributions have been too numerous to mention.

At the International Congress of Gynaecologists held last autumn in Rome the matter was very fully discussed, and, though there was some difference of opinion in respect to the minor details of pathology, it was generally agreed that tubercle affected the female generative organs much more frequently than had hitherto been supposed, and that its effects were always serious and often fatal.

In acknowledging the honour which the Committee of this Section has paid me in requesting me to open a discussion on genital tuberculosis, I will ask your kind attention to a few general considerations before proceeding to the morbid anatomy of this disease and its clinical bearings.

Frequency of Genital Tuberculosis.

It is unnecessary to consider in detail the numerous statistics that have been published as to the frequency of genital tuberculosis. The *post-mortem* records of the Brompton Hospital for Consumption show that in 800 necropsies of females who died of tuberculosis the genital organs were affected in 7.7 per cent. (Berkeley). The operative experience of the surgeons at the Johns Hopkins Hospital, where all the diseased tubes removed by operation were submitted to a careful microscopical examination, corresponded very closely with the above estimate. In 126 necropsies on female children dead of tubercle there were 12 cases of genital tuberculosis =9.5 per cent. (Still). We may conclude therefore that in 8 or 10 per cent. of all cases of salpingitis (in one form or another) the disease is of a tuberculous nature. From this it is apparent that tubercle is a much more frequent cause of pelvic disorder in women than has hitherto been supposed, and consequently the subject of genital tuberculosis becomes one of considerable clinical importance in gynaecology. It must be remembered, however, that the number of cases in which the disease is apparently primary in the pelvic organs and practically limited to them is much smaller than the estimate derived from *post-mortem* experience. Yet it is this smaller class of cases which is of the greatest interest to the gynaecologist. Professor Whitridge Williams has shown what a large proportion of diseased tubes removed by operation proved to be "unsuspected tuberculosis" when microscopically examined. Dr. P. D. Turner has also found from the systematic investigation of the genital organs in a series of 27 consecutive necropsies of females who died of chronic phthisis that tuberculous lesions of an undoubted character were present in 5 cases (18.5 per cent.), and that the naked-eye changes were sometimes so slight as to have been overlooked by the general pathologist.

Modes of Infection.

Of the various modes by which the female genital organs may become infected with tubercle, the following are the most important for our consideration.

I.—*Infection through the Blood Stream.*

In a small proportion of the cases of tuberculous salpingitis there are no signs of tubercle in other parts discoverable on clinical examination or at operation. Hence it is probable that in these cases the tubercle bacilli are introduced into the circulation through the medium of the lymphatic glands. As is well-known, they may be absorbed through the respiratory or digestive tracts, and so lead to caseation of the bronchial, mediastinal, or mesenteric glands. In this way the blood stream becomes infected, and if the Fallopian tubes offer a suitable soil through diminished resistance of the tissues, an outbreak of tubercle may occur in that locality. As the tubes are affected so much more frequently than the other genital organs in the female, we are bound to recognize them as "seats of election" for tubercle, and to class them with the synovial membranes of the joints and the epiphyses of the bones as structures in which tubercle is particularly liable to develop, often without any very obvious local cause.

II.—*Infection from the Peritoneum.*

There are three ways in which this may happen:

(*a*) The serous membrane covering the tubes takes part in a general miliary tuberculosis of the peritoneum.

(*b*) A localized caseous tuberculous perimetritis may result from ulceration of the bowel, and the lesion may gradually extend to the adjacent uterine appendages.

(*c*) The fluids in the peritoneal cavity may convey organisms into the tubes through the patent abdominal ostia. It has been experimentally shown that powdered cinnabar can be so introduced into the tubes from the abdominal cavity, and tubercle bacilli have been actually found in the tubes after death from tuberculous ulceration of the bowel, even when there was no evidence of salpingitis.

Statistics show that the association of tuberculous peritonitis with salpingitis is so frequent—probably in more than 50 per cent. of the cases—that a causal relationship must exist between them, and the morbid anatomy of tuberculous salpingitis indicates that the extension is from the peritoneum to the tubes, not vice versa—at least in the majority of instances. If salpingitis were a frequent cause of tuberculous peritonitis, as some writers maintain, the latter should be much more common in women than men, which is apparently not the case.

III.—*Infection from Other Organs.*

Direct infection of the internal genital organs from adjacent parts other than the peritoneum must be of rare occurrence. But ulceration of the ileum has caused adhesion to and secondary invasion of the uterus, and I have met with a right tuberculous pyosalpinx firmly adherent to the caecum and its appendix which were the seat of extensive chronic ulceration. In this instance the left uterine appendages were normal; hence the lesion probably spread from the caecum to the right Fallopian tube. In the lower genital tract infection has resulted from ulceration of the rectum or base of the bladder into the vagina or vulva, and fistulous openings have thus been established.

IV.—*Infection from External Sources.*

That infection is possible from sexual intercourse, the use of instruments, or contamination with tuberculous faeces and urine cannot be denied. At the same time its frequency has probably been much exaggerated. Primary tuberculosis

of the cervix, vagina, and vulva is exceedingly rare, and in the adult male the same is true of the prepuce and glans penis. Infection by coitus must therefore occur through the medium of the semen, and under such circumstances the lining membrane of the uterus should be first affected. But experience shows that the tubes are the seat of disease three times more often than the body of the uterus, which is difficult to explain on the hypothesis of infection by the semen.

MORBID ANATOMY.

Of the various organs affected in genital tuberculosis, the Fallopian tubes are by very far the most frequent. Indeed, it is estimated that the Fallopian tubes are involved in nearly 90 per cent. of the cases.

The ampullary portion of the tube is the chief seat of disease, probably because of its greater vascularity, its extensive and luxuriant mucous coat, and its direct connexion with the peritoneal cavity and the sources of infection already described. Three forms or stages of tuberculous salpingitis are defined according to whether the lesion is in the miliary or progressive stage, the caseous or degenerative stage, and the fibroid or quiescent stage. The anatomical characters of such specimens as may be removed by operation will be, however, of more interest for our consideration, and therefore I have selected these forms for exhibition.

1. *Diffuse miliary tuberculous salpingitis* is a disease of the mucous membrane of the tube which produces a cylindrical enlargement of the outer half of the tube up to the size of the little finger. On transverse section its lumen is reduced to a mere chink by the encroachment of the swollen rugae of the mucosa upon it. Hence the tube appears solid on section. Histologically these rugae are stuffed with miliary tubercles possessing large giant-cell systems and surrounded by much young vascular inflammatory tissue. The epithelial covering of the rugae is preserved in a remarkable way, and there is thus a strong contrast between tuberculous and catarrhal salpingitis. The condition of the abdominal ostium and fimbriae is likewise of great interest in tuberculosis, and may be mentioned here. Even when the ostium is quite closed it almost invariably happens that the fimbriae of the tube can be recognized upon the exterior. They are not sucked in and obliterated as in ordinary salpingitis, but are often rendered more than usually prominent by swelling and oedema. The abdominal ostium is sometimes closed by a pursestring contraction of the orifice from within the tube. This is known as salpingitic closure. But not infrequently the orifice is more or less patent, even when the disease in the ampulla is advanced and its lumen obstructed. Two subsidiary conditions may follow this stage of miliary tuberculosis—namely, haematosalpinx and hydrosalpinx. They find an exact parallel in the serous and haemorrhagic effusions which occur in the pleura and peritoneum under similar circumstances. The serous surface of this uniformly enlarged tube may become studded with tubercles from secondary infection of the pelvic peritoneum, or the tuberculous process becomes associated with acute inflammation, and then the usual results of perimetritis are found. Why in some cases the disease should be so insidious and in others attended with such acute and urgent symptoms must be left to bacteriology to determine. But we shall not go far astray in assuming that these acute symptoms are usually due to the virulence of the toxins produced by the growth of the tubercle bacilli in the wall of the tube. In the more chronic cases, especially those associated with tuberculous peritonitis and ulceration of the bowel, pyogenic organisms from the intestine play a most important part.

2. *Caseous Tuberculous Salpingitis.*—In this condition the thickened tube is filled with the characteristic yellow substance which results from caseous degeneration of the tuberculous tissue. The tube is much contorted by the contraction of fibrous adhesions around it, by which it is glued to the broad ligament, the ovary, the back of the uterus, or the pelvic wall. Such adhesions are remarkably dense, and when the adjacent bowel is involved they constitute a source of extreme danger and difficulty in any attempt at removal of the uterine appendages. When this stage of the disease is reached, it is generally found that the endometrium of the body of the uterus is also involved.

3. Of more importance to the surgeon than caseous salpingitis is the *tuberculous pyosalpinx*. This lesion has long been of interest to me, for several years ago, when working at the structure of a large pyosalpinx supposed to be of gonorrhoeal origin, I discovered that there was evidence of tubercle in the uterine end of the specimen, though all traces of such disease had disappeared from the wall of the sac and from its contents. This small discovery was confirmed by examinations of other specimens, and I was able subsequently to identify as tuberculous several old specimens of pyosalpinx which had long been preserved in museums as examples of suppuration due to other causes. The peculiar features of the tuberculous pyosalpinx are its elongated banana-like shape, the persistence of the fimbriated extremity, the absence of adhesions upon its serous surface, and the comparative thinness of the sac wall. It is filled with puriform or honey-like contents, which are usually sterile as regards pyogenic organisms, and often do not contain tubercle bacilli. The wall of the pyosalpinx has generally lost its mucous lining by ulceration,

DESCRIPTION OF SPECIMENS.

Acute Tuberculous Salpingitis (Right Side) (Fig. 1).—This specimen is of great interest because the case was mistaken for acute appendicitis and treated as such. The outer end of it is twisted and cylindrically enlarged to the size of the tip of the little finger, and its lumen is entirely blocked with the swollen infiltrated mucous membrane. There are no adhesions, and no miliary tubercles can be detected on the serous membrane. The patient, aged 22, was taken ill suddenly with severe abdominal pain and sickness, rigors, pyrexia, and all the signs of acute peritonitis in the right iliac region. As the symptoms pointed to perforative appendicitis, laparotomy in the right iliac region was successfully performed. The appendix caeci was found to be healthy, but the right Fallopian tube was much swollen and there was acute injection of the adjacent peritoneum. The tube was removed, though the nature of the lesion in it was quite unsuspected.

Caseous Salpingitis in a Child (Fig. 2).—Both Fallopian tubes show a nodular thickening in their entire length, though most marked at the outer ends. The right tube is laid open, and is filled with yellow caseous material which is not breaking down. The ovaries are healthy, but the disease has extended to the uterus, the body of which exhibits caseous endometritis. The long infantile cervix is quite free, but many miliary tubercles are scattered over the serous surfaces of the broad ligaments.

Double Tuberculous Salpingitis (Fig. 3).—Both tubes form two banana-like swellings, which arch round their corresponding ovaries, and in both instances the fimbriae are very prominent, though the abdominal ostia are closed. The right (smaller) tube and ovary are free from adhesions, but the left is covered with soft fibrous tags over the greater part of its surface. In both specimens the uterine ends of the tubes are thickened and caseous. The patient was a middle-aged woman who had been married many years, but was sterile. Her chief cause of complaint was dysmenorrhoea and dyspareunia. Menstruation was regular, though profuse, and there had been no intermenstrual haemorrhage, and no vaginal discharge. There was no family history of tubercle, and no clinical evidence of it in the patient. Both tubes and the right ovary were removed by operation, but this was followed by so much pain and increase of the dysmenorrhoea that it became necessary a year later to reopen the abdomen and remove the uterus and left ovary.

Diffuse Tuberculous Endometritis (Fig. 4).—This specimen is of much interest, because it shows the whole of the lining membrane of the body of the uterus thrown into coarse rugae and nodular projections by a diffuse tuberculous infiltration of the endometrium without ulceration. Moreover, the disease has invaded the cervix and extended to the external os, where the portio vaginalis presented during life an uneven granular appearance like that of a large cervical erosion. The marked hypertrophy of the muscular coat of the uterus should be noted. The clinical history of this case points to the probability that the cervix uteri was first affected and that the disease extended upwards to the body of the uterus. The patient, aged 35, was admitted for sanguineous vaginal discharge and the clinical symptoms of malignant disease. Vaginal hysterectomy was performed, but she died of suppurative peritonitis. At the necropsy old adherent pericardium and caseous pelvic glands were found.

Caseous Endometritis (Fig. 5).—This specimen shows the uterus laid open in front. Its lining membrane is replaced by a finely granular friable material, and there is an irregular ulceration of the surface in the lower half of the body from which this friable material has become detached. A small extension of the disease into the cervical canal may be detected, but for the most part the cervix is healthy. Both Fallopian tubes are much thickened by caseous salpingitis, which has blocked the lumen, though the extremity of the left tube is dilated into a small abscess cavity. The fimbriated ends of both tubes are quite distinct in the specimen, though the abdominal ostia are firmly closed from within the ampullae. The patient, aged 26, died of advanced phthisis and ulceration of the intestine. The infected appendix caeci was adherent to the right broad ligament at the end of the tube, and it is possible that the Fallopian tube may have become infected by direct extension. The ulceration of the bowel was, however, recent and severe, while the lesion in the tubes is certainly of a chronic nature.

Tuberculous Pyometra (Fig. 6).—The cavity of the uterus is much dilated and its wall is thinned. Its inner surface presents groups of small punctate ulcers and superficial erosions resulting from the coalescence of these ulcers. The affected area involves the region of the internal os and has probably led to the obstruction there and consequent pyometra. This form of punctate ulceration is exactly comparable to the condition met with in the urinary bladder in the earlier stages of tuberculous cystitis.



Fig. 1.

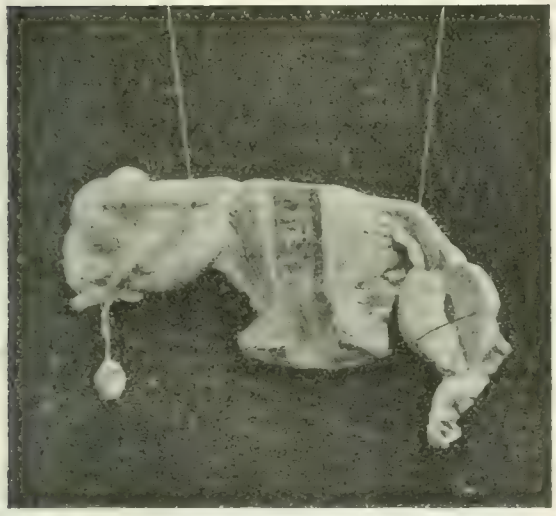


Fig. 2.

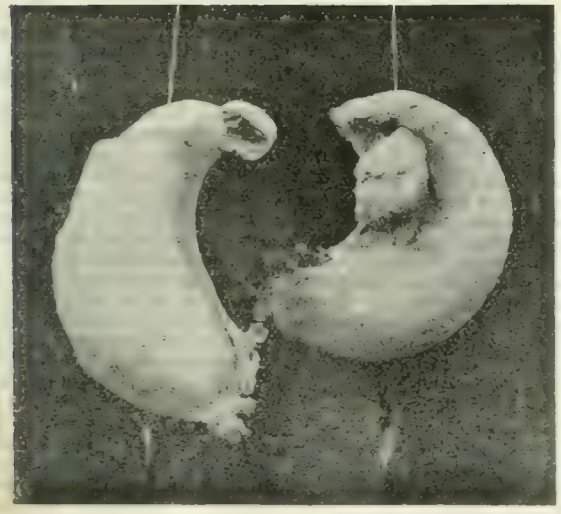


Fig. 3.

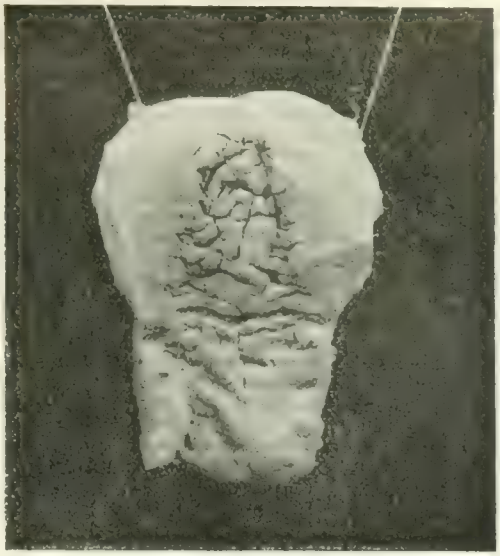


Fig. 4.

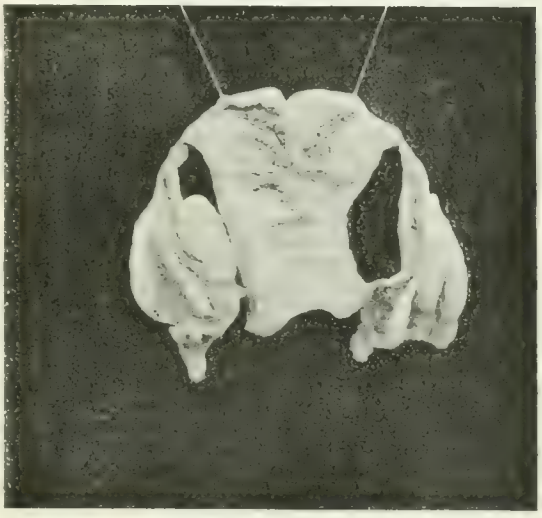


Fig. 5.

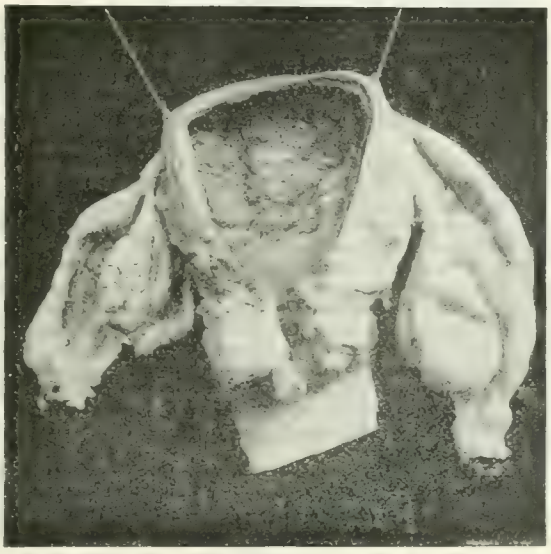


Fig. 6.

and may be replaced by granulation tissue with or without evidence of tubercle in it. The uterine extremity of the pyosalpinx, however, will be found thickened, and, as already stated, will exhibit the characteristic structure of tuberculous salpingitis.

Tuberculosis of the Uterus.

Passing on to the effects produced by tubercle in the body of the uterus, we find a remarkable similarity in their general features to those already described in the tubes. Thus there may be a diffuse miliary tuberculous endometritis in which the whole membrane is greatly thickened and rugose, yet without ulceration. More commonly the interior of the uterus is covered with a granular friable material resulting from caseous endometritis, and the diseased surface is rendered uneven by ulceration of varying severity. This type is usually associated with, and secondary to, caseous salpingitis.

Lastly, there may be a true pyometra, comparable to the pyosalpinx above described. The cervical canal is blocked by polypi, fibrous adhesions, or senile atrophy, and the body of the uterus becomes distended with retained secretions and caseous pus.

In the majority of instances the uterus is infected by extension of disease from the tubes, and rarely from the cervix. Whether primary corporeal tuberculosis occurs or not is at present doubtful, but it has been attributed to placental infection.

Caseous Tuberculous Perimetritis.

There is a peculiar form of tuberculous peritonitis to which I called attention some years ago. Douglas's pouch becomes distended with pus or puriform exudation, and the uterus is found pushed forwards and firmly glued to the bladder and anterior abdominal wall by a thick jacket of lymph, which covers the interior of the pelvic cavity in all directions. The upper and front boundaries of such a space are liable to be formed by adherent bowel. Hence it is more safely and thoroughly drained by an incision into Douglas's pouch through the posterior fornix of the vagina. This disease originates from the bowel and ultimately extends to the Fallopian tubes and uterus.

Symptoms and Diagnosis.

Some writers have unhesitatingly asserted that the clinical recognition of tuberculosis affecting the internal pelvic organs was impossible. At the Congress in Rome last year it seemed to be generally agreed that there was no pathognomonic sign of genital tuberculosis. Most surgeons will also admit that they have met with cases in which this disease was quite unsuspected before the abdomen was opened. But I am disposed to think that these opinions are too despondent. No doubt there are great difficulties in the way of an accurate diagnosis of acute tuberculous salpingitis, yet in the more chronic lesions of the tubes and uterus there is a much greater chance of coming to a right conclusion.

1. The previous history of the patient is of paramount importance, especially as to past lesions of a tuberculous type, namely, phthisis, pleurisy, enlarged glands, chronic arthritis, etc.

2. The absence of other adequate causes for the disease which is recognized in the uterine appendages is likewise a valuable guide. Thus the presence of a distended tube in a virgin is strong evidence of tubercle. When the usual septic or gonorrhoeal sources of salpingitis can be excluded, or are extremely improbable, then the indications are in favour of tubercle.

3. Sterility is usually present in the chronic forms of tuberculous salpingitis, especially the pyosalpinx. On the other hand, pregnancy seems to favour the development of tuberculous peritonitis, not a few cases of which follow rapidly upon a confinement, and they often do badly.

4. It was formerly taught that amenorrhoea was characteristic of tubercle, because it is liable to occur in the advanced stages of phthisis. Further experience, however, has shown that there may be comparatively little disturbance of the menstrual function in tuberculous salpingitis. Menorrhagia is by no means so common as in other forms of chronic salpingitis. I have met with a case of very prolonged and probably permanent amenorrhoea in a young woman who completely recovered from a long illness due to bilateral tuberculous salpingitis.

5. Dysmenorrhoea is certainly a common symptom in tuberculous salpingitis. It was present to a marked degree in all the cases of pyosalpinx that have come under my notice; in fact, it was the patient's chief complaint.

6. The absence of pelvic pain has also been considered worthy of note. It may be stated generally that the tuberculous process is unaccompanied by pain so long as it remains free of secondary infection by pyogenic organisms. Now, the tuberculous pyosalpinx is usually sterile and its surface devoid of adhesions due to perimetritis. Thus the absence of pelvic pain is explained, even when the pyosalpinx has attained a considerable size. In such cases, too, there is no history of recurrent attacks of pelvic peritonitis, which are so characteristic of the common pyosalpinx.

7. Some writers have laid great stress on the nodular feel of the diseased tubes, such nodules being often in close relation to the uterus. If this condition is associated with ascites or other signs of tuberculous peritonitis it will excite suspicion of tubercle, though malignant disease would have to be excluded.

8. Lastly, when the disease is affecting the cavity of the uterus it may be possible to detect tubercle bacilli in the vaginal discharge or to discover the structure of tubercle on microscopical examination of the uterine curettings.

Treatment.

Under this heading I shall content myself with a few general remarks, and leave details to subsequent speakers:

1. It is universally agreed that laparotomy is attended with very beneficial results in cases of diffuse or localized tuberculous ascites. If suppuration has occurred and drainage is necessary, the advantages of vaginal drainage through Douglas's pouch are considerable. The rotten condition of the intestinal wall under these circumstances renders the long use of a drainage tube dangerous from the risk of producing a faecal fistula.

2. When the tubes are found to be thickened from tubercle in the course of a laparotomy for ascites, they should be removed if the adhesions are not too dense. I should like to mention here that I have met with two or three cases in which the removal or disturbance of tuberculous organs has been followed by a rapidly fatal toxaemia, as though some poisonous product existing in the tissues had been liberated.

3. Whether or not it is wise to attempt the removal of caseous tubes when surrounded by dense adhesions is a question which further experience will probably decide. But there can be no doubt that the tuberculous pyosalpinx is best treated by abdominal resection. The dangers of laparotomy are the adhesion of bowel to the abdominal wall, the density of the fibrous adhesions around the appendages, the rottenness of the bowel and tissues generally, and the risk of faecal fistulae.

4. When the uterus is affected its tissues are easily torn, and serious ruptures have resulted from the ordinary operation of dilating and curetting that organ.

II.—J. A. C. KYNOCH, M.B., F.R.C.P.Edin.,
Professor of Obstetrics and Gynaecology, St. Andrews University.

PRIMARY TUBERCULOSIS OF THE CERVIX UTERI.

PROFESSOR KYNOCH said: With the publication of Hegar's work on *Tuberculosis of the Female Pelvic Organs*, in 1886, increased interest in the clinical significance of this condition was aroused. The Fallopian tubes and body of the uterus being most frequently affected, deductions as to their importance have already been arrived it. Thus, it is estimated that about 10 per cent. of tubal inflammatory affections are tuberculous in origin. In marked contrast to this, however, is the supposed rarity of tuberculous disease of the cervix. Consequently its importance has been overlooked. The earlier statistical work of Spaeth certainly pointed to the rarity of this lesion, for, of 119 cases of genital tuberculosis, he was only able to find 6 cases of cervical affection. Zweigbaum has collected 29 cases, 3 of which were primary. The resisting power of the squamous epithelium of the portio vaginalis and the probable monthly exfoliation of the endometrium have been supposed to account for the greater rarity of cervical and uterine tuberculosis as contrasted with that affection of the tubes. But as a result of more routine microscopic examination of curettings, with the view of diagnosing early cases of carcinoma, the number of observed cases of tuberculosis of the cervix has so increased that the condition is one that must now be taken into account in diagnosing any important lesion of the cervix.

The most recent statistical work in this direction is that of Beyea, who has collected 69 cases of cervical tuberculosis. Of these, 58 were associated with tuberculosis elsewhere, 2 were primary—proved by *post-mortem* examination—9 were probably primary, the reports of these, however, not being fully given. Such figures show the preponderance of secondar

over primary tuberculosis, the latter being only confirmed in cases submitted to a complete *post-mortem* examination. The clinical character of tuberculosis of the cervix may manifest itself in three varieties:

1. An ulcerating form, the ulcer being characterized by sharply-defined edges, softness of the floor, and absence of marked induration and friability. Those latter characters distinguish it from squamous-celled carcinoma, for which it might be mistaken.

2. Miliary tuberculosis representing the early stage of the ulcerating variety.

3. A papillary form, involving the cervical endometrium and extending into the vaginal portion like an erosion. Such growths are characterized by finger-like processes, bright red in colour, bleeding—it may be freely—on manipulation, soft to the touch, and with no tendency to friability. These latter signs again distinguish it from epithelioma.

The following are notes of a case illustrating the papillary form, and, as far as physical examination revealed, unassociated with tuberculosis elsewhere.

Case.—Mrs. B., aged 45, had been under treatment for gastric trouble when her doctor discovered that for three months she had been having a slight irregular haemorrhagic vaginal discharge. Finding on examination that the cervix bled easily to the touch, and thereby the suspicion of carcinoma being aroused, the patient was sent to me. She had been married for nine years and had never been pregnant. Menstruation began at 20, and up to the commencement of the present haemorrhagic discharge had always been fairly regular. Her previous history was unimportant, and examination of the various systems revealed nothing abnormal. Two uncles died of phthisis and a brother suffered from spinal disease, otherwise the family history was satisfactory. The patient's husband had been a policeman and was discharged on account of tuberculous spinal disease, which still renders him incapable of following any regular occupation. On examination the vagina appeared unaffected, os patulous, admitting the forefinger. The vaginal aspect of the cervix appeared healthy; the sound passed ½ in. beyond the normal. The inner surface of the anterior lip presented a papillary appearance resembling an unusually marked erosion. It bled freely on manipulation. It differed from commencing epithelioma in being softer, non-friable, and was more suggestive of sarcoma or myxoma of the cervix. Before operation was decided upon a piece of the affected cervix along with curettings from the endometrium was examined microscopically by Professor Sutherland, who pronounced the condition to be tuberculous, the sections showing typical giant cell tubercle follicles. Repeated examination failed to detect the presence of tubercle bacilli. The disease being apparently local, and there being no evidence of tuberculosis elsewhere, the uterus was removed by vaginal hysterectomy. Doyen's clamps being used to secure the broad ligaments. The tubes and ovaries, being apparently unaffected, were not removed. Recovery was rapid and uneventful. On examination of the uterus after removal the wall was found thickened, the cavity measured fully 3 in.; the endometrium was pale, without any evidence of thickening or caseation; nevertheless, microscopic examination revealed the presence of early tuberculous change extending beyond the os internum.



Fig. 1.

That tuberculosis localized to the cervix is more frequent than has been generally supposed is supported by the fact that within eighteen months three cases have been fully reported in the *Journal of Obstetrics and Gynaecology*. The absence of characteristic symptoms may in part account for the condition being so frequently overlooked. In my case irregular bleeding, aggravated by manipulation of the cervix and the presence of a papillary growth on the anterior lip suggested epithelioma, which was excluded because of the absence of the fundamental features of carcinoma—namely, friability and epithelial proliferation, microscopic examination revealing the nature of the lesion before operation was decided upon.



Fig. 2.--Showing giant cell; high power.

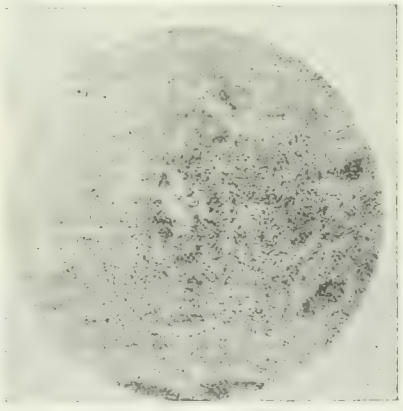


Fig. 3.—Low power.

No reliance can be put on symptoms in diagnosing the condition, as amenorrhoea with muco-purulent discharge from the uterus has been as frequently noted as menorrhagia.

In most of the reported cases the internal os has been regarded as a barrier to the ascent of the tuberculous process from the cervix, and likewise to its descent when starting above this level. In the case which I have reported the endometrium showed no naked-eye change, yet on microscopic examination early tuberculosis was noted. In another case of supposed primary tuberculosis of the left Fallopian tube which I recently removed along with the uterus, the endometrium showed no signs of tuberculous change, yet microscopic examination proved the condition to be of this nature. In the early stages of tuberculosis of the endometrium von Franqué and Abel have described changes very closely resembling those of glandular and interstitial endometritis, the glands being dilated and vacuolated, and the stroma infiltrated with small cells. From the reported cases it would appear that tubercle bacilli are oftener detected in the advanced stage of caseation, where amenorrhoea is more

frequent than menorrhagia, which is more characteristic of the earlier stages. Although it is impossible to exclude blood infection, nevertheless direct infection from a tuberculous husband has been given as a cause of cervical tuberculosis, and cases have been reported by Hegar, Glocker, and others pointing to this mode of infection. Although positive proof is wanting and the evidence far from convincing, it was of interest to note in the case I have reported that the husband had suffered for years from a tuberculous affection of the spine. In the absence of evidence of tuberculosis elsewhere, the surrounding parts being apparently healthy, hysterectomy is the best treatment. Curetting may not be sufficient on account of the possibility of the deeper layer of the mucosa, and even the muscular wall, being invaded with tuberculous granulations. Palliative treatment should be reserved for cases which are obviously secondary to an active tuberculous lesion elsewhere.

III.—ARNOLD W. W. LEA, M.D., B.S.Lond., F.R.C.S.Eng., Assistant Lecturer on Obstetrics and Gynaecology, Owens College, Manchester; Assistant Surgeon, Northern Hospital for Women and Children, Manchester.

FOUR CASES OF TUBERCULOUS DISEASE OF THE FALLOPIAN TUBE TREATED BY OPERATION.

THE Fallopian tube is by far the most frequent seat of tuberculosis of the genital organs, and it is now generally admitted that this affection is much more common than has hitherto been supposed. The tuberculous nature of the disease may be manifest at the time of operation. Often, however, the diagnosis can only be made by a careful microscopic examination of the tissues after removal. Whitridge Williams first drew attention to this fact, and recorded several cases, giving to them the name of "unsuspected tuberculosis" of the Fallopian tubes.[1] In only 2 out of 7 cases recorded by him was the disease recognized at the time of operation. In the others it was only discovered through the routine microscopic examination of all specimens. A type of chronic tuberculous salpingitis exists, characterized by the development of fibrous tissue with dense adhesions, and an absence of caseation or pus formation. There is often no evidence of tuberculous peritonitis, and the affection appears to be primary in the tube. These observations of Williams have been confirmed by Beyea, Edebohls and others, and it is probable, therefore, that many cases of "adherent appendages" removed by abdominal section would, if carefully examined, be found to be tuberculous in origin. There is also a form of inflammation of tube—the so-called "salpingitis nodosa"—in which nodules are present on the peritoneal covering of the tube, and these may closely simulate miliary tubercles. Microscopically, however, there is an absence of the epithelioid and giant cells so characteristic of tubercle. It is essential that in every case of suspected tuberculous infection the diagnosis should be confirmed by microscopic sections, and if possible by inoculation experiments.

The tubercle bacillus gains access to the Fallopian tubes in various ways:

1. The infection is often secondary to tuberculous peritonitis. Bacilli enter the peritoneal cavity from ulcerations of the intestine, from mesenteric glands, or from miliary tubercles. They may then be carried into the tubes by peritoneal currents, and infect the mucous membrane. Osler and others have found the Fallopian tubes to be infected in 30 to 50 per cent. of necropsies in cases of tuberculous peritonitis. This view is supported by the fact that the disease is almost always found most advanced in the outer half of the Fallopian tube, the uterine end often remaining free from tubercle.

2. The Fallopian tubes may be tuberculous in the absence of any obvious infection of the general peritoneum. In these cases the bacilli have been deposited in the tube by the blood stream, being carried from a tuberculous focus in the lungs, bronchial glands, or elsewhere. This occurs not uncommonly as a complication of phthisis, without any infection of the peritoneum. On the other hand, it is remarkable that few cases of tuberculous disease of the pelvic peritoneum and Fallopian tubes are accompanied by infection of the lungs. Kelly found only 4 examples in a series of 22 cases; Indeed, this disease occurs in individuals who are apparently in good health.

3. More rarely, the Fallopian tubes may become infected from an adherent coil of bowel and perforation of a tuberculous ulcer, of which I have recorded an instance.[2]

4. Direct infection of the Fallopian tube from the vagina and uterus certainly occurs, but it is probably rare.

5. In a certain proportion of cases the tubercle of the Fallopian tube is *primary*. There is no *a priori* reason why this should not occur, the bacilli being deposited from the blood or lymph stream by a process analagous to the tuberculous infection of bones or joints. This may be difficult to prove in any individual instance, as it is not possible in cases which recover to exclude the existence of a tuberculous focus elsewhere in the body. From the clinical point of view, however, many cases of Fallopian tube infection are apparently primary, no trace of any tuberculous lesion being recognizable elsewhere.

In the four cases here related infection from without could be practically excluded. In two cases the patients were unmarried, and in the two married women there was no evidence of infection of the uterus, and the husbands were in perfect health.

In three cases the lungs, even after repeated examination, showed no signs of infection. In one case (No. IV) the lungs were undoubtedly tuberculous. In two cases (Nos. I and IV) general peritoneal infection was present. In the other two cases no evidence of peritoneal tuberculosis was observed, and the tubal infection was clinically a primary manifestation of the disease.

The ovary is rarely the seat of primary tuberculous infection, though in miliary tuberculosis it is often affected. The disease in the Fallopian tube may be very advanced without any sign of infection of the ovary. The dense tunica albuginea appears to offer considerable resistance to the invasion of the tubercle bacillus.

In Cases I and II the ovary was embedded in peritoneal adhesions but no tubercles were present. In one case (No. III) a single caseating mass, the size of a hazel nut, was found in the ovary just beneath the Fallopian tube.

In Case IV the ovaries were covered with a thick layer of tuberculous exudation but showed no tubercles in the stroma.

CASE I.—*Chronic Miliary Tuberculosis of Fallopian Tubes: Tuberculous Peritonitis.*

A. J., aged 22, single, seen at the Northern Hospital in May, 1901. She complained of recurrent attacks of pain in the lower part of the abdomen. In December, 1899, she had an illness, accompanied by pain and swelling of the abdomen, and was in bed several weeks. Since then she had had repeated attacks of "inflammation," although in the intervals she had followed her occupation as a servant. Menstruation began at 13, twenty-eight-day type, lasting two to three days, always scanty. For two years each period had been accompanied by severe pelvic pain. She had no leucorrhoea. The patient was a well-developed healthy-looking girl. The abdomen was slightly distended below the umbilicus, with resistance and tenderness in the left iliac region. The liver and kidneys were normal.

Pelvic Examination.—The hymen was present; the uterus slightly enlarged, anteflexed, but did not move freely. A large tubo-ovarian swelling was felt on the left side, irregular in shape, and fixed at the pelvic brim. A similar mass occupied the right side of the pelvis. Peritoneal adhesions were numerous.

The history revealed no source of external infection. The lungs were absolutely normal. She had not lost flesh. The family history showed no evidence of tuberculosis. The temperature was normal.

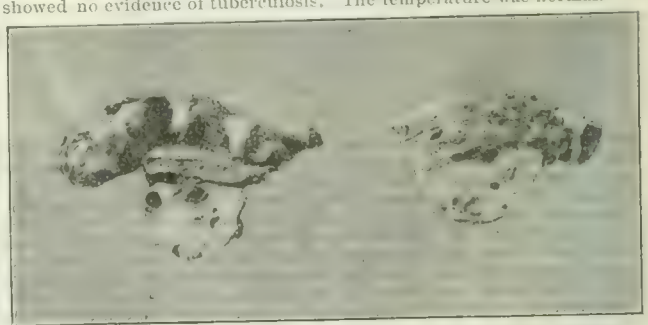


Fig 1.—Case I, A. J.; Chronic diffuse tuberculosis of Fallopian tubes.

Abdominal Section.—June 3rd, 1901. The omentum was adherent over the brim of the pelvis, and was infiltrated by miliary tubercles. The parietal peritoneum was thickened. The left appendages formed a large mass adherent to the bowel, and covered with miliary tubercles. On separating the adhesions an intraperitoneal abscess was opened. The right appendages formed a similar mass, though smaller. Both ovaries and tubes were removed, as also the greater part of the omentum. Numerous enlarged glands were felt in the mesentery. The abdomen was closed without drainage. The patient had pyrexia for five days; highest temperature, 101.8°. A

[1] *Trans. Amer. Gyn. Soc.*, 1892.
[2] *Medical Chronicle*, April, 1897.

small collection of pus formed in the lower part of the abdomen; this was evacuated, and the discharge rapidly ceased. The patient made a good recovery, and has since remained quite well. A recent examination revealed no sign of tubercle in the pelvis or elsewhere. The uterus was quite small and the abdominal cicatrix healthy.

Description of Specimen.—The *left* Fallopian tube is 8 cm. in length, enveloped in firm peritoneal adhesions with numerous small tubercles on the surface. The fimbriated end is closed by adhesions. On section the uterine portion of the tubes is occluded by interstitial salpingitis: the middle and outer portions of the tube are expanded, measuring 2.5 cm. in diameter. The mucous membrane is much swollen, and the lumen almost obliterated. The plicae are folded and thickened, exuda-



Fig. 2.—Case I: tuberculous salpingitis. × 5.

tion of round and epithelioid cells with many giant cells. The epithelium is intact. The muscular wall shows miliary tubercles; the peritoneal covering is thickened, and shows many caseating nodules. The left ovary is large, covered by peritoneal adhesions. On section cystic follicles are seen, many containing blood. The stroma is infiltrated by round cells, but no tubercles are recognizable. The *right* Fallopian tube is slightly enlarged and very tortuous. The peritoneal surface in its outer two-thirds shows miliary tubercles, and a portion of tuberculous omentum is adherent to it. On section the changes closely resemble those in the left tube. The ovary is enveloped in fibrinous exudation and is slightly enlarged. On section cystic follicles are seen, but no tubercles.

This case is probably an example of secondary infection of the Fallopian tubes from the peritoneum. The process was very chronic, pelvic symptoms having been present for eighteen months before operation.

CASE II.—*Chronic Diffuse Tuberculosis: Double Pyosalpinx.*

Mrs. B., aged 27, married three years; no pregnancies. She was first seen in January, 1903, with Dr. M. Bell. The patient had been in good health until two years previously. She then had an illness, associated with severe vomiting and pain in the pelvis, and was in bed for a fortnight. Since this time she had never felt well, having repeated attacks of pain in the right side of the pelvis and back, especially occurring at the menstrual periods. Menstruation commenced at 11 years, twenty eight-day type, lasting five days, without any pain. For two years the flow had been profuse, continuing for seven days, and accompanied by severe radiating pelvic pain continuing throughout the flow. She had slight leucorrhœa. The general condition of the patient was good. The heart, lungs, and abdominal viscera were apparently normal. There was, however, well-marked tenderness and pain in the right iliac region.

Pelvic Examination.—Vagina normal; the uterus slightly enlarged, anteflexed, and movable. Tubo-ovarian swellings were present on each side, lying in the pouch of Douglas, irregular in shape, hard and nodular, fixed by adhesions, and tender on palpation. The temperature rose to 101° each evening. The usual causes of infection were absent, and a probable diagnosis of tuberculous disease of the appendages was made. The family history showed no tendency to tubercle. The husband was perfectly healthy.

Abdominal Section.—January 6th, 1903. The parietal peritoneum and omentum were normal. The posterior surface of the uterus was softened, covered by velamentous adhesions, and studied with miliary tubercles. The left Fallopian tube was distended with pus and embedded in adhesions. The right appendages formed a large mass adherent to the rectum and the back of the uterus. On separating the adhesions an abscess was opened containing 2 oz. of thick pus. The appendix vermiformis was normal. Both appendages were removed. The abdominal wound was united in layers, without drainage. The temperature fell to normal on the fourth day. A stitch abscess formed in the lower part of the abdominal wound, which slightly delayed convalescence. The patient made a good recovery and remains well. A recent examination shows no evidence of tubercle in the lungs or elsewhere.



Figs. 3 and 4.—Case II; tuberculous pyosalpinx, ovaries not enlarged.

Description of Specimens.—The *right* Fallopian tube is 10.5 c.m. in length, acutely bent upon itself in the middle and outer thirds. The uterine end is thickened and tortuous, but only slightly enlarged. The fimbrated extremity is occluded. The greater portion of the tube forms a thick-walled sac containing caseous pus. On section, the uterine segment shows chronic interstitial salpingitis with complete occlusion of the lumen. Sections through the middle of the tube show that the mucous membrane is largely replaced by a thickened layer of round

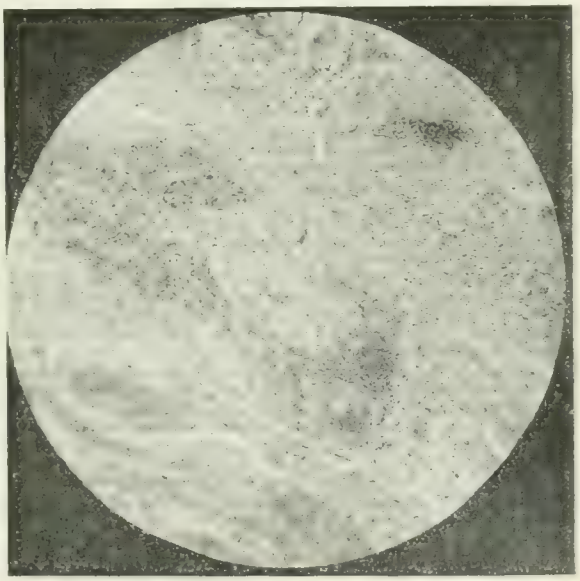


Fig. 5. Case II; tubercles with giant cells, Fallopian tube.

celled exudation with numerous miliary tubercles and giant cells. Beneath this a few plicae are seen with intact epithelium. The muscular layer shows many miliary tubercles; the peritoneum is studded with tubercles. The mesosalpinx is thickened, but not obliterated. The ovary is small, 3.5 cm. in length and 1.5 cm. in breadth. On section the tunica albuginea is thickened and the stroma is dense and infiltrated by round cells, no tubercles are seen. The ovary contains a recent corpus luteum. The *left* Fallopian tube measures 11 cm. in length and is extremely tortuous. The uterine end is thickened and the lumen occluded; 2.5 cm. from the uterus the tube suddenly expands to a diameter of 3.5 cm., and contains caseous pus. The fimbriae have disappeared, but the tube has given way near the outer extremity and leakage of pus has occurred. On section, the mucous membrane throughout the tube is much thickened and infiltrated by tubercles and areas of caseation. In the outer third of the tube considerable effusion of blood has taken place due to rupture of the newly formed vessels in the mucosa. The mesosalpinx is normal. The ovary is not enlarged and free from adhesions. On section, it is apparently normal. Microscopically there is no evidence of tubercle. Cover-glass preparations were made of the pus in the tubes, but no bacilli were found.

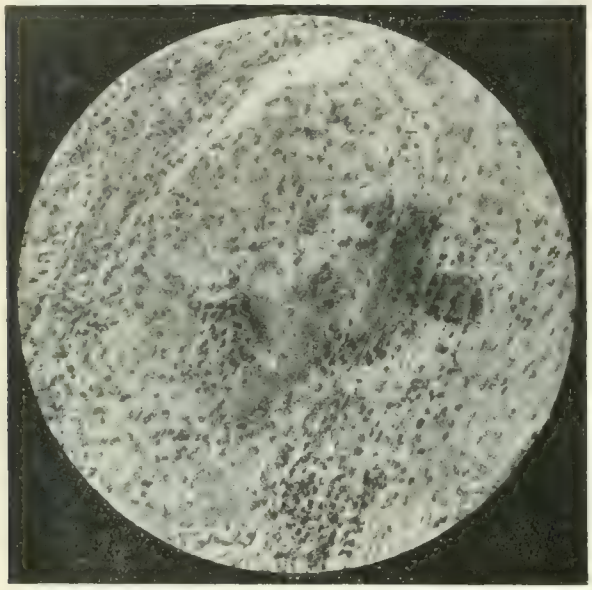


Fig. 6.—Case ; giant cell Fallopian tube mucosa

CASE III.—*Chronic Diffuse Tuberculosis; Double Pyosalpinx.*

Mrs. L., aged 27, married seven years; no pregnancies. She was first seen in December, 1902, with Dr. Anderson. For fifteen months she had suffered from dyspepsia accompanied by severe vomiting and pain in the lower part of the abdomen and back. She had not been confined to bed. Menstruation commenced at 15, twenty-eight-day type, always scanty, and continuing for two days. She had always some pain at this time, but for a year the pain had become much worse, commencing two to three days before the flow, and continuing throughout the period. The pain was felt over the hypogastrium and iliac regions, and was associated with severe sickness. The patient was somewhat anaemic and had lost flesh. The heart and lungs were perfectly normal. The abdomen was not distended, but was tender on pressure in each iliac fossa. Liver and kidneys normal.

Pelvic Examination.—The vagina was small, the uterus anteflexed, not enlarged, but partially fixed by adhesions. The pouch of Douglas was occupied by soft, elastic, irregularly-shaped tubo-ovarian swellings, tender to the touch, and partially fixed by adhesions. There was no leucorrhoea.

Inquiry into the history showed an absence of the usual causes of tubal infection. The family history revealed no evidence of tuberculosis. The husband was in perfect health.

Abdominal Section.—January 10th, 1903. The parietal peritoneum and omentum were normal. The appendages on both sides were firmly adherent to the floor of the pelvis, the posterior wall of the uterus, and the rectum. Both Fallopian tubes were distended with pus. The right ovary contained a haematoma the size of a hen's egg, ruptured during removal. The tubes and ovaries were removed. The abdominal wound was united in layers, without drainage. The patient made a rapid recovery, the temperature remaining normal throughout. At the present time patient is in perfect health. All the gastric symptoms have disappeared. A recent examination reveals no sign of tubercle in the lungs or elsewhere.

Description of Specimen.—The *right* Fallopian tube and ovary are firmly united by peritoneal adhesions. The Fallopian tube measures 6.5 cm. in length. The inner half of the tube is contracted and covered by dense adhesions; the lumen is obliterated by interstitial salpingitis. The outer half of the tube is distended into a thin wall sac with a diameter of 2.5 cm., and containing caseous pus. Sections of the wall show that the mucous membrane has practically disappeared. The muscular coat is atrophic and infiltrated by foci of round celled



Fig. 7.—Case III; tuberculous salpingitis; pyosalpinx.



Fig. 8.—Case III; tuberculous salpingitis, section of basal layer of mucosa showing giant cells.

exudation and a few giant cells. The right ovary is much enlarged from the presence of a haematoma; it measures 4.5 cm. in length and 3.5 cm. in breadth. On section a caseous mass the size of a hazel nut is seen just below the Fallopian tube; the remainder of the ovary is sclerosed and cystic, but shows no tubercle. The *left* Fallopian tube and ovary form a similar mass covered by peritoneal adhesions. The tube is 6 cm. in length, is dilated in its outer third to form a thin-walled pus sac. Miliary tubercles are scattered over the peritoneal surface. Microscopic sections are very similar to those of the right tube. The left ovary is not enlarged, but shows numerous cystic follicles embedded in dense fibrous stroma. No tubercles are present. Cover-glass preparations of the pus were made, but no tubercle bacilli could be found.

CASE IV.—*Acute Miliary Tuberculosis of the Fallopian Tubes: Tuberculous Peritonitis.*

A girl, aged 15, had always enjoyed good health till March, 1903. She then became feverish and suffered from abdominal pains and slight diarrhoea. The symptoms closely simulated typhoid fever, but repeated examinations of the blood gave negative results. I saw her after she had been ill two months in consultation with Dr. Scotson. The patient had wasted very much; the temperature rose each evening to 101°-102°. The abdomen was considerable distended and sensitive to touch. There was no diarrhoea, and nothing was to be felt by palpation of the abdomen. The lungs showed some deficiency in resonance at both apices, but the breath sounds were vesicular. The heart was normal. Examination per rectum revealed that the uterus was anteflexed and pushed forward by a large irregular swelling in the pouch of Douglas, which extended upwards to the brim of the pelvis. Menstruation had commenced at 14, was regular and painless, but no period had come on since the illness commenced two months previously. A diagnosis of tuberculous peritonitis with involvement of the Fallopian tubes and ovaries was made, and an exploratory operation was advised.

Abdominal Section.—March 10th, 1903. The parietal peritoneum was much thickened, and the cavity contained about a quart of free fluid. The coils of bowel were adherent, roofing over the pelvis, and covered by miliary tubercles. The pelvis was occupied by a mass of tuberculous

perimetritic exudation. The Fallopian tubes and ovaries were firmly bound down to the posterior wall of the uterus and the pelvic floor. They were enucleated and removed. An incision was made in the posterior *cul-de-sac*, and the pelvis was thoroughly flushed out, and abdomino-vaginal drainage established. The patient bore the operation well, and for ten days showed slight improvement. She then, however, became gradually weaker, a faecal fistula developed, and she gradually sank three weeks after the operation. The removal of the appendages did not appear to have any beneficial effect on the course of the peritoneal tuberculosis. Dr. Delépine has kindly examined the specimens, and his report is as follows :

The specimen consists of the Fallopian tube, ovaries, and a portion of peritoneum, lining the pouch of Douglas. The Fallopian tubes are considerably thickened, dilated, and convoluted from a point ½ in. from the uterine orifice to the fimbriated extremity. The changes are most advanced near the fimbriae, which are firmly matted together. The lumen of the tube is irregularly dilated; its diameter varies from ¼ in. near the uterus to ½ in. in the outer portion of the tube. The mucous membrane is replaced by a thick, cheesy-looking stratum, with a rough, irregular surface. The lumen is partially filled by caseous débris. The peritoneum of the tube and ovary is replaced by a thick, nodulated membrane, tough and evidently composed of fibrous tissue with small nodules, averaging one-twelfth of an inch in diameter. Many of these are caseating. The tissue intervening between the tubercles is hyperaemic. The ovaries are not enlarged and appear normal to the naked eye.

Microscopical Examination.

Fallopian Tube, ½ in. from Uterus.—No epithelial lining left. Mucosa entirely replaced by a thick layer of partly necrotic tissue, composed of strands of connective tissue, much infiltrated with leucocytes, separating rounded or irregular necrosed areas. Muscular coat partly fibrosed, and much infiltrated with leucocytes. The lumen of the tube is partly occupied by débris of necrosed tissue.

Fallopian Tube, 1¼ in. from Uterus.—Walls of tube much thickened, measuring from ⅛ in. to ½ in. in thickness. The mucosa is in the same state as in the previous specimen, but is much thicker, and contains much larger areas of necrosis. The muscular wall is recognizable by the arrangement of parts, but is almost entirely replaced by fibroid tissue, much infiltrated with small cells. Peritoneum entirely replaced by a continuous layer of large, cheesy tubercles, separated by very thin strands of young connective tissue much infiltrated with leucocytes. The subserous coat is partly invaded by the cheesy tubercles, but in several places typical giant cells are seen. The remains of the muscular coat form a continuous stratum between the diseased peritoneum and the diseased mucous membrane of the tube

Bacteriological Examination

(Microscopical).—A few typical tubercle bacilli found in the contents of the Fallopian tubes and in the diseased mucous membrane. Tubercle bacilli present also, and in larger numbers in the diseased peritoneum.

Inoculation of Guinea-pigs.—(*a*) One guinea-pig inoculated with a small piece of tuberculous peritoneum became rapidly tuberculous, the rapidity and extent of the infection showing the tuberculous bacilli to be very virulent. (*b*) Another guinea-pig inoculated with a portion of the diseased mucous membrane became tuberculous in the same way.

Conclusion.

The lesions present in the Fallopian tubes were due to tuberculosis. From the distribution of the lesions, I am of opinion that the infection had spread from the peritoneum to the Fallopian tubes. With regard to the source of the peritoneal infection, it is difficult to offer an opinion, but it would be reasonable to suspect that the infection was through the alimentary canal.

Sheridan Delepine.

The *clinical history* of tuberculous infection of the Fallopian tubes shows great variations, and does not present reliable characteristics distinguishing it from other inflammatory conditions of the appendages. In some cases the symptoms may be merged in those of tuberculous peritonitis. If, however, the infection is primary, the disease may produce no symptoms so long as the process remains limited to the tube and is not associated with peritonitis. At a later stage, however, pain is a very constant symptom. Thus, in Case I attacks of pain occurred at intervals for eighteen months, in Case II for twelve months, and in Case III for two years. The pain is referred to the lower part of the abdomen, and is due to adhesive peritonitis resulting from the tubal infection. It is especially severe if any leakage of pus has occurred from the tube. The influence on menstruation appears to be variable. Amenorrhoea is certainly not a characteristic feature. In 2 cases menstruation was scanty and painful, but quite regular; in 1 case (No. II) menorrhagia was present; in Case IV, in which the infection was acute, amenorrhoea had been present for two months. Leucorrhoea was not present in any of these cases. If it is profuse, it strongly suggests the presence of tuberculous endometritis. Painful micturition has often been observed, due to the peritonitis. Kelly noted this in 17 out of 20 cases.

It is important to remember that the general health may remain excellent in spite of advanced tuberculous disease. A slight but constant rise of temperature in the evening affords a valuable indication as to the tuberculous nature of a pelvic inflammation. This was present in 2 out of the 4 cases. Distension of the abdomen is an important sign, especially if accompanied by evidence of ascitic or cystic accumulation of fluid. If, however, the infection is limited to the appendages the abdomen is usually not enlarged. The existence of induration in the lower part of the abdomen due to thickening of the subperitoneal tissues strongly suggests tuberculosis.

Diagnosis.

It has generally been held that it is not possible to recognize chronic tuberculous disease of the Fallopian tubes with any degree of confidence. Although this is often true, yet a careful consideration of the history and physical signs may lead to a diagnosis. This is readily made if pelvic inflammatory masses are associated with well-marked tuberculous lesions in the lungs or elsewhere. In rare cases a tuberculous ulcer of the cervix or the discovery of tubercle bacilli in uterine discharges may be conclusive. Sellheim[3] has recently laid stress on the importance of examining fragments of the uterine mucous membrane for evidence of tubercle. If, however, a negative result is obtained, tuberculous salpingitis cannot be excluded. If the infection of the tube is clinically primary, the uterus is often unaffected, and the diagnosis may be difficult or impossible. Bimanual examination of the tubo-ovarian swellings presents nothing absolutely characteristic. If, however, a nodular condition of the uterine segment of the tube is felt, and the outer portion of the tube presents great irregularities, tuberculous infection may be suspected. A careful inquiry into the previous history is of great help. If symptoms of inflammatory disease of the appendages arise in the absence of the usual causes of external infection, such as sepsis or gonorrhoea, tubercle may be suspected. If the patient is unmarried or sterile, the probability is much increased. In two of these cases the patients were single, and the hymen was intact in each instance. In two cases the patients, though married for three and seven years respectively, had never been pregnant, and no external source of infection was discoverable. If, however, the patient has had children, it is, in the absence of positive proof by detection of tubercle bacilli or a tuberculous focus elsewhere practically impossible to diagnose the nature of the disease. Hereditary influences appear to play only a small part in the etiology of this infection; it is noteworthy that in none of these cases was there any family history of tuberculosis.

Prognosis.

This must always be serious. If the Fallopian tubes are the primary seat of the disease early removal holds out a prospect of permanent cure. The beneficial influence of a simple abdominal incision in tuberculous peritonitis is well known, and if, in addition to this, the focus of infection can be removed, the outlook is decidedly hopeful. In Case I, although the omentum was caseating, the parietal peritoneum thickened, and enlarged glands were present in the mesentery, the patient was in excellent health more than two years afterwards.

Cases II and III remain well eight months after the operation, and show no sign of tubercle elsewhere. There is a certain tendency to spontaneous cure by the development of dense fibrous tissue and even calcification in the tubes. It is probable also that the tuberculous process may become arrested although the patients continue to suffer from the symptoms of inflammatory disease of the appendages. This must be the explanation of some cases, so-called "unsuspected tuberculosis," in which the nature of the disease is only recognized by the microscope. In acute abdominal tuberculosis with secondary invasion of the Fallopian tubes, as in Case IV, the value of operative interference is very doubtful.

Treatment.

The operative treatment consists essentially in the removal of the Fallopian tubes. If, however, a diagnosis is made in the early stages, it is probable that palliative and constitutional measures may succeed in checking the process and even in effecting a cure. Sellheim recently recorded 65 cases treated during the last two years at Freiburg. In 28 of these palliative treatment resulted in disappearance of the pain and other symptoms and a relative cure. If, however, definite tubo-ovarian inflammatory masses are present, early removal should be advised. The affection is usually bilateral in the tubes, but the ovary frequently escapes infection, and

[3] *Centralbl. f. Gynäk.*, No. 43, 1902.

it is very desirable to leave a portion of the ovary if it is certainly free from disease. If both appendages are extensively involved, the uterus may also be removed by supravaginal amputation. This was not carried out in any of these cases, as the uterus appeared to be healthy.

If tuberculous endometritis is present, the vaginal radical operation should be performed, but the diagnosis is rarely so certain as to justify this procedure. Although it must often be impossible to completely remove all the tuberculous tissue, operation is often followed by permanent cure. It is important to avoid a radical operation during or shortly after an acute exacerbation of the disease. Secondary septic infection of the appendages is readily induced by leakage of pus into the peritoneal cavity, and operation at this stage may be followed by fatal results.

The presence of advanced tuberculous disease of the lungs or general miliary tuberculosis would contra-indicate operation, but the cure of abdominal tuberculosis by incision has been so abundantly proved that it may be justifiable to undertake it, even in advanced stages of this disease.

If ascites or cystic accumulations of fluid are present, the result is more favourable than in the adhesive type of diffuse peritoneal tuberculosis.

IV.—HERBERT SNOW, M.D.,

Senior Surgeon, Cancer Hospital, Brompton.

DR. SNOW said: I consider that Mr. Targett has laid the Section under a material debt of gratitude, not only by his extremely lucid paper, but by the copious series of lantern slides he has exhibited in illustration thereof. The latter were most comprehensive, embracing lesions of the whole genital tract; and their exhibition has considerably enhanced our knowledge of tuberculosis in this region. I think Mr. Targett was a little too anxious to make out in every case a method of direct infection; and that he overlooked what seems to me a very probable reason in many instances for the outbreak of disease, namely, a general blood contamination by the tubercle bacilli previous to any local manifestation. One occasionally, for instance, finds bones and joints attacked in such a manner as to be inexplicable on any other hypothesis. As Mr. Targett hinted, the bacilli grow only when the soil is duly prepared. A healthy person may absorb them in various ways without injury; and until the local vitality of some organ or tissue becomes sapped by traumatism or impeded function, no ill symptoms show themselves. Women are specially prone to habits which impede necessary vital functions; and the corset, particularly in growing girls, keeps the pelvic organs in a state of chronic congestion certain ultimately to result in some form or other of organic disease. Then, just as the rope breaks at its weakest point, we find, in those who are predisposed to tuberculosis, these local developments in the genitalia. We should, I venture to suggest, do far more to counteract the ravages of that malady by measures addressed to the maintenance of general health than by those which strive merely to prevent the ingress of the tubercle bacillus.

Now it has lately become manifest that tuberculosis of the uterine cervix is a far more frequent malady than had previously been supposed. Cullen and Howard Kelly have proved this. Lewers, if I remember aright, testifies to the same effect; and his recent volume on uterine cancer contains (p. 41) a typical case. It has also become obvious that the disease is almost always mistaken for cancer, with which the objective phenomena largely tally, and that the organ is then excised under that impression. I have myself seen vaginal hysterectomy performed seven or eight times for lesions of the cervix which were assuredly not malignant, and which in all probability were tuberculous. The difficulties of diagnosis seem generally regarded as considerable. Dr. Lewers speaks of them almost pathetically:

> I cannot see any means by which it can be distinguished from cancer except by removing a portion of the cervix and examining it microscopically.

Well, whatever reliance we may be disposed to place upon a microscopical examination and report, it seems to me that we commonly need some more immediate practical basis, which shall at the same time be accurate and reliable, for diagnosis. I am convinced that the proper test in this matter is the presence or absence of marked and continuous pain. These tuberculous cases are free from suffering in any greater degree than is associated with the familiar granular erosion. On the other hand, I have never encountered a case of carcinoma in which severe lumbar and femoral pain, gnawing, or aching, was not from the first a well-marked symptom. I would therefore submit that no case of seeming cancer of the cervix should be condemned to hysterectomy in the absence of pain; without, at any rate, further careful examination, microscopic or otherwise. I regard the point as of no slight practical importance, for the analogy of abdominal and of other forms of tuberculous lesion shows that these can usually be cured by far milder surgical procedures than those we are compelled to invoke in the presence of undoubted malignancy; and I doubt if hysterectomy, or even supravaginal amputation, is here always necessary.

V.—F. W. N. HAULTAIN, M.D.,

Lecturer on Midwifery and Diseases of Women, School of Medicine, Edinburgh.

DR. HAULTAIN thought the frequency with which tuberculosis of the female genitalia occurred was difficult to explain. Primary tubercle of the Fallopian tube was probably the reason of the greater frequency of tuberculous peritonitis in the female, as compared with the male. The clinical features of tuberculous salpingitis were far from characteristic, and the diagnosis very difficult. Premenstrual dysmenorrhoea was perhaps the most constant symptom, though pain in the iliac region, general weakness, and menorrhagia commonly were present. In unmarried females, where the ordinary septic infections could be eliminated, thickening and distension of the tubes might reasonably be expected to be tuberculous in origin. But where other sources of infection were possible, differential diagnosis without signs of tubercle elsewhere was almost impossible. As regarded treatment, he undoubtedly favoured their removal by the abdominal route, where the extensive adhesions frequently present could be seen and more safely dealt with. If the matting of the bowel was very extensive, colpotomy with free drainage was the only safe treatment, and was commonly quite successful. He related a case, and showed a coloured drawing and photomicrographs of primary tubercle of the cervix which occurred in a virgin of 43. After amputation of the cervix the symptoms of profuse leucorrhoea and increasing weakness, which had lasted for seven years, were entirely removed.

VI.—EWEN MACLEAN, M.D.,

Senior Gynaecologist, Cardiff Infirmary.

DR. MACLEAN cited a case which had been under his care.

> A married woman, 30 years of age, who had never been pregnant, and in whose family history there had been no evidence of tuberculosis. Her husband, too, was a healthy man, and none of his relatives were tuberculous. The patient had been in good health until four months previously to the time of the consultation. Since that time there had been loss of flesh, menorrhagia, leucorrhoea, marked umbilical pain, and some obscure pelvic pain and dyspareunia. On examination the lungs were found to be clear, and locally the uterus was in good position and of normal dimensions; the cervix appeared healthy. In the pouch of Douglas a swelling of tangerine orange size was felt, and the left appendages were thickened. At the operation the condition proved to be tuberculous; the swelling posterior to the uterus was a cystic ovary, and much thickened right tube. The left tube was thickened to the calibre of the little finger. The tubes contained caseous matter; the whole pelvic peritoneum was studded with miliary tubercles, being especially aggregated over the thickened tubes. There were no adhesions, and the removal of the appendages of both sides presented no difficulty. The patient made an excellent recovery, and rapidly gained flesh. The microscopical examination of the tubes showed caseous débris and giant cells, but tubercle bacilli were not found.

It was possible that the pus sometimes found in association with tuberculosis was due to a mixed infection. If there were definite evidences of tuberculosis of the appendages the indication was radical removal.

VII.—C. R. STRATON, F.R.C.S.Edin.,

Medical Officer of Health, Wilton Rural and Urban Districts, Salisbury.

MR. STRATON narrated an instance of a tuberculous growth in the vaginal wall of a previously healthy woman after marriage with a husband the subject of tuberculous disease.

REPLIES.

MR. TARGETT thanked the meeting for its kind reception of his paper and lantern demonstration. He agreed with Dr. Arnold Lea that the microscopical examination of uterine curettings was of very limited value in the diagnosis of tuberculous salpingitis. Among the many hundreds of specimens of uterine curettings which he had examined during the past ten years there were not a dozen examples of tuberculous endometritis. Hence a negative result did not disprove tuberculosis of the tubes. Dr. Lea's fourth case was a good illustration of the encysted exudation or tuberculous peri-

metritis to which he had referred, and he thought it was best treated by simple vaginal drainage without removal of the appendages. In spite of the success of some of the operations mentioned, he considered that as a general rule caseous salpingitis surrounded by dense adhesions was best left alone.

Professor Kynoch, in reply, said that in the absence of history of sepsis and gonorrhoea tubal swellings were most frequently tuberculous in nature. Before removing such tubes the endometrium should, he thought, be examined to ascertain the presence or absence of tuberculosis. He referred to a case where, after removal of a tuberculous tube, slight subsequent uterine haemorrhage led to examination of curettings, which showed early tuberculous endometritis, necessitating vaginal hysterectomy.

Dr. Arnold Lea, in reply, stated that in his experience the uterine mucous membrane only became infected at a late stage of tubal infection. In many cases the uterine section of the tube showed interstitial salpingitis with occlusion of the lumen, but an absence of tubercle, thus indicating an attempt at limitation of the infection to the tube. A negative result of examination of curetted fragments might be misleading, and did not exclude tubercle of the tubes. A positive result would of course be valuable, but was rarely obtained.

DIAGNOSIS AND TREATMENT OF UTERINE FIBROIDS.

By Murdoch Cameron, M.D., F.F.P.S.G.,
Regius Professor of Obstetrics and Gynaecology, University of Glasgow.

Fibroids are variously described as fibroma or myoma, although in many cases they are in reality fibromyoma. We possess very little knowledge as to their origin and cause, but they are very common, and may be observed in women of all ages, but especially between the age of 30 and 45. They may, however, be met with very much earlier.

Many causes have been cited, and amongst them sterility, but more likely the sterility is the result rather than the cause. My own experience does not bear out the idea that these tumours are more common amongst married women. These growths are rarely isolated, but are usually numerous, ten, twenty, or more having been met with. They vary in size from that of a pea to a tumour weighing several pounds, say from 2 to 20 lb., although exceptionally large tumours have been met with. The fibroid masses, although as a rule somewhat rounded, may vary in shape according to their site.

When you have a fibroid growing from the fundus uteri, as a rule its upper margin takes what might be described as of bullock's heart shape. Also where you have a single tumour developing in the fundus, you find the same form, whether the case be one of simple myoma or a fibrocystic growth. I think this point is of very great importance, as I have seen it in many cases. At the same time care must be taken not to confound it with the form the fundus sometimes takes in pregnancy or double uterus.

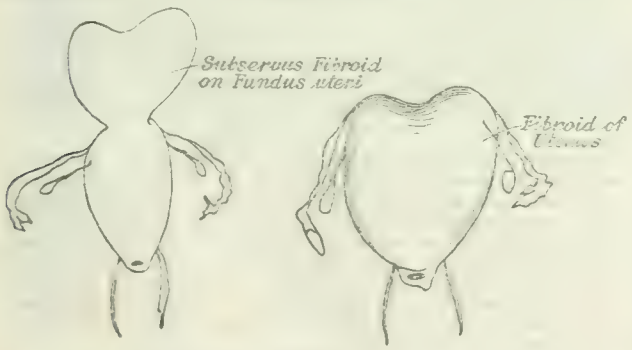


Fig. 1.

A subperitoneal growth changes the uterus less than the other forms, and, after the tumour has somewhat separated, the movements of the body tend still more to favour the formation of a pedicle. From a clinical point of view these growths are extremely interesting, owing to the soft boggy consistence felt in some, being mistaken frequently for fluctuation, and in this way giving rise to the suspicion of ovarian cysts.

The changes that take place in these growths may be either retrogressive or progressive. The former are atrophy and degeneration. Some degree of atrophy usually takes place after the menopause, and some are of opinion that the tumour may entirely disappear. This I am convinced does not take place but may be due to an error in diagnosis, as where an inflammatory thickening has been mistaken for a true fibroma, or where in a small fibroid during pregnancy the enveloping uterine tissue is enormously developed. In the latter condition a marked diminution is effected by the changes following delivery, and so a mistake may readily be made by attributing the change to the fibroid instead of to the uterine tissue. The same change may be effected by electrolysis, ergot, and the removal of the ovaries, although in a much less degree.



Fig. 2.—Fibrocystic tumour of uterus.

Sloughing in the interior of a tumour following delivery may be due to siphoning of the vessels.

Calcification is more frequently met with after the menopause. If met with before this, it is usually found in pedunculated subserous growths.

Spontaneous sloughing is usually associated with septic influence or gangrene, following a sudden or complete arrest of the circulation in the tumour, as in the case of a twisted pedicle. Such a complication is immediately followed by pain, febrile disturbance and peritonitis. In the submucous variety the growth may be completely expelled by sloughing if the patient survives the general septic infection.

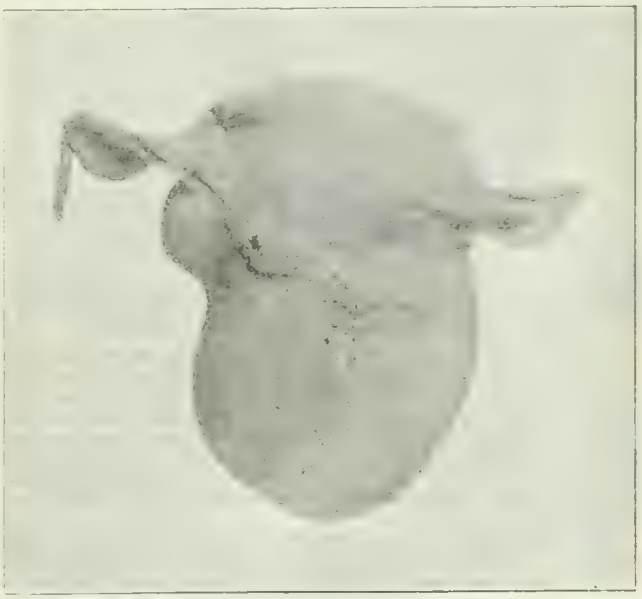


Fig. 3.—Fibrocystic tumour of uterus; anterior aspect.

Cystic changes may be met with, and these give great trouble in diagnosis, if the case has not been under observa-

tion earlier. Some of these cases show a marked increase in size and sensitiveness during a menstrual period with marked diminution upon its cessation. The secretion found in the breasts also may give rise to a suspicion of pregnancy (Figs. 2, 3, 4).

The rate of growth is variable, in one case remaining unchanged during twenty years, whilst in others, especially in vascular myomata, you may have rapid development.

A subserous growth, if in the abdomen, may give rise to few symptoms other than those occasioned by its size, unless twisting of its pedicle takes place. In the submucous and interstitial variety, profuse menstrual haemorrhage is the prominent symptom.

The flow in many cases takes a metrorrhagic character, and then anaemia is very marked. Pain and pressure symptoms with disturbance of the function of the bladder is common. In many cases the ovaries present marked hypertrophy. When the tumour is large and extends above the pubes, it may be recognized by palpation. It may present the following characters: A hard resistant tumour is felt in the median line, or if lateral upon one side. It is painless to pressure, smooth but frequently nodular, when there are several small growths upon its surface.



Fig. 4. Fibrocystic tumour of uterus; posterior aspect.

Upon bimanual examination, the growth, unless it has formed a pedicle, will be found to move with any displacement of the uterus, or rather the uterus will more frequently be affected by any movement of the tumour. This can be verified by introducing the uterine sound and moving the tumour, when the handle of the sound will be seen to swing from side to side. In some cases there is so much displacement that the introduction of the sound will be difficult or impossible.

The vagina may be lessened by the falling down of the uterus or impaction of the tumour, but not infrequently it is very much stretched owing to the tumour dragging or pushing the uterus upwards. This may occur to so great an extent that the finger may fail to reach the os. An interstitial growth is detected by introducing the sound, when the cavity will be found enlarged. Palpation fails to detect any marked separation of the tumour which with the uterus appears to form a considerable more or less hard swelling (Fig. 5).

In the case of a polypus the finger may detect a hard mass presenting, that is, if it has not already passed into the vagina. When it has descended into the vagina, and is of moderate size, the finger may detect the encircling os. In one case recently the tumour attached upon the posterior wall of the cervix was found filling the distended vagina and the dilated uterus, resembling a seven-months pregnancy, with the breech at the vulva It was removed per vaginam by *morcellement* (Fig. 6).

When pregnancy complicates the condition, if the fibroid be upon the fundus and has a pedicle, it is not likely to interfere with the course of pregnancy. A much smaller tumour, lying in the pelvis, or situated in the cervix, would form a more serious complication, especially during labour. Large interstitial tumours might interfere with development and cause abortion.

As regards treatment, where the tumour is causing no disturbance other than by its size and weight, delay in some cases might be advisable, as where the patient is in easy circumstances and could take rest, or where she is the mother of a young family, and it is of the greatest importance that she should run no risk. However, should any change for the worse take place either in the symptoms or in the condition of the growth, then operative interference would be advisable.

Hysterectomy is the most effective method of dealing with fibroids, but it is an operation demanding serious consideration before resorting to it. It should only be done when, after careful investigation, other means are deemed insufficient, or where such have failed, and the condition of the patient from pressure symptoms or haemorrhage demands relief. Enucleation, unless for superficial growths, has been generally abandoned; and so, also, has removal of the ovaries and tubes, although this procedure may wisely be chosen for small interstitial fibroids, with haemorrhage, in young patients.



Fig. 5.—Fibroid of uterus, weight 16 lb.

The indications for operation may be absolute or relative. When the tumour is impacted and is producing serious symptoms from pressure, or where large and increasing rapidly, operation will be necessary. Interference would be justifiable when it prevented the woman from following her employment, or where other means had failed to check the haemorrhage. The relative indications are pain and discomfort, causing complete invalidism. Of course, if you had any serious organic affection in other organs, any interference might be inadvisable.

Myomectomy alone is reserved for cases with a pedicle, or where the tumour can be easily enucleated, and may be performed either by the vagina or through the abdomen, according to the size and nature of the growth. The abdominal incision must be large enough to allow the tumour to pass by its smallest diameter. In hysterectomy the further steps are everting the tumour, ligature of the ovarian vessels and round ligaments, separation of the bladder, ligature of the uterine arteries, division of the cervix, and suturing of the stump, which should be covered with the peritoneum.

The steps of the operation may vary. The vessels may be secured on both sides and the vesico-uterine peritoneum separated before cutting across, or one side may be dealt with, and then the uterus is drawn over to the opposite side, the cervix cut through, and, after the uterine artery has been caught with forceps, the round ligament clamped, and the ovarian vessels ligatured, the tumour is cut away. Ligatures will then replace the forceps. In a few cases it may be possible and advisable to enucleate the tumour before dealing with the uterine vessels and stump so as to secure space for operating. Under such circumstances an elastic ligature should be put round the cervix.

When the tumours can be reached per vaginam it may be removed by *morcellement* or by vaginal hysterectomy, but if large, it may be safer to remove it through the abdomen.

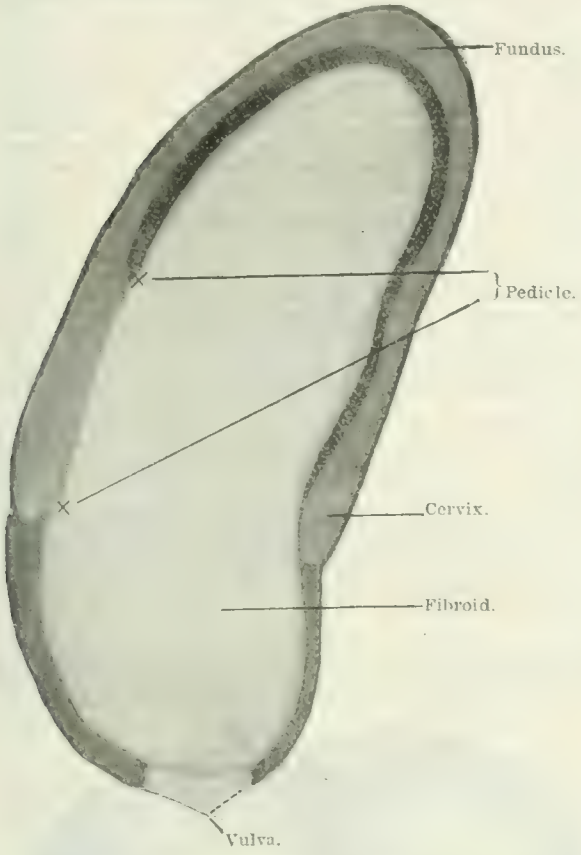


Fig. 6.—Fibroid tumour occupying the vagina as well as the cavum uteri

In connexion with pregnancy it is not easy to lay down any precise procedure, as so many circumstances will determine the necessary operation. In one case the whole cavity of the pelvis was filled up with a hard mass firmly impacted into it, and continuous with a large, round, smooth, hard swelling on the left side above, whilst on the right side was an elastic swelling, with several nodules. On opening the abdomen a large irregular tumour presented, the left portion consisting of an interstitial myoma, the right portion of the distended pregnant uterus. Several subserous myomata varying in size from a walnut to an orange were found implanted over its upper and posterior surfaces. A dead fetus of five months was extracted and the tumour and uterus removed. The parts weighed 27 lb.

In all these cases we have to decide whether the life of the mother is likely to be endangered by allowing pregnancy to continue, either from haemorrhage or obstruction during labour, and next, whether it may be advisable to interfere only at full time. Even then the obstruction may be of such a character as could be readily overcome by a skilled physician. No fixed rule can be laid down, as each case must be decided upon its merits.

Dr. Heywood Smith said he would speak only to one point, that of enucleation. It was absolutely necessary, as Dr. Marion Sims was wont to insist upon, to finish the enucleation at one sitting, as otherwise the remaining portion might become septic. The uterus would undoubtedly contract and tend to extrude the tumour, but it was not safe to delay. He mentioned a case where, at the Hospital for Women in 1879, he removed part of a fibroid by enucleation, and left it one or two days for the uterus to act upon it; in the meantime it had become septic, and pricking his finger with Marion Sims's hook he got blood poisoning and barely escaped with his life. He considered, nevertheless, that a certain number of cases of moderate size could still be treated by enucleation.

Dr. Frederick Wm. Kidd (Dublin) said that in the treatment of this subject Professor Murdoch Cameron, although he had covered the ground very completely, had not laid sufficient stress upon the difficulties in controlling the severe post-partum haemorrhages which might and often did arise after parturition, especially with tumours growing in the fundus of the uterus—tumours which usually existed without interfering with the act of parturition itself. The presence of such tumours must also interfere very materially with the process of involution.

Dr. Ewen Maclean (Cardiff) remarked on the quality of intermittent contraction possessed by fibrocystic tumours—especially on manipulation. So marked was this in one case under his care that it presented a point of difficulty in the differential diagnosis as between the tumour and a pregnant uterus.

The President indicated his views by contrasting uterine (so-called fibroids) with ovarian tumours. With the latter, no matter what its pathological nature might be, the sooner it was removed the better. Delay was ever associated with grave risks and ere long it would kill the patient. With uterine tumours it was different. The presence of such was in itself no warrant to interfere. There were uterine tumours that killed; there were others that were carried about for a natural lifetime. Much depended upon the nature and clinical history. Much that was unsatisfactory in discussions arose from not distinguishing the hard, round, often multiple fibroid, slow in growth and often stationary—especially after the menopause, from the soft variety, with very different connexion with the uterine wall—varying from time to time in size and consistence, and liable at the change of life to increased growth and degeneration. The former might be safely left alone except where complicated by severe metrorrhagia. The other should be removed as soon as a tendency to active change was manifested. He did not believe in the disappearance of "fibroids," but he was sure that there were other swellings which presented many of the features of a fibroid, and he had seen these disappear.

Professor Cameron, in reply, was very pleased to find that the remarks on his paper were pretty much in sympathy with his contentions. If any member was still of opinion that fibroid tumours could be dissolved by electrolysis or other agents, he would suggest that half a dozen exact cases might be placed under his care for treatment and carefully watched by a committee. The result might put a stop to what he looked upon as statements that would not bear investigation

SECTION OF SURGERY.

Edmund Owen, M.B., F.R.C.S., President.

(Concluded from p. 906.)

A FURTHER SERIES OF 32 CASES OF TOTAL EXTIRPATION OF THE PROSTATE FOR RADICAL CURE OF ENLARGEMENT OF THAT ORGAN.

By P. J. Freyer, M.A., M.D., M.Ch.,
Surgeon, St. Peter's Hospital, London.

A year ago, at the Manchester meeting of this Association, I had the honour of placing before the profession details of 21 cases of my operation of total extirpation of the prostate for radical cure of enlargement of that organ, and of exhibiting the prostates removed. Since that time I have performed the operation in a further series of 32 cases (5 in hospital and 27 in private practice), and now present for your consideration the prostates enucleated. The full particulars of the first 24 cases from this latter series have already been published in the Journal of the Association.[1] I shall confine

[1] British Medical Journal, April 18th and July 3rd, 1903.

any detailed description to the remaining cases, each of which presents some peculiar feature of interest, referring, however, to my cases as a whole for statistical purposes, and some brief comments supplementary to those already published by me on this subject.

CASE XLVI.

A well-known public man, aged 81, seen in consultation with Dr. H. I. Macevoy, Brondesbury, May 3rd, 1903. Prostatic symptoms for ten years, gradually increasing in severity. Retention of urine four years previously, relieved by catheter, which has been employed ever since. Great frequency of micturition, intense pain at times, and haematuria. Seen from time to time by various London surgeons. Double vasectomy in 1900, but with no relief. Condition extremely miserable during last six months. I drew off 8 oz. residual urine containing much pus and blood; difficulty in introducing the catheter. Prostate enormously enlarged per rectum, soft, tense, and movable. Cystoscopy on May 4th revealed an outgrowth of the left lobe of the prostate in the bladder, the size of a plum. Patient in very feeble health and confined to bed.

On May 13th, Mr. C. Braine being the anaesthetist, Mr. Thomson Walker and Dr. Macevoy assisting, and Colonel W. H. Henderson, I.M.S., being present, I removed the prostate entire in its capsule, the urethra being left behind. Some trouble was experienced in the enucleation, owing to stoutness of the patient, the finger with difficulty reaching the aspect of the gland towards the triangular ligament. Time occupied from commencing the suprapubic wound till the prostate was delivered from the bladder, thirteen minutes. There was very little bleeding and no shock.

Uneventful recovery, the temperature remaining normal throughout. Some urine passed naturally June 2nd, and wholly in this way June 5th. Patient went home June 8th, twenty-six days after operation, retaining and passing his urine naturally, and he is now in excellent health, untroubled by any urinary symptoms.

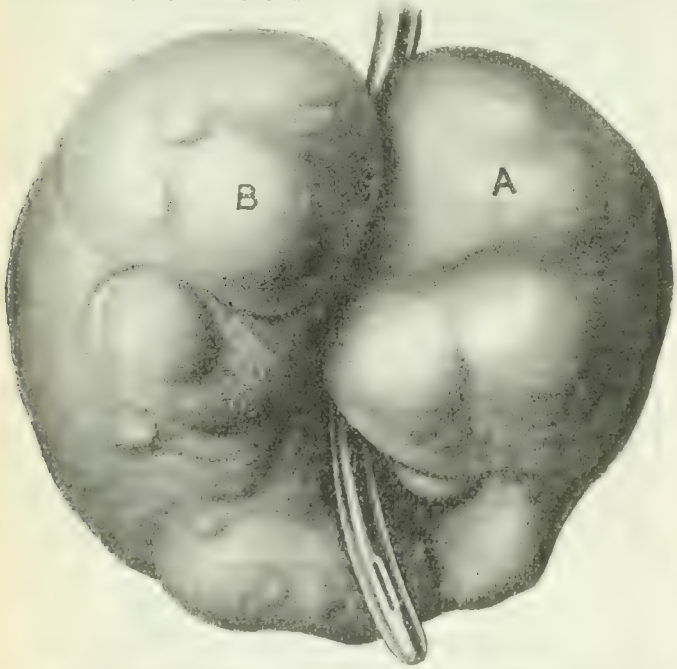


Fig. 1.—Prostate weighing 5¼ oz. removed from patient aged 81. A, right lobe; B, left lobe. Catheter lies in position occupied by urethra.

The prostate (Fig. 1), which weighs 5¼ oz., is an excellent specimen of almost symmetrical adenomatous enlargement of that organ.

This is the oldest patient on whom I have performed this operation, but none of my cases have had a more rapid or uneventful recovery. The result encourages one in the hope that extreme old age is no bar to the successful performance of the operation.

CASE XLVII.

J. S., aged 47, admitted to St. Peter's Hospital May 19th, 1903, with prostatic symptoms which had been gradually increasing for seven years. Complete catheter life for five years; much difficulty in introducing the instrument for two years, causing pain and recurrent orchitis. Urine acid, containing pus and mucus. Prostate much enlarged per rectum, tense, elastic, soft, and movable. Cystoscopy revealed a bilateral outgrowth in the bladder, which was very trabeculated.

On June 26th I removed the prostate entire, leaving the urethra behind. Owing to the patient being extremely stout there was in this case also difficulty in getting the finger to reach the distal aspects of the gland to strip it off the triangular ligament. The patient suffered from bad bronchial catarrh for a few days, the result of the ether employed as the anaesthetic. Otherwise he made an excellent recovery. He commenced to pass urine naturally June 12th, and the suprapubic wound was dry June 20th. He is now in excellent health, able to pass and retain his urine as well as he ever did.

The prostate, which weighs 3 oz., is a good specimen of symmetrical enlargement of that organ.

CASE XLVIII.

Gentleman, aged 62, consulted me May 25th, 1903, on the advice of Dr. Vickers, Wellington, Salop. Prostatic symptoms for ten years, with recurrent haemorrhage during the last five. Profuse haemorrhage on July 13th, 1902, followed by retention of urine, which was relieved by catheter. The haemorrhage recurring, and difficulty being experienced in introducing the catheter, on July 16th the bladder was opened suprapubically by a well-known provincial surgeon, who writes that he removed a "middle lobe" lying over the inner orifice of the urethra, larger than a tangerine orange. Owing to the weak condition of the patient, he did not consider it advisable to attempt total removal of the prostate. Convalescence was retarded by a large gluteal abscess, the suprapubic wound taking some three months to heal. After five weeks the wound again broke down, the fistula remaining continuously open ever since. Patient in a very miserable condition, passing urine every hour by day and night, almost entirely by the fistula. Much pain, with periodical discharge of large quantities of pus, "as if an abscess had burst," as the patient described it. General health very bad; numerous unhealthy sores all over the body, due to absorption of septic matter. Prostate much enlarged per rectum, soft, tense, and more or less movable.

On June 2nd, Mr. C. Braine being the anaesthetist, I removed the remainder of the prostate, weighing 3½ oz. The operation was very prolonged (1¾ hour). A very careful dissection was necessary to avoid opening the peritoneum, which was bound down to the scar. The hard scar tissue around the fistula rendered the abdominal wall unyielding, so that the finger with great difficulty reached the prostate. And, finally, the prostate itself was matted with the bladder walls and the enveloping sheath, so that great difficulty was experienced in its enucleation. Indeed, it was removed in four separate pieces. There was, however, little bleeding, though the shock was severe and lasted for some hours.

With the exception of a bilious attack a week after operation, the patient made an uninterrupted recovery. He passed some urine naturally June 16th, and the suprapubic wound was quite closed June 23rd. He is now in excellent health, retaining and passing his urine naturally.

This case presents a practical example of the unsatisfactory results attendant on McGill's operation, or partial prostatectomy; also of the difficulties that may be encountered in attempting subsequent removal of the main portion of the prostate which is left behind.

CASE XLIX.

Gentleman, aged 63, first consulted me November 29th, 1902, on the advice of Dr. Fennings, of St. Leonards-on-Sea. Prostatic symptoms for ten years. Catheter employed for six months. Much pain, great

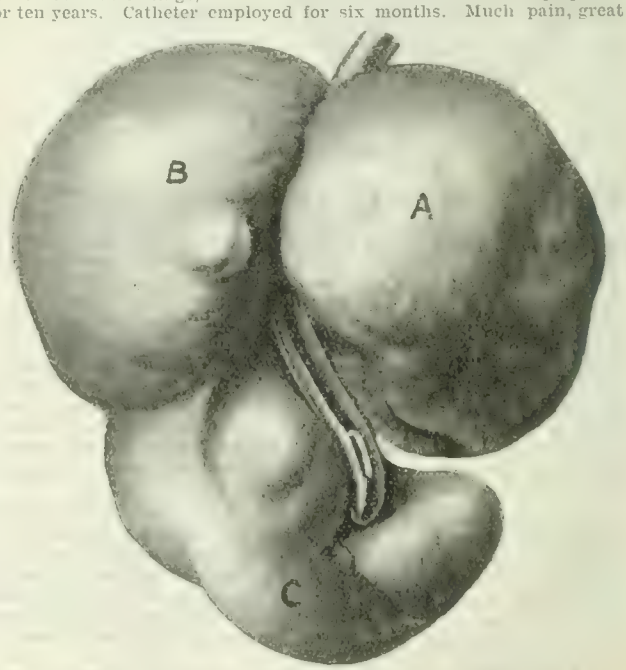


Fig. 2.—Prostate weighing 3½ oz. removed from patient aged 63. Actual size. A, right lobe, B, left lobe, presenting a projection C into the bladder—the so-called "middle lobe." The catheter shows the tortuous course of the urethra.

frequency of micturition and straining, causing involuntary actions of the bowels. Very feeble constitution: suffering from bad asthma and bronchitis. Prostate much enlarged per rectum, bilobed, soft, elastic, and movable. The case was regarded as a suitable one for operation, but postponement was advised till patient should get rid of the bronchitis, which he never did in winter.

Saw patient again in May, 1903, when the bronchitis had disappeared but the asthma was as bad as ever. The prostatic symptoms had much increased; catheter required three times daily; residual urine, 8 to 10 oz., containing much pus.

On June 8th, 1903, Sir Joseph Fayrer and Mr. Walsham being present, I removed the prostate entire in its capsule, leaving the urethra behind. The patient was only eighteen minutes on the operating table, and the time occupied from commencing the suprapubic cystotomy till the prostate was delivered from the bladder was five minutes. Scarcely any bleeding and no shock. The patient began to pass urine naturally June 20th, though the fistula was somewhat slow in closing; he is now in excellent health, untroubled by any urinary symptom.

The prostate (Fig. 2), which weighs 3¼ oz., is a most interesting specimen, presenting an irregularly-curved outgrowth of the left lobe in the bladder (the so-called "middle lobe") which acted as a ball valve to the inner orifice of the urethra.

This was my record case at the time as regards rapidity of operating, but in two instances since then, as will subsequently appear, I have accomplished the main portion of the operation more rapidly, namely, in four minutes and in two minutes respectively. There can be do doubt that rapidity in execution is of vital importance in an operation of this kind, confined, as it is, to persons of about 60 years and upwards, thus minimizing the loss of blood and obviating shock.

CASE L.

A distinguished naval surgeon, aged 65, consulted me May 21st, 1903, for the usual prostatic symptoms, which, however, had only troubled him for two months. Retention of urine on one occasion, requiring use of the catheter. Prostate moderately enlarged per rectum, rather hard and nodular, bilobed, movable. As there was little residual urine, and the symptoms were at the time not urgent, I considered that operation should be postponed.

On June 17th he again consulted me, believing that he was suffering from stone in the bladder, as for some days he had pain, great frequency of micturition, haematuria, and stoppage of the flow. No stone detected on sounding, but cystoscopic examination revealed a teat-like projection of the right lobe of the prostate in the bladder.

On June 22nd (Mr. C. Braine, anaesthetist) I removed the prostate, the lobes coming away separately and the urethra being left intact. The patient made a rapid recovery, urine passing naturally July 6th and the suprapubic wound being dry next day, after which it did not reopen.

On July 24th he left for home in good health, untroubled by any urinary symptom.

The prostate, which weighs 1½ oz., is one of the smallest removed by me. The teat-like process growing from the right lobe no doubt acted at the same time as a ball valve to the inner orifice of the urethra and as a foreign body in the bladder, inducing symptoms resembling those of stone.

CASE LI.

Gentleman from New Zealand, aged 60, seen with Dr. J. Mills, Carlisle, June 29th, 1903. Prostatic symptoms for five years gradually increasing. Much difficulty in passing water three years ago; instruments passed for 6 months with a view to keeping the prostatic urethra open, but catheter never habitually employed. Latterly much irritation of the bladder. Prostate enlarged per rectum, distinctly bilobed, soft, smooth, movable. Cystoscopy revealed distinct prominence of both lobes in the bladder.

On July 11th I removed the prostate, weighing 1¼ oz., easily, leaving the urethra uninjured, the lobes coming away separately. Scarcely any bleeding or shock; uninterrupted recovery, with scarcely any rise in temperature. Urine began to pass naturally July 18th, and the suprapubic wound was permanently closed July 25th. He is now in excellent health, able to retain and pass his urine naturally.

CASE LII.

Gentleman, aged 77, seen with Dr. R. H. Grimbly, Newton Abbot, July 14th, 1903. Prostatic symptoms for seven years. Retention June 25th, 1903; catheter passed and 25 oz. urine removed. Haemorrhage followed, with difficulty in passing the catheter daily, attended by much pain. Urine alkaline, containing much pus. Patient very feeble, nervous, and mentally affected from the pain and fear of difficulty in introducing the catheter. Prostate much enlarged per rectum, soft, tense, movable.

On July 17th Mr. Thomson Walker and Dr. Grimbly assisting, and Dr. J. Walton Browne, of Belfast, and Dr. Thissen, of Aix la Chapelle, being present, I removed the prostate, weighing 2½ oz., entire in its capsule, leaving the urethra uninjured, the time from commencing the suprapubic cystotomy till the prostate was delivered from the bladder being four minutes. There was scarcely any bleeding or shock.

The suprapubic wound is now reduced to a small fistula, and the patient has for several days been passing urine naturally. During the first few days after the operation the mental symptoms were much increased, but latterly they have been much better, though the case in this respect still gives cause for anxiety.

CASE LIII.

Gentleman, aged 74, sent by Dr. J. Williamson, Richmond; admitted to the private ward, St. Peter's Hospital, July 22nd, 1903, with prostatic symptoms of seven years' duration. Retention a fortnight previously, and no urine since then passed naturally. Owing to impossibility of introducing the catheter, bladder tapped suprapubically a week before. Patient very thin and in feeble health. Urine contains much pus and blood. Prostate enlarged per rectum, soft, smooth, movable.

On July 24th, Dr. Williamson, Mr. Boyce Barrow, Major J. F. Blood, and many others being present, I removed the prostate entire in its capsule, leaving the urethra behind, the time occupied from commencing the operation till the prostate was delivered from the bladder being only two minutes. There was very little bleeding and no shock. The patient has not had a bad symptom since the operation, and is practically convalescent.

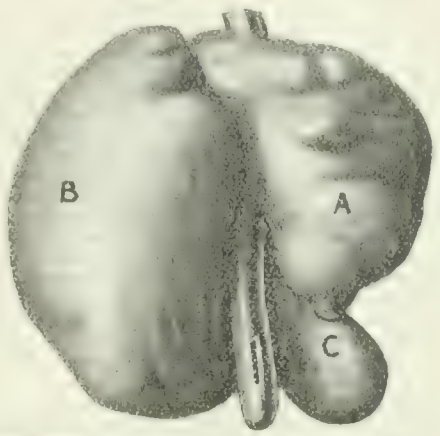


Fig. 3.—Prostate, 1¾ oz. in weight, removed from patient aged 74. B, left lobe; A, right lobe, contained a nipple-shaped projection (C) in the bladder.

The prostate (Fig. 3), which weighs 1⅞ oz., presents a well-marked so-called "middle lobe," which is merely an outgrowth of the right lobe in the bladder.

Excluding the last 2 cases, which are still under treatment, we have 51 completed instances of this operation, the patients varying in age from 57 to 81 years, the average being 68; and the prostates weighing from ¾ oz. to 10½ oz., with an average weight of 3½ oz. The vast majority of them had entered on complete catheter life for periods varying up to twenty-four years. All were in broken health, and many of them apparently moribund before the operation. Very few of them were free from one or more grave complications, such as cystitis, pyelitis, kidney disease, diabetes, heart disease, thoracic aneurysm, chronic bronchitis, asthma, single or double hernia, etc. Of these, 46 have been successful both immediately and remotely. And when I speak of success I mean an absolute and complete success, the patients regaining the power of retaining and passing urine without the aid of an instrument as well as they ever did. In no instance has there been a relapse—on the contrary, time only seems to consolidate their cures. In no case has there been contraction at the seat of operation leading to stricture. In no case has a permanent fistula remained. There has been no dangerous haemorrhage during or after the operation. And, strangest of all, there has been no case of septicaemia amongst them—a remarkable fact, considering that in nearly all the cases the bladder was septic before the operation. To what are we to attribute this absence of septicaemia? No matter how much we irrigate the bladder it is impossible to keep the wounds in a state of thorough asepticity. It must be remembered that a very considerable proportion of aged men succumb to septicaemia on entering on catheter life. I would suggest that those that survive became more or less immune by a gradual absorption of toxins from the septic urine that prevails sooner or later in all cases of catheter life.

There were 5 deaths among these 51 cases, namely: 2 from mania after the wound had practically healed and urine was being passed naturally; 1 from heat stroke on the ninth day when he was quite convalescent; 1 from coma, due to retention of morbid products of the urine which had set in before the operation; and 1 from pneumonia seven days after the operation. Though these deaths are recorded in connexion with the operation, in only one instance can the fatal result be possibly attributed thereto. In my last 19 completed cases there has been no mishap of any kind.

In one of my published lectures on this subject I have alluded to the undue prevalence of mental disturbance amongst persons suffering from prostatic disease. Into the cause of this phenomenon I cannot now enter. I would merely remark that more than ordinary risk attaches to an operation of any kind in such cases, as likely to accentuate the mental symptoms, and thus possibly indirectly lead to a fatal result.

Mr. REGINALD HARRISON said: I should like to offer a few words in reference to the perineal operation, and I will do so by comparing two cases of prostatectomy I have operated upon within the last few weeks, one suprapubically after the manner so well illustrated by my colleague Mr. Freyer, and the other by a perineal route which I venture to say I originally described and advocated. I am not putting forward the latter method in a spirit of controversy, but as representing a procedure which I believe is well adapted for some forms of prostatic enlargement. The case I will first refer to was one of much difficulty and danger, arising from the concurrence of a covered stone in the bladder, with a prostate which, partly by its size and partly by the adjacent suppuration it provoked, completely obstructed micturition in the case of an elderly gentleman who has since been restored to health again. Without occupying time by describing the temporary expedients that were adopted for meeting these difficulties until the patient could be got into a more favourable condition, it eventually became necessary to remove the prostate, or, rather, the adenomata which the prostatic capsule contained. This I did six weeks ago by the suprapubic method. Under cover of the prostatic masses I am placing before you a stone which was suspected was also removed. Though weighing ½ oz., it was shown to be impossible to detect this stone by any sound, and it was only actually discovered when the bladder was opened in this way. To summarize this case it may be stated that it occurred in a man 74 years of age. Prostatic obstruction was complete when suprapubic prostatectomy was practised; in fact, for twenty-two weeks before this operation all the urine had been passed involuntarily through a perineal drainage tube. Then for three weeks after the suprapubic cystotomy the urine escaped almost entirely in this way, and it was not till the end of the fifth week that the abdominal wound had closed and normal micturition was re-established. Taking my own experience of suprapubic prostatectomy, which now includes 20 cases, the duration of treatment, I mean until the wound has soundly healed and the normal function is restored, usually occupies about this time. The other case was that of a professional man, aged 60, whom I saw in February this year. Twenty-five years previously he had a stone removed from the bladder by crushing by Mr. Christopher Heath. He remained well until two years ago when symptoms of prostatic enlargement caused him much continuous irritation and pain. I examined him under an anaesthetic later on, and found the prostate unilaterally enlarged to a considerable extent. Though he was not dependent on the catheter his calls to urinate were both frequent and distressing, and I concluded that it was best to make an exploratory incision within the prostatic capsule and to remove the obstruction, which I believed to be what Sir Henry Thompson described many years ago "as a prostatic tumour encapsuled in the interior of the gland." For this purpose I made the ordinary incision on a grooved staff for lateral lithotomy, which gave free access to the prostatic area and enabled me readily to remove the tumour I am now showing. It will be seen that it is of about the size and shape of a tennis ball. Had I required more room, a bilateral division of the prostatic capsule, as used to be practised in the case of large stones in the days which preceded the more general introduction of litholopaxy, would readily have provided this. But the latter expedient was unnecessary. Enucleation was readily effected by using the two forefingers of my right hand for this purpose, whilst I exercised downward pressure above the pubes with the left, the entire operation only occupying a few minutes. It will be noted that the tumour removed perineally almost equalled in size the two together that were enucleated suprapubically in the first case. A drainage tube was introduced into the bladder by the wound and the urine conveyed outside the bed. The bladder was not incised, nor was the prostatic urethra interfered with, as not infrequently happens, as shown in this and other specimens. Haemorrhage may be controlled by suturing the perineal wound round the gum-elastic drainage tube with the inclusion of some gauze packing if necessary. In this way patients may be kept absolutely dry throughout, and further, the dependency of the drainage as compared with suprapubic cystotomy certainly favours more rapid repair. This patient progressed most favourably. He was up and on the couch in ten days passing urine naturally, and he left hospital within three weeks from the date of operation. In connexion with this case, I would state that in December, 1881, I read a paper before the Royal Medical and Chirurgical Society[2] based on some cases where tumours of the prostate had been successfully enucleated in the course of operations for stone in the bladder by lateral and bilateral lithotomy, and I advocated this proceeding as bearing upon the remedying of prostatic enlargement "by means other than those commonly recognized." In support of my proposition I showed some specimens of tumours thus removed, which I also exhibited in the Section of Surgery of the British Medical Association in Manchester last year. In the discussion which followed the reading of my paper before the Royal Medical and Chirurgical Society in 1881, Sir Henry Thompson, Sir William Savory, and Mr. Christopher Heath took part, when it was stated by the first-named speaker that my suggestion "was practical and well worthy of consideration." After the lapse of over twenty years, I have now the pleasure of submitting a case where these anticipations, deliberately applied, have been fully realized, and which will form a precedent for the further application of the treatment advocated. I cannot help repeating that I think the term employed by Sir Henry Thompson on the occasion of the discussion on my paper best describes the nature of these growths and their relations. He spoke of them as "tumours encapsuled in the interior of the gland," and "as existing in almost every specimen of hypertrophied prostate." This description is fully borne out by the extended observations which will be found in Sir Henry Thompson's work on the prostate.[3] In conclusion, when we consider the large stones weighing many ounces which have been withdrawn through the outlet of the bladder by perineal incision, and also the isolated and easily enucleable nature of the tumours, which, as in the instances I have shown, and others that may be seen, are often the sole causes of prostatic obstruction, I think, for these and for further reasons upon which I have also touched, the perineal or direct operation has much to commend it. It may be asked why I select for perineal prostatectomy the incisions as for lateral or bilateral lithotomy in preference to that for median lithotomy, as practised by Dr. Goodfellow of San Francisco. My reply is that the former provides a larger access to the interior of the prostatic capsule with freer drainage. These remarks will be understood as being made with the object of adding to our resources relative to conditions of this gland, which present much variety and ample scope for surgical treatment.

Dr. COMYNS LEACH described his experience of Mr. Freyer's procedure in his own person. His convalescence had been uneventful and complete relief to all symptoms had followed; his symptoms of prostatic obstruction had extended over four years and vasectomy had been performed without benefit.

Mr. A. B. MITCHELL thought that the suprapubic route was easier than the perineal; he had found that this operation could be performed very rapidly.

Mr. H. T. HERRING said: Mr. Freyer may well be congratulated on the remarkable series of cases he has recorded since 1901. The conclusion which might be drawn from these brilliant results, rather naturally I must admit, would be that all cases of prostatic retention should be subjected to this operation; yet, as most people would prefer prevention rather than a cure by the knife, I venture to make some observations. Mr. Freyer, in the carefully-prepared history of each case, has laid particular stress on the various symptoms which determined him to operate, symptoms which he apparently infers arise from the prostate alone, and he seems entirely to overlook the fact that the greater part, if not all, are caused or induced solely by a septic condition. For I take it that cystitis with its symptoms—pain frequent and difficult catheterization, haemorrhage and pus in the urine, also phosphatic stone and inflammation of neighbouring organs, associated as they commonly are with constitutional disturbances, namely, fever and rigors—are merely an expression of sepsis. Moreover, I would suggest that the continuance of these symptoms is brought about not by one inoculation, but by the constant and repeated introduction of septic matter, as is demonstrated in these cases by the ever-recurring attacks of cystitis and exacerbation of existing sym-

[2] *Med. Chir. Trans.*, vol. lxv.
[3] *Diseases of the Prostate*, 6th edition, p. 70.

ptoms. Now, if by any means we prevent infection, such untoward symptoms do not occur, and the patient, no matter how large the prostate may be, will not get attacks of cystitis with the usual local and constitutional troubles. He is then frequently able to hold water longer than the ordinary individual, for his bladder is often increased in size, and the use, therefore, of the catheter two or three times in the twenty-four hours will suffice to keep him in perfect health without any other trouble whatever. Such a case as this, I presume, would not be suitable for operation, for I hardly think any one would recommend a healthy man of 70 to risk his life and also sacrifice, say, six weeks of his remaining span, and that to be spent in discomfort solely for the sake of ridding him of passing a catheter a few times a day. The necessity, therefore, for operation appears to depend not simply upon the existence of a prostate causing retention, but upon the fact that the urine and the urinary organs have become septic. That infection of the urinary organs is most commonly produced by instrumentation will not, I think, be controverted; and I am also convinced that the long-continued distress and misery so often connected with retention is due to repeated reinoculations by the same means, and the inference I draw in relation to this series of cases is that operation was rendered necessary, at any rate in the larger proportion, not by the prostate, but by the continued use of septic instruments. I know that it is urged by those who accept the outlines of these principles that it is impossible to keep a patient aseptic who is in the habit of using catheters, and they say therefore it is better to operate at once and restore his lost function. I am sure that this objection to catheterization, judging from my personal experience, can and will be overcome by drilling the patient from the beginning in details so that he mechanically carries out the proceedings without thought or hesitation. And, moreover, first, because the worst case of septic infection is markedly improved, if not restored to its former condition, by adequate aseptic precautions; secondly, because an aged patient runs considerable risk from the operation; and, thirdly, because he must necessarily suffer a comparatively long confinement in discomfort at a time when the expectation of life can be but a few years, I believe that this operation should be reserved for exceptional cases when all other methods have failed to give relief.

Mr. Jordan Lloyd called attention to a class of cases of prostatic obstruction in which little or no hypertrophy of the prostate was present, and asked Mr. Freyer what his experience was in these conditions and how he dealt with them. He described a condition he had several times met with, consisting of a true stenosis of the internal meatus or prostatic inlet, which might properly be described as prostatic stricture, and in which the prostate was sometimes less even than the normal size. Of the advantages of Freyer's operation in the larger forms of hypertrophy there could be no question, but whether all operable cases could be best dealt with by suprapubic incision was yet to be seen. Perineal enucleation had some advantages, and some disadvantages also, but in suitable cases the operation could be done with extreme rapidity and with little constitutional disturbance. He asked whether Mr. Freyer had ever met with difficulty in enucleating small hard prostates, and whether he had ever found it quite impossible to do so. He also asked whether any of the patients whose urethrae had in part come away with their prostates had any difficulty in micturition some months after operation. With regard to catheterization in prostatic obstruction, his own experience was that, although theoretically preventable, nearly all cases sooner or later became more or less septic.

Mr. Betham Robinson questioned the fact that Mr. Freyer removed the prostate with the recto-vesical fascia, for if such were the case, damage to the prostatic plexus and the ejaculatory ducts would occur and serious after-results expeeted.

Mr. Sinclair White said that he had performed Mr. Freyer's operation several times, but had had some fatalities from cellulitis. He asked whether Mr. Freyer did not consider it advisable in some cases to provide drainage through a perineal route.

Mr. Freyer, in reply, said he had only removed a thin layer of the recto-vesical fascia in exceptional cases, as might be seen from the specimens before them, and not the whole thickness of that fascia, which would probably lead to infiltration of urine. Mr. Robinson's appeal to the anatomy of the prostate as taught in the schools and textbooks was of no avail. He (Mr. Freyer) had in his first lecture[4] shown that this was defective, and that Sir Henry Thompson was, as far as he was aware, the earliest writer who had grasped the proper anatomy of the prostate and its envelopes. He supposed that the chief object of anatomy was to teach surgery, but they might have gone on to the crack of doom without discovering this operation if guided by the anatomy of the textbooks. He had not practised perineal drainage in any of his cases. Experience as opposed to theory had taught him that this was neither necessary nor desirable. He agreed with Mr. Herring that there would still remain a certain proportion of cases of obstruction to the flow of urine in which the catheter would be necessary. There were certain cases met with in practice in which, though the patient could pass no urine except by catheter, no enlargement of the prostate could be detected either by rectal or cystoscopic examination. Though general sclerosis of the parts might to some extent account for such cases, he considered that the condition had not as yet been explained. He could not agree with Mr. Herring as to the freedom from danger of catheter life under any circumstances. Sooner or later sepsis set in, so that when operation was possible this should be undertaken at the earliest date. He had to thank Mr. Jordan Lloyd for his appreciative reference to his work. As he had already said, there were certain cases of obstruction of the urine in which no operation could relieve the patient. It would be noticed that in his writings he had not as yet attempted any classification of cases suitable for total removal of the prostate. Even now, with 53 cases of the operation behind him, he preferred to wait for further experience before attempting a classification that would be practical and useful. In his early operations he had only attempted the removal of very large prostates, but with experience he had gradually extended the scope of the operation, so that latterly he had been able to remove prostates successfully which were little larger than the average size of the normal gland.

[4] British Medical Journal, July 20th, 1901.

ON A METHOD OF TREATING BY OPERATION PARALYSIS OF THE UPPER ROOT OF THE BRACHIAL PLEXUS (ERB-DUCHENNE TYPE).

By A. H. Tubby, M.S., F.R.C.S.Eng.,
Surgeon, Westminster Hospital, etc.

Paralysis of the upper root of the brachial plexus arises from difficulty at birth, fracture of the clavicle, injuries about the shoulder, and infantile paralysis, amongst other causes. The muscles which are affected are the deltoid, infraspinatus, biceps, brachialis anticus, and supinator longus. There is therefore a loss of power at two joints. The patient is unable to flex his elbow and cannot abduct the shoulder. There is, further, a loss of sensation in the areas of skin supplied by the circumflex and musculo-spiral nerves. These cases do not readily yield to faradism, galvanism, or massage, and the patient is left with a helpless, useless upper extremity, because he has lost two of its most important movements.

So far as I know no one has attempted nerve grafting to replace the damaged nerve root, and indeed it is difficult to say, from the complexity of arrangement of the nerve fibres of the brachial plexus, what will be the result of tacking portions of the sixth or seventh cervical nerve roots to the fifth. It therefore seemed to me the best method was to utilize, as far as possible, what power is left in the remaining healthy muscles of the upper extremity. The simpler problem is to restore the power of complete flexion to the elbow, the more difficult one to confer the power of abduction on the shoulder-joint. For the restoration of complete flexion at the elbow the most convenient muscle at hand is the triceps, and fortunately its outer head is so attached that it can be readily utilized for this purpose. It, as you are aware, arises from the humerus above and to the outer side of the musculo-spiral groove. It is true that the patient in these cases has some partial power of flexion of the elbow by means of the extensor carpi radialis longior, when the hand is placed midway between pronation and supination. But this muscle is totally unable to bring the elbow to the right angle, and what is required is for the patient to acquire the capacity of bringing it firmly beyond the right angle. I have found the following operation extremely successful in two cases in bringing about this desired result.

An incision, 4 in. to 6 in. long, is made from the middle of the back of the upper arm downwards and forwards towards

the front of the elbow, and following the course of the musculo-spiral groove. The musculo-spiral nerve is then readily defined and drawn aside. The outer part of the triceps is then detached, first from its connexion with the tendon above the olecranon, and then rapidly upwards, until a strip, 3 in. to 4 in., adherent to the bone only at the upper extremity, is freed. The next stage is to clean the biceps muscle, or what is left of it. An aperture is then made in its lower part, about 2 in. above the elbow, and the strip of the triceps, which is one of considerable width and strength, is drawn through the biceps from back to front, and firmly pleated down, the elbow at the time being well flexed.

In the two cases on which I have performed this operation the power of voluntary flexion of the elbow has returned in from four to six weeks. I find it better to carry out the treatment of this type of paralysis in two stages, attending to the elbow first and the shoulder afterwards, and the latter part of the operation is more difficult to obtain a satisfactory result.

The replacement of the paralysed deltoid is a difficult problem, but in the first case in which I attempted to restore the power of abduction to the shoulder I used only the clavicular portion of the pectoralis major, but in a second case I used both this portion of muscle and that part of the trapezius attached to the clavicle. The steps of the latter operation are as follows:

An incision is made, commencing 1 in. below the middle of the clavicle, passing outwards to the tip of the acromion, and then downwards for 3 in. A second incision is made from the tip of the acromion upwards for 2 in. to 3 in. along the anterior margin of the trapezius. The flaps are reflected. That portion of the pectoralis major arising from the clavicle is quickly defined and followed to its insertion into the humerus, where it is detached and freed far back towards its origin. The insertion of the trapezius into the clavicle is then separated, and the separation is effected some distance parallel to the fibres of the muscle. The clavicular portion of the pectoralis major—now almost a separate muscle—is then brought upwards, so as to lie over the acromion process and tail downwards towards the insertion of the deltoid. It is well to fix a few of the fibres into the tip of the coracoid process, so that the muscle may not slip downwards subsequently. Into the upper portion of the transplanted pectoralis major the detached piece of the trapezius is implanted, and joins it necessarily at an acute angle; so that now we have a new muscle, composed of the conjoined clavicular part of the trapezius and of the pectoralis major. If the tongue of muscle so formed be long enough it may be inserted directly into the deltoid, but if it be not so, it is advisable to cut through the fibres of the deltoid, and to turn up as thick and large a piece of the periosteum of the humerus as possible, and join this to the muscular tongue above mentioned. In the first case in which I used the pectoralis major only, the patient regained some power of abducting the shoulder. In the second case, in which I used the conjoint pectoralis and trapezius, the result promises to be better. I hesitated to employ the trapezius at first in this way, because I feared that the patient might be unable to abduct his shoulder without throwing the head to the opposite side, but such does not appear to be likely to happen.

An important point after muscle-grafting operations of any kind is that the grafted muscle must never be put on the stretch for at least a month, and then it must still be kept under control, and very gradually be allowed to attempt to perform its full function.

Dr. WILFRED HARRIS said that in a paper he read with Mr. W. W. Low on Wednesday in the Section of Medicine, they described 3 cases in which they had operated on the fifth cervical root in the neck, 2 cases of Erb's palsy in adults, and 1 case of infantile paralysis of the shoulder. In both the adult cases the paralysis involved more muscles than those described by Mr. Tubby, the radial extensors of the wrist and the pronator radii teres being involved in addition to the deltoid, biceps, etc. At the operation the anterior branches of the fifth, sixth, and seventh roots were exposed close to the scalenus anticus, each separately insulated and stimulated faradically, and the fifth root proved to be the one affected. The fifth root was then cut across, and its distal end turned down and sutured into a nick made in the seventh root in one case and the sixth in the other. The operation required careful dissection but presented no great difficulty, but they would urge the necessity of faradic stimulation of any root or nerve at an operation before it was cut. Applying the same method and reasoning to infantile paralysis of the shoulder, they had sutured the upper half of the fifth root into the sixth, after splitting the fifth root longitudinally and stimulating each half faradically, in a case of infantile paralysis of the deltoid and spinati muscles, proving at the operation that the lower bundles of the fifth root supplied the biceps, while the deltoid received its fibres from the uppermost bundle. Marked improvement in the galvanic reactions had already taken place in one of the adult cases, but as six weeks only had elapsed since the first operation, motor improvement could not yet be expected.

THE PATHOLOGY AND TREATMENT OF HALLUX RIGIDUS, HALLUX FLEXUS, AND HALLUX EXTENSUS.

By A. H. TUBBY, M.S.Lond., F.R.C.S.Eng.,
Surgeon, Westminster Hospital, etc.

THIS disabling deformity is seen at all ages and various causes have been ascribed. Thus, hallux flexus is stated to be due to one cause, hallux extensus to another and hallus rigidus to a third: but a somewhat extended experience gained in the course of operations for these conditions has convinced me that there is one cause underlying all the conditions, namely, an osteo-arthritic condition of the first metatarso-phalangeal joint. If we examine this joint we find that it is composed of the distal end of the first metatarsal bone, the proximal end of the first phalanx, its ligaments, and the two sesamoid bones, with the synovial membrane.

By way of illustrating what I believe to be the pathology of this affection I may quote the following case:

A schoolboy, aged 17, was brought to me with hallux rigidus of the left foot. He told me that it started the previous winter, and the joint used to become stiff and swollen. He could not extend or flex the joint without pain, and passive movement was impossible. On examination there could be felt a distinct outgrowth and lipping of the inner side of the head of the metatarsal bone, and the base of the first phalanx was also enlarged. When I came to operate on this boy, which I was obliged to do, because all kinds of palliative treatment had been tried, I found a condition which I have seen frequently before. On removing the head of the first metatarsal bone I noted that the pad of synovial membrane and soft tissues between the two sesamoid bones was enlarged, reddened, and hypertrophied. Further, the synovial membrane was reddened, and there were distinct ulcers in the cartilage on the under surface of the head of the metatarsal bone, where it came in contact with the sesamoid bones; and there was commencing denudation of the cartilage on the upper part of the head of the same bone, where the base of the first phalanx came in contact with it on hyperextension of the toe.

This case was a very typical one and presented most of the appearances seen in many others, particularly enlargement and inflammation of the intersesamoid pad, upon which I wish to insist as an essential factor in the production of the rigidity. So far, the only operative treatment I have found effectual is to remove the head of the first metatarsal bone, dissect out the portion of hypertrophied and inflamed tissue between the sesamoid bones, and, if the surface of these bones should be ulcerated, to dissect them out from the tendons in which they lie.

It is noteworthy that in many cases which appear to be entirely rigid when passively extended, the movements become under an anaesthetic entirely free, thereby evidencing that the apparent loss of movement in the joint is reflex, and whether the condition for which the patient presents himself be hallux flexus, hallus extensus, or hallux rigidus, depends entirely upon which portion of the cartilage of the joint is affected, or if the intersesamoid synovial pad is inflamed. Thus, in the majority of cases, extension is the first movement to be lost, because extension of the first phalanx in putting the foot forwards pushes the head of the metatarsal bone on the inflamed intersesamoid pad, and gives rise to pain. Flexion is lost when enlargement of the intersesamoid pad and synovial membrane is such that they are pressed on or caught between the under surfaces of the base of the first phalanx and head of the metatarsal bone; and hallux rigidus results from a discrete ulceration of the cartilage, associated with the changes immediately above mentioned. If the condition is allowed to proceed long enough osteophytic outgrowths, more especially from the base of the first phalanx, mechanically render flexion or extension impossible. Knowing, as we do, the troublesome character of osteophytic affections of this joint, subjected as it is to constant traumatic influence, we cannot wonder that the disease is seen at all ages, that palliative treatment is of comparatively little avail, and that a radical operation is called for. Excision of the head of the metatarsal bone is undoubtedly the best form,

and I find it preferable to interfere as little as possible with the base of the first phalanx, merely contenting myself with clipping off any osteophytic outgrowths. In fact, the operation is precisely the same as that which I constantly perform for bunion, and has in my hands had the same satisfactory results, the patient regaining complete freedom of movement at the false joint, and no diminution whatever in the power of walking.

In less painful cases careful attention to the size of the boots, giving ample room to the big toe, is effectual. The boot should be of such a length, and the sole of the boot should be sufficiently stiff, to prevent any pressure on the end of the big toe in walking. Further, it is desirable to take off pressure on the metatarso-phalangeal joint in walking. This is easily accomplished by a bar placed obliquely across the sole of the boot and well behind the heads of the metatarsal bones, so that the weight of the tread is not borne at the heads of these bones, but behind them.

PHELPS'S OPERATION FOR CLUB-FOOT.

By E. Muirhead Little, F.R.C.S.,
Surgeon, National Orthopaedic Hospital, London.

At the annual meeting at Ipswich in 1900 the late Dr. A. M. Phelps of New York[1] (whose untimely death is a great loss to surgery) read a paper on the treatment of club-foot, and especially upon the operation which generally goes by his name. Dr. Phelps was always an enthusiast, and he advocated open section of all resistant tissues on the inner side of the sole of the foot in every case of congenital club-foot which was not completely cured by milder methods at the age of four months. Having acted upon this axiom, he reported 1,650 cases treated without a death between 1878 and 1900.

In the discussion which followed all the speakers condemned the operation as unnecessary or harmful, or both, rather to the surprise and, as I was told at the time, much to the disappointment of Dr. Phelps.

Since 1891 I have performed this operation on selected cases 27 times, and as my experience of its advantages and drawbacks differs widely from that expressed at the meeting in 1900, and as, moreover, I have lately been led to adopt a procedure which I believe to be a great improvement, I venture to think a short account of my experience may be of interest to the Section.

The cases on which I have operated fall into two classes:

1. Those of such severe deformity that careful and persistent treatment by milder methods has failed to effect a complete cure, despite all the care of the surgeon and the patient's friends. These I would call cases of necessity.

2. Cases, chiefly in hospital practice, which, owing to the poverty or indifference of the friends, are neglected as regards after-treatment and relapse again and again. These I would call cases of expediency.

The fact that during twelve years of practice at the National Orthopaedic Hospital and in private, only 27 feet have seemed to me to need this operation, I think should acquit me of any charge of recklessness. I believe it would have been well to operate more often than I have done rather than more seldom.

The operation as I now perform it is extremely simple. The usual antiseptic precautions having been taken, the patient is laid on the affected side, so that the foot rests on its outer border and dorsum. A V-shaped incision is then made through skin and fat, having its base towards the outer border of the foot, about one-fourth of the width of the sole away from that border, and its posterior limb close in front of the internal malleolus, and its apex over the tuberosity of the scaphoid. This flap is reflected, and all the soft parts beneath it which resist forcible attempts at correction of the deformity are divided, from plantar fascia down to ligaments, avoiding, however, the external plantar vessels and nerve. If this proceeding does not enable the operator to straighten the foot the neck of the astragalus may also be divided by chisel, but this I believe to be seldom desirable. The tendo Achillis is now divided subcutaneously, all bleeding is arrested, the flap laid across the wound, and its end secured by one or two silkworm-gut sutures.

It will now be found that in the corrected position of the foot there are two narrow fusiform open wounds, one on each side of the flap, which will probably need skin grafting later on. A sponge, gauze and cotton wool dressing is applied, and the foot and leg are then placed upon a wooden back splint, with the sole flat and the fore part of the foot well abducted.

After a few days the dressings are changed, skin grafts applied to the granulating wounds, and the foot and leg put up in gypsum in the best attainable position.

It will be noted that this proceeding differs in some particulars from that described by Phelps.

1. The tendo Achillis is divided last, because I have found its resistance useful in the manipulations of the sole during operation.

2. The skin flap. I adopted this on the suggestion of Mr. Harding Freeland, Registrar to the National Orthopaedic Hospital, but I find that unknown to us an American surgeon, Dr. Jonas, of Omaha, Nebraska, had about the same time adopted a similar measure. Its advantages are obvious. It much shortens the existence of an open wound, and quite does away with the unsightly scar to which so many objections have been taken.

Fig. 1 shows the flap in position one week after operation



Fig. 1.

by the latest method, before skin-grafting and the application of gypsum bandage.

3. I do not now put the foot into gypsum immediately after operation, because oozing often occurs and a bulky dressing is therefore needed which prevents a good hold on the foot being obtained, and also because the hard blood-stained dressings are apt to cause pain and even sores.

The 27 operations were performed on 20 patients, 15 males and 5 females, and the ages ranged from 2½ to 16 years, but only 3 were under 5 years old, and in those there were unusual circumstances which seemed to me to justify operation so early. In only 2 cases have I divided the neck of the astragalus. The immediate results have been in all cases good, and the later results, as far as I have been able to find out, most satisfactory to the patients, although the form of the foot has in many cases not been ideal.

In the discussion which followed the reading of Dr. Phelps's paper the objections raised were briefly: That the results were disappointing (Jackson Clarke); that a large scar was formed and infallibly contracted, causing relapsed varus of an obstinate kind needing osteotomy (Tubby); that the so-called cures were unsatisfactory and that the elasticity of the foot was lost (Noble Smith); that the operation was unnecessary (Williams).

Slight cases of varus can be cured equally well (*quâ* final result) by many methods, and doubtless many of Dr. Phelps's 1,650 could have been so cured without any open operation and without scar, unless the type of varus in America is far more severe than in England, which is improbable.

It is often objected that a tender or painful scar results. In those cases where flap sliding, or the later flap method was not practised, I have had certainly unsightly scars on which some of the patients walked, but not one of them has ever complained of tenderness or pain in the scar. By using the flap any objection of this sort is done away with.

A typical scar one year and a-half after operation by the older flap-sliding method is shown in Fig. 2 (p. 978). The scar the same time after operation by the latest flap method is shown in Fig. 3 (p. 978). Both are taken from Case xi.

It has been said that the scar will and does contract. Dr. Phelps replied that the scar yields under pressure, and I have found that this is so to such an extent that the foot has become markedly valgoid in more than one case, in which at the time of operation I had feared enough had not been done. It is this uncertainty as to the ultimate result which, to my mind, is the chief objection to the operation in children, for

if the foot is, as Dr. Phelps directs, over-corrected at the time of operation, the opposite deformity is very likely to ensue after some years of walking, unless great care is used and proper boots and, if need be, instruments are worn.



Fig. 2.



Fig. 3.

So far, therefore, from sharing the fears of those who predict recontraction and relapse, I am convinced that after healing of the wounds the chief danger is the production of flat foot. To secure good results it is absolutely necessary to keep the fore part of the foot fully abducted and the inner border stretched from the time of operation until the wounds are soundly healed. If the foot is allowed to fall into the varus position during healing the cut surfaces will unite, and a contracted sole result, which is worse than before. If the arch of a club-foot be considered as a bow (A, B, C), and the

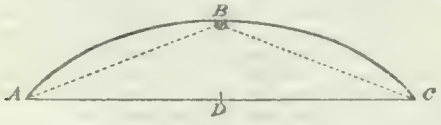


Fig 4.

plantar fascia, skin, and superficial muscles as the string (A, D, C), then by dividing the string at D, and attaching the cut ends by scar tissue at B, as shown by the dotted lines, a condition is produced in which any contractile tendency in A, C and B, C acts at a great disadvantage as compared to the original cord A, D, C. This rough diagram represents in principle what occurs after Phelps's operation if the after-treatment is rightly carried out, and this weakening or almost abolition of the tie-rod of the arch accounts for the tendency to flat foot as a remote result.

Not only in congenital equino-varus, but in pes cavus, I found the operation useful, and I have had a good result from it in a case of talipes calcaneus, where the recurring contraction of the sole was the great obstacle to cure.

CONCLUSIONS.

1. In selected cases Phelps's operation is of great value. A skin flap should always be made.
2. Osteotomy as a part of the operation is rarely necessary.
3. The operation is contraindicated in young children because of the difficulty of predicting what the ultimate result of growth and pressure may be, and the danger of severe flat-foot following.
4. If for reasons of expediency cases must be operated on young, and flat-foot result, the patient is far better off than if he had a relapsed or partly-cured varus.

The following are notes of all my cases in which the later results could be found out.

CASE I.

A. G., aged 6. Talipes equino-varus of both feet. November, 1892. "Appears to have had osteotomy or tarsectomy done previously, as there are large linear scars over the outer side and front of each ankle. The feet are stiff, and in equino-varus position." Operation: Phelps's open operation, November, 1892. During healing a small



Fig. 5.—Case I.

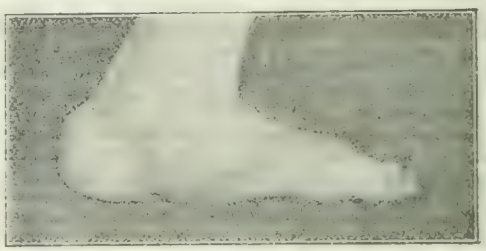


Fig. 6.—Case I.



Fig. 7.—Case I.

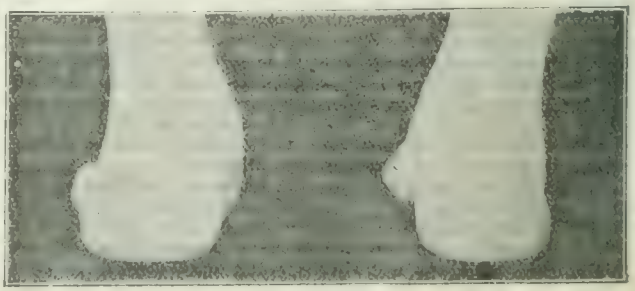


Fig. 8.—Case I.

abscess formed in the left thigh. He left the hospital wearing boots and instruments (inside uprights to calves and varus T straps). Seen and photographed on July 3rd, 1903, 10½ years after operation. Never has any pain now. Has worn plain boots for years.

CASE II.

C. S., aged 8. Talipes equino-varus of both feet. See next case (M. S.). One of five children, three of whom have congenital varus of both feet; paternal uncle had club-foot. Treated at another orthopaedic hospital, but has relapsed. The left foot is worse than the right one.



Fig. 9.—Case II.

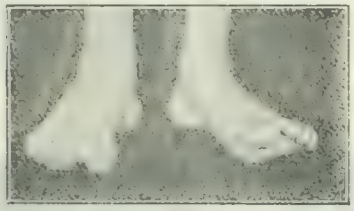


Fig 10.—Case II.

February 19th, 1895. Phelps's operation on left foot. February 20th: A flap of skin raised up from in front of wound and secured in the gap. February 24th. Thiersch's grafts applied to site of flap. Right foot treated subcutaneously. Last seen in April, 1901, six years after operation. Both feet good, but the right is the best. Has worn plain boots for some years. No pain.

CASE III.

M. S., aged 7. Talipes equino-varus of both feet. See previous case. Brother of C. S.; same history. The left foot is very rigid and severely deformed. The right foot is not nearly so bad. February 9th, 1895.

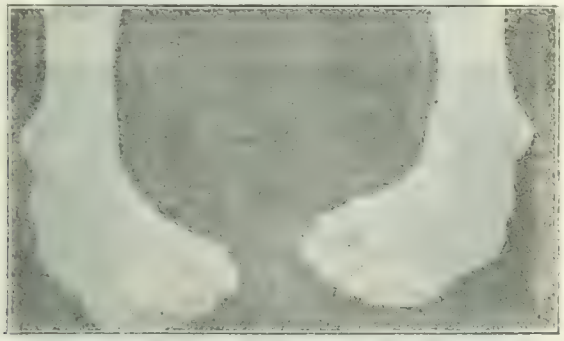


Fig. 11.—Case III.



Fig. 12.—Case III.

Phelps's operation on left foot. February 20th. Thiersch's grafts to wound. The right foot was treated subcutaneously. Last seen in April, 1901. Both feet good. He has worn plain boots for years. No pain. There is greater range of movement in the left than in the right ankle, but the left foot is rather too flat. Ordered a flat-foot instrument. Six years after operation.

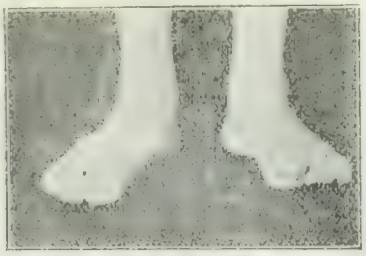


Fig. 13.—Case III.

CASE IV.

S. W., aged 3½ years. Congenital talipes equino-varus, right. Note on admission, 1895: "It is a severe case, the outer border of foot being pressed on in walking, and bursa over the external malleolus. Foot

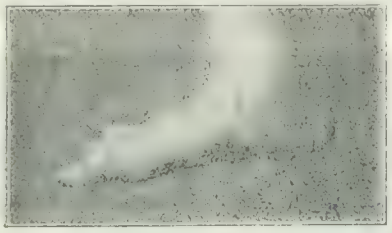


Fig. 14.—Case IV.

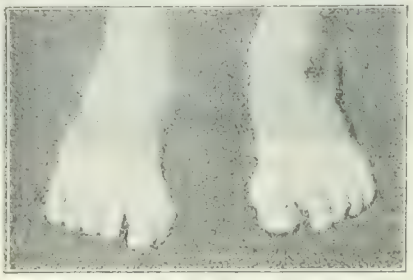


Fig. 15.—Case IV.

turned in at right angles to leg." Was treated at a provincial hospital, but relapsed. April 24th, 1895. Phelps's operation. Photographed in July, 1903, eight years after operation. Foot good; no pain.

CASE V.

E. C., aged 3. Congenital talipes equino-varus of both feet and absence of patellae. Phelps's operation on the right foot September

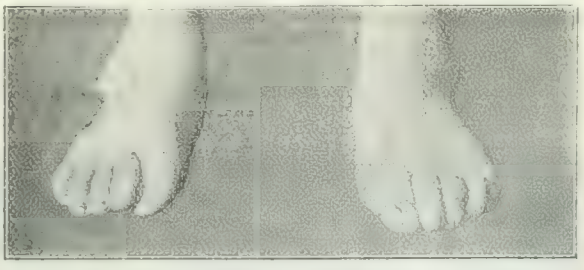


Fig. 16.—Case V.



Fig. 17.—Case V.

25th, 1895. Seen and photographed in July, 1903, nearly eight years after operation. Scar is quite movable and soft, and scarcely to be noticed; no pain.

CASE VI.

A. B., aged 5 years. Congenital talipes equino-varus of left foot. Has been treated as an out-patient since February, 1897. Phelps's operation



Fig. 18.—Case VI.



Fig. 19.—Case VI.

October 24th, 1900. October 31st, 1900. Flap raised and slid back over the wound, and Thiersch's grafts applied to its original site. Seen and photographed July 3rd, 1903. Walks and stands on tiptoe well. No pain or trouble with the scars.

CASE VII.

D. B., aged 2½ years. Congenital talipes equino-varus of right foot. 1901. Has been operated upon in a provincial hospital. There is a scar over the front of the ankle as if caused by splint sore. There is a linear scar behind the transverse crease of the sole. The foot is very rigid, the front part being depressed and inverted. There is a bursa over the cuboid bone. Subcutaneous section of the plantar fascia and tenotomy were performed, but no improvement could be obtained, despite careful use of instruments. October 9th, 1901. Phelps's operation and Thiersch's grafts. Instrument to pelvis. Seen and photographed in July, 1903. No pain. Deep cleft at site of operation. No tendency to relapse.

CASE VIII.

W. H. L., aged 16. Congenital talipes equino-varus of both feet. Treated at a general hospital in 1888. Both feet in position of extreme equino-varus. A linear scar extends from the inner malleolus along the inner border of each foot. There is also a scar along the outer border (osteotomy ?). December 18th, 1901. Phelps's operation on the

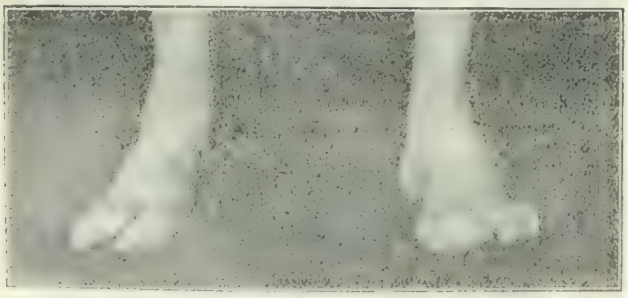


Fig. 20.—Case VIII.

right foot. Flap (attached at both ends) slid back over the wound. Thiersch's grafts. January 1st, 1902. A V-shaped flap, raised from left sole and Phelps's operation performed. January 22nd, 1902. Thiersch's grafts to raw surfaces. Seen and photographed in July, 1903, 1½ year after operation. No pain. Feet fair.

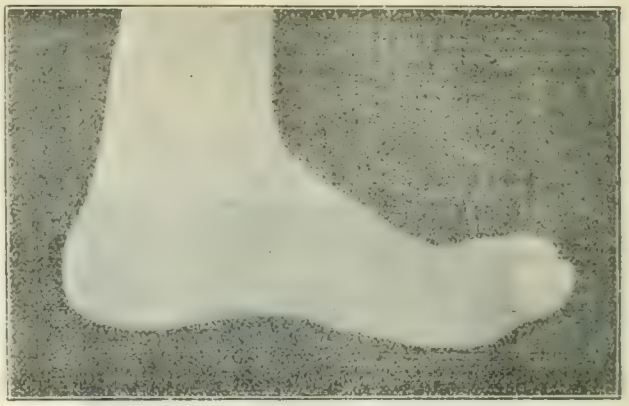


Fig. 21.—Case VIII.

CASE IX.

A. P., aged 11 years. A non-congenital case of severe pes cavus. Left foot in position of equino-varus. Plantar fascia much contracted. The head of the astragalus prominent on outer side of tarsus. Phelps's operation, January 1st, 1902. V-shaped flap. Seen and photographed in July, 1903, 1½ year after operation. Father says there is very grea improvement. He can dorsiflex the ankle with the foot on the floor, to 77 degrees. No pain whatever. Linear scar round flap.

CASE X.

E. L., aged 6. Talipes equino-varus of both feet. A neglected and relapsed case. Phelps's operation on right foot January 15th, 1902, with V-shaped flap. Phelps's operation on left foot, March 5th, 1902. Flap

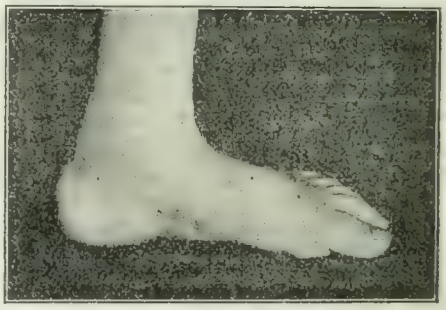


Fig. 22.—Case X.



Fig. 23.—Case X.



Fig. 24.—Case X.

slid back over wound and Thiersch's grafts. Seen and photographed July, 1903. A year and a half after feet very good; no pain.

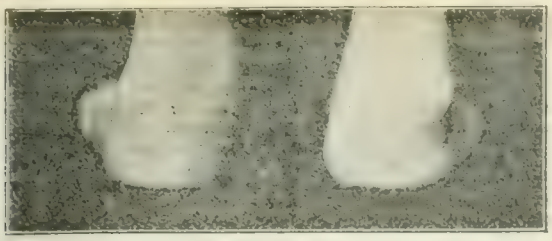


Fig. 25.—Case X.

Case XI.

N. R. H., aged 6. Talipes equino-varus, left. Treated at another orthopaedic hospital but has relapsed. April 9th, 1902, Phelps's operation. April 16th, 1902, Thiersch's grafts. Seen and photographed in July, 1903, fifteen months after operation; no pain.

Case XII.

Male, aged 7. Congenital talipes equino-varus of both feet. Has been treated since early infancy by a distinguished surgeon. The feet are very much deformed, their outer borders forming nearly segments

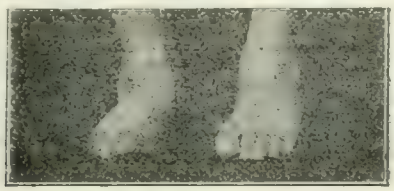


Fig. 26.—Case XII.

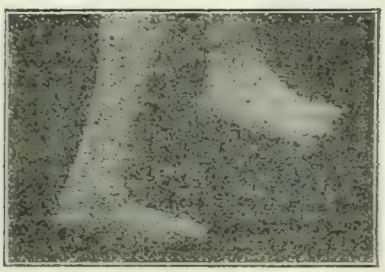


Fig. 27.—Case XII.

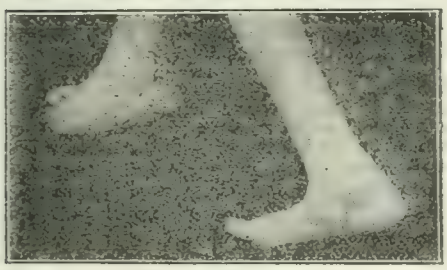


Fig. 28.—Case XII.

of a circle. The heels cannot be placed on the ground when he stands. Phelps's operation on both feet in October, 1895. No flaps or grafts. Seen and photographed in May, 1903. Walks on the right scars. No pain; right foot too flat. Seven and a half years after operation.

Case XIII.

Fol. 197 and 5. Male, aged 11 weeks when first seen. March, 1894. Talipes equino-varus of both feet. Treated subcutaneously. Result



Fig. 30.—Case XIII.

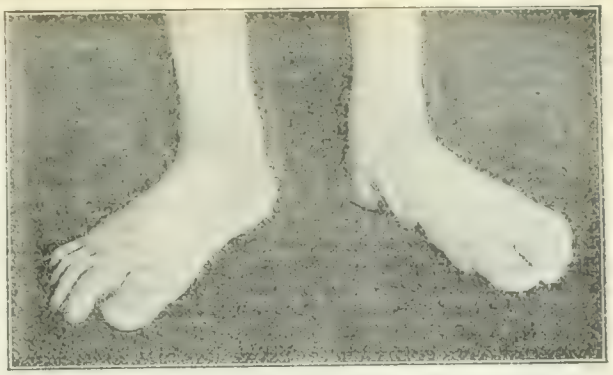


Fig. 29.—Case XIII.

in May, 1894: "Feet in excellent form. To go without splints four hours daily." September, 1899. Left foot relapsed. Phelps's operation on left foot, June 11th, 1900. June 18th. Flap slid back, Thiersch's grafts applied. Aged 6 years. Seen in April, 1903. Both feet good; left foot inclined to valgus. Dorsiflexes ankles with feet on floor, R. to 65 degrees, L. to 75 degrees; no pain. Photographs three years after operation.

Reference.

1 British Medical Journal, 1900, vol. ii, pp. 1184-86.

CYSTIC TUMOURS OF THE MAMMAE: THEIR REMOVAL BY "FORCIBLE MASSAGE" WITHOUT INCISION.

By Herbert Snow, M.D.Lond., Etc.,

Senior Surgeon, Cancer Hospital, Brompton.

So far as I know, it has hitherto been the universal custom to excise cysts of the mammae; if single and small, the cyst alone; if multiple or large, the entire organ, as well as the tumour; and even that commonly fails to secure immunity. Both breasts are affected, simultaneously or successively; and so the second has also to be excised sooner or later.

I have but recently found that such operations, granted a fairly early stage of the cyst formation, are unnecessary; and that the patient can be relieved of her "lump in the breast," together with all the mental anxiety inseparable from that condition, without any mutilation at all. The breasts of these patients, in fact, are full of milk; not healthy milk, but a decomposing and more or less altered product. This is quite apart from pregnancy. The women are single, or have not borne a child for a long term of years. Squeeze this milk-secretion completely out—it must be done under anaesthesia—and all the trouble at once vanishes.

1. The first stage is a chronic inflammatory process, hardly causing any symptoms; "mastitis" is the usual term—an improper one; ὁ μαστος is merely the nipple; ὁ μαζος means the breast. "Mazitis" therefore is the correct designation. It involves the secretion of milk, which is retained within the ducts. This is as abundant in the single as in those who have borne many children. For the most part it is yellow, black, or greenish-black in colour, sebaceous in consistence. Under anaesthesia it can be expressed from the nipple, but some force is required.

2. When this stage has continued for an indefinite period cysts are developed throughout the parenchyma. Commonly one becomes larger than the rest. When ruptured no inflammatory mischief follows. There is no subsequent pain and no suppuration.

Take the very common condition of a middle-aged woman, with a cyst as large as a pigeon's egg in one breast; smaller pea-like bodies being felt in the surrounding parenchyma. All that is required is to place her under anaesthesia; then to rupture the large cyst subcutaneously; lastly, to squeeze from the nipple the viscid yellow or greenish-black matter until no more can be expressed. The larger cyst usually ruptures without force, but continued pressure, exercised in various directions, is needed before the retained secretions can be completely evacuated. Subsequently the organ is a little sore for a day or two. That promptly disappears, and the patient goes on her way rejoicing. No further treatment is wanted. So far as I can at present tell the trouble has vanished for good and all.

It would of course be improper to resort to forcible massage whenever there is reason to suspect any complica-

tion with malignancy, as by the common sequel of intra cystic vegetations, the so-called "duct-cancer;" or by the other modes in which cancerous complications supervene.*

In conclusion, I would point out that carcinoma and epithelioma in any part of the body appear always to supervene upon a chronic inflammatory condition, which has previously existed for an indefinite period of time. That is not conjectural, but a long recognized fact: in support of which numerous authorities could be cited. One more especially notices the phenomenon in cancer developments on a mucous membrane.

Until I encountered the cases cited, and observed the large quantity of retained and altered milk secretion which the mammae under these circumstances contain, I had never realized the existence of the latent inflammatory condition to which the mammae of middle-aged women seem prone, nor the importance thereof in leading to eventual tumour formation. Others may perhaps have done so, but to myself it was an unexpected discovery, quite irrespective of the treatment in question.

But, again, this chronic mazitis does not always pass into the comparatively innocuous "cystic degeneration"; but may assume the far graver aspect of "cancer." As all who are familiar with mammary lesions must be well aware, the immediate antecedents (exciting cause) of these cysts, and of ordinary carcinoma are exactly identical, and may be briefly summarized as "anything tending to impede or pervert the natural process of devolution."

I believe we shall find that even the familiar scirrhous cancer is preceded by a similar precancerous stage of congestions or mazitis; during which the above procedure might be successfully resorted to as a prophylactic measure.

CASE I.

Large Central Cyst.—K. M., 43, married, was seen on March 10th, 1902, with a large globular tumour occupying the centre of the left mammary parenchyma. It was mobile, hard, tender on pressure, of the size of a small orange. There were occasional shooting pains. The glands were not enlarged. No fluctuation could be felt, but the uniformity of the swelling stamped it as a cyst. It was growing rapidly. On March 15th, under anaesthesia, the cyst was ruptured by forcible massage and a large quantity of straw-coloured serum with some milk expressed from the nipple. About a quarter of an hour was occupied by the procedure; the breast being well squeezed from every part of the parenchyma towards the nipple, until the obstructed ducts appeared to have been thoroughly emptied. On the following day there was, of course, some tenderness; but no pain or pyrexia. The patient left the hospital on March 19th. She was seen on September 10th, 1903, with no trace of tumour in the left breast but with a cyst of the right organ, for which massage was again resorted to. Last pregnancy thirteen years previously.

CASE II.

Cyst in Sternal Part of Left Breast.—E. J., 42, married, 2 children, youngest 11 years old, admitted into hospital on August 20th, 1902. A round tumour, as large as the conventional "walnut," occupied the sternal half of the left breast. It appeared solid, but was diagnosed as a cyst on the same grounds as in the previous case. Occasional pricking pain was felt. There were no enlarged glands. There had been no pregnancy for eleven years. On August 22nd the breast was forcibly massaged under anaesthesia. The cyst was ruptured subcutaneously. Turbid, yellowish fluid was expressed from the nipple until there appeared no more to come. The patient left hospital well on August 24th. She was subsequently seen on November 24th last, and again on August 17th, 1903, with no trace of tumour, and in perfect health.

CASE III.

"Walnut" Cyst of Left Breast.—F. Y., 46, married, three children, admitted into hospital on September 10th, 1902, and discharged well on September 18th. The youngest child was 19 years old, and there had been no subsequent pregnancy. She had noticed a "lump" in the breast for seven months. This was mobile, showed indistinct fluctuation, gave no trouble except from the mental uneasiness. On September 12th, the above procedure was resorted to, a large quantity of turbid greenish fluid being expressed from the nipple. The patient was last seen on February 16th, 1903, with no trace of the tumour, and free from all local *malaise*.

CASE IV.

Cystic Degeneration of both Mammae; "Walnut" Cyst in Right.—E. B., a shop assistant, single, aged 40, was sent to me by Mr. Garton, F.R.C.S., in February of this year. There had never been pregnancy. The right breast contained a cyst as large as a walnut under the nipple. The entire parenchyma of both mammae was "lumpy," dotted over with pea-like hard nodules. The lymph-glands were unaffected. On February 13th, 1903, both organs were forcibly massaged, the large cyst being subcutaneously ruptured. From the right nipple a large quantity of thick white fluid like cream was expressed; from the left, a turbid yellowish-green liquid. The patient left hospital five days afterwards. She was seen on August 31st in excellent health, with no pain, and with both breasts, to all appearance, in a perfectly normal condition.

CASE V.

Left Breast Excised for Scirrhous Cancer: Right Treated for Cystic Degeneration Nine Months Afterwards.—E. B., aged 44, married, six children, youngest 10, two early miscarriages, admitted June 9th, 1902, with a "hazel-nut" lump in the left breast, of nine months' duration. No enlarged glands. Shooting pains. The patient was highly neurotic. An exploratory incision into the tumour was made, and the naked-eye appearances indicated incipient carcinoma. The organ was removed. The microscopic examination confirmed the above diagnosis. On April 20th, 1903, E. B. reappeared with a similar "hazel-nut" tumour in the right breast. There was no hesitation in pronouncing it cystic. Free massage under anaesthesia effected the evacuation of abundant curdy yellow and whitish fluid from the nipple. The large cyst was ruptured. The tumour disappeared, and the patient has since remained well.

CASE VI.

Chronic Mazitis (ὁ μαζος, the breast) of the Left Breast.—Miss J., 48, never pregnant, seen on March 30th, 1903. The left breast showed a tumour of "walnut" size, with general "lumpiness" of the parenchyma. The organ had been injured by a fall three weeks previously and there had also been some mental distress. Occasional neuralgic pains were felt. The menses were regular. There was no discharge from the nipple. Excision had been advised by the medical attendant. On March 31st the breast was forcibly massaged under anaesthesia, a turbid greenish-yellow fluid being expressed, for some twenty minutes, by which time the "lump" had entirely vanished. The patient made, as usual, an uneventful recovery. On May 27th Miss J. again came up from the country, in good health, and much pleased with her escape from the dreaded "operation." The left breast appeared perfectly normal. The right, however, now showed several pea-like nodules, and there had been a white discharge from the corresponding nipple. There was no pain. She was advised to use a local inunction, and to return in six months, possibly for a repetition of the massage upon the other organ (see concluding note).

CASE VII.

Miss E. S., aged 46, never pregnant. Large central cyst of right breast, with discharge from nipple. To inner side of left nipple, hard tumour, 1 in. in diameter. Mobile, simulating scirrhus. Both organs generally lumpy. On September 18th, 1903, "forcible massage" and entire removal of tumours. Perfect recovery.

CASE VIII.

Mrs. A. P. W., aged 76, sent into the Cancer Hospital for excision of the mamma, and kindly placed under my treatment by Mr. Bowreman Jessett. Senile mammae. Under the left nipple a tense cyst of walnut size, noticed nine months and productive of sharp cutting pain. No enlarged glands or other indication of malignancy. On June 2nd, under anaesthesia, the cyst was ruptured subcutaneously, and much clear straw-coloured fluid expressed from the nipple. Then a deeper cyst or cysts behind the larger was attacked, when a dusky thick liquid appeared. Only two or three minutes were expended on this case. The tumour of course promptly disappeared. No rise of temperature or pain followed. I saw the case on June 23rd. She appeared perfectly well, free from pain, and without any palpable tumour. This is the oldest patient with whom I have thus dealt. As a rule it would be unsafe to treat old women in this manner, unless one could feel assured of the absence of malignancy. Dr. David J. Morgan, our pathologist, kindly examined for me bacteriologically the expressed fluid, with an entirely negative result.

CASE IX.

Mrs. E. H., aged 42, seen June 17th, 1903. Two children, the youngest 17; no pregnancy since, though it is just possible that an attack of haemorrhage three months ago, fourteen days after a missed period, may have been a miscarriage. In the right breast, to the outer side of the nipple, a tense cyst of "walnut" size; general "lumpiness" of parenchyma, and the same in the left mamma. There were numerous small hard cysts scattered throughout the latter. On June 20th the patient was anaesthetised by Dr. Whitelaw Bourns, the cysts ruptured, and the breasts forcibly massaged for about half an hour. Abundant white or yellowish curd was expressed. The patient recovered as usual. It was subsequently found that the uterus was retroflexed, the body being fixed in the pelvis by adhesions. This condition apparently dated from the last previous confinement seventeen years ago.

CASE X.

Mrs. A., aged 52, seven children, youngest 17; seen on April 23rd, 1903. A lump noticed in the right breast only a few days since. The patient is highly neurotic and anxious. Last menstruation three weeks previously. Both mammae found to be cystic, though no single tumour had yet attained much bulk. The patient was advised to come again in six weeks, attending in the mean time to her general health. She was seen again on June 16th, when the right breast was found to have become worse, presenting the usual "walnut" cyst. On June 23rd "forcible massage," under anaesthesia by Dr. Bourns, effected rupture of the numerous small and of the larger cysts. The abundant fluid expressed from the nipple was of a dark green colour and thick. The procedure occupied half an hour. No pain or pyrexia followed, the patient recovered as usual, and remained well.

Note.—I find that both organs are always affected, even when one only shows a distinct tumour, and now massage both as a

* NOTE.—Mammary cysts may develop either carcinomatous or sarcomatous vegetations. Carcinoma may arise in the adjoining parenchyma; or from an acinus embedded within the cyst wall. Within the writer's experience, malignancy in one form or another invariably supervenes in the end, though it may be not for many years.

regular practice, unless the patient is old or unless there is some strong reason for confining the manipulation to one only.

Mr. Betham Robinson questioned whether it was possible in most cases to rupture cysts in the manner described by Dr. Snow, except when they were near the nipple. He was doubtful also of the after-history of patients treated in this way. Were not the consequences of mastitis mentioned by Dr. Snow contraindications to any such treatment?

THE SUBSTITUTION OF TEMPORARY AND ABSORBABLE FOR PERMANENT AND UNABSORBABLE SUTURES IN THE OPERATIONS ON BONE.

By R. H. Anglin Whitelocke, M.D., F.R.C.S.Eng.,
Honorary Surgeon, Radcliffe Infirmary, Oxford.

For many years it has been the custom of surgeons to use wire for uniting troublesome fractures; and, indeed, not very long ago this material was utilized by some for suturing the soft tissues in incised wounds, and for drawing together the abdominal rings in operations for the cure of hernia.

Silver wire was more generally used, but gold wire or thread has had its advocates. As the science and art of surgery have progressed, and as the treatment of open wounds has become more and more successful owing to the great advantages of antiseptic and aseptic practice, so the employment of other suture materials has come into vogue.

In recent years we find surgeons more strongly urging the importance of cutting down upon even simple fractures and wiring together the fragments. That the results in the vast majority of cases are successful cannot be denied, yet the practice has, so far, not become general. In many instances the union becomes firm, and the wire remains *in situ* without causing any trouble; in a certain number, however, it cuts its way out as soon as movement is made, or it sets up an irritation necessitating its subsequent removal.

Metallic sutures are more likely to cut their way out when used in fractures involving the joints, such as those of the patella and olecranon. The angular strain put upon the wire embedded in the bones when flexion of the knee-joints or elbow-joints first take place is often sufficient to cause the suture to cut its way out of the newly-united bones. Its removal then becomes imperative. This disadvantage is less likely to occur when the shafts of the long bones are wired. Starting with the knowledge that fragments of bone may be readily grafted one on to the other, and that the most perfect union will result in cases where portions of bone are simply placed in apposition, and kept there as in the every-day setting of comminuted fractures, or when the fragments are replaced in the form of a mosaic on the dura mater after extensive trephining of the skull; the question may be asked, Is not all this system of wiring an over-elaborate and unnecessary detail? In many cases I would venture to suggest that it is. For the last three or four years it has been my invariable custom to do away with the use of wire and to substitute for it ordinary catgut or kangaroo tendon. And although the number of cases has not been large (five cases of patella fracture and two of the olecranon), the results have been so universally successful that I am induced to bring the subject before your notice. It is possible that many surgeons may even now be in the habit of using absorbable sutures, yet I am not aware that they are yet extensively used, or that the question has been definitely brought forward in this country. So long ago as the year 1886, when I was house-surgeon under Sir William Macewen at Glasgow, I once saw him use catgut for uniting a fractured patella. At first I used kangaroo tendon for fractures of the patella, thinking that it would bear the strain better than catgut or silk, but now I use ordinary catgut of medium size, prepared by the method advocated by Mr. Mayo Robson. It does equally well in cases of fracture through the olecranon process of the ulna. All that is required is to apply the sutures so that the fragments are brought into accurate apposition and retained there by completely relaxing the muscles by posture and the aid of splints. By the time that the catgut is absorbed (from 10 to 12 days) the union will be sufficiently firm to keep the fragments together, unless some severe strain is allowed to take place. The provisional callus, though tough, will yield and stretch if pulled upon too soon. In fractured patellae, if the fragments cannot be readily brought together either from undue retraction of the quadriceps extensor or from, what is more usual, extensive haemorrhage into the joint, and if the patient is young and healthy I advise immediate operation and suture. After all the blood is removed from the joint, and I prefer to sponge rather than to wash out the contents, and after the fibrous elements of the periosteum which curl in between the fragments have been removed, the joint is extended. In most cases the fragments will almost fall together of themselves. When the fracture is through or near the middle of the bone there is as a rule very little difficulty in bringing the portions into good apposition, but when one fragment is much larger than the other the application of the sutures is more difficult. The sutures of catgut are passed through the tendons and not through the bone. By passing a needle threaded with gut through the ligamentum patellae from without inwards to the under surface of the distal fragment it is made to traverse the joint to the under surface of the proximal and brought through the quadriceps tendon from within outwards. The needle is then unthreaded and the ends of the catgut tied over the anterior surface of the bone after its fragments have been carefully approximated. Two or more additional sutures are inserted in the same way to give increased strength. The joint is drained for twenty-four hours by making an opening into it at its outer side and into this a strip of gauze is inserted. The accompanying photograph shows plainly the site of the drainage. It is illustrative of a



limb four weeks after the patella had been sutured with catgut, and shows the longitudinal scar of the incision for opening the joint and the lateral one on the outer side of the knee through which the gauze drain was inserted. This scar shows the stretching which is customary after early movements.

The object of the drainage is to prevent any accumulation of fluid within the capsule of the joint, which might put too much strain on the sutures, and also to keep the sutures as dry as possible that they may not be softened too soon. Chromicized catgut will last longer than ordinary, and may with advantage be used in cases when drainage is not employed. After the wound is closed and dressed a back splint is applied. It is well to assist relaxation by having the leg on a plane inclined slightly upwards, so that the heel is higher than the back of the knee-joint. At the end of nine days the skin sutures, which are of silkworm gut, are removed, and the patella is gently moved from side to side to ensure that no adhesions take place between the proximal fragment and the anterior surface of the femur. In fourteen days the splint is removed and massage and passive movements of the joint commenced, although the patient is still kept in bed. When this line of after-treatment is carefully carried out the patient will be perfectly able to walk in six weeks, and to have a bone as firmly united as if the wire had been used.

What has been said as applicable to the patella may be repeated in reference to the olecranon. When the fragments of the ulna are brought together, if it is possible without putting too much strain on the seat of union, it is better to put up the elbow in the flexed or semi-flexed position at once. As soon as the wound is healed, attention should

be paid to the proximal fragment to see that it does not become adherent to the dorsal surface of the humerus. By an early lateral side-to-side movement this may be prevented. As before stated, there are many cases of fracture in which sutures are not required at all. The mandible is not infrequently wired after it has been fractured, and in many cases such a practice seems almost imperative, yet I have known firm union take place in a lower jaw from which I had excised more than inch to allow of the complete removal of a malignant growth springing from the side of the tongue and involving the periosteum, and in which no attempt was made to suture at the time.

In two cases of non-union arising from faulty position of the fragments in fractures of both bones of the leg, and in which the distal fragment overrode the proximal, I have succeeded in obtaining firm union by cutting off the overriding portion, placing the bones in their proper positions, and implanting the callus or fragments which were cut off without using sutures of any kind.

The main object of this paper is to show that after all it is not the firm suturing of the fragments of fractured bones together that is necessary for firm union. By the open method, or that of converting a simple fracture into a compound one under strict aseptic principles, we have better results probably more by reason of our removing all substances which get between the bones and keep them apart than by uniting them firmly together; and no better example of this can be found in surgery than in the immeasurably better results obtained in patellar fractures by the open method of operating since the exact pathology became known, and the causes of non-union were better understood.

The well-known pathological dictum that "constant pressure causes atrophy" is surely applicable to all instances in which foreign substances are embedded in animal tissues, and one which must not be lost sight of in surgery.

An absorbable and non-irritating substance such as an animal tissue like catgut or kangaroo tendon, or even silk, if it fulfils our temporary requirements, is surely preferable to a metallic substance which may be latent for a time and cause trouble later.

THE SURGICAL TREATMENT OF CHRONIC GASTRIC ULCER.

By C. Mansell Moullin, M.D.Oxon., F.R.C.S.,
Senior Surgeon and Lecturer on Surgery, London Hospital; Examiner in Surgery, University of Cambridge.

No one, I think, will venture to assert that the results of our present method of treating chronic ulcer of the stomach are satisfactory. The direct mortality is certainly not insignificant. Haemorrhage alone, according to the statistics collected for me at the London Hospital by Dr. Cecil Wall, was responsible for the deaths of 6 per cent. of the women and 12½ per cent. of the men who were admitted for haematemesis arising from this cause; and perforation and suppurative peritonitis occur almost as often, not uncommonly at the end of a long course of treatment, just at the time when the patient is supposed to have been cured. The indirect mortality, whether it is traceable to the extension or cicatrization of the ulcer, or to the general deterioration of health, caused by years of pain and vomiting, is no less grave. And even when life is not sacrificed, the presence of an unhealed chronic ulcer of the stomach means that the patient is reduced to the state of a chronic invalid, unable to work, and forced, except perhaps in the case of those who can afford every luxury, to live in a state of constant suffering and of perpetual apprehension that something worse may happen at any moment. Pyloric and cardiac stenosis, hour-glass contraction, adhesions to the liver, pancreas, and other neighbouring structures, subphrenic and perigastric abscesses, dilatation of the stomach, and a host of other troubles are admittedly common sequelae; and beyond all doubt, the presence of a chronic ulcer of the stomach increases the liability to cancer, for this not infrequently develops at the site of an old and irritated sore. In short, it is no exaggeration to say that a patient with a chronic ulcer of the stomach—an ulcer, that is to say, that has become chronic in spite of the ordinary measures—is scarcely ever really cured. Acute ulcers may heal up and leave superficial scars, which never lead to any trouble, and may indeed be difficult to find. Chronic ones, on the other hand, often persist for years without an attempt at healing; and even when they do heal, the scars that follow in many instances cause such distortion of the stomach that the original troubles are perpetuated, and not uncommonly made worse by the contraction than they were before. Our museums are full of such specimens, taken from cases which, under the present method of treatment, have steadily progressed from bad to worse, until at last they have reached a stage that is beyond all hope of cure and no longer compatible with existence.

Perforation of a gastric ulcer is admitted by every one as demanding operation. Threatened perforation and serious haemorrhage are also regarded by most surgeons as not less definite in their indication. But I would go one step further. I maintain—and this is the point I wish to bring before you to-day—that every chronic ulcer of the stomach that persists and causes serious pain or vomiting, in spite of one thorough trial of the ordinary method of treatment, should be exposed, examined, and treated surgically before it has reached dimensions or led to consequences that render such a proceeding, I will not say impossible, but dangerous. Leaving the ulcer alone, and repeating the treatment which has failed already, simply means incurring a serious risk to life, a risk quite as great as that of an operation performed at this stage, with little or no prospect of a real cure. Operation, on the other hand, whether the risk to life or the recovery of function is concerned, is at this period most successful. The ulcer can be excised and a thin linear scar left, not interfering with anything or harming anything, and the rate of mortality ought not to be greater than that which attends interval operations upon the appendix; but it stands to reason that the operation must be performed within a reasonable time of the onset of the symptoms, before the patient has been brought to death's door by haemorrhage and prolonged starvation, or the stomach has been reduced to that hopeless state which is so profusely illustrated in our museums.

The stomach, surgically speaking, is as accessible and as amenable to operation as the appendix; perhaps more so, for the thickness of its walls, and the way in which the sero-muscular coat separates from the mucous one inside it, render the introduction of sutures peculiarly easy and safe. If it is wise to operate upon a patient for inflammation of the appendix because there is reason to fear another attack, it is certainly no less wise to operate upon a chronic ulcer of the stomach, which is always a source of danger, which is morally certain to cripple the patient for the rest of life, if it does not actually kill him, and which can be dealt with, in this stage, as successfully as an inflamed appendix.

Whatever may be the cause of ulcer of the stomach, whether it is of constitutional or local origin, or of both, there can be absolutely no question that the reasons for its persistence and for its extension are local, and local only. There may be around a pyloric ulcer, as in one of the cases upon which I operated, a mass of chronic inflammatory tissue as large as a tangerine orange—a mass that could be felt through the abdominal wall, and which, from the feel of it, might easily have been mistaken for a malignant growth. It had been present more than twenty years, and during the whole of that time the patient had never enjoyed one satisfactory meal. For twenty years she had been living, and trying to work, in a state of chronic starvation. There may be, as in another of my cases, adhesions to everything around, so that it was difficult to clear a spot upon the anterior surface of the stomach to which a loop of intestine could be attached. There may be on the posterior wall, or along the lesser curvature, a deep excavated ulcer, eating far into the substance of the liver or the pancreas, and laying bare the splenic artery, or even the aorta. Or there may be, under the present method of treatment, other even more extensive and hopeless lesions; but, whatever the original cause of the ulcers, their size and their persistence are in every case due to local irritation and local causes; and in every one of these cases there was a time in which the ulcer could have been treated and the patient cured by comparatively simple local measures, with a very small amount of risk.

The diagnosis may present some difficulty, it is true. I have elsewhere recorded cases of what I have termed recurrent ulceration of the stomach, in which ulcers occur again and again at long intervals of time, sometimes causing severe and even fatal haemorrhage. But these cases, in which the ulcers are acute and recent, can always be distinguished by the perfect freedom from pain in the intervals, a freedom which patients who suffer from chronic ulcer never enjoy for long. Carcinoma, again, may cause some difficulty. On several occasions I have met with a swelling at the pylorus as large as a tangerine orange and as hard as scirrhus, due to

years of chronic ulceration. But as the only hope at present of curing carcinoma rests upon the earliest possible excision, this can hardly be regarded as an objection. And lastly, there is occasionally some difficulty in distinguishing certain cases of chronic gastritis from chronic ulcer of the stomach; but I cannot help thinking that if the gastritis is so bad and so persistent as to be mistaken for ulceration, it had better be treated in the same way, and the stomach be given a prolonged period of rest by the only satisfactory method of draining it that is known.

The operation, if it is performed before the disease has been allowed to progress too far, presents no serious difficulty, and is attended by a very low rate of mortality. It is quite true that our museums are full of specimens of chronic ulcer of the stomach, in which it is obvious at the first glance that anything like operation would have been madness. But these are simply glaring illustrations of what never ought to be allowed to happen at the present day. They are the best possible evidence in favour of early operation.

The actual position of the ulcer on the wall of the stomach can very rarely be ascertained beforehand. Even whether it is at the cardiac or the pyloric end is usually little more than a matter of conjecture. There is nothing in the symptoms which can be relied upon as a clue. The length of time after food is taken before pain is felt, the locality of the pain, and the exact situation of the cutaneous hyperaesthesia so often present in these cases are all significant, but nothing more. In one of my cases in which the ulcer was at the pyloric end, food relieved pain for a time, and the same thing has been noted in other similar cases, but the connexion is not by any means invariable. But in the majority of cases, as soon as the abdomen is opened, simple inspection of the serous coat of the stomach is sufficient to show where the ulcer is. Acute ulcers often involve merely the mucous and submucous layers. Chronic ones, on the other hand, those especially which have lasted sufficiently long to resist one thorough trial of the ordinary remedial measures, nearly always cause some opacity of the serous surface, or bind the layers of the wall together, so that the sero-muscular coat cannot be readily separated from the mucous one when it is pinched up; or leave a scar, or show some evidence of past inflammation in the presence of adhesions. In only two of the fourteen uncomplicated cases upon which I have operated was there no evidence as to locality that I could find. In one of these the ulcer proved to be on the anterior wall, close by the incision which I had made into the stomach for the purpose of examining it. It was an indurated fissure with edges stained and thickened from old haemorrhages, lying at the bottom of one of the rugae; and though it had caused such pain and vomiting that the patient had lost more than one-third of her weight in the course of a few months, it did not extend deeper than the submucous layer. In the other the ulcer lay just outside the pylorus, so that it was really duodenal. The only part of the serous surface of the stomach that cannot be easily inspected is a small area on the posterior wall, near the cardiac orifice.

If examination of the serous surface of the stomach does not give a clue to the locality of the ulcer, the stomach should be drawn well outside the abdomen (as there are no adhesions this can usually be done without any difficulty), packed around with sponges, and opened in such a way that the incision may, if required, serve for an anterior gastro-jejunostomy later. If the angles of this opening are held well apart with four pairs of Spencer Wells's forceps, the opposite wall of the stomach can be inspected in detail; the mucous membrane covering the anterior wall can be everted and brought into the wound, bit by bit; and by introducing the fingers of one hand through an opening made in the layers of the great omentum, and working the wall of the stomach to and fro, nearly the whole of the cardiac end can be brought into view and examined. If this fails to show anything, the interior of the stomach, especially in the neighbourhood of the orifices, can be explored with the fingers, or, as I prefer, a full-sized vaginal speculum can be introduced through the wound, and then practically the whole of the interior can be unfolded and inspected. Even the cardiac orifice is visible in some cases; and if a sponge on a holder is pushed through the pylorus into the duodenum, and withdrawn, the mucous membrane on the duodenal side of the opening can be unrolled and brought into view. It was in this way that I saw a duodenal ulcer in one of the cases in which I failed to find a gastric one.

The treatment that should be adopted when the ulcer is found depends upon its position, its extent, and the number that may be present, for occasionally (though not often in my experience) there is more than one at the same time.

In every case in which it is practicable I am strongly in favour of dealing with the ulcer directly, in preference to performing gastro-jejunostomy. Posterior gastro-jejunostomy, especially with a lateral anastomosis between the two sides of the intestinal loop, is an excellent operation. The patients, as a rule, recover rapidly, without sickness; are able to take a fair amount of liquid food the next day; and are entirely relieved from the pain and other distressing symptoms so common in cases of chronic ulcer. If the ulcer is multiple, as it sometimes, though rarely, is; if it is near the pylorus or the cardia; or if it is so large or so deep, or if it has contracted such dense adhesions to structures around that removal is not practicable, gastro-jejunostomy may be the only resource. But when the muscular coat of the stomach is in good condition, and the outlet and the inlet are free, and the ulcer can be removed without interfering too much with the stomach, providing an additional outlet by performing gastro-jejunostomy is more than is required by the circumstances of the cases. Moreover, gastro-jejunostomy will not stop haemorrhage from an ulcer (there are, at least, two cases on record in which the bleeding has continued and proved fatal, and I have been informed privately of a third); and though it drains the stomach and gives the ulcer rest, so that it stands a better chance of healing than it can ever get under ordinary conditions, gastro-jejunostomy is certainly not as effectual either in curing the ulcer or in preventing the formation of a contracting cicatrix as removal of the ulcer itself.

The ideal mode of treatment is by excision. The wound caused in this way heals in a few days. The patient can be given liquid food in small quantities as soon as the vomiting due to the anaesthetic has ceased; and the scar left is a simple linear one, not likely to contract or lead to the development of adhesions. In one case I succeeded in excising the ulcer before it had involved the sero-muscular coat. In four others the whole thickness of the wall had to be excised and sutured. In three other cases I adopted a plan which had been recommended originally by Andrews and Eisendraht from experiments upon animals. The whole thickness of the wall was strangulated with a silk ligature. The ulcers in these three were situated upon the posterior wall, near the cardiac end of the lesser curvature, a situation in which, according to my present experience, they are more common than is usually believed. A hand was passed into the lesser cavity of the peritoneum, behind the stomach, and that part of the wall upon which the ulcer was situated was pushed into the interior of the stomach by pressing with one of the fingers, until it stood out as a projecting cone with the ulcer on its apex. A stout silk ligature was then tied around the base of the cone and tightened up as the finger slipped out. Two or three Lembert sutures were inserted on the serous surface as a precaution. These all did well.

In one case in which a ligature applied in this way did not hold, owing to the softened state of the mucous membrane, I sutured the base of the ulcer through and through, with success, in so far that there was no leakage. But the patient, who was in the last stage of exhaustion from haemorrhage before the operation, never rallied sufficiently for the wound to be repaired. I have never used the actual cautery, which has been recommended by some, though I can understand that it might be of service, as an addition to gastro-jejunostomy, if a bleeding point were found upon the floor of an ulcer which could not be excised or ligatured; and I have never found a chronic ulcer in which simple erasion appeared to me to be likely to be successful.

The success of the operation, both as regards the actual rate of mortality and the completeness of recovery, is simply dependent upon the condition of the ulcer and the state to which the patient has been reduced at the time of the operation. These cases may be divided into two classes. There are first, those in which the operation is performed deliberately, as a preventive measure, in intelligent anticipation of consequences, which are practically certain to follow. Of these I have had 23 with 1 death, a week after the operation from exhaustion. And there are those in which the operation is performed as a last chance, when course after course of medical treatment has been tried and failed, and when the patient is in the last stage of exhaustion, either from haemorrhage or from prolonged starvation, or from both. Of these I have lost 5 out of 15. Two of these, the details of which have been already published, were absolutely blanched and all but pulseless from

loss of blood. The other 3 gave histories of eighteen, twenty, and twenty-five years respectively of chronic starvation, with almost incessant pain and vomiting, and occasional haematemesis or melaena. One never rallied from the shock, though the operation only took half an hour to perform. In the other 2 the stomach was reduced to such a state from cicatrization and adhesions that ordinary gastro-jejunostomy failed to benefit them, and a second operation became necessary. The future of such patients is in any case very hopeless. It is possible that when they have reached this stage, it may not be wise to attempt to give them relief. It may be wiser to leave them to their sufferings, though these are sometimes so severe that the patient, as in one instance in my own knowledge, has preferred to commit suicide. The object of my paper is to prevent their production in the future by operating upon them before such a state of things has been allowed to develop, while it is still possible to effect a permanent cure with a very small and steadily diminishing amount of risk.

THE OPEN-AIR TREATMENT OF SURGICAL TUBERCULOSIS.

By EDWARD DEANESLY, M.D., B.Sc., F.R.C.S.,
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THE profound and far-reaching effects of what is popularly known as the open-air treatment of consumption are only just beginning to be appreciated. Having originated merely with an attempt to cure or alleviate a disease which afflicts every race of mankind, it has directed attention to the physical and social conditions which lead to it, and clearly indicates the direction in which reform is urgently needed if deterioration of the physique of modern urban communities is to be arrested.

What, then, is this great discovery embodied in the open-air treatment of consumption? Absurd as it may sound, it is nothing but the rediscovery of the *vis medicatrix Naturae* and of the value of unpolluted air. That the body possesses a certain power of recovering from illness and repairing wounds, and that pure air is beneficial to health, have always been familiar facts; but familiar facts are just those which are most constantly disregarded in practice. It is one of the great merits of the open-air treatment of consumption that it is rapidly popularizing the conception that polluted air is as much to be avoided as polluted water. More important still, has been the effect of the open-air treatment in refuting deeply-rooted superstitions as to the evil effects of exposure to atmospheric changes, and in directing attention to the real enemy—namely, dust and dirt, especially the organic dirt which emanates from the animal body.

There can be no great progress in public health until all classes recognize that the first essential of health is minute cleanliness of body, raiment, food, and dwelling-house. How far we are from this ideal, even among the well-to-do classes, every doctor knows.

Continuous exposure of the patient to the open air is the most striking feature of the modern treatment of tuberculosis, and has naturally most impressed the popular imagination. Popular impressions are, however, generally incomplete even when not quite erroneous, and this is no exception. The merit of the treatment of consumption as it is now carried out in a properly-organized sanatorium is that it is a deliberate attempt to treat a definite disease by a carefully-regulated hygiene complete in all details, of which the avoidance of atmospheric pollution is only one, though an important one.

The guiding principles are:

1. Atmospheric purity.
2. Abundant diet; and
3. Absolute rest or carefully-regulated exercise, according to the state and progress of the patient.

The value of these principles is naturally as great for those cases of tuberculosis which come under the care of the surgeon as for pulmonary consumption. In addition it may also be said that in cases of surgical tuberculosis, such as diseases of bones, joints, and glands, the *vis medicatrix Naturae*, the natural tendency to recovery, is distinctly greater than in pulmonary tuberculosis. This fact has long been recognized by surgeons, and is demonstrated by the success which has attended conservative methods of treatment of tuberculous joints by means of mechanical rest of the part affected, when the patient can be kept for a sufficient length of time in good hygienic surroundings. I am, however, convinced that much better and more rapid results can be obtained when local mechanical treatment of the joint is combined with general treatment on sanatorium lines.

The value of complete bodily rest in the open air is not sufficiently appreciated. The tendency, indeed, has been to favour the "ambulant" treatment of joint disease; that is, the affected joint itself being immobilized by a splint (a very difficult matter in the case of a hip) the patient is encouraged to use crutches and spend as much time as possible out of doors. No doubt this treatment is much better than keeping the patient in an ill-ventilated bedroom or a hospital ward, but the fresh air obtained is bought at the price of excessive fatigue, and a much more rapid cure can be obtained by keeping the patient for the first few months absolutely recumbent out of doors. This is true in cases of disease both of the hip and knee. In spinal caries the advantage of prolonged recumbency over a pretence of immobilization with a corset or plaster jacket is sufficiently obvious, at any rate until recovery is well advanced. Patients with tuberculous joints who have been treated by the ambulant method without improving, when made to spend the whole day lying down out of doors, almost invariably enjoy improved appetite and sleep and increase considerably in weight.

Sanatorium treatment, or home treatment on similar lines in cases of surgical tuberculosis does not, of course, dispense with the need for operative measures, but should be regarded as indispensable auxiliary treatment. The question of opening and removing tuberculous abscesses and foci is not affected by it except in so far as the chances of spontaneous recovery are favoured. It is, however, my own practice to deal surgically with every tuberculous focus which has demonstrably reached the stage of caseation as thoroughly as possible but to avoid excisions of joints. Another surgical measure, which should be always carried out when necessary before adopting the open-air recumbency is the removal of diseased tonsils and adenoid growths. A large proportion of children with tuberculous joint disease, and almost all those with tuberculous neck glands, have diseased tonsils and adenoid growths which, apart from their probable toxic effects, by the obstruction of the air passages cause an imperfect respiration.

Assuming, as I do, that the advantages of treatment on sanatorium principles will be hardly disputed, how is it possible to carry them out? Cases of surgical tuberculosis cannot be conveniently treated in sanatoria for consumption: nor is it desirable that they should be. There is, however, no difficulty in carrying out all that is required in any private house that possesses a garden, however small, where a rough open shelter can be erected, or even a tarpaulin suspended over clothes lines as a protection against rain. Here the patient can lie on a folding or camp bed in all weathers for at least eight or nine hours daily. If plenty of rugs or blankets are used, and a couple of stone hot-water bottles in cold weather, this may be done without the slightest discomfort. Even with hospital out-patients this plan can be carried out in a small back yard, provided the friends can be inspired to give the method a fair trial with sufficient confidence. I have been carrying it out now in a crowded industrial district for three or four years, and the improvement in the patient's weight and general appearance after a few weeks is astounding.

Instructions are also given as to keeping the sleeping room as bare and clean as possible and the window wide open. Everything, of course, depends on the extent to which the instructions are carried out. A good deal of expostulation and persuasion are required at first, but as soon as the patient has begun to experience the benefit of improved appetite and sleep no further difficulty is experienced.

The great and rapid gain in weight and strength which have almost invariably followed the adoption of these simple measures even where the patients have lived in the poor and crowded parts of a large manufacturing town, prove that the causes of ill-health are not all inherent to urban life and unavoidable. As every one knows who has devoted any thought to public-health problems, health depends far more on the inside of the dwelling-house and the habits of those who live in it than on the character of the outside scenery. Among the rural population tuberculous disease of all kinds is almost as rife as it is among their cattle, and is due to the same causes as in cities, namely, overcrowding of houses, especially of bedrooms, neglect of personal cleanliness, and a careful exclusion of "draughts" from the house. Whatever may be the merits of country air over that of cities, and the actual chemical differences are not great, the poorer rural classes enjoy no benefit from it within the house.

The poor always, and the well-to-do not seldom, love

warmth and are quite indifferent to foul air and bad smells. In combating tuberculosis, therefore, whether medical or surgical, is it not better to attempt whenever possible to teach the patient and his friends how to get well and keep well in his own house amid normal surroundings?

Life, a great philosopher has told us, may be lived well even in a palace. I am sure life may be healthy even in a city if cleanliness and wholesome habits be maintained. It is certain that life in this country will, in future, be predominantly urban, and if the conditions of cities become such as to render health impossible it will be of small avail to build country sanatoria for their inhabitants. It has lately been proposed and argued with much force that chronic tuberculous joint diseases should not be treated in London general hospitals, but in special hospitals built for the purpose at the seaside. Apart from the enormous cost of such a plan, is it a wise one? I say emphatically no. What is wanted is an organized system of district nursing to supervise the home treatment of patients discharged from the general hospitals and to provide extra foods and necessaries in cases of poverty. The indirect benefits of such a plan would be very great, and its cost would be trifling compared with the cost of housing and taking complete charge of the many thousands of cases of tuberculous joint disease existing in large cities.

Lastly, every general hospital should be provided with facilities for treating patients in the open air. The beneficial effects of this simple measure in cases of chronic burns and suppurating wounds of all kinds are very great. Many hospitals have already made some provision of this kind by means of flat roofs and balconies, and it is probable that in every new hospital means will be specially designed, which shall render it easy to move any patient's bed into the open air. In the case of the upper floors this can only be done by means of balconies or special platforms between adjacent blocks, but on the ground floor it should be quite possible to provide an exit from each ward by an inclined plane by which a patient could be wheeled in his bed into an adjoining open shed in the grounds. I know of no kind of treatment where so much benefit can be obtained at so little cost as by treatment in the open air.

REPORTS OF SOCIETIES.

CLINICAL SOCIETY OF LONDON.

FREDERICK TAYLOR, M.D., F.R.C.P., President, in the Chair.

Friday, October 9th, 1903.

EROSIVE GASTRIC ULCERATION, WITH SEVERE HAEMATEMESIS: OPERATION: RECOVERY.

THE following case was described by Sir DYCE DUCKWORTH:

E. W., aged 20, a book stitcher, was admitted to St. Bartholomew's Hospital on November 21st, 1902, suffering from repeated attacks of haematemesis. Pain had been felt after taking food for three weeks before admission, lasting about an hour, unaccompanied with vomiting. She had been treated eighteen months previously for "indigestion," with pain, but no vomiting or pyrosis. Several attacks of bleeding had occurred for the first time on the day of admission. The patient was blanched, the belly distended, and the epigastric region tender. Treatment consisted in rectal feeding, and small doses of adrenalin chloride, by the mouth, in teaspoonfuls of water. A dark motion was passed on November 22nd. Subsequently whey, in 2-oz. quantities, was given by the mouth, then in 4-oz. doses. A pint of saline solution was also daily injected into the bowel. On November 30th the pulse rose in frequency, and there was headache. The pallor increased. Dark motions were passed. On December 3rd she vomited 12 oz. of blood and watery fluid, bright red in colour. Two hours later 10 oz. of the same material were vomited. There was clear evidence of active and continuous gastric haemorrhage, and Mr. Langton and Mr. Butlin, who now saw the patient in consultation, agreed that it was advisable to operate at once and deal with the source of the bleeding. Mr. Butlin took over the patient, and, with Mr. Lockwood's assistance, opened the abdomen on December 4th, making an incision in the anterior wall in the long axis of the stomach. Nothing that could be called an ulcer was found on examining the interior of the organ, but in the greater curvature near the pylorus the mucous membrane over several square inches was found pink and markedly different from the rest of the membrane, which was of an ivory yellow tinge. At various points on this pink area were found slight excoriations, fissures, and tiny points from which blood slowly oozed. Mr. Lockwood ligatured nine of these points with fine silk thread with a pursestring suture, and the opening in the stomach was closed by a continuous silk suture embracing all three coats. The abdominal wall was closed by three layers of continuous silk sutures, the ends of which were left out at each end of the wound. The operation lasted three-quarters of an hour, and was well borne, not more than a drachm of blood being lost. Some vomiting followed the operation. On December 5th the temperature fell from 101° to 99°. Three ounces of acid green fluid were vomited this day, but no blood. Feeding was carried on by the bowel, while saline solution, one pint, with a drachm of liq. calcis saccharati in it, was administered by the rectum. By January 9th the patient was taking boiled fish, and on the 14th minced meat. By February 4th she was well, and went to the convalescent home at Swanley.

The condition of the gastric mucous surface discovered here was believed, Sir Dyce Duckworth said, by Dr. F. J. Smith and Mr. Mansell Moullin to be the starting-point of most, if not of all, gastric ulcers, and it was probable that if the haemorrhages dependent on it proved fatal in any instance the actual lesions would not be detectable after death.

Mr. MANSELL MOULLIN said he had read a paper on the subject three years ago before that Society; and had since then seen several cases. Bleeding from a chronic ulcer showed that it was spreading. He had done eleven operations on cases of erosive ulceration. The condition was rarely discovered, because, as he thought, it was either the prelude to the usual crater-like ulcer, or else it was invisible in the mucous membrane of the stomach after death. Operation should be undertaken before the patient had become too exhausted. During life a bleeding point might be found on the mucous membrane which after death might be invisible. Haematemesis was only fatal in about 3 per cent. of cases of gastric ulcer; whilst only about 10 per cent. were even considered severe. In other words 90 per cent., treated with adrenalin, suitable food, and rest in bed, recovered; and it was only the other 10 per cent., namely, the severe cases, which the surgeon saw. The cases which required operation were those in which there had been two severe haemorrhages, one following soon after the other; or cases of several small haemorrhages, which other treatment would not arrest. In most of his 11 cases the erosions were multiple. There seemed to be some pathological condition leading to consecutive crops of these erosive patches; and although the haemorrhage might be arrested by the operation it did not always stops its recurrence.

Dr. DE HAVILLAND HALL agreed with Mr. Mansell Moullin's views as to the indications for operation, but demurred to the statement that 10 per cent. of all cases of gastric ulcer were serious. In nine years at the Westminster Hospital he had never lost a case, nor until three months ago had he had a case requiring operation.

Mr. BARKER advocated gastro-enterostomy for these cases, as ligature of some ulcers, especially those in the smaller curvature, was difficult. When the stomach could easily empty itself into the bowel bleeding soon ceased.

Mr. WALLIS said that in two cases of perforating ulcer of the stomach he had been unable to find the opening on the outer surface of the stomach, but upon opening it the ulcers were visible at once, and were easily dealt with.

Dr. PASTEUR discussed the differential diagnosis between haematemesis from erosive ulceration and that from chronic ulcer. He said it was difficult; but with the former the bleeding continued, whereas in the latter it usually subsided under appropriate medical treatment without surgical interference. When the haemorrhage was actually going on, however, how could the diagnosis be made?

Mr. KEETLEY remarked that if operation for gastric haemorrhage was to develop, something much less difficult than that of cutting down upon and finding the bleeding points must be contrived. The operation practised by Mr. Butlin and Mr. Moullin was all very well when every facility was available, but was hardly practicable in general surgery. In a case of his own he had the greatest difficulty in locating the bleeding spot, even after the stomach was opened. Eventually he found the ulcer adherent to the diaphragm. He separated the adhesions and packed the cavity, and the patient recovered; but a few months afterwards she had to undergo gastro-enterostomy, and for three years now had remained quite well. Operations for perforating ulcer were done daily in cottage hospitals; but the detection of a bleeding ulcer was much more difficult. He advocated gastro-enterostomy for these cases; it rested the stomach—as the food passed away quickly, and it rendered the stomach aseptic, thus lessening inflammation—a prolific source of haemorrhage. Other things, also, might be done for a bleeding ulcer; it might be packed; or a simple jejunostomy (as advocated some years ago by Furner of Brighton) might be practised, through which the patient could be fed and the stomach rested.

Mr. BUTLIN said gastro-enterostomy had often proved quite efficient. Some surgeons also found the ulcer whilst others

did not; so that success depended partly upon the surgeon, partly on the ulcer. On some mucous membranes small naevoid spots might bleed enormously, so as nearly to kill the patient. He thought the best plan was to open the stomach, and, if the bleeding point could not be found, then do gastro-enterostomy. But to operate on the bleeding point itself was, he believed, the best surgery.

Sir DYCE DUCKWORTH, in reply, said that erosive ulceration had probably one appearance during life, another after death. Pyrosis was met with mostly in cases of chronic ulcer. Prolonged anaemia was commonly the basis from which ulcer of the stomach arose, while bad food and stays contributed to its production. The upper classes, who had plenty of wholesome food, had gastric ulcer far less often than the lower classes.

ACUTE HAEMORRHAGIC PANCREATITIS.

Mr. ANTHONY BOWLBY described this case.

The patient, a man aged 41, was seized with severe abdominal pain and vomiting on November 19th, 1902. During the next two days there was complaint of flatulence and constipation, and vomiting continued. The abdomen was tender, but no swelling could be felt. The bowels acted well to enemata. On the third day of the illness the patient became delirious, and from that time onwards suffered from delusions, the urine being greatly diminished in quantity. On the eighth day there was a sudden attack of pain with severe vomiting, followed by great and rapid distension of the abdomen and complete obstruction. To relieve this the abdomen was opened, some general early peritonitis with old adhesions, but no mechanical obstruction of the bowel, being found. A coil of the small intestine was opened to relieve the distension, but failed to save the patient's life. A *post-mortem* examination showed a very large haemorrhage surrounding the pancreas and extending down to the pelvic region. The pancreas also was engorged with blood, and there was general peritonitis.

Another case was described by Dr. FRED. TAYLOR.

A patient, aged 68, was admitted into Guy's Hospital on February 3rd, 1899. At a public house in Billingsgate he had ordered some rum, and had filled up his glass from a bottle supposed to contain water, and drank the whole. This bottle was afterwards said to contain oxalic acid of unknown strength. Emetics were given and he vomited freely. Though not apparently much affected at first, he afterwards became collapsed, tremulous, and cyanosed, but recovered towards evening. On admission he was suffering from emphysema and slight bronchitis, while the mouth and lips were slightly excoriated. The following day he appeared to be well, and left at his own urgent request. He went home by train a distance of five or six miles, arriving very feeble and ill, and two days later he returned to the hospital. He was then cyanosed, feeble, with rapid pulse and breathing. There was now no soreness of the mouth or epigastric pain, or pain on swallowing. His bronchitis was worse, and this became the prominent feature, with increasing feebleness of the pulse until his death on February 23rd. *Post mortem*, there was emphysema of the lungs, with purulent bronchitis and pleurisy. Ten ounces of blood were found in the substance of the great omentum, and the pancreas was in a state of interstitial haemorrhagic pancreatitis—enlarged, hard, and infiltrated with blood. There was no peritonitis and no fat necrosis. The kidneys were slightly granular.

Dr. Taylor discussed the relation of the condition of the pancreas to that of the chest, and to the ingestion of the oxalic acid. The entire latency of the pancreatic lesion was pointed out, the other two events combining to mask symptoms which might have been attributed to it.

Mr. BARKER said that the amount vomited was enormous in two cases which he had seen. Had either of the authors noticed this point in their cases?

Mr. BIDWELL had operated upon a case with symptoms similar to those in Mr. Bowlby's case. He had diagnosed pus in the gall bladder. This was found to be healthy, but a large swelling behind the foramen of Winslow was found, from which a quantity of fluid escaped. The vomiting thereupon ceased, and a month afterwards the patient was well. He died, however, not long afterwards with a temperature of 104.0° F., but no *post-mortem* inspection took place.

Mr. BOWLBY, in reply, said that the vomiting was the chief point in his case for several days, and was very often copious.

MEDICAL SOCIETY OF LONDON.

W. DE HAVILLAND HALL, M.D., F.R.C.P., President, in the Chair.

Monday, October 12th, 1903.

PRESIDENTIAL ADDRESS.

DR. DE HAVILLAND HALL, after some personal remarks, gave a retrospect of papers communicated to the Society since its foundation on diseases of the respiratory and circulatory systems, including intrathoracic aneurysm, malignant endocarditis, pneumonia, pleural effusion, empyema, pneumothorax, and pyopneumothorax, contributed among others by Dr. Gilbart Smith, Sir B. W. Richardson, Dr. W. W. Ord, Sir Douglas Powell, Dr. Sansom, Sir Andrew Clark, Dr. Churton, Dr. Hawkins, Sir William Broadbent, Dr. Samuel West, Dr. T. T. Whipham, and Dr. W. Ewart, which were alluded to in order to show the great value of the papers previously brought before the Society.

ADAPTATION AND COMPENSATION.

Dr. G. A. GIBSON, in communicating a paper on this subject, by way of illustration brought forward two outstanding examples of compensatory hypertrophy. He described the enormous increase in the size of the temporal muscle in cases of acromegaly in order to meet the great augmentation in size and weight of the lower jaw, and pointed out that the skull of the acromegalic patient manifested in that respect a distinct tendency to revert to the type of the anthropoid apes. Another example was taken from congenital heart disease, in which it was shown that when any communication existed between the systemic and pulmonic circulation of sufficient size to allow their pressure to become equal, the thickness of the two ventricles became equal, and showed therefore a retention of embryonic features. He then proceeded to take up the main subject of his paper, and dealt in turn with the blood, the vessels, and the heart. He showed that in true cyanosis there was a considerable increase in the amount of haemoglobin. The erythrocytes showed a great numerical increase, and the leucocytes were commonly increased in number as well. It was interesting to observe in this connexion that in cyanosis the haemoglobin index was usually reduced. The facts could only be explained on the theory of a compensatory adaptation which was brought about by an increase in the number of oxygen bearers to restore the balance disturbed by deficient aëration. It was shown that the increase in the erythrocytes was general throughout every part of the circulation, but more so in the capillaries than in the arteries, and more in the veins than in the capillaries. A glance was given, in passing, at the well-known hyperglobulism of lofty altitudes. This was usually regarded as a compensatory process also, but recent observations of Weinzirl were brought forward, which seemed to differ considerably from the work of all previous observers. He further mentioned a series of cases of persistent cyanosis, with enlargement of the spleen, described by several authors, and recently summarized by Osler. These cases had been claimed as a new disease, but the author showed reason to believe that they were probably instances of myocardial weakness. Turning to the blood vessels, Dr. Gibson showed that the principal alterations in the arteries seemed very commonly to have been assumed to lie almost entirely in sclerotic changes. He pointed out, nevertheless, that even Thoma admitted a compensatory hypertrophy of the tunica media might take place, and called attention to the observations of Russell on the connexion between hypertonus and hypertrophy of the middle coat. Many illustrations of this were given, and the structure of such conditions was contrasted with arterio-sclerosis. As regarded the question of arterial sclerosis, he agreed in the main with Russell's view that there was no evidence in favour of a previous dilatation of the arterial walls before the onset of the fibrous change. It seemed, on the whole, rather more probable that in malnutrition and toxic conditions the normal structure became transformed into fibrous tissue, exactly as was the case with the heart in analogous states. Turning, lastly, to the heart, the author brought before the Society a number of illustrations of compensatory hypertrophy, and showed, by way of contrast, some instances also of atrophy. He attempted to answer some of the questions arising from the consideration of cardiac hypertrophy as to whether a numerical increase or an enlargement of the individual muscle fibres played the most important part. From his observations he was certain that both processes occurred in almost every instance, but he was inclined to the belief that in cases of hypertrophy in early life real hyperplasia was the principal factor, while in later life a simple hypertrophy was more common. Illustrations in support of this belief were shown from adult and youthful hearts. In conclusion, the question whether a compensatory hypertrophy could occur in any way other than by increase of function was briefly considered. It had been asserted by Thoma that such might be the case, and in defence of his position he had cited the increase of one ovary or testis in early life when the other had been removed. This, however, necessitated the belief that this organ was functionless in early life, whereas the recent observations of Fehling, Thomson, and Merkel had shown that from an early period of fetal

life the form of the pelvis was diverse in the two sexes, which proved early sexual differentiation. It was probable that the ovary produced an internal secretion which was of specific importance in sexual development, and, unless Thoma had some better argument in favour of non-functional hypertrophy, it could not be accepted. The work of Bradford on the kidney and of Murray on the thyroid gland must be regarded as strongly opposed to the principle enunciated by Thoma.

After Dr. Mitchell Bruce had expressed the appreciation of the Society of Dr. Gibson's paper, Dr. Auld referred to the influence of high blood pressure in producing hypertrophy of the muscular coat of the artery, and to the fact that in arterial selerosis the vessel walls were often richly supplied with blood by the vasa vasorum; and Dr. Gibson replied.

British Gynaecological Society.—At a meeting of this Society held on October 8th, Dr. Heywood Smith (President) showed the following specimens, reading notes of the cases: (1) A large fibroid tumour in calcareous degeneration removed from a sterile married woman, still menstruating, though 50 years of age: the ovaries were cystic, and were first removed; an elongated pedicle attaching the tumour to the fundus was ligatured and divided, and, as the uterus was found to be studded with fibroids, a supravaginal amputation was then performed: the tumour was everywhere permeated with calcareous matter, and there was much difficulty in making a section of it: (2) pyosalpinx (? gonorrhoeal), enlarged and cystic ovaries, and parovarian cysts: (3) sclerotic ovaries from two cases, each marked by menorrhagia and dysmenorrhoea, but the ovarian envelope, in the one smooth, in the other corrugated like the surface of the brain.—Dr. H. Macnaughton-Jones showed specimens of (1) cirrhosis of the ovary; (2) degenerating fibroma from a patient approaching the menopause; (3) microscopical section of duct carcinoma from an isolated encapsuled growth deeply buried in the adipose tissue of the axilla; no other gland was involved: the mamma of the same side, weighing over 3 lb., was subsequently removed, but disclosed no trace of malignancy; (4) uterus and cyst of the broad ligament removed on account of recurrent haemorrhage from a patient who had previously undergone two laparotomies for cystic disease of the ovaries and broad ligament, and had regained good health; (5) temperature charts and tumour from a case in which an apparently perfect convalescence after hysterectomy in a woman of 55 was interrupted on the twentieth day by necrosis of the stump and cellulitis, leading to a hard infiltration extending half-way to the umbilicus. Fifteen days later, the condition of the patient being desperate, he made an incision from the pubes to the left iliac crest, and as aspiration failed he, without opening the peritoneum, carried his incision down into the pelvis and reached a necrotic slough and a cavity containing pus (not fetid). This was cleared out and disinfected, and with subsequent drainage the patient made a good recovery.—Dr. Bedford Fenwick showed a uterus with multiple submucous fibroids removed from a woman, aged 54, seven years after the menopause. For four years she had suffered from irregular, and sometimes profuse, haemorrhage, relieved but recurring after the removal of a polypoid growth projecting from the cervix, again by that of a hard, almost calcareous, growth, and similarly on several subsequent occasions. Lately the bleeding had become more profuse, the discharge more offensive, and she had rapidly lost flesh and strength. A soft, friable mass could be felt just inside the cervix, to the touch just like malignant disease. The temperature was 102°, and a pulse of 110, and from the history a diagnosis of sloughing intrauterine fibroid was made. The case exemplified the fallacy of supposing that fibroids did not grow after the menopause, and was interesting from the manner in which it suggested malignant disease. An earlier radical operation might have saved her much suffering, but she made a good recovery from the operation. In the discussion Mr. Mayo Robson said that he did not think that the calcareous degeneration of fibroid tumours could be explained by deficient circulation through a small pedicle; though generally superficial it was not always so. Dr. C. H. F. Routh and Dr. J. A. Mansell Moullin related cases of cellulitis analogous to that reported by Dr. Macnaughton-Jones. Mr. Bowreman Jessett deprecated the application of carbolic acid to the stump, and the closure of the cervical canal in supra-vaginal hysterectomy, and agreed with Mr. Robson in preferring properly prepared catgut to silk and silkworm gut for closing the abdominal wound. Dr. Richard Smith, Dr. Herbert Snow, Dr. J. Oliver, Mr. T. Rushbrooke, Mr. Skene Keith, and Dr. F. A. Purcell also spoke; and the President and Dr. Macnaughton Jones shortly replied.

Pathological and Clinical Society of Glasgow.—The first meeting of the session 1903-4 took place in the Faculty Hall, Glasgow, on October 12th. The President, Mr. A. E. Maylard, occupied the chair.—Dr. J. K. Kelly showed (*a*) a specimen of hydronephrosis which simulated a parovarian cyst, (*b*) specimens of uterine myomata removed by operation.—Dr. A. N. MacGregor showed a patient, a girl of 15 years, with a large diffuse venous naevus of the thigh. It had been increasing in size, but treatment by ligature of several of the largest veins had led to considerable consolidation and apparent arrest of the growth.—Dr. John Patrick showed a specimen of a large congenital umbilical hernia. The sac ruptured about 36 hours after the birth of the infant and was therefore removed, the hernia reduced and the wound closed. The patient died apparently from shock in a short time.—Dr. R. Barclay Ness described the clinical features of a case which presented *post mortem* a chronic gastric ulcer and miliary tuberculosis. Specimens from the case were demonstrated by Dr. A. R. Ferguson.—Dr. J. MacGregor Robertson demonstrated a new form of haemoglobinometer, devised by Dare, of Philadelphia, which appeared capable of particularly easy and rapid application.

North-East London Clinical Society.—The above Society opened its fourth session with a meeting held at the Tottenham Hospital on October 8th. The President (Dr. J. W. Hunt) was in the chair. Dr. G. E. Herman read a paper on Midwifery from the point of view of Preventive Medicine, and a discussion followed. The officers of the Society for the session 1903-4 are: *President*, Dr. J. W. Hunt; *Vice-Presidents*, Dr. F. H. Daly, Mr. W. Edmunds, Dr. F. de Havilland Hall, Dr. R. Murray Leslie, Dr. E. Hooper May, Dr. J. S. Sequeira, Dr. T. Gilbart Smith, and Dr. F. J. Tresilian; *Treasurer*, Dr. Arthur Giles; *Council*, Mr. C. Billson, Mr. R. P. Brooks, Dr. S. E. Dove, Dr. R. E. Foott, Dr. E. A. Lermitte, Dr. G. N. Meachen, Dr. D. Petty, Dr. A. S. Ransome, Mr. T. Rushbrooke, Mr. R. F. Tomlin, Dr. A. J. Whiting, and Dr. C. H. Wise; *Secretaries*, Mr. H. W. Carson, 26, Welbeck Street, W., and Mr. C. E. Hutt, Bruce Grove, Tottenham, N.

Association of Registered Medical Women.—A meeting was held on Tuesday, October 6th, Miss Webb, M.B. (President), in the chair.—Miss Cock, M.D., showed a case of syringomyelia, and Miss Roberts, M.D., gave notes of a case of the same disease.—Mrs. Scharlieb, M.S., M.D., read a paper on the differential diagnosis of miscarriage.—Mrs. Boyd, M.D., spoke on uterine fibroids complicated with pregnancy.

Torquay Medical Society.—At the opening meeting on October 9th, Dr. J. H. Harris, President, in the chair, forty-one members and guests being present, an address was delivered by Mr. W. Watson Cheyne, C.B., Professor of Surgery at King's College, on Modern Surgery, in which the lecturer insisted that the great advances in operating surgery, after the introduction of asepticism, were due to what might be summed up in the one word "thoroughness," illustrating this by numerous cases out of his own practice covering nearly the whole range of operating surgery.—The annual dinner was held in the evening, and was well attended, Mr. Watson Cheyne being the chief guest.

American Medicine publishes a description of a new hospital car which is running on the Galveston, Harrisburg, and San Antonio Railway. The greater part of the space is taken up by the operating room, the only furniture of which consists of an operating table and two combination cots and stretchers. Six more of the latter are stored in a compartment under the car. These are all adjustable to the operating table, so that in case of a wreck it is possible to carry the injured to and from the table without making any change of cot, which is always a matter of distress to the victim. The room is thoroughly equipped with all the necessary instruments for performing ordinary operations. The remainder of the space on the car is devoted to a parlour and a kitchen. The parlour has two berths and a sofa which can be used in an emergency as a bed. This room will also accommodate a couple of cots.

REVIEWS.

DERMATOLOGY.

DR. MACLEOD'S *Handbook of the Pathology of the Skin*[1] might be described as complementary to the well-known treatises on diseases of the skin, in which a number of practical and histological details are necessarily omitted. The reader will find much valuable and interesting information concerning the cellular elements which build up the integument, whether healthy or diseased, and in this connexion the paragraph on plasma and mast cells may be mentioned. Besides this there are instructive chapters on the technical methods employed in the investigation of morbid skin conditions, and on the apparatus used: on biopsies or removal of portions of diseased tissues from the living subject, together with details as to fixing, hardening, and staining them. All this is well brought up to date, especially as regards modern methods of staining. The various component structures of the skin are reviewed and clearly dealt with in an orderly manner; the chapters on these subjects cannot but repay the student (using the word in the sense that medical men worthy of the name are always students), the more so as the text is illustrated by the author's excellent drawings, eight of the forty plates being in colours. One or two criticisms may be permitted; the extension of the term pemphigus neonatorum to the congenital bullous syphilide (p. 107, footnote 1) is confusing, as the former term, strictly speaking, is only employed for the non-syphilitic bullous eruption observed in infants. It is not quite correct to include lupus erythematosus (p. 186) among the scar-leaving diseases, although this is qualified by the statement as to the rarefaction and degeneration of the collagen. A distinction should be drawn between true scar formation and atrophy. As to the bacillus leprae (p. 346), it has been found in the spinal cord (Chassiotis, Babes). It would be better not to use the same term—tinea imbricata—for both disease and fungus. The foregoing are, however, minor points. Taking the book as a whole, Dr. Macleod is to be congratulated on having produced a work at once original in design and well arranged for the purpose in view. It can be recommended not only to those specially interested in dermatology, but also to workers engaged in general pathology.

The first two parts of Dr. PRINGLE'S edition of Professor JACOBI'S *Portfolio of Dermochromes*[2] contain 42 plates. The illustrations are as a rule well selected and faithful to Nature. It has been the aim of Professor Jacobi to supply representations of the diseases of the skin most frequently met with in practice. Teachers will find the portfolio form suitable for demonstration and for handing round. It would have been well had distribution been brought out, in psoriasis and pityriasis rosea for instance, instead of showing merely a very limited area of the disease. The figure representing ichthyosis does not show that disease as more commonly met with. It may be noted here that those who consult the *Portfolio* would do well to have a reliable treatise on diseases of the skin at their elbow to supplement the necessarily scanty text. The statement that simple purpura rheumatica is a perfectly harmless affection may be misleading. The fact is that haemorrhages into the skin must always be regarded with caution and dealt with accordingly. As to the plates representing small-pox, Dr. C. Killick Millard's letter in the BRITISH MEDICAL JOURNAL of April 18th last should be read in order to correct the erroneous impression conveyed in the statement that in vaccinated individuals variola never assumes a severe form.

Professor FINSEN'S pamphlet on the struggle with lupus vulgaris[3] deals chiefly with statistics. From November, 1895, to January, 1902, 804 patients were treated in the Finsen Institute at Copenhagen. Of these, 412 have been cured, for 124 kept under observation for two to six years have shown no recurrence; 288 patients under observation for less than two years are in the same case. The other figures are: Practically cured, 192; still under treatment, 117; with 91 doing well, and 26 improving but slowly or with temporary benefit only. The remaining 83 cases are made up of: Unsatisfactory results, 16; died, 31; or suffering from concurrent diseases, 44; and treatment interrupted owing to unavoidable circumstances, 23. As in this country, the bulk of the sufferers are not well off. It has therefore been necessary to appeal for funds to carry on the treatment, which is slow. Private individuals (Mr. Hagemann and Mr. V. Jorgensen especially), the city, and latterly the State, have kept the institute going. The plates are photographs of actual cases, showing the condition before and after treatment. Professor Finsen insists on the importance of employing the large apparatus.

A volume on *Diseases of the Skin*,[4] forming part of Kimpton's series of modern textbooks, is from the pen of the Professor of Dermatology in the St. Louis and Missouri Medical College. It is a succinct survey, much on the same lines as other small American books treating of the subject, and that is about all that can be said of it. The illustrations vary in usefulness; some will not be of much assistance to the student.

OTOLOGY.

A NEW translation into English of Professor POLITZER'S well-known *Textbook of the Diseases of the Ear*[5] has been prepared, as we gather from the preface, at Vienna under his own direction. It will be remembered that Dr. Paterson Cassells, of Glasgow, translated the first edition, and that the third was rendered into English by Dr. Dodd. The new translation, in which Drs. Ballin and Heller have had the benefit of the help of Dr. Law, seems very satisfactory. As regards the work itself it is almost needless to say much, except that in this edition it is brought well up to date. When we consider the enormous strides otology has made in some departments, such as the surgery of the ossicles and of the mastoid, since the publication of the first edition in 1878, we are struck with the amazing industry of the author in keeping the work constantly up to date. The number of illustrations alone has increased from 106 to 346 in the present volume. Professor Politzer states that he has only obtained a limited success from extraction of the malleus and incus in chronic suppuration of the middle ear. He thinks, therefore, that this operation is indicated only in those cases in which there are neither subjective nor objective symptoms which indicate the laying bare of the accessory cavities of the middle ear. He is of opinion that extraction of the stapes is contra-indicated during the progress of a middle-ear suppuration on account of the risk of extension of the suppuration to the labyrinth. Extraction of the stapes after an exhausted middle-ear suppuration will, on the other hand, he thinks, be an operation of practical importance in the future. The translators have substituted for the requirements in reference to hearing for admission to the army and navy of Austria and Germany, those of the army and navy of the United States and Great Britain. The latter are less detailed than the American rules, and might in some respects be improved. The author points out candidly the many lacunae existing in our knowledge of the diagnosis and pathology of ear diseases, and this is especially noticeable in the latter part of the work treating of the internal or sound-perceiving portion of the ear. We notice that the value of the work done at the London Otological Congress of 1899 is fully recognized, and there are frequent references to papers read at that meeting throughout the work. The new edition fully maintains the reputation of the book as a valuable work of reference to otological students and practitioners.

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[1] *Practical Handbook of the Pathology of the Skin.* By J. M. H. Macleod, M.D., M.R.C.P. London: H. K. Lewis. 1903. (Demy 8vo, pp. 408; 40 plates. 15s.)

[2] *Portfolio of Dermochromes.* By Professor Jacobi, of Freiburg-i.-B. English adaptation of text by J. J. Pringle, M.B., F.R.C.P. In four parts. Parts i and ii in one volume. London: Rebman, Limited. 1903. (Demy 4to, pp. 80, 42 coloured plates. 50s. complete work.)

[3] *Die Bekämpfung des Lupus Vulgaris* [The Struggle with Lupus Vulgaris]. Von Professor Niels R. Finsen. Jena: G. Fischer. 1902. (Demy 8vo. 1.6, 24 plates. M. 2.)

[4] *Diseases of the Skin.* By Joseph Grindon, Ph.B., M.D. London: H. Kimpton, 1903. (Demy 8vo, pp. 376, 39 illustrations. 7s. 6d.)

[5] *A Textbook of the Diseases of the Ear.* By Professor Dr. Adam Politzer. Translated and edited by M. J. Ballin, Ph.B., M.D., and C. L. Heller, M.D. Fourth edition. London: Baillière, Tindall, and Cox. 1902. (Demy 8vo, pp. 900; 346 illustrations. 25s.)

IRISH POOR-LAW MEDICAL SERVICE.—We learn from the *Enniskillen Reporter* that the guardians of Ballyshannon, after spending about £30 on advertising, have at length secured a medical officer for the Kinlough Dispensary District at a salary of £130 per annum. It is stated that this post has been accepted by Dr. J. Frazer Allen, described as of Nottingham, but from the entries in the *Medical Register* and the *Medical Directory* for 1903 it would appear that this gentleman was a student of the Royal College of Surgeons in Ireland and was registered last year in Dublin.

THE MEDICAL ARRANGEMENTS IN THE SOUTH AFRICAN WAR.

(Continued from page 984).

Evidence of Civilian Surgeons.

Sir Alfred Fripp, C.B., C.V.O.

Sir Alfred Fripp stated that he went out to South Africa in February, 1900. He went in the first instance to Cape Colony. He did most of his work at Deelfontein, near De Aar. They took a large hospital out there; that was the Imperial Yeomanry Base Hospital with 520 beds, eventually enlarged to 1,000. He also travelled about a good deal and visited nearly all the hospitals in Cape Colony, including Kimberley and Mafeking, and in the Orange River Colony up as far as Kroonstadt, and most of them in Natal as far as Ladysmith. Asked to compare the Yeomanry Hospital with one of the regular hospitals, the witness pointed out that they had the great advantage of being always able to get anything that money could buy on making a reasonable representation to the Committee at home. That was one of the difficulties that the Royal Army Medical Corps laboured—and he supposed must always labour—under. There was no way of doing away with the difficulty of having to get requisitions signed by a superior officer before an expensive demand could be carried out. It was therefore unfair to compare the hospitals of the Royal Army Medical Corps with the voluntary ones. He thought, however, the base hospitals were as good as in the circumstances they could have been expected to be. He thought that, subject to that condition, the regular hospitals would have been well managed if there had only been a stronger brain-piece at the head of the Medical Department. The witness proceeded: "But when you have a brain-piece that hesitates to check small abuses which evidently may grow—such as difficulties with ladies and so on of which you have heard—or who does not see how such interferences tend to mix up all sorts of petticoat questions and ruffle the backs of the nurses, who should be left quiet to do their proper work unmolested, then, of course, difficulties must arise." Asked upon whom the responsibility really rested for that state of things, Sir Alfred Fripp said: "One of the things that I should like to be allowed to speak openly about here is the fact that all the senior officers, from the principal medical officer, who was the most charming gentleman (Sir William Wilson), downwards through all the senior officers, are impressed with a sort of feeling, first of all, that their service is looked at askance, that their branch is secondary; and next, that they must not approach any general commanding officer, and certainly not one who has a title, without their knees chattering together with alarm and fright; they must not think of advising him that it really would be for the good of the army if a camp was not pitched on a certain proposed site because it is covered by stinking horses in various stages of decomposition. My impression is that Lord Roberts would have been only too delighted if somebody had warned him by saying to him: 'I am sure such and such a site is already fouled by the enemy's camps; do not you think, my lord, it would be better to put your camp a little further out?' But there is a general shirking of taking any responsibility of that kind, taking any initiative, and daring to do anything that is not already laid down in the regulations: and I daresay that that general fear has a good deal of foundation in what has happened to individuals who have dared to exceed regulations in the past." Asked if he thought that if the army medical officers were rather more of doctors and rather less of soldiers, they might show a little more courage in dealing with the commanding officers of the army, he said that was the direction in which the Advisory Committee was working now and a great many reforms had already been brought about in the Royal Army Medical Corps since the war. Asked if he thought that officer's rank was essential, he replied: "I always hoped that it was not, and I went out to South Africa very strongly hoping that it was not, but I am under the impression now, after visiting a number of military hospitals there, and in England also, that we should not be able to to get on without the doctors having definite rank, and the badge of rank. I do not think that the Royal Army Medical Corps wish it so much themselves, as that it is essential for ordering the non-commissioned officers and men about, and getting proper deference from them. I hoped that it was not so, but I think it is." Speaking of the reforms accomplished by the Committee, Sir Alfred Fripp said that: First, that they had got the good man in; and, secondly, that they had provided for his being able to come to the front more quickly. Another great point which tended to make a man a doctor first and an officer later was that they only examined him now in strictly medical subjects, so that a good young doctor came out top, whereas a little time ago a man might beat him by being better at French and German, and other subjects of minor importance. Then, again, greatly improved status had been given to the Director-General. "It is not, of course," said Sir Alfred Fripp, "for the flattering of the individual that that is important, but it is because every member of the corps, even down to the latest-joined orderly, is proud to be able to nudge his girl in the street and say, 'there goes our chief in the King's procession'—that does make a difference." In reply to further questions, the witness stated that under the new regulations the army medical officer would have increased facilities for gaining experience. Till now he had had no chances of keeping himself in touch with modern improvements, except such as he had made for himself. And if he had shown keenness by making opportunities for himself, he had got himself disliked thereby by the colonel in command. That was seen in many a confidential report. As soon as a man became colonel in command of a base hospital he ceased to be a doctor at all; he became a purely administrative officer. Asked if he did not think this a drawback to the rank, Sir Alfred Fripp said it was the greatest possible drawback. "Sir Frederick Treves, for instance, supposing he was in the Royal Army Medical Corps, or any other eminent surgeon, unless he happened to be appointed professor of military surgery at the Medical Staff College, would not be able to take any post except an administrative one. On the most favourable supposition this administrative post would be that of principal medical officer of a large hospital, and then he would have two lieutenant-colonels under him, one the chief surgeon, and the other the chief physician, but the great surgeon himself would be so inundated with administrative work that he would not be able to find time for the actual practice of surgery." Asked if the Advisory Board had attempted to grapple with that subject, he said they had done so, but he was afraid the attempt had failed, because there must be some alternative. Who was to have command of these general hospitals? Personally he would be quite content to have simply an Army Service Corps officer to do the administrative work. Asked why administrative officers should dislike a keen young officer who endeavoured to improve himself outside the corps, he said he did not think they would much longer, but there was no doubt that at the present time there had drifted up into the senior ranks of that corps a body of men who should not be taken as representative of the better class of the medical profession. For many years the corps had only tempted in the weakest of the profession. Some others had gone in, but he thought the corps had opened its doors specially to the weakest. Those comparatively weak men had drifted up into command, and they were now suffering from "swelled head," and had gone about much more bent on exacting salutes from everybody under them, and similar trifling matters of that kind, rather than with any keenness as to scientific matters. One very eminent gentleman had said, "Oh, the Royal Army Medical Corps. Yes, I will undertake to make an excellent corps of it if you will let me tear out the first two pages from the Army List." That was unnecessarily drastic. There were several very excellent men in the first two pages of the Army List, but it remained true that from the lower ranks many weak men who would not be admitted under the new regulations had drifted up to the higher administrative ranks in the corps. With regard to female nurses, Sir Alfred Fripp said there was a complete want of realization both in South Africa and at home as to how much use nursing sisters could be, also as to how big the need for accommodation and open-minded administration had become. Asked as to the equipment of the army surgeons in South Africa, Sir Alfred Fripp said that, generally speaking, the instruments and other appliances were quite inadequate. At first they were old-fashioned because they had an old-fashioned head-quarter staff of the Royal Army Medical Corps. They improved as they went on; then surgeons could get pretty well anything they requisitioned for. Sometimes there were very long delays, but on the whole he thought the instruments were quite adequate, and the equipment. Surgery was a very secondary matter in the part the medical profession ought to play in war nowadays. There was an enormous amount of lopping off and carpentry done in field hospitals just after and during a battle, but such rough surgery did not require any elaborate instruments. And it was the same with anti-

septics; if you had antiseptics you had no water, and if you had water it was commonly insufficient and bad. The surgery proper was done at the base hospitals, but very little was done even there. Most of the cases could be sent home to England; at any rate, most cases of difficult surgery really needing an expert operator. This touched the all-important point which he wanted to be allowed to bring out in his evidence with regard to the position of the Royal Army Medical Corps and of medicine in any future war. It was that the medical profession could be of enormous help to the combatant ranks if the latter would only realize how much the profession could do now to prevent disease; that was the great point, and therein lay the hope of their being able to help our country to win its next war. The means were sanitation and hygiene, of which they did not understand the merest elements. Tommy did not understand it because he was not taught it, and he was not taught it because the officer looked askance at it and regarded it as just a fad. The Advisory Board, through the Director-General, had recommended the Secretary of State that combatant officers should be educated in the elements of hygiene, and he thought that was a most essential point. If only the combatant officer could be interested in just the elements of hygiene and sanitation, then he would see that his men obeyed the elementary laws of personal health as to boiling the water, and so on, when it could be done. It was, he feared, useless talking of boiling all the drinking water with mobile columns or out on picket duty; it never could be done. It could be done in any considerable garrison or standing camp or large hospital, and there it should be done; but it was not, at least during the first year of the war when he was in South Africa. That was a point where the medical profession could be of great use, and it might strengthen the hands of the Commander-in-Chief, if only he would let them help to prevent disease. What they could not get the authorities to see was the strategic importance of it, which came out very prominently if the figures were examined. If one looked at the number of patients sick in Bloemfontein, and then calculated how much it cost the nation to put each one of those men at the front, he believed it worked out at about £100 a man, and they went sick by scores and hundreds from a disease which was to a large extent preventable. Let them consider how much sooner Lord Roberts's hands would have been free to move from Bloemfontein, and dash after the Boers up towards Johannesburg if it had not been for that heavy epidemic; and if he had been able to make that move forward earlier it would have saved the nation a considerable number of men and a correspondingly large amount of money. Asked what there was to prevent the Director-General of the Army Medical Service from dealing with that problem years ago, Sir Alfred Fripp said he thought it was quaking of the knees. That was a disease from which the responsible medical officers all suffered; they were all afraid to go to their commanding officer and ask for an interview and make suggestions. He meant they were afraid to go to the head people; they would only dare to go up through the channels through which the regulations gave them the right to apply. The eminent surgeons, from Sir William MacCormac downwards, who volunteered to go out received every encouragement from the army authorities. He did not know whether many physicians volunteered, but they would have been delighted to go if they had been asked. They were certainly not encouraged to go in the early days. He was looked upon as a crank for taking a physician out with him. One comment that he remembered was: "Take as many surgeons as you like; but, my dear fellow, the one thing that our officers do understand is the treatment of enteric." "Well," said Sir Alfred Fripp, "they do not: at least, they did not. They do now that they have had an enormous experience, but they did not understand how even to write its name down in the slightest cases, because they called it 'simple continued fever' unless it had very marked symptoms; and they allowed that man with simple continued fever to go about and infect other people, and the other people so infected might have the acutest enteric. Dr. Washbourn went with me, and was of the greatest use. He was afterwards appointed Consulting Physician to the Forces by Lord Kitchener. Another thing they did not understand among modern methods was the enormous practical advantage of having steam disinfectors at each large hospital. All the excreta from typhoid patients ought to be destroyed in some way. At first they did not make any systematic efforts to destroy them, and that was the chief reason why the disease spread so rapidly and so widely. Disinfectants were used and they knew how to use them. It was always rather an individual opinion, of course, as to what were the best to use." As regards the organization in time of peace of civil surgeons as a Royal Army Medical Corps reserve, he said, first, that the civil profession was the natural reserve for the Royal Army Medical Corps, and he was not anxious to see any systematized effort made to draw up a large number of lists of names of doctors and nurses and students who would be willing to go out to the next war. What they wanted was the young house-surgeon, who had just left the work of the big schools, and they could get him by the shoal, and at very short notice. That at least had been proved by the late war. He thought the worst kind of doctor for the purpose was the doctor who had been out of practice for a few years, and then came back. The second point about organization in time of peace was that he did not hold the view, for very similar reasons, that an effort should be made to get each big civilian hospital to keep up in time of peace a small organization that should be ready to be sent to the seat of war. He did not think it would work. It was better that a reserve of material should be kept, and that *personnel* should be picked up rapidly from among the most energetic men in the civilian schools at the time. That was what happened in the late war. There was never any lack of civilian surgeons. There was a great deal of clumsiness in the choice of them. They could have had a much better class of civil surgeons if they had troubled to ask the authorities of the hospitals to select them; £365 a year was, of course, enough to tempt in many loafers who were not good enough for general practice, and so again they were appealing to the lower grades of the profession. As regards the supply of nursing sisters and their functions, he said they must be limited to the base and stationary hospitals. He did not believe in their going to the front with the mobile field hospitals. They would be a handicap upon the movements of the general, and would be of very little use at the place of battle. He was satisfied now that the Board had got a grip of this question. Asked if he would approve of civilian sick being admitted in the large military hospitals, he said that at the present time they would not come; the difficulty was to get even the wives and children of non-commissioned officers and men to come in. The military hospitals were too much like barracks or workhouses. It would take time to live down the feeling that there was among the non-commissioned ranks as well as the commissioned ranks against the Royal Army Medical Corps. It would take a long time before they would realize that the Royal Army Medical Corps was efficient. With regard to the distrust of army doctors amongst military officers, he said that they must try and live it down, and in time they would succeed. During the last month he had visited the military hospitals at Aldershot, Netley, York, Portsmouth, and Gosport, and in every case he found that considerable expense must be incurred before the hospital could be brought up to date as such. Several of them had not got an operating theatre at all, and not one had got a proper upward flushing jet of water to wash out a bedpan, for instance. The putting in of those fittings would cost a good deal of money, and if the Commission could possibly strengthen the hands of the Advisory Board in its endeavour to get control of a few thousand pounds, they were only too willing to go round the country and see that that money was properly spent on one or two military hospitals each year, and so gradually they would get them all up to the standard of the twentieth century. They wanted the Government to give them about £20,000 a year, for the next few years, to bring the military hospitals up to a state that would make them fit to be called hospitals. They wanted sanitation to be a compulsory part of the education of combatant officers, and the Advisory Board had reported to the Secretary of State to that effect. Right up through the different grade examinations that he had to pass prominence should be given to sanitation because of its strategic importance. Asked if it was not very important that the young doctor should if possible know both German and French for the purpose of his profession, he said it was valuable, no doubt, but everything essential was translated nowadays. The British Medical Journal, for instance, every week had four pages reserved for those cases reported from the Continent in English. A medical officer had to be a general practitioner; he could only in a very few instances be a specialist surgeon or physician, and he had such an enormous amount already to read and do and carry in his head that he would not be inclined to insist upon his showing proficiency in any subjects not absolutely essential. In reply to a question Sir Alfred Fripp said undoubtedly, a very large

percentage of the corps loved their profession. On the other hand there were a large number, who had been attracted by the fact that once in the corps there they could stop and draw steadily increasing pay, and after twenty years' service get a pension, and they knew that they would not be kicked out for anything less than gross misbehaviour. He took a dental surgeon to South Africa upon the staff of the Imperial Yeomanry Hospital, and he was also rash enough to take a masseur, and they said he was completely mad for taking both of those persons. But he had no hesitation in saying that that masseur was of more help to Lord Roberts's army than any individual medical man, physician, or surgeon in South Africe, He paid as many as fifty-one visits a day, and was in enormous request, and he did a great deal in shortening the time, and in getting men back to the front quickly. The way in which he curtailed the stay of patients in hospital helped the State more than did the work of any individual surgeon in South Africa. There, again, they were promptly copied, and masseurs were appointed to many different hospitals, or berths were found for them in some unofficial way. He found the same value, practically, from having a dental surgeon. They had a dental surgeon at Aldershot and Woolwich, and were experimenting as to the cost, and the amount of work that they would be called upon to do; it was a very difficult question. The Advisory Board had advised restoration of sanitary officers to advise the combatant officers. Asked if he did not think they got the very best young men graduates from the different schools on the old system, Sir Alfred Fripp replied, "Oh dear, no. There would be a few quite good ones, certainly, but the majority of them were shocking. They were so shocking that we have made it one of our regulations that the candidates have to appear personally before the Advisory Board, and out of those seventy-six we stopped nine from going on for the examination at all, merely on account of their appearance and behaviour and their general illiterateness; it appeared impossible ever to make them into fit officers to bear the King's Commission and to do credit to the corps. That is what we are so very anxious about—to live down the feeling which undoubtedly exists among the combatant branches that the army doctor is not a gentleman." Asked if he had ever contemplated what they would do at the Advisory Board if by any chance they had an unsympathetic Secretary of State, the witness said he had not; but it was a truly terrible contemplation. They had no means of utterance beyond the walls of the room in which they met, but he rather imagined that if the civilian members were all to resign that would have some effect. At present the Permanent Under-Secretary of State saw their advice first of all, then the Commander-in-Chief, and then the Secretary of State, and then each of them minuted it and returned it to the Board, and so far they had always accepted their recommendations. If a sum asked for were refused they had no means under the present system of letting anybody know that they had made the recommendation. Proceeding, he said the public could not be got to take an interest, as they did, in the fact that £500 a year to endow a library and a journal would indirectly do much to further reform and prevent a repetition in the future of the state of things that stirred them so deeply a few months ago. They were trying hard to get this. They were told that it should go down in the Estimates for 1903-4. Asked about Lady Howe's book on the Yeomanry Hospitals, he said he had refused to have anything at all to do with the production of the book. He knew that it contained many misleading statements. He regarded it as a perpetuation in print of a great deal of the spirit that should never have been evoked at all in the war and which one would have imagined would at least have been excluded from having any weight in the management of a large hospital financed by public voluntary subscriptions. He knew for a certainty that a whole lot of the statistics were not right. They were simply "cooked" so as to make an impressive number of figures. He knew that a whole lot of statements as to services rendered and that kind of thing were simply and absolutely untrue. He was asked to verify the statements and said that he would not. He went out as chief civilian medical officer and senior surgeon of this big hospital. He was responsible for its being increased from 100 to 520 beds, and he had the choosing of the medical staff, including the Royal Army Medical Corps commandant and the nurses. He had in addition the responsibility of choosing or of ratifying the choice of all the equipment, which involved an expenditure of nearly £100,000. Further, he had to plan the establishment and the working of the institution, and he was responsible for all the features in which it differed from the military hospitals and broke new ground, and after eight months of such work he did not feel inclined simply to write his article in this book without seeing what other people who went as his subordinates chose to say. That condition was not satisfied.

(To be continued.)

PROFESSOR VON BEHRING ON THE ETIOLOGY OF PHTHISIS.

The following is a summary of Professor E. von Behring's address, recently delivered at Cassel, on the Origin of Pulmonary Phthisis and the Prevention of Tuberculosis:[1]

Introductory Remarks.

Professor von Behring recognizes the enormous diversity of the problems to which the phenomena of tuberculosis have given rise, and does not claim to have solved the whole of them; but he considers that his recent applications of the experimental method to the elucidation of some of these problems have, while far from clearing up the whole subject, already justified important practical deductions. His investigations, he points out, follow the etiological method of inquiry of which Pasteur and Koch have laid the foundations, and adopt as their guiding principle the Darwinian maxim that that is like in kind which is like in origin. It is in the light of this principle that we must appreciate the etiological unity of the lesions produced by the tubercle bacillus amid the diversity of their anatomical manifestations.

Latent Tuberculosis.

In illustration of the frequency with which the tubercle bacillus gains an entrance into the tissues of the human body, reference is made to the results obtained by Naegeli, who worked under Professor Ribbert's direction at Zurich. It was found on necropsy that all the bodies of persons over 30 years of age gave evidence of tuberculous infection; between the ages of 18 and 30 the percentage of infection was 96, between 14 and 18 the incidence was 50 per cent., between 5 and 14, 33 per cent., and between 1 and 5, 17 per cent.; in children under 1 year clear evidence of tuberculous infection was not found. These results are borne out by recent experiments with tuberculin on Austrian soldiers by Franz, who, using doses of only 1 to 3 mg., found that in one regiment 61 per cent. of the soldiers gave a tuberculous reaction, and in another 68 per cent. On the other hand, Berend, a Hungarian physician, has found that in 96 very young children there was no case of a positive tuberculin reaction, although some of them were sickly, with tuberculosis in the family, and doses as high as 1 cg. were given. A further exemplification of the wide dissemination of tubercle bacilli in cases where their presence was not formerly suspected is due to the method of "inoscopy" elaborated by the French clinician Jousset. By this process, the main feature of which is to submit coagulated pleuritic and other effusions to peptic digestion and then examine microscopically the deposit obtained by centrifugalization, the presence of tubercle bacillus is demonstrated with striking frequency.

Tuberculous infection, then, is extremely common, and it very frequently escapes notice, unless special search for it be made, because it so often heals spontaneously without the production of any symptoms. It is thus obviously by no means a necessary consequence that it should be followed by phthisis.

The Starting Point of Phthisis.

But this latent presence of tubercle bacilli is an extremely important factor in the development of the clinical disease. Exposure to infection alone, in the case of adults, cannot, according to Professor von Behring, be regarded as a determining factor in the production of pulmonary phthisis.

I am well acquainted with the statistical arguments based on the higher returns of infection and mortality from consumption amongst attendants on the sick residents in houses occupied by people known to be phthisical, and inmates of prisons, which are intended to demonstrate the origin of pulmonary phthisis from the inhalation of particles of dust, or moisture containing tubercle bacilli. But in view of the extensive dissemination of tuberculosis above described amongst the human race, there is ample justification for the objection that in cases of this kind, where persons succumb to pulmonary phthisis, tuberculous foci pre-exist in their lungs, and that these pulmonary lesions already present developed into active consumption, owing to the adoption by those persons of a mode of life favouring tuberculosis.

[1] *Deut. med. Woch.*, September 24th, 1903.

Nor again does heredity account for the disease, though a bad family history undoubtedly justifies a less favourable prognosis. "The mainspring to which phthisis must be traced is the milk diet of suckling infants." And the explanation is, not that milk is *per se* exceptionally infective, but that the sucking infant, like all new-born mammals, lacks in its digestive system the protective mechanism which in the more developed organism acts as the normal safeguard against the invasion of pathogenic irritants into the tissues.

Infantile Susceptibility.

Professor von Behring adduces experimental evidence of considerable importance to show that the alimentary tract in very early life is incapable of resisting the passage of many foreign and noxious substances, amongst which tubercle bacilli are to be included. The epithelial lining of the intestinal tract is not completely formed in very early life, and is consequently much more porous than afterwards. The large albuminous molecules of diphtheria and tetanus antitoxin, for example, pass through it readily without being converted into peptones, and find their way unchanged into the general circulation: immunity against diphtheria and tetanus can thus be produced in very young animals by administering the specific antitoxin by the alimentary tract instead of subcutaneously. He had demonstrated a similar permeability in the case of anthrax and tubercle bacilli. Attenuated anthrax bacilli, which had been proved innocuous to guinea-pigs on subcutaneous inoculation, were employed in some of his experiments. Newborn guinea-pigs were fed with these attenuated bacilli, and it was found that although the animals did not succumb to anthrax the bacilli could be recovered from their blood. Feeding experiments with tubercle bacill were then instituted, a single dose being used which contained only a small number of bacilli. Here, again, it was found that only the newborn or those but a few days old became tuberculous. In these experiments a special study was made of the development of alimentary tuberculosis in guinea-pigs, and it was found that

whilst their general condition was still normal throughout, tuberculosis of the cervical glands was the first lesion to be detected, a mode of infection corresponding to scrofula in human beings. Later, there not infrequently developed the type of guinea-pig tuberculosis which has hitherto been regarded as indicative of inhalation tuberculosis.

An interesting point noted was that bacilli persisted longer in the caecum than in the rest of the alimentary tract. From these experiments Professor von Behring draws the following conclusion, which he considers to be of the highest practical significance: That "all milk bacteria have the capacity for getting into the vascular circulation, and consequently we must expect that the accidental presence of pathogenic bacteria in the milk given to sucking infants exercises a deleterious effect on the infant's body"; and as these pathogenic organisms are capable of multiplication in the intestine, a serious effect may be produced even though the original number introduced be small. Hence the extreme danger, particularly to infants which are not breast-fed, arising from accidental bacterial contamination of the milk with which they are supplied.

Other Conditions Predisposing to Alimentary Infection.

In very young infants, owing to incomplete continuity of the epithelial layer of the alimentary tract and the absence of active ferment secretion, "the disposition to intestinal tuberculous infection is entirely physiological and normal." In later life a similar condition of permeability to tubercle bacilli may be produced by a variety of pathological causes—for example, the exanthemata, particularly measles, and other conditions which may involve catarrh, abrasion, or epithelial desquamation of any part of the intestinal tract. Hence the extreme importance of guarding not only young infants against tuberculous infection by preventing their contact with phthisical subjects and by careful attention to diet, but also persons of more advanced years who exhibit any clinical indication of a condition associated with deficient protective powers of the epithelium of the alimentary tract.

Persistence of the Tuberculous Virus.

Most infective diseases develop quickly and at once run their characteristic course. But tuberculosis, like leprosy and syphilis, is not of this type. Its introduction is generally insidious and unnoticed, and months, years, or even decades may elapse before it leads to manifest disease. Puberty, childbirth, lactation, malnutrition, over-exertion, unsuitable hygienic surroundings are amongst the conditions which may then kindle it into activity; then we have the beginning of phthisis, but the true beginning of the tuberculous infection is by no means coincident with this, but dates far back "to the earliest period of childhood." Thus we have the rational explanation of "hereditary" phthisis; what really happens is that young children in contact with phthisical parents of careless habits ingest tubercle bacilli by the mouth, and the resultant intestinal infection manifests itself, perhaps many years later, as consumption.

Bovine Tuberculosis.

The study of bovine tuberculosis is important for two reasons; it plays a prominent part, according to Professor Behring, in human infection, and he is firmly convinced that the therapeutic measures employed in cattle ought also to prove useful for the prevention of human tuberculosis. Statistical evidence is given to illustrate the wide prevalence of tuberculosis amongst cattle, and special stress is laid on the fact that many of the animals which give a positive tuberculin reaction are, so far as appearances go, thoroughly sound. Both these circumstances, Professor von Behring holds, finds an exact parallel in human tuberculosis. He then goes on to allude to the very promising results which have followed his now well-known method of immunizing cattle against tuberculosis by inoculating them with attenuated cultures of living human tubercle bacilli. He has "not the least doubt that with human beings, as with cattle, an isopathic immunization is possible through the introduction of a relatively innocuous living tuberculous virus." But he makes it quite clear that the material he uses to inoculate cattle is much too potent to be employed with safety upon man. The difficulties of devising a suitable material for the latter purpose have not yet been overcome, and he admits he would not care to risk an inoculation upon one of his own children. His recent experiments upon the production of immunity by introducing the immunizing material through the alimentary tract are giving most interesting results, and will he hopes lead to a safe and successful method of producing immunity in the human subject.

Koch's Theory.

Professor Behring entirely disagrees with Professor Koch's theory as to the difference between the human and the bovine tuberculous virus. That there are tubercle bacilli of human origin which are not in a condition to produce *Perlsucht* he admits, and points out that he had made this observation, and published it, some years before Koch. But that is no proof of a difference in species.

Jenner's vaccine does not produce variola in man, and yet we do not argue from that fact that there is a difference in kind between the unknown virus of human variola and that of cow-pox.

Moreover, the production of immunity in cattle by means of human tubercle bacilli affords a striking demonstration of the unity of the bacillus of *Perlsucht* and that of human phthisis. Of course it would be inaccurate to maintain an absolute identity between a typical virus of phthisis and a typical virus of *Perlsucht*, just as it would be inaccurate to maintain that all types of tubercle bacilli of human origin are identical. But what we have to deal with are not differences in species, but the formation of more or less stable variations concomitant with modifications of function which find an expression in the energy of the pathogenic process. Koch's second assertion, that bovine bacilli are innocuous for man, has not been demonstrated experimentally; Koch has only attempted to support it by arguments from statistics. But these arguments have been refuted by the anatomical researches of Heller at Kiel, and Orth at Berlin; and the results of Professor von Behring's experimental researches also form a strong indictment against them. Consequently, Professor von Behring most vehemently protests against the corollary, drawn from these two assertions of Koch's, that a rigid sanitary inspection of milk and meat, with a view to the prevention of tuberculous infection, is an unnecessary expense. Butter, he strongly suspects, is responsible for many cases of scrofula in children; and the danger of tuberculous milk, whether the bacilli be of human or bovine origin, cannot be too strongly insisted upon. Professor von Behring concluded with these words;

In Robert Koch posterity will honour one of the greatest investigators of tuberculosis: shall his contemporaries find no other criterion by which to appraise him than the fallibility which attends all human work?

At the meeting of the Medical Society of University College, London, on Wednesday next at 8.30 p.m., an address will be given by Mr. Jonathan Hutchinson on Logic and Leprosy.

BIRMINGHAM AND DISTRICT GENERAL PRACTITIONERS' UNION.

The annual meeting of this Union was held in Birmingham on September 29th. The Chairman of the Council, Dr. H. W. Langley Browne, presided, and upwards of forty members were present.

The report of the Council for the year ending September 30th, 1903, stated that the membership of the Union was 281, being an increase of 31 on the numbers of the previous year. The balance sheet showed a total expenditure of, in round numbers, £47, and a balance of £30. The Code of Ethics drawn up by the Council had been submitted to the different Wards, and after the suggestions thus obtained had been fully considered by the Council, the code as amended was approved by a general meeting, and would, it was believed, be a safe guide not only to local practitioners, but of value to the profession at large. Reference was also made to the action of the Council of the Union with regard to the appointment of a medical man to inspect cases of chicken-pox notified in the city. A deputation waited upon the Lord Mayor and the Health Committee, with the result that an amicable arrangement was arrived at. The report on the statistics of club practice made in 1902 had formed the basis of certain suggestions which the Council would lay before the Wards for further consideration. The Council regretted that touting medical clubs still existed in the district, and the opinion was expressed that the time had come when some strong measures should be taken by the Union to deal with the matter. The report contained the following reference to the reorganization of the British Medical Association:

> During the year the new scheme of reorganization of the British Medical Association has come into force, of which your Council express their appreciation; but, while doing so, they recognize that there is still a necessity for the existence of the General Practitioners' Union, and only some 50 per cent. of the latter are at present members of the British Medical Association.

The Chairman, in moving the adoption of the report, said that it related to a year of quiet work. If nothing else had been done than the adoption of the Code of Ethics it might yet be stated that good work had been accomplished. It might not be a perfect code but it was good and workable, and would form a strong bond of union.

Dr. Freer, in seconding, inquired whether there was any fresh light upon the question of touting medical clubs.

Dr. Neal, the General Secretary, stated that the Union had expressed an opinion condemning touting, and had issued a recommendation to medical men in the district to have nothing to do with any touting club. He thought, however, that the time had come when a definite promise to refrain from association with such clubs should be required as a condition of membership. It was difficult to get sufficient evidence to justify a prosecution before the General Medical Council, but if such a prosecution was successful he believed that the Council would not hesitate to deal with the offender.

Dr. Oakes inquired whether any action taken would be retrospective, if so, it would be necessary to obtain members' signatures to a document renouncing touting.

Dr. Neal said there ought to be no difficulty. The General Medical Council had spoken in the plainest way. He thought that the Union might ask its members to sign a declaration that they are not or never will be associated with such clubs.

Dr. Pooler thought that provident dispensaries as at present worked should be included.

The financial statement was then adopted, and Dr. Sansome proposed a vote of thanks to the chairman, officers, and council, which was seconded by Dr. Garbett and carried unanimously.

Dr. Langley Browne was re-elected chairman, and in returning thanks said that the work of the Union would be lightened if Sir Victor Horsley's proposals contained in the Medical Acts Amendment Bill were carried. In that Bill the Inland Revenue Department would have to see that no one except qualified medical men practised. In return for the guinea registration fee the department would prosecute any one or any body of persons who carried on the practice of medicine, surgery, or midwifery.

Drs. Hallwright and Kirby were elected vice-presidents of the Union.

Dr. Hall proposed that Dr. Neal be elected general secretary, and observed that the work he had done as secretary and as editor of the *Midland Medical Journal* had been invaluable. The resolution was carried.

Dr. Hall (Hay Mill) was elected secretary to the council, and Dr. Parsey secretary to the committees.

On the motion of Dr. Underwood the following resolution was adopted after some discussion:

> That, in view of the new condition of things created by the Midwives Act of 1902, it is desirable, in the opinion of this meeting, that the Council formulate rules for our common guidance in respect to attendance on midwives' cases, such rules, after approval by the union, to be incorporated in the Code of Ethics.

THE TEACHING OF DOMESTIC SUBJECTS IN LONDON BOARD SCHOOLS.

We published in the British Medical Journal of October 3rd, page 854, some account of the cookery classes held in connexion with elementary schools in Germany. It will be interesting to give, by way of comparison, some account of the classes in domestic subjects given in the schools of the London School Board.

There are in all 352 centres of instruction under the School Board, scattered over London, at which children from the surrounding schools attend to learn domestic economy. In some cases the schools are grouped in sets of three, each containing a different branch of instruction in some domestic subject, in others they are quite isolated, but the instruction given is practically the same throughout. There are 183 cooking, 141 laundry, and 28 housewifery centres.

The children in attendance number upwards of 45,000, their ages varying from 11 to 14, and in some cases 15 years. In some districts parents are letting their girls remain rather longer at school than they otherwise would in order that they may attend a housewifery centre.

The whole scheme of instruction covers a period of three years. For two years the child attends cookery and laundry centres, and for one year a housewifery centre. In districts where there is no housewifery centre the girls attend the cookery and laundry centres for another year, the third year's course being more in the nature of household management than pure cookery or laundry work.

Special teachers are appointed for these subjects, who must have diplomas for cookery and laundry work obtained from a training school recognized by the Board of Education, and teachers will be obliged, within a reasonable time, to obtain a teaching diploma for housewifery recognized by the Board of Education, a certificate of the South Kensington Branch of the Board of Education for advanced hygiene, advanced physiology, and elementary chemistry, and a certificate for first aid to the injured.

The scale of salary for teachers of any branch of domestic subjects (cookery, laundry work, or housewifery) is as follows: Minimum, £70 per annum, rising by annual increases of £3 to a maximum of £112 per annum.

The number of children who attend a domestic subjects class must be limited as follows:

Cookery Centres.—First and second course, 18; third course, 14.
Laundry Centres.—All courses, 14.
Housewifery.—All courses, 14.

The system in the teaching of the centres under the London School Board is that each child is taught separately. In Germany they are taken in groups of four. Our system gives four times the trouble to the teacher, but perhaps the results are better for the child.

There are two classes every day in the week; in the morning from 9 a.m. till noon, and in the afternoon 2 p.m. till 4.30 p.m. The classes consist of demonstration and practice. The teacher explains the ingredients and quantities required for the dishes about to be cooked, and tells how the children are to prepare and mix them. The demonstration lesson takes place in a class room with desks, and the instructions are clearly written upon a blackboard. The children next proceed to the kitchen, where everything is in readiness. A sort of narrow wooden counter forms a square in the centre of the room, two gas stoves with ovens and cooking rings being let in on either side, while cupboards form the under part of the tables. The children stand round this outside, while the teacher remains in the inner space (much like a counter in a shop) and overlooks them. Round the outer part of the room are sinks equipped with tubs and brushes to wash vegetables, etc., and afterwards the vessels used. There are also cupboards with shelves and drawers in which are kept the utensils, knives, forks, spoons, etc.

Stores which keep well are supplied once a year by a central store house belonging to the School Board, while the children are sent out shopping for perishable supplies such as meat,

vegetables, butter, and eggs. This seems an excellent plan as it teaches practical housekeeping and they learn to select good materials. The dinners when cooked are for the various teachers, and thus anything bad is sent back. They learn the use of money and the proper prices of food. Certainly this is a point in the London system in which it seems to be superior to the German, but it is decidedly inferior with regard to the equipment and neatness and spotlessness of the kitchens. There the saucepans are all of enamel, the washing-up pans shine like silver, and the tables are snowy; and, be it understood, in Germany every bit of the washing up and scouring is done by the girls themselves. Here "kitchen cleaners" are provided, whose duties are:

To scrub the floor of the centre twice a week. Thoroughly scour such utensils as cannot be cleaned by the children.

Keep the stoves clean and bright and sweep the flues once a week. Wash up dishes, etc., used for the dinners. The children will wash up those used for the lessons.

To order and fetch materials required for the lessons. Light the fires at 8.30 a.m. for a morning lesson, or at 1.30 p.m. for an afternoon lesson if a morning lesson is not given on the same day.

It seems unwise to let children of the very poorest classes, who will have to face the hardships of life, imagine that they are not able to scour kitchen utensils, keep stoves bright and clean, wash up dishes, light the fires, etc. Training in all these matters seems, on the contrary, most indispensable. Kitchen cleaners must also in the laundry centres sweep the room, fill the copper and light the fires, scrub and clean the floors, and clean the hearthstone, etc. They must also "thoroughly scrub and clean the floor of the classroom at least once in three weeks"! In Germany the demonstration and the lesson are given in the same room, and the floor of the room is scrubbed by the children every day. It is fair to say that in that country the children, although of the very poorest class, were all spotlessly clean and neat, their hair brushed and combed and neatly tied back. We wish we could say as much for the same class of children attending the classes in London. This makes it very hard for the teachers, who complain that in some districts the state of filth in which the children are sent from home is indescribable. There is the less excuse, as the English children looked much better and healthier. It is pathetic that many of the teachers in the schools are glad to buy the dinners cooked by these children, and that the cooking mistresses are obliged to dine off dishes over which, in the preparing of them, these children have been bending. Some very strong measures should be taken. As one of the teachers remarked, "We can't refuse to teach them, for the dirtiest ones have the worst mothers, and require it the most."

The pupils are not allowed to eat what they cook, but any of them who wish may buy and take it home.

It would be good, even in the simplest cooking, to instil into the children nice ideas of finishing off dishes and serving and garnishing. This all helps to refine them and make them natty in their homes. At one of our visits some little apple tarts were being made. The pastry was just put on the top and cut roughly round the edge of the pie dish with a knife. It would have been easy to raise it with a small cup (not to speak of the juiciness which would be the result), to ornament it with a top-knot of pastry, and with the top of a spoon held with the hollow portion downwards, to go round the border making a series of shell-like patterns. Like politeness, the small refinements of cooking cost nothing—though when compared with the value of such subjects as cooking and laundry, these small details may seem trivial. A great variety of small cheap dishes are taught, and the recipe of each is written out after the practice lesson. In London the prices of the articles used in the recipe were not shown and this seemed a lost opportunity of instruction.

A useful lesson is given on portable dinners.

Each child is given marks for regular attendance, and if a good record is obtained at the end of the course, she receives the School Board Cookery Book. No prize seems to be given for personal merit or skilfulness, which seems a pity, as the children are taught individually.

In the third year, in districts where there are no housewifery centres, the instruction given in the classes is more in the nature of household management than pure cookery or laundry work. Among the subjects are apportioning of income; a simple form of keeping accounts; a dinner for six not to exceed 2d. per head; the drains of the house; the water supply; lighting, etc. In the laundry course the theory as well as the practice is taught. The girls are allowed to bring suitable garments from their homes to be cleaned at laundry centres. No charge is made, a certain number of clothes also being supplied by the School Board for the purpose of practice. The laundry class rooms are fitted up with all the necessary appliances, such as copper boilers, mangles, ironing tables, lines for drying the clothes, upright stoves round which irons are heated, etc. We were glad to notice that plenty of windows were open in the laundry and cooking centres.

The housewifery courses are intended to instil into the children a proper idea of home life. In as many as possible there is a kitchen, a sitting-room, and a bedroom. Thus they can learn to dust, sweep, and cook. They are taught to trim a lamp, to wash paint, and to nurse in a sick room. A real child is put to bed, the sheets and nightgown are changed without lifting the patient from the bed. Instruction is given also in personal hygiene, invalid cookery, and a host of other useful subjects. Occasionally a real baby is borrowed, and a lesson on washing, dressing, feeding, etc., is given. But this is rare, as the responsibility is great in case of an accident happening to the infant. The pupils are very interested in housewifery, and, indeed, in all domestic subjects; and it is regrettable that more time cannot be devoted to these classes. Each child attends one once a week. The elements of dressmaking are also included in the course.

The London School Board is to be congratulated in having had so able a superintendent as Miss Keene, the first woman superintendent employed by the Board; and it is chiefly due to her that the housewifery classes, of comparatively recent birth, have become so popular.

It may be mentioned that the domestic classes are not compulsory, but as a general rule the mothers are glad that their children should attend them, and in some instances make sacrifices in order that they may prolong the course after the age of 14. It is to be hoped that more and more parents will see the importance of this, and earn the ultimate reward for their temporary self-sacrifice. Delicate children who produce a medical certificate are excused, but they have to employ the time at ordinary school subjects. Many of the teachers in the domestic centres are ladies. Their example alone should have a refining influence, and should do much to teach their pupils gentle manners and more care of their persons, though of course the mothers are to be blamed for their neglected state. All the children seemed attentive and quiet, and cases of bad behaviour are quite exceptional.

PRESENTATION BY MEDICAL MEN.—Advantage was taken of the October meeting of the Gateshead Division of the North of England Branch of the British Medical Association to present to Dr. A. W. Blacklock a token of the esteem and regard which is felt for him by his fellow practitioners in the town. Dr. A. Green, Chairman of the Division, in making the presentation (which consisted of a suitably engraved cigarette case and a purse of gold) said that the health of the recipient not allowing him to continue the arduous work of general practice, Dr. Blacklock had recently obtained the post of Assistant Medical Officer in the Gateshead Workhouse, and his colleagues could not let the occasion pass without some recognition of the straightforward and honourable practice of Dr. Blacklock. He had the sympathy and regard of every one of his colleagues, as was proved by the hearty response to the appeal. Dr. Gilbert, as an old friend of the recipient, made a very happy speech, in which he touched on the fortitude of Dr. Blacklock under circumstances which would have prostrated most men. Dr. Blacklock, in replying, said that this presentation, which was unique in the medical annals of the town, touched him very deeply, not so much from the material side as from the fact that his conduct during nearly thirty years of practice had met with the approval of the profession in the town. As for the fortitude which had been alluded to he thought it but the ordinary duty of every man to present a cheerful front to adverse circumstances. The thanks of the Gateshead practitioners are due to Dr. T. M. Kimpster for carrying this testimonial to such a successful conclusion. Nearly every medical man in the town contributed to the fund.

GUILD OF ST. LUKE.—The annual medical service at St. Paul's Cathedral will take place on Wednesday next at 7.30 p.m., when the Rev. Prebendary Montagu Villiers, Vicar of St. Paul's, Knightsbridge, will preach. All members of the profession are invited to attend and to wear academic costume. The music will be rendered by the London Church Choir Association, the organist being Mr. F. B. Kiddle. It is announced that special care will this year be taken that the service is not too long.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1903.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, OCTOBER 17TH, 1903.

THE UNIVERSITIES AND MEDICAL EDUCATION.

Tot homines tot sententiæ might easily be the first impression left by the perusal of the introductory addresses delivered by Sir William Church, Sir Victor Horsley, and Professor Schäfer. Drawing upon experiences gained in somewhat different fields, and viewing them from the standpoints of minds cast in different moulds, each of them may fairly base upon his past record a claim to have his views attentively considered; and, indeed, a just appreciation of the problems of medical education and of medical legislation may be facilitated by an endeavour to collate their ideas. With regard to the law, Sir William Church is content with things as they are, and deems that it would be an unwarrantable interference with the liberty of the subject to say that he shall not receive medical advice from any person from whom he thinks he may obtain benefit. In a limited sense this is true, though it is but one side of the case, and nobody has proposed to penalize the patient who seeks unqualified advice; but what of the giver, or rather the seller, of such advice? So long as the advice is given under the terms of the statute of Henry VIII "for the love of God and of Christian charity," it is one thing; but, to leave out for the moment the case of other safe-guarded professions, we punish the person who obtains money under false pretences, we punish the fortune teller, and on the same principle it is hard to see why the quack who flourishes on the credulity of the public in medical matters to its detriment should go scot-free. That the laity may share this view is evidenced by the fact that it is not long since that a Cabinet Minister, on learning the provisions of the existing law, stigmatized it as absurd. By implication Sir Victor Horsley propounds on opinion opposite to that expressed by Sir William Church, for he urges the necessity for a Medical Acts Amendment Bill; and if we are to take that submitted to the British Medical Association, in the drafting of which he took a large share, as his ideal, he holds that unqualified practice should be put down by law.

The General Medical Council is alluded to in each of the three addresses. Of its work Sir William Church expresses a general approval, whilst Sir Victor Horsley, by proposing a scheme for altering its constitution, implies that he considers it fulfils a useful purpose. On the other hand, from Professor Schäfer it receives only somewhat adverse criticism. But he has, we submit, misconceived its attitude towards the teaching of the preliminary scientific subjects, and as an almost necessary consequence of this misconception sides with the two Royal Colleges upon the points at issue between the Colleges and the General Medical Council.[1]

We believe that a scheme for relegating the study of the preliminary scientific subjects to a period prior to the commencement of purely medical education, and the institution of an examination in them as an indispensable preliminary to medical study, would receive a large measure of support in the Council, and this is the very course which Professor Schäfer advocates. Some such measure commends itself to Sir William Church as preferable to the present system, and is, in fact, what is actually done by a great majority of those who seek the degree of the University of Oxford, which he formerly represented upon the General Medical Council. On this point Sir Victor Horsley is silent, but he advocates very strongly a one-portal system of qualifying examination with which the universities should have nothing to do. This leads up to the consideration of the true duty of the universities, to which a large part of his address is devoted. He holds, and with this Professor Schäfer agrees, that a university degree should imply a higher knowledge than a mere qualification to practise. From this point, however, their views appear to diverge. Sir Victor would do away with the degree of Bachelor of Medicine or Surgery, urging that as it is a qualifying diploma its retention is a temptation to a downward competition for students. In order to do away with the necessity to make the classes pay their way by students' fees, he strongly urges that the universities should receive support from the State, and whilst he congratulates the University of Birmingham upon the munificent private support which it has received, bids it not look to this as adequate for the future. Professor Schäfer also deplores the possibility of a downward competition and the absence of adequate financial support; his ideals, perhaps, do not differ greatly from those of Sir Victor Horsley, but he regards them as for the present unattainable, and he would retain the pass or qualifying degree. Indeed, he contends that all students who have conscientiously followed the teaching and worked steadily should be able to obtain the pass degree. Unless, then, the university student is to be credited with higher attainments than the student elsewhere—a position which can hardly be maintained—this is a virtual abandonment, for the present, of the position that a university degree is to imply something more than a mere qualification. It is true that further on in his address Professor Schäfer reiterated his opinion that a higher standard is to be aimed at; but we do not believe that a pass degree so attuned as to be attainable by the vast majority of the students can ever have a standard materially higher than that of the average pass diplomas of the country, so long at least as the degree remains a qualification for registration.

Professor Schäfer is a strong advocate of so dividing up the subjects of the curriculum that the student shall be able to devote himself exclusively to one or two at a time.

[1] The authority of Professor Schäfer's name renders it desirable to correct any error into which he has fallen with regard to the General Medical Council's requirements. That body has never expressed any opinion adverse to school teaching in the preliminary scientific subjects, and has, in fact, formed a list of those schools and institutions at which it considers this teaching to be satisfactory. What it has done is to object to study at schools selected somewhat indiscriminately being reckoned as one of the five years of medical study, when in some cases the teaching is certainly insufficient in quantity and perhaps inadequate in kind. Thus, so far as the schools may be influenced, it will be in the direction of improving their science teaching and increasing its amount; it is hard to conceive that this can be any discouragement to school teaching in these subjects. The dispute between the Royal Colleges and the Council relates not to the recognition of school teaching *per se*, but to the recognition of schools for the purposes of the fulfilment of one year of curriculum study in cases in which the Council holds that the number of hours devoted to the subjects is absurdly small, and to the nature of the examination.

He urges, for instance, that anatomy and physiology should not be commenced until the preliminary science subjects have been disposed of, and that hospital attendance should be deferred until the examinations in anatomy and physiology have been passed. This is already the case in the English schools, but the old custom still prevails at many of the Scotch universities, and we need hardly say that we are in full accord with Professor Schäfer in this regard. But we are not sure that we can go with him when he proposes to still further divide up examinations so that the candidate can take up each subject singly, nor do we think with him that to do so would tend to raise the standard in each subject. No doubt much may be said in favour of some such plan, already more or less in use, when those subjects alone are concerned which can be regarded as preparatory, as tilling the ground prior to planting other subjects in the mind. It is enough that the student has once known something of them; he will not forget it all, and what he has forgotten and subsequently wishes to apply he can readily look up. But when we come to the subjects of practical medicine this is not enough. We then wish to be assured not that he has once known them, but that he carries his knowledge about with him for use as required, not perhaps in every detail but in general substance. At the same time we believe Professor Schäfer to be right in holding that there should be no year of study without its corresponding examination, and that examination in any subject should not by vexatious regulations be deferred till some considerable period after the courses have been completed.

Sir Victor Horsley's ideal is that the universities should cease to confer mere qualifying degrees, should confer the M.D. only, and so should be free to pursue their own paths towards the highest medical education. It is not the proper function of a university to turn out a certain large number of qualified medical practitioners, but rather to provide the means for the highest class of education quite irrespective of the numbers who may seek it. How far some of our universities are from the attainment of such an ideal many of us know only too well, and it is difficult to banish the fear that the University of London may take a step in the wrong direction if it yield too far to the cry of a university degree for the London student.

TUBERCULOSIS AND FOOD.

We publish on page 993 a summary of Professor Behring's recent address on the etiology of phthisis. There is so much that is sound and indicative of careful and brilliant experimental research about all Professor Behring's theories that we feel some reluctance in expressing the opinion that on this occasion his grasp of the subject fails in comprehensiveness, and exaggerates into a principle of universal applicability one factor in the causation of tuberculous disease, which, though undoubtedly a factor of extreme importance, we cannot regard as a valid explanation for the primary origin of every case of pulmonary phthisis. His main contention is that it is the rule, rather than the exception, for tubercle bacilli to gain access to the human tissues; they find their way in by the alimentary tract in early infancy, when the intestinal epithelium and secretions are not sufficiently developed to prevent their absorption. Once located in the tissues they may remain dormant for a number of years, and then, owing to the incidence of some secondary predisposing cause, suddenly kindle into activity—tuberculosis in the clinical sense of the word. While this may be the explanation of many cases of phthisis, it seems rash to assume that it is the explanation of all, or that cases of primary infection by inhalation in adults are improbable and unproved. The experience of most medical practitioners has convinced them that inhalation is a common and most dangerous source of infection by which tubercle bacilli actually and primarily responsible for the production of phthisis find entrance into the system. Professor Behring's scientific observations do not seem to justify deductions which involve a repudiation of the ordinary view.

Without accepting any such sweeping generalization as that all persons over 30 years of age are tuberculous, it may be considered that it is not at all uncommon for a person in robust health to retain within his tissues living tubercle bacilli. But if such a person afterwards becomes phthisical it is not safe to assume that the phthisis is necessarily due to the bacilli which may have been latent in his tissues whilst he was in good health. There is the alternative supposition that there has been a subsequent ingestion by tubercle bacilli and that the latter are directly responsible for the outbreak of phthisis. When we come to actual experience the second alternative often appears to be not merely tenable on theoretical grounds but justified by substantial facts. We refer to those cases, of which every practitioner can give instances, in which phthisis has developed after exposure to infection in persons previously in good health. The ordinary common-sense view is that the phthisis is due to the infection, and we fail to see that Professor Behring succeeds in invalidating that opinion. Tubercle bacilli are often latent in the body; the onset of phthisis is generally coincident with some general condition of lowered vitality and enfeebled resisting powers. Persons in vigorous health may often undergo constant exposure to infection without taking any harm. These three propositions totally fail to justify the inference that phthisis in adults never comes from inhalation of bacilli, but must always be interpreted as a stimulation into activity of pre-existing tuberculous foci.

Upon the importance of the alimentary tract as a source of infection, Professor Behring's observations are most interesting and valuable. He has brought forward very strong evidence to show that not only in early infancy but also at later periods of life, when the resisting powers of the alimentary epithelium are weakened by some pathological cause, tubercle bacilli frequently gain entrance to the body by this route, and are subsequently responsible for many cases of tuberculous disease. But here again we feel that he overstates his case by claiming that this is the universal route of infection. In this endeavour he appears to distort the clinical facts and is compelled to resort to a highly artificial explanation of many cases of phthisis which, as we have indicated, are much more naturally and satisfactorily accounted for as due to pulmonary inhalation.

It is important to enter a protest against overstatements of a scientific principle, because they may give rise to practical deductions of an erroneous character. If, for example, the belief were to gain a popular hold that we almost all contain within our bodies the specific germs of tuberculosis which might at any time, by the incidence of some secondary *malaise* acting upon an enfeebled constitution, be stimulated to the production of actual phthisis, then the dangerous idea might become prevalent that

adults at all events may generally disregard the risk of inhalation infection; and consequently many valuable sanitary precautions, into the adoption of which people are gradually being educated, might be neglected as unnecessary.

Where Professor Behring limits his conclusions to deductions which do not transcend his experimental data we entirely agree with him, and we think that his experiments afford a most valuable justification of a rigid enforcement of milk inspection, with a view to preventing its contamination with tubercle bacilli.

Professor Behring is diametrically opposed to Professor Koch's startling pronouncement as to the relation of human to bovine tuberculosis in every important respect. Without prejudice to certain aspects of the question which have not yet been fully elucidated, we are certainly of opinion that Professor Behring's arguments thoroughly justify the present continuance of those hygienic precautions which might be unnecessary if Professor Koch's view were confirmed. It has been the fashion lately to launch against Professor Koch a good deal of cheap criticism of a somewhat uncomplimentary nature. Those who like dialectics to be flavoured with the spice of personality may learn a useful lesson from Professor Behring's concluding remarks in which he expresses the hope that Professor Koch's recent display of human fallibility will not deprive his contemporaries of the indulgence in that reverence to the great investigator of tuberculosis which posterity will undoubtedly accord him. We cannot fathom the precise depth of implication with which Professor Behring penned these words, but we commend the sentiment as one of those felicitous expressions which may be interpreted in a spirit of sincerity or sarcasm, according to the predilections of the reader. History provides many instances of a great man provoking from his contemporaries the wish that he would not cheat them of the full luxury of admiration for his achievements by launching, at a late period in his career, into projects where none but the blindest hero-worship can follow him.

THE ORGANIZATION OF NURSING.

During the last few weeks a good deal of space has been occupied in our columns by a series of letters on the want of organization among those who occupy themselves in nursing the sick. Ladies and gentlemen well known either as advocates or opponents of the registration of nurses, have favoured us with their views. They have taken full advantage of the opportunity, but it does not appear that there is anything very fresh to be said; Mrs. Bedford Fenwick and Mr. Sydney Holland have crossed swords before now, and each has retired from the arena unconvinced. Well-worn arguments have been aired again in the Journal; they seem a little more threadbare, but the question itself has not, we fear, been very much advanced. When we come to inquire for internal evidence as to the position of the controversy, we learn that a few nurses have banded themselves together to secure the passing of an Act for professional registration: they meet, and talk, and resolve, but with no apparent result so far as the body as a whole is concerned. Judging from the recent correspondence in the Journal, and from previous correspondence elsewhere, there would seem to be general agreement among those who write that something must be done. In urging registration as the obvious thing to do, the writers appear to be influenced by their conviction that registration would bring with it a central council and an examining board. These two conditions, judging by the letters received, outweigh in importance all other advantages that might accrue to the public and to nurses themselves from the compilation of a register of names with particulars of training. It may be that those who use this argument are right; the value of an independent examining body with power to insist upon a minimum standard of knowledge, and the right to scrutinize all certificates issued by the various training schools, would go a long way towards bringing the heterogeneous elements into line, and prepare the way for legal registration, if such a step were ever deemed advisable.

Again, judging from this correspondence, we can see that the idea of a central council and examining board with power to criticize and control the issuing of certificates is not acceptable to the larger training schools; there is a nervous fear that their methods may be revised, that the certificate may after all be stripped of some of its glamour, and that their prestige will suffer because their pupils will have to compete on equal terms with those from other schools. Such fears are groundless: that which is good will receive recognition from a body of skilled experts, whilst unsound methods and superficial teaching will be exposed for what they are worth.

It is an evident fact that not only is there no organization among trained nurses, but that from some cause or other all attempts to secure better organization have so far ended in failure. Whilst the command of the situation is in the hands of the authorities of the nurse-training schools, these very authorities appear to lack the wide experience and the comprehensive outlook necessary for a statesman-like grasp of the question. This lack of experience is the result of their isolation from the rank and file of nurses who flow out in a continuous stream from their doors, and from the employers of the rank and file whether lay or professional. One matron writes that "as long as we remain in our training schools we do not realize the necessity for a uniform standard of professional education and training. It is when we come to hold posts as matrons of smaller or special hospitals, and are by necessity brought into contact with nurses belonging to private institutions or working on their own account, it is then we see why the public has such reasonable grounds of complaint against us." This sums up the whole situation. It makes plain why the matrons of the nurse-training schools lack that special knowledge that would enable them to handle this problem as it ought to be handled. The correspondence so far has been mainly carried on by nurses and a few writers specially interested in the management of nursing schools. Until some general agreement is come to between the conflicting elements, the managers of schools, the matrons, and the nurses who are actively engaged in nursing outside the walls of hospitals, not very much progress can be expected. We cannot undertake to give more space to the correspondence on its present lines, but we would point out that the question is one which nearly interests the medical profession, and that a satisfactory solution cannot be found without its co-operation.

THE INTERNATIONAL SANITARY CONFERENCE IN PARIS.

The International Sanitary Conference was officially opened on Saturday, October 10th, by M. Delcassé, the Minister of Foreign Affairs, before the representatives of twenty-five nations from Europe, Asia, Africa, and America. The ceremony took place in the large "salle de reception" at

the Ministry of the Interior. In an impressive speech M. Delcassé bade the delegates welcome in the name of the Government of the Republic, and recalled the humanitarian object of the Conference, the initiative of which was due to Italy, since it was at Venice in 1892 and 1897 that the first regulations were drawn up to protect Europe against epidemic invasion, especially against cholera and plague. M. Barrère, the French Ambassador to Italy, who is President of the Congress, then spoke, sketching the programme of the work which will mark a fresh step in the path of progress. Professor Proust, General Inspector of the Sanitary Service in France, followed, saying that the most important of the international questions to be settled was undoubtedly to decide on the precautions to be taken against the invasion of European ports by plague. The part played by rats in the dissemination of the disease had been brought to light since the existing regulations were drawn up. The conference would consider regulations for the efficient disinfection of vessels before discharge, without causing any deterioration of their cargo. By thus suppressing quarantine commerce would be greatly facilitated. The question whether such disinfection should apply to all vessels coming from an infected port, or only to such vessels as had had cases of plague on board during the voyage would be considered. It was necessary also to codify the existing regulations drawn up at Venice. Paris, and Dresden, as many of the clauses were either redundant or contradictory. The delegates number seventy in all. Great Britain is represented by Mr. Maurice de Bunsen of H.M. Embassy, Dr. Theodore Thomson of the Local Government Board, Dr. F. G. Clemow, Mr. Alban, and Colonel Richardson of the Indian Medical Service. Dr. Ruffer represents the Egyptian Government. In addition to M. Barrère, the President of the Conference, France is represented by M. Georges Louis, Director of Consulates; Professor Brouardel, M. Henri Monod, Professor Proust, Dr. Roux of the Pasteur Institute, Dr. Calmette of Lille, to whom have been added as assistant delegates M. de Cazotte, sous-directeur at the Foreign Office, Dr. Reynaud of Algiers, representing Algeria, and Dr. Legrand of Suez.

FEES FOR MIDWIFERY IN POOR-LAW PRACTICE.

WE understand that the guardians of one of the Poor-law unions in the North of England have, for some cause best known to themselves, become so dissatisfied with the fees which by regulation they have occasionally to pay to their district medical officers for their professional services in difficult cases of midwifery as to have been induced to correspond with other Boards on the subject, with a view to get these fees reduced by the order of the Local Government Board. The sore point with some Boards of Guardians appears to be that by Article 183 of the Consolidated Poor-law Order, it is provided that "in any special case in which great difficulty may have occurred in the delivery or long subsequent attendance in respect of some puerperal malady or affection may have been requisite, any district medical officer shall receive the sum of £2." This order of the Local Government Board bears date July, 1847, and has consequently been in operation for upwards of fifty-five years. It was framed when the fees for attendance on midwifery were throughout England and Wales much lower than those now generally paid, and we cannot help expressing our surprise that any public body should at the present time regard such fees as excessive. The guardians, however, of the union in question have expressed their views on this point as follows: That in their opinion "the sum of 1 guinea is adequate remuneration" for medical attendance in any of these special cases; that is, however great the difficulty of delivery may have been, or however long medical attendance may have been necessary, in consequence of some puerperal trouble developing after the labour. It is very evident that this northern Board of Guardians would not in the past have paid their medical officers this fee for serious cases had they not been compelled to do so by regulation, and we therefore assume that for ordinary midwifery cases they pay the lowest fee sanctioned by the Local Government Board. If this assumption is correct it is 10s. only which their medical officers receive for all ordinary cases of labour, though some of these may involve an all-night's attendance at a distance from home. We are not at all apprehensive that any application to the Local Government Board for the reduction of the fees now paid for serious cases will be successful; but it is within our knowledge that many Boards of Guardians pay these higher fees (£2) with very great reluctance, and some even have the bad taste to require evidence beyond the statement of the medical officer himself as to the precise character of the services rendered to the patient before doing so. This often raises a very objectionable and difficult question which would be better altogether avoided. Some have therefore been induced to ask whether some plan might not be devised by which this could be effected. It has been suggested that it would be better, instead of having a scale of fees varying from 10s. to £2, to have uniformity, so that 1 guinea was paid for every case, whether easy or difficult. It is urged that this uniformity of payment would be for many reasons better than the present system, as even if it involved some sacrifice, frequent dissensions would be avoided, while the legal liability of guardians to pay any fee at all, in those cases which at present carry the higher fee (if any) would be less likely to become the subject of dispute.

THE INDIAN MEDICAL SERVICE.

IT will be observed that the new regulations governing the conditions of service of the Indian Medical Service issued this month do not, either directly or indirectly, contain any reference to the regimental system as affecting the military branch. We are aware that suggestions for the abolition of the regimental hospital system have been under the consideration of the Indian Government for a good many years, and that the proposal to adopt a station hospital system, as in the British army, has been put forward. We have received, during the last few years, many communications from officers of the Indian Medical Service, both senior and junior, condemning the present system. We shall be glad, however, to have further information upon the matter, and to learn the views of officers as to changes which are desirable. A meeting of the Royal Navy and Military Committee of the British Medical Association was held on October 14th, when the new regulations were under consideration, and representations will, we understand, be made to the Secretary of State for India with regard to certain points affecting the military branch. With regard to the civil branch it is hoped that the representations contained in the memorandum transmitted last August to the Secretary of State will have due weight in the consideration which the India Office and the Government of India are now, we are assured, giving to this subject.

ALCOHOL AND THE MEDICAL PROFESSION.

AT a meeting at the Medical Institute of Birmingham last week, Sir Victor Horsley gave an interesting exposition of the attitude which he considers the medical profession ought to adopt towards the alcohol question. The points upon which he laid special stress were that the full extent of the evils due to alcoholism are better known to members of the medical profession than to those of any other class. The world in general was aware that intemperance led to much illness and disease, and a great step in the cause of truth had been made when it was admitted by the Home Secretary in Parliament that alcohol was the chief cause of crime. Medical men, however, who were in a position to see what went on behind the scenes of the social life of the nation, knew not only that the fatalities were far greater than those represented in mortality statistics, but also that moral deterioration from indulgence in drink occurred long before any physical toxic effects were evident. In view of this fact he would like to see medical men take up a much stronger position on the subject than had yet been the case. Inquiries were often addressed to them by their patients as to whether it

would not be wise to take a little alcohol, and he thought that medical men ought always to say, "No, it is not wise. If you take it you must understand that you take it as a luxury. We do not yet fully know the effect of alcohol in the body, but we do know that its stimulating effect is followed by a longer depressant effect, and that from the physiological point of view even small quantities are no good." In his own surgical wards, said Sir Victor Horsley, he never prescribed alcohol. If a patient seemed to him to require stimulation he preferred to turn to remedies such as strychnine. The frequency with which alcohol was prescribed in the course of every-day practice he considered to be a mere fashion, and believed that eventually its use in practice would be relegated to the same limbo as that to which blood-letting had been consigned. There were a good many common beliefs attaching to alcohol which were practically merely traditions, and he would like to see a committee of the British Medical Association appointed to investigate what, if any, scientific basis any of them possessed. There was a common idea, for instance, that whisky was a good thing for rheumatic gout, but recent investigations tended to show that rheumatism was due to the invasion of a microbe, and research equally showed that alcohol would be likely to lessen the natural resistance of human tissues to the invasion of such organisms. Before concluding his address Sir Victor Horsley alluded to the political aspect of the question, which certainly added something to the difficulty of instituting effective reform. The existing evils, however, to the health and well-being of the nation were immense, and though in nowise a fanatic, he recognized clearly that reform was urgently needed. Sir Victor Horsley's remarks seem to have been well received by his auditors, and were further punctuated by brief speeches from Mr. J. Furneaux Jordan and Mr. Jordan Lloyd. Professor Priestley Smith expressed a desire also to see something done by the medical profession to check the consumption of tobacco. The attitude thus taken up by Sir Victor Horsley will, we believe, be accepted by the majority of medical men. Some aspects of intemperance to-day may be less pronounced and gross than formerly, but the amount of secret drinking which goes on is enormous, and few medical men in general practice are not painfully aware of chronic domestic tragedies among their patients, due to stimulants and drugs, of which the world at large knows nothing. It is probable that greater care is now exercised than formerly in the prescription of sedatives and narcotics, but it is a question whether the great mass of the profession is as careful as it might be in the prescription of wine and other stimulants. It should not be forgotten that even a small amount of alcohol is sufficient in some individuals to give origin to alcoholism. Nor can it be doubted that if the medical profession set its face against drink in the same way as it has against dirt and other causes of disease immense good would result.

THE MORTALITY FROM TUBERCULOSIS IN RELATION TO AGE, SEX, AND ALCOHOLISM.

It is a well-known fact that the death-rate from tuberculosis was formerly higher among women than among men, and that now the inverse of this holds good. Thus in England and Wales in 1851-60 the death-rate per million of each sex from phthisis was 2,579 for males and 2,774 for females; in 1861-70 the corresponding numbers were 2,467 and 2,483. In the next decennial period the order was changed, and the male mortality from phthisis from 1871 onwards has been higher than the female mortality from this disease, although lower than the male or the female mortality in the previous decades. Thus in 1871-80 the male death-rate from phthisis was 2,209, the female 2,028, in 1881-90 the corresponding figures were 1,847 and 1,609, and so on. The same inversion of the male and female mortality from tuberculosis has been noticed in France. Thus in 1830 Trébuchet found that the number of deaths from tuberculosis was greater among women than among men. From 1839 to 1848 this was still the case. Now the facts are inverted. It is always dangerous to ascribe a sole reason for an effect which must almost certainly depend on the action, countervailing or co-operating, of a number of influences. Hence, when Lagneau concludes that this increase of male deaths from tuberculosis is related to the increase of alcoholism in France, he is probably stating only one out of many factors involved in the case. (Lagneau's statement is quoted from a contribution of Professor Mahaim, of the University of Lausanne, to the Brussels Congress, and we are left in doubt as to whether there is an actual or only a relative increase of male mortality from tuberculosis). Facts published by Baudron (Paris, 1901) have shown that in France the provinces in which there is most alcohol drinking suffer most from tuberculosis, "the progression of tuberculosis being parallel with that of the consumption of alcohol." Thus, a consumption of 12.5 litres of alcohol per person corresponds with a mortality of 3.3 per 1,000 inhabitants; when the consumption of alcohol becomes 35.4 litres per person, the death-rate from tuberculosis rises to 10.8 per 1,000 inhabitants. The figures published by Drs. Ogle and Tatham in the decennial reports of the English Registrar-General show the close relationship between any occupation involving free access to alcoholic drinks and a high death-rate from phthisis. What share of this undoubted action of alcoholism in favouring tuberculosis is due to its diminishing resistance to infection, and what share is due to its furnishing abundant opportunities for infection in public-houses, etc., may be left an open question. Some light is thrown on the same problem by figures relating to English death returns submitted to the Brussels Congress. It was shown that when the death-rates at each quinquennial age group from 0 to 20 in 1851-60 were compared with the corresponding rates for 1891-95, the male death-rates had declined to an extent varying from 65 to 55 per cent., the female death-rates from 57 to 59 per cent. Here then was a fairly uniform decline in both sexes before adult life. From 20 to 25 years of age the male decline was 50 per cent., the female decline 59 per cent. Although the male is not so satisfactory as the female record at this age period, there is nothing to lead one to anticipate the enormous differences between men and women shown at subsequent ages. Confining ourselves to the ten yearly age periods from 25 to 65, the male decline in consecutive age periods was 37, 18, 16, 19, while the female decline in the same consecutive age periods was 53, 45, 44, 46. Clearly some factor or factors were at work preventing the same amount of improvement among men as among women. This factor, according to the French statistics quoted above, lies in the increasing alcoholism among men. Dr. Newsholme, from whose paper at the Brussels Congress the above figures are quoted, was inclined to lay some stress on the fact that the registration of deaths ascribed to phthisis is now more in accordance with the facts than formerly, but gave the chief place to the fact that "the domestic causes of tuberculosis had been ameliorated more than the occupational." Probably the truth consists in combining both set of considerations.

THE TRANSFER OF KING'S COLLEGE HOSPITAL.

At the meeting of the Court of Governors of King's College Hospital, which took place on October 12th, the following resolution was submitted for approval: "That this Court approves of the proposal to remove King's College Hospital to a site in South London." This resolution was finally carried, but not without some of that opposition of which we expressed an anticipation in a note upon the subject in the British Medical Journal of August 29th, p. 479. It was originally presaged by some words which fell from Lord Dillon at the annual hospital dinner in the spring, and was crystallized in a letter which he addressed to the *Times* at the end of last week. Lord Dillon did not attend the meeting himself, but his views found expression in the shape of an amendment to the effect that further consideration of the motion approving of transfer of the hospital should be deferred for two years. This amendment having been defeated the original resolution was passed by a large majority. The main principle

having thus been approved, the question of site was then discussed, and it was mentioned that offers of sites in South London of from eleven to twenty acres, at prices ranging between £3,000 and £4,500 an acre, had been received. Finally the following resolution was passed: "That this Court accepts the report of the Sites Committee and authorizes the Joint Committee appointed by the Council of King's College Hospital and the Committee of Management of the Hospital to act for them in this matter and to acquire a suitable and adequate site," the last six words being accepted by the movers at the instance of Mr. McHardy as a substitute for the words "purchase a site." The object of the proposer of this alteration was to avoid binding the Committee to purchase a site outright, and the view was expressed that the ground purchased should be adequate for at least 500 beds in order to avoid any possible pinching of space at a future time. A final resolution authorized the Council of King's College Hospital and the Committee of Management to apply to Parliament for an Act containing the powers necessary for removal and for disposing of the existing site. It will be a matter of satisfaction to all those who take an interest in hospital work in London that this matter is at length definitely settled. Neither Lord Dillon in his letter or those who headed the opposition at the meeting brought forward any facts which controvert the views expressed with regard to King's College Hospital in an article in which the subject of the distribution of hospitals in London was dealt with in the BRITISH MEDICAL JOURNAL on January 17th, 1903. On the contrary, it was shown in the report of the Committee of Inquiry that on a day when the special inquiry was made, out of 213 in-patients only 10 came from the large parish in which the hospital is situated and only 42 others from any place within two miles of the hospital. Dr. Crawfurd, Dean of the Hospital, has also pointed out that several of those 9 members of committee who resigned with Lord Dillon were not opposed to removal in principle but dreaded the expense entailed. It is to be regretted that the matter should have led to the resignation of any of those who have long shown practical interest in the institution, but the entire failure shown in Lord Dillon's letter to comprehend that the interests of a hospital as a charitable institution and as a centre of medical education are not only not opposed but are essentially united, makes his resignation less to be regretted than it otherwise would be.

THE CITY OF LONDON CREMATORIUM.

THE foundation stone of the crematorium at the City of London Cemetery, Little Ilford, Essex, was laid on October 14th, by Mr. R. W. Edwards, the Chairman of the Sanitary Committee, acting as the Burial Board for the City of London. The crematorium will contain a hall for the mourners with a waiting-room attached. The catafalque upon which the coffins will rest will be in the centre of the hall, and there will be an ante-chamber for the attendants between the hall and the cremating chamber. The cremating chamber will be at the rear of the hall and will be of sufficient size to admit of two cremating furnaces being erected with an arrangement for the placing of the bodies in either furnace by means of a traverse. It is intended to erect only one furnace at the present time, the flue for which will be carried up in the centre of an ornamental tower about 80 ft. in height. A small auxiliary furnace will be placed at the base of the tower for the more perfect combustion of the gases arising from the cremating furnace. The furnace will be attended to from a basement under the cremating chamber. The hall for the mourners will have an open timbered roof, and the interior will be faced with red-pressed brick, with an ornamental tiled dado, the floor being paved with ornamental tiles. The crematorium will cost about £7,000, and will be built from the designs of Mr. D. J. Ross, the Corporation Engineer. Mr. Edwards, in laying the stone, said that the Corporation of London entrusted to the Sanitary Committee the special duty of protecting the health of the public within the sphere of its influence, and they were mindful that that influence did not terminate with the City boundaries. They were anxious themselves, and sought to stimulate others to keep up well with the march of sanitary science. The Corporation of London was now leading the way in this direction, for the crematorium at Little Ilford was the first in course of erection within any cemetery of the United Kingdom, and was the first in course of construction by any corporation or municipal body in London. When Sir Henry Thompson, in the year 1874, introduced in this country the question of the disposal of the dead by means of cremation, the idea was regarded with antipathy, and it was not until 1884 that cremation of human remains was permitted at the Crematorium at Woking. The late Commissioners of Sewers of the City of London had the question of providing a crematorium before them in 1891, but they had no power. Later on, however, a clause was inserted in a various powers Bill in the year 1900 giving the Corporation the necessary powers to erect a crematorium at Little Ilford. The crematoria at Hull, Manchester, Liverpool, and Woking were inspected, and plans were prepared. Ultimately the Court of Common Council sanctioned the building of the crematorium they now saw in process of execution. To what extent the building thus planned would be used when completed for the cremation of human remains it was not possible to foretell, but having regard to the declarations repeatedly made by representatives of sanitary science in this country, there could no longer remain a doubt as to the advisability of carrying out the work thus indicated in the interests of public health. Mr. H. A. Summers, the late Chairman of the Sanitary Committee, proposed a vote of thanks to the Chairman, which was seconded by Sir Henry Thompson, who said that he had been associated with the movement for cremation for nearly thirty years, and he was glad to find it increasing in all parts of the country. The Chairman made a brief reply, and then the company present adjourned for lunch. In the course of the toasts which followed, Mr. Osborn, Chairman of the East Ham District Council, observed that whether or not the crematorium would be used by the inhabitants of East Ham would depend upon the question of expense. Mr. Deputy Gooding said that the crematorium was not only for the inhabitants of East Ham but for the City of London. The Chairman, in proposing the health of "The Visitors," referred to Sir Henry Thompson, the principal guest, as the veteran promoter of the movement for cremation. Sir Henry Thompson, who replied, and at the same time proposed "The Health of the Chairman," said that there were now seven crematoria in England, seven in Germany, two in France, two in Sweden, one in Denmark, three in Switzerland, sixteen in Italy, twenty-six in America, one in Canada, one in New South Wales, one in Sydney, and one in Calcutta. The number of bodies cremated in England during 1902 was 452, the total number since the commencement of the practice being 3,396. The Chairman made a suitable reply, and the proceedings terminated. It may be observed that under Section IV of the Cremation Act, 1902, it is enacted that the powers of a burial authority to provide and maintain burial grounds or cemeteries, or anything essential thereto, shall be deemed to extend to and include the provision and maintenance of crematoria. The plans must be approved by the Local Government Board.

DIPHTHERIA AND MILKMEN.

IN a recent report to his authority by Dr. Spottiswoode Cameron, Medical Officer of Health for Leeds, there is an account of one of those careful researches which little by little are elucidating the broader etiology of diphtheria epidemics. The outbreak into which inquiry was made on this occasion occurred in June and July of this year, and simple home proximity and school infection having been inferentially excluded as causes, attention was turned to the milk supply of the affected houses. This was found to be drawn from a common source, and to be received by its retail vendor chiefly from a dairy farm of very insanitary nature. The milk from this farm having been stopped the epidemic ceased also, but recurred as soon as permission was given to use the milk again, in spite of the fact that

meanwhile the farm and its surroundings had been put into thoroughly good condition. No explanation for this could at first be found, since the persons employed at the farm as well as the members of the retailer's family were all apparently in perfect health. Finally, however, it occurred to Dr. Cameron to have the throats of all persons who in any way handled the milk examined. It was then found that several of those who took some part in the handling of the milk before it was transmitted to the retailer had in their throats the diphtheria bacillus; in some it was the long and in others the short form. When the *personnel* of the farm was changed the cases of diphtheria ceased to recur among those to whom the milk was supplied.

TRYPANOSOMES AND SLEEPING SICKNESS.

The first report of the Royal Society's Commission to investigate sleeping sickness in Uganda—an abstract of which is published at page 1008—deals principally with the etiology of the disease. It is divided into two parts, namely, (1) the discovery of trypanosomes in the cerebro-spinal fluid of cases of sleeping sickness by Castellani, and (2) a progress report by Bruce and Nabarro, who were sent out to continue the work of the first Commission.[1] The etiology of this interesting disease seemed at last to be nearing a conclusion, when Castellani, in a recent publication, confirmed the discovery by the Portuguese Commission of a special streptococcus as the source of the malady, but the discovery of trypanosomes in the cerebro-spinal fluid of cases of sleeping sickness has again opened up a new field of speculation. In the first part of the report Castellani describes the finding of trypanosomes in the spinal fluid, and concludes that the disease is due to a species of trypanosome, and that the original streptococcus plays a certain part in the last stages of the disease. Bruce and Nabarro in the second part of the report ignore the streptococcus and concentrate their attention on the trypanosome. A perusal of this portion of the report, which is evidently preliminary in nature, brings out points in favour of the trypanosome; but, on the other hand, there are others against it somewhat difficult to overcome. Perhaps the most important point is the constant presence of trypanosomes in the cerebro-spinal fluid and blood of cases suffering from this complaint, the figures of 40 out of 40 being striking. Before this recent discovery, however, filaria perstans used to be found in a similar manner in as many as 100 per cent. of the cases, yet further research has shown that it cannot now be looked on as having anything to do with the disease. In support of the theory that the trypanosome is the causative agent is the fact that 15 lumbar punctures on individuals suffering from other diseases and the centrifugal blood examinations of 18 healthy persons gave negative results. The sceptic might say, however, that the trypanosomes only go into the cerebro-spinal fluid of sleeping-sickness cases because it is specially diseased; and, further, that 18 cases is not a sufficiently large number from which to draw conclusions. This suggestion is somewhat strongly supported by the fact that Baker found trypanosomes in the blood of five natives, whose health the authors state was not visibly affected. The suggestion that this may be due to the fact that we have to deal with two species of trypanosomes may be correct; but the alternative suggestion that the parasite is the same, and causes slight feverish symptoms (trypanosomiasis fever) if in the blood, and the totally different disease, sleeping sickness, if it gets into the spinal fluid, seems not impossible. The experiments on monkeys do not help to clear up the matter of the identity or otherwise of the trypanosomes. There is no suggestion that any of the inoculated animals showed any signs of sleeping sickness, even though trypanosomes were found in their blood. The suggestion that a tsetse fly may spread the human trypanosome seems probable, especially in view of Bruce's own work on the spread of nagana by such flies. The tsetse fly was noticed by Mr. Jackson when acting as Commissioner in Uganda several years ago, and there seems to be little doubt that it is the same as Mr. Austen has described in his monograph as *Glossina palpalis*. The details given as to the experiment in which a monkey was bitten by tsetse flies are not sufficiently full to enable an opinion as to its value to be formed. It would be desirable to know whether the monkey was obtained locally or imported, and whether during the time of the experiment it was kept protected carefully from other biting insects.

[1] Royal Society: *Reports of the Sleeping Sickness Commission*, No. 1, (1) Presence of Trypanosoma in Sleeping Sickness. By Dr. Aldo Castellani. (2) Progress Report on Sleeping Sickness in Uganda. By Lieutenant-Colonel David Bruce, F.R.S., R.A.M.C., and Dr. David Nabarro. London: Harrison and Sons. 7s. 6d.

THE DIABETIC INSTITUTE.

Our courageous contemporary *Truth* has done a public service by giving to its readers some account of the "Diabetic Institute." Our attention was drawn to this so-called institute by a paragraph in the Paris edition of the *New York Herald* headed "Treatment of Diabetes," where it was spoken of in the following terms: "One of the most useful institutions of this country promises to be the Diabetic Institute of London, established for scientific research into the origin, cause, and treatment of diabetes and its secondary symptoms—gout, rheumatism, carbuncles, etc. Hardly any disease is so little understood and at the same time so insidious and dangerous as diabetes, which, according to the highest modern authorities, is curable after all when treated in time. If interested, write to The Institute, 15, D.M., St. Dunstan's Hill, London, for free information. (Communicated.)" In the reply of the Institute to the Editor of *Truth* it is stated that they "do not sell a quack medicine nor pretend to have a secret remedy, as they expressly state its ingredients and that the curative effect is produced by the extract of syzigum jambulum (*sic*)" If spelling is to be taken as an indication of knowledge or education, the writer of this letter possesses little of either. We have a copy of a letter from the Institute from which it appears that the "Consultant" is Dr. L. M. Aston-Davis, and the "Chief Consulting Analyst" is Professor Dr. Ed. Berghaus. We presume it is the latter gentleman who has been Professor of Organic Chemistry of (*sic*) one of the largest German universities, and who is just as able to make a chemical analysis than (*sic*) a young man "made in Great Britain." The letter quoted by *Truth* is word for word the same as ours, and is a complaint to a correspondent that previous letters have been neglected; it begins: "We have twice written to you calling your attention to the seriousness of diabetes and placing the services of the Institute at your disposal, but up to now have received no reply to all our communications;" and it ends: "Will you please let us know what is the reason of your silence? After the trouble we have taken with your case we may at least expect a polite answer from you." The identity of the type-written letters would suggest that the Institute is more pertinacious than successful. We trust it is so, but the thanks of the profession are not less due to *Truth* for the plucky manner in which public attention has been drawn to "a body of unqualified men setting themselves up as an institute to treat disease," and for warning the public against having anything to do with them. Such protests strike the public with more force when originating in a lay paper. The man in the street is curiously disposed to sympathize with quackery and to attribute medical criticisms to self-interested motives.

THE HYGIENIC REFORM OF FEMALE CLOTHING.

We have received an interesting little book[1] by Dr. Neustätter containing some exceeding sensible suggestions as to the improvement, from the point of view of health, of women's clothing. The first principle that he lays down is that the weight of the costume, which he says averages 30 per cent. more than that of male attire, should be reduced to the smallest possible dimensions; secondly, that no pressure should be exercised upon any part of the body, whether breasts or internal organs, and that in particular respiration should be left unimpeded. The best way to

[1] *Die Reform der Frauenkleidung auf gesundheitlicher Grundlage* (The Reform of Women's Clothing from the Health Standpoint). by Dr. O. Neustätter. Munich, Datterer, n.d. Pp. 109, with 79 illustrations.

reduce the weight is to diminish the number of underclothes, replacing them by fewer garments of warmer material, and in particular substituting knickerbockers for petticoats, which protect neither against cold or dust. The weight of the clothes should not be borne exclusively by the shoulders; the ideal to be copied is a knitted garment clinging closely to the figure at all parts; such pressure as there is should be borne by the hips as well as the shoulders. Corsets should be abandoned, and women should not even be measured for rational clothing until some days after discarding them, so that the figure should have had time to reapproach the normal. Whalebone, steel, and other compressing materials should also be done away with, and all these points should receive particular attention in the case of girls of from 18 to 22 years of age. The book is illustrated by many excellent photographs, and the author shows by an amusing juxtaposition that the modern straight-fronted corset tends to produce the type of figure which is characteristic of the Hottentot woman. Practical exemplifications of reformed clothing, as made by various Munich firms, are also given. We must confess that not all of these are attractive to our eyes, but at the same time it must be admitted that the costume of the Venus of Milo is not adapted to northern climes, and that even her figure might not show to its greatest advantage if clothed according to the exigencies of modern fashion.

TRACHOMA AND SCHOOL ATTENDANCE.

ALL hospitals and dispensaries in New York are being asked by the Board of Health to co-operate with it in a determined effort to stamp out trachoma. The city is being mapped out, and each school assigned to a hospital or dispensary area. A card bearing the name of the medical institution at which the patient should attend is to be given by the trachoma inspector to each child excluded from attendance on account of this disease, and on this card the medical officer of the hospital or dispensary will put the dates upon which the child attends. It is hoped that these means will prove effective, because they are calculated to ensure that each excluded child really seeks and receives the regular medical attendance which it requires. A special hospital will be established for the reception of cases for which operative interference is recommended by medical men who are not prepared to undertake it themselves. In Hungary also activity with regard to the disease is being shown, the Minister of the Interior having offered a prize of 2,000 kronen for the best essay on its pathology and treatment. The essays may be written in any language, but must reach the Minister not later than December 31st, 1904.

THE SOCIETY OF MEDICAL OFFICERS OF HEALTH.

THE annual meeting and dinner of the Incorporated Society of Medical Officers of Health, held at the Holborn Restaurant on Friday, October 9th, were marked by the cordiality and enthusiasm happily characteristic of these occasions. The prosperity of the Society is shown not more by the inclusion in its membership of more than half of those engaged in the special department of work which it represents, than by the large number of its members who testify their attachment by taking part in these annual gatherings. Not least, perhaps, among the features contributing to the success of this particular occasion must be counted the desire to do honour to the president for the year, Dr. Joseph Groves. Dr. Newsholme, who gave expression to the high esteem in which their president is held by his brethren in public health work, expressed also, we believe, the sentiments of those who have had the privilege of co-operation with Dr. Groves in the Council and Committees of the British Medical Association. Advantage was taken also of the occasion by the President of the Royal College of Physicians and the President of the British Medical Association to bear testimony to the high estimation in which members of the medical profession in general hold their colleagues who have devoted themselves specially to preventive medicine on its administrative side. It may with confidence be affirmed that both in their references to sanitary science as the highest department of medicine, and in the emphasis with which they dwelt on the importance of independence and security of office for those engaged in this responsible work, Sir William Church and Dr. Griffiths have the hearty support of the bodies of which they are the official heads. As readers of the BRITISH MEDICAL JOURNAL are well aware, the British Medical Association has given repeated practical demonstration of its sympathies and opinions in the efforts which it has made to assist the Society of Medical Officers of Health in the matter of security of tenure. Dr. Groves made grateful reference to the services thus rendered in the past, and we are glad to be able to state that renewed attempts by the two Societies to obtain justice in this matter are now under consideration. It is gratifying to observe that another reform necessary to the full efficiency of the sanitary administration of the country received adequate mention—namely, that of a better organization of the central department chiefly concerned in public health, and of conferring on its Parliamentary head an official status more commensurate with the great responsibilities of his department. Not only the internal organization of the sanitary service, but also the objects of its work, received due attention from the speakers, both members and guests. Sir William Church took the opportunity to dwell upon the advisability of measures for the prevention of small-pox being entrusted to the medical officers of health whose competence had been shown in coping so successfully with such more difficult tasks as the abolition of typhus and the exclusion of cholera and plague from our shores, and also to point out the danger of the rapid multiplication of sanatoria for consumption without, perhaps, sufficient regard in all cases to ways and means. He reminded his audience that he appeared before them in the dual capacity of President of the Royal College of Physicians, and chairman of a parish council; and it was, perhaps, more particularly in respect of the latter office that he ventured to hint certain doubts as to the universal efficacy and applicability of drains. Suffice it to say, that in the subsequent remarks of medical officers of health respect for the President of the Royal College of Physicians doubtless tempered the faithfulness with which they would otherwise have dealt with the heresies of the chairman of parish council.

THE POISON OF RUSSELL'S VIPER.

THE third number (New Series) of the *Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India*[1] is devoted to the researches of Dr. G. Lamb, I.M.S., and Mr. W. Hanna on the poison of Russell's viper (*Daboia Russellii*). They find that *Daboia* venom owes its toxic property principally to its action on the blood, with the production of rapid death from extensive intravascular clotting, while in the chronic cases a marked diminution of the blood coagulability is observed. In weak solutions, such as 0.1 per cent., the toxicity of the venom is completely destroyed by heating for half an hour at 73° C.; with more concentrated solutions this process diminishes but does not destroy the power of causing intravascular thrombosis. The authors find that *Daboia* venom contains no toxic element which has an action similar to that of the toxic albumose regarded as the chief constituent of cobra venom and acts directly on the central nervous system. In this connexion it is interesting to note that Calmette's antivenomous serum, which has been claimed to be protective against the venom of all snakes, has been found to be devoid of power to neutralize the toxin of *Daboia* venom. In explanation of this observation it is pointed out by Dr. Lamb and Mr. Hanna that the venom which Calmette employs to immunize his horses, a mixture of colubrine and viperine poisons, is heated before injection to 73° C., and that such treatment necessarily destroys or greatly impairs the principal element to which *Daboia* venom owes its toxicity. The numerous experiments upon which these observations are based will

[1] Calcutta: Government Printing Office. 1902. (Roy. 8vo, pp. 39; 9d).

be found worthy of a detailed study by all those who are engaged in investigations into the serumtherapeutics of snake venoms.

THE STRANGERS' HALL, NORWICH.

An interesting addition to the public buildings of Norwich has recently been made through the liberality of Mr. Leonard Bolingbroke. Some four years ago he purchased "The Strangers' Hall," a house which must have been well known to Sir Thomas Browne. The building was fast falling into decay when Mr. Bolingbroke purchased it and caused it to be repaired. The oldest part of the building is the crypt and cellars dating probably from the fourteenth century, while the hall above is believed to have been erected towards the end of the fifteenth century. In the sixteenth century the house was the property of Nicholas Sotherton, a grocer. It throws a curious light on the domestic economy of the period to find that this prosperous tradesman, who was mayor of the city, was content with at most one bedroom in his house; his predecessor had none, the house then containing a hall, parlour, kitchen, and buttery, besides the crypt and cellars for the storage of valuables. The Sothertons were promoters of the settlement of the Dutch and Walloons in Norwich, and as these immigrants settled close by, the house may thus have earned its name. In the seventeenth century the house passed into the possession of the Cocks, also grocers, and one of them, who was mayor in 1627, made large additions to the building, but soon after the middle of the century it became the property of Joseph Paine, a friend of Sir Thomas Browne. Paine, who was mayor in 1660 and was knighted by Charles II, is frequently mentioned in Sir Thomas Browne's correspondence with his son, and the author of the *Religio Medici* doubtless often visited the house. Later it was used as the judges' lodgings, and was afterwards purchased by the Roman Catholics who used it as a presbytery. Among those who then used the house were many foreigners, and it is perhaps more probable that the name, Strangers' House, was applied to it at this time. Mr. Bolingbroke has placed in the house an interesting collection of old English furniture and domestic appliances illustrating the everyday life of the past. A small charge is made for admission in the hope of making the place self-supporting.

THE ILLNESS OF MR. CHAMBERLAIN.

Some sensation has been caused by the announcement that in the middle of his campaign in favour of fiscal reform Mr. Chamberlain has been struck down by an attack of gout. We are in a position to say that there is no cause for alarm. During the last few years Mr. Chamberlain has from time to time suffered from attacks of acute gout from which he has recovered, and his general health has not been in any way impaired. As age advances the risk of an attack of gout is always increased, and as is well known, Mr. Chamberlain is one of those whose mode of life is essentially sedentary. To such persons acute attacks of gout appear to act as safety valves, and to be not inconsistent with a long span of life; this was notably the case with the late Earl of Beaconsfield, a man not addicted to active exercises or field sports, who, in spite of, or perhaps by the help of, gout, lived to the ripe age of 77.

TRANSPOSITION OF VISCERA.

Dr. J. F. Thompson, of Portland, Maine, U.S.A., reports a case of appendicitis of unusual interest, especially as to diagnosis.[1] A woman came under his care with symptoms of general peritonitis arising from the appendix. The apex beat was found on the right side of the thorax, to the right of the right nipple and on a level with it. Abdominal section was performed, and a complete transposition of all the abdominal organs discovered. The appendix lay in a large abscess in the left iliac fossa, "the rectum *(sic)* being in the normal position of the appendix." The patient died. Unfortunately a complete necropsy was not permitted, but the transposition of the abdominal organs was confirmed. Another case of *situs mutatus* or reversal of viscera has been reported by M. Ramond.[2] An infant, aged 7 months, died in a Paris hospital of diarrhœa. Its left forearm and hand was ill-developed and at the necropsy complete transposition of the viscera was detected. As usual the great vessels shared in the anomaly. The cæcum, which lay in in the left iliac fossa, appeared normal like the remaining viscera.

[1] *Boston Med. and Surg. Journ.*, August 27th, 1903, p. 247.

DEATH OF SIR GEORGE DUFFEY.

It is with very deep regret—a regret that will be shared by the whole profession, and especially by members of the British Medical Association who knew the work which he did for it—that we have to record the death, after a long and painful illness, of Sir George Duffey of Dublin. He took a large part in the foundation of the Dublin Branch of the Association, and was local Honorary Secretary of the very successful annual meeting in Dublin in 1887. We hope to publish a biographical notice in our next issue.

CORRECTNESS OF THE *MEDICAL REGISTER*.

We learn from the Registrar of the General Medical Council that in consequence of the paragraph under this head which appeared in the British Medical Journal last week, he has received about three hundred communications during the first three days of this week; among these letters were five from registered practitioners whose names would otherwise have been erased from the *Register* at the end of this year under the operation of Section xiv. It may, therefore, be well to call attention to the matter again. We have received a letter from a registered practitioner resident in England, but who was originally registered in Scotland, transmitting a communication from the Registrar of the General Medical Council informing him that notifications from practitioners who were originally registered in Scotland should be addressed to the Registrar of the Scottish Branch, and adding that the circular referred to in our paragraph of last week was addressed only to practitioners originally registered at the English office of the Council, 299, Oxford Street, London, W. We think that Mr. Allen might make this point clear by a further communication to us, and might also inform us, for the information of members, as to what should be done by practitioners originally registered with the Irish Branch Council.

The German Committee of the Virchow Memorial announce, in a document dated October 13th, the anniversary of Virchow's 82nd birthday, that the proposal to erect a statue of Virchow in one of the public streets of Berlin, near the place where his scientific work was conducted will be carried out. They thank those who have already contributed, and appeal for further funds. Contributions will be received by the Bankhaus Mendelssohn und Cie, Berlin, W., Jägerstr. 49, 50. An obelisk of unpolished grey granite has been placed over Virchow's grave in the old Matthäikirchof, Berlin. It bears on one side a black marble tablet, on which is inscribed "Rudolph Virchow," and the date of his birth and death.

Scotland.

Opening of the Winter Session in Glasgow.

The work of the winter session in the different medical school of Glasgow was resumed on Thursday, October 15th. There is as a rule little ceremony at the beginning of the session, but the Medical Faculty of Anderson's College have announced an inaugural address by Major Ronald Ross, Professor of Tropical Medicine in the University College, Liverpool, and the Corporation of the City is taking the opportunity of entertaining the distinguished visitor at dinner in the Municipal Buildings.

Shellfish and Typhoid Fever.

Dr. R. M. Buchanan, Bacteriologist to the Glasgow Corporation, has prepared a report on the examination of shellfish suspected of conveying infection in an outbreak of enteric fever to which reference was made at the time in these

[2] *Bulletins et Mem. de la Soc. Anat. de Paris*, June, 1903.

columns. Four series of specimens of shellfish were received on August 26th and September 11th, 18th, and 30th respectively. These included the edible cockle, mussel, winkle (Littorina littorea), and "muscin" (local name of Mya arenaria). They were collected within the sewage-polluted area, and also at some distance therefrom, where shellfish, especially cockles, are gathered for market. He has arrived at the following conclusions: (1) All the edible shellfish within the area of sewage contamination showed, by the presence of virulent bacillus coli, excremental pollution, and their consumption must therefore be regarded as highly prejudicial to health; (2) the shellfish beyond the range of sewage contamination were found to be normal and safe for edible purposes; (3) certain shellfish—cockles and "muscins"—within the area of sewage contamination showed the presence of the bacillus of typhoid fever in great number, and the consumption of similarly infected shellfish by holiday visitors at the end of July would sufficiently explain the outbreak of typhoid fever which occurred amongst them after their return to their own homes in Glasgow and elsewhere.

Prevention of Consumption in Glasgow.

The programme of work for the approaching winter ha now been arranged by the Council of the Glasgow and District Branch of the National Association for the Prevention of Consumption. A public meeting is to be held next month and will be addressed by Dr. Alfred Hillier, the Secretary of the National Association, on the subject of the Advantages of Sanatoria Treatment to Co-operative and Friendly Societies. Arrangement have also been made for public meetings to be held in different districts of the city to educate the public in the prevention of consumption. A new feature this year, which the Council welcome, is the number of addresses that members of the Branch have undertaken to deliver in various poor mission districts at the request of city congregations labouring therein. It was reported that the subscriptions now received for the sanatoria for males to be erected by the Association at Lanark amounted to nearly £5,700. In view of the pressing need of sanatoria for males from the city and district the Council regret that the insufficiency of these funds prevents them proceeding at once to the erection of the necessary buildings, but renewed efforts will now be made to get the necessary amount of money.

Small-pox in Glasgow.

Following on a case of small-pox recently mentioned as having been discovered in one of the model lodging houses of the city, six additional cases were admitted into hospital last week. These cases were all taken from the same lodging house as the previous case, but it is hoped that the vigilance of the sanitary authorities will result in this slight outbreak being speedily stamped out.

Ireland.

Resident Medical Officers of Workhouses.

In the South Dublin Union there are two resident medical officers, Dr. Macnamara and Dr. Dunne. There has been a divergence of views between Dr. Dunne and the guardians as to the question of private practice, and finally the Local Government Board directed their inspector, Dr. Biggar, to hold an inquiry into the apportionment of the duties of the resident medical officers, and especially as to the manner in which Dr. Dunne had been discharging his duties. The report states that the rules laid down by the guardians were not observed. Instead of one officer going out in the afternoon or evening one was usually absent in the mornings frequently as early as nine, and was absent for the greater part part of the day. Dr. Macnamara's daily average absence was six hours and Dr. Dunne's between six and eight hours. These arrangements undoubtedly interfered with the proper discharge of the usual duties. Dr. Dunne also did a little private practice. The inspector had come to the conclusion that neither of the medical officers spent on an average more than three hours daily in the actual discharge of duties. The inspector pointed out a number of defects in the medical arrangements. The Local Government Board decided that they would postpone their decision for three months in order that time might be given the residents to show that they realized their responsibilities. There are over 1,100 patients in the hospital.

The Fever Hospital Question in Belfast.

The question of converting the Union Fever Hospital in Belfast into a district fever hospital was again brought up at the last weekly meeting of the Board of Guardians. It was proposed that a Committee of the guardians be appointed to meet a Committee of the Council to consider the matter. Mr. Walker moved as an amendment:

That this Board fully recognizes the urgent need of additional accommodation for the treatment of infectious diseases, but beg to point out that as the Council of the County Borough of Belfast is the health authority, and as the need for additional accommodation has been pressed upon the attention of the Corporation for the last twelve years without avail up to the present, this Board cannot relieve the Corporation of their responsibility in the matter, as to do so would be to put ourselves in a false position by accepting a responsibility that does not fall upon the Board of Guardians.

This was seconded by Mr. Malcolmson, who said that the Act quoted did not apply to such an institution as the Belfas Workhouse. Finally, the amendment was carried by 22 to 3.

Consumption in Belfast.

The Belfast Public Health Committee had under consideration at its last meeting a revised memorandum of terms proposed by the Forster Green Hospital for making provision required by the Committee for the admission of cases. It was also decided to ask authority to advertise for sites for day shelters. A communication was received from the Local Government Board urging upon the Council the desirability of taking steps to educate the people as to the best means of guarding against consumption.

Consumption Sanatorium for Cork

On behalf of the Cork Branch of the National Association for Prevention of Consumption a deputation, consisting of Drs. Cremen, Donovan (Medical Officer of Health), Professor Ashley Cummins, M.D., etc., appeared before the Cork County Council in connection with the erection of a sanatorium for the cure of consumptive patients in the city and county. Dr. Cremen said that the deputation came there to ask the sympathy, influence, and support of the council in the effort to obtain a Government grant for the purpose of erecting the much-needed sanatorium. The district councils of the city and county had all been appealed to, and were willing to respond generously on condition that a site could be found. The association had been offered a site absolutely free, and in every way suitable for the purpose of a sanatorium. The gentleman, however, giving the site had limited the time during which his offer would remain open to six months to allow of the collection of funds. Four months of that period had elapsed, and if the association did not succeed in the next two months the whole project would collapse. The following motion was proposed and seconded:

That, recognizing the immense importance of establishing in our county a sanatorium for the cure of consumption—a malady now proved to be curable—we earnestly recommend to the Chief Secretary the application that has been already made to him to obtain from the Treasury the necessary grant of £12,000 for the erection of the buildings, no money being required for the site, which has been generously offered by Mr. Richard Barter, provided it be accepted within limit of time, of which two months only now remain unexpired.

Scarlatina in Lurgan.

An outbreak of scarlatina in Lurgan was reported to the last meeting of the urban council. Dr. Agnew, M.O.H., expressed the opinion that the disease was disseminated by work given out from the sewing factories; he hoped that the new Factory Act would help the sanitary authority to prevent the spread of infectious disease; it would be of great assistance if he could find the houses into which work was taken.

"Retaliation" in Westmeath.

It is reported that the members of the Westmeath branch of the Irish Medical Association have been much annoyed by the offensive references made to them by certain members of the Boards of Guardians. They have now resolved to charge exceptional fees for attendance upon these gentlemen or members of their families. This is an unusual but probably effective method of retaliation. Guardians who can see no grievances in the treatment of their medical officers may have their vision wonderfully improved by the new method.

The Sewerage of Newtonards.

The medical officer of health of Newtonards has called attention to the sewerage, and stated that the chief defect was the want of proper water-tight sewers. The Local Government Board has asked for information on the subject.

Introductory Addresses

AT THE

OPENING OF THE MEDICAL SCHOOLS.

ST. VINCENT'S HOSPITAL, DUBLIN.

By R. F. Tobin, F.R.C.S.I.

THE PRESENT STATE OF THE IRISH POOR-LAW MEDICAL SERVICE.

Mr. Tobin devoted his address to the present unsatisfactory condition of the Irish Poor-law Medical Service. He said that the medical profession was unanimous in holding that something must be done to improve the condition of Irish Poor-law medical officers. It was a duty to bring the subject before the public on every possible occasion, and to continue repeating truisms and commonplace facts until those in authority gave active consideration to them.

The Irish Poor-law medical officers alleged truly that a price was put on their services which at the time it was fixed was certainly not too high, and that since then the cost of medical education had doubled; the market value of medical men had doubled, and yet they were refused any increase either of privileges or pay. A man who after five or six years of arduous study, and after seeing many fall by the way, took employment in the Poor-law medical service found himself ill-treated both as regards pay and consideration. The inadequacy of the pay of the dispensary doctor had been set forth in various ways; for instance, it had been shown that in many districts if these medical officers were allowed merely the rate of car hire given to other Government officials, and no pay whatever, they would be better off. He quoted the case of a fellow student who had taken a dispensary in the West of Ireland some thirty years ago; only on one or two occasions had he had a month's leave of absence during the whole of that period, and finally his health broke down, when he was accorded merely as a matter of grace a pension of £60 a year. Mr. Tobin compared this with the rates of pay and pension in the Army Medical Service. It was true that in some districts dispensary medical officers might supplement their salaries by private practice; but there were not a few districts where the inhabitants were so poor and the medical officer attending them so removed from the public eye that he deserved larger remuneration. It was, he said, most short-sighted policy for one branch of the profession or even for one member of it to be jealous of another; the motto should be "Help one another," for all were interdependent, and what honestly raised one eventually raised all.

To a large number of the public, a number daily growing larger, the doctor seldom loomed larger than as one who prescribed a mixture, a pill, or a blister, to which armoury had of late been added Roentgen ray and tablets. But in Ireland he was glad to say that this was not the way in which the practice of medicine was generally regarded. There was no land where the medical profession stood higher or conducted its practice better than in Ireland, because it had always treated, and the public had always encouraged it in treating, its work in life as a profession and not as a trade. Whether for large fees or small fees or no fees at all, the medical man should resolve that he would never give any one for whom he prescribed anything but his best. The well-to-do public, or at least the more enlightened of them, joined in taking this view of the question; they saw that they must suffer from any deterioration in the profession, and that they were benefited by skill gained by those who practised among the poor. There was thus between the well-to-do, the poor, and the medical profession a mutual helpfulness. The cultured and well-to-do were becoming educated in domestic hygiene; but it was not so with the poor; yet to limit the treatment of their ailments to a bottle of medicine was a mockery. The part, therefore, that the dispensary doctor had to play was a very large one; he was many specialists in one. There was practically no limit to the good he could do if he was a man of sense, ability, and skill; it was his to guard against the occurrence of disease, to limit its spread, to help those attacked in their struggle with it, to raise the physique, and forward in every way the comfort and well-being of those committed to his care. This was no mean task, and surely the man who was called upon to undertake it might put forward the three demands of the Irish Medical Association: (1) A competence (£200 a year) while he worked; (2) a moderate pension when he was no longer able to work; (3) a month's leave of absence every year in which to recuperate his health or attend a post-graduate course.

The necessity to remedy the present condition of things was urgent, and there was another reason for pressing on with energy just now. It was that Ireland had in office a Chief Secretary and an Under-Secretary, possessing, as he believed, the will and the ability to help. A tour through the remoter districts of Ireland might take the traveller through many beautiful places, but at every turn he would see something telling of present misery and neglected opportunity. "The ruined cabins on the hillside," he said, "must awaken thoughts of the brave men born and reared in them, and so of battles gone and battles yet to be, of such a chain of emigration so much gone over the ship's side that one stood in dismay lest the whole should follow. With these thoughts uppermost you would naturally turn to see what was being done to conserve the remaining few. In the houses you enter there is not much of what the twentieth century is proud. On every side you see signs of disease spreading unchecked. The young maimed or dying of tuberculous disease, the old of cancer, lunacy on the increase, typhoid and typhus calling forth heroism and striking down those who display it. Perhaps in some cottage you may come across a dispensary doctor doing what he can to cope with the difficulties. It may be a sore throat which, if not isolated at once, would spread diphtheria or scarlatina far and wide, one which my friend of the railway carriage would treat with 5 gr. of phenacetin; or it may be a crippled child for whom a Thomas's splint is necessary. If the latter, the doctor will be trying to collect 25s., the price of the splint. No doubt the Chief Secretary will give £1. Perhaps, when you get outside, he may ask, 'Where will the other 5s. come from?' Be sure you tell him the custom of the country, 'The doctor will give that himself,' and don't fail to add, 'and well he might out of his fine salary.'

"A dispensary doctor; what a quantity, what a vast, unmeasurable quantity, of grand unselfish work is covered by that name. Here and there, it is true, are to be found a few careless and intemperate in their ways. The casual observer is impressed by them, and goes his way unrecognizing the hundred others who day and night are expending their best energies in the service of the poor. Some pathetic incident gives the general public a glance at this every-day life, and they forthwith stand amazed at the heroism therein displayed. It does not detract from the honour of those who wear the Victoria Cross to say that thousands who have shown an equal bravery are going unregarded through life. Could we but resuscitate and have amongst us for this occasion the late Dr. William Smyth, of Burtonport, how his manly heart would respond and glow with pride at my saying that the work he died in doing is being done in the same heroic way by practically every dispensary doctor in Ireland whenever occasion demands. To how many a one could not we apply the words of Browning inscribed on a tablet erected in Templechrone Church in memory of Dr. Smyth:

> One who never turned his back, but marched breast forward.
> Never doubted clouds would break,
> Never dreamed, though right were worsted, wrong would triumph,
> Held we fall to rise, are baffled to fight better,
> Sleep to wake.

"In saying this I am not indulging in mere verbosity. I am simply stating matters of fact. From the *Londonderry Sentinel* of August 25th I learn that at least Dr. Brendan MacCarthy, a man of whom we at St. Vincent's are justly proud, and who worked with Dr. Smyth on the memorable occasion two years ago, is still marching as he has always marched, 'breast forward.' I read from that paper:

> Dr. MacCarthy addressing the guardians, said, as they were aware, typhus had reappeared in Arranmore. He was on the island last week, and visited not only the houses in which the outbreak occurred, but the houses upon which he had occasion last year to report unfavourably, and he did not find any real improvement. Typhus fever was essentially a disease of dirt and overcrowding. It was the scourge of gaols and armies before the importance of cleanliness and air space was understood. Typhus was disappearing from the face of the globe, because it could not stand for a moment before sunlight, fresh air, and soap and water. But in different parts of Ireland the houses were of an unhealthy description. The windows were not of a proper or sufficient size to let in God's pure sunshine, the floors were of clay, the roof defective, and the walls damp. The family was huddled and crowded in the house, and lay in unhealthy box-beds, with which they were all familiar. Those were the conditions for breeding typhus, and naturally they had outbreaks in such a house, for every cause for such

was there, and very plain to be seen. Then, again, when there was such a loathsome and infectious disease as typhus in the house, the priest or the doctor who went into that house did so at the imminent risk of his life. But the same case could be visited and nursed with comparative safety, if the fresh air and sunlight were allowed to come freely into the house and dilute the poison.

"On resuming your journey you will pass many a pleasant-looking coastguard with spyglass, scanning the horizon for smugglers, pirates, and hostile fleets, and it may occur to you to contrast this continual outlook for foes rare and easily recognizable with the fact that never a glass is turned on the myriads of microscopic enemies that carry devastation over the country—to compare the preparedness of the country for possible enemies at sea with its attitude towards ever-present enemies on land. To drive this lesson home, halt at the first dispensary you meet, and, talking of the recurring courses of instruction that naval officers have to go through, and the eagerness of the State to snap up every new instrument of destruction, introduce them to the white-washed room, without one vestige of equipment, and, if he is there, to the medical officer of health, a man who perhaps took honours at a time when the word bacillus was unknown, and to whom has been given not one month for a post-graduate study in any laboratory since he took up his appointment."

After referring again to the importance of the public health work of the Irish Poor-law medical service, Mr. Tobin concluded his address as follows:

"Strong, and brave, and clever men tend to produce others strong, brave, and clever, and they are matured and made stronger and cleverer not by the consumption of drugs, but by education and by obedience to laws which are known to all who take out the diploma of the Public Health Department.

"Gentlemen, this is one of the commonplace facts that, as I said at the opening of my address, we must continue hurling into the street till we awaken the public to its importance. Once it is practically grasped, forthwith will come a recognition of the true rôle of that composite individual, an Irish dispensary medical officer, and a redress of his grievances. In and out of season the profession has tried to force it on the attention of the Government, but in vain. The all-importance of the issue, and the lethargy of our rulers necessitate and constitute the justification of the attitude of the profession towards the Irish Poor-law medical service.

"Not in the interest of the individual—though his lot however inadequately set forth by me is hard indeed—not in the interest of the profession, but in that of the public weal do I say to you: Join the Irish Medical Association, and, for the present at least, leave the Poor-law medical service alone."

MEATH HOSPITAL, DUBLIN.

ON Monday, October 12th, Sir P. C. Smyly delivered an address at the Meath Hospital, introductory to the session 1903-4. The chair was occupied by Sir Francis Cruise, M.D. He referred to the death of Sir William Stokes, who gave up his life for his Queen and country, who had made a great reputation for himself, and perpetuated the fame of his father. The lecturer then gave a summary of the advances which had been made in the practice of surgery and in the public medical services. On the motion of Dr. James Little, seconded by Mr. Chance, a vote of thanks was passed to Sir Philip Smyly. Sir Lambert Ormsby occupied the second chair.

OPENING OF THE WINTER SESSION IN THE MEDICAL SCHOOLS.

GUY'S HOSPITAL.

THE opening meeting of the Pupils' Physical Society was held in the Physiological Theatre on Saturday, October 10th, at 8.30 p.m. At 7 o'clock the Honorary President, Sir Samuel Wilks, and several members of the staff dined with the Presidents of the Society in the Students' Club. At the subsequent meeting of students and practitioners the opening address was delivered by Dr. Goodhart, Consulting Physician to the Hospital, who was supported by a number of his colleagues on the active staff of the hospital. Sir Samuel Wilks, after humorously complaining that every time he came down to Guy's he found a new building, called on Dr. Goodhart, referring to him as his successor in the pathological department of the hospital many years ago. Dr. Goodhart had an attentive audience as he discoursed pleasantly on Health in Particular and Pitfalls by the Way. He said that the aspect of life upon which he would dwell more particularly was health. He should not attempt to define it, for it was easier to say what was disease than what was health. There was no common standard of health. Inside the hospital they were ever striving to give health to its inmates; but they very seldom did so, although they often put them on the road thereto. Thus, approximately, inside the hospital they knew little of health except the striving to obtain it.

Nevertheless, it was a good working principle always to assume a man to be healthy unless they were sure it was otherwise. A man might be the subject of serious, and in the end of fatal, disease and yet be himself in the enjoyment of health for many years. The human body appreciated regularity but it rebelled against the monopoly of routine. Doctors often ordered rest without due reflection. Rest was a great and dominant aid to healing, but all the muscles were formed for action, and there was probably no more fertile source of disease in the body than ill-advised and prolonged rest. He lastly referred to the two pitfalls of "routine" and "meddlesomeness."

The practice of medicine was strewn with disappointments because means had been applied to purposes they could not be expected to accomplish. When occasion called they often feared to modify the dicta of the past. They continued to do as their fathers had done. They must question authority. Their teachers were not lawgivers, they were of the bacterian order; their action was zymotic, and their function to stimulate thought. Theirs was a profession of moods. Years ago the mood was conservative, to-day in all directions their accomplishments were so great that they were all for doing something. They were meddlesome with their drugs and with their knives. They could not wait and watch. They had not sufficient confidence in *vis vitae*, and this was not good for the best interests of medicine and surgery. It would be said that this was a plea for doing nothing, and that it would deaden enthusiasm, through which most of their advances came. It was a plea that enthusiasm should ever be tempered by a most deliberate judgement—a determined effort on the part of the mind, be it only for the ordering of a poultice or a bath—to choose out of several courses the one best suited for the particular case.

Dr. Goodhart was awarded a hearty vote of thanks for his interesting address, and a similar vote was given to Sir Samuel Wilks, the Honorary President of the Physical Society, for presiding.

REPORTS OF THE ROYAL SOCIETY'S COMMISSION ON SLEEPING SICKNESS.[1]

IN November, 1902, Castellani, while examining specimens of cerebro-spinal fluid taken by lumbar puncture from cases of sleeping sickness, found trypanosomes present in this fluid. The procedure adopted, which was described by him in the BRITISH MEDICAL JOURNAL (vol. i, 1903, p. 1218; see also p. 1431), was to take 15 c.cm. of fluid, and then to centrifugalize this for fifteen minutes: the resulting white deposit was then examined microscopically, and the parasites easily detected.

Out of 34 cases of sleeping sickness, trypanosomes were found in the cerebro-spinal fluid, taken in the manner described above, in 20, or 70 per cent. Anatomically the parasite did not appear to differ materially from the trypanosoma hominis found in the recently discovered disease trypanosomiasis fever. In 80 per cent. of the cases in which trypanosomes were found Castellani also cultivated a variety of streptococcus which he described some months before as the probable cause of the disease.

Bruce and Nabarro, following up Castellani's work and using the same methods, have confirmed this discovery by finding trypanosomes in the cerebro-spinal fluid of individuals suffering from sleeping sickness in all of 40 cases. They do not state what percentage of those cases had the streptococcus also. A series of 15 cases not suffering from sleeping sickness were also examined in a similar manner, but were not found to have this parasite. In pursuing the subject the examination of the blood of sleeping sickness cases for trypanosomes was studied, and the conclusions arrived at are that the parasite may be found there also.

[1] Royal Society: Reports on the Sleeping Sickness Commission. No. I. 1. Presence of Trypanosoma in Sleeping Sickness. By Dr. Aldo Castellani. 2. Progress Report on Sleeping Sickness in Uganda. By Lieutenant-Colonel Bruce, F.R.S., R.A.M.C., and Dr. David Nabarro. London: Harrison and Sons. 1903. Price 7s. 6d.

In answer to the question, Does the blood of the general population contain trypanosomes? the Commissioners mention that Dr. Baker found trypanosomes in the blood of five natives and Dr. Moffat in one European. The presence of the parasites was associated in the cases of the natives with some pyrexia, which, however, soon disappeared, and did not visibly affect their health. In 18 natives apparently healthy no trypanosomes were found in centrifugalized peripheral blood. According to the Commissioners the question seems to resolve itself into this—either the trypanosomes found in sleeping sickness and those found in trypanosoma fever belong to different species, and give rise to different diseases, or they are one and the same, and if confined to the blood give rise to slight feverish symptoms, whereas if they gain entrance to the cerebro-spinal fluid they give rise to sleeping sickness. They consider that the question cannot be answered at present, but they note that the trypanosomes found in sleeping sickness are shorter, have chromatic dot smore frequently, and have the micronucleus situated nearer the end than the other variety. Trypanosomes taken from cases of sleeping sickness and from trypanosomiasis fever were inoculated into monkeys, but no deduction could be made as to the identity or otherwise of the two. The distribution of the disease along the shores of the lake led the investigators next to study the flies of this area. A tsetse fly was found in abundance, the distribution of which, as far as it had been examined, coinciding with that of the sleeping sickness. Experiments with those flies as transmitters of the human trypanosomes were begun just as the report was sent off, and the results are therefore not obtainable, though the first experiment seemed to be positive. The report is illustrated by coloured drawings of the trypanosomes and of the cerebro-spinal lesions and by photographs of patients. The Commissioners conclude their part of the report with an appendix containing some short notes on cases, with temperature charts and necropsies.

LITERARY NOTES.

We have received the prospectus of yet another medical periodical, *Archives Latines de Médecine et de Biologie*. It appears to have sprung out of the International Medical Congress at Madrid, last April, and its object is to co-ordinate the work of medicine and biology done in the three great Latin countries, France, Italy, and Spain. The contributions which it desires to receive are such as are based upon biological and scientific investigation, and the Editor will seek to provide that they shall have a continuous character, so as to bring about again that ancient unity and universality of science which, he says, are almost completely lost in the inevitable specialization of research and practice. The original articles will be published either in French, Spanish, or Italian, but each article will be followed by a summary in the two other languages; an article in French, for instance, will be followed by such a summary in Italian and Spanish. The Editor, who is Dr. Gustavo Pittaluga, of Madrid, speaks somewhat unkindly of the reports of societies. He accepts the conclusions of the last International Congress of the Medical Press, and by excluding such reports he proposes to rid the new *Archives* of what he calls an enormous baggage, the practical results of which are unsatisfactory. He believes that most medical men will be delighted with his decision, and proposes in place of formal reports, which he declares are arid and sterile, to present a monthly critical review, written by well-known physicians and men of science, dealing only with the most important communications presented to academies and societies. The Editor has obtained the assistance of Professors Albert Robin and Raphael Blanchard of Paris, of Dr. Cortezo and Professor Ramón y Cajal of Madrid, of Professor Maragliano of Genoa, and Professor Grassi of Rome. The *Archives* will be published in Madrid monthly, and on and after January 1st, 1904, a *Bulletin* will appear twice a month, perhaps even once a week, dealing with practical matters such as therapeutic novelties, public health, and hygiene. The subscription to the *Archives* for countries within the Postal Union is to be Fr. 18 a year. The first number is to appear on October 15th, and the editorial offices are at Calle del Conde de Aranda, No. 18, Madrid.

We have received the first number of the *Monatschrift für Soziale Medizin*, which has just appeared under the editorship of Dr. M. Fürst and Dr. K. Jaffé, of Hamburg. It has for its object the application of the knowledge of medicine and the allied sciences to the investigation and solution of social problems. The founders hold that social medicine forms a connecting link between practical medicine and social ethics: and their object is to influence the health of the masses rather than that of individuals. A further object of the journal is to uphold the social position and interests of the medical profession. The former aim is exemplified in the present-day struggle against cancer, alcohol, tuberculosis, and syphilis; the latter by the recent growth of medical defence unions, of which the organization recently established in Leipzig, and now numbering some 8,000 members, is fully described in the number under notice. The principal other articles comprise an eloquent appeal by Dr. Friedrich Kriegel for combined action on the part of political economists and doctors in the province of social statistics, the first part of a history of social medicine, particularly in Germany, by Professor Pagel of Berlin, and an investigation of the comparative use of the most important food materials in the various social strata in Germany, by Dr. Felix Hirschfeld. There are numerous reviews of books and abstracts of periodicals, and the new magazine bids fair to become a valuable work of reference. Its originators are evidently fully sensible of the high dignity of the medical profession, and we cordially wish them success in their undertaking.

ASSOCIATION NOTICES.

COUNCIL.

NOTICE OF MEETING.

A Meeting of the Council will be held in the Council Room of the Association, at 429, Strand (corner of Agar Street), London, on Wednesday, the 21st day of October next, at 2 o'clock in the afternoon.

The following Committees will also meet:

Tuesday, October 20th, 1903.—Public Health Committee, 2.30 p.m.—Premises and Library Committee, 3.30 p.m.—Arrangement Committee, 4.30 p.m. *Wednesday, October 21st, 1903.*—Journal and Finance Committee, 10.30 a.m.

October 13th, 1903. Guy Elliston, *General Secretary.*

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

Members are reminded that the Library and Writing Rooms of the Association are fitted up for the accommodation of the Members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 a.m. to 5 p.m. Members can have their letters addressed to them at the office.

Guy Elliston, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

Border Counties Branch: North Cumberland Division.—A meeting of this Division will be held at the County Hotel, Carlisle, on Friday, October 23rd, at 8 p.m.—Norman Maclaren, 23, Portland Square, Carlisle, Honorary Secretary.

Edinburgh Branch: South-Eastern Counties Division.—The autumn meeting of this Division will be held in the King's Arms Hotel, Melrose, on Thursday, October 29th, at 3.30 p.m. The Secretary will be glad to have intimation from members of cases to show, or communications to be made as early as possible.—W. Hall Calvert, Melrose, Honorary Secretary.

Metropolitan Counties Branch: Hampstead Division.—The next meeting of this Division will be held in the Board Room of St. Mary Islington Infirmary, Highgate Hill, N., on Friday, October 23rd, at 4 p.m. Dr. Ford Anderson will preside. Agenda:—Minutes. British Medical Association Vaccination Resolutions. British Medical Association Medical Acts Amendment Bill. British Medical Association Representative on General Medical Council. [Members are requested to read the Supplement to British Medical Journal for August 22nd, 1903, in order to facilitate discussion, as the time at the disposal of the meeting will be short. Mr. Whitaker, Organizing Secretary, will attend and speak.] At 5 p.m., Herbert Tilley, M.D., F.R.C.S., Surgeon to the Throat Hospital, Gordon Square, will read a paper on Chronic Aural Suppurations, Their Diagnosis, Prognosis, and Treatment. Cases of interest and demonstrations with the Roentgen rays will be shown by Dr. Robinson (the Medical Superintendent) and members of the staff. General business. The Division Committee will meet at 3.45 p.m.—J. Dill Russell, F.R.C.S., Osman House, Fortis Green, Honorary Secretary.

Metropolitan Counties Branch: St. Pancras Division.—An ordinary meeting of this Division will be held at the Great Northern Central Hospital, Holloway Road, N., on Friday, October 23rd, at 4.30 p.m. Dr. Wm. Wynn Westcott, Chairman of the Division, will preside. Agenda:—Confirm minutes of July 17th, 1903. Consider Draft, 1903, Draft Medical Acts Amendment Bill. The lines the Council has urged upon the President of the Local Government Board for improving the existing Vaccination Acts. Proposed Medical Acts Amendment Bill. Representation on the General

Medical Council. Transact any business that may be transacted at an ordinary meeting. Mr. Ard, S.H.S.: Perforating Gastric Ulcer. Dr. Martyn Westcott will read a paper on Sea Voyages as Remedial Measures. All members are invited to contribute papers or cards.—R. C. M. POOLEY, M.R.C.P., 35, Highbury Grove, N., Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: TOTTENHAM DIVISION.—A meeting of this Division will be held on Friday, October 30th, at 4 p.m. at the Tottenham Hospital, when a paper will be read by Dr. Dundas Grant on A Few Cautions in the Diagnosis and Treatment of Diseases of the Throat, Nose, and Ear. Visitors are cordially invited.—FRED. TRESILIAN, White Lodge, Enfield, N., Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: WANDSWORTH DIVISION.—The first sessional meeting of this Division will be held at Worple Hall, Wimbledon, on Thursday, October 22nd, at 8.30 p.m. The Medical Act Amendment Bill, Vaccination Resolutions, and Ethical Rules for the Division will be considered, as well as other business. Mr. Whitaker, Organizing Secretary, will attend. Members will see by the sessional card they receive that the Committee has arranged for subjects for discussion, or papers to be read, alternately at each monthly meeting in various centres during the winter months. It only remains for the members themselves, by attending these meetings, showing cases, taking part in the discussions, introducing non-members, and suggesting further topics for consideration to make them instructive and attractive. A small social dinner will precede the meeting at Clapham in November to meet Dr. Hale White, and if this is a success others will be arranged for in Wimbledon and Wandsworth in February and April respectively.—E. ROWLAND FOTHERGILL, M.B., Torquay House, Southfields, S.W., Honorary Secretary.

NORTH OF ENGLAND BRANCH.—The next meeting of this Branch will be held at West Hartlepool, on Wednesday, October 28th. There will be a paper by Dr. T. Beattie, of Newcastle; specimens will be shown by Dr. A. E. Morison, of West Hartlepool; and a demonstration of *x* rays, ultra-violet rays, and other electro-therapeutical agencies will be given by Dr. H. E. Gamlen, of West Hartlepool. Dinner will be held after the meeting. Further particulars will be given in a circular sent to each member. Any member desiring to bring any subject before the Branch is requested to communicate at once with the Honorary Secretary, Dr. A. COX, Cotfield House, Gateshead.

NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCH.—A meeting of this Branch will be held at the Commercial Hotel, Kendal, on October 28th, at 5 p.m. There will be a discussion on the Use of Antitoxins in Private Practice. Members willing to show cases or specimens are requested to communicate with A. S. BARLING, Lancaster, Honorary Secretary.

NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCH: FURNESS DIVISION.—A clinical and social meeting of this Division will be held on Wednesday, October 21st, in the Victoria Park Hotel, Barrow, at 3.30 p.m. Agenda:—Address by Dr. Williams: Thirty Years of Surgery in Barrow. Election of Member of Committee *vice* the late Dr. Long. Matters referred to the Division for discussion: (1) Proposals for Improving the Existing Vaccination Acts; (2) Proposed Medical Acts Amendment Bill; (3) Representation of the Association on the General Medical Council. Short paper: An Interesting Point in Obstetrics, by the Honorary Secretary, followed by discussion. Cases, etc., etc. Members are invited to bring medical friends. Dinner at 6.15 p.m., 4s., morning dress.—FREDERIC E. DANIEL, 141, Abbey Road, Barrow-in-Furness, Honorary Secretary.

NORTH WALES AND SHROPSHIRE BRANCH.—A meeting of the Council of the Branch will be held at the Queen's Hotel, Chester, on Thursday, October 29th, at 3.30 p.m. Agenda:—To read letters of apology. To elect Chairman. To select place of annual meeting for 1904. To consider the question of President of the Branch for 1904. To vote for members of the Association. To vote for Associate Members. To consider any other question affecting the Branch.—W. JONES MORRIS, HAROLD H. B. MACLEOD, and H. JONES ROBERTS, Honorary Secretaries.

SOUTHERN BRANCH: SALISBURY DIVISION.—The next meeting of this Division will be held at the Infirmary, Salisbury, on Wednesday, October 28th, at 8.15 p.m., preceded by dinner at the County Hotel at 7 p.m. Members wishing to read any papers or show any cases are requested to communicate as soon as possible with J. E. GORDON, Honorary Secretary, 52, Endless Street, Salisbury.

STIRLING BRANCH.—The autumn general meeting of this Branch will be held in the Station Hotel, Larbert, on Friday, October 23rd, at 4.45 p.m. Dr. A. Maitland Ramsay (Glasgow) will be present, and will give an address on Inflammation of the Conjunctiva, to be illustrated by a lantern demonstration. The draft Medical Acts Amendment Bill, the resolutions regarding vaccination, and the resolution concerning representation of the Association on the General Medical Council will be considered.—J. E. MOORHOUSE, 1, Glebe Avenue, Stirling, Honorary Secretary.

ULSTER BRANCH.—The autumn meeting of this Branch will be held on Wednesday, October 28th, in Derry. Any member having any papers to read, or any business to bring before the meeting, should kindly communicate with Dr. CALWELL, 1, College Square North, Belfast.

SPECIAL CORRESPONDENCE.

PARIS.

The Annual Meeting and Dinner of the Continental Anglo-American Medical Society.—Meeting of the Académie de Médecine.

THE annual meeting of the Continental Anglo-American Medical Society was held in Paris at the residence of the Honorary Secretary, Dr. Leonard Robinson, on October 6th, at 5 p.m. Dr. Freeman, of San Remo, was in the chair. The Honorary Secretary, after reading the minutes of the last annual meeting and the Treasurer's report, which showed a balance in the Society's funds of nearly 3,000 francs, read the report of the Special Committee appointed to organize the annual luncheon held at Swansea in July. The report was approved, and Dr. Samways, Dr. StClair Thomson, Dr. Warden, and the Honorary Secretary were appointed a Special Committee to arrange for the luncheon to be held during the meeting of the British Medical Association at Oxford in 1904. The vacancies on the Executive Committee were filled by the election of Dr. Hon. Alan Herbert (Paris), Dr. Brandt (Nice), Dr. Linn (Nice), and Dr. Brock (Rome). Six candidates for membership were duly elected members of the Society. A Special Committee was appointed to consider the question of publishing a small directory for the use of members, containing information as to the qualifications, etc., of each member, and to report as to cost to the next annual meeting. On the proposal of Dr. StClair Thomson, seconded by Dr. Robinson, it was unanimously decided to hold the annual meeting and dinner of the Society in 1904 during the International Congress on Tuberculosis in Paris. On the motion of Dr. Freeman, seconded by Dr. Brandt, and supported by Dr. Linn, Drs. Philip Frank and StClair Thomson were unanimously elected Honorary Presidents of the Society. In the evening the annual dinner of the Society was held at the Hôtel du Palais d'Orsay, when over thirty members and guests assembled, Mr. Maurice de Bunsen, Minister Plenipotentiary at H.M. Embassy, being in the chair. After proposing the healths of "The King," "The President of the United States," and the "President of the French Republic," the Chairman proposed "The Prosperity of the Society," humorously referring to his presence as a layman among so many doctors, but concluding he owed the honour to his position as Chairman of the Hertford British Hospital Committee and to his having held a similar position for five years in Constantinople. He was glad to learn that the Society was in a flourishing condition, and he hoped soon to see a member from each of the European capitals on the Society's list. He was given to understand that a lady doctor had that day been elected to membership, and he trusted that future meetings would be graced by the presence of members of the fair sex. Dr. Linn (Nice) replied for the Society. Dr. Mills (Langenschwalbach) proposed "The Guests," coupled with the name of Dr. Bottentuit (Plombières), who gracefully replied in English. Dr. Bull proposed the toast of "The Chairman," bringing to a close a most successful and enjoyable meeting.

The first meeting of the Académie de Médecine after the long vacation was held on October 6th. After the Secretary's report, M. Lancereaux, the President, spoke of the great loss the Académie had suffered during the previous two months by the death of Professor Nocard in the section of veterinary medicine, and of Senator Théophile Roussel in the section of hygiene. Dr. Saint-Yves Ménard then read the discourse he had pronounced in the name of the Académie at the funeral of Professor Nocard at Charenton.[1]

VIENNA.

Vacant Clinics.—The Condition of the Profession.—An Examination for Specialists.—The Detection of Milk from Diseased Cows.—Washed Tobacco.

DURING the last few months not much has happened in medical circles in Vienna, but with the beginning of the new semester fresh life has come into the faculty. Two important offices are vacant, those of Director of the Clinic of Surgery and the Clinic for Syphilis and Dermatology respectively.

The unsatisfactory condition in which the greater number of medical men find themselves is being carefully investigated. A congress of all *Arztekammern*, or corporations of medical practitioners, was held recently in Linz with a view to improve their position. It was resolved to draft new regulations to govern admission to practice and to exercise a disciplinary power over all members of the profession, with a view to stop sundry abuses. One of the most important resolutions adopted was to the effect that the permission to settle down as a practitioner should be granted only after production of proof that the applicant had had one year's experience in a hospital or infirmary. Another resolution was

[1] An obituary notice of Professor Nocard was published in the BRITISH MEDICAL JOURNAL of August 29th, p. 498, and of M. Roussel on October 3rd, p. 856.

adopted prescribing that every practitioner should be bound to keep secret all information concerning his patient, and be exempt from giving evidence in court with regard to matters affecting his patient when such matters had been told to him in confidence. A motion to give the corporation power to take away the diploma and permission to practise was adjourned, and will be discussed separately in each of the provincial corporations. A tariff of fees was brought before the congress, and will be considered in all the corporations before it is adopted.

Great interest was evoked at this congress by a proposal of the Government to create a new examination for specialists. The regulations would require a candidate to undergo a special course, and after two years' training in the hospital, to prove his ability before a commission of professors. A great number of members and representatives opposed this motion, and no definite resolution was agreed to.

Herr Rippes, an assistant in the Agricultural Chemistry Laboratory in Vienna, has devised a method of distinguishing between healthy and unhealthy milk which he believes to be accurate. Hitherto microscopical examination of milk was alone available for the detection of bacteria, and a positive result only of value, a negative result being no proof of good quality. Herr Rippes states that the index of refraction of milk serum is constant in healthy normal milk, being 1.3930 to 1.3942, whilst the index of the serum coming from diseased cows is considerably lower. The same results were obtained with human milk. He even succeeded in diagnosing an illness in a puerperal patient before other physical symptoms were manifest simply by the reduction of the refraction index of her milk. Two drops of diluted acetic acid are added to a small quantity of the milk and then the mixture is heated, until the milk coagulates. One drop of the serum is then brought into a special apparatus consisting of two ocular lenses and two prisms. A scale shows the refraction of the liquid, which can be compared with the normal refraction. The same results are obtained by addition of water to the milk, so that the apparatus may prove valuable for the examination of nursing milk.

The enormous use of cigars and cigarettes in Austria has long been believed to be the cause of various nervous disorders, especially of the circulatory system; efforts to check the habit of smoking have had no result whatever. The sale of tobacco is a Government monopoly, and an experiment now being made is viewed with great interest. Two new sorts of cigars have been introduced, which contain only a small quantity of nicotine, namely, 0.7 to 0.8 per cent., whilst the other sorts have between 1.40 and 2.90 per cent. The diminution of the percentage of nicotine is effected by washing the leaves of the plant in pure water for some hours. It will, however, be some time before the results on smokers can be scientifically ascertained.

MANCHESTER.

Meeting of the University and College Courts.—The "Passing of Owens College."—Dr. Cullingworth's Address on Charles White.—Lectures on Radio-active Rays.—Electric Light in Owens College.—Conference on Defective Children.—Recrudescence of Small-pox.

The day set apart for the inauguration of the reconstituted Victoria University as the Victoria University of Manchester must stand out as a memorable one in the history of educational progress in the north-west of England. On that day the first meeting of the University Court of the Victoria University of Manchester was held. It is a happy augury for the future success of the University of Manchester that one of the first resolutions of the Court was to give representation to the Royal Infirmary and other important institutes on the governing body of the University. Directions were given that a report on the constitution of the Faculties be presented, and that the Council be asked to report on the ordinances and regulations for the constitution of each of the Faculties.

To some, perhaps, the "passing of Owens College" will bring regret. It has done its work right nobly, and is now to be merged in the University of Manchester. The Court consented to the promotion of a Bill in Parliament for the incorporation of the College in the University. The Bill is promoted by the College and not by the University. On the same day as the meeting of the University Court there was held the meeting of the Governors of Owens College. From the statement of the Chairman we take the following facts, which deal with the progress of Owens College between 1870 and 1903. In 1870 there were 11 professors, there are now 36. In the former year 5 lecturers in addition to the 11 professors represented the teaching staff—16 all told. In the present year there are 96 lecturers and assistants, making a total teaching staff of 132. In 1870 the students numbered 209, now the number is 1,148. The income of the College at the corresponding periods was £9,211 and £41,277 respectively, and the capital £92,458 and £1,025,349.

The address given by Mr. Walter Whitehead, as President of the British Medical Association when it met in Manchester last year, seems to have given an impetus to the exhumation of the deeds and doings and of the contributions to the healing art by Manchester men. Besides articles that have appeared in the *Medical Chronicle* by various writers we welcome the address by Dr. C. J. Cullingworth, of St. Thomas's Hospital, formerly Professor of Gynaecology and Midwifery in Owens College and Honorary Librarian and Secretary of the Medical Society, on Charles White, F.R.S., a great provincial surgeon and obstetrician of the 18th century, delivered to the Manchester Medical Society at Owens College on October 7th. Charles White was one of the great medical worthies of Manchester in the 18th century, was "the friend of John Hunter, the principal founder of the Royal Infirmary, the founder also, along with the two Halls, of the Lying-in Charity (now St. Mary's Hospital), an undoubted pioneer in conservative joint-surgery, and, above all, the emancipator of the lying-in woman from the unwholesome influences and deadly dangers to which she had been condemned by the accumulated traditions of centuries of ignorance and superstition." In 1752 Joseph Bancroft, an admirer of White, then about 24 years of age, offered to defray the entire cost of such an institution for a year, provided White gave his professional services. The proposal was accepted, and a small room was hired in Garden Street, Shudehill, by way of experiment. The project was made public, and a few other gentlemen joining Mr. Bancroft, a modest beginning was made by opening the institution for the relief of patients. By July it was found possible to admit in-patients; and so, in such a humble fashion, began the famous Manchester Infirmary, which is now about to enter on another period of extended usefulness in more commodious and extensive premises fitted with all the latest improvements for the cure of the sick, as well as every facility for the instruction of the rising generation of medical students. In 1813, White, at the ripe age of 84, finished "a long life of unremitting exertion and of great and extensive usefulness." Additional interest was given to the lecture by the exhibition of documents, letters, pictures, and instruments associated with the Whites. The picture of White by Allen was lent by his great-great-grandson.

It is a healthful sign of the new activities developing in the University of Manchester to find that Professor Schuster will give a short course of lectures on Rays and Radio-activity, dealing with the various forms of radio-active rays and their applications in medicine. The lectures will begin on October 21st in the Physical Laboratories of Owens College, and will deal with the following aspects of the question: Atomic constitution of electricity; present views on conduction in solids, liquids, and gases; ionized air and its properties; methods of ionization; passage of electricity through gases. Distinction between projectile and undulatory radiation; ultra-violet and infra-red radiation; various effects of radiations; cathode rays; Roentgen rays; Blondlot rays. Radio-activity; distinction between different radiations of radio-active substances; properties of radiations; emanations. To meet the convenience of medical men the lectures will be delivered at 5 p.m.

During the autumn the Council of Owens College has spent a large sum in decorating some of the class-rooms of the Medical School, and also in providing electric light in the building. The electric light is so laid on that it can be used for microscopical purposes as well as for the purpose of projecting lantern slides or experiments by means of an electric lantern.

One of the most recent educational developments is the care of defective children by the public authorities. It has taken a long time to educate the public and the departed School Boards to see how necessary it is to have the health of the scholars properly looked after, to have their vision and hearing tested by competent medical officers. Attention has always been given to the mentally defective, but to a less degree, perhaps, to the physically defective children. At a

conference held in Manchester on October 9th and 10th ways and means were considered for the care of defective children. The Lancashire Society for the Permanent Care of the Feeble-minded has established a boarding school for mentally deficient boys and girls at Sandlebridge, in Cheshire. The municipal authorities of Manchester and Salford are considering the establishment of a joint home for epileptic children, while the Manchester Committee hope to do something for the physically defective. It appears that at least 1 per cent. of the school population is in some degree or other mentally defective. This gives for the London School Boards 9,000, for Manchester 1,000, and Birmingham 900. The permanent care of these deficient children is in the long run the only true economy. The Conference marks an attempt on a large scale to draw together the workers in what is a most important branch of education. Manchester, it appears, is one of the cities where practically nothing is done for the separate educational training of crippled children. Such schools exist in Birmingham, Bristol, London, and Liverpool.

About ten days ago it was announced in the local press that apparently the epidemic of small-pox was at an end. It never does to shout until one is out of the wood, and so it has proved in this case. During last week there was a fresh case in Hulme, whilst three cases have been discovered in Salford.

CORRESPONDENCE.

THE NEW REGULATIONS FOR THE INDIAN MEDICAL SERVICE.

SIR,—Officers of the Indian Medical Service are much indebted to the British Medical Association and to the Editor of the BRITISH MEDICAL JOURNAL for the steady advocacy of their claims.

The new Warrant, while undoubtedly an advance in certain respects, is misleading, in that it ignores the civil side of the service, though, as remarked in your issue of October 10th, this is a matter for the Government of India and the various local governments. Nevertheless, considering that such documents are partly published with a view to recruiting, it is strange that the India Office persistently refrains from making known the advantages of the civil branch of the Indian Medical Service.

The present rules chiefly affect (as regards pay) those members of the service who remain in military employ—that is, in large proportion, the junior members. The following table, compiled from the latest issue of the Indian Army List at hand, gives the number of officers in each rank in civil and in military employ:

Lieutenant-Colonels ...	121	in civil and	70	in military employ.		
Majors	114	,, ,,	35	,,	,,	
Captains (over five years)	100	,, ,,	81	,,	,,	
Captains (under five years)	39	,, ,,	88	,,	,,	
Lieutenants	137			,,	,,	

These figures show that of men over five years' service there are about 335 in civil employ and only 186 in military, so that the new rules will affect most of the juniors and a minority only of the seniors.

In recent years the advantages of the civil side have not been in better pay so much as in the grand scope for professional work, the comparative independence, and in emancipation from military red-tape. It is a common saying in the Indian Medical Service that no one enters it attracted by a military career, and the high place it used to, and ought still to, take in the eyes of students at the medical schools is due to the prospects of civil employ; hence the great importance of keeping this branch attractive as well as contented. These advantages, however, are not now so great as they once were, and the civil rates of pay must be increased, at least in proportion to the increases now sanctioned for the military side.

I may now refer briefly to a few of the paragraphs in the new rules. That the date of promotion should count from the day of joining the "course of instruction" is only restoring a right which should never have been taken away. The absence of examinations before promotion is only what should be. Examinations are both unnecessary and impossible for men occupied in the very diverse employments open to the service; for examples, civil surgeoncies, the prison department, the chemical department, the lunacy department, the sanitary department, the medical school professorships, and the assay-masterships at the mints. Attention should be called to the fact that the couple of months' leave granted "after Netley," though they count for promotion, do not count as service for pension, and if we read paragraph 34 aright the time spent in a hospital appointment "after Netley" also will not count for pension, though probably few candidates are aware of this.

As regards the rates of pay these are fairly good, but by no means liberal or all-round. Considering that all the Indian Services are better paid than the home services, the differences in pay in favour of the I.M.S. are by no means great, as the following table shows:

—	I.M.S.	R.A.M.C. (in India).
	Rs.	Rs.
Lieutenants	420 to 500	420
Captains...	475 to 550	475
Captains (5 years)	475 to 600	—
Captains (7 years)	500 to 650	530
Captains (10 years)	550 to 700	650 + 60 = 710
Majors	650 to 800	790 + 120 = 810
Majors (15 years)	750 to 900	825 + 180 = 1,005
Lieutenant-Colonels	900 to 1,250	1,060 + 180 = 1,240
Lieutenant-Colonels (25 years) ...	900 to 1,300	—
Selected Lieutenant-Colonels ...	1,000 to 1,400	1,150 + 240 = 1,390

As regards lieutenant's pay, all these officers till they have passed a fairly difficult language examination will remain on "unemployed" pay, that is, Rs.420 per month, or the same as a lieutenant R.A.M.C., and after passing will rarely get more than Rs.425, that is, grade pay plus half staff allowance, and out of this they will have to pay mess and regimental band subscriptions. The "permanent" medical charge of a regiment will not often be obtained till the third or fourth year of service, so that up to the fifth year a captain's pay will usually not exceed Rs.475 a month. The increased rates at five and seven years are good, but a captain of ten years' service may find himself getting Rs.10 less pay than a R.A.M.C. officer of the same standing. It is very difficult to understand why I.M.S. majors should often get less than a major R.A.M.C. if, as will often happen, the latter gets an additional "charge allowance." I.M.S. majors of fifteen years' service also suffer, and to the same extent. This is at least anomalous. There is also but little difference between the pay of lieutenant-colonels of the two services.

As regards the "specially-selected" lieutenant-colonels, I presume these will remain as at present, and correspond to those selected for the old grade of brigade-surgeon, under Article 6 of the Warrant of December 7th, 1891. This will affect about 33 men in the Bengal, 11 in the Madras, and about 9 in the Bombay branch of the service, both civil and military. This increase of pay, though not great, is certainly necessary. One will look with interest to see how men are to be selected for the extra "specialist pay." The right to private practice, reaffirmed in Paragraph 22, only slightly affects men in military employ, though a vital matter, which we hope to see generously treated, to the civil side.

The rules as to furlough pay appear to contain nothing new; the rates are certainly inferior to those enjoyed by men on the civil side. Paragraph 31 is very important, in that it grants extra leave for study, but this rule must be read in connexion with Paragraph 34, from which it appears that extra furlough taken for special study will not count for pension. This is a most serious matter, which will make Paragraph 31 totally inoperative and useless.

As regards pensions, the increased pensions at seventeen and at twenty years are good, but will affect but few men. What is still urgently wanted is a progressive rate of pension from twenty-five to thirty years. Such would be of great value to a large number of men, who, owing to their holding hospital appointments at home before joining, entered the service late and cannot now obtain the full rate of pension—namely, £700 a year. What is needed is a progressive rate of pension, say of £40 a year, for every year after twenty-five years' service. Such a concession would do away with many of the claims for "extension of service," which will now under Paragraph 39 be often applied for, and often extensions to seniors press hardly on the men below them.

On the whole, the new rules are an improvement as far as they go, and if the local governments will deal fairly and liberally with the important civil side of the service, there is no reason why the Indian Medical Service should not continue to attract the best men from the schools.—I am, etc.,

October 10th. CIVIL EMPLOY.

ISOLATION HOSPITALS.

Sir,—The discussion on the above subject called forth by your article of October 3rd will, I believe, be widely welcomed. It is full time that the whole question of so-called hospital "isolation" (in reality aggregation) of scarlet fever patients should be carefully investigated.

We have now had twenty years' experience of the system. So far it has been held one of the sacred principles of the science of State medicine, and to question its efficacy rank heresy. Fortunately, however, heretics have not been wanting. Dr. E. D. Marriott, in the columns of the *Sanitary Record*, demonstrated with success the baneful influence on scarlet fever patients of isolation hospital treatment; and Dr. Killick Millard, in a very able paper read before the Incorporated Society of Medical Officers of Health in February, 1901, adduced strong reasons to show that, submitted to the searching proof of statistics, the hospital isolation of scarlet fever was a failure. When medical officers of health, however, begin to question the system, they are met with pious horror on the part of the official leaders of public health. "For goodness' sake," they say, "don't begin now and question the value of isolation hospitals; we have spent £2,000,000 on isolation hospitals!" We are told that it is very injudicious to disturb the public confidence in these institutions, and that all leading sanitarians have believed in them for years, etc.

Dr. Millard, after reading the paper I have referred to, moved a resolution that an inquiry into the subject of the value of the isolation of scarlet fever in hospital be held. This was defeated because of the danger of affecting public confidence. If, however, Dr. Millard and those holding similar opinions are wrong, surely, after twenty years' hospital isolation experience, ample proof can be obtained to utterly confound them. Nothing should be easier. Moreover, if, as a result of the inquiry, hospital isolation emerges triumphant from the ordeal, it is not the confidence of the public that will be shaken but rather the reputation of those who denounced the hospitals. If, on the other hand, the system cannot stand investigation, then the sooner and the more completely the public confidence in them is destroyed the better.

For my part, I boldly confess my belief that the benefits, if any, resulting from the huge sums expended on the hospital isolation of scarlet fever are so absurdly small, that I can no longer advise my authority to continue the costly experiment. I believe the money spent on scarlet fever is out of all proportion to the importance of the disease.

To confess that a system that we have all these years been advocating is a failure is doubtless unpleasant, but even that is rather less unpleasant than the possibility that if we medical men do not take the initiative in discussing the system, the lay public may decide the matter for us.—I am, etc.,

A. Mearns Fraser,
Medical Officer of Health.

Portsmouth, Oct. 10th.

Sir,—Your leader on the subject of isolation hospitals and the correspondence it has evoked serve to call attention to the fact that the results which are following the so-called "isolation" of scarlet fever in hospital are very different from what were anticipated by the early advocates of the measure.

Twenty years ago it was confidently hoped that, if thoroughly carried out, it would either stamp out the disease entirely or at least reduce it to a minimum. Now, after twenty years' experience, it is found impossible to demonstrate that it has reduced the prevalence of the disease to any appreciable extent: and whilst most medical men are beginning to lose faith in its utility as a preventive measure, some are suspecting that it may even do harm, especially when overcrowding in hospital is permitted. At the Liverpool Health Congress, held last August, Professor W. J. Simpson read a paper[1] on Infectious Hospitals, calling special attention to the dangers of aggregation. He said: "The common ward and the general congregation of convalescents on the barrack system are, I believe, the chief causes of return cases." And, again: "I am of opinion that no length of detention in an infectious ward will have any effect on the reduction of return cases." Then, after expressing his satisfaction at the tendency to reduce the length of stay in hospital, he remarks: "This reduction of length of stay in hospital does not, however, lessen or remove the disadvantages belonging to the system I have been dealing with. The risk which a patient admitted with a mild attack encounters by being placed in the same ward with others who may be suffering from a more virulent or acute form of the disease still remains." As a remedy for these evils Professor Simpson advocates the adoption of the "cubicle" system in place of large common wards, as is now being tried at the Pasteur Hospital in Paris.

During the present year the exigencies of small-pox epidemics have compelled certain towns to depart from their established practice and cease "isolating" scarlet fever in hospital. It would be instructive to know how far this course has had any effect in increasing the prevalence of the disease. In this town the sequel to the experiment was a marked diminution of the disease.

In spite of the serious doubts which certainly exist in the minds of many not ill-qualified to form an opinion as to the correctness of the orthodox teaching on the subject of hospital isolation, hospitals continue to be built on the old lines, and the legacy of debt which we are bequeathing to our descendants grows ever greater and greater.

Does it not seem that the time has come when an exhaustive Government inquiry should be instituted into the whole question of the utility of hospital isolation as applied to scarlet fever?—I am, etc.,

C. Killick Millard.

Leicester, Oct. 13th.

[1] *Journal of State Medicine*, September, 1903.

Sir,—I should not trespass on your space were it not for the following sentence in the letter of a correspondent last week:

> The consequence is that miserable misunderstandings, such as appear to have arisen at Hereford and Folkestone, do frequently arise, and the responsible officer—the M.O.H.—has his position weakened rather than strengthened by the action of those professional brethren from whose opinion he would wish to derive support when advocating before our local rulers sanitary and administrative reforms.

This is calculated to give an impression that there is in the Folkestone controversy a difference of opinion between the medical officer of health and other local practitioners when such is not the case. The medical practitioners here have always supported the medical officer of health, and a few years ago brought on themselves a good deal of ill-feeling because they sent in a petition to the sanitary authority drawing its attention to many recommendations of the medical officer of health that had been persistently ignored. We have long recognized here that "union is strength," and I beg to inform your correspondent that there are no "miserable misunderstandings" whatever between the medical officer of health and the local practitioners that I know of.

The whole matter has received more publicity than it really deserves, and the only question was whether the sanitary authority provided medical attendance or not. I asserted that it did not, and to prove my contention I showed that the parish medical officer was usually called in and the patient made a pauper—a procedure I considered most improper.

The Chairman of the Sanitary Committee stated that the fees of the medical officer of health who attended patients were paid by the corporation, but it has since been shown that no resolution sanctioning this was ever passed, and, in fact, so far as the sanitary authority was concerned, no provision was made for medical attendance.

The whole question has been sent back to the Committee for reconsideration, and one hopes that the medical officer of health will be appointed medical officer to the Sanatorium and paid an extra salary to attend all patients admitted except those who wish to have their own private medical attendant.—I am, etc.,

Arthur E. Larking, M.D., D.P.H.Camb.

Folkestone, Oct. 12th.

THE LEPROSY DISCUSSION.

Sir,—I concluded last week my comments on your report of this important discussion, and have also dealt briefly with Dr. Turner's Pretoria report. I should however now like to be permitted to recur to this report, and also to allude to Mr. Pernet's letter of a fortnight ago.

I have since I last wrote read your remarks on Dr. Turner's report in the British Medical Journal of October 3rd, page 843, and the importance which you appear to attach to his assertion that Basutos never eat fish and yet suffer from leprosy induces me to add a few remarks on it. If Dr. Turner thinks that Basutos will not

eat salted and otherwise cured fish he is utterly wrong. The truth is that they are exceedingly fond of it. The Basuto question is no new one. It was the wish to investigate the facts respecting it, on the spot, which was one of my chief inducements to visit South Africa two years ago. I was, however, unable to obtain from the military authorities a pass through districts which were at that time still in part held by the Boers, and after wasting a week waiting at Ladysmith I was compelled most reluctantly to give up my plan. I have, however, been in intimate communication, both by letter and word of mouth, with Dr. Long of Maseru, the able medical adviser to the Basuto Government, and I think I know the facts. From Dr. Leicester, who resided thirty years in the district, I have also derived much information. Basutoland is a mountainous district which has been called the Switzerland of South Africa, and it is inhabited by an intelligent race, which, although not strictly Kaffirs, are yet of the Bantu stock. In 1863 the region was crossed by a body of West Griquas, who left a district in Cape Colony not far distant from Kimberley where both fish eating and leprosy were extant. It is alleged that these West Griquas left leprosy amongst the Basutos. It is certain that they themselves still have it in their present location of East Griqualand and that they still eat salt fish. What did they introduce into Basutoland? the contagion of leprosy, the habit of eating salt fish or both?

As regards other possibilities of obtaining leprosy, it is to be said that the Basutos, like the Kaffirs, are a wandering race. They go great distances in search of work and wages, and often visit the Cape Colony towns, where salt fish is an ordinary article of food. Dr. Long has computed that 15 per cent. of the lepers in his district might have acquired the disease away from home, and this estimate may have been much under the reality. In relation to this matter it may be remarked that a very large proportion of the Basuto lepers are men (93 men to 53 women). There is no reason for thinking that the disease is increasing in Basutoland, and indeed the numbers given by Dr. Cassilis some years ago are considerably in excess of those now offered by Dr. Long.

The Basutos do not catch fish in their mountain streams to any appreciable extent, but all who know them agree that they are exceedingly fond of cured fish in the form of "sardines." I have been told that a Basuto will spend his last sixpence on a box of sardines, will have it opened on the counter, and devour its contents before he reaches his home.

I did not myself find Basuto lepers in either of the South African asylums which I visited, but I saw in private with my friend Dr. B., at Q——, a very interesting example of it. I conceal the names solely because I do not wish to get the poor fellow or his doctor into any trouble. The man was an intelligent clerk earning his livelihood in a public office. He had lived in Capetown and he made no difficulty in admitting that he had eaten salt fish. He was not disfigured, but that he was the subject of leprosy in its maculo-anaesthetic form there was not the slightest doubt.

I quite agree with Dr. Turner in believing that leprosy is a new disease amongst the Basutos. It is, I think, quite certain that the disease was unknown not only amongst them, but amongst the Kaffirs, and probably also amongst the Hottentots prior to the advent of the Europeans. In those days they did not get any fish, now they do.

I may assure Dr. Turner that the inquiry as to whether fish is eaten is a more delicate and difficult one than he appears to think. He is evidently still in that happy intellectual state which permits a man to believe what his friends tell him. For myself I am sorry to say that I have long passed it, and now never give credence to statements unless I have reason to think that they are probably true. If I had accepted as fact all that honest and well-intentioned men have told me, the fish hypothesis would have been abandoned long ago. Over and over again I have been assured that no Natal Kaffir will touch fish. That statement has been made to me by colonists, by resident medical men, and by district magistrates. It has been put into print over and over again. It is now repeated by Dr. Turner in respect to the Basutos. It is, however, I repeat, utterly erroneous. On this point I can give evidence myself. During my tour in Natal we came upon a Kaffir who, with his son, was fishing in a river. We stopped, and questioned him. What would he do with his fish? "Eat it." Would other Kaffirs in his kraal eat fish? "Yes, if they could get it." I have seldom given a man sixpence with greater pleasure. At the little inn where we stopped for the night there was a general store. I told the storekeeper that I had been informed that no Kaffir would eat fish. He assured me that they were very fond of all kinds of salt fish, and offered to show me his books to prove the extent of his sales. He said that he had a Kaffir in his employ who would do anything for him if he could be given a piece of salt fish. At a station a little further on—a small township at the foot of the Drakensberg—there was a large and well-furnished store. I went there, and after purchasing some tobacco asked for salted fish. I was shown sardines in tins, well-cured herrings in barrels with English brands, dried Finnon haddocks, etc., all in excellent condition. "No," I said, "these are not what I want; I want the cheap kind." After some hesitation the shopkeeper, an intelligent Indian, disappeared into a back warehouse, and returned with a thick, sodden lump of Cape-cured fish in his hand. It was in a moist and half-rancid condition. I wished to buy some, but having incautiously said that I only wanted a specimen he took alarm and refused to let me have any. It was all he had, he said, and "it was spoiled and not fit to eat." In the latter part of his statement I quite agreed with him, but at the same time I felt certain that it was on sale for suitable customers. Clearly it was kept in stock, although not displayed in the shop and never offered to any but the poorest purchasers. I can quite understand Dr. Turner's Basuto servant refusing to take the fish which he offered, but at the same time I feel by no means sure that the same man would not have eaten salt fish on the sly. The fact is that the flavour of cured fish is so seductive to many palates that if it can be got it will be eaten. It is, I repeat, of no use whatever asking a person to whom it is a forbidden article whether he has eaten it, and it is little more than mere common-sense to suspect that it will be eaten wherever it is obtainable. In Basutoland salt is dear, and any kind of salted food is highly appreciated. In Basutoland the proportion of male to female lepers is, as I have said, vastly in excess. How does Dr. Turner, as a contagionist, explain that? My suggestion is simply that salt fish is scarce and expensive, and that the men get most of it. It may also be remembered that men travel more into Cape Colony, where salt fish is plentiful. How, also, may I ask can a contagionist explain the fact that leprosy is still very infrequent in Basutoland? It is not more than about 7 per 10,000, yet there is no segregation and every facility is afforded for its spreading. Surely if it were sufficiently contagious to explain what has taken place, it ought by this time to have infected the community far more extensively.

I freely admit that the facts as regards fish-eating in Basutoland itself are somewhat weak, for I can give no proof that anything worse than "sardines" finds its way there. Those facts, however, which favour the doctrine of contagion are, I think, much weaker still. It is possible that commensal communication accounts for a larger number there than in most other countries, and perhaps a yet larger proportion have acquired the the disease away from home than has yet been conjectured.

I have read with great pleasure the letter of Mr. Pernet which appears in the BRITISH MEDICAL JOURNAL of October 3rd. His expressions as regards segregation on Robben Island are even stronger than any which I have ventured to use. It is, he says, "Unworthy of a British Colony in the twentieth century, and an outrage on humanity." When authorities on the matter so high as Dr. Abraham and Mr. Pernet concur in the use of such language, we may surely hope that the days of Robben Island and the Cape Leprosy Laws are numbered. I am glad also to recognize that such an opinion as to the uselessness of segregation must imply a disbelief in the contagiousness of the disease by any of the methods more generally suspected. I will not quarrel with Mr. Pernet as to whether "commensal communication" is or is not a form of "contagion." Undoubtedly it is, as I have often termed it, personal communication. There are, however, differences between contagion by touch, clothes, etc., and the introduction of a virus by the stomach. The precautions to be used against the one and the other would differ importantly. When Mr. Pernet says that I have "not proved that the fish theory is right," I quite agree with him. The theory is not "proved," but still it may be asked, Have not the facts adduced been sufficiently strong to justify Governments all over the world in taking precautions against the sale and consumption of bad fish? And further, has not a good case been made out for a modification in the popular creed as to modes of contagion; for the closure of the leper prisons; and for the

endeavour to diffuse information as to the real nature of the disease? On most of these points I am most glad to have Mr. Pernet's unqualified support.—I am, etc.,

Cavendish Square, W., Oct. 14th. JONATHAN HUTCHINSON.

SIR,—It is only due to Mr. Hutchinson that I should attempt to reply to some of the observations contained in his letter of October 10th, and in the first place I may be allowed to state that no one could have greater respect and admiration for Mr. Hutchinson's position and attainments than myself. It is just because I believe his theory to be unsound, and feared that his prestige and skilful advocacy and arrangements of statistics might induce the profession to adopt his views, that I ventured to interpose in the discussion.

The issue, I take it, has been reduced to this, that it is unsound or badly-cured fish which causes leprosy. To this I demur. Do we really believe that if fish could be universally abolished as an article of diet leprosy would disappear from the face of the earth? I certainly do not. No doubt the important evidence collected by Mr. Hutchinson would appear to establish a *prima facie* case, but can he pretend for one moment that it is sufficient to establish a verdict in his favour?

I will not attempt to deal with or criticize the statements and statistics referred to in his letter. I admit their importance, but may they not be explainable on other hypotheses? They would, moreover, be better dealt with by those residents in the countries to which they refer, but as regards Ireland the condition of the Roman Catholics with reference to fasts are pretty much the same as in other countries. Indeed I know of one Roman Catholic College where nothing but fish, fresh and salted, is consumed without any ill consequences. The disappearance of leprosy from these islands is too large a subject to be dealt with in a letter, and I doubt whether it would carry the case much further.

With regard to British Guiana, I can speak with more confidence. In that country dry salted fish from Newfoundland is eaten daily for breakfast by nearly every white man there, but when cases of leprosy have occasionally occurred among them I have been able to refer the disease to other causes. Little or no fish is caught and salted near the seashore or the mouth of the Pomeroon. It is nearly all imported, and the laws against exposing unsound food for sale are very strict. Up the rivers of the Colony the Indians all adopt the same custom as regards their fishing. During the season it is caught, salted and dried in the sun, and kept for use during the close season; so that if fish caused leprosy among the Warrow tribe, I cannot explain why the Caribs, Macusi, and other tribes escaped, except on the grounds I have stated.

I have known a medical man wounding himself while making a *post-mortem* examination on a leper become affected. I have known European children apparently affected by a leper nurse, and I have found round the leper asylums at Mahaica a larger percentage of lepers than in any other part of the country and where the most obvious cause was the free ingress and egress allowed the inmates. In the interests of the afflicted themselves I think this matter should be thoroughly investigated. If the fish theory prevails I can fancy the different Governments saying, We can do nothing to prevent the spread of this disease; the people will eat fish and therefore the matter had better be left alone. Could anything be more disastrous? In the institution of well-kept leper asylums and homes, such as I tried to establish at Demerara, I believe lies the true remedy, at least for tropical countries. There they were kept in separate cottages surrounded by gardens, were sent to school, taught trades, provided with a chaplain, etc., and made as comfortable as possible. Mr. Hutchinson asks, "Did segregation succeed in Demerara?" I answer it could not, because segregation was not compulsory and not one-third of the lepers in the colony were provided for. We have only to read Mr. Tonkin's interesting account of leprosy in Northern Nigeria in the same number of the BRITISH MEDICAL JOURNAL (page 926) as contains Mr. Hutchinson's letter to see the true conditions under which leprosy spreads.—I am, etc.,

Dublin, Oct. 12th. JOHN D. HILLIS.

NURSING AS AN OCCUPATION.

SIR,—Dr. Bryan asks how an Act providing for a recognized training and examination for nurses, previous to registration, can be a danger to the public?

The danger is that a low standard of nursing education and experience should be accepted as the "recognized training," and the consequent guarantee by the State of insufficiently trained women as registered nurses. Three years' training in a general hospital of over 100 beds, is the qualification required of a candidate for appointment in the military nursing service, or under the Local Government Board for the post of superintendent nurse, and this is generally accepted, in the nursing profession, as the irreducible minimum. But, in the interests of workhouses and the large number of small hospitals, it is to be feared that institutions will be recognized as training schools, which from the small number of their cases, cannot provide sufficient material and variety to give experience to their nurses, nor, especially in the case of the small workhouses, an adequate staff of medical men and highly trained ward sisters, to properly train and instruct them,

A glance at the following figures, compiled from Burdett's *Hospitals and Charities*, will show, I think, that this fear is no imaginary one. There are in the United Kingdom 409 hospitals — exclusive of "children's," "infectious," and "maternity" ones—receiving probationers for training. Of these, 83 only are general hospitals of over 100 beds. There are actually 129 of between 5 and 20 beds and 116 of from 21 to 50 beds who claim to "train" probationers, and 72 of between 51 to 100 beds; this is not the average number of beds occupied, but the total capacity of the hospitals. There are also 647 Poor-law infirmaries and workhouses having infirmary wards, only 48 of which are training schools for nurses, with a three years' course. The great difficulty of obtaining nurses under the Poor Law led the Local Government Board to hold out as a bait to would-be nurses the grant of the title of "qualified nurse" to probationers after a year's service. After such an extraordinary proposal, is it likely that the Local Government Board will add to its difficulties by allowing these 600 workhouses to be denied the status of training schools?

Dr. Bryan is of opinion that "the heads of the nursing profession would never allow an Act to be passed whereby a vast army of women, having the 'little knowledge which is a dangerous thing,' would be registered as trained nurses." But the movement for "the State registration of trained nurses" is not supported by "the heads of the nursing profession" as represented by the matrons of the great hospitals with medical schools (with one exception), and there is no certainty of their having any voice in the framing of the regulations of the proposed Act. Even if they had, the pressure brought to bear by the supporters of the 300 small hospitals and by the Local Government Board on behalf of the 600 workhouses, to get them, or many of them, recognized as training schools under the Act, would probably be too great to be withstood. Only 13 per cent., roughly speaking, that is to say, 131 out of the 1,056, are capable of giving a thorough general training in medical and surgical work. Is it likely that only the 13 per cent. will be permitted to train probationers?

One can see which way the tide sets by reading Miss Todd's letter. She is one of the supporters of the movement, and she thinks "the difficulty of fully training nurses in the smaller schools can be easily overcome by affiliating the smaller provincial hospitals (for nursing purposes) with those for children and special diseases in the same neighbourhood."

It is to be hoped that the other supporters of State registration have a somewhat higher idea of the thorough general training in medical and surgical work, which alone can produce a "fully-trained nurse," and that they recognize the fact that special work should be additional to a thorough general training, and not a partial substitute for it.

If these dismal forebodings of the training school question should be realized, how can Dr. Bryan wonder if nurses, trained and registered after the passing of the Act, should be considered to possess the dangerous "little knowledge"?—I am, etc.,

October 6th. A HOSPITAL SISTER.

ANTIVIVISECTION "STATISTICS."

SIR,—In your leading article dealing with my recent letters in the *Morning Post* you say:

> It is irrelevant to argue that if the death-rate from a disease has increased, a new method of treatment which has been employed in that disease has been less successful than the treatment formerly employed.

The death-rate during the application of a new remedy can surely never be "irrelevant" when estimating the value of that remedy. An argument based on the death-rate is no more "irrelevant" than one based on the case mortality.

As an honest observer I experience a difficulty in regarding case mortality statistics from diphtheria, as equally trustworthy when compared with the Registrar-General's figures, and for the following reasons:

1. They are collected over partial areas by persons not officials of the State.

2. There is nothing to prevent enthusiastic supporters of antitoxin inoculating diphtheria patients after they are out of danger from that disease, and reporting their possible subsequent survival of the injection for a short time as a cure.

3. There is nothing to prevent these same enthusiasts from inoculating patients who have not got true diphtheria at all and subsequently reporting the case as a cure. This indeed might account for the apparent rise in the incidence of the disease in the case-mortality reports.

4. There is nothing in the published case-mortality statistics to tell the public how many of the patients reported as cured of diphtheria died subsequently of other diseases induced by the maleficent properties of the serum.

I have never said that arguments based on the Registrar-General's figures are irrefutable, but the above are some of the reasons why the case-mortality tables that are published should, I think, fail to command at all the same respect. At the end of your article you say

> Until Mr. Coleridge can advance more veracious statements and more, etc.

This is an unfortunate recrudescence of your familiar form of attack upon me, namely, a general imputation of mendacity without any specific justification. May I ask you to be so good as to specify the particular statement in my recent letters to the papers to which you allude as lacking veracity?—I am, etc.,

Victoria Street, S.W., Oct. 12th. STEPHEN COLERIDGE.

*** Any impartial person reading the article in our last issue cannot fail to agree that the irrelevancy of Mr. Coleridge's argument based on the death-rate from diphtheria was demonstrated. If the general death-rate is to be taken as a test of Mr. Coleridge's statement that "the death-rate goes up in the diseases to which the laboratory professors apply their wonderful serums"—in this instance antidiphtherial serum—and of the obvious implication that the increased death-rate is caused directly or indirectly by the administration of this serum, then Mr. Coleridge stands convicted of ignorance or dishonesty in suppressing the facts that (*a*) the death-rate from diphtheria was 78 per cent. higher in 1839 than it has ever been since the introduction of antidiphtherial serum; and that (*b*) it has been lower in every year since antidiphtherial serum was "invented and put on the market in 1894" than it was in the immediately preceding year. As a matter of fact, for the reasons set forth in full in the article referred to, the general death-rate cannot properly be used as a test of the efficiency of curative measures, unless the other causes of varying death-rate can be eliminated.

We are asked to specify the statements lacking veracity in Mr. Coleridge's letters. It would be more difficult to specify those possessing it. It is unnecessary, however, to go beyond the remarks in the letter printed above. It is here suggested that medical men will condescend to such practices as "inoculating diphtheria patients after they are out of danger from that disease and reporting their possible subsequent survival of the injection for a short time as a cure," and that they will also inoculate patients not having true diphtheria and subsequently report the cases as cures, and so on. Could anything more malignantly false be imagined? If Mr. Coleridge meant that doctors would do all this unwittingly, he might at least have said so; but a suggestion of such actions, whether committed wittingly or unwittingly, is one of the most mendacious statements which we have had to record.

We have printed Mr. Coleridge's letter, though it constitutes a gross abuse of our hospitality. We shall print no more from the same source until the writer learns to practise the decencies of debate. The present letter may, however, be of use in showing to those of our readers who do not study antivivisectionist letters in the daily press, the calumnious statements on which the propaganda are based.

THE CAUSE OF CONSUMPTION IN CHILDHOOD.

SIR,—In reference to the interesting researches of Dr. Dieudonné on this subject and Dr. Nash's letter, I beg to refer you to the following extract from a short paper entitled, Some Remarks on Tuberculous Phthisis, read by me at the Public Health Section, Intercolonial Medical Congress, Sydney, 1893. After stating that consumption was contagious and not hereditary, and drawing special attention to the value of fresh air and efficient ventilation, I said:

> The tubercle bacillus is very heavy, its weight is an important safeguard against pulmonary tuberculosis. It does not usually float about the room, but falls straight to the ground, where it remains until disturbed. Thus abdominal tuberculosis is more common amongst children, especially amongst those who eat bread after it has fallen on the floor.

I am, etc.,

G. L. L. LAWSON, M.R.C.P.Edin.,
October 2nd. Late Government Medical Officer, Gosford, N.S.W.

HUMAN AND BOVINE TUBERCULOSIS.

SIR,—In the BRITISH MEDICAL JOURNAL of August 22nd is a letter from Dr. J. Tertius Clarke, entitled "Human and Bovine Tuberculosis," in which he calls attention to the rarity of bovine tuberculosis in the Malay States, and, to what would appear to be, a corresponding rarity of all forms of human tuberculosis, other than pulmonary, among the native population.

Dr. Clarke suggests the possibility of this being to some extent a proof that tuberculosis of glands, joints, and bones—in fact, of all other situations than the lungs—is due to infection from bovine tuberculosis; and refers to paper of mine on Surgical Tuberculosis in Egypt (read before the first Egyptian Medical Congress, and published in the *Journal of Tropical Medicine* of January 15th, 1903), in which I mention the extraordinary prevalence of surgical tuberculosis in Egypt, and he asks the question whether there is a corresponding frequency of bovine tuberculosis in this country.

My friend Mr. W. E. Littlewood, the head of the Veterinary Service in Egypt, has been good enough to send me statistics of Alexandria and Cairo for the last year, which are very interesting. He writes:

"During last year at the Alexandria abattoirs tuberculosis was detected in 5 per cent. of native cattle slaughtered and in 7 per cent. of native buffaloes. In Cairo we detected during the year only 2 to 3 per cent. in cattle generally, and 6 per cent. in camels. Tuberculosis is rarely seen in young animals and buffaloes slaughtered at the abattoirs were largely composed of old finished milch animals. Of course, people send to be slaughtered most of their old cattle, more especially in the provincial villages."

I would like to mention that one meets with very few cases of tuberculosis of peritoneum, intestines, or mesenteric glands in Egypt, while tuberculous meningitis occurs almost never. Skin tuberculosis, almost entirely as lupus, is common; but in by far the great majority of the cases the parts affected are the lymphatic glands, particularly the cervical, the bones, and the joints. Phthisis is also common, especially among the black races, who appear to lose all their resisting power as soon as they leave their native country nearer the equator. It is the universal custom throughout Egypt to feed all children at the breast, either that of the mother or a wet-nurse, for the first two years of life; and, as I have pointed out to Dr. Nathan Raw, this custom may possibly be responsible for the extreme rarity of abdominal tuberculosis in Egyptian children; if, indeed, the causal relation of this form of tuberculosis to the bovine variety is confirmed. There is this to be said, however, that a bottle-fed baby rarely, if ever, survives for more than a few months in Egypt, certainly among the lower classes of the population, and one has but little opportunity of observing whether abdominal tuberculosis does or would occur in such infants. Again, may it not be altogether a question of the survival of the fittest?—I am, etc.,

FRANK C. MADDEN,
Professor of Surgery, Egyptian Government School of
Cairo, Sept. 14th. Medicine, Cairo.

ENTERIC FEVER AND DYSENTERY IN SOUTH AFRICA.

SIR,—I agree with much that has been said by Surgeon-Lieutenant-Colonel E. Luke Freer, V.D., A.M.R., as to the causation of enteric fever and dysentery, in the BRITISH MEDICAL JOURNAL of September 26th, p. 776. Undoubtedly enteric was chiefly propagated by a waterborne dissemination and by the "ubiquitous and obscene fly"—these were the two main factors.

I noticed in South Africa that whilst considerable attention was paid to the latrines and the disposal of faecal matter, less attention was paid to the urinals and the disposal of urine, although the urine of enteric cases contains large numbers of the typhoid bacilli.

The investigations as to specific dysenteric germs have given

negative results, and Surgeon-Lieutenant-Colonel Luke Freer says that the ulceration in the intestines is due to the irritation of the mucous membrane by foreign matters introduced with the water. I am pleased to observe that he attributes as a cause of dysentery, besides the bad water, the consumption of "chupatties" by the soldiers.

I have gone further than that, and during the war I held that the consumption for several days running of the full ration number of the "dog-biscuit" caused diarrhoea and was deleterious; and subsequently in a lecture I have said:

With regard to the biscuits, I may say that day after day, for long periods, we had biscuits served out to us which were harder, if anything, than dog-biscuits, and at which a dog would turn up its nose. The full-ration number of these was six (sometimes we were on half rations and two-third rations), and I found that they invariably produced irritability of the alimentary canal, which, if neglected, led on to dysentery. I was always pleased to have flour in lieu of biscuits when it was procurable, which was very rare, and when we came to a town, as, for instance, Rustenberg, I gave as much as 2s. for a loaf of bread, which I looked upon as a luxury, so much did I hate the biscuits. Biscuits are dearer than flour, but no doubt better for transport, but surely biscuits can be supplied quite as palatable, and as nutritious as "dog-biscuits," but not so hard. Two or three of these biscuits a day were all right, but the full number taken for several days proved anything but wholesome. When I got flour my servant made "chupatties" with it, but they were generally burnt on one side and something like paste.

From observations I have maintained that those biscuits in the warm South African climate, and with the filthy water and the bully beef caused diarrhoea, and if this was neglected the troops became weakened, and it simply paved the way for dysentery and enteric.

As a routine treatment for enteric, medicinally, I noticed that a mixture containing carbolic acid proved to be the best, with certain alterations in treatment in some individual cases; and as a routine treatment for dysentery I agree with Surgeon-Lieutenant-Colonel Luke Freer that magnesium sulphate (in some cases with dilute sulphuric acid), as described by him, was the best, along with Dover's powder in some cases. Of course some cases required something additional in their treatment.—I am, etc.,

Glandovey, Sept. 30th. OWEN WILLIAMS, M.B., etc.

THE MEDICAL ARRANGEMENTS IN THE SOUTH AFRICAN WAR.

SIR,—May I draw attention to a few points in the evidence given by Surgeon-General Wilson before the Royal Commission on the South African war as reported in the BRITISH MEDICAL JOURNAL of October 3rd, 1903?

After a few remarks on the general efficiency and sufficiency of the medical supplies and equipment, and on the superior qualities of the officers of the R.A.M.C. as compared with the civil surgeons, we come to the following:

As regards food, the sick did not suffer from any deficiency. They were principally enteric cases, and *the best treatment for enteric cases was starvation*.

The italics are mine. In civil practice fresh milk is considered the best treatment for enteric, and in this there was surely a deficiency even if unavoidable. Again we read:

There was a deficiency of bedpans and commodes for a short time at Bloemfontein . . . . As a rule, *the enteric cases did not require bed pans*; the ordinary symptom of diarrhoea was absent in it as a rule.

This is a somewhat startling medical aphorism. Whether or no diarrhoea is a prominent symptom, it seems almost superfluous to point out that it is a little short of criminal to allow enteric patients to get out of bed and walk to the latrines if by any means it can be prevented. As far as I was able to ascertain, diarrhoea occurred in about 50 per cent. of the cases and in 75 per cent. of the fatal cases. Again:

The instruments were very good as far as they went. They wanted more and they bought them. The medical officers were supplied, as a rule, with the most modern type of instrument . . . He had never seen a case of instruments which could be washed or disinfected as a whole.

Such cases may be seen anywhere where modern instruments are supplied. As to the quality of the instruments they were by no means good even "as far as they went." The forceps, for example, were flimsy, frequently breaking. Nor were they of the "most modern type." Amputating knives, 12 in. to 18 in. long, villanous trocars for puncturing the bladder per rectum should find no place in modern equipment, more especially when retractors, Volkmann's spoons, and such-like essentials are wanting; nor is it very modern to serve up needles in vaseline, and ligatures of inferior quality in carbolic oil. The cases themselves were indeed magnificent, but most unnecessarily heavy and expensive. Even in times of peace the want of good and serviceable instruments is strongly felt in the service.

I would suggest that it would be possible to arrange with the principal instrument firms in the kingdom to supply at short notice the necessary equipment in instruments and surgical appliances for an army corps, or more, if necessary, provided that they know beforehand exactly what will be required. A schedule should be drawn up giving all the necessary appliances for a general hospital, field hospital, etc., and any firm taking the contract to supply so many hospitals if required, should give a guarantee to have the necessary supply in stock at any given moment.

If some such arrangement as this were made there would be no question of prehistoric instruments, or of an outlay of thousands of pounds to no purpose.

Possibly, too, some such arrangement might be made with regard to hospital equipment, such as beds; otherwise we shall have the legacy of the old Crimea beds lasting on into the next century, or as Colonel Gubbins computes, for the next 1,100 years.

It is not my object here to find fault with the medical arrangements. Of fault-finding there has been more than enough. But the work of reform is now going on and advancing with no leisured steps; the R.A.M.C. bids fair to be the most attractive branch of the profession, and deservedly so. Let us then have no whitewashing even over the minor details of equipment. If army medical organization is to emerge with a clean slate from its former travails, now is the time, while the iron is yet hot.—I am, etc.,

Welbeck Street, W., Oct. 6th. C. GORDON WATSON.

VARIOLOID VARICELLA.

SIR,—After reading the contribution under the above title by Drs. Dickson and Lassalle at the last meeting of the British Medical Association, which is reported in the issue of the BRITISH MEDICAL JOURNAL, dated September 26th, one cannot help feeling that in its present form it is a most unfortunate production. The use of the words varioloid varicella to designate the disease is to be strongly condemned. The term of course merely refers to varicella of a relatively severe type, irregular in some of its features, such as the prolonged period of invasion, but essentially varicella.

From the account given it is evident that many of the cases presented irregular characters. From the most important points, however, namely, the mode of appearance, distribution, and progress of the rash, the course of the individual "unilocular bullae," the general appearance of the exanthem, of which "the most prominent feature was a polymorphic eruption of vesicles, pustules, drying pustules, and crusts of various sizes side by side," etc., it is clear that the disease was almost certainly varicella. Further, the Commissioners who were chosen to investigate the disease in an adjoining locality "came to the conclusion that the disease was exactly the same nature as that occurring in Port of Spain, and was not small-pox."

From the evidence, then, which we possess it seems perfectly clear that the epidemic was one of varicella, and one must account for the particulars, showing its relationship, or rather want of relationship, to vaccination by the widespread opinion which seems to have existed that the disease was really variola. From the title of the communication one is bound to assume that the contributors did not hold this opinion, and one is therefore at a loss to understand their recommendation of "vaccination, revaccination, and isolation" as the measures most useful in dealing with the disease.

It seems to be distinctly regrettable that Drs. Dickson and Lassalle had not the courage to take a more definite stand. On the contrary, in the final paragraph under general remarks they apparently stultify their communication by the statement that "in some respects it is analogous to the epidemic in America of what has been termed irregular or atypical small-pox."

The only conclusion which I have been able to come to after perusing the article is that the contributors have very hazy ideas of the relationship or the reverse of small-pox, vaccination, and varicella, and that the result of their experience has been to complicate and obfuscate a clear issue.

I cannot help feeling that with so indecisive a contribution in our own time, containing apparently such marked contradictions, it is not to be wondered at that the literature of small-pox is hampered by amazing discrepancies.—Yours, etc.,

Manchester, Sept. 30th. R. W. MARSDEN, M.D., M.R.C.P.

THE DEPARTMENTAL COMMITTEE ON VACCINATION.

SIR,—As I am appointed to give evidence before the Departmental Commission of the Local Government Board on behalf of the Public Vaccinators in Rural Districts of England and Wales, I should be glad to receive from those gentlemen information giving instances of excessive distances, and any accurate statistics of the proportion of visits paid to the number of vaccinations effected. In all cases the various fees allowed to each vaccinator should be given. Correspondence should be addressed to me direct, and must reach me within the next two weeks.—I am, etc.,

Winterton House, Westerham, Oct. 12th. A. MAUDE.

MEDICAL ACTS AMENDMENT BILL.

SIR,—I am requested by the Council of the Association of Physicians and Surgeons of the Society of Apothecaries, Limited, to draw your attention to their resolutions on the above-mentioned subject, of which I enclose a copy. While doing so, I should like also to point out that we have the opinions of the leading medical journals in favour of our contentions.

The *Lancet* of June 24th, 1899, p. 1725, says: "The medical profession is no longer divisible mechanically into apothecaries, surgeons, and physicians, and the sooner the law and the interpretation of the law are brought to recognize this equality before the law of all registered medical practitioners the better."

The BRITISH MEDICAL JOURNAL of January 28th, 1899, says: "It seems very undesirable to engage in litigation with a practitioner who is unquestionably legally qualified, because he uses a style such as 'physician and surgeon.' . . . . It surely savours of retrogression for the General Medical Council to revive those distinctions which marked the intercollegiate jealousies of former days." Again, on December 14th, 1895: "The modern tendency is evidently to get rid of the academic and restricted meaning of the terms physician and doctor as limited to those only who hold a specific licence or university degree, and rightly or wrongly to extend the application of those terms to all who are duly licensed to practise medicine."

The *Medical Press and Circular* of November 7th, 1900, says: "Some change from the title of apothecary is certainly desirable and only fair to those who pass the L.S.A. The word 'apothecary' has become as obsolete as 'barber surgeon,' and a change is evidently necessary."

The present condition of the law renders possible a repetition of the grave scandal which arose from the prosecution of the late H. Kingsley Hunter, L.S.A., by the General Medical Council for using the title "physician."

A society of Conjoint Board diploma holders was, I believe, recently dissolved, and I should like to mention that this Association is working in the same direction as the late society, and would welcome conjoint men as extra members in furtherance of our common interests.

Finally, may I ask all licentiates of the Apothecaries' Societies, who have not already done so, to fill up and send to me, their forms of application for membership, without delay? All subscriptions date as from October 1st.—I am, etc.,

Oxford, Oct. 10th. A. RIVERS-WILLSON.
Treasurer and Acting Secretary.

At the September meeting of the Council of the Association of Physicians and Surgeons of the Society of Apothecaries, Limited, it was resolved that, in the opinion of this Association no Medical Acts Amendment Bill can be considered satisfactory which does not include the following provisions:

1. That all persons registered under the Medical Act of 1858 in respect of qualifications to practise medicine shall henceforth be described as physicians, and all persons registered in respect of qualifications to practise surgery shall henceforth be described as surgeons.

2. That all persons registered under the Amending Act, and under the Medical Act of 1886, shall be described as physicians and surgeons.

3. That the annual registration certificate shall state that the person mentioned thereon is entitled to practise medicine or surgery (either alone or in conjunction with midwifery), or medicine and surgery and midwifery, as the case may be.

4. That the title of doctor may be used by all registered medical practitioners who are entitled under the Amending Act to describe themselves as physicians, or as physicians and surgeons.

It was also resolved: That this Association will actively oppose any Bill not containing provisions 1 and 2.

THE ROLE OF EYESTRAIN IN CIVILIZATION

Sir,—As one who tries to take an intelligent interest in his patients I should like to utter a word of protest against the two letters which have appeared criticizing the paper with the above title. I cannot think such letters serve any useful purpose beyond displaying the lack of good taste and of the imaginative faculty in their authors. Any one could see at once that the paper was the work of an enthusiast, but surely it would be better to accept gracefully such a view of eyestrain, etc., and then make allowance for the writer's personal equation, than hastily to pour ridicule upon the whole study of the author.

I think it is the old story over again of our own insular prejudice and want of ability to grasp the views of others. What eyestrain really means only those who suffer with it perpetually throughout the best years of their lives really know. I doubt if the picture of it is at all exaggerated. My own experience leads me to suppose that it is by no means confined to the more cultivated classes or even to those who live in fairly large towns; with our present educational system it will probably not diminish. The treatment by rhubarb, blue pill, headache powders, and injunctions not to use the eyes, always seems to me somewhat beside the mark. I think, too, that the more marked cases of eyestrain, that is, the slighter degrees of ametropia, are by no means so easily cured, or even relieved, by glasses, as Dr. Gould's paper might lead one to suppose. Any one who cares to refer to *Nuttall's Dictionary* will see that "incarnadine" is both an adjective (flesh-coloured, pale-red) and a verb (to dye red), perhaps more commonly the former.—I am, etc.,

Whitby, Yorkshire, Oct. 5th. A. J. SHARP.

THE WILLIAM CADGE MEMORIAL IN THE CATHEDRAL AT NORWICH.

SIR,—Subscriptions have been received from the following since you published the first list:

Sir William Broadbent, London.	Dr. J. M. Jay, Chippenham.
Sir Anderson Critchett, London.	Dr. Vawdrey Lush, Weymouth.
Mr. Jonathan Hutchinson, London.	Dr. H. Briggs, Southport.
Mr. Christopher Heath, London.	Dr. Bridgwater, Uckford.
Mr. Mayo Robson, London.	Dr. Walker, Peterborough.
Mr. Work Dodd, London.	Dr. Thresh, Chelmsford.
Mr. A. E. Barker, London.	Mr. Lettis, Yarmouth.
Dr. Charlton Bastian, London.	Dr. Collier, Yarmouth.
Dr. Duka, London.	Dr. Hepburn, Lowestoft.
Brigade-Surgeon-Lieutenant-Col. Keegan, London.	Mr. H. Taylor, Wroxham.
	Dr. Mallins, Watton.
Mr. G. S. Bates, London.	Mr. Lack, Hingham.
Dr. J. H. Galton, London.	Mr. Ellis, Attleboro.
Dr. Dudley Buxton, London.	Dr. Owens, Long Stratton.
Professor John Chiene, Edinburgh.	Mr. F. Clowes, Sutton-Stalham.
Dr. Griffiths (President British Medical Association), Swansea.	Dr. Hamill, Burnham Market.
	Dr. Griffith Williams, Matteshall.
Mr. Evan Jones, Aberdare.	Mr. Everett, Norwich.
Mr. H. Littlewood, Leeds.	Mr. Watson Turner, Norwich.

The subscription list will be closed at the end of the month.

—We are, etc., WILLIAM H. DAY, *Chairman.*
Norwich, Oct. 12th. MICHAEL BEVERLEY, *Treasurer.*

PUERPERAL FEVER.

SIR,—Most important—both to the already overburdened practitioner and to his lying-in patients—is the issue so ably raised by Dr. George D. Wilson under the above heading. From a considerable past experience I feel convinced that treatment in the overcrowded and otherwise insanitary houses of the very poor is simply a game of chance, and that undoubtedly the only humane course to adopt is the early removal and isolation of the patient. Under such circumstances—as your correspondent suggests—every general hospital, and, I would add, every parish infirmary, should have the necessary accommodation to admit such urgent cases, for it certainly seems a most astounding fact that no provision at present exists for the proper mitigation of the mortality of this virulent form of sepsis—the bugbear of the general practitioner, and the most detrimental to his practice.—I am, etc.,

Harley Street, W., Sept. 29th. RONALD DANIEL.

ALCOHOL IN RELATION TO MENTAL DISORDERS: A CORRECTION.

SIR,—In the BRITISH MEDICAL JOURNAL of October 3rd, p. 822, the following paragraph appears: "In 44 per cent. of those treated at Dr. Stewart's private asylum (*sic*) one of the parents or," etc. The reporter must have taken me up wrongly, for I am most careful not to use the word "asylum" in reference to what is merely a private home for a few gentlefolk who *seek* my protection from King Alcohol. I never have in my house anyone who could be described as a "nervous" case or on the "borderland."—I am, etc.,

Clifton, Oct. 9th. JAMES STEWART, B.A., F.R.C.P.Edin.

ASEPTIC SILENCE.

SIR,—A propos of this subject, may I suggest that it is the bounden duty of every operative surgeon to be clean shaven! Under the ordinary conditions of town life, is it possible to keep a beard or moustache aseptic?—I am, etc.,

Wimpole Street, W., Oct. 9th. KENNETH CAMPBELL.

OBITUARY.

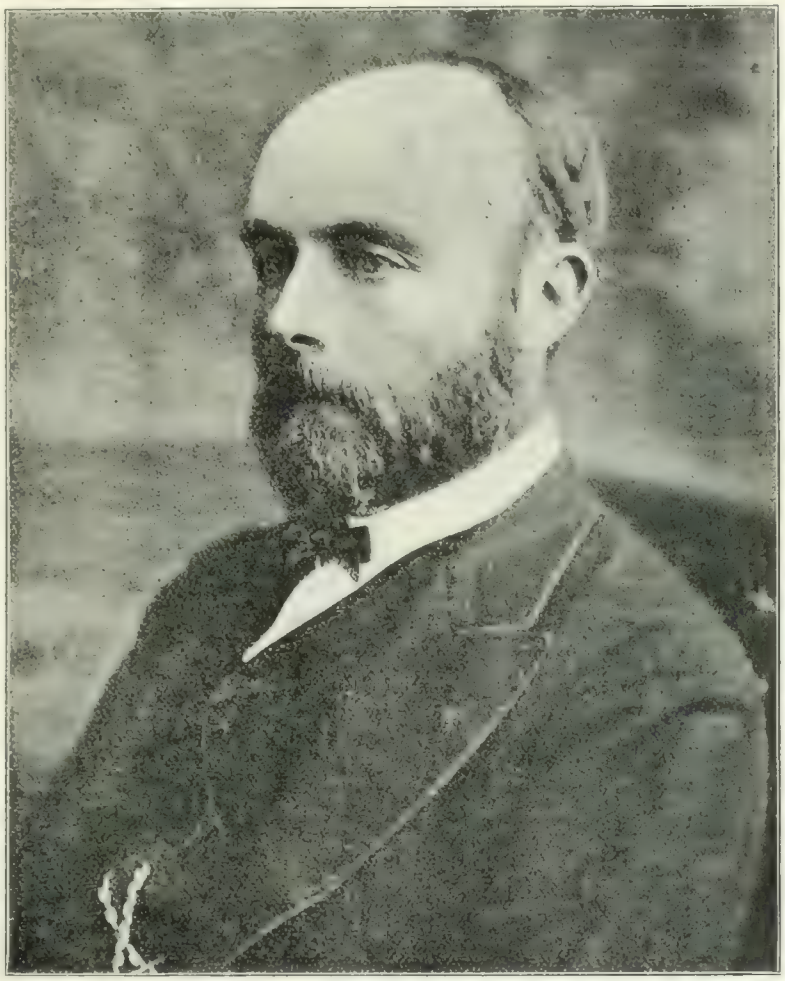
GEORGE LAWSON, F.R.C.S.,

Consulting Surgeon, Royal London Ophthalmic Hospital, Moorfields, and Middlesex Hospital, and Surgeon-Oculist to Her late Majesty Queen Victoria.

By the death of Mr. George Lawson, which took place at his residence, 12, Harley Street, on October 12th, our profession loses a distinguished surgeon, pre-eminent in his own particular speciality, and a large circle of friends mourns a singularly lovable and gifted personality.

Mr. Lawson was in his 73rd year, having been born in 1831. For the last three years his health had been failing; from the beginning of this year he had scarcely left his room, and death came painlessly and peacefully on Monday last.

Mr. Lawson was educated at King's College and was a pupil of, and afterwards House-Surgeon to, Fergusson when that great surgeon was at the zenith of his fame. He became M.R.C.S. in 1852, and L.M. and L.S.A. in 1853, and later, the Fellowship of the College having been established, he took the F.R.C.S. by examination in 1857.



When in the dark days of 1854 the Eastern Question was becoming acute, and the nation was "drifting into war," young Lawson applied for employment in the Army Medical Department, and was gazetted Staff Assistant Surgeon. He was dispatched to Gallipoli and thence to Varna on the Black Sea. In that foul and dilapidated port he suffered from a sharp attack of typhus fever. Deaf to the suggestions of the authorities that he should be invalided home, he elected to proceed, though barely convalescent, with the expedition to Sebastopol. His pluck and determination to do service at the front commended him to Sir John Campbell, the Commander of the Third Division, who courteously invited him to share his cabin during the voyage. Landing in the Crimea, Lawson was with the troops at the battle of Alma, and later on at the successful repulse of the Russians by the allied forces at Inkerman. During the terrible winter of 1854-5, when disease and frost wrought yet greater havoc than the Russian arms, Lawson was in the lines before Sebastopol. The privations and horrors, both inevitable and preventable, of that disastrous siege have been often told. Anaesthetics were then in their infancy, and Lawson used to tell how his was the only inhaler in the outfit of the whole Third Division.

In 1855 Lawson was transferred to Balaclava, and there contracted typhoid fever. The attack nearly proved fatal, and he was at length invalided home. On arrival at Portsmouth he was prostrate and paralysed, unable to move hand or foot, but under the skilful treatment of Dr. Todd strength gradually returned. He quitted military for civil practice and took up his residence at 63, Park Street, Grosvenor Square, in 1856. He became Surgeon to the Middlesex Hospital, and served that institution with unstinted devotion for thirty-three years; for a time he was also Surgeon to the Great Northern Hospital.

Making the diseases and injuries of the eyes a special study, yet keeping the base of his speciality broad, Lawson joined the staff of the Ophthalmic Hospital, Moorfields, in 1862, after serving as assistant to Bowman. For twenty-eight years he worked as Surgeon there with great regularity and distinction, and contributed a variety of papers to the Royal London Ophthalmic Hospital *Reports* and the Ophthalmological Society's *Transactions*. In 1886 just recognition was accorded to his ripe experience and sound judgement by his appointment as Surgeon-Oculist to Her late Majesty Queen Victoria. When Prince Christian met with a serious accident to his eye while out shooting, it was Mr. Lawson whose services were requisitioned and obtained. On retiring from the active staffs of Middlesex and Moorfields Hospitals, Mr. Lawson was elected Consulting Surgeon to both institutions. He was also Consulting Surgeon to the Royal Hospital for Incurables at Putney and to the Victoria Cottage Hospital at Guernsey, in which delightful island he had a residence—"The Hut," on Saint's Bay—whither he often repaired for his holidays. Mr. Lawson lectured on surgery at Middlesex Hospital; as a lecturer he was always original, thorough, and engaging, and in earlier days taught anatomy at the old Grosvenor Place School. He was a member of the Council of the Royal College of Surgeons, and Examiner in Surgery to the College of Physicians. He became an Honorary Fellow of King's College, and was a Fellow of the Royal Medical and Chirurgical Society, Medical, Pathological, and Clinical Societies, and to the last of these he acted as Honorary Secretary.

As a general surgeon Lawson was both courageous and painstaking; fearless in undertaking any operation, however formidable if in his sound and sagacious judgement he had satisfied himself of its wisdom and justification. Though conservative by instinct he was a reformer in matters of hospital construction and in his scrupulous regard for cleanly surgery. To his instrumentality the Middlesex Hospital was indebted for the introduction of teak wood flooring, and his example in his own wards was rapidly followed by others. He, too, was one of the first to discard the time-honoured frock coat, soiled with the blood stains of a hundred operations, in favour of a washable overall, though at first his zeal in this innovation was the subject of not a little banter.

To his house-surgeons, dressers, and clinical assistants Lawson was ever an adorable chief. Severe towards himself and indulgent towards others, he set a lofty standard of duty which became a personal inspiration to those who were privileged to be his colleagues and his subordinates. In him the surgeon never obscured the man; an attractive

and incisive teacher, those who flocked around him in the wards and out-patient rooms carried away with them not only the professional knowledge which flowed from his intuitive good judgement, but also examples of kindly thought.ulness, of mother-wit, and of gracious charm, a recollection of which his pupils will ever retain as a priceless possession. "*Ut tibi sic alteri*" was with him something more than a mere maxim. Many are the stories that could be told of his liberality and generosity to his poorer patients. Not a few of the blind and the halt and the maimed were sent from his out-patient desk, not to the dispensary for a placebo, but to a neighbouring butcher with whom he had a running account for four pounds of beef. It was in his resourcefulness in cases too often relegated to the hopeless and chronic category that Lawson, by some suggestion in dietary, or occupation, or some seeming trifle, would by his deep humanity effect a world of change for the sufferer.

In speaking or lecturing, when warmed by his subject, his manner was singularly animated and engaging; he had plenty of good stories and terse and witty epigrams at command. But, as Johnson would say, his stories had ever wit enough to keep them sweet, and no man heard an unsavoury tale or an impure jest from the lips of George Lawson. Only for self-assertive ignorance had he a caustic rebuke, or more frequently he would dissolve the pompous with abundant ridicule. In manner simple and unaffected, with something of old-world courtesy, and no vestige of patronage or condescension, he was alike a favourite at Court—he was present at Buckingham Palace at the last party Queen Victoria gave—and a friend indeed to many of the neediest of Her Majesty's subjects.

Lawson was a strict Churchman—an Anglican—and active in the service of the church he attended, yet large-hearted and liberal to those who in such matters did not see eye to eye with him. In habits he was almost Puritan in his simplicity, even in the matter of dress, and in the plenitude of his power no one could be more Spartan in his punctiliousness in discharging all the duties which his large practice and hospital appointments imposed upon him. He lived as "ever in the Great Taskmaster's eye."

His work on *Injuries of the Eye, Orbit, and Eyelids*, published in 1867, is a standard classic on the subject with which it deals. His yet more popular *Diseases and Injuries of the Eye*, first published in 1869, has run through numerous editions.

His contributions to the Royal London Ophthalmic Hospital *Reports* cover a wide range of subjects and a long series of years from 1861 to 1888. They mostly dealt with clinical observations of his own, often broke fresh ground, and always bore the impress of his own individuality. He recorded a case of congenital absence of the iris in both eyes (1861), discussed Paracentesis of the Cornea (1862), and compared the treatment of vascular cornea with granular lids by inoculation and by peritomy. Amaurosis during Pregnancy (1863), Traumatic Cataract without Rupture of the External Coats of the Eye (1864), and various instances of accident to the eye (1865-6-7) were the subjects of communications during his earlier years as assistant surgeon at Moorfields. Sympathetic ophthalmia (1865 and 1880) was a favourite subject with Lawson, and his opinion on the often difficult question of when to excise an injured eye, in view of such future contingency, was always regarded as sagacious and authoritative. Indeed, so favourite a topic was sympathetic ophthalmia with him that it is, we understand, a tradition at the Middlesex Hospital that while the subjects with which Lawson commenced his clinical lectures were many and various, he almost invariably concluded with sympathetic ophthalmia.

Other papers on Atropine Irritation (1868), Recurrent Fibroid of the Orbit (1869), Closure of Scleral Wound by Suture (1871), Cancer Originating in an Eye lost by long Antecedent Inflammation (1872), Primary Epithelioma of the Eyelid (1881), Tumours of the Optic Nerve (1882-8), bear witness to the industry with which he cultivated the speciality to which he increasingly devoted his attention. Lawson's fame as an oculist became firmly established, and no opinion was regarded as safer, as more apt to be right, in cases of doubt and difficulty than his.

This brief account of the life and work of George Lawson is sadly insufficient in calling up the man as he was known and loved in his life's work. Above the average height, his campaigning had left just a touch of military bearing in his carriage. His presence was notable, and his large finely-moulded head and brow gave him distinction. His profile was finely cut, his eye the bluest of the blue, and in the chiselling of the nose and mouth the physiognomist could detect the sensitiveness and firmness which combined to mark his nature. A touch perhaps of sadness, and a certain detachment or reserve which were masked in the animation of conversation were visible in repose. Gifted with a musical voice, conversation was in his case alike a source of unalloyed pleasure to the giver and the taker. He was essentially a home-loving man, and no one could doubt that his wife and family were to him the source and the object of devoted and purest affection.

Mr. Lawson leaves a widow and five sons. One son, Mr. Arnold Lawson, F.R.C.S., follows in his father's footsteps, and has recently brought out a greatly enlarged and modernized edition of his father's excellent work on *Diseases of the Eye*. Another son is in the Army Medical Service, while a third joined the Indian Police, and is at present acting as Commissioner in Bangkok, Siam. To them in their bereavement we offer our sympathy on behalf of the profession which Mr. Lawson adorned. As a specialist, as a surgeon, and as

a man he upheld the highest standards of dignified professional service, of large-hearted humanity, and of unaffected piety.

We are indebted to Sir Anderson Critchett, Surgeon-Oculist in Ordinary to the King, for the following note on Mr. Lawson's work and character:

The lamented death of my old and valued friend, Mr. George Lawson, leaves a vacant place in our professional ranks which no other personality within my knowledge can adequately fill. Those who knew him best will appreciate the difficulty which I feel in attempting to do justice to the nobility of his character, the sweetness of his gentle nature, and the entire absence of self-seeking which was evident throughout his private and professional life. He had known me from my boyhood, and I remember his return from the Crimea, where an attack of rheumatic fever resulted in the cardiac affection which to a certain extent handicapped him in his career, and in the end was the cause of his fatal illness. He told me that his pulse usually ranged between 50 and 54, and those who met him, as I often did, in consultation, will remember the enforced pauses which he was obliged to make in mounting a staircase, pauses which he always beguiled with some bright anecdote or observation. The chief desire of his life was to contribute to the happiness and the well-being of others; and on many occasions, when I stood beside his desk at Moorfields Hospital, I have seen him give at his own expense orders for food and firing to some of the half-starved patients who needed sustenance rather than medicine.

His surgical opinion was sound and reliable, for he was an accurate observer and he never failed to leaven science with common sense. On injuries of the eye and orbit he was one of the leading European authorities.

He always estimated the work of others at its full value, and I believe that he was incapable of an ungenerous word or thought. His high professional record is known to us all, and it was a source of legitimate pleasure to him and to his friends when, on the death of Sir William White-Cooper, he was, at Sir William Jenner's suggestion, appointed Surgeon-Oculist in Ordinary to Her Majesty Queen Victoria.

Time has already thinned the ranks of those who knew and loved George Lawson, but many still survive, and by these he will ever be held in affectionate remembrance.

THE LATE MR. WALSHAM.

The funeral of Mr. Walsham took place on Friday, October 9th, at Highgate Cemetery. The service was read by the Rev. Sir Borrodaile Savory, Bart., and a large number of friends and colleagues of the deceased surgeon were present. The weather, previously rainy, was bright and sunny during the interment. On the same day a memorial service was held at the hospital, in the Church of St. Bartholomew-the-Less. The service was conducted by the Rev. W. Ostle, Vicar and Hospitaller, and was attended by several members of the medical staff, by a great number of students and nurses, by the official staff, and by private friends of the deceased. Altogether the congregation amounted to over two hundred and fifty persons.

The Cavendish Lodge of Freemasons, No. 2,620, was represented at this service by the W.M. (J. Herbert Menzies) and the Secretary (J. D. Mortimer).

Professor Alexander Rollet, of Graz, died there in his 70th year on October 1st. He was educated at Vienna, but like so many other physiologists of his generation was deeply influenced by Ludwig, and devoted himself especially to the physiology of the blood and muscles. He was called to Graz in 1863, and was four times rector of that university.

Dr. A. Fochier, Professor of Obstetrics at Lyons, died suddenly on October 2nd at the age of 58. After an exceedingly brilliant career as a student he won the place of surgeon to the Charité Hospital at the age of 26, and devoted himself to the study of obstetrics. He was appointed Professor of Clinical Obstetrics, and threw himself with the greatest ardour into the organization of his department. He was an admirable teacher and greatly beloved by his students. He took an active part in municipal life, and but for early failure of health would have entered the political arena.

Much regret was expressed in Stalybridge at the death of Mr. William Parker Tait, L.R.C.P.Edin., and L.F.P.S.Glas., at the age of 50. Mr. Tait was born at Beith in Ayrshire. His medical training was acquired in Glasgow. He settled in Stalybridge a little over a quarter of a century ago, where he gained an extensive connexion, while his skill and affability earned for him the respect of all classes of the townspeople. He was medical officer of a district of the town and public vaccination officer.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Deputy-Inspector-General W. F. C. Bartlett, retired pay, has been granted the Greenwich Hospital Pension of £50 a year, vacant by the death of Deputy-Inspector-General H. Harkan.

The following appointments have been made at the Admiralty: William M. Craig, M.B., Fleet Surgeon, to the Cape Hospital, October 7th; Harold F. D. Stephens, M.B., Fleet Surgeon, to the *Hibernia*, for the *Maine*, October 7th; D'Arcy Harvey, M.B., Fleet Surgeon, to the *Russell*, October 7th; Robert S. Bernard, Surgeon, to the *Fire Queen*, October 7th; Norman L. Richards, Staff Surgeon, to the *Barrosa*, October 20th; William Eames, Fleet Surgeon, to Plymouth Hospital, October 12th; Alexander L. Christie, M.B., Fleet Surgeon, to the *Mars*, October 12th; Leonard S. Whitwam, Surgeon, to the *Caledonia*, October 12th.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel R. G. Thomsett retires on retired pay, October 14th. He entered the service as Surgeon, September 30th, 1873; became Surgeon-Major, September 30th, 1885; was granted the rank of Lieutenant-Colonel, September 30th, 1893; and was made Brigade Surgeon-Lieutenant-Colonel, January 26th, 1897. He was in the Afghan war of 1878-80 (medal); in the Egyptian war of 1882 (medal and Khedive's star); and in the campaign on the North-West Frontier of India in 1897-8 as Principal Medical Officer, Peshawur Column 5th Brigade Tirah Expeditionary Force (medal, with two clasps).

Lieutenant J. T. K. Thomson, Glasgow Companies Royal Army Medical Corps (Volunteers), to be Surgeon-Lieutenant, October 14th.

Captain E. Brodribb, from half-pay, to be Captain, with precedence next below G. M. Goldsmith, September 21st. Captain Brodribb was placed on temporary half-pay on account of ill-health, January 20th, 1903.

The name of Lieutenant (on probation) O. Ievers, M.B., is as now described, and not as stated in the *Gazette* of September 18th.

Major George Jerry Arthur Tuke died at St. Thomas's Hospital, London, in the 46th year of his age. He was appointed Surgeon, August 1st, 1885, and Surgeon-Major twelve years thereafter. He was engaged in the South African war in 1899-1901.

ROYAL ARMY MEDICAL CORPS (MILITIA).

Lieutenant J. W. Hopkins is seconded for service under the Foreign Office, September 29th.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Lieutenant R. W. Beesley, M.D., the Manchester Companies, to be Captain, September 9th.

The promotion of Lieutenant R. W. B. March, the Manchester Companies, which appeared in the *London Gazette* of September 8th, should read Lieutenant H. Marsh, and bear date September 26th.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

Surgeon-Lieutenant F. Loud, 1st Sussex, resigns his commission, and is appointed Captain, October 10th.

VOLUNTEER RIFLES.

Arthur T. Sissons, M.B., to be Surgeon-Lieutenant in the 1st Volunteer Battalion the East Yorkshire Regiment, and to be borne as supernumerary while doing duty with the Yorkshire Volunteer Infantry Brigade Bearer Company, April 4th.

Lieutenant W. J. Woodman, 4th Volunteer Battalion the Queen's Own (Royal West Kent Regiment), resigns his commission, is appointed Surgeon-Lieutenant, and is borne as supernumerary while commanding the West Kent Volunteer Infantry Brigade Bearer Company, October 10th.

VOLUNTEER INFANTRY BRIGADE BEARER COMPANIES.

George H. L. Hamerton, the South Yorkshire Company, to be Lieutenant, October 10th.

The appointment to the Yorkshire Company of Arthur T. Sissons, M.B., which was announced in the *London Gazette* of April 3rd last, is cancelled.

The Gordon Company, the formation of which was announced in the *London Gazette* of May 5th, 1903, ceases to be an independent unit.

The following announcement is substituted for that which appeared in the *London Gazette* dated July 28th, 1903: Supernumerary-Lieutenant J. G. Fraser, M.B. (Surgeon-Captain 19th Middlesex Volunteer Rifle Corps), to be Captain 5th London Company, and to command under Paragraph 55A Volunteer Regulations, July 25th, 1902.

VOLUNTEER MEDICAL OFFICERS.

V. J. C.—1. Yes. There have been several instances of medical men resident in Ireland joining as surgeons volunteer corps in England and Wales. 2. It is necessary to find a corps in which there is a vacancy, and to get the commanding officer to recommend the applicant for a commission. 3. The medical officer would probably have to join his corps for training during the annual camp (one week at least). The medical officer may be certified as efficient by his commanding officer without his having attended the full number of drills; but as a non-resident in the locality cannot examine recruits or attend target practice, the commanding officer would probably require him to attend camp. 4. There are no volunteer corps in Ireland, but a medical man could join the militia.

MEDICO-LEGAL AND MEDICO-ETHICAL.

THE SCOTTISH PAPERS AND THE MEDICAL PROFESSION.

A GOOD deal of indignant comment has reached us upon the mode in which the Glasgow papers dealt with the case of congenital cataract recently operated upon in that city, and we have now another example of the same thing in an article headed "Lung Surgery" which appeared in the *Glasgow Daily Record and Mail* of September 26th. This article which is also headed "A Great Operation by Sir William Macewan" (*sic*) is written to cap an account recently published in the same paper of an operation for draining a tuberculous cavity of the lung which had been performed in America. The paragraph containing this news seems to have brought forth a letter from a reader who was aware that Professor Macewen had some years ago operated successfully upon the chest of a patient by resection of portions of the ribs and he seems to have jumped to the conclusion that the two operations were identical and that in this instance Glasgow was well ahead of America. The enterprising reporter hunted up Professor Macewen's old patient and obtained from him an account of his case which is given with as many picturesque details as possible. The Glasgow papers only make themselves ridiculous by the publication of such articles; we hope that the medical profession in Glasgow has sufficient influence to be able to induce the editors of local newspapers to show more respect for it and its work than these publications display.

THE STATUS OF A VETERINARY SURGEON.

IT was reported in the *Times* early last week that a veterinary surgeon had applied for, and obtained, exemption from having his name inserted on a list of jurors on the ground that he was a "medical practitioner," and therefore entitled to this privilege. It seems that there is a decision of an Irish judge in which the term "medical practitioner" has been held to include a veterinary surgeon, and that this had weight with the magistrates in coming to a conclusion. We have been unable to find the Irish case, and can only express our surprise if this is a correct statement of the law. Under English law the following persons (*inter alios*) are exempted from serving on juries: "Members and Licentiates of the Royal College of Physicians in London, if actually practising as physicians; Members of the Royal Colleges of Surgeons in London, Edinburgh, and Dublin, if actually practising as surgeons; apothecaries certificated by the Court of Examiners of the Apothecaries' Company, and all registered medical practitioners and registered pharmaceutical chemists, if actually practising as apothecaries, medical practitioners, or pharmaceutical chemists respectively (also registered dentists, if they so desire)." No mention is made of "veterinary surgeons" in this list, and the reason is obvious. The classes of persons who are exempted from serving on juries are those whose vocation in life is entirely inconsistent with their punctual attendance at court. A veterinary surgeon is in quite a different position; but, even assuming that he has some claim to be considered, it is impossible to see how he can be said to be a medical practitioner *pro hac vice*. Prior to 1881 there was no law expressly applicable to veterinary surgeons, and the Act passed in that year gave them certain rights, but no title, to describe themselves as medical practitioners.

"ELECTRO VIGOUR."

PROSECUTION OF AN UNREGISTERED PRACTITIONER.

LEWIS BAILLES, 164, Strand, appeared before Mr. Marsham, at Bow Street Police Court, on October 13th, to a summons charging him with wilfully and falsely pretending to be a doctor, and using the name and title of "doctor" in such a way as to imply that he was registered under the Medical Act, 1858. A second summons charged him with unlawfully using the title and description of "M.B.," thereby implying that he was a Bachelor of Medicine.

Mr. Bodkin prosecuted on behalf of the Medical Defence Union. Mr. Claude M. Treadwell appeared for the defendant, who pleaded "Guilty" to both charges.

Mr. Bodkin explained that the defendant was connected with what was called the McLaughlin Company, which carried on its business at 164, Strand. They advertised what they called their electro vigour treatment in the *Times*, *Daily Telegraph*, *Daily Mail*, *Daily Express*, and other papers whose position gave the advertisements a certain amount of weight. In these advertisements the electric belt was alluded to as a rapid cure for almost every known and unknown disease to which humanity was liable. Readers were invited to go to 164, Strand, to see this wonderful appliance, and told that if they did so they would be under the care of a qualified physician. Those who could not call were invited to send for an illustrated book which would explain how they could cure themselves at their own homes. In July last Mr. Tyrrell, a solicitor's clerk, was sent to 164, Strand, and represented to the defendant that he had called on behalf of a friend, whose symptoms he described. The defendant told Mr. Tyrrell that he had been a ship's doctor, that he held four medical qualifications, and was in the habit of prescribing drugs when necessary. On September 21st Frederick Downes Whitwell, another clerk, went to 164, Strand, to consult the defendant. After attending to several other persons in a private room the defendant examined Mr. Whitwell, using a stethoscope. He came to the conclusion that he was suffering from a weak heart and enlarged liver, and recommended him to buy a 10-guinea electric belt, which he was willing to sell for £3. Mr. Whitwell asked the defendant to give him his name, and he wrote "L. Bailles, M.A., M.B." Mr. Bodkin went on to say that the defendant's real name was Lewis Lamb Bailes. In 1894 he was on the *Register* as Bachelor of Surgery and Bachelor of Medicine of the University of Durham, but in July of that year he was sentenced to five years' penal servitude for rape. The General Medical Council struck him off the *Register*, and all his University degrees were taken from him. Moreover, his name was removed from the *Calendar* of the University of Durham. In spite of this the defendant, after being liberated from prison, advertised himself as a Bachelor of Medicine. It had been held, said Mr. Bodkin, that it was a very serious thing for a man of bad character to hold himself out to be a member of an honourable profession, and he hoped the magistrate—bearing in mind that this advertising scheme had proved very profitable—would impose a substantial fine, and make the defendant pay the costs of the prosecution.

Mr. Treadwell said the defendant knew that he was not entitled to act as a doctor in the ordinary way, but thought he was at liberty to work for a company as a servant. That was what he had done. He was simply a servant of the company, and was not responsible for their advertisements. Of course his view of the law was wrong, but he hoped it would be accepted in mitigation of punishment.

Mr. Marsham said the defendant appeared to be the only medical man connected with the company.

Mr. Treadwell said he had reason to believe that was not so. The defendant told him he had only been associated with the company about three months.

Mr. Marsham wished to know if the belts had done anyone any harm.

Mr. Bodkin: I am given to understand that the belts are so absolutely free from electricity in any possible way that you might just as well wrap a piece of paper round a man's body.

Mr. Marsham: Then they did no harm?

Mr. Bodkin: Except that these people were asking ten guineas for a belt which was absolutely worthless.

Mr. Tyrrell, one of the clerks referred to, said that when he called at 164, Strand, the defendant told him it was one of the happiest days of his life because he had been consulted by so many people. He said he had been there about twelve months, and was going to have another doctor to assist him on the following week as he found it impossible to cope with all the correspondence although he had twenty-five typewriters.

Mr. Marsham said the defendant must have known he was doing wrong, and ordered him to pay on the first summons £20 and £21 costs; in default two months. On the second summons the defendant was fined £5; in default, twenty-one days. The money was paid.

PRACTICE OF DENTISTRY BY REGISTERED MEDICAL PRACTITIONERS.

DENS.—Under the terms of the Dentists Act, 1878, any registered medical man is entitled to make use of the description "dentist," and is, in fact, placed in the same position as a person registered in the *Dentists' Register* in virtue of a special dental qualification.

PAYMENT OF A SUBSTITUTE.

ENQUIRER.—A. is sent for by B. (who has not consulted A. before), and A. being from home his servant gets C. to attend the case for A. C. does so, and in A.'s absence continues attending until the case is concluded. What is the customary or proper arrangement of fees between A. and C.?

*** It is usual and reasonable to share the fees, but where such services are reciprocal they are often rendered for nothing.

LIABILITY FOR FEE.

R. C.—The owner by whom our correspondent was called in is responsible for payment of the fee for the first attendance, but not for subsequent attendances unless guaranteed by him.

MEDICAL FEES IN VACCINATION PROSECUTIONS.

LEVIATHAN.—If required to attend court, 1 guinea would be a reasonable fee, whether called upon to give evidence or not. If the number of cases necessitates a prolonged attendance in court, an increased fee up to, say, 2 guineas, might fairly be stipulated for.

CHARGES FOR TELEGRAMS.

TELEGRAM.—Probably, under the circumstances, it would be better to make no charge beyond out-of-pocket expenses, unless the preparation and sending of the telegrams involved serious loss of time.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF DURHAM.

AT the Convocations holden on Saturdays, September 26th and October 3rd, the following degrees were conferred:

Doctor in Medicine.—C. H. Brookes, M.B.Durh.; W. P. Palmer, M.B., B.S., L.S.Sc.Durh., M.R.C.S., L.R.C.P., L.S.A.; R. T. Thorne, M.B., B.S.Durh., M.R.C.S., L.R.C.P.; W. M. Dawson, M.B., B.S.Durh.

Doctor in Medicine for Practitioners of Fifteen Years' Standing.—G. W. Blomfield, M.R.C.S., L.R.C.P., L.S.A.; H. Burton, M.R.C.S., L.S.A.; G. T. Gifford, M.R.C.S., L.S.A.; W. H. Hillyer, M.R.C.S., L.R.C.P.; G. F. Hugill, M.R.C.S., L.R.C.P., L.S.A.; F. W. Jollye, M.R.C.S., L.R.C.P., F.R.C.S.E., D.P.H.; W. S. Sharpe, M.R.C.S., L.R.C.P., D.P.H.; E. Sharpley, M.R.C.S., L.R.C.P.; H. L. Smith, M.R.C.S., L.R.C.P.; C. J. West, M.R.C.S., L.R.C.P.; O. S. Wraith, L.R.C.P. & S.

Bachelor in Medicine (M.B.)—A. H. Bateman, College of Medicine, Newcastle-upon-Tyne; C. H. Crass, College of Medicine, Newcastle-upon-Tyne; H. L. Currie, College of Medicine, Newcastle-upon-Tyne; Alice Maud Dodd, London School of Medicine for Women; A. G. Dunn, College of Medicine, Newcastle-upon-Tyne; F. J. Gowans, College of Medicine, Newcastle-upon-Tyne; D. R. Guns, College of Medicine, Newcastle-upon-Tyne; A. H. Heslop, College of Medicine, Newcastle-upon-Tyne; P. W. James, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital, London; E. Ll. Jenkins, M.R.C.S., L.R.C.P., St. Mary's Hospital, London; E. Kendal, College of Medicine, Newcastle-upon-Tyne; W. H. Lamplough, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital, London; J. G. O. H. Lane, M.R.C.S., L.R.C.P., Guy's Hospital, London; H. L. Noel-Cox, College of Medicine, Newcastle-upon-Tyne; W. H. Peacock, College of Medicine, Newcastle-upon-Tyne; A. Reid, M.R.C.S., L.R.C.P., D.P.H., Guy's Hospital, London; C. A. Ryman, St. George's Hospital, London; T. Y. Simpson, M.R.C.S., L.R.C.P., London Hospital; A. Smith, College of Medicine, Newcastle-upon-Tyne; J. C. Stewart, College of Medicine, Newcastle upon-Tyne; J. R. Wylie, College of Medicine, Newcastle-upon-Tyne.

Bachelor of Surgery (B.S.).—A. H. Bateman, College of Medicine, Newcastle-upon-Tyne; C. H. Crass, College of Medicine, Newcastle-upon-Tyne; H. L. Currie, College of Medicine, Newcastle-upon-Tyne; Alice Maud Dodd, London School of Medicine for Women; A. G. Dunn, College of Medicine, Newcastle-upon-Tyne; G. R. East, M.B.Durh., College of Medicine, Newcastle-upon-Tyne; F. J. Gowans, College of Medicine, Newcastle-upon-Tyne; D. R. Guns, College of Medicine, Newcastle-upon-Tyne; A. H. Heslop, College of Medicine, Newcastle-upon-Tyne; A. E. Hodge, M.B.Durh., College of Medicine, Newcastle-upon-Tyne; E. L. Jenkins, M.R.C.S.,

L.R.C.P., St. Mary's Hospital, London: Evelyn Kendal, College of Medicine, Newcastle-upon-Tyne; W. H. Lamplough, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital, London; J. G. O. H. Lane, M.R.C.S., L.R.C.P., Guy's Hospital, London; W. H. Peacock, College of Medicine, Newcastle-upon-Tyne; T. Y. Simpson, M.R.C.S., L.R.C.P., London Hospital; A. Smith, College of Medicine, Newcastle-upon-Tyne; J. C. Stewart, College of Medicine, Newcastle-upon-Tyne; J. R. Wylie, College of Medicine, Newcastle-upon-Tyne.

Bachelor in Hygiene (B.Hy.).—W. E. Alderson, M.D., M.S.Durh.; L. McNabb, M.B., B.S., D.P.H.Durh.

The following candidates received the Diploma in Public Health: W. E. Alderson, M.D., M.S.Durh.; W. G. Barras, M.D., L.S.Sc.Durh.; W. E. Peacock, M.D., B.S.Durh.; D. Young, M.B., Ch.B.Ed.

VICTORIA UNIVERSITY.

The following candidates have passed the First Examination in Medicine in the subjects undernoted:

Part I. Chemistry and Physics.—J. Allen, Owens; H. A. Dunkerley, Owens; A. C. Edwards, Univ.; F. Hall, Owens; F. Hartley, Owens; J. L. Moir, Owens; W. Nightingale, Owens; B. C. Piercy, Yorks; R. Robertson, Owens; G. B. Warburton, Owens; A. E. Woodall, Owens.

Part II. Biology.—J. Allen, Owens; L. S. Ashcroft, Univ.; H. D. Dakin, Yorks; J. A. Donnellan, Univ.; A. K. Eatock, Owens; F. Hall, Owens; J. L. Moir, Owens; P. Moran, Owens; W. Nightingale, Owens; H. E. R. Stephens, Owens; J. V. Steward, Owens; A. E. Woodall, Owens.

SOCIETY OF APOTHECARIES OF LONDON.

The following candidates have passed the Primary Examination, Part II, in the subjects indicated:

Anatomy.—S. F. H. Everill, Birmingham; G. W. Hassall, Birmingham; R. D. Neagle, St. Mary's Hospital; A. Shepperd, Guy's Hospital.

Physiology.—S. F. H. Everill, Birmingham; C. E. Pring, Royal Free Hospital; A. Shepperd, Guy's Hospital; G. W. Simson, Bristol.

The following candidates have passed the Primary Examination, Part I, in the subjects indicated:

Biology.—R. Rowlands, Glasgow.

Chemistry.—L. W. Bradshaw, Leeds; H. T. Roberts, St. Mary's Hospital.

Materia Medica and Pharmacy.—R. J. W. McKane, Leeds; R. Rowlands, Glasgow.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,154 births and 4,554 deaths were registered during the week ending Saturday last, October 10th. The annual rate of mortality in these towns, which had been 16.5, 16.3, and 15.3 per 1,000 in the three preceding weeks, rose again last week to 15.8 per 1,000. The rates in the several towns ranged from 4.7 in Hornsey, 9.1 in Handsworth, 9.6 in Croydon, 9.9 in Hanley, 10.4 in Reading, 10.5 in Derby, 10.6 in King's Norton, 10.9 in West Hartlepool, and 11.2 in Leyton, to 20.2 in Stockport, 20.3 in St. Helens, 20.4 in Merthyr Tydfil, 21.1 in Newcastle-on-Tyne, 21.2 in Ipswich and in West Bromwich, 21.4 in Middlesbrough, 22.8 in Rotherham, 23.4 in Sunderland, and 24.0 in Bootle. In London the rate of mortality was 14.5 per 1,000, while it averaged 16.3 in the seventy-five large provincial towns. The death-rate from the principal infectious diseases averaged 2.4 per 1,000 in the seventy-six large towns; in London this death-rate was 2.1 per 1,000, while it averaged 2.6 in the seventy-five other large towns, among which the highest death-rates from the principal infectious diseases were 4.7 in Burnley, 4.9 in Middlesbrough and Sunderland, 5.4 in Wolverhampton, 5.5 in Preston, 5.7 in West Ham, 6.5 in Merthyr Tydfil, and 10.2 in Warrington. Measles caused a death-rate of 1.4 in Sunderland, 1.8 in Bury, and 5.5 in Warrington; scarlet fever of 1.1 in Wolverhampton and 2.2 in Merthyr Tydfil; diphtheria of 1.5 in Ipswich; whooping-cough of 1.1 in Middlesbrough; "fever" of 1.2 in St. Helens, and 2.9 in Merthyr Tydfil; and diarrhoea of 3.5 in Birmingham, 3.6 in Coventry and in Gateshead, 3.8 in Wolverhampton and in Middlesborough, 3.9 in West Bromwich and in Warrington, 4.2 in Burnley, 4.6 in Preston, 4.8 in West Ham, and 5.5 in Rotherham. Two deaths from small-pox occurred last week in Bolton, and one each in Leicester, Salford, and York, but not one in any other of the seventy-six large towns. The number of small-pox patients under treatment in the Metropolitan Asylums Hospitals, which had been 41, 29, and 21 at the end of the three preceding weeks, had further declined to 17 at the end of last week; 2 new cases were admitted during the week, against 7, 1, and 1 in the three preceding weeks. The number of scarlet-fever patients in these hospitals and in the London Fever Hospital on Saturday last the 10th inst., was 1,881, against 1,803, 1,886, and 1,877 on the three preceding Saturdays; 240 new cases were admitted last week, against 261, 293, and 235 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, October 10th, 907 births and 525 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 16.1, 16.8, and 17.3 per 1,000 in the three preceding weeks, declined again to 16.0 per 1,000 last week, but was 0.2 per 1,000 above the mean rate during the same period in the seventy-six large English towns. The rates in the eight Scotch towns ranged from 9.3 in Perth and 14.1 in Aberdeen, to 18.0 in Greenock and 19.8 in Dundee. The death-rate from the principal infectious diseases averaged 2.2 per 1,000 in these towns, the highest rates being recorded in Dundee and Perth. The 235 deaths registered in Glasgow included 8 which were referred to measles, 2 to scarlet fever, 3 to whooping-cough, 5 to "fever," and 21 to diarrhoea. Ten deaths from diphtheria, and 3 from "fever" were recorded in Dundee. Three fatal cases of diarrhoea occurred in Aberdeen, 3 in Greenock, and 2 in Edinburgh.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, October 10th, 538 births and 330 deaths were registered in six of the principal Irish towns, against 553 births and 312 deaths in the preceding period. The mean annual death-rate of these towns, which had been 18.7, 15.8, and 19.02 per 1,000 in the three preceding weeks, fell to 16.8 per 1,000 in the week under notice, this figure being 0.7 above the mean annual rate during the corresponding period in the 70 English towns. The death-rates in these six Irish towns ranged from 10.9 in Limerick and 13.6 in Londonderry to 20.7 in Dublin and 21.9 in Cork. The death-rates from the principal zymotic diseases in these six Irish towns averaged during the week 1.0 per 1,000 or 0.1 less than during the preceding period. The highest point, 2.6, was reached in Belfast, while Limerick and Waterford registered no deaths from zymotic disease at all. In Dublin no deaths from small-pox, measles, typhus, or simple continued fever were registered, but 1 death was ascribed to scarlet fever, 2 to whooping cough, 1 to diphtheria, 2 to enteric and 4 to diarrhoeal diseases. In Belfast the tale was 1 death due to measles, 1 to diphtheria, 2 each to scarlet fever and whooping cough, 4 to enteric and 8 to diarrhoeal diseases.

ACTION FOR FEES FOR ATTENDANCE AT ISOLATION HOSPITAL.

At Waterford, on September 30th, Dr. E. F. Stephenson, according to the *Waterford Standard*, claimed £24 3s. from the Waterford Board of Guardians for attendance on a small-pox patient.

The plaintiff was medical officer of the Woodstown Dispensary District under the defendants, and in his district was an isolation hospital built some years ago in anticipation of cases of bubonic plague and yellow fever being imported; it had only been used as a temporary summer home for convalescent and delicate children. On July 21st this year the Medical Officer of Health of Waterford detected a case of small-pox among the crew of an incoming ship, and, he having reported the case to his authority, the Corporation of Waterford, the patient was first entered as a nominal inmate of the union workhouse, and then taken out to the isolation hospital within the plaintiff's district. Hearing of this, the plaintiff first visited the patient, and then wrote to the master of the union stating that he had seen the case, and asking whether arrangements had been made for medical attendance upon it, and that a telegram should be sent to him if he were required to attend. In reply, he was told that no orders had been issued and that he must use his own discretion. On the same day, and before receiving this answer, he got a telegram from the clerk of the union asking whether he had seen the case, and what his diagnosis was, to which he replied that it was a case of small-pox. Subsequently, in the exercise of his discretion and from a sense of humanity, he went on visiting the case without receiving further instruction. Eventually, however, he wrote to the guardians in order to have his position in the matter defined. To this letter the guardians replied by sending him a red ticket, thus making the case an official patient, and as they refused to withdraw it or pay his fees, the plaintiff was obliged to bring this action for their recovery. Formal evidence in support of the above statement having been given, the Court brought out by inquiry that there were other small-pox cases elsewhere at the time, and that they were being attended by the Corporation's own medical officer.

The defence set up was that if the guardians were responsible for the case at all they had covered that responsibility by the subsequent issue of a red ticket, the legal effect of which was to compel the plaintiff to attend to it, that prior to this he was acting simply as a volunteer, and that in default of this defence the responsibility rested on the Waterford Corporation, and not on the guardians.

The Court in giving judgement held that the guardians had from the first assumed responsibility for the patient, and then thought to protect themselves by throwing a red ticket at the plaintiff's head. It might be the duty of the plaintiff to attend upon a case of small-pox in a resident of his own district, but this case had nothing to do with him, being simply carted in from outside, and if the guardians wished to make him responsible for it they should have issued a red ticket in the first instance. The verdict, therefore, would be for the plaintiff for the sum of 20 guineas, with costs on the higher scale. A sum of 2 guineas was also allowed to the *locum tenens* who acted for the plaintiff during the latter's detention in Court.

VITAL STATISTICS OF LONDON DURING THE THIRD QUARTER OF 1903.

In the accompanying table will be found summarized the vital statistics of the metropolitan boroughs and of the City of London, based upon the Registrar-General's returns for the third, or summer, quarter of the year. The mortality figures in the table relate to the deaths of persons actually belonging to the various boroughs, and are the result of a complete system of distribution of deaths in institutions among the several boroughs in which the deceased persons had previously resided.

The 32,646 births registered in London during the three months under notice were equal to an annual rate of 28.4 per 1,000 of the population, estimated at 4,613,812 persons in the middle of the year; in the corresponding quarters of the three preceding years the rates had been 29.1, 28.9, and 28.9 per 1,000, while the average birth-rate in the third quarters of the ten years 1893-1902 was 29.6 per 1,000. The birth-rates last quarter ranged from 14.1 in the City of London, 16.9 in Hampstead, 17.3 in the City of Westminster, 19.0 in Kensington, 20.5 in Chelsea, and 21.8 in Stoke Newington, to 32.5 in Bermondsey, 32.8 in Shoreditch, 34.0 in Poplar, 35.3 in Finsbury, 35.5 in Bethnal Green, and 36.8 in Stepney.

The 15,581 deaths of persons belonging to London registered during last quarter were equal to an annual rate of 13.5 per 1,000, against 17.7, 16.6, and 14.7 per 1,000 in the corresponding quarters of the three preceding years; the mean death-rate in the ten preceding third quarters was 18.0 per 1,000. The lowest death-rates last quarter in the various metropolitan boroughs were 8.8 in Hampstead, 9.4 in Stoke Newington, 10.6 in Wandsworth, 10.7 in Lewisham, 11.3 in Hammersmith, and 11.7 in the City of Westminster; while the highest rates were 16.6 in Southwark, 16.8 in Bermondsey, 17.6 in Bethnal Green, 17.7 in Stepney, 19.1 in Finsbury, and 19.3 in Shoreditch.

During last quarter 2,500 deaths were referred to the principal infectious diseases; of these, 3 resulted from small-pox, 247 from measles, 91 from scarlet fever, 144 from diphtheria, 217 from whooping-cough, 79 from enteric fever, 2 from simple continued fever, and 1,717 from diarrhoea. These 2,500 deaths were equal to an annual rate of 2.17 per 1,000, against an average rate of 3.96 in the corresponding periods of the ten preceding years. In the third quarters of the three preceding years the rates had been 3.77, 3.99, and 2.67 per 1,000 respectively. The lowest death-rates

Analysis of the Vital Statistics of the Metropolitan Boroughs and of the City of London after Distribution of Deaths occurring in Public Institutions during the Third Quarter of 1903.

BOROUGHS.	Estimated Population middle of 1903.	Births.	Deaths.	Annual Rate per 1,000 Living. Births.	Deaths.	Principal Infectious Diseases.	Deaths from Principal Infectious Diseases.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping-Cough.	Typhus.	Enteric Fever.	Simple and Ill-defined Fever.	Diarrhœa.	Phthisis.	Deaths of Children under 1 year of age to 1,000 Births.
COUNTY OF LONDON	4,613,812	32,646	15,581	28.4	13.5	2.17	2,500	3	247	91	144	217	—	79	2	1,717	1,631	139
Paddington	146,032	890	443	24.4	12.2	1.46	53	—	7	5	5	4	—	—	—	32	37	130
Kensington	178,409	844	555	19.0	12.5	2.30	103	—	9	5	8	6	—	2	—	73	51	175
Hammersmith	115,803	736	325	25.5	11.3	2.13	62	—	—	1	—	1	—	1	—	59	38	130
Fulham	147,780	1,181	501	32.1	13.6	3.83	141	—	11	1	4	3	—	4	—	118	50	167
Chelsea	74,169	379	232	20.5	12.5	0.96	18	—	1	1	—	3	—	—	—	13	25	142
City of Westminster ...	179,052	774	522	17.3	11.7	1.13	51	1	13	1	1	4	—	1	—	29	74	137
St. Marylebone ...	131,234	943	445	28.8	13.6	1.36	45	—	4	4	7	5	—	2	2	21	58	82
Hampstead	85,197	360	186	16.9	8.8	0.51	11	—	—	—	2	2	—	1	—	6	16	78
St. Pancras	235,716	1,556	824	26.5	14.0	1.76	103	—	25	1	5	9	—	5	—	52	96	145
Islington	339,137	2,220	1,030	26.3	12.2	1.26	107	—	17	8	6	15	—	4	—	57	113	117
Stoke Newington ...	52,069	283	122	21.8	9.4	1.01	13	—	—	—	1	—	—	1	—	11	16	113
Hackney	224,082	1,591	670	28.5	12.0	2.17	121	—	11	4	10	10	—	13	—	73	53	121
Holborn	57,845	410	205	28.4	14.2	0.90	13	—	1	—	1	3	—	—	—	8	42	76
Finsbury	99,717	877	476	35.3	19.1	3.01	75	—	21	3	1	7	—	2	—	41	52	155
City of London ...	24,539	86	86	14.1	14.1	0.98	6	—	—	—	1	—	—	2	—	3	12	116
Shoreditch	117,513	962	565	32.8	19.3	4.81	141	—	9	1	2	19	—	3	—	116	52	252
Bethnal Green	130,028	1,152	570	35.5	17.6	3.18	103	—	9	5	8	10	—	—	—	71	74	157
Stepney	302,153	2,772	1,333	36.8	17.7	3.71	279	—	29	8	13	33	—	8	—	188	143	173
Poplar	169,550	1,437	687	34.0	16.3	2.93	124	—	5	4	16	4	—	3	—	92	66	163
Southwark	207,369	1,661	857	32.1	16.6	2.76	143	—	9	2	5	8	—	3	—	116	122	155
Bermondsey	129,801	1,050	544	32.5	16.8	2.08	96	—	8	6	6	7	—	3	—	66	43	183
Lambeth	307,711	2,306	1,000	30.1	13.0	1.95	148	2	12	5	5	13	—	3	—	108	104	131
Battersea	173,422	1,271	537	29.4	12.4	2.56	111	—	17	1	4	17	—	3	—	69	41	127
Wandsworth	249,078	1,668	661	26.8	10.6	1.56	97	—	8	2	11	15	—	3	—	58	47	111
Camberwell	265,562	1,806	792	27.3	12.0	1.94	127	—	15	7	5	11	—	5	—	84	73	122
Deptford	112,537	849	365	30.3	13.0	2.38	67	—	5	4	0	6	—	—	—	46	32	139
Greenwich	99,824	709	311	28.5	12.5	2.01	65	—	1	3	3	7	—	—	—	51	26	151
Lewisham	136,405	933	364	27.4	10.7	1.15	39	—	—	2	4	—	—	6	—	27	27	85
Woolwich	121,478	940	373	31.0	12.3	1.25	38	—	—	1	3	4	—	1	—	29	48	91

last quarter from these infectious diseases were 0.51 in Hampstead, 0.90 in Holborn, 0.96 in Chelsea, 0.98 in the City of London, 1.01 in Stoke Newington, and 1.13 in the City of Westminster; and the highest rates 2.98 in Bermondsey, 3.01 in Finsbury, 3.18 in Bethnal Green, 3.71 in Stepney, 3.83 in Fulham, and 4.81 in Shoreditch. Measles showed the highest proportional fatality in Fulham, St. Pancras, Finsbury, Shoreditch, Stepney, and Battersea; scarlet fever in Paddington, Bethnal Green, Bermondsey, and Deptford; diphtheria in St. Marylebone, Bethnal Green, Poplar, Bermondsey, and Deptford; whooping-cough in Finsbury, Shoreditch, Bethnal Green, Stepney, Battersea, and Greenwich; "fever" in Fulham, St. Marylebone, Hackney, the City of London, Stepney, and Lewisham; and diarrhœa in Fulham, Shoreditch, Bethnal Green, Stepney, Poplar, and Southwark. Of the 3 fatal cases of small-pox, 2 belonged to Lambeth and 1 to the City of Westminster.

During the third quarter of the year, 1,631 deaths from phthisis were registered, equal to an annual rate of 1.42 per 1,000, against 1.57, 1.47, and 1.38 per 1,000 in the corresponding quarters of the three preceding years. Among the various metropolitan boroughs the lowest death-rates from phthisis last quarter were recorded in Paddington, Hampstead, Hackney, Battersea, Wandsworth, and Lewisham; and the highest rates in Holborn, Finsbury, the City of London, Bethnal Green, Stepney, and Southwark.

Infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births, was equal to 139 per 1,000 last quarter, against 219, 203, and 149 in the corresponding quarters of the three preceding years. The rates of infant mortality during the quarter under notice were lowest in St. Marylebone, Hampstead, Holborn, Wandsworth, Lewisham, and Woolwich; and highest in Kensington, Fulham, Shoreditch, Poplar, Stepney, and Bermondsey.

SEGREGATION OF CONTACTS.

WE learn from the *Journal of the American Medical Association* that a handsome and roomy brick and cement building has just been erected in the Philadelphia Hospital grounds in which are to be placed the families of patients suffering from contagious diseases, except small-pox. The patient himself will be taken to the Municipal Hospital, while his relatives are "thoroughly sterilized" in the new building. This is rather an alarming prospect, but our contemporary probably intends to convey that the contacts and their belongings are to be disinfected. The new building contains 50 rooms, each 10 ft. square, for the accommodation of the occupants, and the receiving ward is separated from the living rooms by porcelain doors. The number of rooms allotted to a family will vary in accordance with its size, but all the families brought there will be made comfortable at the city's expense during the period of their detention. Meanwhile the home of the family will be in the hands of the Board of Health, and formalin gas diffused through the house for 24 hours. In case the patient is suffering from small-pox his family will be taken to the Municipal Hospital with him.

VACCINATION OF SCHOOL CHILDREN.

BY a recent decision of the Philadelphia Board of Education vaccinating physicians may now visit all the schools under its authority and ascertain whether the pupils therein are all properly vaccinated. If not satisfied with what they find they inform the child interested, and it is the duty of the latter to convey to its parents the advice of the vaccinator. The child is not allowed to attend school further until it has produced a certificate that the operation has been properly performed.

DUTIES OF MEDICAL OFFICERS OF HEALTH.

M. O. H. states that he is medical officer of health of a very wide rural district, having a town twelve miles away from him, but close to his boundary. Most of the children living within a radius of two miles from the town, and in M. O. H.'s district, attend schools in this town. Cases of infectious disease arise among these children. The clerk to the Urban District Council has written to M. O. H.'s District Council asking them to instruct M. O. H. to notify to him all infectious cases occurring around the urban district. This is done, and he is subsequently instructed to notify these cases to the attendance officer instead of to the clerk of the District Council. M. O. H. does not consider it his duty to do this, and regards it as the duty of the attendance officer to find out the facts of each case. He asks if he may legally refuse to do this extra work, and, if not, if he can claim payment for each notification, or at least postage.

*** If M. O. H. will consult the list of duties of a medical officer of health as laid down by the Local Government Board he will find that it is his duty to "advise the persons competent to act as to the measures which may appear to him to be required to prevent the extension" of any infectious disease. One of the most important of these measures is the prevention of attendance at school of children from an infected household; and instructions on this point are systematically issued in connexion with the public health administration of well-organized districts. The work in question occupies considerable time if efficiently carried out, and it might be made a reason for increase of salary. The education authority of the urban district might also be asked to supply stamped envelopes for these notices.

BUILDING BY-LAWS.

T. M. B. states that in a rural district a person has purchased three old cottages, converted them into one dwelling house, and has built at the back of this a kitchen, scullery, two bedrooms, two water-closets, and a box-room, all from the ground foundations. He asks whether the by-laws in force in the district for new buildings would apply to this annexe. A copy of the by-laws is enclosed.

*** These are, in our opinion, badly drafted and the definitions are deficient. There can, however, be no doubt that the above are new buildings within the by-laws, and that the owner ought to have submitted plans before commencing his work.

NON-PROSECUTION FOR "EXPOSURE."

M.D. asks if it is usual for a medical officer of health to decline to advise the sanitary authority "to prosecute a woman for wilfully exposing her child while suffering from scarlatina when asked to do so by a brother practitioner." "M.D." states that he can trace two cases of scarlatina to the wilful exposure, and he thinks of taking proceedings himself *pro bono publico*, because the medical officer of health when asked to move answers: "I shall not advise the Sanitary Board to take proceedings. Such action is never taken by a Sanitary Council."

*** We have summarized in the above statement the case as given to us. The statement is clearly incomplete, and we advise "M.D." not to

take any action on his own account. "Wilful exposure" must be proved, and there may be facts in the possession of the sanitary authority indicating that a conviction could not be obtained. "M.D." should consult the clerk to the sanitary authority as well as the medical officer of health before deciding on further action.

NOTIFICATION FEES.

W. H. B. asks whether a fee of 1s. or of 2s. 6d. for notification of each infectious case should be charged under the following circumstances: He is the medical attendant of a private home containing eighty to ninety boys (waifs and strays), among whom twenty cases of scarlet fever have recently developed.

*** As is well known, a fee of 2s. 6d. is payable in all instances except "if the case occurs in his practice as medical officer of any public body or institution." The following extract from Lumley's *Public Health Acts*, vol. i. p. 584, throws some light on the meaning of the words "public body or institution." It states: "The expression no doubt includes a public hospital or infirmary, and a workhouse, but not, it is submitted, a private hospital to which patients are admitted for payment, nor a medical club or provident dispensary." In our opinion, "W. H. B." should charge 2s. 6d. for each case notified in the above institution.

HOSPITAL AND DISPENSARY MANAGEMENT.

EDINBURGH ROYAL INFIRMARY.

The following appointments have been made by the Managers:—Resident Physicians: A. N. Fell, M.B., Ch.B., to Professor Sir T. R. Fraser; Robert Veitch, M.B., Ch.B., to Professor Greenfield; Gilbert J. Farie, M.B., Ch.B., to Professor Simpson; Herbert P. Thompson, M.B., Ch.B., to Professor Wylie; H. Nethersole Fletcher, M.B., Ch.B., to Dr. Smart; Paul Mathews, M.B., to Dr. James; W. G. Porter, B.Sc., M.B., Ch.B., to Dr. Bramwell; J. Henderson Smith, M.B., Ch.B., to Dr. Gibson; C. Macfie Campbell, M.B., Ch.B., to Dr. Bruce. Resident Surgeons: A. H. Firth, M.A., M.B., Ch.B., to Professor Annandale; D. M. Callender, M.A., M.B., Ch.B., to Professor Chiene, C.B.; William Hume, M.B., Ch.B., to Dr. MacGillivray; C. J. Shaw, M.B., Ch.B., to Dr. Berry Hart; T. W. E. Ross, M.B., Ch.B., to Mr. Cotterill; John M. Darling, M.A., M.B., Ch.B., to Mr. Caird. Non-Resident House-Physicians: Wilfred M'Farlane, M.B., Ch.B. (for three months), to Dr. W. Allan Jamieson; C. M. Pearson, M.B., M.R.C.P., to Dr. R. W. Philip (Ward 6). Non-Resident House-Surgeons: R. Murdoch Mathieson, M.D., to Mr. Wallace; A. Morrison M'Intosh, M.B., F.R.C.S.Edin., to Dr. Mackenzie Johnston; J. Graham M'Bride, M.B., Ch.B., to Mr. Berry. Clinical Assistants: Andrew A. Hall, M.B., Ch.B., to Professor Sir R. T. Fraser; J. M. Kirkness, M.B., Ch.B., to Professor Simpson; R. W. Craig, M.B., Ch.B., to Professor Wyllie; R. G. Gordon, M.B., Ch.B., to Dr. Bramwell; Duncan Lorimer, M.B., Ch.B., to Dr. Bruce; T. Howard Morgan, M.D., etc., to Dr. R. W. Philip (Medical Waiting-room); John D. Cormie, M.A., B.Sc., etc., to Dr. Murdoch Brown; C. R. P. Mitchell, M.B., Ch.B., to Dr. MacGillivray; J. S. M'Lean, L.R.C.P.&S.Edin., to Mr. Cotterill; D. Halliday Croom, M.B., Ch.B., to Dr. Gibson. Arthur J. Brock, M.B., Ch.B., was appointed Resident Medical Officer at the Convalescent House, Murrayfield, for six months from October 1st; and Henry Wade, M.B., Ch.B., was appointed Clinical Tutor for the ensuing winter and summer sessions in the ward under the charge of Mr. Caird.

THE CHILDREN OF THE METROPOLITAN ASYLUMS BOARD.

The fifth report of the Children's Committee of the Metropolitan Asylums Board, which is signed by Mr. W. Crooks, brings the history of this important division of the Board's work up to May 15th, 1903, that being the date of the end of its official year. The various enterprises of this Committee are all now well under way, and the following schools and homes at work:

(1) *Ophthalmia Schools.*—Projected accommodation, two schools, each to contain 360. Of these, the one at Swanley was opened this year, and a full description of it was given in our columns. The second, it is hoped, will be opened shortly at Brentwood.

(2) *Ringworm Schools.*—One at Witham for 160 children, open since February, 1901, and another for 420 at Sutton, opened this year.

(3) *Seaside Homes.*—One at Herne Bay for 134 children, and another at Margate for 91; both of these have been open for three or four years, and a third for 100 children is in course of erection at Littlehampton.

(4) *Homes for Defective Children.*—Of these there are four scattered in different parts of London, which together provide accommodation for 64 children. Two others, which will provide for 25 children, are to be opened shortly.

(5) *Remand Homes.*—Of these homes, which are intended to meet the wants of the Juvenile Offenders Act, there are now three which together accommodate 150 children.

Some medical returns are appended to the report, but they do not contain anything of very particular interest, except, perhaps, the fact that about 40 per cent. of the cases of ringworm appear to have been due to the megalosporon class of tinea, whereas, in hospital practice, the microsporon variety is usually considered to be infinitely more common.

INDIA AND THE COLONIES.

TRANSVAAL.

Johannesburg Hospital.—The report of the Johannesburg Hospital for the year ending December 31st, 1902, is dated June, 1903, and is the first which has been issued for three years. This is one of those hospitals which, like many others in the Colonies, depend for support partly upon the payments of patients, partly upon Government grants, and partly upon donations. The revenue for the year was £33,102, of which rather more than half was received from patients and the rest from Government, and at the end of the year there was a deficit equal to about one-eighteenth of the total expenditure for the year. The scale of fees charged is not shown, nor are the accounts in general published in such form as to throw much light upon the way in which the institution and its funds are administered. It is stated that the average number of beds occupied throughout the year was 253, and that the total number of in-patients treated was 2,568, of whom 2,477 were whites and the rest coloured. The mortality among the former was 10 per cent., and among the latter 19.8 per cent. The patients are not divided into medical and surgical divisions, nor is the average duration of treatment mentioned, but a list of some 844 operations of one sort and another is supplied. It contains, however, no reference to anæsthetics nor the result of their administration. It may be expected that the report for the current year will be of a rather more illuminating character. The Resident Secretary is Mr. R. F. Harte.

LAGOS.

The Water Supply.—The water supply of Lagos, both as regards its quality and quantity, has been a source of trouble for a considerable time. It is now proposed to adopt a plan of collecting water from the Apapa Plain, a sandy area of considerable extent, the scheme being similar to that employed in Amerstam in Holland. A report by Sir William MacGregor, with appendices by various Government officials, shows that the idea is practical, and would supply the town with a plentiful quantity of water of a sufficiently fair quality for drinking purposes. The point at issue seems to be, will the water require artificial filtration before its distribution, or will the natural filtration through sand be sufficient? The Principal Medical Officer seems to favour special filtration, and, if his views are correct, it will mean a very great additional cost. It must be noted that of several samples of this water taken for analysis some smelt badly, and as swamps at the side of the plain seem to drain into it when the level is low, the question must be a rather difficult one to decide. A bacteriological examination is to be made when the apparatus arrives from England, and it would be well to await the results of this before coming to any definite conclusion. The plan of tapping the plain seems to be good, and, by furnishing a regular supply, should do away with the wells and other means at present in use for obtaining water.

MEDICAL NEWS.

The annual meeting of the Therapeutical Society will be held at the Apothecaries' Hall, Blackfriars, on Tuesday, October 27th, at 4 p.m. Members of the profession are invited to attend.

The King has given permission that the Royal Waterloo Hospital for Children and Women shall continue to employ that style, a privilege enjoyed since the reign of George III.

Dr. C. J. Thomas, who has been acting as a half-time assistant medical officer of the London School Board, has been appointed a full-time assistant at the salary of £400 rising to a maximum of £600.

The Departmental Committee on Vaccination Administration.—The Departmental Committee on Vaccination Expenses at its meeting on October 7th heard the evidence of Dr. J. W. Gill, Public Vaccinator in the St. Germans Union, and of Mr. T. W. Mallam, President of the National Poor-law Officers' Association.

Presentation.—Dr. J. R. Essex, J.P., was recently presented at a large meeting of workmen of the Glyn Colliery, Pontypool, with an illuminated address on the occasion of his retirement. The address bore testimony to his devotion to duty, and stated that during long seasons of depression and stoppages at the collieries Dr. Essex continued to attend the workmen and their families without remuneration.

The Brompton Hospital.—The course of lectures for the winter session at the Hospital for Consumption and Diseases of the Chest, Brompton, will be opened by Dr. Habershon, who will give two lectures on bronchiectasis on October 21st and 28th at 4 p.m. on each day. The lectures will be illustrated by cases, and are free to all qualified practitioners and students of medicine.

The autumn meeting of the South-Eastern Division of the Medico-Psychological Association will take place at St. Luke's Hospital, E.C., on Thursday, October 29th. Members are invited to luncheon by Dr. Rawes at 1.30. At the general meeting at 3 p.m., Dr. Rawes will read a short history of St. Luke's Hospital, and Dr. Edridge-Green will open a discussion on the relation of hysteria to insanity. The members will dine together at the Café Monico, Piccadilly Circus, W., in the evening.

King's College Hospital.—In anticipation of a decision to which reference is made in another column, Messrs. W. H. Benyon and Co., of Cheltenham, have issued a memorial picture of King's College Hospital, which is the work of Mr. H. Hill. It is a composite picture, having in the centre a view of the front of the building, around which are grouped pictures of the interiors of the Pantia Ralli Ward, the Craven Ward, the Chapel, the Boardroom, the Great Hall, and the Clinical Pathologist's Laboratory. Twenty portraits of

present and past members of the staff are also included, some of them, such as that of Sir Thomas Watson, being reproduced from existing engravings; others, like that of R. Bentley Todd, from portraits in the British Museum and elsewhere; while the rest are from photographs. As a memorial it is an excellent work, and is understood to have given much satisfaction to such old students as have seen it. The price at which it is issued is 42s. for each of the first 150 copies or "first proofs" in black and three tints, and 31s. 6d. for "proof impressions" in black and one tint.

THE *Journal of the American Medical Association* states that one Cooper was fined 100 dols. and costs at Uhrichsville for practising medicine without a licence. It also appears that in the States of Iowa and Missouri steps are being taken to require medical practitioners to comply with the law with regard to registration. In St. Louis recently eighty-five practitioners were cited to appear before the judge to explain why they had not complied with the law. An inquiry in Woodbury, Iowa, has shown that from 10 to 20 per cent. of the practitioners of medicine in that county have not registered their certificates with the county recorder as the law provides.

YELLOW fever is at present prevailing to a serious extent in Mexico, especially along the American border. It is stated that in Linares, the original population of which was 9,000, there are eight deaths a day, although one-half of the population has fled. In spite of precautions taken at the frontier, the disease has made its appearance in Texas, and the inhabitants are fleeing from the infected districts. Laredo, which appears to be the centre of the outbreak, has been placed in quarantine, and other Texas counties have, we learn from *American Medicine*, established a "shot-gun quarantine," turning back all those who are endeavouring to get away in coaches, buggies, and carts.

IT has hitherto been necessary to send patients at the Royal Albert Edward Infirmary, Wigan, who require light treatment, to Manchester or Liverpool, but the institution is now provided with a complete outfit for x-ray and Finsen treatment. The installation was a gift to the infirmary from Dr. R. Prosser White, a member of the honorary staff, and the opening of the room devoted to the apparatus was made the occasion of a pleasant little public ceremony over which Mrs. Ffarington, the wife of Colonel Ffarington, Chairman of the Board of Management, presided. Suitable acknowledgements were made to Dr. White for his generous gift, and the proceedings, to which several members of the medical staff contributed brief speeches, concluded by an impromptu "at home."

HOSPITAL SHOPPING.—The idea of instituting a Hospital Shopping Day was suggested some time ago, and appears to have taken successful root. November 3rd has been fixed upon as the day, and 600 leading shopkeepers in London have already expressed their readiness to join in the scheme. In return for the publicity afforded to them by the scheme, and the extra purchases made, they have agreed to set aside and hand over to the King Edward's Hospital Fund a percentage of all sums received for goods purchased on that date. The shops taking part in the movement will be made widely known, and in a leaflet which has been published it is suggested that persons who would like to benefit the hospitals at no cost to themselves, should between now and November 3rd look round their houses and note down anything they may require later on, and which they "may as well purchase on Hospital Shopping Day."

THE LONDON SCHOOL OF TROPICAL MEDICINE.—The London School of Tropical Medicine is steadily growing in importance as a teaching centre. The number of students who have entered for the current session is twenty-seven. Of these nine belong to the Colonial Service, one to the Jamaica Service, two to the Foreign Office, one to the Royal Army Medical Corps, one medical officer of the South African Police, one to the American Foreign Christian Mission Society, the rest being private practitioners. The list includes two graduates of American universities, one of McGill University, Montreal, one of the University of Sydney, one of the University of Turin, and one of the University of Havana. The entry is the largest in the history of the school, and it is especially satisfactory to note that the great majority of the students have entered for the whole course. The curriculum has been rearranged, and whereas in former sessions the largest number of students who entered for the full three months' course was three, this session it is nineteen. The number of private students who have entered may be taken as an indication of the success of the school, for their attendance is voluntary and they have to pay their own fees. Of the total number, no fewer than fifteen (including the army medical officer and the American missionary) are private students. The new laboratory of the school is now complete, and is one of the best equipped in London. It is hoped that in a few weeks the new museum and lecture room will be ready for use.

BANQUET AND PRESENTATION.—Dr. Calthrop, who is leaving Newcastle to practise in London, was entertained by friends and patients in Tilley's Rooms to a banquet on October 13th. About sixty gentlemen sat down to dinner. In the absence of Alderman T. Bell, the chair was occupied by Professor Thomas Oliver. In addition to several members of the Town Council and prominent citizens, the medical profession was represented by Drs. Oliver, Limont, George Murray, Ranken Lyle, Allison, Richardson, Ruxton, Hobbs, and Fred. Walker. After the toast of "The King," the Chair proposed the health of "Our Guest," and, in doing so, alluded to the successful career which Dr. Calthrop had had in Newcastle, and to his many excellent qualities as a medical practitioner; while they all regretted that the choice which Dr. Calthrop had made obliged him to leave the North, they sincerely wished him God-speed in his work and success in his new venture. In concluding his remarks, Dr. Oliver, on behalf of the company, presented the guest of the evening with a beautiful silver bowl. In responding to his health and in acknowledging the gift, Dr. Calthrop spoke of the necessity of medical men keeping themselves well abreast of the times, so that their patients got the benefits of the most recent advances in medical and surgical science, and made a strong appeal to the laity to help the medical profession in carrying on research work. "The Medical Profession" was proposed by Colonel Crauford, and responded to in very appropriate terms by Professor George Murray. Other toasts followed. Several songs were contributed by friends present and an enjoyable evening spent by all.

THE death is announced of Dr. Richard Pott, who was appointed the first Professor of Diseases of Children in the University of Halle in 1883.

MEDICAL VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BIRKENHEAD UNION.—Resident Medical Officer for the infirmary, workhouse, and sanatorium. Salary, £120 per annum.

BRIDGNORTH AND SOUTH SHROPSHIRE INFIRMARY.—House-Surgeon, resident. Salary, £100 per annum.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—House-Surgeon, resident. Salary, £140 per annum.

CARDIFF INFIRMARY.—(1) Assistant House-Surgeon. (2) Assistant House Physician. Both resident, and salary at the rate of £75 per annum.

CHESTERFIELD UNION.—Poor-law Medical Officer and Public Vaccinator for the Chesterfield District. Salary, £53 per annum and vaccination fees.

DARLINGTON HOSPITAL AND DISPENSARY.—House-Surgeon, resident. Salary, £120 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark.—(1) House-Physician, salary £80. (2) House-Surgeon, salary £70. Both resident.

GLASGOW DISTRICT ASYLUM, Woodilee.—Junior Assistant Medical Officer, resident. Salary, £125.

GOSFORTH CITY ASYLUM.—Assistant Medical Offier, resident. Salary, £140, rising to £160 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House-Physician. Honorarium, £25 for six months.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C. House-Surgeon, resident. Salary, £50 for six months, and £2 10s. washing allowance.

HOSPITAL FOR WOMEN, Soho Square, W.—House-Physician. Salary, £30 for six months.

ISLINGTON HOSPITAL AND DISPENSARY.—House-Surgeon, resident. Salary, £120 per annum.

LISTER INSTITUTE OF PREVENTIVE MEDICINE, Chelsea Gardens, S.W.—Studentship, value £150.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN.—Honorary Surgeon for Children.

MARGATE: ROYAL SEA-BATHING HOSPITAL.—Resident Surgeon. Salary as junior at the rate of £80 per annum, and as senior £120 per annum.

MIDDLESEX HOSPITAL.—Second Assistant in the Clinical and Bacteriological Laboratories. Salary, £100 per annum.

NEWCASTLE-UPON-TYNE: UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.—Demonstrator of Anatomy. Salary, £120 to £150 per annum.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney Road.—Assistant Physician.

NOTTINGHAM CHILDREN'S HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House-Surgeon, resident. Salary, £100 per annum.

PUBLIC DISPENSARY, Stanhope Street, W.C.—Resident Medical Officer. Salary, £105 per annum.

SAMARITAN FREE HOSPITAL, Marylebone Road, N.W.—Clinical Assistants.

SOUTHAMPTON: ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

TAUNTON AND SOMERSET HOSPITAL.—Resident Assistant House-Surgeon. Salary at the rate of £50 per annum.

THROAT HOSPITAL, Golden Square, W.—Resident House-Surgeon. Salary, £50 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House-Physician, resident. Salary, £100 per annum.

MEDICAL APPOINTMENTS.

Bowlby, Anthony A., F.R.C.S., Surgeon to St. Bartholomew's Hospital, *vice* Howard Marsh, F.R.C.S., resigned.

Bruce, R. H. G., M.B., M.S.Aberd., Certifying Factory Surgeon for the Friockheim District, County Forfar.

Costellor, John, M.D., B.S., Medical Officer to the Balranald Hospital, New South Wales.

Edwards, Robert T., M.R.C.S.Eng., L.R.C.P.Lond., Resident Medical Officer to the Aberystwyth Infirmary and Cardiganshire General Hospital.

Ellis, H. A., M.B., Ch.B.Dub., Health Officer at Coolgardie, West Australia.

Evered, A. Courtenay, L.R.C.P. & S.Edin., Health Officer at Albany, West Australia.

Kane, Robert E., L.R.C.P. & S.Edin., Medical Officer at Tarcoon, Queensland.

Kennedy, A. D., M.B., Ch.B.Glasg., Certifying Factory Surgeon for the Ballachulish District, County Argyll.

Knight, Wilfred, M.B., L.R.C.P.E., Resident Medical Officer to the Durban Hospital, Natal.

Livingstone, Thomas Hillhouse, M.D., F.R.C.S.Edin., Medical Officer to the Newcastle-on-Tyne Branch of the National Society for Prevention of Cruelty to Children, *vice* Thomas Anthony Dodd, deceased.

Mould, G. W., M.R.C.S.Eng., Consulting Medical Officer to the Royal Asylum, Cheadle, and Superintendent of the Welsh houses connected therewith.

Mould, P. G., M.R.C.S., L.R.C.P., Second Assistant Medical Officer to the Royal Asylum, Cheadle.

Mullen, William L., M.B., Ch.B.Melb., Deputy Medical Superintendent of the Kew Lunatic Asylum, Victoria.

O'Brien, Richard A., M.B., B.S.Melb., Health Officer for the Port of Brisbane, *vice* James E. F. McDonald, M.B., B.S.Melb.

Poole, J. S., M.D.Canada, Clinical Assistant to the Chelsea Hospital for Women.

Sankey, R. H., M.A.Oxon., M.R.C.S., L.R.C.P.Lond., House-Physician to the Radcliffe Infirmary, Oxford.

Scowcroft, Walter, M.R.C.S., L.R.C.P., Resident Superintendent to the Royal Asylum, Cheadle, *vice* G. W. Mould, M.R.C.S.Eng.

Shanahan, Patrick F., M.B., B.S.Adel., Health Officer for Arltunga, South Australia.

Stiff, H. H., M.B., B.C.Cantab., M.R.C.S. L.R.C.P.Lond., Certifying Surgeon under the Factory and Workshops Act for the Bury St. Edmunds District.

Sutcliffe, John, M.R.C.S., L.R.C.P., Senior Assistant Medical Officer to the Royal Asylum, Cheadle.

Thomas, Edwin R., L.R.C.P. & S.E., L.F.P. & S.G., Medical Officer of Health for the Borough of Beaumaris.

Thomson, Eric M., M.A., M.B., Ch.B.Aberd., Assistant Medical Officer, Government Lunatic Asylum, Kingston, Jamaica.

Unwin, W. H., M.B., F.R.C.S., Clinical Assistant to the Chelsea Hospital for Women.

Waterhouse, A. T., M.B., B.Ch.Oxon., L.R.C.P., M.R.C.S., House-Surgeon to the Radcliffe Infirmary, Oxford.

West, Samuel, M.D.Oxon., F.R.C.P., Physician to St. Bartholomew's Hospital, *vice* Philip J. Hensley, M.D.Camb., F.R.C.P., resigned.

Wood, James, M.R.C.S.Eng., L.R.C.P.Lond., L.D.S., Honorary Dental Assistant Surgeon to the Bolton Infirmary and Dispensary.

DIARY FOR NEXT WEEK.

TUESDAY.

Chelsea Clinical Society, Chelsea Dispensary, Manor Street, King's Road, S.W. (adjacent to the Town Hall), 8.30 p.m.—Opening Address by the President, Dr. Vincent Dickinson; followed by a smoking concert.

Pathological Society of London, 20, Hanover Square, W., 8.30 p.m., Mr. W. L. H. Duckworth: Fractures in Skeletons of Large Apes. Mr. G. L. Cheatle: Cancer and Nerve or Trophic Areas. Mr. Raymond Johnson: Cartilaginous Body from the Knee-joint. Mr. S. G. Shattock: An examination of some of Mr. Freyer's Prostates. Mr. H. J. Curtis: Congenital Sacral Tumours (Thyroid-dermoid) removed from girl aged 1 year; Card Specimens. Mr. Hobday: Fracture in Femur of Gorilla. Dr. H. Thursfield: Sarcoma of Kidney.

FRIDAY.

Clinical Society of London, 20, Hanover Square, W., 8 p.m.—Exhibition of Clinical Cases, followed by Discussion. Patients will be in attendance from 8 p.m. to 9 p.m.

POST-GRADUATE COURSES AND LECTURES.

Charing Cross Hospital, Thursday, 4 p.m.—Demonstration of Gynaecological Cases.

Hospital for Consumption and Diseases of the Chest, Brompton, Wednesday, 4 p.m.—Lecture on Bronchiectasis.

Hospital for Sick Children, Great Ormond Street, W.C., Thursday, 4 p.m.—Lecture on the Imperfectly-descended Testicle, the Rationale and Value of the Various Methods of Treatment.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C.—Lectures will be delivered at 3.30 p.m. as follows: Tuesday, Hysteria; Friday, Electrical Testing.

North East London Post-Graduate College, Tottenham Hospital, N., Thursday, 4.30 p.m.—Clinical Lecture on Some Modern Methods of the Physical Examination of the Chest.

Post-Graduate College, West London Hospital, Hammersmith Road, W.—Lectures will be delivered at 5 p.m. as follows: Monday, Tuberculous Peritonitis in Children; Tuesday, Surgical Cases; Wednesday, Administration of Anaesthetics; Thursday, Hernia; Friday, Skin Cases.

Samaritan Free Hospital for Women, Marylebone Road, N.W., Thursday, 3 p.m.—Lecture on the Selection of Cases for Abdominal Section.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTH.

Malcolm.—On October 6th, at 13, Portman Street, W., the wife of John D. Malcolm, F.R.C.S.Edin., of a son.

MARRIAGES.

Moorhead—Hawkins.—On September 28th, at St. John's, Lower Weston, Bath, by the Rev. J. Church, B.A., George Hamilton Moorhead, L.R.C.S.I., elder son of J. H. Moorhead, Esq., M.D., of Erricle, Cootehill, County Cavan, to Bath, only daughter of the late Anthony Hawkins, Esq., and of Mrs. Hawkins, of Hull.

Mounsey—Russell.—At Sandyford Parish Church, Glasgow, on October 7th, by the Rev. D. H. Paterson, Archie, assisted by the Rev. [illegible] A. Campbell, Troqueer, Dumfries, George [illegible] Mounsey, M.B., C.M.Edin., of Caterthorpe Road, Edmonton, Birmingham, to Helen Greenlees, eldest daughter of James Russell, banker, Annan.

Shea—Craig.—On October 7th, at Zion Church, Rathgar, Dublin, by the Rev. Dr. W. J. Clarke, Rector, Arthur Wilson Sheer, L.S.A.Lond., L.M., R.C.P.I., of Chesterfield, Derbyshire, seventh son of William Askin Shea, J.P., of Rathgar, Dublin, to Annie Florence (Weena), only daughter of the late Thomas Hugh Craig, of Dublin.

DEATH.

Duffey.—October 11th, at his residence, 9, Fitzwilliam Place, Dublin, after a prolonged illness, Sir George Frederick Duffey, M.D., ex-President, Royal College of Physicians, Ireland, aged 60. Funeral on Friday morning, 9.30, for Mount Jerome. No flowers.

IN MEMORIAM.

Hamilton.—In loving memory of David Rogers Hamilton, Major, R.A.M.C., who died at Framphray, N.B., October 17th, 1902.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

Communications respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the Journal, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

Original Articles and Letters *forwarded for publication are understood to be offered to the* British Medical Journal *alone, unless the contrary be stated.*

Authors desiring reprints of their articles published in the British Medical Journal are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

Correspondents who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

Correspondents not answered are requested to look at the Notices to Correspondents of the following week.

Manuscripts forwarded to the Office of this Journal cannot under any circumstances be returned.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the Journal be addressed to the Editor at the Office of the Journal, and not at his private house.

Telegraphic Address.—The telegraphic address of the EDITOR of the British Medical Journal is *Articulate, London.* The telegraphic address of the MANAGER of the British Medical Journal is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

Home for Idiot.

Albino asks for information as to a home where an idiot aged about 6 years would be admitted free of charge, or for a small weekly sum.

*** Application might be made to Mr. G. N. Fuller, LL.B., solicitor, Bath, for particulars of the Magdalen Charity, Rock Hall House, Combe Down, near Bath, or to the Medical Superintendent, Earlswood Asylum, Redhill, Surrey. Either of these charities would be suitable for the case

ANSWERS.

Simple Simon.—Suppositories of the kind forwarded are no doubt largely sold and used; many of them are believed to contain quinine.

C. R. L. might consult *Dangerous Trades*, edited by Thomas Oliver, M.D., (London: John Murray, 1902, 25s.), and *The Hygiene, Diseases and Mortality of Occupations*, by J. T. Arlidge, M.D. (London: Percival and Co., 1892, 21s.)

Sella Turcica.—The following books would probably meet our correspondent's requirements: *Handbook of Physiology*, by W. D. Halliburton, M.D., F.R.S., Fifth edition. (London: John Murray, 1903, 14s.); or *Elements of Human Physiology*, by E. H. Starling, M.D., F.R.C.P., F.R.S., Fifth edition. (London: J. and A. Churchill, 1902, 12s. 6d.)

Reg. B.—It is understood that permission to practise in Spain irrespective of nationality of the proposed patients can be obtained without great difficulty. The diplomas of the individual who wishes to establish himself in Spain should be transmitted to the Chancellor of the University of Madrid, and if found satisfactory and the identity of the person who purports to be referred to therein is duly established, permission may be sent to the applicant in such form as will enable him to practise on the same terms as a native of the country.

J. A. P. B. might consult Crocker's *Diseases of the Skin*, 3rd edition, vol. i, p. 50, and vol. ii, p. 1339 (London: H. K. Lewis, 1902, 28s.); Eichhoff's *Ueber Seifen* (Hamburg: Leopold Voss, 1889, M.1.20); Buzzi's *Beitrag zur Würdigung der medikamentösen Seifen, U.S.W.* (Hamburg: Leopold Voss, 1891, M.1.50); Paschki's article Seifen in Lesser's *Encyklopädie der Haut- und Geschlechtskrankheiten* (Leipzig: F. C. W. Vogel, 1900, M.30); and Ledermann's *Therapeutisches Vademecum der Haut- und Geschlechtskrankheiten*, 2nd edition (Berlin: O. Coblentz, 1901, M.4.50).

M.D., F.R.C.S.E.—A twelfth oil immersion is absolutely necessary for the study of blood according to modern methods of staining, etc. For example, a lower power would not be sufficient to investigate the presence or absence of fine granulations in myelocytes which otherwise would be mistaken for large lymphocytes. A good haemocytometer is Thomas's, obtainable from Hawksley or Kanthack. If our correspondent has access to gas, he might obtain Haldane's haemoglobinometer; if not, Gowers's or Fleischl's. A list of books on the subject was published in the British Medical Journal of June 20th, 1903, page 1476.

P. A.—The qualifying conditions for practising in the State of Illinois and the city of Chicago have been greatly altered during the last few years, and there is now a State examination, which all or any candidates for a licence to practice, wherever trained, may be called upon to pass. It is, however, within the power of the authorities to exempt graduates of certain approved colleges from actual examination before granting them a licence, but in every case the candidate must be 21 years of age and have studied medicine for not less than four years. There are a large number of schools of medicine in Chicago which grant diplomas and degrees, and of these perhaps the best known are the Rush Medical College (affiliated with Chicago University) and the College of Physicians and Surgeons, Chicago, which is the medical school of the University of Illinois. For complete information "P. A." should write to Dr. James A. Egan, Secretary of the State Board of Health, Springfield, Illinois. It is understood that the profession is rather more overcrowded in Chicago than it is in most places, and that the prospects of an English medical man as such would be extremely bad.

Bearer Companies, St. John Ambulance.

Honorary Surgeon S. J. A. B.—We are informed that if our correspondent will apply to the Chief Commissioner, St. John Ambulance Brigade, St. John's Gate, Clerkenwell, E.C., he will no doubt receive full information as to the bearer companies and their work.

NOTES, LETTERS, ETC.

THE MEDICAL DIRECTORY.

MESSRS. J. AND A. CHURCHILL, 7, Great Marlborough Street, W., request us to remind members of the medical profession that all information for the 1904 issue of the *Medical Directory* should be sent to them without any further delay. They state that it will not be safe for any member of the profession to rely on an alteration being possible after October 24th.

THE LUST OF SLANDER.

WE have received a letter from Dr. A. Leffingwell, of Boston, Massachusetts, in which he writes as follows: My attention has been called to the editorial in the BRITISH MEDICAL JOURNAL of July 25th, p. 205, wherein you allege that "on the authority of Dr. Leffingwell, an American antivivisectionist," it has been charged that vivisectors "make use of the sight of dying animals, or torture animals to stimulate lust." Permit me, Sir, in the interest of truth and as a physician and physiologist, to deny that, at any time, I have ever made such a "charge" against physiological investigators. In a letter to United States Senator McMillan, written nearly four years ago, and published by him in a Government report, I took the ground that only men of good character should be allowed the right to experiment upon living animals; and referring to a claim put forth that "no legal restrictions" should define who might or who might not vivisect, I pointed out that one class of men most certainly should be excluded from that privilege. There is not a reputable medical man in Great Britain who would not agree with me in every word I said. You do me some injustice, also, in referring to me as an "antivivisectionist." For nearly a quarter of a century I have argued in favour of the adoption simply of that legal regulation of vivisection which obtains in England, and in all this time I have never written a word which could be construed into advocacy of antivivisection or the legal prohibition of animal experimentation. My views are simply those put forth over and over again in your editorial columns when the question first began to be agitated in England.

THE MISSING LADY DOCTOR.

WE have received a further letter from Mr. E. F. Hickman (57, Courtfield Gardens, South Kensington, S.W.) suggesting that his daughter, Sophia Frances Hickman, M.D., if she have lost her memory, may have found admission to some infirmary, workhouse, hospital, or other institution, and he expresses the hope that officers of such institutions will bear the matter in mind and communicate with him should any person resembling Miss Hickman come under their notice.

HOTELS AND BOARDING HOUSES.

EMPHYSEMA writes: On behalf of those unfortunates who may have to leave home during the winter in search of health, I would suggest that some arrangement should be made to form a list of hotels and boarding houses willing to place a thermometer in every room and to guarantee that the temperature shall be kept over 60° in every part of the house. It would be well also to have an understanding that a variety of food suitable for invalids will be available without pretence of extra trouble and expense.

BROKEN NECK.

U. writes: Here is an ancient tale from family correspondence, dated August 28th, 1758: "Nelly got a sad fright about two weeks ago. They waited dinner for Peggy, but she did not come in time, and Nelly saw her come riding up the avenue. When she came allmost to her door her horse scar'd, and Nelly cried out, 'She's fa'en.' Her neck was quite out of joint and she was almost gone, but I may say quite gone. It instantly struck Mr. D. that he would try to give her neck a pull, which he did, but it had no effect the first time, but he thought to himself she was gone, whoever he would give a pull with all his strength, which he did, and it gave a crack, and she recovered instantly. Peggy spoke and said, 'How do you do, Mrs. D.?' The fall had been so sudden she was not sensible she got one—nor nothing that had happened. She was carried in and laid in bed, where she was surprising easy, and able to ride home next day. Was not that remarkable providence?"

ASEPSIS "IN EXCELSIS."

WE have received from Mr. Fred. Reynolds, of Messrs. Reynolds and Branson, Leeds, a clever little pictorial skit on modern operative procedures under the title of "Aseptic Surgery." The operation room is represented as a bath, and patient, surgeon, assistants, nurse, and spectators are depicted in bathing costume and immersed up to the neck in sterilized water. Instruments and sterilized dressings, etc., are seen floating about on the surface, together with an electric switch for heating the submerged operating table. A telephone to the matron and another to the house-surgeon are suspended from the ceiling, together with an array of irrigators, while the walls are decked with attachments for electric cauteries, drills, etc. Two huge thermometers check the temperature of the air and water, while due observation of the body heat of the patient is assured by the provision of an electric alarm thermometer set at 98.5°. The ventilation is apparently arranged upon the vacuum system, since an electric exhaust air fan is seen busily at work in the upper part of the wall. Altogether it is such a very complete and scientific little theatre that it is no wonder that patient, surgeons, and nurse all look very pleased with themselves. The spectators, however, look very much the reverse, especially the one who is beating a hurried retreat through the screen of sterilized water which guards the entry to the chamber.

CIRCUMCISION.

MUSALMAN writes: With reference to the question of circumcision, it is by no means certain that this "barbarous mutilation" has not a good deal to be said in its favour. When one contrasts the clean insensitive glans of the Musalman with the irritated, filthy, and malodorous condition almost invariably present in the Hindu and British soldier in India when the prepuce is long and tight, there seems no room for doubt but that the removal of the appendage is often a sanitary improvement. It is evident that the nervous irritation kept up by an irritable mucous membrane constantly covered with decomposing secretions must be constitutionally bad from many points of view, and may produce very evil results. It is also certain that many boys and young men are perpetually tortured by sensations and ideas from the above cause, the reason for which they never suspect, and are unfortunately not told, as the treatment by a little cleanliness with astringents and antiseptics is so easy and so beneficial.

ERRATUM.—In the notice of the appointment of Mr. R. Fox-Symons, M.R.C.S., L.R.C.P.Lond., D.P.H., R.C.P.&S.I., published on August 29th, 1903, p. 483, it should have been stated that he had been appointed Inspector-General of Hospitals of the Transvaal, and not as printed.

LETTERS, COMMUNICATIONS, ETC., have been received from:
A Anxious Enquirer; Messrs. Arnold and Sons, London; R. Alcock, M.B., Hanley; Dr. C. Averill, Macclesfield; Association of Registered Medical Women, Secretary of, London; Miss R. E. L. C. Appel, M.B., Benares. **B** Dr. C. F. Beecor, London; Mr. H. M. Bates, London; Mr. H. N. Barnett, Knock; Dr. T. E. B. Brown, C.I.E., London; Mr. J. P. Blake, London; Dr. F. Bushnell, Plymouth; Mr. L. A. Bidwell, London; Mr. C. Bowdler, Camberley; Dr. H. L. Browne, West Bromwich; Mr. W. H. Bull, Stony Stratford; Mr. A. S. Barling, Lancaster. **C** Dr. W. Collingridge, London; Messrs. J. and A. Churchill, London; Dr. W. H. Calvert, Melrose; E. K. Campbell, M.B., London; Mr. J. B. Curgenven, Hildenboro'; Civil Employ; Mr. J. T. Crocker, Bingley; A. Cox, M.B., Gateshead; Hon. S. Coleridge, London; Dr. F. E. Carey, Guernsey; Mr. H. W. Carson, London; Mr. A. A. Cooper, London. **D** Mr. W. H. Date, Cullompton; Mr. H. Dwyer, Banbury; Dr. T. Dutton, London; Mr. F. Davidson, London; Dr. T. W. Dewar, Dunblane. **E** Emphysema; Mr. W. Ewens, London; Dr. F. A. Elkins, King's Langley; Mr. F. C. Eve, Hull; Mr. H. R. Evans, London. **F** Mr. W. P. le Fevre, Touws River, C.C.; Dr. A. M. Fraser, Portsmouth; Mr. R. Fox-Symons, Pretoria. **G** Mr. G. Goodman, Brigg. **H** Mr. J. Hutchinson, London; Mr. E. F. Hickman, London; Dr. A. E. Henchley, Canterbury; Mr. F. Haydon, London; Dr. R. G. Hebb, London; Dr. J. F. Horne, Barnsley; Mr. J. D. Hillis, Dublin; Dr. S. H. Habershon, London; Dr. J. F. Horne, Barnsley; Mr. J. D. Hillis, Dublin; Dr. S. H. Habershon, London; Dr. M. Haranchipy, Lamaulou; Mr. G. C. Hall, Islip; Dr. E. Haughton, London; Dr. M. Haranchipy, Lamaulou; Mr. G. C. Hall, Islip; Dr. E. Haughton, London; Dr. F. de H. Hall, London; Mr. J. Houston, London. **I** "India Rubber Journal," Editor of the, London. **J** Messrs. W. A. Jones and Co., Liverpool; J. C.; Dr. E. L. Jones, Cambridge; Dr. W. M. Jones, Torquay. **K** Dr. T. N. Kelynack, London; Mr. A. Keneally, London; Mr. H. S. Kingsford, London. **L** Dr. A. Leffingwell, Boston, Mass.; L.R.C.P.; Mr. R. R. Leeper, Dublin; Mr. J. Lawrence-Hamilton, Brighton; Dr. A. Lawson, London; Mr. F. J. Lynch, Armagh; Mr. G. Lowe, Lincoln; Mr. P. G. Lee, Cork; Dr. A. E. Larking, Folkestone. **M** Mr. J. H. Mummery, London; Mr. J. W. MacMullan, Penarth; Dr. W. McCallin, Southampton; P. C. Mears, M.B., North Shields; J. D. E. Mortimer, M.B., London; M.D., F.R.C.S.E.; J. L. Martin, M.B., Chelmsford; Mr. E. D. Marriott, Nottingham; Dr. J. Macpherson, Edinburgh; M.D.; Mycpia: Mr. A. Maude, Westerham; Dr. C. K. Millard, Leicester; Dr. J. J. Macan, Cheam; Dr. J. E. Moorhouse, Stirling. **N** Mr. J. W. Noble, Nottingham. **O** Sir I. Oliver, London. One of those who were taken in. **P** P. A.; Mr. F. E. Parkes, London; Dr. J. Pearse, Trowbridge; Mr. R. C. M. Pooley, London. **R** Messrs. Rembeimer and Co., Surbiton; J. D. Russell, M.B., London; Rusticus; Mr. A. Rivers-Willson, Oxford; Mr. H. M. Roberts, Stevenston; R. W. M.; R. W. T. C. **S** Messrs. E. S. Shultes and Co., London; Mr. F. Soddy, London; Mr. R. J. Stirling, Fleet; Mr. G. A. G. Simpson, London; Mr. J. Stewart, Clifton; Sella Turcica; Dr. H. Smith, Durham; Dr. G. F. Still, London; Dr. S. Sunderland, London. **T** Mr. R. F. Tobin, Dublin; Mr. J. A. Todd, Wolverhampton; Dr. F. J. Tresilian, Enfield; J. H. Teacher, M.B., Glasgow. **V** V. J. C.; Dr. A. P. Voelcker, London; Veritas; Dr. Agnes C. Victor, Boston, Mass. **W** Mr. C. H. Whiteford, Plymouth; Dr. W. Watkins-Pitchford, Pietermaritzburg; Dr. F. Willoughs, London.

BOOKS, ETC., RECEIVED.

A Short Practice of Midwifery. By Henry Jellett, B.A., M.D., B.Ch., B.A.O.Dub, F.R.C.P.I., L.M. Preface by W. J. Smyly, M.D., F.R.C.P.I. Fourth edition. London: J. and A. Churchill. 1903. 8s. 6d.

The Care of Infants. By Sophia Jex-Blake, M.D. Second edition. Edinburgh: G. A. Morton; and London: Simpkin, Marshall and Co., Limited. 1903. 1s. 6d.

Gynaecological Nursing. By Netta Stewart. Edinburgh: Oliver and Boyd. 1903. 2s. 6d.

Advanced Study and Research in the University of Cambridge. Compiled by Donald MacAlister, M.A., M.D. Second edition. Cambridge: University Press. 1903. 6d.

Krankheit Begabung Verbrechen ihre Ursachen und ihre Beziehungen zu Einander. Von Arthur R. H. Lehmann. Berlin: J. Gnadenfeld and Co. 1904. M.6.

Transactions of the American Pediatric Society. Fourteenth session. Held at Boston, May 26th, 27th, and 28th, 1902. With addenda from thirteenth session and index. Vols. i to xiv inclusive. Edited by Walter Lester Carr, M.D. New York: E. B. Treat and Co.

Het Pollen-Asthma (de z.g.n. kookikoorts) deszelfs Verschijnselen Oorzaken en Behandeling. Door Dr. J. E. Alberts. Amsterdam: Egeling's Boekhandel. 1903. Fr.1.

A System of Physiologic Therapeutics. Edited by Solomon Solis Cohen, A.M., M.D. Vol. viii.—Rest: Mental Therapeutics Suggestion. By Francis X. Dercum, M.D., Ph.D. London: Rebman Limited. 1903. 12s. 6d.

Handbuch der pathologischen Anatomie des Nervensystems. Herausgegeben von Dr. C. Flatau, Priv.-Doc., Dr. L. Jacobsohn, Priv.-Doc., Dr. L. Minor. II. Abtheilung (Bog. 21-36): III. Abtheilung (Bog. 41-60): IV. Abtheilung (Bog. 61-86); V. Abtheilung (Schluss). Berlin: S. Karger; and London: Williams and Norgate. 1903. II. Abtheilung, 10s.; III, IV, and V, 14s. each.

Contributions to the Physiology of Digestion, and to Dietetics. By W. T. Aitchison Robertson, M.D., D.Sc., F.R.C.P.E., F.R.S.E. Edinburgh: Oliver and Boyd. 1903.

Diseases of Women. By Alfred Lewis Galabin, M.A., M.D., F.R.C.P. Sixth edition. London: J. and A. Churchill. 1903. 16s.

Handbuch der allgemeinen und speziellen Hydrotherapie. Von Dr. Ludwig Schweinburg. Nebst einem Beitrage von Dr. Oscar Frankl: Die Hydrotherapie in der Gynäkologie und Geburtshilfe. Wiesbaden: J. F. Bergmann. 1904. M.6.

Ueber die funktionelle Prüfung des menschlichen Gehororgans gesammelte Abhandlungen und Vorträge. Von Dr. Friedrich Bezold. Band II. Wiesbaden: J. F. Bergmann. 1903. M.5.

Die Verhütung der Harninfektion. Handhabung der Asepsis und Antisepsis bei der Behandlung der Harnkrankheiten. Von Dr. Berthold Goldberg. Wiesbaden: J. F. Bergmann: 1904. M.3.

Handbuch der Geburtshülfe. In drei Banden. Herausgegeben von F. von Winckel. Erster Band, 1 Halfte. Wiesbaden: J. F. Bergmann. 1903. M.13.60.

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The Harveian Oration

ON

THE STUDY OF STRUCTURE IN RELATION TO FUNCTION.

Delivered before the Royal College of Physicians on Monday, October 19th, 1903.

By W. H. ALLCHIN, M.D.,

Senior Physician, Westminster Hospital; Fellow and Censor of the College.

[Dr. Allchin commenced his oration by quoting the terms of the deed by which Harvey founded the Harveian Festival, and in compliance with these terms referred briefly to the various benefactors of the College, and to some of those Fellows who by their labours had benefited mankind at large. He sketched Harvey's studies in anatomy, and then proceeded as follows:]

I propose to consider how far the ascertainment of the facts of structure as a necessary preliminary or adjunct to experimental methods has influenced the progress of biological knowledge, and what may be the limitations and extensions of the subject in that direction. But I would guard myself at the same time from being supposed to assume that anatomy, however complete and precise, is of itself sufficient to furnish a physiology or knowledge of function, since in the earlier days to which I have referred, when the facts of gross anatomy were well and widely known, most erroneous and grotesque views were held as to the action and uses of the various organs; as, indeed, the history of the explanations offered for the circulation of the blood before Harvey's time sufficiently testifies. Nor do I fail to admit that much physiology, more especially in recent times, has become known even with considerable approach to exactness without a corresponding knowledge of its structural basis.

The Circulation.

The discovery and proof of the circulation, not only by the actual positive knowledge which it furnished but also by the methods by which it was arrived at, did much to dispel the fanciful and absurd views held as to the other functions of the body and thus became the starting point of modern physiology. But, as I propose to show by a few examples, the full benefit of Harvey's work, and, indeed, its applicability in explaining those other functions, was proportional to the extent of the accurate information possessed in respect to the structure of the organs by which these processes are carried out, and as fresh anatomical knowledge was forthcoming so did truer conceptions of the living activities develop from their observation and experimental investigation.

The Respiratory Function.

The rational study of the respiratory function, for example, followed much the same course as did that of the circulation of the blood. The Galenic doctrine on this subject was that which Fabricius propounded in the lectures to which Harvey listened. The air which was introduced into the lungs by the "rough artery"—or as we call it trachea—was for the purpose of modifying and regulating the innate heat of the heart, of getting rid of the fuliginous vapours which resulted from this innate heat, and further with the object of being conveyed by the "vein-like artery"—pulmonary vein—to the left side of the heart, there to generate those vital spirits which the arteries carried throughout the body. Although Harvey's discovery set aside at once and for ever such unintelligible nonsense as it had done the corresponding views of the heart's action, the time was not yet quite ripe for laying the foundation of sounder principles to the function of respiration. The state of knowledge of the anatomy of the lungs was scarcely so far developed in Harvey's time as was that of the structure of the heart, as may be seen in the *Manuall of the Anatomy or Dissection of the Body of Man* (enlarged 1642), by Alexander Read, who was a Fellow of this College as well as "Brother of the Worshipfull Company of the Barber Chirurgions."

Moreover, the significance of the movements of the chest in breathing and of their relation to the entrance and exit of the air from the lungs was but imperfectly realized. If to Borelli may be attributed the first settlement of these questions on right lines, applying as he did to the problem the growing mechanical and chemical knowledge of his day, and showing as he did that the air entered the lungs as a result of atmospheric pressure as the chest enlarged by muscular contraction, and, further, that the air inspired was actually taken up by the blood, and that this was essential to the life of the animal, all of which are the facts which are at the basis of our present knowledge of the subject—if, as I say, Borelli showed this, the way for his so doing was made clear for him by what had been done in explaining the true structure of muscular tissues, and still more by the labours of his fellow Professor at Pisa, Malpighi. More than fifty years after the invention of the compound microscope this observer applied it to the investigation of the tissues, and had himself informed Borelli of the minute structure of the lungs, how the terminal branches of the air tubes ended in closed vesicles on the walls of which the smallest blood vessels ramified, forming the communication between the arteries and veins, and thus supplying the completing link to Harvey's work within a few years after our great countryman's death. On such a foundation of exact knowledge the further pursuance of the subject was one for the physicist and chemist, and by them it has been brought to a high pitch, when once the nature of the machine they had to deal with was clearly defined. Observation and experiment were profitably occupied when anatomy had cleared the ground.

It was not only with the functions of respiration that Malpighi's great work on the investigation of tissue structure was concerned. His labours, added to and developed by the famous Dutchmen, Van Leeuwenhoek and Swammerdam, as well as by the Englishman, Robert Hooke, rendered possible the satisfactory examination of the other functions, though the difficulties of the necessary observation and experiment were greater than they were in respect to the circulation and respiration. Connected with the latter questions of a mechanical and chemical character arose more capable of being answered, as the sciences of physic and chemistry were at the time being better understood. While it was comparatively easy to see the movements of the heart and of the lungs in a living animal when these organs were exposed, vivisection did not render so clear the secretory activities of the glands, the changes brought about by digestion, the intricacies of tissue nutrition, and the workings of the nervous system. These physiological problems were more intimately connected with the living material, and were not so open to such observation or experimental inquiry as was then possible. And it may be said that less even was known of the structure of the organs concerned in these functions than there was of the circulatory and respiratory systems. But Malpighi and his fellows showed the way to what was wanted, and, as will appear, the uses and workings of the structures became open to scientific inquiry with important consequences.

Muscular Action.

Mention must be made, however, in further illustration of my theme, of what had been done to provide truer conceptions of the nature of muscular action. Up to the time of Vesalius, and even for some time afterwards, the contractile power of the muscles was regarded as resident in the connective tissue sheath of the fibres, the true muscle substances being looked upon as packing. Vesalius first indicated the proper rôle of this material, but it was not until more than a century later in 1664 that Nicolas Stensen, a Dane, described (1664-7) the structure of muscular tissue as he had studied it with the microscope, and thus furnished Borelli with the anatomical grounds upon which he formulated the principles of the action of this substance, also showing that the contractions were induced through the nerves. Although much that he taught was erroneous, being entirely dominated by mechanical conceptions of the nature of muscular contractility, the refutation of his errors showed the right lines, which was possible only on the structural basis which the microscope had supplied.

The most important step towards an understanding of the nature of muscular action was taken shortly afterwards by a Fellow of this College, Francis Glisson, whose name is more generally associated with his work on the liver and on rickets. In a treatise, however, published by him in 1673, *De Natura Substantiae Energetica*, he first explained the property of muscle substance which he called irritability, the character and phenomena of which were further developed by Haller nearly a century later.

SECRETORY GLANDS.

Important as the work was that Malpighi did in respect to the discovery of the capillary blood vessels and the structure of the lungs, almost, if not quite, as great was that which he accomplished in connexion with the secreting glands. In earlier times the word "gland" had a wider range of meaning, and included such organs as the brain and tongue. That some of them were concerned in straining off certain serosities or humours from the blood was also generally held, but the active agents in the process were quite unknown, as would naturally be the case when the intimate structure of the organs was hidden from view. To the nerves this function was often attributed, but the physiology of secretion was on a par with that of the heart or the lungs, with which of course it was interwoven. Within a few years previously to the time that Malpighi was investigating the structure of the skin, the liver, and the kidneys, the ducts of the pancreas and of the submaxillary and parotid glands were discovered and the position of these organs as secreting glands recognized. Malpighi in addition showed the lobular structure of the liver and the relation of the acini to the blood vessels, and showed the general course and arrangements of the renal tubules and of the glomeruli and capsules which were named after him. The instruments at his disposal did not permit him to realize the cellular constituents of these several organs, but all these researches gave the death blow to the older conceptions as to the part played by the nerves in the secretory processes, and it was realized that the secretions were derived from the blood in its passage through the glands, and were passed into the commencements of the ducts. Stensen indeed, who had discovered the submaxillary duct, seems to have had a foreshadowing of the vasomotor influence on secretion.

The subject of digestion need not detain me, the problems with which it is concerned are so essentially chemical in nature that although in the latter part of Harvey's period, and within a few years after, the existence of the digestive juices as secretions of the various glands was known, their composition and mode of action on the food stuffs were not a matter of anatomical inquiry and depended for their satisfactory investigation upon a knowledge of chemistry that was developed altogether outside the study of the living body.

THE NERVOUS SYSTEM.

Of all the functions of the body, none, it would be at once admitted, is more difficult of study or more obscure in the investigation than that of the nervous system. None also has been the subject of cruder description or wilder explanations. That this is so would seen natural, clearly associated as nervous phenomena are with the more recondite phenomena of life, and subject as their study has ever been to the influences of metaphysical speculation. At the same time, however, one, and as I conceive the most, important circumstance that has retarded the rational development of neurology has been the extreme difficulty that has existed in obtaining a precise knowledge of the actual structure of the organs which subserve the function. Even at the present day, great as are the advances that have been made, I think I should be correct in saying that less is known of the minute anatomy of the nervous centres than of any other organs in the body.

Whilst it may be said that with the present means at our command a knowledge of the histology of many of the tissues has reached or almost reached its limits, the precise disposition of the multiplicity of nerves and cells that constitute the brain and spinal cord as well as the ultimate termination of the nerve fibrils in the tissues and in the centres are yet to seek. Hence it is that whilst during the period of Harvey and immediately subsequent the study of the several functions to which I have referred began to emerge from the erroneous and fanciful notions by which they were surrounded and their investigation to be started upon lines that have been followed to the present day, the phenomena of the nervous system for some time remained enveloped in the mystic obscurity that had enshrouded them with growing intensity from the earliest times, an obscurity that was, if possible, made greater by the lengthy and unintelligible phrases in which they were described.

The main divisions of the brain were recognized—cerebrum and cerebellum, medulla, corpus callosum, corpora striata, ventricles, and even such smaller parts as the corpora geniculata, pituitary body, pineal gland, infundibulum, and septum lucidum. The distinction into white and grey matter was also appreciated, and that the former was made up of fibres was supposed. But the structural relation of the several parts to one another was very indistinctly realized and anything further as to minute structure was, of course, unknown. The following extract from Read's *Manuall of Anatomy*, already mentioned, will serve to show what was taught in a standard textbook, as we should now call it, concerning the functions of the brain.

> Of the action of the brain. The action of the brain is this: After that the spirits and blood are discharged into the sinus of the dura mater by the veines and arteries to temper the heat of them the brain is ordained (seeing it is colder than the heart) that the animall functions, which are feeling and moving, may be the more readily executed. Wherefore the animall spir ts seem not to differ from the vitall spirits in substance, but in qualities, namely, the temperament and attenuation, for they must be more temperate, because heat doth both taint the reasons (as we may see in drunkennesse and raving) and hindereth or preventeth the motion. The spirits ought also to be more subtile, because they are to passe like a thunder through the bodies of the nerves. So, as the vitall spirits are carried to the parts of the bodies by the arteries, so the animall are carried by the nerves. The animall spirits for this cause also ought to be subtill because the reasonable soul is resident in the brain, which doth contemplate things immateriall, as Angels and it selfe.

Although this may be taken as illustrating the teaching of the day, and the work of Willis, *De Cerebri Anatome* (1659) was no advance thereon, there appeared ten years later (1669) a treatise on the anatomy of the brain by Nicolas Stensen, whose investigations on secretions have already been referred to, which foreshadowed in several respects many of the discoveries made and views held a century and more later. But the special feature of this treatise as bearing on my present subject is that after pointing out the extremely slight information possessed as to the essential structures of the nervous system, Stensen refused to admit, in face of the lack of all sound anatomical knowledge, any physiological deductions whatever. After pointing out a number of cases in which he shows that adequate anatomical knowledge is wanting, he says: "Whence you may guess how little trust is to be put in explanations based on such a futile foundation.....I have said nothing of the use of parts, nothing of the actions which we call animal, since it is impossible to explain the movements carried out by a machine, so long as we remain ignorant of the structure of its parts."[1]

It was only very gradually that this ignorance was cleared up, and pending that the progress of neurology was hindered by the mystical speculations of successive metaphysical doctrines. Until the discovery of the nerve cells and their connexion with the fibres was made no very sound notions on nervous function were possible.

THE DEVELOPMENT OF PATHOLOGY.

Slowly and with many throwbacks as physiology emerged from obscurity and became established on a scientific basis the correlative subject of pathology long lagged behind in taking up a similar position. The reluctance, as it were, to regard morbid processes in the same manner as those manifested by a healthy organism was no doubt in part responsible for the delay in establishing any clear conceptions as to the nature of disease; but what was of far greater influence was the lack of any systematic observations on the appearances presented after death—anything that, in short, might be looked upon as a knowledge of morbid anatomy. Hence it was that the notions respecting disease and its workings were if possible more fanciful than those held in connexion with the healthy body, and were retained for long after the latter had been diverted on to right lines.

Although isolated records of necropsies were made from time to time,[2] it was not until the latter half of the eighteenth century that Morgagni laid the foundations of a scientific pathology by his work *De Sedibus et Causis Morborum* (1780), upon which a goodly superstructure was soon erected. "It stands most clearly revealed," says Virchow,[3] "in the history of pathology that the division of the body first into the larger regions—head, breast, abdomen, etc.—then into organs, then into tissues, and finally into cells and cell territories, was the first step which opened up to us the comprehension of disease." There is good ground for thinking that this comprehension would have been sooner grasped if the collection of records of *post-mortem* inspections which Harvey had made over many years had escaped the destruction which befell many of his papers when his house in London was ransacked during his absence at Oxford with King Charles.

THE DEVELOPMENT OF HISTOLOGY.

From this necessarily brief sketch of the development of physiology in relation to gross anatomy, it is apparent that

any approach to an accurate understanding of the working of the several functions was only possible when the facts of structure were ascertained and appreciated; and that when these facts were scanty, fanciful and erroneous views were entertained as to the mode in which the corresponding functions were performed. With the prosecution of anatomical investigation beyond the range of the unaided vision the knowledge of the living organism and its working was by so much extended. The impetus given to the study of microscopic structure by the labours of Malpighi and his followers resulted in establishing histology—a term first used by Carl Mayer in 1820—as a specific branch of anatomical inquiry which has been pursued with ever-growing success to the present day, coincidently as the realm of gross anatomy became more and more restricted, so far as the human organism is concerned, by the very completeness of the knowledge of it.

Did time permit it would not be difficult to show, as indeed has in part already been done, that as the intimate structure of the tissues became revealed, so was the way cleared for a sounder physiology, whether by a more rational understanding of what observation and experiment had disclosed, or by indicating the direction in which observation and experiment might be fruitfully continued.

The progress of histological research has been marked by one great feature far reaching in its effects and of fundamental importance—the recognition of the cell as the tissue unit. And whilst this has served to give completeness to the views of tissue structure, and especially of the genetic relations of the several components of the organs, it served as a fresh starting point for the investigation of biological problems, since it was recognized that the life of the organism was but the life of the cell, differing only in degree of completeness: and the full realization of what is meant by specialization of function being dependent on differentiation of structure became apparent.

With entire appreciation of the complexity of the phenomena presented by the living cell, Brücke forty years ago affirmed that this must imply the existence of some structural arrangement in cell substance, some degree of organization, some further stage that had hitherto been detected in the disposition of the material which subserves function. Setting aside the obvious distinction into cell contents, nucleus, and attraction sphere, and the separation of the first into cell protoplasm and the metabolic products thereof (such as starch, fat, glycogen, and pigment granules), attention has been directed towards discovering in the apparently homogeneous protoplasm some evidence of structure.

Numerous observers long ago described a fibrillar arrangement in this material, a view that later gave place to the assertion that it is rather to be regarded as of a reticular nature, the protoplasm forming a network or meshwork, "the nodal points of which appear as individual granules."[4] The imperfect loculi formed by this disposition of fibrils were described as being occupied by a more fluid material. Objections were raised to this explanation, and the more recent description with which the name of Bütschli is associated attributes to the protoplasm a

> foam structure, which depends upon the presence within a uniform ground mass of a large number of extremely fine vacuoles lying almost at the limit of microscopic visibility, and so close together that their walls consist of relatively thin lamellae. (Verworn.)

But, these and several other views as to the intimate structure of the living cell protoplasm which describe it "as being composed of two substances, one of which is disposed as a contractile net according to some, as a relatively rigid framework according to others, or as free filaments; or whether it be built up of a more solid material and of a more fluid material which occupies the minute spaces or vacuoles which are hollowed out in the former"[5] have not met with universal acceptance, and there are still those who regard these relatively coarse indications of structure in cells as the results of *post-mortem* change or of fixing reagents. To such the living protoplasm is a homogeneous colloid, and its "peculiar and transcendental qualities are associated with molecular rather than with molar structure."

What is said as to the cell contents applies also to the nucleus, in which a reticular or meshwork appearance is described by some, as others would regard the actual living condition as one of perfect homogeneity.

In this uncertain state the question of the intimate structure of the living cell protoplasm must at present be left, so far as the same is capable of investigation by the microscope and its accessories. But, whilst fully recognizing that with further improvements in method and in means this problem will be solved, it none the less seems certain, consistently with the present hypotheses as to the nature of the cosmos, that however far the eye may be able to penetrate there will still remain behind and beyond a molecular or atomic structure, for the understanding of which other branches of scientific inquiry must be employed. "The organism," says Virchow, "is not an individual but a social mechanism. An exact anatomical analysis of this mechanism always brings us at last to cells; they are the ultimate constituents of all tissues as they were their origins, hence we call them the living elements, and hence we regard them as the anatomical basis of all biological analysis, whether it has a physiological or a pathological object in view. The cells are composed of organic chemical substances which are not themselves alive, but the mechanical arrangement of which determines the direction and power of their activity."[6]

Before proceeding to consider the next and chemical stage of structure, it would be well shortly to indicate some of the living phenomena which have either already received or still await their explanation in the intimate histology of the cell. Most important of these is contractility, whether this be manifested as irregular amoeboid movements, the rhythmic wavings of cilia, or the orderly and more highly differentiated contraction of muscular tissue. The ebb and flow of the more diffluent portions into and out of the reticulum of the spongio-plasm—the "streaming," as it has been termed—is a step towards explaining—apart altogether from the attempt to express protoplasmic movement in terms of inorganic phenomena, such as has been done—those alternate contractions and expansions of the bioplasm due to reciprocal rearrangements of its particles which constitute one of the most striking characteristics of the living organism.

The complicated changes connected with nuclear division, known as "mitosis," which underlie all cell multiplication, and hence are of such importance in growth and development, are only realized as the result of those microscopic investigations which have been directed towards discovering a structural organization of the cell itself.

The germ plasm and the problems of heredity connected therewith can only be discussed in terms of cell structure with any probability of satisfactory results. Possibly also the varied morphological characters presented by the fully-developed living constituents of the tissues, developed as they have been through successive stages from cells of almost identical appearance in the blastoderm, may be more fully understood when the structure of their protoplasm is more accurately known. The so-called specificity of cells and its limitations—metaplastic interchanges—so important in the study of tumour formation, is an aspect of this same question.

Biological Chemistry.

From the earliest recorded times there has prevailed an idea which ascribed to matter an ultimate composition of indivisible, indestructible particles or atoms, and by no one was the atomic theory more firmly maintained than by the contemporary of the later years of Harvey—Isaac Newton. "To me," said he, "it seems probable that God in the beginning formed matter in solid, massy, hard, impenetrable particles of such sizes and figures, and with such other properties and in such proportion as most conduced to the end for which He formed them." By Robert Boyle, also, to whom natural philosophy in the seventeenth century owed much, the theory was held, though he found the explanation of chemical changes in the differences of atomic structure and arrangement of one single form of matter rather than of different elements—a crude foreshadowing of the present day conception by Sir William Crookes of the fundamental matter or "protyle." As is well known, however, it was not until the early years of the last century that the atomic theory received its practical development by John Dalton, since when it has remained at the foundation of physical and chemical science. "Despite attacks and criticisms," says Professor Clarke in his recent Wilde Lecture,[7] "Dalton's generalization still holds the field; and from it, as from a parent stem, spring nearly all the other accepted theories of chemistry." The conception of an atom as the smallest conceivable portion into which an element can be divided, or that can enter into combination, and attaching to the idea of the atom a definite relative weight constant for atoms of the same element, but differing with different elements, gave a satisfactory explanation for the laws of definite proportions and of multiple proportions which previously had been but incompletely recognized.

Since with the exception of a few elementary gases an atom is always combined with one or more atoms of the same or of other elements, some term is required to denote the smallest portion of the substance capable of a separate existence, and for this the word "molecule" is employed. Built up on these fundamental ideas, there has developed among other great generalizations the chemistry of the carbon compounds and the hypothetical recognition of the relative arrangements of the atoms within the molecule—in short, chemical constitution or chemical structure. Now "the greater the valency of an element the more complicated are its combining ratios, and the greater the possibility of its atoms forming numerous compounds with similar and dissimilar atoms." The atoms of carbon, which is the chief element in so-called organic bodies, "possess, in a much greater degree than those of any other element the property of combining with similar atoms, whereby a part of their valencies are satisfied."[8] Thus may be formed groups of carbon atoms so linked together that their valencies are in part satisfied among themselves, constituting what are known as carbon nuclei; and the free valencies being satisfied by atoms of other elements, molecules are formed in which much energy is accumulated with more or less instability.

Such conceptions as to the fundamental nature of matter, of its molecular structure and arrangement of atoms therein, permitted the laying down of rational or structural formulae for chemical compounds; and when the further suggestion was made of linking the atoms in tridimensional space rather than in a single plane, a still further extension of the idea of the atomic disposition within the molecule became possible, and "stereo-chemistry was born" (Clarke).

With theories of this kind ready at hand—theories which had done and are still doing so much to explain the phenomena met with in the domains of physics and chemistry—what more natural than that the biologist, recognizing that but little progress was being made in the further investigation of the intimate cell structure, and that the histologist in point of fact was apparently at the limit of his range of observation, should turn to the physico-chemical sciences for the satisfaction of his quest?

The attempts, however, from the chemical side to explain the constitution of living matter—due, no doubt, to the extreme complexity of the subject—cannot be said as yet to have led to any very definite result, although several very suggestive hypotheses have been put forward. Inasmuch as no empirical formula has up to the present been constructed for any one of the typical proteids, a rational or structural formula for the constitution of the undoubtedly large molecules of which these substances are composed is scarcely to be expected; and this, although necessary, is only the first stage in the inquiry. Analysis of proteid bodies give rise to numerous products; the end substances, such as carbonic acid, water, and urea, we are familiar with, but the intermediate ones "fall into two principal groups, the fatty compounds (generally containing an amidogen radicle) and the aromatic compounds or derivatives of benzene."[9] Accurate as further work in this direction may become, however, it still of necessity will not be a satisfactory explanation of the composition of living protoplasm, which is ever in a state of flux, the continuous decompositions and reconstructions of which underlie its activities and are indeed phases of its living. Hitherto all attempts to ascertain the composition of the bioplasm have resulted in killing the material, and hence the solution of the question is evaded. And although proteids are obtained from living protoplasm, there is no proof that they exist as such in the living matter, but rather are they the dead derivatives of what is killed in the process of examination.

Theories of the constitution of proteids arrived at by the attempted synthesis of these substances have been provisionally set out, and though no one of them is free from objection, it may reasonably be supposed that consistent with prevailing chemical theories they are on the right lines. Among these should be mentioned that propounded by our distinguished Fellow, Dr. Latham, according to which what he terms "living proteid" is composed of a chain of cyan-alcohols and a thio-alcohol united to a benzene nucleus. These cyan-alcohols are exceedingly unstable and prone to undergo intramolecular changes, properties also possessed in a marked degree by bioplasm, and similar bodies are obtained from the disintegration of both cyan-alcohols and proteids. A more recent attempt in the same direction has been made by Verworn,[10] who describes the "biogens," as he terms them, as real chemical and physical entities, each consisting of a benzene nucleus round which are arranged various groups of atoms, the idea being arrived at by a study of the metabolic products of the organism. The extreme liability of the biogen Verworn attributes to the incorporation of oxygen in the molecule, the absence of which, rather than the accumulation of waste products, he regards as responsible for the cessation of the irritability of the bioplasm. It may be further observed that it is in the cell protoplasm and not in the nucleus that this observer locates the biogens.

Whilst fully realizing the purely speculative character of these conceptions, the provisional use that they may be in comprehending the activities of the living organism is apparent. For many of these complex processes the knowledge of the chemical anatomy of bioplasm is as essential as the gross anatomy of the organs concerned is for an understanding of the circulation of the blood. As the chemist and the physicist find in the atomic theory and its developments an explanation of the properties or functions of the non-living bodies with which they deal, so may the physiologist find in the same assumptions a clue to those even more abstruse functions displayed by living materials, and furnish to the pathologist and to the clinical physician those data upon which a fuller realization of morbid processes may be obtained and sounder principles for their prevention or their treatment be laid down.

Where in the whole range of physiological inquiry is to be found a region into which the observer has less penetrated, and where for the want of some guidance he is more adrift in the comprehension of what he does recognize than in the complicated region of "nutrition?" And yet how essential for the mere framing of a proper dietary, or for an understanding of the protean symptoms collectively denominated "gout," is it that we should be able to form some idea of what becomes of the absorbed food stuffs, when having undergone some elaboration in the epithelial cells, the hepatic tissues, and the blood through which they have passed, they come "within the sphere of influence" of the living cell. What, too, is more important than to be able to attach to the comprehensive term "metabolism" some rational meaning, based upon a knowledge of what actually occurs, and what structural arrangements and rearrangements take place within the bioplasm of the tissues? The practical importance of this must be obvious and should prevent the relegation of such questions as I have been discussing as transcendental and of no useful purpose.

One of the greatest and most far-reaching advances in pathology within recent years is undoubtedly the recognition of the part played by micro-organisms in the causation of disease. But the full value of the knowledge gained is not comprised in the detection and cultivation of the specific bacillus nor yet even in the discovery of the particular toxin which the microbe produces, important as such information is. We require to know how and why these poisons affect the tissues as they do, and in order to arrive at that the rational formulae of these poisons must be known—and, what is more, the molecular structure of the living cells upon which the noxious material acts—ere we can realize how by some untoward substitution in the atomic arrangement of the living molecule its activities are prejudicially affected.

Our treatment of disease by drugs has been forcibly if irreverently described as "pouring substances of which we know little into bodies of which we know less." Pharmacology has done a little towards removing this reproach, and that department of it which deals with the relation between the chemical composition and constitution of a substance and its physiological action no doubt lies at the root of all rational drug therapeutics. But no one can assert that so far very much is known in this direction or that there has been much practical outcome of the investigations. This would be quite otherwise, however, if we had a knowledge of the molecular structure of living matter which would show the perversions taking place in disease and indicate the way in which they could be corrected.

The subject of immunity may reasonably be expected to find its interpretation in the ultimate constitution of the tissue elements; as also those at present vague conditions which we are dimly conscious of, represented by such terms as "bodily constitution" and "temperament." So, too, the differences in response on the part of different individuals to the same morbific influence, the variations in the manifestation of what we speak of as the same disease in various persons that lead the sagacious physician to treat the patient and not the malady; and in brief those intangible characters

which determine the responsibility of the organism for morbid symptoms, as distinct from the injurious agent that we speak of as cause, each and all await their explanation. The factors of the environment which condition the vitality of the tissues are not to be found solely in such external conditions as are commonly comprised in that expression.

As illustrating these environmental relationships may be mentioned the various forms of taxis or tropism whereby the direction of the movements exhibited by living protoplasm may be influenced. The best known of these is "chemotaxis" as met with in connexion with some states of leucocytosis, but it is probable that other forms of taxis caused by pressure, gravity, heat, and light also prevail. "The spermatozoon seeks the ovum, and almost everywhere in the living world is led in the right path by the chemotactic action which the metabolic products of the egg-cell exert upon the freely moving sperm-cell. . . Every species of spermatozoon is chemotactic to the specific substances that characterize the ovum of the corresponding species." (Verworn. *General Physiology.*) The effect also of these external agencies as well as others like moisture and the density of the surrounding medium on the nutritional activity and on the power of reproduction as well as on the motility of the simplest organism has been experimentally demonstrated; suggesting a chemical complexity of protoplasmic structure which is open to disturbance by the external world.

The behaviour of cell to cell, their mutual interactions—cytotaxis—and their physiological resistances the one to another will have to be taken into account in forming any thorough conception of the totality of life, whether healthy or diseased, that an organism presents, and the understanding of such problems cannot be attained until the finite structure of the material concerned be rendered plain, or be assumed with such justification as those concepts underlying physico-chemical action at present furnish.

As bearing upon these and other questions a very large body of experimental evidence exists to show that there are great varieties in protoplasm, and that it is far from being of a uniform character in all cases as was formerly supposed, and this even amongst the simplest unicellular organisms. The differences in behaviour exhibited by different species in response to various reagents clearly demonstrate this. For whilst some are so profoundly affected in their molecular constitution as to succumb on being subjected to certain poisons, others, in no wise differing so far as can be determined by the means at present at our disposal, are quite uninjured. Some kinds of bioplasm appear to have a general high resistance to all chemical agents, while others have a high or low resistance to particular agents only; thus, nervous tissue, for instance, is readily and injuriously affected by substances (for example, cocaine or nicotine) to which many protophyta are indifferent. Since also many toxic bodies which produce no effect upon dead albumen are yet violently poisonous to living protoplasm it would seem probable that the latter contains in its construction certain unstable groups of molecules which undergo replacement by others from the toxic agents. All this goes to show that protoplasm is extremely complex and consists of numerous kinds of compounds, many of which are very unstable. Also that not all protoplasm contains the same compounds, but that these are dissimilar in different organisms. And, further, that not all of the compounds in any protoplasmic body are essential to life, and that we may so act on a protoplasmic body by a weak reagent and gradually change its composition so that it will no longer be killed by a strong solution of the same reagent, thus affecting an acclimatization, or, as we should say, rendering the organism immune.[11]

May it not also be in this same molecular structure of living matter that will be found the explanation of those phenomena of development and of organic evolution by which the fertilized ovum of two different kinds placed under identical conditions will each attain "to such form and structure as best fit it for its place in Nature—processes which cannot be measured or observed by the same methods as are used in the investigation of the phenomena of non-living nature—that is, by measurements of their time and place relations under varying conditions—in other words, by the method of experiment,"[12] which are applicable to other processes of living organisms? "The biogen hypothesis gives a plausible account of growth and the production of fresh living material by supposing that the molecule is capable of polymerization—that is, the union of a number of molecules to form a single molecule—and then of falling into simpler substances once more."[13]

Surely I need not plead for the importance of these questions I have set out, an importance that is not merely the concern of the biologist, but is that of the practical physician. In the solution of these problems lies widespread benefit to mankind.

The Constitution of Matter: Radio-Activity.

Yet one step further. The atomic theory of the constitution of matter and its developments, although they have hitherto sufficed for the needs of the chemist who concerns himself with the decompositions and reconstructions of substances, is not the last word for some at least of the most progressive physicists. Is the atom indivisible and finite? has ever been a question that even the most pronounced atomists have asked themselves from time to time, and if the explanation of the recent discoveries that have been made in connexion with radio-activity be correct the answer must be in the negative. Briefly to summarize from this year's Romanes lecture by Sir Oliver Lodge the most advanced views that physicists are inclined to hold, it may be said that the atom is conceived as consisting of an aggregate of what have been termed corpuscles, and further that each atom may have associated with it a definite charge of electricity, atoms of different kinds having multiples of this charge, such an electrically charged atom being termed an "ion." Now the smallest unit of electric charge which itself "possesses the most fundamental and characteristic property of matter, namely, mass or inertia" is known as an "electron," and the charge with which the atom is possessed consists of a number of these electrons. When the ion contains an equal number of positive and of negative electrons it is electrically neutral, but when there is an electron in excess it is called a negative ion (cation) as one containing an electron in defect is a positive ion (anion). The latter, however, has not been recognized. Within the atom the "electrons are in a state of vigorous motion among themselves." But it has been found that the electrons can be detached from the atom at an electrode, and such isolated particles form the cathode rays which, when stopped suddenly by a massive obstacle, give rise to the so-called Roentgen rays. Hence the electron "is the most definite and fundamental and simple unit which we know of in Nature." Whether, however, the electron is to be considered as solely consisting of electrical charge or whether this be associated with a material particle is a moot point. Some hold that the latter is non-existent, and that in place of there being two kinds of inertia which we speak of as material and electrical the latter alone exists, the atom therefore being "composed solely of electricity." Such a concept of the electrical nature of matter is obviously a more precise expression of the monistic theory, in accord with which matter and energy are but convertible terms. Such a hypothesis suggests also that the various elements as we know them are but "different groupings of one fundamental constituent," the atom of each one consisting of its own special number of electrons; the unity of matter being thus arrived at.

Highly speculative as such considerations are, they nevertheless find support in electrical phenomena, and still further in radio-activity, of which we have heard so much in connexion with radium and allied substances. This radio-activity "consists in the flinging away with great violence of actual atoms," which exceed in their rate of movement the fastest cannon ball ever projected. The substance left is also radio-active, and successive residues, differing as they do from each other, yet continue to exhibit radio-activity, "and one of the residues so left seems ultimately to pitch away electrons simply instead of atoms of matter"—a veritable transmutation of matter. Thus it is supposed that "the massive and extremely complex atoms of a radio-active substance are liable to get into an unstable condition.....and, gradually disintegrating, fall into other and ultimately more stable forms of matter." Yet it appears that as the radio-active substance thus breaks up fresh radio-active matter is as constantly regenerated, possibly, as Lord Kelvin has suggested, from the ethereal waves surrounding the atoms.

Even as the atomic and molecular theory was laid hold of to furnish an explanation of that flux of chemical activity which we denominate bioplasm, so have these further speculations on ionic action been pressed into the same service and with some promise, wholly hypothetical as they may be. It is to Professor Loeb, of Chicago, that we in the main owe the application of the ionic theory to physiological phenomena. "The bulk of protoplasm," he writes,[14] "consists of colloidal material, and the physical manifestations of life such as muscular contraction, protoplasmic motions, and the innervations are due to changes of the condition of these colloidal solutions. And the reason why the electrical current is the universal form of stimulation is that the particles in colloidal solutions are electrically charged, and that every alteration of the charge of the particles will result in a process of innervation, or a contraction, or a protoplasmic motion." Thus nerve action is simply electrical action, negative ions being released where nerve blends with muscle, or where systems of concatenated neurons come into connexion. Ion after ion is precipitated, and thus neural conduction takes place.[15] This play of ions is excited or inhibited by the character of the fluids with which the protoplasm is

bathed, by the nature, that is, of the ions which these fluids contain.

Most effective in stimulating protoplasmic action are such substances as sodium salts, as those of lime restrain it, and since such inorganic bodies are among the products of tissue waste it may be that in the ions of metabolism are to be be found the causes of that rhythmic tendency to activity which nerve cells and muscle fibre alike exhibit. If normal neuro-muscular action may be thus induced, the theory offers a clue to the comprehension of some of the most obscure morbid manifestations of these tissues, for, says Professor Loeb:

> That certain ions are capable of bringing about forms of irritability in nerves and muscles which do not exist normally may perhaps furnish the explanation of a certain number of morbid phenomena (neurosis and hysteria) in which the motor and sensory reactions of the patient are modified.

Conclusion.

In thus labouring as it may seem the successive phases of structure from the grossly obvious to such as the microscope discloses, and thence to the hypothetical chemical and electrical constitution of the material involved, it is not for a moment claimed that the investigation and the observation of functional manifestation have waited for anatomical discovery. In many departments of physiology, notably in that concerned with nerve and muscle and with secretion, a large mass of information has been acquired as the result of carefully-devised experiments, whilst but little has been done towards ascertaining the ultimate structure of the tissues concerned—little, that is, beyond what was known a score of years ago or more. But in respect to such tissues as these microscopic examination would seem almost to have reached its limits, and for the complete comprehension of the physico-chemical phenomena more recently ascertained the problem of the chemical and electrical constitution of the muscle or nerve fibre and of the gland cell awaits solution. Though it may be true that "it is quite impossible to attain to a complete knowledge of function without a thorough anatomical analysis" (Huxley)—and this, it may be added, although the observation of function may have led to the study of structure—yet it is clear that "structure" must include a wider range of meaning than hitherto it has been commonly thought to bear, and to reach into those regions where observation is conditioned by speculation, and where theory has to take the place of demonstrable fact. However true it may be that for a general conception of the physics of the circulation Harvey was beholden to his anatomical knowledge, it is also true that for our later acquired information of the share taken in the movement of the blood by the arteries an acquaintance with the structure of these vessels is necessary, whereby their elasticity and their tone are referred each to its own tissue.

The problem that Harvey solved was one that in its broad features was a mechanical one; but it does not end with such information as the gross anatomy of the organs and the histology of the tissues supply. Behind it lie the contraction of the muscular substance of the heart and arteries and the nervous governance of that material, which involve considerations of another character. For the complete understanding of the electrical and chemical changes which are associated with the passage of the nervous stimulus and the muscular response we should require to know what are the underlying molecular rearrangements and alteration in chemical constitution crudely represented by the formation of certain waste products. At this point, I say, precise knowledge fails us, and we turn for assistance to theories which have been so helpful in the explanation of the properties of non-living matter, consistent therein with the principle laid down by Mayer half a century ago "to refer both vital and physical phenomena to a common measure."

Whilst I have endeavoured to illustrate with such completeness as my brief time permits the relationship of physiology to anatomy, whether normal or morbid, the general tenor of my remarks will have indicated that when the limits of visibility, even with our most perfect instruments, have been reached, the separate investigation of structure and of function no longer becomes possible. The molecular constitution, chemical or electrical, of living matter becomes conceivable only in terms of action, and function and structure are but aspects of each other.

No deeper secrets of Nature exist to be searched out by observation and experiment than these and none will more benefit mankind in their discovery. To their investigation, therefore, in obedience to the precept of Harvey, do I exhort you to turn.

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SEVENTY-FIRST ANNUAL MEETING

OF THE

British Medical Association.

Held in Swansea, July 28th, 29th, 30th, and 31st 1903.

PROCEEDINGS OF SECTIONS.

SECTION OF MEDICINE.

Sir Isambard Owen, M.D., F.R.C.P., President.

DISCUSSION ON MEDICAL INFLAMMATIONS IN THE CAECAL REGION.

I.—Paul M. Chapman, M.D., F.R.C.P.,
Physician, Hereford General Infirmary.

Dr. Chapman, in introducing the subject, discussed the position of the physician with regard to the treatment of inflammations in the caecal region. The responsibility of advising operation should depend more largely on the physician, and he sympathized greatly with the position of the general practitioner, who often said such and such a surgeon had seen his case and had recommended operation, the practitioner himself begging the physician to put his foot down and discountenance any such thing. In many cases, perhaps in most mild cases, through appropriate treatment known to all, such inflammations would entirely subside. He thought the physician should have more authority and that surgeons should not take upon themselves the entire responsibility of advising abdominal section. Such advice should come from the physician, who really could not evade his responsibility.

II.—Henry W. King, M.D., M.R.C.S.,
Physician, Chester General Infirmary.

Dr. King said: Inflammations in the caecal region divide themselves into the acute (generally appendicitis cases) and the subacute (generally caecal cases proper). The former I feel certain are best treated by expectant non-operative methods. In the majority of these, where the pain is not so excessive as to indicate perforation or gangrene of the appendix tip, the patient with a pulse of 100, temperature 102°, vomiting and pain, my custom is to give nothing but water by the mouth in very small doses, even so little as a teaspoonful every quarter of an hour for the first 12 hours or so, and give opium and belladonna in large doses at once: the results in these cases are generally very good. In the subacute form with a history of constipation I prescribe either an aperient with rapidly following doses of belladonna or enemata with hot fomentations.

III.—T. D. Savill, M.D., M.R.C.P.,
Physician, West End Hospital for Diseases of the Nervous System, and Hospital for Diseases of Skin, Leicester Square.

Dr. Savill considered that the treatment of appendicitis was preventive, remedial, and surgical. An important part of the preventive treatment of appendicitis was the treatment of chronic catarrhal colitis, occasionally of a membranous type, and in many cases associated with neurasthenia. This was chiefly irrigation, particularly with a weak solution of chinosol or silver nitrate. As regarded appendicitis, if the patient's pulse were under 100 or the temperature not raised he would temporize in operation. Opium should be with-

held for as long as possible, as it masked the symptoms. He urged also that operation should not be delayed too long. He preferred to have a surgeon brought into contact with the case as soon as possible. Surgeons would not, he thought, be prepared to adopt what might be called the carpenter view.

IV.—Wm. Collier, M.D., F.R.C.P.,
Physician, Radcliffe Infirmary, Oxford.

Dr. Collier said that he was disappointed with the discussion, as he had come to learn as much as he could about those other cases of inflammations in the region of the appendix not connected with the appendix, but apparently the discussion was to centre on the appendix. With reference to the question of treatment of appendicitis, some years ago he had been present at a meeting at the Medical Society of London when Mr. Mayo Robson had argued that having made the diagnosis of appendicitis an operation should be at once done. He rather disagreed with this advice, and felt that Mr. Mayo Robson saw most of the severe types of appendicitis, but did not see those milder types that recovered without operation, and in many cases did not recur. Another point had to be considered which was who was going to operate; while Dr. Collier would have no objection to Mr. Mayo Robson operating in a doubtful case he would certainly prefer to give the patient the chance of medical treatment in the case of a less skilful operator. In the old days all physicians were familiar with the cases of appendicitis, in which a well-marked tumour was found in the right iliac region with well-defined boundaries. These cases were carefully watched; the masses slowly melted away, and the patients made a good recovery; in many cases the disease never recurred. In the present time, after a few days, unless this kind of case was doing absolutely well, the surgeon was called in and an operation was performed. He felt that the physician was perhaps too much influenced by the surgeon. It should always be remembered that certain drawbacks occasionally followed operation, such as herniae in the region of the wound or neuralgic pains. The pendulum had probably swung rather too far in the surgical direction, as he found that in hospital practice nearly all cases of appendicitis were taken over at once by the surgeon and not seen by the physician at all.

V.—Charles Robert Straton, F.R.C.S.Edin.
Salisbury.

Mr. Straton considered that many of the cases of appendicitis that recovered were cases of colitis, the appendix undergoing enlargement, as the tonsil might, from micro-organismal influence; but whenever suppuration had occurred operation was indicated.

VI.—Robert Saundby, M.D., F.R.C.P.,
Professor of Medicine, University of Birmingham; Physician Birmingham General Hospital.

Professor Saundby said that in Birmingham there was a very satisfactory agreement between the medical and surgical authorities upon the course to be pursued in these cases. The cases that required operation, and in which it was their duty to insist upon the need for it, were (1) where there was evidence of pus, that was, a fluctuating tumour, or a tumour with persistent fever and marked leucocytosis; (2) an indolent lump, which did not disappear on rest in bed, although pain and fever might have ceased; (3) relapsing cases—after the third relapse certainly.

VII.—William Joseph Tyson, M.D., F.R.C.P., F.R.C.S.,
Physician, Folkestone Hospital.

Dr. Tyson spoke of the necessity of looking at these cases from a medical and surgical aspect; they were formerly treated almost entirely by the physicians, but were now practically being treated almost entirely by surgeons. The one extreme was as bad as the other. There could be no doubt where pus had formed as to the advisability of letting it out as in any ordinary abscess, but he could not advise that all those cases called relapsing should necessarily be operated on, as when the second attack was slight this might, and very often was, the last; but should there be further attacks, the use of the knife was wise and generally necessary. But, after all, surgical interference could not be looked upon as the goal to which they should look. The treatment in the future must be in the direction of prevention of these cases—by dieting, aperients, and exercise.

VIII.—Michael George Foster, M.D., M.R.C.P.,
San Remo and London.

Dr. Foster said that M. Dieulafoy had contended that membranous colitis rarely led to appendicitis. He had himself watched some 30 cases of membranous colitis and 4 of these had developed appendicitis. The occurrence of these cases rather pointed to the frequency of the extension of morbid processes to the colon. In regard to the treatment of colitis the necessity of abundant and solid food was pointed out.

IX.—A. McPhedran, M.B.,
Professor of Clinical Medicine, University of Toronto.

Professor McPhedran said the medical treatment seemed to resolve itself into rest with abstinence from food. In many cases he had applied leeches, apparently with much advantage, but his surgical friends objected to them in the cases that had to be operated on. In the diagnosis of suppuration cases he wished to draw attention to the importance of examining the blood to estimate the number of leucocytes, as material increase was strongly significant of local suppuration. In Canada they were inclined to operate rather more readily in these cases than in this country. It was needless to say that no definite rule could be laid down to decide whether an operation should be done. In fulminant cases of course there should be no delay. In less severe cases, if the temperature and pulse continued to rise, it was desirable to operate before the third day. If not done then, it was well if possible to wait for a week or more, so as to give time for the exudation to become firmly walled off by adhesions. In recent years, with the adoption of this principle, the results had been much more favourable.

X.—William Odell, M.D., F.R.C.S.,
Torquay.

Dr. Odell held that the physician and surgeon should share the responsible of the management of appendix cases. The dictum of Sir Frederick Treves that an operation should be done after the occurrence of a second attack was a sound one.

DEMONSTRATION.

Dr. Paul Chapman exhibited the apparatus used by him for obtaining simultaneous tracings from the heart and index finger, for the measurement of pulse delay, and demonstrated its use upon a patient suffering from aortic disease.

ON THE IMPORTANCE OF ACCURATE MUSCULAR ANALYSIS IN LESIONS OF THE BRACHIAL PLEXUS;

AND THE TREATMENT OF ERB'S PALSY AND INFANTILE PARALYSIS OF THE UPPER EXTREMITY BY CROSS-UNION OF THE NERVE ROOTS.

BY

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and

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Since Duchenne[3] in 1867 and Erb[4] in 1874 described the acute paralysis of the arm and shoulder which is usually known by the name of the latter, and involves the deltoid, infraspinatus, biceps, brachialis anticus, and the supinator muscles, there has always been some uncertainty as to the exact localization of the lesion. Erb himself first ascribed the condition to a traumatic lesion of the sixth cervical root; but since the experiments of Ferrier and Yeo[5] on the spinal roots in the monkey in 1883, this form of paralysis has been usually ascribed to a lesion of the combined fifth and sixth trunks. This we believe to be an error, and the result of an assumption that the brachial plexus of the monkey is identical with that of man. For example, on stimulation of the fifth root in the human subject, we have found on two occasions contractions of the triceps and of the clavicular portions of the pectoral, neither of which contracts on stimulation of the same root in the monkey. It is true that Sherrington[11] makes the statement that he obtained contraction of the clavicular portion of the pectoral from the fifth root in monkeys, but this must be an error, possibly the inner clavicular fibres of the deltoid having been mistaken for the pectoral; for neither in rhesus nor in any of the monkeys

lower than the gibbons, among the 34 specimens that we have dissected, is there any clavicular origin for the pectoralis major at all.

During the last twelve months one of us (W. H.) has had under treatment two very complete and remarkable cases of this palsy, one in a man, following immediately upon a severe fall on the shoulder; the other a woman, a case of neuritis occurring spontaneously with sudden onset of severe pain, but in its results resembling the other in almost minute detail. In each case the paralysis and wasting of the affected muscles have been complete, with complete loss of all electrical reactions, and no attempt at recovery. Careful analysis of the muscles affected shows in each case the following muscles to be completely paralysed—deltoid, spinati and teres minor, biceps, brachialis anticus, supinator longus, supinator brevis, pronator radii teres, and the two radial extensors of the wrist. The only exception was slight voluntary power and faradic reaction in the brachialis anticus of the woman, not sufficient to move the weight of the forearm. Paralysis of pronation and of the radial extensors of the wrist in association with this form of palsy has never previously been described, and might very easily be overlooked, owing to the complete paralysis of the supinating action of the biceps and supinator brevis, and to the inward rotation of the arm by the subscapularis, owing to the loss of the antagonistic external rotatory action of the infraspinatus and teres minor. The loss of the pronator radii teres might thus be very easily overlooked, as indeed it was in both these cases until a systematic electrical testing of all the muscles of the upper extremity disclosed its absence. (It is a muscle very easy to stimulate faradically to produce powerful pronation in the normal subject by placing the testing electrode just internal to the biceps tendon.) Similarly the loss of the radial extensors of the wrist was overlooked, until their absence was disclosed by systematic electrical testing, since in clenching the fist the extensor communis digitorum took their place in fixing the wrist, and not until the tendons were carefully felt for was their contraction noticed to be absent in clenching the fist.

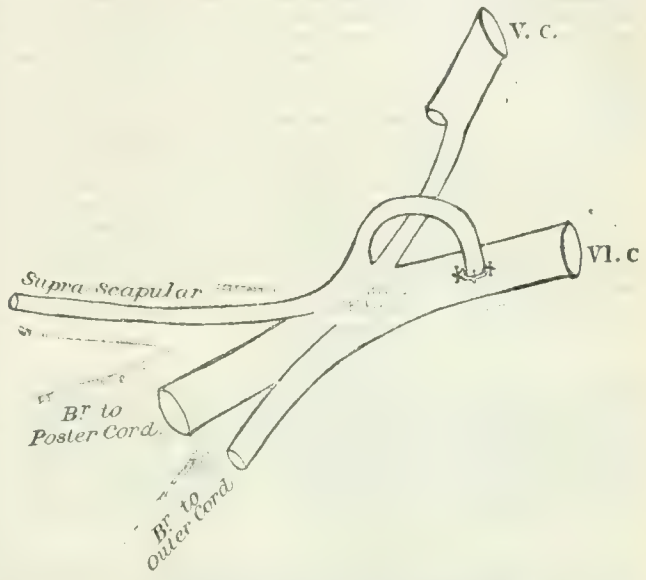
Feeling convinced by clinical experience, and by a study of the writings of Thorburn[12] and Sherrington[11] that the sixth cervical root was not involved in these cases, and that the lesion was probably confined to the fifth root, one of us (W. H.) undertook some dissections and experimental stimulation of the brachial plexus in monkeys, and found that it was possible by carefully splitting the cords and following the fibres to the muscles in rhesus that the deltoid, supraspinatus and infraspinatus, biceps, brachialis anticus, and supinator longus were in large part supplied by fibres from the fifth root. Experimental stimulation also of the fifth root (anterior division) in rhesus produced well-marked contractions in both parts of the deltoid and biceps, infraspinatus, supinator longus and brevis, and in the extensor carpi radialis longior. All these muscles contracted on stimulation of the sixth root also, but for certain reasons we consider the brachial plexus in man in its upper portion to be prefixed nearly a whole root as compared with macacus rhesus, and less for its lower portion. A remarkable case published by Markoe[10] long ago clearly proves that in man the deltoid, spinati, biceps, and brachialis anticus derive their whole motor supply from the fifth cervical root. A girl was wounded by a cut extending from the fourth cervical spine to the posterior border of the sterno-mastoid, cutting the fifth root clean across, and producing complete paralysis of abduction of the shoulder and of flexion of the forearm, with full reaction of degeneration and wasting of these muscles. This case, though a reference is given to it by Howell and Huber,[7] seems to have been overlooked in the literature of the brachial plexus, and it is well reported, and almost as valuable as a physiological experiment upon the fifth root in man. In this case the supinator longus showed only partial loss to faradism. Recently Kennedy[8] has reported three cases of Duchenne's obstetrical paralysis in children, which is exactly the same as that known as Erb's palsy in the adult, in which he operated, and found the combined fifth and sixth trunks surrounded by scar tissue, and excised this portion, suturing the fifth and sixth roots to the three distal divisions of the combined trunk. Kennedy has simply assumed the paralysis to be due to a lesion of this combined trunk, as it is stated in the textbooks, taking no steps himself to prove by electrical stimulation of the roots at the operation whether one or other of the fifth and sixth roots which combine to form the upper cord had escaped damage. This we consider a very important omission, and we think that in all such operations involving cutting of nerve trunks faradic stimulation should be employed at the operation for diagnostic purposes. This we have done in the three operations done by one of us (V. W. L.) on the upper cervical roots in two cases of Erb's palsy, and in one case of infantile paralysis of the deltoid and the supraspinatus and infraspinatus. By this means only can it be determined whether a given nerve is damaged or not, and a definite decision come to as to whether it shall be cut or left intact or used for grafting. Numerous operations for nerve suture, at varying times after injury, have now been recorded, in some of which a piece of fresh animal's nerve has been inserted between the two ends, but very few instances of grafting one nerve on to another in man have been recorded. All these, so far as we are aware, have been done upon the facial nerve in cases of inveterate facial paralysis, by cutting across the facial nerve and inserting the distal end into either the spinal accessory or hypoglossal. Such instances, with varying degrees of recovery, have been recorded by Ballance,[1] Kennedy,[9] Bernhardt and Körte.[2] Experimentally in animals Flourens in 1828,[6] and more recently Howell and Huber,[7] have shown perfect motor recovery to be possible after cross union of two divided nerve trunks. It therefore occurred to one of us (W. H.) that in the two cases of Erb's palsy referred to above a cure might possibly be effected by dividing the paralysed fifth cervical root and suturing its distal end into a neighbouring healthy root, the sixth or seventh. In the first case operated on—the woman with neuritis, possibly haemorrhagic, as it came on suddenly sixteen months previously accompanied by severe pain—the dissection to expose the fifth, sixth, and seventh roots was fairly easy. The fifth root appeared rather smaller than normal, and after isolating the nerve, and insulating it by passing a bent vulcanite spatula beneath it, it was stimulated faradically with weak currents applied by means of a sterilized bipolar electrode, the two points being about 5 mm. apart. The only muscular contractions obtained were the clavicular portion of the pectoral, the triceps, and weak contraction in one of the extensor muscles in the forearm, which seemed to be the extensor carpi ulnaris. It is quite impossible to be certain of which tendon is moving in the neighbourhood of the wrist in a stimulation experiment of the plexus. The triceps reacted very definitely, and there could be no possible doubt that in this case its motor supply was partly from the fifth root, as the results were the same after cutting the fifth root and stimulating the distal end of the nerve when held up so as to exclude diffusion of current. Similar insulation and stimulation of the sixth root produced powerful shock-like contractions in the whole of the pectoralis major, the latissimus, and triceps, with some of the muscles in the forearm. The results for the seventh root gave less strong contraction of the triceps, strong of the lower pectoral and of the latissimus, with some forearm muscles. Attempts were made to locate the forearm muscles which contracted, but owing to the crowding together of the tendons at the wrist and the movements of the arm and forearm by the contractions of the pectoral, latissimus, and triceps, we hesitate to claim absolute accuracy for the forearm muscles recorded under the sixth and seventh roots, and therefore think it better to omit them. About the larger muscles there could be no possible doubt. Although the stimulation results and the appearance of the sixth root suggested that it was perfectly healthy, it was considered wiser to graft the distal end of the fifth into the seventh root, which was accordingly done, passing it under the sixth, and sewing it firmly into a transverse nick made through the sheath and a few nerve bundles of the seventh root. No anaesthesia or any increase of paralysis followed the operation, but unfortunately slight sepsis followed, and the wound failed to heal by first intention, and tenderness and pain in the forearm, thumb, and two outer fingers resulted, presumably from neuritis of the nerve trunks exposed at the operation. In this case there has never been any anaesthesia on any part of the limb to the most delicate tests, either before or after the operation of division of the fifth root.

In our second case, a man, aged 40, had fallen out of a cart three years before on to his shoulder, causing instant paralysis of the left arm, followed by wasting of the deltoid, biceps, etc., as already described. For this he was treated for many months at two hospitals in London. There was very slight anaesthesia on the outside of the arm from the shoulder to the elbow, and quite marked anaesthesia to touch and pain in the thumb and radial side of the index finger, which he was quite certain dated from the time of the injury, as he had

noticed clumsiness of his hand on account of the loss of feeling. In addition to the complete wasting and palsy of the deltoid, biceps, etc., there was definite weakness and slight wasting of the whole of the left pectoral and of the latissimus. The serratus also appeared to be somewhat weaker than normal. We were, therefore, of opinion that the fifth root had been completely destroyed, possibly ruptured, and that in addition the sixth root, or the combined trunk of the fifth and sixth, had also suffered, possibly at a later date, from pressure of scar tissue. This diagnosis was, we think, proved by our findings at the operation, and by its results. The dissection to expose the three upper roots of the plexus was much more difficult than in the case of the woman, for the scalenus anticus seemed to be entirely replaced by a mass of scar tissue encircling especially the fifth and sixth roots and their combined trunk. Both were, however, ultimately cleaned and insulated on a bent vulcanite spatula, dried and stimulated by faradism. The only response given by the fifth root was feeble contraction in the deltoid, in its middle and posterior fibres. No other muscle reacted at all, even to moderately strong faradism of this root. Stimulation of the sixth root produced moderately strong contractions of the whole of the pectoralis, latissimus, triceps and one of the extensors in the forearm, with inward rotation of the shoulder, probably due to the subscapularis, and also slight contractions in the flexors of the wrist. Tracing the fifth root upwards to its foramen showed it to end above in a swelling enveloped in dense scar tissue, about 1½ in. above its junction with the sixth. The seventh root was not fully exposed, owing to the length of the operation, and the fifth root was accordingly cut across about ¼ in. above its union with the sixth, and its distal end firmly sewn into a transverse nick made in the upper edge of the sixth root. Before this was done the scar tissue was as far as possible cleaned from the combined trunk and the fifth and sixth roots forming it. The wound healed uneventfully. The day after the operation the numbness and anaesthesia of the left thumb and index finger had improved, and by the end of a week sensation in this area was absolutely normal to the most delicate tests, though the slight anaesthesia on the outside of the arm persisted. There was no alteration in the motor power of the limb. Since his discharge he has been treated by galvanism again, and a month later definite contractions could be seen in the deltoid on reversing a current of 10 milliampères, though prolonged galvanic treatment some months before operation had no effect. In this case there has already been some improvement, the anaesthesia over the sixth root area having disappeared, and his hand thereby being more useful, while the galvanic reactions in the deltoid have reappeared. No motor improvement can be hoped for until the lapse of six months from the date of the nerve suture last June, and improvement may be looked for in January of next year possibly.

Our third case is that of a little girl, aged 2 years, who suffered from an attack of infantile paralysis or acute anterior poliomyelitis of the right shoulder last February, leaving behind complete paralysis and wasting, with reaction of degeneration in the deltoid, supraspinatus, and infraspinatus. The biceps, brachialis anticus, and supinator longus were only slightly affected, being perceptibly weaker than on the left side, and with slightly diminished faradic reaction. All the other muscles appeared normal, with good faradic reactions. She was treated for three weeks in June last with galvanism, but with no improvement, and it was therefore suggested by one of us (W. H.) that an operation on the fifth root might possibly cure the condition by grafting the part of the fifth root containing the nerve bundles for the circumflex and suprascapular on to the neighbouring healthy sixth root, in order that new nerve fibres might grow down from the anterior horn cells of the sixth segment into the wasted nerve bundles of the fifth root produced by the spinal lesion in the fifth segment.

Dissection of the combined trunk of the fifth and sixth roots in the gibbon and also in man showed that the fifth root as it joins the sixth divides into three branches—an upper, the smallest of the three, to the suprascapular; a posterior branch destined for the circumflex; and a lower branch to the outer cord. Further dissection also showed that the posterior branch, far the largest of the three, which appeared to be given off behind and between the first and third branches, really passes behind the branch to the suprascapular, and runs up the fifth root on its upper margin, with the suprascapular in the middle, between it and the lower bundle to the outer cord (musculo-cutaneous). The uppermost or circumflex bundle of the fifth root occupies just the upper half of the root, and can be split off from the lower half as a continuous bundle right up to the foramen. It was therefore suggested that at the operation on the child the fifth root should be split longitudinally in halves by a fine knife, and each half separately insulated and stimulated with faradism, in order first to prove by the contraction results on stimulation the position and distribution of the nerve bundles observed anatomically. Secondly, that if in this way it was found possible to separate in the fifth root the circumflex bundle for the deltoid from the musculo-cutaneous bundle for the biceps and brachialis anticus, it would then be justifiable to cut across the circumflex bundle, and to suture its distal end into the sixth root, leaving the remainder of the fifth root intact. It was of course guesswork to hit off the exact



point in the fifth root separating the circumflex and suprascapular bundles from the musculo-cutaneous portion, but we thought that, making due allowance for wasting of the two upper bundles for the paralysed deltoid and infraspinatus, that division of the root into halves, as nearly as could be done, would be near the mark. This was accordingly done, and with complete success, for faradic stimulation of the upper half of the fifth root gave the very slightest contractions of the biceps, with definite weak contractions of the deltoid and triceps, whilst stimulation of the lower half gave powerful contractions of the biceps, causing strong flexion of the forearm, with no contractions at all in the deltoid.

An interesting point was the definite contraction of the deltoid obtained on stimulation of its nerve, although strong faradism applied in the usual way through the skin previously under an anaesthetic evoked no contractions in the muscle, the full reaction of degeneration being present. This same point was also noticed at the operation on the man for Erb's palsy, and is also described by Ballance[1] as being noticed in his operations for grafting the facial nerve. Before the fifth cervical root was cut in our third case, stimulation of the whole root, insulated in the usual way by a bent vulcanite spatula being passed underneath it, produced, in addition to the muscular contractions already described, well-marked, though not powerful contraction of the triceps, confirming the similar result previously obtained in our first case; contractions were also produced in the clavicular portion of the pectoral, the supinator longus, and the radial extensors of the wrist. The sixth root was also isolated and similarly stimulated, producing strong contraction in the latissimus, in the whole of the pectoral, and the triceps, with external rotation of the shoulder. Some contraction in some of the forearm muscles was also noted, and very weak contraction also in the biceps. After cutting across the upper half of the fifth root, 1 in. above its junction with the sixth, the distal end was turned down in front of the remainder of the fifth root, and sewn by two fine gut sutures into a cross-shaped nick made in the front of the sixth root.

Recovery from the operation was uneventful, the wound healing by first intention, and no further weakness in the biceps has been noticed, the child being able to flex the forearm as before. About two months after the operation the child began to complain of soreness on the outside of the arm, though nothing was to be seen on examination. This might be due to commencing return of conduction in the sensory fibres divided, and is, we think, of good prognosis, though no recovery in the motor power of the paralysed muscles can be expected until next January, six months after the operation. There is no essential difference in the power of recovery between cross-suture of nerve roots above the plexus and cross-suture of peripheral nerves below, which has been shown to be possible in animals with good motor recovery and perfect co-ordination. As regards muscular co-ordination with returning voluntary power (see Kennedy[9]), no doubt the co-ordination of impulses for movements of the muscles with their new root supply will have to be relearnt, and slight awkwardness may possibly be expected for a short time, but experience of surgeons in tendon grafting shows that such awkwardness is of short duration. In all probability the nearer the two nerve roots are to one another in respect of the cord segments to which they belong, the less difficulty will be experienced after cross-suture in overcoming any tendency to inco-ordination, and for that reason, in addition to its being easier, we recommend suturing the fifth root into the sixth rather than into the seventh in cases of paralysis of the Erb-Duchenne type, as we consider we have proved that the sixth root is unaffected in the ordinary form of this paralysis. Finally, we would urge the paramount necessity of employing careful faradic stimulation of the nerve trunks in all such operations on the brachial plexus, as it is only in this way that a scientific and accurate diagnosis of the condition of the nerves can be made.

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THE PHYSICAL EXAMINATION OF THE UPPER REGIONS OF THE CHEST.

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COMPARATIVELY little information is to be found in medical literature with regard to the physical signs presented in health by the regions of the chest which are contiguous to, or which correspond to, the pulmonary apices.

In November, 1899, I commenced a series of observations with the object of defining as accurately as possible the variations of the physical signs in health; but the task promises to be such a lengthy one that I propose to publish this preliminary paper, in the hope of dealing with the physical signs of the whole of the thorax in a fuller paper at some future date. I have already presented some of my results in a paper read at the Cambridge Medical Society in March, 1903.

The data for the present paper are afforded by written observations made on about 115 cases, and many further observations not separately recorded. The method of examination is as follows: The person is stripped to the waist, the feet are placed in line together, and the arms hang flaccid by the side, the face being directed straight forward. The investigation resolves itself into inspection, palpation, percussion, auscultation, mensuration.

Inspection.

1. I have noticed that in adult right-handed persons the right clavicle is tilted more than the left, and in left-handed persons the left is tilted more than the right. In the young and in ambidexters they slope equally. Interesting exceptions are found as the results of occupation or disease past or present. These exceptions often afford much aid in diagnosis. Take this case for example. A person is left-handed, and the left clavicle not tilted normally. In such a case one, at the first glance, expects to find later in the examination a consolidated left apex, or emphysema of the right apex, or a story of former consolidation from pleurisy on the left side, or of some injury to the clavicle, or of the pursuit of some occupation giving rise to the deviation. I have not succeeded in finding any reference to this matter in medical literature.

2. Increase or diminution or falling in of the thorax in the upper part may be noticed.

3. As the patient takes a deep inspiration followed by a deep expiration it will usually be observed that movement is greater on the right side; the difference is not always perceptible to sight or touch, but on most occasions, if the movement at the left apex is greater than at the right, there is some disease; and if a patient shows a greater expansion at the left apex you will usually find disease, probably of the right apex. References to this part of the subject are not lacking.

Eichhorst,[1] in referring to the differences in the intensity of the respiratory movements in physiological conditions, mentions that Sibson showed first that the expansion of the right side was usually greater than that of the left.

On the other hand, Ransome[2] found that in most of the women he examined the movements of the left side of the chest, and in most men those of the right side, predominated. This observer remarks[3] that the "increased power of movement and the increased size on the right side, are due to the greater force of the muscles on this side." It is interesting to note an exception in the case of a left-handed male. He also noted "a large relative movement of the chest walls in children as compared with that in adults, and a diminution in the power of chest movement as age advanced."[4]

Ransome's observations made with his stethometer make me hesitate in affirming that movement is greater on the right side. The right side is usually larger than the left, and, if the intake of air into each lung is the same, a given point on the right side of the chest wall must make a lesser (not a greater) excursion than a corresponding point on the left side. This view would account for his finding that an exception was afforded in the case of a left-handed person. I cannot understand why tactile and visual impressions gave me a different impression, and I think it more likely that his results, obtained by careful instrumental methods, are the most correct.

Palpation.

On palpation, with the hand laid flat on the chest, or with the bulbs of the fingers pressed well into the intercostal spaces, I find that the vocal vibrations are more marked on the right side both in right-handed and in left-handed persons, and that both at the back and in the front of the chest. The vocal vibrations are diminished where the muscular parietes are thicker; hence they are most distinct in front, and in the second interspace close to the sternum, over the clavicle, and near to the spine at the back.

Increase of vocal vibrations at the left apex is always a sign of disease of one or other apex, namely, either consolidation of left apex or pleural thickening, etc., on right side.

This fact is mentioned by Fowler,[5] who states that the vocal fremitus is normally more distinct beneath the right clavicle than on the opposite side; and that if the vocal fremitus is equal on the two sides and well marked, it is probably increased at the left apex, and a presumption thus arises that the left upper lobe is the seat of disease. While if the fremitus is more marked at the left apex than at the right the presumption that the left upper lobe is affected is still stronger.

Eichhorst[6] also states that the vocal fremitus is almost without exception more marked on the right than on the left. Eichhorst tried 100 persons with healthy chests, and found vocal fremitus greater in the right side in 97; vocal fremitus equal on the two sides in 1; vocal fremitus greater on the left side in 2.

Kidd,[7] who gives one of the most accurate accounts of the dissimilarity of the physical signs afforded by the two apices, states that the vocal fremitus is more pronounced at the right apex than at the left.

Squire,[8] in an important paper on the physiological difference between the two sides of the chest in the physical signs obtained over the upper part of the lung, found the vocal resonance equal on the two sides in 11 cases out of 58. In 45 cases the fremitus was more marked on the right side, and in 2 cases more marked on the left side.

Percussion.

The resonance of a part is determined by several factors.

(*a*) The personal factor. A difference of resonance perceptible to one observer is often unperceived by another.

The slighter differences of resonance are unequally perceptible to the same observer at different times.

(*b*) The nature of the blow—whether light or heavy, sharp or lingering.

Light rapid strokes and light fingers bring out superficial percussion differences most, for light percussion tests superficial structures, and heavy percussion elicits the resonance from deeper parts. Sir Hugh Beevor tells me that he thinks that a long contact with the fingers deadens the percussion note, and that for this reason some percussors are less alive to these differences. Certain it is that many percussors are unobservant of these lighter differences in resonance.

(*c*) The part struck. The results of percussion on bones, cartilages, or muscles should be compared in each case with the results obtained on similar parts. If the blows are indiscriminately given to bone, cartilage, or soft parts the result is not trustworthy.

(*d*) The condition of the soft parts is of importance. Thus contraction of a pectoral or trapezius on one side will give a less resonant note than when either of these muscles is relaxed. Hence the patient should stand erect with the face directed forwards and the arms hanging flaccid from the sides. A sitting or lying posture is undesirable if it can be avoided.

(*e*) The adjuvant vibrations due to vibration of adjacent parts. Thus in percussing near the clavicle the note is more "leer" if the finger lies in contact with the clavicle, and even proximity to the bone favours the appearance of this kind of resonance. Again, on percussing close to the sternum, the note becomes altered by reason of the communication of the vibrations to the sternum itself.

(*f*) The nature of the resonating cavity, its size and the condition of its walls. Thus in deep inspiration the enlargement of the resonating cavity produces a more resonant note, while on compressing one side of the chest wall with the hand it is found that that side gives a less resonant note. Another example of many is afforded by the change in the apical resonance when there is consolidation or effusion, etc., at the base on the same side. The influence exerted by the condition of the thoracic walls is instanced by the effect of greater development of one pectoral. In the case of a lady patient of mine the right side is slightly less resonant than the left, although she is right-handed, and this is explained by thickening of the subcutaneous tissues resulting from a former venous thrombosis in the left arm. The veins on that side of the upper part of the chest are much enlarged.

The Method of Procedure.

(*a*) In percussing in the supraclavicular region the platysmae should not be unequally contracted on the two sides, for a tense muscle gives a duller note than a relaxed one. For this reason the patient should not be allowed to look to one side. As a rule I find the note becomes suddenly much less resonant when the border of the trapezius is approached. Sometimes with light percussion, and perhaps always on heavier percussion, a note of some tone may be elicited from back to front. This, however, cannot always be done by light percussion: hence, in thus mapping out the limits of the apices the result, which depends a good deal on the force of percussion, will be found to be variable within certain limits, even when the observations are made by the same person.

b. On percussing on the clavicle from its sternal end outwards the note becomes gradually less resonant; hence the necessity for care in selecting comparable points.

c. On percussing in the infraclavicular region from the sternal border outwards, the note becomes duller as the shoulder is approached, but more resonant after passing over the edge of the pectoral into the axilla. The note over the interspaces should always be compared with that over interspaces, and the note over ribs or cartilages with the note over corresponding ribs and cartilages.

On percussing in the supraclavicular, clavicular, and infraclavicular regions I find, generally speaking, that the right side is duller than the left, both back and front in adult right-handed persons. The difference is more marked in front, or is more easily detected, and the sign is not observed in infants and young children. In left-handed persons the left is duller than the right. The duller note at the right apex depends upon the condition of the thoracic walls on the right side, and not upon the position and size of the bronchus.

If in the case of a right-handed person the left side is duller than the right, or if in a left-handed person the right side is the duller, the fact is usually indicative of disease. Dr. W. H. Brazil,[10] of Bolton-le-Moors, drew attention to this subject in a note on "the normal thoracic resonance" in left-handed persons.[11] He pointed out that an exception to the rule, "the resonance is higher pitched on the right side," is found in left-handed persons. He showed, further, that the vocal vibrations are greater on the right side, in this point agreeing with what we find in left-handed as well as in right-handed persons.

In 1901, at a meeting of the Clinical Society of London, Sir Hugh Beevor[12] exhibited two healthy left-handed persons, and pointed out (1) that the right side of the chest is less resonant in right-handed persons; (2) that the left side is less resonant in left-handed persons.

Eichhorst[13] states that in persons of the working classes the note is less loud over the great pectoral than over the corresponding part of the left side. He adds that contraction of the great pectoral muscle produces the same effect, and that in persons in whom the muscle is atrophic the opposite effect is produced. I can confirm these assertions, but I do not find any difference confined to working classes.

Gerhardt[14] states that, of all parts of the chest wall, the inner part of the infraclavicular region is the most resonant, and that the left side of the chest is often more resonant than the right, owing to the smaller development of the musculature; that the outer part of the infraclavicular region gives a somewhat duller tone, the supraclavicular a duller and more "leer" note; and that from the second to the fourth rib the percussion note is more resonant in comparison with the corresponding points on the right side.

Eichhorst[15] states that in the first and second right interspaces the note is, as a rule, less resonant than on the left side, and he has found both notes equal in the left-handed.

The Heights of the Apices.

It is essential to remember that the percussion note over the clavicle becomes less resonant the higher you percuss but that there is no toneless note in any place. The height of the apex cannot, in fact, be determined with precision by percussion only, although it is possible to ascertain approximately the comparative volumes of the two apices by fixing upon a purely arbitrary limit to the lung resonance—at 3 to 5 cm. above the clavicle. It is most instructive to ask a friend to pencil in the heights of the apices on successive occasions on the same subject with a few days' interval. Though the heights of the apices cannot, as a rule, be accurately determined, yet marked differences in the resonance on the two sides are of value. The position of the clavicles has much to do with the apparent height of the apices. The tilting of the clavicle, to which I have drawn attention, is of much importance in this relation. In cases of emphysema the clavicles are often found in a position of extreme inspiration, and the apex may actually be below the level of the clavicles, behind which is a very deep supraclavicular fossa.

I find the summits about level in normal persons, and if they show a marked difference, there is usually disease of one or other lung. Gee states that the height of the apices is mostly equal on both sides, but there may be a difference of $\frac{1}{2}$ in. in favour of the right. Eichhorst[16] states that, as a rule, the apices extend 3 cm. to 4 cm. above the clavicle, and usually reach higher in women; and that they may extend unequally high in healthy persons, but seldom do so. In emphysema he states that they extend higher than this. I do not think they do, but it is the fact that sometimes they are more resonant. Eichhorst and Gee[17] mention that E. Seitz[18] showed the importance of differences in the "height of the apices" in the diagnosis of early phthisis. Beevor[19] stated that the pulmonary apex did not rise so high above the clavicle in left-handed persons, whereas in most right-handed persons the apex extended higher on the left side.

Inspiratory Percussion.

On deep inspiration the portion of the lung above the clavicle becomes more resonant. I do not think that this can be due to the expansion of the apex with air, but rather to the increase of the resonating cavity which attends inflation of the lungs. In this connexion it must be pointed out that the clavicles rise during inspiration, and they do not afford a fixed point from which measurements may be taken. The landmarks chosen should be more trustworthy.

I cannot find any evidence that the lung reaches higher into the neck during inspiration; but I do find that the resonance, which is present in a diminishing degree as you

percuss from front to back, becomes more marked during inspiration. I attribute this for the most part to changes in the resonating cavity, just as skodaic resonance occurs in an apex above a pleural effusion.

Dr. Philip[20] finds an inspiratory increase of the area of resonance, which he attributes, I think unwarrantably, to expansion of the apex.

Gerhardt[21] gives a figure showing some increase of the upward extent, and some extension inwards, of the apex in inspiration, and I think he has fallen into the same error as Dr. Philip.

Colbeck[22] contends that the apices do not, so to speak, expand into the neck, and that there is a decrease of the supraclavicular resonance during deep inspiration. I think there may be some widening of the apical resonance, such as Gerhardt describes, during inspiration, but I am unable to detect it, and I doubt if the height of the apex varies measurably. Colbeck rightly points out that the supraclavicular resonance diminishes as one departs upwards from the clavicle; but in Fig. 1 he diagrammatizes the effects of a full inspiration dividing the supraclavicular triangle into three arbitrarily defined regions, described as "resonant," as "impaired," and as "dull."

In Fig. 2 an equally arbitrary line divides a part of the supraclavicular region into two regions, the one "absolutely dull" and the other of impaired resonance.

Now, these regions do not exist in fact. I cannot conceive of an apex being divided into three regions during deep inspiration and another divided into two when it is the seat of early tubercle. Further, Dr. Colbeck appears to be wrong in describing as "dull" a region which is rarely dull in the absolute sense of the term.

If I were to endeavour to modify Dr. Colbeck's diagram so that it should more accurately represent the facts, I should represent no zone from back to front as absolutely dull, for sufficiently heavy percussion elicits a note of some tone over the shoulder from the front to the back of the chest. Further, the margin of the apical resonance is ill-defined, especially on the outer side, and most defined on the inner side.

With Dr. Colbeck I am disposed to agree to this extent, that the supraclavicular resonance does diminish, as I have already said, towards the border of the trapezius, especially on using light percussion, such as Dr. Colbeck says he employs; but, as I have pointed out, there is some resonance to be elicited right over the shoulder, especially in thin subjects and with forcible percussion. The upper boundaries assigned to the lungs are quite arbitrarily selected and they bear no constant or exact relation to the anatomical extent of the apex. I do not think that the same observer's results are often precisely alike on each occasion of examining the same person.

I may repeat that the change observed during inspiration is chiefly an increase of resonance, but that this does not indicate any such expansion upwards of the lung as is observed at the bases and sometimes over the precordium. The increase of resonance is due for the most part to changes in the resonating cavity.

Auscultation.

On auscultation I find the breath sounds differ normally at the two apices; in addition to the differences to which I shall presently draw attention, inspiration, generally speaking, is harsher at the right apex, while expiration has also a harsher character.

The difference is most marked over the clavicle, where the breath sounds may often be described as bronchial, and I have even found tubular breathing in this situation. The same holds good of the back, but the differences are not so well-marked except near the bronchus and at the very summit, because of the thickness of the overlying structures. This normal difference may constitute a veritable pitfall in some cases.

For instance, a left-handed person (Case A) who had not been noticed to be left-handed, showed hectic fever, a percussion note against the left apex, and seemingly much weaker breathing at the left apex. He was accordingly considered to have tuberculous disease of the left apex. In a right-handed person the diagnosis would probably be right; but in an actual case of this kind it was wrong—the patient was suffering from uncomplicated pernicious anaemia. The man was left-handed and the normal differences had been ignored.

There is another very important difference between the breath sounds at the two apices, which is, as a rule, apparent only in quiet breathing. On listening at each apex not only are the breath sounds louder or harsher at the right apex, but if the movements of the chest wall be followed while listening it will be observed that at the left apex the breath sounds have often become inaudible before the movement comes to an end. There is some inaudible expiration at the left apex, but I have never yet noted the sign at the right apex when it is absent at the left except in disease.

On asking the patient to take a breath the results of auscultation are very different, the expiratory murmur being audible on both sides until the chest wall comes to rest. For the above reasons it is well to listen to the breath sounds both during quiet breathing and during forced breathing.

Dr. Squire[23] states that he detected no difference in the character or intensity of the breath sounds in quiet breathing in 41 cases; but Kidd[24] states that the breath sounds are louder, the expiratory murmur more audible and prolonged at the right apex than at the left, and I entirely agree with his statement.

Gee[25] says "bronchial breathing" is to be heard between the scapulae in many persons; sometimes under the right clavicle also (especially in women), and sometimes, yet seldom, under the left.

Eichhorst[26] rightly points out that the intensity of the breath sounds depends largely upon the thickness of the chest wall. He states that vesicular breathing is often loudest on the left side. He quotes Kennedy, who found in 99 persons that the vesicular murmur was louder on the left side in 80 per cent., equal on both sides in 14 per cent., and louder on the right side in 6 per cent. I have not succeeded in verifying this reference, and fancy that the word "left" must be mistakenly printed for "right."

Vocal Resonance.

In testing the vocal resonance I always employ a plan of my own of listening rapidly at many points on each side and estimating the net result. No other plan gives such accurate results, because the vocal resonance diminishes as you listen further from the bronchi, and depends upon the thickness, etc., of the thoracic walls, and if you listen at only one point on each side you may not select comparable sites for your operations.

The vocal resonance is greatest at the right apex, and that always. It is loudest at the points where the breath sounds are loudest. Nothing short of disease causes an increase at the left apex.

Fowler[27] mentions that the vocal resonance is normally more intense in the right infraclavicular region than on the left. I think we may add that it is usually much more marked *over* the right clavicle.

Dr. Squire, in an important communication on the "physiological" difference between the two sides of the chest, appears to me to be of the opinion that there is danger of slight abnormalities being attributed to the physiological differences between the right and left apices. I quite agree, but think the commoner fault is that physiological differences pass undetected, though now and then some of these physiological signs are noticed and are wrongly regarded as indications of disease.

In conclusion, a thorough investigation of all the points to which I have drawn attention will usually clear up a diagnosis, but none must be omitted.

To take two examples, the case already referred to (Case A) showed hectic fever, relative dullness at the left apex, and the breath sounds at the same apex were described as weak. The vocal resonance was noted as increased at the right apex.

The diagnosis of tuberculosis of the right apex had been suggested, but he was suffering from uncomplicated pernicious anaemia. The note at the left apex was duller than at the right, because he was, as I found, left-handed, and all the other signs were physiological.

To take another case, that of a person with a hectic temperature; the percussion note was against the right apex, the breath sounds were bronchial over the right clavicle, the apex was less high on the right side, the vocal resonance was increased. The person had perfectly healthy lungs; the above differences were physiological and the real seat of the disease (an alveolar abscess) had passed unnoticed.

REFERENCES.

[1] *Lehrbuch d. physikalischen Untersuchungensmethoden innerer Krankheiten*, von Dr. Hermann Eichhorst, Theil 1: Braunschweig, 1881, p. 131. [2] Ransome, *On Stethometry*: London: Macmillan and Co., 1876, p. 62 and p. 64. [3] Ibid., table 1, p. 53. [4] Ibid., p. 62. [5] Fowler, *Diseases of the Lungs* (Fowler and Godlee); London, 1898, p. 53. [6] Eichhorst, p. 156. [7] Kidd, Allbutt's *System of Medicine*, vol. v, 203. [8] BRITISH MEDICAL JOURNAL, May 23rd, 1903, p. 1199; Ibid., June 27th, 1903, p. 1527. [9] Cf. Squire, op. cit.,

British Medical Journal, May 23rd, 1903, p. 1200; conclu. 5. [10] I wrote to Dr. Brazil in November, 1900, and he courteously suggested that I should pursue the matter further. [11] Brazil, British Medical Journal October 26th, 1889, p. 920. [12] *Lancet*, May 4th, 1901, p. 1275. In May, 1901, I wrote to Sir Hugh Beevor, who courteously desired me to pursue the matter, and acquitted me of trespass in so doing. [13] *Lehrbuch d. physikalischen Untersuchungensmethoden innerer Krankheiten*, von Dr. Hermann Eichhorst, Bd. ii. Theil i, Braunschweig, 1881, p. 213. See also the fourth edition of the same (1896). [14] *Lehrbuch der Auscn. und Percn.*, von Dr. C. Gerhardt, Tübingen, 1876. [15] Eichhorst, op. cit., p. 264. [16] Op. cit., p. 270. [17] Gee, *Auscultation and Percussion*, p. 100. [18] Seitz (auctore Heyer), *Über die percussionische Grenzbestimmung der Lungenspitze*, Giessen, 1868 (reference from above). [19] Sir Hugh Beevor, *Lancet*, May 4th, 1901, p. 1275. [20] R. W. Philip, the Rôle of Percussion in the Diagnosis of Early Pulmonary Tuberculosis, *Practitioner*, January, 1903. [21] *Auscultation und Percussion*, Tübingen, 1900, Fig. 27, p. 147. [22] *Practitioner*, March, 1903, "The Phenomena of Tidal Percussion," p. 262, et seq. [23] British Medical Journal, May 23, 1903, p. 1199. [24] Kidd, Allbutt's *System of Medicine*, vol. v, p. 203, p. 56. [25] *Auscultation and Percussion*: Together with the other Methods of Physical Examination of the Chest, by Samuel Gee, M.D., second edition, London, 1877, p. 132. [26] Eichhorst, op. cit., p. 309. [27] Fowler, *Diseases of the Lungs*; London, 1898, p. 65; Squire, "On the 'Physiological' Differences between the two Sides of the Chest in the Physical Signs Obtained over the Upper Part of the Lung," British Medical Journal, May 23rd, 1903, p. 1198, et seq.

DISCUSSION ON
THE TREATMENT OF GASTRIC ULCER.

I.—Thomas Dryslwyn Griffiths, M.D.Lond.,
President, British Medical Association.

I have no doubt Dr. H. D. Rolleston, who has promised to open the discussion upon the treatment of gastric ulcer, will be here shortly. In the meantime I will occupy the time with a few remarks which I had intended to make on the subject at a later stage.

With the view of ascertaining the most rational and successful treatment of any particular disease it is evident that we cannot do better at a meeting of this kind than to relate our individual experiences and adduce the reasons for the means employed and method adopted. By following this plan in our discussion much valuable and practical information may be gained and time saved.

For many years past I have treated all the cases—a considerable number—of gastric peptic ulcer which have come under my care by giving the stomach absolute rest and by abundant rectal feeding. In the first place the patient is provided with a nurse well trained for this particular treatment. The patient is put to bed for twelve or fourteen days; the bowels are well cleared out by an enema, and the rectal feeding is commenced an hour or two later. Nutrient enemata at a temperature of from 97° to 100° are repeated every four hours as nearly as possible, and in the intervals drink enemata are given according to the requirements of the patient. The nutrient enemata consist of the various articles of diet which are digested and absorbed with the aid of digestive agents or otherwise in the lower bowel. The following is an example of an ordinary rectal feed: Five ounces of good beef tea, half a tube of Fairchild's peptonizing powder (Burroughs, Wellcome, and Co.), a dessertspoonful of glucose, a dessertspoonful of brandy, a small quantity of table salt. The beef tea may be substituted by a tablespoonful of beef peptonoid (Carnrick's) and five ounces of sterilized water, etc.

It is unnecessary, and time would not permit me, to enter into a detailed account of the preparation of the various articles which are used for rectal feeding. Each nutrient enema should be limited to 5 oz. or 6 oz. to avoid irritating the rectum: and it should be injected into the bowel by its own gravitation through a funnel and a rubber tubing provided with a glass or rubber nozzle of small calibre, and a clip near the end. The funnel is placed in an ordinary ring stand, supported on a table, about 2 ft. above the level of the patient's hips. By adopting this plan, which is far simpler than the use of a syringe, there is less danger of irritating the anus and of inflating the bowel.

The ingredients of the nutrient enemata may be varied indefinitely, but it should be remembered that they must be peptonized or peptonizing and non-irritating. The object is to give the patient sufficient nutriment to supply the waste and something more to help the healing process in the stomach. The nutrient enemata are supplemented in the intervals by enemata of sterilized water or normal saline at temperature from 97° to 100°, varying in quantity from 4 oz. to 8 oz., or even more. The amount of nutriment and fluid required varies very considerably in different patients.

I wish, particularly, to call attention to two facts which are of great practical value, and which are not generally known, namely, the condition of the tongue and the smell of the breath. They are invaluable guides as to the efficiency and sufficiency of the rectal feeding in cases of peptic ulcers. When the patient is amply and properly fed the tongue is moist and healthy-looking and the breath is sweet (normal). The breath of a starving patient has a peculiar tainted or offensive smell. I do not know how to describe it: in fact, it cannot be described except by comparison. The nearest thing to it that I know of is the drunkard's breath—once noticed it is easily recognized afterwards. When the patient has this peculiar breath and dry tongue, and probably thirst, the drink enemata (bowel drink) especially should be increased. These two signs are known to the well-trained nurse and she also knows that the tongue and breath will tell tales if she fails in her duty. When properly fed the patient is perfectly free from pain, hunger, and thirst, and consequently happy after two or three days' treatment. On the other hand, if the patient does not respond to the treatment in the course of a few days, one may naturally suspect that there is something more serious than a peptic ulcer to deal with. It is not necessary, and in fact it is better not, to wash out the bowel every day—every second or third day is sufficiently often—and if the bowels act of their own accord aperient enemata are not necessary. When the rectum is intolerant of artificial feeding, which is very seldom the case when gently and properly treated, from 5 to 10 minims of laudanum are added to the enemata two or three times in the twenty-four hours. The patient is not allowed to swallow anything, not even a teaspoonful of water. The mouth is rinsed out once a day or oftener if the patient should desire it for the purpose of cleanliness, but if the teeth are clean at the outset, even this is unnecessary. This treatment is continued for ten or eleven days. As a rule ten days are sufficient. On the eleventh day the patient is fed very much like a baby one month old with small quantities of milk and water. The rectal feeding is still continued for another three or four days, but gradually diminished in proportion to the amount of food taken by the mouth. On the fifteenth day a small quantity of fish is allowed. It is unnecessary to enter into further details on this point. It must be remembered that a large number of chronic peptic ulcers with hard, swollen edges are probably not completely cured in fifteen or sixteen days; therefore, great care must be taken as regards diet and partial rest to the stomach for some weeks longer, and finally attention should be paid to the patient's general state of health. Judging from the frequency of the cicatrices in the stomach at necropsies and the occasional latent course of gastric ulcer ending suddenly in perforation, it is probable that a certain number are successfully treated as dyspepsia, and possibly some get well without any treatment at all. In artificial feeding we must remember that the rectum has to perform with the aid of peptonizing agents the work of the stomach. The chief function of the lower bowel is to absorb and thereby inspissate the liquid digested food from the small intestine.

It is absurd to use nutrient suppositories—"enules"—they cannot serve their purpose without fluid, which the rectum cannot supply in its healthy state. The stomach has an extravascular circulation—it secretes a large amount of liquid to dilute the food it digests. By injecting into the rectum a large amount of fluid which should be aseptic, we imitate the action of the stomach. No doubt both bile and pancreatic fluid assist digestion in rectal feeding. I deprecate the practice of partial feeding by the mouth and rectum in the first instance. Why not give the stomach perfect rest when we can do it? Total feeding per rectum shortens the period of treatment and limits the patient's period at the hospital to about sixteen days, whereas in partial feeding by the mouth and playing with rectal feeding the patient is detained at the hospital for about six weeks or more. Rectal feeding and complete rest to the stomach are incomparably the best treatment I have yet witnessed for cases of peptic and duodenal ulcers. I have never known haemorrhage to occur after the commencement of this treatment.

II.—H. D. Rolleston, M.D., F.R.C.P.,
Physician, St. George's Hospital.

Dr. Rolleston said: Gastric ulcer formed the subject of discussion before this Section in 1900, when Dr. Payne opened the proceedings by a paper on the Problems of Gastric Ulcer, which included the more restricted subject of its medical treatment chosen for consideration to-day. In the following year, 1901, Mr. Barling, in the Section of Surgery, dealt fully

with the treatment of gastric ulcer by gastro-jejunostomy. On the present occasion we are concerned with the medical treatment of gastric ulcer, and though it will be well to consider the indications for surgical treatment in cases which obstinately resist medical measures, it is unnecessary to deal with the treatment of perforation as this is, or should be, a purely surgical question. Further, the scope of the discussion renders impossible any reference to the attractive subject of diagnosis.

General Treatment.

In the acute stage of an ordinary clinical case of gastric ulcer, in a young woman, with localized tenderness, vomiting, pain, etc., the principle of absolute physiological rest, though universally accepted, is not so consistently carried out. While most medical men cut off all food by the mouth, some allow sips of water, hot or cold, or ice by the mouth to relieve thirst. Probably this depends in part on the erroneous belief that water is quietly absorbed by the mucous membrane of the stomach. As a matter of fact, water taken into the stomach is only absorbed in the intestine, and has first to be expelled from the stomach by peristaltic action. In this way not only is healing delayed, but a gastric ulcer may be so disturbed that severe haemorrhage is induced. I have seen haematemesis set up when water was first allowed by the mouth five days after a previous haematemesis, and when deep tenderness had disappeared. My own practice is to forbid any water by the mouth, and to rely on rectal injections of from 10 oz. to 20 oz. of water, given slowly four or more times a day. Thirst is not, as a rule, relieved so well by rectal injections of water as by fluid given by the mouth. The thirst, restlessness, and attendant discomfort may at the outset of treatment be temporarily relieved by a hypodermic injection of morphine, but it is not advisable to repeat this often, as the habit may thus be started. The mouth should be kept as clean as possible by a mouth wash, such as listerine. Even though patients are not given fluid of any kind by the mouth they still swallow their saliva, and when, as not uncommonly happens, there is pyorrhoea alveolaris, infection and irritation of the stomach are kept up, and may, as will be seen later, account for vomiting. The question might, indeed, be raised whether it is more harmful to swallow these buccal secretions as such, or when diluted with a considerable amount of water, The risk of infection of the stomach from the mouth is probably diminished by the use of a mouth wash. A few words may be said about the disadvantages of withholding all liquid—even water in small quantities—by the mouth. Thirst is often very trying, and patients suffer from dryness of the mouth and tongue, though this may be relieved by washing out the mouth with water. Occasionally—sometimes it would appear almost in small epidemics—patients with gastric ulcer develop parotitis on rectal feeding. I have seen this parotitis attack a patient with gastric ulcer, and a day or two later develop in the patient in the next bed, and it has occurred to me as possible that patients with dry mouths are specially susceptible to the infection of ordinary parotitis. Dr. B. N. Tebbs has found from an analysis of the cases at St. George's Hospital that parotitis is more frequently a sequel of gastric ulcer than of other abdominal diseases such as appendicitis, that the patients affected were all on nutrient enemata, and that the routine use of antiseptic mouth washes does not influence or protect against the incidence of parotitis. The latter point is of interest, as it militates against the view that there is an ascending infection of Stenson's ducts from the mouth.

The proteids of nutrient enemata should, of course, always be peptonized, and the enemata should contain eggs and a sufficiency of salt, in addition to the ordinary constituents, such as milk, beef-tea, and sugar, and may be given every four or six hours. The irritability of the rectum should be guarded against by washing out the bowel daily with boracic solution, or with a dilute solution of perchloride of mercury, 1 in 10,000, or, in addition, by the occasional introduction of morphine suppositories into the rectum.

Value of Rectal Feeding.

It is a question of considerable interest whether nutrient enemata are necessary during the period—usually one to two weeks—in which no food is given by the mouth. My own impression is that, provided plenty of water is given by the bowel, it is unnecessary to give nutrient enemata, though I usually do give them, or allow the patient to have them if desired, when a week has passed without food of any kind having been introduced into the body. The pulse and heart should, of course, be most carefully watched. It is somewhat surprising how well patients bear complete starvation when plenty of water is given by the bowel; and it has been said epigrammatically that nutrient enemata satisfy the minds rather than the bodies of the patients (Wynter).[1] At any rate, this may be applied, with little fear of exaggeration, to the use of nutrient suppositories. As a result of careful chemical analysis of the enemata, urine, and faeces in cases of gastric ulcer on exclusive rectal feeding and from a critical review of the data obtained by other observers, Edsall and Miller conclude that in exceptional cases rectal feeding provides sufficient food to prevent tissue loss, but even then only maintains the patient in a condition of decided subnutrition; usually nutrient enemata are very imperfectly absorbed and only supply a very small part of the food necessary to maintain a nutritive equilibrium.[2]

It is interesting to note that diacetic acid is extremely common in the urine of patients who are starving or are on rectal feeding, and that it disappears from the urine when feeding by the mouth is resumed.

More efficient nutrient enemata can be given in a semi-solid form as advised by Leube; and O. F. F. Grünbaum[3] has advocated ox serum in rectal alimentation, in combination with starch and glucose, as a satisfactory method of supplying the necessary amount of caloric energy to the body and of minimizing loss of weight. It would be of value to hear the experience of members on improved methods of rectal feeding and on the hypodermic injection of sterilized olive oil or other forms of food. My senior colleague, Dr. Ewart, tells me that he will explain a method of giving continuous nutrient enemata much on the same lines as continuous irrigation of the colon.

I do not propose to discuss the return to feeding by the mouth and the gradual improvement in the diet.

Drug treatment of gastric ulcer may be divided into two headings:

(I) The symptomatic treatment of pain by opium, bismuth, nitrate of silver, counter-irritation, of haemorrhage, and of vomiting.

(II) Attempts to bring about a cure and to prevent a relapse may be directed (*a*) to improving the general health and resistance and removing any underlying cause such as chlorosis, syphilis, or oral sepsis; or (*b*) to the purely local treatment of the ulcer.

(*a*) In the cases commonly recognized as gastric ulcer in young women, which, however, Hale White[4] regards as a different disease, there is no doubt that as soon as gastric irritation has subsided, iron is a most valuable remedy, and should be taken to prevent a relapse in the same manner as in chlorosis. In the more chronic gastric ulcers usually seen in men after 30 years of age, potassium iodide should be tried, as a certain percentage of these ulcers are syphilitic in origin. If iodides disagree, they should be discontinued; but if well borne, which they are not in ordinary gastric ulcers, there is a fair probability that the process is syphilitic and that a cure will result. It is, perhaps, hardly necessary to dignify the application of mouth washes, listerine, hydrogen peroxide, etc., to the teeth and gums, as "drug treatment," but its importance can hardly be overestimated.

(*b*) Cautiously washing out the stomach with water or mild antiseptic solutions, or running in a large amount of bismuth, so as to get the local soothing effect of bismuth on the surface of the ulcer, are curative measures sometimes employed. (Fleiner's and Fenwick's modification of Fleiner's method.)

"Erosion" of the gastric mucous membrane has been treated by an intragastric spray of nitrate of silver; 1 to 2 per cent. (Max Einhorn).[5]

Indications for Surgical Treatment.

Apart from perforation, the only acute complication which requires operative interference is repeated haemorrhage which does not yield to medical treatment and is manifestly endangering life. Repeated haemorrhage may be due (1) to an ordinary gastric ulcer with an exposed and ulcerated artery in its floor, or (2) to "exulceratio simplex" (Dieulafoy) or "pore-like erosions of the gastric arteries" (J. L. Steven). In the latter condition the bleeding spots may be so small as to escape observation when the gastric mucous membrane is

[1] W. E. Wynter. BRITISH MEDICAL JOURNAL, 1902, vol. ii, p. 1710.
[2] Edsall and Miller. *Trans. Coll. Physicians*, Philadelphia, vol. xxiv, p. 225, 1902.
[3] O. F. F. Grünbaum. BRITISH MEDICAL JOURNAL, 1901, vol. i, p. 823.
[4] Hale White, *Lancet*, 1901, vol. i, p. 1810. "Are not some patients said to be afflicted with gastric ulcer really suffering from a different disease?"
[5] Max Einhorn. *Journ. of the Amer. Med. Assoc.*, May 20th, 1889.

examined during an operation, and yet may be found after death. This has occurred in at least two published cases, and in one case under my own care.

Parotitis, which is an acute complication occasionally seen in patients with gastric ulcer on rectal feeding, hardly ever requires surgical treatment, and although its appearances may be highly suggestive of suppuration it is extremely rare to find pus.

Vomiting.

Vomiting in patients with gastric ulcer is an indication that absolute physiological rest should be given to the stomach, and that nothing, except drugs like opium, bismuth, hydrocyanic acid, etc., should be given by the mouth. Quite recently Dr. Jex-Blake and I[6] found that a certain percentage (27.1) of patients with gastric ulcer vomited material other than blood, in spite of the fact that they were having absolutely nothing by the mouth. In order to treat this troublesome and rather perplexing symptom it is desirable to know what factors are responsible for the vomiting. In some instances it appeared that the vomiting was reflex, and due to the irritation of rectal injections, since, on cautiously giving liquid food by the mouth and omitting rectal feeding, vomiting ceased. In a few cases of persistent vomiting the cause was probably oral sepsis, and the swallowing of pus and micro-organisms, as shown by the fact that removal of bad teeth cured this symptom in two instances, and improvement followed special attention to the condition of the teeth in others. The part played by oral sepsis in this form of vomiting is of considerable importance, since the effects of bismuth, morphine, etc., by the mouth are very disappointing; while I have not seen striking benefit from counter-irritation, in the form of blisters, to the epigastrium.

It was suggested that in some cases vomiting depended on the administration of common salt, which was given with eggs to increase absorption of the nutrient enemata. Nothnagel showed experimentally that sodium chloride set up reversed peristalsis, but Cannon's[7] observations with *x* rays show that there is normally reversed peristalsis in the colon. Further, patients on nutrient enemata containing common salt do not necessarily vomit. Patients prone to vomit should of course be kept scrupulously still, and any movement of the bed must be avoided as far as possible.

Haematemesis.

It is impossible and indeed unnecessary to enter fully into the treatment of haematemesis. Absolute rest, which is assisted by morphine hypodermically to quiet anxiety, is of course essential. Patients should not be allowed to suck ice. Unless haematemesis is repeated it is probably better not to give any drugs by the mouth. When haematemesis recurs or there are signs of continued though concealed haemorrhage, Ruspini's styptic or adrenalin by the mouth for their purely local action on the bleeding spot, and a rectal injection of a drachm of chloride of calcium, in order to increase the coagulability of the blood, may be given with advantage. The hypodermic injection of ergot seems irrational as it will constrict the blood vessels, generally raise the blood pressure, and so favour haemorrhage from any weak spot. There is no reason to suppose it will concentrate its energy on the bleeding vessel, and I have seen haemorrhage occur after, though I am not justified in saying because of, its use. The analogy between haemorrhage from a hollow muscle like the uterus and haemorrhage from blood vessels in mucous membranes is very fallacious. The injection of digitalin and the use of lead comes under the same condemnation. It would be interesting to hear more of the influence of an icebag on the epigastrium in haematemesis. It has appeared to me to be harmless, but it might increase collapse by abstracting heat. As a minor point attention may be drawn to the advisability of testing the coagulation time of the blood some time after haematemesis, and, if it be abnormally short, of giving citric acid as directed by A. E. Wright, so as to diminish the tendency to venous thrombosis.

In chronic gastric ulcer operative interference is justified in the following circumstances: (1) When there is constant pain which is not relieved by medical measures and leads to a condition of chronic invalidism. This may be due to adhesions (adhesion dyspepsia) or may depend on the presence of a large gastric ulcer: (2) when there is intermittent or permanent pyloric obstruction; the first may be due to spasm set up by a chronic ulcer near the pylorus, and is met by gastro-enterostomy; the second is due to cicatricial contraction; (3) when haematemesis recurs in spite of medical treatment.

In conclusion, the following are some of the points in the treatment of gastric ulcers to which discussion may be directed:

1. The question of fluid by the mouth in the acute stage.
2. The value of ordinary rectal alimentation and of special modifications of nutrient enemata.
3. The treatment of vomiting in patients fed exclusively per rectum.
4. The drug treatment of gastric haemorrhage.
5. The indications for surgical treatment (excluding perforation).

[6] Rolleston and Jex-Blake. British Medical Journal, 1903, vol. ii, p. 68.

[7] W. B. Cannon, *Amer. Jour. Phys.*, vol. vi. p. 253.

III.—Robert Saundby, M.D., F.R.C.P.,

Professor of Medicine, University of Birmingham; Physician, Birmingham General Hospital.

Professor Saundby said that he entertained very definite opinions upon this question, and had for a good many years employed a routine treatment with practically uniform success. It was impossible to discuss the diagnosis of ulcer on that occasion, but it could be admitted that the elements of diagnostic certainty did not exist; a certain combination of symptoms was usually held to justify the opinion that an ulcer existed and to establish the need for specific appropriate treatment. In the first place, all cases where vomiting accompanied pain after food should be placed in bed and fed with 1 oz. of milk and lime-water every hour. This quantity might be increased to 2 oz., 3 oz., and 4 oz. hourly on successive days. The diet should then be gradually improved by the addition of soft bread, minced chicken, custard pudding, minced mutton, mashed potato, up to ordinary diet, which was reached in from two to three weeks. The patient was then allowed to get up, and was discharged after the cessation of all symptoms for a few days had been assured. From the commencement the patient was placed on the ordinary mist. mag. sulph. c ferro three times a day. This was the ordinary routine treatment which succeeded with the majority of cases. Where the patient was admitted with haematemesis nothing was given by the mouth, but the patient was fed by rectal enemata (1 egg, milk to 4 oz., and a little common salt) every four hours for two days, an icebag was applied to the epigastrium, and if necessary a hypodermic injection of morphine was administered. Where pain persisted a bismuth and soda mixture might replace the sulphate of iron prescription, or Vichy water, or teaspoonful doses of olive oil, as suggested by Pawlow's experiments, might be tried. If the pain was severe and prevented sleep a hypodermic injection of morphine might be given. The speaker had had under his care probably at least 200 cases, but he had had only one death, and he believed death rarely occurred when the case was under suitable treatment. With respect to surgical operation under the conditions laid down by Dr. Rolleston, he agreed that operation was justified in all cases where the ulcer caused pyloric obstruction. If haematemesis was recurrent, the propriety of operating must be admitted, although he had never had to have recourse to that means. Pain—even constant pain—was a more doubtful indication, as where this symptom was present the patient was generally neurasthenic, and was an unfavourable subject for operation. Even when the surgeon removed adhesions or other mechanical defects cure did not always follow and the patient's condition might be made worse, as a consequence of the shock of the operation.

IV.—William Joseph Tyson, M.D., F.R.C.P., F.R.C.S.,

Physician, Folkestone Hospital.

Dr. Tyson spoke on the importance of the prevention of gastric ulcers—especially in those cases of bad anaemia occurring in the poorer classes—by giving an assimilative preparation of iron, careful dieting, and rest. If this treatment were carried out in a hospital or home, the success of it would probably be greater. All cases of anaemia should be looked upon from the view that a gastric ulcer might follow in its train. If this view were borne in mind, cases of anaemia would be much more thoroughly treated than was commonly now the case.

V.—Henry W. King, M.D., M.R.C.S.,

Physician, Chester General Infirmary.

Dr. King said: Gastric ulcer can be divided into the subacute, the acute, and the perforating. I always attempt to obtain complete physiological rest by fluid rectal alimen-

tation of egg, milk, a little brandy, and a few drops of laudanum pancreatized in 4, 6, or 8 oz. every 4, 6, or 8 hours for 4 to 7 or 8 days, allowing water either rather freely or only in teaspoonfuls every quarter of an hour, and continuing this very limited quantity for 12 or even 24 hours. We know that the size of a gastric ulcer is often considerable, that an ulcer of the skin takes a certain definite time to heal up; we should therefore allow a similar period of rectal feeding for some days, gradually assisted by peptonized milk after a few days. I generally use small doses of morphine m iij, with slightly alkalinized bismuth subnitrate three times a day, except in the acute cases, where nothing is given. I add to this in a few days 6 to 10 gr. of the saccharine carbonate of iron, or mx. of dialysed iron or of 3 gr. of reduced iron, also three times a day. I never advise operation in haematemesis: the state of collapse obviates, in my opinion, any chance of success by operation.

VI.—WILLIAM COLLIER, M.D., F.R.C.P.,

Physician, Radcliffe Infirmary, Oxford.

DR. COLLIER wished to confine his remarks to cases of gastric ulcer occuring in anaemic girls and young women and in which the diagnosis was based on the occurrence of haemorrhage in connexion with the other symptoms of ulcer. His experience extended over eighteen years at a provincial hospital and was based on something like 180 cases. The lesson he had learned was that, although the symptoms were often exceedingly alarming, the deaths from haematemesis were exceedingly few. Of the cases he had mentioned not a single one had died. He was not going to spend much time in discussing treatment, as he invariably adopted the same line of treatment as had been suggested by Dr. Rolleston and Professor Saundby. Although the value of rectal feeding might not be great, the mental effect was good, as the patient, who often was afraid of being starved, was reassured when told she was getting her food by the bowel. With reference to recurring attacks of haemorrhage, he would certainly apply an icebag, but would take care never to apply it for more than an hour at any one time. His practice was to apply the icebag for a short period, allow an interval of a few hours, and then reapply it. In out-patient departments so many cases presented themselves with some of the premonitory symptoms of gastric ulcer that it was quite impossible to treat all with rest. In those cases where pain was a prominent symptom he found bismuth a valuable drug; but in his opinion it should always be given on an empty stomach, and not, as he had often seen it prescribed, after a meal; within a very short period he combined iron with the bismuth, usually with the very best results. In cases in which pain persisted in spite of careful feeding and the use of bismuth, he had occasionally obtained satisfactory relief from the use either of cannabis indica or large doses of an alkali.

VII.—F. D. BOYD, C.M.G., M.D.,

Assistant Physician, Royal Infirmary, Edinburgh.

DR. BOYD expressed the opinion that chronic gastric ulcer should be treated surgically. He emphasized the giving of no water by the mouth in acute ulcer, and discussed the question of rectal feeding, pointing out how divergent the results were. He was not yet prepared to give up rectal feeding in favour of starvation. The 210 calories obtained per diem by rectal feeding might be of value to the patient if emaciated. The question of operation in haemorrhage was discussed. Could the physician tell the surgeon where to find the ulcer; could he localize the ulcer? The speaker was afraid in many cases the answer must be in the negative. Could the surgeon find the bleeding point? If so, operation might be advised. The experience in Edinburgh was against operation.

VIII.—BERTRAND DAWSON, M.D., M.R.C.P.,

Assistant Physician, London Hospital.

DR. BERTRAND DAWSON said: The discrepancies in the results of treatment in different hands are largely explained by divergent views on diagnosis. There are a number of milder cases which some physicians would, and others would not, put into the category of gastric ulcer; and the more widely a physician's views on diagnosis lead him to cast his net, the better will be the results of his treatment. I am inclined to think that this in a measure explains the uniformly good results obtained by Dr. Saundby under a simple treatment of rest in bed and milk and lime-water diet. That cases presenting even severely the evidence of gastric ulcer—that is, with marked pain related to food, tenderness, vomiting, repeated haematemesis—occur without any ulcer being in reality present, has been abundantly proved, and while our diagnosis is so faulty so must our treatment be uncertain. In mild cases feeding by the mouth is desirable, but in severe ones, whether as regards pain, vomiting, or haematemesis, food should be given exclusively by the rectum for a week, but not longer. The nourishment thus absorbed is too little for a longer continuance, and the risks of imperfect nutrition would be greater than those of stomach feeding. In the treatment of severe haematemesis, besides complete withholding of food by the mouth, hypodermic injections of morphine and rectal injections of calcium chloride are the most likely to meet with success. The morphine should be administered often enough to keep both patient and stomach at rest. The calcium chloride should be given in 1-drachm or even 2-drachm doses twice daily for three days with the object of increasing the coagulability of the blood. This procedure is of equal use, whether the bleeding has one or many points of origin. The objection to adrenalin and ergot is that, whereas in bleeding from capillaries and veins they would be useful, they would be the reverse in focal bleeding from an arteriole, and we have often no certain means of determining whether the haematemesis has one source or the other. As regards operative interference, although the occurrence of haematemesis may strengthen the case for the subsequent surgical treatment of an ulcer, in my judgement the undertaking of an emergency operation at the time of the bleeding is to be deprecated, and would in the long run hasten more deaths than it would save lives. The patient's condition is unfavourable, and the bleeding point may be difficult to find. There may be no ulcer discoverable, and the bleeding have multiple points of origin when ligation would be futile, or a single and inaccessible point of origin—for example, ruptured oesophageal varix—when ligation would be impossible. On the other hand, cases of haematemesis usually yield well to medical treatment; their mortality is very low, and when bleeding is violent it is extraordinary how near death such a patient can be and yet recover.

IX.—WILLIAM EWART, M.D., F.R.C.P.,

Physician, St. George's Hospital and Belgrave Hospital for Children.

DR. EWART described a method of continuous rectal alimentation. He said:

> The apparatus, which can easily be improvised, consists of the barrel of a 4 oz. to 5 oz. glass syringe, to the nozzle of which a length of indiarubber tubing is attached, ending in a male indiarubber catheter for introduction into the rectum. A short length of glass tubing is included in the conducting tube, and a coil or two of the latter is placed in a basin of warm water. The flow is regulated down to a very small stream by means of a screw clamp, and in this way it can be kept up for the greater part of the day (the catheter being removed at night). In twelve hours 2 pints of nutrient fluid may be injected in this way and retained, the foot of the bed being slightly raised if necessary. Milk, containing two eggs and 3 drachms of maltine to the pint, is a good solution for the purpose, and to this a little brandy or any other medication may be added.

Dr. Ewart was anxious to hear whether continuous rectal alimentation, which he had found convenient as well as beneficial in a variety of cases, had previously been suggested or described. (See BRITISH MEDICAL JOURNAL, August 8th, 1903, p. 337.) Whatever views might be entertained as to the value of feeding by the rectum, he was quite sure that the systematic administration of a sufficiency of water was an indispensable part of the treatment of cases of persistent vomiting, and the same apparatus might easily be made to serve that purpose also.

X.—GEORGE PARKER, M.D.,

Physician, Bristol General Hospital.

DR. PARKER wished to emphasize some points not noticed by previous speakers. Thus the use of calcium chloride by the mouth and not merely by the rectum had been found distinctly beneficial in relieving the pain and sickness and, so far as could be determined, in preventing haemorrhage. Then, too, whether rectal feeding was employed or not, if food by the mouth was stopped, the administration of plenty of water or rather of saline solution by the bowel to supply the daily needs of the organism was most important. Some of the more obstinate chronic cases were probably dependent on dental and other forms of chronic gastric infection and it was

desirable in such cases to attempt as far as possible the purification of the mouth and obtain intestinal antisepsis. Where marked hyperacidity existed not only the use of bismuth before meals but the administration of magnesium salts was to be recommended instead of sodium bicarbonate as Sir Lander Brunton had pointed out.

Reply.

Dr. Rolleston, in replying, said he had found hyperacidity in some cases of gastric ulcer but not in others. He looked upon operation as a more or less desperate proceeding.

DISCUSSION ON SUSCEPTIBILITY AND INFECTION.

I.—Robert J. M. Buchanan, M.D.Viet., M.R.C.P.Lond.,
Assistant Physician, Royal Infirmary, Liverpool.

Dr. Buchanan said: The condition in which the body of an animal resists the entrance of disease-producing germs, or, having been compelled to allow them to enter, resists their growth or pathogenesis, is called "immunity." The resistance so manifested is a distinct potential and vital phenomenon. The opposite condition is susceptibility, the latter being really the absence of immunity.

Immunity may be "natural" or "acquired," and susceptibility may be "natural" or "acquired." By natural immunity is meant the natural and constant resistance which some animals exhibit towards certain diseases which affect others. It would be as well to point out at this stage the importance of remembering that immunity or resistance against the invasion of living organisms is one thing, and immunity or resistance against poisonous products another. Immunity against one does not necessarily mean immunity against both. An animal may be naturally resistant to certain organisms, but at the same time susceptible to its toxins. One has to distinguish two main types of infection, one in which the process consists of a multiplication of the bacteria and diffusion of their toxins throughout the tissues generally, for example anthrax; and a second in which the bacteria remain localized and the morbid changes are due to absorption of their toxins which are formed locally as in diphtheria and tetanus. We thus recognize two main infections, namely, "pure bacterial infection" and "toxic bacterial infection," and when dealing with specific infections one should differentiate "simple immunity to bacteria" from "immunity against toxin" or "tolerance of poison." We cannot, however, draw such a hard-and-fast line, and in reality true natural immunity ought to include both. We may consider anthrax, tuberculosis, glanders, and leprosy as examples of "pure bacterial infection," tetanus and diphtheria as examples of "toxic infections," typhoid fever and influenza as "mixed forms of infection." Natural immunity may be racial or individual. It may be increased in power or reduced. Different diseases affect different animals in different degrees.

The study of anthropology in medicine reveals many illustrations that are interesting relative to the subject of immunity and susceptibility. The susceptibility of man and woman varies in many diseases: in cretinism and goitre women are more often subjects of the latter and men of the former. In animals the dark chestnut horse is stronger than others, the light chestnut is of irritable and delicate constitution. Many black horses are the finest of their species, but others heavy and of dull temperament, while there is some reason to believe that they are particularly liable to malignant disease. Black-faced sheep are regarded as less liable to disease than the whitefaced, and certain black pigs can eat with impunity substances which would be poisonous to white ones; like differences are seen in black and white rats. On the whole it would seem that the deposition of pigment in the skin and hair of animals is the result of processes connoting or accompanying health and vigour. Negroes are said to be exempt from haemorrhoids and varicose veins, and gout is a disease of civilized races rather than of savage. Exemption from yellow fever is pronounced in the negro, and in New Orleans the scale of exemption places the full-blooded negro first and then in order the mulatto, Creole, Southern European, the Englishman, and last the Scandinavian, who is most susceptible of all. Cancer is said to be rife in China, rare in Egypt, uncommon among negroes, but prevalent among the blond inhabitants of Norway. To tuberculosis the Gaelic and Kymric races are considered more susceptible than the Saxon and Scandinavian; negroes are very susceptible to tuberculosis, especially in countries not native to them. Certain infectious diseases of bacterial origin prevail only or principally among animals of a single species; typhoid, cholera, and relapsing fever are peculiar to man. Man has a natural resistance against many diseases to which the lower animals are susceptible. Several species of animals, including man, may be susceptible to certain diseases while others are immune.

Tubercle infects man, ape, cattle, and the small herbivora, while the carnivora are immune. Man, cattle, sheep, pigs, rabbits and mice are susceptible to anthrax; while the rat, dog, carnivora, and birds generally are immune. Among sheep, so susceptible to anthrax, Algerian sheep are immune.

Glanders, a disease infecting principally the equine genus, may be inoculated to man, the guinea-pig, and field-mice, while house-mice, rabbits, cattle, and pigs are extremely immune. We are all acquainted from personal experience with examples of individual natural immunity or susceptibility. Young animals, as a rule, are more susceptible to certain diseases than old ones. In man the young are specially susceptible to scarlet fever, measles, whooping-cough, and tuberculosis; while, as age advances, the susceptibility to the latter diminishes. Man is naturally susceptible to syphilis and diphtheria. Small-pox is excessively fatal to people among whom it has been introduced for the first time, as evidenced in the North American Indians; thus the Mandon nation was almost entirely destroyed—it is stated that in one village only 40 out of 2,000 survived. In the earliest epidemic in Iceland 18,000 out of 52,000 perished.

Negroes are very susceptible to sleeping sickness and ainhum; other races not so. Jews are believed to be prone to diabetes, nervous diseases, and psoriasis. Chinese are stated to be exempt from chorea, as it is unknown amongst them. In man, of many exposed to infection, some escape and others suffer.

Natural resistance may be absolute or partial within certain limits—absolute as in the case of the immunity of the hen against tetanus; partial as exemplified by man's resistance to tuberculosis, leprosy, and anthrax.

The nature and causes of natural resistance and susceptibility are by no means fully understood. At the most we can only say that the results of investigation point to its being a "distinct, potential, and vital phenomenon," the true nature of which still remains largely a matter of speculation and theory, although the work done in the investigation and elucidation of the problem of acquired and artificial immunity has thrown much light upon the natural phenomenon, if we may be allowed to judge by analogy. Although one cannot always fully understand and define what a certain thing or phenomenon is, or upon what its existence depends and from whence derived, one may be able to judge of it and explain its entity up to a certain point by observing the conditions with which it is constantly associated and the manifestations of its action by what it does, also by observing the results of the influence of forces acting upon it from without. Thus we know that within certain limitations every organism has special cellular mechanisms to ward off infection. The skin acts as an external protective agent in the prevention of infection, provided there be no solution of its continuity; at the same time it may be overcome by inunction of the infective agent with mechanical pressure. The lymphatic glands act as barriers to the entrance or diffusion of many infective organisms. Intact mucous membranes are antagonistic to certain organisms. Large quantities of virulent anthrax spores are required to infect guinea-pigs or mice when administered by the alimentary canal, while small quantities suffice if injected subcutaneously. The acid gastric juice is also protective, as instanced in its prevention of cholera infection. The ciliated and sensitive epithelium of the bronchi and the germicidal action of mucus may protect the respiratory organs from tuberculous infection.

The age and nature of epithelium are important factors in combating diphtheria, the younger cells being less resistant. Traumatic lesions at the seat of infection will cause a local predisposition to certain infective processes. Malignant endocarditis has been produced by injuring the protective endothelial covering of the valves and then injecting infective organisms, but endocarditis did not take place when the valves were intact.

The body temperature may be unfavourable to infection as in the case of the resistance of fowls to anthrax. The composition of the body fluids is of importance; for instance, the rat is immune to anthrax, largely by reason of the high degree of alkalinity of its blood and tissue fluids.

Recently-drawn blood of various animals possesses germicidal properties; these vary in different species, and may be marked to certain bacteria, less so to others, and to others not at all. The action is prompt but limited to limited numbers of bacteria. This peculiar germicidal power has been attributed to certain substances called "alexins" or "sozins," such as are inimical to or pro-protective against bacilli have been termed "myco-sozins," those antagonistic to poisonous products "toxo-sozins." These substances must not be confounded with antitoxins, which have different properties and origin and are quite distinct. In view of this, one must recognize a distinction between natural and acquired immunity. The "alexins" and "sozins" belong to the former, the antitoxins and allied substances belong to the latter. This germicidal action of blood may be increased by increasing its alkalinity, but the alkali *per se* is not necessarily the germicide, but is supposed to act as a solvent upon the nucleins of tissue cells which are germicidal.

Again, the cellular elements of the body act as protective agents, as taught by Metchnikoff, and are termed by him phagocytes. He held that the phagocytes, or wandering cells, were capable of enveloping, digesting, and so removing the invading organisms.

In the light of recent research the theory of phagocytosis has been materially reduced in its importance, although still commanding a share of acceptance as an explanation of cellular protective action. By other workers the leucocytes are regarded as a principal source of the natural resistance, not because of their phagocytic propensities, but because they produce "alexins" or "sozins." The bactericidal action of blood and artificial exudations has been shown to be proportionate to their richness in leucocytes.

In view of this I carried out the following experiment with blood from a case of spleno-myelogenous leukaemia, in order to note the phagocytic action of the leucocytes upon typhoid and anthrax bacilli: A series of hang-drops of leukaemic blood were made and inoculated with fresh bouillon cultivation of twenty-four hours' duration of typhoid and anthrax bacilli. Another series were not inoculated, and kept as control specimens. Each hang-drop was enclosed in its own moist chamber, and the full series enclosed in a bell-jar moist chamber and placed in the incubator. As occasion required separate specimens were removed and transferred to the warm stage and examined under the microscope.

Specimens were fixed, stained, and mounted at regular periods. In the control drops amoeboid movement was recognized in the finely granular leucocytes and the hyaline cells. The coarsely granular cells in some cases were actively amoeboid, but the coarsest variety, and evidently the atypical form, found in the blood in this disease were extremely sluggish, many showing no disposition to move. The myelocytes were not amoeboid. After a period of three hours the finely granular cells were very active, the coarse slow; in another hour the cells became less active, and there was no movement of their granules. Four hours later amoeboid movement was still present, and the cells became very lively when stimulated with a little extra warmth; there was no movement of granules. About twenty-six hours after the preparations were made there were still a few cells showing active amoeboid movement; there was no movement of granules, and when the observation terminated the cells were very shrunken.

In the typhoid specimens, half an hour after preparation there was well-marked "clumping" of the bacilli and loss of their movement. Amoeboid movement in the cells was good. Four hours later the clumping had disappeared and the bacilli had become very motile. Amoeboid movement had ceased in the leucocytes and there was no evidence of phagocytosis. The cell granules were very agitated and many cells were seen to be already dying. Five and a-half hours later the bacilli were very motile and had increased in numbers. There was no amoeboid movement in any of the cells, no swelling or seething of the granules. No phagocytosis was observed. Ten hours later the bacilli were still active and had multiplied greatly, the leucocytes showed no movement and had become quite round, they were more granular but the granules were still. There was no phagocytosis. The attitude of the leucocytes towards the bacilli during the observation was as follows: At first quite spherical the leucocytes showed seething of their granules, then they betrayed marked agitation and restlessness, and constantly altered their shape. The nuclei remained spherical. A leucocyte in movement would throw out a pseudopodium of extraordinary length towards bacilli, which never left it but remained end on to its extremity, the pseudopodium would stretch round several red corpuscles to keep in touch with them, but no attempt was made to enclose them.

In anthrax specimens amoeboid movement was pronounced half an hour after preparation. Three hours later it had increased, and active phagocytosis was established. An hour later the cells were still motile, in many the granules had commenced to seethe. Four hours later many were swollen and their granules seething; phagocytosis was noticed, but movement had ceased. An hour later the granules were intensely agitated, especially in cells adjacent to bacilli, but amoeboid movement was not seen. Twelve hours later there remained one or two seething cells, but these very soon stopped. The bacilli had multiplied in number and sporulation was pronounced. In stained specimens phagocytosis was seen in many coarse eosinophile cells. In conclusion phagocytosis was exhibited, especially by the fine oxyphile and hyaline and by many of the coarse oxyphile cells, but not by the myelocytes. Phagocytosis was only exercised to the anthrax not to the typhoid bacilli.

In many instances the bacilli were materially altered and broken up, and showed marked alteration in their affinity for stains. An interesting feature was that the typhoid bacilli were rapidly agglutinated and lost their movement, while the motility of the leucocytes was at first increased. However, as the bacilli recovered themselves, the leucocytes became, as it were, quickly paralysed and rapidly died, showing no sign of phagocytic action, although in certain cells pseudopodia were extruded as if influenced by a positive chemiotaxis. Such may be analogous to the absence of leucocytosis in early typhoid, and its appearance as the disease declines. Contrary to the general consensus of opinion, phagocytosis was exercised by the coarsely granular oxyphile cell, and the bacilli showed signs of having suffered by the process, manifested by alteration in staining property and contour.

The alexins, which must be regarded as proteolytic enzymes derived from leucocytes, cannot be considered as formed for the purpose of affording protection against bacteria only, but must be regarded as an appliance common to, and indispensable to every animal organism. They normally effect the dissolution of organized substances, yet their action may also be directed against substances and cells which may have penetrated as foreign bodies, whether they be red blood corpuscles of a foreign species, bacteria, or other microscopic fungi.

Increased natural resistance to bacteria may be generalized throughout the whole organism, or local. How may this increase be produced? It may be increased by any agents which induce a hyperleucocytosis, by introducing into the body for this purpose such substances as deutero-albumose, organic extracts, spermin, and substances allied to albumose, yeast nuclein, and nucleic acid obtained from yeast, papayotin, emulsin, diastase, and pilocarpin.

Bacterial proteins extracted from cells of bacteria also produce hyperleucocytosis—for example, the old tuberculin of Koch. As these proteins exist in the bacteria, injection of sterile cultures act in a similar manner. The introduction of non-pathogenic bacteria which die in the body, but excrete protein, also produce hyperleucocytosis, and so increase the resistance against other bacteria. The injection of absolutely indifferent fluids, such as normal saline solution, bouillon, and others, into the peritoneal cavity of guinea-pigs has been followed by a marked, though temporary, increase of natural resistance. The injection of cinnamic acid also produces hyperleucocytosis, and on this ground Landerer has made use of it in the treatment of tuberculosis by intravenous injection. The small particles are said to be deposited around tuberculous foci and produce an accumulation of leucocytes, with subsequent formation of connective tissue and cicatrization. Again, increased resistance may follow general dietetic and hygienic measures, as in the treatment of tuberculosis. General hydrotherapeutic measures also produce hyperleucocytosis, as do sun and light baths. Local increase of resistance may be produced by local increase of blood supply.

Apart from a natural resistance to bacillary invasion there is also evidence in support of a natural resistance to poisons. As examples, the hedgehog, the pig, ichneumon, and certain snakes are resistant to snake venom. Scorpions resist their own poison. Rats are very resistant to the toxin of diphtheria, and so are mice. Crocodiles are resistant to tetanus toxin, but susceptible to diphtheria toxin. The blood of turtles injected with tetanus toxin remains poisonous for many months, and is capable of inducing tetanus, although

the animals themselves are absolutely resistant. In this species of animal the susceptible cells are said to be absent, without these immunity cannot be looked upon as acquired. To produce acquired immunity there must have been a pre-existing susceptibility. It may be that in many cases natural resistance to poison is necessary, and is a means by aid of which the phagocytes and alexins are able to act as protectives.

On inserting subcutaneously sterile tubes containing such substances as mercury, nitrate of silver, turpentine and croton oil, it has been found that mercury caused suppuration in the dog but not in the rabbit; a 5 per cent. solution of nitrate of silver produced suppuration in dogs, but not in rodents. Ammonia failed in both. Turpentine was certain to be followed by suppuration in carnivora, and croton oil the same, but in less degree. This would lead us to think that the readiness of pus formation depends upon conditions belonging to the animal rather than to the material used.

It is certainly important to cultivate our observation and increase our knowledge in reference to the ways and means of augmenting natural resistance. It often happens that our knowledge may be extended, not only by positive evidence in favour of the reality of what we are seeking, but by evidence of negation in a diametrically opposite direction.

Thus methods tending towards the increase of natural resistance may be the outcome of observations upon the causes and effects of influences which tend to lessen it. By a knowledge of the conditions which bring about acquired susceptibility we may be enabled not only to counteract these or prevent their occurrence, but to endeavour to increase the resistance. Reduction of resistance or susceptibility may be brought about by general or special interferences. To all actively engaged in the practice of their profession the former are of peculiar interest, as they are of great value in determining a course of action in the prevention or cure of disease. Let us consider a series of them.

General Interferences.—Starvation has a marked influence in reducing resistance. The same applies to deprivation from water and the use of an unsuitable aliment or diet. Canalis and Morpurgo rendered pigeons—naturally resistant against anthrax—extremely susceptible to it by starvation. They succumb if starved immediately after inoculation or for six days before it and the starvation is continued; but if they be fed well after inoculation, though starved previously, they survive. Starvation for more than six days prior to inoculation could not be counteracted by subsequent feeding. Hens, naturally immune, are rendered susceptible in the same way.

Unsuitable diet may remove the resistance against anthrax, as occurs in refractory rats when fed on sour milk and bread.

Exposure to heat, cold, and damp also tend to lessen resistance. Thus, on immersing a hen in cold water, it loses its resistance to anthrax. Frogs easily succumb to anthrax if they be kept at a temperature of 25° to 35° C.

Fatigue also reduces resistance, as has been shown in the white rat, which, though normally resistant to anthrax, becomes susceptible to it, when thoroughly fatigued by being made to work a treadwheel in a cage. Loss of blood is also a factor in the reduction of resistance, as are the production of traumatic lesions, the section of nerves, the introduction of anaesthetics, and other definite chemical substances. Again, the introduction of the products of certain bacteria may lessen resistance against others.

With these facts before us we can readily understand how in an epidemic, say of typhoid fever, in a community of individuals naturally resistant, those subject to one or other of the above hostile influences are affected while others escape. Considering tuberculosis from the same standpoint, we are guided in the exercise of measures antagonistic to it. The bacillus is so widely distributed that the hope for its complete destruction is but slight. A healthy man is relatively immune against tuberculosis, but any of the above influences may so reduce his resistance as to render his infection somewhat easy. To prevent this, all such influences should be removed, and an effort made on sound principles to increase his natural resistance, at the same time reducing the infective agent by destruction of the sputum.

Special Interferences.—Tizzoni and Cattani thought that rabbits could not be rendered immune to tetanus after the removal of their spleens, and that dogs naturally immune to anthrax would by removal of the spleen be made susceptible. That acquired susceptibility does not depend upon removal of the spleen has been shown by experiments of Foà and Scabia working with the diplococcus of pneumonia and B. pyocyaneus. The temporary loss of resistance is due to shock and weakness after the operation. Canalis and Morpurgo have rendered pigeons less resistant to anthrax by removal of the pancreas; removal of the pancreas renders animals more susceptible to infection. This may be dependent upon the glycocaemia following it; and Leo has shown that by the administration of phloridzin in small doses in food, sugar showed itself in the blood, and the animal under experiment became very susceptible to glanders infection, which in its normal condition it was able to resist. By similar treatment rats were not rendered more susceptible to anthrax and tubercle.

We are clinically acquainted with diabetes in the human subject, and I think are quite agreed as to the great tendency to suppurations of the skin in the form of boils, and the great frequency with which diabetics are attacked by tuberculosis. This, I think, can be accounted for by the disturbance of the normal chemistry of the body tissues and fluids, containing sugar, which reduces materially the natural resistance against the invasion of bacteria.

One agrees with Professor Sims Woodhead when he says: "In recent years so much attention has been directed to the connective tissue protective agencies that there may have been some danger of the importance of the part that variously functionally active organs play in the prevention of disease being overlooked; but remembering the share that the suprarenal body and the thyroid gland, with their secretions, the spleen, the liver, the kidney, the intestine, and the bone marrow take in the formation of blood, in the elimination of waste products, and in similar operations one cannot but be struck with the fact that, should any of these have their vitality lowered or their activity impaired, they must necessarily leave the body more open to attack than when they are performing their functions properly. It is therefore necessary to insist, not only on the activity of the disease-producing germs as a causal agent, but also upon the weakness of the tissues, or the functional disturbance of the various organs as powerful predisposing causes. The part that the liver plays in protecting the body not only against ingested poisonous substances, but also against certain products of digestion formed in the stomach and alimentary canal (autogenetic poisons) may be instanced for example. This organ acts as a kind of storehouse, not only for food materials but also for toxic substances, retaining them in bulk as it were and allowing them to pass into the general circulation only in such amount as may easily be eliminated without much damage being done to the organism as a whole. Again, bile has a marked effect in destroying or neutralizing the activity of certain poisons, for example, snake venom, and the state of the bile secretion probably has a distinct influence on the destruction both of poisons and micro-organisms, that may be found in the intestines. The secretions of the stomach and the intestines, and even those of the salivary glands exert a germicidal effect on bacteria, so that any alteration being brought about in them may readily be a predisposing factor in the production of infective disease. Not only the micro-organisms, then, but also their power of producing poisons, the condition, general health of the patient and his tissues, and the character, normal or abnormal, of the secretions and their power of destroying toxins or the toxin-producing organisms themselves, must all be considered as playing a part in the production of this class of disease."

Again, we may reduce the resistance of a body, insusceptible to a certain organism, by injecting certain chemical substances at the seat of lesion. In animals immune against tetanus infection can be brought about by injecting lactic acid or trimethylamine along with the bacilli. Bujwid found that after injection of sugar into the tissues of animals, inoculation with staphylococcus pyogenes aureus produced a marked suppuration not easily produced without it.

Hypodermic injections of dextrose and lactic acid will render mice susceptible to mammalian tubercle. Similar results in reference to reduction of resistance have followed the injection of mixtures of bacteria, both harmless separately; also coincident inoculation of the bacterial products of one kind of organism with the bacteria themselves of another kind may be harmless.

The same holds good for the concurrent inoculation of different organisms, by which means resistance is reduced, non-pathogenic germs may be rendered pathogenic, and the virulence of pathogenic germs may be increased or diminished.

This introduces the problem of mixed infections, a matter of great importance in clinical observation and practice. This subject has interested me particularly in relation to the

mixed infections occurring in cases of pulmonary tuberculosis in the human subject, and their bearing upon prognosis and treatment. Assuming, then, a case in which tubercle bacilli have been demonstrated in the sputum, I shall ask you to join me in considering of what import this is in relation to prognosis. Without any doubt the prognosis is rendered more serious; and we have been so tutored by experience that a mental picture at once arises of the tuberculous lesion, its pathological histology, its different methods of progression, its subtle march, the train of clinical symptoms which follow, and the peculiar exhausting drain upon the system which for ages have been associated with and summed in the term "phthisis." This mental picture influences us greatly in our judgement, and the memory of multitudinous unsuccessful attempts to combat or arrest the progress of this insidious enemy impresses the generality of minds with a forlorn hope.

Now, if one takes a retrospective view of the various lesions in the body which are due to the tubercle bacillus, one is immediately impressed with two important factors in relation to prognosis. The first is that much depends upon the determination of the bacilli to certain localities; and, secondly, that the general progress of the life-history of the organism is slow. An intravascular inoculation is necessarily rapid in its dissemination and its serious result. An implication of the brain, for instance, is extremely grave.

On the other hand, tuberculosis of bone is an extremely slow process; and in joints—for example, the knee-joint—also a slow process. The same is particularly evident in tuberculous enlargement of the lymphatic glands and lupus tuberculous infiltration of the skin. In many cases this slow process affords a hopeful outlook, and the disease is either arrested or permanently cured. Large masses of tuberculous infiltration are found in the abdomen, and they disappear under certain conditions. This reflection tends to produce a more hopeful way of thinking.

There is no doubt that the tubercle bacillus is endowed with powers of gradually eroding tissue and causing suppuration; at the same time, the formation of tuberculous nodules is held by many observers to be a cell proliferation evoked by the bacillus and in direct opposition to its progress. For the purposes of argument we assume the virulence (if one may use this term) of the bacillus to be a constant and the cellular reaction a constant; then we may follow our investigation and endeavour to answer the question, Under what circumstances, unassociated with differences of reciprocal infective processes (virulence and resistance) is the progress of the lesion accelerated?

One way out of the difficulty is by looking for an ally which indirectly may increase the progress of the tubercle bacillus and at the same time reduce the resistance of the host. It has been found by experiment that inoculations of non-pathogenic organisms may prove fatal, provided another kind of organism be inoculated concurrently. Monti found that old attenuated cultures of the staphylococcus pyogenes aureus or pneumococcus always prove fatal, provided a culture of an innocuous organism such as the proteus vulgaris were injected at the same time.

It is chiefly to Babes that we are indebted for the knowledge of the various organisms met with in tuberculous foci. In 7 out of 12 cases of tuberculous meningitis various microbes were met with in association with the tubercle bacillus: in 2, pneumococcus; 2, streptococcus pyogenes; in 1 staphylococcus pyogenes aureus; and in 2 peculiar bacilli causing meningitis in rabbits. In tuberculous otitis bacillus pyocyaneus was found, while in a second case of tuberculous otitis oval saprophytic bacilli were found in the brain, an abscess of the neck, the spleen, and pleuritic fluid on the right side. The tubercle bacillus alone was isolated from 3 out of 7 cases of osteo-myelitis, and in these the disease was exceedingly slow. In 4 the streptococcus pyogenes was found, and in 1 caused a fatal pericarditis.

In 2 cases of subcutaneous abscess streptococcus pyogenes and tubercle bacilli were isolated from the pus; in 1 case the streptococcus was also isolated from the spleen and pleural exudation. Streptococcus pyogenes and staphylococcus aureus have been found in the exudation in tuberculous peritonitis in men. In a case of metritis and salpingitis with miliary tubercle the staphylococcus aureus was present in the blood of the heart, lungs, and peritoneal abscesses. Suppuration in tuberculosis is due, then, to the bacillus itself and to other micro-organisms complicating the infection. It is unnecessary for me to enumerate further instances of mixed infections; in fact, the more we study the question, the more shall we be persuaded that pure infections in disease are comparatively rare, and that the gravity of individual cases rests upon the character and proportion of the mixed infection.

How does this potent question of mixed infection bear upon the prognosis in cases of pulmonary tuberculosis; and how by some simple procedure may it be recognized for clinical purposes? There is no doubt that its bearing is a very important one. A pure localized tuberculous lesion of the lung is not so serious a condition as one naturally presupposes. Many cases of old-standing and quiescent or cured tuberculous lesions are found on *post-mortem* examination when no suspicion of their existence has arisen during life. This goes far to prove that spontaneous cure is by no means rare. Such cases I would consider pure infections. Examples are ever passing before us where the disease drags on a slow course, where its ravages are limited and the process of destruction prolonged.

It is certainly, I am happy to say, the experience of many of us that we can enumerate cases of arrest or cure which we have followed from start to finish. Such cases, I believe, have been pure infections. On the other hand, we can produce a long list of cases that have rapidly gone downhill in spite of all efforts to arrest or cure the disease. Such, I believe, have been cases of mixed infection. The condition of the lungs in tuberculosis is an extremely complicated one, and that complication rests in the existence of mixed infections, because it is so difficult to protect the lungs from the advent of staphylococcal and streptococcal infections. After a prolonged investigation extending over a period of years I have been convinced that the greatest source of danger in pulmonary tuberculosis resides in the association of the tubercle bacillus with other organisms; and that once this mixed infection has become well established the prognosis is proportionately increased in gravity. For clinical purposes the mixed organisms may be recognized in the microscopical examination of the sputum.

Preliminary preparation is necessary to insure freedom from the ordinary organisms of the saliva as far as is possible, so that one may hope to obtain material from below the glottis and uncontaminated by its passage through the mouth. I therefore endeavour to obtain this result by the following method: A perfectly clean sterilized bottle, with a well-fitting stopper, is given to the patient, with instructions that, after fasting for some hours—for example, overnight—the mouth is to be thoroughly cleansed several times with a brush and antiseptic wash, all the recesses of the teeth and tongue are to be well scrubbed, and after each scrubbing the mouth to be well rinsed out with antiseptic wash, the pharynx to be treated similarly as far as possible. The patient is then to expectorate into the bottle, and submit it for immediate examination. By these means one may obtain a fairly reliable sample of sputum from the lung. The small yellow particles are to be examined, which it may be presumed come from the deepest recesses of the lungs. The number of secondary organisms found may vary greatly, but in some cases they are in such profusion as to form masses and long chains; and in one particular case I have found such a combination as true alveolar casts of tubercle bacilli associated with alveolar casts of micrococci. From a series of 21 cases taken at random from private and hospital practice, 10 of these revealed a pure and 11 a mixed infection. In the 10 pure the disease was exceptionally slow, with a tendency to quiescence or cure. In 1 case the patient lived for eighteen years from the time tubercle was first noticed in the expectoration, and died eventually of septic peritonitis from perforation of the appendix, during this period specimens of sputum examined at different times were free from secondary organisms. Another case has already lasted ten years, an example of pure infection. Another case recovered, and after four years no tubercle bacilli could be found.

The cases of mixed infection showed no tendency to improve; the general symptoms were more severe, with rapid emaciation; in 3 early collapse was shown by want of reaction, subnormal temperature, and marked lividity. In 1 pronounced streptococcal infection along with tubercle both lungs were involved with a fatal termination in twenty-eight days. Another case with a definite history of six weeks' pain and cough revealed numbers of streptococci on every occasion and the pulmonary lesion rapidly extended. In all cases where streptococci have been present the condition has been proportionately severe.

It may be urged that such mixed infections are always found in the late stages of phthisis; one cannot, however, judge the stages of the disease on a time basis; a case may

be late relative to time, early as regards lesion, or vice versa, apart from gross cavity formation these mixed infections are present in the alveoli, and apart from any period of the disease, whether associated or not with existing cavities.

I am led to believe that in non-cavernous lesions secondary infections hasten the rapidity of softening and extension, with cavity formation; or in a pre-existing cavity their advent is followed by rapid ulceration of its boundaries, with less hope of its cicatrization. These secondary infections I believe reduce the natural resistance, local or general, of man against tuberculous invasion.

Artificial Immunity and Natural Resistance.

Time will not allow a general survey of the theories associated with artificial or acquired immunity. A clear account of this has been recently afforded us by Professor Welch in his brilliant Huxley lecture. The subject is an enormous one and full of interest and teaches us that new and extraordinary alterations in our conceptions of and attitude towards the problem of disease must take place at an early date. Professor Welch's hypothesis of reciprocity in infection, namely, that if the host is stimulated to produce substances inimical to the invading bacterium or which may neutralize its poisonous products, or produce immunity against it, so may these very substances in the host stimulate the bacillus to produce similar substances which immunize it against the host gives us material for much thought. We recognize in cultures of pathogenic bacteria intracellular and extracellular poisonous substances and I am led to ask the question, are the bacteria while manufacturing these poisons living under conditions normal to them, do the culture media contain the very substances which stimulate the bacilli to form their special poisons and immunizing bodies? Have we any certain proof that bacteria if living under conditions normal to them produce any such poisons at all? May there not occur a reciprocal infection between two different classes of bacteria in cases where two non-pathogenic varieties of bacteria when mixed together become pathogenic? Assuming the possibility that under normal conditions bacteria do not produce poisonous materials, I can conceive that, in a case where an animal is naturally immune to a specific bacterial invasion, there is nothing in its tissues or fluids which affect the bacteria in any way, rather that they consist of material natural to it. On the other hand should there have been any alteration of the body fluids and tissues, the condition arises which acts upon the bacterium and makes it an offensive factor. In fact that the determination of the disease is dependent not upon the invasion by the bacterium alone, but upon the action upon it of the tissues and fluids of a body antecedently deranged. Or further that both bacterium and host may be in an abnormal state prior to their meeeting.

When bacteria come across material irritating to them they respond in the ways mentioned, and a reciprocal infective process is the result. Their advent into the body is accidental, not intentional by any means. Infective processes may not be all the fault of the bacterium, although we are inclined to lay all the blame upon the organism and accept none ourselves. We know little as yet of the normal metabolic processes of the human body. When we consider the question as to how bacteria in infection bring about disturbances of our body metabolism, we must remember that they do not always, and I can conceive that disturbed metabolism has most probably been a pre-existing and causal agent of infection, not always the result of it.

"It may be said of almost all infective diseases that they (the invading bacteria) have little or no chance of gaining a foothold in the human body unless there be disease of some kind or weakening of the tissues or a distinct lesion in which the organism may find a nidus and sufficient and suitable nutriment." (Woodhead.)

The fault may be largely our own and the antecedent deranged metabolism the result of our own ignorance or folly, or the accidental adverse conditions under which we may be placed in the general arrangement of a terrestrial humanity.

Apart from the natural physiological decay of all living reatures, two main factors hasten this end, namely, want nd excess.

Again, I would suggest that, in natural immunity there may be sufficient bacteriolytic power in the host to dissolve the bacteria without any stimulation of it. This bacteriolytic power may be an early manifestation, and so cut short the possibility of bacterial response; or graduated, and so account for mild infections. In typhoid fever, for instance, in which the bacterial poison is intracellular, the insidious progress of the disease may depend upon a gradual formation of bacteriolytic substance and a gradual solution of the bacteria, producing a progressive increase of symptoms. Such a procedure would have a decided effect in determining the period of invasion in specific fevers; in scarlet fever, for example, the bacteria may grow rapidly, and the bacteriolysin be formed rapidly, thus accounting for a short incubative period. This, to my mind, would explain the failure of endeavours to isolate the organism, its death having taken place prior to any bacteriological investigation having been made.

The existence of an endotheliolysin in snake venom has suggested to me the probability that a similar substance is present in acute rheumatic fever, which by its action destroys the delicate endothelium covering of the cardiac valves and the lining membranes of joints, and may affect also the endothelium associated with the minute anatomy of the central and peripheral nervous system, and be responsible for the onset of chorea. By a similar process other bodies may be responsible for the specific eruptions in the exanthemata.

In conclusion, I would draw your attention to the fact that immunizing bodies are contained in human milk, and which the child is able to assimilate up to a certain period, and which may guard it against certain diseases. For example, the mother, being naturally resistant against tuberculosis, may thus render her child resistant against the disease, while a child fed upon cow's milk (an animal naturally susceptible) becomes, by lack of such immunizing bodies in its food, more susceptible to tuberculosis.

Inheritance of Individual Resistance and Susceptibility.

It may not be out of place here to consider how racial immunity may be accounted for. It is most probably an acquired tolerance due to natural selection and inheritance. In a population attacked by a specific disease the most susceptible perish, and such as are individually immune or least susceptible survive and beget offspring with the natural resistance by inheritance. By a repetition of the process a racial immunity could be established. This, however, does not lead us any nearer a solution of the question as to how this primary individual natural insusceptibility is produced or originated.

Apart from the evidence in support of the possibility of inheritance of disease by means of direct transmission from parent to offspring, and which is rather a direct infection from parent to offspring than a true inheritance, one can understand the possibility of a true inheritance of natural resistance or susceptibility. In cases where the tissues of the parent are primarily susceptible, or rendered so by any process, to infections, such susceptibility may be transmitted to the offspring, although not necessarily specific to any one definite infection. When one so often recognizes inheritance of such minute physical details as the colour of the irides, minute reproductions of outlines, the shape, character, and early decay of the teeth, the colour, and in many cases the loss, of hair taking place at a definite period of life; the quality of intellect, and minute peculiarities of disposition, one cannot easily put aside the possible occurrence of inherited resistance or susceptibility.

II.—Ai McPhedran, M.D.,

Professor of Clinical Medicine, University of Toronto.

Professor McPhedran said the subject was a very complex one and still surrounded by much mystery. Great advance was however being made. Professor Ehrlich's theories afforded an admirable hypothesis for further investigation, and they might hope for substantial additions to their knowlege in the near future. That natural vigour was not sufficient to antagonize bacterial invasion was shown by the great susceptibility of vigorous young men who were often the subjects of the most severe attacks.

III.—David Caldwell McVail, M.B., L.R.C.P., F.F.P.S.Glasg.,

Professor of Clinical Medicine, St. Mungo's College; and Physician, Royal Infirmary, Glasgow.

Professor McVail said that from the clinical point of view the various bacteriological theories and speculations that so rapidly succeeded each other were apt to be confusing. Was it always the case that when bacterial infection occurred the tissues attacked had been in a condition of abnormally low vital activity? He had seen a man in the full vigour of life

attacked by general tuberculosis and die in a week. He had seen robust individuals attacked by typhus, and far less vigorous people exposed to the same infection escape. In bacteriological laboratories one culture basis was found to offer a more fruitful field for one microbe than for another. In one jelly this organism would grow and in another would not, and these jellies were alike devoid of "vital activity." A microbe, like all other living entities, had to make its living, and in some soils it found it, and in others not. Some microbes throve in a slightly alkaline soil, others in a slightly acid soil. In so far as physiological research employed chemical and physical methods of investigation, it had given profitable results; but in the region of philosophical speculation, when it theorized regarding "vital force" and the nature of life, it had only produced confusion. It would be by inductive research and not by speculation that the secrets of this department also would slowly reveal themselves.

THE TREATMENT OF PULMONARY TUBERCULOSIS BY FORMALDEHYDE.

By D. I. Chowry-Muthu, M.D.,
Wells, Somerset.

In discussing the main lines that shall guide us in the treatment of pulmonary tuberculosis we keep two objects in view:

1. To strengthen the resisting powers of the tissues and cells of the body, and thus enable them to overcome the enemy.

2. To introduce into the system an antiseptic that would have the effect of destroying or at least neutralizing the action of the bacilli and their toxins.

When a man's health is run down and his vitality lowered by overwork, anxiety, insanitary surroundings, and other predisposing causes, we try to support and strengthen all the powers of the body by (*a*) life in the open air, (*b*) liberal feeding, (*c*) regulated exercise and rest—all judiciously administered by the physician in charge. This is what is termed the open-air treatment, which, though only introduced a few years ago into this country, has had such a remarkable success as to supersede the older methods of treatment.

But there is a limit to the open-air cure, and there is no use in shutting our eyes to the fact that the cure or arrest of the disease by this new method must necessarily take a long time, and many who are afflicted have neither the time, opportunity, nor the means to avail themselves of it to the fullest possible extent. It is therefore felt that something else might be done to supplement the hygienic treatment. And since antiseptic surgery has made such rapid strides towards success of late years, it is argued that some germicide could be internally administered that would have the effect of destroying or at least checking the progress of the enemy, and thus arrest the disease. Various remedies have been tried with this object in view, and many drugs have been experimented upon in their turn, such as guaiacol, creosote, balsams, terebinthinates, cinnamic acid, protargol, etc.

I have been making a series of trials on formaldehyde during the last few years. A course of experiments on the disinfection of rooms called my attention to the strong germicidal properties of the drug, and ever since I have applied it to the treatment of laryngeal and pulmonary tuberculosis. I would now, therefore, call your attention to some of the results and invite your comment and experience.

Formic aldehyde or formaldehyde ($H.CHO$), a gas obtained by passing methyl alcohol over platinum—a molecule of methyl alcohol $CH_3.OH$ passing over platinum loses two atoms of hydrogen, which combining with oxygen forms water, leaving behind formic aldehyde $H.CHO$ has of recent years come rapidly to the front as possessing powerful antiseptic properties and therapeutic value. It is gradually superseding some of the older antiseptics, having some distinct advantages over them. It is non-poisonous and non-corrosive, can be used in the form of solution and gas, easy and clean in its application, and does not discolour textile fabrics, [illegible] articles or metals, except iron and steel. It is extensively used in surgery and gynaecology, in [illegible] practice, and various skin diseases; in fact, [illegible] is needed.

So wide is the interest taken in formaldehyde that medical men from almost every part of the world are making extensive trials to introduce it into the system in some form or other in cases of laryngeal and pulmonary tuberculosis. For instance, Professor Cervello of Palermo has been working for some years on this subject and has introduced an apparatus for the inhalation of the gas. Dr. Bertheau and Dr. Salivas of Paris, and Dr. Labadie and Dr. Hatch of New York, and Dr. Geisse of Bonn are carrying out Francisque Crotte's method of transfusing formaldehyde by static electricity. Dr. Ruata of Perugia, Dr. Huggard of Davos Platz, and in this country among others Dr. Green and Dr. Murrell have reported successful cases treated by the inhalation of formaldehyde. Lastly, Dr. Robert Maguire of Brompton Hospital has introduced the intravenous injection of formalin, and then others are thus trying it both in private and hospital practice.

There are, therefore, three different ways of administering formaldehyde in pulmonary tuberculosis:

1. By inhalation.
2. By intravenous injection.
3. By electricity.

I.—*The Inhalation Method.*

The idea that volatile substances inhaled into the lungs have a beneficial effect in consumption is as old as the ancient Greeks. Various drugs have been used from time to time and exalted in their turn. Formaldehyde has the advantage over many drugs in being a strong germicide and at the same time innocuous to the patient when carefully used. There are two ways of using the inhalation—(*a*) by oro-nasal inhaler, (*b*) by vapourizer.

(*a*) The inhaler is, as you see, pyramidal in shape, flexible and light, and made of perforated zinc. It is somewhat similar in shape to that of Dr. Yeo but differs in being larger, fuller, and nickel plated. It is curved to fit the chin, and has leaden clasps to take in a layer of wool or sponge, which can be renewed. As an inhalant I use a mixture of formalin (40 per cent.), chloroform, and rectified spirit in the following proportion:—Formalin (40 per cent.), 1 part; chloroform, 1 part; rectified spirit, 2 parts. A few drops of liq. ammon. fort. are added to the mixture to neutralize the pungency of the vapour so that the patient can use the inhaler with comfort.

Advantages of oro-nasal inhalation: (*a*) It is simple, and can be used at all times—in the open air while the patient is walking, reading, writing, etc., or indoors; (*b*) there is constantly a zone of antiseptic atmosphere round the patient, so that if he ventures out even in unhealthy surroundings for a while he will not suffer for it; (*c*) the inhaler keeps out dust or any extraneous matter injurious to the patient; (*d*) after leaving the sanatorium the patient can use it while at home or at his daily occupation.

(*a*) Another method of generating formaldehyde is by a vapourizer which consists of a methylated spirit lamp and an open boiler, into the mouth of which is let in a tray whose sides are covered with wire gauze. The tray carries paraform powder or tabloids, with a little menthol to neutralize the effect of the vapour. The moist products from the combustion of the spirit acting on the powder or tabloids cause the evolution of the gas. The generation of the steam renders the action of formaldehyde more effective and penetrating and confines its diffusion in the room where it is generated. The patient takes the formaldehyde vapour bath in the inhalation room or, better still, in his own bedroom for an hour or two daily with doors and windows partially or wholly closed. Both the inhaler and the vapourizer can be obtained by Messrs. Maw, Son, and Sons, Aldersgate Street, London.

Advantages of the Vapourizer.—(*a*) The patient's room and its contents are rendered aseptic by constant disinfection; (*b*) the patient's personal clothing is also disinfected, especially his coat and vest, to which tiny and almost invisible particles of sputum from coughing are liable to adhere, and which on drying are apt to reinfect the patient and be a source of danger to others. I may say in this connexion that I hope to point out at some other time the real danger consumptives incur by wearing moustache or beard.

The objection raised against pulmonary inhalation is that by this method antiseptic volatile substances cannot reach far enough down the lungs to be of any service in the arrest of the disease. This entirely depends upon the kind of apparatus used. This is quite true in the case of respirators, mouth inhalers, and many of the sprays, as the inhalation produced by them cannot reach lower than the trachea. Two conditions are necessary for the inhalation to be efficacious: (*a*) The inhaler must cover the nose; (*b*) it must be continuously worn as many hours as possible. The anatomical structure of the lung, as Ruata pointed out, lends itself peculiarly to antiseptic treatment. The examination of lungs of colliers and

others engaged in dusty occupations has shown that the inhaled dust can be detected in the lung tissue. Besides, if a volatile substance like chloroform can, when inhaled, enter into the circulation, causing general anaesthesia, surely it is not unreasonable to infer that atmosphere charged with a penetrating vapour like formaldehyde does enter the alveoli of the lungs, especially when it is mixed with spirit and chloroform.

Further, to prove this point, I will here cite the case of a patient who came under my care about two years ago in whom tuberculosis was engrafted on bronchiectasis. The patient was a male, single, 42 years of age, and presented himself with symptoms of emaciation, rise of temperature, abundance of fetid sputum which contained tubercle bacilli. After six weeks of open-air life and careful feeding, formaldehyde treatment was given every day, the patient wearing the "muzzle" without intermission all the time except during meals. Besides he also had a formaldehyde bath one to two hours daily. At the end of seven months he gained weight, the temperature became normal, the sputum diminished from 15 oz. to 1 oz. daily and was practically odourless. All this time he was kept under the open-air treatment and slept in an outdoor chalet. At the end of eight months he was sent home convalescent.

Besides, I know of cases of simple bronchiectasis that have been greatly benefited by a prolonged course of creosote vapour baths. All these cases justify us in the conclusion that substances like formaldehyde do enter the lung and have a beneficial influence in the arrest of the disease.

One point more. Clinically speaking, whatever the pathologist may say (it is not the pathologist, but the clinical observer that has the last word to say on the efficacy of a drug) from an experience of five years, I can say that formaldehyde inhalation has been a distinct aid to the open-air treatment in the arrest of pulmonary tuberculosis. I have kept full records of more than a hundred patients. About 68 per cent. of them of all stages that have entered the sanatorium have left it cured or the disease arrested so as to enable them to return to their occupation. If time permitted I could have given instances of some remarkable cases of progress made under formaldehyde treatment. One will suffice at present.

A London clerk with poor physique and low vitality, but plenty of enthusiasm and determination to get well, was admitted into the sanatorium about two and a-half years ago with symptoms of breaking down of the left lung. A few days after his admission he was put under the continuous inhalation and vapour treatment. He slept in an open-air châlet all one winter, and gallantly persevered in the treatment. At the end of nine months he completely recovered, and has been engaged in active work ever since.

Under this method the patients have improved in strength and appetite, the expectoration became less tenacious and scanty, and in some cases entirely disappeared, and tubercle bacilli considerably diminished in number, and in some altogether vanished. Some may contend that the open-air treatment alone would be sufficient to bring about such a result. My answer is that medical men who have tried my inhalation treatment in patients' own homes in crowded cities have found distinct benefit in the arrest of this disease. To say the least, therefore, I believe strongly that this antiseptic treatment has helped the hygienic treatment and cut short the length of stay in the sanatorium. And any help, however small it may be, that contributes to the arrest of this terrible plague is a distinct gain, and should be welcomed.

II.—*Intravenous Injection Method.*

During the last fifteen months I have been trying the intravenous injection of formalin introduced by Dr. Robert Maguire. The apparatus, which is prepared by Squire and Sons of London, consists of a burette with a stopcock connected with one end by an indiarubber tubing and needle, and in the other with a hand pump, the whole fixed on a wooden stand. The mode of procedure is briefly as follows: The patient lies in a recumbent position. The skin in front of the elbow is washed with 1 in 20 carbolic, the arm is tied with a silk handkerchief. The patient firmly squeezes with the hand a roller bandage, the elbow is steadied, and one of the median veins is pierced, and the needle plunged first vertically, and then in the length of the vein: the arm is then loosened, and the hand released from holding the bandage. After the injection a piece of carbolized wool is pressed over the wound for a minute or two.

In the preparation of the solution for the injection every precaution should be observed to render the apparatus sterile, and care taken that it is free from impurities; which are chiefly copper and formic acid. The purified formic aldehyde should contain no copper, and be practically free from formic acid. To sterilize the glass tubes they should be rinsed with hydrochloric acid and several quantities of water, then a solution of mercuric chloride 1 in 1,000, and finally with water sterilized by intermittent boiling. Just before the injection the burette should be rinsed with some of the solution, which should also be run through the tube and the needle.

I have treated 25 cases by this method, and have given about 500 injections. I commence with 50 c.cm. of a strength of 1 in 2,000, increasing to 1 in 1,000. During the operation patients often complain of feeling of numbness in the hands, at the elbow, or inside the shoulder, which passes off in a few minutes. After the injection the temperature sometimes goes up to 98.6° or 99° F., and rarely to 100° or 101° F. For a few days there is increased frothy and mucoid expectoration. Some patients complain of sick headache, and one or two were attacked with fits of shivering, resembling ague, three or four hours after the injection, but within a day all these symptoms disappear and no ill-effects remain. As to the maximum that could be injected with safety, Dr. Rankin, of the Seamen's Hospital, Greenwich, has tried with a strength of 1 in 1,000, 1 in 750, 1 in 500, and injected 50 to 200 c.cm. at one sitting. Once he gave 220 c.cm. of 1 in 500, and beyond the feeling of numbness at the tip of the tongue no untoward symptoms occurred in his case. Still I think that 50 c.cm. of 1 in 1,000 should not be exceeded as a rule. Many of the patients so treated considerably improved, though in some it had no effect. All the patients who have had the injections have had the open-air treatment, so that the good results obtained might partly at least be attributed to the hygienic treatment. Nevertheless the improvement in one or two was so striking that I would beg leave to call your attention to them.

One case is that of a Welshman, D. O., aged 25, single; who was seen by me about the middle of February this year, when he showed signs of active mischief in both the apices of the lungs, front and back, and the sputum contained tubercle bacilli. Three months after his admission injections of formalin or haemasepsin, as it is called, were commenced; he had altogether fifteen injections of 50 c.cm. of 1 in 1,000, and now, if you examine him, you will find all absence of physical signs, and the sputum in repeated examinations contained no bacilli. Of course he was treated under the open-air life all this time. Still this is such a remarkable case as to make me believe that intravenous injection has something to do with the rapid arrest of the disease.

The second case is that of a clergyman from London, who was admitted into the sanatorium with disease of the right lung. One day suddenly I observed a pneumonic patch in the left lung at the third intercostal space. Here I may say in parenthesis that, as Dr. Squire has pointed out, if the left lung is secondarily infected by the right, it always shows itself first in the anterior axillary line outside and upwards of the left nipple. I gave five injections of 50 c.cm. of 1 in 1,000, and in a week the patch entirely disappeared, and there is no sign of return up to the present day. This makes me conclude that intravenous injection will be especially useful in cases of acute pneumonia, and in early cases of infiltration before consolidation takes place. Here I may add that five cases of acute disseminated tuberculosis have recently been treated by this method by others, with the result that in every case the disease has been arrested.

A strong point brought forward against intravenous injection and inhalation is that tubercle, being non-vascular, is outside the area of the vascular system, and formaldehyde cannot therefore touch the affected part. It is not intended by these methods to kill tubercle bacilli *in situ*, though Baccelli claims that it does. It appears that the antiseptic fluid bathing the unaffected part of the lung would help to prevent the spread of infection. It must not be forgotten that the fatal termination of pulmonary tuberculosis is not due to the lesion caused by the tubercle bacilli, but to the general septic infection caused by the pyogenic organisms and their toxins. Thus either the antiseptic solution washing the lung, or the antiseptic vapour filling the alveolar walls, would help to guard the unaffected portion from the spread of the enemy, and thus giving breathing time for the organism to assert itself and throw off the disease.

As yet the intravenous injection is still on its trial. While in some cases it has undoubtedly done good, in others it has failed; no one claims formaldehyde to be a specific. How far the hopes entertained at present by this method will be realized the future alone can tell.

It should be tried at least in all acute and early cases. There may be danger of injecting in advanced cases, as caseous substance blocking up the affected portion of the lung may prevent the flow of formalin through it, and thus the solution may concentrate its effect on the unaffected lung tissue and seriously interfere with its normal physiological function.

Electric Method.

In this method advantage is taken of the process of electric osmosis or cataphoresis for the introduction of drugs through the pores of the skin. Lately I have taken a great interest in Francisque Crotte's method of transfusing formaldehyde by means of static currents of electricity, which is being brought to a high state of efficiency in France and America. Crotte has been able to pass formaldehyde into the lungs through the tissues by means of static electricity. He and others have proved beyond doubt the presence of the drug in the lungs by laboratory experiments, by killing the animals after subjecting them to the treatment. Clinically marvellous results have been claimed by medical men (whose names I have before mentioned) from France, Germany, and America, who speak in enthusiastic terms of this method of transfusing formaldehyde into the system. I am making a series of investigations in this direction, but my observations are not complete. Whether the success obtained by this method is due entirely to the better introduction of formaldehyde into the system, or solely to the stimulating and tonic effects of electricity or both, is not quite clear.

To summarize briefly: The open-air treatment, excellent though it is, demands heavy sacrifice of time and means in many patients in this age of struggle for life and competition, and should be supplemented by some antiseptic or electric treatment. Serumtherapy is in its infancy. Special drugs by mouth have been disappointing. Tuberculin is at present a failure. The continuous inhalation and vapour treatment of formaldehyde is simple and can be used in all cases. The intravenous injection administered with caution should be given a trial at least in early cases of pneumonic origin, and if it does not do good it can do no harm. The electric method is plausible and hopeful. Any two of these methods can be combined with advantage, and whatever method is adopted, I believe that the introduction of formaldehyde into the system will be found an important aid in the treatment of pulmonary tuberculosis.

CASE OF BRONZED DIABETES.

By George Parker, M.A., M.D.
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In this disease we have not merely diabetes with some discoloration of the skin, but rather a hypertrophic cirrhosis of the liver, pancreas, and spleen, together with an extraordinary deposit of iron pigment in all the organs of the body and some degree of diabetes. It is important not only from its rarity, but from the light it throws on the pathology of certain blood affections and of diabetes itself. The following case under my care showed fairly well-marked symptoms during life:

History.—C. R., 65, a male, fitter by trade, came to the Bristol General Hospital on November 19th, 1902, for the treatment of a varicose ulcer of long standing. He had always had good health, and no history of alcoholism could be made out. He complained also that he had recently lost flesh, and was now troubled with thirst, dyspepsia, and frequent micturition. His urine was found to contain sugar, and a specimen tested in the out-patient room showed 5½ per cent. His weight was 10 st. 13 lb., and the heart and lungs were normal. He was told to diet himself, and was treated with uranium nitrate and later on with opium. The percentage of sugar remained nearly constant, and though he improved in some respects he lost weight gradually for three months.

State on Examination.—On February 20th he was admitted as an in-patient, and his weight was found to be only 10 st., but the ulcer on his leg had healed up. He was a short, spare, dark-complexioned man, and had lost one eye by an accident some years ago. The sight of the other was good with plus glasses. There was marked arcus senilis and the conjunctiva had a quasi-icteric tinge. The skin was of a dusky, metallic hue, most noticeable in certain lights, especially on the face, neck, legs, and around the site of the old ulcer. The colour was of burnt sienna or greyish brown, and faded off without any definite margin. It appeared to me to increase slightly during his stay in the hospital. The lips and mucous membranes were greyish, but showed no marked pigmentation. The tongue was much furred, dry, and could not be cleansed. No abnormal physical signs were detected in the chest or abdomen. There was no oedema nor any distension of the abdomen, and the liver and spleen were not palpable. The pulse was feeble and of low tension but the arteries were much thickened. There had been no history of epistaxis or other bleeding. For the first week he was placed on a moderately restricted diet with about 6 oz. of bread daily. The urine averaged 50 oz. a day and contained about 5.7 per cent. of sugar. A more rigid diet was tried but only a slight decrease of sugar followed during the next four weeks. He appeared comfortable and fairly active, but the tongue became more and more coated, the papillae standing up as dry brown points. About March 27th he became constipated and drowsy, the urine showed acetone and diacetic acid, and a sweet odour was noticed in the breath. large doses of alkalies were given by the mouth and rectum without success, and the patient became comatose and died on March 31st.

Necropsy.—This was made by Dr. Newman Neild to whom I am indebted for the following notes: The body was that of a well developed elderly man, showing slight rigor mortis. It was considerably wasted, though subcutaneous fat was present everywhere. There were small pigmented flecks over the upper arms and slightly over the thorax, and general pigmentation of limbs, especially of the distal portions and of the dorsa of the hands and feet, but none on the palms and soles. The general groundwork was of deeper colour than normal, superimposed on this was a fine mottling composed of flecks of pigment about 1 millimetre in size. The internal saphenous vein on the left leg as high as Scarpa's triangle and the veins on the outer side of both legs were varicose. There was a scar on the right shin, and over the lower part of the legs a reddish brown pigmentation was very marked extending downwards over the dorsa of the feet to the roots of the nails, also very slight increase of pigment in the axillae and groins and over the skin of the penis and scrotum. The nipples were pigmented and the face slightly so, more marked towards the temples and ears. The left eye was absent, the sclerotic of the right eye was jaundiced. The arcus senilis was well marked. There was much hypostatic staining over the head, back, legs and arms. On opening the abdomen about 6 or 8 oz. of dark yellow fluid with some small flakes of lymph were found without signs of recent peritonitis. The omentum contained fat of a light yellow colour. The bladder extended halfway to the pubes and was obviously hypertrophied. The parietal peritoneum in the iliac region was marked by flecks of pigment similar to those on the limbs. The surface of the liver was uniformly rough, with small nodules "like a toad's back." The appendix was normal. On first opening the abdomen the intestines were a yellowish-grey with the mesenteric vessels showing a slate-grey, but after removal the intestines quickly turned to a uniformly leaden colour. The stomach when opened was of normal appearance on its surface, but the vessels were dark-grey on a lighter grey field, except near the oesophageal orifice, where the surface was of a light pink. Oesophageal piles were present. The intestines were normal except as to their colour, the Peyer's patches and the solitary follicles standing out in darker grey than the rest of the surface. The kidneys (right and left, 12 oz.) could be easily displaced downwards, the right almost to the pelvic brim. The cortex was normal in width and lighter than the pyramids; some tubules and Malpighian bodies showed opaque and white on a more translucent background. The pelvis was injected but not discoloured. The capsule peeled off easily. The suprarenals were firm, the cortex was darker in tint than normal, otherwise macroscopically there was nothing to note. Liver (3 lb. 5 oz.) was obviously cirrhosed and the surface regularly nodulated, but the margin was not greatly rounded. A few branching patches of superficial fibrosis were present on the upper surface, especially one large patch on the dome of the right lobe. The whole organ was of a warm bronze shade, and on section the cirrhosis showed a remarkably uniform distribution with a monolobular arrangement. The gall bladder was enlarged, projecting 1½ in. beyond the anterior margin of the liver, and through the common duct bile could easily be expressed. The bile was thick, dark, and contained two small collections, the size of a pea, of minute facetted gall stones. The spleen (7½ oz.) was purplish-grey in colour on the surface, and irregularly studded with white patches of fibrosis, which were raised above the surface; but on section these latter cut like cartilage, and projected into the organ more than they rose above the surface. When incised the organ was firm and browner in tint than normal. The trabeculae were thickened. The pancreas (2½ oz.) was small and firm, surrounded by fat, and at the thick end wide bands of fibrous tissue of soft consistence passed through its substance. The colour was brown, of a burnt sienna shade except near the duodenum, where the surface for about ⅛ in. was of a bluish black. The portal vein showed a thickening of the inner coats. The lymphatic glands around the pancreas and the coeliac axis were enlarged and of a rich golden brown. The retro-peritoneal glands below this region, and the mesenteric glands were slightly tinged with brown. The glands in the axilla and groin were faintly tinged of an olive-brown. The cartilages of the ribs showed, on section, a ring of olive-brown staining. Calcification had commenced in the centre of the cartilage. The parietal pleurae were normal in colour, but there were some dry adhesions behind the lung, which were easily separated by the hand. Similar adhesions were present over the diaphragm, especially on the right side. There was general congestion of the trachea and bronchi, which were coated with a thick reddish mucus. The lungs were deeply congested, and somewhat browner than is usually seen in congestion. Slight oedema was present. No phthisis, even of an obsolescent stage, was found. The bronchial glands were black and oedematous; the inter-bronchial glands were slightly enlarged and had the same golden-brown colour as the glands around the coeliac axis, except that this was only to be seen where the glands were not black. The tongue was thickly furred; the tonsils and the soft palate, except for some granules, were normal. The cricoid and thyroid were calcified. The mucous membrane over the crico-thyroid space was mottled coarsely with

pigment of a dark olive colour. The heart (11 oz.) showed a few drachms of dark fluid in the pericardium, but no pigmentation. There was slight atheroma of the aorta. The thickness of the heart walls was normal, and they were slightly tinged with brown. Some striation of the papillae was noted in the left ventricle, and there was a recent vegetation on the posterior cusp of the mitral, with slight thickening of the mitral, the chordae tendineae, and of the aortic valve. The blood was fluid, with dark clots in the heart. The oesophagus showed a few varicose veins at the lower end, and some small raised follicles. The testicles were darker than normal. The urine (sp. gr. 1028), a cloud of albumen, mucus, and sugar were present, but no acetone or diacetic acid. The colour was a pale straw, with a greenish tinge. The thyroid was enlarged and showed colloid degeneration, with fibroid changes. No remains of the thymus were present. Permission to examine the brain was refused.

Histology.—The liver shows an extensive cirrhosis which is chiefly of the monolobular form, the fibrous bands usually surrounding a single lobule, but sometimes embracing two or three, or dividing up a single one. Numerous pigment granules are scattered about both in the fibrous tissue and among the cells. They are most frequent at the margins of the lobules, but they often form a line running up to and surrounding the centre. At times they appear to be in liver cells, which are smaller than their fellows, and in other cases they form heaps or masses. Many are scattered free among the fibrous tissue, but others are in tiny islets of liver cells which are surrounded by bands of fibres of a special type. The granules show a marked iron reaction and are usually rounded or irregular in shape, but some of those in the fibrous tissue are spindle shaped. The pancreas presents similar extremely numerous masses of pigment and marked fibrosis, though the latter varies in different parts. The fibrous tissue passes into and among the acini as well as surrounding them. The pigment lies chiefly among the cells of the parenchyma. The spleen has also undergone a certain fibrous change, the capsule and trabeculae are much thickened, and a few thin strands of fibrous tissue pass among the cells of the parenchyma. There is marked periarteritis and some endarteritis of the vessels and much thickening around the venous spaces. There is iron pigment in the connective tissue, but not in the pulp. The heart shows slight fibrosis with patches of pigment here and there in the muscle fibres, and sometimes between them. The lymphatic glands from the mesentery present more pigment than any other organ examined, together with slight general fibrosis. The suprarenals are normal, except for a deposit of the iron pigment in the cortex and here and there in the medulla.

Since Hanot and Chauffard first described the disease in 1882, some twenty-five cases have been reported. Professor Saundby noted an instance, and one or two others have occurred in this country. It usually appears in elderly men, most often after an alcoholic history. The polyuria and sugar passed are rarely great. There is generally a large, tender liver, with marked cirrhosis of the monolobular form, and but slight jaundice. Abdominal distension and attacks of diarrhoea alternating with constipation are common. The spleen and pancreas are commonly described as showing fibrotic changes, though the duct in the latter is patent. The bronzing consists of a curious slaty, metallic tinge on the skin. The mucous membranes are not discoloured during life. The intestines after death become of a leaden colour from reaction with H_2S. The liver and some other organs are of a very dark brown. The pigment, which contains an extraordinary amount of iron, is found not only in the Malphigian layer of the skin, but also in the heart and other muscles, in the liver and pancreas in large quantities, and above all in the lymphatic glands, so that the liver may contain 1 per cent. of iron and the lymphatic glands 3 per cent. or more. The kidneys may be normal, and the lungs not infrequently show phthisical lesions.

Addison's disease has at first sight some resemblance to this affection, and the two conditions have, it is said, been found together.[1] Yet they clearly are distinct. The pigment in Addison contains no iron, the mucous membranes are discoloured, while the liver and other organs are normal. Still the recent discovery that over-action of the suprarenals or injection of adrenalin can produce glycosuria, especially if the pancreas is excised or diseased, may point to some links between the various symptoms seen in this disease.

Now it seems that in bronzed diabetes at some stages glycosuria may disappear,[2] and, on the other hand, there are a recognized group of cases of cirrhosis combined with a deposit of iron pigment, which do not go on to glycosuria at all. This latter affection has been called "haemochromatosis," and seems hardly distinguishable histologically from bronzed diabetes; Von Recklinghausen in 1889 seems to have included under the name not only (1) bronzed diabetes and (2) cirrhosis with general pigmentation, but also (3) cases of local deposit of iron pigment in various situations. This third group, though important for comparison, appears to be quite distinct, for a local deposit of iron pigment occurs in many diseases without giving rise to other symptoms. Thus it is found in pernicious anaemia, though its situation and the blood changes point to an entirely different process. Maude Abbott has found it after typhoid, ordinary diseases of the liver, and after other complaints. In short, it often follows chronic suppuration or local blood destruction, though not invariably. "Even after extensive transfusion," as she remarks, "there may be little or no pigmentation." Thus effused haemoglobin, unless specially transformed, does not form pigment giving the iron reaction such as we see in bronzed diabetes.

As to the second group, pigmentation with cirrhosis, Maude Abbott has written an exhaustive analysis of a case under Professor Stewart.[3] There was fibrosis of all organs except the kidneys, and marked iron pigmentation, but no glycosuria. In the liver the pigment was scattered, not only through the parenchyma, but also in the connective tissue. Two forms of pigment were found, dark brown or haemosiderin, and light brown or haemofuscin, but she proves that both contain iron, though in a different state of combination. The distribution of the pigment corresponded closely with that seen in our present case, and she comes to the conclusion that some unknown toxin leads not only to a blood destruction, but also to the destruction of the cells whose duty it is to remove the resulting pigment. Without this second lesion no widespread deposit of iron pigment can take place, for in simple internal haemorrhages or experimental injections of blood such a deposit is generally absent.

If Abbott's case and others like it are true instances of bronzed diabetes, does the diabetes come in as a secondary result from the cirrhosis attacking the pancreas? Again, is the cirrhosis a result of the irritation of the pigment, or are the pigment and the cirrhosis both results of some toxin absorbed from the intestine? On one at least of these theories we are brought into close relation with splenic anaemia and Banti's disease, and in some of these and allied affections we find a pigmentation of the skin, as well as cirrhosis. Osler noted 6 instances of this in 15 cases of splenic anaemia.

A great difficulty to my mind is the enormous amount of the pigment which is stored up in the body, although no perceptible haemorrhages have been found and no secondary, or indeed any, form of anaemia has been revealed by the blood counts in these cases, so far as is known. Is it not probable that we have no abnormal blood destruction, but rather the accumulated product of the normal daily mortality of the red cells, which is in some way prevented from elimination by the death of the cells whose duty it is to remove it? Still, the rate of accumulation must be rapid, for the average duration of the disease is under a year. Moreover, the new red cells must then derive their iron from fresh food supplies rather than from the old pigment; but Stockman's work perhaps may be quoted as showing the likelihood of this.

On the whole, then, in bronzed diabetes the chief factor is the loss of power of elimination rather than any abnormal amount of haemolysis. The haemoglobin lies where it falls but undergoes a chemical change and answers more easily to iron tests. It has been debated whether the pigment does actually move from its place of formation. Thus Hanot originally believed that diabetes stimulated the liver cells to increased pigment formation, and that it was scattered from the liver over the whole body. Letulle thought that the pigment was formed elsewhere, and accumulated especially in the dead cells of the cirrhosed liver, while Mossi held that it was formed universally even in the deeper cells of the Malpighian layer, and was not moved from the place where it was formed, and in support of this view it is pointed out by Auscher and Lapicque that the pigment cannot be detected in the blood.

It certainly seems, so far as we have gone, more rational to consider the diabetes as secondary, for if an excess of sugar can cause cirrhosis or pigment it ought to occur commonly in diabetes, especially in severe forms, yet the combination is one of the rarest complications. Moreover, the type of diabetes in this affection is usually a mild one. Even in pancreatic diabetes, where jaundice has appeared, pigmentation does not necessarily follow. This was the case in two instances reported recently by Teleky.[4]

If a toxic cirrhosis of the liver and pancreas is the starting point of both bronzed diabetes and general haemochromatosis, an explanation of both processes may possibly be found in A. C. Croftan's researches.[5] He argues that the pancreas normally produces a ferment akin to or identical with trypsin, that this is taken up by the leucocytes, and that everywhere in the body it carries on the work of breaking up the molecule of sugar. He shows, too, that in a pure solution of sugar or

glycogen it cannot do this, but in the presence of haemoglobin it is able to do so. Under these conditions the haemoglobin is broken up into bile pigment and acids, and the sugar into simpler bodies. Lepine and others had previously shown the presence in blood of some such ferment with glycolytic powers, and this ferment Croftan traces to the white cells and from them to the pancreas, or perhaps more exactly to the secretion of the islands of Langerhans. If the pancreas fails to form the ferment, sugar, from whatever source it comes, is no longer broken up and glycosuria follows; and, on the other hand, haemoglobin is not normally transformed and may give rise to haemochromatin. If the liver at the same time is fairly normal, the pigment is removed and only the symptoms of diabetes result. In bronzed diabetes the cirrhotic liver cannot remove the pigment, which accumulates. In haemochromatosis of Abbott's type the pancreatic disease may not be sufficiently advanced, as Opie thinks, to cause glycosuria, but still much haemoglobin is incompletely transformed and, on account of the advanced liver cirrhosis, is retained in the body. Thus, as the stress of the changes falls on the pancreas or the liver, we get a variation in the symptoms. In other words, we may say that in bronzed diabetes the toxin, causing cirrhosis of the pancreas, leads to an abundant supply of pigment *plus* sugar, while the same toxin affecting the liver prevents the elimination of the pigment; while a less extensive cirrhosis may give either pigmentation only or to glycosuria only. The difficulties which this theory entails must not be minimized, but it does appear to give a possible solution for the various cases. Whether the pigment takes some part in causing the liver cirrhosis or whether this is entirely due to the toxin which starts the first changes is an interesting question. It would be simpler to take the latter view, though arguments from Abbott and Opie are not wanting for the other alternative.

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SPINAL PUNCTURE IN "URAEMIA."

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[Abstract.]

Oedema in acute renal affections develops suddenly, and is universal, afterwards it is influenced less or more by gravitation. Primarily all the tissues of the body are involved, particularly the connective tissue which is present in every structure and organ. The connective tissue in the brain is involved in the general oedema. There is thus produced a condition of increased intracranial overpressure, as the cranium is an undilatable chamber. Increase of tension within the cranium, unless developed extremely slowly, is accompanied by pain. This pain is severe in proportion to the rapidity of development of the pressure. This is true alike of tumour and haemorrhage, and must equally be true where intracranial oedema rapidly occurs. Where intracranial pressure is increased suddenly, as in apoplectic haemorrhages, convulsive movements may occur, accompanied by or followed by unconsciousness, and if the pressure be still greater in degree, respiration may be interfered with and may be brought to a standstill. This is frequently seen in intracranial haemorrhage, whether outside or inside the brain. In renal affections intracranial oedema frequently causes severe pain, convulsions may occur, and coma usually ending in death may also ensue. Convulsions and coma occurring in connexion with albuminuria have very generally been regarded as the effects of uraemic poisoning. I have for some years past been in doubt as to the truth of this poisoning theory.

Should the symptoms of convulsions and coma in renal disease be due to intracranial pressure, that pressure obviously would be lessened by puncture and drainage of the spinal arachnoid space. In the year 1900, and again in the present year of 1903, I had opportunity of practically determining this question. In the first of these years a patient with acute albuminuria and oedema, after severe intracranial pain followed by convulsive attacks repeated during thirty-six hours, had become almost blind, and notwithstanding free perspiration by hot-air baths and pilocarpin he finally became comatose. He had the operation of spinal puncture performed on him at my request in my ward in the Glasgow Royal Infirmary by Dr. Knox, Professor of Clinical Surgery. The spinal fluid fell in drops from the cannula for three-quarters of an hour, when the cannula was withdrawn. In all, about 6 drachms of fluid escaped, the patient being entirely unconscious, no anaesthetic general or local being required. Within four hours the patient began to regain consciousness and his sight to return. He slept a natural sleep during the night, and woke in the morning entirely free from pain or mental dullness or confusion, and with perfect vision. He had no knowledge of anything that had happened for two days previously. No more fits occurred. The urine rapidly increased in amount, the albumen rapidly diminished, the oedema disappeared, and he left the hospital some weeks afterwards with only a trace of albumen present in the urine.

The second case was that of a man in whom albuminuria had quickly developed but with moderate oedema of the surface. In a few days he had become mentally confused, and he was still mentally confused when admitted to my ward in the Royal Infirmary. It was doubtful if he was at all conscious when he came. His urine contained a large amount of albumen. Hot-air baths and pilocarpin produced free perspiration but without benefit to his cerebral state, and thirty-six hours after admission the comatose condition was deep. In Professor Knox's absence Dr. Patrick, Assistant Surgeon to the Royal Infirmary, at my request performed spinal puncture. Again the cerebro-spinal fluid issued in drops. After fully an ounce had escaped the cannula was withdrawn. Again, as in the first case, at the end of about four hours, consciousness began to return. In the night he slept comfortably, by the morning he was entirely rational. The urine rapidly increased, and when he left the hospital there was no trace of albumen. He stated that he recollected being taken out of his house in the country to be conveyed to the Royal Infirmary, but that from the leaving of his house until the evening of the day on which the spinal puncture had been performed his mind had been an absolute blank.

The result of the spinal puncture in these two cases proves, in my opinion, that the pain, the convulsions, and the coma of acute albuminuria are due in many, if not in all, instances to the sudden increase of intracranial pressure, and not to uraemic poisoning of nerve centres. They further prove that this increased intracranial pressure may be, in at least some instances, effectually relieved by spinal puncture, and that uraemic coma is by no means necessarily fatal in its result where puncture and drainage are successfully performed.

THE COMPARATIVE VALUE OF ORAL AND RECTAL TEMPERATURES IN THE STUDY OF PULMONARY TUBERCULOSIS.

By

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In the diagnosis, prognosis and treatment of pulmonary tuberculosis much reliance has been placed on the results of a periodical registration of the temperature.

Unfortunately for long there have been wide differences in the methods employed for taking temperatures. With the springing up of sanatoria in various parts of the country, in which temperatures are taken as one of the important guides in the modern hygienic treatment of these cases, it seems advisable that there should be less divergence in the mode of registration, not only in the interests of the patients themselves, but also for the sake of scientific medicine.

Since comparatively few observations have been published in this country, with the exception of the recent papers by Mr. Braine-Hartnell[1] and Drs. Burton-Fanning and Champion,[2] on the results of a systematic registration and comparison in the same case and at the same time of rectal and oral temperatures, we propose to briefly summarize our recent observations on oral and rectal temperatures, and to indicate what we consider to be their respective advantages and disadvantages.

Our conclusions are based on 17,420 individual observations in 300 different patients, in all stages, and of every variety, of

tuberculous disease of the lungs. It should at once be clearly understood that in many of the statements hitherto made in regard to this matter, sufficient attention has not been drawn to the variations in temperature of the mouth and rectum brought about by varying degrees of exercise.

In a healthy adult, during rest, the rectal temperature is normally a little less than 1° F. higher than the oral.

It is clear that most forms of exercise necessarily entail a certain degree of exposure of the mouth, which of course tends to give a lower thermometric reading than that of the protected rectum. It may here be noticed also that the oral temperature is not infrequently distinctly raised by exercise when such is carried on without undue exposure of the face and mouth to cold air or winds or other influences tending to lower its temperature.

In a healthy adult, in fair training, after exercise the rectal temperature is raised from 2° to 3°. In the case of one of us after an hour's lawn tennis the rectal temperature rose from 99° to 101.4°, whilst at the same time the oral temperature rose from 98.4° to 98.6°. Similar results were obtained on subsequent occasions. It is manifest that in diseased states the normal physiological variation in the temperature as taken in the rectum during exercise and rest must not be overlooked.

In some institutions, we understand, great importance is placed upon the rectal temperature taken during or immediately after exercise, and greater stress is laid upon its importance as a guide than when taken during rest. In such procedure, it seems to us, sufficient allowance is not made for the physiological rise directly dependent upon recent exercise, and not necessarily indicative of any pathological condition.

In the healthy adult this rise is but of short duration, whereas it is claimed that in the tuberculous the elevation is maintained for some time; but, even allowing for this, we are of opinion that, as a general guide to the prognosis and treatment of phthisical cases, the temperature records taken during rest are of greater importance and afford much more reliable indications than does the rapidly altering pyrexia dependent on exercise.

We may here add that at the Mount Vernon Hospital, where our observations have been made, it is customary to depend chiefly on temperatures taken during rest, and at least an hour after exercise; and this plan, from an experience of several years, has been shown to afford what we consider the most satisfactory indication of progress and a reliable guide to exercise and general management of cases.

The Oral Method of Registering Temperature.

The advantages of the oral method are generally recognized to be its simplicity of application, its cleanliness, and that it has for long years been in vogue, and therefore most of the available data respecting tuberculous temperatures are based on readings taken in the mouth.

Whatever method is shown to be the best for phthisis will also be likely to prove most desirable for the registration of "surgical" and other forms of tuberculosis and pyrexial diseases generally if reliable comparisons are to be made.

The chief disadvantage said to be associated with the oral method is that it is unreliable.

It is claimed that exposure of the face in the open, the imbibition of drinks, engaging in conversation, active exercises and the like, lower the temperature of the buccal cavity below that of the body generally. It is, moreover, said that, even with a quick registering thermometer, a considerable time (some say thirty minutes) is required to obtain the maximum record. A consideration of the conditions under which it is customary to take oral temperatures shows that many of the above objections are mainly theoretical. It may be added, however, that reliable "rest" oral temperatures can be obtained with much greater rapidity than during or after exercise, and it must be admitted that under conditions usually associated with the latter some difficulty may be experienced in obtaining trustworthy reading in the mouth.

The Rectal Method of Registering Temperature.

The advantages claimed for the rectal method of recording temperature is that it is more reliable in that it is less susceptible to varying extraneous influences.

In 11.3 per cent. of our observations the rectal reading maintained a more regular range than the oral, and, taken into consideration with the condition of the patient, was considered to afford the most reliable guide to management.

In 1.3 per cent. of the cases the rectal temperature was constantly 1° to 2° above the oral record.

The disadvantages of the rectal method, particularly when taken after exercise, have been already alluded to. Whilst some patients do at first object to this procedure, any aesthetic objection may generally be readily overcome by a tactful physician if the advantages can be shown to be sufficiently real.

A reference to our observations may here be made as indicating the relative value of oral and rectal temperature. In 45 per cent. of our cases the rectal temperature closely corresponded with the oral, but being from 0.4° to 1° F. higher.

In 38 per cent. of our cases the rectal temperature bore no constant relation to the oral, being sometimes higher and frequently lower. Most of these cases were afebrile or had only a slight degree of pyrexia; and here it may be added that, generally speaking, the discrepancies between oral and rectal temperature have been most apparent in patients with a comparatively slight degree of pyrexia, whilst, on the other hand, the oral and rectal have more closely corresponded when a conspicuous and persistent degree of pyrexia has existed.

In 4.3 per cent. of our cases the rectal temperature appeared to be very misleading, being constantly below the oral. Thus in one case of extensive laryngeal ulceration and miliary outbreak in the lungs the rectal temperature was almost constantly 2° below the oral. The remaining cases in this group were also active, and the rectal temperature remained constantly below the oral in each case for four weeks.

Conclusions.

1. Temperatures carefully taken in the mouth during rest form a reliable guide in the management of phthisical cases under conditions of sanatorium life.

2. Temperatures taken in the mouth during or shortly after exercise cannot be considered trustworthy unless registered with such precautions as militate against their general practical applicability.

3. Temperatures taken in the rectum during rest generally speaking register higher than in the mouth, but do not otherwise usually afford any special assistance in the management of phthisical cases.

4. Temperatures taken in the rectum during or shortly after exercise in both healthy and phthisical subjects register a temperature considerably higher than that in the mouth, and whilst in the non-tuberculous the return to normal is more rapid than in the tuberculous, no special direct advantage for the phthisical appears specially to accrue from this method.

5. For practical purposes in the management of phthisical cases undergoing so-called sanatorium treatment the registration of temperature by the oral method when taken during rest and with due care affords reliable guidance.

References.

[1] J. C. Braine-Hartnell: On the Value of Rectal Temperature in Pulmonary Tuberculosis. *Transactions of the British Congress on Tuberculosis*, vol. iii. p. 299. 1902. [2] F. W. Burton-Fanning and S. Gurney Champion: The Comparative Value of the Mouth, the Rectum, the Urine, the Axilla, and the Groin for the Observation of the Temperature. *Lancet*, March 28th, 1903.

THE MINERAL WATER OF LLANGAMMARCH WELLS.

By W. Black Jones, M.D., B.S.Lond., D.P.H.,

Physician, Llangammarch Wells Spa.

Llangammarch Wells is situated in the northern portion of Breconshire, on the Central Wales Branch of the London and North-Western Railway. The village is about 560 ft. above ordnance datum, and lies on the banks of the Irfon, a tributary of the Wye. The valley, surrounded for many miles by an extensive tract of moorland, is bounded on the south by the Eppynt Mountain, which attains an altitude of over 1,600 ft.

The table on p. 1056 contains a summary of the meteorological statistics published in the report of the Registrar-General for the years 1897 to 1902. The mean of the annual results is given, also the mean for the season, May to September.

During the summer months the mean maximum temperature is usually several degrees lower than that of London, a circumstance which is of assistance in the treatment of cardiac and other diseases. The prevailing winds are from the south-west.

—	Temperature of Air.		Humidity (Per Cent.)	Rainfall (Inches).	Rainy Days.
	Minimum	Maximum			
Annual ...	39.4	55.6	79	45.18	205
Season ...	45.7	65.0	77	14.14	74

The mineral spring, which was accidentally discovered in the year 1832, is situated nearly a mile east of the village near the Lake Hotel and close to the Irfon.

The following analysis, which was made by the *Lancet* in 1894, closely agrees with that made by Dr. Dupré in 1883, the former results, however, showed for the first time presence of the chlorides of lithium and ammonium. The analysis is expressed in grains per gallon:

Chloride of sodium	186.200
Chloride of calcium	85.160
Chloride of magnesium	20.100
Chloride of barium	6.749
Chloride of lithium	0.847
Chloride of ammonium	0.262
Alumina and silica	3.340
Bromine as bromide	Distinct traces.
Total mineral matters	302.658

The temperature of freshly drawn water is about 50° F.; it is neutral to test paper and contains practically no carbonic acid in solution.

The presence of barium in a soluble form in a mineral water is exceptional; there is much evidence to show that it is a cardiac tonic, its action of muscle being similar to that of veratrin. Sir Lauder Brunton has shown that it, together with the calcium, has the power of slowing and also increasing the contractions of involuntary as well as voluntary muscular fibre. "This," he remarks, "comes to be important, as we shall find out when we consider the action of drugs upon organs consisting of involuntary muscular fibre, such as the heart." In examining the therapeutical value of this water, it will be first considered when taken internally.

It has a marked diuretic effect—far more so, in fact, than can be accounted for by drinking a similar amount of distilled water. Having closely observed the effect on a number of patients (the details of which I have previously recorded),[1] I find that on the average the increased diuresis amounts to from 40 to 50 per cent.—in one case it reached 100 per cent.

In the cases of several patients who were suffering from the uric-acid diathesis I made, by means of Hopkins's method, quantitative estimations of the amount of that acid as excreted in the urine. My results showed, after the patient had been taking the water for a few days, that there was a decided increase in the output of this substance—in several cases from 30 to 50 per cent. In one case, however, the increase was 165 per cent.

In connexion with this subject it will be remembered that there is a small quantity of lithium in solution in this water. As an illustration of the further action of this water on uric acid, the cases of two persons who passed uric-acid calculi while under treatment may be cited.

In the first case, a man, who had suffered from renal calculus for ten years and had taken Contrexéville water without relief, drank the Llangammarch water for some months, and all his symptoms completely disappeared. In the other case there was very free diuresis, and after a week's treatment a small renal calculus, which had previously been unsuspected, was passed.

This action on uric acid is most encouraging and indicates a wide range in the usefulness of this water. In albuminuria, whether due to renal or cardiac disease, there is generally a decrease in the amount of albumen passed, in a few mild cases, it has entirely disappeared after a short course of treatment.

The effect of the water on patients suffering from chronic gout and rheumatism is frequently at first to increase the pain, but after a week or ten days the symptoms subside and there is also an increased mobility of the affected joints.

The following case of sciatica in a man, aged 37, may be noted. A course of water, baths, and massage was prescribed and after a few days' treatment he completely lost the pain from which he had been suffering for six weeks.

With regard to the action on the bowels, in the majority of cases there is no apparent effect, but occasionally it acts as a mild laxative.

In a few cases of enlarged prostate that have come under my notice, although there has been an increase in the amount of urine passed, there has been a considerable decrease in the painful symptoms.

It is rarely that cases of tuberculous glands are sent to Llangammarch Wells, but in one patient, a boy of 12 years of age, who had large suppurating glands on both sides of the neck and caries of the metatarsal region of the right foot, there was great improvement in the condition of the neck after several months' course of water, the foot in the meantime having healed.

Mineral water baths are administered to a large number of patients who visit Llangammarch, the water being heated to 95° F. The effect of immersion on the circulation resembles very closely the action of the effervescing baths of Nauheim. The pulse-rate is usually diminished a few beats while the patient is in the bath; a further decrease is generally found upon examination half an hour or so afterwards; occasionally this condition lasts for some hours. This may be illustrated by the case of a man who consulted me six years ago:

He was 34 years of age and the subject of aortic and mitral disease. The apex beat was in the sixth interspace in the nipple line, the cardiac dullness being increased to a corresponding extent. At the apex a double murmur was heard, the systolic being conducted outwards and the diastolic upwards towards the carotids, which pulsated visibly. The pulse was 78, regular, and of somewhat increased tension. The urine was normal. During a month's treatment he made marked progress; the pulsation in the neck, which had caused him continual annoyance, was hardly noticed by him—in fact, he stated that he felt at times that he had no cardiac symptoms at all.

The following details give the mean results of observations of the pulse for twelve consecutive baths. After resting for half an hour on a couch the mean pulse-rate was 74.5, immediately before getting out of the bath it was 72.3, and after resting for a further half hour it was 67.5. In several instances the diminished pulse-rate continued for several hours. The patient is now in fairly good health.

Not only is there a diminution in the pulse-rate, but the volume and tension are increased. It will be noted that these effects of the bath closely resemble the action of digitalis and strophanthus.

It will be observed that the above results are similar to those obtained in the carbonated baths of Nauheim, which can be imitated to a considerable extent by effervescing baths artificially prepared. In my experience, however, the natural water of Llangammarch gives, on the whole, better results than an artificially prepared bath.

Patients suffering from cardiac pain, especially in cases due to angina pectoris, experience marked relief upon immersion. The dyspnoea which so frequently occurs in all kinds of cardiac disease is usually relieved to a considerable extent. Pain in another class of disease is also considerably alleviated—namely, in cases of gout, rheumatism, sciatica, and osteo-arthritis.

The mineral water is administered internally as follows: One or two tumblers of the capacity of about 10 oz. are taken about an hour before breakfast, the patient sipping the water slowly, and taking a short walk after each glass. Another glass is taken about 11 or 12 noon, and the last in the afternoon. Should the water cause symptoms of dyspepsia, it is taken hot, and then rarely causes any digestive trouble.

The baths are usually administered about every other day, on the intervening day frequently massage or resistance exercises are prescribed. The patient is directed to rest on a couch for half an hour before and after the bath. The temperature of the first bath is usually 95° F., this is gradually reduced at each successive bath to 90° or 88° F. The patient is immersed from five to ten minutes at first; this period is increased after a few baths to fifteen minutes.

The following classes of cardiac cases usually do well at Llangammarch: Mitral and aortic disease, cases of dilatation and hypertrophy, irritable heart, especially that following influenza, also angina pectoris.

The treatment adopted is a modification of the Nauheim system. Generally it consists of from four to six weeks' course of drinking the water, baths, resistance exercises, or massage and graduated hill climbing. The latter I have found to be a valuable adjunct to treatment, as Llangammarch is very favourably situated owing to the hills which surround the valley, affording not only pretty views on all sides, but a particularly bracing air which is one of the special features of the district.

Patients usually state that they sleep much better at Llangammarch than elsewhere. This is not only a great advantage in the treatment of cardiac cases, but also is of great benefit to many patients suffering from neurasthenia, especially in those due to the remote effects of influenza. The diet is carefully regulated and plain living adopted.

The following case of dilated heart may be of interest:

A somewhat stout man, aged 63, consulted me in July, 1901. On examining the heart, it was found that the apex beat was not palpable, the cardiac dullness was increased, and the heart sounds were very feeble, no murmur being audible. The pulse was 80, of increased tension, irregular, and intermittent. The liver was felt 1 in. below the costal arch, and was tender on palpation. The abdomen was distended with fat and flatus. There was no albumen in the urine. The weight was a little over 12 st. He suffered considerably from dyspnoea and from flatulent distension of the stomach. After a month's treatment the pulse became more regular, there was less dyspnoea, the flatulence was much relieved, and he slept better. When seen again in October of the following year the patient's condition showed continued improvement, he was physically stronger, he had less dyspnoea, and his digestion gave him less trouble. He had lost 2 st. in weight.

In another case a man, aged 56, who consulted me in July, 1902, suffered from hypertrophy with arrhythmia. He was very neurotic and excitable and had formerly had symptoms of Graves's disease, which, however, had subsided. The apex beat was in the nipple line, the cardiac dullness was increased, but no murmur was discovered. The pulse was somewhat irregular, varying from 90 to 100 beats per minute, the tension being increased. He was a well-built man, but not capable of taking much exercise. After three weeks' treatment his pulse became more regular, he was able to take more exercise, and was much less excitable. He had a slight relapse after returning home, and came for further treatment in September, 1902, and again in May of this year. He made marked progress, his circulation became nearer normal, his muscular and nervous system showed signs of decided improvement, and he was able to ascend the Eppynt Mountain to a height of about 1,000 ft. above the Lake Hotel, without experiencing any inconvenience.

Speaking generally the results obtained indicate in the action of the heart an increased force of systole, a prolonged diastole, a relief of dyspnoea and pain, an improved muscular tone of the body generally, a better digestive power and appetite, more regular action of the bowels, and in many cases improved rest at night.

It will be observed that Llangammarch, in addition to the treatment of cardiac disease, is well suited for the treatment of cases of gout, chronic rheumatism, lithaemia, calculi, gastric catarrh, and neurasthenia.

REFERENCE.
[1] *Lancet*, June 30th, 1900.

SUBSECTION OF ELECTRO-THERAPEUTICS.

DISCUSSION ON THE RESULTS OF TREATMENT OF MALIGNANT DISEASE BY ELECTRICAL METHODS.

I.—LEWIS JONES, M.D.,
Medical Officer in Charge of the Electrical Department, St. Bartholomew's Hospital.

DR. LEWIS JONES said: It gives me great pleasure to open the proceedings of this Subsection, because I am sure we all feel that the occasion is one of note in the history of medical electricity in this country. The establishment of a Subsection of Electro-therapeutics under the auspices of the British Medical Association marks a stage in the advance of the subject in public interest, and is a source of gratification, I feel sure, to all who have the interests of medical electricity at heart and to all those whose patient work for years past has helped to lay a firm foundation for the superstructure of the future. I trust that this gathering may be the first of a long unbroken succession of meetings at which the inevitable advances of the science of electricity, with their equally inevitable applications to medical science, may be described and criticized, to receive judgment in accordance with their deserts.

The subject which is down for our consideration to-day is one of the highest importance. All over the civilized world just now men's minds are being turned with fresh energy towards the object of finding some means which can be used to check the advances of that group of diseases which we know as malignant diseases. There is a feeling that in some way or other a cure might be found in spite of all the failures of the past. In particular the newer discoveries of science are being examined by medical men. Wherever any fresh fact seems to offer a clue the path it indicates is being followed up minutely. Medical men have always shown themselves ready to make practical application of the discoveries of science. Take, for instance, the application of *x* rays. The progress in this section has been almost purely a medical matter.

It is the medical profession which has provided the stimulus for the elaboration of *x*-ray machinery, and has accounted for the astonishing development of Professor Roentgen's discovery. So, too, with the alternating current supplied in towns for electric lighting. No sooner was this type of current supply rendered available than its therapeutic possibilities were being examined and applied by medical men, with the result that it is now a thoroughly well recognized method of medical treatment, and filling its own proper corner in the field of electro-therapeutics. So also with the high-frequency group of phenomena, with the phenomena of condenser discharges, as in the Leslie Miller lamp, and the phenomena of radio-activity, that newest development of chemical science.

The grievous nature of cancer and the distress of mind from which its victims suffer make it a subject which must be discussed without enthusiasm. The discredit which has attached to the cancer-curing impostors of the past will deservedly be ours unless we are particularly careful to keep rigidly within the bounds of observed facts. In a semi-public assembly like the present one we must be excessively careful to avoid anything like over-statement of the case. The line which I believe we can most advantageously follow to-day will be that of the relation of cases, and the discussion of practical points, such as the best kind of tube, the best time of exposure, the number of applications found most suitable, and so on.

First let us examine the observed facts upon which there is now a general agreement of opinion among *x*-ray workers—namely, that (1) in rodent ulcer a satisfactory cure may often be observed; (2) that healing of an ulcerated cancerous surface has been observed in a certain proportion of cases; (3) that relief of pains in cancerous parts is a fairly common experience; (4) that superficial nodules, undoubtedly cancerous in nature, will sometimes decrease notably in size under *x*-ray treatment. This is the groundwork upon which we hope to be able to build, but the edifice is not yet built, nor do we even know whether we shall ever advance much further.

Having reached our present position, we are searching—I might say, we are groping in the dark—for a fresh clue to enable us to progress another stage. What direction shall we take? Shall we use hard tubes, soft tubes, or medium tubes? Shall we operate our tubes with the anticathode red hot or cool? Shall we have the tube close to the part or remote? Do we desire a reaction of dermatitis, or do we need to avoid it carefully? No one knows, though some of us have opinions. Only a sifting of cases and a comparison of results will in time teach us whether these points matter or not. If we have no successes to relate, let us relate our failures and try to learn from them.

The successful treatment of rodent ulcer by *x* rays is now sufficiently established for us to leave it on one side at present. I do not mean that there is no more to learn about this particular disease, but that the points not yet worked out are such as may be left for the present to individual investigators. I would suggest, therefore, that to-day we should limit our remarks to cases of undoubted sarcoma or carcinoma. If it were possible to do so, we would choose to begin in the case of carcinoma with simple superficial epithelioma, as, for example, epithelioma of the lip in its earliest stages. If in such cases it could be satisfactorily established that a complete disappearance of the growth followed the treatment, it would be reasonable to advance to the more difficult problems of deeper growths.

Unfortunately these are just the cases we cannot as yet obtain. Naturally the surgeon who feels that an immediate cure can be secured by a prompt operation is reluctant to run the risk of sacrificing his patient's chances by any procedure which involves delay. His attitude is not likely to change until it can be shown that the results of *x*-ray treatment are as good as those now obtained by excision. That is the position of affairs to-day, and the only material which is available for the study of the effect of *x* rays upon malignant disease is among cases which are too extensive or too deeply seated for the surgeon to be able to touch them. Naturally this complicates matters a good deal and adds very greatly to the difficulties of the position.

In spite of these difficulties, cases have been recorded which

show that the progress of epithelioma can be profoundly influenced by *x*-ray applications. Even if we pass over partial successes and consider only such as are complete, we find some satisfactory evidence to support us. Macintyre,[1] of Glasgow, has recorded a case of epithelioma which filled the nasal cavity. Eight months later the whole neoplasm had disappeared under the *x*-ray treatment. The diagnosis of the case was confirmed by microscopical examination.

In looking through the published records of *x* rays in cancer one cannot help feeling surprised to find how few of the alleged successful cases have been so recorded as to carry to those who read them a reasonable conviction of success, and this, too, in spite of the fact that numbers of people are working at this subject, and scores, if not hundreds, of cases have been treated. Half a dozen cases of unmistakeable cure of undoubted cancer, if minutely reported, would be worth more just now than any number of vague statements about partial improvement, favourable effects, and the like. The more one examines the published cases the more suspicious one becomes. In most of them there is some flaw in the evidence. Either the diagnosis is uncertain or the patient is not more than partially relieved at the time of writing, or he has been so unfortunate as to die of some intercurrent disease. It is greatly to be wished that all medical men who have recorded favourable cases will periodically supply further notes of the later progress of their patients. In short, while there is a quantity of evidence to support the contention that *x* rays act beneficially in malignant disease, the amount of evidence to show that cures have resulted is lamentably meagre. What can be the explanation of this? Here is an agent which very commonly gives relief to some of the symptoms produced by a malignant growth, and yet fails to give as much relief as is really required. Is it because of some defect in our technique, or is it because the cases subjected to *x*-ray treatment are ill-chosen, or, finally, is it from some inherent defect of the method of a fundamental kind? This is the crux of the situation:

First, as to technique. Have we yet to discover that some tubes only emit the right kind of *x* ray? Have we to use our tubes differently, or do we fail simply from insufficient perseverance? The nature of the tube, the degree of penetration of the rays which it gives off, the proximity of tube to the affected part, the production of a reaction or not, are all points on which further knowledge is wanted. Already there is a divergence of opinion as to the need for a dermatitis or not, for while some observers think the good effect is in proportion to the amount of dermatitis, others hold a quite opposite view.

Secondly, as to the selection of cases. Most of us will agree that the cases hitherto submitted for *x*-ray treatment have been of the most unpromising character. Most, if not all of them, have been of a kind which were already too advanced to be other than practically hopeless from the first; and whereas the failure has usually been from reappearance of disease in a vital organ remote from its original seat, the *x*-ray applications have so far justified their employment by improvements at the place to which they were applied.

Thirdly, as to inherent defects in the *x*-ray method. It may be that all our efforts will be in vain because of this. But until the method has been tried on simple cases at an early stage we cannot abandon our attempts. In my opinion the proper course to adopt would be to start *x*-ray treatment as soon as possible after the removal of the tumour by the surgeon, and not to wait until recurrences have seriously spoiled the chances of success. Further, I would avoid all masking of the surrounding parts by impervious screens for fear lest the screens should shield some foci of disease. It is probable that the use of lead screens has contributed a good deal to the failures of the past.

Fourthly, I would use a medium tube, and would prefer to operate it with a hot anticathode. I would avoid dermatitis by arranging the exposures suitably, and I would continue the treatment, with occasional breaks, for three, four, or five months.

In conclusion, it is necessary to speak of other proposed electrical methods, namely, the high-frequency method, and the use of the statical machine. Both of these have been tried, and both have had some slight success to show. In both methods there is a common factor, namely, the presence of cathode rays, and it seems to me possible that these may require further examination. Curiously enough, radium has lately been tried for the relief of cancer, and cases of its favourable action have been mentioned.

The rays emitted by radium are of two kinds—one apparently identical with *x* rays, and one with cathode rays, and it may be that the combination of cathode rays with *x* rays has some special advantage. If this should turn out to be the case we may perhaps have recourse to the tubes used by Lenard in his investigations into cathode rays, in which the cathodal bombardment projected against an aluminium window of the tube gave rise to manifestations of cathode rays in the air outside the window. Such tubes could be made without difficulty.

We have a laborious piece of work before us; we do not know whether success can be attained or not; but, at any rate, we must give the subject the closest scrutiny, and above all, we must try not to deceive ourselves.

[1] British Medical Journal, June 6th, 1903.

II.—J. Hall-Edwards, L.R.C.P.,

Radiographer, Birmingham General Hospital.

Mr. Hall-Edwards said that his experience in the electrical treatment of malignant disease had been mainly limited to the use of the *x* rays. Since the discussion upon this subject at last year's meeting at Manchester some progress had been made. He then said that he should not feel justified in undertaking the *x*-ray treatment of any case of epithelioma which could be excised, except at a very early stage, when a few days' delay would make very little difference either way. A year's experience had rendered him more confident, and he should now have no hesitation in treating any case in which there was no implication of contiguous glands. Mr. Hall-Edwards referred to several cases, one of epithelioma of the nose, which showed but little tendency to improve until potassium iodide was administered, when the disease entirely disappeared within a few days. The cure of the disease was undoubtedly brought about by the *x* rays, and it was subsequently found that some months previous to the commencement of *x*-ray treatment potassium iodide had been administered for a considerable length of time without effect. There could be little doubt that very frequently a mixture of diseases was present, and general treatment combined with the application of the rays, was indicated. In a case of cancer of the rectum which had greatly improved under *x*-ray treatment, an eminent specialist had said that the patient could not live three months. She was now living in comparative comfort after two years' treatment. The case was not cured, but was much relieved. In some cases of internal cancer the application of the rays did decided harm, and the patients died from rapid toxaemia. It had been suggested that after the rays had been used for a certain length of time, the growth should be cut down upon and drained, so that the products of disintegration might escape instead of being absorbed. As to the technique, he agreed with the President that a fairly high tube with a heated anticathode yielded the best results, but on occasion he had found a soft tube, carefully used, of the greatest possible service. He was of opinion that increased knowledge would enable them to produce still better results.

III.—Chisholm Williams, F.R.C.S.Edin.,

Electrotherapeutist, West London Hospital.

Mr. Chisholm Williams considered that in all cases of recurrent growths general treatment should not be neglected. In his opinion the best form of general treatment was by means of high-frequency electrical currents which besides acting as a general tonic to the system, might possibly play some part in overcoming that occasional septic condition, mentioned by the previous speaker. Locally he used a special high-vacuum electrode attached to the top of the high-frequency resonator which when placed over the growth emitted a powerful supply of *x* rays and other electrical discharges; he found this more effective than the ordinary form of *x*-ray tube, as the rays could be brought in actual contact with the affected part, and, being so much under control, extensive dermatitis could be readily prevented. Up to the present relief of pain and offensive discharge, if present, was practically all they could expect. Rodent ulcer could be completely and rapidly cured by *x* rays or by high-frequency currents in the manner already indicated.

IV.—V. H. Rutherford, M.B.,

Physician, Newcastle-on-Tyne Hospital.

Dr. Rutherford spoke regarding the duration of good results in the treatment of rodent ulcer by *x* rays. In a miner with a shallow ulcer the size of a five-shilling piece on the fore-

head, he succeeded in obtaining an excellent result after thirteen exposures of ten minutes each. About six months later the ulceration returned after a blow with a stick, but healed up satisfactorily after ten exposures. In a sailor with a deeper ulcer on the right side of the nose the cavity filled up and a good scar was obtained after sixty exposures, but in two months' time the man returned (giving a history of poulticing for some inflammation of the eye) with the ulcer as bad as before treatment. Forty further exposures failed to bring about good results, and then the patient went to sea. The best result he had achieved was in a woman, aged 67, in whom a rodent ulcer on the nose healed after about fifty sittings, and in whom the result was maintained two years.

V.—C. H. Allfrey, M.D.,
Assistant Physician, East Sussex Hospital.

Dr. Allfrey suggested that the internal administration of potassium iodide should accompany *x*-ray treatment: more especially of internal parts, so that any débris caused by the rays might be more effectually absorbed. He observed that as there might be several factors in the causation of disease, so there might be more factors than one necessary for a cure.

VI.—H. B. Manders, M.D.,
London.

Dr. Manders remarked on five cases of cancer treated by him with high-frequency currents, four had died, but with great relief to pain and fetor of discharges. The fifth case of "malignant disease of omentum" was still alive, and the disease seemed to be kept in check by the treatment. Dr. Manders advocated a blue coloured glass-vacuum electrode, and expressed the opinion that cobalt glass was the best owing to the spectrum of cobalt being very rich in ultra-violet rays. He also spoke highly of general treatment by the high-frequency currents.

VII.—Lovell Drage, M.D.,
Hatfield.

Dr. Drage referred to his belief that success in the treatment of cancer would be obtained by a combination of electrical treatment with some form of treatment such as the subcutaneous injection of a 10 per cent. glycerine solution of sodium cinnamate, which produced a considerable leucocytosis. The results which he had obtained from the use of this drug appeared to persist, but with large masses the drug did not appear to be sufficiently active, and it appeared that something must be added if success was to be obtained. Other drugs nearly allied to cinnamic acid were being worked at, and there was some hope that before another year a more active drug than the cinnamate would be obtained.

VIII.—W. Kenneth Wills, M.B., B.C.Camb.,
Clifton.

Dr. Wills said: The question of leucocytosis is one of extreme importance in association with *x*-ray treatment. By this we should be able to tell whether a patient is likely to prove successful or not under the rays. This may prove also of importance in connexion with Dr. Drage's remarks on the value of sodium cinnamate, which produces a leucocytosis. The combination of drugs which will produce leucocytosis in association with *x*-ray treatment, leading to much more successful results with the rays in otherwise intractable cases, may be of the utmost importance. The *x* rays may have some action upon the chemical combinations taking place in the body, and more knowledge is required in the department of the action of the rays upon chemical action. Drugs taken at the same time as the *x*-ray treatment is administered may have a very different action than when taken alone. This may be the answer to the question raised by Mr. Hall-Edwards as to how his patient with epithelioma improved after *x*-ray treatment when potassium iodide was administered. My experience is short and small with regard to carcinoma and *x* rays. Only four cases have come under my notice. Two of these I inherited from my predecessor, Mr. C. H. Walker, at the Bristol General Hospital. These were recurrent nodules after operation for carcinoma of the breast. One is apparently quite well after some months of *x*-ray treatment; the second has one nodule only remaining, otherwise is well; the third, without operation, extensive carcinoma mammae, with internal secondary deposits, was relieved of agonizing pain in the right arm, but died; the fourth is still under treatment, but seems to be receiving benefit.

IX.—Preston King, M.D.,
Path.

Dr. King mentioned some cases of cure in rodent ulcer from the use of the *x* rays. He thought the frequency of the sittings was not important, but that a certain number, differing in different cases, of application was necessary. He used the therapeutic tube in actual contact with the skin.

A DISCUSSION ON THE TREATMENT OF TUBERCULOUS DISEASE BY ELECTRICAL METHODS.

I.—Chisholm Williams, F.R.C.S.Ed., etc.,
Electro-therapeutist, West London Hospital.

Mr. Chisholm Williams said: The treatment of tuberculosis by electrical methods may be conveniently divided into two parts—one in which we aim at a general electrification of the body cells, etc., and the other by more direct application of electricity to the superficial manifestations of this disease. In many cases it is of great advantage to use that form of electrical treatment which will affect the general as well as the local condition of the patient. Unfortunately for us, the literature on the subject of the use of general electricity in tuberculosis is meagre in the extreme, probably owing to the use by the majority of workers in the past of the almost obsolete static machine. In the latest edition of *Medical Electricity* (Lewis Jones) we find no record of general tuberculosis being treated, but find that the static breeze is of use in certain non-tuberculosis skin diseases, and also that general electrification produces an invigorating effect in general conditions. We are tempted to ask, Might not this latter be of some use in such a condition as pulmonary tuberculosis?

In *Therapeutic Electricity* Hedley makes no mention of any of the older methods as having been thoroughly tried in general tuberculosis, but considers the electric bath one of the best methods of general electrification. Gautier and Larat have obtained good results in "strumous" conditions and diseases due to failure or perversion of nutrition with the alternating dynamo-current bath.

In *Electrotherapy* Jacoby (America) dismisses the whole subject of the influence of static breeze, static insulation, direct and indirect spark, faradic stimulation of the diaphragm and galvanization of the sympathetic, in the following words: "Other methods of suggestion are preferable"; and again, "personally, I have no experience in the treatment of tuberculosis by means of electricity."

But we have at our disposal another method of treatment, namely, by electrical currents of high frequency and high potential; this, although introduced to our profession from abroad, nevertheless merits our unbiassed consideration. At the annual meeting of the Association at Cheltenham in 1901 I read a paper on a series of forty-three cases of pulmonary tuberculosis treated by high-frequency currents, and very briefly my experience was as follows: The patient increased his weight, with increase of appetite and digestive power. The temperature was for the time raised according to the length of sittings and the strength of the currents. The night sweats were at first somewhat increased, but later disappeared. The tubercle bacilli, which are usually present in fair numbers, quickly begin to increase, and after a few applications are greatly increased; they soon, however, form clumps and get misshapen, short and stumpy, and generally curved, and take the stain far more readily than before. After a time they begin to decrease in numbers, and later, when the patient is obviously getting better in every respect, they may cease entirely, and may reappear in the sputum after weeks of absence.

The physical signs generally persist for a considerable time after the patient has regained his normal weight (for height) and all other signs and symptoms are absent or in abeyance. The consistence of the sputum is interesting. At first, besides tubercle, we get very quickly after the application of the high-frequency currents, lung tissue and a few blood cells, both of which may greatly increase, the former showing the alveolar arrangement, and the latter may be in great numbers, producing the typical "rusty" sputum of pneumonia; pus is often found; later the sputum clears, leaving only a few bacilli and mucus. In eight cases I have noted semi-calcareous nodules expectorated. The sputum, which at first is generally muco-purulent and may be offensive, loses its offensiveness and becomes less coloured. Generally in the course, during a varying time extending from a few weeks to

a month or more, it is very heavy and sinks. As the patient progresses it becomes lighter in weight and whiter in colour, far more serous and easy to "get out." Tuberculous laryngitis seems to be particularly amenable to the effect of the high-frequency currents, as do tuberculous skin affections, lupus, etc.

The diarrhoea which I met with in the majority of my cases was, seemingly, easily corrected by the treatment, probably by the digestion improving, the intestines being less worried by the irritating waste products.

When the temperature has been raised by the treatment, the patient, of course, may feel rather worse, that is lassitude, and the sweats on the fall of the fever are sometimes large in amount; also that during this period the body weight may decrease, or at all events, remain stationary. I found this in many cases where the fever increased, and in spite of the patient taking presumably a much more nutritious diet, still a slight weekly loss was observed. Some cases will react to the influence of the high-frequency currents within 24 hours; others may take a few days. The more severe the case, the more quickly does the reaction take place. However much the temperature rises, it will generally be found down to, or below, the patient's usual normal within 48 hours. So that the dose can be readily regulated and the patient only given as much as he can comfortably bear. When a patient can be exposed to the currents for over half an hour daily for one week, and it is found that during the whole period the temperature remains steady at normal and subnormal, we may safely predict that the disease is, to say the least of it, arrested.

I was led to treat those cases by the experiments of Drs. Lagriffoul and Denoyes, of the Montpellier Faculty of Medicine, who have published a further series of experiments on the action of high-frequency currents on tuberculous guinea-pigs, and have proved that an actual inflammation is produced around the pulmonary foci, and that finally this abates and leaves the lung clear of the bacilli. M. Dimitriewski, of the University of Tomsk, has been working with various toxins with a like result, the toxins losing their power and becoming innocuous. The tubercle bacilli seem to pursue the same course as if they were under the *x* rays. According to the experiments of Dr. Forbes Ross and Dr. Norris Wolfenden the bacilli rapidly increase in numbers, and have a tendency to form clumps, then get small in number and shape, and take the microscopical stains very readily, but are pale in colour. They are attenuated by overgrowth. Of my original 43 consecutive cases 3 have died, their certificates being pneumonia, tuberculous kidney, and lardaceous disease.

One may hope the time is not far distant when those who are working in this direction will publish their results. Many sanatoria are now fitted up with efficient apparatus. May I be permitted to remark that electrical methods should not be condemned until great perseverance has been given on the part of the observer, and that the greatest care be taken that the apparatus be of the most powerful description?

In tuberculosis of other parts, joints, etc., many electrical methods have been used, but in my hands the best results have been obtained by general electrification combined with a high-vacuum electrode from the resonator, or the ordinary *x*-ray discharge. Cases of old-standing tuberculous lesions are very amenable to electrical treatment.

The following notes are from a case under the care of Mr. McAdam Eccles, and reported by him in the *West London Medical Journal*, April, 1903. I will only give a brief extract:

Male, aged 37. Renal tuberculosis. Operation, December, 1900; sinus followed in loin. April, 1901: Sinus thoroughly scraped out, but refused to heal. November, 1901: Whole kidney, which was tuberculous in nature, removed; three sinuses persisted. September, 1902: Small nodule noticed in left epididymis. December 13th, 1902: Patient was sent to me for high-frequency treatment, locally by means of high-vacuum glass electrodes, and generally auto-condensation. January 26th, 1903: A right hydrocele formed very quickly; this gradually subsided, leaving a tuberculous testis. In March it was removed with the left epididymis. The loin sinuses had healed.

It would be interesting to know if the electricity had any part in the formation of the right tuberculous testis by developing so quickly a dormant spot. In many tuberculous cases where sinuses persist after operation electricity in a perfectly painless manner is able to promote healing in a very peculiar way.

We now pass to the consideration of the several methods of treatment in the local manifestation of this disease—lupus. The oldest method is undoubtedly the Finsen, with the details of which you are all familiar. It is stated to be effective in 95 per cent. of all lupus cases, but that it is superior to other forms of light treatment is quickly losing support. Let me quote the remarks of Malcolm Morris and Ernest Dore in a paper in the British Medical Journal of February 9th, 1901, p. 329: "The advantages of the method may be briefly summed up as follows—reliability, painlessness, excellent cosmetic effects. The disadvantages are the small area treated, the long time required, and the expense." Regarding these statements, the reliability is no greater than the *x* rays or other electrical rays. Painlessness: In 53 cases who had Finsen treatment I had a history of pain more or less severe in 42. Some complained of pain at the time of application due to the pressure of the compression, others of a reactionary pain coming on some hours after; this is, of course, common to all electrical treatments. The cosmetic effects, the beautiful, smooth, pale scars, are also no better than those produced by other methods. Does not the resulting scar depend on (1) the original depth of the disease: (2) the amount of inflammatory reaction produced by electrical treatment; and (3) the application of such caustic applications as pure carbolic or pyrogallic acid; and (4) the forcible removal of crusts? Of the disadvantages the smallness of area is one of the chief, and is obviated in other electrical measures. The length of exposure, which may vary anything from weeks to a year or more, and in duration upwards of one hour each application, is tedious to patient and trying to operator; necessarily the expensiveness of this form of treatment is great. The numerous forms of ultra-violet-ray lamps are on the whole somewhat inferior to the original ones. The Finsen-Reyn lamp appears to be slightly more effective and cheaper than the older designs.

Treatment by means of *x* rays: Here we have an agent that we know will penetrate the tissues no matter how deep, and thus we are able to do away with one drawback of Finsen treatment, namely, the compressor, which has to be used to render the parts bloodless. Contrasting it with other forms of light, we find it as reliable as any other, absolutely the most painless of all methods applied locally, the cosmetic effects are indeed beautiful. Might I here venture to remark again that the after-appearance of a scar depends on the depth of the initial disease and the carefulness or otherwise of the treatment it has undergone? Generally speaking, a superficial lupus patch over a muscular part will give a supple scar, whilst a deep patch over bone will give a dense cicatrix.

That bogey of *x*-ray treatment "dermatitis" has been "laid low," by means of metal masks and generally more skilful application than formerly, perhaps the better manufacture of the tubes has also played an important part. Loss of hair does not take place for similar reasons. The area of treatment is that of the patch; in some severe cases at the West London Hospital, in which the whole right buttock was affected as well as the front and back of right thigh, knee, and calf, the rays were directed to middle of back of right thigh and a cure effected. The rays penetrating to front of thigh obviated the necessity of raying the front of thigh, that part healed up as readily as the back portions. Again one little girl whose left buttock, thigh, back and front were affected has had the *x* rays applied through the clothing from behind and the healing differed in no way from other cases of a similar nature. The number and duration of applications depend very much on the individual operator, generally speaking a five minutes "dose" with thirty applications will suffice for most cases. Daily applications are the best, the operator watching the results with care, pushing or withholding the treatment according to the effects produced. I have frequently found that the tube at 1 in. for one minute is enough for the purpose.

In this form of treatment it is never necessary to remove scabs, except from motives of curiosity, the thickest scab is transparent to the *x* rays, neither is it necessary to use carbolic, pyrogallic, or other irritant, the operator who knows the condition of his tube and is experienced otherwise can regulate the amount of inflammation to be produced in the patch. At the West London Hospital we work out at about 82 per cent. of cures in lupus vulgaris—this contrasts favourably with the Finsen light in this country at the London Hospital whose percentage is about 63. That at the Copenhagen Finsen Institute is said to be 97 per cent.

The static effleuve has been used with the best results in lupus, unfortunately in but few cases as yet, but doubtless we shall hear more of the method later. The drawbacks are insignificant, the chief being the somewhat stinging nature of the brush discharge. A great advantage, shared only by

high-frequency treatment, being that general electrification of the patient may also be practised.

That the treatment by electrical currents of high frequency and high potential is a most excellent method will only be doubted by those whose experience of this form of electricity is of a limited character. As early as 1897 Dr. Brocq reported 62 cases, 10 of which were failures or abandoned the treatment, whilst the rest were cured. Lately, Dr. Bordier has reported a series of 73 cases with a like percentage of cures.

The treatment may be applied in three ways: First, by the ordinary brush effleuve; this, containing a vast quantity of ultra-violet rays, is or should be absolutely painless. Secondly, by means of a highly-exhausted vacuum electrode attached to top of resonator when in actual contact is warm but painless, and may be regulated by withdrawing it away from the skin as desired. These electrodes should, with the fluorescent screen, give evidence of the production of *x* rays. Thirdly, by means of general electrification, by preferably auto-condensation; combination of this latter with either of the former methods will prove of the utmost benefit. In my book on *High-Frequency Currents in the Treatment of Some Diseases*, I quote two cases of lupus treated by general electrification in one case, and the other by means of the effleuve to a remote part. Both cases were successful and are intended to suggest that whatever the electrical method we employ the general electrification is noticeable, and must play an important part in the successful treatment of the local condition. As in the superficial lesions of tuberculosis, the active agency for cure is doubtless the electrical rays and their penetration, it should follow that the great penetrative power of the *x* rays should be the most effective. But it is a question if the *x*-ray worker does not get his quickest results for cure by means of tubes of little penetration, which would point to rays of comparatively short length being the curative factor. In the Finsen these are undoubtedly feeble, hence the need of assisting their penetration by means of pressure to render the parts bloodless.

In the highly exhausted vacuum electrode for use with the high-frequency currents we most nearly approach the *x*-ray tube, hence the excellent results obtained.

As to the exact manner in which these electrical methods promote a cure, more light is needed; it may be that the normal nutrition is interfered with to an extent which is incompatible with the vitality of certain micro-organisms, or that the tubercles are attenuated by overgrowth, or, in the case of general electrification, the individual cells of the body are strengthened to resent the inroads of the tubercle bacilli. In the treatment of high-frequency currents it is well to remember that "efficient treatment" can only be obtained by such a combination as will allow of the patient receiving from 350 milliampères and upwards whilst on the condensation couch; that for local treatment only the highest exhausted electrodes are of service. Inefficient apparatus will account largely for the diverse results obtained by various workers.

II.—Joseph Bolton, M.D.,
Nottingham.

Dr. Bolton said that as a result of a paper read by Mr. Chisholm Williams at Cheltenham two years ago on the treatment of consumption by high-frequency currents he purchased an apparatus and entered into the treatment with enthusiasm. At first he treated every tuberculous case which presented itself, and as a consequence his results were very uncertain. Also the patients were sent to him by other doctors, and he did not in every case verify their diagnosis. He was now much more careful in the selection of his cases, and as a consequence his results are much more uniform. One of his earliest cases was a young girl sent to him by a physician as suffering from phthisis, but a cure was effected so rapidly that he came to doubt the diagnosis. Another patient sent to him with tuberculous laryngitis improved rapidly, and was soon able to return to his work as a tram driver. Two cases in which there was a rise of temperature before treatment was commenced did badly; the disease was not checked. But in several chronic cases a very satisfactory result had been achieved. Pleuritic pain had been relieved; the loss of blood from the lung had been stopped; the diarrhoea had ceased, as also the night sweats; appetite had improved, and strength increased. Weight had increased in one case to the extent of 9½ lb. Tuberculous abscesses and sinuses did well if the sinus did not lead to dead bone, in which case the assistance of the surgeon was advisable. In suitable cases a favourable result might be confidently expected, even though the patient was unable to remove from his unfavourable surroundings.

III.—J. Hall-Edwards, L.R.C.P.,
Radiographer, General Hospital, Birmingham.

Mr. Hall-Edwards said that his experiences in the treatment of tuberculous disease by means of high-frequency currents was so small that he felt unable to express an opinion upon the subject. He thought that much more convincing evidence was necessary. Patients who applied for electrical treatment should be made to understand that there was no royal road to cure, and that perseverance in the treatment was necessary. As regarded the action of the *x*-rays upon bacteria, a paper recently published by Dr. William H. Bean had confirmed the previously obtained results, and it might now be accepted that they had no bactericidal properties. The scar produced in lupus by the *x*-rays was quite as soft and pliable as that produced by other methods. He felt that the statistics published were misleading, he did not think that so large a number of cures were made. He had been somewhat disappointed with the results obtained by the use of high-frequency currents. He failed to see the difference (from a physiological point of view) between auto-conduction and auto-condensation, and thought that some of these terms might be abolished with advantage. In all applications of the high-frequency currents a general electrification took place, but the division of the methods into local and general had its advantages. He had frequently noticed that, in treating one side of the face for lupus, the *x* rays had brought about a great change on the opposite side.

IV.—Phineas S. Abraham, M.D., F.R.C.S.I.,
Surgeon, Skin Department West London Hospital, Blackfriars Hospital, etc.

Dr. Abraham was inclined to agree with Mr. Hall-Edwards and Mr. Chisholm Williams that on the whole the Roentgen-ray treatment was more serviceable, and preferable to the "Finsen light" (and its modifications), except perhaps in regard to very superficial and small patches of lupus. He had had a very large number of cases under both methods during the last two or three years at the West London Hospital (treated by Mr. Chisholm Williams), at the Blackfriars Hospital for Diseases of the Skin (treated by Dr. Warde and Mr. Hartigan), and in private under Dr. Harrison Low, and although many cases showed excellent results, he nevertheless—in consequence of the enormous time and expense incurred and of their uncertainty in some cases—was somewhat chary of recommending these new methods to the patients. He admitted that many apparent cures had been effected by their means at the West London Hospital, at Blackfriars, and among his private cases, but he wished that the experts could give some hints as to which cases were likely to be benefited or otherwise—for example, he had recently been greatly disappointed in two cases, one of lupus of the nose, the other epithelioma of the cheek in old patients, which had steadily got worse after some months under the *x* rays. In both of these he was resorting to the old methods of excision or scraping, which with cauteries, etc., he still continued frequently to use with excellent results.

V.—V. H. Rutherford, M.B.,
Physician, Skin Hospital, Newcastle.

Dr. Rutherford stated that from nine months' experience with the Finsen lamp, and upwards of two years' with the *x* rays, he selected lupus cases of small area for Finsen treatment, and the rest for the rays. In practically 90 per cent. the result with the Finsen lamp was most excellent, partly, of course, from the process of selection adopted. The success with the Roentgen rays naturally had not been quite so good, from the fact that the cases were more extensive and of longer standing. He sometimes changed the patient from the one method to the other with excellent results. He felt that both methods had come to stay, that both were probably open to improvement, and that the future treatment of tuberculosis of the skin was full of hope. He congratulated Mr. Chisholm Williams upon his thorough and exhaustive paper.

VI.—H. H. Hulbert, M.R.C.S., etc.,
Bexhill-on-Sea.

Mr. Hulbert said that the results of the treatment of tuber-

culosis by the Finsen treatment, by the high-frequency treatment, and by the *x*-ray treatment depended upon the amount, quality, and penetrating power of the violet or the ultra-violet ray produced, and that whether the one or the other form of treatment should be used depended to a great extent upon the depth of the disease below the surface, the violet ray produced by the light treatment apparatus possessed little penetrative power; that produced by the high-frequency treatment was more penetrative, while that produced by the *x*-ray treatment penetrated most deeply; and the clinical results of either of the treatments followed the use of that apparatus which produced the best and, if necessary, the most penetrating violet ray.

SOME POINTS IN PRACTICAL MUSCLE TESTING.

By W. S. Hedley, M.D.

For information about the motor nervous system we interrogate the muscles. There are various means at disposal for doing this, but by none can there be elicited so clear and true a response as by electrical stimulation. To attempt any adequate clinical study of diseases of the nervous or muscular apparatus without the aid of electro-diagnosis is to grope about in the uncertain twilight for something that might be looked for in the light of day. Uncontrolled by the patient's will, uninfluenced by his story, the electrical reactions of a muscle tell their own tale, and often reveal the one objective feature, the one distinctive physical sign, that alone is necessary to differentiate the morbid change. It is scarcely an exaggeration to say that what the stethoscope is to the pulmonary and cardiac conditions, what urine analysis is to renal disease, what the *x* ray is to abnormalities of bone, such is electrical exploration to normal and abnormal conditions of the neuro-muscular system. By this means not only is it often possible to distinguish with certainty disease of the lower segment of the motor path, to affirm the presence of a neuritis or of an anterior poliomyelitis, to exclude the paralysis of cerebral disease, of diseases limited to the white matter of the cord, of hysterical paralysis, or pure myopathies, but there are cases frequently occurring, and recent warfare has been prolific of such, where the distribution among the muscles of the abnormal electrical reactions may lead to a localization yet more exact, and disclose with something like certainty the actual seat of the morbid process.

Such claims may appear less comprehensive and more modest if stated in another way: Electro-diagnosis enables us to affirm or deny the presence of "Reaction of degeneration;" in other words, to affirm or deny the presence of abnormalities (beyond a certain amount) in that part of the motor tract which, commencing at the motor ganglion cells, terminates at the nerve endings in the muscles. It is true that there are refinements of electro-diagnosis over and above this, but beyond this point no certain light appears, no sign that seeing we can clearly interpret and turn to practical account. Yet under patient observation such signs grow daily clearer, and the day must come when it will be possible to affirm that electrical contractility is normal only when motor centres, motor nerves, and the muscles that they innervate are absolutely sound and intact.

What practitioner is not every now and again confronted with the question—whether in a given case he is dealing with a pure primary myopathy or with a muscular atrophy having its origin in trouble of the lower motor neuron? Can these conditions be separated? We know that electro-diagnosis can distinguish one from the other as plainly as black from white. But it is not always that it speaks so clearly and unmistakeably as this. Consider a muscular atrophy from prolonged fixation, from a very slight nerve injury, or from certain joint troubles. All or any of these may show electrical reactions, in the shape of diminished electrical excitability to both currents, without qualitative change, which are not different from the reactions of a pure primary myopathy. Here it becomes evident that we must clearly recognize the limits as well as the powers of electro-diagnosis; it must in every case, but especially in such a case as this, be carried out in the light of our ordinary medical knowledge. Etiology, sensory troubles, the condition of the articulations, heredity, hysterical manifestations, age—all the commonplaces of clinical diagnosis must be taken into account. We are "all-round" medical men, not mere electrical testing machines. The case in question also brings home to us the importance of accurate diagnosis, from the point of view of electrical treatment of such a case. If we deal with a pure myopathy as we might very properly deal with an atrophy merely from disuse, by faradization and electrical gymnastics, the result would probably be the reverse of beneficial. Even with judicious treatment, electrical or otherwise, which of us can say that in a pure myopathy we have ever succeeded in bringing about the restoration of the muscle, or any approach thereto?

Doumer has led the way to a more philosophical method of studying the response of muscles to electrical stimulation. He points out the necessity for resolving the combination of reactions characteristic of a given morbid state into their simple or elementary components with a view to assign to each its own special significance: For instance, "reaction of degeneration" is, as we know, composed of a variety of elements—such as loss to faradism, sluggish contraction, inversion of formula, what do they each individually imply? Having ascertained this, their interpretation is easy when they come to be formed up as a group characteristic of a given disease. The list of various morbid conditions thus characterized by special combinations of electrical reactions is now somewhat considerable. Thus, besides the group of elementary reactions characteristic of reaction of degeneration, there is the so-called "antagonistic" reaction of Capriati which forms part of the group indicative of polyneuritis. Hoffmann has described the combination peculiar to progressive hereditary myelopathies. Thomson's disease, general paralysis, and other morbid conditions, have each had assigned to them a group of reactions special to themselves. As to methods of exploration another sign of progress lies in the increasing use of the clinical myograph. The tracings thus obtained are very characteristic. The "degenerative" curve, the "paralytic," the "atrophic," the "spasmodic," each tell more unmistakably than words the condition of the neuro-muscular apparatus.

We are all aware that an electrical diagnosis is by no means a quite easy and simple matter. It requires a considerable experience, and involves a procedure that ought to be rigorously exact, approaching, indeed, as far as possible, the conditions of a physiological experiment. Yet there is nothing mysterious in the methods nor complex in the instrumentation, nor too exacting in point of time. The merest outline only of electrical knowledge is necessary. An induction coil and a battery of not less than 40 cells is the chief apparatus required. The so-called "combined battery" is of various forms, and all of these are fully explained and illustrated in the catalogues of the instrument makers. Armed with this simple apparatus, it is easy to show that if a continuous current be applied to an uninjured nerve or muscle in the living body, the extent to which that nerve or muscle is excited will vary (*a*) according to the pole which is applied; (*b*) according to whether the circuit is opened or closed: (*c*) according to the intensity used. And inasmuch as this current acts as a stimulus at the moment that the circuit is closed (closure contraction), and also at the moment the circuit is opened (opening contraction), and, as this occurs at both poles, it is evident that the neuro-muscular apparatus may be excited in four different ways. In other words, there are to be systematically studied four "electrical reactions"—namely, one at closure and one at opening with the negative pole applied to the part under observation, and one at closure and one at opening with the positive pole applied.

It thus appears: (1) That the normal muscle responds to electrical excitation, whether galvanic or faradic, and whether "direct"—that is, through the motor point of the muscle—or "indirect"—that is, through the nerve trunk—by a short, sharp contraction. (2) With the continuous current the nerve can be excited in four different ways and to a varying extent. Thus the cathodic closure contraction (C.C.C.) is the strongest stimulus; next come anodic closing contraction (A.C.C.) and anodic opening contraction (A.O.C.); and last and long behind the others comes cathodic opening contraction (C.O.C.), which is by far the weakest stimulus.

In its typical form "reaction of degeneration" consists of:

1. Abolition of faradic sensibility in nerve and muscle.
2. Exaggeration of galvanic excitability of nerve and muscle.
3. A contraction which is "sluggish."
4. Reversal of the normal formula. That is to say, cathodic closure contraction becomes less marked than anodic closure contraction.

It is the last of these signs—this so-called "reversal of the formula" or "reaction of Erb" (after the author who first discovered and described it), which has long been a physical and physiological puzzle. As we are all aware, it was demonstrated by Schiff about fifty years ago that the closing con-

traction is localized at the cathode. Recently it has become probable, although not proved, that the opening contraction is really due to the "make" of a polarization current having its cathode at the former anode, and that therefore it is of the same nature as the "make" contraction. In other words, Pflüger's law may be considered to say that "excitation occurs only at the point where the current is leaving the tissue." Now it is difficult to imagine that excitation of a structure can occur in any other way than by the electrolytic decomposition which occurs at the pole; that is to say, the stimulation must be due to the development of cations. But what about the degenerated muscle? Is it likely that the great physical and physiological law just spoken of is suddenly reversed, and that in this case excitation, instead of being due to cations, is connected with the development of anions? This seems so improbable that it is a matter for surprise that physiologists have only of late attacked the problem experimentally. Is this reversal real or is it only apparent?

Amongst the latest investigators in this direction are May[1] and Wiener.[2] The former simply applies the reasoning and experiments of Biedermann with reference to the same anomaly occurring in the case of non-striated muscles to the degenerated striated muscles. Biedermann has shown that in the contraction which occurs at the anode of the muscles of the intestine and ureter in the case of vertebrates, and in the muscles of holothuria and of certain worms, the apparent inversion is due to the production of virtual electrodes in the depths of the tissues of an opposite sign to those on the surface; in other words, that the contraction at the anode is peripolar, not polar. He showed this by using very fine electrodes, by which it became evident that, at the actual cathode, closure of the circuit produced an elevation due to the contraction of the fibres, this area of elevation being surrounded by a larger area of depression and relaxation corresponding to the peripolar zone. At the actual anode he found a small depression, owing to relaxation of muscles, but surrounded by a ring of contraction in the peripolar zone.

Less exact observers had noticed only the peripolar area of contraction, and put it down to an anodic contraction, whereas it was really peripolar and cathodic.

May following Biedermann has done the same thing in the same way for degenerated muscle. He considers that, given a certain rise in excitability, the widespread peripolar excitation is more easily observable than the very limited anodic relaxation or absence of effect. He then proceeds to the experimental proof, following exactly on the lines of Biedermann for the circular muscle of the intestine.

Wiener's experiments are of a different order. Taking the sound as well as the degenerated muscle, a very small non-polarizable electrode was placed thereon, the indifferent electrode being upon some distant point; it was observed that in the sound muscle the point of entry of the nerve into the muscular substance is the point of maximum excitability, whilst in the degenerated muscle the maximum point of excitability is at the extremities of the muscle. This fact supplies an evident explanation of the reversal of the formula in the degenerated muscle when the active electrode is placed over the point of entry of the nerve into the muscle—in other words, over the motor point. In the normal muscle the preponderance of negative closure contraction results from the fact that the cathode producing it is situated at the point of greatest excitability (the point of entrance or "motor point") and of greatest current density. In the case of the degenerated muscle this relationship is changed. The point of entry of the nerve into the muscle is the first to lose its excitability, the extremities of the muscle retaining it longer, and the inversion of the formula is due to the fact that it is no longer the cathode producing the cathodic closure contraction but the cathodes producing the anodic closure contraction (peripolar) which are situated at the points of greatest excitability. (It is to be remembered, however, that for this apparent reversal of the formula to occur there must be a difference of excitability between the extremities of the muscle and its central or motor points so great that it is not compensated for by the greater current density at the centre, that is to say, at the "motor point.")

These two observers therefore agree that the reversal of the formula is only an apparent and not a real contradiction of the law of polar effects, and is due to the predominance in the degenerated muscle of peripolar action resulting from alteration in the excitability of the muscle due to the degeneration of its nerve. But there is a difference of opinion as to the *seat* of the peripolar effects. Whilst one of these observers thinks that the peripolar effects are produced, as in the circular muscles of the intestine, all round the neighbourhood of the electrode, the other (Wiener) holds that these peripolar effects are produced at the extremities of the muscle, the reason of their predominance being that in the degenerated muscle the point of maximum excitability is the periphery.

The explanation given by May of the predominance of the peripolar over the polar effects is that when we record the contraction of a whole muscle, the prolonged contraction which occurs at the cathode will be more pronounced, the greater the number of fibres in which the cathodic effect predominates (using unipolar stimulation). When the cathode is applied to the muscle, and the anode to some other part of the body, the cathodic effect is limited to the immediate neighbourhood of the cathode; on the other hand, when the anode is applied to the muscle, the cathodes will be peripolar and will be widely diffused throughout the muscle. It is interesting to note, what Mr. May seems to be unaware of, that a similar explanation was put forward by de Watteville about twenty years ago in a thesis for the Faculty of Medicine of Bâle.[3]

The important clinical point in this connexion is that although the reversal of the formula is a most important symptom of degeneration, we must be prepared to find that it is by no means always present, requiring as it does the realization of many conditions to bring about its appearance.

I have ventured to put forward these few points as a plea for increased attention to a subject whose importance is second to none, whether in general medicine or in therapeutic electricity. It has sometimes appeared to me that amidst the glamour of new things—high-frequency currents, photo-therapeutics, and the therapeutic possibilities of *x* rays—there has of late been a danger of our forgetting other and older friends, and amongst these I am afraid must be mentioned that fascinating and indispensable handmaid of medicine—electro-diagnosis.

References.

[1] *Brain*, Spring, 1902. [2] *Deut. Arch. f. klin. Med.*, Band lx. s. 264. [3] *Introduction à l'Etude de l'Electrotonus des Nerfs Moteurs et Sensitifs chez l'Homme*, 1883.

USE OF ELECTRICITY IN THE TREATMENT OF AFFECTIONS OF THE DIGESTIVE ORGANS.

By George Herschell, M.D.Lond.,

In no field of medical work does electricity produce more brilliant results than in the dynamic or functional disorders of the digestive tract. The truth of this assertion will naturally be questioned by those whose horizon is limited to an acquaintance with the continuous galvanic current, the obsolete induction coils, and the mechanically imperfect Wimshurst static machines, until quite recently the only means at our disposal for the treatment of patients. But those who are using the modern high tension induction coil, the polyphase and sinusoidal alternating currents and the currents of high frequency and potency are fully aware that the statement is devoid of exaggeration.

Each of these forms of electrical energy has its own particular sphere of of usefulness and fulfils certain specific indications. In the present paper I propose to pass in review the different affections of the stomach and intestines in which clinical experience teaches us that we may expect good results, and, excluding entirely the question of diet and drugs, shall briefly indicate in each case the form of electrical treatment which has proved most beneficial.

Gastric Hyperaesthesia.—According to Einhorn this condition can be efficiently treated with the continuous galvanic current, using from 5 to 15 milliampères three or four times a week. The negative pole attached to a flat moistened electrode should be applied to the epigastric region whilst the positive is introduced into the interior of the stomach by means of an intragastric electrode. Boardman Reed prefers the high tension induction coil current, and my experience coincides with his. It has been known for some considerable time, and the fact has been largely utilized by gynaecologists, that the current from the secondary winding of an induction coil would produce results of a markedly sedative character, provided that there were at least 1,000yds. of a fine wire contained in it. The apparatus I personally use contains 1,500yds. of No. 36 wire in the secondary winding, and an interruptor running at a very high speed. With such a coil, alimented by a 4 volt or 6 volt accumulator, we can relieve in a very short time time hyperaesthesia of the gastric mucosa when of a purely functional nature. With this object we

must use intragastric methods, as it is necessary that the current should be applied directly to the gastric mucosa. The patient having swallowed half a pint of water the intragastric electrode is passed, and the patient reclines upon a couch. The other pole of the machine is attached to a moistened pad some 4 in. by 5 in. in size, which is placed upon the epigastrium.

The secondary coil being out of action, the current in the primary is gradually turned on until about 3 or 4 volts are passing, the brake being at the same time manipulated in such a manner as to give the most rapid interruption possible with the smallest spark gap. The secondary is now moved over the primary until a current is obtained which is just perceptible to the patient.

Hyperchlorhydria may be treated in the same manner when not depending upon chronic glandular gastritis. When such is the case we must alternate the electrical applications with the intragastric spray of nitrate of silver, or use the method suggested by Hemmeter of lavage in succession with solutions of alkalies, suspensions of bismuth, and a vegetable astringent, such as a 0.5 per cent. solution of tannic acid.

Hypochlorhydria and Achylia Gastrica, when not dependent upon atrophy of the secreting glands, are successfully treated by the currents of high frequency, or by the static spark modified in the manner described by Monnell. In using the high-frequency currents upon cases of this nature we have several alternate methods of application, of which the two following are those I chiefly use:

1. A metal plate forms one electrode, and is placed upon the tongue of the patient. The other electrode consists of a piece of sheet lead of a triangular shape, cut accurately to fit the epigastric region between the costal cartilages, the base of the triangle coming halfway between the ensiform cartilage and the umbilicus. These two electrodes are attached by derivation to two or more spires of the small solenoid of the high-frequency group. A current of from 300 to 400 milliampères may be used with impunity, and are measured by a hot wire galvanometer in circuit.

2. The patient lies upon the condensation couch grasping the handles, the said couch being attached to the solenoid in derivation. A moistened electrode placed upon the epigastrium is connected by a third conducting cord to the top of the resonator. The patient is thus simultaneously undergoing autocondensation, and receiving a monopolar application of the resonator current to the stomach.

Gastric Atony and Atonic Dilatation of the Stomach.—The milder forms of gastric atony when there is merely loss of tonicity and no absolute retention of food residues may be:

(*a*) *A Local Manifestation of a General Neurasthenic Condition.*—In these cases our main efforts should be directed to the treatment of the general neurasthenia. The local treatment to the stomach may consist of:

(1) The galvanic continuous current mechanically interrupted by means of a clockwork rheotome in the circuit.

(2) The induction coil of high tension slowly interrupted.

(3) The high-frequency current applied in the manner used in the treatment of hypochlorhydria.

(*b*) *A Local Trouble, pure and simple, Usually Depending upon a Chronic Gastritis.*—This is in many cases the result of chronic obstructive disease of the heart and liver, and demands in the first instance treatment directed to these conditions. In other cases the kidneys are at fault, and the local trouble is due to the irritation in the stomach produced by the vicarious elimination of urinary products. In both these cases, after having inaugurated the treatment of the cause of the gastritis, we may with advantage make use of local applications of either the high-frequency currents, or the triphase alternating current with the object of restoring tone. The severer forms of gastric atony will demand either the triphase alternating current, the high-frequency current with the interposition of a spark gap in the circuit, or the modified static spark already described. Of these the triphase alternating current has given the best results in my hands, one pole being applied to the epigastrium, one to the small of the back, and the third to the interior of the stomach by means of an intragastric electrode. In cases where a stomach tube cannot be passed, good results may be obtained by the method advocated by Guimbail, namely, the application of two long narrow electrodes along the sides of the dorsal vertebrae and the third electrode upon the epigastric region. In many cases very brilliant results have followed, retention of food residues ceasing, and the case becoming for all practical purposes myasthenia of the first degree with slight stagnation of food only. In several cases where the patient was yet below middle age an absolute cure has been obtained. This fortunate result has occurred in several cases in which the gastric atony has been induced by overloading the stomach during convalescence from influenza and typhoid.

Constipation.—In constipation due to atony of the intestines the best results are usually obtained by the use of the triphase alternating current applied in the manner described by me elsewhere.[1] In attemping to cure a case by electricity it is important to entirely relinquish the use of purgative drugs from the very commencement of the treatment. Until the daily function of the bowel is re-established we can rely upon olive oil enemata given at bedtime to secure the necessary relief. An accessory means of treatment of great value is the use of a wash-leather ball containing 2 lb. or 3 lb. of leaden shot with which the patient should massage the abdomen every morning before rising in the following manner: The patient, lying on his back with knees drawn up and abdomen relaxed, places the shot ball in the right iliac region. From thence he slowly rolls it round the abdomen, following the course of the colon. This exercise continued for from five to ten minutes is an important aid to the cure of obstinate constipation.

When from any reason the triphase alternating current is not available we may replace it with one of the following:

1. The static induced or Morton current.

2. The high-frequency current, with a spark gap in the circuit.

3. The sinusoidal monophase current (*a*) from a Mackintosh magneto machine; (*b*) from a Dean rotary converter; (*c*) from the alternating main, reduced to proper strength by resistances.

4. The current from the secondary winding of an induction coil containing a comparatively short length of thick wire, and thus giving a current of low voltage and high ampèrage. This current must be used with slow interruptions produced preferably by a mechanical rheotome.

It is important to bear in mind that to procure the best results from electricity in cases of constipation we should invariably place one pole within the rectum.

REFERENCE.

[1] *Polyphase Currents in Electrotherapy.* London. 1903.

THE *X* RAYS AS A DIAGNOSTIC AGENT IN PULMONARY CONDITIONS.

By Joseph S. Bolton, M.D.,

Nottingham.

Two years ago Dr. Hugh Walsham published papers on Present Day Skiagraphy, in which he showed that it was possible to diagnose diseases of the lungs by means of the *x* rays. I was not then in a position to take up the subject, especially as it appeared to me to be one of considerable difficulty and uncertainty. Indeed, it was not till after I had seen some beautiful radiographs by Dr. Green of Lincoln in this present year that I considered the possibly of using it myself. The short experience I have had has convinced me that the process is so easy and the results so convincing that I am anxious to see it become a routine practice in every hospital in the kingdom. After several disappointments in abdominal radiography, it was a relief to find something easy of accomplishment. My own fear was that the movement of the ribs and chest wall would entirely invalidate the results I should obtain. I was aware that attempts had been made by means of intricate apparatus to turn on and off the current by a system of levers put into operation by the movements of the chest and abdomen in breathing. Dr. Green told me that he taught the patient to hold his breath for a few seconds, while he turned on and off the current, so that the rays were only active while the chest was motionless. I believe Dr. Walsham does not consider this to be necessary, but is content with telling his patient to avoid deep breathing, and it is quite certain that useful work can be accomplished without any special precautions. I follow out exactly the procedure described by Dr. Walsham in the *Clinical Journal* of June 26th, 1901, p. 153. The patient lies on a couch in the prone position with the naked chest resting on the photographic plate enclosed in the usual opaque envelope, and resting on a board to prevent breakage. The plate must be large enough to receive both lungs. The anticathode of the tube must be at right angles to the plate and exactly over the spine. To avoid magnifying the parts near to the plate it is advisable that the tube should not be too near the body, but this is not so important if all you require is to compare one lung with the other. I have

usually placed my tube within a foot of the patient so as to avoid as much as possible casting a shadow of the scapula over the apex of the lung. The arms should be placed in such a position as will remove the blade of the scapula as far as possible out of the way. If it is the apices of the lungs which are suspected the tube should be placed fairly high up between the shoulders. If an examination has been previously made with the screen it will be a guide as to the part of the lung probably diseased.

There have been several excellent papers in the medical journals upon this subject recently, particularly one by Dr. Dally in the *Lancet* for June 27th, and one by Drs. Lawson and McCrombie in the *Lancet* for July 25th. All the writers rightly insist upon the importance of observing carefully the movements of the diaphragm and ribs by radioscopy. This can only be successfully done by long practice in the use of the screen, but the image on the photographic plate can be at once appreciated by the novice.

In my earliest efforts I exposed my plates for three or four minutes, but found on development that the lungs were so transparent that they had disappeared except at one or two very diseased spots. I now expose for one and a half minute, and believe that one minute would be sufficient for a thin chest. The best developer is undoubtedly a strong solution of pyrogallic acid. Dr. Green develops his plates for half an hour, and gets admirable results, but then his plates require a week of sunlight to print them, and if you are wanting to see the result quickly you must not develop for more than six or seven minutes. For the examination of a broken bone the negative is all that is needed, and is in fact better than the printed radiograph, but this is not so with a diseased lung. The print is absolutely necessary to make it clear to an ordinary observer.

I will finish these remarks by one or two examples of its usefulness. A few days ago a young man presented himself with the following history:—He came of a healthy family and followed a healthy occupation, but several years ago he had an attack of pleurisy in the right side, and ever since then he had an occasional pain in that side. His chest has been examined every six months by a physician of repute and no trace of disease found. He has frequently a little cough, and expectorates some clear phlegm in the morning. His appetite and general health are good. He has no rise of temperature but has a tendency to sweat in the axillae in the day time, not at night. I stripped him to the waist and examined his chest, but was unable to detect anything abnormal except possibly a little rub or creak, where the old pleurisy had been. I took him into the dark room and turned on the *x* rays. The luminous screen showed rather small movement of both sides of the diaphragm, but I could not be sure that one side of the chest was less transparent than the other. I then took a radiograph of each side of the chest, each lung separately, and on developing found the left apex decidedly obscure. Not being quite convinced by this one trial, three or four days later I took another radiograph, this time of both lungs on one plate. The result was beyond all doubt. The patient had well-marked disease of the left apex. Six weeks later there was rise of temperature and the stethoscopic signs of phthisis were undoubted.

Another young man presented himself about the same time with sounds in his left chest, which might be due to bronchitis or to phthisis. The radiograph showed clearly patches of tuberculous disease on a level with the second and third ribs, where the sounds had been heard with the stethoscope.

A diagnostic method at one so easy and so certain should surely be at the disposal of and in constant use by every physician. The importance of early diagnosis, and therefore early treatment, in phthisis can scarcely be over-estimated. It is extremely probable that cases linger for months, nay, perhaps for years in a very early stage, and that if these cases were diagnosed and treated, much of the mortality from consumption might be prevented.

HIGH-FREQUENCY CURRENTS IN THE TREATMENT OF SOME FORMS OF DEAFNESS.

By J. C. Fergusson, M.D.,
Great Malvern.

[Abstract.]

Some six or seven years ago, a patient of mine (a gentleman over 50 years of age), who had been very deaf for a number of years, was anxious to try electric treatment as a tonic, and not with the slightest idea of deriving any benefit to his hearing, for which, he said, he had tried every form of treatment in vain. After a few days he surprised me very much by stating that he could hear better! But, as he could not stay longer, the treatment was stopped, and I thought no more of the matter.

Seven years later I had another patient, a young lady aged 20, who, being under treatment for other ailments, casually remarked that her hearing was very bad from an affection of the middle-ear four years before. It was so bad, that she could not hear the ticking of a watch 2 in. from her right ear! Suddenly I remembered the effect of electric treatment in the former case of deafness, and it at once occurred to me to try the "high-frequency" effleuve. The result was most gratifying. Day by day she could hear the watch ticking further and further off, till, in about ten days, she could hear the ticking of the watch held at arms' length! Encouraged by this satisfactory result, I had recourse to high frequency for deafness in other patients.

Case No. III was that of a gentleman of 57 who had been deaf in the right ear for seven years, so deaf that he could not hear without an ear trumpet, which he carried continuously. Under the high-frequency treatment he soon began to hear better, and in three weeks the hearing of the deaf ear had greatly improved. As this gentleman only stayed with me while his wife was under treatment, I was not able to complete the cure, which subsequent successes makes me confident would have resulted.

Case No. IV was a professional gentleman aged 69, who a year ago had had sharp vertigo, accompanied by noises in the head and deafness in both ears, the left so bad that he had to use a tube. In about three weeks' time the same treatment had so much improved his hearing that he was able to dispense with the tube.

Case No. V, another professional gentleman of 60, was so deaf in right ear he could scarcely hear the ticking of a watch unless pressed against the meatus, and when spoken to by any person on his right he was obliged to turn his head so as to bring his left ear to them. This patient is still under treatment, but already in one week his hearing has begun to improve.

In view of what was said at previous discussions of the advantage of differentiating between cases where electrotherapeutic methods only are used, from those where it is used in conjunction with other modes of treatment, I subjoin the following analysis:

Analysis of Cases.

Case I. Had "static" treatment only.
Case III. Had "high-frequency" treatment only.
Case II. IV. and V. Had "hydrotherapeutic" treatment as well.

I should add, also, that by "high frequency" in each of these cases, I gave the patient ten minutes in the large auto-conduction solinoid, and then five minutes of d'Arsonval's bipolar effleuve with the brush electrodes, held opposite both ears, but at such a distance as to preclude sparking.

As to results I have to draw attention to the extremely encouraging fact that notwithstanding the long periods of deafness and the great difference in the ages of the patients: (*a*) The hearing of all the cases benefited and (*b*) the only case in which sufficient time could be had for treatment a complete cure was effected!

Finally, though deafness from removable causes may be a less serious evil than malignant disease, it is a serious evil nevertheless. Therefore a means of cure hitherto unknown cannot fail to interest members; and the remedy, if it prove successful, as it has in every case where I have tried it, must redound to the credit of electro-therapeutics.

SECTION OF PSYCHOLOGY.

Robert Jones, M.D., President.

(Concluded from p. 836.)

DISCUSSION ON THE PATHOLOGY OF GENERAL PARALYSIS OF THE INSANE.

I.—W. Ford Robertson, M.D.,
Pathologist to the Scottish Asylums.

Dr. Robertson said: The pathology of general paralysis of the insane has in recent years been so frequently written about and discussed that some apology seems almost to be

needed for inviting you to consider so threadbare a subject. If any such apology is thought to be necessary, it can, I think, be furnished to your satisfaction. I would state it in three propositions: (1) General paralysis is a veritable scourge in this and many other countries; (2) notwithstanding the enormous array of facts that have been ascertained regarding the disease, its exact pathogenesis is still unknown, and, so long as this is so, we have no right to conclude that the disease is incurable; and (3) recent bacteriological and experimental investigations, to which I shall refer again, have brought to light certain facts, not hitherto known, which may have a very important bearing upon the pathology of the disease, and which cannot be explained away by any existing data.

The view that general paralysis of the insane is essentially syphilitic in origin, though probably held by the majority of neurologists at the present day, has never been proved. It is no more than a hypothesis. That syphilis strongly favours the development of general paralysis is, however, beyond question. The doubt is merely as to its manner of action. Against the essentially syphilitic origin of general paralysis there is the fact that many clinicians have in the course of their experience seen cases in which it was hardly conceivable that there could have been syphilitic infection, and that numerous cases have now been observed in which syphilis was contracted after the onset of the symptoms of general paralysis.[1] The argument commonly used to support the doctrine, "No syphilis, no general paralysis," based essentially upon statistics showing the high percentage of cases of general paralysis in which a history of syphilis can be obtained, is marred, in my opinion, by a constant failure to take into account the fact that only a very small proportion of syphilitics ever become general paralytics or tabetics. Similar statistical evidence could be adduced showing that very high percentages of persons affected by tuberculosis have previously had measles. We indeed know that an attack of measles very strongly predisposes to tuberculosis, but we do not on these grounds conclude, "No measles, no tuberculosis." Moreover, the syphilitic hypothesis does not explain the clearly-established fact that there are other conditions, such as chronic alcoholism, lead poisoning, and excessive meat diet, which favour the development of general paralysis.

When, in any case of this disease, an investigation is made into the state of the non-nervous organs and tissues, there is, in my opinion, no escape from the conclusion that we are dealing with an active bacterial toxaemia. More than two years ago, Dr. Lewis C. Bruce and I directed attention to the gastro-intestinal disorders that occur in cases of general paralysis, and we stated our belief that the disease is dependent upon a toxaemia of gastro-intestinal and bacterial origin.[2] Dr. Bruce has since so far modified his own view as to regard toxic infection by the bacillus coli as a secondary and not a primary occurrence. Otherwise more recent observations have only served to confirm and extend the conclusions which we then formulated.

On the ground of bacteriological and clinical observations, of known facts regarding the bacterial forms concerned, and of the modern doctrine of immunity, Dr. G. Douglas M'Rae, Dr. John Jeffrey and myself[3] have advanced the hypothesis that general paralysis is the result of a chronic toxic infection from the respiratory and alimentary tracts, permitted by general and local impairment of the defences against bacteria, and dependent upon the excessive development of various bacterial forms, but especially upon the abundant growth of a diphtheroid bacillus which gives the disease its distinctive character. This is the hypothesis that I am here to defend to-day. I maintain that the phenomena of general paralysis present to the pathologist a problem in disorder of the natural immunity and its consequences. The recognized causes of general paralysis, such as syphilis, chronic alcoholism, lead poisoning, excessive meat diet, etc., are such as are known either to make an excessive call upon the leucoblastic functions of the bone marrow, or directly to damage this tissue, upon the healthy functional activity of which the defences of the body against bacteria are dependent. Now, as in the case of other cells of the body, the myelocytes from which the polynuclear leucocytes are derived must have definite limits as regards their proliferative capacity, so that after long-maintained excessive proliferation a condition of myelocytic insufficiency must arise. The protective functions of other tissues may in a similar manner become impaired. Under such circumstances the saprophytic bacteria of the alimentary and respiratory tracts will tend to assume a pathogenic action, not from any change in themselves, but because the forces by which they are normally held in check have become weakened. Hence there will arise a condition of mixed toxic bacterial infection from the alimentary and respiratory tracts, and sometimes also from the cutaneous surfaces. Any conditions independently weakening local resistance may determine the point of the bacterial attack. Under such circumstances the body must reinforce its flagging defensive powers by its auxiliary and emergency forces, that is to say, by the formation of various immune bodies and the extension of active phagocytic functions to cells which ordinarily take a subordinate part in the destruction of foreign invaders. This is the position that has, I maintain, been reached before general paralysis can arise. But this impairment of the defences, whilst in itself having various degrees and characters, is not special to general paralysis at all. There is evidence that it occurs in senile insanity and allied conditions, in chronic alcoholism, and in many other chronic disorders in which saprophytic bacteria assume a pathogenic action. It would appear that some special infection is added, or at least predominates, in general paralysis, giving to the disease its distinctive features. We have obtained evidence that an organism resembling the Klebs-Loeffler bacillus is constantly present in general paralysis, and that it is exerting a pathogenic action. The cultural and morphological characters of this organism are indistinguishable from those of the Klebs-Loeffler bacillus. We advance it as a hypothesis that it is the attenuated and not uncommonly saprophytic form of this organism. By long residence in the host, it may have undergone a certain exaltation of virulence. Some experimental evidence obtained by Dr. Shennan and myself shows that it has a pathogenic action upon rats. Local lesions would appear to play an important part in maintaining the special infection. It seems, indeed, very probable that the part played by syphilis is not confined to its action upon the bone marrow, but is concerned also in the production of local lesions, especially in the upper portions of the respiratory and alimentary tracts. The result is that various bacterial toxins, including those of this diphtheroid organism, are absorbed, and, entering the circulation, are brought into contact with the tissues, which fix them or not in accordance with their mutual affinities. Certain of them are fixed by the nerve cells, others by the tissue elements of the vessels, and so on. The toxins are numerous, and therefore the lesions are various and widespread, affecting not merely the nervous organs but practically every tissue in the body.

I shall now summarize the evidence in support of these views:

1. The bone marrow of the general paralytic presents chronic changes of a severe character. The bones show various forms of alteration, but are commonly thickened and sclerosed. The medullary portion is usually diminished by overgrowth of bone.

2. There are various clinical facts which, taken together, tend to show that the general paralytic is suffering from a bacterial toxaemia. These consist in the rises of temperature, the leucocytosis and the disorders of the digestive functions which have been specially described by Dr. Lewis C. Bruce, and in the almost constantly existing chronic sore throat and septic condition of the mouth, and in the frequently-obtainable evidence of chronic bronchitis.

3. There are severe chronic changes in the alimentary and respiratory tracts of the character of those that are produced by the prolonged action of bacterial toxins. These changes consist in chronic catarrhal conditions, manifested by proliferative, atrophic, and sclerotic lesions. In some instances the stomach may show little or no alteration: the ileum, as far as my observations go, is constantly affected. The condition of the throat has already been mentioned. The tonsils are frequently enlarged and their crypts filled with purulent matter, but probably more commonly they are extremely atrophic. Even then, however, they often contain cavities filled with pus. The trachea and bronchi generally present distinct chronic inflammatory changes, which, however, may occur only locally. The lungs, apart from the acute inflammatory conditions to which the patients in so many instances succumb, very often show evidences of long-standing local bacterial infection. In various parts of the alimentary and respiratory tracts there is very commonly a great development of plasma cells and of "fuchsine bodies," which arise from the granules of these cells. This implies that a special call has been made upon the defensive forces to com-

[1] Garbini, *Riv. Sperimentale di Freniatria*, 1903, F. i-ii.
[2] BRITISH MEDICAL JOURNAL, June 29th, 1901.
[3] *Review of Neurology and Psychiatry*, May, 1903.

bat some foreign invader, for it is now held by the most competent authorities that these cells are auxiliary phagocytes. There is also evidence of partial exhaustion of the simple and compound mucous glands in the alimentary and respiratory tracts. This must involve a local diminution in the power of resisting bacteria.

4. There is direct evidence of general excessive development of saprophytic bacteria. I do not insist upon the readily obtained *post-mortem* evidence of the presence of excessive numbers of bacteria in the alimentary tract, as it is obviously of uncertain value. There are, however, other facts of more definite significance. Cultures made from the nose and throat during life result in the development of micro-organisms far in excess of the normal in numbers. In one case, in order to test the point, Dr. M'Rae and I obtained stomach wash from a general paralytic who had been fasting for eighteen hours. The fluid was very milky, and, on microscopic examination, the only ascertainable cause of this appearance was the great numbers of bacteria it contained. In this connexion, also, there may be mentioned the septic cystitis, to which general paralytics are specially prone, and which has been attributed to absorption of organisms from an unduly septic alimentary canal and their excretion into the urinary tract.

5. There is evidence of the almost constant presence, in the respiratory and alimentary tracts, of a bacillus, which in its cultural and morphological characters resembles the Klebs-Loeffler bacillus. Drs. M'Rae and Jeffrey and I were able to obtain it in cultures made at *post-mortem* examinations in 17 cases out of 20. In the remaining three it was found by other methods. In all of 20 cases examined histologically by suitable methods I have been able to recognize in the respiratory or alimentary tracts a bacillus identical in form and staining reactions with the organism isolated by culture methods.[4] In 8 of these cases the organism was present in very great numbers. In the course of our bacteriological researches my colleagues and I made cultures from the mouth and throat of various cases of general paralysis during life, and we were able to obtain the bacillus in several instances. The investigation presented special difficulties on account of the great abundance and variety of the bacteria present. Recently I commenced a systematic investigation of the nose and throat of cases of general paralysis at Morningside Asylum, with a view to ascertaining the frequency with which proof of the presence of this organism can be obtained. So far I have made cultures from 10 cases, and I have found the diphtheroid bacillus in 9. The exception was a case in a state of remission.

6. There is evidence that this diphtheroid bacillus occasionally takes part in a terminal blood invasion in cases of general paralysis. This fact is one of considerable weight in support of the view that it is exerting a pathogenic action. The evidence consists in the fact that in 4 out of 16 cases we were able to obtain cultures of the bacillus from the brain. The only alternative explanation of this observation is that there is a local infection of the brain, and this cannot be excluded. I have, however, searched in vain for the organism in sections of the brain. Faure and Laignel-Levastine[5] have obtained entirely negative results from bacteriological examination of the cerebro-spinal fluid taken by lumbar puncture in this disease. The positive results of Montesano and Montessori did not include the observation of a diphtheroid organism.

7. A filamentous organism, in its individual segments indistinguishable from some forms of the diphtheroid organism, may with considerable frequency be observed in great numbers in the lymphatics of the alimentary (and probably also the respiratory) tract in cases of general paralysis. In a recent paper I have stated grounds upon which it is probable that this organism is a thread form of the diphtheroid bacillus. This view is especially supported by the fact that to all appearance the same filamentous organism has been observed as a terminal invasion of the portal blood stream in two rats which died from the effects of feeding upon pure cultures of the bacillus. It was also observed in the walls of the bronchi of one of these two rats. On the analogy of what has been found to occur in experimental observations upon the bacillus coli, bacillus typhosus, and bacillus proteus, this assumption of a thread form might be explained by the presence in the serum of anti-substances to the bacillary bodies, the existence of which for the Klebs-Loeffler bacillus has recently been demonstrated by Wasserman.[6] In this case the thread form would represent a terminal invasion by the diphtheroid organism. I have endeavoured to ascertain if this thread-form is assumed when the bacillus is grown upon the blood of general paralytics and upon that of immunized rabbits. In most of the observations the results were negative, but in two I have obtained distinct evidence of a tendency to the formation of short threads. One was with the blood of an immunized rabbit (kindly furnished by Dr. Shennan) and the other with that of a general paralytic. As yet, however, the evidence is not sufficient to warrant the conclusion that these two forms are morphological varieties of the same organism.

8. Experimental evidence shows that, when introduced by way of the alimentary tract in the form of broth cultures, the diphtheroid bacillus isolated from cases of general paralysis is capable of producing in the rat a series of morbid phenomena which especially affect the nervous system, and which, when once established, may go on progressively till death results, even though feeding with the cultures is stopped, and that the associated changes in the central nervous system have a distinct resemblance to those that occur in dementia paralytica. These experimental investigations, which are being undertaken by Dr. Shennan, are still in progress, and I can here only refer very briefly to some of the results already obtained. Changes closely resembling those that occur in cases of general paralysis have been found in the nerve cells, vessels of the central nervous system, neuroglia, mesoglia, and pia arachnoid, as well as in the gastro-intestinal and respiratory tracts.

In conclusion, I would repeat that I make no claim that this hypothesis has been established. I have merely stated a series of facts which, I maintain, harmonize with it. I would ask those who intend to take part in the discussion to bring forward any facts which seem to them to disprove or to support the hypothesis that I have been defending, and to cite any special cases that may have occurred in their experience which seem capable of explanation upon this hypothesis, or others with the facts of which they consider that this hypothesis does not harmonize.

[4] *Review of Neurology and Psychiatry*, July, 1903.
[5] Pighini. *Riv. Sperimentale di Freniatria*, 1903, F. i-ii.
[6] *Deut. med. Woch.*, 1902, No. 44.

II.—Robert Jones, M.D.,

Medical Superintendent, London County Asylum, Claybury; President of the Section.

Dr. Robert Jones expressed, on behalf of the Section of Psychology, the great interest and pleasure it had given members to see Dr. Robertson's pictures and to hear his demonstration upon the pathology of a disease which tended gradually to increase with the progress of civilization, and which, in the last report of Morningside Asylum, had so increased that among the male admissions there was no less a proportion of general paralysis than 21 per cent. If further light could be thrown upon the pathology of this fatal disease it would be very welcome. As to the causation of general paralysis Dr. Jones believed that in the vast majority of cases, and upon the weight of evidence, the undoubted history of syphilis could be ascertained in these cases, and the proportion tended to increase the more accurate the previous history could be ascertained. There was no doubt that the general paralytic person was subject to many trophic changes, that he very soon became a prey to the many and various invading micro-organisms, but it was not often that Nature proceeded in the same track on diverse lines, and it was open to some suspicion whether the Klebs-Loeffler bacillus was able to produce such different diseased conditions as diptheria and general paralysis. They also knew that one of the stages of general paralysis was characterized by a steady increase in weight, which one would not expect if the disease depended upon a progressive form of auto-intoxication from the intestinal tract. He looked upon the general paralytic as a person of low vital reaction in the later stages, and that he readily became a prey to these invasions, characterized, as Dr. Ford Robertson had stated, by tonsillar, bronchial, pulmonary, intestinal, and a variety of other morbid conditions; but these he considered were non-essentials in regard to causation. He complimented Dr. Ford Robertson upon the courage of his convictions in bringing before the Section a fresh but not the generally accepted view as to causation, supported as this was by very careful and systematic work.

III.—D. J. Hamilton, M.D.,

Professor of Pathology, Aberdeen University.

Professor Hamilton drew attention to a case of railway injury in which the individual, a girl, had been shaken by

a train becoming derailed, but did not suffer from any external injury. On arrival at her home she was able to walk a distance of a mile and a-half, but within a week or so began to suffer from paralytic symptoms, which extended from the feet upwards, and before the time of death had produced almost complete paralysis of the legs and arms. The necropsy was made twenty-six hours afterwards, and the cord was placed in Müller's fluid within a couple of hours. The sections of the cord showed the presence of a bacillus within the grey matter chiefly, and in great abundance. The speaker said that he had never seen anything like this spinal cord, and would be glad to hear if any one else had met with anything of the kind, whether it might have any bearing on the present discussion, and whether the appearance in question might be regarded as of *post-mortem* occurrence.

IV.—J. G. ADAMI, M.D.,
Professor of Pathology, Montreal University.

PROFESSOR ADAMI was fully prepared to accept the view that long-continued action of bacteria of low virulence would set up progressive ascending changes in the nervous system. In his laboratory at Montreal Dr. G. A. Charlton had recently studied the effects of repeated small inoculations of a typical bacillus coli extending over months in the rabbit. By this means he had set up a peculiar type of anaemia, not very unlike pernicious anaemia, and with this a progressive paralysis, curiously like that seen in that same disease, both clinically and histologically. Bacteria and their toxins undoubtedly might have a progressive action upon the nervous system. He was prepared to find that several species of bacteria had a somewhat similar effect. This subject of the chronic, long-continued presence of bacteria of low virulence within the tissues was one in which he was particularly interested. Here in general paralysis was a chronic state leading steadily to a greater and greater weakness of the body as a whole, favouring, that was, what he had termed "subinfection" of various types. Thus, while prepared to believe that diphtherial or diphtheroid bacilli might be an accessory factor in the production of general paralytic conditions, he would be cautious in accepting such bacilli as the essential and, so to speak, primary specific agent in the development of general paralysis.

V.—J. F. FLASHMAN, M.D.,
Sydney.

DR. FLASHMAN considered that though most people looked upon syphilis as the cause of perhaps 80 per cent. of cases of general paralysis, yet one must admit that there was a residue of about 20 per cent. in which the etiology was uncertain. The facts which Dr. Ford Robertson had brought forward were exceedingly suggestive of an assisting factor which might be later found to explain these cases. He was to be congratulated on investigating the pathology of paralysis from a bacteriological standpoint.

VI.—J. FLETCHER BEACH, M.B.,
Physician, West End Hospital for Epilepsy and Paralysis.

DR. FLETCHER BEACH wished to ask Dr. Ford Robertson whether among the cases he observed there were cases of juvenile general paralysis, and whether the changes mentioned were found in them. A few years ago he collected about thirty cases of juvenile general paralysis, and in the great majority of these syphilis was present. It seemed difficult to imagine that the grave changes he had observed could take place in children of the age of 7 years, at which age general paralysis had been observed.

VII.—F. W. MOTT, M.D., F.R.S.,
Pathologist, London County Asylums.

DR. MOTT regretted that he was unable to be present to hear Dr. Robertson's paper, but he was still of opinion that syphilis, if it had not been absolutely proved to be the essential cause of general paralysis, was by far the most important factor. He asked Dr. Robertson whether he regarded this diphtheroid bacillus as the specific organism of general paralysis; if so, before this hypothesis could be accepted, it would have to be shown that it was present in the very earliest stages of general paralysis. He also asked if Dr. Robertson had tried the effects of feeding rats on cultures of other organisms, and whether the brain showed changes similar to those produced by the feeding with Klebs-Loeffler bacilli. In chronic abrin and ricin poisoning the changes in the brains of animals in many respects resembled general paralysis. Again, Dr. Mott asked Dr. Robertson whether he had found plasma cells around the vessels of the brains of those animals, a pathological condition which Vogt had described as pathognomonic for general paralysis, and which he himself considered very characteristic. With regard to the defence of the organism, he thought it probable that Dr. Robertson's work would show that secondary infection might play an important part in hastening the progress of the disease.

VIII.—W. LLOYD ANDRIEZEN, M.D.,
London.

DR. ANDRIEZEN said that syphilis was the cause of general paralysis in 80 per cent. of cases. The changes were syphilitic (arterial and periarterial) in the brains of general paralysis. He referred specially in this respect to Professor Renaut's recent researches. There was continuity of history and of symptoms between early cerebral syphilis—occurring within three years of infection—and general paralysis occurring ten to fifteen years after infection; the pathological lesions also showed continuity between the former and latter classes of cases. Treatment by the intensive mercurial method—mercuric benzoate—also bore out the view of the syphilitic nature of general paralysis, for the cerebral, vascular and perivascular inflammatory disturbances subsided under treatment. The cystitis observed in some cases was a subterminal infective condition, and so he thought was the diphtheroid infection described by Dr. Robertson in advanced cases of general paralysis. Both were secondary and subterminal states not essential to the etiology of general paralysis.

IX.—W. MAULE SMITH, M.B.,
Assistant Medical Officer, West Riding Asylum, Wakefield.

DR. MAULE SMITH said he would like to thank Dr. Ford Robertson and his colleagues for the exhaustive investigation into the etiology of general paralysis, and for the excellent lantern slides he had brought before the meeting. Since reading Dr. Robertson's paper in May he had had an opportunity of examining three cases of general paralysis. Films were examined from scrapings of the bronchi and liver and stained after the instructions sent out in Dr. Robertson's paper, but he was quite unsuccessful in finding any such organisms. In two cases dying of asylum dysentery in the earlier part of the year numbers of organisms resembling in staining those of diphtheria were found. One rat was injected from the bronchial scrapings from a case of general paralysis, with negative results.

X.—DAVID YELLOWLEES, M.D.,
Late Medical Superintendent, Glasgow District Asylum.

DR. YELLOWLEES expressed great interest in Dr. Robertson's views as to the bacterial origin of general paralysis, but was not yet disposed to accept them in the face of clinical evidence. He was glad that Dr. Mott did not regard syphilis as an essential and invariable cause of general paralysis but only as a very frequent cause; in this view he fully agreed.

XI.—F. EDRIDGE-GREEN, M.D.,
London.

DR. EDRIDGE-GREEN was strongly in favour of the view of syphilis being the cause of general paralysis and of tabes. In many cases the patient had suffered apparently very little from the syphilis, and had led a very healthy life, but ten or fifteen years afterwards general paralysis or tabes developed.

XII.—JOHN HADDON, M.D.,
Denholm.

DR. HADDON said that when at the annual meeting at Cheltenham he had heard a discussion in this Section on Puerperal Mania, he ventured to point out that as nearly all diseases were being found to be of microbic origin, lunacy might be found to be of the same origin, and puerperal mania might be taken as a stepping stone in that direction, seeing it was admitted to be of microbic origin. Now Dr. Robertson would appear to have discovered one organism which caused general paralysis—a disease which Dr. Clouston found to account for 21 per cent. of his male lunatics. The microscopic slides exhibited showed marked degeneration of the whole intestinal tract, so that in these cases the whole sys-

tem must have suffered and been in a degenerated state; and it was possible that mental trouble or worry of any kind overtaking a man whose system was in such a state might develop some form of insanity, being unable to overcome the burden that had fallen upon him. If insanity should be found to depend upon an organism, the tissues must first be degenerated, since normal tissues and secretions prevented such organisms entering the system, and as it was the civilized habits of eating that led to degeneration of the digestive and other organs, it was advisable that diet should be attended to, not only in the treatment, but as a preventive of insanity.

XIII.—Edwin Goodall, M.D.,
Medical Superintendent, Carmarthen Asylum.

Dr. Goodall agreed that the relationship of syphilis to paralytic dementia was often assumed, and that more evidence was needed. He believed that it was established that general paralysis in children was due to hereditary syphilis. He asked Dr. Robertson whether the organism (Klebs-Loeffler) was found in certain parts of the intestine rather than others, as, for example, in the colon and about the ileo-caecal valve, where the inhibitory action of the intestinal wall over bacterial growth was least in evidence? Also, had he had time to examine for this organism in other forms of mental disorder? Lastly, had he found in sections of the rat's cortex that the tangential fibres were degenerated?

XIV.—T. B. Hyslop, M.D.,
Medical Superintendent, Bethlem Royal Asylum.

Dr. Hyslop said it was difficult to undo all the work and conclusions of the innumerable clinicians who had succeeded in establishing a definite relationship between syphilis and general paralysis. Tabes was etiologically the same as general paralysis, and had to be reckoned with before one could receive this hypothesis from Dr. Robertson. He believed the bacilli found by Dr. Robertson to be part of a terminal infection, and that they occurred in relationship to the lowered vitality of the tissues.

Reply.

Dr. Ford Robertson, in reply, said that his purpose had been achieved, even though he did not say one word more. He felt he had succeeded in calling forth that friendly interchange of views of which he had spoken. It was impossible for him to answer all the criticisms that had been made. Many of them were really dependent upon slight misunderstandings regarding the opinions he held. For example, several of the speakers had implied that he attached little or no importance to syphilis in the etiology of general paralysis. On the contrary, he maintained that syphilis was by far the most important etiological factor. He only differed from the most generally adopted view in maintaining that it was not an absolutely essential factor and in insisting that there must be some other factor introduced to account for the phenomena of the disease. He would try to answer very briefly a few of what seemed to him to be the more important of the criticisms that had been passed. He had been asked if he did not think that the organic changes in the nervous system and the consequent low trophic conditions in the general paralytic would satisfactorily account for the bacterial attack upon the gastro-intestinal tract. He maintained that it certainly would not, for all the recent work upon immunity had pointed to the conclusion that the protective arrangements of the body against bacteria consisted in certain complex chemico-vital processes with which the nervous system had very little to do. If it were otherwise, a patient in a condition of shock would succumb to septicaemia within forty-eight hours. He had been asked to give some details regarding the symptoms observed in the rats. He did not, however, wish at present to enter fully into the results of this experimental inquiry because it was still in progress, and no claim was made that it was in any way complete or its testimony conclusive. He would merely say that the symptoms included feebleness and slowness of gait, inco-ordination of movement, drowsiness passing into a stuporous condition, marked dyspnoea, and some diarrhoea. The value of the experimental evidence was rendered much less than it might otherwise have been by the unfortunate rapidity with which the disease went on to a fatal termination. In answer to Dr. Goodall, he said that he had not found that the diphtheroid organism was most abundant in the region of the ileo-caecal valve. Other organisms seemed to predominate there. It was high up in the nasal cavity and fauces that the diphtheroid bacillus seemed especially to lodge. From these situations it might readily be disseminated throughout the alimentary and respiratory tracts. He had been asked about the results of similar observations in other cases. He had occasionally observed diphtheroid organisms in the alimentary tract of cases that were not general paralysis, exactly as was to be expected. But no one who rightly understood the hypothesis he had defended could bring such a fact forward as an objection to it. With regard to Dr. Maule Smith's remarks, he thought that the question had been looked at too exclusively from the point of view of the bacterial attack. He insisted that the all-important fact was the general and local impairment of the defences. Against Dr. Hyslop's contention that the work of clinicians for years had been to lay down a distinct relationship between syphilis and general paralysis, he placed the views of many eminent authorities who insisted that syphilis was not an essential factor, and the fact that numerous cases had now been recorded in which syphilis had been contracted after the onset of general paralysis. He agreed entirely with the view that general paralysis and tabes had essentially the same pathogenesis. He was asked, if the hypothesis he had defended was true, should they isolate cases of general paralysis? The answer depended entirely upon whether or not any exaltation of the virulence of the diphtheroid bacillus took place through long residence in the host, and this point was still uncertain. In reply to Dr. Mott, Dr. Ford Robertson said that it would hardly be in accord with the hypothesis advanced to call this bacillus the specific bacillus that produced general paralysis. It was maintained that there were a profound alteration of the general immunity, probably important local lesions in the respiratory and alimentary tracts, a mixed toxic bacterial infection from these tracts, not special to general paralysis, and, lastly, the predominance of a toxic infection by this bacillus. There was no escape from the conclusion that the lesions observed in the rats were specific lesions produced by the organisms in the cultures with which the animals were fed, but it was not claimed that it had been proved that these lesions were pathologically identical with those of general paralysis. It was merely pointed out that the two sets of lesions had a close resemblance to each other. The inconclusiveness of Krafft-Ebing's experiments in support of the doctrine "No syphilis, no general paralysis" had often been pointed out. There were very strong grounds for believing that general paralysis sometimes developed in persons who had not been infected by syphilis. He had referred to fourteen recorded cases in which syphilis had been contracted after the onset of the symptoms of general paralysis. Dr. Mott explained such cases as instances of a second infection, and he (the speaker) admitted that the explanation was a possible one. He had not with certainty determined the presence of plasma cells in the walls of the cerebral vessels of the experimental rats, or proliferation of the ependyma. He had not had an opportunity of making any bacteriological investigations in cases of juvenile general paralysis.

CAVITIES IN THE CORD.

By Richard Gundry Rows, M.D.,
Pathologist, County Asylum, Whippingham.

[Abstract.]

In this lantern demonstration specimens were shown of cavities which were found in three spinal cords, and which had an entirely different origin in each case. In the first case the cavities were largest and most numerous in the dorsal region, but were also present in the cervical and lumbar regions. They were caused by an atrophy of the nervous substance and neuroglia, following marked degeneration of the vessels and dilatation of the lymph spaces. There was no overgrowth of neuroglia anywhere in the cord. The second case was one of syringomyelia gliosa, in which there was the usual overgrowth of the neuroglia, with subsequent rarefaction and destruction. It was associated with a hydromyelia. There was marked degeneration of the vessels. The third series of specimens were taken from a cord in which micrococci were found. In this case the cavities were produced by haemorrhages into the grey matter on both sides of the cord. The vessels generally were engorged and dilatation of the lymphatic spaces was also marked.

REPORTS OF SOCIETIES.

OBSTETRICAL SOCIETY OF LONDON.

EDWARD MALINS, M.D., President, in the Chair.

Wednesday, October 7th, 1903.

EXTRAUTERINE GESTATION.

THE following case was described by Mr. JOHN MALCOLM:

The patient, a healthy woman, was married on October 9th, 1899, at the age of 23. In April, 1900, she felt depressed, and menstruation became irregular. She had attacks of pelvic pain, with nausea, commencing on May 12th, June 3rd, June 15th, June 28th, and July 12th. In the last two attacks there was fever, and in the final one there was obstinate constipation and vomiting. On July 17th a large mass was felt behind the upper part of the vagina, nearly filling the pelvis, and rising about halfway between the pubes and umbilicus. The uterus was somewhat enlarged, dragged up, and pushed over to the left side. On July 18th, 1900, an incision was made in the middle line above the pubes, a small pus cavity opened, and through it the amniotic sac evacuated. A fetus of between three and four months' development was extracted without opening the peritoneum, the placenta with an extensive attachment being felt on the right side and floor of the pelvis. The cavity was packed with iodoform gauze, no attempt being made to remove the placenta. The latter remained alive, and there were frequent and sometimes profuse haemorrhages when the gauze packing was changed between July 24th and August 10th. On the latter date an attempt was made to break up and get it away. A small piece was torn off, but haemorrhage was so alarming that the wound had to be packed immediately. This procedure killed the placenta, and hardly any blood was lost afterwards, although every bit of the placenta had to be peeled off the maternal tissues, and its removal was not completed until August 26th. There was an inflammatory attack with some intestinal difficulty in September, and the wound did not finally heal until the middle of December. The patient was now in perfect health.

Commenting on the case, Mr. Malcolm discussed the methods of arresting haemorrhage, and urged that operation should always be recommended as soon as a diagnosis of an ectopic gestation with a living fetus was made.

SURVIVAL OF OVUM.

A second case was described by Dr. CUTHBERT LOCKYER.

The symptoms began with uterine haemorrhage and the passage of a (?) decidual membrane on December 27th, 1902, after amenorrhoea dating from the end of October. Signs of internal haemorrhage appeared on January 11th, 1903 (about the eleventh week of gestation). A swelling in the left ovarian region was palpable on January 20th. Further crises occurred on February 5th and 9th. Operation took place on February 11th, death following twenty-four hours later.

Dr. Lockyer said that in this case the primary tubal rupture occurred through the peritoneal aspect of the tube, the fetus escaping into the abdominal cavity; chorionic villi gained immediate attachment to the omentum, which presumably was adherent to the tube prior to the rupture. The omentum enveloped the gestation products, and soon shut them off from the general peritoneal cavity. The secondary gestation sac, so formed, seemed to have remained intact from January 11th until February 5th. On February 9th, the time of the third crisis, the fetus probably escaped through a rent in the amnion, since it was found in the peritoneal cavity two days later at the time of the operation. There was no hematocele formation. He thought that implantation on the omentum took place just as it does when the rent being below, the villi grow out between the layers of the broad ligament, but events proved that the risk of secondary rupture was greater when the sac was formed of omentum than when the envelope was formed by the broad ligament. He also discussed the clinical differences of sacs of these two varieties.

A report on a case of abdominal pregnancy secondary to partially ruptured pregnant tube having been read by Dr. HELLIER, discussion of all three papers followed.

Dr. HERMAN thought Mr. Malcolm had treated his case wisely, and agreed that operation should be performed without unnecessary delay in all similar cases. He could not, however, agree with the recommendation of prompt operation in all cases of ectopic pregnancy, in which the fetus was living, whatever the period of pregnancy. In the first half of ectopic pregnancy certain dangerous events were frequent—rupture of the tube or of the gestation sac, and its ulterior consequences. At this period the placenta was small and could be satisfactorily dealt with, though even at this period, as Mr. Malcolm had shown, haemorrhage often gave great trouble. But in the second half of ectopic pregnancy the conditions were different. The further the pregnancy went on the more vascular was the placenta and the larger its area, so that the difficulty of stopping bleeding was greater. Mr. Malcolm had quoted Dr. Champneys's compilation of cases made in 1887, and showing a mortality of 88 per cent., and Dr. Herman was not aware of any considerable number of cases of operation in ectopic gestation with a living fetus at or near time which showed improvement having been published since. Before proceding to this dangerous operation they should consider what would happen if the operation were not done. When the patient had reached the second half of pregnancy liability to rupture of the sac was a thing of the past, and dangerous accidents of any kind were rare. Arrived at term spurious labour came on, and at this time the patient was practically in no danger. Then the child died, the liquor amnii was absorbed, and finally, after an uncertain interval, the placenta became thrombosed. The patient was as a rule in no danger until suppuration took place, and it might not occur at all and the patient remain in good health to the end of a long life, subject only to the inconvenience of an enlarged abdomen. Suppuration occurred after an interval which Parry had shown might be from one month to two years, and was on an average six months, and if operation were postponed until then the placenta would almost certainly be thrombosed, and it could then be easily peeled off without haemorrhage. He had exhibited to the Society (*Transactions*, vol. xxviii, p. 141) specimens from a case illustrating this. He therefore could not agree that immediate operation should be done in the second half of ectopic pregnancy with a living child; he thought that by far the safer course was to wait until symptoms of suppuration had begun.

Dr. VICTOR BONNEY said two corresponding cases had come under his notice recently.

In the first a two months' tubal gestation ruptured into the broad ligament, forming a sac into which bleeding occurred during a period of six weeks. In the second case the patient, after missing two periods, was suddenly seized with severe pain, accompanied by some loss, and followed by the passage of a uterine cast. The bleeding was slight, and was followed by another two months' amenorrhoea. An examination four months after the beginning of pregnancy revealed all the signs of a typical extrauterine gestation; indeed the placenta could be felt in the pouch of Douglas by vaginal examination. Both these two patients were subjected to operation by Mr. Bland-Sutton, and an enormous retroperitoneal collection of blood was found in the first, whilst from the second a perfect and unruptured secondary abdominal sac, containing a living fetus of between 4 and 5 months, was removed with a successful result. In this latter case the removal of the placenta was followed by very free bleeding.

In considering the advisability or not of removing the placenta at once in any given cases, there were, he thought, two main points to consider—first, the duration of the pregnancy; and, secondly, the mode of placental attachment in the particular case under consideration.

Dr. AMAND ROUTH said that the case so ably commented upon by Dr. Lockyer had proved a very disappointing one. The patient had had three attacks of collapse from internal haemorrhage, with nine weeks' amenorrhoea. The diagnosis of extrauterine gestation was made from the history and the physical signs. It was assumed that it was a secondary intraperitoneal pregnancy after tubal rupture, owing to the tumour being entirely distinct from the retroverted uterus.

At the operation the placenta was found to be already separated on its central maternal surface, and adherent at several parts of the circumference to omentum and broad ligament. After its removal there was a profuse general capillary haemorrhage from all the underlying structures. This was at once arrested by firmly-applied gauze pressure. As the anaesthesia passed off uncontrollable vomiting ensued, and she died of exhaustion in twenty-four hours.

Dr. Routh asked for the experience of those present regarding the persistent amenorrhoea in this case and that of Dr. Victor Bonney, instead of the usual metrorrhagia. Was it peculiar to cases of secondary intraperitoneal pregnancy?

Dr. HEYWOOD SMITH wished to ask Mr. Malcolm whether in his case he had used adrenalin for the arrest of the haemorrhage. In corresponding cases he himself had found both adrenalin and tincture of matico very useful.

Mr. MALCOLM, in reply, said that if an operation were performed, as he advised, whenever ectopic gestation with a living fetus was diagnosed, undoubtedly cases would be operated upon which would get well without operation—as, for instance, such a case as that recorded by Mr. W. R. Watkins in the eighth volume of the *Transactions* (p. 106), in which a patient died at the age of 74, having carried the remains of a full-time extrauterine fetation in her abdomen for forty-three years. But Mr. Malcolm contended that if the operation proved dangerous during the life of the fetus it would be more dangerous if delayed until suppuration took place, or if it had to be performed for severe haemorrhage. It seemed to him that, under all circumstances, delay in

operating was likely to give occasion to development of more dangerous conditions. With regard to a true abdominal pregnancy arising outside the tube and outside the ovary, Mr. Malcolm thought this was quite possible. Dr. Taylor's deductions from observations made during an operation performed in 1896 explained the method of development of extrauterine fetations most satisfactorily. Dr. Taylor taught that so long as the amnion did not rupture, and the supply of blood to the placenta was sufficient, the fetus in the amnion might develop anywhere to full term.

Specimens.

Dr. Herbert Spencer showed a degenerated fibroid removed by abdominal hysterectomy, Mr. Targett one of keratinising carcinoma, and Dr. Sikes a specimen of succenturiate placenta. A case of primary squamous epithelioma of the body of the uterus was narrated by Dr. W. E. Batchelor, and discussed by Drs. Lockyer and Stevens, while Dr. Sikes demonstrated a method of taking intrauterine bacteriological cultures.

PATHOLOGICAL SOCIETY OF LONDON.

Rickman J. Godlee, F.R.C.S., Vice-President, in the Chair.

Tuesday, October 20th, 1903.

Fractures in the Skeletons of Large Apes.

Mr. W. L. H. Duckworth exhibited a series of photographs illustrating the above subject. The lesions themselves closely resembled the various forms of fracture known in man, but their frequency was notably greater in such apes, a fact probably connected with their arboreal habits. Besides fracture, other lesions shown amongst the apes in question were osteo-arthritis and symmetrical periostitis of unknown source. In answer to the Chairman, who observed that some of the symmetrical thickenings suggested those of osteo-arthropathy, and inquired whether any of the animals died in captivity of phthisis, the speaker stated that in one such case the ape died in captivity; most of the other animals were killed in the wild state.

Cancer and Nerve or Trophic Areas.

Mr. G. L. Cheatle gave a lantern demonstration of cases bearing upon the relation of cancer to nerve or trophic areas.

Cartilaginous Body from the Knee-Joint.

Mr. Raymond Johnson brought forward a specimen of the above kind removed from the knee-joint. The portion of the synovial membrane to which the pedicle was attached was also removed, and the interest of the specimen consisted in the presence of numerous nodules of hyaline cartilage in the synovial membrane around the attachment of the pedunculated body. The specimen thus demonstrated in an unusual way the formation of such a chondroma by a growth of cartilage in the synovial membrane. A specimen of a cartilaginous tumour removed from a tendon sheath in the palm of the hand was exhibited by the same author, who had found no record of a similar specimen.

In answer to Mr. Eccles, the author stated that the age of the first patient was 40, and that the "body" lay in the outer side of the joint, over the condyle.

Hypertrophy of the Prostate.

Mr. S. G. Shattock discussed certain anatomical points in connexion with the operation of prostatectomy from an examination of a series of specimens which had been presented by Mr. P. J. Freyer to the museum of the Royal College of Surgeons. The two questions upon which controversy had arisen were (1) how far the prostatic portion of the urethra was preserved, (2) was the whole prostate removed? Much of the interest in regard to the urethra was now gone, since its preservation was no longer regarded as of any moment. The question of the urethra had to be considered first in the case where the gland was removed with its circumferential entire, and secondly, when the gland was parted up in front of the urethra with the definite purpose of saving the canal. As an example of the first, the speaker selected the eighth case recorded by Mr. Freyer in the British Medical Journal, February 1st, 1902, a case in which Mr. Freyer thought that the urethra had been preserved. Here, after the gland was detached all round, with the catheter passing through its axis, the whole mass, on counterpressure being made from the rectum, was suddenly propelled into the bladder, and it was thereupon noticed that the urethra was covered by the catheter for about 2 in. from the triangular ligament. This portion of the urethra was regarded by Mr. Freyer as prostatic, from off which the gland had been drawn like a bead from a thread. The specimen showed beyond the anterior end of the gland a cord-like process which was viewed by the operator as the pubo-prostatic ligaments. A minute examination of this, however, showed it to be urethral mucosa covered on one side with columnar epithelium, and it continued without solution of continuity into the bore of the gland. The process must be regarded as membranous urethra avulsed in connexion with the prostate; and this, the speaker imagined, was the urethra felt on the catheter after the gland had been displaced into the bladder, and whilst the finger was still in front of or on the distal side of the gland. In a second class of cases, the prostate was parted in the mid-line in front of or above the urethra with the object of peeling the latter off and afterwards completing the removal of the enucleated gland by displacing it into the bladder. As an example, in Case IX of Mr. Freyer's list, this was thought to have been carried out; but examination showed that except at the anterior end the urethral and vesical mucosa remained on the enlarged gland, the depth of the canal being, as regularly the case, largely increased. The speaker showed the same in an enlarged prostate removed by Mr. A. P. Gould, where the same attempt had been made to preserve the urethra, and where almost the whole of the mucosa remained—in places so thinned, that it could hardly be raised on dissection, yet microscopically showing a mosaic of prominent epithelium, and traceable without interruption to the flaps of thicker mucosa remaining on the vesical surface. In fact, the object aimed at in such circumstances was so incompletely attained that it could not, properly speaking, be said to have been carried out, such extensive tracts of attenuated urethral mucosa did examination disclose adhering to the deepened bore of the gland. Passing on to the other question, How much of the gland was removed? the speaker had selected the most cleanly extirpated of all Mr. Freyer's specimens.[1] The gland was removed with its circumference quite entire. It was, after hardening, cut completely through at right angles to the axis of the urethra, and microscopic sections were made of the entire area midway between the upper, vesical, and the lower ends. To prevent confusion, it was necessary to use terms in the same sense as Mr. Freyer; by the "sheath" was to be understood the fibrous investment furnished by the recto-vesical fascia; by the "capsule," the fibro-muscular cortex which was directly continuous with the stroma of the gland, but into which the gland tissue did not itself penetrate. The transverse section in Mr. Freyer's specimen displayed a well-marked cortex of unstriped muscle fibre completely surrounding the glandular mass. It was at once obvious that what had been carried out was not the mere enucleation of an adenomatous formation. The surface of a prostatic adenoma, like that of others, was smooth, and lowly lobulated or tuberose. In the various other of Mr. Freyer's specimens the same held true: the mass removed was invested with a cortex of fibro-muscular tissue, through rents or defects in which the underlying smooth and tuberous adenomatous mass of the enlargement presented itself to view. Mr. Freyer's operation, therefore, was a prostatectomy, but was it as complete a prostatectomy histologically as it was from a surgical standpoint? Did the line of enucleation absolutely and everywhere pass beyond the limits of the gland tissue? Although this was a theoretical possibility, a critical study of the muscular cortex in Mr. Freyer's specimen showed that it was not the case. For long distances the cortex was solely of plain muscle concentrically disposed, but here and there the unmistakeable flattened recesses of gland tissue lay so involved in the line of enucleation that it was impossible to believe that none others remained behind. For in this, as in the others of Mr. Freyer's specimens, the transversely fasciculated character of the surface of the capsule proved that the line of enucleation was not beyond but through it. From the histological side, therefore, the speaker thought that prostatectomy was in most cases incomplete. An absolutely complete prostatectomy, in short, could hardly be verified except by the microscopic demonstration of the absence of gland tissue in the parts left behind.

Mr. Thomson-Walker remarked on the importance of obtaining an examination of the parts left behind in order to determine what had really been carried out at such operation. In regard to the urethra, he thought that certain portions might be saved.

Mr. W. G. Spencer observed that more information was

[1] Case 28, British Medical Journal, April 12th, 1902.

much needed in regard to the harder forms of enlargement; these did not allow, apparently, of the same ready enucleation as the softer, adenomatous varieties.

Congenital Sacral Tumour.

Mr. H. J. Curtis exhibited a small tumour of this class, removed from a girl 1 year of age. It occupied the usual position behind the rectum, was cystic, and showed structures pertaining to intestine, having presumably arisen, as such tumours are supposed to do, in the post-anal gut.

Harveian Society of London.—At a meeting of this Society on October 15th, Dr. Winslow Hall in the chair, Dr. Herbert Tilley showed a man of 45 upon whom he had operated five years before for squamous epithelioma of the right vocal cord. Its point of interest was that the only symptom of which complaint had been made was hoarseness. In so grave a disease this was remarkable; and the patient's voice when he appeared at the meeting was excellent. The diagnosis had been confirmed by microscopical examination. The cord was now replaced by a cicatricial band.—Mr. Wilfred Harris showed a man with old traumatic paralysis of the deltoid. He had recently grafted the fifth nerve of the brachial plexus on to the sixth root and the patient already showed some improvement.—Mr. Laming Evans showed a case of spina bifida in a child, involving all the sacral and the last three lumbar vertebrae, coupled with congenital double talipes and absence of bladder control. He intended to limit operation to correcting the deformity of the feet, not considering arthrodesis of knee-joints and ankle-joints, as suggested by a member, as necessary. He also showed a woman with double pes cavus and a swelling over the eleventh and twelfth dorsal spines, the probable nature of which was discussed.—Mr. P. L. Daniel showed a man suffering from tabes complicated with perforating ulcer at the base of the third toe, and discussed the relationship of untreated mild syphilis and so-called non-syphilitic soft sore to the causation of corresponding cases. He also expressed the view that the infrequency with which perforating ulcers took on malignant growth militated against the theory that loss of nerve control had much to do with the cause and distribution of cancer. The true pathology of perforating ulcers was discussed by Messrs. Jaffray, Harris, and Evans, and in reply Mr. Daniel said he attached little importance to trophic nerve causes, and as an example pointed out that when sloughing occurred after removal of the Gasserian ganglion it was due to sepsis and trauma of the cornea.

Hunterian Society.—The first Hunterian lecture was delivered on Wednesday, October 14th, by Dr. Hale White.—Dr. Dingle was in the chair.—The subject of the lecture was some clinical considerations concerning certain of the rarer forms of enlargement of the heart. Dr. Hale White first alluded to the difficulty of estimating by percussion whether the heart was enlarged, and he then pointed out how much it might hypertrophy as a result of pericarditis. This was due to the fact that the main function of the fibrous pericardium was to support the heart and prevent its dilatation, hence when the pericardium was softened by inflammation the heart readily dilated, and as when dilated it acted under a great mechanical disadvantage it soon underwent compensatory hypertrophy. The object of treatment must be to overcome the dilatation, because experience showed that when adhesions took place on a heart which was not dilated very little harm followed, but if adhesions formed on a dilated organ the patient would suffer for the rest of his life from all the more serious effects of cardiac failure. The treatment of pericarditis was discussed, and also the best means of preventing dilatation. Allusion was made to the cardiac enlargement which followed specific fevers and that due to over-indulgence in alcohol was discussed. Four cases were narrated. In three of them a necropsy was held. No other cause than alcoholic drink could be found for the enlargement. These three hearts weighed respectively 22, 20, and 20 oz. No valvular disease or adherent pericardium could be found. The muscle was histologically healthy. The chief symptoms of the condition were dyspnoea, a rapid, feeble, and often irregular pulse, displacement of the cardiac impulse outwards, the sounds were faint, but no murmur. If the patient lived long enough severe dilatation might ensue, and then all the symptoms of backward venous congestion developed. Owing to the presence of albuminuria such cases were difficult to distinguish from chronic interstitial nephritis. It was shown that they were especially common in those German towns where large quantities of beer were drunk. The cause of the condition was discussed, and it was shown that nothing histologically abnormal could usually be found in the heart, and that the condition could not be ascribed to any particular constituent of the beer, nor to the quantity of fluid drunk, nor to alcoholic neuritis of the vagus. The last rare form of enlargement considered was that due to a fibroid heart, and it was shown that this was a frequent cause of sudden death. An alcoholic heart was probably commoner than was usually supposed.—A hearty vote of thanks was accorded to Dr. Hale White for his most interesting lecture.

Dermatological Society of London.—A meeting was held on October 14th, Dr. H. Radcliffe Crocker in the chair. The following cases were shown:—Mr. Malcolm Morris: Two cases of lupus erythematosus, in both of which the buccal cavity was affected.—Mr. Wilmott Evans: A boy with a linear mole affecting the area supplied by the dorsal branch of the left ulnar nerve on the back of the hand.—Dr. Sequeira: A girl aged 15, with a number of ulcers and scar-leaving eruption on both lower extremities. The general opinion of those present was that it was a form of tuberculosis.—Dr. E. G. Graham Little: A woman aged 45, single, who had suffered for thirteen months from an ulcerating spreading eruption on the dorsum of the right foot, and for a shorter time from a somewhat similar patch on the left thigh. That on the foot showed multiple steeply-cut ulcers with very high tumour-like edges. There was no history of syphilis, but this was the diagnosis generally offered.—Mr. Arthur Shillitoe: A case of gyrate psoriasis in a man who had been also attacked with gonorrhoea. The case was shown to demonstrate the improvement which had taken place in the psoriasis from the administration of copaiba resin given for the gonorrhoea.—Dr. S. E. Dore: A Russian suffering from von Recklinghausen's disease.—Dr. A. Whitfield: A man aged 25, who had had syphilis five years ago, and presented the rare condition known as acne keloid, generally believed to be unconnected with the syphilis.

Society of Anaesthetists.—The annual dinner of this Society was held at the Café Monico on October 16th. The President, C. Carter Braine, F.R.C.S., received fifty-two members and guests, among the latter being several ladies. Dr. Cullingworth, who proposed the toast of "The Society," said that Sir James Simpson, a gynaecologist, fought a hard fight for anaesthesia and won. Anaesthesia flourished for some time without science, but was now on a scientific basis and advancing. He suggested that anaesthetists might sometimes be invited to give a lecture on their own experiences of, and views as to, operators. The former could institute useful comparisons between operators who, by the way, rarely saw each other operate. The President, in replying to the toast, avowed that the greatest honour to an anaesthetist was to be President of the Society. It had existed now for ten years, and started as a semi-social gathering for discussion of cases. Then there was an influx of country and foreign members, and later of practitioners interested in anaesthesia. The membership now amounted to ninety-one. During this session there would be several clinical meetings. Dr. Dudley Buxton proposed the toast of "The Visitors" in a witty speech. Mr. Arthur Barker, who replied, acknowledged the debt of gratitude which surgeons owed to anaesthetists, and emphasized the confidence which was placed in them. Abroad he found the position of the surgeon was different because he had to keep watch on the anaesthetist throughout the operation. Dr. Woollett proposed the toast of "The President" in humorously reminiscent vein. The President replied suitably. The Secretaries asked that all members who wished to read papers or bring communications before the Society during the present session would be good enough to notify them as soon as possible. The first meeting will take place on November 6th.

Wigan Medical Society.—An ordinary meeting of the above Society was held on October 8th, the President, Dr. Benson, in the chair. Mr. Brady showed a fibro-myomatous uterus removed by abdominal hysterectomy.—The President opened a discussion on forceps in midwifery, with especial reference to axis-traction forceps. An interesting discussion followed, and the following members took part: Messrs. Rees, Blair, McElligott, Brady, Mill, and the Honorary Secretary, to whom the President replied.

REVIEWS.

SURGERY.

The appearance of the final volume of the *Manual of Surgical Treatment*[1] by Professor Watson Cheyne and Mr. Burghard affords us a welcome opportunity of congratulating the authors on the successful completion of a work which, we believe, will long be regarded as a standard and authoritative treatise on practical surgery. Their task has been very laborious, by reason not only of the wide and rapid development of their subject in all its branches, but also of the necessity in a work of this scope of breaking new ground. The full series of volumes now forms a valuable and important addition to the surgical literature of this country, and presents a complete exposition of the best and most advanced views on surgical treatment. The fullness of the later additions proves that the authors have endeavoured to render their manual good and comprehensive throughout, and that they have resisted any temptations to shorten the concluding part, and to hurry its issue. The final section is one of much interest, as most of the subjects here discussed are either quite new or more or less unsettled and in process of development. It contains instructive chapters on the surgical affections of the pancreas and on the treatment of pulmonary cavities, deals at full length with recent surgical methods of treating prostatic hypertrophy, and presents a good review of the indications for operative intervention in the varying conditions of malignant disease of the rectum. The long and very able chapters on the surgery of the kidney and of the liver and bile passages also assist to render this a volume of quite special interest and importance. In this section of their manual the authors have evidently adhered less strictly to their original intention of teaching almost exclusively the results of their personal experience, and, recognizing the important work of fellow-labourers, have considered in a catholic spirit some of the able contributions that have recently been made on special branches of surgical practice. Full acknowledgement is made of the great assistance that has been derived from Mr. Henry Morris's exhaustive work on the surgical affections of the kidney and ureter, and also from the published experience of Dr. Fowler and Mr. Godlee in connexion with the surgical treatment of diseases of the chest. The usefulness of the chapter on diseases of the rectum and anus is increased by the addition to the excellent illustrations which abound in this as in other parts, of several drawings taken from Quénu and Hartmann's well-known *Chirurgie du Rectum*.

Professors Garrè and Quincke whilst recognizing the present undeveloped stage of the surgical treatment of pulmonary affections, think it opportune to present a review[2] of such progress as has already been made, and so to smooth the way for a more general advance in this direction. The treatise they have produced, though a small volume, is thoroughly comprehensive and gives full information based on actual clinical experience, concerning the indications and prognosis of operative intervention in cases of both disease and injury of the lungs. A full and excellent chapter on the surgical anatomy of the thorax is followed by two chapters, taking up more than one-third of the book, on the pathology, diagnosis, and operative treatment of pulmonary suppuration. The utility of the treatise is enhanced by some clear illustrations most of which are original, and by a full bibliography.

In a volume on cancer of the breast,[3] based on a prize essay written in 1901, Dr. Ménio has, with much zeal and labour, fulfilled his object of bringing under the notice of French surgeons the most recent and advanced developments of the surgical treatment of cancer of the breast. An enthusiastic advocate of the radical and extensive treatment, he has set himself the congenial task of discussing at length the successive phases of its evolution, the anatomical and clinical data by which the essential elements of the method are justified, and the statistics which, in his opinion, proclaim its superiority. The work, regarded as a literary exercise rather than a statement of clinical experience, is, on the whole, satisfactory. It is well arranged, and shows that the author has acquired an exceptionally wide knowledge of his subject. Credit is freely given to the part taken by English as well as by American surgeons in improving the results of the operative treatment of mammary cancer. Although the statistics collected by Dr. Ménio show a decided improvement in the results of operative treatment of cancer of the breast, it seems to be by no means demonstrated that such improvement has kept pace with the still increasing extent of the field of operation.

In publishing his address on the *Radical Cure of Corns and Bunions*,[4] delivered to the Willesden Medical Society, Mr. Freeland has done service by affording, through proper and professional means, good prospects of relief from the troublesome and often disabling effects of these minor ailments. The author, holding that the chemical and instrumental means in general use for the treatment of corns are unsatisfactory, advocates free excision of the entire growth, together with the underlying bursa when existent. This, however, is not proposed as a universal remedy, as it is pointed out that in cases of deformity of the foot with which the growth of corns is so often associated, the treatment of the corns must be the treatment of the abnormal condition which has called them into being. Some suggestive hints are also given on the management of bunions. In the treatment of the common form of this affection occurring in the inner aspect of the ball of the great toe in connexion with displacement of the first phalanx, the author states that no other operation can be so readily performed or give such uniformly good results as excision of the head of the first metatarsal. Attention to the rules of treatment here suggested and to the principles on which these rules are based is likely to be the means of affording satisfaction to the practitioner, and beneficial results to his patients.

The writing of a satisfactory handbook on matters which are of an essentially practical nature, and only to be thoroughly learnt by personal acquaintance, is not a simple task. The only useful part which such textbooks as Mr. W. Johnson Smith's *Practical Guide to Surgical Bandaging and Dressings*[5] can fill is that of explaining and rendering intelligible the orders which nurses and students receive in the ward. While the author has in part succumbed to the temptation of writing a book of "instructions" rather than of "instruction," on the whole the small volume will be very acceptable to the junior students and nurses for whom it is designed. The first chapters deal with the principles of wound treatment, and give a readable and careful summary of the subject of surgical cleanliness. Greater prominence might well have been accorded to aseptic procedure. The author states that "some surgeons operate in gloves," and other similar expressions will probably incline the reader to think that the aseptic technique is not popular among surgeons, whereas the contrary is of course the case. The chapters on splints and on bandaging are well and concisely written, and the illustrations are good and numerous. The instructions on the treatment of wounds, burns, and ulcers are of less value, and with some of the author's methods not a few surgeons would be found to disagree, for example with his adverse opinion on the value of picric acid in burns, and his omission to mention the all important attempt to render a burn and its surroundings aseptic. On nursing in cases of injury there is an interesting chapter which summarizes the more important points to which the nurse should direct her attention. The little volume is small enough for the pocket, and reference to it in the ward should often help a nurse to understand instructions the reasons for which may not be plain to her.

EPILEPSY AND HYSTERIA.

Although hysteria and epilepsy are classed as functional diseases, hysteria is, Dr. Hoche[6] affirms, functional in the

[1] *A Manual of Surgical Treatment.* By W. Watson Cheyne, C.B., M.B., F.R.C.S., F.R.S., Professor of Clinical Surgery in King's College, London: Senior Surgeon to King's College Hospital, etc.; and F. F. Burghard, M.D. and M.S.Lond., F.R.C.S., Teacher of Operative Surgery in King's College, London; Surgeon to King's College Hospital, etc. Part VI, Section I. London: Longmans, Green, and Co. 1903. (Royal 8vo, pp. 539, 113 illustrations. 21s.)

[2] *Grundriss der Lungenchirurgie* [Outlines of Pulmonary Surgery.] By C. Garrè, Professor of Surgery, University of Königsberg, and H. Quincke, Professor of Medicine, University of Kiel. Jena: Gustav Fischer. 1902. (Roy. 8vo, pp. 120; 30 illustrations. M. 3.)

[3] *L'Extirpation du Cancer du Sein.* Par le Dr. Ménio, Ancien Chef de Clinique Chirurgicale à la Faculté de Médecine de Toulouse, etc. Paris: A. Maloine. 1903. (Demy 8vo, pp. 245, 38 illustrations. Fr. 4.)

[4] *The Radical Cure of Corns and Bunions.* By E. Harding Freeland, F.R.C.S.Eng., Surgeon to the St. George's and St. James's Dispensary, etc. London: John Bale, Sons, and Danielsson. 1903. (Crown 8vo, pp. 12, 9 illustrations. 1s.)

[5] *Practical Guide to Surgical Bandaging and Dressings.* By W. Johnson Smith, F.R.C.S. London: The Scientific Press. (Demy 16mo, pp. 167, 70 illustrations. 2s.)

[6] *Die Differentialdiagnose zwischen Epilepsie und Hysterie* [The Differential Diagnosis of Epilepsy and Hysteria]. Von Professor Dr. A. Hoche. Berlin: August Hirschwald. 1902. (Demy 8vo, pp. 36. M. 1.)

sense that it does not, and never can, possess a pathological anatomy, whereas epilepsy is functional only in the sense that we are as yet ignorant of the changes in the central nervous system which give it origin. It is not denied that parallel with the psychical phenomena of hysteria changes must be taking place in the central nervous system, but these changes are only of such a kind as normally accompany mental activity. The theories as to the etiology of epilepsy are too numerous even for Dr. Hoche to name, but the various explanations of hysterical phenomena find suitable mention. The question of hystero-epilepsy has for many years excited the liveliest discussion in France, but in Germany, Dr. Hoche says, has until recently been completely ignored. Landouzy's division of hystero-epilepsy into two forms according to whether the epileptic and hysteric symptoms are mingled in the same attack or occur in the same individual at different times has been adopted by Charcot and his school, with this alteration, that the latter division, in which the same individual is subject to both hysterical and epileptic attacks, is called hystero-epilepsy, but the former division, in which any one attack partakes of the characters of both, is considered a true hysteria. Moebius condemns in forcible language the use of the expression at all, but of late others—Oppenheim, Binswanger, etc.—assert the existence of mixed or intermediate forms. Since Romberg in 1857 drew attention to pupil changes in epileptic attacks, much importance has been attached to this sign as affording a valuable means of diagnosis. Recent investigations, however, have proved that this is by no means of absolute worth. The pupil changes in epilepsy are variable and inconstant, even in attacks classical in type. The pupil changes may begin with the aura; they may be present in minor epilepsy and persist for some time after the attack, or in the most severe cases they may not be present at all, as in Oppenheim's case, in which light reaction was maintained to the end of an attack terminating fatally. Of the pupil changes in hysteria there exists a fairly rich literature, beginning with Galezowski's paper (1870) in which an account is given of hysterical myosis. Sluggishness and failure of light reaction were found by Féré (1882) in grave hysteria; and by others—too numerous to mention—maximal dilatation, maximal contraction, spasm of accommodation, and abolition of reflex contraction to convergence and accommodation have been observed. These changes may be present in one attack and not in another; they are generally symmetrical, and have no relation to loss of consciousness or severity of attack. In the interval between attacks these changes may also be present. The absence of light reflex is, however, not a reflectory immobility in the Argyll-Robertson sense, but is a total immobility, due, not to interference with the reflex arc, but to spasm of the iridic musculature, and thus analogous to the apparent loss of knee-jerk in a hysterically contracted leg. Since the existence of a dilator pupillae muscle has been set beyond doubt, it can easily be understood how spasm of one or other set of muscles, dilator or contractor, may bring about this condition of immobility with maximal dilatation or contraction. When, moreover, the pupil changes occurring normally under psychical influences are borne in mind, the occurrence of marked pupillary changes in hysteria ceases to be extraordinary. Though pupil changes, Dr. Hoche concludes, serve in the majority of cases as a distinguishing feature of epilepsy, they are not absolutely diagnostic. With regard to the minority of cases insusceptible of accurate differential diagnosis, Dr. Hoche deprecates the use of the term hystero-epilepsy as confusing two diseases which have no real point of contact, and regards the mode of development and permanent mental alterations in epilepsy as the most valuable factors in differential diagnosis. This interesting pamphlet is founded upon the results of the discussion held at Baden-Baden in 1902, a full report of which is to be found in the *Archiv für Psychiatrie*, Bd. xxxvi, Heft 1.

Of the many strange phenomena related as being observed in hypnosis, one of the most striking is that named auto-representation. This extremely rare condition is believed by Dr. ADOLPHE BAIN[1] to be based on coënesthesis or common sensibility translated by higher cortical cerebration into true images. That is, that reflex nerve action—of which in normal states people are unconscious—affects subconscious levels, and that in the hypnotic trance these stimuli reach visual and tactile cortical centres concerned ordinarily with special senses. The patients—cases of grave hysteria—being put into the hypnotic trance, affirm that they see with closed eyes the interior of the body, and give to the medical bystander a minute and accurate account in homely words of their internal anatomy, macroscopical and microscopical. They describe the shape and action of the heart, the ramification of the vessels, the movement and shape of the blood corpuscles, or any part of their anatomy to which their attention is directed. Not only the minute anatomy, but particles accidentally incorporated into the organism—small pieces of lead, the metallic stopping of teeth which have found their way into the intestine—as well as pathological states of the gut, have, it is here stated, been described by the patients, and their presence and appearance afterwards verified by examination. Dr. Bain cites cases from Sollier, Buvat, Comar, and others, and relates in detail the few instances he has personally encountered. He devotes some time to the question of possible deception by the patients, but concludes that the phenomenon of auto-representation is an indubitable fact. The patients were for the most part uneducated women of the lower classes. Without expressing any dogmatic opinion on these statements, all this seems to us incredible, and it may be well to remember that in France elementary physiology is widely taught. The subject, however, is one of such great interest and so much is hidden within the penetralia of mentality that it would be rash to say that the matter does not deserve investigation.

[1] *De l'Auto-Représentation chez les Hystériques.* [Auto-Representation in the Hysterical.] Par Dr. Adolphe Bain. Paris: Vigot Frères. 1903. (Cr. 8vo, pp. 156. Fr. 2.)

REPORTS AND ANALYSES

AND

DESCRIPTIONS OF NEW INVENTIONS

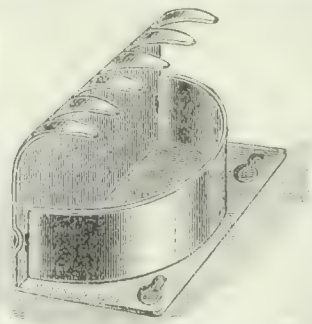
IN MEDICINE, SURGERY, DIETETICS, AND THE ALLIED SCIENCES.

MEDICINAL AND DIETETIC PREPARATIONS.

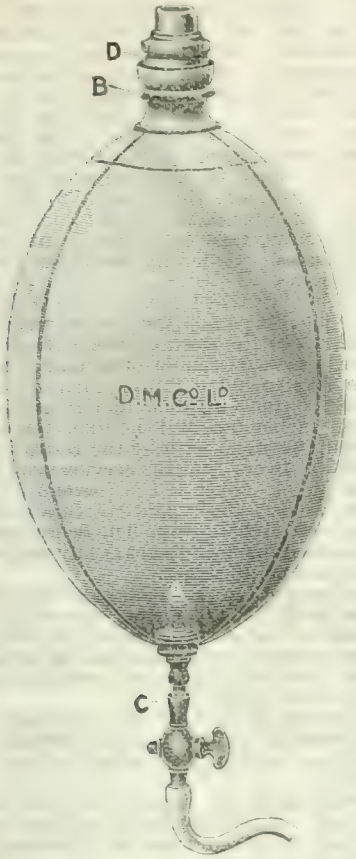
A Substitute for Ichthyol.—Under the name of isarol (or ichthyodin) the Society of Chemical Industry in Basle has recently introduced a substitute for ichthyol. Isarol is prepared from Tyrolese schist oil, and closely resembles ichthyol in its chemical and physical properties. It is, however, slightly richer in sulphur, and is said to be purer and more constant in composition. Like ichthyol, it yields no residue on incineration, is readily soluble in water, and indeed it corresponds exactly with that substance as described in the Swiss *Pharmacopoeia* under the head Ammonium Sulfoichthyolicum. Dr. F. Egger, of the Universitäts-Poliklinik, Basle, states that the two substances are therapeutically identical. Messrs. Fuerst Brothers, 17, Philpot Lane, E.C., are the agents, and the price is about 20 per cent. below that of ichthyol.

MEDICAL AND SURGICAL APPLIANCES.

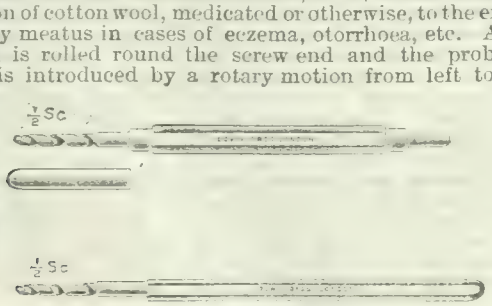
A Wool Tidy.—Dr. WYATT WINGRAVE (London, W.) writes: This instrument consists of a serrated scraper for the easy removal of cotton wool from probes, forceps, etc. It is firmly secured to the table by means of screws which pass through slots in the footplate, but is readily detachable. The wool is easily removed with one hand only by simply dragging the applicator firmly through one of the clefts with a slight rotary movement, a somewhat difficult feat with the usual metal box, which owing to its unsteadiness demands the use of both hands. It is made by Messrs. Mayer and Meltzer in two shapes, with and without a well, which is detachable for sterilizing purposes; the illustration shows the well. Although specially designed for aural and nasal work, it will be found equally serviceable in dental and other work which requires the use of wool wads for cleansing and escharotic treatment.



Reversible Nitrous Oxide Gas Bag.—Mr. Vernon Knowles, L.D.S., of Reading, has had constructed (Dental Manufacturing Co., Lexington Street, W.) a bag made of specially stout rubber for use when nitrous oxide gas, alone or with ether or chloride of ethyl, is used. The feature of Mr. Vernon Knowles's bag is that it is easily detached from its connexions, and can be reversed so that the inner surface may be completely cleansed and freed alike from impurities and residues from the anaesthetic employed. This is a great gain, and especially so when rebreathing is allowed. It fulfils its purpose admirably, and will prove a distinct boon to those who desire to combine cleanliness with efficiency when giving anaesthetics. Either face of the bag can be used. Reference to the figure renders it easy to follow the manipulation required. The rubber ring B which grips the neck of the bag on the union is pushed upwards on to the metal collar D, thus freeing the bag, which is easily detached. The vulcanite tap C at the base of the bag, on to the nozzle of which the rubber tubing is attached, having been unscrewed from the double-ended vulcanite socket, the base of the bag is pushed upwards until the inner socket A projects through the neck of the bag, when it is grasped and the bag gently pulled through until it is reversed; thus what was the inner surface becomes the outer, and can now be thoroughly cleansed, preferably with a weak solution of carbolic acid. When the bag is dry it is reattached to the union by means of the rubber ring, and the vulcanite tap screwed into the socket at the base. This reversible gas-bag is fitted with a special mount, the smaller end of which will fit most of the various N_2O stopcocks or angle mounts used with ether chambers, and the larger end will also carry the reversible supplemental bags for ether, somnoform, ethyl chloride, etc., which are made on the same principle.



An Aural Dressing Probe has been designed by Deputy-Inspector-General Digby Longfield, R.N., to facilitate the application of cotton wool, medicated or otherwise, to the external auditory meatus in cases of eczema, otorrhoea, etc. A piece of wool is rolled round the screw end and the probe thus armed is introduced by a rotary motion from left to right.



When it is desired to leave the wool *in situ* the motion is reversed and the instrument withdrawn leaving in the ear a hollow cylinder of wool which may be soaked in a lotion or covered with an ointment as desired. For this purpose the probe is convenient and safe, provided care be taken to see that the wool extends well beyond the point of the instrument. The probe is made by Messrs. Down Brothers, St. Thomas's Street, Borough.

Plates for X-Ray Work.—Some special plates for radiography, made by the Dr. C. Schleussner Photographic-Plate Works, Frankfort-on-Main, have been tested for us and have been found to be very well suited for all ordinary *x*-ray photographic work. They give good detail of skeletal structure with moderately short exposure, and are low in price as compared with some of the best known plates commonly used for the same purpose. The latter plates give no doubt the finest results, but their employment is an unnecessary luxury for a great deal of more ordinary radiographic work. The plates are well packed as regards safety from damage, either in transit or from light access, and can be obtained from Messrs. Thomas Christy and Co., 4, Old Swan Lane, Upper Thames Street, London.

THE MEDICAL ARRANGEMENTS IN THE SOUTH AFRICAN WAR.

(Concluded from page 993).

Evidence of Civilian Surgeons.

Sir Frederick Treves, Bart., C.B., K.C.V.O.

Sir Frederick Treves stated that he went to South Africa at the time Sir Redvers Buller went. He was present during all the operations for the relief of Ladysmith; he did not go to the Transvaal. He expressed the opinion that the Army Medical Service suffered from over-elaborate organization. It was almost strangled by the mechanical elements introduced into it. Its administration had been elaborated to such a degree that it was almost unworkable as it stood on paper. He thought the success of the work in Natal was due to the fact that the military-medical organization was entirely thrown aside. Asked to explain what he meant by the organization being "practically strangled," Sir Frederick Treves replied: "By the immense amount of detail to be carried out in obtaining transport and equipment and in moving, the enormous number of forms to be dealt with to obtain what was necessary to be obtained, and in fact, if in the rapid moving of a column the positive instructions were carried out, the hospital would be paralysed—it would be impossible to keep on its work. The length of time taken to obtain the supplies and transport and the like would be such as to paralyse its movement." The organization was full of an enormous number of safeguards apparently based upon the impression that the officer put in charge of a hospital was likely to be incapable, and that his incapacity would be minimized by restrictions of all sorts. In an army on a peace footing at home the organization might be suitable, but it was very laborious and put an enormous amount of work upon men. It was an exceedingly extravagant service; it was worked in the most costly possible way. An officer was obtained who was supposed to be a specially-qualified man, who received high pay and charge pay, and then he was put to do work which was practically much better done by an ordinary clerk for a pound or so a week. The system must be decentralized in the field; that was really the essence of the whole business. If a man was good enough to be put in charge of a large mobile field hospital, that man should be regarded as responsible, and should have to a very large extent perfectly free action. As a matter of fact, he was not free in any particular. The supplies were well managed, but it was a question of not being able to get things without an amount of form which was almost disastrous. It came to this, that the man at the head of the field hospital practically could have nothing to do with the sick. His time was spent in looking after accounts and tallies and arrangements of that sort. There was an exceedingly good officer as the surgeon in charge of the hospital he was in, but he could have had little to do with the sick. He was engaged as a superior kind of clerk looking after accounts. If they sent down 150 men, with perhaps 12 bearers to each stretcher, and they had twenty-six miles of ground to cover, all those stretchers had to be accounted for, blankets and everthing, and it was a very heavy piece of work. In a civil hospital it would be preposterous to suggest that the senior surgeon should be answerable for blankets and all those things; that was all done by the house-steward, and this particular branch of the service would never be better until all that work was put in the hands of a proper quartermaster. At the great hospital of Maritzburg at Fort Napier, one of the best medical officers as a medical man never saw a patient; he was entirely engaged in office work. If he (the witness) had been an army surgeon, in all probability, instead of being able to perform

operations, his whole time would have been spent in signing documents, in seeing that everything tallied, and that each stretcher was accounted for. He would never have seen a patient. As to the field hospital itself, he said, the equipment was based upon certain tabulated forms, and it was supposed to be quite complete in itself, and the result was that in many journeys they had to make in Natal up to the Tugela and back again they were dragging with them what amounted to tons of useless material. Every field hospital was hampered by a theoretically complete outfit, which had to be dragged to and fro all over the country, and it was an immense burden. The outfit of the field hospital was suitable for any climate in the world, from the Polar regions to the Equator; it was an exceedingly elaborate outfit; and that had to be dragged all over the country. He supposed he should not be exaggerating if he said they could have thrown away quite a half of their outfit and not missed it.

Asked if it would have been impossible, at the suggestion of the surgeon-in-charge, to have left many of these things behind, he said the surgeon-in-charge would have to account for them, and the question was where were they to be left. To leave stores on the line of communications meant a guard, and difficulties of that sort. He thought it would have been, from the Government point of view, better if a responsible man, having been put in charge of the field hospital, became the person who was absolutely responsible for seeing that the hospital was thoroughly well found for the work it had to undertake, and that he should not have to drag about a theoretically complete equipment. Asked to indicate some of the things which could have been left behind without any risk, he said there was a very large number of boxes of drugs which never could be required and were never opened but had to be dragged about. There was a certain outfit that the Government required to be attached to a stationary or field hospital, and that had to be found down to the very last possible safety pin. The whole difficulty could be got over by having advanced medical dépôts. The advanced medical dépôt was a well formulated thing, and was in charge of a quartermaster; and if with every column there was an advanced medical dépôt, and if the mobile field hospitals took from that dépôt what supplies they wanted that would meet the difficulty. At present they had no choice in the matter whatever—they must take the whole outfit. There was a very large dépôt at Durban which was admirably administered, and they had an advanced medical dépôt with them, but it was practically no use because they had a complete outfit. It would have been very much better if the dépôt had been trebled, and they could have been cut down by two-thirds. They had to move and the dépôt had not. When the dépôt moved into Ladysmith of course it was of immense service.

As to collecting and dressing stations, he thought the war had shown that the system of breaking up the collection of the sick into two stations, collecting and dressing stations, was no longer needed. It was cumbrous, and as a matter of fact it was not carried out. The men who were put in charge of the collecting stations were either doing nothing, or that little piece of the arrangement was liable to be disorganized. It was not suited for a bullet carrying 2,200 yards, as the smallbore bullet did. In reply to further questions, Sir Frederick Treves said the bearer company was separate from the field hospital; and that was another system which was a little cumbrous. It would be very much better if the bearer company were a part of the field hospital and could work under the instructions of the officer in charge of the field hospital. A large mobile field hospital should move with each column. The gravest thing in the treatment of the wounded in war was the transport. There was no doubt whatever that the mortality of a war was very largely increased by inefficient transport. The experiment was tried in Natal of having at the head of the column a large field hospital, to which he was attached, and it was an unqualified success. That was the first time it was ever employed. Practically the whole of the wounded in Natal came through that field hospital, and therefore had first-class treatment as soon as it could possibly be got. The death-rate in war would be very small if a small tent could be built over every man where he fell; it was the dragging of the man about that killed him.

The transport was the weakest thing in the Army Medical Service: that was from the nature of the ambulance cart. It was not a practical thing for a country without roads. The Boers had good ambulances, but an English ambulance was hardly fit to transport the sick; it was almost impossible for a well man to sit in when it was moving rapidly. If a wagon was wanted that could be driven at a trot over a series of walls, or practically over churchyards, and that would come out unbroken, the English ambulance would do it, but it was a rough affair. In a war on the Continent the ambulance Mark V would be admirable, because there there were proper roads; but there was no provision for an ambulance to go over a rough country. Having had his attention called to the evidence that Mark V stood the work across country, Sir Frederick Treves said the carts stood the work, but the patients did not. There was no equipment in the service for following a cavalry column. It must be a two-wheeled cart, and the orderlies must be mounted, and there ought to be a saddle provided, so that a sick man could be brought home on a horse. In South Africa there was no wagon equipment beyond the regulation ambulances. Generally speaking the medical work was admirably done.

Mr. Brodrick's Committee had rectified most of the faults apparent to them, and he thought that now the service would be really admirable. Asked as to the work of the Advisory Board, he said that at present it had been devoted mainly to improving the terms of the service and obtaining men for it, because it had been so terribly undermanned, and in establishing a medical staff college in London, and the like. Questions of administration would be dealt with by the Board in due course. He did not hesitate to say that the service would be the finest in the world in time. Asked if the Secretary of State carried out their recommendations, he said Mr. Brodrick had supported them in every conceivable way. The Secretary of State had constantly expressed his wish to get at any sacrifice the best medical service that could be got.

Asked if he had any experience of civil surgeons sent out to supplement the men of the Army Medical Corps, he said the field hospital he was attached to was worked mainly by civil surgeons. So far as his own knowledge went, he had no fault to find with the way in which the civil surgeons were selected; the men they had with them were splendid.

Asked as to the female nurses he said all that he came across were excellent; they were all carefully picked women, and no woman so far as he knew was engaged who had had less than three years' training.

Asked whether any use was made of dhoolies in Natal he replied in the affirmative. There was nothing in the world like a hand-carriage for a wounded man, and nothing ever would be invented as good as that.

Asked if he would approve of the large military hospital taking in such of the civil population as chose to go, in order that the medical men might have sufficient practice to enable them to discharge their duties, Sir Frederick Treves said he was certain it would never do in this country. It opened up a series of complicated questions; it practically opened up the question of a State-supported hospital—and there was no such thing in this country—such as they had in Germany and other parts of Europe, and he thought the difficulties would be very considerable.

Sir Frederick Treves further stated that if the military hospitals were developed all the military sick would be treated, and none would be sent to civil hospitals as they were now. Supposing a private in a cavalry regiment developed a rupture; if that youth was operated upon he could remain in the service, and that operation ought to be done by the military surgeon. If the military surgeon undertook the surgical work that fell within his legitimate sphere, he would have quite enough to keep his hands well in training. He did not think it was possible to arrange that army surgeons should take charge of patients and perform operations in civil hospitals The hospital had got a certain reputation; the officers were selected with the very greatest care; and it practically came to this, that when a patient came in instead of having the operation done by the man who had been specially picked to do it the operation would be done by the first military officer whose turn it was. He did not think that would be quite keeping faith with the public. The public would not like it, and he did not think the hospitals would meet with the support they at present met with if that were done.

Asked if the Advisory Board had had before it the question of providing sanitary officers, he said that was now a matter under discussion. He thought it was most desirable.

Asked as to the supplies furnished for the medical department in Africa, Sir Frederick Treves said they were antiquated, and they were carrying about instruments which he should have thought would only be found in museums. He would not say, however, that the equipment was entirely antiquated.

In defence of the army, he said that he had been asked to draw up a sketch of an instrument case, for example, and that meant changing not one but many thousands through the length and breadth of this enormous empire, and the outlay was colossal. As soon as those boxes were put all over the world, in India, and every other part where the British army extended, there was a change in practice, and they became obsolete and had all to be changed again. In regard to medicine, he said they took about medicines that were in bottles in the most cumbrous form, and that had been in the bottles for twenty years possibly. They had to drag this useless chemist's shop all over the country, packed up in the most ludicrous and extravagant way. Tablets or any such concentrated preparations as were used now would have put the whole outfit into a twelfth part of the space.

Asked whether disinfection was not very imperfect in several of the hospitals, he said that was true. Sterilizers and methylated spirits were not easy things to carry about. They were very short of fuel. In regard to the state of the military hospitals in this country, he said that there was none which could compare with a large workhouse infirmary, for instance; and that was a fairly low standard of comfort. This was not creditable to the British army.

Asked whether the army medical officers knew anything about the Army Medical Corps in Russia and Austria, he said that unfortunately they did not. The Advisory Board was making a special point of this, that before a man could be promoted to a colonel he must possess a knowledge of the military service of certain countries. Asked whether he considered generally that the medical arrangements in the German army were materially superior to ours, he said he did not think they could be said to be better without qualifying the term in some way. Their outfit might perhaps be better, but he did not think the system of the service was any better. He should not think France would stand quite so high as Germany. In the United States the service was unquestionably good. Asked whether in Germany and Russia the army medical services had wider experiences in time of peace than ours, he said the system was perfectly different. For instance, in Germany a military medical officer was put with his regiment at Bonn. That regiment stopped at Bonn for possiby 50 years, and that man was allowed to practise. In Russia the best surgeons were military surgeons. In England the military medical officer was not allowed to practice. In that respect they had an immense advantage in Germany and Russia, which held good in India, where the medical officer could practise. There was nothing that kept a man better in form than the test of civil practice, which was denied to all the men in our service. Asked if he would advocate allowing an army medical officer to practise, he said it was not possible, the amount of foreign service was so enormous, and his stay in any town so very short. What would be the perfect development, if this country were rich enough, would be to allow the treatment of the women and children in the army. That was not done, and that enormous advantage was lost to the army medical officer. Sir Frederick Treves went on: "Take any women's hospital you like, there are a number of cases requiring operation, and it would be of great service if those operations could be undertaken by the medical officer, but there is no accommodation, and they go to the civil hospital. The women and children attached to the British army are looked after practically by civilians. The only women's hospitals are lying-in hospitals, simply because no civil hospital will take in what is called a lying-in case. I think you would find, if the women and children attached to the British army and recognized as being on the strength, were treated by the army surgeons, that you would have the equivalent of the civil practice you refer to; but, as a matter of fact, the moment a woman has anything the matter with her requiring definite treatment she is sent off to the civil hospital." He did not think it possible that officers of the Army Medical Corps should have a consultative practice. He did not think their claim to special knowledge could be such as would cause the public to consult them except in one matter, and that was in tropical diseases.

LITERARY NOTES.

Dr. Gerald Leighton has finished his book on *British Lizards*, which will be published by Mr. G. Morton, Edinburgh, immediately. The book is a companion to the author's previous volume on *British Serpents* published two years ago. It is to be illustrated hy photographs of living lizards by Mr. Douglas English. In addition to the life-history of the lizards, the distribution in all the British counties will be described.

It may interest some of our readers to learn that the author of the series of Sonnets on the Macedonian question which appeared in the *Daily Chronicle* of September 26th is Dr. Montagu Lomax, of Minchinhampton. The poet appeals to Europe "to set a bleeding people free." But Europe is "craven" and her "all-puissant state cowers palsy-stricken:" it would seem too likely, therefore, that her "wavering rod" will, as the poet fears, "sink foil'd of vengeance." He turns to England

> To whom, in anguish of unfriended need
> Earth's weakest cried, and never erst in vain.

Read by the dry light of history this is a strong statement, but we need not stop to criticize it, for

> Pictoribus atque poetis
> Quidlibet audendi semper fuit aequa potestas.

Dr. Lomax's abuse of his country for having

> Now so caitiff grown, so worn and gray
> She fears to face the stern appeal of war,

is simply to be taken as a symptom of the fine frenzy of the poet. Lashing himself into a Tyrtaean fury, he cries—

> Nay, in God's name! Better a thousand times
> War, righteous war, than this unrighteous peace.

Here we must ask the poet in all seriousness whether he means what he says. He has evidently worked himself up into that acute state of indignation which makes verses. We venture to recommend to him as a sedative a perusal of the report of the Royal Commission on the South African War, and the three volumes of evidence on which it was based. A study of these documents would show him that there are excellent reasons why England should fear to face the stern appeal of war just at present. Dr. Lomax's sonnets may encourage the cynic to approve the political wisdom of Plato in banishing poets from his Republic.

At a meeting of the Wayne County (Michigan) Medical Association held recently, it was decided to form a committee of medical men to prepare news of a medical nature for the lay press. This is to prevent garbled accounts of operations, new inventions, etc., and to furnish information regarding prophylaxis and other matters that may be of value to the public. The object of the committee is in itself praiseworthy; we may, however, be allowed to point out that it is one thing for a committee of medical men to "prepare news for the lay press" and another and altogether different thing to get the lay press to accept the news so prepared. A committee of medical men would naturally be filled, as Lord Bowen would have said, with a sense of each other's unworthiness, and their reports of the operations or discoveries of any one among them might be trusted not to err on the side of excessive laudation. But carefully-edited reports of medical discoveries are not at all the kind of thing that either the lay press or its readers want. What your able editor looks for is sensation; as for accuracy of statement, professional etiquette, even ordinary good taste, he cares for none of these things. As we have often pointed out, an incalulable amount of harm is done by the sensational reports of discoveries and operations which are allowed to appear in the newspapers. The worst offenders are the cheap papers, but in the press generally there are signs of a lack of control in medical matters which is the cause of absurd and unfortunate misstatements.

At a meeting of the Hospitals' Association to be held at St. Thomas's Hospital on Thursday next at 4 p.m., a discussion on the Local Government Board Report on Nursing will be opened by Miss Gibson, Matron of the Birmingham Infirmary, and Dr. Savill. Tickets of admission can be had on application to Mr. Sydney Phillips, at St. Thomas's Hospital.

The Mount Vernon Hospital for Consumption and Diseases of the Chest.—The winter course of lectures and demonstrations in connexion with the Mount Vernon Hospital for Consumption and Diseases of the Chest was opened on October 15th by Professor Thomas Oliver, of Newcastle-on-Tyne, with an address on Occupation as a Cause of Lung Disease. The lectures are free to qualified practitioners and students of medicine, and are given in the lecture hall of the out-patient department at 7, Fitzroy Square, W., on Thursday afternoons at 5 p.m. A list of the forthcoming lectures will be found in our advertisement columns.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1903.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, OCTOBER 24TH, 1903.

MEDICAL EDUCATION.

The letter from our Berlin correspondent published in another column (p. 1093) gives some interesting particulars with regard to important changes in the requirements for medical qualification in the German Empire which have just come into effect. The period of study prior to the final examination is now lengthened to five years; but the most striking innovation is the compulsory introduction of a sort of post-graduate study. Before any licence to practise is granted the student must complete a year's attendance upon the practice of a public hospital, which year must be subsequent to the passing of his final examination. Thus the German medical student of the future will be required to devote a period of six years to study and hospital training before he is in a position to earn his own living; whilst he, already possessed of that sort of knowledge which can be tested by examination, will have a year in which to watch its practical application before passing from the immediate influence of his teachers. A further and hardly less radical change consists in the recognition of non-classical schools as affording the requisite preliminary general education.

Useful sidelights may sometimes be thrown upon professional education of one kind by observations on the education for a different profession. In this way the report made by the Principal to the Governors of the Northampton Institute on the results of a tour in Canada and in the United States, undertaken in order to inspect the working of technical engineering schools, may contain data applicable to medical education.

The general plan appears to be that the boy of 14, if able to afford further study, passes into either a high school, or a manual training school, or a manual training high school. At the first the education is purely literary, at the two last partly literary and partly practical and scientific. A period of four years is spent at one or the other, so that the boy has reached the age of 18 before commencing purely professional training, some sort of matriculation examination being exacted before he is allowed to do so. It is significant that, though there is not complete unanimity on this point, the technical school teachers for the most part actually prefer the student who has gone on with the more purely literary training as being more teachable. The Principal concludes that the later age at which the student enters upon technical training on the other side of the Atlantic is a great advantage.

A few lines lower down we read an expression of regret that the later years of technical instruction are somewhat crowded by the necessity of devoting the first years to the preliminary studies of mathematics, chemistry, and physics, which seems somewhat to contradict the opinion first expressed that little or nothing was gained by the substitution of a manual training school for the purely literary high school in the last years of school life. The reconciliation of this discrepancy may lie in the interpretation to be placed on the term "manual training," which may possibly lead to trenching upon the ground better entered upon at a later period to the exclusion of some amount of mental training. So far as a parallel may be drawn, this would not necessarily be an argument against the relegation of physics and chemistry to a period antecedent to the study of medical subjects proper. For these subjects can certainly be so taught as to provide as good a mental training as anything else. If the practical effect of shifting them from their present position to school life were to be that the student could not enter upon his medical education before he was 18, it would only be in complete accord with these conclusions reached by educationalists working in a somewhat different sphere, who attach great importance to the age question. This is all the more significant as we have always been told that the American boy is expected to be getting his living at an age when the English boy is still at school: here we have an authoritative expression of opinion that he cannot with advantage qualify for a learned profession before he is 22.

There is food for reflection in these considerations. Although the conditions in different countries are not identical, we have the broad fact that in France, in Italy, and now in Germany medical education takes up more time than is devoted to it in England. On the other hand, we are often told that 16 is not too early an age for the commencement of medical education; that an adequate general education can be attained by that age; and that if we put any further difficulties in the way of raising the standard of preliminary examinations and so indirectly oblige the boy to remain longer at school we shall starve the supply of medical students; and, finally, that under existing conditions of secondary education in the country we must not hope for better things at present. Where does the truth lie? Is secondary education in England behind that of other countries? And if it is, is this a reason for regarding the arrangement under which a qualification for registration can be obtained at the age of 21 as an inevitable consequence? With insular self-satisfaction we have been in the habit of regarding British qualifications as implying a little more than those of most other countries. Are we justified in this? and if so, how long shall we remain so if other countries are less timid in increasing their requirements than we are?

GERMAN METHODS OF SMALL-POX PREVENTION.

The remarkable freedom of Germany from small-pox under its Revaccination Act of 1874 is a fact which has given much trouble to champions of antivaccination. From time to time various efforts have been made to produce some explanation of the phenomenon other than vaccinal influence, but without any startling measure of success.

In the absence of anything better, a favourite plan has been to insist that revaccination had been compulsory in Prussia since so far back as 1835, and that the share borne by Prussia of the small-pox pandemic of the early Seventies proved the inefficacy of national revaccination. Regarding this contention, a somewhat singular thing is that

the Prussians themselves were quite unaware of having been living under a system or law of compulsory revaccination since 1835. They thought (and think) that that system began only in 1874. But it is sometimes said that a man has to go abroad in order to get trustworthy news of his own country, and it was an English antivaccinist who, well on to twenty years ago, made and published the discovery that Prussia had been revaccinated since 1835. However it may be in matters of trade, the Teutonic intellect appears to be slow to learn some things, and there is great reason to doubt whether even now the Englishman's discovery has ever been heard of in the Fatherland. No doubt the Prussians must all have been revaccinated when asleep or under chloroform—or perhaps mesmeric influence was at work; but how it was that they did not see or feel the vesicles on their arms after their recovery from the anaesthetic or soporific, or whatever else it was, is a mystery which nobody has attempted to penetrate.

All this, however, is changed now. The new view is that the law of 1835 was an isolation law, and rather curiously, in the publication in which this latest discovery is brought forward, there seems no reference to the old allegation about a revaccination law. It appears to have served its day, and to be laid on the shelf. "The police exercise the right to remove patients from their homes to isolation hospitals if no guarantee is given of their strictest isolation at home. This law dates from August 5th, 1835. Coercion is to be avoided as much as possible, and only used in urgent need." It will be noted how perfectly this meets the views of English opponents alike of vaccination and compulsion. Isolation is carried out, and at the same time the liberty of the subject is respected. But behold what follows on this change of front. It now appears that the great epidemic which occurred in Prussia in 1871-2 took place after thirty-five years' practice of small-pox isolation under this law of 1835. So that in Prussia it has been proved that police measures of isolation cannot prevent small-pox epidemics! In short the pandemic of 1871-2 was a thing to be dilated on when it was being alleged that revaccination had been compulsory since 1835, but when, in the kaleidoscope of antivaccination sophistry, isolation takes the place of revaccination in 1835, we hear no more of the small-pox devastation in Prussia in the Seventies.

In the matter of isolation laws, having once begun to discover them, there is no reason for the antivaccinist resting satisfied with anything so ancient as 1835. And so another "enactment" is credited to the year 1883. But it seems that this also has to go by the board. From a short article by a correspondent published at p. 1091 it appears that no new law was passed then, there being only a notification to the authorities of a decision of the High Court that isolation of a dwelling house means isolation of the whole house, and not merely of a part of it, until after disinfection. To dignify such a decision by describing it as an "enactment" and "law compulsory,' and to attribute to it the fact that small-pox has almost disappeared from Germany is to show once more to what desperate straits opponents of vaccination are driven in the matter of German small-pox. That this decision of the courts affected Prussia only, but is brought in to explain the small-pox immunity of the whole German Empire, is merely another illustration of how the case for antivaccination is built up.

But as if it were felt that the alleged laws of 1835 and 1883 were even jointly insufficient for the purpose in hand, there is also cited the Imperial Law of June 30th, 1900. Here at last the reference really is to a law, and to one, moreover, applicable to the whole German Empire. But what special relation has the law of 1900 to small-pox? It is by no means confined to that disease, but applies equally to other dangerous infectious disorders, and relates to ordinary preventive measures like notification, disinfection, isolation, discontinuance of school attendance, and the usual precautions which make up the routine control of diseases such as scarlet fever, diphtheria, enteric fever, and the like. Needless to say, the Act does not exclude small-pox, which is classified among the dangerous infectious diseases, but to any man in his senses there is no occasion to point out that a law passed in 1900 cannot be credited with Germany's striking immunity from small-pox for a quarter of a century before it was placed on the statute book.

So that in the end, notwithstanding all antivaccination efforts to the contrary—efforts which are no doubt greatly stimulated by the fear of an English Revaccination Bill in 1904—there is no logical escape from the conclusion, which under all circumstances and at all times has been deducible from the facts both of small-pox absence and small-pox prevalence—the conclusion that vaccination and revaccination are capable of preventing small-pox epidemics in England, and that without these measures we cannot hope to remain free from the recurring scourge.

THE HARVEIAN ORATION.

The illustrious founder of the Harveian Oration at the Royal College of Physicians of London ordained that it should comprise a commemoration of all the benefactors of the College by name, with a list of what they had done for the benefit of the College, and an exhortation to others to imitate their example, and a further injunction to the Fellows and Members to search and study out the secrets of Nature by way of experiment, and at the same time to maintain mutual love and affection among themselves. The annual delivery of an address upon these lines has now continued for nearly 250 years, and the problem of rendering adequate justice to it, while at the same time maintaining any degree of originality, must become increasingly difficult.

Some orators have chosen a biographical mode of treatment, devoting their study to the lessons to be learnt from Harvey's life and studies. Others have selected the historical aspect, and have compared the state of medical learning in the Elizabethan and Jacobean times with that of the ancients on the one hand or of our own epoch on the other. This year's orator, Dr. Allchin, has not followed closely either of these routes, but has preferred to take wide conception of his theme, and to examine the changes in the conditions of research, which are the keynote of all advances in science. To do full justice to this point of view needs not only a scholarly acquaintance with the history of biological knowledge in the past, but also deep insight into the fundamental problems of the present. Both these qualities Dr. Allchin has manifested in a high degree, and he has moreover expounded his thesis with a grace and polish of literary style which renders the Oration as pleasant to read as it is worthy of close study.

While guarding himself from appearing to assume that anatomy, however complete and precise, is of itself sufficient to furnish physiology or knowledge of function, Dr. Allchin shows that the full benefit of Harvey's work was proportionate to the extent of the information possessed

in respect to the structure of organs, and that as fresh anatomical knowledge was forthcoming so did truer conceptions of living activities develop from anatomical observation and experimental investigation. It was not till some years after Harvey's death that the compound microscope was devoted to the service of biology by Malpighi and Van Leeuwenhoek. As time went on the field of investigation open to these methods became more and more restricted. First of all gross anatomy was brought to something approaching perfection; then improved histological procedures successively elucidated the structure of the various internal organs, till at last, with the exception, perhaps, of the minute anatomy of the central nervous system, little remains which our present instruments of observation can hope to reveal. But the restless search after the causes of things knows no limits, and when checked in one direction ever seeks the aid of new weapons. Of these the next to be handled were the comparative method and that of embryology. The former had indeed been in the hands of even the earliest investigators, but achieved fresh scope with the promulgation of the Darwinian theory. The latter virtually began with von Baer, but entered an almost unbounded domain in the hands of Francis Balfour.

The possibilities of research along these lines are as yet by no means exhausted; but we are nevertheless approaching and coming into touch with a region in which their assistance can no longer be of avail, and where even the distinction between structure and function tends to vanish. All biological research centres at last upon the cell; here, in the analysis of the ebb and flow in the ultimate elements whereof protoplasm is composed lies the final quest. At last men of science have driven the forces of Nature into their most secret stronghold and are besieging them in the hope that they may yield up their most prized secrets—the constitution of matter and the meaning of life. Medicine is founded upon pathology, which is itself broad-based on the whole fabric of biological knowledge. Dr. Allchin shows how the apparently transcendental speculations of the modern physicist are of vital importance to medical men. If matter be built up of electrons the interplay of ions may be the key to the mystery of life, a mystery whose solution would afford a better rational foundation for the treatment of disease.

Harvey's work is a masterly example of the application of scientific knowledge obtained from all sources to practical medicine, and Dr. Allchin's Oration is a worthy reminder of this, and an incitation to our profession to take a wide and withal searching view of the principles upon which the science of healing ultimately rests.

THE INHERITANCE OF MORAL AND MENTAL PHYSICAL CHARACTERS.

The fourth annual Huxley Memorial Lecture of the Anthropological Institute was delivered on October 16th by Professor Karl Pearson, F.R.S., who took for his subject the inheritance in man of moral and mental characters and its relation to the inheritance of physical characters. He said that since Mr. Francis Galton's epoch-making work it was impossible to deny *in toto* the inheritance of mental characters, and it had become necessary to go a step further and ask for the exact quantitative measure of inheritance of such characters and a comparison of such measure with its actual value for the physical characters. During the last six or seven years, with the asssistance of many capable and devoted workers, he had been making an investigation into the subject which really involved three separate inquiries—first, an investigation into the actual value of inheritance of the physical characters in man, which was carried out by the measurement of upwards of one thousand families; secondly, a comparison of the inheritance of the physical characters in man with that of the physical characters in other forms of life: and thirdly, an inquiry into the inheritance of the mental and moral characters in man; for the last-named purpose the opinions of teachers in two hundred schools of different sorts all over the country were asked about the characters of their pupils in respect to the physical, mental, and moral characteristics of brother and brother, sister and sister, and brother and sister. The data asked with regard to physical characters included cephalic index, span, colour of eye and hair, curliness of hair, athletic power, and health. With regard to the physical characters it was found that in all cases yet worked out the fraternal resemblance indicated by the "regression line" was that if one of the pair exceeded or fell short of the mean by a certain amount, the other of the pair tended to exceed or fall short by half that amount. The general result of the inquiry into mental and moral characters was to show that a similar relation existed. The mathematical analysis of the figures founded on the schedules received showed that intelligence or ability followed precisely the same laws of inheritance as general health, and that both followed the same laws as the cephalic index or any other physical character. It could thus safely be said that the general health in the community was inherited in precisely the same manner as head measurement or body lengths. The same law applied to the inheritance of psychical and moral characters. If the relation of the psychical characters to the physical characters was so constant, Professor Pearson argued that the conclusion must be drawn that while geniality and probity and ability might be fostered by home environment and by provision of good schools and well-equipped institutions for research, their origin, like that of physical characters, was deeper down, that is to say, they were bred in the stock and not created by the environment. It was the stock itself that made the home environment, that is to say, the home standard was itself a product of the parental stock, so that the relative gain from education depended to a surprising degree on the raw material. There seemed to be a want of intelligence in the British merchant, workman, and professional man, but the remedy was not the adoption of foreign methods of instruction or the spread of technical education. The reason for the deficiency was that the mentally better stock in the nation was not reproducing itself at the same rate as of old; the less able and the less energetic were more fertile. Education could not bring up hereditary weakness to the level of hereditary strength, and the only remedy was to alter the relative fertility of the good and bad stocks of the community. The psychical characters which were the backbone of a State in the modern struggle of nations were not manufactured by home, and school, and college, they were bred in the bone, and for the last forty years the intellectual classes of the nation, enervated by wealth, or by love of pleasure, or following an erroneous standard of life, had ceased to give, in due proportion, the men wanted to carry on the ever-growing work of the empire. A vote of thanks to Professor Pearson was moved by Mr. Francis Galton, who expressed his warm appreciation of the value of the investigation now being carried on by Professor Karl Pearson, and the results already obtained. The motion was seconded by Professor W. F. R. Welldon, who spoke in terms of the highest praise, not only of the industry displayed by Professor Pearson and his assistants, but also of the originality of the mathematical methods which Professor Pearson had evolved for the purpose of this research. Subsequently the President, Mr. H. Balfour, presented the Institute's Huxley Medal to Professor Karl Pearson.

THE HISTORY OF MEDICINE IN ENGLISH LITERATURE.

The annual address to the York Medical Society was this year delivered by Dr. Norman Moore, in the presence of a large audience, including the Dean of York and many

other non-medical guests, of whom a considerable proportion were ladies. Dr. Moore chose for his subject "The History of Medicine as Illustrated in English Literature," and pointed out that in early times a knowledge of medicine was regarded as a part of the general store of information which should be possessed by every well-trained mind. Some idea of the mental equipment which was aimed at was to be found in the *Liber Etymologiarum* of St. Isidore, who was Bishop of Seville in 604, the time when St. Augustine landed in England. Isidore had quite modern ideas as to the width of the educational basis upon which the study of medicine ought to be founded. Dr. Moore stated that the earliest mention of hospital accommodation in England was to be found in Bede's account of the death of Caedmon. The earliest physician to be mentioned by name in England was one Medicus Cynifrid, who attended St. Ethelreda, Abbess of Ely, in her last illness, which was evidently tuberculous in nature. He opened an abscess in her neck, which was much swollen, and with regard to which she said: "I know that I deserve to bear the weight of my disease upon my neck, for I remember in my girlhood I bore there the very foolish weight of necklaces." Bede's history also records the advent of another microbe in England, namely, that of the plague, which arrived in 664 from Ireland, and not, as one would have expected, directly from the Continent. Among other medical topics treated in English literature, Dr. Moore referred to Defoe's account of the Great Plague of London and Sterne's description of the nursing of Corporal Trim. The annual banquet of the Society was held in the evening, Dr. Evelyn again presiding. Its chief feature was an amusing speech by Mr. J. G. Butcher, K.C., M.P., who compared the lot of the politician with that of the doctor. He also pleaded with the medical profession that its members should use their influence and knowledge to consolidate local feeling in order to bring about the reform of the housing question, which so directly affected the vitality of the nation.

THE ELECTRO-VIGOUR COMPANY.

The successful prosecution of Mr. Bailes, the "medical officer" to the "Dr. McLaughlin Company"—a company trading in electric belts—is important both to the medical profession and the general public. It has proved that but for the vigilance of the Medical Defence Union a disregistered practitioner whose medical degrees were not only erased from the *Medical Register*, but also recalled by the university which granted them, would have imposed upon the public as a legally-qualified and registered medical man, and that, under the aegis of his thus assumed qualifications, a much-advertised so-called electric belt would have been foisted upon credulous patients as being sold upon the recommendation and authority of a registered physician. It cannot be too well recognized by the public at large, as pointed out in the lay press by Messrs. Hempson and Mr. Bateman, the solicitors and secretary of the Medical Defence Union respectively, that no registered medical practitioner would be permitted by the governing bodies of the profession to hold office with any advertising electric belt company, and that if any such were discovered to be holding such appointment the case would be investigated by the General Medical Council, and if the facts were proved the Council would undoubtedly find such practitioner to have been guilty of infamous conduct in a professional respect. That this statement is correct is proved by the records of the General Medical Council, as it will be remembered that two medical practitioners holding office in and associating themselves with the once flourishing Harness Electric Belt Company were, after inquiry, found to have been guilty of infamous conduct in a professional respect, and their names and qualifications were removed from the *Register*. The public may therefore take it as an accepted fact that in any case in which a person describes himself as a medical officer to companies trading in much-advertised electric belts, he is not a legally qualified and registered medical practitioner, and may consequently discount the value of the professional advice purporting to be given by any such person.

During the hearing of the case, counsel for the prosecution very rightly commented upon the wide issue of the advertisements of the company in newspapers of deserved repute, such as the *Times*, *Daily Telegraph*, *Daily Mail*, *Daily Express*, and others. He also called the attention of the presiding magistrate to the nature of the illustrated pamphlet issued by the Electro-Vigour Company, which he asserted would certainly have been stopped by the postal authorities if issued without being entirely enclosed in a cover. We have seen the booklet in question, and we have no hesitation in describing it as an absolutely disgusting and demoralizing publication, and one which can have no pretension to be styled a medical work at all. It is a misfortune that under the present state of the law such a publication can be issued by any one, and circulated "under cover" through His Majesty's Post Office with apparent impunity. Its effect when falling into the hands of weak and credulous people can only be detrimental. We are not surprised that the "Electro-vigour Company" should have attempted to prevent the report of the trial being published by a daily paper, and we must congratulate the *Daily News* on its exposure of the attempt by prompt publication of the letter it received from the company as an addendum to its full report of the hearing at Bow Street police-court. We reproduce this letter elsewhere (p. 1106) and also the reply thereto of Messrs. Hempson, solicitors to the Medical Defence Union. The company's letter speaks for itself, and the *Daily News* did a public service in publishing it in full, a duty which some other papers appear to have shirked. The Medical Defence Union has once again established its right to be considered as a protector both of the medical profession and of the public against unqualified practice, and in this case as in many others has deserved well of both.

AN APPARENTLY HARMLESS STIMULANT.

Some of our readers may be able to recollect an endeavour which was made many years ago to introduce into this country the use of yerba-maté. On that occasion it failed, but a second attempt may be encouraged by an interesting account of the uses and qualities of this herbal stimulant, otherwise known as Paraguay tea, which has been received by the *Journal of Tropical Medicine* from an unnamed correspondent in Paraguay in answer to a published request for information. The beverage is prepared as an infusion from the dried and powdered leaves of *Ilex paraguarensis*, and for centuries it has been the national beverage of the populations of South America, while in Paraguay and Argentine it is, according to the writer, the sole stay and stimulant of the working classes. It is best drunk as a very hot infusion through a metal tube, but it can also be taken in the same way as tea or coffee, with milk and sugar. Most people, however, after a short experience, prefer to drink it native fashion without any admixture. As such it is very bitter; but, nevertheless, those who drink it soon learn to consider it an agreeable and even palatable drink. Other people, especially workmen, drink it as an infusion prepared with cold water, and it is then known as "tereré." Its stimulating and sustaining effects, according to the writer's account, are very remarkable. Workmen apparently take the drink with them wherever they go, and from time to time take sips of it, and the energy which is thus infused into the otherwise lazy South American is notable. Woodcutters, for instance, commencing their labours at daybreak, work on with unfagging energy for five to six hours before their midday meal, which is really breakfast, because they take no solid food before it so long as they can get maté. The writer, from his own experience, confirms these results. He finds that its invigorating and sustaining powers are different in character to those of either tea, coffee, or cocoa. Taken as a stimulant for night work, study, or nursing, he states that it conveys an energy and lightness which make duty a real pleasure. These results are the more peculiar because on analysis there seems to be nothing in the drug which obviously explains them. The percentage of caffeine and the amount of volatile oil

is very much less than that contained in tea and coffee. In the course of three years' experience the correspondent has been unable to discover any evil effects from the use of the drug. Very neurotic and neurasthenic individuals may have their symptoms aggravated by excessive maté drinking, but these cases are rare, and even when consumption of the beverage becomes an actual mania no special evil accrues.

EPIDEMIC CEREBRO-SPINAL MENINGITIS OR INFLUENZA?

Dr. Reginald Farrar, one of the medical inspectors of the Local Government Board, has furnished a memorandum to the Board on an illness resembling epidemic cerebro-spinal meningitis observed in certain localities of the Ellesmere Rural and Oswestry Urban Districts of Shropshire in May and June last. There were two groups of cases—one at Criftins, a village of some 750 inhabitants, five miles from Oswestry, and the other at Oswestry itself. The former group consisted of some 80 children who had been unfit for school owing to headache, dizziness, vomiting, etc. Two deaths occurred, and several of the children had been dangerously ill. In most cases there was delirium, and in many abdominal pain, with diarrhoea and general aching and tenderness, amounting in some cases to hyperaesthesia. Many children recovered in three days but some were ill for a week or longer. In the majority of cases there was no medical attendance. Nothing definite could be ascertained as to the origin of the outbreak. When the school closed for the Whitsuntide holidays the number of cases rapidly abated. In Oswestry, which is a town of about 10,000 inhabitants, five or six cases of a similar kind occurred. There was, apparently, no connexion between the two groups of cases. Dr. Farrar hesitates to adopt positively a diagnosis of epidemic cerebro-spinal meningitis, as, in spite of two deaths certified as acute meningitis, and four cases more or less serious, he does not think there were a sufficient number of typical cases with pathognomonic symptoms of meningitis, such as retraction of the head, subsequent paralysis, etc., to justify the diagnosis. The epidemic has, on the other hand, been too severe to be classed as epidemic diarrhoea merely, and several symptoms pointed against such a diagnosis. On the whole, he inclines to the view that the features of the outbreak are compatible with a hypothesis of influenza of the so-called abdominal type, with occasional cerebro-spinal symptoms in some of the severe cases. The medical officer of health of the Ellesmere district appears to share this view. Dr. Farrar considers the outbreak to be of the same nature as a similar epidemic reported upon by Dr. Bruce Low for the Board in 1891-2, which occurred in certain localities in Northamptonshire. An appendix contains a number of clinical facts respecting eight of the cases.

TUBERCULOSIS IN LUNATIC ASYLUMS.

A year ago[1] we made some comments on the *Statistics as to Tuberculosis in Lunatic Asylums*, published by a Committee of the Medico-Psychological Association of Great Britain and Ireland. A revision of these statistics has now been issued, in a preface to which the Council of the Association states that, having found errors to exist, it placed the tables in the hands of Dr. Chapman, late Superintendent of Hereford Asylum, and now presents the result of his labours. He has clearly had to deal with unsatisfactory material lacking in homogeneity; and one of the most urgent reforms required in administration appears to be the enforcement of uniformity of classifying causes of death, preceded by a necropsy in each fatal case, with a separate entry as to the presence or absence of tuberculosis and of dysentery, the two great scourges of asylum administration. Dr. Chapman points out that the "better" asylums, that is, those having a relatively low mortality from tuberculosis, have a "good" soil in fully two instances out of three, whilst the "worse" asylums have a "bad" soil in three cases out of four; and he considers that the value of a "good" soil can hardly be doubted. We doubt if this conclusion would stand if the other causes of variations in tuberculous mortality were taken into account. As pointed out by Dr. Chapman it is contradicted by the experience of the Scotch asylums, where only three out of seven have a "good" soil. Stress is laid on the fact that good asylums have nearly 8 per cent. more night space per patient than bad asylums. It should be pointed out, however, that in 22 out of the 41 better asylums the night space averages 636 cubic ft., while in 19 out of the 28 worse asylums it averages 630 cubic ft., figures which do not look conclusive. So far as ventilation is concerned, 18 out of 33 better asylums have natural ventilation, while the proportion is 21 out of 30 among the worse asylums. When the figures for England, Scotland, and Ireland are separated contradictory results are obtained. We much doubt whether the deductions as to relative inefficiency of natural ventilation, as to floor space, and as to dryness of soil are justified by the tables; but there can be no doubt as to the main conclusion to be drawn from this important report. The one certain thing in the midst of these complex statistics, among many things which are uncertain and inconclusive, is that "infection is one of the strongest causative elements in the prevalence of tuberculosis in asylums." From this standpoint the figures referring to the deaths from tuberculosis in 24 asylums in 1899, although only complete for fatal cases, and saying nothing about non-fatal cases admitted, or other cases admitted, are the most interesting in the report. These figures show that for every 100 cases admitted with tubercle and terminating fatally, 375 others originated in the asylums. The practical teaching of these figures is unmistakable. They call for "the segregation of infected individuals as an imperative necessity." We need not repeat our former remarks as to the importance of taking every possible measure to ensure the early diagnosis of cases, and their prompt isolation. The notification of all cases of phthisis in each asylum to the Commissioners in Lunacy has been already advocated in these columns, but nothing apparently has hitherto been done in this direction in provincial asylums. Such notification would compel attention to the evil, and that is the first step towards its amelioration and gradual removal.

THE BATTLE OF THE CLUBS IN GERMANY.

Until lately the medical profession in Germany was in a very unorganized condition, but during the last couple of years an organization has arisen which bids fair to be of great use in ameliorating the general interests of the profession. It was founded by Dr. Hartmann, of Leipzig, with a view to afford medical men a means of assisting each other and of combining against the arbitrary regulations which are imposed upon them in many States, it being felt that the Legislature was too much under the influence of political considerations to be of real service in the matter. The organization calls itself "The Union of German Doctors for the Protection of their Economic Interests," but is generally known as the Leipzig Union. Some idea of its popularity may be gathered from the fact that its membership increased during the first six months of this year from 3,000 to nearly 8,000. It is an organized effort to prevent sweating in the medical profession. Its avowed chief means of effecting this is by giving pecuniary assistance to those doctors who have been injured, or may be in danger of suffering injury, at the hands of sick clubs (*Krankenkassen*). To do this a reserve fund is necessary; no difficulty, however, has been found in setting the institution upon a satisfactory basis in this respect. Any medical man in Germany can become a member by paying £1 a year, or a life subscription of £15. The executive consists of a Central Committee, all the members of which must reside in or near Leipzig, and an elaborate organization of local committees. Particular attention is paid to the organization of a statistical inquiry into the relations, especially pecuniary, of doctors to sick clubs throughout Germany. The institution is not only defensive in scope, but seeks to interest public opinion by disseminating

[1] British Medical Journal, October 25th, 1902, pp. 1357 and 1349.

literature relating to its particular objects. It has already issued some seven pamphlets dealing with the ills to which the medical profession in Germany is liable, and suggesting particular remedies for their abatement, more especially in the case of club practice. During the past year it has taken an active part in four contests between medical men and clubs, helping the former pecuniarily when they had given up their posts, and warning other doctors of the state of affairs, so that the institutions were eventually boycotted and compelled to reinstate their former medical officers on their own terms. The Leipzig Union has now joined forces with the older established German Medical Union, each retaining autonomy in its own sphere of action, and the influence upon the general spirit of the profession would appear to have been favourable. Attempts are now being made to secure alterations in the laws which press heavily upon the profession. These have been so far successful that four important reforms have passed the Reichstag and Senate, and will come into force on January 1st, 1904.

TRIAL BY JURY

In many of the cases where the conduct of members of the medical profession has been subjected to the arbitrament of a British jury, the practitioner has been able to clear his character and maintain his professional reputation. Nevertheless, cases involving a discussion of what constitutes sufficient care and skill have sometimes been decided in a manner which seems to show that actions for malpraxis should not be left to a jury unless both parties consent. Their prejudices are often against the practitioner. If the patient has not been cured the common juror at once jumps to the conclusion that he has not received value for his money. If the treatment is justified by the opinion of professional brethren, it is urged at once that the doctors would not be likely to oppose each other; and, although a strong judge is often able to mould the jury to his will, the practitioner sometimes sustains defeat. Thus in a case which arose in the Midlands last year damages were claimed for alleged want of care and skill in treating a workman for a posterior dislocation of the elbow-joint. The evidence against the defendant was that of two medical men and two bonesetters; while he on his part called three medical men. In the result a verdict for £25 damages was returned. From this case it seems to be impossible for any judge to make it sufficiently clear that no member of the medical profession can undertake to effect a cure. In our view it might well be left to the judge, assisted if necessary by a medical assessor, to say whether there has been negligence or no.

GREY'S HOSPITAL, PIETERMARITZBURG.

Some two years ago, in the British Medical Journal of September 14th, 1901, we referred to the action of the Pietermaritzburg Branch of the South African Medical Association in agitating for changed conditions in the management of Grey's Hospital; the chief objection which was then urged was that the medical staff consisted solely of one medical superintendent and one house-surgeon. Since that date we have received from Dr. Campbell Watt, President of the Natal Branch of the British Medical Association, a pamphlet and press cuttings relating to the present stage of the controversy. We gather that the ground of controversy has now been somewhat shifted. The efforts of Dr. Watt and his colleagues have been successful in bringing the staff of the hospital more into accord with modern views. The visiting physicians and surgeons who have now been appointed have, however, discovered that the hospital is seriously inadequate to cope with the number of patients seeking admission and relief; they complain, moreover, that they are unrepresented upon the Board of Management. A Committee has accordingly been formed to collect a sum of money from the public towards the reconstruction, if necessary on a new site, of the institution, and it is proposed to constitute a body of governors from among the subscribers, who should elect representatives to sit, together with an equal number chosen by the medical staff, upon the Board of Management. The movement, of which Dr. Campbell Watt is Vice-President, has met with considerable support and over £1,000 has been subscribed. A deputation from the Building Committee was received by the Board of Management and the points at issue were argued out at considerable length. In answer to the statement that the hospital was too much in the hands of a Government corporation, it was pointed out that practically the whole of its maintenance, amounting to some £5,000 a year, was provided by the Government. The Board of Management, moreover, stated that the rebuilding scheme must entail an expense of £50,000, towards which the Committee's appeal had brought in one-fiftieth. Eventually the Board communicated to the Building Committee its opinion that no adequate public reason for a change in its constitution was forthcoming. As to this point we must beg leave to differ, holding as we do that it is essential for the medical officers of every hospital to be represented upon its governing body. As to the special questions of accommodation, nursing, and so forth which have been raised we are obviously not in a position to form a judgement, but we feel convinced that the solution of the problem would be greatly facilitated were the Board of Management in future to include representatives of the medical staff.

THE SPECTACLE MAKERS' COMPANY AND ITS DIPLOMATES.

In the report of the proceedings of the last meeting of the Royal College of Surgeons of England, published at p. 1101, will be found a soundly-reasoned and dignified reply given by the Council of the Royal College of Surgeons of England to a question asked them by the Spectacle Makers' Company respecting a petition of the diplomates of the Company praying it to include the subject of sight-testing in its examinations. The answer of the College, which by no means exhausts the arguments that may be used against the proposal, will, it is to be hoped, support the Company in maintaining its present attitude against that active section of its members which desires to see it encroach upon the provisions of the Medical Acts, and claim for opticians powers which they have neither the education nor training to use to the advantage of the public or, in the long run, of their business as opticians.

THE LATE MISS HICKMAN, M.D.

The mystery of Miss Hickman's sudden disappearance from the Royal Free Hospital has at length been cleared up, but unfortunately only by the discovery of her remains in a secluded part of Richmond Park. It will be remembered that Miss Hickman, after a brilliant career at the Medical School for Women, at which she gained First Class Honours in many medical and surgical subjects of examination, was appointed as *locum tenens* House-Physician in August of this year at the Royal Free Hospital. It appears that she took up her duties there about August 14th, and there is a consensus of opinion among her colleagues at the hospital that she was in good health and spirits. On Saturday, August 15th, at 2 p.m., after performing her duties in the wards, she left the hospital gates, and with the exception that she was seen by one of the students in a street near the hospital, was not seen alive again. Owing to the publicity naturally given by her father to her disappearance, and to the fact that the matter was placed in the hands of the police and rewards and placards issued, the greatest interest was shown by the press and public, and thousands of persons became for the nonce amateur detectives. In spite, however, of various clues, which unfortunately turned out to be valueless, no trace of her was discovered until on Sunday, October 18th, some boys who were hunting for chestnuts in Richmond Park suddenly to their horror stumbled across the remains of a woman in Sidmouth Plantation, an enclosure of about 50 acres in extent, over which the rights of shooting are enjoyed by a Royal Prince. The police on making a detailed examination found that the body was that of Miss Hickman. Almost two months

elapsed between the date of Miss Hickman's disappearance and the discovery of her body, but the actual date of the death in the plantation can only be conjectured. An inquest was opened by the Mid-Surrey Coroner (Dr. M. H. Taylor) on October 21st, and a full report of the medical evidence, admirably given by Dr. Gardiner, is published at page 1105. It will be found to be of considerable medico-legal interest. The greatest sympathy is felt for the parents and relatives of the deceased, whose academic success in the past gave brilliant hopes for the future.

BIRMINGHAM CHILDREN'S HOSPITAL AND LADY DOCTORS.

Some years ago the Birmingham Children's Hospital admitted a lady to its medical staff and tried the experiment of giving another one of two resident appointments. The latter arrangement was found to be impracticable and was given up, but at the present time Dr. Annie Clark is the senior acting physician. At a recent meeting of the committee of the hospital, called to revise the rules in order to permit the employment of a second extra acting surgeon, letters were read from Dr. Annie Clarke and Dr. Mary Sturge, another lady practising in the town, objecting to the proposed rule which fixes the Fellowship of a Royal College of Surgeons as the qualification for the new appointment, on the ground that women will thereby be excluded. If we are right in supposing that it is the Fellowship of any College of Surgeons that is required, we think the grievances of the Birmingham ladies are in this instance more imaginary than real. The F.R.C.S.I. is open to them, and the proposed rule affects only the surgical side of the hospital, and so far few women have shown a disposition to seek surgical practice. On the other hand it is highly desirable that the class of candidate for hospital vacancies should be defined by insisting upon those qualifications which imply special training. Unless this is done unsuitable candidates are apt to present themselves, contests occur which at best are useless, and the appointment may fall to a candidate whose local influence is greater than his professional standing. We therefore think that the Committee would do well to accept the suggestion of the Medical Board, and adopt the F.R.C.S. diploma for the surgical staff of the hospital. It constitutes the best evidence of surgical attainments that can be afforded by diploma, and has been accepted as essential by all our principal hospitals.

ANKYLOSTOMIASIS IN MINERS.

In reply to a letter of inquiry addressed to him by Dr. A. Milroy, of Kilwinning, Ayrshire, the Home Secretary has stated that the subject of ankylostomiasis in mines has been engaging his continuous and anxious attention since the appearance of the disease in the Cornish mines, which were inspected by Dr. Haldane last year.[1] Dr. Haldane has, at the request of the Home Secretary, made a special visit to the Westphalian mines, and has investigated on the spot the conditions existing there, the measures taken to stamp out the disease, and the degree of success resulting from these measures. Mr. Akers-Douglas adds that he has not received observations or suggestions from the Mining Association or from the Miners' Federation, but that he has decided to invite representatives of the owners and of the men to a conference at the Home Office to discuss the subject, and to arrive, if possible, at definite conclusions as to the preventive measures which it is desirable to take.

KING EDWARD VII SANATORIUM.

The King will lay the foundation stone of the King Edward VII Sanatorium at Lord's Common, Midhurst, Sussex, on Tuesday, November 3rd, at 12.45 p.m. The Sanatorium, it will be remembered, owes its foundation to His Majesty's determination to expend a sum of about £200,000 placed at his disposal for charitable or utilitarian purposes by Sir Ernest Cassel, on the erection of a sanatorium for tuberculous patients in England. The King has been advised by a committee consisting of Sir William Broadbent, Sir Richard Douglas Powell, Sir Francis Laking, Sir Felix Semon, Sir Hermann Weber, and Dr. C. Theodore Williams, with Dr. Horton-Smith and Dr. John Broadbent as honorary secretaries. After extensive inquiries at home and abroad, and the inspection of many sites, that near Midhurst was selected as the most suitable. The actual work of building has been delayed by various causes, among others, some difficulty which, we understand, was experienced with regard to obtaining a suitable water supply. These have now been overcome, and the plans for the sanatorium have been prepared by Mr. H. Percy Adams, F.R.I.B.A. During the interval the offer of prizes for essays upon the best mode of constructing such sanatoria has led to the production of several works upon the subject; those which gained the prizes were the essays of Dr. Arthur Latham, Dr. F. J. Wethered, and Dr. E. C. Morland. Although the plans of the sanatorium will not follow the details of any one of these essays, the facts and opinions therein collected have no doubt been of assistance to the committee and the architect. Lord's Common is near the summit, but on the southern slope of the hills which run east and west between the chalk downs bordering the sea on the south and the higher range of Blackdown on the north. The district is one of the most beautiful in England, and its elevation above the sea and the dryness of the soil is believed to render it particularly suitable for the erection of an open-air sanatorium.

[1] British Medical Journal, 1902, ii, p. 1864.

THE CAUSE OF DEATH IN ENTERIC FEVER.

We have received a record of observations made by Dr. W. Watkins-Pitchford, Assistant Bacteriologist to the Natal Government, upon 1,154 cases of enteric fever. Sixty-one of the patients died, giving a case mortality of 5.28 per cent. Dr. Watkins-Pitchford's paper is mostly concerned with the immediate cause of death. Thirty-nine per cent. of the deaths were due to circulatory failure following toxaemia in the febrile stage or subsequent exhaustion. Most of these heart failures occurred between the 18th and 24th day of the fever. The period of danger from perforation is put at from the 10th to the 24th day, and the author sets down the common "methods of perforation" as two—(1) primary sloughing from the intensity of the inflammation in acute cases; and (2) slit-like ruptures, the commonest variety, induced by tensions in the bowel wall. As less common conditions resulting in perforation he places secondary necrosis from deficient blood supply to the cicatrix, and dragging of adhesions to the peritoneal aspect of the ulcer. The author remarks that "the prospects of a patient who has perforation are so hopeless, if he be left alone, that I am of opinion that every case should be submitted to operation. If this were made the rule, I feel sure that a small but very satisfactory percentage of lives would be saved." Dr. Watkins-Pitchford also discusses the occurrence of haemorrhage and pneumonia and other complications in typhoid fever, and adds an interesting note on antityphoid inoculation with Wright's prophylactic. Whereas the case mortality for uninoculated was 5.7, it was 2.19 for the inoculated. The average severity of illness was considerably reduced by inoculation, though really severe cases occurred about equally.

MEMBRANOUS CATARRH OF THE INTESTINES.

To the increasing literature of this subject Professor von Noorden and Dr. Dapper have contributed a small monograph[1] which has been translated into somewhat clumsy English by Dr. Crofton of Chicago. They point out, as is usually agreed, that the disease occurs in persons who are either the subjects of chronic constipation or who have previously suffered from it. They hold, however, that chronic constipation is never the sole cause, but that there is always in addition excessive irritability and over-activity of the mucigenous glands of the large intestine, due, not to inflammation, but to certain nervous influences. The

[1] *Membranous Catarrh of the Intestines.* By Professor Dr. Carl von Noorden in association with Dr. Carl Dapper. Bristol: Wright. 1903.

disease thus occurs almost exclusively in persons who have a neurasthenic or a hysterical predisposition. This view appears to have been first put forward by Nothnagel, whose opinion the authors defend with some vigour, though in our judgement, hardly with entire success, against the attack of Boas, who points out that the disease gets well when the constipation is relieved, and holds that the nervous phenomena are merely associated. The disease appears to occur chiefly between the ages of 20 and 45, and more especially in women. Its cardinal symptoms are attacks of pain and the evacuation of mucus. The writers hold that the violent cramps are due to the effort to dislodge and expel hard masses of mucus which is stickier than usual owing to the absorption of water from the intestine, which always occurs in chronic constipation. The variable intensity of the symptoms is due, according to the authors, to the individual temperament of the patient. The treatment of the disease falls under two heads. The acute attacks necessitate rest in bed, hot applications to the abdomen, and the use of narcotics together with hot water enemata, followed by a high oil enema. The chronic disease is met by the authors with what they call a dietetic-exercise treatment of the intestine. This resolves itself first into treating constipation, which can be largely effected by a diet containing plenty of cellulose and fat. The writers state that many patients are much harmed by being kept upon the fluid diet appropriate to gastric ulcer, which only tends to increase the constipation. They prefer giving weak saline waters, such as those of Kissingen and Homburg, to the carbonated waters of Carlsbad. The general nutrition being thus maintained, the average duration of the cure is four weeks. The symptoms are not infrequently somewhat aggravated at first, but as the treatment is persisted in, and the nervous system also looked after, the patient steadily progresses; it is claimed that a permanent cure has been effected in 50 per cent. of the authors' cases.

THE ENTRIES AT THE MEDICAL SCHOOLS.

We have received in response to inquiries a number of returns from many of the medical schools in England, giving statistics as to the number of students who entered at the beginning of this winter session. The returns, however, are not yet complete, and we therefore postpone the publication of details. We may, however, say that the number of students returned from the medical schools in London as having joined for the full curriculum—excluding University College, which has made no return to us—is 394. The total number returned as joining at the commencement of the winter session 1902 was 390, so that, making allowance for the entries at University College, it would appear that the total number of entries in London is somewhat larger this year than last. The number of entries for the full curriculum at the London School of Medicine for Women is returned this year as 36, as compared with 28 last year. At Cambridge the number is 104, as compared with 125; at Owens College, 51 as compared with 48; at the University of Durham College of Medicine, 26 as compared with 28; and at the University College of South Wales, Cardiff, 13 as compared with 17; while at University College, Bristol, the number this year is 12, the same as last year.

INDIAN MEDICAL SERVICE.

We learn that the new regulations in the India Office Memorandum issued this month apply to all officers now in the service, and take effect from August 13th, 1903.

A convocation of the University of Oxford will be held on October 31st to elect a Chancellor in the place of the late Marquis of Salisbury.

The Society of Apothecaries of London gives notice that a Gillson Scholarship in Pathology, of the value of £90, tenable for one year, will be open for competition in the month of January, 1904. Further particulars can be obtained on application to the Secretary to the Examiners, Society of Apothecaries, Blackfriars, E.C.

We regret to hear that Dr. James Stewart, physician to the Royal Victoria Hospital, Montreal, has recently suffered from a severe form of septicaemia, and are glad to learn that he is making satisfactory progress towards recovery. He had the advantage of the advice of Professor Osler, who paid a special visit to Montreal.

The first meeting of the Faculty of Medicine of the University of London in the session 1903-4 will be held at the University, South Kensington, at 5 p.m. on Friday next. The chief items of business are: (1) The consideration of communications from various interested bodies with reference to a proposal to establish a degree in veterinary science, and (2) the consideration of recommendations to be made with reference to the constitution for 1904 of the Boards of Studies with which the Faculty is concerned.

Mr. J. C. Horsley, R.A., the father of Sir Victor Horsley, died at his house in Kensington on October 18th, at the age of 86. Mr. Horsley, though he painted one of the frescos for the House of Lords, gained distinction as a painter of cabinet pictures. He was elected A.R.A. in 1855 and R.A. in 1856, and was chosen Treasurer of the Royal Academy in 1882. Upon him fell to a very large extent the duty of selecting, often also of discovering, pictures in private collections suitable to form part of the winter exhibitions of old masters. The striking success from every point of view of these exhibitions has been due in very large measure to his learning and judgement which have excited the admiration of succeeding generations of critics. The profession will sympathize with Sir Victor Horsley in the loss which he has sustained by the death of his distinguished father.

On October 17th, the Lord Mayor of London and the Lady Mayoress entertained at a banquet at the Mansion House the President of the Institute of Journalists, the Chairman of the London District, the President of the Newspaper Society, and a number of representatives of the London press. The Lord Mayor, in proposing the toast of the evening, said that the country was rightly very proud of its press. It was, he said, fortunate that journalism, which still remained anonymous, and he hoped would long continue so, had marched from the inchoate to the corporate state, and so it came about that he coupled with the toast the name of the President of the Institute of Journalists, Mr. Nicol Dunn, who replied in a humorous speech. Mr. A. F. Robbins proposed "Literature, the Drama, and Art," acknowledged by Mr. Anthony Hope Hawkins, Mr. A. W. Pinero, and Mr. M. H. Spielmann respectively. Among the company were many ladies, and one of them, Mrs. Craigie (John Oliver Hobbes) replied for the toast of "The Ladies," given by Mr. Birrell, K.C. The toast of "The Lord Mayor and Lady Mayoress," given by Mr. A. W. A'Beckett, was very heartily received, and the Lord Mayor's reply brought an extremely agreeable evening to a close at an hour which must have made some of the journalists present sigh that all public dinners could not be equally well managed and concluded at as reasonable an hour.

Ireland.

Royal University of Ireland.

We are informed that some dissatisfaction is felt by students of Queen's College, Belfast, with regard to the results of the recent examination for the M.B. degree of the Royal University of Ireland. It is stated that on an average Belfast students secure about 50 per cent. of the places, but that on this occasion they obtained only nine out of twenty-three passes. It is alleged that one of the examiners in surgery did not show a sufficiently judicial spirit. It is said to be probable that the Students' Representative Council will take the matter into consideration, and that if the statements now current are substantiated the Council will bring the facts before the Senate of the University.

THE PROFESSORSHIP OF CHEMISTRY, TRINITY COLLEGE, DUBLIN.

Dr. Sydney Young, F.R.S., Professor of Chemistry, Bristol, has been appointed to the Chair of Chemistry in Trinity College, Dublin, vacant by the resignation of Professor Emerson Reynolds, F.R.S. Dr. Young was educated at Owens College and he subsequently studied at Strassburg. He obtained first place at the University of London B.Sc. Examination, and in 1880 was Scholar in Chemistry.

THE PREVENTION OF TUBERCULOSIS.

The Irish Local Government Board has reissued a circular letter, first published by it in September, 1901. This letter was addressed to all county and district councils and Boards of Guardians, as well as to medical officers of workhouses and those in charge of dispensaries. Its most important paragraph reads as follows:

> The Board consider that the most necessary step to commence with is to educate the people in the best means of guarding against the disease, and, with this object in view, they would suggest that the local authorities should endeavour to enlist the sympathy and support of the clergy of all denominations, managers of schools, schoolmasters, and all persons whose duties bring them intimately in contact with the people, and more particularly with the poor, and to supply them, for distribution, with copies of the leaflet entitled *Information for Consumptive People, and for Those who Live with Them.*

With the leaflet mentioned in this paragraph there is included a sample of a poster, in very large type, which points out that consumption is an infectious but preventable disease, and gives brief advice to patients how to deal with expectoration, and to their friends how to deal with the dust in the rooms inhabited by them. The influence of intemperance, overcrowding, dirt, and damp, is also mentioned, while due stress is laid upon the importance of fresh air and sunshine as remedial agents. The smaller leaflet is to much the same effect, but rather more detailed in character. Education of the people is an essential part of the whole campaign against phthisis, and all efforts on the part of the authorities must prove useless unless the people themselves join in the war against it, and for this purpose conform their habits and lives to the desired model. This, however, can only occur when persons of all classes have an intelligent, everyday apprehension of the main factors which combine to render the disease prevalent, and clearly understand the precautions which ought to be taken both by heads of families and individual patients. Literature, therefore, of this character in which adequate information is conveyed in carefully-chosen language can scarcely fail to do good.—At the annual meeting of the Forster Green Hospital for Consumptives, Belfast, the Committee of Management reported that 117 cases had been admitted, which, with 33 under treatment, made a total of 150 cases. The open-air treatment is still thoroughly carried out and the very large majority of patients are benefited; all the beds were kept constantly full, and the new year at the hospital, owing to the kindness of many friends, opened practically free of debt.

OVERCROWDED ASYLUMS.

At the meeting of the Monaghan and Cavan Asylum Committee on October 15th an important report of Dr. Courtenay, one of the Inspectors of Lunacy in Ireland, was under consideration. The existence of overcrowding had been referred to in many former reports, but as there had been an increase of 27 patients, it had become more marked now. The old infirmary, which could not accommodate 50, had 70 living in it; the sleeping rooms contained nearly double their proper quota; all had patients sleeping on the floors; efforts to separate the quiet and convalescent from the noisy were fruitless; consumption was prevalent; erysipelas was constantly appearing; the dining rooms, stores, and laundry were quite inadequate, and the mortuary repulsive. The sanitary accommodation received praise, but complaint was made that only 30 per cent. of the male and 39 per cent. of the female patients were usually employed, which was much below the average in public asylums.

The report of the Inspector of Asylums read at the last meeting of the Armagh Asylum Board also showed considerable overcrowding. The new buildings were approved of, but the dayroom accommodation was condemned as dangerous on account of the overcrowding during wet weather. Amongst occupations for patients, handlooms have been introduced and so far they have given satisfaction.

THE DISPENSARY QUESTION IN CO. WEXFORD.

At the weekly meeting of the Enniscorthy Board of Guardians on October 16th, a letter was read from Dr. W. W. Murphy, Honorary Secretary of the co. Wexford Branch of the Irish Medical Association, forwarding a resolution passed at a meeting of the Irish Medical Association on October 2nd, calling the attention of county councils and Boards of Guardians to Section VI of the Local Government Act, 1902, and asking them in their own interests as representatives of the ratepayers to agitate for an early repeal of this section, and thus to facilitate a settlement of the grievances under which Poor-law medical officers labour. The section referred to provides that from April 1st, 1903, there shall not be paid out of the local taxation account in any financial year to any council or Board of Guardians a greater amount than was paid in the local financial year ending on March 31st, 1902. The effect of the section so far as it relates to the salaries of medical officers is that any increase of salaries that may now be paid to doctors must be paid out of the rates, without any recoupment from the local taxation account as formerly, and the doctors are of opinion that their demand for increased salaries will continue to be refused so long as the whole of that increase will have to be paid out of the local rates. The Clonroche Dispensary continues vacant, as no medical officer can be got to accept the position at the salary advertised—£120 a year. Dr. Delaney is acting as temporary medical officer at a salary of £4 4s. a week. Two abortive attempts have been made to fix a basis of agreement between the representatives of the Poor-law unions in co. Wexford and the representatives of the Irish Medical Association, and the Local Government Board has suggested as a way out of the difficulty, so far as Clonroche is concerned, that that dispensary district should be divided up amongst the neighbouring dispensaries. To this the medical officers object, and have all signed and published an agreement that they will at once resign if their districts are interfered with in the way suggested. The guardians were also averse to having the district so divided, and refused by a large majority to agree to the Local Government Board's proposal. Since the failure, however, of the guardians and the medical officers to agree to a settlement the Local Government Board's suggestion is to be again considered by the Enniscorthy guardians.

Owing to the death of Dr. Rafferty, of Bray No. 2 Dispensary District, a vacancy has occurred there, and the co. Wexford Branch of the Irish Medical Association has passed a resolution expressing the hope that no medical man "will be found to act with such disloyalty to his professional brethren as to accept the position at a salary less than £200 a year, the minimum fixed by the Irish Medical Association."

GRANARD NURSING QUESTION.

A new element has been introduced into this question by the following declaration of the Roman Catholic hierarchy meeting at Maynooth:

> We feel called upon to express our regret that the Local Government Board has not given adequate support and protection to the Sisters of Mercy in the workhouse hospital at Granard; and, much as we deplore the necessity which deprives the sick poor of their invaluable service, we desire to associate ourselves with the Bishop of Ardagh in the action which he has found it his duty to take in this painful case.

Speaking entirely upon the medical or nursing aspect of this dispute, we cannot help feeling that this pronouncement is to be regretted more especially as Dr. Kenny has written to the guardians, in reply to their resolution, explaining that he had not intended in the remotest way to insult the nuns. He had endeavoured to reform the system of hospital management persisted in for years by the Board of Guardians. To assist in terminating the dispute he had no hesitation in expressing regret for the unpleasantness of the past, and would do what he could to meet the wishes of the guardians, especially as there was now a promise to carry out the necessary reforms. The letter was sent to the Roman Catholic Bishop.

Scotland.

OPENING OF THE WINTER SESSION IN EDINBURGH.

THE various classes in the University and Extramural Medical Schools were opened for the winter session on October 13th. The new University Professor of Anatomy—Dr. D. J. Cunningham—gave his introductory lecture in the McEwan Hall. He traced the progress of anatomical teaching in Edinburgh from its beginning in 1697. Robert Elliot became in 1705 the first Professor of Anatomy. The first real teacher

and professor of anatomy was Alexander Monro Primus, who was elected in 1720, but was not given teaching accommodation within the University till 1725. The subsequent history of the Chair of Anatomy was rapidly surveyed down to the time of Sir William Turner. Some matters connected with the study of anatomy was then discussed. The value of the Roentgen rays in giving exact knowledge of topographical anatomy was referred to.

Improvements in the University of Edinburgh.

During the summer recess a number of needed improvements have been made in the University buildings. These have affected the library in the old University, and the anatomy, chemistry, and pathology rooms in the new University. Besides these, some minor changes have been made to add to the comfort and convenience of women students.

The Library.

The accommodation was all but exhausted, while the number of volumes was steadily increasing. The problem was to provide shelving not merely for the 230,000 volumes of which the library at present consists, but for 400,000 volumes, so as to leave an ample margin of space for many years to come. The scheme finally fixed upon was that of the Art Metal Construction Company of Jamestown, New York. A contract has been taken by this company to fit up four rooms with their library standards and shelvings, and one room is nearly finished. This apartment is 23 ft. 6 in. by 22 ft. 6 in. by 20 ft in height, and it is being fitted to hold about 45,000 volumes. It has been divided into two floors, the lower 8 ft. high and the upper 12 ft., with a glass flooring between, and the electric light has been hung from the roof between the bookshelves, so that the name of every book can be read as it stands in its place. The money required for this new equipment is part of the annual sum allocated by the Carnegie Trust to the University for such purposes. The heating arrangements, too, are being improved.

Chemistry Class Rooms.

The chemical laboratories have of late years been found too small for the number of students. Originally they were fitted up to accommodate about forty students, and now for about double that number. By skilful alterations a large and well-lighted hall, 52 ft. by 45 ft. by 12 ft. in height, has been constructed to give 50 additional working places for students, and the latest laboratory improvements have been adopted. The ventilation is by electric fans, and two large ducts are on each side of the room. Electric light has everywhere been introduced. The Lecture Theatre has been provided with an installation of nine large power Nernst lamps. An electric motor has been put in to pump up water to a cistern so that it may be supplied at high pressure in the laboratories and lecture theatre.

Pathology Work Rooms.

A large hall, 42 ft. by 39 ft., with roof light, has been constructed to provide space for 50 workers, and to be used for bacteriological research. The fittings and equipment are of the most approved type. The old bacteriology class room has been converted into a special research room. The histological room has been provided with electric light, as indeed have all the rooms in the Pathological Department. A new Zeiss lantern of large size for showing photographs of actual organisms, etc., has been provided.

Anatomy Department.

Here, again, electric light has been introduced. In the theatre arrangements have been made for using the Zeiss lantern, as in the pathology department. Dark rooms in both departments have been provided. Ventilation by electric fan has been adopted in the large practical demonstration hall. Fifty tables of a new pattern have been introduced. They have steel frames with movable plane-tree tops, which can be removed for washing. Each table has two electric lamps. The expense of these improvements in the new University will be defrayed from the ordinary funds of the University.

The Health of Edinburgh.

Births and Deaths.

Sir Henry Littlejohn in his annual report for 1902 states that the population of Edinburgh in 1902 was 317,459. The number of births was 7,909, giving a birth-rate of 24.48, the lowest ever recorded, and the lowest with one exception of the other large towns of Scotland. In 1871 the rate was 34.89, so that it is within comparatively recent years that a serious reduction has taken place. In England and Wales during 1902 the birth-rate was 28.6, and in the seventy-six great towns 30.0 per 1,000. The illegitimate births were 7.58 of the total. The number of deaths was 5,726, but deducting the deaths of those who were merely temporary residents or had come for treatment in a medical institution, the actual mortality was 5,113, giving a death-rate of 15.83 per 1,000, the lowest recorded annual death-rate, with the exception of the year 1896, when the rate was 15.26. Of the total deaths 1,410, or 27.5 per cent. occurred under 5 years of age. Of these 944 were infants under 1 year. In the second year of life 246 died, in the third year 128, in the fourth 51, and in the fifth 41. The death-rate of children under 5 was 43.90 per 1,000 of the population living under 5 years, while the rate for all those above this age-period was 12.73 per 1,000.

The infantile death-rate, which is usually expressed as the proportion of deaths of infants under 1 year of age to 1,000 births during the year, was in 1902 119, 143 in 1901, and 132 in 1900. The total number of deaths of illegitimate children under 5 years was 113, as compared with 191 in 1901. Out of 600 illegitimate children born last year 91 died, or a proportion of 148 per 1,000, as compared with a proportion of 116 deaths of legitimate children per 1,000 legitimate births.

The number of deaths due to zymotic diseases (excluding diarrhoea) was 346, as against 599 in 1901, 291 in 1900, and 391 in 1899. The great fluctuation in the figure is almost wholly due to the prevalence or non-prevalence of measles and whooping-cough. Seven cases of small-pox occurred; none were fatal. The measles death-rate was 0.35 per 1,000 of the population, which was less than the average of the last five years, namely, 0.48. Of the 116 deaths, no fewer than 107 occurred under 5 years of age. The scarlet-fever death-rate was 0.09 per 1,000 of the population, a similar rate to that of 1901. Diphtheria caused a death-rate of 0.09 per 1,000, as compared with 0.18 in 1901. The average of the five previous years was 0.14 per 1,000. Whooping-cough caused a death-rate of 0.30 per 1,000 of the population, while the average of the five preceding years was 0.46. No fewer than 40 of the deaths took place during the first year of life, 30 in the second, the total deaths under 5 years being 93 out of a total of 97. Typhus fever caused 1 death, enteric fever 27, influenza 62, chicken-pox 3 deaths (all of them children between 2 and 3 years of age). Diarrhoea was stated to have caused 23 deaths, 20 of which were during the first year of life; 17 were attributed to syphilis, 25 to erysipelas, 53 to dietetic diseases, 1,105 to constitutional diseases. In the last group phthisis accounted for 477 deaths (262 males and 215 females), and cancer 312 (127 males and 185 females) as against 293 in 1901 and 370 in 1900. Developmental diseases caused 623 deaths (165 due to premature birth), diseases of the nervous system 450, diseases of the circulatory system 602 (142 were cases of endocarditis or valvular disease of the heart), diseases of the respiratory system 937, diseases of the digestive system 309 (dentition 21 and appendicitis 21), urinary system 157, accident or negligence 148 (6 cases of accidental poisoning), 31 suicides; ill-defined and non-specified causes were returned in 136 deaths, of which 125 were described as due to debility, atrophy, or inanition.

Infectious Disease Notification.

The year 1902 marked a new era so far as the notification of infectious diseases in Edinburgh was concerned. For twenty-two years previous to this, notification was carried out under a local Act of Parliament. With the beginning of 1902 the Infectious Disease (Notification) Act, 1889, came into force, with the result that the notification of measles was discarded and that of erysipelas and puerperal fever required in addition to those notified under the earlier Act. The change has made a great difference in the number of notifications received, and in the expense incurred by the city. In 1901 the notifications numbered 7,053, of which 5,384 were cases of measles. In 1900 the notifications numbered 6,160, and in 1899 they were 5,365. In 1902 the total was only 1,968, of which scarlet fever accounted for 812 and diphtheria 408. There was less enteric fever during 1902 than has ever been recorded since the year 1880. There were 408 cases of diphtheria, as against 542 in 1901 and 483 in 1900. Of erysipelas 513 cases were notified. On puerperal fever Sir Henry writes:

> Twenty-six cases were reported. Probably this is less than the actual number which occurred, since great uncertainty prevails amongst medical men as to what really constitutes the condition and should be regarded as "puerperal fever" within the meaning of the Act. The same difficulty is experienced throughout the whole country, and the question is one which might advantageously form the subject of discussion at a congress of medical men with the view of a definite

and general agreement being arrived at. In the meantime, statistics of notifications relating to the condition cannot be regarded as of much value, and the practical advantages derived from notification are not very apparent.

Some interesting comparisons between mortality of patients treated at home and in hospital are given. In enteric fever 35 per cent. of the cases treated at home died, while of those treated in hospital only 7.5 per cent.; of 111 cases of diphtheria treated at home 11.7 per cent. died, while out of 297 patients removed to hospital only 6.3 per cent. The mortality amongst scarlet-fever cases was high last year, and more especially so amongst the patients treated in the hospital, of whom 4.6 per cent. died, as compared with only 1 per cent. of those treated at home. There was a growing disposition to send infectious diseases to the hospital for treatment. Various other matters are discussed and tables given.

COLINTON MAINS HOSPITAL, EDINBURGH.

On Wednesday, October 7th, the new hospital at Colinton Mains for infectious disease was open for the inspection of the medical profession and friends. Despite deplorable weather a considerable number availed themselves of the invitation. On the following three days the public were admitted. Thursday and Friday were very wet and few visitors appeared, but Saturday was fine and a very large number turned out to inspect and admire the new buildings and their equipments. On Wednesday, October 14th, the Town Council made an official visit of inspection. Next week it is intended that the hospital shall be open for the admission of scarlet fever patients in the first instance; 31 fresh cases of this disease were reported in the week ending mid-day, October 10th. No death was registered. In the preceding week 40 cases were notified and there was one death.

TROPICAL MEDICINE IN GLASGOW.

The Health Committee of the Corporation of Glasgow took the opportunity of entertaining Major Ross to dinner in the City Chambers on the occasion of his visit. The Lord Provost, Sir John Ure Primrose, presided, and there were about 80 gentlemen present, including a large proportion of representative medical men.

The toast of the evening was proposed by Bailie W. F. Anderson, who said that the Corporation had at all times sought to recognize special merit. The guest of the evening had done much to mitigate human suffering in tropical lands. It had been left to Major Ross to put on the soundest and most unquestionable basis the fact that malaria was a preventable disease. Science had provided a means of preventing malaria and yellow fever, but the apathy of the Government was the only thing standing in the way of the application of the remedy. They might help Major Ross in his efforts to break down this apathy, and municipalities like Glasgow could do much to bring about that result.

In acknowledging the toast, Major Ross referred to his investigations into malaria, and mentioned the names of many from whom he had received assistance in the work. The difficulties of those engaged in this research had been enormous, not only in the way of toil, but of depreciation, and even of ridicule. They might be quite certain, however, that they had discovered the method by which malarial fever was carried, and the same could now be said also of yellow fever. Such diseases did more to impede trade than anything else, and that was one reason why not only scientists, but all business men, should attend to this matter. It had now been proved that these diseases could be got rid of on a large scale, and he would like to see a more general effort by the authorities of this country to deal with the matter in a really business-like way. It was of such importance that one would have expected that the authorities would have convened a meeting of those who knew about the subject and asked their advice, but no action had been taken. Liverpool and Manchester had been struggling for some time with the question, and if Glasgow would act along with them, no doubt it would have a good result.

The other toasts submitted were "The Corporation of the City of Glasgow," proposed by Sir Hector Cameron and responded to by the Lord Provost, and "The Faculty of Physicians and Surgeons," proposed by ex-Bailie Crawford, LL.D., and responded to by the President, Dr. James Finlayson.

PROPOSED ISLAND HOME FOR GLASGOW INEBRIATES.

Considerable interest is taken at present in Glasgow in the working of the Inebriates Act, and the Glasgow Corporation proposes to make an interesting experiment in this matter. Already it has a home in a quiet part of Ayrshire, which is utilized for women with moderate success. The Corporation practically owns Shuna, a small island on the west coast of Scotland, and it is proposed to send some twenty or thirty men there with the necessary staff as an experiment. If the experiment were successful, about two hundred men might be accommodated on the island, and there would be no difficulty in finding work for those so committed. The cost of maintaining them is estimated to be about 1s. a head a day, and if the island and the buildings thereon were licensed by the Secretary of Scotland under the Inebriates Act as a certified inebriate reformatory, the usual grant of 10s. 6d. a week per inmate would be received, and would thus more than meet the cost of maintenance. If the plan were ultimately proceeded with it would be necessary to erect additional buildings, but the present buildings with little alteration are sufficient to accommodate the small number of men thought of, and it will be interesting to see the result of the experiment.

DEATH OF MR. WILLIAM QUARRIER.

A notable man in Glasgow has passed away in the person of Mr. William Quarrier. His lifelong work amongst the orphan children at Glasgow has been well known, and his Homes at Bridge of Weir are a standing monument to his energy and zeal. More recently he added to his work for the children the provision of sanatoria for female cases in the incipient stages of consumption, and has been able to provide beds for 80 patients. This more recent phase of his work has been carried on with considerable success, and must already have proved of the greatest benefit to the city. Although his methods of administration were often adversely criticized, the public generally have shown great appreciation of his philanthropic work, and their sympathy goes out to his relatives in their bereavement.

OPENING OF THE WINTER SESSION AT ABERDEEN.

The winter session at Aberdeen University opened on Tuesday, October 13th. The sense of the University's loss in the death, on September 27th, of the Duke of Richmond and Gordon, who had held the office of Chancellor of the University for over forty-two years, was recorded at the meeting of the General Council of the University held on October 14th. The election of a Chancellor will take place on November 3rd. At King's College, where the arts classes met, the introduction of Professor Sandford Terry as the first occupant of the Chair of History in the University was an important event. The death of Emeritus Professor Bain was naturally a subject of sad reference in many classrooms. On the medical side, the announcements by the Professors of Anatomy and Surgery as regards their intention of developing the instruction in the modern applications of electricity were noticeable features. The use of x rays in anatomical demonstrations has been provided for by the instalment of the necessary apparatus, and is likely to prove of service in the teaching of regional anatomy as well as of the structure and mechanism of the skeleton and joints. Professor Ogston intimated his intention of devoting more time in his course on surgery to the consideration of the methods of applied electricity at the expense of that previously occupied in details of bandaging and other matters which can be learnt sufficiently from instruction at the infirmary. The Lord Rector, Mr. C. T. Ritchie, M.P., has intimated his intention of delivering the Rectorial address on Thursday, October 29th.

ST. ANDREWS UNIVERSITY.

The winter session of St. Andrews University was opened by an address by Principal Donaldson. After referring to the benefactions to St. Andrews University by the new Lord Rector, Mr. Andrew Carnegie, he went on to speak of the Carnegie Trust. He repudiated the idea that Mr. Carnegie's gift for the payment of fees of Scottish students would corrupt these students or their parents and undermine the independence of the Scottish character. The practice and experience of some of the Continental universities did not justify such assertions. He thought if any one was or was likely to be corrupted it was the Legislature, for Mr. Carnegie had done what the Legislature should have done long ago. The Carnegie Trust had had to face a task which could be done completely only by the University courts, who fixed the fees, and the Legislature which could guarantee the exact sums required each year to make up for the absence or diminution of the amount of fees.

Introductory Addresses

AT THE

OPENING OF THE MEDICAL SCHOOLS.

MEATH HOSPITAL, DUBLIN.

By Sir Philip C. Smyly, M.D., F.R.C.S.I.,
Surgeon to the King in Ireland and to the Meath Hospital.

MODERN SURGERY AND SOME PROBLEMS OF THE FUTURE.

Sir Philip Smyly devoted his address to a brief sketch of Meath Hospital and a consideration of some of the accomplishments of modern surgery, and of points now exciting professional interest. This year, he said, completed the third jubilee of the Meath Hospital and County Dublin Infirmary. Meath Hospital students were to be found all over the world, and wherever they were found they were in good positions, and did credit to themselves and to the hospital where they learned to learn their art, and whenever they were met they said, "How goes the old Meath," "I must some day have another look at the old Meath." This was a term of affection, and not a reflection on the age of the hospital or of the medical staff.

Since the last time he had opened the session there had been many changes. One of the most serious he counted the death of Sir William Stokes, who was a true friend, a true gentleman, and a distinguished surgeon, who gave up his life in the service of his Queen and country, but not until he had made a great reputation for himself and perpetuated the reputation of his father, William Stokes, in his memoir of that great physician who with Graves made the Meath Hospital famous all over Europe. Trousseau, the great French physician, is reported to have said, "In my Graves and Stokes I read daily as I do in my breviary." This volume by Sir William every Meath Hospital man should have among his books. It was a well-told history of a great physician, and showed how a great name could be made.

Sir William Stokes was one of the first in Dublin to adopt Listerism, and by his practice and eloquent addresses at various medical and surgical societies and congresses did much towards the adoption of Listerism all over the world. The new operating theatre, where there was every contrivance to enable the surgeons to practise aseptic surgery, was in no small measure due to the earnest and active co-operation of Sir William Stokes. Doubtless some of his auditors might remember the instructive address given in this hospital by the late Mr. Patteson on asepsis, a man who though such a short time a member of the staff won the esteem and respect of all his colleagues. This whole subject was now so well known, said Sir Philip Smyly, that it was unnecessary to take up time by any panegyric, but he would mention a few of the surgical possibilities which had become daily facts and which could not have been thought of before Lord Lister. He remembered the time when Sir James Y. Simpson brought a resolution before the governing body of the infirmary in Edinburgh to prohibit any more operations in the hospital, and also to build a small hospital outside the city where all operation cases could be sent and where all operations were to be performed. Then came Lister and began his great revolution. Sepsis and microbes were banished, and surgery again flourished; since that time organs that no surgeon ever thought of treating had come within surgical reach.

Surgery and the Prostate.

For example, the prostate gland could now be removed, and in an article in *La Presse Médicale* entitled "La Methode de Freyer; Prostatectomie Totale Transvesicale par Voie Sus-pubienne" would be found. "This is certain, that at the present time it gives excellent results. It gives very great honour to the man who created it, and whose name will mark a chief stage in the history of prostatectomy." Mr. Freyer, said Sir Philip, was an Irishman, and a most distinguished member of the Irish Graduates' Association, which had done so much for Irishmen practising in England. To that Association was due the removal of an order that no Irishman should hold hospital appointments in England. It was an Association which every Irish medical man should join wherever he might live, whether in Ireland or England or in the Colonies of this great empire.

Surgery and the Kidney.

The kidney also was an organ now within the reach of the surgeon, and many and various were the operations on it, followed by the most brilliant results; for instance, Edebohl's operations for Bright's disease, with regard to which he had just received an interesting note from Mr. Freyer narrating a successful case.

Surgery and the Pancreas.

The pancreas also had become of surgical interest. Von Mikulicz-Radecki had published[1] his personal experience of operative interference for disease of the pancreas, which, he pointed out, was at the present time the most incomplete chapter in the realm of abdominal surgery. Besides thirty cases in which this surgeon had the opportunity of operating upon the pancreas while resecting the stomach for cancer, he had operated on the pancreas itself thirty times, and with very good results.

Cancer and Tuberculosis.

The two great subjects which were now interesting both the profession and the public were tuberculosis and cancer. Though hopes had many times been dashed he thought there would be good results from the deliberations of the Cancer Research Fund. The first annual meeting of its General Committee was held on July 30th last. (Sir Philip Smyly here quoted at length the report of the meeting as it appeared in the British Medical Journal, p. 317, August 1st, 1903, emphasizing that point which referred to Mr. Balfour's call to the public and the profession not to be discouraged by the slow development of positive results.)

Cancer and Electricity.

The various forms and modes of application of electricity had also of late years been of the very greatest interest to the medical profession and to many of the general public. The speaker here again quoted with approval a leader from the British Medical Journal on the subject of cancer and electricity, and then, in reference to its concluding paragraph which stated that the value of electricity in malignant disease must be regarded as still *sub judice*, Sir Philip Smyly continued: "And yet from time to time we do get reports of actual cures; for example, in *La Presse Médicale* for August 19th, 1903, we have a case of cancer of the breast cured by *x* rays. The patient, seen for the first time in 1903, had cancer of the breast from 1901; this cancer was lately ulcerated, and caused cruel sufferings to the patient; it was accompanied by numerous axillary nodules. M. Mondain and M. Marion decided to try *x* rays; they placed at a distance of 20 to 30 cm. a soft tube. At the second sitting the pain diminished completely, and at the thirty-ninth day from the commencement of the treatment the cicatrization was complete, notwithstanding the delay due to a radio-dermatitis which intervened."

Lupus.

That horrible disease, lupus, which for so long was called cancer, but which was now known to be tuberculous, was rapidly becoming amenable to treatment. In the *Dublin Journal* for August would be found a paper by C. M. O'Brien, M.D., entitled Experiences of a Year's Trial of the Light Treatment for Lupus. Dr. O'Brien used both Finsen light and the *x* rays, and his results were most satisfactory. As the result of his experience, he expressed the opinion that in the treatment of circumscribed superficial lupus the Finsen light had no equal. It was a paper well worth reading.

The Campaign against Tuberculosis.

Sir Philip Smyly then said he would like to call attention to pulmonary tuberculosis, known to the public as consumption. Of late years much had been learned, though there was much still to learn with regard to treatment. He would particularly draw notice to the third report of the National Association for the Prevention of Tuberculosis, and especially to the motto on the outside cover due to His Majesty the King, who said as Prince of Wales: "Consumption is a preventable disease; if preventable, why not prevented?" Also worthy of note was a very clear and useful pamphlet by a Roman Catholic curate of Ballinrobe, with a preface by Sir Francis Cruise, published by the Catholic Truth Society of Ireland. Would it not, asked the speaker, be a great help towards stamping out this dreadful disease if Christian men of every Church were to join in helping forward the great and good work of prevention?

Prevention was better than cure. But much could be done

[1] Epitome of the British Medical Journal, August 29th, 1903, par.

towards cure. Dr. Henry McCormac, of Belfast, was one of the first to preach fresh air and good feeding as the cure for consumption. The outcome of this knowledge was the great development of the sanatorium treatment in every part of the world. One of the chief uses of a sanatorium was that it was in itself an educational institution not to teach science so much as common sense—to teach sufferers how to live and how not to infect others.

There was no doubt that high air was also an important factor in treatment of disease. There was to be a large British sanatorium at Davos, to be called the Queen Alexandra Sanatorium for Consumption. The report of the Basle Sanatorium was of the greatest value in ascertaining the real worth of the Davos climate. That sanatorium was founded in 1896 by the city of Basle, and the patients, mostly of the working classes, paid only very small fees, the balance being made up by voluntary contributions and donations. In reference to its report, the *Davos Courier* said: "Dr. Alexander Spengler, a German doctor, who settled at Davos about the middle of the last century, was the first to make a practical application of the method, and to supply from his own practice and experience the beginnings of the data on which the high-mountain treatment of phthisis is based. In the course of his practice in the then almost unknown valley of Davos he was struck both by the fact that the inhabitants of this high region (over 5,000 ft. above sea level) enjoyed almost an immunity from consumption, and that those persons who came up from the lowlands suffering from the disease rapidly and thoroughly improved in health. So impressed was he by these observations that he induced several sufferers from the complaint to try the effect of the climate. The experiments were entirely successful, and this was the beginning of Davos as a health resort." Dr. E. Nienhaus, Medical Director of the Basle Sanatorium, commented in his report on the great industry which had been of late years displayed in the erection of sanatoria in Germany, and his remarks applied with equal force to England. "During the past few years," he said, "the sanatorium movement, especially in Germany, has reached very large proportions. Sanatorium doctors, as well as university professors, thus deny the favourable influence of the high-mountain climate, and lay all the weight on the sanatorium treatment alone. Now, however, when it has been discovered that the sanatoria have not accomplished, in this combat against tuberculosis, all that was promised for them, we shall find that opinion will gradually come again to lay stress on the influence of climate."

The Choice of a Career.

With regard to the education of the medical student, great advances had recently been made. He would advise the student to read carefully the Educational Number of the British Medical Journal for September 5th, 1903, on the advantages and disadvantages of the profession of medicine; there were some valuable hints in it as to how to preserve his own health, and how to fit himself to meet emergencies. It was well worth careful study. It was most important for a young man to make up his mind as to the line of practice he meant to adopt; and also with regard to the services—the Navy, Army, the Indian Service; and last, though not least, the Poor-law and private practice. Little by little the Navy and Army Services had become most unattractive, and until recently teachers in England and Ireland had advised their pupils to avoid them, seemingly with success; but now in the Journal the following would be found: "We are glad to learn that in the last two years much energy has been devoted to improving this service (Army Medical). In order to consider the necessary steps and to assist the Secretary of State, an Advisory Board has been created. Some of the most eminent civilian medical authorities have given to it their voluntary services and much of their time. Sir Frederick Treves expressed his belief that the Army Medical Service would be made 'the finest service in the world in time' when reforms in contemplation could be carried out."

In the Navy and Indian Medical Service many and great improvements had also been made, so that the services might now be regarded as a career in life for the best men in the profession. But many men must stay at home, and therefore it became a duty to endeavour to make the home career as good as possible. Much useful advice had been given recently by the speaker's friend, Dr. Tobin, in his introductory address when opening the session at St. Vincent's Hospital about the Poor-law Medical Service. The speaker had been told by some that they lived very happy lives in the country. For himself, he entirely agreed with the man who said, "My dear sir, the country is a delightful place to spend a day or two, but show me any place in the country where you can have the comfort and security of the paving stones." Wherever, however, they might cast their lot, let them always bear in mind that they were gentlemen, and let them cultivate those great virtues which Sir Dyce Duckworth urged so strongly in his great address in Liverpool on the occasion of inaugurating the first autumn session of the Faculty of Medicine in the new University, reported in the British Medical Journal of October 3rd, 1903. With a full quotation from this address Philip Smyly brought his speech to a conclusion.

UNIVERSITY COLLEGE, SHEFFIELD.

The Medical Department of University College, Sheffield, commenced the winter session as usual on October 1st. To suit, however, the convenience of Sir Michael Foster, who had promised to give the inaugural address, the opening ceremony was deferred until October 15th.

The address was delivered in the hall of University College on the afternoon of that day. The hall was well filled with an audience consisting of members of the medical profession, prominent citizens, and ladies and gentlemen interested in educational matters and the University movement.

Sir Michael departed a good deal from the usual routine of addresses and advice to students as to their future studies was omitted. He, however, delivered an interesting and thoughtful address. He referred at the outset to the complexity and variety of the studies necessary to be followed by those taking up a medical career. The question whether the burden was becoming too great for the student, and what things in the curriculum could with advantage be thrown on one side, must, he said, be considered. The least important for the future would have to give way. There had been evolution in the medical profession. The doctor at one time was the priest who, by incantation and charms, was to drive out the spirits which had occasioned disease; the spirits were replaced by peccant humours, which had also to be driven out. The "driving out" of disease was long a watchword in the profession, and people still clung to the idea.

He then proceeded to deal with disease as caused in three ways—first, accident; secondly, by the action of germs; and, thirdly, by noxious conditions interfering with the physiological machine, and bringing about deviations from what was regarded as health. A man ate too much or too little, or he ate the wrong thing; he drank, slept, or worked too much or too little. Changes in the organism caused by these conditions of the environment sooner or later brought about disease.

He then proceeded to consider the methods of combating the results of the varied causes. Disease caused by germs could be treated by two different plans: (1) keeping the germ from entering, and (2) muzzling it when it had entered the system, and producing such a change in the organism as would render it ineffective. For two centuries and more, medical men had tried hard to drive out small-pox, and failed. Other measures had been taken, and so small-pox was so rare that the chief cause of its increase in England was the fact that the ordinary medical practitioner failed to recognize it when he saw it. The work of the doctor was not to attempt by nostrums to put out the fire when once it had been lighted, but either to destroy the matches which light the fire or to render the body uninflammable, so that the matches could not set it alight. Of these two, the first was undoubtedly the better. But it was not always easy to carry out. In many cases more success had attended the second method, which through various processes rendered the body immune to this or that disease, and they might well go on with that method. But it must never be forgotten that that method was of secondary value. In diseases due to germs they had learnt that medicine was preventive, and that the real work of the doctor was to stop the disease rather than to cure it.

The question he put was whether the same methods might be pursued against diseases which were due to the breaking of physiological laws, whether due to ignorance or wilfulness, and whether the preventive method for those diseases could not be adopted with greater zeal and wider effect than was the case at present. He called those diseases occasioned by germs public diseases and those due to environment private,

the first affecting the public directly and the latter indirectly. He then entered a plea for the investigation of the cause and prevention of private diseases, many of which were due to faults committed through sheer ignorance. It was not too much to suppose that if the constitution of the individual patients was more regularly brought to the notice of the doctor, he would be able to so carefully study it that he could guide the patient more clearly in his conduct of life. If the patient obeyed them, a very large number of diseases of all kinds would be enormously reduced.

A passing reference was made to disease of old age. In most cases old age was premature owing to the blows received in life; the wrong steps taken, the breaking of physiological laws, all helped to hasten them to the grave. If the private practitioner had the opportunity of studying more completely with all the resources of physiological, chemical and physical science, the constitution of patients he would be helping to lengthen human life and lessen human suffering. The public health officer received his reward to prevent disease, the private practitioner lived on disease, and his reward was inverse whereas it should be in direct proportion to the health of his patients.

All he had said tended to the increase of medical studies. The private practitioner studied mainly diagnosis and therapeutics, the preparation of those who had to mend, whereas those who made the prevention of disease their aim studied mainly hygiene. All this meant a doubling instead of a reduction of the medical studies. The way out of the difficulty was a division of labour. There might be what he called private and public officers of health, who would prevent disease in the individual or en masse.

He paid a high tribute to the medical officers of health and to the services they rendered to the public. He thought that in the near future more of them would be needed. The particular requirements for the medical officer of health and the private doctor, whose object it would be to keep his patients in health, would be a very considerable knowledge of hygiene and little of therapeutics. Then there would be members who would be called in for the cure of disease by therapeutic measures, operative or medicinal, when the others had failed. Theirs would be chiefly the study of diagnosis and therapeutics and very little of hygiene.

In the evening Sir Michael Foster was entertained at dinner by the professors and lecturers of the Medical Department of University College, together with many other members of the profession. Several prominent townsmen were among the guests. Dr. Dyson presided, and the toast of "The Guest, Sir Michael Foster," was proposed by Mr. R. J. Pye-Smith, and replied to by Sir Michael in a humorous speech, referring to his experiences in general practice in his early professional life. The other toasts included "The Medical Department of University College," proposed by Mr. A. J. Hobson (ex-Master Cutler), and replied to by Professor Arthur Hall; "The Medical Charities of the City," proposed by Mr. H. K. Stephenson, and responded to by Mr. J. Marshall, Chairman of Royal Infirmary Board; and "The Visitors," proposed by Mr. Simeon Snell, who referred to the hearty co-operation of the local press in furthering the movement for a university for Sheffield. Mr. R. H. Dunbar, Editor *Sheffield Telegraph*, and Mr. J. Derry, Editor *Sheffield Independent*, responded.

ST. MUNGO'S COLLEGE, GLASGOW.

There was a large gathering of students and others in the lecture hall of St. Mungo's College to hear the opening address for the winter session by Dr. D. N. Knox. The subject was the Real Reason for Rebuilding the Royal Infirmary, viewed from the surgical standpoint. Dr. Knox dealt with the history of clinical surgery in the Royal Infirmary during the last century. In the pre-antiseptic days the results of amputations in the infirmary gave a death-rate of 36 per cent., mainly due to septic disease. Lord Lister's work had changed all that, and the vast improvement in surgical practice was well illustrated by reference to the report of the Royal Infirmary for 1902. The total number of amputations for injury last year was 101, with only 9 deaths, and the amputations for disease numbered 74, without a single death. However, the surgeons were not yet satisfied, for although deaths after operations might be prevented lesser but still serious evils remained. The walls and floors of an old hospital like theirs could not be perfectly sterilized by any means short of demolition, and only by such means could wounds be certainly prevented from suppurating, and long weakening convalescence in many cases be avoided.

ANDERSON'S COLLEGE, GLASGOW.

Major Ronald Ross, of the Liverpool School of Tropical Medicine, visited Glasgow last week primarily to deliver an opening address at Anderson's College Medical School, but he also fulfilled other engagements in the city and was entertained to dinner in the evening at the Municipal Chambers by the Lord Provost and the Health Committee.

At Anderson's College there was a large and representative audience, the chair being occupied by Mr. A. Malloch Bayne, the President of the institution. Major Ross, who had chosen as his subject "Medical Science and the Empire," said that civilization existed mainly in the temperate zones and barbarism mainly in the tropics. Turning attention particularly to tropical Africa, one found that while long before this it should have been a second India, it was the darkest land on the face of the earth. The principal, if not the only, cause of the backwardness of that great continent was its unhealthiness. If a greater overflow of civilization into the tropics was to be successful, if half the world was not to remain inaccessible to civilization, the principal disease scourges of the tropics must be overcome. That could not be done by the soldier, by the politician, or by the trader, but by the efforts of the medical profession. Medical science in fact would play the main part in the future development not only of our empire, but of the whole empire of civilization. Great progress had already been made in the study of tropical diseases, and more particularly in regard to malaria and to yellow fever, two of the greatest scourges of these tropical lands. Major Ross told in a very graphic way the story of his long effort to demonstrate the relation of malaria to the mosquitos, and of his ultimate success in finding the malaria parasite in one variety of mosquito. That discovery had clearly shown why the disease was so widespread, but also the way in which it might be prevented; and more recently the study of yellow fever in America had revealed the fact that it too was carried by mosquitos and might be similarly prevented. Illustrations were given of what was being done already to make use of those discoveries, and where efforts at prevention had been undertaken the results were very striking indeed, but Major Ross complained seriously of the apathy of the British Government in availing themselves of the knowledge medical science had thus provided.

On the motion of Dr. R. S. Thomson, seconded by Bailie W. F. Anderson, the Chairman of the Health Committee of the Corporation, an enthusiastic vote of thanks was given to Major Ross.

SMALL-POX ISOLATION IN GERMANY.

[from a correspondent.]

In despair of finding any reasonable cause for the almost complete abolition of small-pox epidemics in Germany, apart from the systematic vaccination and revaccination of the population, it has recently been asserted that the freedom from small-pox enjoyed by Germany is due chiefly to isolation machinery. Small-pox being a highly contagious disease, all civilized nations adopt measures of more or less stringency to prevent its spread when it actually invades a locality: but, judging from the provisions of the German laws, in no small-pox epidemic that ever occurred in Germany have patients been isolated so promptly and efficiently as in the recent London epidemic.

The laws regulating the public measures to be adopted vary in the different states of Germany, but an attempt to attain uniformity as to notification of diseases was made by the Imperial Law of June 30th, 1900. If we take the state of things as existing before the year 1900, we find that the practice in Prussia regarding isolation is based on the *Regulativ* of 1835, which was not abrogated by the passing of the Imperial Vaccination Law of 1874. The following is a translation of its provisions as to isolation:

Section XLV runs thus: If the patient remains in his house, this must either be isolated or else indicated by a tablet.

Section XLVI. If the number of small-pox patients in any place should increase extremely, special strictly isolated hospitals are to be erected for the reception of those who cannot remain in their own dwellings, or carefully separated sections of general hospitals are to be used.

That is all as regards Prussia.

In Würtemberg the law, which dates from 1888, is to the effect that in all places with hospitals allowing the perfect separation of infectious cases an effort must be made to bring the first cases to the hospital, and, if possible, all the cases. Where there is no hospital, then if an extensive outbreak prevail, and isolation at home is not possible, the

erection of special hospitals or sheds should be kept in view (*ins Auge zu fassen*).

If removal to a hospital is impracticable, then the patient and his attendants must abstain from traffic of any kind with other people until professionally certified as safe, and until complete disinfection has been effected. Further, a warning tablet must be affixed to the house. In large towns an official list of houses invaded by small-pox must be published daily. The inhabitants must earnestly avoid unnecessary visits to such houses. Children from such houses must be excluded from school attendance. All nurses and attendants must be revaccinated persons; if necessary, such attendants must be provided (at public cost).

Such is the law in Prussia and in Wurtemburg, and similar regulations exist in other States of the Bund. Immediate notification to the authorities is of course necessary.

In Prussia and some other States—Hanover, Schleswig-Holstein, Luxemburg, Hesse-Nassau, Bavaria, and Baden—compulsory vaccination of all occupants of small-pox invaded houses who are unvaccinated or not recently revaccinated (within five to ten years) may be made, and if the epidemic prevail extensively then the Prussian law permits vaccination of all the rest of the inhabitants of the locality affected, and if such vaccinations are not done then at least extraordinary public vaccinations are arranged. Absolute coercion is avoided.

A sharp police supervision is maintained over all workers coming into Germany from Russian or Austrian districts where small-pox is epidemic. They are required to produce evidence of satisfactory vaccination or to submit to vaccination at once. In some States (Wurtemburg since 1888, Baden since 1870) the revaccination of all workers in paper factories and of all rag sorters is enjoined by law.

We are now being told that to an "enactment" of 1883, in Prussia, the continued freedom of the whole of Germany from small-pox is due. But what after all was this enactment which created such a revolution in the whole empire, while it only referred to one State of that empire? It was really not a new law but only a notification to the authorities of a decision by the Prussian High Court of Justice on an appeal case that isolation of a dwelling means isolation of the entire house, and not merely of one room or a few rooms. Further, the isolation is to be maintained until all medical measures for disinfection have been carried out.

PREVENTION OF CONSUMPTION.

THE NATIONAL ASSOCIATION FOR THE PREVENTION OF CONSUMPTION.

AT a meeting of the National Association for the Prevention of Consumption, held under the presidency of Sir William Broadbent last week, a Committee was appointed to make arrangements for the forthcoming congress in Paris in 1904.

A letter from the Incorporated Society of Medical Officers of Health was read, and also a memorial to the Principal Secretary of State for the Home Department with reference to the proposed standards of ventilation contained in the first departmental report on the ventilation of factories and workshops presented to Parliament in 1902. The Council entirely endorsed the memorial, and as it had already approached the Home Secretary on the subject, it expressed its willingness to further co-operate with the Incorporated Society of Medical Officers of Health in any way that might be thought practicable.

The Council resolved, in view of the by-law against spitting recently passed by the London County Council, to take further steps to induce the railway companies to prohibit spitting in their carriages and about their premises.

The Secretary reported that a sub-branch of the West Wales Branch of the Association was shortly to be formed at the Aberystwyth University.

CONTRACT MEDICAL PRACTICE.

THE BALLACHULISH QUARRIES DISPUTE.

THE Ballachulish Quarries dispute remains still unsettled although the men have now been locked out for ten months. Recently the Quarrymen's Committee made a number of proposals in order to try to bring to an end the grievances of which complaint is made and of which one of the principal is the arrangement as to medical attendance and the refusal of the company to reinstate Dr. Grant in office. The suggestions made by the quarrymen are thirteen in number and the first three read as follows: (1) The interdict against Dr. Grant to be withdrawn: (2) the appointment of the quarry medical attendant to be in the men's own hands; (3) no deductions to be made for medical attendance except with the men's expressed consent. The other ten stipulations refer to rates of pay and other conditions of labour. In reply to these propositions the company's manager posted notices making some concessions as to wages but making no reference to the medical position excepting a statement that in future no doctor's fees would be collected by the manager unless it were otherwise arranged between him and the men. The same evening that this notice was posted the men met and considered it and unanimously refused to accept the terms offered. The point which seems to have influenced them largely was that the medical question which they consider one of the most important was left unsettled by the notice. Dr. Grant being locked out like themselves, the men think, apparently, that any settlement accepted by them should include him. It will be seen, therefore, that so far the men have not wavered in any way, but are standing firmly to their guns. Fortunately none of them are out of work, as they have found employment at quarries in other quarters. The chief drawback to them, therefore, of the lock-out, though this is no small one, is that they are unable to live with their families. The feeling in the district seems to be that the men's requests ought to be granted, since there is nothing in them in any way unfair, and settlement in the way the men wish of the medical question and of the sundry conditions of labour involved could make no difference whatever to the company's dividends. Although, therefore, the name of Dr. A. D. Kennedy has appeared in the *Gazette* as having been appointed at Ballachulish as Surgeon under the Factory and Workshops Act in succession to Dr Lachlan Grant, it may still be hoped that the company or those who act in its name will still see fit to give way in the matter. The point is one which the men obviously regard as of the highest importance to themselves, and since it entails the question of whether they are to exchange the services of a medical man in whom they have the greatest confidence for one of whom they know nothing, their attitude is not unnatural. On the other hand, to the company the point cannot make any difference whatever, and the profession will find it difficult to believe that its continued refusal to give way is due to anything more than personal feeling or a somewhat untimely adherence to a general principle of which the management has only been able to avail itself owing to the previous confidence felt by the men that reasonable attention would be paid to their wishes.

THE PLAGUE.

PREVALENCE OF THE DISEASE.

INDIA.

DURING the week ending September 17th the deaths from plague in India numbered 13,996, compared with 13,088 during the preceding week. During the month of September 363 fresh cases of plague were reported in the city of Bombay, and 332 deaths from the disease. In the Bombay Presidency, exclusive of the city, there occurred 49,630 fresh cases and 35,627 deaths from plague.

CAPE COLONY.

The report of the Medical Officer of Health for the Colony reports as follows on the fresh cases of plague and the deaths due to the disease during the weeks ending September 19th and 26th:

Port Elizabeth.—Fresh cases, 0 and 1; deaths, 1 and 0; cases under treatment, 2 and 2.

Queen's Town.—No cases or deaths; remaining under treatment, 1 and 1.

East London.—No plague reported. Plague in rats is only reported from East London.

HONG KONG.

During the weeks ending October 7th and 13th the fresh cases of plague numbered 2 and 2; and the deaths from the disease to 2 and 2 respectively.

MAURITIUS.

During the weeks ending October 8th and 15th the fresh cases of plague were stated to be 91 and 83, and the deaths from the disease 54 and 54 respectively.

PHILIPPINES.

Up to September 26th 180 deaths from plague were reported to have occurred in the neighbourhood of Manila.

ASSOCIATION NOTICES.

ELECTION OF MEMBERS.

ANY candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are fitted up for the accommodation of the Members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 a.m. to 5 p.m. Members can have their letters addressed to them at the office.

GUY ELLISTON, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

BATH AND BRISTOL BRANCH.—A meeting of this Branch will be held at the Medical Library, University College, Bristol, on Wednesday, October 28th, at 7.45 p.m., Dr. Barclay J. Baron, President. The following communications are expected: Dr. G. Parker will show (*a*) Specimens from a case of Bronzed Diabetes; (*b*) Vesical Calculus. The following papers will be read: A case of Scurvy Rickets, B. M. H. Rogers, M.D.; Family Tremor, F. H. Edgeworth, M.B.; Some points in the Etiology and Treatment of Boils, H. Waldo, M.D.; The Diagnostic Value of Pupil Changes in Cerebro-spinal Syphilis, J. Michell Clarke, M.D.—J. MICHELL CLARKE, Clifton, W. M. BEAUMONT, Bath, Honorary Secretaries.

Edinburgh Branch: South-Eastern Counties Division.—The autumn meeting of this Division will be held in the King's Arms Hotel, Melrose, on Thursday, October 29th, at 3.30 p.m. The Division will consider: (1) A print of six resolutions passed and approved by the Council of the British Medical Association on January 21st, 1903; (2) the Draft Medical Acts Amendment Bill; (3) resolution passed by the Representative Meeting, 1903, that a petition be presented to the Privy Council praying that in any future legislation the British Medical Association be directly represented on the General Medical Council in proportion to its magnitude and representative character. The Secretary will arrange a dinner after the meeting on intimation from not less than a dozen members that they intend to remain.—W. Hall Calvert, Melrose, Honorary Secretary.

Metropolitan Counties Branch: Tottenham Division.—A meeting of this Division will be held on Friday, October 30th, at 4 p.m. at the Tottenham Hospital, when a paper will be read by Dr. Dundas Grant on A Few Cautions in the Diagnosis and Treatment of Diseases of the Throat, Nose, and Ear. Visitors are cordially invited.—Fred. Tresilian, White Lodge, Enfield, N., Honorary Secretary.

Metropolitan Counties Branch: Kensington Division.—An ordinary meeting of this Division will be held on Tuesday, October 27th, at 4.30 p.m., at the Kensington Town Hall, High Street, Kensington, Dr. H. Campbell Pope in the chair, to consider: Draft Medical Act Amendment Bill; resolutions of Council for improving Vaccination Acts; resolutions as to representation on the General Medical Council (the Draft Act and resolutions above are referred to Divisions by Council and were published in the Supplement to the British Medical Journal of August 22nd, 1903); motion by Dr. G. Crichton: That it is desirable that the Branch Council should inquire into some recent Post-office medical appointments, and should ask the Postmaster-General to receive a deputation on the subject of these appointments generally; to present a report from the Ethical Committee of the Division. Members are earnestly requested to attend, on account of the importance of the matters to be discussed.—G. Crawford Thomson, M.D., 111, Sinclair Road, West Kensington, W., Honorary Secretary.

North of England Branch.—The next meeting of this Branch will be held at West Hartlepool, on Wednesday, October 28th. There will be a paper by Dr. T. Beattie, of Newcastle; specimens will be shown by Dr. A. E. Morison, of West Hartlepool; and a demonstration of x rays, ultra-violet rays, and other electro-therapeutical agencies will be given by Dr. H. E. Gamlen, of West Hartlepool. Dinner will be held after the meeting. Further particulars will be given in a circular sent to each member. Any member desiring to bring any subject before the Branch is requested to communicate at once with the Honorary Secretary, Dr. A. Cox, Cotfield House, Gateshead.

North Lancashire and South Westmorland Branch.—A meeting of this Branch will be held at the Commercial Hotel, Kendal, on October 28th, at 5 p.m. There will be a discussion on the Use of Antitoxins in Private Practice. Members willing to show cases or specimens are requested to communicate with A. S. Barling, Lancaster, Honorary Secretary.

North Wales and Shropshire Branch.—A meeting of the Council of the Branch will be held at the Queen's Hotel, Chester, on Thursday, October 29th, at 3.30 p.m. Agenda:—To read letters of apology. To elect Chairman. To select place of annual meeting for 1904. To consider the question of President of the Branch for 1904. To vote for members of the Association. To vote for Associate Members. To consider any other question affecting the Branch.—W. Jones Morris, Harold H. B. Macleod, and H. Jones Roberts, Honorary Secretaries.

Staffordshire Branch.—A meeting of this Branch will be held at the North Stafford Hotel, Stoke-upon-Trent, on Thursday, November 26th, at 4 p.m. The Secretary would be glad to have a note of papers and cases.—G. Petgrave Johnson, Stoke-on-Trent, Honorary Secretary.

Southern Branch: Salisbury Division.—The next meeting of this Division will be held at the Infirmary, Salisbury, on Wednesday, October 28th, at 8.15 p.m., preceded by dinner at the County Hotel at 7 p.m. Members wishing to read any papers or show any cases are requested to communicate as soon as possible with J. E. Gordon, Honorary Secretary, 52, Endless Street, Salisbury.

South-Eastern Branch: Faversham Division.—The next meeting of this Division will be held at 2, Marine Crescent, Herne Bay (the residence of Dr. Keswick Bowes), on Thursday, October 29th, at 3 p.m. Agenda: Confirmation of minutes of last meeting; time and place of next meeting: desirability of canvassing the non-members of the Division: suggested annual combined meeting of the East Kent District at Canterbury. Matters referred to the Division (see Supplement of the British Medical Journal of August 22nd): (1) Improvement of the Vaccination Acts; (2) proposed Medical Acts Amendment Bill; (3) representation on the General Medical Council. Paper by T. Armstrong Bowes, M.D., on Some Uncommon Affections of Newly-born Infants. It is hoped members will make an effort to attend, as there are several important matters referred to the Divisions. All members of the South-Eastern Branch are invited to attend these meetings and to introduce professional friends.—William Gosse, Westdene, Sittingbourne, Honorary Divisional Secretary.

South-Eastern Branch: Guildford Division.—The first meeting of this Division under the new Constitution will be held at the Royal Surrey County Hospital on Thursday, October 29th, at 4.30 p.m. The President of the Branch, Mr. A. A. Napper, of Cranleigh, in the chair. Agenda: Minutes of meeting held at Guildford, June 12th; to decide when the next meeting shall be held, and to nominate a member of the Division to take the chair thereat; business of the District. Paper: Mr. Albert Carless (London), Some Mishaps in the Treatment of Appendicitis. Members desirous of exhibiting specimens or reading notes of cases are invited to communicate with the Honorary Secretary. Dinner at 6.30 p.m., Lion Hotel, Guildford; charge 6s., exclusive of wine. All members of the South-Eastern Branch are entitled to attend and to introduce professional friends. The Honorary Secretary would be much obliged if members would kindly inform him whether they intend, if possible, to be present at the meeting and if likely to remain to dinner. By so doing they will very materially facilitate arrangements and promote the success of the meeting.—Alex. Hope Walker, Cranleigh Honorary Secretary.

Ulster Branch.—The autumn meeting of this Branch will be held on Wednesday, October 28th, in Derry. Any member having any papers to read, or any business to bring before the meeting, should kindly communicate with Dr. Calwell, 1, College Square North, Belfast.

Yorkshire Branch.—The next meeting of this Branch will be held at the Grand Hotel, Scarborough, on Saturday, October 24th, at 4.30 p.m., when the following business will be transacted and papers read: The Medical Acts Amendment Bill, the Vaccination Acts, and the Central Midwives Board (see Supplement to the British Medical Journal, August 22nd, 1903) will be discussed. Papers and Cases: Dr. Porritt (Huddersfield), a Case of Gastrorrhagia; Mr. Simeon Snell (Sheffield), on Removal of the Crystalline Lens in High Degrees of Myopia, as Illustrated in Sixty Cases; Dr. Churton (Leeds), a Case of Pontine Haemorrhage, with remarks on Diagnosis (specimen shown); Dr. Hellier (Leeds), the Treatment of Puerperal Eclampsia, with special reference to the use of Bossi's Dilator; Dr. Solly (Harrogate) will show a new form of Uterine Applicator. The members and friends will dine at the Grand Hotel at 6.30 p.m. Members who intend staying for the dinner, or for the week end, are requested to communicate with Dr. Cuff (Scarborough) as soon as possible. Special terms at the rate of 10s. 6d. per day, including the dinner, have been arranged for. Cheap return tickets can be obtained at Leeds. Members who intend golfing at Ganton on Friday or Saturday are requested to communicate with the Secretary. The Committee of the Scarborough Golf Club has kindly offered to admit the members at 1s. a day.—Adolph Bronner, 33, Manor Row, Bradford, Honorary Secretary.

SPECIAL CORRESPONDENCE.

BERLIN.

The New Regulations for the Medical Curriculum.—Professor von Leyden on the Treatment and Prevention of Tuberculosis.—Lectures on Building and Hygiene.

The new regulations for medical examinations in the German empire came into force on October 1st, and have brought with them many changes of importance. Henceforth the study of medicine will be open to youths matriculating from non-classical schools (*Real-gymnasien* and *Ober-real-schulen*), as well as those from the Greek and Latin schools (*Gymnasien*), which alone had enjoyed the privilege hitherto. The university curriculum has been extended from the former nine semesters to ten semesters, that is, five years. The preliminary examination (*Vorprüfung*) is thus postponed till the end of the fifth semester, and the final examination (*Hauptprüfung*) till the end of the tenth. One of the conditions precedent to sitting for the second examination is two years' clinical instruction after the first. The granting of the qualification to practise is postponed until the candidate has followed a "year of practice" (*praktisches Jahr*) in a public hospital. This means that in point of fact the course of study—before independence can be thought of—is lengthened, not by one half-year, but by three, in order to give candidates time to assimilate the immense mass of material produced by the modern development of medicine. Of course these heightened demands on the candidates' knowledge mean heightened demands on their teachers, and likewise heightened demands on the clinical and other medical institutes at the universities. Thus, for instance, few of the German universities have special children's clinical hospitals. These will have to be organized, for the new regulations require a half-year's attendance at a children's clinical hospital or polyclinic. Many similar deficiencies will make themselves felt, and will have to be supplied, at whatever cost and trouble.

Former patients of the great Belzig sanatorium have founded a society for the struggle against tuberculosis, and its opening meeting was made memorable by an address given by Professor von Leyden, an honorary member of the society. He began by expressing his satisfaction at the healthy appearance of the assembled old Belzig patients, and then at once attacked the burning question of the day, whether Behring's and Koch's latest investigations should render a change in our measures against the spread of tuberculosis advisable or necessary. He expressed his unreserved admiration for Behring's magnificently organized researches, and his full hope that Behring's immunizing method would form a most important weapon for stamping out bovine tuberculosis. But the aim and purpose of people's sanatoria (*Volksheilstätten*) would remain what it had been hitherto, that is, to afford the

poorer classes advantages which the rich were able to obtain for themselves. There were at present in Germany close upon 70 sanatoria with room and adequate apparatus for the treatment of 40,000 tuberculous patients. The results obtained were in no way behind expectations, and it was justifiable to affirm that almost 30 per cent. of the discharged patients had essentially improved in health, and many had been lastingly cured. But the sanatoria, wide as the range of their usefulness was, could only do a part of the great work that was required: they had to be supplemented by hygiene and prophylaxis. He was warmly in favour of the *Erholungs - stätten* (day sanatoria with light shelter pavilions) established in the pine forests on the outskirts of Berlin and other large cities. The next step forward must lead to medical supervision of families of small means attacked or even only threatened by tuberculosis. In this branch of the great struggle other countries—England, France, and Belgium—were ahead of Germany. In France and Belgium the central organizations for this family supervision were the so-called "dispensaires," and their work and objects might be summed up under four headings: (1) Education of the patient and his family through combined teaching; (2) assistance in keeping the patient's home thoroughly clean and airy; (3) assistance in washing and disinfecting the family clothes; and (4) aid in the shape of wholesome food. Such a "dispensaire," he added, was in course of erection, and would shortly be opened in Berlin.

Courses of lectures on building and hygiene are now being held at the Technical High School of Charlottenburg for the exclusive benefit of Government architects, of whom a number from all parts of the Prussian monarchy have been specially invited to attend by the Ministry of Public Works. Professor Kossel—R. Koch's assistant—has charge of the medical part of the lecture, while an architect and a political economist—both men of distinction and of practical experience—contribute the technical share. Daily lectures are given, and the course, which includes inspection of waterworks, workmen's dwellings, etc., lasts a fortnight.

MANCHESTER.

Historical Letter regarding Recognition of Teaching of Anatomy.—Students' Representative Council.—Salicylic Acid in Jam.

THE Jordan family, through Dr. F. W. Jordan, of Heaton Chapel, have presented an interesting historical letter to Owens College. It is a letter addressed to the late Dr. Hull, of Manchester, from the Secretary of the Court of Examiners of the Royal College of Surgeons of England, dated London, April 24th, 1821. The Secretary in the letter states:

> I communicated to the Court of Examiners the contents of your letter, and the account which you gave of Mr. Joseph Jordan as a public teacher of anatomy, which, in conjunction with your recommendation of him, has induced them to say that they will receive his certificate of the attendance of pupils upon his anatomical lectures in the same way as they do those of public teachers of anatomy in the metropolis.

Mr. Joseph Jordan, who was also a surgeon to the Royal Infirmary, was the first teacher in the provinces attendance on whose lectures on anatomy was accepted as qualifying for the examination of the College of Surgeons. The letter will be framed and placed in the Medical School of the University. Dr. Hull was one of the founders of the Manchester Medical Society in 1834, and he was its first President.

There are many signs that the University of Manchester is exercising a real influence for good on the academic as well as on the extramural community. The lack of corporate unity between the great departments of the College which is so necessary to the realization of the ideal student life has hitherto been attempted to be supplied by the Representative Students' Council. In the new Statutes (X) of the University of Manchester the Students' Representative Council will be duly constituted under ordinances to be framed by the Court. Their general scope is expressed in the following statement. Its functions will be (1) to promote the general interests of the students and to represent them in all matters affecting their interests; (2) to afford a recognized means of communication between the students and the University authorities; and (3) to promote social and academic unity.

An important case affecting the addition of salicylic acid to jams and preserves was decided at the Cheshire Quarter Sessions on October 19th. A grocer sold jam containing 2.6 gr. of salicylic acid to the pound. The case was an appeal against a conviction by the magistrates for selling, to the prejudice of the purchaser, jam which was not of the nature, substance, and quality demanded. The Bench found on all points against the appellant. The limit suggested by the Parliamentary Commission—namely, 1 gr. to the pound—has not yet been adopted by the Legislature. Even if it had, the amount of the acid present exceeded this limit. On other grounds the Bench found against the appellant.

CORRESPONDENCE.

THE REGISTRATION OF NURSES.

SIR,—Mr. Sydney Holland's position with regard to registration of nurses evidently depends upon his belief in the accuracy of the statement he makes at the beginning of the third paragraph of his letter, namely:

> When one takes the trouble to inquire into the causes of complaint against trained nurses it is comparatively seldom that ignorance of a nurse's technical duties is the source of the grievance.

Now this condition may exist at the institution of which he is chairman, and perhaps also at the other large London hospitals, and if so it may account for the opinions held by the matrons of those hospitals he refers to, but it is certainly not universal and can only occur under the very best conditions of nursing. It has been constantly noted by members of the medical profession that "ignorance of a nurse's technical duties" exists amongst many of those nurses who are sent out as fully trained, and it is for this reason that some supervision of the training schools and some test of a nurse's capability is necessary in the interests of the public, the medical profession, and of the nurses themselves.

No better method of doing this could be suggested than that of establishing the State registration of nurses combined with the formation of an Examining Board. The first duty of such a Board would be to fix a standard of training and to find out which hospitals are capable of carrying out such standard; then examinations would be held to ascertain and test whether a nurse had availed herself of her training opportunities. If found satisfactory, registration would follow.

This examination and registration should be quite separate from and independent of any certificate of character. The qualities of a nurse which are summed up in the word character are of course extremely important, but any defects would be apparent during the years of training, and if grave should prevent the granting of the certificate of training.

If a further step still were taken, and a higher diploma were granted after a second examination to nurses who had been registered for a certain number of years, then nursing might become an occupation for many more women than are at present engaged in it. It is not very many years since nursing duties had to be undertaken by the medical attendant, and there is nothing which has done more to relieve the strain and worry of a doctor's life than the evolution of the trained nurse. Therefore the medical profession owes a great debt of gratitude to the nursing, and it could not be better paid than by supporting the nurses in their legitimate desire for State recognition and registration.—I am, etc.,

West Bromwich, Oct. 14th. HENRY LANGLEY BROWNE.

SIR,—May I venture to suggest that no one can take quite a complete view of the nursing question who has not become familiar with the conditions which exist in the country. It is outside London and in the rural districts that it is most common to meet the quite untrained nurse, and it is just in such out-of-the-way places where the nurse has to bear the most responsibility, as she is often at a distance from a medical man.

I can speak most emphatically from my own experience that it would be the greatest help and benefit if a State (or official) register of trained nurses existed, and if it was an offence punishable by law for institutions to send out untrained women as "hospital nurses."

To ask why medical men cannot get references and testimonials from the matrons of the hospital at which they were trained, together with a statement of their experience, etc., is simply to show that the questioner does not in the least realize the conditions under which nurses are so often engaged. A case of diphtheria requiring tracheotomy, a case of strangulated hernia or extrauterine gestation, or one of gastric ulcer or delirious typhoid fever gives no time for prolonged negotiations. One rushes for the telephone and rings up in rotation all hospitals and institutions from which a nurse may be obtained. It often happens that all the hospital nurses are engaged, and one has to have recourse to the various co-operation and private nursing homes. In such desperate cases one is generally thankful to get any one at a moment's notice. And then when (as has actually happened to myself)

one finds that one has only got a woman who cannot even take a temperature, keep a record of the pulse, or give an enema, and this for a case where life or death are the issues of nursing, it makes one long not only to restrain such people from practising their ignorance upon the sick, but still more to punish those who send them out.

It is not only stray individuals, the failures and outcasts of hospitals, or those who have never attempted to go to hospital, whom we have to guard against, but the associations who for pecuniary gain or to supply funds for a misguided philanthropy actually make a principle of getting untrained women and sending them out as "trained nurses." I have myself had a woman sent to me, who a few weeks before had been a domestic servant, to nurse an abdominal section, and I was to be charged 25s. a week for her services.

It is a great pity that the whole medical and nursing profession cannot be unanimous in educating the public in the fact that sick nursing requires a certain scientific training, and that the lack of this training may cost a patient his life.

If patients realized that their lives often depended on a nurse's knowledge and devotion to duty they would be less inclined to attach so much importance to the place in which she had her meals or to her general manner.

No one imagines that when a State register is kept it will be a guarantee that every nurse on it is socially, mentally, and morally perfect, but it will supply the fact that she has had a recognized training in her work. "A Hospital Sister's" argument that *no* register is better than a register with too low a standard is difficult to follow. Surely any standard is better than no standard, and surely it is worth any effort on the part of all interested in the welfare of the sick to make it illegal for institutions and individuals to continue the dishonest, dangerous, but profitable trade of trafficking in untrained women under the guise of hospital nurses.—I am, etc.,

Clifton, Oct. 18th. Ernest W. Hey Groves, M.D.Lond.

DEPARTMENTAL SWEATING.

Sir,—The clerk to my Board of Guardians has received from the Local Government Board an order to furnish a return of the number of vaccinations in each parish, and the cost thereof during the last eight years, and also to obtain from the parish medical officers an account of the number of paupers attended and the average number of visits paid in the same period. The clerk, as reported in the local press, complains that this entails a great amount of work for which he does not expect to be paid, and the guardians sympathize with him to the extent of "hoping" that he will receive some extra remuneration.

The parish medical officers, who have to waste days of their time in working out eight years' statistics of their pauper work, or, as in my own case, have to pay a clerk to do so, have not the same opportunity as the clerk of entering a protest; but protest I think we should against this and all the other unpaid and poorly-paid work which we do. Take this parish work, for instance. I presume that the object of the inquiry is to see whether the fees paid for vaccination could not be cut down. I suppose that the Local Government Board thinks that incidentally they may find also an excuse for reducing the salaries of the parish medical officers. I can only devoutly hope that when they see my return they will vote me an increase of salary to the extent of some 250 per cent., post-dated twenty-five years.

Briefly, the result of my investigation on behalf of the Board is to show that my town visits pay about 13d. each with medicines: this includes attending a confinement, setting a fracture, or operating on a strangulated hernia, the extra fees for which are (? illegally) commuted in the salary. The country visits on the same basis are paid for at an average of 3½d. per mile. An idea of what this means may be given by stating that the work I do for a salary of £70 would bring me in £240 if charged at the ordinary fees in this district, which fees are by outsiders (my various locum tenentes and medical friends) judged to be abnormally low; the district (agricultural) is a poor one, the roads are hilly and the population very scattered.

One grumbles at such sweating of medical men, but one experiences no sensation of surprise, for from our earliest professional days we have been accustomed to sell our goods below cost price. Apprenticed to a lawyer, the lad from school receives a few shillings a week for the help he gives his master while being taught; the medical student pays for the same privilege. In my own case my hospital took twelve guineas solely for the right to enter its wards and help in its work, whereby the cost of so many additional nurses was saved. After qualification the same principle prevails: the house-surgeons in many of our hospitals are unpaid, and I am told that at the Edinburgh Maternity the resident physicians actually pay a guinea a week for their board. At all hospitals, I believe, the ordinary and consulting physicians and surgeons give their services gratuitously, and I might say without appreciation. At any rate I notice that in the annual report of the cottage hospital here, Mrs. A. is thanked for a parcel of magazines, and Mrs. B. for some old clothes, but Dr. C., who gives his time and thought and skill freely and gratuitously, is not even mentioned. Thank the doctor? But that is his business, to attend at the hospital. Pay him a salary? But hospitals always get medical services for nothing. I ask, why should they? Do the butcher and baker supply their goods free to all charities, or is there any parallel to the abnegation of the profession? When one thinks of the poorly-paid club and parish work, of the non-payers whom one must attend lest one be ragged in the press as "inhuman," one feels that there is little room left for private charity such as every medical man has such boundless scope for exercising. For myself, I can honestly say that the thought of my fee comes always second to the thought of my patient; but of an evening, after a twelve hours' day of physical and mental fatigue, it is somewhat hard to think that all that work and anxiety does not mean a good balance at the bank, and a safe provision for the old age whose advent we are doing our utmost to hasten.—I am, etc.,

October 19th. A Medical Fiscal Reformer.

THE NORTHERN UNIVERSITY TRIAD.

Sir,—I learn from the British Medical Journal of October 17th that my friend Sir Victor Horsley (with whose bereavement we are all sympathizing) stated in a recent address that the action of Liverpool in applying for a charter as an independent university was opposed by the recently reorganized University of London. Will you allow me to point out that this statement is founded on a misapprehension? The University of London took no part in the controversy which preceded the disruption of the Victoria University, and did not support or oppose either of the contending parties. Sir Victor Horsley's mistake no doubt arose from the fact that I have been for many years a member of the Court of the Victoria University, and in that capacity gave evidence in favour of the retention of close mutual relations between Manchester, Liverpool and Leeds. I do not know whether the evidence given before the Privy Council has yet been published, but if it has, it will be seen that I specifically disclaimed appearing for the University of London, which, as I have already said, took no part in the matter. My evidence was given as a member of the Governing Body of the Victoria University and not as Principal of the University of London. I am glad to see that Sir Victor Horsley admits that my apprehensions were not altogether groundless, and can on my part state that the conditions attached to the grant of the new charter to Liverpool have gone far to meet some of my objections. Even if this were not so the matter is now settled: and I most sincerely wish success to the three sister universities in the North of England, with one or more of which I have been connected in their earlier stages for nearly thirty years.—I am, etc.,

South Kensington, S.W., Oct. 20th. Arthur W. Rücker.

THE CORRECTNESS OF THE *MEDICAL REGISTER*.

Sir,—With reference to the editorial note in the British Medical Journal of October 17th respecting the correctness of the *Medical Register*, allow me to say that I regret that I did not make it clear in my former communication that the circulars I mentioned were issued only to persons who originally registered at the office of the English Branch Council, my powers of inquiry being limited to these. Each branch registrar, according to the Council's regulations, makes inquiries only as to those persons who originally registered at his office.

Practitioners should communicate with the office of the branch at which they originally registered, but I may add that any letters received at this office which should have been sent to one of the other branches always receive most careful attention, and are forwarded to the proper quarter without delay.—I am, etc.,

H. E. Allen,
Registrar.

Oxford Street, W., Oct. 17th.

ALCOHOL AND THE MEDICAL PROFESSION.

Sir,—I have read with pleasure the excellent annotation which appeared in the British Medical Journal of October 17th under the above heading. It is cheering and gratifying to find a medical man of Sir Victor Horsley's standing and experience speak so plainly and decidedly on the relation of alcohol to the medical profession. I have been in practice in the Highlands of Scotland for the past nine years, and I feel convinced that nearly all the cases of poverty and misery which come within my experience are either directly or indirectly traceable to the abuse of alcohol.

Dr. Clouston's yearly reports on insanity are interesting and instructive, as showing how potent a factor alcohol is in the etiology of this disease, and I have no doubt that public opinion is being gradually educated to comprehend the magnitude of the evil, but unfortunately alcohol is a powerful political weapon, and the lay press of our country is consequently far from enthusiastic on the question of temperance or reform of the drink traffic. I believe, however, that medical men can do a great deal in the right direction by propagating sound views on the therapeutics of alcohol, and by exercising greater care in prescribing the drug. Sir Victor Horsley's advice to the profession on this point deserves to be written in letters of gold.—I am, etc.,

October 18th. Alpha.

THE REGIMENTAL SYSTEM IN THE INDIAN MEDICAL SERVICE.

Sir,—Referring to your editorial in the British Medical Journal of October 17th, p. 1000, I may certainly state that the regimental system for medical officers in the Indian army was, in the view of thinking men, dead and buried years ago, and would have been abrogated in the last century if it were not for the notorious slowness of the Indian Government. It almost seems like flogging a dead horse to refer to the matter, but possibly a few junior medical officers would still prefer the existing régime as giving them more apparent freedom. They are, however, practically a negligible quantity; the majority of them are counting the days when they can obtain civil appointment.

A few years ago a surgeon-general told me he was pestered by regiments to send them young medical officers who would play polo, hockey, etc., and run the mess; and on inquiry the surgeon-general was informed that it was quite immaterial what medical attainments they possessed!

Then, as regards senior medical officers, apart from the painfulness of being frequently commanded by majors or even captains, they are the only senior officials in India performing the same duties and having the same responsibilities as when they entered the service a quarter of a century previously.

You are doubtless aware that about fifteen years ago two medical officers were detailed to run experimentally two native station hospitals for a year; one of them afterwards told me he was enjoined to report that the system would not work satisfactorily,

Surgeon-General Rice, when touring in 1886 or 1887, said said that although native station hospitals were under consideration, yet if they were introduced it would solely be in the interests of Government, and not out of consideration for medical officers.

Respect for your space makes me refrain from pursuing the subject.—I am, etc.,

October 19th. I.M.S.

ISOLATION HOSPITALS.

Sir,—In discussing the utility of isolation hospitals I should like to point out that we shall get no reliable information about their value in checking or otherwise the spread of scarlet fever if we speak of them *en masse*; a proposed "inquiry," if conducted on these lines, would simply add to the useless heap of unreliable statistics which we at present possess. There are indeed great differences, not only between the large and the small hospitals, but also amongst the large hospitals themselves, in the methods of administration, and also in the degree to which asepsis is observed, or is possible, in the wards. This possibility, again, depends not only on the structure of the buildings, but also on the intelligence of the nursing staff. These differences produce different results, but it is not possible to find these out by the collection of statistics.

My own view is that much of the so-called failure of isolation hospitals has been due to faulty technique in the matter of asepsis, using the word in its widest sense. We should, if this be so, improve and not abolish our isolation hospitals.—I am, etc.,

A. Knyvett Gordon,
Medical Superintendent, City Fever Hospital, Manchester.

October 19th.

Sir,—For my own part I have always made it a rule to avoid entering into public discussion on matters sanitary. I have neither the time nor the inclination to do so. Had Dr. Watt confined his letters to the press circulating in the district where both he and I are known, so far as I am concerned he would still be waiting a reply. I feel, however, I cannot allow certain of the statements contained in his latest letter on p. 938 of the British Medical Journal to pass unnoticed. Here is his first statement: "Moreover the mother of the typhoid family reported to me that the medical officer of health in reply to her own and her sick husband's wish that her stricken ones be removed told her that the Council were willing to board out the healthy children, but would not open the hospital, as it would cost £10 a week." I emphatically deny that I ever said anything of the kind. Both the man and his wife are prepared if necessary to swear I never mentioned such a thing to them, and that they never told Dr. Watt that I had said so. Statement No. 2: The harrowing tale of the afflicted mother being forced to leave her sick family and tramp the village in the vain endeavour to obtain lodgings. Having decided on the removal of the healthy children, I asked the mother if she knew of any one in the village who would take them in, mentioning the sum the Council were prepared to pay. Her reply was that she did not, but she thought it would be easy to get plenty of people to take the children on the terms mentioned. I then went to the vicar, who is a member of the Rural District Council, and with his help found lodgings. Returning at once to the mother I informed her of the fact. She told me that during my absence she had seen a friend who promised to take the children. She laughed when I told her Dr. Watt's version of the story.—I am, etc.,

Godfrey Goodman, D.P.H.
Brigg, Oct. 13th. Medical Officer of Health.

THE PATHOLOGY AND TREATMENT OF HALLUX RIGIDUS, HALLUX FLEXUS, AND HALLUX EXTENSUS.

Sir,—Mr. Tubby observes, in the British Medical Journal of October 17th, p. 976, that for hallux flexus and kindred affections of the great toe "there is one cause underlying all the conditions, namely, an osteo-arthritic condition of the first metatarso-phalangeal joint," but he does not explain why this particular joint is so affected. Will you permit me to quote from a paper of my own, On Some Points in the Surgical Physiology of the Foot, in vol. lxxx (1897) of the *Medico-Chirurgical Transactions:*

> If the great toe be fixed in the position of rest (extended and somewhat over the second), as it generally is in the median-pointed boot, then such movement as it can make is in the natural plane, and when still it is really at rest. If, however, it happen to be packed beneath the second toe, then if it move at all it must be in a plane for which the joints are not adapted. Grinding of the cartilage and consequent irritation is a necessary result. Then the conditions known as Hallux flexus, H. rigidus, and H. dolorosus, in varying degree of severity, is liable to follow. The toe is flexed because it is held down beneath the second; it is rigid because movement is painful; it is painful, even when still, because fixed in an unnatural position; it is never in a position of rest.

Hallux flexus was first described by the late Mr. Davies-Colley to the Clinical Society,[1] quickly followed by an extended discussion in these columns. I arrived at the above explanation soon afterwards, and ever since I have always found in cases of irritation at the metatarso-phalangeal joint disproportionate to the degree of distortion, that the great toe had been habitually packed under the second, not over it. I discussed the subject more fully at the Cheltenham meeting, with diagrams and a special reference to one in Mr. Tubby's book on *Deformities*.[2]—I am, etc.,

Gloucester, Oct. 17th. T. S. Ellis.

MEDICAL MISSIONARIES.

Sir,—As one who has been a good deal in touch with missionary work abroad and at home, permit me to point out to your correspondent, "Temperantia in Omnibus Rebus," that, in my opinion, he looks at the matter from a wrong standpoint, and perhaps that is the reason of his disappointment in the work. The societies do not want men who are not willing

[1] British Medical Journal, 1887, vol. i, p. 776.
[2] Ibid., 1901, vol. ii, p. 1070.

for the sake of the cause to work at a low rate of remuneration, not because they are averse to giving larger salaries, but because the Christian generosity of the public is so small that they cannot afford to do so. Your correspondent further writes of getting very little help from his clerical comrades; but doctors do not go to the mission field to be dependent on clerical help, and often do the whole work of the mission station, and usually do, I think, all the spiritual work in hospital; in fact, the work of healing body and soul go hand in hand, as they ought to do, and I think it is a pity that the profession at home do not recognize this more than they do. Your correspondent, however, does not hold this view evidently, as he writes "from a medical point of view" and "from a missionary point of view," as if the two were separate and distinct, which they are not, for I do not quite agree with one sentence in Dr. Sargood Fry's letter where he writes of medical work as "a means to an end." I consider it is more than this, that often of itself it reaches the heart of the native, who for the first time experiences loving care and sympathy in his bodily weakness.

Medical missionary work is a noble field of service, and I trust that many more young medical men will come forward and offer themselves to relieve some of the pressure which results from an undermanned field, undeterred by the somewhat gloomy letter of your correspondent, who must indeed have been unfortunate, as I never met any medical missionary who held his views.—I am, etc.,

H. Norman Barnett,
Honorary Assistant Secretary,
Belfast, Sept. 29th. N. of I. Branch C.M.S. Medical Auxiliary.

THE F.R.C.P., M.R.C.P.Edin.

Sir,—May I point out one or two apparent mistakes in our humorous colleague's letter (Dr. Armour) of September 28th? I am neither Scotch nor Irish (should be proud to be either), but pure Saxon. I am also an English graduate. My opinion is, all appointments should be opened to every qualified man of the British Empire. It is the London men who have formed the trust, and we outside it must fight it in a energetic but friendly manner.

My opinion seems shared by a great number of my Edinburgh colleagues, especially the F.R.C.S.Edin. I therefore shall be glad to fall in with Dr. Leigh's suggestion and name the association "The Royal Colleges of Edinburgh." I shall be glad to hear from other Fellows and Members who are interested in the formation of such an association. One F.R.C.S.Edin. writes:

I am F.R.C.S.Edin and M.C.Cantab. (the latter I understood was the blue ribbon in surgery—there are about twenty), yet a large number of hospitals up and down the country would close their door to me, not because my surgical qualification is bad, but because they are in the hands of a staff with London qualifications.

I myself was offered a good hospital appointment a few years ago, provided I became a Member of the R.C.P.Lond. I declined, for although I have the greatest respect for the R.C.P.Lond., I looked upon it as an insult to the R.C.P.Edin.—I am, etc.,

Manchester Square, W., Oct. 10th. Thomas Dutton.

PAIN IN CANCER OF THE CERVIX UTERI.

Sir,—In the British Medical Journal of October 17th Dr. Herbert Snow is reported to have said in his contribution to the discussion at the Swansea meeting: "I am convinced that the proper test in this matter (diagnosis) is the presence or absence of marked and continuous pain.....I have never encountered a case of carcinoma in which severe lumbar and femoral pain, gnawing, or aching was not from the first a well-marked symptom." And he draws the inference that no case of painless cancer should be subjected to hysterectomy forthwith.

This is to me an astonishing pronouncement from an experienced member of the staff of a cancer hospital. Dr. Snow's experience must be unique among the gynaecological surgeons of the world.

I have had a professional experience of the observation, investigation, and treatment of cancer of the uterus, now extending over a quarter of a century, and I do not know any one fact concerning cancer of the cervix more completely and unquestionably established than the comparatively late occurrence of pain as a symptom of the disease.

We have for a professional generation been constantly reiterating our conviction of the truth of this statement, and only in comparatively recent years have we been cheered by the evidence that this teaching of gynaecology has reached the medical practitioners of this country. They are acting upon it, and we now see a much larger proportion of operable cases than we did a few years ago.

This is not a question of theorizing and authoritative opinion. It is a simple matter of clinical observation in the various stages of the disease, and it seemed to me that opinion had become everywhere unanimous and final. Are all the advantages derived by both patients and doctors from the apprehension of the truth that the onset of pain in cancer of the cervix implies that as a rule the disease has reached an advanced stage, to be diminished wherever the teaching of this new erroneous, and therefore practically dangerous, doctrine comes and carries influence because of the temporary comfort it may afford to timid and ignorant people?

A letter is scarcely the proper vehicle for conveying observations and convictions regarding exceptional cases in which pain may be a comparatively early symptom, or the relation between pain and ulceration, or the diagnosis and treatment of rare cases of tuberculous disease of the cervix simulating cancer. My object at present is to utter a few words of warning and protest to those of your readers who may possibly consider an opinion of mine worth reading.—I am, etc.,

Manchester, Oct. 19th. W. J. Sinclair.

FELLOWSHIP OF THE ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

Sir,—Dr. Knight has hardly helped his cause by referring in the British Medical Journal of October 3rd to the Medical Act, 1876, 39 and 40 Vict., cap. xli. The provision he alludes to is:

That no person who but for this Act would not have been entitled to be registered shall by reason of such registration be entitled to take any part in the government, management, or proceedings of the universities or corporations mentioned in the said Medical Act.

Now, from an abstract of the by-laws of the Royal College of Surgeons, Edinburgh, in my possession I read:

Every Fellow is entitled to attend the meetings of the College, and to take part in the procedings and in the election of office-bearers.

If this is not conferring the privilege of taking part in the "government, management, or proceedings" of the Royal College of Surgeons, Edinburgh, upon the Fellows of that body, be they male or female, I have yet to learn the value of words. As long, therefore, as the Act of 1876 remains in force, the governing body of the Royal College of Surgeons, Edinburgh, has no option in the matter of which Dr. Knight is an advocate.—I am, etc.,

Aberystwyth, Oct. 5th. S. Wesley Wilson.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ANNUAL DINNER OF THE R.A.M.C.

Speech by Mr. Brodrick.

The Director-General and officers of the Royal Army Medical Corps entertained Mr. St. J. Brodrick, Secretary of State for India (late Secretary for War), and a number of other guests at a dinner held on October 21st at the Hotel Métropole.

In proposing the toast of "Our Guests," the Director-General said that in Mr. Brodrick they were welcoming one who had done much for the Royal Army Medical Corps. The great improvements that had been introduced into the Medical Service of late had their beginnings in Mr. Brodrick's Reorganization Committee. One result of that Committee was the issue of the new Warrant granting increased pay, giving charge pay, increasing the number of examinations, and the recognition of marked individual excellence by extra pay for those who qualified in special subjects. He referred especially to the appointment of sanitary officers. Another great benefit of that Warrant was also due to Mr. Brodrick—namely, transfer of the Royal Army Medical Corps School from Netley to London. The association of the Corps with the civilian members of the profession was exemplified in the new Advisory Board, whose labours on behalf of the corps and of the soldiers—especially of the sick soldiers—had enabled him as Director-General to attack problems for the future education of officers which would otherwise have been impossible, and which would have been barren of result unless supported by a Secretary of State determined on progress. The Royal Army Medical College and Laboratories at present occupied only temporary quarters, but a sum of £100,000 had been voted for the building of the new College. For that great boon they were indebted to Mr. Brodrick. The Director-General concluded by advising the medical profession to establish some definite plan of preparation in the time of peace which in war would provide for an easy and prompt

expansion of the supply of officers to the Royal Army Medical Corps.

Mr. Brodrick, who responded to this toast, said that those who looked back over the history of the Royal Army Medical Corps for some years could not fail to realize how justified the members were in holding such a banquet as they did that night and associating with it the leading members of the civil medical profession. He had seen something of the Royal Army Medical Corps for a longer time back than most of the politicians who had served in the War Office. In 1886, when he joined the War Office, there was one universal cry in the Parliament and in the Press for a great reduction of the Army Medical Department. In his opinion very unwisely those reductions were then made, and ever since there had been good grounds to deplore that action. When he took office as Secretary of State three years ago, having that circumstance in his mind he was able to form a juster impression than some of what had been demanded from the Royal Army Medical Corps in the late war, and of what it was possible for them to achieve. It had to be remembered also that that reduction took place at the time when scientific advancement by the civilian medical profession was proceeding by leaps and bounds, and in this connexion Mr. Brodrick showed by figures the number of competitors for the Army Medical Corps and the number of vacancies since 1897. In that year there were 28 candidates and 35 vacancies, in 1898 there were 21 candidates and 40 vacancies, in 1899 there were 25 candidates and 28 vacancies, in 1900 there were 16 candidates and 50 vacancies. Then came the appointment of the Reorganization Committee. In 1902 there were 73 candidates for 30 vacancies, and in February of this year there were 50 candidates for 30 vacancies, and in July last there were 78 candidates for 30 vacancies. The Army Medical Corps had to meet the great demand made on it in the time of war, when it was in the condition of a patient very much enfeebled by want of nourishment. The British public and the House of Commons, who were the prime movers in the reductions mentioned had never seen fit to take upon themselves the responsibility which they forced on those who represented them. It seems to have been a matter of surprise that whilst such a great advance was being made in the civil medical profession the Army Medical Department had not kept pace with it, but it had to be remembered that there were in the corps no examinations then for special promotion, and that men were promoted to even high positions in order of seniority and without selection for merit; there was no opportunity given for study leave or for scientific research; and there was, owing to the short supply of officers, an excessive amount of foreign service. In regard to the assistance they had received from the civilian members of the profession, he remembered well one day how his friend, Sir Alfred Fripp, was good enough to come to him and say that if he could only induce the War Office to take help from outside, that there were any number of men willing to give their experience and skill towards helping the Royal Army Medical Corps to achieve the end desired, and he quoted the opinion of Sir Frederick Treves, given before the Royal Commission, that the work of the Advisory Board, formed in consequence, was admirably done. The great development and important changes which had taken place in the Army Medical Department could not have occurred without the co-operation of the civilian heads of the medical profession outside. When Mr. Brodrick went into the War Office seventeen years ago in a subordinate position he found great friction existing between the civilian and the military elements, which had been going on for years, and had had the greatest possible effect in stopping business and arresting all classes of reform. In the administration of the army, which was a Parliamentary one, there was a civilian element, and a strong permanent civilian support was needed, because the House of Commons was supreme in all these matters. In the opinion of Mr. Brodrick the civilian permanent element at the War Office had not been appreciated, and he failed to find, in looking through the pages of the Royal Commission report, a single word in which they alleged that the work done by the civilian department had broken down. He thought the highest claim for recognition that the present permanent civilian staff had was not their ability which was great, not their great work, not their immunity from blame, but the character of the relations which they had made with the military departments. Great results had been achieved by bringing the Army Medical Department into close touch with the outside world of science o which it was a part, and no Minister would ever succeed in carrying on the work of the British army unless he carried that principle as far as he could into all departments of the service. The Army Medical Department had called in the civilian heads of the medical profession for assistance, and they had been told that the new Advisory Board had worked well with military and civilian elements. If the result of the experiments in the Army Medical Corps, which had given them so many good candidates for the vacant posts, was followed in other directions he believed the foundations would be laid for solving the many difficulties connected with our volunteer army. He hoped that the new college of the corps would be rising from the ground within a few months; the money had been voted, the architect had been appointed, the site had been marked out, and the preliminary plans had been prepared. That institution would be the permanent seal of their connexion with the civilian medical profession. He was glad to hear the Chairman appeal for a civilian reserve of medical men versed in military requirements which would supplement in time of war the officers of the Army Medical Corps. In all medical matters they must work in the dark, for there were no parades of army corps at which that work could be made apparent. But when the day came when a fresh emergency again should nerve the nation to an unexpected effort, and when a demand was made which without preparation could not possibly be responded to, then we should realize the highest aim of patriotism by having done our duty.

Sir William Church, who also replied for the toast, said that it was necessary that there should be some organization by which civilian surgeons could receive training in organization before military work was attempted. He mentioned that the Royal Medical and Chirurgical Society had lately instituted a new order of Service Fellows, by means of which any officers of the naval or medical services could join on special terms.

Sir L. H. Ormsby (President of the Royal College of Surgeons of Ireland) also responded to this toast, and was followed by Sir William Turner, who said that the Army Medical Department and the War Office must keep in touch with the medical profession, with the civilian members of the medical profession, and with the great schools of medicine in order to secure the services of the best men. He regarded the Advisory Board as an important means of communication between the Royal Army Medical Corps and the civilian side of the profession.

Sir Frederick Treves in a short speech proposed the toast of "The Royal Army Medical Corps," which was briefly responded to by the Director-General, after which the company dispersed.

List of Guests.

The Right Hon. St. J. Brodrick, M.P.
Sir W. Church, Bart., K.C.B.
Sir E. Ward, K.C.B.
Surg.-Gen. Sir J. Fayrer, K.C.S.I., K.H.P.
Sir H. Howse
Sir L. Ormsby
Sir F. Treves, Bart., K.C.V.O., C.B.
Sir W. Turner
Surg.-Gen. Sir W. Hooper, K.C.S.I.
Sir W. Bennett, K.C.V.O.
Sir C. Ball, M.D.
Sir E. C. Perry, M.D.
Sir A. Fripp, C.V.O., C.B.
Colonel Sir J. R. A. Clark, Bt., C.B.
" C. W. B. Bowdler, C.B.
" W. A. Dunne, C.B.
Prof. Howard Marsh
Lieut.-Col. J. E. Squire
Dr. J. Galloway

List of Members.

Surg.-Gen. Sir W. Taylor, K.C.B., M.H.P.
" J. Jameson, C.B., M.H.P.
" Sir J. B. C. Reade, K.C.B., M.H.P.
" F. Bradshaw, C.B., K.H.P.
" W. H. McNamara, C.B., C.M.G.
" W. F. Stevenson, C.B.
" A. Keogh, C.B.
" A. Clery, C.B.
Colonel W. Donovan, C.B.
" W. L. Gubbins, M.V.O.
" H. E. R. James
Lieut.-Col. A. T. Sloggett, C.M.G.
" H. C. Kirkpatrick
Dr. J. Anderson, C.I.E.
Lieut.-Col. H. R. Whitehead
" G. W. Robinson
" A. T. S. Clarke
" J. T. Beattie
" J. A. Gormley
" W. Babtie, V.C., C.M.G.
" D. Bruce
" R. Jennings
" T. J. O'Donnell, D.S.O.
" A. M. Davies
" W. H. Hubbard
" E. M. Wilson, C.B., C.M.G., D.S.O.
Lieut.-Col. G. T. Trewman
" R. F. O'Brien
" W. W. Pike, D.S.O.
" B. M. Skinner
" C. R. Bartlett
" W. G. Macpherson, C.M.G.
" J. G. MacNeece
" R. J. Simpson, C.M.G.
" S. Hickson
" M. W. Russell
" R. W. Ford, D.S.O.
Major T. McCulloch
" F. Heuston, C.M.G.
" M. T. Yarr
" O. R. A. Julian, C.M.G.
" M. L. Hearn
Surgeon-Major C. R. Kilkelly, C.M.G.
Major J. Meek
" M. C. Ferguson, C.M.G.
" J. Moir
Captain T. H. Goodwin
" F. C. Heffernan
" L. A. Mitchell
" H. A. Berryman
" A. E. Milner
" C. E. Pollock
" C. K. Morgan
" K. B. Barnett

THE STRENGTH AND DISTRIBUTION OF THE ARMY MEDICAL SERVICE.

The following table shows the present strength and distribution of the Active List of medical officers:

Distribution in Monthly Army List for October, 1903.

Ranks.	Home.	South Africa.	Other Foreign Stations.	Not Posted.	Total.	Remarks. Seconded.	On Probation.	Attending Royal Army Medical College.
Surgeon-Generals	5	1	4	—	10	—	—	—
Colonels	13	1	13	—	27	1	—	—
Lieut.-Colonels	83	12	78	7	180	1	—	—
Majors	121	21	119	7	268	6	—	—
Captains	78	38	180	11	307	13	—	26
Lieutenants	99	6	64	4	173	5	43	1
Total	399	79	458	29	965	26	43	27

Considerable changes in the distribution of medical officers have again taken place since our analysis founded on the June Army List. The total strength has increased by 12, which may be regarded as a contribution to the ultimate normal strength contemplated.

There is a further relative increase of the numbers on the home establishment; but this largely results from the inclusion of no less than 43 probationers, and 27 officers attending the Royal Army Medical College; deducting these and a few seconded officers, the actual number doing duty at home is about 325. It is satisfactory to find that a steady proportion of captains is permitted to pass through the Corps College.

The total strength stationed in South Africa has fallen from 97 to 79, which probably approaches the mean number which will be required in that country; only 6 of the whole number are of the rank of lieutenant.

The total number abroad has fallen from 569 to 537, thus further reducing the long-standing disproportion between the home and foreign establishments.

Altogether, the strength and distribution of the service are now beginning to be such as to ensure efficiency.

Only 61 retired and militia medical officers are now employed in home appointments.

INDIAN MEDICAL SERVICE.

Among the points raised by our correspondent "Civil Employ," whose letter was published in the British Medical Journal of October 17th, page 1012, there are two to which we desire to call further attention.

He stated that the couple of months' leave granted after Netley, though they counted for promotion, would not count for service for pension, and suggested that the time spent in a hospital appointment after Netley would not count for pension. We are officially informed that these opinions are incorrect. The whole of the interval between leaving Netley and embarking for India and the period for which a lieutenant on probation may be seconded to hold hospital appointments will count for pension. Our attention is further called to paragraph 13 of the revised Regulations for the examination of candidates for admission to the Indian Medical Service. It is there stated that "while seconded [in order to hold a hospital appointment] he will receive no pay from Indian funds, but his service towards promotion, increase of pay, and pension will reckon from the date on which the course of instruction for lieutenants on probation commences."

The second point is that our correspondent, by comparing paragraph 31 and paragraph 34 of the India Office Memorandum, concluded that extra furlough taken for special study would not count for pension. We are officially informed that there is a misprint in paragraph 34, and that it should read as follows:

34. Service for pension reckons from date of first commission, and includes all leave taken under the rules quoted in paras. 25 to 31 (see also para. 42).

A later copy of the Memorandum which we have received from the India Office contains the following paragraph:

The subject of the salaries of officers in civil employ referred to in paragraph 19 of the Memorandum is now under the consideration of the Government of India.

The regulations for examination dated October, 1903, do not differ very materially from those previously in force, but it may be convenient to print them here:

Regulations for the Examination of Candidates for Admission to His Majesty's Indian Medical Service.

1. The regulations are those in force at the present time. They are subject to any alterations that may be determined on.

2. *Limits of Age.*—Candidates must be natural-born subjects of His Majesty, between 21 and 28 years of age at the date of the examination, of sound bodily health, and, in the opinion of the Secretary of State for India in Council, in all respects suitable to hold commissions in the Indian Medical Service. They may be married or unmarried. They must possess, under the Medical Acts in force at the time of their appointment, a registrable qualification to practise both medicine and surgery in Great Britain and Ireland.

[*N.B.—In the case of Natives of India it will be necessary for a Candidate to obtain a certificate of age and nationality issued under G.G.O. No. 477, dated 22nd May, 1903 Military (Medical) Department, and signed, should he be a resident in British India, by the Secretary to Government of the Province, or the Commissioner of the Division within which his family resides, or should he reside in a Native State, by the highest Political Officer accredited to the State in which his family resides.*]

3. *Declaration to be Submitted.*—They must subscribe and send in to the Military Secretary, India Office, Westminster, *so as to reach that address by the date fixed in the advertisement of the examination*, a declaration according to the annexed form.

4. This declaration must be accompanied by the following documents:—

a. Proof of age either by Registrar-General's certificate, or, where such certificate is unattainable, by the candidate's own statutory declaration, form of which can be obtained at the India Office, supported, if required by the Secretary of State, by such evidence as he may consider satisfactory. A certificate of baptism which does not afford proof of age will be useless.

b. A recommendation from some person of standing in society—not a member of his own family—to the effect that he is of regular and steady habits, and likely in every respect to prove creditable to the service if admitted; and a certificate of moral character from a magistrate, or a minister of the religious denomination to which the candidate belongs.

d. A certificate of having attended a course of instruction for not less than three months at an ophthalmic hospital, or the ophthalmic department of a general hospital, which course shall include instruction in the errors of refraction.

e. In the case of Natives of India, *b* and *d*, and the certificates referred to in paragraph 2 above.

5. The Secretary of State for India reserves the right of deciding whether the candidate may be allowed to compete for a commission in His Majesty's Indian Medical Service.

6. *Physical Examination.*—The physical fitness of each candidate will be determined by a Board of Medical Officers, who are required to certify that his vision is sufficiently good to enable him to pass the tests* laid down by the Regulations.

Every candidate must also be free from all organic disease, and from constitutional weakness, or other disability likely to unfit him for military service in India.

7. *Subjects for Examination.*—On proving possession of the foregoing qualifications, the candidate will be examined† by the Examining Board in the following subjects, and the highest number of marks obtainable will be distributed as follows:—

	Marks.
1. Medicine, including Therapeutics	1,200
2. Surgery, including diseases of the eye	1,200
3. Applied Anatomy and Physiology	600
4. Pathology and Bacteriology	900
5. Midwifery and Diseases of Women and Children	600
6. Chemistry, Pharmacy, and *either* Botany *or* Zoology	600

N.B.—The examination in medicine and surgery will be in part practical, and will include operations on the dead body, the application of surgical apparatus, and the examination of medical and surgical patients at the bedside. The examination in chemistry will be limited to the elements of the science, and to its application to medicine, pharmacy, and practical hygiene.

No candidate shall be considered eligible who shall not have obtained at least *one-third* of the marks obtainable in each of the above subjects, and *one-half* of the aggregate marks for all the subjects.

8. *Course of Instruction.*—After passing this examination the success-

* These are as follows:

(1) If a candidate can read D = 6 at a distance of 20 ft., and D = 0.6 at any distance selected by himself, with each eye without glasses, he will be considered Fit.

(2) If a candidate can only read D = 24 at 20 ft. with each eye without glasses, his visual deficiency being due to faulty refraction which can be corrected by glasses which enable him to read D = 6 at 20 ft. with one eye, and D = 12 at the same distance with the other eye, and can also read D = 0.8 with each eye without glasses at any distance selected by himself, he will be considered Fit.

(3) If a candidate cannot read D = 24 at 20 ft. with each eye without glasses, notwithstanding he can read D = 0.6, he will be considered Unfit.

N.B.—Snellen's test types will be used for determining the acuteness of vision. Squint, inability to distinguish the principal colours, or any morbid condition subject to the risk of aggravation or recurrence in either eye will cause the rejection of a candidate.

† Candidates who pass the physical examination will be required to pay a fee of £1 before being permitted to compete.

ful candidates will be required to attend one entire course of practical instruction at the Army Medical School and elsewhere, as may be decided, in—

(1) Hygiene.
(2) Clinical and Military Medicine.
(3) Clinical and Military Surgery.
(4) Pathology of diseases and injuries incidental to Military Service

This course will be of not less than four months' duration.

6. The candidate's commission as Lieutenant will bear the date on which the course of instruction commences, but his rank will not be gazetted until he has passed the final examination.

10. *Pay while Under Instruction: Uniform while Under Instruction.*—During this period of instruction each candidate will receive an allowance of 14s. per diem, with quarters, or, when quarters are not provided, with the usual allowances of a subaltern in lieu thereof, to cover all costs of maintenance; and he will be required to provide himself with uniform (namely, the regulation undress uniform and the mess dress of a Lieutenant of the Indian Medical Service, as described in Indian Army Regulations, Vol. VII, with Sam Browne belt, but without the sword).

11. Candidates will be required to conform to such rules of discipline as may from time to time be laid down.

12. *Final Examination.*—At the conclusion of the course candidates will be required to pass an examination in the subjects taught during the course of instruction.

13. A Lieutenant who, before the expiry of one month from the date of passing his final examination, furnishes proof of his election to a Resident Appointment at a recognized civil hospital, may be seconded for a period not exceeding one year from the date on which he takes up such appointment, provided that he joins it within three months of passing his final examination, and that he holds himself in readiness to sail for India within fourteen days of the termination of the appointment. While seconded he will receive no pay from Indian funds, but his service towards promotion, increase of pay, and pension will reckon from the date on which the course of instruction for Lieutenants on probation commences.

14. *Registration.*—Before the commission of a Lieutenant on probation is confirmed he must be registered under the Medical Acts in force at the time of his appointment.

15. *Position on List, How Determined.*—Officers appointed to the Indian Medical Service will be placed on one list, their position on it being determined by the combined results of the preliminary and final examinations, and, so far as the requirements of the Service will permit, they will have the choice of Commands in India (that is, Bengal, Punjab, Madras, or Bombay, according to their position on that list).

Though ordinarily employed within the limits of the Command to which they may have been posted, they will be liable to employment elsewhere according to the exigencies of the Service.

16. No candidate will be permitted to compete more than three times.

India Office,
October, 1903.

Examinations for admission to the Service usually take place twice in the year, in January and July.

N.B.—The exact date of the next examination and the number of appointments will be notified in the newspapers in due course.

Candidates cannot be supplied with copies of past examination papers.

[Hereafter follows the declaration and schedule of qualification to be filled up by candidates.]

Copies of the paper can be obtained on application to the Military Secretary, India Office, London, S.W.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: EDWARD P. MOURILYAN, M.B., Staff Surgeon, to the medical department, Admiralty, August 14th; ERNEST S. TUCK, Surgeon, to the *Cambrian*, for Ascension Hospital, October 23rd; JAMES W. W. STANTON, Surgeon, to the *Fire Queen*, October 23rd; ALEXANDER J. J. JOHNSTON, Fleet Surgeon, to the *President*, for three months' study at a civil hospital, October 22nd; EDWARD S. MILLER, M.B., to the *Tartar*, October 28th; ALAN G. EASTMENT, Surgeon, to the *Impregnable*, October 28th.

SPECIALISTS IN THE NAVY.

RETIRED writes: In the BRITISH MEDICAL JOURNAL of October 1st, a summary of the revised regulations for the Navy Medical Service was given. It is unfortunate that the Admiralty, ever behind the War Office in reforming their medical services, long delay, also, the full relative equality of the pay and allowances of these two public services: a characteristic example is given in the revised regulations we summarized:

By the recent Royal Warrant for the Army Medical Service, an officer in charge of a general or other hospital, or a division of a general hospital, receives, if in charge of at least 50 beds, 2s. 6d. a day; 100 beds, 10s.; 200 beds, 7s. 6d.; 300 beds, 10s.

The revised regulations for the Royal Navy Medical Service provide charge pay for the medical officers in charge of Haslar, Plymouth, Chatham, Malta, Hong Kong, Bermuda, Jamaica, Portland, Yarmouth, Haulbowline, Cape of Good Hope, Gibraltar, Yokohama, Esquimalt, and Ascension. No charge pay as in the army, however, is granted to the deputy inspector-generals or fleet surgeons, principal medical officers in charge of divisions of Haslar and Plymouth Hospitals.

It appears that now, for the first time, a candidate holding, or about to hold, the appointment of a resident medical officer in a recognized civil hospital, is eligible for the same consideration as one holding, or about to hold, a surgical appointment. There is still a failure to recognize under the rank of a fleet surgeon an officer as specialist, or any provision or encouragement, as in the case of the R.A.M.C., for such to qualify for such special appointments, save in the case of the Haslar and Plymouth schools of instruction for surgeons on entry. The Admiralty have in many ways, under the administration of the late Boards, very considerably improved the pay and allowances of their medical officers, but more requires to be done to enable the Royal Navy Medical Service to compete on equal terms with the army for candidates for entry. The long-promised improvement in relative rank to bring them more on a par with the military branch, as regards age, is still anxiously awaited.

ARMY MEDICAL STAFF.

SURGEON-GENERAL W. J. CHARLTON has been selected as Principal Medical Officer 4th Army Corps.

Major ALEXANDER SHARPE, M.D., died at Dublin, August 19th. His commissions were dated: Surgeon, February 5th, 1881; Surgeon-Major, February 5th, 1893. He retired January 20th, 1897, not having had war experience.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT-COLONEL A. HEWETT, F.R.C.S.Edin., retires on retired pay, October 17th. He entered the service as Surgeon, March 6th, 1880; became Surgeon-Major, March 6th, 1892; and Lieutenant-Colonel, March 6th, 1900.

Lieutenant-Colonel W. J. MACNAMARA, M.D., has been appointed Senior Medical Officer, Jersey.

Colonel G. D. BOURKE is ordered home from India, on promotion, to take over the duties of Principal Medical Officer, Western District.

It is announced that Colonel W. L. GUBBINS, Principal Medical Officer Home District, is to be promoted to be Surgeon-General, and appointed Principal Medical Officer, Bombay Command; he being succeeded in the Home District by Lieutenant-Colonel A. T. SLOGGETT, C.M.G.

CHANGES OF STATION.

THE following changes of station amongst the officers of the Royal Army Medical Corps have been officially reported to have taken place during the last month:

	From.	To.
Major D. V. O'Connell, M.D.	—	Chester.
,, J. R. Mallins, M.B.	—	Woolwich.
,, C. J. W. Tatham	—	Devonport.
,, C. H. Hales, D.S.O.	—	,,
,, O. R. A. Julian,, C.M.G.	—	Home District.
,, J. D. Ferguson, D.S.O.	—	Somaliland.
Captain E. C. Anderson, D.S.O.	—	Shorncliffe.
,, H. E. M. Douglas, V.C., D.S.O....	—	Somaliland.

ARMY MEDICAL RESERVE.

LIEUTENANT J. T. K. THOMSON, Glasgow Companies, Royal Army Medical Corps (Volunteers), to be Surgeon-Lieutenant, October 14th, instead of as notified in the *Gazette* of October 13th under "Royal Army Medical Corps."

INDIAN MEDICAL SERVICE.

LIEUTENANT GEORGE FREDERICK HUMPHREYS died at Poona on September 26th, aged 23 years. He was appointed to the department September 1st, 1902.

IMPERIAL YEOMANRY.

RICHARD H. ASHWIN, M.D., to be Surgeon-Lieutenant in the East Riding of Yorkshire Regiment, October 17th.

ROYAL NAVAL VOLUNTEER RESERVE.

JOHN MACINTYRE, M.B., F.R.S.E., to be Honorary Staff Surgeon, October 15th.

The undermentioned gentlemen have been appointed Surgeons, dated October 15th: PETER PATERSON, M.B., C.M., ALEXANDER L. BROWN, F.R.C.P.E., JAMES P. BOYD, M.B., C.M., EBENEZER SNELL, M.R.C.S.

VOLUNTEER RIFLES.

SURGEON-LIEUTENANT J. L. KERR, M.D., 2nd (The Weald of Kent) Volunteer Battalion the Buffs (East Kent Regiment), to be Surgeon-Captain, October 17th.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

MR. WILLIAM A. BURNS, to be Lieutenant in the Glasgow Companies, October 17th.

THE LONDON COMPANIES R.A.M.C. (VOL.).

UNDER the command of Major Matthews and with the co-operation of a party of the Electrical Engineers, the London Companies of the Royal Army Medical Corps (Volunteers) were engaged for several hours on October 17th in practising work of a kind which will frequently have to be done after a big engagement. The night was exceedingly dark, and the idea underlying the operations was that a great battle near Wimbledon Common had terminated late in the evening, and that numbers of wounded men were lying about the Common, while others had crept into the coppice for shelter. The work consisted in searching out and dealing with these men with the assistance of a powerful search light. When found one by one the cases were removed with all due precautions by bearer parties and thence dispatched to the collecting station by ambulances to the dressing station in the rear. The work was well carried out and was of a thoroughly practical character.

THE DEPARTMENTAL COMMITTEE ON VACCINATION ADMINISTRATION.—The Departmental Committee appointed by the President of the Local Government Board to inquire and report with regard to the payments made to public vaccinators and vaccination officers under the Vaccination Order, 1898, met on October 15th, and heard the evidence of Mr. W. D. Elsam, Secretary of the National Vaccination Officers' Association, and of Mr. A. R. Harwood, Vaccination Officer of the Farnham Union.

UNIVERSITIES AND COLLEGES.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY Council was held on October 15th, Mr. John Tweedy, President, in the chair.

Resignation of Mr. Pick.

A letter was read from Mr. Pickering Pick resigning his seat on the Council. Mr. Pick's resignation was accepted by the Council with regret, and with an expression of their recognition of his services to the College, both as a member of the Council and an Examiner.

The late Mr. Thomas Richard Jessop.

The Council recorded their deep regret at the death of Mr Jessop, and passed a vote of condolence with his family.

Members of Committees.

Mr. Langton was re-elected a member of the Committee of Management. Mr. Godlee was elected a member of the Laboratories Committee in the vacancy occasioned by the retirement of Mr. Morris. Mr. Dent was appointed a member of the Finance Committee, and Mr. Robson a member of the Discipline Committee, in the vacancies occasioned by the death of Mr. Jessop.

The Granting of Medical Certificates to Soldiers.

The attention of the Council having been called to the fact that medical certificates are not infrequently made use of by soldiers to assist them in deserting and otherwise evading military discipline, the Council desire to call the attention of Fellows and Members to the abuse to which such certificates may be put and to the responsibility which is attached to their issue.

Letter from the General Medical Council.

The President of the General Medical Council stated in a letter that he had been authorized to appoint a committee of members of the General Medical Council to confer with representatives of the two Colleges in regard to the questions which have been raised respecting the regulations for the first year of study and the First Examination of the Conjoint Examining Board. In response to this, the Council of the Royal College of Surgeons appointed a committee of eight to confer with representatives of the Royal College of Physicians relative to the proposed conference with a committee of the General Medical Council.

Photographs of the Honorary Fellows of the College.

The best thanks of the Council were given to Mr. Reginald Harrison for the gift of a collection of photographs of Honorary Fellows of the College.

Physical Disability of Recruits for the Army.

The Council have had under consideration a circular prepared by the Director-General of the Army Medical Service in regard to a proposed inquiry as to the causes which have during recent years led to the rejection, on the ground of physical disability, of so large a number of recruits for the army, and as to the possible measures by which this state of affairs may be remedied.

This document was transmitted to the Council by the Secretary of State for Home Affairs, who requested to be favoured with any observations thereon which the Council might think fit to make.

After a careful consideration of the matter the following reply was addressed by the Council to the Secretary of State, namely:

"The Council of the Royal College of Surgeons of England have carefully considered the Circular drawn up by Sir William Taylor, Director-General of the Army Medical Service, on the physical deficiencies of the men who offer themselves for enlistment in the army; and now beg to submit, for the information of the Secretary of State, the following observations in reference to those matters upon which their opinion is invited, namely: (*a*) the necessity of a proposed inquiry into the causes of physical deficiency and as to the best available means of remedying defects and improving the national health; (*b*) the ground to be covered by the Commission if appointed; and (*c*) the composition of the Commission.

"It is premised in the Circular of the Director-General that, while there is reason to believe the physique of the well-to-do classes is improving, 'a very large proportion of the men who offer themselves for enlistment in the army are found to be physically unfit for military service'; and there seems to be a presumption that the proportion is increasing. But the statistics set forth in the Circular do not support this view; and there is no indication that the figures are affected by any change in the standard of physical requirements in recruits during the period under consideration. Nor does it appear that there has been any noticeable change in the personnel of the candidates for enlistment during this period. In the opinion of the Council, however, there are reasons for believing that, compared with former times, most of the men who now offer themselves as recruits are drawn from a class physically inferior, and that a general statistical statement may be, therefore, misleading.

"Many influences have been at work during recent years to affect the status of the working classes. Increased competition in trade, keener industrial rivalries, the growing responsibilities of employers, the 'labour movement,' trades-unions, and other social and economics factors have altered the conditions of labour, and raised at once the comparative standard of efficiency of the workmen, the standard of living, and the rate of wages. In the struggle for employment the better educated, the more intelligent, and the more active and industrious are attracted to the better paid and more coveted occupations. The result is a large, and probably growing, remainder of those who, more or less unfit, fail to obtain regular employment. And it is apparently from this residue that the army has to obtain the larger proportion of its recruits.

"Disquieting though this reflection may be, there is no evidence before the Council that the physical disabilities of this class, taken by itself, have increased or are increasing. Indeed, the data supplied by the Circular itself seem to show that they have not increased, but rather that they may tend to diminish.

"From Table I, p. 2, it would appear that when recruits belong to a class which may be regarded as first-hand material, namely, 'boys under 17 years of age,' the proportion of rejections is only 11.2 per cent. Considering the probable parentage and the early surroundings of these youths, and considering also the numerous possible physical disqualifications, this cannot be regarded as a high rate of rejection. Moreover, this class of recruits affords a fair criterion of the average physique of the lower stratum of society. And it is also this class of recruit which should manifest most improvement under the favouring conditions of better food, better housing, and better surroundings and associations after enlistment.

"Again, Table II, p. 3, shows a steady declining rate of primary rejections from 40.6 per cent. in 1893 and 41.6 per cent. in 1896 to 27.4, 28.0, and 30.7 respectively in the three years 1900-2. Against this is to be set a sharp rise in the years 1901 and 1902 in secondary rejections—that is, rejections within three months of enlistment and after two years' service. The causes of these secondary rejections are not stated; but it may not unreasonably be assumed that many of them were due to preventable causes, physical or moral.

"As bearing generally on the larger question of national health, and more particularly on the physique of those who offer themselves as recruits, Table III, p. 4, is not without some hopeful indications as to the future. The table shows a diminishing proportion of rejections in each of the assigned grounds of disqualification, excepting that of 'loss or decay of teeth.' In such a critical test of physique as 'chest measurement' the rejections, which were 139.64 per thousand in 1896, were only 49.88 and 56.72 respectively in the years 1901-2. 'Imperfect constitution and debility' caused 18.40 per thousand rejection in 1891, and only 3.36 and 3.01 respectively in the years 1901-2. On the other hand, the rejections due to loss or decay of teeth, which were 10.88 per thousand in 1891, had risen to 49.26 per thousand in 1902.

"The Circular does not state whether or not there has been increased stringency of late in the matter of the teeth, or relaxation with respect to the other physical and vital requirements. In the absence of any statement to the contrary, the Council assume that no material alteration has been made. In any case the Council believe that many of the causes of disability will tend to grow less. Greater attention is now paid in schools to the general health of children, to physical training, to the care of the sight, the hearing, and the cleanliness of the mouth and teeth. And the spreading influence of the various social, municipal, and philanthropic agencies for the promotion of the public health, and the strengthening of the character of the individual, cannot fail to beneficially affect the health and well-being of all classes of the people, including the lowest.

"It may perhaps not be altogether irrelevant to remark that many of the grounds of physical disqualification for the English army—such as defects in vision, weight, height, and teeth—would in countries where conscription obtains be much less important factors in judging of the fitness of men for military service.

"The Council desire to state that while they have thought it right to scrutinize the data supplied in the Circular prepared by the Director-General, they have not done so in a captious spirit, but rather to illustrate the difficulty they have experienced in forming an opinion or in making any definite recommendation. They cordially recognize the immense importance of the matters to which the Director-General has called attention and the skill and clearness with which he has collated the facts upon which his opinion and recommendations are based.

"On the evidence before them and in view of the testimony of the public health statistics, the Council do not think there is need for a large inquiry into the national health, and they are doubtful whether trustworthy results would be obtained by instituting a special inquiry with respect to the class from which most of the recruits are obtained. The Council are, however, of opinion that much might be done in a less formal manner by emphasizing the necessity of still stricter attention to the health, feeding, and training of school children, and more especially the care of the teeth and the arrest of threatened or early decay.

"The Council also are of opinion—upon which opinion they would lay great stress—that as much as possible should be done to promote the health, growth, and general physical development of the young soldier by improving his environment and by the exercise of special care in the selection of the kind and quality of his food and in its preparation and preservation.

"Should the Government decide to institute the larger inquiry into the national health, or the more limited one dealing chiefly or solely with the class supplying the majority of recruits, the Council would suggest that, in addition to military men, the Commission should contain employers of labour, representatives of the working classes, persons who have specially studied matters relating to public health, and members of the medical profession. With respect to the last named, the Council would be pleased, in conjunction with the Royal College of Physicians, to nominate representatives specially acquainted with the subject-matter of the inquiry."

Spectacle Makers' Company.

The above Company having appointed a Committee to consider two memorials signed by opticians praying the Company to include the subject of sight-testing in their examinations, and to extend their diploma by certification of efficiency therein, and having asked the College to give its views upon the proposal, the following opinion was expressed:

"The Council of the Royal College of Surgeons have carefully considered the matters upon which they have been invited by the Worshipful Company of Spectacle Makers to express their opinion, and desire to submit the following statement of their views for the information of the Committee appointed to consider the proposed alteration in the character of the Company's diploma.

"Considering the hidden danger and the untoward possibilities that may attend almost any morbid state of the body, it is against public safety and welfare that any one should be deemed competent to order or prescribe any medical or surgical remedy or appliance who has not had an efficient medical and surgical training.

"More particularly with respect to the petition of working opticians that they should be certified, after due examination, to be qualified to test the sight and prescribe spectacles to correct the various errors of refraction, it is to be observed that, while optical defects often occur in eyes which are otherwise healthy, they are not infrequently associated with diseased conditions, which are difficult to detect, and whose nature and significance can only be appreciated by persons who have studied diseases of the eye not merely as local affections, but in their relation to general disease.

"Moreover, in many grave affections of the eyes, whether of a local or of a constitutional character, such as inflammation or atrophy of the optic nerves, inflammation or degeneration of the retina or choroid, chronic glaucoma, and many other diseases, the earliest and most obtrusive symptom is often impairment of sight, which patients themselves are too prone to ascribe to presbyopia or other optical defects remediable by spectacles. This opinion, the optician, by virtue of his calling, is naturally predisposed to adopt and enforce.

"In the ultimate interest of the public no countenance should be given to any proposal which is likely to foster the belief that tradesmen, whatever be their technical skill, and whether opticians, or orthopaedic or other surgical instrument makers, are safe and sufficient guides in the management and treatment of deformities or other diseased conditions."

UNIVERSITY OF CAMBRIDGE.

Examinations.—The following dates for the medical examinations are announced:

	Names sent in.	Certificates and Fees.	Examination Begins.
First M.B.	November 30 ...	December 8 ...	December 14
Second M.B.... ...	,, 30 ...	,, 8 ...	,, 14
Third M.B., Part I ...	,, 30 ...	,, 8 ...	,, 14
Third M.B., Part II ...	,, 26 ...	,, 9 ...	,, 8
M.C.	,, 26 ...	,, 2 ...	,, 10

Degrees.—At the Congregation on October 15th the following medical and surgical degrees were conferred:

M.B. only.—J. G. Cooper, Trinity.

M.B. and B.C.—W. F. L. Day, Caius; A. O. M. Fehrsen, Caius; F. P. Edwards, Downing.

UNIVERSITY OF LONDON.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL.

THE annual distribution of prizes of St. George's Hospital Medical School took place in the Board Room of the Hospital on October 15th. The prizes were given away Dr. E. Warre, Head Master of Eton College. The Entrance Scholarship in Arts of the value of £100 was gained by Mr. G. D. Knox, and the Entrance Scholarship in Anatomy and Physiology of the value of £50 was awarded to Mr. D. W. Roy. The Brackenbury Prize in Medicine and Surgery was taken by Mr. H. V. Drake.

Dr. Warre, in addressing the students, said that he might have been tempted to speak on the question of the present system of examinations, the seemingly endless burden of which, like some Sisyphian stone, the youth of this country was ever engaged in rolling up the various inclines that led to the higher portals of the profession. That, however, was not the place to discuss such an important question, so he had chosen to direct their attention to the subject of sympathy. The groundwork of sympathy was primarily physical, for even Nero who could sanction horrible cruelties could shed floods of tears at some imaginary incident presented by an actor on the stage. Up to that point sympathy in its mere passivity had no title to rank as a virtue. The sight of suffering awakened strong emotion, and many students were completely unnerved at the sight of the first severe operation they witnessed; but emotional feelings of that kind were not helpful, and medical students had to be schooled and disciplined for the public to have physicians and surgeons able to carry out the important duties of their calling. They had to take care, however, that the heart of the medical man did not become seared and hard so as to be incapable of any feeling. True and active sympathy was only to be gained by self-discipline. Hospital practice, perhaps, with its rapid succession of cases and its pressure of work, might not be altogether favourable for the cultivation of a sympathetic habit of mind, and they must remember the necessity of stirring up that gift within them, for a doctor in practice had to attend to all sorts and conditions of men. The key to the real knowledge of men was sympathy; but it was only the true sympathy he referred to that gave the key to success, not counterfeit sympathy nor the veneer of a sympathetic manner accompanied by the use of smooth phrases. The sympathy he meant must be genuine, sincere, and truthful. As Aristotle told them it was not the medicine prescribed by the physician, nor was it the knife of the surgeon that restored the patient to health, but it was the unseen operation of that which remained sound in the constitution of the patient. Faith, hope, and cheerfulness were as physic to the inner consciousness of the sufferer, and went far towards the restoration of health. To be able to inspire all that was to double the effect of the medical aid supplied by the doctor. Sympathy not only brought help and comfort to the patient, but it reacted on the character of him who possessed it, making his life a blessing to himself as well as to others, and for that reason he claimed a place for sympathy in their equipment as medical men.

ST. BARTHOLOMEW'S HOSPITAL AND COLLEGE.

The following scholarships have been awarded:—Senior Entrance Scholarships (value £75): Mr. G. C. E. Simpson, B.A.Cantab. (St. John's), first; Mr. F. W. W. Griffin, B.A Cantab. (King's), ; Mr. J. J. Paterson, Cardiff, equal, second. Junior Entrance Scholarship (value £150): Mr. T. L. Bomford. Preliminary Scientific Exhibition (value £50): Mr. H. H. King. Jeaffreson Exhibition (value £20): Mr. A. J. S. Fuller, B.A. Cantab.

ROYAL UNIVERSITY OF IRELAND.

THE Examiners have recommended that the following candidates be adjudged to have passed the Third Examination in Medicine:

Upper Pass.—P. T. Cawley, Queen's College, Galway; A. G. Cummins, Queen's College, Cork; J. S. Dickey, Queen's College, Belfast; J. Donnelly, Queen's College, Belfast; D. H. C. Given, Queen's College, Cork; W. Irwin, B.A., Queen's College, Cork; R. Jamison (Sch.), Queen's College, Belfast; R. J. Lytle, Queen's College, Belfast; T. O'Driscoll, Catholic University School of Medicine.

Pass.—J. J. Clarke, Catholic University School of Medicine; J. W. Dale, B.A., Queen's College, Belfast; M. F. Donovan, B.A., Queen's College, Cork; J. Dowling, Queen's College, Galway; W. P. Farrell, Catholic University School of Medicine; A. Hill, Queen's College, Belfast; R. S. Kennedy, Queen's College, Cork; W. J. Leighton, Queen's College, Belfast; J. Macarthur, Queen's College, Belfast; W. T. McCutcheon, Queen's College, Belfast; J. Magill, Queen's College, Belfast; M. J. O'Grady, Catholic University School of Medicine; J. J. O'Mahony, B.A., Queen's College, Cork; E. M. O'Neill, Catholic University School of Medicine; H. S. Sims, Queen's College, Cork; P. Steen, Catholic University School of Medicine; J. P. Waters, Catholic University School of Medicine; J. West, Queen's College, Belfast.

The Examiners have recommended that the following candidates be adjudged to have passed the M.B., B.Ch., B.A.O. Examination:

Upper Pass.—S. K. Adams, Queen's College, Belfast; M. Cagney, Queen's College, Cork; H. M. Johnston, B.A., Queen's College, Belfast; G. Kelly, Catholic University School of Medicine; T. Killen, B.A., Queen's College, Belfast; C. G. Lowry, Queen's College, Belfast; F. McDonald, Catholic University School of Medicine; J. N. Meenan, Catholic University School of Medicine; J. H. Moore, Queen's College, Belfast.

Pass.—Lily A. Baker, Catholic University School of Medicine; C. J. Boucher, Queen's College, Belfast; R. J. Cahill, Catholic University School of Medicine; E. Forde, Catholic University School of Medicine and Queen's College, Galway; D. Gillespie, Queen's College, Belfast; J. McA. Holmes, Queen's College, Belfast; E. P. Kenny, Catholic University School of Medicine; M. J. Landy, Catholic University School of Medicine; F. A. McOstrich, Queen's College, Cork; W. Minford, B.A., Queen's College, Belfast; M. J. O'Flynn, Queen's College, Galway, and Catholic University School of Medicine; E. J. O'Hanlon, Catholic University School of Medicine; F. C. Sampson, Catholic University School of Medicine; W. A. Simpson, Queen's College, Galway, and Catholic University School of Medicine.

The Examiners have recommended that the following candidates be adjudged to have passed the M.D. Degree Examination:

D. P. Barry, M.B., B.Ch., B.A.O., Liverpool University; D. Kernohan, M.B., B.Ch., B.A.O., private study; Frances O. C. S. McDade, B.A., M.B., B.Ch., B.A.O., Brompton Hospital, London; M. L. Rowan, B.A., M.B., B.Ch., B.A.O., Queen's College, Belfast, and private study.

VICTORIA UNIVERSITY OF MANCHESTER.

Faculty of Medicine.

ONE of the two open Entrance Scholarships which were recently founded, each of the value of £100, has been awarded to Mr. W. C. Denniston, B.Sc. It is proposed to offer two similar scholarships, one in Arts and one in Science, next July.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

Election of Officers.

AT the annual meeting of the College on October 20th, the following officers were elected for the ensuing year:—*President:* Sir Arthur V. Macan, M.B. *Vice-President:* H. T. Bewley, M.D. *Censors:* H. T. Bewley, M.D., T. Henry Willson, J. Byrne Coleman, C.M.G., M.D., G. J. Peacocke, M.D.; *Representative on the General Medical Council:* Sir John W. Moore, M.D. *Representative on the Committee of Management:* J. Magee Finny, M.D., Walter G. Smith, M.D., and James Craig, M.D. *Treasurer:* Henry T. Bewley, M.D. *Registrar:* James Craig, M.D. *Librarian:* Robert Phelps. Sir Arthur V. Macan was elected King's Professor of Midwifery in the School of Physic, Ireland.

Appointment of Examiners.

The following were appointed additional Examiners to take the place of an absent Censor or Examiner: Medicine, A. R. Parsons, M.D.; Medical Jurisprudence and Hygiene, A. Nixon Montgomery; Midwifery, J. H. R. Glenn, M.D. The following other Examiners were also appointed: For the Licence to practise Midwifery, A. J. Horne and H. Jellett, M.D.; for the Membership: Clinical Medicine, J. Magee Finny, M.D., and J. Byrne Coleman, C.M.G., M.D.; Practice of Medicine, W. G. Smith, M.D., and G. J. Peacock, M.D.; Pathology, A. C. Earle, M.D., and A. C. O. Sullivan, M.D. For the examinations under the Conjoint Scheme, the following were appointed: Biology, E. MacDowel Cosgrave, M.D.; Chemistry, Professor E. Lapper and Ninian Falkiner, M.D.; Physics, R. Travers Smith, M.D., and W. A. Winter, M.D.; Pharmacy, Materia Medica, and Therapeutics, H. C. Drury, M.D., and Martin Dempsey, M.D.; Physiology, H. C. Earle, M.D.; Pathology, A. C. O'Sullivan, M.D.; Medicine, J. Redmond, M.D., and J. O'Carroll, M.D.; Hygiene and Forensic Medicine, W. R. Dawson, M.D. For the Conjoint Diploma in Public Health: Chemistry, Professor E. Lapper; Hygiene, H. T. Bewley, M.D.; Meteorology, Sir John W. Moore, M.D. Extern Examiners in Preliminary Education, Professor W. E. Thrift, F.T.C.D., and W. T. Kennedy, F.T.C.D.

Death of Sir George Duffey.

The Registrar reported the death of Sir George F. Duffey, ex-President of the College, and the following resolution was adopted in silence: "Resolved: That on this, the first meeting of the College since the death of Sir George F. Duffey, we, the President and Fellows, desire to place on record our deep regret at the loss the College has sustained by the removal of one of its Fellows and Past-Presidents, who was ever loyal to the College and upheld the highest principles of our profession. Regular in his attendance, painstaking and helpful at committees, he has left a place it will be hard to fill, while personally we feel we have lost a genial *confrère* and a generous friend. We desire that a copy of this resolution be forwarded to Lady Duffey, with unanimous expression of our sincere sympathy with her and her family in their bereavement."

The General Medical Council.

Dr. Atthill having tendered his resignation of the office of representative of the College on the General Medical Council, the following resolution was adopted unanimously at a previous meeting of the College:—"Resolved: That the President and Fellows accept the resignation of their representative on the General Medical Council with sincere regret, and take this opportunity of expressing their grateful sense of the invaluable services rendered to the College by Dr. Atthill through a long series of years, not only in the capacity of representative on the General Medical Council, but also in many other important collegiate offices."

The Banquet.

The annual banquet took place in the evening at the College Hall. Among the guests present were the Lord Chancellor, the Dean of St. Patrick, the President of the Incorporated Law Society, the Presidents of Queen's College, Cork, and Queen's College, Galway, the Right Rev. Mons. Molloy, the Principal Medical Officer in Ireland, the Registrar-General for Ireland, and Sir James Dougharty, K.C.V.O.

CONJOINT BOARD IN IRELAND.

CANDIDATES have passed the First Professional Examination as undernoted:

W. H. Bomford, H. C. Burbidge, T. C. Casey, A. Culler, M. B. Dooley, C. J. B. Dunlop, J. J. Dwyer, T. Fehily, F. V. Hanratty, P. Harrington, D. F. Harty, S. F. Hayes, W. E. M. Hitchins, C. Macaulay, W. R. O'Farrell, W. H. O'Riordan, D. O'Sullivan, T. Walsh.

ERRATUM.—In the pass list of the Society of Apothecaries of London, published in the BRITISH MEDICAL JOURNAL of October 17th, p. 1023, line 6 of list, for "Simson" read "Simpson."

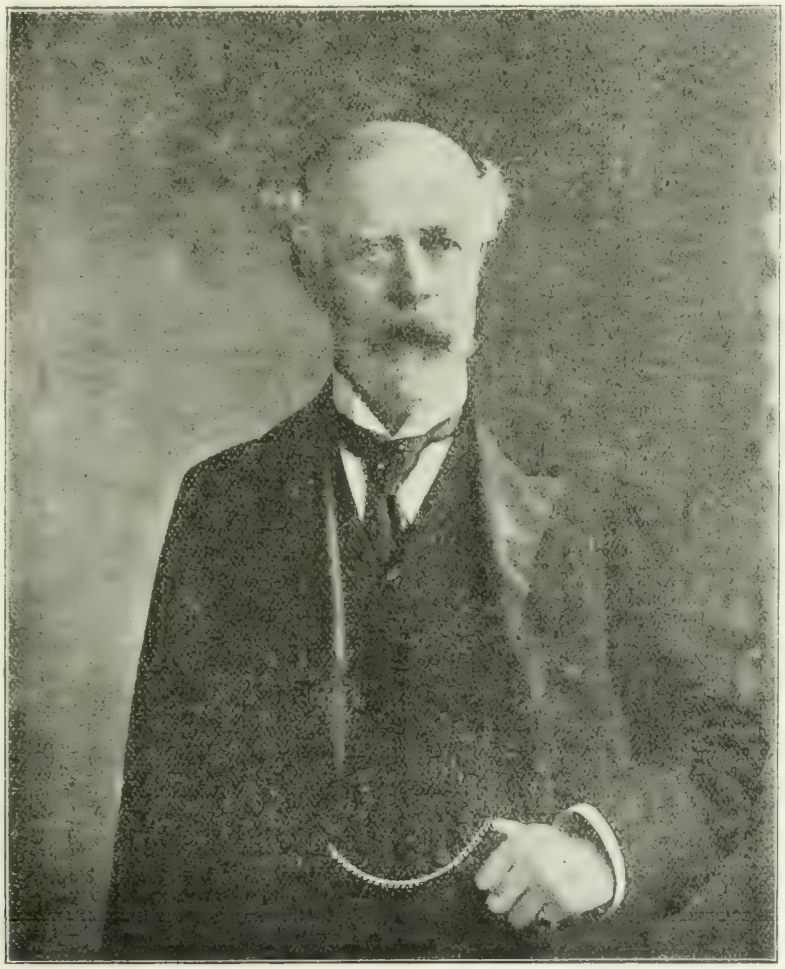
OBITUARY.

Sir GEORGE FREDERICK DUFFEY, M.D.,

F. and Ex. Pres. R.C.P.I.,

Physician and Lecturer on Clinical Medicine, Royal City of Dublin Hospital.

The profession at large will hear with great sorrow of the death of Sir George F. Duffey, which took place at his residence, 30, Fitzwilliam Place, Dublin, on October 13th. His illness had lasted for some months. So far back as April he returned from a short holiday, certain symptoms pointing to a central nerve lesion having suddenly developed. His medical attendants were from the first filled with anxiety on his account, and they had the advantage of the help of Dr. Ferrier, who went over to Dublin; the disease, however, steadily progressed, with distressing phases, until death came as a release.



George Duffey was born in 1843, the son of Mr. John Duffey, a member of the Bar. Twenty years later he graduated in arts in the University of Dublin, and in 1864 obtained his degrees in medicine. He gave early proof of his interest in his work, applying himself so diligently that he carried off a Medical Exhibition and the Medical Scholarship while yet an undergraduate. Immediately following the close of his career at Trinity College he entered the army as an assistant surgeon. He was attached to the 24th Regiment until 1871, when he retired, only to grieve two years later over the death of so many old comrades at the battle of Isandwala. On leaving the army he devoted himself to civil practice in Dublin. He soon started and maintained for some years, the *Dublin Hospital Gazette*—a journal of much excellence. He became Physician to Mercer's Hospital in 1876, and was then appointed Lecturer on Materia Medica in the Carmichael School. In 1882 he transferred his services to the City of Dublin Hospital, and soon after became Professor of Materia Medica in the Royal College of Surgeons of Ireland, on the amalgamation of various schools with that institution. In turn he was Examiner at the late Queen's University, the University of Dublin, and to the Conjoint Board.

In 1896 he was chosen President of the Royal College of Physicians, and in the following year—Queen Victoria's Jubilee—he received the honour of knighthood. The General Medical Council selected him for the most important office of Inspector of Examinations, and it is a proof of the excellent way in which he discharged the duty that he was chosen in each successive year until his death.

In 1871 he married Agnes, daughter of the late Mr. John Cameron, of Dublin, and sister of Sir Charles Cameron, M.D., Bart., formerly M.P. for Glasgow. His elder son, George Duffey, entered the army as a lieutenant, but died of yellow fever in the West Indies; while the younger, Arthur, is a lieutenant in the Royal Army Medical Corps, and in 1899 was Special Commissioner to the United States on behalf of the Cancer Research Society.

Into a life that was comparatively short George Duffey managed to crowd his many and varied activities, and his fine character early attracted to him a large body of personal friends. He was without those bitter smallnesses which are a misery to their possessor and irritating to others. He held a high ideal of professional life and he lived up to it. His teaching was thorough and painstaking, and proved attractive to his students. His position as Inspector of Examinations for the General Medical Council was at once important and onerous. It was his duty to master the intricacies of the various methods of the examining bodies and to report upon their observance. His criticisms were always fearless, but there was a kindliness about the phrasing of them that disarmed resentment, and, supported as he was by accuracy and fairness of judgement, he was the means of bringing about many alterations in methods which helped to make standards higher, and so to improve the general character of professional knowledge.

By the death of Sir George Duffey the Dublin School has lost one of its most prominent and beloved members and the profession at large a high-minded and honourable gentleman.

The funeral took place on Friday, October 16th, when the body was laid in Mount Jerome Cemetery. There was a vast assemblage drawn not only from the profession but from all other classes. The Presidents of the Royal Colleges of Physicians and Surgeons were present, as well as the heads of many public departments.

The services which Sir George Duffey rendered to the British Medical Association were conspicuous, and we owe the following brief summary of them to the pen of Sir John Moore: "Rather more than five-and-twenty years ago George Duffey took in hand the difficult and delicate task of organizing a Dublin Branch of the Association—difficult and delicate because it was necessary to avoid wounding the susceptibilities of the members of the Irish Medical Association on the one hand, and to keep clear of the domain of the existing Dublin medical societies on the other hand. He achieved complete success, and the Branch was recognized in 1877. To this day he is justly regarded as the founder of the Dublin—now the Leinster—Branch. It was also mainly owing to Duffey's popularity and influence that the Royal College of Physicians of Ireland opened its doors to the newly-established Branch, which has ever since held its annual and council meetings in the splendid halls of the College in Kildare Street. In the early days of its existence, George Duffey, as Honorary Secretary of the Branch, safeguarded its interests in such a way as to merit the fullest and most grateful recognition of his services.

"Many members of the Association remember with what conspicuous success the Dublin Branch, under the able guidance of George Duffey, at that time its ex-Honorary Secretary, played the part of host to the Association in the summer of 1887, when after a lapse of twenty years the British Medical Association met for the second time in the Irish capital. George Duffey was Local Honorary Secretary of that notable meeting, which was presided over by Sir John Banks, K.C.B., with his wonted dignity, hospitality, and ability. At the close of that—the fifty-fifth—annual meeting of the Association, it was moved by Sir Walter Foster, M.P., seconded by Dr. Dempsey, of Belfast, and unanimously resolved:

That the most cordial thanks of the members be given to Dr. George Duffey for his energetic and able organization of this most successful and brilliant meeting.

"In 1901, George Duffey was by acclamation chosen President of the Dublin Branch, which owed him so much, and a more disinterested, able and courteous gentleman never accepted office at the hands of the delighted members.

"In addition to the foregoing, Sir George Duffey held the following offices in connexion with the annual meetings of the British Medical Association, namely: Secretary of the Section of Medicine, 1879 (Cork), Vice-President of the Section of Medicine, 1884 (Belfast), Vice-President of the Section of Medicine, 1888 (Glasgow), and President of the Section of Medicine, 1896 (Carlisle)."

Sir John Banks, K.C.B., who was President of the Association on the memorable occasion of the Dublin meeting in 1887, sorrowfully writes: "I would express my profound regret at the death of one who was all that could be desired in his capacity of Local Honorary Secretary to that historic meeting. Well do I remember the unflagging zeal and tireless energy of my departed friend and colleague. I make bold to say that the success of the Dublin meeting of 1887 was in no small measure due to the powers of organization, tact, and courtesy of George Duffey."

We are indebted to Dr. Craig, Registrar of the Royal College of Physicians of Ireland, for the following: "In endeavouring to write an appreciation of Sir George Duffey there are no pitfalls which an author feels he must shun. The true, straight, kindly and just man was there, always to be relied upon and more highly appreciated the better he was known. In his death the Royal College of Physicians of Ireland has lost a Fellow whose place there is no one to fill. No mere casuist, no lover of talking, but a worker in every sense of the word was the friend whose death every Fellow of the College deplores.

"A licentiate in 1871, with Hawtrey Benson and John William Moore, he was elected to the Fellowship in 1873. Four years later he became Censor for two years, and this position he again filled in 1883-5 and 1889-91. He was Vice-President during the three last-named years. He was selected as a member of the Library Committee in 1881 and of the Economy Committee in 1883, and for the following twenty-two and twenty years respectively and until a few months ago he was one of their most useful members.

"In 1882 the late Dr. Henry Kennedy suggested that an annual dinner of Fellows and guests should be held in the College on St. Luke's Day. The suggestion was at once adopted and he and Duffey were appointed joint secretaries to carry out the arrangements. At Dr. Kennedy's death in 1887 Dr. Duffey was asked to discharge the duties of honorary secretary himself and this he did with conspicuous success until he advanced to the position of President in 1896.

"During his biennial term of office as President the duties connected with the chair seemed to tell upon his health. Always a nervous speaker, the part he had to play at public meetings was a source of anxiety to him, but no President ever filled the College chair with more conscientious regard of the trust which he considered his office entailed. When the College learned that the honour of knighthood was to be conferred upon him in 1897 the announcement was received with the greatest pleasure, for one and all of his brother Fellows knew that they could look on Sir George Duffey as a worthy recipient of such an honour and as one who would maintain the dignity of his position.

"The attendance at his funeral on Friday morning, the 16th inst., was in itself sufficient evidence of his popularity. On that occasion nearly every Fellow connected with the College was present, and if the most predominant feeling in the breasts of the younger Fellows was that of sorrow for a highly esteemed and departed colleague, among all the senior Fellows it was more the loss of a beloved and true friend that was felt."

JOHN BRENDON CURGENVEN, M.R.C.S.Eng., L.S.A.

We regret to announce the death of Mr. Curgenven on October 15th. He had attended a Branch meeting of the British Medical Association held at Tonbridge, and was returning in a railway carriage to Hildenborough, when he died quite suddenly. His age was 72. His pulse-rate had recently been as low as 48.

He was the eldest son of James Curgenven, of Tretawn, Cornwall. He was born in 1831, and was educated in Cornwall. In 1847 he became a pupil of his uncle, Peter Brendon, F.R.C.S., at Highgate, and entered as a student at St. Bartholomew's Hospital. In January of that year he inhaled ether as an anaesthetic in the presence of Mr. Whipple and Mr. Bate at Plymouth, he being the second person to "take" it in the West of England. He obtained the diploma of M.R.C.S. and L.S.A. in 1852, and was appointed Resident Medical Officer to the Royal Free Hospital in January, 1853.

In November, 1854, ill-health due to overwork during the cholera epidemic of that year compelled him to resign his post at that hospital.

Early in 1855 he was engaged by Lord Ward (the late Earl Dudley) to accompany him to the Crimea in a steam yacht as medical attendant and private secretary. During the two months spent in the Crimea he accompanied the Guards' Brigade as volunteer surgeon at the attack on the Redan, and was present with Lord Ward at the taking of Kertch, being among the first to land after the forts were blown up. The following day he assisted in dressing the wounded Russians in the infirmary. He subsequently had medical charge of Miss Nightingale on her voyage in the yacht from Balaclava to Scutari, when she was convalescent from fever.

Mr. Curgenven commenced practice in Bayswater in 1856. He married, in 1860, Josephine, daughter of Mr. Joseph Sadler, by whom he had a family of ten children, eight of whom are living. He filled the post of Honorary Secretary to the Harveian Society of London from 1862 to 1872, and organized committees on the subjects of infanticide (1866), venereal diseases (1867), and therapeutics (1868). On retiring from the secretaryship he was presented with an illuminated testimonial and a purse of money. In 1859, as member of the Provisional Committee, he assisted in founding the New Sydenham Society. In that same year he joined the Victoria Rifle Volunteers, and was present at the review held by the Queen in Hyde Park in 1860. Whilst a volunteer he performed the feat of hitting with the old Enfield rifle, whilst standing, at 100 yards, a shilling which was put up on a split stick by the Duke of Wellington. This shilling he wore on his watch-chain until his death.

Mr. Curgenven served on the Parliamentary Bills Committee of the British Medical Association, and assisted in drafting the first Habitual Drunkards Bill, acting with the late Mr. Ernest Hart on other committees—on Infant Mortality, Hospital Out-patient Administration, etc. He also served on committees of the Obstetrical Society on Infant Mortality, and on the Examination and Registration of Midwives (1869). He formed an association for promoting the extension of the Contagious Diseases Acts, of which Mr. Mitford, M.P., was chairman, and Mr. Curgenven and the late Mr. Berkeley Hill were honorary secretaries. Mr. Curgenven was examined by the Royal Commission on the subject, and obtained the signatures of 2,509 medical men and others to a memorial advocating the retention of the Acts. This was presented to the Home Secretary by 154 members of the House of Commons, Mr. Curgenven being present.

In 1869 he read a paper on Baby Farming before the Social Science Association, and drafted a Bill for the Protection of Infant Life. In the following year the famous baby-farming case occurred, and Mrs. Walters was hanged for murder. Mr. Curgenven then formed a society for the protection of infant life, of which Sir T. W. Charley was Chairman. The result of the labours of the Society, of which Mr. Ernest Hart, Mr. Wheeler, and others were members, was the passing of the Acts for the Protection of Infant Life, for the Amendment of the Bastardy Laws, and the Offences Against the Person Acts. In 1869 also he promoted the formation of the Paddington Committee of the Charity Organization Society, himself acting as its Honorary Secretary. He served, too, on several other committees, such as the Sanitary Committee of the Paddington Vestry, the Paddington Committee of the Bishop of London's Fund, and the Paddington Committee of the Cotton Districts' Relief Fund. He was a member of the Lay Helpers' Association, and Churchwarden of Christ Church, Lancaster Gate, for twenty-six years, being presented with a silver salver and a purse of 100 guineas on his resignation.

He was during these many years further engaged in a large general practice, which must have required almost constant attention, and the wonder naturally arises as to how he was also able to achieve this large amount of public work. He seems never to have spared himself if his efforts were required for the furtherance of any philanthropic object. He retired from practice in favour of his son, Mr. J. S. Curgenven, in 1890; since then he had occupied himself mostly with gardening, residing for a few years at Teddington, subsequently at Hildenborough. The funeral took place in the church of the latter parish on October 20th.

Mr. Marshall Weir, M.R.C.S.Eng., died somewhat suddenly on June 29th at his residence, Palermo, Knock, Belfast, in his 73rd year. He had retired from the active practice of his profession about two years previously. Most of his professional life, after a brilliant course in Belfast and London, was passed in Dromore, co. Down, where he held the post of Dispensary Medical Officer for nearly half a century; he was also Public Vaccinator Surgeon to the Royal Irish Constabulary and Certifying Factory Surgeon for the district, and was on the Commission of the Peace for co. Down. He was a warm advocate of the open-air treatment of consumption and contributed notes on the subject to the Registrar-General's return in 1865. He was a man of deep piety, ever seeking the spiritual as well as the physical welfare of his patients, and was universally loved by both rich and poor; he was a frequent and acceptable advocate of the "physiological righteousness" of temperance, especially as regards heredity, on which he wrote an able paper. As a medical friend wrote of him, "He was a thorough gentlemen and an ornament to his profession."

We regret to have to record the death of Professor Ernst Pflüger, the distinguished oculist, who died at Berne on September 30th. Professor Pflüger had held the Chair of Ophthalmology at the premier University of Switzerland for many years, and was widely known for his numerous contributions to this branch of surgery. He took a prominent part in advocating removal of the lens in high degrees of myopia and at the time of the occurrence of his last illness was actively co-operating in the arrangements for the International Congress of Ophthalmological Surgeons at Lucerne next September, of which he was Vice-President-elect. His death is a distinct loss to European ophthalmology.

MEDICO-LEGAL AND MEDICO-ETHICAL.

INQUEST ON MISS HICKMAN, M.D.

An inquest was held at the Police-court, Richmond, on Wednesday, October 21st, by Dr. Taylor, J.P., the District Coroner, on the body found in Richmond Park, which was alleged to be that of Miss Hickman, whose mysterious disappearance for nearly two months has excited great interest.

A maid employed at the house of Miss Hickman's father in Courtfield Gardens identified the clothes produced by the marks thereon as having belonged to Miss Hickman. She also identified a watch and chain and two bronze medals, one granted by the St. John Ambulance Brigade for proficiency in "First Aid," upon which the name of "Fanny Hickman" was engraved, and the other a medal won by her young mistress in a swimming competition.

Several little boys, of ages varying from 9 to 12, deposed that on October 18th they had been hunting for chestnuts in a game-preserved part of the Park, and that whilst searching in the heavy undergrowth they had suddenly come upon the body of a woman, that, struck with fright, they ran away home and only related what they had seen during the afternoon, and that they had difficulty in getting their parents to believe them and report the matter to the police.

Inspector Cleeve and several sergeants of police detailed the steps they took upon receiving the information that a body had been seen in a plantation in the park, and how late at night they instituted a search party, and after much difficulty traced the whereabouts of the body in consequence of the smell. They also related the result of a further search of the ground when daylight appeared, at which time they were able to find the various articles described by the maid, and also an empty medicine bottle, unlabelled and uncorked. They also stated that it would have been impossible for less than four people to have lifted the body over the fence surrounding the plantation, and explained that even as it was it required several constables to remove the body when found. They also negatived the idea of foul play.

Dr. Gardiner, living at Richmond, deposed that he was a registered medical practitioner, and police-surgeon of the division.

Examination before Removal.—Dr. Gardiner said: On Sunday, October 18th, about 10.30 p.m., I was summoned by the police to view the body of a woman that had been lying in one of the plantations in Richmond Park. The police required me to see it previous to removal. I went to the plantation and saw the body. The body was lying on the ground as near as I could guess about 8 yards from the iron fence which surrounded the plantation, and was covered by the leaves and boughs of rhododendrons. The body was lying on the left side and slightly prone, the head pointing towards the direction of Richmond Hill. The left arm was fully extended at right angles to the body palm up; the right arm was across the chest and tucked in below the left breast; the thighs were flexed slightly upon the abdomen, the legs flexed upon the thighs. The left leg was drawn up more than the right, and the right ankle was in the hollow of the left foot. The body was clothed, and the clothes were in no way disarranged. The head was separated from the body, and lay about 5 to 6 in. away and slightly behind the middle line; it was turned up as if looking over the right shoulder. The head and face were denuded of all soft parts with the exception of a little integument on the occipital bone. The lower jaw was detached and lying a little in front of the middle line of the body, partly covered by leaves and partly by a large straw hat, which was lying upon and among leaves, crown up. The lower jaw was devoid of tissue, and several teeth were lying beside it, having dropped from the jaw. The neck appeared to be gone, but in the line of the neck, and close to the body, I found the second cervical vertebra. The hands and feet appeared to be gnawed. Such examination as I could then make showed no signs of violence. The body was lying under boughs and on none. No boughs appeared to be broken beneath the body. The position of the body was as if the deceased had lain down to sleep or rest. The bushes formed a thick

screen above and around. The body appeared well nourished, and that of a large and powerfully-built woman. There was a pad of hair lying on the ground between the skull and the lower jawbone.

Post-mortem Examination.—Continuing Dr. Gardiner said: I made an examination later at the mortuary. I performed the *post-mortem* examination, assisted by Dr. Saward and in the presence of Mr. Pepper. The body was well nourished: no parts of the body exhibited marks of violence such as fractures of bone, bullet wounds, or cuts. The body was much decomposed: the skin in many places was absent, being apparently gnawed away. The head was entirely detached: the cervical vertebrae all detached with the exception of the seventh; all the other cervical vertebrae were missing with the exception of the second. The skull was denuded of all soft parts, and exhibited no fractures and no wounds, bullet or other. The face was long and oval; the upper and lower jaws when placed in position were opposed; many of the teeth in both jaws had dropped out; some were stopped with gold, and others with amalgam. The brain had gone. The hair was coarse and brown in colour, tied up behind with tape and fixed with ordinary hair pins, and was about 17 in. in length. The skin had been gnawed away in front of the chest to the bottom of the breast bone. The skin and soft tissues of the neck and shoulders were completely gone; the clavicles and first ribs were exposed. On the left side the soft tissues of hand and wrist were gnawed away, as also the skin of the lower half of back of the forearm. The fingers were missing, except part of the middle finger, and of this only the metacarpal bone was left. The skin of the right arm was gnawed away in the lower third of the dorsal aspect, and from the lower two-thirds of the palmar aspect of the forearm. All the fingers were missing. The skin and muscular tissue of the right lower limb were gnawed away; also the upper third of the leg; also the front and outer side of the ankle opening into the joint. The toenails were detached; that of the great toe was *in situ*; nearly all the epidermis of the sole was gone. The skin of the left lower limb had been gnawed away on the lower half of the leg; the skin of both legs was marked by the ribs of the stockings; the knees exhibited longitudinal ribbing due to the underclothing. The epidermis of the left sole was peeled forwards and stained black. The skin on the outer side of the abdomen and right hip was mottled green, less so on the left. A portion of the breast was left. The uterus was present and was virgin. The liver, spleen, and right kidney were entirely gone, as also the greater part of the intestines. The stomach was just discernible, the only contents a reddish-brown layer adherent to the walls, but it was impossible to ligature it. The left kidney was fairly well preserved in its capsule; the cortex and medulla could be recognized. A small part of the small intestine was healthy. The heart muscle and chordae tendineae could just be recognized; the lungs were shrunken, and formed a pultaceous mass; the tongue, pharynx, larynx, and oesophagus were all gone, also the trachea.

Conclusion.—My conclusion after careful examination is that Miss Hickman has been dead for about two months. I am of opinion that there is no evidence that death was due to external violence nor to starvation. I am of opinion that Miss Hickman entered the plantation alive, and lay down in the spot where she was found. I cannot give the cause of death, as the result of both examination and dissection is entirely negative. I have preserved the left kidney and portion of the small intestine left, and hold these for analysis should it be decided to examine these chemically. The height of the body, making all allowances, would be about 5 ft. 9 in. The missing vertebrae may be lying deep down in the soil or have been carried away away by animals. The greatest agency in the detachment of the head was decomposition—the rest due to the gnawing away of parts by animals. I have no doubt about this; it was not due to violence.

Mr. Pepper, M.S., F.R.C.S., Lecturer on Medical Jurisprudence at St. Mary's Hospital, corroborated all the evidence given by Dr. Gardiner. He mentioned that on the inside of the medicine bottle produced was a greenish deposit, freely movable, but he could not without analysis state what it was, nor could he add to the medical evidence already given.

Dr. Saward, who had assisted at the necropsy also confirmed the evidence.

The Coroner decided to adjourn the inquest for two weeks to enable the police and others to finish their inquiries; but before closing the court desired the jury to express their opinion as to the identity of the body, in order that he might issue order for burial.

The jury unanimously decided that the body which they had seen that day, and upon which the inquest was held, was that of Sophia Frances Hickman, M.D.

ELECTRO-VIGOUR.

We published last week, page 1022, a report of the prosecution before the magistrate at Bow Street of Lewis Bailes for wilfully and falsely pretending to be a doctor, and using the name and title of doctor, and for unlawfully using the title and description of M.B., implying that he was a bachelor of medicine. It will be remembered that it was stated by the prosecuting counsel that the defendant was connected with the McLaughlin Company, which advertised what they call their Electro-Vigour Treatment in various papers. Their readers were informed that on calling at the office of the company they would be under the care of a qualified physician. It was further stated that the defendant had been on the *Register* as a Bachelor of Medicine and a Bachelor of Surgery of the University of Durham; that he had been convicted of rape in 1894; and that thereupon the General Medical Council removed his name from the *Register*, and his university degrees were withdrawn from him. We recall these facts because we think it will be interesting to reprint from the *Daily News* of October 14th the following letter received by that paper from the Dr. McLaughlin Company:

"We understand that a case was tried at Bow Street to-day in which an old employé was charged with practising as a medical practitioner while in our employ some months ago, and that while he was thus practising his certificate all the time was cancelled.

"Let us say here that we had no knowledge whatever that his certificate had been cancelled and that he has sworn a declaration before our solicitors that he withheld the information from us.

"Of course, he is not in our employ now, but we thought it only right and proper you should know that, as we have already stated, we had no knowledge at the time his certificate was cancelled, and that immediately it was made known to us the man left our employ.

"Probably, under these circumstances, even had you thought of reporting the case, you will, in justice to ourselves, withhold it, because the action was in no way connected with us, but was brought by the Medical Defence Union against Mr. Baillies, who left our employ some time ago."

We may add that at least one other London paper appears to have received a similar communication from the company, although we have not seen it published elsewhere in full.

The following letter from Messrs. Hempsons, solicitors of the Medical Defence Union, was published in the *Daily News* of October 16th:

"ELECTRO-VIGOUR.

"Sir,—To your report of the prosecution by the Medical Defence Union (Limited) of Lewis Bailles, at Bow Street yesterday, before Mr. Marsham, published in your issue of this date, is appended a letter received by you from the 'Dr. McLaughlin Company,' to which Bailles was attached.

"This letter contains certain misstatements, and gives rise to certain misconceptions which it is necessary we should correct.

"It is stated by the company that Bailles was in their employ 'some months ago,' that they "had no knowledge whatever that his certificate had been cancelled,' and in the concluding paragraph of their letter they reiterate that Bailles left their employment 'some time ago.'

"Dealing first with the statement that the company were unaware that Bailles' 'certificate had been cancelled,' for the information of the public it is desirable that it should be known that no registered medical practitioner would be permitted by the governing bodies of his profession to hold office with any advertising electric belt company, and that if such a position were held by any registered practitioner he would most certainly be charged with infamous conduct in a professional respect before the General Medical Council, and have his name erased from the *Register*.

"Relatively to the date at which Bailles left the employ of the company we may say that one of our clerks, Mr. Tyrrell, was personally attended by him in his capacity of medical officer of the company on July 30th last; that Mr. Whitwell, another of our clerks, was similarly attended, and was medically examined by Bailles on September 21st last; that the summonses were served personally on him at the offices of the company on October 8th instant; and that we were informed on inquiry at the company's offices on the 9th instant that he was still there and could be consulted.

"These facts, we think, sufficiently disprove the statements made by the company in the letter which you publish.

"No comments at our hands are needed upon that portion of their letter requesting you to withhold the report of the trial.—Yours, etc.,

"HEMPSONS.

"Solicitors to the Medical Defence Union (Limited).

"55, King Street, Cheapside, E.C., Oct. 14th."

PAYMENTS BY FRIENDLY SOCIETY.

On October 13th, Judge W. F. K. Taylor, K.C., sitting at the Liverpool Court of Passage, heard a claim by Dr. O. E. Limrick against the Liverpool Shipwrights' Trade and Friendly Society in respect of fees alleged to be due. Mr. Rigby Swift appeared for the plaintiff; Mr. Tobin, K.C., and Mr. Greaves Lord for the defendants. It appeared that in April, 1892, the plaintiff was appointed to act as surgeon to the Society for a remuneration of 3s. 3d. per annum per member, with (as he alleged) a minimum payment of £20 a quarter. Within a few months of his appointment the payments to him fell below the agreed amount, and he now sought to recover £144 16s. 10½d., the amount in arrear. It was contended on the part of the defendants (1) that there was no agreement to pay any minimum amount to the plaintiff; (2) that as a matter of fact the plaintiff was to receive only half the sum of 3s. 3d.; (3) that in so far as the claim referred to fees owing since June, 1897, it was barred by the statute of limitations. His Honour in summing up to the jury invited them to consider whether the Society could have fixed a minimum payment when the subscriptions to the doctor's fund by the members might have fallen short by that amount. The jury, after a brief absence from court, gave a verdict for the defendants.

MEDICAL ETIQUETTE.

RUSTICUS.—Under the circumstances related A. should not, in our opinion have called upon the patient.

OPTICIANS AS OCULISTS.

MYOPIA asks us to express our opinion of an arrangement by which a qualified medical practitioner agrees to assist an optician who is a member of the British Optical Association and of the Spectacle Makers' Company by attending at the optician's place of business to examine any patient whom the optician finds himself unable to benefit.

*** In our opinion the practitioner who made such an arrangement would put himself in a position which was not only undignified but distinctly unprofessional.

MEDICAL OFFICERS OF INSURANCE COMPANIES.

A CORRESPONDENT submits the two following questions: (1) Is it correct for a medical man acting on behalf of an insurance company to visit and examine a patient without the knowledge and consent of the medical man in charge? (2) Is it any excuse to say that the fees offered by the insurance company are insufficient to allow the exercise of the usual professional courtesy; on the other hand does not this excuse aggravate the fault?

*** (1) The medical officer of the insurance company is bound to give due notice to the patient of his intended visit, and request the patient to secure the presence of his medical attendant. (2) It is no excuse.

BEQUESTS TO HOSPITALS.—Under the will of the late Mr. George Frederick Canti, of Hove, £1,000 has been bequeathed to the Sussex County Hospital and £500 each to the Earlswood Asylum for Idiots, the North London Consumption Hospital (Mount Vernon), the Hospital for Incurables at Putney, and the Alexandra Children's Hospital at Brighton.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,466 births and 4,573 deaths were registered during the week ending Saturday last, October 17th. The annual rate of mortality in these towns, which had been 16.3, 15.3, and 15.8 per 1,000 in the three preceding weeks, was again 15.8 per 1,000 last week. The rates in the several towns ranged from 3.3 in Hornsey, 7.1 in Barrow-in-Furness, 7.2 in Handsworth, 7.9 in Grimsby, 8.1 in Croydon and in Burton-on-Trent, 8.2 in King's Norton, and 9.0 in Wallasey, to 20.2 in West Hartlepool, 20.3 in Manchester, 21.1 in Stockton-on-Tees, 21.5 in Burnley, 21.8 in Tynemouth, 22.3 in Hanley, 24.2 in Salford, and 26.3 in Middlesbrough. In London the rate of mortality was 15.3 per 1,000, while it averaged 16.1 in the seventy-five other large towns. The death-rate from the principal infectious diseases in the seventy-six towns averaged 2.2 per 1,000; in London this death-rate was equal to 2.0 per 1,000, while it averaged 2.3 in the seventy-five large provincial towns, and ranged upwards to 4.0 in Great Yarmouth, 4.1 in Preston, 4.4 in Smethwick, 5.8 in Northampton and in Hanley, 5.9 in West Ham, 6.0 in Middlesbrough, 6.5 in Merthyr Tydfil, and 6.8 in Burnley. Measles caused a death-rate of 1.1 in Stockport, 1.7 in Sunderland, and 3.1 in Warrington: scarlet fever of 1.1 in Swansea; diphtheria of 2.0 in Great Yarmouth: "fever" of 1.0 in Walthamstow, 1.3 in Rhondda, and 2.2 in Merthyr Tydfil: and diarrhoea of 3.3 in Birmingham, 3.6 in Preston, 4.1 in Hanley, 4.4 in Middlesbrough and in Merthyr Tydfil, 4.6 in West Ham and in Northampton, and 5.2 in Burnley. The mortality from whooping-cough showed no marked excess in any of the large towns. No fatal case of small-pox was registered last week either in London or in any of the large provincial towns. The number of small-pox patients under treatment in the Metropolitan Asylums Hospitals, which had been 29, 21, and 17 at the end of the three preceding weeks, had further declined to 11 at the end of last week; one new case was admitted during the week, against 1, 1, and 2 in the three preceding weeks. The number of scarlet-fever cases in these hospitals and in the London Fever Hospital on Saturday last, October 17th, was 1,860, against 1,886, 1,876, and 1,881 on the three preceding Saturdays; 208 new cases were admitted during last week, against 293, 235, and 240 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, October 17th, 992 births and 527 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 16.8, 17.3, and 16.0 per 1,000 in the three preceding weeks, rose again last week to 16.1 per 1,000, and was 0.3 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 13.3 in Aberdeen and 13.5 in Edinburgh, to 17.7 in Glasgow and 20.1 in Perth. The death-rate from the principal infectious diseases averaged 2.2 per 1,000 in these towns, the highest rates being recorded in Glasgow and Perth. The 268 deaths registered in Glasgow included 1 which was referred to small-pox, 11 to measles, 2 to scarlet fever, 6 to whooping-cough, and 24 to diarrhoea. Three fatal cases of scarlet fever and 2 of diphtheria were recorded in Edinburgh. Two deaths from "fever" and 2 from diarrhoea occurred in Dundee; 4 from diarrhoea in Aberdeen, and 3 from diarrhoea in Leith.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, October 17th, 587 births and 301 deaths were registered in six of the principal Irish towns, against 538 births and 330 deaths in the preceding period. The mean annual death-rate of these towns, which had been 15.8, 19.2, and 16.8 per 1,000 in the three preceding weeks, rose to 17.3 per 1,000 in the week under notice, this figure being 1.5 above the mean annual rate during the corresponding period in the seventy-six English towns. The deaths in these six Irish towns ranged from 10.1 in Limerick and 13.0 in Cork to 19.9 in Dublin and 31.2 in Waterford. The death-rates from the principal zymotic diseases in these six Irish towns averaged during the week 1.5 per 1,000 or 0.5 more than during the preceding period. The highest point, 2.8, was reached in Belfast, while Waterford registered no deaths from zymotic disease at all. In Dublin no deaths from small-pox, measles, scarlet fever, diphtheria, or simple continued fever were registered, but 1 was ascribed to whooping-cough, 2 to enteric fever, and 5 to diarrhoeal diseases. In Belfast 3 death were due to scarlet fever, 5 to enteric, 9 to diarrhoeal diseases, and 1 each to measles and diphtheria.

THE HEALTH OF DERBYSHIRE.

The report of Dr. Sidney Barwise, the Medical Officer of Health for Derbyshire, for 1902, states that the area of the county is 646,597 acres, and its population 497,056. This gives less than one person (0.76) to the acre. The average number of persons to the acre in the urban districts is 2.8, and in the rural 0.44. The birth-rate is returned as 32.6, as compared with 28.6 for England and Wales, and it is stated that it is not diminishing in Derbyshire so rapidly as in the country generally. The death-rate for the county is 15.1, as compared with 16.3 for England and Wales. As the decennial average death-rate for Derbyshire (1891-1900) was 16.8, this is a marked improvement. Dr. Barwise inserts an interesting table on the expectation of life in each of his urban and rural districts. For the whole county the figure is 59.5, as compared with 47.7 for England and Wales. The census returns show that there has been a decided improvement in the matter of housing, to which Dr. Barwise draws special attention. In 1801 there were 5.02 persons per house, while in 1901 the number per house fell to 4.96. As a matter of fact the improvement in many parts of the county is much more marked than this. For instance, in 1891 the largest percentage of tenements with less than four rooms was, at Ashbourne, 30 per cent. At the 1901 census this proportion had fallen to 23.9 per cent. There were 56 cases of small-pox, with 1 death. Some of the districts are still without isolation hospital provision. In regard to diphtheria emphasis is laid upon the importance of antitoxin and its early administration.

The incidence of enteric fever and epidemic diarrhoea has been remarkably low in Derbyshire, as elsewhere, and this is attributed to the wet season laying the dust. Dr. Barwise observes that though a high infantile mortality-rate in any particular year may be due to some passing influence, yet when the rate is persistently high year after year it must be caused by local insanitary conditions which ought to be discovered and remedied. In relation to this question he thinks industrial conditions, improper feeding, and premature birth and congenital defects are the chief causes; and better sanitation, paving of yards, etc., coupled with sterilized milk supplies, leaflets of information, and education of girls in schools are the the chief directions in which a remedy should be sought. Detailed instruction in the prevention of infection in elementary schools, and a number of particulars as to phthisis and cancer are furnished in the report. An abstract of the Midwives Act is added, and an account of the work under the Factory Act, which appears to be less than might be expected. Another subject conspicuous by its almost entire absence from the Derbyshire report is the question of dairies, cowsheds, and milkshops. The number of such places registered and inspected is altogether inadequate in regard to one of the greatest milk-producing counties in England. If Dr. Barwise would devote, say, ten pages every year to a constructive criticism of the management of the milk trade in his county, it would be of great service to other councils besides his own. About 80 pages out of the 140 constituting the report are abstracts of local medical officers' reports.

ENGLISH URBAN MORTALITY IN THE THIRD QUARTER OF 1903.

[Specially Reported for the "British Medical Journal."]

The vital statistics of the seventy-six large towns dealt with in the Registrar-General's weekly returns are summarized in the accompanying table. During the three months ending September last, 112,123 births were registered in these towns, equal to an annual rate of 29.8 per 1,000 of their aggregate population, estimated at 15,075,011 persons in the middle of the year; this rate was 0.7 per 1,000 below the birth-rate in the corresponding quarter of the preceding year. In London the birth-rate last quarter was 28.4 per 1,000, while it averaged 30.5 in the seventy-five large provincial towns, and ranged from 16.6 in Bournemouth, 19.3 in Hastings, 21.3 in Halifax, 21.4 in Hornsey, 22.9 in Rochdale, 23.2 in Huddersfield, 23.7 in Bradford, and 23.8 in Bury, to 35.3 in Wigan, 35.4 in West Bromwich, 35.6 in Warrington, 36.0 in Gateshead, 38.0 in Middlesbrough, 38.1 in St. Helens, 39.0 in Merthyr Tydfil, and 40.4 in Rhondda.

During the quarter under notice 56,761 deaths were registered in these seventy-six towns, corresponding to an annual rate of 15.1 per 1,000, which was slightly below the rate in the third quarter of last year. In London the rate of mortality was 14.1 per 1,000, while it averaged 15.6 per 1,000 in the seventy-five large provincial towns, among which the death-rates ranged from 7.1 in Hornsey, 8.4 in Handsworth, 8.6 in Kings Norton, 9.6 in Croydon and in East Ham, 9.7 in Leyton and in Bournemouth, and 10.2 in Willesden, to 19.7 in Liverpool and in Warrington, 19.8 in Birkenhead and in Newcastle-on-Tyne, 20.1 in Wigan, 20.9 in Sheffield, 21.5 in Bootle, and 22.1 in Middlesbrough.

The 56,761 deaths from all causes in these towns last quarter included 9,972 which were referred to the principal infectious diseases; of these, 57 resulted from small-pox, 846 from measles, 480 from scarlet fever, 628 from diphtheria, 839 from whooping-cough, 426 from "fever" (principally enteric), and 6,696 from diarrhoea. The death-rate from these diseases averaged 2.66 per 1,000, being slightly above the mean rate in the corresponding period of last year. In London these diseases caused a death-rate of 2.20 per 1,000 while the rate averaged 2.85 in the seventy-five large provincial towns, and ranged from 0.3 in Hornsey, 0.37 in Bournemouth and in Kings Norton, 0.39 in Burton-on-Trent, 0.42 in Hastings, 0.82 in Barrow-in-Furness, 0.84 in Croydon and in West Hartlepool, and 0.87 in Halifax, to 4.55 in Aston Manor, 4.63 in Burnley, 4.70 in Middlesbrough, 4.73 in Hull, 4.83 in Wigan, 4.92 in Birkenhead, 6.67 in Sheffield, and 6.80 in Bootle. The fatal cases of small-pox registered during the quarter included 16 in Liverpool, 7 in Newcastle-on-Tyne, 5 in Leeds, 4 in York, 4 in Gateshead, 3 in London, 3 in Hanley, and 3 in Halifax. The death-rate from measles was equal to 0.23 per 1,000, against 0.37 in the corresponding period of last year; in London the death-rate from this disease was 0.21 per 1,000; among the seventy-five other towns measles was proportionally most fatal in Ipswich, Coventry, Leicester, Stockport, Warrington, Sheffield, Middlesbrough, Sunderland, and Merthyr Tydfil. The mortality from scarlet fever was equal to an annual rate of 0.13 per 1,000, or 0.06 per 1,000 less than the rate in the third quarter of last year. In London the scarlet fever death-rate was only 0.08 per 1,000, while it averaged 0.15 in the seventy-five large provincial towns, among which the highest death-rates from this disease were recorded in Great Yarmouth, Walsall, Birmingham, Stockport, Bootle, Bury, Tynemouth, and Rhondda. The mean death-rate from diphtheria in the seventy-six large towns was 0.17 per 1,000, showing a decline of 0.04 per 1,000 from that recorded in the corresponding period of last year; in London this death-rate was equal to 0.13 per 1,000, while it averaged 0.18 in the seventy-five large provincial towns, the highest rates being recorded in Portsmouth, Great Yarmouth, Hanley, Birmingham, Wigan, Manchester, Salford, Rotherham, and South Shields. The fatal cases of whooping-cough were equal to an annual rate of 0.22 per 1,000, against 0.36 per 1,000 in the third quarter of last year; in London this disease caused a death-rate of 0.19 per 1,000, and an average rate of 0.24 per 1,000 in the seventy-five other large towns, among which the greatest proportional mortality from this disease occurred in West Ham, Walthamstow, Warrington, Oldham, Rochdale, Burnley, Preston, Sheffield, and Newport (Mon.). The death-rate from "fever" averaged 0.11 per 1,000 in the seventy-six large towns, and was 0.07 per 1,000 below the rate in the corresponding period of last year; in London the "fever" death-rate was 0.08 per 1,000, while it averaged 0.13 per 1,000 in the seventy-five large provincial towns, among which "fever" was proportionally most fatal in Southampton, Grimsby, Liverpool, Bootle, St. Helens, Bolton, Salford, Preston, and Merthyr Tydfil. The mortality from diarrhoea was equal to an annual rate of 1.78 per 1,000, against 1.23 in the third quarter of last year. The rate in London was 1.51 per 1,000, while it averaged 1.9 in the seventy-five other large towns, being highest in Aston Manor, Grimsby, Birkenhead, Bootle, Wigan, Burnley, Sheffield, and Hull.

Infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births, was equal to 159 per 1,000 last quarter, against 146 in the corresponding period of the preceding year. In London the proportion, during the quarter under notice, was 141 per 1,000, while it averaged 166 in the seventy-five other large towns, and ranged from 50 in Hornsey, 65 in Bournemouth, 80 in Coventry, 85 in Hastings, 85 in Handsworth, 87 in Kings Norton, 92 in Croydon, and 93 in Barrow-in-Furness, to 233 in Grimsby and in Stockport, 234 in Aston Manor and in Hull, 239 in Bootle, 251 in Burnley, 258 in Sheffield, and 260 in Birkenhead.

Analysis of the Vital Statistics of Seventy-Six of the Largest English Towns during the Third Quarter of 1903.

Towns.	Estimated Population middle of 1903.	Births.	Deaths.	Annual Rate per 1,000 Living. Births.	Deaths.	Principal Infectious Diseases.	Deaths from Principal Infectious Diseases.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping-Cough.	Fever.	Diarrhoea.	Deaths of Children under one year of age to 1,000 Births.	Rate per cent. of Uncertified Deaths.
76 Towns	15,075,011	112,123	56,761	29.8	15.1	2.66	9,972	57	846	480	628	839	426	6,696	159	1.0
75 Provincial Towns	10,461,199	79,477	40,579	30.5	15.6	2.85	7,443	54	599	389	481	622	339	4,959	166	1.3
London	4,613,812	32,646	16,182	28.4	14.1	2.20	2,529	3	247	91	147	217	87	1,737	141	0.3
Croydon	141,157	909	338	25.8	9.6	0.84	29	—	1	—	3	1	2	22	92	—
Willesden	127,077	1,049	322	33.1	10.2	1.85	59	—	2	6	3	7	3	38	105	—
Hornsey	78,386	418	138	21.4	7.1	0.30	6	—	—	—	1	2	—	3	50	—
Tottenham	109,749	875	290	32.0	10.6	1.59	43	—	1	1	2	7	1	31	128	—
West Ham	281,894	2,417	1,007	34.4	14.3	3.72	262	—	26	3	18	32	10	173	160	—
East Ham	110,451	946	265	34.4	9.6	1.88	52	—	3	1	2	7	6	33	118	—
Leyton	107,153	838	259	31.4	9.7	1.59	43	—	3	6	6	5	3	20	105	1.5
Walthamstow	106,290	872	304	32.9	11.5	3.09	82	—	12	1	4	16	4	45	142	0.3
Hastings	66,194	318	191	19.3	11.6	0.42	7	—	—	—	—	2	—	5	85	1.0
Brighton	125,405	774	411	24.8	13.1	1.62	51	—	3	—	6	4	1	37	136	0.2
Portsmouth	194,960	1,332	688	27.4	14.2	2.58	126	—	4	9	23	6	8	76	134	1.0
Bournemouth	63,132	262	153	16.6	9.7	0.37	6	—	—	1	1	—	—	4	65	0.7
Southampton	110,120	777	386	28.3	14.1	2.29	63	—	—	2	8	5	9	39	140	—
Reading	75,082	511	202	27.3	10.8	1.30	24	—	—	1	5	5	1	12	113	1.0
Northampton	89,863	623	273	27.8	12.2	1.64	37	—	1	5	1	4	2	24	109	1.1
Ipswich	68,818	497	273	29.0	15.9	2.92	50	—	31	—	2	1	—	16	161	1.1
Great Yarmouth	51,851	352	245	27.2	19.0	2.71	35	—	—	6	13	—	1	15	162	—
Norwich	114,351	785	362	27.5	12.7	2.67	76	—	—	1	1	2	2	70	168	1.1
Plymouth	112,022	715	399	25.6	14.3	1.79	50	—	3	3	4	5	4	31	141	0.8
Devonport	73,815	521	229	28.3	12.4	1.31	24	—	1	2	2	4	—	15	125	0.4
Bristol	338,895	2,286	1,015	27.1	12.0	1.12	95	—	1	12	19	9	4	50	107	0.7
Hanley	63,205	532	268	33.8	17.0	4.24	67	3	1	1	12	—	3	47	171	0.4
Burton-on-Trent	51,450	331	136	25.8	10.6	0.39	5	1	—	—	—	—	—	4	100	0.7
Wolverhampton	96,947	732	332	30.3	13.7	2.48	60	—	5	3	2	—	4	46	127	0.3
Walsall	89,878	764	360	34.1	16.1	2.75	62	—	—	7	3	5	3	44	157	0.8
Handsworth	57,557	372	121	25.9	8.4	1.19	17	—	5	2	—	—	—	10	86	1.7
West Bromwich	66,558	588	193	35.4	11.6	1.44	24	—	—	2	3	2	—	17	104	2.1
Birmingham	533,039	4,284	2,174	32.2	16.4	3.47	464	2	23	36	42	21	13	327	170	1.9
Kings Norton	63,717	461	137	29.0	8.6	0.37	6	—	1	1	1	1	—	2	87	2.2
Smethwick	58,787	499	163	34.0	11.1	1.03	15	1	1	—	2	1	3	7	134	3.1
Aston Manor	79,417	555	284	28.0	14.3	4.55	90	—	10	4	—	3	—	73	234	0.4
Coventry	72,684	549	249	30.3	13.7	1.99	36	—	16	—	3	4	—	13	80	1.6
Leicester	220,272	1,472	763	26.8	13.9	2.46	135	1	32	1	3	4	2	92	181	1.3
Grimsby	65,772	467	265	28.5	16.2	4.51	74	—	—	4	1	1	12	56	233	1.1
Nottingham	245,985	1,794	961	29.3	15.7	3.06	188	—	19	11	17	23	11	107	176	0.5
Derby	118,707	814	386	27.5	13.0	1.25	37	—	2	—	—	6	2	27	150	—
Stockport	95,709	725	435	30.4	18.2	4.10	98	—	18	7	1	5	5	62	233	—
Birkenhead	113,598	890	561	31.4	19.8	4.92	139	—	1	4	1	12	3	118	260	0.5
Wallasey	58,258	406	193	28.0	13.3	2.00	29	—	—	2	2	1	—	24	155	2.6
Liverpool	716,810	6,063	3,527	33.9	19.7	3.96	706	16	10	44	39	57	46	494	201	2.6
Bootle	60,761	514	326	33.9	21.5	6.80	103	1	—	13	2	2	6	79	239	3.1
St. Helens	87,259	829	373	38.1	17.1	2.99	65	—	—	3	4	5	5	48	145	4.6
Wigan	62,165	547	312	35.3	20.1	4.83	75	—	3	3	5	5	—	59	227	0.6
Warrington	66,370	589	326	35.6	19.7	4.47	74	—	14	2	—	9	1	48	182	3.7
Bolton	173,401	1,108	790	25.6	18.3	3.56	154	—	3	10	11	—	10	120	209	0.3
Bury	58,313	346	242	23.8	16.6	3.52	51	—	4	4	2	1	1	39	228	2.5
Manchester	553,486	4,511	2,540	32.7	18.4	3.19	441	2	53	14	44	24	16	288	185	1.7
Salford	226,480	1,911	1,005	33.8	17.8	3.86	219	—	7	11	29	12	14	146	177	0.6
Oldham	138,786	927	531	26.8	15.3	1.86	64	1	9	4	10	16	4	20	113	0.2
Rochdale	84,824	484	287	22.9	13.6	1.45	31	—	—	3	2	13	3	10	130	3.5
Burnley	99,469	672	462	27.1	18.6	4.63	115	—	1	2	6	16	5	85	251	0.6
Blackburn	131,218	837	421	25.6	12.9	1.46	48	—	17	2	6	3	4	16	133	2.4
Preston	114,404	897	451	31.5	15.8	3.13	89	—	9	3	4	14	7	52	137	2.2
Barrow-in-Furness	59,009	452	161	30.7	10.9	0.82	12	—	2	—	2	2	3	3	93	3.1
Huddersfield	94,963	549	351	23.2	14.8	0.88	21	—	—	5	2	1	1	12	111	0.3
Halifax	106,754	566	348	21.3	13.1	0.87	23	3	2	1	1	5	—	11	117	1.7
Bradford	283,412	1,674	1,009	23.7	14.3	1.85	131	—	—	9	4	13	13	92	154	0.7
Leeds	443,559	3,276	1,729	29.6	15.6	2.76	306	5	23	29	11	32	11	195	177	0.5
Sheffield	425,528	3,545	2,221	33.4	20.9	6.67	708	—	135	22	9	77	14	451	258	2.0
Rotherham	57,212	486	234	34.1	16.4	4.21	60	—	1	3	5	5	3	43	179	3.8
York	80,186	593	282	29.7	14.1	2.50	50	4	1	2	1	9	3	30	177	—
Hull	249,639	2,024	1,150	32.5	18.5	4.73	294	1	8	3	10	2	8	202	234	0.8
Middlesbrough	95,013	899	523	38.0	22.1	4.70	111	—	21	1	3	4	3	79	207	2.1
Stockton-on-Tees	51,965	407	176	31.4	13.6	1.62	21	—	—	1	3	2	1	14	120	0.6
West Hartlepool	67,201	539	230	32.2	13.7	0.84	14	—	2	1	1	3	1	6	132	0.4
Sunderland	149,572	1,271	696	34.1	18.7	2.90	108	—	25	4	11	13	4	51	167	1.9
South Shields	105,325	873	427	33.2	16.3	1.56	41	1	3	3	9	—	2	23	141	4.2
Gateshead	115,531	1,037	505	36.0	17.5	2.81	81	4	—	6	1	7	—	63	182	3.2
Newcastle-on-Tyne	222,241	1,756	1,099	31.7	19.8	2.26	125	7	—	7	11	19	1	80	200	0.5
Tynemouth	52,531	454	227	34.7	17.3	2.15	28	1	—	4	3	1	1	18	161	0.4
Newport (Mon.)	70,217	544	269	31.1	15.4	3.02	53	—	4	—	—	16	3	30	169	—
Cardiff	172,598	1,328	504	30.9	11.7	1.74	75	—	3	6	4	4	6	52	118	0.2
Rhondda	119,652	1,204	441	40.4	14.8	3.43	102	—	—	13	8	8	6	67	158	0.7
Merthyr Tydfil	71,651	697	308	39.0	17.2	2.40	43	—	10	4	1	4	9	15	129	—
Swansea	95,489	756	365	31.7	15.3	1.47	35	—	3	2	—	5	2	23	143	0.5

The causes of 564, or 1.0 per cent., of the deaths in these seventy-six towns last quarter were not certified, either by a registered medical practitioner or by a coroner. The causes of all the deaths were duly certified in Croydon, Willesden, Hornsey, Tottenham, West Ham, East Ham, Southampton, Great Yarmouth, Derby, Stockport, York, Newport (Mon.), and Merthyr Tydfil; while the highest proportions of uncertified deaths were registered in Smethwick, Bootle, St. Helens, Warrington, Rochdale, Barrow-in-Furness, Rotherham, South Shields, and Gateshead.

GUERNSEY.

The report of Dr. Draper Bishop, Medical Officer of Health for the island of Guernsey, is the fourth annual report which has been issued, and shows that during the last ten years the population has risen from 35,529 to 40,550, or an increase of about 14 per cent. The general death-rate for the year was 16.2 per 1,000, while that of infants under 1 year was 142.7 for each 1,000 births registered. The birth-rate was 27.8 per 1,000, which is 0.6 less than that in England and Wales during the same period. From the returns with regard to diphtheria, it would appear that this disease in Guernsey still bears more heavily on rural than on urban populations. The tuberculosis death-rate appears to be 1.25 per 1,000. The report draws attention to the need for improvement in the system of death registration. A large number of deaths at present are registered without any medical certificate at all, and statements such as "a complication of diseases" figure as causes of death. It is stated that an admirable *Projet de Loi* dealing with the matter has been prepared, and a hope is expressed that the Royal Court will soon see fit to pass it. This hope will be shared by all who are interested in matters appertaining to public health. The tables included in the report appear to be those recommended by the Society of Medical Officers of Health. For the sake of bringing things into line it would be as well if the tables demanded by the Local Government Board in England were included as well, especially as the post of Medical Officer of Health of Guernsey is one of comparatively recent introduction.

NEW MILK REGULATIONS, CITY OF LONDON.

The Corporation of London has issued new regulations as to milk stores, milkshops, etc., and as to precautions against infection and contamination of milk within the City of London. The regulations are of course made under the Dairies, Cowsheds, and Milkshops Order, and are drawn up in the main on the lines of the Model Regulations, and were to come into force on and after September 1st, 1903. Previous regulations are revoked. We are glad to learn of these new regulations and think the London County Council might well issue new regulations for the whole of London outside the city. We believe it is a fact that notwithstanding the growth of knowledge respecting milk supply and control the regulations now nominally in force in the metropolis are the same as those in force under the old Metropolitan Board of Works.

MUNICIPAL MILK DEPÔTS.

In the British Medical Journal of April 25th, 1903, page 973, we gave some account of the infant milk dépôt and stations maintained by the Battersea Borough Council. We learn that the Local Government Board auditor surcharged the Borough Council with part of the expenditure upon the infant milk dépôt. Representations were made to the Local Government Board on the subject, and its decision was expressed in a letter dated September 25th, as follows:

"The Board concur in the auditor's opinion that there was no legal authority for the expenditure being charged upon the general rates fund of the borough, and they accordingly confirm his decision as lawful. They are prepared, however, to remit the disallowance in the exercise of the equitable jurisdiction conferred upon them, and they enclose a certificate to that effect."

The Borough Council of Battersea has now addressed a communication to the Local Government Board asking them to authorize the Council to continue under the Local Authorities Expenses Act, 1887, the expenditure referred to.

The Local Government Board having by its action raised the question of the power of borough councils to expend money upon milk depôts as part of the care for public health which it is the duty of such councils to exercise, we hope that the matter will now definitely be set at rest, and that the excellent work done at Battersea and elsewhere in this respect may be continued.

TEIGNMOUTH ISOLATION HOSPITAL.

It has been decided by the sanitary authority of Teignmouth to abandon the isolation hospital which it has used up to the present, and the fears of various property-owners that a site in their neighbourhood may be selected for a new hospital and their property thereby deteriorated in value has apparently led them to question the necessity of ceasing to use the old building. The circumstances of the latter, however, as revealed in a letter from Dr. Davy, the Senior Physician of the Devon and Exeter Hospital, published in the *Western Morning News*, makes it evident that abandonment of the building was not only inevitable but a matter of urgency. This letter was originally addressed to a colleague whom he had met in consultation on a patient isolated for diphtheria at the hospital. It shows that the hospital was so close to some gasworks as practically to form part of them, and that the patient in question was suffering not more from diphtheria than from chronic gas poisoning. The source of the latter was shown with great probability to be emanations from a stock of from 200 to 1,000 tons of small coal stored beneath the building, aided by the gases released from time to time from the gas purifiers. Besides this dangerous condition of things, Dr. Davy pointed out in his letter that the building lacked most of the essentials of an efficient isolation hospital, and with his conclusions, his colleague Dr. Johnson, who authorized the publication of the letter, entirely agreed.

UNQUALIFIED DISPENSERS IN POOR-LAW PRACTICE.

Another (Scotland) states that in the district where he is practising he holds the appointment of medical officer to the parish, having to attend to the poor within a certain area. The contract for supplying drugs, etc., has been since he came into office in the hands of another practitioner in the district who keeps an unqualified dispenser in his open surgery. Our correspondent is not satisfied that his prescriptions are correctly dispensed. He states that he has called and complained without effect, and is of opinion that if he reports the matter to the parish council he would be certainly accused of spite or jealousy. He mentions that there is a chemist and druggist within the same district, and the contract for supplying drugs is usually given to a chemist when there is one in the district. He asks, How is it that the decision of the General Medical Council can be so flagrantly ignored in this case? He states that if he were to open a shop himself for consulting purposes he would require to conform to the law of the Council and employ a qualified chemist or dispense only his own prescriptions.

*** We would recommend that our correspondent, after satisfying himself that his facts are quite accurate, should write to the practitioner referred to, and state that unless a qualified assistant is put in charge of the dispensary he will decline to send his prescriptions there, and would consider it his duty to bring the matter before the parish council, and, if necessary, before the Local Government Board. If there is any breach of the Medical Act, or the Pharmacy Act, the matter could be brought before the General Medical Council or the Pharmaceutical Society.

MEDICAL NEWS.

The first scientific meeting of the Zoological Society of London will be held on Tuesday, November 3rd, at 8.30 p.m., at the house of the Society, 3, Hanover Square, W.

The Goldsmiths Company have made a donation of £25 to the funds of the Imperial Vaccination League, 53, Berners Street, London, W.

The Princess of Wales has consented to become a patron of the British Lying-in Hospital, Endell Street, London, W.C. This hospital was founded in 1749, and is the oldest of its kind in London.

Successful Vaccination.—Dr. A. G. Bateman Lory, medical officer and public vaccinator for the Chudleigh District of the Newton Abbot Union, has for the second time received the grant for successful vaccination from the Local Government Board.

At a special meeting of the Council of the Charity Organization Society which will be held at the Royal United Service Institution, Whitehall, on Monday next, at 4.30 p.m., Dr. Edmund Cautley will read a paper on out-patient departments and the rearing of children. The chair will be taken by Sir W. J. Sendall, G.C.M.G.

The Guild of St. Luke.—The annual medical service of the Guild was held on the evening of October 21st, in St. Paul's Cathedral. A large congregation was present, including about 120 members of the medical profession, who, wearing academical costume, assembled near the west door, and, preceded by the cross-bearer and the officers of the Guild, walked in procession up the nave to reserved seats under the dome. The Master and Wardens of the Apothecaries' Company occupied seats in the choir. As the clergy and choir advanced up the nave, the processional hymn "To the name of our salvation" was sung. The musical portion of the service was rendered by members of the London Church Choir Association, under the direction of Dr. H. Walford Davies. An opening voluntary was played by Dr. Grabham. Mr. F. B. Kiddle afterwards presided at the organ. The service was intoned by Minor Canon Morgan-Brown, and the lessons were read by the Rev. W. H. Jervois. The sermon was preached by Prebendary H. Montague Villiers, Vicar of St. Paul's, Knightsbridge, who chose for his text Job xxxii, 8, "But there is a spirit in man, and the inspiration of the Almighty giveth them understanding." He said that to no class of men were the inexorable problems of life's painful riddles so continually presented as to men in the profession of those before him and in his own. The world was full of mystery and problems of suffering, but amid them all there was peace for the believer who trusted God. Though suffering on earth might be punishment for sin, it was never safe to argue that it was so in every case. If the problem of their professions could be solved it must be through the incarnation of Christ; in no other way was it soluble. The great lesson of the incarnation had taught, or should have taught, us complete trust in God, without which all else was a burdensome enigma. Unbelief was not infrequently of moral origin. After the sermon a collection was made on behalf of the mission work of the Guild.

The Metropolitan Asylums Board.—At the last ordinary meeting of the Metropolitan Asylums Board a report was received from the Hospitals Committee stating that it had

informed the Local Government Board that it did not propose to proceed with the additions to Joyce Green Hospital until the spring, by which time it was hoped that there would be so little small-pox that workmen could be employed without danger; in the contrary event vaccination of the workmen employed would be enforced, and arrangements made for the residence of the men upon the premises. At the same time the Hospitals Committee was authorized to take all necessary steps to defend an action threatened in respect of the spread of scarlet fever in the family of a patient who was alleged to have been prematurely discharged. The total number of small-pox cases under treatment at the date of the meeting was 13, as against 22 a fortnight previously.

"Society for Relief of Widows and Orphans of Medical Men.—A quarterly court of the Directors of the Society was held on October 14th, the President, Mr. Christopher Heath, being in the chair. Three new members were elected; the death of a member was reported, and the resignation of a member accepted. The death of a widow, aged 87, who had been receiving £50 per annum since May, 1890, was announced. Applications for assistance were read from three orphans of a member who died in 1899, and grants at the rate of £12 per annum made them. Applications for renewal of grants were made from 53 widows, 16 orphans, and 4 recipients from the Copeland Fund, and £1,321 was voted to be distributed among them at the next court, subject to the report of the Visitors. It was resolved to make the usual present at Christmas to the widows and orphans on the funds—namely, £10 to each widow, £3 to each orphan, and £5 each to the four orphans on the Copeland Fund, in all £589. The expenses of the quarter were £64 14s. 6d.

MEDICAL VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham Road.—Resident Medical Officer. Salary at the rate of £40 per annum.

BIRKENHEAD UNION.—Resident Medical Officer for the Infirmary, Workhouse, and Sanatorium. Salary £120 per annum.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—House-Surgeon, resident. Salary, £140 per annum.

DARLINGTON HOSPITAL AND DISPENSARY.—House-Surgeon, resident. Salary, £120 per annum.

EDMONTON URBAN DISTRICT COUNCIL.—Medical Officer of Health. Salary, £150.

GLASGOW UNIVERSITY.—Examiner for Degrees in Medicine, (1) in Anatomy, (2) in Medical Jurisprudence, and (3) in Midwifery. Annual salaries, £80 for (1) and £50 for (2) and (3). Also Examiner in Botany for degrees in Arts, Science, and Medicine Salary, £50.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton—(1) Resident House-Physician. Honorarium, £25 for six months. (2) Dental Surgeon.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—(1) House-Surgeon resident. Salary, £20 for six months, and £2 10s. washing allowance. (2) Radiographer.

HOSPITAL FOR WOMEN, Soho Square, W.—House-Physician. Salary, £30 for six months.

LEEDS GENERAL INFIRMARY.—Resident Casualty Officer. Salary, £100 per annum.

LONDON HOSPITAL, Whitechapel.—Physician to the Department for Diseases of the Skin.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN.—Honorary Surgeon for Children.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney Road.—(1) Assistant Physician. (2) House Physician. Salary at the rate of £80 per annum.

NOTTINGHAM CHILDREN'S HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House-Surgeon, resident. Salary, £100 per annum.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone Road, N.W.—Resident Medical Officer. Salary at the rate of £50 per annum.

ROCHDALE INFIRMARY.—Resident Medical Officer. Salary, £100 per annum.

ROYAL LONDON OPHTHALMIC HOSPITAL, E.C.—Senior House-Surgeon, resident. Salary, £100 per annum.

SALISBURY: FISHERTON HOUSE ASYLUM.—Assistant Medical Officer, resident. Salary, £150 per annum.

SUNDERLAND COUNTY BOROUGH.—Medical Officer of Health of the Borough and Port. Salary, £520 per annum.

WESTERN DISPENSARY, Rochester Row, S.W.—Two Attending Medical Officers.

WISBECH: NORTH CAMBRIDGESHIRE HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House-Physician, resident. Salary, £100 per annum.

MEDICAL APPOINTMENTS.

Bourke, James J. F., L.R.C.P. & S.Irel., Medical Officer at Hughenden, Queensland, *vice* Richard H. Symes, L.R.C.S.Irel.

Cockle, Walter P., B.A., M.D., B.Ch., B.A.O., L.M.Dubl., Medical Officer and Public Vaccinator for the Borough of Ealing and the Parish of Twyford Abbey.

Evans, E., M.R.C.S., L.R.C.P.Lond., Medical Officer of the Holbeach Union Workhouse.

Forster, Lucinda, M.B., B.S.Lond., Medical Officer, Quarantine Office, Suez.

Frew, Alex., M.B., Ch.B.Edin., Medical Officer to Witwatersrand Deep, Driefontein Deep, and Knight's Central Gold Mines, near Johannesburg, Transvaal.

Gregg, Norman, M.B., Ch.B.Edin., Assistant Medical Officer to the Birmingham Parish Infirmary.

Harbison, Wm. Henry, L.R.C.P. & S.Edin., Health Officer for Wallaroo, South Australia, *vice* D. T. Harbison, M.B., Ch.B.Melb.

Howkett, J. E., M.B., C.M., Clinical Assistant to the Chelsea Hospital for Women.

Hood, Edward C., M.R.C.S.Eng., Medical Officer at Winton, Queensland, *vice* Wm. D. Bowgett, M.R.C.S.Eng., L.S.A.

Hungerford, Lancelot M., L.R.C.P. & S.Irel., Health Officer at Busselton, West Australia.

Johnston, G. Jameson, M.A., M.B., F.R.C.S.I., Honorary Surgeon, Masonic Orphan Boys' School, Dublin.

Long, Sydney H., M.D.Cantab., Medical Officer of Health to Cromer.

Mackey, Charles, M.B., Ch.B., Junior Resident Medical Officer to the Manchester Children's Hospital, Pendlebury.

Riviere, Clive, M.D.Lond., M.R.C.P., Physician to the Out-patients at the City of London Hospital for Diseases of the Chest, Victoria Park.

Roe, William Francis, L.R.C.P.I. and L.R.C.S.I. and L.M., Physician to the Holloway and North Islington Dispensary.

Wilson, J. Clark, M.D.Edin., Clinical Assistant to the Samaritan Free Hospital.

Westminster Hospital Medical School.—The following appointments have recently been made to vacancies in Lectureships at the School:
Lecturer in Pathology.—R. Grainger Hebb, M.D.
Lecturer in Physiology.—B. Louis Abrahams, M.B.
Lecturer in Biology.—A. Campbell Stark, B.Sc.

DIARY FOR NEXT WEEK.

MONDAY.

Medical Society of London, 11, Chandos Street, Cavendish Square, W., 8.30 p.m.—Dr. A. F. Voelcker will open a discussion on Purpura in Childhood.

Odontological Society of Great Britain, 20, Hanover Square, W., 8 p.m.—Inaugural Address by the President, Mr. J. Bland-Sutton, on Teeth from the Temporal Bones of Horses.

TUESDAY.

Royal Medical and Chirurgical Society, 20, Hanover Square, W., 8.30 p.m.—Mr. Alban Doran, Large Bile Cyst of the Liver: Jaundice without Cholelithiasis: Incision and Drainage; Recovery. With epidiascope illustrations.

Therapeutical Society, Apothecaries' Hall, Blackfriars, 4 p.m.—Annual Meeting. Dr. Harrington Sainsbury, on The Action of Carbon and of Bodies in the Particulate State. Demonstration of Roentgen rays and of radium, and of medical plants and instruments, microscopical specimens, etc.

WEDNESDAY.

Hunterian Society, London Institution, 8.30 p.m.—Clinical Evening.

THURSDAY.

Ophthalmological Society of the United Kingdom, 11, Chandos Street, Cavendish Square, 8.30 p.m.—Card Specimens by Mr. G. H. Goldsmith, Mr. W. Adams Frost, Mr. R. W. Doyne, and Mr. S. Stephenson. Presidential Address. Papers: Mr. E. Nettleship, Tumour of Choroid in an Eye with Old Choroiditis. Mr. J. H. Fisher: A Case of Tumour of the Choroid associated with Iritis. Major F. O'Kinealy: An Anomalous Case of Tobacco Amblyopia. Mr. S. Mayou: The Pathological Anatomy of the Plaques in Epithelial Xerosis.

FRIDAY.

British Balneological and Climatological Society, 20, Hanover Square, W., 8.30 p.m.—The President, Dr. Alfred F. Street, will deliver an address entitled Some Questions in Seaside Climatology.

POST-GRADUATE COURSES AND LECTURES.

Charing Cross Hospital, Thursday, 4 p.m.—Demonstration of Medical Cases.

Hospital for Consumption and Diseases of the Chest, Brompton, Wednesday, 4 p.m.—Lecture on Bronchiectasis.

Hospital for Sick Children, Great Ormond Street, W.C., Thursday, 4 p.m.—Lecture on the Speech Defects in Children.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C.—Lectures will be delivered at 3.30 p.m. as follows: Tuesday, Anatomy of the Spinal Cord; Friday, Localization in the Spinal Cord.

North East London Post-Graduate College, Tottenham Hospital, N., Thursday, 4.30 p.m.—Clinical Lecture on Acute Inflammatory Affections of the Lungs and Pleurae.

Post-Graduate College, West London Hospital, Hammersmith Road, W.—Lectures will be delivered at 5 p.m. as follows: Monday, Examination of the Stomach and Gastric Contents; Tuesday, Heredity and Insanity; Wednesday, Practical Medicine; Thursday, Practical Surgery; Friday, Electro-therapeutics.

Samaritan Free Hospital for Women, Marylebone Road, N.W., Thursday, 3 p.m.—Lecture on the Methods of Examination Employed in Gynaecological Diagnosis (Demonstration of Instruments).

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

Edmondson.—October 13th, at 7, Avenue Road, Scarborough, the wife of Dr. C. R. Edmondson, of a son and daughter.

Heelas.—On October 13th, the wife of Walter W. Heelas, M.R.C.S.Eng., L.R.C.P.Lond., of 8, Tettenhall Road, Wolverhampton, of a son.

Price.—On October 11th, at Victoria Street, West Bromwich, the wife of T. H. Price, M.R.C.S.Eng., L.R.C.P.Lond., of a son.

Stevenson.—October 8th, at Nettlebed, Henley-on-Thames, the wife of William Fleming Stevenson, L.R.C.P., L.R.C.S.Edin., of a daughter.

MARRIAGES.

Cooke—Joseph.—October 20th, at St. George's, Bloomsbury, by Rev. Canon Parker, William Henry Cooke, M.D.Brux., F.R.C.S., M.R.C.S., L.R.C.P., L.S.A., of 36, Gay Street, Bath, to Edith, third daughter of William Joseph, of Gwynfryn, Cardigan.

Cunningham—Glazier.—On October 8th, 1903, at St. John's Church, Putney, by the Rev. Howard Webb, M.A., Herbert H. R. Cunningham, M.R.C.S., L.R.C.P., late Royal Irish Fusiliers, eldest surviving son of the late Surgeon-General J. P. Cunningham, M.D., A.M.S., to Ida Marion, younger daughter of Walter H. Glazier, of Putney.

Graham—Green.—On Thursday, October 15th, at the Parish Church, Forest Row, Sussex, William George James Graham, L.R.C.P.&S.E., L.F.P.&S.G., of Parkside, Wonersh, Guildford, eldest son of Colonel James Graham, Cotswold, Wimbledon, to Mary Sibylla Frances, only child of Cecil Egerton Green, of Oakfield, Forest Row, Sussex.

Pearson—Jones.—At All Hallows Church, Ordsall, Retford, on October 15th, by the Rev. Dr. Stott, assisted by the Rev. J. Smith, George Bruce Pearson, L.R.C.P., L.R.C.S.Edin., of Buckingham, to Maud Mary, only daughter of the late Samuel Jones, Town Clerk of East Retford, and of Mrs. Jones, Oaklands.

Straton—Goldney.—On October 20th, at St. John's Church, Meerut, India, by the Rev. W. Kitchin, Chaplain of Meerut, Captain Charles Henry Straton, R.A.M.C., eldest son of Charles Robert Straton, F.R.C.S., West Lodge, Wilton, Salisbury, to Eleanor Grace, eldest daughter of the Rev. Samuel Goldney, M.A., of Kew, Surrey.

Wilson—Wright.—October 14th, 1903, at St. Michael's Church, Markington, by the Ven. Archdeacon A. S. Aylen, of St. Andrews, assisted by the Rev. S. A. Brooking, Vicar, Alex. Garrick Wilson, M.B.Camb., F.R.C.S.Eng., of Ranmoor, Sheffield, eldest son of J. Mitchell Wilson, Esq., M.D., of Cottingham to Mary Evelyn, third daughter of the late Dr. J. Hodgson Wright and of Mrs. Hodgson Wright, of Kirby Leas, Halifax.

DEATHS.

Hutchison.—At Cradock, South Africa, on October 13th, Robert Fergus Hutchison, M.B., C.M., D.P.H., aged 28, dearly loved son of Thomas and Nicola Hutchison, of West Cults, Aberdeenshire.

Whitelaw.—At Tyldesley, near Manchester, on October 12th, Thomas Buchanan Whitelaw, L.R.C.P. & S.Edin., eldest son of William Whitelaw, M.D., J.P., Middlecroft, Kirkintilloch, Dumbartonshire, in the 33th year of his age.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Articulate, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

RETIRED SURGEON asks for advice in the treatment of obstinate constipation in a lady, aged 30, pregnant (for the first time) about three months.

LICTOR will be glad if any member can tell him a good application for eczema of the lips (subacute) and acne of the face.

TAKEN IN.—The name of Frederick Thorneycroft Hall does not appear on the *Medical Register* for 1903 nor in the *Medical Directory* for 1903.

The Passage of Foreign Bodies through the Alimentary Canal.

MAJOR S. F. CLARK, R.A.M.C. (Devonport), asks: What is the usual time taken by a large piece of money to pass through the alimentary canal of a man? I had a case lately in which a half-crown was voided by a soldier almost exactly twenty-four hours after it had been swallowed. He had taken an aperient, but still the coin appears to me to have made excellent "time." What is the record?

Anaesthetics for Dental Operations.

F.R.C.S.I. asks: Can you tell me if it is legally necessary to have a second medical man when giving gas to extract teeth?

*** There is no legal obligation that a second medical man should be present. But for the security of the patient it is better that undivided attention should be given to the anaesthesia, and, on account of the possibility of hallucinations on the part of the patient, an anaesthetic should never be administered except in the presence of some other person. A considerable number of cases of hallucination on sexual subjects are on record as having occurred during anaesthesia induced for dental operations.

Income-tax.

S. writes: My surgeries are in my dwelling-house: stables, etc., and paddock are used for horses which are exclusively used for work of practice. Am I entitled to rebatement of income-tax on part of rent representing value of premises mentioned? The surveyor says no.

*** An allowance may be claimed for such a proportion of the total rent of the premises as fairly represents the value of the surgeries and stables used solely for the purposes of the practice. The same principle applies to the paddock, but our correspondent may have some difficulty in satisfying the Income-tax Commissioners that the paddock is not occupied as a convenient adjunct to the house, and used, partly at any rate, for purposes of pleasure.

ONAERO asks: Is the purchaser of a practice in April of this year liable to income-tax assessment (Table D) on a sum which is put down as the average of his predecessor's income for the last three years, and is there any statute enforcing such a condition on the purchaser?

*** The answer is in the affirmative. The purchaser of the practice is liable to be assessed on the average profits made by his predecessor during the three years 1900, 1901, 1902, unless he proves to the satisfaction of the Income-tax Commissioners that the profits of such practice "have fallen short or will fall short from some specific cause, to be alleged to them, since such change or succession took place, or by reason thereof." The governing statute is the Income-tax Act, 1842, 5 and 6 Vict., cap. 35, sec. c, Sched. D, Rules, Fourth.

Lectures on School Hygiene.

PEDAGOGUE asks what works would be suitable to obtain material for a course of fifteen lectures to teachers on "school hygiene," and what work could be recommended to the class as a textbook.

*** The syllabus published by the Sanitary Institute (Secretary, Parkes Museum, Margaret Street, W.), indicating the scope of the examination in practical hygiene for school teachers, is very thorough, and contains a good bibliography of the subject up to 1902. The best English textbooks are those of E. R. Shaw (London: Macmillan and Co. 1901. 3s. 6d.), an American writer, who lays down first principles very clearly; and the new edition of Newsholme and Pakes (London: Swan Sonnenschein and Co. 1903. 3s.). The last is best adapted to the conditions of English schools.

ANSWERS.

Correctness of the "Medical Register."

J. H. C.—The names and addresses of the Registrars of the General Medical Council are given as follows in the *Medical Register*, 1903: Henry E. Allen, LL.B., B.A., Registrar of the General Medical Council and of the Branch Council for England, Medical Council Office, 299, Oxford Street, London, W.; James Robertson, Registrar of the Branch Council for Scotland, 54, George Square, Edinburgh; Richard J. E. Roe, Registrar of the Branch Council for Ireland, 35, Dawson Street, Dublin.

The Weir-Mitchell Treatment.

R. W. M.—(1) There are no "exact quantities" in a Weir-Mitchell dietary; the general principle underlying the treatment is "overfeeding," and what constitutes this necessarily to some extent varies. At the end of ten days or so, when full three hours' massage has been reached, three meat meals, with beef-tea at 11 a.m. and 5 p.m., and at least 80 oz. of fresh milk in three-hourly quantities, usually constitutes "full diet." A brief but comprehensive account of the feeding under this system will be found in an article by the late Dr. W. S. Playfair, under the title Neuroses, Functional, page 856, vol. ii, of *A Dictionary of Psychological Medicine*, edited by Dr. Hack Tuke. (2) We are not aware of any book which would supply a direct answer to "R. W. M.'s" two questions. Every book on hygiene, however, contains tables of food constituents, given either as percentages of water, proteids, carbohydrates, fats, and minerals, or as grains of nitrogen and carbon per lb. of substance, and from these to find the answer to any number of similar questions is a matter of arithmetic proportion. Notter and Horrocks's *Hygiene*, Second Edition (London: J. and A. Churchill. 1900. 25s.), perhaps gives the most complete series of tables. Assimilation and nutrition, however, depend upon so many other factors besides elemental constituents, that to call any quantity of one food the precise equivalent of a given quantity of another can rarely be accurate. A good work upon the whole subject of food and dietetics is perhaps *Food and the Principles of Dietetics*, by Robert Hutchison (London: E. Arnold. 1900. 16s.).

Lectures to Missionary Students.

M.O.H.—A course of lectures on the following subjects would probably prove both interesting and useful to the students of a missionary college. The subjects should be dealt with in simple language and in an elementary manner, emphasizing general principles rather than entering into details. 1. The general structure of the body and position of organs. 2. The work done in the body—an elementary physiological sketch. 3. The influence of fresh air, light, and cleanliness in the prevention and treatment of disease. 4. Surgical cleanliness—micro-organisms and antisepsis. 5. Wounds and their treatment. 6. Fractures and dislocations—signs and treatment. 7. Haemorrhage and its treatment. 8. Fits and unconsciousness, sunstroke, etc. 9. Poisoning and its treatment, snakebite, etc. 10. Infectious illnesses and their management. 11. The causation and prevention of malaria, cholera, typhoid (enteric) fever, consumption. 12. Parasites conveyed by food and water. The following books might be found useful: *Home Hygiene*, by Dr. J. F. Sykes (1s.); *First-aid to the Injured*, by J. Cantlie, F.R.C.S. (1s.); *Hints and Helps for Home Nursing and Hygiene*, by E. MacD. Cosgrave (1s.), all of which are published by the St. John Ambulance Association.

NOTES, LETTERS, Etc.

BROTHER OF ST. LUKE writes: I see on reading over the regulations of the Central Midwives Board, Section 15, "No midwife is to assist in laying out a patient." How will this affect a large number of country parish nurses who are universally looked to for assistance in performing "the last rites"?

A New Route for Posterior Gastro-Jejunostomy.

DR. JOHN W. TAYLOR (Birmingham) writes: I notice a very interesting paper with this title in the BRITISH MEDICAL JOURNAL of October 10th. I think I should, perhaps, point out that the "new route" has been used and recommended for several years by Dr. Doyen, of Rheims and Paris (he being, I believe, the first to use it), and that I reported a successful case of this kind in the *Birmingham Medical Review* of February, 1897, and in the *Lancet* of November 13th, 1897. The point of priority is not a very important one. The main point is that the method is a good one, and I should like to join with Mr. Hall in heartily recommending it.

"Brachial Neuralgia."

DR. AGNES C. VIETOR, Assistant Surgeon, New England Hospital, Boston, U.S.A., writes: Under the above heading in the BRITISH MEDICAL JOURNAL of July 11th, Dr. Robert M. Simon reports several cases of traumatism of the brachial plexus, and says he has been unable to find an adequate description of any similar cases. Permit me to call attention to a study of such cases, which I reported before the Surgical Section of the New York Academy of Medicine in 1896. A report was published in detail in the Boston *Medical and Surgical Journal* of October 21st and 28th, 1897.

Too Bold Advertisement.

THE *Journal of the American Medical Association* states that an enterprising advertising practitioner of Des Moines used a picture of the State House on his circulars and pamphlets, thereby creating the impression that his sanatorium had five gilded domes and countless windows. He has been indicted on the charge of obtaining money under false pretences.

Slippery Streets.

ANTIDRIVEL writes: It must be a constant source of distress to those who are really fond of animals to see the torture endured—without chloroform—by our London cab and 'bus horses when the pavements are greasy. The fact that it is absolutely unnecessary and can be prevented by the proper use of sand only intensifies it. We are constantly hearing so-called truths about vivisection, but no word is ever spoken about the frightful tortures these poor horses undergo. If the antivivisectionists compelled the vestries to use sand regularly we might believe them to be sincere, but as it stands we can only label their remarks as claptrap.

Body Temperature after Death.

SABERTON writes: In the case of a recent suicide by drowning the river bailiff who found the body described it as being "in a stooping position, slightly forward, with about 3 in. of the head out of the water, the face just under water." The subject was 5 ft. 4 in. in height, a female, just over seven months advanced in pregnancy. Although sixteen hours in the water and twenty-four hours afterwards in the shed awaiting inquest, the parts around the pelvis still retained a slight warmth in contrast to the rest of the body.

A WARNING.

DR. CHARLES W. EMLYN (Inverness Terrace, W.) writes: On Saturday last a message was brought to my house asking me to go some distance off to see a lady whose name was unknown to me, but, as I was on duty for a colleague who was away from home, it did not occur to me that the message was a bogus one. On my return, I investigated my consulting room, and found that the messenger, who had been a few minutes alone in the room before I came to him, had thoroughly turned over the contents of my ottoman sofa, which happily contained nothing of importance or value to the thief. The man was short and stout, clean shaven strongly smelling of tobacco and spirits, and gave the name of Hamilton. Perhaps this warning will prevent any brother practitioner from suffering from his attentions.

MOTORS.

MOTOCYCLETTE writes: I should like to call the attention of members of the Association who use motor cars or cycles in their work to a clause in the new Motor Cars Act which will press very hardly on many of us. I refer to the closure to such vehicles of all roads less than 16 ft. wide. The Local Government Board is considering or is about to consider the framing of regulations under this Act, and if approached by the Association might be willing to make some concessions to medical men as to the use of such roads in their own districts for the purpose of seeing their patients. I doubt if there are any medical men who would be likely to drive "to the public danger" when at work and near their own homes, and as there are very many country lanes and roads which are narrow in odd places it would be a great hardship to have them closed, necessitating as it would the employment of further horses such as would in all probability entirely absorb any gain resulting from economy in the use of a motor vehicle. I believe some endeavour will be made through the auspices of the *Motor*—the journal of widest influence connected with the pastime—on behalf of motor cyclists, but it behoves every one interested to do what he can in the matter, and that now at once, before it is too late.

THOMSEN'S DISEASE.

DR J. F. MACGREGOR (Morven, Oban) writes: The various letters which have appeared in the BRITISH MEDICAL JOURNAL during the past few weeks under the above heading, and the reference to "snap" finger, or "trigger" finger, induce me to write the particulars of the following case I know. It is that of a female 49 years of age. The finger affected is the ring finger of the right hand; and she considers the original cause of the condition to be carrying a heavy box suspended by a leather strap about twelve years ago. The same night she awoke with pain in her finger, and found that there were slight involuntary movements of flexion and extension going on. Ever since she has suffered more or less from this spasmodic condition of the finger, and it is becoming worse. When she grasps any small object firmly, such as the handle of a table knife, she has to use the other hand to undo the grip of the ring finger, before she can let it go. The spasm is painful while it lasts; it is also weaker than the other fingers, inasmuch as she is not able to completely flex or extend it without great effort. When doing light work, or working with large objects which do not necessitate the closing in firmly of the fingers it gives no trouble. Till lately the finger used to open with a snap or "clasp-knife" action, but now she has to release it with the other hand. The patient suffers much from cold feet and chilblains; she is otherwise in good health. At 12 years of age she had whooping-cough; at 30 rheumatic fever; and at 35 influenza. Nothing abnormal can be seen or felt in the finger or its joints. Massage has been tried, but with no benefit.

DR. WILLIAM THOMSON (Nantwich) writes: At the end of September I was consulted by a lady about a peculiar contraction of one of her fingers. She is a widow, has had no family, aged 55, and is in a good position.

The contraction is of the third finger of the right hand. The trouble commenced about two years ago. At first it was only in the morning on awaking that she found the finger bent. After using the hand a little it went all right. By-and-by the bending came oftener, just when the hand was quiet. Now she can seldom close her hand to do anything without it bending up and remaining so till she has opened it. The middle and little fingers are not influenced in any way by the bending of the third; she can keep them straight or bent just as she pleases. She is able sometimes to force the finger to open by itself, but this causes some pain, but if opened by the other hand there is no pain. On being forcibly opened, about half-way the finger straightens itself with a jerk ("trigger" movement) with a rasping sensation as if a dislocation were reduced. She does not suffer from cold hands or feet. My patient has good health generally. Shortly before this affection began she had a severe attack of influenza, which passed off without apparently any after-effects.

A few days after being consulted I read Dr. Clifford Allbutt's memorandum in the BRITISH MEDICAL JOURNAL of October 3rd about "Thomsen's Disease," and afterwards his second letter on the 11th; from these I have concluded this to be a typical case of this peculiar affection, though differing in several important points from the two cases mentioned by Dr. Clifford Allbut.

ASEPTIC SILENCE.

SEN-SEN writes: There is nothing new under the sun. As long ago as 1814 Byron wrote these lines:

> The Angel of Death spread his wings on the blast,
> And breathed in the face of the foe as he passed,
> And the eyes of the sleepers waxed deadly and chill,
> And their hearts but once heaved, and for ever grew still.

May I venture to suggest that the surgeon whose breath is so aggressive that pallid death lurks ever in his train, should not "take the veil," but should exchange his operating gown for the garb of a Trappist monk?

PARD writes: The immortal Edward Lear evidently anticipated the present aseptic mare's nest when he delivered himself of the following prophetic verse:

> An F.R.C.S. with a beard,
> Remarked, "It is just as I feared,
> Two 'cocci,' ten bacilli,
> Twelve black aspergilli,
> Have all built their nests in my beard."

I quote from memory.

LETTERS, COMMUNICATIONS, ETC., have been received from:

A Mr. H. E. Allen, London; Alpha; A. F.; Anti-drivel. **B** Dr. A. [illegible]aycott, St. Albans; Dr. J. G. Blackman, Portsmouth; Brother of St. Luke; M[illegible] Barrauds Limited, London; H. L. Barnard, M.B., London; Mr. J. A. Bolton, Lon[illegible]; Mr. J. F. E. Bridger, London; Dr. F. Bushnell, Plymouth; Mr. J. N. Bredin, Mai[illegible]one; Mr. J. B. Blackett, London; Dr. C. Buttar, London; Balthasar; Dr. A. Bronner, Bradford; Mr. C. Birchall, Liverpool; Mr. L. A. Bidwell, London; Dr. T. E. B. Brown, C.I.E., London; Mr. J. A. P. Barnes, Black Rock. **C** Dr. J. E. G. Calverley, C.M.G., Folkestone; Correct Etiquette; Dr. H. Cane, Belvedere; Mr. J. H. Carson, Salford; Mr. H. S. Clogg, London; Dr. W. H. Calvert, Melrose; Dr. W. P. Cockle, London; Cryppo. **D** Mr. F. E. Daniel, Barrow-in-Furness; Mr. J. Derham-Reid, London; Dr. T. W. Dewar, Dunblane; Mr. G. W. B. Daniell, London; Mr. R. Davis, Eastbourne; A. Dodds M.B., Germiston. **E** Mr. T. S. Ellis, Gloucester; Mr. C. W. Emlyn, London. **F** Messrs. J. S. Fry and Sons, Bristol; F.R.C.S.I.; W. E. St. L. Finny, M.B., Kingston Hill; Field Officer, R.A.M.C.; L. G. Fraser, M.B., North Shields; Mr. W. Fryer, London. **G** Dr. G. Geddes, Heywood; Mr. C. Greenwood, London; Dr. W. Gosse, Sittingbourne; Mr. G. Goodman, Brigg; Mr. B.W. Gowring, Basingstoke; Dr. E.W. H. Graves, Clifton; Dr. T. Gambier, St. Leonards; Dr. R. Grant, Ballachulish; A. K. Gordon, M.B., Manchester; Mr. T. Gallivan, Listowel. **H** Mr. A. Hope, London; Mr. G. J. Hart, London; Mr. H. Hick, New Romney; Mr. F. A. Hirtzel, London; Mr. M. C. Hime, Duncrana; Mr. E. Hill, Pietermaritzburg; Mr. A. F. Hepworth, Shepshed; Mr. J. Houston, London; Mr. T. J. Henry Grafton, N.S.W.; Mr. A. E. Harris, London; Dr. P. Horton-Smith, London; Mr. G. Hardwicke, Isleham. **I** Mr. A. F. Ilsley, London; Income Tax; In doubt. **J** Dr. W. M. Jones, Torquay; Dr. E. L. Jones, Cambridge; Dr. G. P. Johnson, Stoke-on-Trent; Mr. F. W. Jollye, Alresford; Justitia. **L** Mr. T. Laffan, Cashel; Dr. W. G. V. Lush, Weymouth; Mr. J. Lawrence-Hamilton, Brighton; Dr. G. Leighton, Edinburgh; Mr. A. G. B. Lory, Chudleigh; Dr. T. G. Lyon, London; L.R.C.P.; Mr. C. S. Loch, London; Lictor. **M** Mr. E. D. Marriott, Nottingham; Dr. J. F. MacGregor, Morvern; J. A. C. Macewen, M.B., Glasgow; Mr. J. H. Mummery, London; Mr. P. C. Mitchell, London; J. D. Malcolm, M.B., London; M.D.; Medical Fiscal Reformer; Dr. A. Macfadyen, London; W. J. McCardie, M.B., Birmingham; Mrs. Murdoch, London; M.B.; M.R.C.S. **N** Dr. P. A. Nightingale, London; Mr. G. H. F. Nye, London. **O** Obstetrical Society, Secretary of, London; Onaero; Observer; One Who Knows. **P** Dr C. B. Plowright, King's Lynn; Pedagogue; Dr. B. Pierce, York; Dr. T. F. Pedley, Rangoon; Mr. A. Powell, Bombay; Mr. G. Pernet, London; Perplexed; Pard; Pons. **R** Miss G. A. Rogers, Leicester; Mr. H. M. Raven, Broadstairs. Dr. E. N. Smith, London; Mr. J. C. Soper, London; Messrs. G. Street and Co., London; Dr. G. E. Smith, Cairo; Dr. E. Schiff, Vienna; Mr. G. W. Simpson, London; Dr. E. H. Snell, Coventry; Sussex; Dr. J. Strachan, Dollar; Sen-Sen; Dr. W. J. Sinclair, Manchester; S. Stephenson, M.B., London. **T** Dr. J. W. Taylor, Birmingham; Mr. C. P. Turner, London; Dr. W. O. Travis, Hampton-on-Thames; Dr. G. C. Thompson, London; Mr. J. M. Tabor, London; Mr. W. Thomson, Nantwich; H. H. Thomson, M.B., Bridge of Weir; Dr. H. C. Thomson, London; Mr. H. H. Tidswell, Torquay. **V** Mr. E. D. Vinrace, London. **W** Mr. T. Watt, Goxhill; Dr. F. Winslow, London; Wigan Medical Society, Secretary of, Wigan; Dr. A. Whitfield, London; Mr. C. H. Whiteford, Plymouth; Mr. J. Welsh, Chester; Mr. S. W. Wilson, Aberystwyth; Dr. F. Willcocks, London; A. D. Williams, M.B., Devonport; Mr. A. C. Wilkin*, London.

BOOKS, ETC., RECEIVED.

The Book of Herbs. By Lady Rosalind Northcote. London and New York: John Lane. 1903. 2s. 6d.

Reports to the Malaria Committee of the Royal Society. Eighth series. Reports by Messrs. Stephens and Christophers; and Report by Captain James, I.M.S. London: Harrison and Sons. 1903. 2s.

Extra Bulletin of the Superior Board of Health. Official Documents Relative to the Epidemic of Bubonic Plague at Mazatlan, Sinaloa and Ensenada de Todos Santos, Lower California. Number 4. March to June, 1903. Mexico: J. Palencia. 1903.

Untersuchungen über den Magensaftfluss. (Begriff, Entstehung, Behandlung, Stoffwechsel, pathologische Anatomie.) Klinischer Teil von Professor H. Strauss. Patholog-anatom. Teil von Dr. F. Bleichröder. Jena: Gustav Fischer. 1903. M.2.

Practical Textbook of Midwifery for Nurses. By Robert Jardine, M.D.Edin., M.R.C.S. Eng., etc. Second edition. Edinburgh: William F. Clay. 1903. 6s.

The Medical Examination for Life Assurance. By F. de Havilland Hall, M.D., F.R.C.P. Third edition. Bristol: John Wright and Co. 1903. 4s.

Physiologische und klinische Untersuchungen über das Gehirn. Gesammelte Abhandlungen von Dr. Eduard Hitzig. Theil I. Untersuchungen über das Gehirn. Theil II. Alte und Neue Untersuchungen über das Gehirn. Berlin: August Hirschwald. 1904. M.27.

Essentials of Pelvic Diagnosis. By E. Stanmore Bishop, F.R.C.S.Eng. And an Appendix on Examination of Blood, etc. By Charles H. Melland, M.D.Lond., M.R.C.P. Bristol: John Wright and Co. 1903. 2s. 6d.

An Atlas of Human Anatomy. By Carl Toldt, M.D., and Alois Dalla Rosa, M.D. Translated from third German edition by M. Eden Paul, M.D.Brux., M.R.C.S., L.R.C.P. First Section. A. The Regions of the Human Body. B. Osteology. London: Rebman Limited. 1903. 9s.

The Symptoms and Pathology of Plague. By E. F. Gordon Tucker. Bombay: Education Society's Press. Rs. 2.

Maladies des Pays Chauds. Par Patrick Manson. Traduit de l'Anglais par Maurice Guiband, Jean Bruygues; et augmenté de Notes et d'un Appendice par M. Guiband. Paris: C. Naud. 1904. Fr. 12.

Varicocele, Varicose Veins. By R. P. Roberts, M.D., Ph.D. London: Advance Publishing Co. 2s. 6d.

Consolation. By F. Horman, M.D., and R. F. Roberts, Ph.D. London; Advance Publishing Co. 4s. 6d.

A Sleeping Giant. By Henry Tipple. London: The Gutenberg Press Limited. 1903. 3s. 6d.

The Nature of Man. Studies in Optimistic Philosophy. By Elie Metchnikoff. English Translation edited by P. Chalmers Mitchell, M.A., D.Sc.Oxon. London: William Heinemann. New York: G. P. Putnam's Sons. 1903. 12s. 6d.

*** In forwarding books the publishers are requested to state the selling price.

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N.B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.

SEVENTY-FIRST ANNUAL MEETING
OF THE
British Medical Association.

Held in Swansea, July 28th, 29th, 30th, and 31st 1903.

PROCEEDINGS OF SECTIONS.

SECTION OF LARYNGOLOGY AND OTOLOGY.

Patrick Watson Williams, M.D., President.

INTRODUCTORY REMARKS BY THE PRESIDENT.

ON THE POSITION OF LARYNGOLOGY AND OTOLOGY IN THE MEDICAL STUDENT'S CURRICULUM.

Gentlemen,—My first and pleasing duty as President of this Section is to extend a very cordial welcome to those distinguished colleagues who, in response to our invitation, have come from afar and at considerable personal inconvenience to assist us with their ripe experience in the various questions we propose to discuss. Indeed, it is the generous co-operation which our foreign *confrères* are always so willing to afford that brings home to us the practical importance of the topics that are here discussed, and the necessity for the more systematic training of medical students in the clinical examination of the nose, throat, and ear, so that every qualified practitioner may be familiar with at least their commoner diseases, and able to interpret those phenomena which in their pathological significance directly bear on general medical diagnosis.

The wish so earnestly expressed by an early Elizabethan dramatist—

> I would you had a window in your heart,
> I might look through you:

is only half-realized to-day; but in our own territory is fulfilled by those special devices for which our medical forefathers must have longed. It is easy now to differentiate an enlarged turbinated body and a polypus, or to distinguish between the presence of ulcers or other intranasal affections and accessory sinus disease, as sources of nasal discharge. We know, too, that nasal disease accounts for many cases of recurrent headache still often erroneously diagnosed as functional or organic nervous disease, while outbreaks of diphtheria are not very rarely due to the existence of latent intranasal diphtheria in a nurse, servant, or teacher.

Laryngoscopic examination as an aid to diagnosis in general medicine is not less valuable than the examination of the eye. How often does the existence of a vocal cord paresis or paralysis prove invaluable in the early diagnosis of central nerve disease, such as tabes dorsalis or bulbar paralysis, while every laryngologist knows full well that the larynx will frequently yield the one and only definite physical sign pointing to the existence of an intrathoracic aneurysm or other less common form of intrathoracic tumour. The distinction between a simple laryngitis and paresis of an otherwise healthy vocal cord is not a difficult matter, and yet from want of a little familiarity with the laryngoscope is often enough beyond the ken of the young practitioner.

Therapeutical success in medicine depends especially on the recognition of serious disease in its earlier and more tractable stages. The importance of taking things in time was voiced by Ovid in the well-known lines:

> Principiis obsta: sero medicina paratur,
> Cum mala per longas invaluere moras.

Happily rendered by:

> Resist the young disease; who stays too long,
> His leech perchance shall find the foe too strong.
> (S. T. Irwin.)

We are no longer content to await the development of the grosser manifestations of advancing laryngeal tuberculosis before diagnosing the disease and adopting measures for its arrest. Every practitioner should realize the possible clinical import of simple hoarseness, and have sufficient knowledge of the larynx to be put on his guard ere the thickening of a cord, or the localized tumefaction on a vocal process, or in the interarytenoid fold, has either spread locally or has masked the existence of an early pulmonary lesion till it progressed beyond the possibility of cure.

If early recognition of laryngeal tuberculosis has done a good deal towards the successful treatment of this disease, far more is it essential in the radical extirpation of cancer, and I am certain that my colleagues who are about to address us on this topic must deplore the lamentable number of cases that pass beyond the hope of relief simply for want of earlier diagnosis.

At the medical examination for entry into the Navy and Army the teeth are carefully inspected. Many candidates are thrown out for some error of refraction that could be remedied by wearing spectacles, or for some defect in chest measurement of little importance in after-life, and so forth, yet unless the candidate is obviously deaf the existence of serious aural disease may escape observation. Quite recently a young gentleman came to me, directly after he had passed his medical examination for the army, on account of deafness, which he had noticed for six or seven years. He had nerve deafness, and could not hear the watch on contact on one side, while the hearing on the other was $\frac{1}{36}$ only.

It is an old saying that history repeats itself. Although we cannot associate the term science with the semi-barbaric empiricism above which the healing art has never risen whilst linked to priestcraft, yet in the ancient Egyptian temple we observe that inevitable development of scientific progress, which in latter days first separated the practice of medicine and surgery, and has now further subdivided each into the several special departments represented in the numerous sections of our own annual meetings. The training of our medical student should certainly include the investigation and treatment of the simpler affections of the special regions, so that in due time he may undertake such cases in his own practice, and be competent to act as did the High Priest of Thebes when serious difficulties arose—a function too often undertaken for themselves by the suffering public.

I have but touched on one or two of the more striking points which show how essential is some elementary knowledge of laryngology in general practice, and to support my plea that it should no longer be left to the student's discretion whether he attends the hospital clinics or not. Practical acquaintance with obstetrics, diseases of women, and ophthalmology and dermatology is demanded of him, and in fairness to the student those who are responsible for the arrangement of his curriculum should remedy the existing defect.

Post-graduate teaching is an altogether different matter, and while invaluable as a means of extending the practitioner's knowledge of all the special and higher branches of medicine and surgery it is beyond the reach of many medical men, and therefore it should not be relied on as the chief if not only means of obtaining elementary practice in the treatment of any regional diseases.

Contrary to the very general impression, specialism in medical practice is not a recent development, for we learn from Ebers[1] that in Egypt as long ago as the thirteenth century B.C. there was a school of specialists attached to the College of Priests in Thebes. They were physicians to the king, and were consulted in all serious cases. "It was left to the principal of the medical staff of the sanctuary to select that master of the healing art whose special knowledge appeared to him to be suited for the treatment of the case."

Reference.
1 *Uarda*, vol. ii, p. 32.

A DISCUSSION ON THE OPERATIVE TREATMENT OF MALIGNANT DISEASES OF THE LARYNX.

I.—Sir Felix Semon, C.V.O., M.D., F.R.C.P.,
Physician-Extraordinary to His Majesty the King.

Sir Felix Semon said: The history of radical operations for malignant disease of the larynx is of comparatively recent origin. The larynx was of old considered as an organ indispensable to life, a view not to be wondered at considering that its graver organic diseases, such as cancer, tuberculosis, tertiary syphilis, leprosy, external injuries, etc., if unchecked, practically always ended fatally. In accord with this

state of public opinion we find that, until the demonstration by Professor Czerny, then Billroth's assistant, in 1870, namely, that dogs, from whom, under proper antiseptic precautions, the larynx had been removed *in toto*, could, and did, survive the operation for an indefinite period, the operative treatment of malignant disease of the larynx was limited to palliative tracheotomy when the obstruction caused by the new growth threatened to extinguish life by asphyxia.[1]

The success of Czerny's experiments induced Professor Billroth, and following him other surgeons, to remove the entire larynx or large parts of it in cases of malignant disease, and it will be remembered what a sensation the report of the first cases thus operated upon created at the time. Unfortunately, however, the results did not correspond to the hopes which had been entertained. Most of the patients either died from the consequences of the operation itself or succumbed to recurrence soon afterwards. When the late Dr. Foulis presented in 1881 his tabulated account of the cases of total and partial laryngectomy performed until 1881, he had to confess that out of 25 cases of total extirpation of the larynx so far performed for malignant disease, not one of the patients had been reported alive at the end of the first year after operation, whilst only two of them had lived to 9 and 10 months respectively. Of the 6 cases of partial extirpation of the larynx then on record, 1 patient died two days after the operation, 2 succumbed to recurrence within six months, 2 others died within the first year from affections apparently not connected with the operation, and 1 patient only was alive fourteen months after the left half of the larynx had been removed. In spite of these not very encouraging results, both operations continued to be practised, although not very extensively, until improvements in the technique, particularly of partial extirpation in the hands of Dr. Eugen Hahn, of Berlin, gradually led to better results with regard to diminution of the danger of the operation itself.

Meanwhile another form of radical operation—namely, thyrotomy, with removal of the soft parts round the new growth—had not fared better than the more serious operations just mentioned. In 1878 Paul Bruns passed a most destructive criticism on the efficiency, and, indeed, the admissibility of thyrotomy in malignant disease of the larynx. It must be confessed that the statistics on which he based his judgement fully justified his condemnation. Out of 19 cases of cancer of the larynx which had been treated by thyrotomy until 1887, two patients died shortly after the operation; in not less than sixteen local recurrences occurred either immediately after the operation, or very few months afterwards; in one single case only was recurrence retarded for more than one year, and in one case death took place twenty-two months after the operation from cancer of the suprarenal glands, whilst there was no trace of recurrence in the larynx itself. On the strength of this result, Paul Bruns arrived at the conclusion that "attempts to extirpate the disease by means of thyrotomy have shown themselves to be altogether insufficient and useless."

The reasons of this unsatisfactory state of things are not far to seek. Without denying that additional features may have played a rôle, I have no hesitation in saying that two causes above all others operated in rendering radical operations in those early days so very unsatisfactory. In the first place our clinical knowledge of malignant disease of the larynx was so incomplete that the diagnosis was usually only made at a time when operative interference of any kind had extremely little chance, and even then but too frequently endeavours were made to limit the operation to procedures, such as thyrotomy with removal of the soft parts only, which, although excellent in early stages, are totally insufficient when the disease is more advanced. Secondly, the technique of the various forms of operation so far discussed was still in its infancy; pulmonary complications arising from the inability to sufficiently protect the lower air passages against the entry of blood, and later on of septic matter from the wound, were of appalling frequency, and carried away by far the greater part of the patients who had been subjected to these operations.

The first of these reasons explains the failure of thyrotomy, the second one, the horrible mortality after partial, and still more after total extirpation of the larynx, and although the latter gradually decreased, still as late as 1888 the statistics of Schwartz, Scheier, and Baratoux showed no more than 8 to 13 per cent. of real cures after total extirpation for malignant disease of the larynx.

An unusual opportunity of improving this unsatisfactory state of things was afforded by the illness of the late German Emperor, which for a time concentrated the attention of the whole medical world upon malignant disease of the larynx. It is true that already some time previous to this efforts had been made from various quarters, and in various directions, to improve both our diagnostic and our therapeutic powers. Thus, as already stated, the late Dr. Eugen Hahn had in various respects improved the technique, particularly of partial extirpation of the larynx, and had by the invention of his excellent sponge cannula materially diminished the risk of septic pulmonary complications after operation, whilst I, when bringing the case of the late Mr. Montagu Williams, who had been operated upon by Hahn, before the Clinical Society in 1886, had drawn attention to several so far unknown, or at any rate, undescribed signs, which had enabled me in a number of cases to make the diagnosis of malignant disease of the larynx earlier than usual. There can, however, be no doubt that it was the illness of the then Crown Prince of Germany, and the discussion connected with it, which led to a considerable improvement both in the diagnosis and in the operative treatment of malignant disease of the larynx. The questions whether innocent laryngeal growths show a special tendency after intralaryngeal operations to undergo malignant degeneration; whether clinical observation or microscopic examination of intralaryngeally removed fragments of a new growth ought to decide our action; the differential diagnosis between innocent and malignant tumours of the larynx; the statistics compiled by various authors; and other points of importance formed for a time topics of burning universal interest, and the collective investigation, which, with the help of most of the leading laryngologists, I instituted into these points, materially contributed, I venture to think, towards a better understanding of most of these mooted questions. Shortly afterwards (in 1889) Mr. Butlin demonstrated that, owing to our diagnostic improvements, thyrotomy ought to be reinstated in the place which, owing to defective diagnostic knowledge and imperfect execution it had lost.

From this time onward curious national differences developed concerning the whole question of operative interference in malignant disease of the larynx. Whilst in this country, operators, trusting to Butlin's and my own statements, followed in the same lines, and thereby obtained results by the early performance of thyrotomy in suitable cases, which are as gratifying as the nature of the terrible disease with which we have to deal will permit, the development on the European continent, and in America was a widely different one. The old truth that it is more difficult to re-establish in public favour a discredited procedure than to introduce a brand new one held good again. Up to the present moment, with the exception of a few Continental specialists and surgeons, such as Chiari, Moure, Schmiegelow, who have worked on parallel lines, and have obtained similarly gratifying results as British operators, thyrotomy is still looked upon abroad with more or less universal distrust and apprehension. On the other hand, in Germany intralaryngeal operations in early cases of malignant disease of the larynx have been, and still are warmly recommended, and in America the astounding doctrine has been promulgated that as soon as the naked-eye diagnosis of malignant disease of the larynx has been made, not only the whole larynx, but also all its tributary lymphatic glands should be at once excised.

Thus we are as far from a consensus of opinion on the principles which ought to guide us in operating upon malignant disease of the larynx as we were at any period since radical operations for this class of diseases were introduced, and the method to which we naturally look for help and guidance under such circumstances, namely, the statistical, has, in my humble opinion, done more harm than good in this particular question. Let me justify this statement. I am myself a convinced adherent of the statistical method, but I am at the same time fully conscious that it is a double-edged weapon, and that by putting the question at issue wrongly, or by employing statistical material without close scrutiny, most fallacious results might be obtained. It is not difficult to prove this with special reference to our subject.

Statistics might be employed to show broadly the general results so far obtained by a particular operation by simply

[1] It is true that in 1866 Sir Patrick Heron Watson of Edinburgh removed a syphilitic larynx *in toto*, but this solitary operation only became known to the world in 1881 through a communication made by the late Dr. Foulis of Edinburgh to the Laryngological Section of the International Medical Congress of London. (*Transactions* of the Sub-section for Diseases of the Throat, p. 57.)

grouping all the cases together that have ever been operated upon by that method. There is not a word to be said against this so long as there is only the question of satisfying the reader's curiosity as to the sum of results obtained, but when it is desired to decide the value of a particular form of operation, nothing could be more misleading than to simply heap together all such operations ever performed at any time, and by anybody, and to draw conclusions from the bare result of such an indiscriminate array of cases as to the real efficacy of that operation.

Some years ago I proved this contention, when Dr. Sendziak grouped together all cases of malignant disease of the larynx ever treated by thyrotomy from the introduction of that operation until the date of the publication of his paper, and when he arrived, as he was bound to do, at an opinion very unfavourable to that form of operation. By critically analysing his statistics, and by showing that the real efficiency of thyrotomy was much more truly shown by the results of single observers, who have had the opportunity of acquiring particular experience, than by wholesale enumeration of all cases ever operated upon by that method, I think that I invalidated several of his conclusions. Unfortunately, however, my criticism, the justice of which was later on acknowledged by Sendziak himself, has shared the usual fate of such rectifications—that is, the original statements have passed into most surgical and laryngological textbooks, and very little notice has been taken of my correction, the result being that thyrotomy for malignant disease of the larynx continues to be looked upon with considerable distrust abroad.

Another drawback to statistics in this question is that no general principles are agreed upon, according to which they ought to be prepared. Thus the views of authors who have given us statistics on the question of radical operations for malignant disease of the larynx materially differ as to the period when the patient may be looked upon as "cured" after operation, some demanding a period of three years, others of two, whilst I from large experience am convinced that unless recurrence takes place within one year from the operation the word "cure" can safely be employed. In my experience of 18 thyrotomies for microscopically-established malignant disease of the larynx I have not met with a single case in which recurrence, either local or elsewhere, has taken place after more than one year after operation.

Again, artificial subdivisions are being made by some statisticians as to whether soft parts only are removed at the operation, or whether fragments of cartilage may have to be taken away at the same time, the former class alone being included by Sendziak and others under the heading of "thyrotomy," whilst to all cases in which portions of cartilage had to be removed, the proud name of "partial extirpation of the larynx" is granted. Now it does not make in my experience the least difference in the gravity of the operation, the course of healing, and the ultimate result whether you may have to remove soft parts only, or whether additional small parts of the arytenoid cartilages or of the thyroid or cricoid may have to be resected; yet by separating such cases from the rubric of thyrotomy, and quoting them under the title of partial extirpation of the larynx, a number of cases which rightly belong to the province of thyrotomy are artificially removed from their natural position.

Further, in many of these statistics carcinoma and sarcoma of the larynx are treated in different chapters. From the pathological point of view this course is correct enough, but with regard to the indications for operation itself, and its results, such subdivision is, according to my personal experience, quite unnecessary.

The result of all this is that the material is broken up in such a curious, and I honestly believe, unnecessary and undesirable manner, as to ultimately lead to very erroneous conclusions as to the value of the individual forms of radical operations for malignant disease of the larynx. I have on various occasions dilated upon this very important question, and would like to do so more fully now again, but the limited time at my disposal prevents me from doing so, and I can only throw out the above suggestions with a view to emphasizing the fact that conclusions drawn from an indiscriminate employment of the statistical method in this question ought to be received with critical caution.

We possess at present five different operative methods of dealing with malignant disease of the larynx, and inasmuch as no internal medication of any kind has as yet enabled us to cope with that terrible disease, the only questions to decide under such circumstances are: when shall we operate, and what method shall we select?

There is, I think, unanimity amongst those who know anything about the subject, that as a general principle operation should be at once proceeded with if the case lends itself at all to operative interference as soon as the diagnosis is made. It is unfortunately true enough that not only the public, but a not inconsiderable proportion of the medical profession are still possessed by the idea, "once cancer, always cancer." But if anything could be calculated to rouse these sceptics from their present pessimistic attitude, surely it ought to be the brilliant results which we are now obtaining just in cancer of the larynx when the diagnosis has been early made, the suitable operation been selected, and no precious time been lost. The dictum of my unforgettable teacher, Virchow, "if cancer be at its onset and often for a long time a local disease, it must be possible to cure it at that stage by local treatment," ought to be our guidance in this whole question.

True, we must distinguish between intrinsic and extrinsic malignant disease of the larynx, the former comprising the true interior of the larynx from the ventricular bands downwards, the latter the tumours situated on the arytenoepiglottic folds, the arytenoid cartilages, epiglottis, and the posterior wall of the cricoid cartilage.

The distinction from a practical point of view is all-important. The intrinsic form remains much longer a purely local affection, and shows very little tendency until the disease is much advanced to infect the neighbouring lymphatic glands, whilst in the extrinsic form such glandular infection unfortunately makes its appearance as a rule at a very early stage. Upon this one fact depends the enormous difference between the two forms with regard to prognosis, extent and danger of the operation, and probability or otherwise of recurrence, and it is likely that this difference will ever continue to exist as long as we are compelled to combat the disease by operation; but, whether extrinsic or intrinsic, under all circumstances must it be our aim to establish the diagnosis as early as possible, and when it is secured, or even in a few cases when it is somewhat doubtful, to proceed energetically.

In very few diseases is the question of time so all-important, in very few does the loss of precious time revenge itself so cruelly, as in malignant disease of the larynx! I shall have a few more words to say on this point at the conclusion of my observations, but wish now to pass in brief review the various forms of operation at our disposal.

1. There is first of all the intralaryngeal method, which was recommended for more general use in Professor B. Fraenkel's (of Berlin) well-known paper, Laryngeal Cancer, its Diagnosis and Treatment,[2] on the strength of several successful operations performed by himself. I did not refrain, much as I disliked to oppose the views of not only an intimate personal friend, but also of one of the most prominent laryngologists, from at once expressing grave doubts as to the *rationale* of this form of operation in cases of malignant disease of the larynx.[3] Since then, time, so far from effacing my objections has deepened them, and on an occasion like this it is my duty to give again fresh expression to them. Not that I doubt that in some exceptional cases the intralaryngeal method may not achieve enticing triumphs in cases of malignant disease of the larynx; but it is not with the splendid exceptions, but with the general principle of the application of a method that I have to deal here. And from this point of view it is my duty to say that in my humble opinion the intralaryngeal method, with some extremely rare exceptions, of which more anon, is absolutely unsuitable for the radical extirpation of malignant disease of the larynx, and that its employment in cases of this kind is diametrically opposed to and irreconcileable with the principle which is universally acknowledged as the guiding one in dealing with malignant growths in other parts of the body. I fear no contradiction when I say that this principle is that not only the tumour itself, but an area of healthy tissue in all directions round the new formation ought to be removed in order to make the operation really radical. Now I make bold to say that intralaryngeal operations do not afford the least guarantee, by however skilful hands they may be carried out, that this first and most indispensable demand has been complied with. The intralaryngeal method is excellently adapted to the removal of growths from the surface of the laryngeal

[2] *Deut. med. Woch.*, 1889. Nos. 1-6.

[3] See my concluding remarks in the Report of the Collective Investigation on the Question of the Transition of Benign into Malignant Growths, particularly after Intralaryngeal Operations (Berlin: August Hirschwald, 1889, pp. 187 *et seq.*).

tissues, and it is in connexion with such growths that it celebrates legitimate triumphs. But it is characteristic of malignant neoplasms that they not merely rise from the surface, but above all that they infiltrate the mother soil, and I maintain that with this often enough insidious infiltration the intralaryngeal method is not competent to deal. When first I raised my objection to Fraenkel's proposals, I stated that it had made a deep and ever-renewed impression upon me, that usually, when I had opened the larynx in external operations for malignant disease, I had found that the affection was much more advanced than had appeared from mere laryngoscopic inspection. Since 1889, when I penned those lines, my experience in this class of cases has greatly increased, and with increased experience the fact that the disease is almost always much more advanced than one would have thought from the laryngoscopic inspection has more and more deeply impressed itself upon me. Under these circumstances I am convinced that it ought not to be the ambition of the intralaryngeal method to compete with really radical operations on a field in which, by the nature of things, no general successes can be obtained by it. The advantages which are claimed for it, such as that no external operation, usually so much dreaded by the patient, is required; that the patient is never laid up: that the vocal results are better than after external operation, etc., in my opinion sink into insignificance in comparison with the dangers which loss of precious time and undue postponement of really radical operation brings about. We hear occasionally of a few cases which have been successfully treated by the intralaryngeal method and remained well, but how about those in which after intralaryngeal treatment ultimately external operation became unavoidable, and which then had to be much more extensive than it would had the patient at once been subjected to external operation? Not many cases of that sort will be found recorded in contemporary literature, and yet I suspect they are anything but rare. Even the advantage claimed for these cases that the patient is never laid up for a single day is, in my opinion, more than counteracted by the need, not only of usually very prolonged attendance until the growth has been apparently completely exterminated, but by the even more urgent need of the patient's keeping himself for an almost indefinite period under observation in order to be sure that this happy consummation has been really arrived at. And, personally, I must say that after what I have seen of malignant disease of the larynx, I should, even after an apparently successfully intralaryngeal operation for malignant disease, never feel satisfied in my own mind that I had succeeded in actually radically extirpating the growth, and I do not think that even in successful cases the gain is commensurate to the risk. I will not deny that in some quite exceptional cases, such as when malignant disease begins at the tip of the epiglottis and is recognized whilst it is still quite limited to the peripheral part of that structure, removal of the whole epiglottis by means of the snare or of the knife from within may not be legitimately attempted, but although I have myself reported a successful case of intralaryngeal removal of an epithelioma of a vocal cord—the removal had been intended for the purposes of a microscopic examination of the growth, and unexpectedly turned out to have been radical—and although even now the patient continues well, I should never deliberately try to remove an intrinsic cancer or sarcoma from the larynx by intralaryngeal operation.

2. *Thyrotomy.*—Speaking before an audience of British laryngologists I need not say much in praise of this operation, the advantages of which most of us have learut to appreciate from personal experience, and which is indicated in all cases of intrinsic malignant disease of the larynx, in which the diagnosis is made at a time when the disease is not too extensive, nor apparently too deeply infiltrating. I firmly believe that, under such circumstances, thyrotomy and thorough removal of the growth, with a sufficient circumference of healthy tissue, and accompanied—as individual cases may require—by removal of small fragments of cartilage in the neighbourhood, is a positively ideal operation. I have now performed twenty thyrotomies of this character in cases of undoubtedly malignant disease of the larynx (the microscopic examination of the growth was in all instances made by Mr. Shattock) and have had 19 recoveries, with 2—I may fairly say quite doubtful—recurrences, and 1 death from operation. In 2 of my cases the operation has been too recently performed to allow one to speak of lasting cures. All my cases having occurred in private practice, I have had the opportunity of following up to the present moment the fates of all my patients, and being convinced from my personal experiences that no recurrence need be feared if the patient has remained well for a full year after the operation, I can now summarize my results to the effect that out of 18 cases of undoubtedly malignant disease of the larynx which I have operated upon by thyrotomy between June 2nd, 1891, and July 29th, 1902, 15, that is, 85 per cent. are now alive and well, whilst the vocal results, with the exception of a few cases in which it was necessary to remove both vocal cords, are surprisingly good. This list does not include cases of doubtful malignancy, of which I have operated upon 4 by thyrotomy with 1 recurrence, nor 2 cases in which the disease was found to be tuberculous, nor 1 case in which recurrence took place and proved the papillamatous nature of the growth.

I hope to lay a full report of all my personal experiences with regard to this matter during the coming winter before the Royal Medical and Chirurgical Society, but on the present occasion I felt that it would not be right to monopolize by a detailed account of my own experiences the time allotted to me for the introduction of the subject. Anyhow, I hope that even this bald account of my results will tend to convince the greatest sceptic that if this operation be restricted to the cases in which it is really applicable, its results are, as I have called them in the syllabus of my remarks, "perfectly ideal." But in order to obtain such results the following conditions are absolutely essential:

1. The operation must be restricted to early stages of intrinsic malignant disease.
2. For this purpose an early diagnosis is indispensable.
3. The operation when performed must be thorough, that is, no sentimental considerations concerning the amount of vocal power to be retained by the patient must interfere with the imperative necessity of removing a sufficient area of healthy tissue round the new growth in all directions. A violation on one single part of the periphery of the new growth of this rule may frustrate the entire purpose of the operation.
4. Should it be found after opening the larynx that the disease is more advanced than it appeared from laryngoscopic examination, it is the duty of the operator not to limit his interference to the operation originally contemplated, but to perform partial laryngectomy, or indeed any other operation, the necessity of which may become apparent when the extent and depth of infiltration of the new growth has been definitely ascertained.

If these demands be complied with, the position of thyrotomy, as being *the* operation in early stages of intrinsic malignant disease of the larynx will remain impregnable so long as we have to fight malignant disease by operation. Of course I do not mean to say that even if all these rules are adhered to a lasting cure can be guaranteed; such a statement would be ludicrous, seeing the insidious nature of malignant disease, and the impossibility of deciding for certain whether or not before the operation infectious elements may have emigrated into the neighbourhood. The practical results, however, obtained by so many British operators, and by Chiari, Moure, and Schmiegelow on the Continent, show that with proper selection of cases and sufficient energy of operation most satisfactory results are obtained. But if in any of the points named above, half-hearted concessions are made, thyrotomy is as likely to become discredited again, as it was when Paul Bruns passed his stringent criticisms. No better illustration of this could be given than a communication made at the recent International Medical Congress at Madrid. On that occasion the results of radical operations for malignant disease of the larynx performed in a Spanish clinic were reported, and it was stated that out of eight thyrotomies performed, no less than six ended in recurrence from within one month to two years after operation. The reporter arrived at the conclusion that the results of thyrotomy were very uncertain.

This report appears to me simply deplorable. In the absence of details I cannot, of course, venture to enter upon any detailed criticism of the cases, but, having just told you that out of 18 thyrotomies performed by myself in cases of undoubted malignant disease of the larynx, recurrence—and this very doubtful—only took place in two cases, I have no hesitation in saying that there must have been something radically wrong in Spain either with the selection of the cases for thyrotomy, or with the performance of the operation. No other explanation will hold good when such discrepancies occur in the results of one and the same operation in two different hands. One of the most regrettable incidents in connexion with the unsatisfactory Spanish results will, of course,

be the fact that these cases will pass into future wholesale statistics, and will again contribute towards discrediting the operation in the eyes of those who have had no opportunity of acquiring experiences of their own.

With regard to the technique of the operation, I have but little to add to the description which I gave in the *Lancet* in 1894. Having now treated a number of cases by immediate complete closure of the entire wound, I have not seen any advantage from that procedure, whilst it prevents one from testing the patient's power of swallowing after the operation, and, in my opinion, increases the danger of septic complication. I have, therefore, returned to the method I described in 1894—that is, to immediately close the larger upper part of the wound, and leave the lower part open for two or three days after the operation until all danger of septic complication has passed.

Another point I should like to mention is this; that in cases in which the growth was situated in the anterior commissure, and in which it was necessary to remove the anterior parts of one or both vocal cords, I have recently repeatedly stitched their posterior ends to the ventricular bands, with the result of obtaining much better vocal results than had resulted without this procedure.

3. *Partial Extirpation of the Larynx.*—By partial extirpation I mean an operation in which no less than one entire wing of the thyroid cartilage, and possibly additionally an arytenoid and parts of the cricoid cartilage are removed, but, I do not include in this category, as I have stated before cases in which it was only necessary to take away small fragments of these cartilages.

The operation in itself does nor offer any greater technical difficulties than mere thyrotomy, but it is still, I think, a moot question whether the after-treatment may be conducted on exactly the same lines as that operation—that is, whether the wound may be at once closed in almost its entire length, or whether it should be kept open at first, in order to avoid subsequent stenosis of the parts. In one case I have followed the former plan without any unpleasant amount of narrowing resulting, but I do not venture on the strength of so isolated an experience to recommend a general adoption of this plan, and hope that the subsequent discussion may throw some light upon this question. Altogether I am convinced that partial extirpation of the larynx will come to be more rarely performed in proportion to the diagnosis of malignant disease being arrived at more and more early, experience having shown me that even in cases of rather extensive intrinsic malignant disease, thorough removal of the growth and soft parts round it, with subsequent energetic scraping of the base, is sufficient to prevent recurrence. Only if the new growth should be found to have actually invaded the cartilages will complete removal of the latter become indispensable.

4. *Total Extirpation of the Larynx.*—As the result of a very curious misunderstanding of some observations which I made as far back as 1881, in the discussion on the treatment of laryngeal cancer in the Sub-Section for Diseases of the Throat, of the London International Medical Congress, I have been persistently reported as an avowed opponent of total laryngectomy, and in spite of repeated express disavowals of the attitude attributed to me, in which I again endeavoured to clearly define my views concerning that operation,[1] the legend has, I regret to say, recently been again revived in Dr. Jonathan Wright's otherwise excellent history of laryngology and rhinology. The author actually describes Mr. Butlin and myself as "resenting total extirpation as unjustifiable," and states that we have of late years reiterated these views. I take this opportunity of restating that we have done nothing of the kind. Total extirpation is an operation over which, however much I may admire the skill of the surgeon who saves a patient from an otherwise unavoidable painful death, I cannot grow enthusiastic, seeing that whatever may be done to alleviate the patient's after-existence, it cannot certainly be described as a pleasant one. But I have never denied, nor do I deny now, that in cases in which the disease begins in a situation which *a priori* renders it impossible to eradicate it by less heroic means, such as on the posterior wall, or on the oesophageal aspect of the larynx, or when it has not been sufficiently early recognized and allowed to grow beyond the limits of thyrotomy or partial extirpation, its performance may become unavoidable to save the patient's life. If my attitude has altered at all, it has done so in the sense of my looking more favourably upon the operation since by the general adoption of the American method of shutting off completely the lower part of the trachea, through stitching it to the skin, from the actual field of operation, the dangers of septic complication have become materially diminished, and since by the invention of ingenious prothetic appliances, the after-existence of the patients and their power of making themselves intelligible has been considerably ameliorated. Still I cannot say that I am enamoured of this operation, and I think that even the most daring surgeons, as whose representative we have the pleasure of welcoming to-day Professor Gluck, of Berlin, than whom no living surgeon has obtained more brilliant results in this class of operations, will agree with me, that it ought to be the aim of every practitioner to recognize the disease at so early a period, that we may be able to save the patient by thyrotomy, instead of having recourse to total extirpation. That the latter operation will ever be superseded, so long as our treatment of malignant disease of the larynx is exclusively surgical, I do not believe for a moment, because in extrinsic malignant disease, and particularly when it is situated on the posterior surface of the cricoid cartilage, the smaller operations are of no avail. But seeing the—to conclude from my own experience—incontestable fact that intrinsic malignant disease is undoubtedly far more frequent than extrinsic, it may confidently be hoped that by earlier recognition, and thorough extirpation by means of thyrotomy of the former variety, the number of cases of total extirpation may become more reduced in number as years pass on. With regard to the technique of the operation, its incidents, its general, immediate, and remote results, I cannot speak from personal experience, and gladly leave this part of our subject in the hands of its most experienced exponent, Professor Gluck.

5. *Subhyoid Pharyngotomy.*—Of this operation I have but to repeat what I have said on former occasions. It is suitable for cases in which the disease starts from the epiglottis, or from the aryteno-epiglottidean fold, and its technique is an easy one, whilst it affords a good view of the field of operation. A curious fatality has, however, reigned over this operation, the causes of which have not as yet been sufficiently elucidated. It may be hoped that with further experience these results may improve.

6. *Palliative Tracheotomy.*—This operation, according to the present state of our knowledge, ought only to come into question when either the disease has started in a locality in which nothing short of total extirpation of the larynx could come into play, and when the patient declines to submit to that operation, or when the disease, although starting in a more favourable locality for the milder forms of operation, has unfortunately not been recognized early enough to allow of the milder forms of radical operation, or when serious complications forbid the performance of the latter. But I strongly hold that in view of our present results, and in the absence of distinct contra-indications, no member of the medical profession ought to allow a patient of his, afflicted with malignant disease of the larynx, to drift into that hopeless condition when palliative tracheotomy affords the only means of prolonging a deplorable existence. Should it have to be performed, it ought, needless to say, to be done as far down as possible in order to avoid that, before the end of life, the disease should actually extend into the tracheotomy wound, when the cannula would have to lie in a fungating mass, and by the difficulties connected with its cleaning and reintroduction further increase the sufferings of the unfortunate patient.

In conclusion I wish to make a few observations on some points intimately connected with the question of operative treatment in malignant disease of the larynx, although not of an exactly surgical nature.

First of these is the question of arriving at a reliable diagnosis of the disease.

Eight years ago Mr. Butlin, in a discussion on laryngeal cancer in the Section for Disease of the Throat of the British Medical Association at London, stated that "we must admit that there are three classes of cases: the first in which any one and every one can make the diagnosis; the second in which the better instructed or more experienced make it, and others do not; and the third class, in which the conditions are so obscure that no one can make the diagnosis unless the larynx is opened, and in some of which it is even then difficult to say what the nature of the disease is."[2]

No truer words were ever spoken, and the description then given even now fully applies. Whilst I maintain everything that I have ever taught of the value of certain early signs of

[1] *Archiv für Laryngologie*, vol. vi. Heft 3; *Encyclopaedica Medica*, vol. vi, xiii, Internat. Med. Cong., Paris, 1900, Section de Laryngologie.

[2] British Medical Journal, vol. ii. 1881, p. 1034.

malignant disease, I am as ready as I ever was to admit that practically none of these signs taken by itself is absolutely conclusive, and that even if several of them should occur together, the possibility of a diagnostic mistake is not absolutely excluded. I think here more particularly of a contingency of which I have seen two examples during the last few years—namely, of malignant disease being simulated by tuberculous tumours of the larynx. But even apart from this, errors are possible between benign and malignant growths occurring in older persons. This being so, most of us hold, and I think quite rightly, that, whenever possible, fragments of the suspicious growth should be removed from within, and submitted to microscopic examination at the hands of an expert. Should this examination result in the establishment of the presence of a squamous-celled carcinoma or other unmistakable form of malignant disease, the advantage thus gained is of course great. Unfortunately, however, it is not always possible to remove sufficient pieces from within, and even when it is, the evidence of the microscopist may be in some cases doubtful, whilst in others, owing to non-characteristic fragments only having been been removed, the evidence may be directly misleading.

There are also cases on record in which the clinical aspect and the course subsequently taken by the disease were irreconcilable with the verdict given by the microscopist. Under these circumstances I still hold to the view that, whilst the microscope may be of infinite value in deciding the thorny question of diagnosis, its rôle in this question is that of a helpmate, but not of an infallible arbiter, and that the clinical observer must have the courage of his own opinions, and perform an exploratory thyrotomy in suspicious cases even when the microscope has not given an unambiguous reply as to malignancy. Even after opening the larynx, as Mr. Butlin has quite rightly said, it is sometimes not possible to definitely decide what kind of growth one has to deal with, and from an ethical point of view the rather thorny question may arise: How to treat the growth under such circumstances? Personally, I do not hesitate to say that if justified doubt exists, it is in the interest of the patient to treat the suspicious growth with its surroundings as if it had been proven to be malignant. True, subsequent microscopic examination may and will show in a few such cases that the growth was innocent, and that milder measures might have sufficed, but these cases are, in my own experience, very exceptional indeed, and ought not, I think, to be allowed to outweigh general experience.

In close connexion with the points just discussed is one final question, the importance of which was brought home to me rather forcibly by a recent case of my own. A patient, aged about 60, was sent to me by a well-known laryngologist, with the diagnosis of malignant disease of the larynx. On laryngoscopic examination an irregular, snow-white, sharply pointed papillomatous-looking growth was seen to occupy the posterior part either of the right vocal cord or the posterior part of the ventricular band, and of the interior surface of the right arytenoid cartilage. It seemed also possible that all these three parts might be affected. There could however obviously be no deep infiltration, as the movements of the right cord were perfect. Seeing the situation, and the appearance of the growth, as well as the age of the patient, I, too, had no doubt that the disease was malignant, and recommended, as the original adviser had done, immediate operation. Our advice was followed. When I opened the larynx I found that the growth occupied the whole posterior part of the right vocal cord and the inner aspect of the right arytenoid cartilage. I removed the right vocal cord, and the anterior part of the right arytaenoid cartilage, with an area of healthy tissue around the growth. The patient made an uninterrupted recovery, left the home exactly one week after the operation, and his voice within a short time became almost normal.

The growth was sent to Mr. Shattock, who, to my greatest surprise, reported that he did not consider the growth a carcinoma, but a papilloma with a somewhat pronounced horny covering of epithelium. On my urging the clinical reasons for strongly suspecting malignancy, Mr. Shattock replied that, although the growth could not be really classed as a carcinoma, nevertheless it was just such a tumour as might at any time take a malignant character, not being a common papilloma, with closely pressed, rounded projections, but with projections more pointed, and covered with an excess of squamous epithelium. The histological and clinical characteristics were not really as discordant as might at first appear.

I of course considered it my duty at once to communicate the result of Mr. Shattock's examination to the patient's general medical attendant, and we earnestly discussed the question whether any, and if so what, information should be given to the patient himself. Three courses obviously were open:

1. To tell the patient that the microscopic examination had resulted in a demonstration that the growth was non-malignant, and to say nothing further.

2. To state the result of the microscopic examination, but to add that this had not dispelled the clinical fears.

3. To say nothing for the present, and to wait until all fears of a recurrence had disappeared.

After careful consideration it was decided to adopt the third course, as the kindest to the patient, and, in our joint opinion, the wisest in view of the situation. We could not honestly tell the patient that the result of the microscopic examination had superseded the clinical diagnosis, as neither of us believed this, and to tell him of the doubts besetting his case would have meant to produce, whilst he had been quite reconciled to his affection being malignant, a condition of mental unrest positively detrimental to his health. In accordance, therefore, with our decision, I only told the patient on his direct question as to what had been the result of the microscopic examinaton, that it had shown the growth not to be of the most malignant type.

I saw the patient six months after operation, when the condition of his larynx was first-rate, and his voice was almost normal.

Not quite six months after this I found to my great disappointment that the anterior part of the internal scar was occupied by a white, warty, flat new growth, which much reminded one of the original tumefaction, and was very suspicious-looking. A fortnight later this growth was, if anything, a little larger, and the neighbourhood of its posterior part looked very angry and red. Endeavours were made to remove a fragment for microscopic purposes, but the neoplasm was so flat that no piece of sufficient size for that purpose could be grasped with forceps. A consultation was subsequently held with Mr. Butlin, who, being put in full possession of all the facts of the case, unhesitatingly stated that he considered the new growth to be of a malignant type, and suggested speedy repetition of thyrotomy. Before, however, following this advice, which entirely coincided with my own view, I then considered it my duty to tell the patient of Mr. Shattock's favourable opinion of the nature of the growth primarily removed, and myself suggested that still further opinion should be taken, in order to satisfy the patient's friends that the course proposed was the correct one.

A monster consultation was then held in which no less than six medical men took part, and in which the unanimous opinion was arrived at that the growth was most probably malignant, and should under all circumstances be removed forthwith. The patient, however, who had until that moment been perfectly ready to follow my advice, suddenly upbraided me before my colleagues for having done him a great wrong by not telling him at once of the favourable verdict of the microscopist, and left in a huff. This happened about eight months ago. I have not since seen him, and am not able to say anything about the present condition of matters, but I have heard that so far he seems none the worse for the condition of his larynx. From the scientific aspect, the case of course presents features of unusual interest: Was the original growth benign or malignant? Which was right—clinical observation or the microscope? Again, did the undoubted recurrence represent the return of an originally innocent or of a malignant growth, or was it possibly a keloid? It must be remembered that the original growth was situated on the posterior part of the right vocal cord and the arytenoid cartilage, whilst the present neoplasm is situated in the anterior aspect of the scar close to the anterior commissure. But quite apart from the scientific aspect, the ethical question forces itself upon our attention: What is one to say to the patient under circumstances such as those described? Having thought a good deal about this knotty question, I still think that the course I pursued was the right one. All the members of the medical profession who have been engaged in the case have agreed with my view, but I thought this a proper occasion to bring the whole question involved before a wider forum, and shall be glad to hear what course the members of this Section think ought to be followed under similar trying circumstances to those described.

Finally, let me once more express my conviction that the

operative treatment of malignant disease of the larynx, if pursued on the lines which are at present generally followed by British observers, will yield the more satisfactory results the sooner the diagnosis is made, and the earlier and the more thoroughly operation is carried out.

II.—Themistokles Gluck, M.D.,

Titular Professor of Surgery in the University of Berlin.

Professor Gluck said: Your great countryman Abernethy said: "Every operation which mutilates is a black spot on surgery." This humane thought found expression in the conservative and plastic surgery of John Hunter and Astley Cooper, and, in a broader sense, in the chloroform narcosis of Simpson and the modern treatment of wounds by Lord Lister—the great and merciful medical gifts which England's spirit has given to humanity. My own endeavour has been to build up the surgery of the larynx under the auspices of laryngological advisers whose diagnosis and subtle technique I admired, and whose conservative principles I tried to take as a guide in the major surgery of these organs. Our first object must be to save life; our next to leave the patient in such a physical condition that the life so saved is worth living.

I will first describe the operation suitable for diffuse papilloma, some cases of syphilis, and for circumscribed cancer of the vocal cords. The steps are as follows:

1. A low tracheotomy is done.

2. A median incision is made through skin and fascia, the sternal muscles are retracted, and the larynx is exposed.

3. The thyroid cartilage and crico-thyroid membrane are divided in the middle line, and the two halves are retracted with hooks.

4. A solution of cocaine and antipyrin (5 per cent.), and carbolic acid (1 per cent.), in distilled water, is applied to the interior of the larynx, and the growth is removed with scissors, knife, or thermo-cautery, and plugs of iodoform gauze are placed in the larynx and fixed with a few points of suture through the cartilage.

5. Between the fourth and sixth days the plugs are removed (under anaesthesia). If necessary the suspected region is cauterized, and the wound is stitched up.

6. About the tenth day the sutures are removed, and the tracheal cannula. In the third week healing is complete, and the patient is allowed to speak.

I can only confirm Sir Felix Semon's admirable results. I have patients who were operated upon fourteen years ago, and who are able to lecture regularly.

With regard to operations for cancer of the larynx (extrinsic or intrinsic) and for tumours of the tongue and pharynx, it is well known that with the older methods the mortality of such operation was very high, most of the cases dying from septic pneumonia (pneumonia ab ingestis). I have got rid of this source of danger by resecting the trachea and stitching the distal cut end of that tube to a button-hole in the skin, thus interposing between the wound and the lungs a living organic barrier, an impermeable diaphragm which renders the inspiration of foreign bodies impossible.

In order to give you an idea of my technique I will describe shortly how a hemilaryngectomy, a total laryngectomy, and a pharyngectomy are carried out according to my procedure.

If a hemilaryngectomy is intended then first tracheotomy is performed as low down as possible, and a Hahn's cannula is introduced in order to prevent the running down of blood into the windpipe. Then one makes a cut in the middle line from the hyoid bone to the lower edge of the cricoid cartilage. From the ends of this cut two further cuts continue on the diseased side 4 cm. horizontally outwards. The skin flap, which is thus outlined, is reflected. Thereupon the soft parts are separated on the outside from the diseased half of the larynx. Then I split the larynx from the bottom in the middle line, divide the thyro-hyoid membrane at the upper edge of the thyroid cartilage, and proceed in the same way at the lower edge of the cricoid cartilage, and cut the plate of the cricoid cartilage through in the middle line behind. With that the diseased part of the larynx is loosened out. The defect thus created is so covered with the skin flap that its edges are sewn above to the mucous membrane of the sinus pyriformis, and below to the trachea, and in the middle to the plate of the cartilage. A large tampon of iodoform gauze is introduced into the cavity of the larynx. It must press tightly against the under-surface of the skin flap, and prevents the entrance of food particles into the air passages. Finally, the Hahn cannula is exchanged for a common cannula. If the whole larynx is to be removed then there is no preliminary tracheotomy. I make an incision in the middle line, from the hyoid bone to the lower edge of the cricoid cartilage. The larynx is denuded in front and on both sides, the muscle attachments cut off close to the larynx. The thyroid gland is separated laterally and downwards from the larynx. The superior laryngeal artery is tied on both sides before its entrance into the larynx. Thereupon I place the patient so that the head hangs down over the edge of the table, and cut through the membrane between the thyroid cartilage and the hyoid bone, then I introduce a gauze tampon through the wound, into the pharynx to prevent saliva from entering the wound, draw the entrance of the larynx forwards in front of the wound, and separate the oesophagus from the posterior surface of the larynx, till the whole larynx is denuded up to the lower edge of the cricoid cartilage, and can be drawn out of the wound. Finally a 4 to 5 cm. long transverse cut is made deep down in the jugulum, (episternal notch) and from this transverse cut the skin is loosened upwards into the upper wound, so that a skin bridge 4 to 5 cm. wide is created. Then I pass two strong threads through the trachea, cut the larynx close above the threads, straight off, and draw the tracheal stump on the threads, under the skin bridge to the front. The tracheal opening is now placed in the transverse skin wound in the jugulum, like a button-hole, and it is definitely fixed here by sewing its edge all round to the edges of the skin wound. The opening in the pharynx is closed by one or more rows of sutures, all the pockets of the mouth cavity are tightly packed with iodoform gauze strips, and the skin is sewn together over the gauze. To feed the patient one introduces an india-rubber tube through the nose into the oesophagus.

In order to extirpate the larynx with the pharynx, I expose first, as I have described in laryngectomy, the whole larynx, and place the patient so that the head hangs down backwards over the edge of the table. I then divide the membrane between the hyoid bone and the larynx, and draw the entrance of the larynx forward in front of the wound. The inner surface of the pharynx is now well seen, and one can divide without difficulty the side walls and the anterior edge of the pharynx straight through above the tumour. Next I push forward into the loose tissues between the pharynx and oesophagus and the vertebral column, and detach the pharynx from the vertebral column till I have reached the lower pole of the tumour. I cut the oesophagus straight off, as far as possible below the tumour, and then loosen the oesophagus from the wall of the trachea for a short distance. The larynx is then divided from the trachea just as in the laryngectomy, and the tracheal stump pulled under the skin bridge and into the button-hole in the jugulum, where it is firmly stitched. The wound is closed towards the mouth by sewing the pharynx walls, or if one has cut off the pharynx very high, by packing with iodoform gauze. An indiarubber tube is placed in the oesophagus to feed the patient. The hollow of the mouth is stuffed with iodoform gauze, and the skin sewn together over it.

If cancerous glands have to be removed in laryngectomy or pharyngectomy, my procedure varies according as the glands are adherent to the organ or movable. I extirpate movable glands through an incision which is made at the anterior edge of the sterno-mastoid. From this cut one can remove the glands, and, if necessary, pieces of the jugular vein and carotid artery without a communication originating with the laryngectomy wound.

The wound heals by first intention, which is of importance, for if the large vessels or their ligatured ends are lying free in a suppurating wound, then haemorrhage may easily occur. If the glands are adherent to the larynx, I remove them along with it. If one has to deal with large glandular tumours, and if one must remove the muscles, or the vessels with them, then transverse incisions must be employed in addition to the vertical cut. I try to protect the vessels or their ligatured ends in these cases by covering them with skin flaps and stitching over. In this manner the vessel region is separated from the large wound, and one is protected against bleeding.

As explaining my method of laryngectomy for particular cases I will describe two operations in their particular stages more minutely.

Case 1: Total Extirpation of the Larynx, the Epiglottis, Resection of the Pharynx, Extirpation of Diseased Lymphatic Glands.

1. *Incisions.*—Two crosscuts were made, the upper close

above the hyoid bone, the lower one close below the cricoid cartilage, extending from the middle of the right to the posterior edge of the left musculus sterno-cleido-mastoideus. Along the posterior edge of the left sterno-mastoid both these incisions were connected by a long cut. The flap was reflected to the right.

2. *Exposure of the Larynx.*—The left sterno-mastoid was cut across at the level of the two horizontal cuts, the omohyoid was cut where it passes from under the sterno-mastoid. Then I worked forward under the sterno-mastoid, and tried to push the muscle with the mass of indurated lymphatic glands which lay before and under it away from the large vessels. This was easily managed with the carotid, but the glands were so closely adherent to the jugular vein that I preferred to tie the vessel above and below the glandular mass and divide it. Thereupon first left and then right the sterno-hyoid and sterno-thyroid were cut through near the lower edge of the cricoid cartilage. The ligature of both superior thyroid arteries followed above the origin of the crico-thyroid artery. I could now, after dividing the dense fascia, which binds it to the front surface of the trachea push the broad isthmus of the thyroid gland upwards till the upper four tracheal rings were exposed; the latter were also exposed laterally so that the whole circumference of the trachea was free with the exception of the posterior surface, where it remained for the time being connected with the oesophagus. Finally, the sterno-hyoid, omo-hyoid, and thyro-hoid were cut off right and left at their insertions into the hyoid bone, and at the same time, the anterior laryngeal arteries were ligatured and divided on both sides.

3. *Division of the Trachea.*—The ligamentum crico-trachale was cut through with free hand, two threads were passed through the front wall of the trachea, and a sharp hook was inserted in the lower edge of the cricoid cartilage, the thread ends and the hook were pulled forward, and thus the transverse wound in the trachea was made to gape. Next, I divided the trachea all around from the lower edge of the cricoid cartilage and stripped the oesophagus with the finger from the posterior surface of the trachea for about 2 cm. I could now draw the tracheal stump easily up to the level of the skin. Then first the anterior circumference of the trachea was sewn with a few stitches to the skin and the lower edge of the large square skin flap was brought into its natural position again, and the edge of the tracheal stump was sewn to it. By this means the tracheal opening was bordered round with skin, and shut off from the rest of the wound. For further narcosis I used a common cannula.

4. *Removal of the Larynx.*—I worked in above the hyoid bone, cut through the insertion of the mylo-hyoid and genio-hyoid muscles on both sides, also the glosso-epiglottic ligaments (median and lateral), and came thus in front of the epiglottis into the pharynx, and at once packed the mouth cavity full by way of the wound with a long strip of gauze. Further, I cut through the hyoid bone with strong scissors on both sides internally to the attachment of the digastric muscle. By now drawing the hyoid bone upwards with a sharp hook, I had a good view of the posterior surface of the epiglottis, the sinus pyriformis, and the larynx entrance. I saw the carcinoma which on the left side occupied the whole sinus and the ligamentum aryepiglotticum. I divided it from the horns of the hyoid bone, and at the same time the mucous membrane was cut through with it; then followed on both sides the division of the constrictors of the pharynx, together with the mucous membrane, and finally the front wall of the oesophagus at the level of the upper edge of the cricoid cartilage was cut through crossways. Only the front surface of the oesophagus remained to be stripped off from the larynx, which was easily done with a blunt dissector.

5. *Closing the Wound.*—The closing of the oesophagus pharynx wound was a matter of great difficulty, for the strain on the stitches which drew up the front wall of the oesophagus to the base of the tongue was very great. Still the junction was effected at last in a cross direction. A union lengthwise was not possible, because only about a 5 cm. broad strip of the back wall of the throat remained, out of which one could not form a sufficiently long tube. Before closing the wound of the mucous membrane a soft indiarubber tube was passed [illegible] into the oesophagus. To support the mucous [illegible] the remaining stumps of muscle and strips of [illegible] joined as far as possible by a second layer of [illegible] For this the rather high-lying upper horns of the thyroid [illegible] were also used. Then the principal flap of skin was drawn back to its former position and sewn, which had already been done at its lower edge in fastening the trachea. For drainage two gauze strips were led out at the lower corners of the wound. A light compressive bandage was applied.

Case 2: A Tumour which was supposed to have begun in the Left Aryepiglottic Ligament, and which now reached in the Left Wall of the Throat nearly up to the Tonsil, filled the Sinus Pyriformis, and extended into the Oesophagus, where one could Feel the Uppermost Edge from the Mouth with the Index Finger.

Operation. Part 1.—Incision in the middle line beginning a little above the hyoid bone, and reaching to the episternal notch. Skin and fat were cut through at one stroke, exposing the hyo-thyroid membrane, the thyroid cartilage, and the cricoid cartilage. Ligature of the crico-thyroid artery. The deep layer of the cervical fascia, where it joins in front of the isthmus of the thyroid gland, was divided transversely, and the isthmus of the thyroid gland was pushed upwards till the upper tracheal rings were exposed. Transverse incision through skin and platysma up to the anterior edge of the sterno-mastoid on both sides. Ligature of anterior jugular vein. The sterno-hyoid, omo-hyoid, and thyro-hyoid were cut close off under the hyoid bone. The sterno-hyoid and sterno-thyroid were divided at the lower edge of the cricoid cartilage. The sterno-thyroid was divided at its insertion. The stumps of the muscles remained in connexion with the skin flaps, and on both sides were separated from the larynx with the skin flap, and drawn outwards with blunt hooks. The upper pole of the thyroid gland appeared on both sides to be attacked by the tumour. I tied the superior thyroid artery on both sides, and divided it between two ligatures. Then the upper part of the thyroid gland was cut off on both sides. The slight bleeding from the cut surfaces was stopped by a few stitches. The lower halves of the thyroid glands were pushed away from the cricoid cartilage and trachea. The superior laryngeal artery was tied on both sides in front of the horn of the thyroid cartilage, where the thyro-hyoid membrane is inserted. Therewith the whole of the front side of the larynx lay exposed.

Part 2.—Dividing the larynx from the hyoid bone. Transverse division of the pharynx with the head hanging. I pulled the hyoid bone with sharp hooks forwards and upwards and divided the thyro-hyoid membrane close to its lower edge. I then advanced with small cuts to the posterior surface of the hyoid bone upwards and backwards and opened thus the cavity of the pharynx between the base of the tongue and the front surface of the epiglottis. The cut was widened

DESCRIPTION OF FIGURES.

PLATE I.

Fig. 1.—Transverse section of trachea showing the gap caused by the removal of diseased parts. Anterior wall of oesophagus, tracheal stump and larynx stump connected by stitches.

Fig. 2.—Stumps sewn together. Iodoform gauze plugs are fixed and retained by stitches for periods of two to eight days, according to circumstances.

Figs. 3 and 4 illustrate the plastic operation to remedy the defect of the anterior wall of the trachea.

PLATE II.

Fig. 5.—The cutting of the double-bridged skin flap which is drawn upwards during the rest of the operation. The two halves of the larynx are drawn apart with hooks.

Fig. 6.—The second stage.

Fig. 7.—The skin flap replaced in its old position.

Fig. 8.—The last stage, the skin flap fixed in the depth of the cavity with sutures. During the after-treatment the skin flap is held in position by iodoform-gauze plugs, and there is, of course, a cannula in the trachea.

PLATE III.—HEMILARYNGECTOMY.

Fig. 9.—Skin flap reflected, half of larynx removed.

Fig. 10.—Skin flap placed in its future position with stitches through healthy part of larynx.

Fig. 11.—Final stage.

PLATE IV.—LARYNGECTOMY.

Fig. 12.—The cutting of the skin flap and also of the button-hole for the tracheal stump.

Fig. 13.—The larynx is removed, the tracheal stump is ready to be drawn through the button-hole opening in the skin of the episternal notch.

Fig. 14.—Flap replaced and stitched over iodoform-gauze plugs. Tracheal stump fixed in the button-hole.

PLATE VI.—LARYNGECTOMY.

Fig. 15.—Exposure of larynx and trachea.

Fig. 16.—Drawing the larynx out of the wound (with hanging head).

Fig. 17.—Tracheal stump fixed in button-hole; wound cavity closed.

PLATE I.

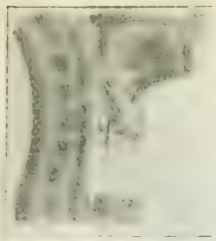


Fig. 1.

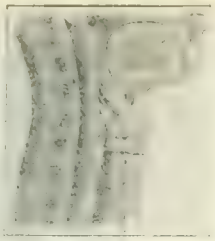


Fig. 2.

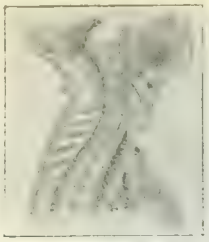


Fig. 3.

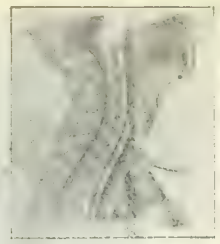


Fig. 4.

PLATE II.

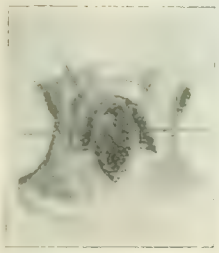


Fig. 5.

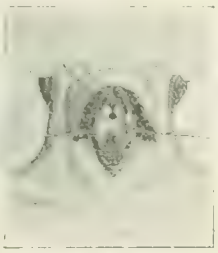


Fig. 6.



Fig. 7.



Fig. 8.

PLATE III.

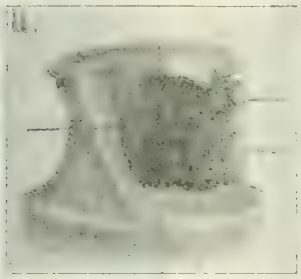


Fig. 9.

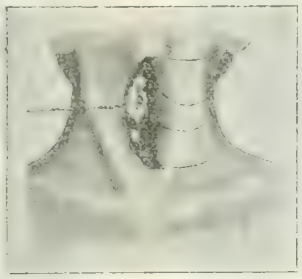


Fig. 10.



Fig. 11.

PLATE IV.



Fig. 12.

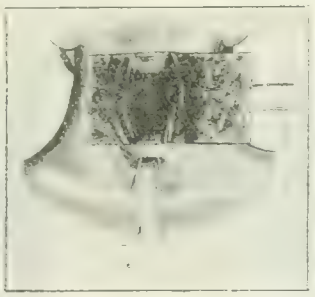


Fig. 13.



Fig. 14.

PLATE VI.

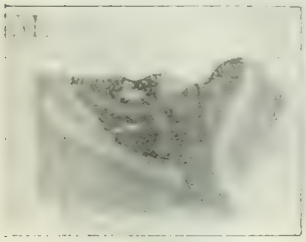


Fig. 15.

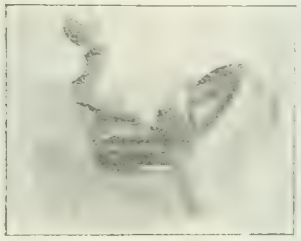


Fig. 16.

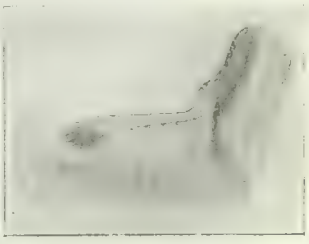


Fig. 17.

PLATE V.

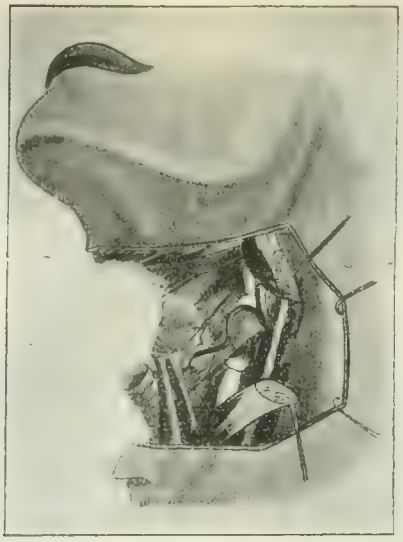


Fig. 18.



Fig. 19.

PLATE VIII.



Fig. 20.



Fig. 21.



Fig. 22.

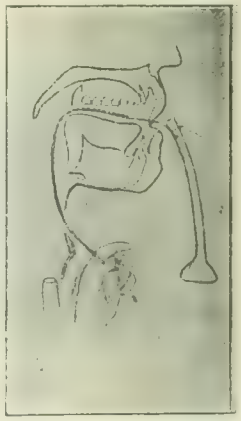


Fig. 23.

PLATE VII.



Fig. 24.



Fig. 25.

on both sides close to the lower edge of the hyoid bone up to where the upper horn of the thyroid cartilage and the lateral thyro-hyoid ligament are connected with the greater cornu of the hyoid bone. I could then draw forward the larynx (the head hanging) so that its entrance was directed upwards and left the breathing air a free passage safe from the flowing in of blood. It was now evident that if the incision was carried at the level of the hyoid bone horizontally cross-wise through the throat wall and onwards, that on the right side it would extend well into healthy parts, but on the left side the upper edge of the tumour would remain. Nevertheless I decided to proceed in this manner, as with the narrowness of the space it would be very difficult before removing the larynx to get around the upper pole of the swelling along the side wall of the throat. Therefore on both sides the thyro-hyoid ligaments were cut through. I then worked with the finger into the deeper parts between the internal carotid and the constrictors of the pharynx, and penetrated into the space filled with loose connective tissue behind the back wall of the pharynx, the finger of the other hand working in the same direction from the other side; and when they met, the pharynx all round was loosened and could be cut off crossways. The bleeding was slight and readily controlled by pressure.

DESCRIPTION OF FIGURES.

Plate V.—Laryngectomy.

Fig. 18.—Extirpation of larynx, resection of the internal jugular vein and formation of a skin flap to protect the large vessels and shut them off from the wound cavity. The protection is completed by iodoform gauze plugs.

Fig. 19.—Tracheal stump stitched in the button-hole, and the muscles sewn together over the region of the vessels; the skin diaphragm placed in its future position.

Plate VII.—Laryngectomy and Pharyngectomy.

Fig. 24.—Pharynx and larynx separated from their connexions and drawn out of the wound, the patient meanwhile breathing through the larynx, in which if necessary a cannula is placed.

Fig. 25.—The stump of the pharynx at the root of the tongue is tied over a plug of iodoform gauze. An indiarubber tube is placed in the stump of the oesophagus and fixed there with sutures for feeding the patient. The rest of the wound is firmly packed with iodoform or sterilized gauze plugs, and these are sewn up tight with tampon stitches.

Plate VIII.—Prothetic Appliances.

Fig. 20.—Speaking tube for whispering voice. The external cannula lies in the trachea: the internal one has a lid which is continued into an indiarubber tube, which the patient holds in front of his lips. If during the act of expiration he articulates one hears a distinct whispering voice.

Fig. 21.—The external cannula lies in the trachea; the internal one has a lid with a valve and a sort of tongue. The internal cannula is joined to a rubber tube which can be introduced into the mouth or nose. Inspiration opens the valve, expiration closes it, and the current of air causes the tongue to vibrate, producing a note. If during the production of this sound movements of articulation be made, one gets distinct voice and speech like that of a normal person. The tube may also be introduced into the mouth through an artificial opening in front of the parotid gland.

Fig. 22.—Artificial pharynx and oesophagus.

Fig. 23.—Introduction of oesophageal tube by means of a silk thread. The thread is removed before introducing the tube into the stump of the oesophagus. With this appliance the patient can eat, drink, swallow and smoke like a normal person, and not a drop goes the wrong way.

Part 3.—Division of oesophagus and trachea. Whilst the larynx was continually drawn gently forwards and upwards I loosened with the finger the pharynx and the uppermost part of the oesophagus from the front of the vertebral column till I had reached the level of the uppermost tracheal rings. Here was the extreme edge of the tumour, as one could plainly feel through the oesophagus wall. Next, the larynx was pulled strongly forward, so that the tracheal rings in the jugulum (episternal notch) rose to the level of the skin wound. A strong needle, with thick thread was pushed through the edge of the skin close to the angle of the wound, through the trachea, catching a broad piece of the tracheal wall, and so out again through the skin about 1 cm. from the point of entry. Having done the same on the other side, a piece of iodoform gauze was placed under the thread between the skin and trachea, and then both threads were firmly knotted. Above the threads I divided, from front to back, first the trachea and then the oesophagus, transversely.

Part 4.—Removal of the remains of the tumour from the left side of the throat wall. I divided with a strong pair of scissors the hyoid bone in the middle. The left half was drawn forwards. Then (with hanging head) the upper edge of the tumour could be well seen. I cut around it in healthy tissues, and finished the extirpation by peeling the tumour out with the finger from above and behind. The left half of the hyoid bone was removed with it.

Part 5.—Care of the wound. In the trachea a common cannula was placed; in the oesophagus a soft indiarubber tube, which was led out in front through the wound. Around the stump of the oesophagus strips of iodoform gauze were lightly packed. The anterior wall of the oesophagus was fixed to the posterior wall of the trachea with a few stitches. In the upper part of the wound I fastened the mucous membrane of the base of the tongue and the side wall of the pharynx, as far as this was possible, to the external skin by knotting the threads over strips of iodoform gauze. The closure towards the cavity of the mouth consisted of a large, strong ball of sterilized gauze. This plug and those which filled out the rest of the wound were prevented from falling out by drawing the edges of skin over them with a few stitches. Fixing the anterior wall of the oesophagus to the posterior wall of the trachea with some deep stitches is in long operations of advantage. By this means one gains a thicker tissue wall for plastic work later on. In some cases the whole thryroid gland, 4 to 6 tracheal rings, and the retro-tracheal glands have been removed. I prefer now, wherever possible, instead of prophylactic resection of the trachea, as above described, to carry out the operation without opening the air passages and only at the end, after the larynx has been lifted with the trachea out of the wound, to fix the unopened trachea, at the lower angle of the wound to the skin circularly with stitches. If we proceed in this way the operation is finished by cutting away the diseased larynx from the already fixed trachea. By this method not a drop of blood or secretion need flow into the bronchi during the operation.

Results.

As showing the progress that has been made during the last fifteen years in this subject I may mention that in my first series of 10 cases only 2 were successful, and in 9 cases of another series I had 4 deaths.

Since then I have performed many operations with ever-improving results. Thus in one series of 35 hemi-laryngectomies I had 3 deaths—one twenty-four days after operation of heart failure, when the wound was already healed; another independently of the operation of phlegmon of the right gluteal muscle: the third of pneumonia five days after operation.

My most recent results show a series of 22 complete laryngectomies with 1 death—that of a man of 70 who died on the eleventh day of iodoform poisoning. Of partial extirpations of the larynx and pharynx, generally combined with removal of infected glands, I can point to a series of 27 cases with only 1 death. This was a case in which the carotid had been tied and death occurred from hemiplegia five days after the operation.

After the healing of these large operations the patients eat like normal individuals, nor do they need a tracheal cannula as the tracheal stump and the skin are soldered together and stenosis does not occur later on.

First save and prolong the life of your patient, and do not trouble yourself too much about the post-operative state; the restitution of function will be a secondary care, the imminent danger once dissipated. That is my surgical faith. I have devised a plastic operation with skin flaps, which are fixed by points of suture to the healthy side of the larynx, to the pharynx, oesophagus, and trachea, and to the muscles of the throat. The pedunculated skin flap, which covers and replaces the resected larynx, acquires in time the aspect of a mucous membrane. If the skin flaps which are employed to cover in the pharynx have to be taken from hairy regions the flaps may later become covered with hair, which the patient pulls out from time to time when it begins to trouble him. Uncontrollable bleeding from the bowels sometimes occurs after extensive operations on the neck, larynx, and pharynx, not necessarily due to recurrence of cancer, but simply the result of vascular stagnation. When the carotid artery is exposed, and the jugular vein resected, I protect the vessel with a skin flap, which separates it from the cavities of the wound, and in this way the danger of haemorrhage is obviated.

The first dressing may be left in place for six, eight, to ten days, the cannula only being changed, if temperature and pulse keep normal. The patient is advised never to swallow, but to spit everything out. My experience in resection of the trachea proves that the tracheal stump can be mobilized and

drawn up to the skin wound without risk of gangrene to the trachea. After hemilaryngectomy patients require no cannula for speaking, part of the cicatrix generally acting as an accessory vocal cord. After complete laryngectomy patients learn to speak distinctly with the double cannula of Gussenbauer, or if the communication between the naso-pharynx and trachea no longer exists with what is called the pharyngeal voice. Air from the stomach, or from a *cul-de-sac* behind the tracheal cicatrix, produces a murmuring, which passes along the folds of the mucous membrane of the oesophagus or pharynx and is transformed by the movements of articulation into a distinct whispering voice. For the majority I have constructed a phonetic apparatus. This is composed, first, of an external tracheal cannula; secondly, of an internal tracheal cannula which has a case with a valve and a kind of tongue.

As the patient inspires the valve opens; expiration closes the valve, and the current of air is directed through the phonetic apparatus, which is situated in a short metallic tube which corresponds to the upper face of the internal cannula. The apparatus resounds, and the sound is conducted by an indiarubber tube, the other end of which may be placed between the lips or teeth or introduced through the nose into the pharynx, or through a small incision in the cheek. If the patient causes the apparatus to resound with the expiratory current, and at the same time makes movements of articulation, the weak whisper of articulation is transformed into a loud and clear voice. If the patient speaks with the tube before the lips, articulation is situated behind phonation, the reverse of the normal order. At present I could show you 38 living patients who have been cured by these operations, the oldest case was operated on thirteen years ago. Of those already dead, a number have lived 11, 8, $6\frac{1}{2}$, $5\frac{1}{2}$, $4\frac{1}{2}$, and $3\frac{1}{2}$ years after the operation in good health, and some have died of other illnesses, not of recurrence.

One man, nine years after hemilaryngectomy, had recurrence in the other half of the larynx and in the glands; after the second operation he lived over two years, and died at 76. The operations lengthened his life for eleven years.

A man of 76 had the larynx and pharynx extirpated, and lived $11\frac{1}{2}$ years after the operation. Twice I have performed complete laryngectomy for tubercle. One case died, in spite of that, of consumption; the other was done four years ago, and the patient is perfectly well.

In all I have performed 125 of these operations since the year 1888, and the record is one of great progress both in technique and also in the elaboration of plastic operations and mechanical appliances for the improvement of the post-operative condition.

III.—HERBERT TILLEY, M.D., F.R.C.S.,

Surgeon, Throat Hospital, Golden Square.

DR. HERBERT TILLEY gave details of five cases of thyrotomy for malignant disease of the vocal cords. Four of these were alive and in perfect health—six, five and a-half, four, and one year respectively since the operation. The fourth case was a very feeble individual suffering from advanced heart disease, and in whom some milk escaped into the neck wound within thirty-six hours of the operation. Septic poisoning set in, and a fatal result ensued in about six days. He had sewn up the skin wound in all cases at the close of the operation, with the exception of the lower end, where a strip of iodoform gauze was inserted to act as a drain. This was removed several times during the day, as it became soiled by mucus from the trachea. For checking the oozing from the wounded parts in the larynx he had found Whitehead's varnish a most excellent antiseptic and styptic. With regard to the after-treatment of these cases he had recently had an interesting experience. An old man, aged 74, was operated upon (thyrotomy) for malignant disease of the left vocal cord. For the first twenty-four hours after the operation the patient did well, then his pulse became very rapid, active delirium set in and his temperature rose to 102°. The wound looked quite healthy, and the physical signs in the chest were normal. It seemed not improbable that the patient's condition was mainly due to weakness from want of food, and that he was not absorbing nourishment from the nutrient rectal injections which were given every four hours for the first twenty-four hours after the operation. At any rate all the symptoms disappeared shortly after he was given some brandy and egg mixture by the mouth, and he made an uneventful recovery.

IV.—W. JOBSON HORNE, M.D., B.C.Cantab.,

Surgeon, Metropolitan Ear and Throat Hospital; Ernest Hart Memorial Research Scholar.

DR. JOBSON HORNE said the subject had been so exhaustively dealt with by the openers of the discussion, that it required time to give to what they had heard the consideration its importance deserved. He desired to thank Sir Felix Semon and Professor Gluck for their comprehensive exposition of the subject, and to thank Professor Gluck also for the demonstration of the really remarkable growths he had removed, and of the equally excellent results he had obtained. He felt sure there was a consensus of opinion that in suitable cases thyrotomy was a perfectly ideal operation. Unfortunately its usefulness was only too often limited by the want of a sufficiently early diagnosis, and then they had at their disposal the operations so successfully developed by Professor Gluck. Speaking from a pathological as well as from a clinical experience, Dr. Horne said when an error in diagnosis was committed it was more commonly on the side of regarding an innocent growth as a malignant one than a malignant growth as an innocent one. As regarded the removal of a portion of a growth by the endolaryngeal method for a premicroscopic examination it was often difficult to obtain enough of the growth upon which to base a positive diagnosis. A negative result from such an examination was to the case very much what a negative result from an examination of the sputum was to a doubtful case of phthisis; and he thought it was as well not to disturb the growth by any endolaryngeal procedure unless previously consent had been obtained to thyrotomy being performed if found to be advisable, and in doubtful cases he considered thyrotomy, having regard to its present state of development, was not only justifiable but the right course to adopt.

V.—ROBERT WOODS, M.B., F.R.C.S.I.,

Surgeon, Department for Throat, Nose and Ear Richmond Hospital, Dublin.

MR. WOODS having congratulated the section on its good fortune in having two such important communications brought before it as those of Sir F. Semon and Professor Gluck, said his experience of operations for malignant disease of the larynx was confined to 9 cases of which 2 were extrinsic. The first, an excision of half the larynx, lived about five months when recurrence took place in a gland over the right innominate vein. In removing the gland the vein was opened and canalized but under the influence of oxygen the patient recovered only to die a few days later of pneumonia. The second case was of total extirpation which died of pneumonia fourteen days after operation. In thyrotomy his experience was more favourable and entirely bore out all that was claimed for that operation by Sir F. Semon. He had operated in this way for malignant disease in 7 cases, 6 males and 1 female. The female and 5 males had cancer, the remaining case was one of a very rapidly-growing myxo-sarcoma. In all cases a microscopic examination was made by a pathologist, and a positive diagnosis arrived at before operation. They were all private patients, so that their subsequent histories were fairly well known. Their ages varied from 50 to 74. The first case was done in 1891 and the last three months previously. Up to the present there was no recurrence in any one of them. As regarded the technique of the operation, he did not entirely approve of the use of Whitehead's varnish as a means of stopping haemorrhage, there being a danger that it might seal up the submucous tissue and conduce to oedema; he depended more on pressure. He invariably closed the larynx with silkworm-gut sutures put through the alae of the thyroid cartilage, and had never seen the least trouble from intralaryngeal granulations. He considered the most important detail in connexion with the operation was proper purgation of the patient beforehand. The point was more important than it might seem, for no amount of care in performing a sterile operation could compensate for inefficient clearing out of the alimentary canal. Where the air passed over a recent wound the possibility of local septic infection must always be present, but its likelihood could be reduced to a negligible quantity by careful preparation, and of what constituted this the nurse should not be judge.

VI.—EUGENE S. YONGE, M.D.,

Honorary Assistant Physician, Manchester Hospital for Consumption and Diseases of Throat.

DR. E. S. YONGE agreed with Sir Felix Semon that the tech-

nique of thyrotomy was very important. He believed that if unfavourable results were carefully examined they would often be found to be due to faults of technique. He thought also that the state of Continental opinion had been correctly expressed. His own experience was that even among some of the leading observers there was a curious ignorance of the recent work done in England in relation to this operation. He wished to know whether Sir Felix Semon had had any difficulty in preventing tearing of the cord when splitting the usually calcified or even ossified cartilage in the middle line.

VII.—Dundas Grant, M.A., M.D., F.R.C.S.,
Surgeon, Central London Throat and Ear Hospital.

Dr. Dundas Grant considered that the introductions to the discussion by Sir Felix Semon and Professor Glück respectively were among the most valuable contributions to their knowledge of the subject which could have been presented to any meeting of laryngologists. It was of the greatest interest to observe how the work had proceeded along the two different lines. All must admit that Sir Felix Semon deserved their gratitude for having taught in the most unmistakable way the necessity for early diagnosis and for promptitude in acting upon its indications without losing the golden moments. The operation of thyrotomy was practically devoid of danger, and it was not putting it too strongly to say that they were justified in carrying it out, even before an absolute diagnosis of intrinsic carcinoma was made, for if by any chance the growth proved, on opening the thyroid, to be a simple one, it was an easy matter to close the larynx again, and even if the voice were somewhat damaged by the procedure, the knowledge that the disease was non-malignant was ample compensation for such a drawback. Sir Felix Semon had generously acknowledged his indebtedness to Mr. Butlin for the guidance and collaboration which his surgical skill and experience had rendered so valuable. There could be no higher ideal than the removal of the disease with as little disturbance of normal anatomy and physiology as possible. The essential for its success being early diagnosis.

These methods had, of course, their limits, and when complete eradication by this comparatively mild measure was of doubtful possibility the motto had to be "thorough," and thoroughness had been the idea most prominently before the minds of Professor Glück and those who had attacked the subject from his point of view.

There could be no question that his work had enabled them to face the removal of the larynx with greater equanimity than was previously possible. The dread previously felt that utter voicelessness must ensue from total extirpation was to a certain degree dispelled, as the so-called "pharyngeal" voice was by no means a negligible quantity, and they had seen cases in which oral utterance was quite as distinct after the operation as the pre-existing disease allowed it to be before that. In a case of sarcoma, in which Dr. Grant had excised the whole larynx, and with it the infiltrated thyroid gland, the patient was able to speak in a loud whisper, and to have quite satisfactory communion with the members of her family.

Dr. Grant referred to a possibility that, when removing a portion of the contents of the larynx for microscopical examination, the fragment of tissue removed might contain no definite malignant growth. This had happened to himself, but, being convinced from clinical evidences that the case was malignant, he removed a second portion, the features of which were quite characteristic. In the case in which this occurred the disease was found on thyrotomy to be much more extensive than the laryngoscope had indicated, and it was necessary to remove the cartilage of one-half of the larynx and almost all the soft parts of the other. This occasioned considerable interference with the sphincter of the larynx, and caused regurgitation of fluids into the trachea. As, however, Mr. Butlin's injunction as to leaving the tracheotomy wound open had been acted on, the fluids found their way out by this opening, and, in point of fact, the patient was encouraged to sip small quantities of very weak mercury biniodide solution, for the purpose of cleansing the interior of the larynx and removing a tetor which previously arose from it. The power of swallowing speedily returned, but the flaccidity of the one-half of the larynx was such that it became indrawn during inspiration, and it was necessary to replace the tracheotomy tube with which the patient was quite comfortable.

In the case of complete excision before mentioned, the patient became on one occasion so violently thirsty that she insisted on drinking a large quantity of water; this came out through the operation wound as fast as she drank it, bringing away a considerable quantity of muco-pus, and from that moment her condition became steadily better; she made a good recovery from her operation, but died a year later from recurrence in the neighbouring parts.

Dr. Grant thought that cases in which, before operation, there was a tendency to the regurgitation of fluids into the larnyx, were less favourable in their prognosis than those in which this did not exist, as there was every probability of the occurrence of "swallowing pneumonia," as happened in a case of his in which this condition was present, although otherwise it seemed a favourable one for operation.

VIII.—Charles Plumley Childe, F.R.C.S.,
Assistant Surgeon, Royal Portsmouth Hospital and South Hants Eye and Ear Infirmary.

Mr. Childe asked Sir Felix Semon if he could explain why patients sometimes died after extensive throat operations without any obvious or detectable cause, such as septic absorption or pneumonia. He narrated a case in which he had removed a growth of the tonsil and neighbouring parts by lateral pharyngotomy and in which the patient died in this way. True, the patient had been a drinker, but there had been no indulgence in alcohol for some time before the operation.

IX.—P. Watson Williams, M.D.,
Physician, Throat Department, Bristol Royal Infirmary; President of the Section.

Dr. Watson Williams desired to thank Sir Felix Semon and Professor Gluck for their exceedingly valuable papers, and expressed the regret that all present felt at the misfortune which had prevented Professor Moure from coming to their meeting and giving his opening address, which they were obliged to take as read. It was, indeed, a marvellously changed picture from the comparatively recent time when the diagnosis of laryngeal cancer was equivalent to a death sentence, whereas now Sir Felix Semon was able to show that 85 per cent. of lasting cures could be obtained from the operation of thyrotomy in suitable cases, while in the more extensive disease Professor Gluck had operated with lasting success on 27 cases, with only 1 death. It was evident, however, that it was essential for successful results by thyrotomy that the diagnosis should be made early, and no one had done more to render that possible than Sir Felix Semon by his investigations on the earlier manifestations and symptoms of laryngeal cancer. As regarded the ethical question referred to the meeting by Sir Felix Semon, he felt sure all present would agree with him that when the histologist was in doubt as to the nature of a fragment of growth removed for examination it was the duty of the laryngologist himself to decide what was best to be done, and advise accordingly, rather than worry the patient by submitting to him evidence, more or less conflicting, on a highly technical matter with which he could have no acquaintance. He did not see how Sir Felix Semon could well have taken any other course than the one he adopted, and this seemed to be the unanimous opinion of the Section.

Replies.

Sir Felix Semon, in reply, said he quite agreed with Dr. Woods as to the importance of preliminary purgation in removing toxins from the system. Strict asepsis should, of course, also be practised as far as it was possible under the circumstances. The critical period after these operations was, in his experience, exactly three days, and if no complication occurred during this period the patient was practically out of danger as far as the operation was concerned. A rise of temperature during the first two days to 102° F. or more generally meant a septic complication, probably pneumonia or bronchitis, but even if the latter occurred the majority of cases ultimately did well. Bronchitis due to the inspiration of blood or to aggravation of a pre-existing bronchial catarrh usually caused the temperature to rise to not more than 100° F. or 101° F., and kept it up more or less for perhaps a week, when recovery generally ensued. A considerable rise of temperature without any demonstrable lesion and accompanied by impaired consciousness, as in the cases referred to by Mr. Childe, was a much more serious matter and always rendered the prognosis grave. He had no adequate explanation to offer of such cases except the word "septicaemia." Alcoholism made the prognosis worse in these as in other

cases of illness, but he saw no reason to assume any specially injurious action in the disease under discussion. In connexion with the question of etiology, he begged to propound two problems for their consideration: (1) Why do by far most cases of cancer of the larynx occur in men? (2) Why is it that when women do suffer from this disease it is almost always the "extrinsic" form that affects them? The last-named fact surely militated against tobacco and alcohol being accused as more predisposing men than women. In stitching the larynx it was sufficient to pass the needle as deep as possible through the perichondrium, but not necessary to enter the laryngeal cavity. If the needle entered the interior of the larynx troublesome granulations were apt to form in the anterior commissure, causing the observer much anxiety, and giving rise to suspicion of recurrence. In this observation he wished to confirm Dr. Tilley's observations. With regard to bleeding from the little vessel near the vocal process he relied upon pressure to stop it, and would, after Dr. Woods's remarks, hesitate to use Whitehead's varnish in that situation. He had found cocaine most useful in these operations but he would not use adrenalin, fearing from his experience in the nose that it increased the liability to secondary haemorrhage. The cases which Professor Gluck had shown them were veritable triumphs of surgery, but such great operations would hardly ever be necessary, he felt sure, in cases of "intrinsic" cancer of the larynx if a diagnosis were made early in the case. He trusted that ere long every practitioner would be able to make such a diagnosis, and that ultimately total extirpations might become limited to cases of "extrinsic" malignant disease, in which no other form of operation was possible.

Professor GLUCK agreed entirely with what Sir Felix Semon had said as to the importance of early diagnosis in enabling such cases to be cured without resorting to the more extensive operations.

TWO CASES OF EPITHELIOMA OF THE LARYNX REMAINING WELL TWO YEARS AFTER OPERATION (THYROTOMY).

By EUGENE S. YONGE, M.D.Edin.,
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IF the utility of the operation of thyrotomy for malignant disease of the larynx were quite universally acknowledged and its sphere of usefulness were commonly recognized and defined, the publication of isolated cases might justly be regarded as superfluous; but in the present state of the subject the recording of instances, as they occur, appears to be a legitimate addition to the accretions which are slowly being added to the growing mass of testimony in favour of the procedure.

The clinical and pathological evidence, in the cases mentioned below pointed very distinctly to their malignancy. The patients have been observed at frequent intervals up to the present time, so that the after-history is, so far, complete.

CASE I.—A man, aged 57, consulted me for hoarseness of about twelve months' duration. The hoarseness was the only symptom noticed, and the patient had previously been in good health. The left vocal cord was converted into a papillary fringe and was seen to move much less freely than the corresponding cord. No enlarged cervical glands could be detected. A portion of the growth was removed and pronounced, after microscopic examination, to have the characters of squamous epithelioma. Tracheotomy followed by thyrotomy was performed in July, 1901. The patient was aphonic for a few weeks after the operation, but gradually developed a strong and fairly clear voice, owing principally to the formation of a fibrous band which grew in the position of the left cord and acted vicariously for that structure. Recently he has told me that he has been able to make a speech in a large public hall and has been well heard. There is no sign of recurrence at the present date.

CASE II.—A man, aged 67, was sent to me for hoarseness, which was stated to have lasted for eighteen months, and which had resisted all treatment. A wart-like growth, with a broad base, was attached to the right cord and ventricular band. The right cord was almost fixed; the left cord showed some evidences of congestion in its anterior half, but otherwise appeared healthy. The patient was admitted into a private hospital in August, 1901, and tracheotomy and thyrotomy were performed at the same operation. At the present time he is in good health and remains free from any sign of recurrence. The voice, although not so strong as that of Case I, is quite a useful one, and the patient is able to dictate to a clerk for two or three hours without suffering any inconvenience.

The importance of early diagnosis is of course great. A persistent dry hoarseness, occurring in a man over 50 years of age, is in many instances the first and, for a considerable period, the only sign of the condition of the larynx. In both the instances cited, the preliminary removal of a piece of tissue for examination gave positive information, but the absence of such positive information need not be looked upon as a contraindication to the operation, if the clinical signs are sufficiently distinctive. The well-known fact that the disease may be considerably more extensive than it is believed to be, judging from laryngoscopic examination, was not so evident in the cases mentioned above as in a third case (seen with Dr. McCarthy, of Stalybridge) where the growth, which was apparently almost confined to the region of the right cord, was found, on opening the larynx, to have extended downwards towards the trachea and also to have infiltrated the thyroid cartilage.

Dr. S. Delépine, Professor of Pathology at the Owens College, Manchester, kindly made a very complete examination of the structures removed from Cases I and II and reported them to be both instances of typical lobulated epithelioma. The full pathological report together with a preliminary account of the cases were embodied in a paper which appeared in November last.[1]

REFERENCE.

[1] *Lancet*, November 15th, 1902. The Treatment of Early Cancer of the Larynx by Thyrotomy.

A DISCUSSION ON THE TECHNIQUE OF OPERATIONS ON THE TEMPORAL BONE IN SUPPURATIVE MIDDLE-EAR DISEASE.

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DR. MCBRIDE said: The subject we are about to discuss has so many aspects, and has of late years been the cause of so much literary activity, that it is somewhat difficult to introduce it in anything like a satisfactory manner without very seriously infringing the laws relating to the time allowed for communications. It is virtually essential to study operations upon the temporal bone from the historical aspect, for in this way only can I hope to interest an audience of specialists whose knowledge of recent literature equals, if it does not exceed, my own. Of course, as you are aware, the first operation suggested was opening into the mastoid cells, and, curiously enough, it is said to have been proposed in 1649 by Riolanus as a remedy in cases of occlusion of the Eustachian tube. Somewhere between 1750 and 1774 Petit, a French surgeon, however, performed the operation for the evacuation of pus. Schwartze[1] quotes from Petit's work, published after his death in 1774, as follows: "J'appliquai le perforatif sur l'os qui paraissait sain, à cela d'une rougeur érysipélateuse dans l'etendue d'un quart d'écu: a peine eus-je usé la table externe, qu'il sortit une sanie puante et séreuse; l'exfoliation se fit dans son temps et le malade guérit. On peut juger par là combien j'ai épargné de douleurs au malade et de combien j'ai abrégé sa guérison." About the same period Morand seems to have opened the mastoid and evacuated an intracranial abscess. In 1776 Jasser, a Prussian military surgeon, apparently ignorant of the work of his French predecessors, opened a carious mastoid with a probe. As Schwartze[2] points out, he was probably not conversant with the anatomy of the parts, as he was much startled because fluid injected into the sinus ran out at the nose. The result, however, was so gratifying that the patient insisted upon having the opposite ear operated on, as here also there was deafness and chronic discharge. This operation was performed through a healthy cortex by means of a trocar, and in this instance, too, the result was most satisfactory. Afterwards perforation of the mastoid seems to have been employed as a remedy for deafness until 1791, when enthusiasm was checked by the death of Berger, the King of Denmark's physician, who insisted upon having the operation performed upon himself in order to cure impaired hearing and tinnitus. The mastoid seems to have been small and sclerosed, and the unfortunate patient died of meningitis. In 1792 Arneman, of Göttingen,[3] quoted by Roosa, laid down the following indications for boring through the mastoid process, as he called it:

1. In any case of absolute deafness, or in any case where the impairment of hearing, is constantly increasing, and for which all other remedies have been used without effect.

[1] *Die chirurgischen Krankheiten des Ohres*, p. 330.
[2] Op. cit.
[3] *Treatise on Diseases of the Ear*, p. 507.

2. When in case of an ulcer or suppuration of the ear, the morbid material has become collected in the cells of the mastoid, or the cells have become carious.

3. If the normal mucous secretion has become hardened or collected in excessive quantity.

4. In cases where pain and noise, which would finally destroy the hearing have existed in the ear for a very long time.

5. In cases of stoppage of the Eustachian tube not remedied by injections.

Owing, however, to the unfortunate fate of Berger, the operation lapsed for many years, and an abortive attempt by Dezeimeris[4] of Paris to revive it with a view to relieving deafness, failed, although he collected 14 cases in which the results were as follows: 3 without effect, 2 resulting in improved hearing, and 9 with entirely satisfactory results as regards the deafness. It is tempting to turn aside for a moment to comment on these statistics. We know now that mastoid operations rarely produce great improvement in the hearing of the very deaf, and yet we find an author claiming this large percentage of cures. It is difficult to avoid speculations as to whether human nature has changed since 1830, or whether in the glowing accounts of more modern surgery allowance should not often be made for the enthusiasm of the pioneer, or the unconscious bias of the ardent advocate.

To us it must be interesting to note the verdict upon the mastoid operation given by our greatest workers of the middle of last century—Wilde and Toynbee. The former[5] wrote: "In 1793, Jasser revived the old operation of perforation of the mastoid process for the purpose of injecting the middle ear; but as the success attending this procedure must be very doubtful and the hazard very great, it is never resorted to in the present day." Seven years later, Toynbee[6] defined his position as follows: "I have never performed this operation, but I should not scruple to do so in a case where the life of the patient was threatened."

About, and before the same period, the operation was condemned on the Continent by Itard, Bonnafont, and Rau, among aurists: and by Dieffenbach (1848) among surgeons.[7] In 1860 Forget and von Troeltsch both advocated the operation, the former recording a case which he had operated upon in 1849. In 1863 Pagenstecher's work appeared; in 1864 Follin published one successful case, and in 1869 Lücke opened three mastoids with a trocar. In 1868 James Hinton, the celebrated English aurist, recorded a successful case.[8] According to Roosa,[9] Ludwig Mayer was the first German surgeon who really opened the mastoid in 1864, although he admits that von Troeltsch and Schwartze had previously done so, but that they used only probes, disease having done what was required. While Roosa is inclined to attribute the revival of the operation to such pioneers as Crosby in America, Hinton in England, Triquet and Follin in France, and Mayer and Jacoby in Germany, there can, I think, be no doubt that the mastoid operation and its indications were first elaborated by Schwartze of Halle, who is still an active worker. Almost from the time that this observer published his first series of fifty cases in the *Arch. f. Ohrenheilk.*, vol. x, the mastoid operation became recognized as valuable, although its full significance only began to dawn upon the surgical world at that time.

The actual methods of operating employed by these pioneers of mastoid surgery were various. The early efforts seem sometimes to have consisted of breaking down already carious bone with a probe, for example, Jasser, von Troeltsch; while in cases where this was not possible, trocars or borers were employed (Jasser, Pagenstecher). The mallet and gouge were, however, employed by Petit, Forget (1849), Billroth (1867), and Rouge (1869). As we all know, this is the method recommended by Schwartze, and still employed by most operators, with or without the addition of the dental bur. Schwartze's first communication on the mastoid operation appeared in vol. vii of the *Arch. f. Ohrenheilk.*, and he was then able to collect 59 cases in which it had been performed, 13 of these being his own. In vols. x, xi, xii, xiii, xiv, xvi, xvii, xviii, and xix he continued to furnish reports of his work and results. It is almost unnecessary to remind an audience of specialists that Schwartze recommended reaching the antrum from a point a little behind the suprameatal spine,[10] where the bone usually shows several openings for vessels.

As is well known, this operation was performed for both acute and chronic cases at first, and in its earlier days drainage tubes were used where we now employ gauze packing. Irrigation also formed an accepted feature in the after-treatment. Probably most of us only employ Schwartze's method now in acute and subacute cases, and the younger generation of aurists have probably never seen a chronic case treated on these lines. The difficulty was to keep the mastoid fistula pervious, and for this purpose it was customary to use a lead plug. This was removed once or twice a day, and irrigation practised with an antiseptic solution. Looking back upon cases so treated I can recall successes in extremely chronic cases, but the plug had usually to be worn for a very long time. I was rather surprised and interested the other day to find in a report from Schwartze's clinic[11] that the original method is still used there in chronic cases, uncomplicated by the presence of cholesteatoma, where there is no perforation at the upper pole, or in the posterior superior quadrant of the membrane. In view of the large experience obtainable by operators in this clinic the statement is worthy of all consideration, more particularly when we have to deal with cases in which a good amount of hearing power exists.

As before said, the general consensus of opinion has of late years been towards employing simple opening of the antrum only in acute and subacute cases, if we except Macewen.[12] This author operates with the bur, and by its use exposes the antrum. He then goes on to say: "If the state of the middle ear, previously ascertained by auriscopic examination, renders it desirable to open into the tympanic attic, this may be done by means of a fine bur applied to the junction of the roof with the outer wall of the antral passage. Neither the floor of the passage nor its inner wall must be encroached on lest the facial nerve or the semicircular canal be injured. Sufficient bone ought to be removed to freely expose the attic. The tegmen covering the tympanic cavity can then be examined by means of a beam of electric light. The antral passage is in many instances sufficiently wide without further enlargement to permit of the thorough cleansing of the attic and the remainder of the tympanic cavity. If the malleus and incus are eroded their mucous membrane is destroyed, and they are covered with granulation tissue, and their ligaments are softened. They likewise can be easily removed through the antral passage by means of minute hooks and ear scoops, etc."

Now I may frankly say that this appears to me a most tedious method, as I should think the communication with the tympanum would rarely without great enlargement admit of a satisfactory examination of the attic. As another modification in the technique of the simple Schwartze operation may be mentioned the suggestion of Clarence Blake,[13] who allows the wound to fill with blood and then to heal. In one instance this was accomplished in four days. I have never seen a case myself where it seemed justifiable to adopt this method, nor have I read of its having been tried by others. Again, as has been pointed out by Elsworth[14] and several French authors, among whom we may mention Toubert,[15] Lombard, and Laurens, there are frequently cells seated in the posterior and upper part of the mastoid, the existence of which the operator should bear in mind in view of their being possible foci of suppuration and giving rise to symptoms after the middle-ear cavities have been apparently drained. Another modification of technique is required in the form of suppuration now known as Bezold's. In 1881[16] this author described perforation of the inner wall of the mastoid in its lowest part and resulting burrowing of pus below the muscles of the neck. It has seemed to me that the treatment of this form is somewhat slurred over in many of our textbooks. The method I have always so far found successful is to open up the mastoid, clear out the antrum if necessary, and remove all diseased parts of the process itself. This leads to the discovery of the breach in the inner and lower wall. As its edges are carious, this may be enlarged with a sharp spoon, and a long probe provided with an eye and bent at its extremity passed down into the abscess cavity. When it is felt that the probe has reached its lower part, it is made to project under the skin either in front or behind the sterno-

[4] Schwartze, op cit.
[5] *Aural Surgery*, 1853, p. 19.
[6] *Diseases of the Ear*, p. 341.
[7] Schwartze, op. cit.
[8] *Med. Chir. Trans.*, 1868, p. 231.
[9] Op. cit.
[10] *Chir. Erkrankungen des Ohres.*, 1883, p. 340.
[11] Grunert and Schultze, *Arch. f. Ohrenheilk.*, lvii, p. 280, 1903.
[12] *Pyogenic Diseases of the Brain and Spinal Cord*, 1893.
[13] *Journal of Laryngology*, 1899, p. 310.
[14] *Graduation Thesis*.
[15] *Ann. des Mal. de l'Oreille*, June, 1902.
[16] *Deut. med. Woch.*, 1881, p. 28.

mastoid and cut down upon. A drainage tube is then attached to the probe and drawn through.

This, I think, concludes the consideration of the more important pure modifications of Schwartze's original operation, if, perhaps, we except the proposal of Malherbe[17] to open into the middle ear by way of the mastoid in order to sever adhesions in chronic non-suppurative middle ear catarrh.

We must now pass to the group of operations known as radical and which have this in common, that in all of them removal of the posterior wall of the meatus is carried out. It is interesting to note that in 1877 Wolf suggested opening the mastoid by way of the meatus. The real stimulus to the present method of operating was, however, supplied by Küster,[18] the Berlin surgeon, who suggested reaching the middle ear by removing the posterior wall of the external auditory passage. In the same year von Bergmann described his method, in which the upper wall was removed as well. These operations, however, were obviously incomplete, and the next step in advance was taken by Zaufal, who began to operate in February of 1889, according to the method which bears his name. In April, 1890, Hartmann seems to have shown a patient who was treated by establishing a free communication between the meatus, tympanum, and antrum, and in the International Congress of 1890, Stacke, Hessler, and Jansen advocated the same principle, the first giving his special method of carrying it into effect.

In Zaufal's original operation the membranous lining of the meatus was removed; he chiselled away the mastoid, layer by layer, entering the blade 1 cm. behind the meatus and working towards it. If he thus reached the antrum, he completed the operation by means of specially delicate but strong bone forceps. Sometimes he worked towards the antrum, if it lay deep, from the upper and posterior part of the artificial bone orifice. The outer wall of the attic was removed by means of the Luer's forceps already referred to. While, therefore, Zaufal may be said to have first initiated the modern radical mastoid operation, this fact does not detract from the merit of Stacke, who, in 1890, proposed very much the same operation, which he still advocates. I may mention that even in his first paper[19] he recommended turning down a flap from the membranous meatus and making it lie on the floor of the cavity produced by removal of the posterior wall, opening of the antrum, and removal of the outer wall of the attic.

In 1897 Stacke published his monograph,[20] and in this work the history of the various modifications of his original proceeding is given. These were in the main confined to modifications of the flaps, which are produced from the membranous and cartilaginous meatus. In Stacke's earliest operations he simply slit the posterior wall of the tube produced by detaching the soft parts from the bone, which detachment, be it observed, is now confined to the posterior wall, although at one time it embraced the anterior as well. However, this simple method was abandoned in favour of the quadrilateral flap formed by incising the posterior superior wall from within outwards to the concha, and then making a cut downwards and backwards at right angles to it. Panse proposed a method by which the post-auricular wound was at once stitched. He simply produced a tongue-shaped flap by two parallel incisions along the superior and inferior walls, the posterior wound was closed, and the flap kept in contact with the outer surface of the cavity by stitches. Körner, some years later, modified this proceeding in so far that he cut into the cartilage, and so the cartilaginous meatus became much widened. Panse has more recently suggested slitting up the posterior wall of the membranous canal to the edge of the auricle, and then forming two flaps by means of two incisions at right angles to the first. In 1898 Siebenmann described a modification of Körner's method. He makes an incision through the centre of the posterior wall of the membranous meatus. He then, when the cartilage is reached, branches off upwards and downwards. If the bone cavity be moderate in size he resects the cartilage and plugs the triangular flap backwards. Whether he stitches the posterior wound is not clear, but presumably he does. If the cavity be large he cuts off the skin flap and stitches back the auricle. I must now pass from this question of dealing with the membranous and cartilaginous meatus, observing that it has only been possible to consider such modifications as involve a novel principle.

[17] *Arch. internat. de laryngologie*, etc., March, April, 1897.
[18] Ueber die Grundsätze der Behandlung von Eiterungen in starrwandigen Höhlen, *Deut. med. Woch.*, 1889.
[19] *Verhandlungen des internationalen Med. Cong.*, 1890, Abt. xiii, p. 45
[20] *Die operative Freilegung der Mittelohrräume*, Tübingen, 1897.

Certain authors have advocated the creation of a permanent post-auricular opening, more particularly when dealing with cholesteatoma. Probably the first author to draw attention to this method was Siebenmann in 1893. He turned over a lower flap from the meatus, stitched this to the lower edge of the skin incision, united the edges of skin formed by cutting the flap, and finally turned a flap, which he cut from the mastoid region with its attachment above into the upper part of the wound. He at the same time applied large grafts to the osseous cavity. Here, again, various other methods have been suggested for arriving at the same result, for example, turning a flap of skin into the upper part of the wound and periosteum into the lower (Stacke), but space does not permit a consideration of such less important details. It is, however, noteworthy that Trautmann in 1900[21] advocated producing a permanent opening in all mastoid operations and closing it later by a plastic proceeding. At first he employed Siebenmann's method, but later he merely stitched the quadrilateral meatal flap to the lower edge of the external wound.

At this point we turn naturally to the methods of closing post-auricular openings. For very small ones the method of Mosetig-Moorhof may be used. A flap corresponding to the size of the defect is dissected off from the skin below the orifice. The edges of the latter are rawed and the flap turned upwards, the skin surface being inwards. The edges of the wound produced are brought together, while the margins of the flap are kept *in situ* with four sutures. Passow's operation consists in cutting round the orifice near the edge; the skin, together with periosteum, is then detached towards the opening and the margins of the flap so produced are united; afterwards the outer edges are also sutured. Trautmann has slightly modified this method in that he makes his original incision wide of the edge. Lermoyez[22] recommends the following method: A quadrilateral flap is made from the posterior margin of the opening and turned in, another is made from the anterior part and cut off. The auricle which has supplied most of the second flap is then pulled back and stitched, so that the bleeding surfaces are in apposition. As a good deal of tension occurs, a semilunar incision is made behind and above the sutures. In one or two cases in which the defects were too large to employ any of the above methods, I have adopted a somewhat different plan. An incision is made behind, parallel to the posterior margin of the opening, and rather further away from it than its own breadth. The skin between incision and edge is then undermined, so that, while it is attached above and below, its centre is freely movable. It must, of course, be detached from the posterior edge of the opening, and can then be slid forward and attached to the rawed anterior edge. This operation is not very elegant, and the inner surface is without epidermis, but the result obtained in one of my cases was extremely satisfactory. Of course, the wound behind the ear requires dressing until healing is complete. For the closure of small openings, Frey seems to have found paraffin injection very satisfactory. He first causes bulging of the edges, and later brings them together. If they then be rawed, union results. In a general way our remarks have reached the technique of the mastoid operation as practised to-day. I fancy that in radical operations most of us employ the gouge and mallet for the coarser part of the work, and use the bur for smoothing off rough edges and points. For the outer wall of the attic, the bent gouge used by Stacke seems to me particularly serviceable, as it is difficult to get a straight one to bite along the upper wall of the meatus. In many operations, too, Zaufal's modified bone forceps will be found of great value. It appears to me that the operator must not slavishly follow any one man or method, but that he should be prepared to adapt himself to the exigencies demanded by each case. As you are probably all aware, Ballance has revived the application of large grafts to the bone wound—a method first suggested by Siebenmann, and afterwards employed by Reinhard and Jansen. He, however, employs a different technique, which I need not describe, as, no doubt, all present are familiar with the original description as it appeared in the *Journal of Laryngology*, April, 1900, and the newer modifications as given in the *Lancet*, April 11th, 1903. I have not myself done a sufficient number of these operations to be able to give an authoritative criticism, but, no doubt, the employment of grafts does hasten epidermization, and in this way curtails after-treatment. Again, it is obvious that Ballance's method of grafting and closing the posterior wound

[21] *Arch. f. Ohrenheilk.*, vol. xlviii, p. 1.
[22] *Ann. des Mal. de l'Oreille*, etc., June, 1901.

is in some ways a distinct advance. I have not been able to see any great advantage in having the meatal flap turned upwards, and its fixation seems to me to add a further complication. The second operation is a disadvantage, but unavoidable, unless it should be found that it is equally advantageous to leave the original wound open until after the grafting.

Having thus considered the purely aural aspect of operations on the temporal bone, we naturally drift towards the treatment of intracranial suppurations. The simplest form in which this occurs, both as as regards treatment and the minimum of risk, is when pus is found just within the bone and external to the dura mater. Those who have read accounts of recent mastoid operations will be aware that there is an increasing tendency to expose both the dura and lateral sinus. I will not say that this is recommended as a routine practice, but rather that it is not considered necessary to take great precautions against it, and that the least justification for the adoption of the method is allowed to influence the operator. My own practice is to avoid such exposure, unless definite indications exist or it is required in order to remove all carious bone. In such operations we may find a definite extradural collection of pus, or we may find a drop or two of very fetid pus around the lateral sinus. In this last-named class of cases I have seen very high temperature disappear immediately after the evacuation of a very small amount—not more than a drop or two. Jansen[23] described cases in which deep extra dural collections of pus in the posterior fossa could only be opened by following a fistula through the labyrinth. Of perhaps greater significance are cerebral and cerebellar abscesses. The first record of an otitic intracranial abscess successfully treated by operation dates as far back as 1768 by Morand, then after an interval of eighty years (1848) another case was described by Roux.[24] From this we have a long interval until a case was recorded by Schondorff,[25] and another by Truckenbrod, operated on by Schede[26]. It is, however, to be noted that in these the operators were all guided by the existence of external fistulae. The development of intracranial surgery for the cure of otitic cerebral abscess from time this on has been, I am pleased to say, a peculiarly British product, for British surgeons were the first to treat cases in which there was no external guide. We may, I think, consider Hulke as our pioneer, but unfortunately his cases were none of them successful.[27] The first actual success was published by Barker, who opened a temporo-sphenoidal abscess at a point 1¼ in. behind and above the meatus, and the second was operated on by Caird, of Edinburgh[28]. Then in 1887 and 1888 Macewen published three cases with one recovery, while he again was followed by Barker (second case), Horsley, and Cathcart. Only afterwards did von Bergmann bring out his monograph in which he described cases of his own. In 1887[29] I published, in conjunction with Mr. Miller, a paper in which I suggested that as the intracranial abscess is usually in contact with diseased bone, and as this diseased bone is commonly found near the tegmen, this region should be explored. Operations on these lines were actually carried out at my suggestion by Mr. Miller. As this suggestion is now usually attributed to Körner, who made it in 1889,[30] I take the liberty of quoting my own words more than two years earlier: "It must be remembered that in most of these cases the abscess is in intimate relation with the roof of the tympanum, and I am strongly of opinion that it is desirable to reach this spot with as little injury to the brain and its membranes as possible. It appears to me that this end can best be attained by making a dissection of the auricle downwards, so as to define the osseous meatus. When this has been done an opening should be made just above and in front of it—a proceeding which exposes the dura mater within a very short distance of the roof of the tympanum, with which the great majority of cerebral abscesses are in intimate relation, without any danger of wounding the middle meningeal artery." It may be noted that Körner proposed to attain the same result by removal of the upper wall of the meatus. Röpke calls attention to my work in this connexion in the following passage: "McBride had already, in 1887, stated that most temporo-sphenoidal abscesses are in close relation with the tegmen tympani. Independently, Körner, in 1889, propounded the same thing," etc.[31] I think most of you will agree with me when I say that now there is an ever-increasing tendency—if time permits—to begin, even in cases of suspected abscess by laying bare the middle-ear cavities, that all diseased bone should be taken away, and that in many cases we shall thus gain valuable information, if, indeed, we cannot complete the treatment. If there be an abscess we are quite likely to reach it by this method, and, having reached it, we can decide whether a second opening through the skull is desirable or not. The treatment of cerebellar abscess is a much more difficult matter. Hulke[32] advised trephining "two centimetres behind and nw rds from the mastoid process, the crown of the trephine encroaching on the inferior curved line." Dean, in doubtful cases, suggested removing bone with a trephine 1¾ in. behind and ¼ in. above the centre of the external auditory meatus, so that both cerebrum and cerebellum may be explored from the same wound. Macewen seems in most cases to explore the sigmoid sinus and, either through the opening thus made, or by trephining behind the mastoid, gains access to the cerebellum.

The history of operations upon the lateral sinus dates from recent times. In 1880 Zaufal proposed tying the internal jugular and removing infective material from the sigmoid sinus; in 1884 he seems to have had a case in which he found the sinus already opened by suppuration.[33] He washed it out, but the jugular was not tied on this occasion, and the patient seems to have succumbed to pneumonia. In 1886 Horsley independently suggested tying the jugular, and in 1889 Arbuthnot Lane published one successful case, while Ballance was in the same year able to report upon four patients—two cured and two who succumbed. It seems to me, therefore, that operative treatment of sinus thrombosis owes at least as much to England as to Germany. It is rather remarkable that Zaufal's original suggestion should have been scouted by German surgeons, and that we do not find a case reported from the Continent until 1890, when Salzer[34] published one.

I do not think I need dwell long on the technique of the operation as at present practised, nor does it come within the province of this paper to discuss the advantages and disadvantages of ligation of the jugular. It is now usual to expose the sinus by extending the wound already made in opening up the middle ear backwards. The appearance of the vessel and the presence or absence of pulsation are carefully noted. When a suppurating thrombus is contained, the walls often show a yellow coloration. Whether the absence of pulsation be of much value is a doubtful point. If inspection and palpation fail to give sufficient information exploratory puncture may be justifiable. It must, however, be borne in mind that it is no light risk to pass even a sterilized needle under the circumstances present in this operation, for the sinus is in immediate contact in most cases with a septic middle ear. After the sinus has been exposed and found to contain fluid blood, it may be desirable to ascertain whether or not the jugular bulb be thrombosed. Whiting has suggested the following test. Compressing the vessel as near the bulb as possible, he draws his finger upwards so as to empty it; the compression is then removed, and if blood enters from below it is assumed that the bulb is not thrombosed. Various interesting questions next confront us—for example, Is it well to tie the jugular? If we do not do so, is it right to attempt removal of the clot below the point of opening, etc.? But it seems to me that these hardly come within the scope of our subject. Of late, however, it has been proposed to expose the jugular bulb by operation on the temporal bone. Grunert[35] begins by opening the mastoid, exposing the sinus, and ligaturing the jugular. He then unites the retro-auricular and cervical incisions, resects the tip of the mastoid, pulls forward the soft parts, and loosens them to the jugular foramen. Finally, he removes sufficient bone to expose the bulb. Piffl has described another mode of effecting the same object. After the middle-ear cavities have been exposed according to Zaufal's method the incision is prolonged downwards, periosteum of the lower and anterior parts of the osseous meatus is then detached up to the Glisserian fissure. The soft parts are also detached from the lower and anterior parts of the osseous meatus internally. They are pushed forward, and, with small bone forceps, the osseous wall is

[23] *Arch. f. Ohrenheilk.*, vol. xxxv. p. 280, 1893.
[24] *Die otitischen Erkrankungen des Hirns*, etc., by Körner, 1894.
[25] *Arch. f. klin. Chir.*, 1884.
[26] *Archives of Otology*, 1886.
[27] *Lancet*, July 3rd, 1886.
[28] British Medical Journal, February 12th, 1887.
[29] The Diagnosis and Treatment of Cerebral Abscess due to Ear Disease, *Edin. Med. Journ.*, June, 1887.
[30] *Arch. f. Ohrenheilk*, vol. xxix, p. 19.
[31] Zur Operation des otitischen Grosshirn-abscesses, *Zeits. fur Ohrenheilk.*, 1899, p. 97.
[32] Op. cit.
[33] *Prag. med. Woch.*, 1884, p. 474.
[34] Körner, op. cit., p. 64.
[35] *Arch. f. Ohrenheilk.*, vol. l i, p. 286.

removed to the hypo-tympanic recess. If too little space be thus afforded, the styloid process may be detached. As a rule, the jugular is now exposed. The further steps of the operation consist in removal of the outer wall of bone.

This paper, although I feel that the question at issue has not been thoroughly discussed owing to lack of space, has already exceeded the time limit. I imagine that neither those who suggested the subject, nor those who undertook it—I can speak for myself at least—realized the space required, even to touch upon the technique of operations on the temporal bone in anything like a satisfactory manner. So far, I have attempted to refer to what I consider epoch-making operations, but I have had to avoid detailed descriptions; and, perhaps, in addressing an audience of specialists, such details were not required. Yet, after adopting such precautions, I still find I have transgressed the limit. The following cases, which, either from illustrating special points, or on account of their interest, may be appended:

Case I.—H. R. was admitted to my ward in May, 1902, suffering from chronic middle-ear suppuration and mastoid complication. On the 28th a radical operation was performed and the wound left open. On June 18th the bone surface was grafted, and on July 28th the patient was discharged, the ear being quite dry, but a large permanent opening was left. In December, 1902, the patient was readmitted in order to have the perforation closed. The orifice was far too large for the operation of Mosetig-Moorhof, Passow, or Trautmann, and too large even, I thought, to offer a chance of success for the method of Lermoyez. I therefore adopted the following plan:—A large semicircular incision was made behind the opening, allowing sufficient skin between the incision and posterior margin of the opening to more than cover it. The skin around the opening was freed at the edges, and then the part between the incision and the posterior margin was raised altogether from the subjacent tissue and brought forward, being stitched to the anterior margin, which had been previously rawed. The stitches were removed in a few days, and on January 29th of this year the parts were in perfect apposition, although there was a degree of puckering.

This case illustrates two points, namely:

1. That if grafting be employed an unexpectedly large opening may remain if the wound be left open and dressed from behind.

2. That the method of closing the large opening adopted in this case may be quite successful, although by using it we are obliged to present a raw skin surface inwards.

Case II.—M. G., a young man of 20. As the patient was very ill a satisfactory history was not available, and I regret to say that my notes do not refer to the character of the discharge from the left ear. The patient came to the hospital at 1 p.m. on February 22nd, 1894. His temperature then was 102.4°, and rose in the evening to 106.2°. On the 23rd, as the history rather pointed to an acute process, Schwartze's operation was performed. The outer bone was sclerosed; the lateral sinus was exposed and around it was a small quantity of excessively fetid pus. The sinus did not pulsate. From the somewhat defective notes preserved of this case I find that the ear was dressed on the 24th and that the sinus was then seen to pulsate. The temperature after the operation fell to 99.4°, but rose to 102.4° in the evening; on the 26th pulsation was still visible; on March 9th the wound was comparatively sweet, and, to make a long story short, he was dismissed from the ward on April 20th, but still came up to have the wound dressed.

I have ventured to bring this case, incomplete as are my records, before you for several reasons. In the first place, it illustrates a point I previously referred to—namely, that a small quantity of fetid pus around the lateral sinus may account for very high temperatures, and that in such cases cure may result without further treatment than removing the septic material. It would, in my opinion, have been a very grave error in the above case had I made an exploratory puncture into the sinus at the time of operation.

Case III.—J. C., aged 30, a teacher, was admitted to my ward on June 12th, 1894, complaining of pain behind the left ear and discharge from it. According to the history he gave his present illness began with discharge from the ear three weeks before, the result of a severe cold. For the last ten days before his admission he had suffered from pain behind the ear. When admitted he looked extremely ill; was dull and stupid. For two days there had been less pain over the mastoid, without any improvement in the other symptoms. His temperature on June 12th (date of admission) was 101° at night, with a pulse-rate of 74 to 80, and respirations 16 to 18. On the morning of June 13th I expressed the opinion that the relief of mastoid pain was probably due to bursting of retained secretion inwards. In the left ear there were granulations, a discovery which rather militated against the patient's history, which pointed to acute middle-ear inflammation. There was now only slight mastoid tenderness, while two days before it had been very marked. Examination of the eyes by Dr. Mackay showed "distinct optic neuritis in an early stage, and a patch of opaque nerve fibres." On June 13th I opened the mastoid and found a large extradural abscess around the lateral sinus, which pulsated freely. There was not only pus but much cholesteatomatous material in contact with the dura. The wound was dressed with iodoform and boracic powders and stuffed with iodoform gauze, as also was, of course, the meatus. Patient was sick twice overnight. The wound was dressed on June 14th, and a good deal of cholesteatomatous material was removed. There was still marked pulsation, which, however, disappeared in two days. I need not weary you by further details. The patient was discharged in September, during my absence, but came up as an out-patient. On July 20th there was still "blurring of the surface and borders of the discs," but Dr. Mackay, who kindly made the examination, thought that the changes were less marked than on the previous occasion.

I have given merely the interesting facts in this case. The general evidence of illness associated with relief of pain, and without external swelling is, in my experience, often an indication that pus has penetrated the cranial cavity. The cessation of pulsation of the lateral sinus after a few days is a phenomenon with which we are all familiar, and is, I presume, due to the formation of adhesions. In this patient there was certainly a very unusual amount of cholesteatomatous material in contact with the sinus and dura. It is somewhat tempting to speculate upon the chain and order of events which led to this, but I shall restrain the inclination, as I have already occupied too much time.

The next case I bring forward to show how cholesteatoma may penetrate not only the bone but the dura.

Case IV.—E. L., aged 49, was an old patient of mine who suffered from chronic middle-ear suppuration. In 1892 I removed the malleus from the right ear, and this was followed by improved hearing and cessation of discharge. In April, 1900, she had influenza, and after this otorrhœa returned, but according to patient the secretion was odourless. On July 14th, 1900, she was admitted to my ward, and had then distinct, although not complete, paresis of the right side of the face. She suffered a good deal from tinnitus, but there was neither pain nor giddiness. The aural discharge was without fetor; no swelling or tenderness over mastoid. The meatus was blocked by cholesteatomatous material, which was removed partly with a blunt hook, but chiefly by syringing after softening. Considerable improvement in hearing resulted. On July 18th a bluish, cicatrized inner wall of tympanum was seen, but on the posterior wall of the meatus was a granulation. On the next day a good deal of non-fetid débris was syringed out. When the speculum was pressed upon, another piece of non-fetid material came into view, and was removed with forceps. On July 21st there was again a quantity of material in the ear, and it was removed by syringing and again not fetid. On the 22nd the patient was operated upon by me. The preliminary steps were those usual in Stacke's operation. After the osseous meatus had been exposed, it was found that a Stacke's protector could be passed backwards into a cavity, the instrument evidently passing through a loss of substance in the posterior wall. Bone was then removed from the posterior and upper wall inwards as far as the protector. It was then found that the latter lay in a large cavity filled with what appeared to be cholesteatomatous material. This was removed as far as possible with a sharp spoon, but no undue force was used. Here again the débris was free from smell. The removed material seemed also to contain granulation tissue, and towards the end what looked like brain substance. At no time was there the slightest fetor. It appeared to me that if the brain was really exposed the best thing to do was to cover it as far as possible with skin, and this I did, taking flaps from the posterior and anterior edges of the wound. The latter was then lightly plugged with sterilized gauze, as also was the meatus. During the afternoon there was considerable oozing of watery fluid, presumably cerebro-spinal; this, however, only lasted for an hour or two; the temperature at night was 100°. After this she made practically an uninterrupted recovery. Indeed, I saw her in March of this year, and she was then perfectly well. The flap which covered the part where the brain had been exposed continued to pulsate and the skin from the posterior surface of the wound had been pushed forward, so that what was at first a large cavity had now its posterior and anterior walls almost in apposition. At the time of operation some of the suspected brain substance was laid aside, and Dr. Noel Paton kindly supplied the following report: "Brain tissue and a small piece of tissue loaded with leucocytes, no cholesterin crystals."

I regret extremely that no microscopic examination of the non-fetid, cholesteatoma-like masses, which were first removed, was made. The whole case bristles with difficulties, and the most striking is the absence of fetor. Here, again, I must for the present refrain from speculation, and content myself by having brought before you a case of unusual character, and necessitating, from the unexpected condition disclosed by operation, a special modification of technique. The one point which seemed to me fairly certain was that at the time of operation the dura had already disappeared.

The following brief notes are of interest in view of the somewhat unusual course run by a case of extradural abscess.

Case V.—J. M. was admitted to my wards in October, 1902, with the following history: He had never suffered from his ear until ten weeks before. He then had a cold in his head, and after a rigor noticed discharge from his left ear. There seemed never to have been pain. About a week before admission he observed a swelling behind the ear, and was sent in by his doctor. On examination there was marked swelling over the mastoid, and only slight tenderness on very firm

pressure over the tip, and 1 in. higher up. There was fluctuation between these two points. The ear contained discharge, and after its removal a granulation was found attached to the posterior wall, which prevented a clear view of the membrane. Hearing defective (loud voice, 18 ft.); tuning fork was heard better by air than by bone conduction, but was perceived better by affected ear from the middle line. On operating I found pus coming through the bone about 2 in. behind the mastoid. A probe passed reached the dura. The opening was enlarged and the edges smoothed with a bur, and as a result more pus escaped. There was no fetor. The mastoid antrum was not opened, as I thought this might be done later if required, and because I assumed that the pus had first entered the cranial cavity, and then found its way out as described. The dressing consisted of light plugging with iodoform gauze. When this was first changed a large cavity was found discharging pus, with evident pulsation. There was, however, no tendency for the dura to present at the opening. The subsequent history was gradual diminution of discharge from the ear, disappearance of granulation, and finally complete dryness of the ear. By January 4th, 1903, all pulsation had disappeared from the opening behind the mastoid, and the patient was during my absence transferred to the convalescent.

The course of this case was peculiar in the following points:

1. Drainage from the mastoid had occurred by a very circuitous route.

2. The post-auricular extradural abscess filled up very slowly, and, curiously enough, the dura never came near the external orifice, there being for long an apparently deep cavity.

3. There were very few general symptoms, the eyes were normal, and there was never anything noteworthy in pulse or temperature.

I must say this case was rather puzzling to me, and I felt inclined to perform a second exploratory operation. However, the patient improved so steadily that I hardly felt justified in insisting upon the necessity for this, and the man was naturally very averse to further surgery; more particularly, as I could not say that I thought it absolutely necessary. Unfortunately I cannot give his case up to the present, as I should have liked to do. Still, I have thought the above notes of sufficient interest to warrant bringing them before you. I shall endeavour to ascertain the subsequent history, and, if it arrives in time, give it as a footnote.

The next case to which I desire to direct attention is that of a cerebral abscess opened through the mastoid wound.

Case VI.—J. M., aged 19, was admitted to my wards on July 20th, 1901, complaining of "running ear and sore head." The previous history was vague, but the present illness began three weeks before with great pain in the ear, which lasted a fortnight and then was relieved by discharge. Pain, however, then occurred in the head and right temple and continued up to date of admission. There was no marked tenderness, excepting at the base of the right mastoid. The patient also complained of giddiness, which had been present about a week. The right pupil was rather irregular, and Dr. Sym reported the presence of optic neuritis in the left eye and a condition suggestive of commencing optic neuritis in the right. The bowels were constipated, the temperature, when his case was taken was 101.4° F., and the pulse 64. There was also slight photophobia, which began two weeks before. The right meatus contained very fetid pus and epithelium, so that the exact site of the perforation was not made out. As this was not a case admitting of delay I operated on the following day by Zaufal's method, freely exposing the middle-ear cavities and removing diseased bone. On probing in the region of the tegmen a fistula was discovered, through which pus poured; the orifice was enlarged and all softened bone removed with the sharp spoon; a small sequestrum was removed which looked very like the tegmen, and a small slough also came away quite like a piece of dura. In this way, a large temporo-sphenoidal abscess was opened. The cavity was syringed out gently and two tubes inserted. The subsequent course of the case was very favourable, and the patient was discharged on September 5th. On January 28th, 1902, Dr. Mackay reported both eyes normal, including the fundi.

I have referred to this case shortly in order to illustrate the extremely satisfactory results which may be attained by following up the disease along its track. A less satisfactory issue occurred in the following instance:

Case VII.—D. S., a boy of 11, admitted to my wards on November 16th, 1897. The history was rather uncertain, but he appeared to have had a discharge from the right ear for two months. About three weeks before this diminished and then stopped. Afterwards the patient had sharp pain in the ear, which continued although the discharge reappeared. A few days before admission a swelling was noticed behind the right ear, and just before that period he was said to have had vomiting and headache. He was also stated to have lost flesh for three weeks. In the ear there was much fetid pus, and there was marked swelling over the mastoid with tenderness. The lad was drowsy and listless, but did not complain of much pain. On the following day (17th) I opened the mastoid, using Schwartze's method, but on the 18th the boy continued drowsy and the pulse was inclined to be slow. Examination of the discs showed some fullness of the veins on the right side. On the morning of the 19th the nurse noticed that the patient could hardly be roused. This condition developed into almost complete coma with dilated pupils, the dilatation being most marked on the right side. It was noted that this pupil was uninfluenced by light until the patient was partially roused, when it contracted. There was no evidence of paralysis, but the pulse was slow—54. In this case, by prolonging the original incision and curving it forward I laid bare the upper margin of the osseous meatus and the bone immediately above it, then removed a disc of bone with a half-inch trephine and exposed the dura, which did not pulsate. It was incised; a director was passed towards the region above the tegmen. Pus was found, and dressing forceps were introduced, and a large quantity of fetid matter was evacuated, immediately after which the pulse rose to 75. During the operation but before the skull was opened the patient had violent convulsions, apparently chiefly on left side. A drainage tube was introduced into the abscess and the parts dressed. Symptoms of compression again appeared in the afternoon; the pulse became intermittent, and the breathing assumed a Cheyne-Stokes character. I was summoned, and after removing the dressings found the tube had been forced out by intracranial pressure. A tube was reintroduced and stitched to the skin, and the symptoms were at once relieved. On the evening of the same day the lad seemed fairly well and was quite conscious; he was, however, inclined to be restless and irritable. On the 20th he seemed better as a whole. The wound was dressed and the abscess cavity gently syringed. On the 21st the condition was less favourable. He had passed a restless night, complaining of his head and leg; pulse was quick and compressible, pupils moderately contracted, and the right disc showed marked swelling of the veins; there was also tenderness over the nape of the neck. On the evening of the same day there was slight delirium, and next day he became unconscious, although capable of being, to some extent, aroused. The coma became deeper, and next day he died. Necropsy revealed a huge temporo-sphenoidal abscess, which had ruptured into the lateral ventricle and filled it with pus. The matter had passed downwards into the fourth ventricle and there infected the meninges, and the under-surface of the pons and medulla were covered with pus.

In this case—looking back upon it—it would undoubtedly have been better to have performed an extensive radical operation at first, and in this way the abscess might have been tapped, as in the previous case.[36] Presumably, the rupture into the ventricle occurred just before the second operation, and the boy was then past saving. The case illustrates well how readily such an abscess may be reached by trephining just above the osseous meatus, thus reaching the common seat—that is, near the tegmen.

Case VIII.—F. K., a boy of 11, was admitted to my wards on November 16th, 1901. He complained of pain in the head and noise in the left ear. Lately both of these symptoms had become worse. The ear had discharged off and on for six years, but deafness was first observed a year before admission. For a few days previous to examination stiffness of the neck was complained of. The discharge was said to have dated from a fall at the age of 7. He had aural polypi removed in the out-patient department several times during the previous year. On examination the left ear was found filled with granulations and foul discharge, and hearing on that side was much impaired. There was pain on pressure over the base of the mastoid, and on percussion 1 in. above and 2 in. behind the meatus. A slight tendency to fall to the left on walking was noted. On the evening of the 16th he had a rigor, and at 8 p.m. the temperature was 103.2°, afterwards rising another degree. On the morning of the 17th there was another rigor, with temperature of 102.2°. Examination of the eyes showed double optic neuritis, especially marked in the right eye. On the 17th a radical mastoid operation was performed. On the 18th temperature fluctuated between 99° to 104°; on the 19th, 98° to 104.8°; on the 20th, 97° to 105°. A blood count kindly done by Dr. Gulland showed marked leucocytosis (22,000 white cells). As this state of matters continued, the lateral sinus was exposed; exploratory puncture with hypodermic syringe gave neither pus nor blood, but as further exposure showed a yellowish colour, a small incision was made through which non-fetid pus under tension escaped. The sinus was curetted upwards, and downwards and from above free bleeding occurred, none coming from below. The bleeding was stopped by pressure and the parts dressed. The jugular was not tied. On the 26th there was no rigor; on the 27th, however, the temperature rose to 105°. After this there was a general tendency to improvement, but rises of pulse and temperature continued to occur at longer intervals until December 30th. On the last occasion, when the fever was marked (December 10th), there was headache with high temperature, probably depending in great part upon carious teeth, although there was still fairly marked leucocytosis (18,600). On January 3rd he was able to be up for a little, and after this rapidly improved. On December 27th optic neuritis was present as at first, but on February 21st it had disappeared; on the 27th the patient was discharged. Cultures were made from the pus in the lateral sinus by Dr. Welch, and yielded colonies "which in many respects resembled a short form of the diphtheric bacillus. I am not satisfied as to the character of the bacilli in question, and propose making further investigations" (report by Dr. Welch).

I have thus sketched in bare outline a very interesting

[36] The comparatively recent history had made me select Schwartze's method.

example of lateral sinus thrombosis. The questions which arise in connexion with it are:

1. Should the sinus have been explored at the first operation?

2. Should the jugular have been tied?

The first I am inclined to answer in the affirmative, more particularly as it was subsequently learned that the patient had had rigors at home. This is hardly the place to discuss the question of ligature of the jugular, but the abstention in this case was justified by the result. The most interesting feature was the temperature chart (two-hourly), which, however, time and relevance do not permit me now to discuss.

II.—Professor Arthur Hartmann,
Berlin.

Professor Hartmann said: Dr. McBride has given us a detailed description of the history and of the operation for treating middle-ear suppuration. After his lucid review and description it is unnecessary for me also to describe the operation. I will therefore confine myself to some practical points, and to showing you some preparations and illustrations of them.

Concerning acute inflammation: in opening the mastoid, the antrum as a rule should be opened so as to allow free communication with the tympanic cavity. Only in those cases of abscess of the mastoid in which the internal wall of the abscess during the operation appears to be healthy, and in which there is no swelling of the posterior and superior wall of the meatus and of the upper part of the tympanum can we confine ourselves to the removal of the diseased bone. In other cases the antrum should be opened. If there are any symptoms or signs pointing to the extension of suppuration to the middle or posterior cranial fossa, then the bony parts should be removed until the dura mater is exposed.

In order to effect a rapid and lasting cure by this operation, the opening of the cavity of the mastoid must be made very wide. All the bone from the diseased parts, chiefly the posterior and inferior edges of the bony cavity, must be removed, and not only these parts, but also the external part of the posterior wall of the meatus. By so doing you obtain an extension of the soft integuments which line and cover the cavity.

As regards the treatment of chronic suppuration of the middle ear, we are indebted to the surgeons Kuster and v. Bergmann for having shown to us the way to obtain a sure and permanent cure. Following them, Zaufal and Stacke gave us an exact description of the operation which we now call the "radical" operation, and which was based upon the peculiar anatomical and pathological conditions. They described in detail the various steps of the operation, what we added later was chiefly the enlargement of the external meatus by plastic methods such as Körner's flap. The principle in the radical operation is that all the affected parts of the tympanic cavity and mastoid are rendered perfectly accessible and visible.

For this purpose (1) all bone external to the affected parts must be removed; (2) the external meatus must be considerably enlarged. Whether you take away the bony parts with a gouge or with the bur depends upon the experience and practice of the surgeon. The bur may be preferred for working in the deeper parts, for removing the bridge between the antrum and the internal part of the meatus, and for removing the external wall of the attic, but these parts can be equally well removed with small gouges. The use of the bur can scarcely be avoided in opening the vestibulum of the labyrinth. The bur is also useful and convenient for smoothing the whole of the surface of the cavity.

In the literature we have many descriptions, illustrations, and measurements demonstrating the danger of injuring the facial nerve and the semicircular canals. I have myself made measurements on a large number of preparations, and have given the number of millimetres the facial nerve and semicircular canals are distant from the external surface of the mastoid and the suprameatal spine. But I do not wish to attach too much significance to such measurements; of much more importonce than the description and measurement is the experience acquired by examination of specimens. Every one who wishes to perform operations upon the temporal bone should have made many *post-mortem* examinations of this region and thereby have acquired a mental image of the minute anatomy of the parts. In that way only can he avoid with the greatest possible certainty the danger of injuring important structures. I have brought with me several preparations which demonstrate the parts we have to deal with:

[Dr. Hartmann here demonstrated a series of anatomical preparations illustrating the surgical anatomy of the temporal bone.]

1. A preparation in which the bone is opened in the same manner as in the radical operation. The posterior wall of the meatus has been removed, the external part entirely, and the internal with the exception of the facial protuberance. Moreover, the external wall of the antrum and the attic is removed.

2. A preparation in which the posterior wall of the meatus has been left but the facial and semicircular canals are opened.

3. The same preparation without the posterior wall of the meatus.

The preparations show that the facial canal is only a few millimetres distant from the internal and posterior wall of the meatus, and that dissection of the inner wall of the meatus can scarcely be done without injuring the facial nerve. In most cases such chiselling is not necessary. Only when we must have a way to the oval window the chiselling of the internal and posterior wall is to be considered.

The first operations for the treatment of labyrinthine suppuration were published by Jansen, and we have now a very complete description of these operations by Hinsberg. We can open the vestibulum without difficulty by removing the stapes from its window; if it is not to be seen we can open the vestibulum by the bur, but must avoid going upwards so as not to hurt the facial nerve; if we go too deeply the carotid may be injured. In the majority of cases purulent inflammation of the labyrinth has extended from the mastoid through the semicircular canals, therefore, as a rule, the operation must be performed from the latter point. The horizontal semicircular canal would be opened first. We must follow it just behind the facial canal until we reach the vestibulum. A probe can then be introduced coming out through the oval window. By following the anterior part of the horizontal canal one comes very easily into the vestibulum. These proceedings can be better demonstrated on preparations than they can be described.

[Dr. Hartmann here demonstrated the following preparations]:

1. A preparation in which the radical operation has been performed and the labyrinth has been opened by means of a bur. The operation was performed so that at first the horizontal canal was opened, and then the anterior branch was followed, and the labyrinth having been entered, the posterior and inferior part of the surrounding canal was removed.

2. A vertical section cut parallel to the meatus, showing the vestibulum open.

3. Some horizontal sections through the vestibulum and horizontal canals.

It will be observed from all these specimens that the operations must be performed in the most careful manner, for if we go too deeply we are in danger of opening the internal meatus, and if we go down there is the danger of hurting the facial nerve.

Before performing the operation for chronic suppuration I would recommend that the tympanic cavity and the antrum should be cleansed as thoroughly as possible by means of a cannula such as I have designed. I have seen many cases in which the operation for chronic suppuration of the middle ear had been advised, but after washing out the tympanum and the antrum in the way I have suggested the discharge ceased, and by a few repetitions of this cleansing the necessity for an operation was obviated. I have met with similar experiences in the treatment of suppuration of the antrum of Highmore.

During the operation we should remove all inspissated matter and cholesteatomatous masses by syringing, and not with the spoon. In this way we can save the surface, which is covered with epithelium. This epithelium is of service in promoting healing.

As a rule we have after an operation several spots which are covered with epithelium; the inferior and superior wall of the meatus, also a small piece of the internal part of the posterior wall, some parts of the surface of the internal and upper wall of the tympanic cavity and the antrum, and from these spots epidermization can extend. When we enlarge the opening of the meatus and remove the edges in a manner similar to what I recommended in the operation for acute abscess the soft integuments can extend inwards, and only a small cavity

is left to close. The best grafts are the natural extensions from the soft parts in the cavity; the enlargement of the external meatus may be done by Körner's flap or by the Y cut of Seibenmann. The more you enlarge the meatus the more you diminish the external surface of the wound cavity, and the easier and quicker can epidermization of the internal surface take place, by extension from the edges of the enlarged meatus.

For making Körner's flap I use an instrument which I recommended some years ago. It serves to fix the membranous part of the meatus and very much facilitates the cut through it.

Healing by means of skin grafts is not now so much performed in Germany as formerly. By proceeding in the manner I have recommended to you, so that you leave some parts of the internal surface covered with epithelium, and by removing the edges so that the whole cavity is rendered very small, and by enlarging the external meatus considerably, you seldom have to resort to skin grafting, and the wound behind the concha can be sutured after the operation.

III.—Dundas Grant, M.A., M.D., F.R.C.S.,
Surgeon, Central London Throat and Ear Hospital.

Dr. Dundas Grant said the Section might consider itself fortunate in the fact that Dr. McBride and Professor Hartmann had accepted the responsibility of introducing that discussion.

Dr. McBride, in taking events in historical sequence, had given them an admirable *exposé* of the gradual development of operations now practised on the temporal bone in suppurative middle-ear disease, so that his advocacy had not been confined to one pet method, but he had given appreciative consideration to all.

Professor Hartmann had taken a very practical course in dividing the operations into two groups, according as they were practised for acute or for chronic inflammation. All would agree with him that these operations were entirely different. The operation for acute suppurative inflammation was one which could hardly be overestimated, seeing its extraordinary efficacy in leading to a cessation of discharge and to a recovery of the organs of hearing to little short of their integral state. It might be said that the radical operation was too often performed; it was his opinion that the non-radical operation for acute inflammation was performed too seldom. Most of them must have been surprised, when they had been led to open the mastoid in a case of persistent acute suppuration of two or three weeks' standing, to find to what an extent the interior of the mastoid portion of the temporal bone had broken down, so that the sigmoid sinus was exposed, and sometimes, though more rarely, the dura mater was also laid bare. Jansen had taught with what frequency extradural abscess resulted from acute suppuration, and his somewhat alarming statistics would be readily comprehended by one who had performed the operation Dr. Grant referred to with any degree of frequency. When performed with care the operation presented no particular difficulties, and in the presence of threatening symptoms, a general surgeon of even the most modest acquirements ought to be prepared to carry it out. In a considerable proportion of Dr. Grant's cases it had been unnecessary to make any intentional opening of the antrum, as he had found a condition answering exactly to that described by Politzer as resulting from influenza—namely, a large comparatively smooth-walled cavity filled with pus, and not apparently communicating with the antrum. The mere presence of this seemed, however, to have kept up the suppuration in the middle ear, which cleared up as soon as this cavity was laid open, emptied and drained. As a rule, however, he made an opening into the antrum in order to assure himself as to its condition, frequently finding it so comparatively normal as to preclude the necessity for opening it more freely. In other cases, a space filled with granulation tissue extended right up to the aditus, and a reasonable amount of clearance had, he thought, been found beneficial. He did not, however, think that it was advisable to syringe forcibly through from the mastoid cavity to the tympanum, as there was such a remarkable tendency to rehabilitation on the part of the latter when once the disease in the mastoid had been removed. He usually plugged the cavity for about forty-eight hours, then removed this and pressed the skin down into the hollow by means of gauze dressings, a strip of lint moistened with so-called "red wash" being introduced down to the bottom. He had no experience of the primary suture, but considered its trial quite justifiable.

Very different was it with the operation for chronic inflammation; this, which had to be thorough, was one which tested the technical capacity of specialists to its utmost degree, and the surgeon who would attempt to do it without a good deal of special study of the matter was likely to meet with considerable difficulties and unsatisfactory results. The main principles of the operation had been tersely laid down by Professor Hartmann, namely, that all the bone external to the affected part must be removed. The method by which this was done was probably now familiar to most of those present, and he was bound to say that he preferred to work down upon a firm bent probe, such as the one devised by himself, or Stacke's guard which protected at the same time the facial nerve and the external semi-circular canal; but Stacke's guard was in itself capable of doing damage, unless it was held by an experienced assistant, the danger, of course, was that of damaging the facial nerve; the guard itself might be the agent in doing this if it was roughly manipulated while in the aditus, because immediately below it lay the nerve, and, by a lever action which would be readily intelligible, the toe of the guide might be pressed down with considerable force upon it. There was another source of difficulty which had, so far as his reading went, been described in only one systematic work, namely, that of Mr. Mark Hovell; this was the possibilty of introducing the guard or probe into the sinus tympani, the cavity lying below the facial nerve and which was sometimes of considerable size either from peculiarity of structure or from the effects of disease. Various forceps had been recommended for cutting away the posterior wall of the meatus, but he was inclined to think there was nothing better than a flat chisel which in this part of the operation had a peculiar advantage of its own, just as the hollow one had, for instance, in the removal of the outer wall of the attic.

The question of "plastic" had probably not yet been entirely settled. Personally he had found Körner's flap very satisfactory, and as a rule he saw no object in thinning it down, as it was not well to leave an unnecessarily large cavity posterior to the auditory meatus; a large cavity there simply served as a sort of trap for epidermic remains and collections of cerumen. Mr. Ballance's flap had seemed to him theoretically to be hinged in the wrong direction, but practically it acted extremely well; one might criticize it as having a tendency to draw the anterior wall of the membrano-cartilaginous meatus backwards, and in this way detach it from its osseous bed. To prevent this he had made a longitudinal cut along the upper wall of the meatus, so as to detach the flap from the anterior part. If it was necessary to have a very large meatus, this could be done by making a large Körner's flap extending into the concha, and dissecting the underlying tissues from its skin covering. He had two cases under his observation in which he had done this with the most complete success so far as enlargement was concerned, but really to a very much greater extent than was at all necessary. The result was very unsightly, although it fulfilled the purpose of admitting the air to the cavity in the most perfect degree.

He brought before the Section at its last meeting in Manchester some views with regard to the retention of the lining membrane of a cholesteatoma cavity when this was complete and comparatively homogeneous. Although it was not a good skin, it was a fair substitute for it, and was calculated in such cases to take the place of the skin-graft devised by Mr. Ballance. It had been stated that the bone underneath the cholesteatoma matrix was always diseased, but in a case recently under his care he carefully pulled out the whole cholesteatoma, and found the bone beneath it to be perfectly smooth, as if the cavity in which the cholesteatoma lay had been hollowed out by means of a bur. In this case he had departed from his usual rule of leaving the matrix *in situ*.

In regard to Mr. Ballance's grafting, he could only say it had given him better results than any other method that he had employed, and that in the case of quite a large cavity other than cholesteatoma, to which he had referred, he considered it indispensable. When, however, the cavity was small, he thought that it might be got to heal in so short a time as to justify the omission of a second operation.

IV.—R. C. Elsworth, F.R.C.S.,
Surgeon, Swansea Hospital.

Mr. Elsworth thought just as good a surface could be got with the gouge and chisel as with the bur, practically, by planing off thin shavings of bone with the hand—by wrist action chiefly—and using part of the instrument as a fulcrum.

He showed sections of temporal bones displaying the "accessory antrum" described by him. It lay above and behind the antrum proper and external to it, abutting on the sigmoid sinus. He also described a vein which skirted the accessory antrum, originating in the spongy tissue of the periosteum surrounding the antrum proper, and opening into the sigmoid sinus just below the knee. This vein was, he thought, the channel of infection in those cases of sigmoid thrombosis without erosion of the sigmoid groove. This vein was a constant vessel, and generally opened as described; but it might also end in several other ways, for example, in the superior petrosal sinus running on the temporo-sphenoidal surface of the temporal bone, and sometimes, he thought, giving rise to temporo-sphenoidal abscess.

V.—Themistokles Gluck, M.D.,

Titular Professor of Surgery in the University of Berlin.

Professor Gluck, as showing the extent to which operative interference might be successfully practised, narrated the following cases:

Case I.—A woman aged 42 came under his care with erysipelas of the head originating from eczema of the meatus. For twenty-eight years she had suffered from otorrhoea with formation of cholesteatoma. She had rigors, headache, and vomiting. There was fetid otorrhoea, and the whole tissues of the neck along the carotid sheath were swollen and tender. Professor Gluck first opened the mastoid and cleared out the cholesteatoma, but did not open the cranium, fearing extension of the erysipelas to the meninges. The erysipelas quickly subsided, but rigors continued to occur; the neck was stiff, and delirium and retention of urine came on, and there was difficulty in swallowing from increasing infiltration of the neck. The parts were fully exposed by a longitudinal incision over the carotid sheath and a transverse one across the occiput. The mastoid was removed and also the posterior part of the foramen lacerum posticum with the styloid process. A large part of the squama came away and the petrous temporal was removed together with the labyrinth and facial canal, as it was carious and infiltrated with pus. The dura mater was freely exposed, also the transverse sinus, the genu and the jugular bulb as far as the bend. All extradural pus having been evacuated, the external jugular was tied and cut. The internal jugular could be felt as a hard cord, but contained some blood: the superior thyroid, lingual, and common facial veins were full to bursting. The latter were tied and cut after ligature of the internal jugular at the bend (angulus venosus). Drawing the carotid and vagus inwards the jugular vein with the bulb and the contained suppurating thrombi were removed. In removing the jugular bulb the internal carotid in its bony canal had to be secured with two stitches on account of severe haemorrhage. In removing the jugular bulb and clearing out the sigmoid sinus, it was found that the thrombosis extended into the inferior petrosal and also into the transverse sinus, and they were accordingly cleared out, the latter as far as the torcular Herophili; the free bleeding being controlled by iodoform gauze plugs. The patient made a good recovery; the giddiness and swaying gait due to removal of the labyrinth disappeared, and except for facial paralysis the patient was well. The case showed the importance of removing all diseased bone even as far as the apex of the petrous temporal, and also the advantage of preliminary ligature of the internal jugular before opening the sinus.

Case II. *Nerve Grafting for Facial Paralysis.*—A boy, W. S., was operated on by Professor Gluck in 1869 for cholesteatoma and extradural abscess. The boy made a good recovery, but complete facial paralysis followed the operation. In July, 1901, a nerve-grafting operation was undertaken. The branch of the spinal accessory which supplies the trapezius was found and isolated. Next the pes anserinus major was exposed and the facial trunk traced back. The nerves were divided and the peripheral end of the facial was joined exactly to the central end of the spinal accessory with three fine points of suture. The wound healed by first intention. In September, 1902, the whole region supplied by the facial nerve reacted to faradic currents. At present the peripheral regions supplied by the facial and the spinal accessory can only obey one impulse of the will. The mode of regeneration in this case is probably that the nerve branches from the axis cylinder of the central stump arrive at the peripheral end and then grow on into the old tubes of Schwann.

VI.—W. Jobson Horne, M.D., B.C.Cantab.,

Surgeon, Metropolitan Ear, Nose, and Throat Hospital; Ernest Hart Memorial Research Scholar.

Dr. Jobson Horne considered it would not be possible to overstate the practical importance of the points Professor Hartmann had dealt with in his paper. The technique of operations on the temporal bones and a knowledge of the dangers of the operation and how to avoid them were not to be acquired by studying the measurements and the descriptions of the surgical anatomy given in the literature. For knowledge one had to go to the dead-house and to the laboratory, and although the minute dissection of the bone was laborious, and the time expended costly, it was the only path to a thorough knowledge of the region and of its remedial surgery. Ample evidence of this was afforded by the instructive preparations Professor Hartmann had brought with him, and had demonstrated to them. Speaking of the technique of the operation, Dr. Horne referred to the relationship of the posterior bony wall of the meatus to the facial nerve, and considered that more of this wall could be cut away than was generally done, and without injury to the facial nerve. This point had been demonstrated by Dr. Hugh Jones at a meeting of the Otological Society of the United Kingdom recently held in Liverpool. By a more efficient removal of this part of the bone better drainage was established, healing was accelerated, and the possibility of a subsequent narrowing or stenosis of the meatus was materially lessened. Another point to which Professor Hartmann had alluded, and which had given rise to considerable discussion in the Otological Society, was the advisability of leaving or removing the epithelium forming the outermost layer or matrix of a cholesteatoma, and on this matter Dr. Horne was anxious to hear more fully the views of his former teacher. As regarded the interesting specimens shown by Mr. Elsworth to demonstrate an accessory antrum and a vein connected with it, Dr. Horne said that last year, after listening to the lucid description given by Mr. Elsworth at Manchester, he had formed the opinion that the vein referred to was a tributary to the petro-squamosal sinus, and that the accessory antrum was an aberrant mastoid cell. That opinion had been now confirmed by the opportunity he had had of examining the specimens; all of which were adult bones, and he inquired whether this accessory antrum was demonstrable in quite early life. Whilst fully agreeing that the vein might play an important part in the pathology of the bone, and that the possible existence of the cell should not be forgotten in the surgical treatment of suppurative disease, he thought it would be unwise to dignify either by special names, and thereby add to the terminology with which the bone was already burdened.

VII.—Herbert Tilley, F.R.C.S.,

Surgeon, Throat Hospital, Golden Square.

Dr. Herbert Tilley thought that if the multiplication of special instruments for many unimportant steps in the mastoid operation went much farther that operation would come to depend less upon surgical skill and knowledge of anatomy than upon the correct use of mechanical appliances. With reference to skin grafting after the radical operation he thought that all would be agreed that the method was only a time-saving one as regarded the after-treatment and that it should be, as a rule, reserved for cases in which the combined tympano-mastoid cavity was large. He had grafted 15 cases but gave up the gold foil after the second one because it seemed to prevent escape of moisture and promoted maceration of the graft. Small pellets of aseptic gauze carefully and evenly packed down on to the graft gave excellent results. Separate grafts about the size of a sixpence or threepenny-piece were better than one large graft because failure of one of these would not entail complete failure of the grafting operation as might be the case with one large graft. He thought that it was quite possible to get a small to medium-sized tympano-mastoid cavity to heal without any packing at all and had seen cases which had healed perfectly in five weeks when treated only by daily irrigation and drying out with sterilized gauze mops followed by the instillation of spirit drops.

VIII.—Adolph Bronner, M.D.,

Senior Surgeon, Bradford Eye and Ear Hospital; Laryngologist, Bradford Royal Infirmary.

Dr. Bronner thought plugging the mastoid wound should not be continued for more than four or five days, as it only retarded healing. He would like to know the final result in cases where skin grafting had been used, say after a year or two.

IX. Samuel Lodge, Jun., M.D.,

Honorary Surgeon, Eye, Ear, Throat, and Nose Department, Royal Halifax Infirmary; Senior Assistant Surgeon, Bradford Eye and Ear Hospital.

Dr. Lodge described the formation of a shining resilient membrane in one of his cases two years after operation. He would like to know if other members had met with a similar condition.

X.—A. Logan Turner, M.D., F.R.C.S.E.,

Surgeon, Diseases of the Ear and Throat, Deaconess Hospital, Edinburgh.

Dr. Logan Turner said mastoid cases were generally spoken

of as acute or chronic, but he would like to know what meaning exactly was attached to the terms. How long might a case be considered "acute" and treated as such, and when did it pass into the chronic category? With regard to packing, he thought that if they were going to give it up they would require to see their cases more frequently.

XI.—Robert Woods, M.B., F.R.C.S.I.,
Surgeon, Diseases of the Ear, Throat, and Nose, Richmond Hospital, Dublin.

Dr. Woods thought that the multiplicity of instruments was to some extent the effect of want of early mechanical training on the part of the operator. As to skin grafting, he thought its function was a double one, first shortening the convalescence, and secondly, diminishing the tendency to subsequent stenosis of the cavity.

XII.—V. Delsaux, M.D.,
Professor in the University of Brussels.

Professor Delsaux recorded his own experience and that of a colleague in dispensing with continuous plugging in the after-treatment. They removed the plug on the second day, and filled the cavity of the wound with boracic acid powder. At the end of a fortnight a granulating surface was found with islands of epithelium, which gradually spread and lined the whole cavity.

Replies.

Dr. McBride felt extremely doubtful about the advisability of retaining the cholesteatoma membrane as advised by Dr. Grant and Professor Hartmann, seeing that it was the birthplace of the whole formation. The "accessory antrum," if constant, was a very important cavity, whatever name it might be called by. Stacke's protector was, in his opinion, an extremely useful instrument, and could not be efficiently replaced by a bent probe. With regard to the question of chronicity raised by Dr. Logan Turner, he thought a case might be considered chronic after a year, but the appearance of parts as seen through the aural speculum would generally enable a decision to be made. For instance, a small perforation, with pouting granulations, generally indicated a comparatively recent condition, with defective drainage, such as might probably be relieved by opening the antrum; in chronic cases there was often extensive destruction of the membrane, with loss of ossicles, etc.

Professor Hartmann agreed with Dr. Dundas Grant as to leaving the cholesteatoma membrane in suitable cases. He had noticed very rapid healing afterwards. He did not wash out in acute cases, and he laid great stress upon the dryness of the mastoid wound. He did not use Stacke's protector, nor did Stacke himself any longer.

ON THE LOCAL USE OF FORMALIN IN THE TREATMENT OF NASAL POLYPI BEFORE AND AFTER OPERATION ON THE SAME BY THE USUAL METHODS.

By Adolph Bronner, M.D.,
Senior Surgeon, Bradford Eye and Ear Hospital; Laryngologist, Bradford Royal Infirmary.

I do not intend to enter into any discussion on the causes and treatment of nasal polypi, but wish simply to record my experience with the local application of formalin in these cases.

Thanks to the good work recently done by Zuckerkandl, Hajek, Grunbaum, Lack, and others, we know that nasal polypi are the result of chronic inflammation of the mucous membrane, due to local irritation by pus, etc., or to focal suppuration, and that generally the underlying periosteum, often also the bone, is diseased. In many cases one or more of the accessory cavities, especially the ethmoidal cells, are affected. This partly explains the great tendency of the polyypi to recur, and the frequent necessity for surgical interference.

All specialists, but I am sorry to say not all surgeons, have long since discarded the barbarous method of removing polypi by introducing forceps, and pulling out as much of the interior of the nares as they can catch hold of. (They have a special preference for the unoffending lower turbinates.) The cold or hot snare is now invariably used. I remove as much of the polypi or diseased mucous membrane as I can with the cold snare, and then apply formalin on a probe with cotton-wool to the roots of the polypi. I try not to cut through the pedunculated polypi, but to pull them out by the roots, and thus I often succeed in removing the whole of the polypus, and in many cases also part of the underlying diseased bone. Before using the formalin I again apply a powder consisting of equal parts of cocaine, eucaine, and desiccated suprarenal extract to the parts with a probe and cotton-wool.

After a few days a formalin spray (1 in 500, up to 1 in 100) is ordered to be used ter die for a week or two, and then less frequently. The patients are all asked to return again in one month. If the spray is painful (and some patients are extremely sensitive to formalin) I order a paroleine spray to be used before the application. The formalin not only acts as a powerful disinfectant, but also causes contraction and hardening of the diseased tissues. I also order insufflations of tannoform, aristol, and boric acid. As long as there is much discharge an alkaline spray should be used. Often the middle turbinate is extensively diseased. In these cases I remove the anterior part of the bone by forceps or snare. Messrs. Mayer and Meltzer have recently modified Grunwald's forceps and made them larger and stronger.

Before operation the nares should be most carefully examined, the swelling of the mucous membrane removed by the local application of equal parts of powdered cocaine, eucaine, and desiccated suprarenal extract, and all the cavities and recesses, as far as possible, examined with a probe. Thus, and only thus, can an accurate diagnosis be made and scientific treatment adopted.

I use this method in all cases of polypi. In many surgical interference becomes necessary, but I do not think we should have recourse to this before we have thoroughly tried local medical treatment for some weeks or months and removed the polypi numerous times, and used formalin during the intervals.

It is often impossible to tell how many of the accessory cavities are affected. In most cases the frontal and ethmoidal cells are diseased. Lack strongly advises thoroughly scraping these cells under a general anaesthetic, and has published numerous successful cases. I have followed his suggestion, but my cases have not all done well. Nor, I may say, have all other surgeons had good results. I have seen numerous cases reported as cured in which recurrence has taken place. The operation is also not devoid of danger, and many fatal cases have occurred, although they have not been recorded. If local medical treatment fails I remove under a local anaesthetic part of the middle and upper turbinates with forceps, sharp spoon, or snare at several sittings. If eucaine and suprarenal extract are used there is not much pain or haemorrhage. In the interval between the operations formalin and tannoform are applied locally.

Nearly all the numerous cases in which I have operated during the last three to four years have, so far as can be judged in so short a time, been very successful. I see the patients every month, and if there is the slightest recurrence of polypi I remove these with the snare and apply formalin. In some cases numerous operations are necessary, and the polypi seem to recur in a less degree each time. In Yorkshire nasal polypi (as all diseases of the nose) are extremely common, much more so than in the South, so that we have ample opportunity of seeing and treating a large number of cases.

Dr. Herbert Tilley thought Dr. Bronner was making too sweeping a statement in saying that the majority of nasal polypi were caused by accessory sinus disease. For practical purposes he always divided polypi into those which were and those which were not associated with suppuration. In the latter class of case accessory sinus suppuration was always present, and was probably the cause of the polypi.

Dr. Childe advocated the removal of polypi with forceps according to the method of Sir Mitchell Banks. He thought it was not possible to be too thorough.

The President thought that formalin probably acted much in the same way as the galvano-cautery. The latter produced a sort of local boiling of the parts, and was an excellent antiseptic.

Dr. Jobson Horne inquired whether the possible danger of injuring the olfactory structure by the use of formalin in the treatment of nasal polypi was outweighed by the good results obtainable, also whether it was advisable to entrust to patients the application of formalin in efficient strengths by means of sprays.

Dr. Bronner, in reply, explained that he applied formalin on a brush of absorbent cotton, strictly limiting its action to the diseased parts, and protecting the neighbouring tissues

with paroleine or some similar preparation; it was applied, in fact, exactly in the same way as pure carbolic acid or any other strong caustic.

ILLUSTRATIONS OF THE EFFECTS PRODUCED BY THE SINGING VOICE IN A SUITABLE MEDIUM.

By Arthur George Haydon, M.D.,
London.

In opening I may say that I am bringing before the notice of the British Medical Association an entirely new subject, but one which will be of great interest both from a physiological and pathological point of view. It may also prove to be of some value as a means of diagnosis.

It has recently been discovered that the vibration of the singing voice in perfect health, when tested by a certain apparatus known as the idiophone, will produce the formation of pictures of flowers in various colours.

I will here give a description of the idiophone, which is employed to secure these results. A porcelain cylinder is used, measuring 6 in. in length, with a diameter of 5 in., closed at one end by the same material, and open at the other. In the wall of the cylinder two holes are made on opposite sides, and into each hole a long tube is inserted, provided with a mouthpiece like a speaking tube. Over the open end of the cylinder a membrane of great delicacy is placed, and this is covered by lycopodium dust, the under-surface of the membrane having been previously coated with a layer of gelatine; and on this various paints of the primary and secondary colours are dusted in the form of fine powder.

In order to produce the results mentioned above the vocalist should sing into one of these tubes, the other being left open; the voice is therefore bottled up for a time in the cylinder, and the vibrations during its transit have been found to cause the various colours to pass through the gelatine and coalesce to form the most extraordinary and beautiful pictures of flowers; and these can be seen on the exposed surface of the membrane. The pictures vary in character according to the timbre of the voice, the time of the music, whether it be adagio, andante, allegretto or presto. Also if the music is phrased as in legato passages or separated as in staccato movements. The results of the experiments with the idiophone have been photographed. The photographs which accompany this paper are selected from a large number as good examples of the simple and complex forms respectively.

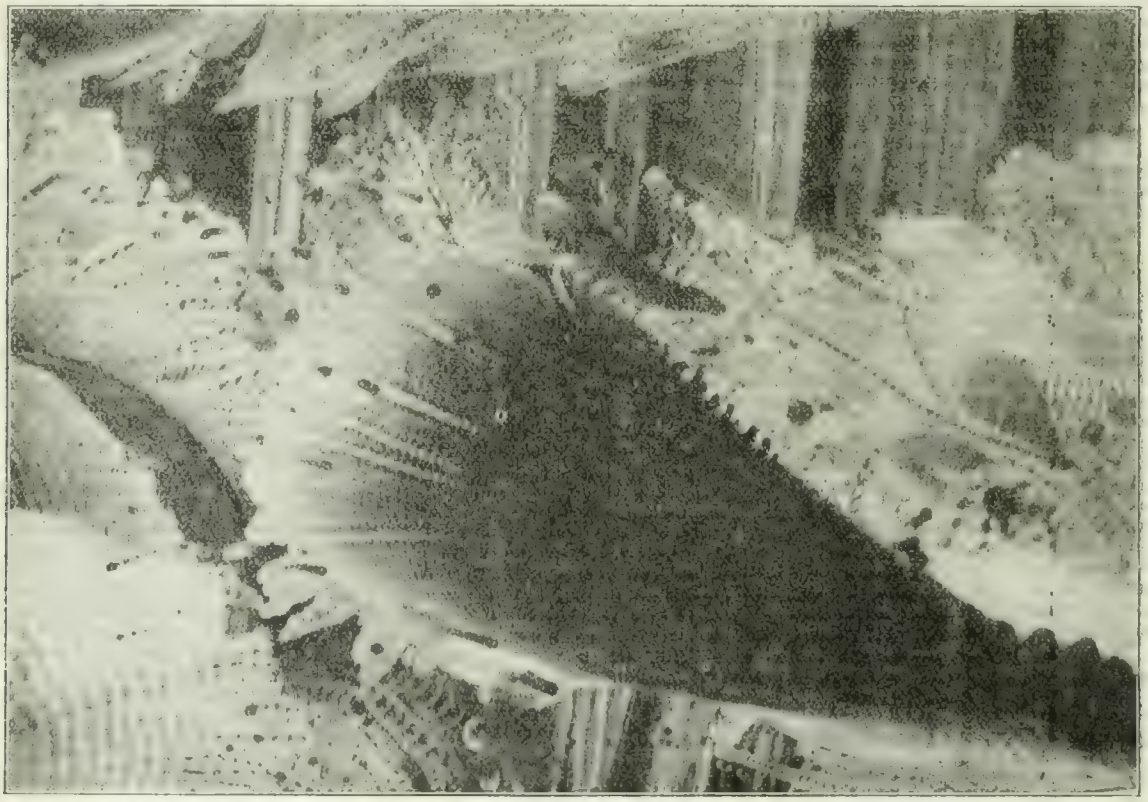


Fig. 3.—Produced by singing a cadenza into the cylinder. A specimen of musical embroidery. From a direct photograph of the membrane.

Turning now to the application of this invention to

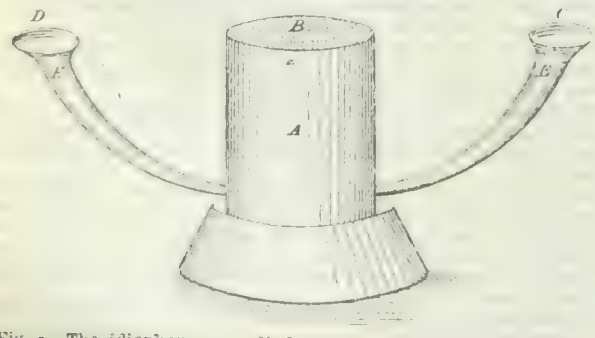


Fig. 1.—The idiophone; A, cylinder; B, membrane; C, inlet, mouthpiece for singer; D, outlet; E, tube.

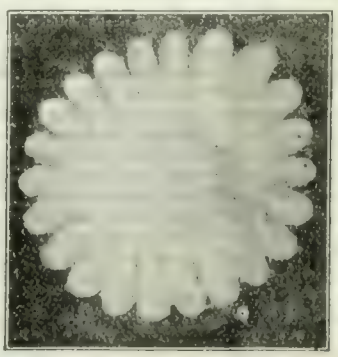


Fig. 2.—Produced by singing E flat into the cylinder. From a direct photograph of the membrane.

medicine, I would add that the diagnostic value of the idiophone will depend upon the pictures formed on the membrane as the result of the change in the voice produced by abnormalities of the lungs, bronchi, trachea, larynx, pharynx and palate. All these abnormalities are associated with well known diseases, and will produce by means of the idiophone definite pictures; and valuable records can be obtained to be added to the clinical report of the case.

We shall therefore find, I have no doubt, that before long this new means of diagnosis will be added to every throat hospital and to the throat departments of general hospitals, and form part of every physician's and surgeon's equipment. In conclusion, I may also draw your attention to the curious geometrical figures produced by vibrating fine chalk powder on a steel or glass plate, by placing a finger on one edge of the plate to produce a node, and drawing a violin bow against the opposite edge of the plate. As the position of the finger is changed, so different geometrical figures are the result. These are known as the Chladni figures, and certainly demonstrate the fact that all musical sounds which have even vibrations will produce definite pictures on a suitable medium. Membranes also vibrate in a similar way. The forms of their nodal lines are generally even more complicated than those of the plates. The general rule is that to a determinate note belongs a determinate figure for the same membrane or plate, and that the figure is more complicated as the note produced is higher.

A DISCUSSION ON THE UPPER RESPIRATORY TRACT AS A SOURCE OF SYSTEMIC INFECTION.

I.—F. de Havilland Hall, M.D., F.R.C.P.,
Physician, Westminster Hospital.

Dr. de Havilland Hall said: The subject of the discussion is one of great interest to me, and one which has engaged my attention for some years past. In my opening remarks in the Lettsomian Lectures, which I delivered before the Medical Society of London in 1897, the following passage occurs: "Before entering upon a description of the nose and throat affections of the acute specific diseases I would like to accentuate the extreme importance of the nose and throat as the chief portals of entrance of the poisons, whatever they may be, which give rise to these diseases." In the six years which have elapsed since these lectures were delivered more and more evidence has been accumulating in support of the opinion which I then expressed.

In no branch of medicine has greater advance been made than in the knowledge of the methods by which diseases are propagated. The whole subject of infection has required to be rewritten since the recognition of the part played by micro-organisms in disease. It is only since the discovery that many, if not most, constitutional affections depend on the presence of bacteria, that attention has been directed to the upper respiratory tract as a sourse of infection. Indeed, until particulate organisms had been proved to be the cause of various diseases, there was nothing more than a vague idea that certain smells, for instance, might cause sore throat or headache. Now we are in a position to demonstrate the route taken by these organisms, and I look to Dr. Jobson Horne to prove this to your satisfaction.

As it will be impossible in the time at my disposal to consider all the diseases which enter the system through the portals of the upper respiratory tract, I must confine myself to some of the more important. With you, Sir, in the chair, I feel that I must commence with typhoid fever, as in the extremely valuable paper on five cases of this disease which you read before the meeting of the British Medical Association in 1894, you adduced evidence to support the view that the respiratory tract was the source of primary infection in one of the cases.

I have myself had one hospital case in which the disease appeared to have started in the larynx. Though typhoid fever is almost invariably propagated by means of the stools and urine, there is sufficient evidence to show that the Eberth-Gaffky bacillus may find its way into the system through the respiratory tract. This is the more likely to be the case if the vitality of the laryngeal mucous membrane is lowered owing to previous inflammatory mischief.

Dr. Watson Williams's patient was particularly vulnerable, as he had suffered from old-standing laryngitis. These cases confirm Budd's view that, under certain conditions, typhoid fever was infectious, and they should lead to the expectoration being disinfected.

Though the particular organism responsible for measles has yet to be identified, the mode of onset points conclusively to the poison being received via the respiratory tract; at present, however, there is no definite evidence on the subject.

Even more certainly than is the case in measles is the evidence conclusive that Pfeiffer's bacillus, the micro-organism of that polymorphic disease, influenza, enters the system through the respiratory tract. I have seen many cases in which the trouble appeared to start in the naso-pharyngeal space and I am strongly of opinion that adenoid vegetations or enlargement of the pharyngeal tonsil render the individual more liable to contract influenza and many other infectious diseases. The same may be said with even greater emphasis of the faucial tonsils, and I think that parents and others having the charge of children cannot be too strongly impressed with the danger of allowing them to go about with adenoids and enlarged tonsils. Not only is the risk of infection much increased, but should a disease like scarlet fever or diphtheria be contracted they are in greater peril of their life. The preliminary catarrhal stage of whooping-cough would clearly seem to indicate that the poison, whatever it may be, enters through the respiratory tract. In diphtheria there can be no doubt that, in the great majority of cases, the Klebs-Loeffler bacillus implants inself in the tonsil, and probably enters its substance through some abrasion of the epithelium. At the onset the disease is a purely local one, the secondary symptoms being due to the absorption of toxic materials secreted by the bacilli during their growth. How purely local the disease may be at its onset is shown by 2 cases under the care of Mr. Charters Symonds in which there was unilateral nasal diphtheria.

I remember seeing some years ago a case in which I was uncertain as to the diagnosis until I made a rhinoscopic examination, and on so doing I found a characteristic deposit in the naso-pharynx. This localization is more frequent than is generally recognized, and it is probable that some of the cases usually regarded as primary nasal diphtheria really commence in the naso pharynx, and that the nose is affected by extension.

In the primary laryngeal form clinical evidence is in favour of the view that the Klebs-Loeffler bacilli enter the system through the laryngeal mucous membrane, but as to what determines the point of ingress we are ignorant. Possibly there is some vulnerable spot in the larynx. The usual course, however, is for the larynx to be affected by extension from the pharynx. I am convinced that the nose plays an important rôle in the diffusion of diphtheria. During an epidemic of diphtheria children suffering from nasal discharge mixed with blood, and especially if they have enlarged cervical glands, should be isolated and the secretion examined bacteriologically. There can be little doubt that many a case of diphtheria in which the source of infection cannot be traced owes its origin to a case of nasal diphtheria which has been overlooked, or to the persistence of the Klebs-Loeffler bacillus in the nasal secretion of a patient who has had diphtheria, but who has been considered convalescent and free from infection.

The old idea of fixing a definite period of quarantine after a patient has suffered from diphtheria is now quite untenable. No individual convalescent from diphtheria should be allowed to mix with his fellows until both the nasal and buccal secretion has been found to be free from the Klebs-Loeffler bacillus.

It would also be well that apparently healthy persons who have been in contact with diphtherial patients should have their secretions tested, as it has been shown that in nearly 20 per cent. of such persons the specific bacilli are present in the mouth.

I have had rather a curious experience in reference to the reception of the virus of scarlet fever by the nasal mucous membrane. On two occasions within three days after I applied the galvano-cautery to the nasal mucosa, scarlet fever has attacked the individual. In one case the patient was a medical man who as house-physician at a London hospital had been frequently exposed to infection before, but had escaped. I am of opinion that in these cases the germ entered the system through the wound caused by the galvano-cautery, though it is of course possible that these two cases were only coincidences.

The conclusion to be drawn from these cases is the advisability of abstaining from operative procedures on the nasal mucous membrane in persons liable to be exposed to septic and infectious diseases.

Lacunar tonsillitis is another disease which I have seen as the result of intranasal cauterization. Its onset is determined much in the same way as in the cases of scarlet fever referred to above.

Kronenberg records a case in which after an operation in the nose tonsillitis came on, followed by acute articular rheumatism. Endocarditis, pericarditis, and pneumonia supervened, and the patient died. The articular rheumatism from the commencement showed signs of pyaemia.

The intimate connexion which exists between the throat and acute rheumatism is shown by the frequency with which tonsillitis precedes or accompanies an attack of acute rheumatism. I think that there is a great deal to be said in favour of the view that tonsillitis is a primary infective disease of the lacunae, and that rheumatic fever is a secondary disease arising from the absorption of microbes or their products into the system. I have recorded a typical case of acute pericarditis occurring in a child with acute lacunar tonsillitis but with no other symptoms of rheumatism. I think, therefore, that clinically we may regard acute multiple articular rheumatism as an infectious disease, which runs the course of an attenuated pyaemia, and that in a large number of cases the infection enters the system through Waldeyer's pharyngeal ring, especially the faucial tonsils.

The inflammatory reaction in the tonsils to which the name of lacunar tonsillitis is given, may be regarded as the evidence of the local action of the micro-organisms causing the disease. On the other hand it is quite possible that in the future we shall be able to distinguish bacteriologically various forms of tonsillitis. One, for instance, associated with acute rheumatism, and another giving rise to endocarditis, from absorption of toxins, but quite unconnected with rheumatism.

And yet another view is possible, namely, not to regard the tonsillitis as in any way due to rheumatism, but as affording a mode of entrance into the system of the germs which give rise to rheumatism. Before this question can be definitely settled we need to know more of the cause of rheumatism. If the suggestion be true, then the importance of careful antiseptic treatment of all sore throats, howsoever mild they be, is accentuated.

Septic and pyaemic processes may be the result of infection through the upper respiratory tract. In October, 1898, I saw, in consultation with Mr. W. G. Spencer, a case of acute pharyngitis due to streptococcus pyogenes: this was followed by septicaemia, deep glandular inflammation, and pericarditis. The patient had four injections of antistreptococcus serum and made a good recovery. In March of this year I was called into the country to see a medical man who had been tracheotomized the previous day. I found enormous swelling of the epiglottis and right aryepiglottic fold, no pulmonary or cardiac affection. Pulse 120, very feeble; temperature ranging between 101° and 99°; urine albuminous. One of the inmates of the house had died a week previously, evidently from septic pneumonia, and another died the day after my visit, also from some septic condition. The house was found to be in a most insanitary state. Though I was unable to get a bacteriological examination I decided to use antistreptococcus serum. The immediate effect of the subcutaneous injection of 10 c.cm. was so satisfactory that it was determined to continue its use, 80 c.cm. being the total amount employed. The patient had a patch of lobar pneumonia, followed by empyema, for which he had a portion of rib resected, but eventually made an excellent recovery. I take it that this was a case of primary infection of the larynx, probably by the streptococcus pyogenes.

In my Lettsomian lectures I pointed out the important rôle played by chronic nasal affections in the production of facial erysipelas. These affections, by impairing the nutritive activity of the epithelium and leading to its desquamation, allow the streptococcus erysipelatis an access into the system. In a paper which I presented at the meeting of the Association in 1891 I quoted various authorities in favour of the view that non-traumatic oedema of the larynx is always the result of erysipelas, and that infection occurs through fissures in the epithelium or through abrasions of the surface. Hence the upper respiratory tract should be regarded as of great importance in the spread of erysipelas, and not only erysipelas but also conditions such as angina Ludovici, phlegmon of the pharnyx and larynx which, as Sir Felix Semon has pointed out, may have a common origin.

O. J. Stein records a case of chronic catarrhal rhinitis in which an acute exacerbation occurred. The abundant purulent discharge contained the streptococcus erysipelatis. A few days later a widespread erysipelas of the face developed. This case illustrates the importance of a bacteriological examination of the nasal secretion.

The question of the infection of the system by tuberculosis is too wide for me to do more than touch its fringe. Though nasal tuberculosis is usually found in patients suffering from pulmonary or general tuberculosis, yet cases are occasionally met with in which no pulmonary or other tuberculous lesion can be detected. I say advisedly "can be detected" because all physicians with clinical experience are fully conversant with the difficulty which exists in affirming that the lungs are free from tuberculosis. Admitting, as I am prepared to do, that in some of the cases of nasal tuberculosis the lesion in the nose represents the primary seat of invasion, then the later development of tuberculosis in the lungs and other organs will be an example of secondary systemic infection. From Mr. F. J. Steward's careful paper in *Guy's Hospital Reports*, vol. liv, it would appear that the proportion of primary cases of nasal tuberculosis is much greater than has hitherto been generally supposed. What I have just said about primary nasal tuberculosis applies with even greater force to primary laryngeal tuberculosis. Its possibility has been rendered certain by the discovery in a few cases, at the necropsy, of tuberculous disease of the larynx without any deposit in the lungs. With this evidence before us, we are justified in assuming that in exceptional cases tuberculosis may start in the larynx, and that the lungs may be secondarily affected. In the great majority of cases, however, the converse holds good, the larynx being involved by infection from the lungs.

One of the most important advances which has been made of late years in regard to the diffusion of tuberculosis is the recognition of latent tuberculosis of the tonsils. In a very suggestive address delivered by Dr. Sims Woodhead he reviewed the various portals of entrance into the system of the tubercle bacillus, and summed up as follows: "I am driven to the conclusion that this method of infection of the glands of the neck through the tonsils must be of comparatively frequent occurrence, especially in children living under insanitary conditions, and subjected to various devitalizing influences."

In the first edition of my work on the *Diseases of the Nose and Throat*, before I knew anything about the possibility of tuberculous infection of the glands of the neck through the tonsils, I pointed out that in cases of enlarged tonsils the cervical glands were almost always enlarged. This fact was the common property of all who had devoted attention to the diseases of the throat, but in my Lettsomian lectures I went a step further, and said, "Tubercle bacilli can probably pass through the tonsils, and, without giving rise to any disturbance in them, may produce tuberculosis of the glands of the neck."

The observations of M. Dieulafoy in France, and Dr. Hugh Walsham in this country, to cite only two well-known investigators, have placed on a firm basis the connexion between tuberculous glands of the neck and enlarged tonsils.

Until the last few years it was generally held that the tonsils were but rarely affected with tuberculosis, and then usually only superficially as the result of extension from pharyngeal tuberculosis, but Dr. Hugh Walsham has shown that out of thirty-four consecutive *post-mortem* cases the tonsils were found to be more or less tuberculous in twenty. The examination of enlarged tonsils and of adenoids removed during life has not had equally marked results. The discovery of the liability of the tonsils to tuberculous infection has thrown quite a new light on the subject of tuberculous disease of the cervical glands, and emphasizes the importance of removing enlarged and honeycombed tonsils by means of which all kinds of noxious germs may enter the system. The tonsils probably become infected by tubercle bacilli in children, who crawl about and get their hands covered with dust and dirt, and then infect themselves by sucking their fingers. Sucking dirty toys is another possible source of infection. Some bacilli may gain access to the tonsils in swallowing tuberculous milk; or, in respiration, the air containing the bacilli may deposit them on the surface of the tonsils. From what I have just stated, the potentiality of the tonsils as a source of tuberculous infection is very great. Not only are the faucial tonsils the seat of primary infection by the tubercle bacillus, but also the pharyngeal tonsil may be the part first affected.

According to one authority, in 5 per cent. of the cases of enlarged pharyngeal tonsils there are tuberculous foci. The recognition of the tuberculous nature of some adenoid ve-

tations and the possibility of the system becoming infected through them should constitute an additional reason for the prompt and complete removal of these growths. If they are infected with tubercle, it would almost be better to leave them alone than only partially to remove them, as partial removal might the more speedily lead to tuberculous infection of the system. It has been shown that pulmonary tuberculosis is essentially a "filth" disease, that is, that it depends on impure air. The aërial dangers are three in number; first, the presence of tubercle bacilli, without which, of course, tuberculosis could not arise; secondly, dust in the air; and, thirdly, gaseous impurities. Dust in the air, especially minute fragments of mineral matter, by damaging the epithelium of the air passages, allows a point of entrance to the bacilli, and gaseous impurities, especially carbonic dioxide, by diminishing the protective power of the lymphatic glands, favour the growth of the bacilli.

If time had permitted I might have directed attention to the entrance of other infectious diseases via the upper respiratory tract, but I think that I have brought forward sufficient material to give rise to a useful discussion, especially as I am to be followed by Dr. Jobson Horne.

II.—Jobson Horne, M.D.,

Surgeon, Metropolitan Ear, Nose, and Throat Hospital; Ernest Hart Memorial Research Scholar.

Dr. Jobson Horne said: It is unnecessary to dwell upon the importance of the subject under discussion, its importance is rivalled only by the vastness of the field it covers, and this will become apparent as the discussion develops. An increasing recognition of the part played by the upper respiratory tract as a source of systemic infection must be attributed, I think, to the improved methods of clinical analysis in modern medicine, a natural concomitant of the growth of specialism.

It would be idle, and, after the exhaustive paper by Dr. de Havilland Hall, it is unnecessary, for me in the present communication to attempt to pass in review in the brief time at my disposal the vast range of diseases gaining admittance to the body through the portals which fall within the domain of our practice. It would be equally idle for me to attempt to discuss any one of these diseases in all its amplitude.

All that I propose doing is to invite your attention to the consideration of a few diseases of obscure origin and insidious onset, which, I believe, more frequently than is commonly thought, have their origin in the upper respiratory tract, and also to a consideration of the part played by the lymphatic system in modifying or preventing a systemic infection. The diseases to which I propose alluding are infective endocarditis, tuberculosis, lymphadenoma (Hodgkin's disease), and lymphosarcoma.

The term "infective endocarditis" in its usually accepted and restricted sense, meaning the malignant, ulcerative, or septic phase of the disease, is, perhaps, in the light of our present knowledge no longer tenable, for we now know that acute endocarditis, inasmuch as it is associated with one or other of the infective diseases, is always infective in nature. The cases I am about to refer to, however, belong to the more malignant and destructive variety in which the septic process is by no means confined to the heart, but the stress of the disease is upon that organ. The part played by the faucial tonsils in rheumatic fever, and therefore in acute endocarditis, has already been submitted for your consideration, and I need not dwell upon that point.

I pass down to the larynx, a breach in the mucous membrane of which may be the site of entry of the parasite which will bring about the destruction of the patient. Do not let it be thought for one moment that I am desirous of establishing the larynx to the exclusion of other sites of infection as the *fons et origo* of this disease, or of any of the other diseases to which I shall allude. I merely give you *post-mortem* room facts and clinical observations which cannot be lightly passed over. It is now nearly ten years since I first observed a case of malignant endocarditis in which the primary infection was in the larynx. It occurred in a man aged 57; at the necropsy the cusps of the mitral and aortic valves presented vegetations and ulcerations, the larynx in its left half was swollen and sloughy, and the left arytenoid cartilage was necrosed and exfoliating. The lesions in the larynx were so gross as to leave no doubt about it being the primary site of infection.

More recently I have had the opportunity of observing a similar case, the larynx from which is in the Museum of St. Bartholomew's Hospital, and through the kindness of Dr. Andrewes, the Curator, I am able to show you a photograph, in which it will be observed that both arytenoid cartilages are necrosed and exfoliating. The laryngeal lesions in these two cases were so advanced that it was difficult to indicate the precise site of infection. I have, however, a larynx from another case, a younger subject of malignant endocarditis, in which death occurred at an earlier stage and which shows the starting point of the ulceration. This point is in a fold of mucous membrane commencing behind the vocal process and passing obliquely upwards and backwards, to be lost between the summits of the cartilages of Santorini and Wrisberg. I find this to be a site which lends itself to infection in other diseases about which I shall speak; here secretion may rest and stagnate, and here stress and strain is put upon the laryngeal mucosa, and a breach in an inflamed surface could readily occur. I shall refer to it as the vulnerable spot.



Diagram of the interior of the left half of a larynx to show the site referred to as the vulnerable spot, which is indicated by a dotted line.

The upper respiratory tract as a source of tuberculous infection may be considered under three headings:

First, it may be the site of direct infection. I use the term in contradistinction to indirect infection, which I shall almost immediately explain. A tuberculous lesion in this region may be the outcome of direct infection by the virus from outside the body—as, for example's sake, in primary tuberculosis of the nose, the fauces, the post-nasal adenoid tissue, the soft palate, the pharynx, the parotid gland, the tongue, the larynx, and the ear; all of such primary infections, with the exception of the last, are comparatively rare. On the other hand, the lesions may be the outcome—and this is more commonly the case—of direct inoculation with sputum from the lungs, in which case, of course, the infection is a secondary one, and in illustration of this I would instance secondary tuberculosis of the larynx and the ear; primary tuberculosis of the larynx is so extremely rare that it is a negligible quantity. The diagnosis of such a condition, for obvious reasons, can only be based upon *post-mortem* evidence. In the course of ten years, whilst closely following the necropsies of a large general hospital, I have never met with a single case.

From deadhouse observations I feel that I am now in a position to make the following statements with reference to tuberculosis of the larynx:

1. When the larynx is infected with tubercle the disease is already established in the lungs.

2. That by the time the disease in the larynx has advanced to ulceration the disease in the lung has advanced to cavitation.

3. When the disease in the lung is confined to the pure miliary form the larynx is never infected.

These statements are uttered with a degree of dogmatism to which I am seldom given. The deduction to be drawn from them is obvious—that infection of the larynx takes place by the sputum. The bearing of these observations upon the so-called cure of laryngeal tuberculosis by means of surgical treatment must be equally obvious.

Infection of the ear by the sputum I have dwelt upon so recently in a discussion at the Otological Society that I think I need not detain you on that point.

I would refer here to a matter of controversy which closely concerns our discussion—namely, the relative potency of the virus of tuberculosis in its dry and moist forms. Without entering into any discussion about the propagation of tuberculosis, I think we may assume it is generally agreed that the spread of the disease is to be mainly attributed to the particles of sputum from phthisical patients. Cornet and his school hold that the sputum is most dangerous when it has become dry and pulverized. Flügge maintains that the sputum is more infectious in the moist form, as in the spray produced in coughing and sneezing. Numerous experiments have been done by these two schools in support of their respective views. Let us consider what light is thrown upon the subject by the references I have made to tuberculosis of the ear and larynx. Both of these regions are exposed to infection through the agency of an atmosphere charged with tuberculous dust, yet it is extremely rare to meet with tuberculosis primary in the larynx by direct infection from the air inspired. It is equally rare to meet with tuberculosis in the ear starting from the external meatus. On the other hand, evidence has been adduced to prove that infection of both these regions must be attributed to sputum direct from its mother soil being lodged against the mucous membrane of the larynx and about the orifice of the Eustachian tube. These facts seem to me to strongly support the view advanced by Flügge.

Tuberculous ulceration when it occurs in the trachea is usually more marked on the posterior wall, and is met with in subjects of advanced phthisis who have become bedridden. Doubtless the prolonged contact of a tenacious agent such as sputum fully explains the etiology and situation of the lesions observed.

Secondly, the upper respiratory tract as a path of indirect infection in tuberculosis. By that I mean infection through the upper respiratory tract without any naked eye or positive microscopic evidence of the path taken being left behind.

Lymphoid tissue of all tissues is most vulnerable to tuberculosis, and yet how difficult it is to demonstrate tubercle bacilli in excised tonsils, post-nasal adenoids or lymphatic glands. Were one to diligently examine with the microscope excised tonsils and adenoids, cutting series of sections through the entire structure, the reward for one's pains would be to find giant cell systems in about 4 per cent. and tubercle bacilli in rather less than 1 per cent. of such examinations, notwithstanding the fact that the material may have been taken from cases of tuberculous adenitis and, perhaps, primary tuberculosis of the middle ear. This is an important pathological fact, to which I shall revert.

That a systemic infection with tuberculosis does take place through the lymphoid ring of the upper respiratory tract is beyond question. It was demonstrated by Sims Woodhead in his experiments on swine, which showed that the lungs could become infected through the cervical glands by feeding with infected material. It is, of course, difficult to demonstrate the truth of this in the human subject.

The preceding considerations bring me to my next proposition, namely, the part played by the lymphoid tissues in modifying or preventing a systemic infection. Call to mind the cases of tuberculous adenitis in which the disease is restricted under hygienic measures to the cervical glands. Infection in such cases must have taken place through the upper respiratory tract. Couple with this clinical observation the pathological difficulty in demonstrating tubercle bacilli in the lymphoid tissue from these regions. We are then driven to consider whether the bacilli, having set up a morbid process, may, through some property of the tissue, perish or become crippled amidst the lesions they have engendered, and the systemic infection may thereby become arrested, or, at least, modified in its progress.

This brings me to the consideration of another disease, namely, lymphadenoma or Hodgkin's disease. I prefer using the latter term in the present state of our knowledge. It is comprehensive and non-committal in sense. Far be it from me to provoke a discussion here as to whether lymphadenoma is or is not tuberculous. At present I recognize in it a histological, but not a pathological, entity. As regards the etiology, it has long been surmised that Hodgkin's disease is due to an infection. When we bear in mind that, so far as it is possible to ascertain, Hodgkin's disease has commenced in the glands of the neck in at least 50 per cent. of the cases recorded, and also that the tonsils themselves are not infrequently affected in this disease, it is reasonable to point to the latter structure as a probable point of entrance of the infecting agent, whatever it may be. I have already published cases demonstrating ulceration of the larynx as a point of entrance of the infecting agent,[1] and I think the evidence brought forward in those cases is ample to indicate the necessity of examining the larynx as a possible site of infection in the diseases grouped under Hodgkin's name.

Lastly, I wish to refer to a case of thoracic lymphosarcoma which occurred in a man aged 49. At the necropsy it was found that the mediastinum contained a considerable mass of new growth, presenting the macroscopic appearances of a lymphosarcoma. The main bronchus on the right side, although not invaded, was decidedly compressed, but not occluded by the growth; the oesophagus had been impinged upon to an extent of 4 in., and for about 2 in. had been seriously narrowed. The gland at the bifurcation of the trachea was greatly enlarged, and appeared to be the starting point of the growth. The anterior and posterior glands in the mediastinum were involved. The other glands in the body were not obviously affected.

The right lung near its root contained a secondary deposit of the circumference of a penny-piece. No macroscopic evidence of tubercle was met with in the lungs or in any part of the body. The liver and spleen were free from new growth. The larynx, on the outer side of the right arytenoid region, presented a circumscribed area of oedema about the size of a raisin. On the inner aspect of the right arytenoid there was the puckered scar of an ulcer, situated immediately below the cartilages of Santorini and Wrisberg, in the situation I have referred to as the vulnerable spot.

Under the microscope the case was found to be one of sarcoma—that is to say, histological round-celled sarcoma was present, both in the growth and in the secondary deposit in the lung. After all "sarcoma" is but a mere term, and conveys no more precise information about the nature of the case than the term "lymphadenoma" would afford about that of the others I have referred to.

The presence of the ulcer in the larynx in this particular case raises the interesting question whether the growths were not the result of a systemic infection, and whether sarcoma may not eventually have to be numbered, together with the lesions met with in Hodgkin's disease, amongst the infective granulomata.

Before concluding, I wish to thank our President for his address eloquently appealing for a compulsory training of students in laryngoscopy. In my brief remarks I have only touched upon a very small part of a subject of vast importance in general medicine, and that I have done imperfectly: but I trust what little I have said will be held to be further evidence in support of our President's appeal. *Non cuivis homini contingit adire Corinthum.* To behold Corinth was to the civilized Roman the acme of culture. Let us hope that in the near future our appeal will be heard, and that we shall cease to have cause to sing, *Non cuivis medico contingit adire laryngem.*

III.—J. L. Goodale, M.D.,
Boston, U.S.A.

Dr. Goodale said: The object of the following paper is to discuss certain chronic disturbances of the system, arising through the absorption of bacterial products from the lymphoid tissue of the upper respiratory tract. We have here to do with conditions which are essentially different from those occurring in acute infections. In the former class of cases the pathogenic micro-organism invades the tissues, either in virtue of its virulence, or as a result of the temporary lowering of the resistance of the organism. In the chronic conditions, on the other hand, alterations have occurred in the histological or anatomical structure of the tissues, which permit the development on or in them, of saprophytic bacteria, and the disturbances produced are due to the absorption into the system of products of decomposition.

In order to understand the etiology of these conditions it will be necessary to bear in mind certain histological points relating to the structure of lymphoid tissue. I will remind you that the unit of lymphoid tissue is the follicle, a collection of lymphoid cells enclosing a central endothelial reticulum. These units are separated from each other by an endothelial network containing lymphoid cells, plasma cells, and cells of a type intermediate between these two. The surface of this tissue is formed by mucous membrane, squamous or columnar, of considerable density, equalling, at least in compactness, the mucous membrane of the vicinity. In the pharyngeal, faucial, and lingual tonsils the stout mucous membrane of the free surface forms

[1] *Journal of Laryngology, Rhinology, and Otology*, vol. xvi, p. 684.

invaginations, which are lined with comparatively loose mucous membrane. This is the important circumstance which renders these organs points of inferior resistance against the invasion of micro-organisms. Fluids and finely-divided particles, in contact with the compact epithelium of the free surface of these tonsils, penetrate with difficulty, or not at all. When introduced into the crypts, they have been observed to penetrate the intercellular deficiencies of the lacunar epithelium, and travel with the efferent lymph stream, between the follicles, towards the capsule of the organ, and even into the cervical lymph glands. The situation of these tonsils is thus seen to be an important factor in determining the method of resistance against bacterial invasion. The pharyngeal tonsil is situated in a region in contact with air which has already been filtered nearly or quite free of bacteria. The secretion of the numerous mucous glands of the vicinity acts as a protective covering to prevent the direct contact of micro-organisms against the mucous membrane. Finally, the invaginations of the mucous membrane present little or no opportunity for the retention and decomposition of substances in contact with them. In the case of the lingual tonsil the lacunae are comparatively short and wide-mouthed, while a constant stream of fluid is passing by with each act of swallowing. Retention and decomposition of the lacunar contents is thus practically impossible. In the faucial tonsils, on the other hand, a variety of factors come into play in determining this question. Under normal circumstances the crypts are irrigated by saliva and other fluids with almost the same degree of thoroughness as in the case of the lingual tonsil. The leucocytes and cellular detritus of the crypts have thus no opportunity to accumulate.

Under certain conditions, however, free egress from the lumen of the crypt is restricted and decomposition of its contents ensues. The two chief factors in causing this condition are acute inflammation and retrograde metamorphosis.

As shown by the writer, acute tonsillitis is characterized histologically by a diffuse inflammation of the parenchyma of the organ, appearing in the form of an increased proliferation of the lymphoid cells and of the endothelial cells of the reticulum, due to the absorption of a toxin formed in the crypts. The crypts are filled with exfoliated epithelial cells, leucocytes, bacteria, amorphous débris, and in some cases fibrin. The leucocytes are chiefly polynuclear neutrophiles, many of which contain bacteria in their interior. Some show nuclear fragmentation, with dispersion of their chromatin. There are also seen smaller numbers of lymphoid cells, plasma cells, and cells intermediate in character between these two.

Of chief importance in the present connexion is the different degree of intensity of the process in the distal and proximal portions of the crypts. Bacteria are abundant near the orifice of the crypt, gradually diminishing towards the base, which at times seems nearly free from them. The phagocytic leucocytes correspondingly near the orifice of the crypt exhibit the greatest number of incorporated bacteria. In cases of especial clinical severity, fibrin is seen along the walls of the lacunae near the orifice, as a delicate network enclosing cells and bacteria. In the deeper portions of the crypt fibrin occurs only in exceptional cases. We thus see that in acute tonsillitis the activity of the process is chiefly manifested near the distal portion of the crypt. It is thus evident that denudations of the epithelium and adhesions of the opposite walls would occur more readily near the orifice of the crypt than near its base. If the adhesions completely occlude the orifice of the crypt, a cyst-like cavity is formed in the tonsil. If this cavity is free from bacteria, it will exert no further influence upon the system, except, possibly, through pressure. If, however, the occlusion is not complete but permits the entrance of saprophytic bacteria decomposition of the lacunar contents rapidly ensues. Inflammatory adhesions of the tonsillar folds to the surface of the organ may bring about the same result by partially closing the orifice of one or more crypts.

With regard now to retrograde metamorphosis, as age advances, contractions and alterations occur in the structure of the tonsil of great variety. The resulting condition depends upon the manner in which this sclerosis takes place. If the tonsil has been previously essentially normal it merely retracts more or less symmetrically into its recess between the anterior and posterior pillars. If, on the other hand, the crypts have been previously dilated, and if the free surface is more or less covered by adhesions and folds of membrane extending to the vicinity, the process of involution will be attended by an irregular narrowing of the lumen of the crypts. If the narrowing begins near the base of the crypt, and extends from this point outward, no harm will result, but if the narrowing, on the other hand, begins at the orifice, a bottle-shaped condition of the crypt will be produced, with resulting faulty drainage and decomposition of its contents.

In the histological examination of tonsils, which are the seat of putrefactive processes, we are struck first with the relatively large size of the endothelial centre of the follicles. This enlargement is out of proportion to the number of lymphoid and plasma cells in the vicinity, and is due to increased proliferation of the endothelial cells lining the reticulum. In response to irritation these endothelial cells give rise to cells having the appearance of epithelial cells, but with phagocytic properties. Their phagocytosis is not only for amorphous detritus, but also for other living cells, chiefly red blood corpuscles and lymphoid and plasma cells. It differs thus from the phagocytosis exhibited by the polynuclear neutrophiles of the crypts, which is limited to micro-organisms and detritus. It differs, however, from the enlargement found in acute inflammation, in that there is no swelling of the cytoplasm of the endothelial cells of the blood vessels, or abnormal exfoliation. The proliferation and phagocytosis is to be regarded as the result of absorption into the interior of the tonsil of irritating toxins, produced by the saprophytic bacteria of the crypts.

In several instances I have found concealed terminal dilatations of the lacunae. In these cases clinical examination showed a tonsil of moderate size, with apparently normal crypts. After excision, however, a cavity was encountered, adjacent to the capsule, containing a large amount of fetid puriform fluid. The existence of such an accumulation may be difficult to recognize clinically, even after careful probing or division of the intralacunar tissue.

These conditions of saprophytic development, whether apparent or concealed, are sufficient to bring about a definite train of clinical symptoms, which may be briefly referred to. Pallor, impairment of strength and spirits, fetid odour of the breath, gastric disturbances of various kinds, are most frequently found. Abnormal susceptibility to acute infections is frequent. In two instances I have seen obstinate acne of the face, which had been treated by skilled dermatologists for a number of years with but slight transitory improvement, show a complete clearing up of the skin, after a deep-seated, concealed, fetid collection had been removed from the tonsil.

Increased susceptibility to circum-tonsillar abscess is a common phenomenon, and is usually attributed to the occlusion of the orifice of a cyst during acute tonsillitis with consequent damming up of its contents. In many, if not most cases, however, I believe that the extension of the suppurative inflammation beyond the tonsil is due to the rupture of an intrafollicular abscess into the efferent lymph channels. In the microscopic examination of acutely-inflamed tonsils, I have repeatedly found in addition to the ordinary phenomena of proliferation and exudation one or more follicles to be the seat of active suppuration. In other words, while acute tonsillitis ordinarily shows no penetration of bacteria from the crypts into the tonsillar tissues proper, a certain proportion of cases are characterized by the presence of intrafollicular foci of suppuration. The ordinary course of these intrafollicular abscesses is to rupture into the nearest crypt before attaining any considerable size. In five cases, however, of acute tonsillitis complicated by beginning circum-tonsillar inflammation, microscopic examination of the excised tonsil showed a rupture of one or more intrafollicular abscesses into the efferent lymph channels, and chains of polynuclear leucocytes could be traced from the broken follicular ring as far as the capsule of the tonsil. It is to my mind an open question whether the penetration of the bacteria into tonsillar tissue is due to increased virulence on their part, or to a lowering of the powers of resistance of the organism, or to pre-existing local alterations in the tonsil itself.

Long-continued persistence of the bacillus of diphtheria in the throat appears in some instances to be due to chronic lacunar inflammation, and may under these circumstances be best treated by a complete clearing out of the tonsillar tissue. On theoretical grounds there should be no objection to this procedure if the system has been rendered either actively or passively immune to the disease, since the specific micro-organisms possess subsequently for the individual merely saprophytic and not pathogenic properties. It is, however, questionable whether the disappearance of the diphtheria bacilli under such circumstances is to be attributed to the

removal from the throat of what may be considered culture media, or whether it is due to increased vigour of the organism consequent upon the arrest of the long-continued absorption into the system of saprophytic poisons.

Finally, we have to consider tuberculous infection of the system through the portal of the lacunar epithelioma. In my experience, tuberculous cervical lymphadenitis is in a large number of cases associated with dilatation of the lacunae, which on close inspection show a narrow hyperaemic halo about their orifice. The tonsils at the same time are not necessarily enlarged. Where the removal of such tonsils cannot be practised, either on account of the general condition of the patient or his unwillingness to submit to operation, I believe that an attempt should be made to reduce the size of the lacunae either by cauterization or by application of iodine, with the object both of securing better drainage and of rendering the lacunar epithelium more compact.

To recapitulate briefly I will say: Chronic absorption of the products of bacterial decomposition is unlikely to occur in the pharyngeal or lingual tonsil, but takes place with frequency in the faucial tonsils. In the faucial tonsils the chief factors favouring the development of saprophytic bacteria are antecedent attacks of acute inflammation, either alone or in association with processes of retrograde metamorphosis.

Histologically, the most conspicuous alterations are the endothelial proliferation and formation. Clinically, this condition is characterized by evidences of toxic absorption into the system. It appears to favour the development of circumtonsillar abscess after acute tonsillitis, also the persistence of the bacillus of diphtheria after an attack of this disease, and finally, the penetration of the bacillus of tuberculosis into the lymphatic system.

IV.—F. J. Poynton, M.R.C.P.,

Assistant Physician, University College Hospital and Hospital for Sick Children, Great Ormond Street.

Dr. Poynton said: Dr. de Havilland Hall's able introduction of this important subject has dealt in particular with the clinical aspect. My intention is to deal very shortly with some pathological points. I think pathology has rendered very important service to medicine in putting on a sure basis the fact that general infection may commence by dissemination from the upper air passages. English clinicians have done much to pave the way to this knowledge on the pathological side. The early experimental investigations in Germany demonstrated conclusively that a streptococcus might be present in the throat in diphtheria which would produce with some constancy a suppurative arthritis in animals. Dr. Paine and myself made another step when we showed that a diplococcus could be isolated from a rheumatic angina, which would on intravenous inoculation produce the lesions of rheumatic fever in the joints, heart, pleurae, and elsewhere, and which were present in those lesions in man. Then F. Meyer and Menzer elaborated these early investigations and repeated them on a larger scale, so that now we know the stages in the process. 1. The micro-organisms get into the fibrous framework of the tonsils, and thence reach the minute blood capillaries and lymphatics so reaching the general circulation. In some cases the lymphatics appear to be the chief channel, and there is much enlargement of the cervical glands, in other cases the chief channel appears to be minute blood vessels. 2. The micro-organisms have been isolated from the blood in man, and found in the local lesions. We are then on firm ground. I do not say as regards the specific nature of any micro-organisms, but as regards the fact under discussion, that a local focus in the upper air passages may be the cause of a general infection.

There is another very important, but disquieting, fact that is established by pathology. It is that in many instances when once the micro-organisms have gained access to the general system, they make themselves new homes in the tissues. Few experiments are more convincing than the production of severe endocarditis in a rabbit by the diplococcus from rheumatic fever. A fortnight afterwards if you cut a section of the valve you may find literally thousands of virulent micro-organisms there. It is clear, therefore, that local treatment of the upper air passages can only do a limited amount of good in infections of the rheumatic type, for each internal lesion is a local focus. But it holds good, as Dr. Hall has so well pointed out, that every effort should be made to arrest the process before it generalizes. I venture to think, nevertheless, that this great truth must be kept clearly in mind by those who are devoting their lives to a special study of the upper air passages.

A third and equally important point is that at present we really do not know why it is that micro-organisms probably always present in the throat, suddenly become dangerous. That border line between pathogenic and non-pathogenic is in my opinion the weak spot of bacteriology at the present time. So far as rheumatism is concerned it is I think it very probable that there is a rapid multiplication of the micro-organisms in rheumatic angina. Such has been my experience and that of some German investigators, but this does not answer the question. Why? Because of the obscurity of this most pressing question, I have always fought hard against any assumption that whether a sore throat is septic, or rheumatic or catarrhal is simply a question of the resistance of the patient. In opposition I maintain that we do not know when we look at such a throat, whether the fate of the patient turns upon his resisting powers or upon some special (specific, if you prefer that word) properties in the infective agent, or, as is more probable, upon both.

Certainly I think we shall admit, so far as diphtheria is concerned, much rests with the micro-organisms, and though in those other infections so vaguely termed septic we are at present in confusion, I hold firmly to the view that when you have great clinical differences, then you have some special factor in the infective agent. I admit the factor of personal resistance, but not as the explanation of the great differences that there are between the illnesses that follow rheumatic, septic, and catarrhal sore throats. In the search for these differences, difficult and slow though it may be, lies the hope of the discovery of the special poisons and their antidotes. In the massing together of these conditions as septic lies, in my opinion, the danger of a false confidence and imperfect methods of treatment.

There is one practical point which I have met with and which perhaps is worth alluding to. On several occasions I have seen rheumatic fever directly follow tonsillotomy, though I do not say as cause and effect. When I say directly follow, I mean within a week of the operation, the patient being apparently in good health when the operation was done. So far as advising operation for rheumatic patients with diseased tonsils—and there are many such—all that can be said is, if their removal is for the general good of the patient it is right, but it will not prevent further attacks except in so far as improving the health protects against many infections.

The last point to which I should like to allude is this, that very probably infection from the throat may occur without any appreciable local symptoms. It is generally admitted that the most severe puerperal fever may occur from uterine infection with scarcely any local disturbance. The virulence of the infection is such that the unfortunate patient is in the position of an animal intravenously injected with micro-organisms. The same seems to occur in the throat. This is a great practical difficulty both in treatment and in getting an accurate idea of the frequency of infection from the upper air passages. The local inflammation is only a measure of the local disease, and not of the tendency to general infection. My remarks I am afraid are somewhat limited in their scope, and have not the advantage of a special knowledge of the upper air passages, but I should like to add that the subject appears to me a most important one, and I am much obliged to the President and Secretaries for giving me this opportunity of hearing and taking part in it.

V.—Herbert Tilley, M.D., F.R.C.S.,

Surgeon, Throat Hospital, Golden Square.

Dr. Herbert Tilley said: I wish to limit my remarks to the part which the nose and naso-pharynx play as a source of general septic infection under two sets of circumstances:

1. When a chronic purulent focus exists the general health may suffer in a very profound and serious manner as a result of the constant absorption of septic material.

2. When operative procedures have been carried out in these regions, very grave and even fatal results may ensue if due care has not been maintained to provide for and maintain surgical cleanliness of the parts.

With regard to the first point—namely, the effect upon the general health of continuous absorption of septic products from a chronic purulent focus, I would remind you of the loss of energy, mental apathy and indifference, loss of appetite, wasting, and sallow complexion, which are so often found in association with the local symptoms which accompany chronic empyemata of the nasal accessory cavities.

In some patients these evil effects are very marked, and no less striking is the immediate improvement in the general health when the poison-producing focus has been efficiently treated. A patient who had suffered from bilateral maxillary sinus empyema for ten years, and who was in a low mental and physical condition when first seen, put on 11 lb. in weight during the six weeks which followed efficient drainage of these cavities, while the mental depression, amounting almost to melancholia, entirely left him.

Dr. William Hunter has drawn attention to the possible relation between such pus-producing centres and some of the grave forms of anaemia. On the other hand, we must all have been equally astonished at the excellenl general health and mental vigour possessed by other patients, who for perhaps years have harboured a reservoir of fetid pus, and who seemed to suffer little inconvenience or discomfort from the same. Maybe they consulted us simply because they thought they had some "post-nasal catarrh."

How are we to explain these differences? In the first class of case forms of indigestion may generally be noted as prominent among the general symptoms; in the second class they are usually absent, and it is an interesting question whether the good health of these patients may not be due to a normal secretion of free hydrochloric acid in the gastric juice which would render inert the pus which had been swallowed. On the other hand, a diminished amount of free acid would allow of the absorption of pus, and pave the way for those forms of septic gastritis with constitutional symptoms to which Dr. William Hunter has drawn attention.

2. Passing now to general septic infection following operative procedures carried out upon the upper air passages, we may congratulate ourselves that in spite of the great number of operations which are performed in these regions, the instances of serious general septic infection are comparatively uncommon. Apart from care on the part of the surgeon, this may be due to the free drainage which in most operations is naturally provided for, and the peculiar capacity for healing which is possessed by the more vascular areas of the head and neck.

Accidents, however, have happened in the past, and will occur again in the future, if surgeons are careless or refuse to learn from their own and the failures of others. Let me illustrate my meaning:

Some ten years ago I was suffering from a series of head colds to which I had long been prone. Between such attacks more or less nasal obstruction was always a trouble, and necessitated mouth breathing with its attendant evils. A friend cauterized my left inferior turbinal, applied no dressing or application, and allowed me to follow at once my daily routine of work. The same evening I felt very unwell, had a slight rigor, with intense throbbing of the left side of the nose and face, and the left tonsil became painful. For the next three days the temperature varied from 101° to 103°, and on the fifth day an acute abscess of the tonsil discharged itself, after which convalescence set in.

Last November I saw in consultation a lad of 13 years of age, who four days previously had had the same operation performed on his right inferior turbinal in Paris. He was allowed to travel to England the same day. Towards evening he felt unwell with some pain in the right side of face and sore throat, limited also to the right side. He arrived at Ealing during the next day feeling very ill, with intense sore throat, swelling of the glands under the angle of the jaw: temperature 101.6°. When I saw him (on the fifth day) I found he had a very inflamed throat, more especially on the right side. Swallowing was impossible except for small quantities of liquids; the tongue was thickly furred; temperature 103°; and the right side of the neck from the mastoid to the clavicle was a red, swollen, brawny mass, acutely tender on pressure, and semi-fluctuating in parts. The lad was very ill. Incisions were made into the swelling, drainage tubes inserted, constant fomentations applied, antistreptococcus serum injected, and after an anxious illness and tedious convalescence the patient was restored to health.

In both cases there can be little doubt that infection entered by the wound in the nasal mucous membrane, and had the eschar in either been carefully dressed it is more than probable that no harm would have resulted. Hence, before cauterizing the nasal mucosa, the parts should be thoroughly cleansed, and after application of the cautery some glycerine of carbolic acid should be rubbed into the eschar by means of a cotton-wool mop. From want of similar care I have known the greater part of the cartilaginous nasal septum slough away after Asch's operation for deviation of the septum, the patient suffering in the meantime from constitutional symptoms of septic poisoning.

After the radical operations practised for the cure of chronic empyema of the maxillary antrum, it is not usual for grave constitutional symptoms of septic poisoning to arise, and I have never heard of a fatal result from this cause. Once only have I seen intense cellulitis of the soft tissues of the cheek follow the radical operation, and in this case, after pus was evacuated, the patient recovered.

Constitutional symptoms of septic poisoning following the operation referred to may be avoided by not packing the sinus cavity at the close of the operation; it is quite unnecessary, and its practice entails giving the patient considerable pain.

With regard to the radical operation upon the frontal sinus, as practised by most of us to-day—namely, removal of the greater part of the anterior wall, enlargement of the fronto-nasal canal, removal of diseased ethmoidal cells, followed by gradual but complete obliteration of the sinus—it may be said to be free from risk to life, provided surgical cleanliness be maintained and the surgeon has a practical working knowledge of the anatomy of the parts concerned.

But this comparative freedom from risk has been painfully attained unto by those who have spent much time, much anxiety, and much thought in the evolution of the operation during the past ten years.

Many patients have succumbed to general septic infection following and due to the operation carried out for the relief of chronic empyema of the frontal sinus. Fifteen such cases are known to me, two of them having occurred in my own earlier practice. In all cases the fatal result has arisen from a spreading septic osteomyelitis of the frontal bone resulting from imperfect drainage of the bony cavity during the after-treatment of the radical operation. To avoid such disaster let me recommend you to make a large opening into the nose, and never completely sew up the external wound or pack it very tightly with gauze.

Again and again has the warning been given in our societies and printed in our journals, and yet from facts concerning a fatal case which has recently come to my knowledge it would seem necessary to again point out the danger and the means for avoiding it.

The sphenoidal sinuses have recently been receiving a considerable amount of surgical attention, and interesting if not anxious results may be expected.

Under the influence of retained pus alarming local and general symptoms arise, and most surgeons are content to remove the middle turbinal bone and the front wall of the sphenoidal sinus in order to ensure free drainage. If this be followed by free irrigation of the sinus with suitable antiseptics, great relief will ensue.

Anything in the nature of thorough curettage of the sinus is extremely dangerous, for, in so variable a cavity, it is impossible to know the dimensions of the sinus, the thinness of its walls, or its exact relationship to surrounding important structures. It is not surprising, therefore, to hear that even in skilled hands a patient in whom this method was recently adopted died three or four days afterwards of septic meningitis.

With regard to septic systemic infection following operations upon the post-nasal space, I presume we have all been unfortunate enough to have had one or two cases in which, after the operation for adenoids, the patient has had a high temperature with enlarged and tender glands in the neck, and constitutional symptoms of septic poisoning lasting for a week or ten days. Two consecutive cases recently occurred in my practice, and were I believe due to a crack in the blade of my curette which probably harboured some septic material; anyway, no such *contretemps* have followed the use of a new instrument.

Septicaemia followed by death is not unknown after the operation, and in one case it was proved to be due to escape of sewer gas into the patient's room.

I think a very sharp curette is inadvisable; its cuts deeply and is apt to open up the fibrous tissue on the front of the axis vertebra and basi-sphenoid. The wound takes long in healing, and I believe such cases are more liable to septic infection than those in which merely the redundant adenoid tissue is removed.

The following is an interesting case of general septic infection following the removal of a pre-existing focus of suppuration in the naso-pharynx (Tornwaldt's disease):

For 12 months or more a lady had suffered from periodical attacks of severe pain limited to the left side of the head, and which seemed to radiate from behind the left angle of the jaw, where the pain was most intense. On one or two occasions some earache had accompanied these pains and had been followed by slight discharge of pus from the meatus. After three or four days of suffering she "felt something

burst in the head," and experienced an unpleasant taste and smell, while the symptoms immediately subsided.

When I saw her the hearing was normal and the left drum showed no trace of present or past disease. While examining the post-nasal space with the finger I burst an abscess which was located in the remains of an old adenoid growth. The smell from it was extremely fetid. An attack of septic sore throat immediately supervened with the usual constitutional symptoms, the right maxillary sinus became infected, and after two days of acute facial neuralgia it discharged pus into the nasal cavity.

Some ten days later, when the patient was fairly strong, I removed a large, tough adenoid growth, in which the thick-walled and very offensive abscess was situated. The right antrum was also drained through the alveolus. At the close of the operation the post-nasal space was swabbed out with zinc chloride solution, gr. 40 ad ℥j; but in spite of this she again suffered from a septic inflammation of the throat, enlarged and tender glands in the neck, and for a week the temperature varied from 100° to 102°.

On the third day following the operation a bright scarlet punctiform rash appeared on the neck and upper part of the chest and back, and from thence spread over the face, lower chest, abdomen, to extensor surfaces of arms and thighs, and then to flexor surface of limbs. The tissues of the eyelids were swollen and dark red to crimson. The rash itched intensely, lasted six days, and desquamated slightly on the face and neck. Tongue coated in the middle, red at edges, no prominence of papillae. No albuminuria. There can be little doubt that this was a septic rash, although in many ways it was suspiciously like the rash of scarlet fever. After a somewhat tardy convalescence the patient completely recovered, and is now free from all her old symptoms.

The case affords an excellent illustration of a chronic localized suppuration giving rise to both local and general symptoms of an uncommon nature, and shows that in spite of antiseptic precautions at the time of the operation, an acute local spreading infection, giving rise to well-marked symptoms of systemic poisoning, may follow attempts at removal of the original source of trouble.

VI.—Donald Rose Paterson, M.D., M.R.C.P.,

Assistant-Physician, Cardiff Infirmary.

Dr. Paterson drew attention to the occurrence of albuminuria in patients suffering from atrophic rhinitis. Details were given of three cases in which this relationship was present. Fetid discharge into the naso-pharynx had existed for some time before the onset of the nephritis, and a careful inquiry into the history of each case suggested this as the probable cause. It was worthy of remark that in many patients ozaena might persist for many years with little deterioration of the general health; but in two cases of the speaker's subsequent infection by tuberculosis took place, and it was desirable that in all such cases treatment should be directed to the improvement of the local condition. The speaker drew attention to the supratonsillar fossa as a starting point of systemic infection, and quoted a case where infection that led to acute nephritis had probably entered by this portal.

VII.—Robert Woods, M.B., F.R.C.S.I.,

Surgeon, Diseases of the Ear, Throat and Nose, Richmond Hospital, Dublin.

Mr. Woods pointed out that septic mouth conditions sometimes caused systemic infection especially of the cervical glands, and that the teeth should therefore be examined and put right in every case. He detailed a case of primary nasal tuberculosis in a lady, aged 30. The disease was repeatedly scraped and ultimately cured, but the larynx then became diseased. The epiglottis was infiltrated and ulcerated at the edge and the right ary-epiglottic fold and side of the larynx. The disease was a typical tuberculosis, and the point of interest was that the evidence went to show that the laryngeal infection was secondary to the nasal as the most careful examination failed to disclose anything wrong with the lungs. He mentioned a case of Hodgkin's disease which he had observed from a very early stage, where the infection clearly started in the tonsil. He also detailed two cases of virulent infection of the throat, one of which was complicated with diphtheria, where the tonsils were incised with a view to tapping an abscess which, as it turned out, did not exist. In both cases the incision was followed by great increase in the severity of the toxaemia and the subsequent death of the patient. It was, of course, possible that this would have happened in any case, but there was a strong suspicion that the incision acted as a point of entry of micro-organisms into the blood as suggested by Dr. Poynton, and therefore aggravated the condition. He therefore thought that it was a fallacy to regard incision in any such case as a thing that ought to be done on the principle that it could do no harm.

VIII.—A. Logan Turner, M.D., F.R.C.S.E.,

Surgeon Diseases of Nose, Throat, and Ear, Deaconess Hospital, Edinburgh.

Dr. Logan Turner referred to cases of ill-defined septic infection due to absorption through abrasions of the mucous membrane of the nose or naso-pharynx. He was able to confirm Dr. Paterson's observations regarding septic absorption in cases of ozaena.

IX.—W. Lamb, M.D., C.M., M.R.C.P.,

Honorary Surgeon, Birmingham Ear and Throat Hospital.

Dr. Lamb described a case of illness which began with acute laryngitis and oedema of the glottis, for the relief of which he was called to see the patient. The oedema subsided without tracheotomy being required, but the subsidence brought no improvement in the patient's general condition, which he regarded at the time as due to some intense septic infection. He heard subsequently that the patient died of double pneumonia within a week. In future, should such a case occur to him, he would certainly recommend the injection of anti-streptococcus serum. The vulnerable spot in the larynx described by Dr. Horne had been pointed out to him many years ago by Professor Chiari as the favourite seat of ulceration in typhoid fever.

X.—P. Watson Williams, M.D.,

Physician, Throat Department, Bristol Royal Infirmary; President of the Section.

Dr. Watson Williams alluded to the comprehensive and extremely valuable introductory addresses by the openers of this discussion, and to the many points of interest elicited in the course of the discussion. The fact that many acute and chronic diseases were now proved to be due to infection by micro-organisms, and that these for the most part entered the body of the patient either by inspired air or by means of fluids drunk or food ingested, rendered it inevitable that the gate of entry should be often the seat of primary infection. Notwithstanding the natural protective barriers against such invasion which they believed were provided in the nose and in the faucial ring of lymphoid tissue, it was seen that, under a variety of adverse conditions, these natural barriers failed. When they recalled the histological observations of Stohr, Goodale, and others, demonstrating that in the epithelial coverings of the tonsils and other lymphoid tissue aggregations there existed numerous gaps between the cells large enough to permit the passage of leucocytes, there was little room for doubt that the invading micro-organisms found here an open portal. He did not propose to reiterate what had been so well told by the introducers and speakers to the discussion with which he fully agreed; but he desired to refer to one or two points especially. First, the significance of chronic hypertrophy of the tonsils as a source of secondary anaemia from absorption of toxic products of the enormous numbers of septic and saprophytic micro-organisms in the crypts and tissues of the tonsils. They were so prone to have regard to the relatively insignificant mechanical effects of enlarged tonsils while altogether overlooking the really important fact that the boy or girl who had enlarged and diseased tonsils was suffering from a sort of chronic drain poisoning. The general systemic effects were very similar to those described by Dr. Tilley as the result of chronic accessory sinus disease in the nose, with which every rhinologist was so familiar, with this difference, perhaps, that whereas accessory sinus disease was almost confined to adult life, the tonsillar affection exercised disastrous results on the more susceptible growing child. The importance of the nasal passages as the possible seat of latent diphtheria he had already touched upon in his opening address. He considered that Dr. de Havilland Hall's successful result with antistreptococcus serum was attributable largely to its early administration. He had long been convinced that if good results were to be obtained this serum should be used as antidiphtherial serum was used, that was, as soon as the infection was diagnosed, for if they had waited till the blood cultures showed

the presence of diphtheria bacilli they would never have had faith in antidiphtherial serum. The cases of lympho-sarcoma and lymphadenoma commencing in the larynx were full of significance, while those instances of renal disease attributed by Dr. Paterson to infective disease in the upper respiratory tract served to show how far-reaching were the consequences of such localized infection. An important lesson to be learnt from Dr. Poynton's investigations on the connexion between tonsillar infection and rheumatic fever with arthritic and cardiac complications was the desirability of arresting the infective process while still localized in the upper respiratory tract. But of one thing he felt convinced, namely, that infective processes often remained localized in the tonsils and other lymphoid tissues in or connected with the throat, and that these lymphoid aggregations, often a source of danger, were when healthy a valuable protective barrier which should not be heedlessly removed without good reason. Finally, he alluded to Von Babes's researches demonstrating that pulmonary gangrene was sometimes due to infection from the retropharyngeal glands and tonsils, and those observations of Kocher which showed that acute suppurative osteomyelitis might be due to pyogenic infection through the tonsils.

REPLIES.

Dr. de Havilland Hall, in reply, remarked that Dr. Poynton had not, he thought, quite understood him. He said that rheumatism ran the course of an attenuated pyaemia. By this he did not intend to convey that rheumatism was of pyaemic origin, but that in its symptoms it resembled pyaemia: indeed, as Hilton Fagge had pointed out, the differential diagnosis between the two diseases was sometimes quite impossible. Dr. Tilley's remarks on the necessity of strict antiseptic precautions in the employment of surgical procedures in the upper respiratory tract should receive universal attention and lead to a diminution of the lamentable cases of septic infection which had resulted from want of care. He had no experience of the connexion between chronic atrophic rhinitis and renal disease, but it might possibly be the explanation of some cases in which the etiology had not yet been demonstrated. As regarded Dr. Paterson's suggestion that atrophic rhinitis led to tuberculosis, he would rather look upon the atrophic rhinitis and the tuberculosis as being due to a common vulnerability of the mucous membrane. He agreed with Mr. Woods that it would not do that it should go forth to the world that this Section regarded the mouth as part of the respiratory tract. If it had been included he would have mentioned a case of acute septicaemia ending fatally resulting from carious teeth. As a pendant to Mr. Woods's case of lymphadenoma he mentioned a case of sarcoma of the left tonsil which was followed by diffuse sarcomatosis.

Dr. Jobson Horne, in reply, expressed gratification at the discussion having brought out so much of interest. He thought that Dr. Poynton's paper rather added to the importance of local treatment in all cases of tonsillitis, in view of the danger of systemic infections. As regarded pulmonary tuberculosis developing in the subjects of atrophic rhinitis with ozaena, he was inclined to take the same view Dr. Paterson did in holding the nasal condition to be a causative factor and not only a coincidence. Dr. Horne was glad to learn that the site in the larynx to which he had drawn attention as a vulnerable point in infective endocarditis, Hodgkin's disease, tuberculous lymphadenitis, and lympho-sarcoma, had already been regarded in a similar light in typhoid fever.

DIFFICULTIES AND INSUFFICIENCY OF THE STENOSAL THEORY OF ADENOID DEAFNESS.

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At the Cheltenham meeting of this Section I reviewed the commonly accepted theory of adenoid deafness and arrived at the following conclusions: First, that the theory was not what it claimed to be—complete—but covered only a part of the ground, and, secondly, that accepting it as complete, there was a difficulty not only in estimating the value of the different contributory factors, but even in naming them.

A consideration of the stenosal theory shows that these conclusions (if not stronger ones) may be affirmed of it: to such I now ask your attention. In a marked case of adenoids the open mouth is a prominent feature, and for a considerable period it was believed that respiration was in large measure buccal during both day and night. It is now, however, maintained that inspiration during sleep is in nearly every instance almost wholly nasal even where the respiration is buccal by day, even where the obstacles to nasal inspiration are so great as to prevent the requisite quantity of air from reaching the lungs, and even where the patient sleeps with the mouth open. It is this later view—almost exclusive nasal inspiration during sleep—which is the foundation of the stenosal theory, and in the following summary of that theory I take Mr. Parker as exponent. Wherever stenosis of the nostrils and nasopharynx exists, that is, wherever an obstruction in these parts so diminishes the physiological air channel that it is insufficient to supply the requisite quantity of air to the lungs—nasal inspiration leads to diminution of the air pressure throughout that portion of the respiratory tract which lies behind the obstruction (including the Eustachian tubes and tympanic cavities), and this diminution of pressure brings about (*a*) enlargement of the blood vessels of the parts exposed to it; (*b*) sinking of yielding parts in the course of or in intimate relation with the respiratory tract. The teaching so far as deafness is concerned is that the deafness is due to diminished air tension; that this is proved by the membrane being invariably retracted; that the insufficiency of air tension caused in the manner already explained exists during sleep, and that it is compensated for partly by the driving in of the tympanic membranes and perhaps of small portions of the tubes, and partly by the overfilling of the blood vessels; that the hyperaemia leads in some instances to hypertrophy of the mucous membrane and of the tympanic membranes, and in other cases to a greater activity of the secretive glands; that in case of post-nasal growths alone the tympanum may recover itself during the day when buccal respiration is going on, and air is supplied to the tympanum during swallowing.

The stenosal theory is fascinating both from its simplicity and its comprehensiveness, but it is not free from difficulties.

1. It implies a groundless assumption. It takes for granted that in all cases (save those where the growths overlap the orifices of or inflammation extends up the Eustachian tubes) the growths are of sufficient bulk to prevent the requisite quantity of air from reaching the lungs during sleep, and so causing diminished air tension. This assumption, however, is not in accordance with the facts. Cases in which operation is followed by marked improvement in hearing, although the adenoids are too small to give rise to respiratory troubles are not uncommon.

2. It cannot account for unilateral deafness. The explanation of this condition by the stenosal theory involves a contradiction in terms, and yet we are asked to accept it. Mr. Parker, in the concluding chapter of his book on adenoids, when referring to the methods of operation, says: "There is one point, however, I would strongly insist on, and that is, the impossibility of effecting a thorough removal with a Gottstein's curette or finger-nail without chloroform or under gas. I have examined very many cases done by these methods by various operators, and have hardly ever failed to find some considerable amount of growth left, and have often noticed that the deafness is in consequence only temporarily or partially benefited. I have found, too, that one ear may have improved, whilst the other has remained stationary, and I now always feel sure before looking that considerable stenosis has been left on the unimproved side." These statements are remarkable for their sweeping and confident character, but on the present occasion they may be disposed of in a few words. Adenoids causing deafness do so according to the stenosal theory by diminishing the air tension in the respiratory tract (behind the obstruction) as a whole. There cannot be a difference in the air tension of the two lateral halves of the respiratory tract with a corresponding difference in consequences; but the explanation of a unilateral deafness by the theory in question necessitates the admission of this impossibility. A unilateral deafness could be accounted for by the stenosal theory in one, and only one, condition—namely, where the respiratory tract is divided into two lateral halves completely separated from each other by a partition wall impermeable to air, and extending from the septum to the commencement of the bronchi. In short, Mr. Parker's concluding statement is a refutation of the stenosal theory.

3. Invariable retraction of the membrane has not been established. The theory affirms invariable retraction of the membrane. Is this warranted? Is depression a condition which by our present method and appliances can be diagnosed

with certainty? Is the physiological position itself invariable—absolutely the same throughout the race, absolutely the same in the individual throughout life? Universal affirmation of depression must rest on observation accurately conducted, of instances so numerous and varied as to warrant a generalization, and showing in every instance an unmistakable depression. But the diagnosis is not always a matter of certainty.

In well-marked cases there is no doubt that between the maximum retraction and the physiological position there is a considerable range, and in the neighbourhood of the physiological position a reliable diagnosis may with our present method and appliances be difficult, if not impossible. In the latter cases we may, unconsciously it is true, be helped in our opinion by other considerations than those afforded by inspection. With adenoids we expect retraction, and the expectation may in some cases assist in its discovery.

4. The alleged invariable retraction of the membrane is put forward as conclusive proof that the deafness is due to diminution of air tension. This implies that retraction signifies diminution of tympanic tension, but without indicating whether the diminished tension is of the past or the present. The interpretation of a depression of the membrane in relation to the tympanic tension has been regarded as a simple matter, but it is a difficult problem. A retracted membrane gives no indication of the state, normal or diminished, of the tympanic air tension. The most that can be claimed (not admitted) is that it is at once the consequence and the evidence of a one-time diminution of pressure; the pressure may have continued subnormal, or it may have reached the normal whilst the membrane retains its faulty position. But does depression of a membrane warrant us in affirming that there ever was a diminution of the tympanic tension? The problem is a pneumatic one. In an air-containing cavity whose capacity is capable (by reason of a movable side) of variation, the tension is dependent on and determined by two factors—(*a*) quantity of contained air, and (*b*) containing capacity. The tension may be increased or diminished by alterations in either of these factors, but for our present purpose we need consider only diminution of the quantity of contained air and diminution of capacity. Diminution of the quantity of air without change in capacity causes diminished air pressure, whilst diminution of capacity, the quantity of air remaining the same, will increase the pressure. Thus these two processes—withdrawing air (lowering pressure) and diminishing capacity (increasing pressure)—tend to neutralize each other, and by proportioning them the air may be diminished in quantity without altering the tension, the diminution in capacity neutralizing the reduction in the quantity of the air. In this case the movable side sinks or becomes depressed simultaneously, and in a corresponding degree with the withdrawal of air, and is effected without the intervention of a diminished air tension. We now come to the aural question. The tympanum with its annexes—the mastoid antrum and cells—is such a cavity as we have been considering. It is air-containing, has a movable wall—the membrane—through whose agency its capacity may vary. Its air may under certain circumstances become reduced in quantity, entailing a depression of the membrane. What is the significance of a depressed membrane viewed in relation to the tympanic air? It invariably indicates a reduction in its quantity. But a reduction of the quantity of contained air must not be confounded with a reduction of its tension. The tension may or may not be lowered; whether it is or is not depends upon the extent to which the cavity capacity has been diminished by the depression of the membrane.

The following propositions indicate at least some of the relations of a depressed membrane to the tympanic tension:

1. The reduction of the quantity of contained air and the diminution of the tympanic cavity may proceed simultaneously and *pari passu*, so that from beginning to end the tension remains unaltered—that is, there would be a depressed membrane, although there was not, and never had been, a diminished air tension.

2. The situation up to a certain point may be as above described, but beyond that point the diminution of the cavity fails to keep pace with the reduction of the quantity of the contained air, leading to a diminution of tension which may persist until the time of examination. Here we have retracted membrane in the earlier stage without, and in the later stage with, diminution of tension.

3. From the beginning to the end there may be a disparity between the two processes, so that the reduction of the air exceeds the compensating diminution of the cavity, and results in a diminution of tension—that is, with the retracted membrane there is a concurrent diminution of tension.

4. The diminished air tension just referred to may, by amelioration of the pathological conditions, be raised to the normal, whilst the membrane retains its faulty position. In this instance, with retracted membrane, the tension is, in the earlier stages, diminished, and in the later stages undiminished.

It is thus plain that mere retraction of a membrane indicates in relation to the tympanic air one, and only one, fact, namely, that its quantity has been reduced. Mere retraction gives no information whatever as to the state—present or past—of the tympanic tension. Depression of the membrane may not inaptly be described as an automatic process by which the intratympanic tension is up to a certain point maintained. If a depressed membrane warrant an inference as to tension, it must be by reason of some peculiarities which it presents. What are the characteristic signs, first, of an existing diminished tympanic tension; and secondly, of a past diminished tympanic tension? It might seem at first sight that the degree of the depression would afford us some help, but a little inquiry shows how valueless it is. Whether in a given case there is a diminution of tympanic tension depends upon the answer to two questions: First, By what quantity has the contained air been reduced? secondly, to what extent has the capacity of the containing cavity been diminished by the depression of the membrane? If the second be sufficient to neutralize the first, the tension is normal; but if it be insufficient then the tension is lowered.

How far we are from being able to answer these questions will be seen when we remember that the air-containing cavity is the tympanum *plus* its annexes, the antrum and mastoid cells; that the capacity of the antrum and mastoid cells varies within wide ranges, from the sclerosed to the pneumatic mastoid; that in an individual instance we are unable to estimate it even approximately; that being unable to estimate the capacity of the cavity, we cannot tell by how much it has been reduced by the depression of the membrane, and are therefore unable to balance the diminution in capacity with the reduction in quantity of the air; that a moderately depressed membrane may be as or more significant in one case (say a sclerosed mastoid) as a greatly depressed membrane in another (say a pneumatic mastoid); that no method has been suggested by which the reduction in quantity of the air can be estimated.

5. If the stenosal teaching be sound, the history of adenoid deafness should be one of diurnal periodicity, the patient rising deaf from diminished air in the tympanum, the result of hours of sleep, and going to bed at night hearing comparatively well in consequence of the restoration, complete or partial, of the tympanic air tension effected by the repeated acts of swallowing during the day when buccal respiration renders the naso-pharyngeal tension normal. But such is not the history of patients.

6. The theory is inconsistent with the immediate auditory results of operation. With (*a*) the immediate improvement in cases where the membrane is not perforated. It is admitted that, except in the rare cases of greatly enlarged tonsils, the air tension in the respiratory tract is not diminished during the day time when respiration is buccal; consequently, at the time of the operation it was normal, and the operation effected no change in it. The immediate improvement in hearing is therefore inexplicable by the stenosal theory. And with (*b*) the immediate improvement taking place in cases where the membrane is perforated. This improvement is not covered by the theory because, the membrane being perforated, the tympanic air tension would be unaffected by the operation.

In the paper reviewing the commonly accepted theory of adenoid deafness, I arrived at the conclusion that even accepting that theory it was difficult to name the contributory factors. What was said upon that subject is applicable to the stenosal theory.

Diminution of the intratympanic tension is assumed as a great central fact in both theories; and even as regards it, we are in a given case unable to say whether it is an existing agency, or one which has been spent in effecting changes in the membrane chain of ossicles, intratympanic muscles, and mucous membrane.

We may now with advantage glance at a couple of points in

reference to the foundation upon which the stenosal theory rests.

1. Why is inspiration during sleep wholly, or almost wholly, nasal where the mouth is widely open, where the nasal channel is insufficient to supply the requisite quantity of air, and where the respiration is buccal by day? Why does the air not rush in through the open mouth?

Mr. Parker, at the suggestion of Dr. McDonald, conducted a series of observations on the respiration during sleep of patients with post-nasal adenoids, and he has published the results in a book to which I have already referred. I have searched this work for an answer to the question, and the only one I can find is this, "There indeed seems to be a very overpowering instinct in favour of breathing through the nose, which during sleep, when the will power is suspended, strongly asserts itself," and he quotes McDonald, "That the instinct of nose-breathing appears to asserts itself in spite of sometimes great difficulties, and especially during sleep."

What are we to say about this doctrine of a "very overpowering instinct"? We know that if an air-containing cavity which is in communication by two channels with the atmosphere have its capacity increased there will be an immediate inrush of air through the two channels if permeable until equilibrium of pressure has been established, and that if only one inlet be used it is because there is an obstruction at some point in the other. We have been so accustomed to observing patients with nasal obstruction keep the mouth open during waking hours and breathe through the mouth that the association of the ideas open mouth and buccal respiration has become very strong, but we must be on our guard against assuming (1) that an open mouth means an open channel for buccal respiration, and (2) that the absence of buccal respiration when the mouth is open is due to the intervention of some mysterious agency—"a very overpowering instinct"—and not to a mechanical obstruction.

Although the lungs have two potential channels for their air supply, namely, the nose and the mouth, they have only one physiological entrance for quiet respiration—the nose. When the patient is awake the will can so mould the buccal walls as to form and keep open the supplementary air channel, but when during sleep the will power is suspended the ordinary laws of Nature have free play, and gravity and the suction of inspiration combined may bring the tongue into contact with or proximity to the palate, and thus mechanically block or obstruct the potential mouth channel and so account for the absence or presence of only a slight degree of buccal respiration when the mouth is widely open. The present state of scientific knowledge compels us to reject the explanation of "a very overpowering instinct" until it has been proved that the mouth air channel remains during sleep open and permeable.

2. Is inspiration during sleep in the great majority of cases wholly or almost wholly nasal where the mouth is widely open, where the nasal channel is insufficient to supply the requisite quantity of air and where the respiration is buccal by day? This is a question of fact, and is to be answered by observation and by observation alone. Mr. Parker has replied in the affirmative after an investigation of 50 cases. When I read his paper I accepted his facts, although I could not subscribe to his explanations, but some recent observations have given reason for asking whether the facts might not be open to criticism. We must therefore consider his method of investigation, which he states as follow: "The means employed to determine whether the current of air was entering through one or both nostrils or through the mouth was simply by thinning out a small piece of cotton wool, twisting up one end and making the other spatulate, but all so delicate that the slightest breath of air would move it. This broader end was held first in front of the mouth and then in front of each nostril, and its movements readily showed through which passage or passages the air was entering; and the amount of air entering each passage could in great measure be gauged by the force with which the cotton wool was blown from and sucked towards the opening of the passage." The method is not one of precision and in the absence of further details the reported observations cannot be accepted as free from doubt. No information is given as to the area of (*a*) the wool fan (*b*) of the buccal opening or (*c*) of the anterior nares. And yet these are important points. A fan large enough to cover one nostril and to receive the whole of its inspiratory and expiratory current might cover only a small part of the orifice of the widely open mouth and so be acted upon by only a small portion of the buccal inspiratory and expiratory current; in such a case the observation is valueless. Not only the area but also the shape of the wool fan is to be considered. To be of value our observations must be of similar circumstances—the fan must in the different cases occupy the same relation to the margins of the orifices. A more or less flat fan would lie in apposition with or close proximity to the entire boundary of an anterior nares, but it could not occupy a similar position with the buccal boundary: the shape of the buccal orifice—prominent in the median line and retreating towards the angles—precludes it; whilst the fan and the buccal boundary are in apposition or close proximity in the median line they are separated laterally by a distance increasing as we proceed outwards until the angle is reached. Such a faulty position of the fan would vitiate the observation. It may be that Mr. Parker's observations were so conducted as to preclude the errors we have been considering, but until we know that they were we are not justified in drawing conclusions from them. It is desirable that another series of observations should be conducted and that the report should give such details as would enable us to form an opinion as to the possibility of error having crept in and that the results should, if possible, be verified or controlled by another method of investigation. Another method is available, and it may in certain cases give results which cannot be questioned. Air may pass by all or any of three orifices—the mouth and the two anterior nares. If the allegation be true that inspiration is entirely or almost entirely nasal, then placing over the mouth an impermeable covering would not materially affect inspiration, whilst the blocking of either or both nostrils where inspiration was insufficient would lead to great distress. Such results would be valuable. Results at variance with the teaching would also be of great importance.

Seven casual observations of this character have come under my notice (July, 1902). They were all of patients who had had post-nasal adenoids removed, and whom on going through the wards I found asleep with the mouth open. In each instance I closed both nostrils simultaneously by compressing the nose between the thumb and forefinger, and the closure was repeated several times. Five continued asleep with no marked disturbance of respiration, the other two patients almost immediately gave signs of awaking. Now the respiration of the five must have been mainly buccal, since blocking of the nares was practically without effect. The awaking of the other two may have been due to want of air caused by the blocking of the nostrils, the mouth giving an insufficient supply. It must, however, be remembered that these patients may have been roused by the irritation of contact (fingers and nose) in persons who were not sleeping soundly. I may add that a nurse has reported to me another case to be added to the above-mentioned two. The group of five thus affords definite and unimpeachable results which are adverse to the stenosal contention, whilst the explanation of the other three is doubtful.

Since writing the foregoing, an interesting observation has come under my notice. A patient several times showed signs of awaking almost immediately upon compression by the finger and thumb, but remained apparently undisturbed when the nares were closed by placing two fingers over them; the disturbance during compression was evidently not caused by cutting off the air supply.

From these instances no conclusions can be drawn upon the question of the almost exclusive prevalence of nasal inspiration during sleep, but they strengthen the case which has been made for further and more conclusive observations than those recorded.

Mr. Robert Woods pointed out that adenoid growths when present in any considerable mass relieved the soft palate from the necessity for making its proper excursion, and thus the palatal muscles became lazy and in time paretic. In his opinion adenoid deafness was due quite as much to this condition of the palatal muscles interfering with the proper opening of the Eustachian tube as to the adenoids themselves.

The President said he did not consider the stenosis caused by the growths to be the cause of the deafness, he attributed it rather to catarrhal conditions of the mucous membrane spreading up the Eustachian tubes, and resulting in retraction of the membranes. He agreed with Mr. Woods that defective action of the palatal muscles was a contributory cause. The mechanical action of the adenoids could no longer be regarded as a chief cause, there might be little growth and yet marked deafness, and vice versa.

THE SURGICAL TREATMENT OF CANCER OF THE LARYNX.

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A most important consideration from the point of view of treatment is the exact seat of the disease. It is beyond dispute that extralaryngeal malignant tumours—that is, tumours involving the epiglottic region—are not amenable to the same measures as endolaryngeal growths.

I will consider, first, extralaryngeal growths. The most important point in every case is the establishment of an early and exact diagnosis. We know that it is not always easy, especially in the early stages, to recognize a malignant growth with such certainty as to justify active treatment. The microscopist is often in doubt as to the nature of an excised fragment, for one reason or another, and so it is important when the clinical signs suggest malignancy to remove successive fragments from a sufficient depth and to submit them to a histologist skilled in the examination of malignant degenerations of the laryngeal mucous membrane. Only thus shall we be in a position to initiate energetic treatment while there is still some chance of success.

A.—Treatment of Extrinsic Cancer of the Larynx.

Not rarely malignant disease begins near the free edge of the epiglottis, on its lingual and laryngeal surface, and the patient may come to consult us whilst the growth is still very limited. In such a case it may be removed with the snare or cutting foreeps, after the application of cocaine and adrenalin. There is not generally much pain or bleeding. When the growth has extended a little further down, involving almost the whole epiglottis, the base of the tongue, and perhaps even the glosso-epiglottic folds, especially the median one, it becomes necessary to perform an external operation, in order to remove the disease completely. For this purpose I prefer transhyoid pharyngotomy, as recommended by Gussenbauer and revived by Vallas of Lyons.

The operation is one of the simplest and easiest to perform, and is practically bloodless. A vertical median incision is made extending from just below the symphysis mentis downwards to that point of the trachea, where it will be necessary, presently, to introduce a cannula. The tissues are divided layer by layer in the middle line, and I would even advise the division of the hyoid bone in the middle line with the help of a pair of strong shears before opening the trachea; and it is only when I have reached the base of the tongue that I introduce an ordinary tracheotomy tube. This is done under superficial anaesthesia, so that the patient may cough up any blood that finds its way into the air passages, and this being accomplished the anaesthesia is deepened, and the base of the tongue, which at this level is quite thin, is divided by a vertical mesial incision. By drawing the two halves apart the epiglottis is easily exposed; it is then drawn forward by a finger introduced into the wound and removed. An energetic application of the curette and the thermo-cautery completes the operation. The two halves of the tongue are then sutured with catgut, the parts of the hyoid bone are held together by stitching the muscles above it and below, and, finally, the skin is stitched with horsehair.

It is better to leave the tracheotomy tube in for some days, but it is unnecessary to feed the patient through an oesophageal tube. I have had no trouble with swallowing in my cases, and this would be more likely to occur during the days immediately following the operation than later, when the post-operative swelling has disappeared.

This operation may be considered an ideal one, inasmuch as it gives access for the removal of infected glands, if such exist, in the neighbourhood of the hyoid bone. It will not, of course, always prevent recurrence any more than any other radical operation. It is interesting to know what becomes of these cases some months or even years after operation. In one of my patients a curious deformity developed. It consisted in a sort of antero-posterior elongation of the glottic region, so that the glottis was reduced to a slit, to which the movement of the arytenoids was no longer capable of imparting the usual form of an isosceles triangle. The aspiration of the ary-epiglottic folds interfered with respiration so much that it became necessary to introduce a tracheotomy tube; but after a time the glottis gradually regained its normal form almost completely and the tube was removed.

B.—Intrinsic Cancer of the Larynx.

This may spring from the vocal cords, the ventricular bands, or the arytenoid region. Tumours of the cords are, I think, much less malignant than those which grow from other parts of the mucous membrane, and admit of a better prognosis. With regard to the endolaryngeal method of treatment, in spite of the observations of Fraenkel and a few others, I entirely agree with the majority of experienced laryngologists in regarding it as quite inapplicable.

Unfortunately microscopic examination of fragments of growth does not yet enable us to distinguish degrees of malignity sufficiently to choose those cases in which operation offers a fair chance of success, and this to my mind explains the fact that the endolaryngeal method has scored some successes whilst in cases treated by external operation there have been many more fatal recurrences.

Tracheotomy ought not to be regarded as a mode of treatment for cancer of the larynx; it is merely a palliative operation for prolonging the patient's life more or less, and gives its best results when the tumour is situated in the interior of the larynx.

Thyrotomy has been reinstated in favour as a method of treatment in cancer of the larynx by the work of Sir Felix Semon. The indications for this operation are definite; it ought to be reserved exclusively for malignant growths originating in the interior of the larynx, and especially for tumours of one or other of the vocal cords. When one of the ventricular bands is affected, when there is peripheral infiltration, still more when the corresponding arytenoid cartilage is fixed, or when there are signs of perichondritis, it is unsuitable and ought to be rejected as a means of cure. On the other hand in a suitable case it is an operation to advise and to perform. I will briefly describe my method.

The patient having been anaesthetised his head is bent firmly backwards and a roll of sheeting is placed under his shoulders. His chin, covered with an aseptic compress, is held in position by an assistant. The field of operation having been sterilized in the ordinary way a vertical median incision is made from the hyoid bone to the episternal notch. The incision must be exactly in the middle line. Beneath the skin and superficial fascia one finds above the prominence of the thyroid cartilage and the thyro-hyoid membrane, and below if one has hit the middle line the intermuscular septum, which one divides with the knife. At this depth one finds some superficial veins and frequently some small arterial branches running to the thyroid gland. They are necessarily divided and clamped, to be tied later before opening the air passages. The thyroid isthmus should then be divided exactly in the middle line; the sharp bleeding which ensues is easily controlled by pressure. Before opening the larynx it is a good plan to separate the tissues gently on each side from the wings of the thyroid cartilage and thoroughly expose the thyro-hyoid and crico-thyroid membranes. All bleeding having been arrested, one opens the trachea below the first or second tracheal ring and introduces a cannula—Trendelenburg's, Hahn's, or, as I very much prefer, an ordinary tracheotomy tube. Just before the introduction of the tube the patient is allowed to recover partly from the anaesthetic so that he may cough up any blood which enters the trachea. As soon as the cough subsides the anaesthesia is deepened again. With Hahn's cannula it is necessary to wait ten or fifteen minutes to allow the sponge to swell. It is well not to dilate a slender trachea too much, or an alarming syncopal condition is liable to supervene, with arrest of respiration. With an ordinary tube such as I use there is no risk of this.

It is important that during the subsequent stages of the operation the patient should be allowed now and then partially to recover his tracheal reflex in order that he may be able to expel any blood or mucus which may find its way into the air passages. In this way the operator is kept informed of what is going on in the trachea, and this is important both for the immediate success of the operation and for the avoidance of complications. Next the crico-thyroid membrane and thyroid cartilage are divided in their whole extent, and if possible rapidly with the same stroke exactly in the middle line, the wings of the cartilage are gently pulled apart, and a strip of gauze, soaked in 20 per cent. cocaine and 1 in 10,000 adrenalin, is introduced into the larynx. After waiting for one or two minutes, so as to allow the cocaine and adrenalin to take effect, the halves of the divided thyroid cartilage are gently pulled apart so as to expose the interior of the larynx. The cricoid cartilage ought always to be left intact. On examining the larynx the operator

finds, as was long ago pointed out by Sir F. Semon, that the growth is much larger and has a much more extensive attachment than was indicated by the view in the laryngeal mirror. The diseased tissues are removed with scissors, bistoury, or some other cutting instrument, and the base of attachment is thoroughly curetted or even burned with the thermo-cautery. The red-hot iron has the advantage in these cases of completely stopping bleeding, and so favouring immediate union. The operation being finished, the two halves of the thyroid cartilage are brought together as exactly as possible, and kept in position by catgut stitches passed through the cartilage. The muscles are stitched with catgut, and the skin with horsehair. Till quite lately it has been usual to leave the tracheotomy tube in position for several days in order to avoid any respiratory embarrassment which might result from inflammatory swelling. Of late, however, I have closed the wound completely, and dispensed with the tube, leaving only a small button-hole of the wound open at a point corresponding to the wound in the trachea. The button-hole includes the skin and subjacent tissues, but the wound in the trachea is always sutured. I did not adopt this practice of immediate suture of the wound till I had satisfied myself, by laryngoscopic examination on the evening of the day of operation, or next day, that the entrance of the larynx was large enough for respiratory purposes during most of the time. The object of leaving a button-hole in the lower part of the wound is to avoid the occurrence of emphysema. For the first twenty-four or forty-eight hours a skilled assistant ought to be placed in charge of the patient, so that in the event of serious respiratory embarrassment arising he may at once replace the tracheotomy tube. It is not difficult to understand how the precautions I have described are calculated to hasten healing and to avoid the occurrence of the broncho-pneumonia which occasionally follows operation on the upper air passages. Thyrotomy, according to this improved method, has of late years been of the greatest service to me. I have not lost a single patient from the operation, and healing has been very rapid.

Partial or Complete Laryngectomy.

When the tumour has extended beyond the limits which we have just described, it may be necessary to interfere more extensively. Thus, if, during the performance of thyrotomy, one finds malignant degeneration of part of the thyroid cartilage—one of its alae, for instance—one ought to excise the affected region freely, or, if necessary, even remove half the larynx. Afterwards one must try to restore the laryngeal tube either by stitching together the remaining parts of the thyroid cartilage, or, if half of the organ has been removed, by allowing the operation wound to heal in such a way as to leave a passage.

Generally speaking, the half of the larynx which is left continues to discharge its function as before, whilst the half which has been removed is replaced by cicatricial fibrous tissue. One may even dispense with the tracheotomy tube, as I saw in Professor Gluck's practice in Berlin, the patient being able to breathe through the new cicatricial channel. If at any time his breathing becomes embarrassed he can introduce a dilator, which he carries constantly in his pocket, and push over the sound ala of the thyroid cartilage, so as to allow of the entrance of air from the outside, and avoid the threatening danger of stenosis.

If the whole of the thyroid cartilage is involved operation is more questionable, not that interference need necessarily be fatal in itself, at least immediately, but because the results are not very encouraging. The majority of patients who have survived, with some rare exceptions, died within two or three years after the operation, some of recurrence, others of secondary affections, broncho-pneumonia, cerebral haemorrhage, etc. Is this want of success to be attributed to the unfavourable conditions under which the operation was performed? Possibly so, for often the pharynx, and even the oesophagus and base of the tongue and the neighbouring glands are affected, so that the circumstances are obviously unfavourable to an operation of the kind in question. It is certain that in order to have a good chance of success it would be necessary to operate whilst the tumour is still limited to the larynx and has not invaded neighbouring parts.

Having decided to operate, the best method is, I think, that recommended by Périer, which consists in making a T-shaped incision on the front of the neck, the vertical median cut as described for throtomy, the horizontal cut transversely across the hyoid region. These incisions are deepened to the cartilages of the larynx. Considering the larynx as a tumour to be removed, one strips the muscle from its external surface as far as the level of the inferior constrictors of the pharynx. The larynx thus only remains attached posteriorly to the mucous membrane of the pharynx and oesophagus, and below to the trachea, which has not yet been opened. The trachea should be separated from the oesophagus with the aid of a blunt dissector and the finger; then, a thread having been passed through it with the help of a Reverdin's needle, it is drawn forward and divided transversely through the first ring below the cricoid cartilage, a specially large tube being introduced into the stump, through which the administration of chloroform is continued. The larynx is separated posteriorly from the mucous membrane of the pharynx, and the great cornua of the hyoid bone are divided, and the epiglottis is removed or left as its condition requires.

Finally, the tracheal ring is stitched to the surface of the skin, and the anterior wall of the oesophagus is similarly fixed to the lower part of the thyro-hyoid membrane, a procedure which has the advantage of shutting off the laryngeal wound entirely from the buccal cavity, and so lessening the risk of secondary infection. (See my *Leçons sur les Maladies du Larynx*, 1890.) Thus one is enabled to close the wound pretty completely above the tracheal cannula leaving merely a drainage opening to facilitate the escape of the liquids which nearly always form after the operation, and also to lessen the risk of infection which might occur from the early separation of the stitches binding the oesophagus to the floor of the mouth. The only disadvantage of this proceeding is that it renders more difficult the application of prothetic appliances; but we know, alas! how little is to be expected from them. In this connexion I may say that the rhinotracheal prothetic appliances shown by Professor Gluck of Berlin at the International Medical Congress held in Paris in 1900 are the best yet introduced for cases of laryngectomy. When the laryngectomy wound has healed there remains in place of the larynx a large fistulous channel in the front of the neck communicating with the base of the tongue and the pharynx. In order to make good this defect, Professor Gluck has devised a plastic operation which, as I have seen at his clinic, gives excellent results.

Such are the means at our disposal for combating this terrible disease. Unfortunately, even in favourable cases, when the tumour does not recur after laryngectomy, the patient finds himself in such a condition of inferiority to his fellows, that he may with some reason ask himself, at least in certain cases, whether death would not have been preferable to such an existence as is left to him.

In conclusion, let me again insist upon the supreme importance of early diagnosis.

Vaccination Expenses.—The Departmental Committee appointed by the President of the Local Government Board to inquire and report with regard to the payments made to public vaccinators and vaccination officers under the Vaccination Order, 1898, on October 21st, heard the evidence of Mr. C. A. Kemble, Chairman of the Board of Guardians of the Clutton Union, Mr. J. T. Beston, a member of the Birmingham Board of Guardians, and Dr. H. Langley Browle, Public Vaccinator of the West Bromwich Union. On October 22nd Drs. A. E. Cope, A. Drury, and A. Maude gave evidence on behalf of the Association of Public Vaccinators of England and Wales.

Sir Wm. Taylor, K.C.B., Director-General Army Medical Service, will preside at a dinner of the Glasgow University Club, London, to be held on Thursday, November 26th, in the Trocadero Restaurant, W. Particulars may be obtained from Mr. Jas. Dodds, Scottish Office, Whitehall, S.W., or from Dr. C. O. Hawthorne, 28, Weymouth Street, W.

Bequests to Hospitals.—The late Mr. George Hitchens, of Plymouth, has left the sum of £3,000 to the South Devon and East Cornwall Hospital, and devised a freehold house in trust for the same hospital. He left his residual estate to the Plymouth Public Dispensary. Mr. Alfred Webb Miles, of Putney, has bequeathed £200 each to the Brompton Consumption Hospital, the Cancer Hospital at Brompton, and the Royal Hospital for Incurables; also £100 each to the Victoria Hospital at Folkestone and the Royal Sea-Bathing Infirmary at Margate. Under the will of the late Miss Jane Blisset, of Freshfield, Stoke, Wilts, £300 each has been bequeathed to the Wells Cottage Hospital, the London Hospital, and the Victoria Park Hospital for Diseases of the Chest.

British Medical Association.

PROCEEDINGS OF DIVISIONS AND BRANCHES RELATING TO SCIENTIFIC AND CLINICAL MEDICINE.

METROPOLITAN COUNTIES BRANCH: ST. PANCRAS DIVISION.

W. Wynn Westcott, M.B., in the Chair.

Friday, July 17th, 1903.

Overlaying of Infants.—The Chairman read a paper on the overlaying of infants, which will be published in full.

Uterine Fibroid.—Mr. R. C. M. Pooley showed a fibroid uterus and appendages complicated with a large cyst. The case made satisfactory progress until the third day, when death took place suddenly. On necropsy a large clot was found in the vessels of the heart.

Glioma of Optic Thalamus.—Dr. Herbert Rogers showed a glioma of the optic thalamus in a girl of 20. The patient had suffered from headache, vomiting, and optic neuritis. She had a slow pulse and presented Babinski's sign, but showed no other motor or sensory disturbance, although the tumour was large and seemed to press upon the motor and sensory tract. The tumour contained a haemorrhage which probably accounted for the severe symptoms noted a few days before death, when the headache and vomiting could only be relieved by drawing off the excess of subarachnoid fluid by lumbar puncture.

Cerebral Tuberculosis.—Dr. Rogers also showed a brain containing recent and old tuberculous lesions. The patient was a child, aged 18 months, admitted to the Temperance Hospital for tuberculous glands in the neck. While there it developed tuberculous meningitis, but seemed to recover entirely for four months. It then developed fresh signs of meningitis and died after five weeks. The specimen showed old encapsulated tubercle and recent miliary infection.

Angioma of the Brain.—Dr. Rogers demonstrated also a specimen of angioma of the brain. The patient, a woman of 32, was admitted for chronic intestinal obstruction, but since childhood had suffered from what were supposed to be ordinary epileptic fits. The intestinal obstruction, which became acute, was successfully relieved by operation, but shortly afterwards the patient died quite suddenly. The only abnormality found *post mortem* which could explain the death was this large naevus in the brain.

Friday, October 16th, 1903.

Papers.—Mr. Aird read notes of three cases of perforating gastric ulcer, and Mr. Martin Westcott read a paper on sea voyages as remedial measures.

SOUTH-WESTERN BRANCH.

W. F. Thompson, M.D., President, in the Chair,

Liskeard, Wednesday, October 7th, 1903.

Malignant Disease– Dr. Bushnell read a paper on the life history of malignant disease, in the course of which he drew attention to the experiments and remarkable results obtained by Mr. D'Arcy Power and others. He suggested that similar experiments should be repeated in a local laboratory and an attempt made to separate extrinsic from intrinsic factors of cell growth of cancerous nature by cross-breeding of mice or other susceptible animals, with a view to estimating the factor of heredity. He further suggested that a topographical survey of cancer in Devon and Cornwall might be undertaken by the Branch. In conclusion he urged that a comprehensive view should be taken of the subject, and that it should include its biological and chemical aspects.

Ethyl Chloride.—Mr. C. H. Whiteford read an interesting paper on ethyl chloride as a general anaesthetic. He pointed out the advantages and facility of its administration and the rapidity with which anaesthesia could be induced, showing that it could be employed with perfect safety in operations lasting 20 minutes or even over half an hour. Age was no drawback to its use, and he had administered it with equal success in infants, adults, and old persons.

Cases.—Mr. Paul Swain gave an account of the after-history of an ovariotomy in a pregnant woman.—Mr. J. C. Walker read notes of a case of tetanus which he had successfully treated by hypodermic injections of carbolic acid.—Mr. W. Woollcombe read notes of an enterectomy performed for intestinal obstruction followed by unusual symptoms.—Dr. W. Hammond showed a case of fracture of the skull from which he had had to remove bone.

SOUTHERN BRANCH: PORTSMOUTH DIVISION.

L. Maybury, M.D., President, in the Chair.

Portsmouth, Tuesday, October 13th, 1903.

Surgical Cases.—Dr. J. Ward Cousins showed the following cases: (1) Three cases of naevus treated by electrolysis with excellent results. (2) A case of tumour of the neck. (3) A case of ulceration of the throat with enlarged cervical glands in a girl aged 16. The diagnosis was congenital syphilis in a strumous subject, and in spite of specific treatment the ulceration was extending. Dr. Claremont advocated heroic doses of potassium iodide. A combination of mercury with the iodide was advised by others. (4) A case of epithelioma of the hand and soft palates. (5) A case of necrosis of the lower jaw following noma and showing a good result after operation. (6) A case of knee-joint disease which was incised and 120 loose cartilages removed.—Mr. Childe showed: (1) A case in which he had removed half the tongue by Kocher's method. A gratifying result had been obtained. (2) A case of enterectomy for strangulated umbilical hernia with specimen. The union of the gut was effected by a double row of sutures. Mr. Childe emphasized the importance of resterilizing everything concerned in the operation at the time of severing the intestine.

Cranial Osteoma.—Dr. L. Maybury showed a case of osteoma of the skull causing great proptosis in the region of the growth; also two cases of empyema in children showing good results after incision and drainage, and in one case resection of three ribs.

Perihepatitis.—Dr. J. T. Leon showed a case of perihepatitis and splenitis (? specific) in a young boy from whom he had removed a large quantity of ascitic fluid by paracentesis. The liver was much enlarged and very hard. Alcohol as a cause had been eliminated.

Mammary Tumour.—Dr. Carling showed a case of a woman, aged 34, in whose right breast a tumour had developed with enlarged glands running from it up to the axilla, and also one below the clavicle. The growth was moderately hard and not very painful.—The President advocated exploratory puncture preparatory to further measures.—Dr. Cousins was in favour of performing a radical operation, an opinion shared by several other members.

SOUTH MIDLAND BRANCH.

William E. Audland, L.R.C.P., M.R.C.S.Eng., in the Chair.

Bedford, Thursday, October 15th, 1903.

Hyperpyrexia.—Dr. Buszard read a paper on hyperpyrexia, referring to its occurrence in almost every febrile disease, but especially in acute rheumatism. The condition was not one of high temperature alone, but a temperature of 105° or more associated with distinct disturbances in the nervous system, would be called hyperpyrexia. Drugs were usually of no avail, though antipyrin had done good in some cases. The sheet anchor was the external application of cold in the form of the bath or the pack.

Chloroma.—Dr. Hichens read a paper on a case of chloroma occurring at Northampton Hospital, and showed specimens. He gave an account of the literature of the subject, and analysed the symptoms in other recorded cases, ending with a brief discussion of the nature of the disease, which he thought closely analogous to lymphatic leukaemia, and hazarding the suggestion that chloroma was a form of lympho-sarcoma, and that lymphatic leukaemia might be regarded as a fluid sarcoma of the haemopoietic system.

Enterectomy.—Mr. Gifford Nash read notes and exhibited specimens of four cases of enterectomy for malignant disease.

Discussion.—The papers and cases were freely discussed by the members, and the meeting concluded with a vote of thanks to the readers of papers.

[*The business portion of the Proceedings will be found in the* Supplement].

REPORTS OF SOCIETIES.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Alfred Willett, F.R.C.S., President, in the Chair.

Tuesday, October 27th, 1903.

The President announced that advantage had been taken of the new regulations for officers of the public Services, and several members were proposed for election as Service Fellows.

Large Bile Cyst of the Liver: Jaundice without Cholelithiasis: Incision and Drainage: Recovery.

Mr. Alban Doran contributed a paper on simple non-hydatid cysts of the liver, in which he described the following case:

The patient was a woman aged 42. Three years before admission, when in the second month of pregnancy, she fell against a washing tub, striking the right hypochondrium; abortion occurred within a few hours. She soon became pregnant again, and was delivered spontaneously at term. Four months before the operation jaundice set in, the urine was deeply stained, the motions white. The liver was greatly enlarged by a cystic swelling, which, when exposed and opened, was found to contain three pints of green bile, without calculi or hydatid elements. It occupied the left half of the right lobe of the liver. The gall bladder and the three ducts were quite unconnected with it, and were empty and unobstructed; the pancreas appeared healthy. A drainage tube was passed into the cystic cavity in the liver. For three weeks quantities of pure bile escaped from the tube, the jaundice steadily diminishing. In the fifth week the motions began to become coloured, and a month later the patient was in excellent health.

Reference was made to other reported cases of a single non-hydatid and non-pedunculated cyst in the liver. In three, recorded by Bird of Melbourne, Bayer, and Winckler, there was neither jaundice nor cholelithiasis, and in Winckler's alone was there any trace of bile in the contents of the cyst. In North's and Mayo Robson's cases there was jaundice, and also obstruction from calculi. There was apparently bile in the contents of the cyst in North's case, whilst in Robson's bile flowed away a few days after the cyst had been opened. In the author's case there was marked jaundice, but no trace of cholelithiasis; the cyst contained pure green bile. The author recorded some observations about gall stones in the liver. Turning to special features in his case, the author discussed the cause. It was possibly due to the injury, or to pregnancy, which caused biliary stasis, as shown by Potocki, or to their combined effects. The cyst might have been a true new growth developed from an intrahepatic duct, but such cysts do not usually contain bile. There were no distinct symptoms of hypertrophic biliary cirrhosis. Some observations were made about congenital malformations and heredity in regard to the jaundice—the precise cause of which was not clear in this case—about haemorrhage in operations on jaundiced patients, and the prophylactic value of calcium chloride, and as to the dangers of haemorrhage into liver cysts. Remarks were also made on bile entering hydatid cysts. The influence of jaundice on menstruation was noted—in Cocking's case of life-long jaundice the patient bore children and was regular; in the present case there was neither amenorrhoea nor menorrhagia. In conclusion, it was explained that drainage was the necessary treatment in cases of non-pedunculated liver cyst. In this case, where there was no cholelithiasis or pancreatic disease, there was neither shock nor free oozing after the operation.

Mr. Bruce Clarke considered that the pathology of this case was a little obscure. It was either dependent on the injury or on some cyst, a retention cyst or a congenital cyst. More probably the injury was the cause. A somewhat analogous condition was that of a man with hydronephrosis and epilepsy. During a fit he fell and struck his side on a hard object, with great collapse ensuing. Some six weeks later, when the kidney was operated on, it was found that a renal vein had ruptured into the hydronephrotic cyst, and the blood had separated into clot and fluid. Traumatic hydronephrosis, too, was to some extent parallel with the suggested etiology. Dr. Miller's case was a child of 3 or 4 years of age, and was thus hardly comparable with the present case. The jaundice was in the first case probably due to obstruction by pressure, and the catarrh of the ducts present probably prevented the flow of the bile after the operation. The association in this case of mobility of the kidney was interesting, and the mobility was probably directly due to the liver cyst. The diagnosis lay between hydatid, simple cyst, and a cyst connected with malignant disease. Except for the duration of the case there was no symptom or sign that could differentiate these conditions.

Mr. Butler-Smythe had seen Mr. Doran's case, and had not been any way near arriving at a correct diagnosis. It would have been satisfactory if a portion of the cyst had been removed for microscopic examination. The gall bladder and the ducts were completely pressed away from the transverse fissure, and lay white and distinct in the posterior part of the abdomen, suggesting a mechanical origin for the cyst. The flow of bile coming on eliminated the theory of a calculus as a cause. It was a point whether the liver substance was injured. The movable kidney had been made much of, but the right kidney could be felt in 9 out of 10 cases of women, and so this was not extraordinary. In regard to treatment he had not found that calcium chloride arrested haemorrhage in his cases.

The President referred to the non-appearance of the flow of bile after the operation, and suggested it might be explained by the fact that a bile duct opened into the cyst, that the natural course of the bile was through the cyst, and it was not until the cyst began to contract that the bile began to follow its ordinary track.

Mr. Doran replied.

Primary Chancre of the Tongue.

Mr. R. Clement Lucas showed a case of this condition.

A married man, aged 35, had a family of five children, and was a farrier by trade. He was admitted into Guy's Hospital on October 20th for a sore beneath his tongue. About five weeks before he noticed two little white spots beneath his tongue. These extended and formed a sore. He was unable to account for the sore, except that in his shop the men were accustomed to smoke the first pipe they saw lying about. The sore extended across the frenum and forwards nearly to the tip of the tongue, and was almost symmetrical. The edges were slightly undermined. It had a greyish surface, and the mucous membrane around was red and inflamed. The sore was very painful and tender. There were enlarged glands beneath the jaw on the left side, extending nearly from the symphysis to the angle. They were firm and adherent to the deeper structures, but not to the skin. On his skin there was a brownish papular syphilide to be seen on his arms, chest, and abdomen, and slightly on his forehead.

Mr. Lucas remarked on the extreme rarity of the site for primary sore. In the whole course of his experience he had met with only one other on the tongue. In that case the chancre was on the right edge near the tip, and corresponded to a ragged artificial toothplate. It presented a more distinct rim than in the case shown. The man, who was between 50 and 60 years of age, had enlarged lymphatic glands in the submaxillary triangle and an eruption similar to that in the case shown.

CLINICAL SOCIETY OF LONDON.

Frederick Taylor, M.D., F.R.C.P., President, in the Chair.

Friday, October 23rd, 1903.

Clinical Evening.

Adiposis Dolorosa in a Male.

Dr. Leonard Williams exhibited a case in which he had made the above diagnosis.

The patient, a male, had enjoyed good health, but shortly after becoming barman he began to suffer from bilateral, more or less symmetrical, swellings on the trunk and upper arms, some of which were typical lipomata. Their development was accompanied by pain, which subsequently subsided; but pain was elicited by rough handling, and occurred not rarely in paroxysms without obvious cause. Haemorrhages were apt to occur over the swellings, after exercise of the underlying muscles. The patient had become progressively asthenic.

There was, said Dr. Williams, only one other recorded case in a male.

Mr. Bowlby considered it to be a case of diffused lipoma, such as he had described in a paper some eight or ten years ago. Such cases were usually connected with alcoholism.

Mr. Herbert French thought the loss of bodily power was less marked than was usual in adiposis dolorosa.

Dr. Williams, in reply, justified his diagnosis on the grounds of the patient's occupation, the pain, haemorrhages, mental depression, and anaemia. The patient was intolerant of iron and thyroid extract. Possibly diffuse lipoma and adiposis dolorosa were the same disease.

Non-malignant Growth at the Base of the Skull.

Mr. T. H. Kellock showed a boy, 2½ years old.

At the age of 3 months the right eye became prominent and the side of the head projecting; since then the condition had slowly increased, but without pain or other inconvenience. The child was intelligent; had signs of rickets, and the anterior fontanelle was not quite closed.

The swelling at the right temporal region was bony; the circumference of the head was 21 in. The right upper jaw was pushed forwards. There were no paralytic symptoms whatever. On the front and back of the trunk were several oval-shaped spots of light brown colour, said to have been present since the child's birth. The right eyeball was proptosed, and there was cupping of the disc; the left fundus showed no cupping of disc.

VASCULAR NASO-PHARYNGEAL FIBROMA.

Dr. HERBERT TILLEY showed a male, aged 16, from whom he had removed a fibro-angioma by various operations:

When first seen 2 years ago the patient had had complete nasal obstruction, with blood-stained discharge from the left nostril of five months' duration. A large, sloughy, easily-bleeding mass completely filled the left nasal fossa. In November, 1901, only half the growth could be removed by Ollier's method. In December, after a preliminary laryngotomy and division of the soft, and removal of the left side of the hard, palate, all visible growth was removed; also in March, 1902, after its recurrence. In July, 1902, there was again extensive recurrence, and after a preliminary laryngotomy the soft parts of the nose and face were turned upwards; a large opening was made in the left canine fossa and the lower half of the ascending process of the left superior maxilla removed. The growth was seen to arise from the external surface of the antrum and ethmoidal region, and was completely removed. There had been no recurrence; the boy had grown 4 in., and early this year the soft palate had been sutured.

The growths were shown, and Dr. Tilley remarked on the great assistance obtained by preliminary laryngotomy in such operations.

OSTEITIS DEFORMANS.

Mr. HERBERT FRENCH showed two cases, one of each sex:

The man, a painter, aged 54, had both tibiae and fibulae thickened and curved. Other bones were also affected; but not the cranium. The condition began three years ago. The woman, aged 53, a widow, had both tibiae thickened and bowed, also the right femur; but not the cranium. The affection began ten years ago at the menopause, and had been slowly progressive.

Mr. BOWLBY said that Sir James Paget had described cases of osteitis deformans limited to a single bone; and Mr. Clutton had maintained that the disease might be confined to one bone. The patient now exhibited had the affection in one bone for six years before the opposite bone became affected. It would be interesting to inquire if all these cases began in one bone and afterwards spread to other bones. This was an interesting case, connecting the single bone cases with those in which many bones were affected.

Mr. H. L. BARNARD mentioned a case in which there was spontaneous fracture of the affected bone, the humerus.

Mr. H. FRENCH had also heard of another case associated with spontaneous fracture. In Germany cases of osteitis deformans were very rare, whereas osteomalacia was common, though rarely seen in England.

GASTROTOMY FOR A FOREIGN BODY.

Mr. H. J. PATERSON exhibited an inhaler removed from the oesophagus by gastrotomy.

It measured 4½ in. long and almost ¾ in. in diameter, and had been swallowed by a gentleman suffering from phthisis. Inside the metal case was a glass inhaler containing a drachm of creosote. A skiagraph showed the case lying to the left of, and almost parallel to, the spinal column. It produced no symptoms whatever, as after swallowing it the patient took no food. When the stomach was opened 1 in. of the case was projecting from the oesophagus into the stomach, and was removed. The patient made an uninterrupted recovery.

ABSENCE OF SEXUAL ORGANS.

Mr. E. BEAUMONT exhibited a child, aged 14 months, who but for apparently complete absence of sexual organs was quite normal.

SARCOMA OF THE LEFT SUPRARENAL.

Mr. H. L. BARNARD described this case.

The boy was 2½ years old, and the symptoms began after a fall upon his head six weeks ago. The cheeks and eyes swelled next day, and lately the swelling had rapidly increased. The whole head was enlarged, and the eyes were being forced forwards. A blood count showed moderate anaemia. There was a tumour, probably of the left suprarenal body, to which the growths in the cranial bones were secondary.

ECTOPIA VESICAE.

Mr. T. H. KELLOCK showed a boy, aged 4½ years, who had been the subject of complete ectopia vesicae. An operation in two parts had been performed upon him, which had left the bladder quite covered.

A PEDICLE TRIDENT.

Mr. H. L. BARNARD exhibited a new pedicle trident, claiming for it that it favoured precision in the placing of multiple ligatures, and saved much valuable time at operation.

LIVERPOOL MEDICAL INSTITUTION.

RUSHTON PARKER, B.S., F.R.C.S., President, in the Chair.

Thursday, October 22nd, 1903.

EXHIBITS.

Mr. NEWBOLT showed a male patient from whose right vocal cord he had removed a large papilloma of six years' growth. Thyrotomy was preceded by tracheotomy.—Dr. BRIGGS exhibited a portable metal operating table designed by Richelot and made by Mathieu of Paris. It was convenient and the Trendelenburg position could be easily secured.—Dr. BUSHBY showed a case of aneurysm of the ascending aorta of eight years' standing in a woman, aged 26, and also a young man with an unusual form of heart affection, the nature of which was discussed by the PRESIDENT and Drs. THURSTAN HOLLAND and GULLAN.

COLOUR VISION.

Dr. K. GROSSMANN read a paper on the quantitative examination of colour vision in connexion especially with the recognition of signals. The desirability of examination with coloured lights was emphasized. The most frequent and the most dangerous form of colour blindness was central colour scotoma, often brought on by toxic influences such as tobacco. Its existence was much more common than was usually supposed, because it was not specially looked for and tests such as Holmgren's skeins did not reveal its existence. Dr. Grossmann then demonstrated a test he had invented by which, starting from any given standard colour, distance, size, and intensity of light could be arranged so as to represent colour-perception on a definite quantitative scale.

The test was discussed by Drs. GIVEN, O'HAGAN, and E. NICHOLSON; the latter thought the test would be of particular value in those cases of confusion between greens and drabs which were much more common than the infinitely more dangerous confusion between green and red.

THE DIAGNOSIS OF APPENDICITIS.

Dr. W. BLAIR BELL read a paper on some points in the diagnosis of appendicitis. He dealt with the difference in diagnosis of appendicular colic and acute appendicitis, and distinguished between chronic appendicitis and intermittent relapsing appendicitis. In cases in which acute perforation had occurred and general abdominal pain and rigidity existed, he had gained much assistance in localizing the site of the lesion by noticing as anaesthesia progressed the muscular area which retained its rigidity longest. That area he found to be situated over the lesion. He considered that true chronic appendicitis was preceded by dilatation of the caecum, possibly in most cases by a chronic typhlitis. It was found chiefly among the upper classes, being due to overfeeding and the bolting of meals, a state of affairs which, when accompanied by constipation, led to infection of the appendix. Cases in support of the views expressed were narrated.

Mr. F. T. PAUL thought the difficulty in diagnosis was sometimes due to the variable situation of the appendix, which in one case might cause a pelvic abscess, and in another an abscess in the neighbourhood of the liver. The source of the trouble was almost invariably mechanical, faeces and faecal concretions becoming impacted in the appendix. No doubt the appendix was subject to attacks of colic and irritation in the earlier stages, but the more serious lesion, peritonitis, only occurred after the irritation had produced a stricture, or the concretion a stercoral ulcer and sloughing. The milder phases of the complaint could not usually be diagnosed with absolute certainty, whilst the acute forms could always be recognized as peritonitis, and as such receive appropriate treatment. He thought it was possible to assert that the appendix was the source of the mischief in some cases without laparotomy.

The PRESIDENT, after complimenting Dr. Blair Bell, remarked that even "fulminating" cases with widespread peritoneal infiltration were not all fatal, as he had experienced on several occasions. Cases also of abscess, effused around the appendix and bounded by peritoneal adhesions, were commonly less difficult to manage successfully than abscesses occupying a retroperitoneal or retrocaecal position; the former were commonly nearer the incision in the abdominal wall, easier to isolate during operation by packing and protecting the surrounding free peritoneum. Some cases, although the appendix could not be found or reached without adding greatly to the danger, were nevertheless capable of healing and soundly closing.

Relapsing appendicitis was commonly unattended by abscess, and operation was less urgent even when otherwise advisable. An important class of case was that in which the recurring pain was so clearly at a distance from the appendix as to be attributable to dragging of adhesions. In these operation could be dispensed with, as the appendix itself had recovered. There were others in which the relapses became less and less severe and eventually ceased, so that here again operation was unnecessary. He gave instances under each category, and had met with several varieties during the current year in which numerous cases seem to have occurred in his own practice as in that of others.

MEDICAL SOCIETY OF LONDON.

F. de Havilland Hall, M.D., F.R.C.P., President, in the Chair.

Monday, October 26th, 1903.

Discussion on Purpura in Childhood.

Dr. Arthur Voelcker opened a discussion on this subject, his remarks being confined to the condition as it appeared in the first twelve years of life. Purpura was a condition in which haemorrhages, more or less extensive, occurred into the skin, and in and from the mucous and serous membranes. In its essential varieties it was by no means a common disease. In a period of ten years only 36 cases of purpura had been admitted into the Middlesex Hospital, and of these only 5 were in children below 10 years of age. During the last six years, out of 6,465 admissions to the medical wards at the Hospital for Sick Children there were only 16 cases of purpura. Out of 4,962 necropsies made at the Great Ormond Street Hospital on children under 12 years of age, there were only 9 cases of essential purpura, and at the Middlesex Hospital there were only 2 fatal cases in children in ten years. Purpura was commoner in girls than in boys; out of 16 cases 10 occurred in girls, and 6 in boys, while of 9 fatal cases 7 occurred in girls, and only 2 in boys. Symptomatic purpura was more common in the first two years of life, and this was due to the large number of cases occurring in the course of tuberculosis and severe gastro-enteritis. In cases of congenital syphilis purpura might occur at birth. The season of the year did not seem to influence the occurrence of purpura, and in this it differed markedly from paroxysmal haemoglobinuria. Many drugs had been credited with causing purpura, and perhaps potassium iodide was the one most commonly observed to produce it. Mechanical conditions due to alterations in the vascular pressure at birth, and occasionally in the course of whooping-cough, might produce it. Purpura had also been described in association with certain nerve lesions. Symptomatic purpura was not infrequent in the course of the acute specific fevers, and might occur early or late. It added to the gravity of a case. Purpura was most common in the course of measles. In diphtheria it was less common since antitoxin had been used. Occasionally purpura resulted from the use of antitoxin, though it did not seem to produce any bad effect on the course of convalescence. Purpura had been observed in cases of suprarenal haemorrhage, and it was an open question whether some of these cases might not be cases of variola. Purpura was also met with in association with septicaemia, especially with infective endocarditis, and also in posterior basic meningitis, as well as in gastro-enteritis and in association with malignant new growths, jaundice, and severe blood diseases. Dr. Voelcker had not met with it in association with scurvy rickets. Essential forms of purpura might for convenience be divided into four varieties—P. simplex, in which there were only haemorrhages into the skin; P. rheumatica, in which there were joint pains and swelling, and often various forms of exudative erythemata; P. haemorrhagica, the morbus maculosus Werlhofii, in which there were haemorrhages from the mucous membranes and swellings about the joints and constitutional symptoms; and Henoch's purpura, in which the onset was usually with severe abdominal pain and vomiting, the purpura tended to relapse, there were haemorrhages from the mucous membranes, and exudative erythemata were common, as were joint pains. Reasons were given for regarding this classification as unsatisfactory, and in particular doubt was thrown on the existence of any valid relation between the so-called P. rheumatica and true rheumatism. He showed that in none of the cases of P. rheumatica were there any evidences of valvular lesions, either clinically or in the necropsies. Of the 16 cases of purpura, 6 were cases of P. simplex, 2 of Henoch's purpura, 4 of P. haemorrhagica, and 4 of P. rheumatica. It was shown that with the exception of designating all mild cases P. simplex, it was impossible to adopt more than a very artificial classification of these different forms of purpura. Dr. Cheadle had urged a close connexion between purpura and the rheumatic state, but he had been unable to confirm this by his analysis of the 16 clinical or the 9 fatal cases referred to. Recurrence of purpura while cases were under observation was not very common. Epistaxis might prove fatal. Haematuria was only observed in one case which recovered. One of the striking features in the *post-mortem* appearances of fatal purpura was the occurrence of submucous haemorrhages in the large rather than in the small intestine, and it was suggested that there might be some condition of the vasomotor system which led to this condition, and with it the associated pain and reflex vomiting. The causes of these changes was as yet unknown, and although various authors had described micro-organisms in the lesions of purpura, yet in some cases cultures from the blood and from the organs had remained sterile. There did not appear to be any constant change in the morphological constituents of the blood. Retinal haemorrhages had been conspicuous by their absence, an observation at variance with that of Sir William Gowers. Evidence was not forthcoming from the necropsies of the existence of haemorrhages either into the joints or into the serous cavities of the body. With regard to prognosis, most cases of purpura, with the exception of P. fulminans, recovered, but in cases of symptomatic purpura the gravity of the coexisting disease was increased. Purpura was a much-treated disease, but it was to be doubted whether any drug really influenced the condition. Rest in bed was important. Cold compresses over the skin lesions, opium for the abdominal pain and diarrhoea, ergot, turpentine, iron, and calcium chloride had all been used, but without any obvious benefit. The use of suprarenal extract locally in cases of epistaxis was suggested, and in the severe cases of secondary anaemia transfusion with saline or glucose solutions.

Dr. F. J. Poynton also considered that purpura was rare in scurvy rickets, but it did occur. The rheumatic affection seemed to have a strong influence on the capillary blood vessels and on the blood. The damage caused by it to the vessels was, he thought, probably of the nature of a solution of their walls. Epistaxis was common in rheumatic fever. It was probable that purpura in active rheumatism was due to its infective agent.

Dr. Walter Carr spoke in regard to idiopathic purpura During six years in the Victoria Hospital for Sick Children, Chelsea, there were only six cases, hence it must be considered rare. He believed that a certain number of the cases were of rheumatic origin, but the difficulty of making sure of a rheumatic element was emphasized. A few of the non-rheumatic cases might be haemophilic. The condition often came on in healthy, well-nourished children. Rest was of great importance in purpura. Calcium chloride he had not found of value, but turpentine had been of service.

Dr. A. E. Wright ascribed the causation of purpura to changes in the composition of the blood and in the blood pressure. The alteration in the blood most likely to produce the changes was a defect in the fibrinogen of the blood, but a diminished viscidity might be due to a defect of serum globulin and serum albumin. It was known that by the peptonizing influence of bacteria albuminous fluids were made less viscid, and this might have an influence in purpura. Calcium chloride affected the fibrinogen of the blood, and if the defect in viscidity were due to a defect of serum globulin or serum albumin it could not be expected to have any influence.

The President had found that at the Westminster Hospital, in fifteen years, among 1,000 cases there were only 15 cases of purpura, and of these only 5 were under the age of 10. Of 17,000 cases at the London Hospital, according to Dr. Stephen Mackenzie, there were only 200 cases of purpura, and of these only 49 were under 10. Reference was made to the occurrence of purpura in association with ulcerative colitis, and cases were quoted. There was probably but little connexion between purpura and rheumatism. Purpuric extravasations were sometimes found along the course of the nerves in association with the lightning pains of tabes. Favourable allusion was made to the treatment of purpura by sodium sulphocarbolate, and especially by turpentine. He had had good results from calcium chloride in one adult case of purpura.

Dr. Voelcker replied.

REVIEWS.

PUBLIC HEALTH.

WE are glad to welcome another edition, the third, of Dr. POORE'S well-known *Essays on Rural Hygiene*.[1] The first appeared in 1893, and during the subsequent ten years the author has had the reward of knowing that many persons have been converted to his way of thinking. This is a matter of satisfaction, for his way of thinking is in many respects eminently sound and reasonable. He protests against the overcrowding of houses to the acre, against the evils of impure air and water, and against the wasteful treatment of sewage and excreta. As is well known, the last-named subject is one upon which Dr. Poore lays great emphasis. He holds that excreta and all refuse of every kind, instead of being turned into sewage, so to speak, should be buried immediately, without treatment, just beneath the surface of the soil. In this way, he contends, no pollution of air or water can occur, for the living earth will assimilate such putrescible matter in the most economical manner and to the increase of its own fertility. Dr. Poore therefore does not favour the water-carriage system of sewage removal, but prefers dry earth and similar methods. We entirely share the author's view that the tendency for rural sanitary authorities to imitate the action of large urban authorities is often mischievous. These essays abound in common sense and sagacity, and the author's command of irony and satire makes them most entertaining reading. Unreasonable "schemes" of sanitary authorities, the expenses of which fall upon the rates, come in for some well-deserved criticism. Generally speaking, it is clear that if certain of Dr. Poore's views were acted upon by the general population, nothing but good would result. For example, fresh air in houses, particularly in bedrooms, is a much-needed reform. It is remarkable how few persons sleep with their bedroom windows open, and this one simple recommendation, if widely adopted, would doubtless prove highly beneficial. During the last decade much has been learned of the effect of stagnant air, loaded with carbonic acid and organic impurities, upon the human lung. Again, how well it would be if persons arranged their lives in such manner as not to turn day into night and night into day. Running through the whole book is the idea of the return to Nature and the simple application of her laws, and such an idea is eminently healthy. It is rather singular to note how the newer knowledge respecting nitrification and the function of putrefactive organisms in the soil lends support to many of Dr. Poore's ideas. Without committing ourselves to all the views expressed in the book, we must heartily commend it as a whole.

Since the last edition of Mr. WYNTER BLYTH'S book on *Foods*, the investigations of Parliamentary Committees have resulted in new legislation on the adulteration of milk and other foods, and standards of purity have been fixed for milk, butter, and margarine. Moreover, analytical methods are continually advancing in specialization, and call for record. On the whole, too, it may be said that there is increased interest in the relation of food and its adulteration to the public weal. This is partly owing to fresh knowledge in regard to the part food may play in disease and physical growth, and partly owing to the number of outbreaks of food poisoning or disease apparently conveyed by food—the arsenical beer poisoning in the North and Midlands, the Derby pork-pie outbreak, several milk epidemics, and cheese poisoning. Hence it is not surprising that a new edition is required of this well-known book; nor is it astonishing that Mr. Blyth has had in some measure to rewrite it.[2] In this he has been ably assisted by his son, Mr. Meredith W. Blyth. The fifth edition is divided into nine parts, dealing respectively with the history of adulteration, analytical methods, carbohydrates, milk and its products, tea, alcohol, vinegar, mustard and condiments, and the examination and analysis of water. The strong side of the book is, as in the past, its chemical in contradistinction to its biological portions. It is impossible, for example, to deal with the bacteriological examination of water in eight or ten pages. Moreover, to enter into the bacteriological examination of water, milk, and other foods would greatly increase an already bulky volume. Although the authors have found it necessary to omit the bibliography previously given, we are glad to notice that references to the literature of the subject abound. New matter has also been added on the detection and estimation of arsenic and the composition and analysis of spices. The book is now well known and widely read by analytical chemists, and we have no doubt that the new edition will obtain a welcome.

The little book by Dr. F. W. ANDREWES on *Disinfection and Sterilization*[3] is the outcome of a practical class which the author conducted in the summer vacation of 1902 for some of the nursing staff of St. Bartholomew's Hospital. It is an expansion of the lectures and practical work of which that class consisted and is written in a simple and straightforward manner for those who know little or nothing of bacteriology, but who need an elementary acquaintance with its principles and methods to be able to carry out disinfection efficiently. As a matter of fact there is a great deal of inefficient disinfection at the present day, and a book which emphasizes the fundamental requirements as this book does is particularly welcome. Its elementary nature is rather an advantage than otherwise, for though it necessitates the omission of many of the more interesting problems of sterilization, it leaves upon the mind of the nurse the simple principles upon which efficiency depends. This is not possible in larger works, encumbered with a large body of facts and details. Dr. Andrewes devotes the first four lessons to an outline sketch of the nature and classification of bacteria; their growth, requirements, and distribution; their products and the relation of these to disease; and elementary facts as to their artificial cultivation and study. This forms his groundwork, and offers, as Dr. Klein suggests in his prefatory note, all the learner really needs in order to have an intelligent appreciation of the why and wherefore of disinfection. The next three chapters are devoted to the methods of disinfection by heat, by chemical solutions, and by gases, followed by two chapters on the application of the principles discussed to medical and surgical nursing. These two chapters contain a large number of useful facts and hints as to the management of surgical cases and the nursing of infectious diseases. The remainder of the book is devoted to a short account of the bacteria etiologically related to the chief infective diseases, and a number of practical exercises in laboratory instruction on the essentials of disinfection. We think the abstracts on the bacteria concerned in infection might perhaps more suitably have followed Chapter IV. They are brief and succinct, and for the most part contain the chief facts bearing upon the subject. The section devoted to practical laboratory exercises seems remote from the general object of the book, outside the scope of a nurse's work, and certainly beyond the general public. We recognize the difficulty of the author, who desires to be scientifically accurate, and yet writes within small compass. It is almost to attempt the impossible. There can be no question that Dr. Andrewes, as would be expected, has produced a useful and accurate, and therefore a valuable, book on a subject where authoritative guidance is much needed. In a second edition a number of clerical errors will doubtless be corrected.

The main part of *A Practical Guide to Disinfection*[4] consists of a general discussion of the subject of disinfection. In successive chapters physical agents, gaseous disinfectants, chemical solutions, insecticides applied to disinfection against the insect-borne diseases, the disinfection of houses, ships, and objects, and the disinfection for each communicable disease are in turn discussed. This plan involves a certain amount of repetition, but as it conduces to clearness the repetition can scarcely be described as a fault. The book, as a whole, scarcely calls for detailed comment. Its subject matter is clearly stated from an American standpoint, various forms of apparatus having additional interest because of minor differences from English apparatus are depicted, and practical guidance is given throughout. Thus under the heading of the use of sprays for wall disinfection it is pointed out that a pulverized liquid does not wet the entire

[1] *Essays on Rural Hygiene.* By George Vivian Poore, M.D., F.R.C.P. London: Longmans, Green and Co. 1903. (Demy 8vo, pp. 426; 12 illustrations. 6s. 6d.)

[2] *Foods: their Composition and Analysis.* A Manual for the Use of Analytical Chemists. By Alexander Wynter Blyth, M.R.C.S., F.I.C., and Meredith Wynter Blyth, B.A., B.Sc., F.I.C. Fifth edition. London: Charles Griffin and Co. 1903. (Demy 8vo, pp. 616, 82 illustrations, 4 plates. 21s.)

[3] *Lessons in Disinfection and Sterilization:* An Elementary Course of Bacteriology, together with a Scheme of Practical Experiments illustrating the Subject Matter. By F. W. Andrewes, M.A., M.D., F.R.C.P., D.P.H. London: J. and A. Churchill. 1903. (Crown 8vo, pp. 214. 3s.)

[4] *A Practical Guide to Disinfection.* By M. J. Rosenau, M.D., with a Supplement by F. J. Allan, M.D. London: Rebman, Limited, 1903. (Demy 8vo, pp. 448. 10s. 6d.)

surface of the wall, which is a strong argument in favour of using as a spraying agent a volatile liquid like formalin solution. The section on insecticides and on methods of destroying rats are useful contributions to the subject. The disinfection of books by formaldehyde gas in a closed chamber is recommended, but we should like to see the result of accurate experiments performed under these conditions. In a supplement comprising 94 pages Dr. Allan, the Medical Officer of Health for the City of Westminster, gives much additional valuable information. Booth's vacuum cleaner for rooms, railway carriages, etc., is first described. Its inclusion among means of disinfection is quite justifiable, the sole object of disinfection being to remove infective dust. Then each of the chief forms of steam disinfector is depicted and described, Washington Lyon, Nottingham, Equifex, Thresh-Delépine, Reck, and several other foreign apparatus. A novel feature in this connexion is the Equifex Steam Tester, which indicates when air has been evacuated from the apparatus and the disinfection becomes efficient. The supplement also contains a large amount of useful information respecting the chief disinfectants and appliances used in connexion with practical disinfection.

Mr. Greenish points out in the preface to his excellent manual on *The Microscopical Examination of Food and Drugs*[5] that fifty years have elapsed since Dr. Hill Hassall first wrote on the subject, and that since that time advances in microscopical research have failed to keep pace with advances in chemical analysis. The ordinary botanical textbooks do not meet the requirements of the case. They deal with the structure of vegetable organs from a general point of view, devoting little or no attention to the details that distinguish the individual members of any one class from one another. This book has been written to meet this special need, and it admirably fulfils it. It is divided into twelve sections, dealing respectively with starch, hairs, and textile fibres, spores and glands, ergot, woods, stems, leaves, barks, seeds, fruits, rhizomes, and roots. Each section contains illustrations which will give great help in identifying actual specimens under the microscope. The book will be invaluable to public analysts and to those preparing for such a position.

Dr. Kenwood's *Public Health Laboratory Work*[6] has for many years been recognized as the standard textbook on this branch of sanitary science by candidates for the various public health diplomas, and the present edition (the third) will, without doubt, further enhance its popularity. In the new edition some 150 pages have been added, but the early portions of the book, although evidently carefully revised and brought up to date, have undergone no marked alteration in either matter or arrangement. The various processes for the analysis of water, air, and soil are accurately and clearly described, and are in the main well chosen. We are a little surprised to find that the extremely convenient "indigo" method for the estimation of nitrates and nitrites still finds no place in the section on water analysis; at the same time we are pleased to note the disappearance of the specious arguments in favour of the reliability of the chemical analysis as compared with the bacterioscopic investigation of a water sample in determining its freedom from excremental contamination. The section on the analysis of foods has undergone some expansion and is uniformly good; the portion dealing with the detection of preservatives and of colouring matters in food stuffs, written in accordance with the findings of the Royal Commission of 1899 is particularly full, although in this connexion we must confess to a preference for the potassium hydrate and phloroglucinol test for the presence of formalin, even in milk, over either of the two given by the author, Hehner's test, and that adopted by the Massachusetts Board of Health. The microscopical examination of food, etc., widely scattered though it is, is very fully dealt with, and, like the references to the parasitic forms of life, is freely illustrated; the picture of ergot representing the section of the end of a stroma strikes us as being particularly good. Part VII, on bacteriological work as applied to public health, is now written by Dr. Savage, and occupies 128 pages, illustrated by 30 figures, as compared with the 19 unillustrated pages of the second edition. It is no doubt very good so far as it goes, but even now can hardly be considered sufficient for the requirements of the public health examinations on this subject, unless supplemented by some of the larger laboratory textbooks. In this section are described some of the methods employed in the bacterioscopic examination of water, air, soil, milk and other food stuffs, together with brief but concise descriptions of the more important specific micro-organisms. The illustrations in this section are, for the most part, useful, although the reproductions of plate colonies (Figs. 121-122; 127-129) have lost so much detail in the process work as to be practically valueless. We note in connexion with the serum diagnosis of typhoid fever that the author advises the somewhat crude "drop" method of diluting the serum; and, moreover, bases his diagnosis on a dilution limit of 1 in 100 observed for a period of two hours in a hanging-drop preparation. An appendix giving directions for the preparation of standard nutrient media and for the various staining methods completes a well balanced and useful textbook.

In a pamphlet of 34 pages,[7] apparently a reprint of articles printed in the *Sanitary Record*, Dr. Russell McLean has given a good account of the various sources of water supply and their respective merits. Dr. Poore would not agree with the author's remarks on shallow wells, and Dr. McLean has scarcely realized the possibilities of safety of such wells, when Dr. Poore's directions for ensuring nitrification are carried out. This is a minor point. The pamphlet as a whole will be found most useful by members of local authorities and other laymen to whom it can be heartily recommended.

"MANKIND IN THE MAKING."

Mr. Wells, who has given us so many interesting romances, has in his new volume, *Mankind in the Making*[8] essayed a very serious piece of work, nothing less than the regeneration, in all senses, of society. He has certainly illuminated his subject, and though the interest of his book flags in parts, he has illustrated it with much ingenuity and originality, and with a very happy knack of expression.

Mr. Wells avows himself a thorough-going Republican. He is, in any case, a man of much resource, and apparently ready to suggest a remedy for most of the ills of modern life. He is much enamoured of the jury system, and would have us appoint juries to select members of Parliament. He would sweep away hereditary honours though he would grant us others not hereditary. He would form a lowest class of honour, selected from the professions and trades, to include every man and woman who was qualified to do or had done something "as distinguished from the common, unenterprising, esurient man." From this class he would draw his juries, and local juries might select their earls, and great guilds, like the medical, their dukes, and from these earls and dukes he would select a second chamber. With such a scheme of honour, and with teaching that is mainly practical—with the evidence presented to every child "that truth and sound living are the only trustworthy ways to either honour and power, the child will have a fair chance to grow up neither a smart and hustling cheat, nor a sluggish, disingenuous snob, but a proud, ambitioned, clean-handed, and capable man." Who can deny that Mr. Wells's scheme is logical, and might possibly work quite admirably? The world, however, is not ripe for anything so drastic, and who can tell if Mr. Wells's juries would not themselves be honeycombed with caucuses and wire pullers?

"This living world," says Mr. Wells (and this is the keynote of all his teaching), "is no more than a great birthplace, an incessant renewal, an undying fresh beginning and unfolding of life," "Life is a fabric woven of births and the struggle to maintain and multiply lives." All is to be estimated, as it conduces to wholesome and hopeful births, and as it leads to a higher and ampler standard of life. It is quite clear that Mr. Wells would wish the child of the future begotten after some Platonic plan of careful selection, in which the physical, mental, and moral perfections of both parents should constitute their claim to parentage. The superior being arrived, Mr. Wells considers the beginnings of his mind and language, and here we must declare

[5] *The Microscopical Examination of Foods and Drugs.* By Henry George Greenish, F.I.C. London: J. and A. Churchill. 1903. (Demy 8vo, pp. 335; 168 illustrations. 10s. 6d.)

[6] *Public Health Laboratory Work.* By Henry R. Kenwood, M.B., D.P.H., F.C.S. Part VII. dealing with Public Health Bacteriological Work, by W. G. Savage, M.D., B.Sc., D.P.H. Third Edition. London: H. K. Lewis. 1903. (Cr. 8vo, pp. 606; 4 plates, 134 figures. 10s. 6d.)

[7] *Rural Water Supplies.* By C. J. Russell McLean, M.D., etc. London: Sanitary Publishing Company. (Demy 8vo, pp. 34. 1s.).

[8] *Mankind in the Making.* By H. G. Wells. London: Chapman and Hall. 1903. (Crown 8vo, pp. 439. 7s. 6d.)

our complete sympathy with the regrets expressed at the paucity of the vocabulary of most of us. With one of the amplest of languages how few of us employ even one-tenth of the wealth within our reach! It is to be otherwise with the new arrival, whose stock of words is to be formed by his school library, selected by the "English Language Society" of the future; while his pronunciation is to be carefully attended to also. We will not inquire how that is to be effected, but we presume that as the purest pronunciation is to be heard in Scotland—no shirking of "r's" and "h's" there—his teachers will be Scotch.

This "clean and beautiful child" is forcibly contrasted with "the mean and graceless creature of our modern life, with his ill-made clothes, his clumsy, half-fearful, half-brutal bearing, his coarse defective speech, his dreary unintelligent work, his shabby, impossible, bathless, artless, comfortless home" which shows that Mr. Wells can write picturesque, anapaestic prose and that he has not much admiration for our average twentieth century man. This child of hope and the future is not to be worried with Latin and Greek, or French and German and science, but he is to know English perfectly "as much mathematics as one can get in," with a little drawing and painting and music: and, of course, he is to be a Republican. We are all hidebound and case-hardened, and Mr. Wells has no hope of us, and the just and happy future rests literally in the womb of time; given and supposed that the prophet and teacher shall not be wanting, whose happiness will be the good he hopes to do: and whose reward, the fame of a Confucius or a Moses. What if that teacher should be he who erstwhile limned for us "The War of the Worlds!"

Seriously, we believe that our established order will last much longer than Mr. Wells thinks. We even fear that his juries might not work well, and might fall out among themselves and come to wordy warfare, like the Socialists of Germany. Despite his able presentation Mr. Wells's socialism does not attract, and after reading in his pages what are our possibilities of the future we may be thankful to be what we are and where we are. Of course, there are present hardships and inequalities, but after all *La carrière ouverte aux talents* still remains and the *divinae particula aurae* cannot be suppressed. Even under our imperfect arrangements if the worthy man and woman cannot rise, it is because the talent is not there, or because the divine spark is wanting.

The relation of the sexes is the mainspring of Mr. Wells's volume, and here we must accord a note of highest praise. Mr. Wells is direct and plain enough, but his touch is light and delicate, and he does not, like a Zola, dwell on topics better veiled, and he is never prurient, and never nasty. His are the gropings of an honest, wholesome-minded man, and they are all the more meritorious, because, as yet, like the other probers of futurity, he is peering through the mist.

BACTERIOLOGY.

PROFESSOR FUNCK, in the preface to his handy little *Manual of Clinical Bacteriology*, the second edition of which has just appeared,[9] expresses the opinion that every medical man ought to be in a position to carry out personally the examination of sputum, pus, and exudations by microscopical and cultural methods, and points out the immediate as well as the remote value of such routine investigations. Throughout his book the applications of bacteriological science to practical clinical medicine are kept prominently in view, to the total exclusion of controversial matter, with perhaps the single exception of the reference to the author's discovery of the sporidium vaccinale, in the last chapter. The manual is divided into twelve chapters, of which the two first are devoted to descriptions of simple and efficient microscopical and cultural methods, and such animal experiments as may be necessary for purposes of diagnosis. Next follow in order chapters dealing with the bacteriological examination of pus, membranous exudations, sputum, and faeces: of water and of air, and of blood. The contents of these chapters, though by no means exhaustive, are eminently practical, and include concise descriptions of the chief pathogenetic bacteria, from which few of the really vital points in their respective life histories are missing. The chapter given to the question of immunity, although all too short, is clear and pithy; indeed we do not recollect having read a more lucid exposition of present-day and accepted theories. The same may be said of the chapter which treats of the practical results of prophylactic vaccinations and the employment of therapeutical serums. The last chapter is merely a tabular recapitulation of the various specific bacteria most commonly encountered in diseases of special regions, for example, respiratory tract, nervous system, etc. The index is meagre, but the internal arrangement of the various chapters renders the task of finding any desired subject an easy matter.

[9] *Manuel de Bactériologie Clinique.* By M. Funck. Second edition. Brussels: H. Lamertin. 1903. (Cr. 8vo, pp. 239. Seven coloured plates. Fr. 7.)

ANAESTHETICS.

IT may be admitted that books on medical science aim either at presenting accurately a narrow view of a subject for students, or an original and wide treatment intended to advance science or improve art. Dr. BLUMFELD in his *Anaesthetics*[10] has the former and less ambitious aim, and upon the whole has succeeded. He deals only with nitrous oxide, ether, and chloroform, and the two mixtures A.C.E., we presume the older and less valuable one of Harley and the "C.E.," which we are told is composed of chloroform and ether in the same proportion as in the A.C.E. It would be well to caution students that other authorities often employ the letters C.E. to denote mixtures of other strengths, sometimes stronger and sometimes weaker than that given above. The use of nitrous oxide when employed alone, or with air or oxygen is carefully described, nor are the chapters on ether or chloroform less reliable. Such phrases as "the toxic action on the dilating heart of the chloroform," and "further damaged by the chloroform containing blood" may mislead, and for students perspicacity is only second to accuracy. The preliminary chapter upon the nature and action of common anaesthetics and those giving the rules for making the choice of an anaesthetic, the preparation of a patient, and the dangers and troubles incidental to anaesthesia contain much that is good and worthy of attention. Dr. Blumfeld makes a statement that no "danger from inhalation of vomit" will occur even in cases of intestinal stoppage if the anaesthesia is maintained deep enough. He appears to have overlooked the facts that the aspiration of vomitus very commonly occurs before the stage of complete anaesthesia has been attained, and that the contents of the stomach and intestines are in many instances simply regurgitated even in complete anaesthesia in a manner which is quite unlike the vomiting of incomplete anaesthesia. The illustrations are mostly good, but slips in revision such as "nitrate" of amyl should be eliminated if the book reaches further editions.

Mr. LUKE, in *A Pocket Guide to Anaesthetics*,[11] gives a generally accurate account of the subject. The style is occasionally less severe than is usual in professional works, and revision would have removed such solecisms as "Soubérain" for "Soubeiran," "dilation" for "dilatation," "the aggravated Trendelenberg (*sic*) position," "during pregnancy chloroform and ether may be given at any time almost." We notice that in dealing with the choice of the anaesthetic it is said that anaemic persons take anaesthetics well; this is not, we believe, the usual experience. Mr. Luke, in quoting Kocher's preference for ether in prolonged operations, appears to be at variance with the commonly-accepted views of the leading anaesthetists. While it is generally accepted that ether possesses few dangers in the hands of a careful practitioner when given for a short period, yet even its admirers appear to consider that when inhaled for an hour or more it is a possible cause of post-anaesthetic complication. The method of giving nitrous oxide is somewhat briefly described for the average student, and the more complex prolonged gas methods are only mentioned. This wise reserve permeates the book, and thus enhances its value. In a student's manual it is far better to deal thoroughly with a few accepted methods than to confuse the beginner with the more refined procedures recommended by specialists. For ether, the wide-bored Clover's inhaler (Hewitt) and an American invention, Blake's inhaler, as modified by Mr. Luke himself, are figured and recommended. The way in which the section referring to this anaesthetic is handled leaves nothing to be desired, although Mr. Luke's views upon the sequelae of ether will by some surgeons be regarded as too optimistic. Chloroform is also dealt with upon satisfactory lines, a preference being shown to the employment of

[10] *Medical Monographs* (Series No. 7). *Anaesthetics.* A Practical Handbook by J. Blumfeld, M.D.Cantab., Assistant Anaesthetist to St George's Hospital, etc. London: Baillière, Tindall, and Cox. 1902. (Crown 8vo, pp. 109. Nine illustrations. 2s. 6d.)

[11] *A Pocket Guide to Anaesthetics:* for the Student and General Practitioner. By Thomas D. Luke, M.B., F.R.C.S. Edinburgh: William Green and Sons. 1902. (Cr. 8vo, pp. 148. 5s.

the open method rather than that of inhalers. Local anaesthesia is described, and there is a useful chapter upon the management of the patient before and after administration of the anaesthetic.

Dr. Campiche, as assistant to Dr. Roux of Lausanne, had valuable opportunities of studying the relative merits of chloroform and ether, the anaesthetics with which his thesis deals.[12] He gives an excellent summary of the history of his subject, presenting the results of the work of Schiff, Juilliard, Bert, J. Comte, Roux, Bruns, Dumont, Fueter, Kappeler, and Gurlt, authors many of whom are unfamiliar to English readers. In a lucid and unbiassed manner the merits and shortcomings of these two anaesthetics are discussed and weighed. Then follows what is perhaps the most interesting part of the thesis, a carefully epitomized list of the operations performed at Lausanne in Dr. Roux's clinic between November 1st, 1900, and October 1st, 1901. Of these 511 were under ether with 18 cases of lung complications, namely, 10 cases of pneumonia and 8 of bronchitis. Two of the patients who suffered from pneumonia died. Chloroform was given to 205 patients, in some instances on account of pre-existing pulmonary conditions which contraindicated ether; 21 instances of pulmonary complications are recorded, 8 being (broncho-) pneumonias, and 11 cases of bronchitis. In this connexion we may recall the fact which is sometimes lost sight of that Ollier, Körte, Richel, Ricard, Gurlt and Le Dentu and many American and Canadian surgeons have also reported numerous cases of pneumonia and bronchitis as sequels to chloroformization. Of Campiche's cases about half had pre-existing lung trouble and the rest were reported wholly free from disease—a somewhat startling record of 9 per cent. of lung complication following chloroform. Of the 18 ether cases 4 had pre-existing lung trouble and others were extremely feeble from exhaustion; 14 were reported sound; 2 deaths occurred. It would appear, therefore, that between 3 and 4 per cent. of the ether cases showed lung complications. If we exclude cases of pre-existing lung disease chloroform produced between 4 and 5 per cent. and ether nearly 3 per cent. of lung complications. Another point brought out in these pages is the frequency of lung trouble following operations in which no anaesthetic was employed. The disease in these cases was goitre since in Lausanne this seems to be the only form of malady which in certain instances debars the patient from the merciful employment of an anaesthetic. Dr. Campiche is led to the conclusion that even in these anaesthetics do not materially enhance the danger of operations and spares the patient great suffering. An excellent description of the methods of administration of anaesthetics as practised in Lausanne and elsewhere is given. After a detailed description of all the instances in which complications occurred a logical and fair review of the case is presented. Dr. Campiche's contribution to a most difficult and important subject is to be very highly commended.

NOTES ON BOOKS.

The M.D. Examination of Brussels University,[13] by Dr. A. R. Henceley, is a small pamphlet with stiff covers, of 19 pages, giving information as to the steps to be taken by English practitioners to acquire the M.D. degree of the University of Brussels. A schedule is given of the subjects of the examination, and some general information as to the course to be pursued by the English candidate on arriving at Brussels. He is also informed as to the fees payable, and a sample of the questions asked at each part of the examination is given for his instruction, with suggestions as to the best books to read beforehand. On page 7 the author says, "Syphilis is not looked upon as a cause for so many diseases there, as in Great Britain, *for obvious reasons*." It is not quite clear what these "obvious reasons" are, and the reader might have been interested had they been given.

Dr. Hime, whose earlier literary efforts in the cause of moral purity have been noticed in previous issues of the British Medical Journal, has published in a volume with the title *Wild Oats*,[14] some thirty pages of rhymed lines—"the syllables in each the normal ten"—to demonstrate the retributive justice which awaits infractions of the moral law. While admitting that not many sowers of wild oats are likely to read his sermons, he thinks that a few such may do so, and hopes that of these a few at least may benefit thereby. Scarcely any reader, at all events, would be likely to question the sincerity of the author's motives or the painstaking industry which has compiled the pertinent notes appended to it.

Veterinary Surgery.

We have received a copy of Mr. Hobday's work upon the *Castration of Cryptorchid Horses*.[15] A list of some 75 consecutive cases is given, 4 of which ended in death. The fatal result in 3 of these cases appears to have been due to the extensive nature of the operation required and the fourth to septic peritonitis. The latter was one of two cases operated upon on the same occasion, the second recovering without untoward symptoms. The operation of removal of the ovaries from troublesome mares is also described, notes of 30 consecutive cases being appended, all of which were successful. The vaginal route is advised, and with regard to both operations chloroform is stated to be practically an essential if the best results are to be obtained.

Professor Liautard, of the American Veterinary College, has been engaged in translating the *Surgical Therapeutics of Domestic Animals*,[16] written by Professor Cadiot and his assistant J. Almy, of the Veterinary School of Alfort, and the fascicule which contains the third part of the first volume has been sent to us. It is a very obvious translation, and the precise scope to which the authors purport to limit themselves is not entirely represented by the title. In its complete form it will doubtless be a very comprehensive work, but it is not clear how any book of two volumes can deal with the therapeutics of the diseases of horses, dogs, fowls, pigs, cows, and all other tame animals except in general terms. It does not, therefore, seem likely to displace existing works which deal with the same subjects in a less ambitious manner.

The second edition of the *Veterinary Pharmacopoeia*,[17] for which Messrs. George, Charles, and Albert Gresswell are responsible, follows the general lines of the *British Pharmacopoeia* of 1888, and indeed strongly resembles that work. A description, however, of the therapeutics of each drug is included in each article, and there is an interesting introductory note on comparative therapy. In the dosage distinctions are made between men, horses, foals, oxen, calves, and any other animals to which the drug is commonly administered. It appears to be a very complete work.

LITERARY NOTES.

We have received the following note from Dr. Montagu Lomax, to whose sonnets on the Macedonian question reference was made in these Notes last week:

Poetry and Politics.

It is always flattering to be reviewed in your columns by so scholarly a critic as the writer of Literary Notes; much more, to feel oneself worth a quotation from Horace (in the original), and inclusion among the poets whom Plato would have banished from his Republic, among whom, if I recollect aright, Homer was one. I cannot complain, either, if my sonnets on the Macedonian question ran counter to your reviewer's political opinions, for in politics, of course, every one is at liberty to think as he pleases. But from the standpoint of literary criticism, may I humbly suggest that it is not quite fair to select six lines at haphazard out of a total of seventy, and serve them up, torn from their context, as representing either the poetry or politics of the writer? The sonnets in question were written primarily as an appeal to the conscience of Europe (if there is such a thing) on a question involving not merely international honour, but the most sacred rights of humanity, and as such was favourably commented upon even by papers not in political sympathy with the writer. To sum up their purpose as mere "abuse of England" is as critically inadequate as it is ethically unjust. It needs no perusal of the Report of the South African Commission to convince any sensible man, whether friend or foe, of

[12] *Contribution à l'Etude de la Narcose à l'Ether.* Par P. Campiche, M.D. (Thèse de Lausanne). Geneve: Eggimann et Cie. 1902. (Demy 8vo, pp. 108.)

[13] *The M.D. Examination of Brussels University.* By A. R. Henchley, M.D.Brux., L.R.C.P., L.R.C.S.Edin., L.S.A. London: M. Hughes and Clarke. 1903. (Fcap. 8vo, pp. 19. 2s. 7d., post free.)

[14] *Wild Oats: a Sermon in Rhyme.* By Maurice C. Hime, M.A., LL.D. London: J. and A. Churchill; and Dublin: Wm. M'Gee. (Crown 8vo, pp. 41. 1s.)

[15] *The Castration of Cryptorchid Horses.* By Frederick T. G. Hobday, F.R.C.V.S. Edinburgh and London: W. and A. K. Johnston. 1903. (Demy 8vo, pp. 105. 5s.)

[16] *A Treatise on Surgical Therapeutics of Domestic Animals.* By P. J. Cadiot and J. Almy. Translated by A. Liautard, M.D., V.M. New York: W. R. Jenkins. 1902. (Demy 8vo, pp. 129.)

[17] *The Veterinary Pharmacopoeia.* By George Gresswell, M.A., L.R.C.P. and S.E., L.F.P.S.G., and Charles Gresswell, M.R.C.V.S. With Physiological Actions of Medicines by Albert Gresswell, M.A., M.D. Second Edition. London: Baillière, Tindall and Cox. 1903. (Demy 8vo, pp. 457, 12s. 6d.)

England's impotence to intervene effectively in this hideous Eastern question, but the statement of this fact, for all its miserable truth, was not made by me, but your reviewer, and is in reality a damning indictment against the oscillating feebleness of the present Government. English public opinion on this question is sound enough; what it needs is rousing and leading; and where now is a leader to be found? Your reviewer is pleased to make fun of what he calls my "Tyrtaean fury." Be it so. But, putting my insignificant advocacy aside, who would not welcome the advent of another Tyrtaeus, with power to rouse and lead his countrymen as victoriously as his prototype did the Spartans of old? This, really, was the burden of my "Appeal," as the sonnet your reviewer quoted from (if you can find room for in its entirety) illustrates, and I think, justifies:

O for one hour of Cromwell's iron mood,
That voice of thunder breathing words of fire,
Before the blast of whose tremendous ire
The might of princes quail'd and was subdued!
Dare we no longer shape the thing we would,
But sick with wrath and impotent desire
Wait mute and helpless till these hell-hounds tire,
Death-drunken, of their carnival of blood?
Is this the land that kept the world at bay,
And brought the Tyrant grovelling to his knees,
That day at Aboukir and Trafalgar,
England, once named the Mistress of the Seas,
But now so caitiff grown, so worn and gray,
She fears to face the stern appeal of war?

We might be content to allow Dr. Lomax's courteous rejoinder to stand without comment, but that he appears to attribute some political intention to our previous note. Far be it from us to enter on that thorny path, and we venture to think, *pace* Lord Rosebery, that the efficiency of the armed forces of the country ought not to be considered a political question. At any rate it ought not to be question of party politics. "They manage these things better in France," and the admirable reserve displayed by our neighbours, a reserve previously believed to be foreign to the genius of that people, in the reorganization of their military establishments since 1870 might well be imitated by our practical nation. Our correspondent's attitude of mind as expressed in the sonnet printed above seems rather to illustrate Sir William Napier's dictum that the British people most frequently got into trouble because they were "war-like and not military."

The *Times* during the last two or three years has been publishing nearly every day extracts from its columns of a hundred years ago. The issue for last Wednesday contains the following curious communication from Dr. Edward Jenner, the discoverer of vaccination:

DR. JENNER to the PUBLIC.

Cheltenham, Oct. 26.

Some report having gone abroad that the Cow-pox has been found to secure the constitution from the plague in Constantinople and some other parts of European Turkey, DR. JENNER begs leave to lay before the Public the evidence which he has received of this important fact. He does not deem the point clearly ascertained, but cannot forbear thinking that every reader will see a considerable presumption in its favour in the following Extract of a Letter:

FROM DR. DE CARRO, OF VIENNA, TO DR. JENNER.

"Your discovery has already produced some consequences which you surely were very far from foreseeing, when you made it known to the world. I believe that I once mentioned to you that a French Physician, Mons. LA FONT, thought he had observed that vaccinated people were not attacked with the plague. He described to me the facts which raised the suspicion; they were few, and not very conclusive, but he spoke of his new observations with modesty and prudence, and thought only that the subject deserved his further attention. Another Physician at Constantinople, Mons. AUBAN, who never had any communication with M. LA FONT, who is of Salonica, wrote to me about a year ago that he had also some suspicion of the Cow-pox being a preservative against the plague—did not mention facts, but said that several people had observed the same, and many vaccinated themselves as a security against the plague. Guess what was my astonishment, when a few days ago I received, through the French Ambassador at Vienna, a packet of Dr. AUBAN, who begins his letter with these words—'What I had the honour of mentioning to you long ago, concerning the Cow-pox being a security against the plague, as a probability, I can now, after many experiments, speak of almost as a certainty.' He describes the facts summarily in his letter, and adds two *procès verbaux*, signed by him and several witnesses, desiring Citizen CHAMPAGNY and myself to give them every possible publicity. The proofs are—

"1st. Of 6,000 vaccinated at Constantinople, not one has taken the plague.

"2d. That infants previously vaccinated, have sucked, without injury, the milk of nurses infected with the plague.

"3d. That an Italian Physician, Dr. VALLI, who went to Constantinople to study the plague, was so persuaded of the truth of the new discovery that, upon the sole security of having been vaccinated, he shut himself up in a Lazaretto, and had, with people attacked with carbuncles and buboes, various modes of contact, without any effect.

"4th. That the same Dr. VALLI inserted into his own hand a mixture of variolous and pestilential virus, and having felt no effect from that trial, he meant the following week to insert pestilential virus alone.

"5th. That Dr. AUBAN, having been informed that in some villages near Constantinople the cows were subject to some eruptions on their udders, he, with several Gentlemen of the French Embassy, went to those villages and found the cow-pox then existing. The report of the inhabitants was that they had never seen the plague or the small-pox among them, though both these diseases made dreadful ravages in the vicinity.

"Such, my dear Sir," continues Dr. DE CARRO, "are the extraordinary facts which have been communicated to me. I have now and then corresponded with MM. LAFONT and AUBAN; their correspondence announces much medical information. The second, acquainting the world with such an important discovery, runs certainly a great risk if he receives it by false and hasty observations."

THE HARBEN LECTURES.

DR. FERDINAND HUEPPE, Professor of Hygiene in the German University of Prague, has delivered the Harben Lectures before the Royal Institute of Public Health in the Lecture Theatre of King's College during this month.

LECTURE I.

General Views on the Etiology of Infectious Diseases.

The lecturer began by referring to the fact that both scientific researches and practical measures in modern hygiene were influenced and determined by our conception of the mode of origin of diseases; but there was a want of agreement as to what constituted the cause. On the one hand—as in tuberculosis and leprosy—the individual constitution might play a considerable part; while, on the other hand—in such diseases as cholera and plague—external causes might operate chiefly. The study of the latter class of diseases led to an exaggeration of the importance of external causes alone as against the constitutional causes, for in both groups of disease specific disease-producing germs were found. The work of Pasteur and Koch led many to hold the germ as the sole cause, in opposition to the teaching of Goodsir and Virchow, who claimed that the diseased cell constituted the disease entity. A third view, associated with the names of Simon, Farr, and Parkes in England and Pettenkofer in Germany, was that other external conditions—defined as "predisposition of place and time"—played a very considerable part, this being notably the case in typhoid fever.

Professor Hueppe said that since 1888 he had tried to lead others to recognize the importance of all the three volumes above described, any one of which was too exclusive. The common observation that some persons escaped a disease to which they were exposed whilst others were attacked, led to the conception of "predisposition." He did not consider predisposition as something negative as opposed to the (positive) immunity acquired after recovery from an attack of a disease. He considered predisposition as positive as immunity, to which it was correlated.

Chemical methods had not led us to an understanding of the constitution of the protoplasmic molecule; resort must be had to biological method "through impulses, which correspond to the atomic groups of the protoplasm." Such an impulse was a stimulus, and could only be exerted if it possessed side groups such as were found in enzymes. He regarded this as the meaning of the specificity of disease-producing bacteria acting as stimuli. In normal, physiological assimilatory stimuli there was, so to speak, a good key, whilst pathogenic bacteria might be compared to a false key fitting into and possibly destroying the lock—the cell protoplasm of the animal body. This conception applied also to the processes of immunization. Immunization proved the existence of predisposition, since it increased as the faculties which pre-exist as predisposition. In man predisposition might alter with age, and might be affected by such external conditions as cold, heat, hunger, and alcoholism and by other diseases which might also lower resistance. Professor Hueppe believed that the descendants of mixed races might show an altered predisposition, citing in support of his opinion the observations made in Italy by Kruse with regard to the distribution of cancer; the population of Southern Italy was relative pure Ligurian, that of northern Italy was a mixed population of Germans, Ligurians, and Turanians, and cancer prevailed in the north.

The theory that disease germs were the only cause, the "specific entity" of the disease, could not be accepted,

because they may at times be harboured by healthy individuals without producing disease (diphtheria, pneumonia, tuberculosis, and cholera). These germs could live outside the body as saprophytes, and consequently did not necessarily lead a parasitic life. Their disease-producing power might vary, and they did not affect different animals alike. Different germs might produce similar effects, and different individuals of the same species behaved differently to infection. These facts rendered it impossible to admit that either the disease germ or the diseased bodily cells were an entity in the process. The cellular pathologist made a mistake in only considering the structure of the animal mechanism; the bacteriologist, in concluding that his laboratory infection experiments with pure cultures were equivalent to what took place in naturally-acquired infection. In proof of the last statement he cited the instance of the guinea-pig, which was highly susceptible to laboratory infection with tubercle bacilli, but practically never infected naturally.

In diseases conveyed by air, water, and food it was possible in certain instances to avoid infection by these means, but there remained the "genius epidemicus" of Sydenham; that was, the fact that certain infectious diseases did vary in different epidemics with regard to extent and intensity, a variation which was attributable to the influence of environment as a stimulus in the Darwinian sense.

The pathogenic power of a germ might become modified so that it behaved like a harmless saprophyte when introduced into the body. Professor Hueppe accepted this as evidence in favour of the origin of all infectious diseases being phylogenetically traceable to putrefactive processes. According to the degree of adaptation to parasitism he distinguished germs which were facultative parasites, facultative saprophytes, and obligatory parasites.

Disease he regarded as a function of three changeable factors—(1) predisposition, (2) stimulus, and (3) condition. Each might vary from 0 to infinity.

Professor Hueppe concluded with the words: "Practice alone brings us into a groove from which there is no outlet, but practice combined with scientific research guarantees progress in public health."

Lecture II.

Hygiene and Serum Researches.

In the earlier work on disease, Metchnikoff's phagocyte theory was hailed by pathologists. By this theory as then expressed predisposition was entirely negative, an inability of the phagocytes to cope with the invading germs. Metchnikoff referred an important function to the cells, whereas others inclined to the so-called humoral theory, according to which the presence of bactericidal substances in the body fluids constituted the means of defence. The divergent views were united by subsequent researches, which showed that bactericidal substances were produced in cells. It was shown that cell-free blood could destroy germs, and that this power could be increased in specific immunization. In one group of diseases, of which cholera and typhoid fever were examples, the acquisition of immunity was shown by the presence in the blood of specific bactericidal substances; in the other, of which tetanus and diphtheria were instances, the growth of immunity led to the formation in the blood of substances capable of destroying the poisons given off by the specific germs. A condition might, however, exist in acquired or inherited immunity, in which both bactericidal and antitoxic substances appeared in the blood. By separating the germ from its toxin either antimicrobic or antitoxic substance might be obtainod in the blood during the process of immunization.

Antitoxins cured but did not immunize, in fact they cured because they did not immunize. Habituation or tolerance to a poison did not depend on antitoxins, for antitoxin formation was only accessory to toxin immunity. Toxin immunity depended upon the toxin serving as a stimulus to susceptible cell protoplasm. Professor Hueppe agreed with the main conception of Ehrlich's theory regarding the mode of interaction of toxin and cell-protoplasm through haptophores and receptors, etc. He also advanced conceptions of his own, which cannot be entered into fully here from lack of space. He considered natural resistance, artificial habituation and susceptibility to toxins to be correlated, and that a similar correlation existed in immunity due to bactericidal substances. He explained the familiar views of Ehrlich, Bordet, Pfeiffer and others with regard to the mode of action of bactericidal serums. He had as early as 1895 written, "The property of specificity may not unreasonably be conceived of as a quantitative variation and as dependent upon the bringing into action of normal powers by appropriate stimuli." This conception had since been accepted by Ehrlich and others. Immunization was only the augmentation of faculties preformed as disposition. Predisposition was something positive, but did not suffice to protect the body against infection.

Lecture III.

On Tuberculosis.

Whereas tuberculosis was formerly considered a constitutional disease by the majority of physicians, the belief that it was an infectious disease grew, and culminated in the discovery of the tubercle bacillus by Koch in 1881. Sanatorium treatment, begun by Brehmer, demonstrated the curability of the disease by raising the resistance of the individual affected. Thus, both the specific bacillus and predisposition were factors. The erroneous view of some bacteriologists who ignored predisposition was based on laboratory experiments in which large numbers of bacilli were introduced into the body, a condition which did not exist in natural infection. That tuberculosis was frequently cured was shown by the records of necropsies. Virulent bacilli had been found in the air passages of healthy persons who had associated with the tuberculous. Tuberculosis was so general that every individual had an opportunity of becoming infected, the majority, however, remained healthy. Formerly the tubercle bacillus was regarded as an obligatory parasite, a view which had had to be modified since its successful cultivation upon glycerinated media, especially at temperatures below that of the body. The bacillus might become attenuated in cultures, and it showed variations in virulence in the animal body.

Professor Hueppe opposed the famous dictum of Koch with regard to the intercommunicability of bovine and human tuberculosis, on the grounds that different races of cattle had been found to possess different predispositions to infection, and that numerous investigators had succeeded in infecting cattle with bacilli of human origin. Behring found human tubercle bacilli which did not at first infect cattle to be capable of doing so after passage through the goat. Anthropoid apes had been infected with human and bovine bacilli, as had also human beings. Cattle had been rendered immune to bovine tuberculosis by treatment with bacilli of human origin. Human and bovine bacilli must therefore be regarded as but varieties of one species of micro-organism. These varieties might show morphological differences, and necessarily, in consequence of adaptation, they would show differences of virulence when obtained from the bodies of different species of animals. Similar observations had been made with regard to other bacteria, namely, the bacteria of septicaemia haemorrhagica and the streptococci. Bacilli of avian origin had also been modified, and it must be concluded that these also were but varieties of the mammalian bacillus.

Opinion with regard to the mode of infection had undergone a change since Koch had claimed that pulmonary tuberculosis indicated that the port of entry for the bacillus was through the respiratory passages. Several observers, including the lecturer, had shown that pulmonary infection might also occur when the bacilli entered the lungs through the lymphatic and blood circulation, and Grawitz had pointed out the possibility of infection through the tonsils. Experiments made in Professor Hueppe's laboratory showed that if rabbits were fed with tuberculous material, some developed intestinal, others pulmonary, tuberculosis. Baumgarten produced pulmonary tuberculosis in rabbits by inoculations into the bladder, and bacilli might be carried to the bronchial glands and lungs from the submaxillary glands. A special susceptibility of certain organs appeared to determine which organ was affected. This was an entirely different view to that originally advanced by Koch. According to the lecturer, the *locus minoris resistentiae* was to be found in the lungs in the adult, in the intestine in childhood.

That a specific inherited predisposition existed was indicated by the fact that in certain families the children became tuberculous in succession on attaining a certain age. In some instances the parts attacked were often the same in the different members of a family. The fight against the bacilli alone would not suffice as a practical measure of prevention, and resort must be made also to hygienic measures to increase the powers of resistance against infection. It was too early to form a judgement regarding the value of immunization experiments against tuberculosis, such as had been conducted by Macfadyean and von Behring.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1903.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, OCTOBER 31ST, 1903.

THE BUSINESS OF THE ASSOCIATION.

As will be seen by the reports of the proceedings published in the Supplement to this issue, a great deal of business, most of which had been prepared by the Standing Committees, was advanced a stage at the last meeting of the Council of the Association.

The preliminary arrangements for the next annual meeting of the Association, which is to be held at Oxford on July 26th, 27th, 28th, and 29th, 1904, were discussed and approved. There will be an Address in Medicine and an Address in Surgery, and the scientific business of the meeting will be conducted in thirteen Sections. In order to provide more time for the general business of the Association on the first day of the meeting it has been arranged that the church service should take place at 10.30 a.m., and that the annual general meeting should commence at noon. This, allowing an interval for luncheon, will give from two to three hours of additional time, and, judging from the experience of the first Representative Meeting at Swansea, the new time-table is likely to be found convenient. We understand that the officials of the University, as well as of the city of Oxford, are showing great interest in the meeting, which promises to be exceedingly interesting.

In response to resolutions adopted at the Annual Representative Meeting the Medico-Political Committee has resolved to request the secretary of every Division to issue to medical men residing within the area of his Division a series of questions asking for information as to the conditions of contract practice which have come under their own observation. The recommendation was approved by the Council, and the circulars will no doubt reach those of our readers who are engaged in such practice within a short time; we trust that they will receive their careful consideration, because those who have given attention to the question are deeply impressed by the feeling that if some effectual remedy is to be found for present disabilities it is essential in the first place, owing to the differences which exist between various localities, and in the practice of various societies and workmen's associations, that full information on the matters raised by the questions should be obained. It is asked that answers, which will be regarded as confidential, may be sent direct to the Organizing Secretary at the central offices of the Association in London. By him they will be analysed, and the results submitted for the consideration and guidance of the Committee. The Ethical Committee has also given attention to the resolution of the Annual Representative Meeting instructing it to investigate the ethical position of medical men engaged in various kinds of contract practice, and will have before it at its next meeting an interim report on the subject.

Various matters of great importance to the public health came before the Council upon the minutes of the Medico-Political and Public Health Committees. We need only refer in passing to the reaffirmation of the necessity for obtaining security of tenure for medical officers of health in England and Wales. The report of the Medico-Political Committee contains (p. cevii) the text of a memorandum which will be submitted by the Council of the Association to the President of the Local Government Board. Security of tenure is already enjoyed by the medical officers of health not only in Scotland but also in London, and every argument which was used in support of this provision in the case of the metropolitan officers will apply with equal or greater force to the case of rural and urban officers in the provinces of England and Wales. These arguments, however, are ignored by a small but persistent body of members of the House of Commons, and it is sincerely to be hoped that the representations now made by the Association may induce Mr. Walter Long to make the reform a Government measure, in which case opposition, though not silenced itself, would be unable to silence all discussion of the subject in the House of Commons, as in the case of a private member's Bill.

It is not, however, intended that the interest of the Association in public-health administration should be limited to this matter. The President, Dr. Griffiths, in his address to the Association at Swansea, directed special attention to the defects in the general structure of our public-health administration, especially in rural districts, and the Council has instructed the Public Health Committee and the Medico-Political Committee, acting jointly, to report upon the steps which might be taken to increase the control of the central authority. No doubt the proposal with regard to the creation of a Ministry of Public Health, which was also before the Medico-Political Committee, will be considered in relation with the general subject.

Under a representative system individual legislators must always be specially accessible to opinions expressed to them by constituents. It is indeed of the essence of the system that a member of the House of Commons should continually bear in mind his responsibility to the people he represents. It is, therefore, of the first importance that the members of the medical profession in every constituency should on all suitable occasions impress their views both individually and collectively upon their parliamentary representative, and it is hoped that the institution of smaller units of organization—Divisions—may facilitate collective action since it is a kind of work which their constitution specially fits them to perform with effect. But there is a public opinion within the House of Commons, and the medical profession of this country has hitherto been remiss in contributing its quota to the formation of such opinion. Committees of members of the House of Commons interested in particular subjects, and formed irrespective of party have been for a long time in existence. There is, for example, a committee of members interested in army reform. The Medico-Political Committee has suggested, and the Public Health Committee concurs in the suggestion, that steps should be taken to bring about a conference with medical men who are members of the House of Commons with a view of forming a medical and public health committee of members of Parliament interested in public health in its widest sense.

Such a committee should not consist exclusively of medi-

cal members, but should include other members—and we are glad to believe that their number is increasing—who take an active and intelligent interest in health questions. There is, of course, no intention of attempting to form a party, or even a "group." Although Bills affecting the public health may contain contentious matter, the contention does not, save in very rare instances, partake of a political character. Again, other Bills not ostensibly dealing with public-health administration may contain provisions having a bearing on health. Regret has sometimes been expressed by individual members of Parliament that their attention had not been adequately called to the public-health aspect of Bills before Parliament. The retort might often have been that memoranda and circular letters had been issued; but the fate of most circulars is too well known: they are either thrown into the waste-paper basket direct, or put aside for perusal at that more convenient season which never comes. If such a committee of members of the House of Commons as is now suggested existed, it would be possible by way of discussion at its meetings to ensure that the facts and arguments placed at the disposal of members were adequately considered and their bearing and relative importance made plain. Lastly, it should be understood that the task of watching a Bill through its various stages in the House of Commons is a very onerous undertaking for any single member. Whereas if a number of members are interested in the same measure it becomes a comparatively easy matter.

The memorandum on certain changes in the Pharmacy Act proposed by the recent Departmental Committee, prepared by the Organizing Secretary for the Medico-Political Committee, was adopted by the Council of the Association for submission to the Lord President of the Privy Council. It is printed at page ccvi, and, together with the report by which it was accompanied (page ccv) will be found well worthy of perusal as a clear statement of a subject into which complications have sometimes rather unnecessarily been introduced. The Departmental Committee, it will be remembered, was appointed to consider the first schedule of the Pharmacy Act, and its inquiries were directed to the question whether the provisions of the Pharmacy Act, as they restrict the sale of certain poisons were undesirable, and if so, whether they could be relaxed without undue risk to human life. The Committee recommended that the regulations with regard to the sale for agricultural or horticultural purposes of arsenic, tobacco, and its alkaloids, and for sanitary purposes of carbolic acid, should be relaxed. The relaxation suggested was that it should no longer be required that the seller shall be a person who has given evidence of technical training and knowledge in accordance with the provisions of the Act. In the memorandum presented to the Lord President of the Privy Council by the Association it was pointed out that medical men, in view of dangers, well known to them, attending the retail sale of poisons in general, and especially of arsenic and carbolic acid, must view with misgiving any departure from the principle stated in the preamble of the Pharmacy Act, 1868, that it is expedient for the safety of the public that persons keeping open shop for the retailing of poisons should possess a competent practical knowledge of their business ascertained by examination.

The Annual Representative Meeting last July at Swansea, which was attended by representatives of Divisions throughout the United Kingdom, had before it a recommendation that a circular letter should be sent to the principal London papers deprecating the mention, in paragraphs relating to the illnesses of persons other than members of the Royal Family, of the names of medical men in attendance. This recommendation having been approved by the meeting, the letter which is printed at page ccviii was recently issued, and has been published in certain London newspapers. It has caused a certain amount of stir; some papers express their ready acquiescence in the suggestion, but it appears to have given considerable offence to certain members of the medical profession, who have relieved their feelings by writing to one of the London newspapers. One of the writers thinks to dispose of the matter by the analogy of the Bar, and suggests by implication that it would be absurd for the daily press to refuse to publish the names of counsel engaged in an important case. He also thinks that by analogy the names of bishops who preach sermons, and peers who entertain shooting parties, ought not to be mentioned. The references to bishop and peer are probably jokes, but that to the Bar we have often heard before. It may therefore be worth while to point out in the first place that the medical profession has nothing to do with the discipline of the Bar, although we believe that its rules of conduct, applied to different circumstances and operating in a different way, are, to say the least, quite as strict as those of the medical profession; and in the second place, the analogy suggested does not exist. The proceedings in a court of law are public, the counsel who appear are, in theory at least, officers of the court, and it is in the public interest that the right to report public proceedings should be unfettered. No doubt, however, editors of newspapers, who are not as a rule babes in the ways of this world but possess a knowledge of human nature as extensive and peculiar as Mr. Weller's knowledge of London, will form their own opinion on the merits of the analogy and of the protest.

INHERITANCE OF ACQUIRED MORBID CONDITIONS.

In a paper read before the Insurance Institute of Montreal[1] Professor Adami maintains the possibility of the transmission from parent to child of acquired morbid conditions, conveyed in the male or female germ cell from which the embryo develops, and not due to post-conceptual intrauterine infection. Such conditions, arising in the parent from the action of infective micro-organisms or other toxic substances, may exercise upon the germ cells, according to Professor Adami, a specific influence, and hence bring about the manifestation in the offspring of characteristics which he also regards as specific, at least in the case of some diseases. Thus he expresses his belief that "parental tuberculosis, for example, has a definite specific influence upon the offspring." For these lesions in the offspring he adopts the term "paratubercular;" he illustrates his meaning by reference to the mental precocity, suspiciously good complexion, and poor chest development of such subjects, and sums up the "paratubercular" mental condition as "that grade of mental instability which renders the higher centres more easily stimulated." Again, speaking not of congenital syphilis, but of "the deleterious effects of the syphilitic virus upon the spermatozoon," he thinks there are indications of a "parasyphilitic" type of lesions in the offspring. "The syphilitic

[1] *Montreal Medical Journal*, April, 1903.

progeny is mentally dull and of delayed development, the teeth tend to be notched, and so on;" and the "parasyphilitic" mental condition is contrasted with the "paratubercular" as being "one of dulling of the nerves."

Professor Adami also deals with the transmission of the toxic influences of alcohol and lead. Whilst admitting that he has no positive proof of the inheritance of specific alcoholic tendencies, he holds that, owing to deterioration of the germ cells as the result of alcoholism, children of such parentage are liable to suffer from an imperfect development of the higher nervous system and, as a consequent, mental instability and lack of self-control. The deleterious effects of lead are illustrated by the statistics of thirty-two pregnancies, in which the fathers suffered from lead poisoning, whilst the mothers were free from that condition, the mortality of the infants being extremely high. "Inherited plumbism" is defined as "lead poisoning acting initially upon one or both of the conjugating germ cells," and it is contended that the mental and other disturbances due to this condition, which show themselves after birth, are not the result of the action of lead salts still circulating in the system; "they are one and all lesions of incomplete development."

From the practical standpoint, it is difficult to see that Professor Adami's views afford a basis for a more accurate estimate of the duration of life than is provided by the ordinary common-sense opinion that weakly parents are likely to beget weakly offspring, and that imperfections of development, such as weak lungs or an unstable nervous system, are frequently inherited, and therefore predispose to the incidence of the same types of disease from one generation to the next. Even if it be conceded as a theoretical possibility that an infectious disease has a specifically toxic, and also antitoxic, influence upon the germ cells, it would be futile to try to take these influences into account as separable and calculable factors in a practical estimate of the probable duration of life, until their existence has been actually demonstrated and defined as a measurable quantity.

The scientific aspect of the question is much more complicated, and involves a large number of important problems, the solution of which still lies very remotely in the future. There is a very wide gap still to be bridged between the known specificity of toxins and the known, though unexplained, capacity of the germ cells to bring about in the offspring a reproduction of the characteristics of their ancestors. Our present knowledge of toxic action may be grouped roughly under three main categories. First, we know that certain bacterial toxins and other chemical compounds produce demonstrable changes in the blood which are typical of each, and therefore may legitimately be regarded as specific, and that some of them act in a selective manner, more or less peculiar to each, upon particular organs and tissues of the body. Secondly, most pathological conditions which produce a definite disease or morbid process also predispose to various complications and sequelae which, taken collectively, are more or less typical of a single etiological factor, but taken individually overlap, and are not exclusively confined to the action of any one specific morbid influence. Thirdly, the body as a whole, by virtue of its organic unity, experiences from any pathological process a general impairment of nutrition and vitality, varying in degree according to the intensity and duration of the process which occasions it. These three categories, each containing an indefinite number of subdivisions, shade off imperceptibly, the one into the others, and so provide the connecting links between the definitely specific and the practically universal phases of morbid processes; but this continuity of the series must not blind us to the fact that there is an enormous difference between the one end of the chain and the other. For instance, if an animal reacts to an inoculation with tuberculin, we may reasonably infer that this is a specific reaction due to a specific cause, and we may also assume that the general nutrition of the animal and consequently the condition of every particular organ, for example, the tubes or ovary, is modified by the presence in the circulation of the tuberculous toxin. But we have no justification whatever for the further assumption that influences which come under the third category, such as the action upon the testis or ovary, are specific in the sense that the offspring derived from these organs will possess a modified resistance to the tuberculous virus in consequence of the parental infection with tuberculosis.

In the interests of accurate scientific progress it is desirable to draw a sharp line of demarcation between lesions which are strictly demonstrable as specific and those which are only hypothetically and tentatively suggested as being so. We therefore object to the introduction in this connexion of such ambiguous terms as "paratubercular" and "parasyphilitic." Either we have sufficient proof to justify our attributing a morbid condition to a definite disease or we have not. If we have, let us give it outright its proper title—"syphilitic," "tubercular," or whatever it may be. If we feel that our evidence does not amount to a proof, the employment of those adjectives is unjustifiable, and the introduction of them with an apologetic "para" is liable to bias our own judgement and to mislead that of others.

Another point in Professor Adami's article which deserves notice is his appeal to statistical methods for the solution of scientific problems, and his suggestion that by the application of Karl Pearson's mathematical diagrams to the data in possession of the insurance companies it may be possible, for example, to discriminate between the toxic and the antitoxic influence of the tuberculous virus which is transmitted by the germ cell from parent to offspring. This is an interesting suggestion, but it is by no means clear that the subject is one which is as yet ripe for an application of statistical methods. Statistics are the servants of science, not its masters. An argument based on statistics is sometimes regarded as an appeal to incontrovertible fact and therefore infallible. But that is not always the case; assuming the facts to be accurate, the value of the statistics based on them depends on the soundness of the underlying principle on which the facts have been selected and the validity of the relationships in which the statistician groups them. It is a popular saying that statistics speak for themselves; but that is just what they never do; they speak automatically, in subservience to the guiding principles under which they have been collected and correlated. A volume of statistics speaks not for itself, but for the sagacity or folly of the person who collected them; and only too many statistical records have been compiled which serve but to demonstrate the illimitable possibilities of misdirected energy.

We may conclude this review of Professor Adami's article with a definite corollary; when our knowledge of the chemistry of the cell is sufficiently precise to make the hypothesis that a bacterial toxin impresses on a germ

cell a specific influence transmissible as such to the offspring something more than a possibility, we may test this theory by the standard of statistics; until that time arrives, no accumulation of insurance statistics can convert a tentative hypothesis into a scientific fact.

THE MORTALITY EXPERIENCE IN THE SOUTH AFRICAN CAMPAIGN.

On another page (1172) is summarized an important paper on this subject recently contributed to the proceedings of the Institute of Actuaries. By means of the facts there set out we can now accurately state the death-rate, whether from wounds or from disease, in each arm of the service; and can compare the experience of the recent war with that of former wars. At first sight it appears satisfactory that the annual death-rate in the late campaign was only 38.7 per 1,000, as compared with 50 per 1,000, the average of a number of campaigns, and 70 per 1,000 in the American civil war. When allowance is made for the facts that the late campaign was spread over an enormous area, and that only a small proportion of the combatants were at one time engaged in the active operations of warfare, it is doubtful if the comparison is so favourable as at first sight appears.

We have at various times passed strictures on the lack of foresight displayed and on the inefficiency of the measures taken for the prevention of communicable diseases in the campaign. It is satisfactory to turn from this side of the question to the unanimous opinion of those competent to judge—an opinion which is amply confirmed in the above paper—that "the care of the sick and wounded was exceptionally good. Although the medical staff were put to very severe tests on many occasions, they were always equal to any emergency, whether caused by disease or by the bullets of the enemy."

It is satisfactory also to note that statistically this campaign has been more carefully followed than any of its predecessors. The numbers returned as missing and not subsequently accounted for are extremely small, and the figures on which the death-rates of the late campaign are based are more trustworthy than those of the Franco-Prussian war, and much more trustworthy than those of any other campaign.

Another important point is the proportion of the deaths caused by the enemy and by disease. Approximately, 2 deaths occurred from disease for every 1 from wounds in the late campaign. In the long struggle of the American civil war from 1861 to 1865 the death-rate from disease was about four times that arising on the field of battle. During the Franco-Prussian war, on the other hand, the death-rate from disease was singularly low.

In comparing results the duration of the war needs to be taken into account. The South African war proper lasted about twelve months, the subsequent fighting partaking of a guerilla character. Comparing this first year with the Franco-Prussian war, it is significant that the death-rate of the officers was 87.5 per 1,000, and of non-commissioned officers and men about 80 per 1,000, the corresponding rates in the Franco-Prussian war being 75 per 1,000 and 45 per 1,000 respectively.

The experience of insured Yeomanry and Volunteers is particularly interesting as a basis for future insurance. It is well known that large numbers were insured in whole battalions by public subscription for £250 each. The death-rates of these insured Yeomanry and Volunteers are given; but whether the insurance companies lost on their policies is apparently unknown. For officers during the first year of the campaign the premium generally quoted for the extra risk was five guineas, while the mortality experienced by them was about 8 per cent. Clearly, therefore, the insurance offices had charged little more than half of what was required to cover the risk. Both ignorance and *naiveté* are displayed in the frequent applications which the companies have received from officers returned from the front for some return of extra premiums, as also in the expression of feeling that the companies from patriotic motives ought to waive all extra premiums. The former plea shows how difficult it is for the untrained mind to realize that the foundation of the science of insurance consists of averages; and the latter plea ignores the unfairness to other policy-holders which would result from waiving all extra premiums due by those incurring the risk of war.

THE MALAYA BRANCH OF THE ASSOCIATION.

It is a far cry from the Straits Settlements to London, but distance from the centre does not appear to interfere with the energies of the Malaya Branch of the Association. It is, indeed, one of the most active of all the many Branches, whether of those near at home or of those in the distant corners of the world to which the Association has now spread. Its meetings take place with commendable regularity, and, notwithstanding the very great area over which membership is spread, they appear to be very well attended. At every fourth meeting there is a dinner, after which only one paper is read and discussed, while the other meetings are of the same nature as those held nearer home. The subjects discussed, however, are somewhat special in character and give ample proof, if it were needed, that interest in scientific research into the causation of diseases and conditions peculiar to tropical regions is not confined to great centres. Among the subjects put down for discussion during the current year are tropical kidney, aberrant types of fever, and the mosquitos of Singapore. The idea adopted by this Branch of issuing in advance a syllabus showing the main subjects which will be discussed during the year appears to be worthy of imitation, since it gives members an opportunity of making special note of any case that happens to come under their observation in the course of their work, in anticipation of the discussions which will arise.

TOUTING EXTRAORDINARY.

Our attention has been called to two new phases of the objectionable system of touting on behalf of an unregistered practitioner and "a remedy for gout and rheumatism" respectively. In the first instance, a bank manager, whose son is under the care of a member of the Association, received a letter, signed and headed with an address, stating that the writer had been informed that the person addressed had a son who was suffering from "abscess of the brain," and that he ventured to inform him that a cure had been effected in a similar case by ——, giving name and address. This gratuitous advice was the more impertinent seeing that the bank manager had not a son suffering from cerebral abscess, and the writer was unknown to him. The Post-office Directory being referred to, it was seen that the name and address of the healer of abscesses in the brain were those of a patent medicine vendor. In this case no harm was done as the banker being a wise man handed the letter on to his medical adviser and took no further notice of it. The letter might have been addressed to a less cautious man and the statement as to the illness of the patient might have been correct, and then the aim of the writer in touting for an unregistered practitioner might have been successful and at the same time detrimental to the patient. To attempt to unsettle the minds of parents ignorant of practical medicine and anxious to do

anything for a suffering child, by means of recommendations to quacks and false statements that similar diseases have been cured by them is an abominable method of advertisement and deserves the strongest censure. In the other instance a patient of the medical practitioner who has communicated with us received a letter signed, but not containing a full address, in which the writer states that by request of a friend she forwards a prescription which quite cured her of gout and rheumatism after fifteen years of awful agony; adding that she had to take eleven bottles only! The writer explains that she does not give her full address as she does not wish to be thanked, but volunteers the information that any good chemist or large drug stores will make the prescription up. Finally, she appeals to the recipient, when it has done good, to "spread it far and wide by writing letters like this, and sending copies to sufferers; the chemist will always make copies (of the prescription) to give away." The prescription is written on a half-sheet of note paper in that rather undecipherable manner which we regret to admit is usual with medical men, and is signed with initials of unknown quality and quantity. At first sight the benevolence of the sender seemed to be quite pure and unalloyed by any taint of commercialism, but a second glance revealed the fact that one of the ingredients directed to be dispensed in making up the prescription was a proprietary medicine which we will not further advertise by naming. Whether this snowball method of touting has the sanction of the firm of druggists mentioned in a foot note to the prescription does not appear. If it is, we should regard such a way of pushing business as most reprehensible. If it is not, the writer might find some less dangerous way of exercising her benevolence.

THE SPREAD OF TYPHOID FEVER BY ICE.

THE St. Lawrence State Hospital is situated on the River St. Lawrence, three miles below the city of Ogdensburg. At this point the river is a mile and a-quarter wide, from 12 to 20 ft. deep, and having a current of three miles an hour. This was the source of the water supply of the hospital from its establishment in December, 1890, till December, 1900. Typhoid fever became prevalent within about two months of the establishment, and remained practically endemic for ten years, increasing steadily in the number of cases. In 1895 Dr. F. C. Curtis reported that in his opinion the water supply was the source of the endemic. Eventually it was decided to abandon the St. Lawrence as a supply, and obtain the necessary water from a small Adirondack stream, which supplied the town of Ogdensburg. This was done in December, 1900, and typhoid fever ceased to occur until October, 1902. Drs. R. H. Hutchings and A. W. Wheeler[1] have recently described a fresh outbreak of typhoid fever. In October, 1902, eight persons contracted typhoid fever, though there were no cases of the disease in Ogdensburg supplied by the same water. All conceivable sources of infection could be eliminated except some ice which had been taken from the St. Lawrence and stored since February, when several cases of typhoid fever had occurred at Ogdensburg, and may have infected the ice at the time of formation. This, however, is not the interesting point. Drs. Hutchings and Wheeler, having suspected the water or the ice, had these articles bacteriologically examined. The former was reported as fairly satisfactory, the latter as highly unsatisfactory. The authors therefore commenced a thorough examination of the ice. Fragments were melted in a clean vessel at room temperature. A considerable black sediment was deposited, which on microscopical examination was seen to be crowded with organisms, many of which were motile. Cultures were made from the sediment and from the ice water in bouillon, which rapidly became turbid and acquired a faecal odour. Plates were made and five colonies with character resembling those of B. typhosus were obtained. On subculture three were proved to be B. coli, one was a bacillus not identified, and "the fifth was a pure culture of the typhoid bacillus, as shown by the following tests: On nutrient agar, it grows readily, in broth no pellicle is formed, in lactose media no fermentation occurs, on potato the growth is invisible, in litmus milk the reaction is faintly alkaline and no coagulation occurs, with the serum of typhoid fever patients characteristic clumping is produced, and it is an actively motile bacillus having the appearance of the B. typhosus." With the discontinuance of the use of the infected ice the epidemic gradually subsided. There were in all 39 cases. We believe this is one of the first, if not actually the first case on record of an iceborne infection of typhoid fever in which the bacillus has been isolated.

[1] *American Journal of Medical Sciences* for October.

WAGE-EARNING SCHOOL CHILDREN.

A VERY interesting report on wage-earning school children has been prepared for the Manchester Education Committee. Inquiries have been made from the head teachers of the 159 elementary schools in the city on the employment of children out of school hours. Over 3,000 school children are at work, and their hours of labour range from a minimum of 1 a week to a maximum of 68¼. More than 200 work from 30 to 40 hours per week, about 64 from 40 to 50 hours, 9 from 50 to 60 hours, and 1 child of 12 years is reported as working on a farm for no fewer than 68¼ hours per week. The occupations in which the majority of the children are engaged, and those working the longest hours, are in vending and distributing newspapers, in barbers' shops, errand boys in retail shops, in the milk business, and to a lesser degree in domestic work of various kinds. One child of 6 years of age is said to be engaged 20 hours a week in selling newspapers. Amongst about 20 children of 7 years old 1 is employed 27 hours a week, also in the sale of newspapers, and another runs errands for 26 hours a week. Other children of this age work 17, 12, and 8 hours and under. There are from 40 to 50 children of 8 years of age working for 25, 24, and 21 hours and less. There are about 120 children of 9 years of age engaged, and 1 of them at least works 29 to 30 hours a week. The rest of the children are from 10 to 13 years of age. Curiously enough the number at 14 years of age is inconsiderable. The wages of the children do not seem to bear any proportion to the number of working hours. The boy who is said to work on a farm for 68¼ hours a week receives 3s. 6d. and his keep, but finds his own shoes. The sale of newspapers appears most profitable, and some of the children's earnings range from 7s. to 11s. per week. The Employment of Children Act, 1903, which comes into force on January 1st, will give municipalities power to make by-laws dealing with: (*a*) The age below which employment is illegal; (*b*) the hours of employment and the length of time during each day; (*c*) the prohibition of, or permission for, certain specific employments. The Act prescribes that a child shall not be employed between 9 p.m. and 6 a.m., but such hours may be varied either generally or specifically by a municipal by-law.

THE DESTRUCTION OF RATS ON BOARD SHIP.

NOCHT AND GIEMSA,[1] recognizing the important part played by rats in the transmission of plague, have performed a large number of experiments with a view to determining the most effectual means of destroying them in the holds of ships. The objections to the use of edible poisons are obvious, and of rat-killing animals, ferrets are alone really useful. They have, however, distinct disadvantages: First, they attack other animals, particularly birds; secondly, they require extreme care, especially as regards feeding; thirdly, they have but little resisting power against cold; and lastly, they cannot penetrate into corners quite so well as their prey. It thus appears necessary to kill the rats by the means of a poisonous vapour; for this purpose burning sulphur has been employed, at least 10 kilog. being required for every 1,000 c.m. of storage space. In order to obviate the danger of fire caused by the combustion within a closed space, bombs of sulphurous acid have been used, and also a substance called piktolin, which consists of a

[1] *Arbeit aus dem kaiserlichen Gesundheitsamte*, XX, 1, 1903.

mixture of sulphurous and carbonic acids. The disadvantages of this are, first, that the hold must be almost cleared out before it is introduced, and, secondly, that it must be led on through a complicated series of tubes, as otherwise it does not diffuse equally. Piktolin acts much more rapidly than burning sulphur, but is about twice as dear. Recently the Clayton Fire Extinguishing and Ventilating Company has introduced an apparatus in which sulphur is burnt at a high temperature, and sulphurous together with a little sulphuric acid produced. The process occupies some fifteen hours, and requires the combustion of about 1 lb. of sulphur per 250 cubic feet of hold requiring to be cleared. It is claimed that this method, while absolutely fatal to the rats, does not injure the cargo:[1] but the authors consider that this is only true of dry goods. Many substances, particularly fruit and other provisions, absorb the gases, and are thereby damaged. Moreover, the repeated use of the apparatus is not without harmful influence upon the vessel itself. Further experiments were carried on with carbonic-acid gas. It was found that 30 per cent. of this must be present in the atmosphere before the rats are killed with certainty. It is best employed in the liquid form in steel cylinders, but is very expensive, and moreover so slow in its action, that the animals frequently have time to escape from its influence to places of safety. The writers finally come to the conclusion that the sole agent, by the use of which all the preceding objections can be obviated, is carbon monoxide. This has no smell, exerts no chemical action upon the cargo or the vessel, is cheaply manufactured, and rapidly kills rats and mice. The use of this gas was suggested by Haldane, but the authors consider that their method of producing it is safer as regards the risk of explosion. They manufacture it by heating coke in a generator and driving through the upper surface a current of compressed air either alone or alternately with aqueous valour. By this means a gas is produced consisting on an average of 5 volumes of carbon monoxide, 18 of dioxide, and 77 of nitrogen. The gas is introduced into the hold by tubes passed down through the ventilators, and a volume equal to about three-quarters of the cubic contents to be cleared is employed. There is no difficulty in allowing the escape of the gas by opening the ventilators when it has done its work; if necessary men in diving helmets can be sent to open the windows. Goods of all kinds after twelve hours' exposure to the gas were found quite unaltered. Details are given of experiments made upon various ships, in all of which every rat and mouse succumbed to the gas. In one particular case several of these animals were found to be infected with plague. The cost of the method is comparatively moderate: the original apparatus for a large harbour would come to some £2,000, but that having once been set up each individual ship can be cleared for from £3 to £4.

THE FUTURE OF ANTHROPOMETRY.

The father of anthropometry was Charles White, the Manchester surgeon, who in 1799 published the results of measurements made by him upon about fifty negroes in order to determine certain differences between them and European peoples. Since then an enormous amount of labour has been expended in collecting other measurements. The average ratios of head-breadth to head-length, of nose-breadth to nose-length, of leg-length to thigh-length, expressed as so many indices have been determined upon individuals or skeletons of most races in every part of the world. The variations, however, from the mean of individuals of any race are so great that the ablest exponents of anthropometry have not seldom been greatly deceived in their attempts to identify ethnologically a bone or bones from the orthodox formulae in which the various forms and dimensions of bones are expressed. It is no wonder, therefore, that great distrust is felt towards the whole subject and Dr. Myers in a paper presented to the Anthropological Institute[2] endeavours to forecast what the future of the science will be. He reviews the substitutes that have been suggested for a system of measurements, but considers that if physical anthropology is to remain a science it is inevitable that its results should be capable of expression in mathematical terms. He is of opinion that much of the discredit which has been thrown around the subject is due to the desire of individuals to draw conclusions of wide application from investigations of too limited a character, and also to a tendency to try and deduce ethnological criteria from collections of skulls not positively known to be all of one race. He appears to hold the opinion that anthropometry, in order to survive, must extend its scope, and ally, if not identify, itself with the infant science of general biometry, which is in some sense its daughter, and which has the advantage of knowing the errors into which its parent has been led by basing arguments on insufficient data. In addition to insufficiency of data, it has been an essential error on the part of those interested in anthropometry to confine research to the one sole line of the collection of racial averages. There are other matters which come within its scope. For instance, variations in the correlation between various forms of skeletal development must surely exist, just as the dark skin of a coloured race, though not essential to acclimatization, is yet correlated with certain unknown physiological changes by which pigmentation is attained. Soon, too, there will be sufficient material to determine the evolutionary changes undergone by a people fixed in a given country. Some researches on the subject have already been published in respect of Egypt and Great Britain, and if they are to be accepted they show the possibility of extraordinary rapid alterations within a comparatively short space of time. Other subjects which, upon the initiative of Mr. Francis Galton, some anthropometrists have begun to investigate Dr. Myers considers cannot really be profitably attempted until zoologists have determined, by work under simpler conditions, several essential data. The questions to which he more particularly refers are those such as to whether dark-eyed women or tall women bear more children than the fair-eyed or short, whether brothers are more alike than sisters, and whether inheritance is more marked in the male than in the female.

[1] See British Medical Journal, April 27th, 1901, p. 1031, and May 11th, 1901, p. 1170.

[2] *Journal of the Anthropological Institute*, vol. xxxiii, 1303, 2nd fasc.

MIDWIVES IN PRE-REVOLUTIONARY FRANCE.

An interesting article on the art of midwifery in Touraine has recently appeared in *La France Médicale*.[1] It appears to be clear that registration was established as early as 1292, for in the archives of the municipality at that date two *ventrières* are included in the register of the *taille*. Thus, though held under an inelegant denomination as "servile and manual labourers," they had the honour of being rateable. By the 14th century, however, the midwife of the Hôtel Dieu in Tours bore the recognized title of *Maitresse des Accouchées*. In the 16th century Paris enforced a strict code on the *mestier* ("Art and Mystery," now *métier*) entitled *Statuts ou règlemens ordonnez pour toutes les matrones ou saiges-femmes de la ville, faulxbourgs, prévosté et vicomté de Paris, accoutumez de tous temps estre gardez et jurez par les dictes matrones avant d'estre admises à l'exercice de leur estat.* This title looks as though the authorities were quite in earnest in those days, and a copy of the statutes, preserved in the Bibliothèque Nationale, shows that the education was strict, with a minimum time limit of study. In 1580, in accordance with these statutes, the midwife-students of Touraine had to pass an examination before the official medical superintendent of the Province, two sworn surgeons, and two matrons. Those that passed were admitted to the *maîtrise*, according to the monopolizing principles of the old régime, which no doubt did not encourage improvement and progress. Nor must we be deceived by the imposing aspect of the Examining Board, for superintendents were seldom chosen for simple merit. In 1692 the municipality of Tours drew up a midwives' statute, enforcing education and examination as according to the older Act, but further requiring the successful candidate to take an oath of fidelity to her craft before the Lieutenant-General of Police

[1] *La France Médicale*, September 25th, 1903.

and to pay all necessary fees. But by March, 1699, the authorities, who clearly had good reasons to be stringent, had to express surprise—of the official variety—that the licence was gravely infringed, so that in the first place "a great number of women died," and also ugly scandals arose from the admission of immoral women into lying-in institutions, to the utter corruption of the midwives. Worse still, it was discovered that the medical authorities had neglected to examine the candidates whom they had licensed, so that they were solemnly reminded of their obligation before the authorities, who forthwith made any woman who practised midwifery without a licence liable to a penalty of 500 livres—a stiff fine, as the Tournois livre was much higher than a franc. In truth there was no serious obstetrical education till as late as 1778, when a Madame Ducoudray gave a fortnightly course of lectures every year. Candidates were sent up by the Lord of the Manor and the parish priest of each village or town in Touraine. In 1782 Chevreul's summary of the art of midwifery was distributed by the authorities to all the townships of Touraine. The author was a famous teacher at Angers, and in 1790 he was appointed inspector of the midwifery course of instruction in that province. Our contemporary publishes an interesting letter from Chevreul to the Mayor of Tours thanking that magnate for having recognized the value of his services, and declaring that he was determined to do yet more for the good cause. He therefore begs the Mayor to allow him to fix a date for the examination of midwives and the distribution of prizes, adding a remarkable provision clearly implying that the villagers of Touraine were badly looked after. In short, he desired that village candidates alone should be examined during the current year 1790. Chevreul, already called from Maine to Touraine, was in 1792 appointed by the revolutionary government to superintend a hospital for infants—*enfants de la patrie*—at Angers. Keeping his head on his shoulders through the Revolution, he actually found grace under the restored Bourbons, who made him Director of the School of Medicine of Angers in 1820. He died in that city in 1845 at the age of 91.

THE PHYSIOLOGY OF BITTERS.

THE custom of taking bitter appetizers immediately before the heavy meals of the day is widespread both in this country and abroad, the object being of course to stimulate the secretion of gastric juice. Latterly it has been suggested that it would be more physiological to make use of a small quantity of alkali instead, as that is known to exercise a favourable influence upon peptic secretion. The chief objections to the use of bitters have been based on researches by Tchelzov, who found that the administration of large doses of quassia hindered rather than helped the digestive process. Reichmann, moreover, showed that in the fasting stomach, the secretory activity of which is normal or diminished, a bitter drink produced less secretion of gastric juice than a draught of distilled water. These experiments take account solely of the specific action of the bitters and do not regard their reflex effects. These have been particularly studied by Borissov, whose results are analysed in a recent number of *La Semaine Médicale*. He made use of Pawlow's method of sham feeding in a dog in which oesophagotomy had been performed and a gastric fistula also established. The bitter substances, therefore, did not pass into the stomach, and the reflex effects of their presence in the mouth could be accurately judged. Borissov found that if a little wad of wool soaked in tincture of gentian was put into the mouth immediately before food was administered a marked stimulant effect upon gastric secretion resulted; but if the bitter was used fifteen to thirty minutes before the meal it was quite inefficacious. It is concluded, therefore, that these substances have the power of rendering gustatory sensations more acute and of exercising a temporarily stimulant effect upon gastric secretion; for this purpose they should be given immediately before the meal in small doses and in the form of tincture (10 to 20 drops) rather than cachets or pills. We may remark upon this that the habit is obviously susceptible of abuse, particularly when, as is usually the case, some strong alcoholic liquor is used as the vehicle of the bitter. As a matter of fact, such a stimulant action is the real function which is intended to be subserved by the soup which is taken at the beginning of a meal. There is a tendency—even outside the City of London—to consume this in somewhat large quantity; in such cases it tends to be harmful rather than conducive to digestion; but there can be no doubt, on the other hand, that the use of a tablespoonful or two of a hot and sapid fluid at the beginning of a meal is an excellent means of giving the stomach a fair start in the performance of its functions.

PUPIL REACTIONS IN DIAGNOSIS.

MARBURG (*Wiener Klinik*, August, 1903) summarizes our present knowledge concerning the origin of the pupil reactions and their clinical significance. The internal muscles of the eye are under the control of three sets of centres, first in the cerebral cortex, secondly in the region of the corpora quadrigemina, and thirdly in the ciliary ganglion. The reaction of the pupil to light is slowed in old age owing to the weakening of the muscles and the rigidity of the blood vessels of the iris. It apparently bears no direct relation to the visual acuity; within certain limits one can be affected without the other. A curious phenomenon has been described by Hirschberg in connexion with retrobulbar neuritis; in this rare disease, if the light be shut off from the sound eye the pupil of that affected enlarges to more than double its size, while in health it would only increase by about a third. When lesions are present in the chiasma or optic tract, the hemiopia is associated with hemiopic rigidity of the pupil; this has for instance been demonstrated in acromegaly. It is however very difficult to elicit, owing to the irradiation of the light into the normal half of the pupil. The Argyll-Robertson pupil is a subject of much interest, and a great deal of discussion has taken place as to the seat of the centre for the reaction to light. The view that it is situated in the spinal cord is negatived by the fact that it can be obtained in decapitated animals after destruction of the spinal cord and bulb. Nor are those who hold that the ciliary ganglion is the centre able to explain the fact that no sensory phenomena in the cornea accompany the loss of the light reflex. The changes which have been described in this ganglion may well be secondary, like those in the posterior ganglia in tabes. The author therefore concludes that the centre for the light reflex is in the neighbourhood of the nucleus for the sphincter iridis, that is to say, in the mid-brain. The principal cause of the Argyll Robertson pupil is syphilis, and cases in which this symptom alone is present can often be cured by early and vigorous antisyphilitic treatment. Where syphilis is denied there is very often an aortic degeneration or some other sign rendering its pre-existence probable. The actual diseases in which the symptom is met with most frequently are tabes and general paralysis; next in frequency comes cerebral syphilis, in which there is often associated paralysis of the ocular muscles. It is noteworthy that the loss of the light reflex does not occur in association with the posterior column lesion of pernicious anaemia. It not infrequently is at first unilateral, but if untreated both eyes may be ultimately affected. The Argyll-Robertson pupil may occur as a temporary phenomenon in a large number of diseases, and may also result from injury. The principal classes of cause are: First, neurosis; secondly, infections, especially meningitis, influenza, and pneumonia; and thirdly intoxication as with atropine, chloroform, carbon disulphide, lead, male fern, poisonous fungi, nicotine, and excessive quantities of bromides, such as are sometimes given in epilepsy. When it occurs in chronic alcoholism it is due to inflammatory processes in the neighbourhood of the centre; in auto-intoxications, such as uraemia, the cause resembles more a neurosis. The rigid pupil can be used to distinguish a hysterical fit from true epilepsy. The functional form can often be cured by suggestion together with the administration of eserine. It must not be forgotten, however, that syphilis and hysteria

may coexist in the same subject. It is well known that the cortex exercises a tonic influence over the pupil, but the clinical meaning of the curious pupillar instability known as "hippus" has not yet been ascertained. To sum up: persistent reflex immobility of the pupil is always a sign of a severe organic brain lesion, while a temporary attack may be functional; the former is in the majority of cases, perhaps in all, an indication of antecedent syphilis, the latter is of manifold etiology, but of high prognostic significance, since, apart from neuroses, it is usually associated with an anatomical lesion of the brain. The accommodation reflex is associated with two others, that of convergence and the orbicularis phenomenon. Tabes, general paralysis, and syphilis determine the majority of affections of accommodation; diphtheria, however, is also a frequent cause, and influenza, though a rarer etiological factor, leads to a peculiarly persistent loss of the reflex. Other causes are pneumonia, atropine, and auto-intoxication in diabetes. A curious phenomenon, first described by Sänger, is an extreme slowness of accommodation and convergence, which may sometimes occupy five minutes before they are complete; nothing is known as to the cause of this, nor of the equally curious fact that the pupil sometimes dilates in the effort to accommodate. The orbicularis phenomenon consists in a contraction of the pupils when the eyelids are suddenly opened, or when an effort is made to close them against resistance. The diagnostic value of these three reflexes is not so great as that of the light reflex, but their persistent absence points to organic changes in the central nervous system. Another interesting reflex is the dilatation of the pupil upon stimulation of the sensory nerves, particularly when this causes pain. The efferent impulse of this must pass along the sympathetic to the dilator muscle of the pupil; it is by stimulation of this muscle that cocaine causes the pupil to enlarge. This reflex is of very little diagnostic importance, but may be lost before the others in general paralysis. One other reflex has been described by Haab; it is not strikingly speaking a reflex action, but an evidence of psychical control of the pupil. The attention is called to a dark object, such as a hat; then the subject looks into the distance and relaxes his accommodation; upon suddenly calling up the image of the object the pupil contracts. In conclusion, the author calls attention to one case of myasthenia gravis, in which the fatigue reaction of the pupil was observed, successive illuminations producing contractions which became weaker and weaker.

THE WORLD OF SENSE.

The Rev. J. M. Bacon has published in the *Cornhill Magazine* for November an interesting account of an experimental balloon voyage made with the view mainly of ascertaining the conditions under which sounds were conveyed from a balloon to the earth. After the balloon had ascended, a gun-cotton cartridge attached to a length of twin wire was lowered till it hung suspended 100 ft. below, and then fired electrically from the car. Observations were made at various places by observers; the most complete series of reports were recorded by observers stationed at long distances athwart the wind and such observers were generally found to be in groups. One observer stationed ten miles from the nearest report, and more than twenty miles from the furthest heard the complete series. In concluding his paper, Mr. Bacon states that one observer stated that a thoroughbred mare at grass in an open meadow was startled by the first and clearly-heard report, as also by those which followed, till these, owing to distance and adverse winds, faded completely out of her owner's hearing. Observation of the animal, however, showed that it continued to hear the reports inaudible to its master. The observation, of course, can have no scientific value unless and until we know something of the range of hearing of the human observer. It is, however, curious, and will interest those, and among lovers of horses there must be many, who have seen reason to believe that the horse depends very much more largely than the average man on the sense of hearing for information as to what is happening in its environment. The external ear of the horse is more mobile, at least is more constantly in motion than in any other domestic animal, not excluding its long eared relative the donkey. A nervous horse will be reassured by a familiar voice when nothing else will quiet its nerves, and a horse will hear and understand a distant sound long before it becomes audible or intelligible to its rider. To man, who depends so largely—indeed, almost exclusively—for his conception of his environment on sight, it is difficult to realize that to other animals the information derived from another sense may be far more informing. Yet no one who has lived much with dogs can doubt that, to many dogs at least, the sense of smell gives much more information and is far more relied upon than that of sight. Many a dog who cannot confidently recognize his master by sight at twenty paces against the wind, will be absolutely certain of him at fifty if his master is approaching with the wind behind him. Again, a dog trusts almost entirely to his smell in judging of his dinner, whereas man even in this extreme case judges largely by sight.

THE ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN.

The memorial stone of the new buildings of the Royal Waterloo Hospital for Children and Women, Waterloo Bridge Road, S.E., was laid by H.R.H. the Duchess of Albany on October 26th. Formerly a dispensary, then an infirmary, and now, for many years past, a special hospital for children and women, it has gone through a varied existence. Till the Eighties it was closely associated with Guy's Hospital. There was hardly a physician of that medical school who had not, more or less, some connexion with the place. Sir Samuel Wilks, the late Dr. Braxton Hicks and Dr. Hilton Fagge are a few of the many who took some interest in the Waterloo Road Infirmary for Children and Women. Again the surgical side was represented by such names as Mr. Cooper Forster, Mr. Arthur Durham, and others of like surgical reputation. However, from time to time physicians and surgeons from other schools of medicine filled the ranks of the staff. Hemmed in, as it were, the Royal Hospital for Children and Women has always been disadvantageously situated in a confined spot with little hope of extension. Yet the institution has, in its way as a dispensary and an infirmary done much good in the past, and has truly stuck to its guns and continued on the lines of the original foundation. A special feature of this institution, anterior to the Eighties, was the home visiting of those who who were unable to attend as out-patients or who could not be received as in-patients. During the severe floods that occurred in Lambeth many years ago the infirmary became an important centre for relief. Dr. Charles West wrote the first edition of his book on *Children's Diseases* while physician to this institution, and all modern works on medical diseases of children owe much to his teaching. Those who are acquainted with Great Ormond Street Hospital and the Waterloo Road Hospital are aware of the ties that connect these two children's hospitals, although the offshoot has gone ahead quite beyond all expectation. However, the year 1881 was a memorable one for the parent hospital. It was the beginning of a new epoch. A pathological department was established, an improved gynaecological practice and surgical practice introduced. The hospital at that time possessed a keen observant resident medical officer, and it is undoubtedly owing in a very great measure to his exertions and unremitting care of the patients that the hospital reached a very high and hitherto unattained degree of excellence. From this date it began to go ahead, although there were many difficulties to surmount. It is probably not too much to say the hospital has reached its present position owing to the skill of the obstetric physician, the surgeon—whose work on the operations of surgery are so well known—and also the energy of the resident medical officer. The opening ceremony, then, is peculiarly interesting to them and those of

the Committee of the hospital who remember the past. The hospital has on several occasions been visited by members of the Royal Family. The present Queen and her children formerly made many private visits, and for several years Her Royal Highness the Duchess of Albany has been closely associated with the hospital. The new hospital is thoroughly well equipped. It provides 200 beds.

THE LONDON TEMPERANCE HOSPITAL.

A SCHEME for the rebuilding of the out-patient department of the London Temperance Hospital, in Hampstead Road, was inaugurated on October 28th by a visit from the Lord Mayor of London, who was accompanied by the Lady Mayoress and attended by the Sheriffs. The Mayoral party was received by Mr. Alderman Strong, on behalf of the Board of Management, and was conducted through the wards by Sir William Collins, Surgeon to the hospital. In presenting a formal address to the Lord Mayor from the Board of Management, Alderman Strong explained that the constantly increasing number of out-patients had made it imperative that extensive alterations and additions should be made in the out-patient department. The old out-patient department occupied premises at one time used as St. James's Vicarage, but these, with subsequent additions, were now quite inadequate for the needs of the hospital, and on the recommendation of King Edward's Hospital Fund for London the Board had undertaken to pull down the present buildings, and to erect in their place a new and commodious structure suitable to the growing requirements of the department. The undertaking would involve an initial expenditure of at least £10,000, towards which the King's Fund had granted sums amounting to £1,500. It was stated that the site was already secured in that it formed part of the freehold property belonging to the hospital, and was quite unencumbered. The Lord Mayor, in a felicitous speech, congratulated the hospital on having gained the approval of the King Edward's Fund and on the work it was doing in combating that "fell enemy of the human race"—alcoholism. In the unavoidable absence of the Lord Chief Justice of England, a resolution of thanks to the Lord and Lady Mayoress, the Sheriffs and their ladies, was proposed by Dr. Dawson Burns, seconded on behalf of the medical and surgical staff by Sir William Collins and supported by Archdeacon Basil Wilberforce, who said that there was no sort of controversy about the good work done by the hospital. It was intimated that the first contributions to the building fund had been made by the Lord Mayor and the two Sheriffs.

THE JENNER SOCIETY.

IT is very satisfactory to observe from a report just issued by the Executive Committee of the Jenner Society that the work of the Society is being continued with unabated vigour and with very considerable evidence of success. By some opponents of vaccination it was prophesied that the institution of the Imperial Vaccination League would mean the collapse of the Gloucester organization; but those who thought so had little appreciation of the energy and activity of Dr. Bond, who is its moving spirit, or of the good relations which were known to exist between the two bodies. Up till now it has been felt that each Society has a sufficient field for its own energies, and their attitude is that, not of rivalry, but of practical co-operation. In the report now issued, the Executive Committee of the Jenner Society point with justifiable pride to the value of the work which they have been able to accomplish in the spread of the knowledge of the benefits of vaccination, and in the exposure of the misrepresentations which have done so much to hinder the full fruition of Jennerian prophylaxis. Such work, of course, cannot be carried on without funds, and the operations of the Jenner Society from January 1st, 1901, to June 30th, 1903, have left it with a balance of only some £5 in hand. We unreservedly support its appeal for additional income. No one who has at heart the interests of vaccination need have the slightest hesitation in contributing to the Jenner Society. Every farthing which it receives will, we are sure, be devoted to the teaching of the truth regarding vaccination, and to counteracting the evil effects which have resulted and do still result from antivaccinist propaganda.

LONDON WATER.

THE Court of Arbitration appointed under the Metropolis Water Act, 1902, to adjudicate upon the claims made by the metropolitan water companies upon the transference of their undertakings to the Metropolitan Water Board has been sitting during the past week to hear evidence. A preliminary meeting was held on May 29th, but the proceedings on that occasion had reference mainly to the form in which the claims should be made. The original claims of the companies amounted in the aggregate to nearly fifty millions, in addition to their debenture stocks. The claims of six of them—the New River, Grand Junction, West Middlesex, Lambeth, Chelsea, and Kent Companies—amount to 34½ millions, and against this the Water Board has offered a total of 10¾ millions for the six companies. The first three days of the sitting of the Court were occupied by a statement of the case for the East London Water Works and the evidence and examination of the chief engineer of that company.

THE meeting of the Pathological Society of London announced for Tuesday, November 3rd, will not be held.

DR. H. R. MILL, Director of the British Association, has written to the *Times* to state that the rain which fell on Tuesday last brought the total rainfall in London for the portion of 1903 from January 1st to October 27th above the amount recorded in the whole twelve months of any year since the late Mr. Symons established his rain gauge in Camden Town in 1858. The year 1879, when the fall for the first ten months amounted to 32.22 in., is that which most nearly approaches the rainfall of this year to October 27th, when the amount registered was 34.61 in. The greatest rainfall at Camden Town in any year since 1858 was in 1878, when the total for the year was 34.08 in.

Scotland.

THE CLYDE PORT SANITARY AUTHORITY.

THE Subcommittee of the Glasgow Corporation, which visited various parts of England to study the procedure followed there in regard to the management of a port sanitary authority, have prepared a report. They recommend that the medical officer of health for the city be the chief medical officer of the port, that the chief sanitary inspector be also the chief sanitary officer of the port, and that the clerk of the police be the clerk to and legal adviser of the port local authority. There will be a boarding station at Greenock for all Glasgow-bound vessels, and arrangements have been made with the Greenock authorities for the removal of any patients suffering from infectious disease on board ship to the wards of the Greenock Infirmary.

STERILIZED MILK FOR INFANTS.

Another matter that has been under consideration of the Health Committee of the Glasgow Corporation is the high mortality among infants and its relation to the milk supply. A Subcommittee has recommended that the Corporation, following the example of some other large towns, should agree to the principle of supplying milk for the feeding of infants in poor localities. This would involve (1) the setting up of an establishment for the preparation of the milk supplied, modified and sterilized according to requirements, the necessary machinery and appliances for which would cost about £650; and (2) either the institution of dépôts for the sale of this milk or, as at Liverpool, an arrangement to supply the milk through dealers, who would receive a commission on the sales. The Committee thinks

that an experiment should be made in three or four districts of the city where the infantile mortality is high, and does not anticipate that any large expense would be necessary. The price at which the milk could be sold consistently with reaching the poorest need not be more than is at present paid for ordinary milk, and there would be the great advantage of having it in a properly sterile condition and in suitable bottles so that the children might get it without contamination. It is hoped that the Corporation will authorize an experiment on these lines, and it will be interesting to watch what success will attend it.

Small-pox in Glasgow.

There has been a further spread of small-pox in Glasgow. There were twenty-three patients in the hospital on October 24th. Up to the present the disease is associated wholly with certain model lodging-houses on the south side of the city. Some time ago one case, the first for many months, was taken from one of these lodging-houses. The patient stated that he had been working at Talla Waterworks, and had lived in the city for two nights in a lodging-house. He then changed his quarters to another similar establishment, where he sickened, but unfortunately he wandered about in a sick state for a week before seeing a doctor. As a result, early in October six cases of small-pox occurred in this second lodging-house. A number of cases have since been taken from both these houses, and all the infected persons so far seem to have been either associates of or contacts with the first patient. In view of the character of the places affected and the migratory habits of their inhabitants, it has been thought advisable to take very special precautions in all the lodging-houses of the city as to the admission of fresh boarders. The superintendents have been recommended to admit no one who cannot show evidence of recent revaccination, or, failing that, who will not submit to revaccination, and provision has been made to provide sanitary officers and medical men to carry out this work.

Ireland.

Death of Mr. Forster Green, of Belfast.

On October 21st there passed away, in his 88th year, Mr. Forster Green, one of the most familiar names and figures in Belfast, if not in Ulster. Mr. Forster Green was one of the Society of Friends, and began life, one might say, under difficulties; his first business enterprise was unsuccessful, and he was compelled to compound with his creditors, but his abilities and great business energy soon paid back every penny of principle and interest. Mr. Green had six daughters and one son, but consumption played havoc in his family, and all have predeceased him. Apparently as a consequence he always took the greatest interest in everything connected with the disease. He gave £5,000 to the Throne Hospital to open a consumptive wing in 1885. He subsequently bought Fortbredle Park, of 45 acres, and gave it to the "Hospital for Consumption"; it is now known as the "Forster Green Consumption Hospital." His contributions to the Samaritan Hospital; to the Belfast Midnight Mission, in connexion with which he established a hospital; to the Home for the Blind; to the Workshops for the Industrious Blind; to the City Y.M.C.A.; to the Shankill Road Mission; to the Homes of Rest, Bangor; are only some of his benevolences. He was a very strict man of business, and it was popularly said would return from a meeting, where he had given away perhaps £1,000, and dismiss one of his employés for wilfully destroying a pennyworth. He was one of the strongest temperance advocates, and although he could have increased his profits literally by thousands by selling spirits, he would never allow it to be mentioned. Many young candidates for house surgeonships will remember his strict examination and cross-examination of their opinions on the drink question.

The Salaries of Poor-law Medical Officers.

At the meeting of the Cookstown Board of Guardians on October 24th a letter was read from Dr. Harris, of Stewartstown, asking for an increase of salary. Dr. Stewart had been the medical officer for Stewartstown for more than twenty years; some of the officials of the Board had had their salaries increased more than once, and at least one of them by 100 per cent. Dr. Harris's letter was marked "read." Subsequently the Chairman proposed that Dr. Graves's salary as medical officer of the union infirmary and fever hospital be increased from £50 to £80; an amendment was proposed that it be increased to £90; the direct negative was then proposed, as fifteen years before, when Dr. Graves received the appointment, it was said that he would not ask for an increase of salary. Finally the smaller increase was passed by 16 to 11.

Granard Nursing Question.

The Roman Catholic Bishop of Ardagh (Dr. Hoare) has written a long letter to the Granard Guardians, in which he states that Dr. Kenny has offered no apology whatever, and adds that he is not sorry for it. He feels he "cannot have any trust in any apology of Dr. Kenny, for the simple reason that, with the present attitude of the controlling Board, an apology can give no guarantee for the future." The guardians resolved to send the correspondence to the Chief Secretary.

Westminster Hospital.—The annual dinner of past and present students of Westminster Hospital was held at the Trocadero Restaurant on October 22nd. The chair was occupied by Mr. Walter Spencer, who in proposing the toast of "The Hospital" commented upon the various methods adopted by London hospitals to secure efficiency and public support. He also drew attention to the changes which the City of Westminster had been undergoing under its new municipal authority, and called upon all who, through residence or business ties were "Westminster men," to support the Westminster Hospital. Sir J. W. Barry, Chairman of the House Committee, in reply, spoke of the new interests furnished him by the work he did for the hospital and the satisfaction he felt in knowing that though small, both the hospital and medical school were thoroughly efficient. The system of support by voluntary contributions was advantageous alike to the staff, the patients, and the whole of society; to the former because of the personal interest created, and to the latter because it was good that society should be brought face to face with the necessity of giving pecuniary help, and thus be compelled to think about suffering. He should be sorry therefore if the London hospitals were obliged to appeal to the rates. At the same time, having to face a yearly expenditure of £20,000 with no more than £3,000 income when a high level of efficiency absolutely compelled an increase of expenditure, they could not but be anxious, even though situated in the heart of Westminster, the richest city in the world. The Chairman had said their sheet anchor was the "testator," but he feared the generalization of subscription was tending to diminish local and private interests by creating a less definite sense of obligation. With regard to the question of moving the hospital, the matter had received the most earnest consideration during the past few years, and it was felt that the right place for them was Broad Sanctuary. The toast of "The Medical School" was given by the Chairman and acknowledged by Dr. A. Gossage, the Dean. The former referred to the growing need for a central school of scientific education. To the toast of "The Past and Present Students," proposed by Dr. Allchin, Lieutenant-Colonel Davies responded for past students and Mr. G. W. Heron for those still present. The healths of "The Chairman" and of "The Secretaries of the Dinner" were proposed respectively by Mr. C. W. Glassington and Dr. Bertram Abrahams, the latter of whom has recently been appointed assistant physician. The very large attendance both of past and present students greatly contributed to the success of a pleasant evening.

Bequests to Hospitals.—Under the will of the late Mr. Charles Samuel, founder of the firm of Samuel Brothers, Ludgate Hill, the sum of £8,500 is devoted to charitable bequests. Of this sum, the London Hospital and the Jews' Hospital and Orphan Asylum each receive £500, free of legacy duty; while the following institutions each benefit to the extent of £200, free of legacy duty: The Jews' Convalescent Home, the Jewish Lying-in Charity, the Society for the Relief of the Indigent Blind of the Jewish Persuasion, the Deaf and Dumb Asylum for Jews, St. Mary's Hospital, the Metropolitan Hospital, the Royal Free Hospital, the North London Consumption Hospital, the City of London Hospital for Diseases of the Chest, the National Hospital for Diseases of the Heart and Paralysis.—Under the will of the late Mrs. Sarah Stopford, of Onslow Square, South Kensington, who died on August 12th, 1903, St. George's Hospital receives the sum of £1,000.

THE MIDWIVES ACT.

LOCAL SUPERVISION.

THE Midwives Act, 1902, by Clause 8 constituted the council of a county or county borough in England and Wales the local supervising authority for midwives within the area of the county or county borough, but empowered the council to delegate, with or without any restrictions or conditions as it might think fit, any powers or duties conferred or imposed upon the council by or in pursuance of the Act to a committee appointed by it, consisting either wholly or partly of members of the council, and it was especially provided that women should be eligible to serve on any such committees. Clause 9 empowered the county council to delegate with or without any restrictions, as it might think fit, any powers or duties conferred or imposed upon it by the Act to any district council within the area of the county, and further provided that the powers and duties so delegated might be exercised by a committee appointed by such district council and consisting either wholly or partly of members of the district council, and that women should be eligible to serve on such committees.

The powers conferred upon county councils by Clause 8 are extensive, as will appear from the following subclauses:

1. To exercise general supervision over all midwives practising within their area in accordance with the rules to be laid down under this Act.

2. To investigate charges of malpractice, negligence, or misconduct on the part of any midwife practising within their area, and, should a prima-facie case be established, to report the same to the Central Midwives Board.

3. To suspend any midwife from practice, in accordance with the rules under this Act, if such suspension appears necessary in order to prevent the spread of infection.

4. To report at once to the said Board the name of any midwife practising in their area convicted of an offence.

5. During the month of January of each year to supply the Secretary of the Central Midwives Board with the names and addresses of all midwives who during the preceding year have notified their intention to practise within their area, and to keep a current copy of the roll of midwives accessible at all reasonable times for public inspection.

6. To report at once to the Central Midwives Board the death of any midwife or any change in the name or address of any midwife in their area, so that the necessary alteration may be made in the roll.

7. To give due notice of the effect of the Act so far as practicable to persons at present using the title of midwife.

Under Clause 3 the Central Midwives Board framed rules (published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of August 22nd, p. cxcvii). Among these rules is Section E, framed in accordance with Clause 3, 1 (*e*), of the Act. Section E contains twenty-one rules to regulate, supervise, and restrict within due limits the practice of midwives; and by Clause 8 (1), quoted above, it is now the duty of the local supervising authority to exercise general supervision over all practising midwives in accordance with these rules.

COUNTIES WHICH HAVE APPOINTED MEDICAL OFFICERS.

As communications which have reached us show that the medical members of county councils have felt some difficulty in advising their councils as to the best course to adopt, we have made some inquiries, and are indebted to the medical officers or clerks of county councils of the counties mentioned below for the information which is there given.

Cambridge.

The clerk informs us that the County Council has appointed a Special Committee, including two ladies, and has delegated to it all the powers under the Act. It is not proposed to delegate any powers to district councils.

Cheshire.

The Medical Officer of Health, Dr. F. Vacher, informs us that the point is not finally settled. He has advised his county council not to delegate any powers or duties conferred or imposed upon it under the Act to any urban or rural district council. A Midwives Committee, consisting of ten members of the county council, including five medical practitioners and the chairman and vice-chairman *ex-officio*, has been appointed. It is believed that this Committee will be able to give effect to the Act, and that the county medical officer will be able to act as executive officer of it.

Derbyshire.

The County Medical Officer, Dr. S. Barwise, has informed us that the duties of the County Council have been delegated to the Public Health Committee; a subcommittee has been appointed to arrange details and the County Medical Officer acts as executive officer. The Committee has been led to decide that the Council ought not to delegate its powers to the district councils by two considerations, (1) the County Council would have no control over the expenditure of the district councils in enforcing the Act, and (2) as many of the districts are small it is feared that some of the members of the district councils or their officers might be influenced by personal feelings. All notifications will be sent to the County Medical Officer, and the Committee has decided to pay half-a-guinea for a report by a local medical officer of health on the circumstances of each case of puerperal fever notified to him as occurring in the practice of the midwives practising within his district. These reports will be made upon the following form:

[Private and Confidential.]

MIDWIVES ACT, 1902.

Report upon Case of Puerperal Fever in Practice of a Midwife.

1.—Name of Midwife_____
Address. Parish_____. Street_____
Date of Inspection by M.O.H._____
Name of Patient_____
Age_____. Date of Confinement_____
Date of Inspection of patient's residence by M.O.H.

2.—Please copy from Midwife's Register or otherwise obtain the following:
No._____
Date of engagement to attend_____
Name and Address_____
Number of previous labours and miscarriages_____
Age_____
Date and hour of Midwife's arrival_____
Presentation_____
Duration of 1st, 2nd, and 3rd stage of labour_____
Complications (if any) during and after labour_____
Sex of infant_____. Born living or dead_____
Full time or premature—No. of months_____
If doctor called_____. Name of Doctor_____
Date of Midwife's last visit_____
Condition of mother then_____
*Remarks_____

* If any drugs have been administered state here, and their nature and dose, and the time and purpose of their administration.

3.—Does Midwife wear dress of washable material and a clean washable apron?

4.—What antiseptic washes is Midwife provided with?

Is Midwife provided with Antiseptic lubricants?

5.—Are all her instruments and appliances obviously clean?

6.—Has the Midwife disinfected herself and her instruments to the satisfaction of your District Council? (See Section of the Rules of the Central Midwives Board)

7.—Has Midwife been in attendance on any other case of
(*a*) Puerperal Fever
(*b*) Erysipelas
(*c*) Any other Infectious Disease

8.—To what cause to you attribute the case, to the best of your belief?

9.—Is the Midwife, to the best of your belief, complying with the Rules of the Central Midwives Board? State any exception

10.—Have any circumstances come to your knowledge which make a prima facie case for the investigation of the Local Supervising Authority, with the view of communicating with the Central Midwives Board?

MEDICAL OFFICER OF HEALTH.

N.B.—It is understood that this Report is private and confidential, and that the County Council is solely responsible for any Report made to the Central Midwives Board.

With regard to general supervision to be exercised by the local supervising authority under the rules made by the Central Midwives Board the Derbyshire Public Health Committee will have the reports just mentioned from the local medical officers of health, and the County Medical Officer when inspecting the county for other purposes proposes to call upon the midwives, and, if he thinks further inspection necessary, will report to his Committee. If this appears desirable it will probably be decided either to make some arrangement with local medical officers of health, or, failing that, with the County Nursing Association, to inspect the books of all midwives in the county annually, and to send a report as to the way in which each midwife is carrying out the regulations of the Board.

Durham.

Dr. T. Eustace Hill, County Medical Officer, will advise the Public Health Committee that the duties of the County Council under the Act should be delegated to the Health Committee, and that the County Medical Officer should, for the present at least, act as executive officer. Dr. Hill expresses the opinion that it is very desirable that there should be uniformity of administration in each county, and he considers that this could hardly be attained if the working of the Act were left to the district authorities, of which there are forty-three in Durham alone. He also points out that no financial difficulty will arise if the County Council retains the administration of the Act.

Gloucestershire.

Dr. J. Middleton Martin, County Medical Officer, expresses the opinion that in the counties in which there is a County Medical Officer all powers should be delegated to a small committee of the County Council and believes that supervision might be carried out with sufficient thoroughness by the County Medical Officer. All notices requiring medical consideration should reach the County Medical Officer direct, but under certain circumstances formal notices might be sent to the clerk to the County Council. He believes that the Act will be administered more efficiently and more uniformly by county councils than by district councils.

Lancashire.

Dr. Edward Sergeant, the County Medical Officer, has been good enough to inform us that a special committee has been appointed by the County Council to consider the matter, and has made the following recommendations: (*a*) That the County Council should retain all the administrative duties assigned to them under the Act; (*b*) that the powers and duties should be delegated to a new committee to be composed of all medical members of the Council, nine in number, and four lay members, with power to co-opt lady members, if thought desirable; and (*c*) that the County Medical Officer should be appointed medical adviser to the committee. The special committee has been moved to recommend the appointment of a new committee, apart from the Public Health Committee, to act as local supervising authority by the consideration that a vast amount of work may be expected to arise in the 135 districts of so populous a county as Lancaster, with more than a thousand females engaged, partly or wholly, in the practice of midwifery, over whom medical supervision of an important character will have to be exercised. In his recent annual report Dr. Sergeant makes the following observations:

It does not seem to be desirable for the County Council at present to delegate any of their powers to district councils. Among the disadvantages likely to arise the following may be mentioned:

(*a*) Unequal efficiency in various parts of the county.

(*b*) The County Council will have to pay the expenses of the district councils without any power to control their actions.

(*c*) Difficulty of fixing a limit to the district councils, etc., in putting the Act into operations without any experience as to what should be a maximum cost.

(*d*) In delegating authority to a district council the County Council is not freed from legal responsibility.

(*e*) The labour and expense of administering the Act through several district councils would be greater than if retained by the County Council.

(*f*) Powers once delegated are difficult to recall.

It is further provided by the Act that while the local supervising authority is required (Section VIII. Subsection 3) to suspend any midwife from practice if such suspension appeared necessary in order to prevent the spread of infection, the Act provides no means whereby the County Council can obtain prompt information of the occurrence of infectious disease in a midwife's practice. It is suggested that the midwife should be required to notify the existence of infectious disease in her practice to the medical adviser of the county, and that he should have power to arrange with the local medical officers of health for further information or assistance in carrying out the provisions of the Act.

Northamptonshire.

The County Medical Officer, Dr. C. E. Paget, informs us that the County Council has delegated its duties under the Act to the Public Health Committee, and that the question as to supervision will be considered when the certification of midwives, which will shortly be undertaken, is in progress.

Shropshire.

Dr. James Wheatley, County Medical Officer, expresses the opinion that County Councils should not delegate their powers under the Act to district councils, though in the case of large boroughs, in which the sanitary machinery is good, such delegations might be advantageous. He points out that it is very desirable that there should be uniformity in the administration of the Act throughout the county, and it is not desirable that the local supervising authority, which will be more or less a judicial body, should be too intimately associated with the persons they have to supervise.

Staffordshire.

Dr. George Reid, County Medical Officer, expresses the opinion that under no circumstances should the powers under the Act be delegated to district councils, but to the Health Committees of County Councils. He believes that if the powers were delegated to district councils the Act would become a dead letter in the majority of cases.

Surrey.

The County Medical Officer, Dr. Edward C. Seaton, informs us that the General Purposes Committee of the Surrey County Council has appointed a subcommittee to consider the whole subject. In view of recent experience gained in connexion with the Education Committee, he thinks it will be necessary to consider districts to some extent independently bearing in mind certain general principles of administration.

Sussex (East).

The Medical Officer of the East Sussex County Council, Mr. Alexander G. Foulerton, F.R.C.S., expresses the opinion that a County Council should exercise its powers under the Act through a subcommittee of its Sanitary Committee with a few lady members added if thought necessary. He thinks that decentralization by the delegation of authority to the district councils would be a mistake, and that there ought only to be the one central supervising authority for each county. Upon the subcommittee of the Sanitary Committee all medical members on the council should be included.

Warwickshire.

Dr. Bostock Hill, County Medical Officer, informs us that it has been decided that it will be undesirable for the County Council to delegate its duties under the Act to the district councils, inasmuch as it was thought that, in many of the smaller districts at least, the Act would not be put effectively into force if such delegation were made. He believes that it would be better for the County Medical Officer, or an assistant, to receive the notifications and exercise supervision under the regulations issued by the Central Midwives Board.

Wiltshire.

Dr. J. Tubb-Thomas informs us that the County Council has decided to retain the powers, and has appointed a special committee to which the powers under the Act have been delegated. This committee consists of seven members of the Sanitary and General Purposes Committee, and of five co-opted ladies. The supervision will be exercised through the County Medical Officer's department, either by himself or his assistant. This will ensure uniformity of supervision throughout the county. He thinks that the delegation of powers to district councils would lead to constant friction between the committee, the midwives and the medical men.

Worcestershire.

Dr. G. H. Fosbroke, County Medical Officer, informs us that the Worcestershire County Council has delegated its powers to a special committee consisting of ten members, six of whom are members of the County Council, and four co-opted ladies. A complete scheme has not yet been formulated, but the names and addresses of 600 midwives have been obtained.

Yorkshire (East Riding).

We understand that the County Council has taken steps to put in force the registration of midwives under the advice of its Medical Officer, Dr. J. Mitchell Wilson. At present the County Council has decided to retain the administration of the Act.

Yorkshire (North Riding).

Dr. Cheetham, County Medical Officer, informs us that the County Council has instructed the chief constable to make out a list of midwives practising within the county, of whom there are very few.

Yorkshire (West Riding).

Dr. James R. Kaye, County Medical Officer, informs us that the County Council of the West Riding of Yorkshire has delegated its powers and duties under the Act to the Sanitary Committee, which is one of the standing committees of the Council. This Committee has decided to retain the administration in its own hands, with the County Medical Officer as chief adviser or director. The powers are not to be delegated to district councils, which in the administrative county number about 160, some of them representing very small districts. By communicating with every medical practitioner in the Riding Dr. Kaye has obtained a list of women at present practising, and a notice under Section VIII (7) prepared by the solicitor will shortly be issued to these women directly and by advertisement. It is intended that the County Medical Officer should undertake the contemplated supervision of midwives. Should this duty be found after experience to require extension of this department the matter will be dealt with when it arises.

Counties Which have not Appointed Medical Officers.

With regard to counties which have not yet appointed a medical officer, it appears quite clear that the new duties placed upon the County Council by the Act are an additional argument for the appointment of such an officer.

There appears to be considerable difference of opinion as to the best course to pursue pending the appointment of a county medical officer. The reasons urged in favour of the County Council retaining the power in its own hands, and acting through its Sanitary Committee or through a special Midwives Act Committee remain, and several correspondents suggest that it will be necessary to appoint a special medical officer to the Midwives Act committee of the County Council. Such an officer might possibly be found in some cases in an M.O.H. to a combination of districts, who might then give his whole time to the double office. The other alternative is for the County Council to delegate its powers to the district councils, in which case it is suggested that a medical man of good standing, practising in the respective county towns or their neighbourhood, should be specially retained as the adviser to the district councils in respect to the Midwives Act, while others consider that the duty of medical adviser to the district council should fall upon the shoulders of the medical officer of health to the district council. One of our correspondents expresses the opinion that this would mean a great amount of overlapping, and that some friction would be likely to occur if the local medical officer of health upon whom the duty of supervision fell were in private practice.

THE MORTALITY EXPERIENCE OF THE IMPERIAL FORCES DURING THE WAR IN SOUTH AFRICA.

The exhaustive paper on this subject read before the Institute of Actuaries by Messrs. F. Schooling, F.I.A., and E. A. Rusher, F.I.A., has now been printed,[1] and proves to be a very important contribution to our knowledge of the incidence of fatal wounds and fatal sickness in connexion with war.

Method of Investigation.

For the purposes of the paper the Imperial Forces were divided into three classes, in each class the experience of the officers being distinguished from that of the non-commissioned officers and men: (*a*) Regulars, Volunteers, and Militia; (*b*) Imperial Yeomanry, and (*c*) Colonials, including the forces raised in South Africa. It was originally intended to give the experience of British volunteers separately, but this was found to be impossible, as in most instances they were attached to particular regiments. The proportion of volunteers to regulars was very small. Among the regulars and volunteers the ratio was 1 officer to 30.6 men, and amongst the yeomanry 1 officer to 20.6 men.

[1] *The Mortality Experience of the Imperial Forces during the War in South Africa, October 11th, 1899, to May 31st, 1902.* By F. Schooling, F.I.A., and E. A. Rusher, F.I.A. London: C. and E. Layton. 1903. (Demy 8vo, pp. 83. 2s. 6d.)

The laborious nature of the work involved in the paper may be gathered from the fact that a card had to be written for each of the 21,945 deaths observed. Deaths from "wounds" include all deaths on the battle-field as well as those subsequently occurring from wounds. By comparisons of data from various sources a degree of accuracy was secured which would have been impracticable if the figures had been taken from official returns without analysis.

Death-rates of Officers and Men.

The main statistical results are thrown into geometric form in diagrams, which enables them to be easily interpreted. Thus, the first diagram shows that almost continuously throughout the campaign the officers experienced a considerably higher death-rate than the non-commissioned officers and men. In the second diagram this comparison is carried a step further. The death-rates from wounds and from other causes are found to vary in opposite directions. The commissioned officers invariably experienced a higher death-rate from wounds throughout the entire period of the war, in most cases considerably higher, than the other classes of combatants, while, on the other hand, the death-rates from other causes were almost invariably higher among the non-commissioned officers and men than amongst the officers. The causes of these two important facts were probably that on the one hand in battle officers were marked men, and they also exposed themselves to risks which they would not allow their men to incur; and that in sickness they probably were as a class men of better stamina and were possibly better cared for when ill than men of the rank and file.

Death-rates of Various Arms.

Turning next to the three chief divisions of the army already named, the third diagram in Messrs. Schooling and Rusher's paper shows that for equal numbers exposed to risk the Imperial Yeomanry rapidly took the first place in the casualty lists, and "practically till the end of the war held that place as an easy first." This was almost certainly owing to the fact that they consisted of mounted men, who were most in demand in the war. The death-rates for the regulars were very high in the early part of the war. For the greater part of the war they suffered less than the yeomanry, more than the colonials; but in the latter part of the war less than either, probably because they were then chiefly employed in holding lines of communication and garrisoning block-houses.

Death-rate from Wounds.

Taking next the separate mortality from wounds, after the first stage of the war the regulars had a lower death-rate than either of the other two forces, which confirms the preceding statement as to their functions. The death-rate from wounds in the two other branches of the service shows peaks and depressions corresponding to the advancing movements of the British Army.

Death-rates from Disease.

In the death-rates from other causes than wounds, the effect of summer in increasing mortality is very obvious in the curves. So also is the effect of the privations at Ladysmith and of the conditions resulting from Paardeberg and the subsequent stay at Bloemfontein. The relatively low death-rate amongst the colonials stands out prominently. How much of this is due to acclimatization and how much to more intelligent precautions on their part cannot be stated.

Total Death-rates.

We come next to the total experience during the war, and here comparison can be made with other campaigns. Messrs. Smee and Ackland[2] arrived at the conclusion, based on campaigns extending over nearly one hundred years, that the average death-rate of the army in the field is about 50 per 1,000 per annum; they also specially note that the death-rate in the American civil war was 70 per 1,000. The death-rate per annum in the recent war, for all the forces engaged, including officers and men, was 38.7 per 1,000. For officers alone it was 53 per 1,000; for non-commissioned officers and men 38.1 per 1,000. These figures would enable the term premium for a temporary assurance during a war comparable to the South African to be stated. They do not, however, take into account the probability of deterioration through wounds or disease contracted during the campaign. The following table summarizes the experience of the war:

[2] *Journ. Inst. Actuaries*, vol. xxiv.

	Officers.				N.C.O.'s and Men.			
	Months of Exposure to Risk.	Death-rate Per 1,000 Per Annum from			Months of Exposure to Risk.	Death-rate Per 1,000 Per Annum from		
		Wounds.	Illness.	Total.		Wounds.	Illness.	Total.
Regulars and Volunteers ...	161,604	33·7	20·6	54·3	4,980,325	11·6	27·3	38·9
Yeomanry	17,844	49·1	20·2	69·3	368,187	20·8	34·0	54·8
Colonials	53,747	30·1	14·3	44·4	1,215,484	14·1	16·3	30·4
Total for all classes	233,195	34·1	19·1	53·2	6,563,996	12·6	25·6	38·2
Total officers and men (all classes)	679,719	13·3	25·4	38·7				

Mortality among Assured Lives.

The remainder of Messrs. Schooling and Rusher's paper is devoted to the mortality amongst 19,269 assured lives in the war. Comparing the death-rates of the assured yeomanry and volunteers with those of the whole of the yeomanry deduced from the official War Office returns, the rates of the former were considerably the lower. This might be to a slight degree owing to the necessary inclusion of volunteers who were not as a rule placed in positions of such danger as the yeomanry. The death-rate from wounds was on the whole about the same for all ages. The length of period for which the men were engaged upon active service had more important effect than age on the death-rate, possibly in part owing to the men becoming inured as time went on, and in part to the fact that the less hardy men were invalided home.

PREVENTION OF CONSUMPTION.

Workmen's Societies.

On the afternoon of Saturday, October 24th, a number of delegates from the workmen's societies of East London were addressed by Dr. G. A. Heron, at their own request, in the waiting hall of the Victoria Park Hospital for Diseases of the Chest, on the prevention of consumption. The delegates numbered about 50, and each society it was understood had sent one, two, or, in some instances, three delegates.

Dr. Heron commenced his address by explaining in simple language the nature of the tuberculous process, the mode of infection by the inhalation of the bacilli, the risk of unregulated expectoration, and the part played by dust. Consumption in cities, he said, went hand-in-hand with poverty on the one side and drink on the other. A poverty-stricken man lived in miserable surroundings, in an overcrowded room or rooms, and hence was both more prone to receive infection and to transmit it. Overcrowding meant bad ventilation. Alcoholism in itself meant a predisposition to acquire the disease, and as a consumptive suffered much he was apt, in order to escape from his suffering, to frequent public-houses and thus to spread infection. The manner in which a consumptive might infect his room, his dress, his bedclothing, his eating utensils, and his personal effects generally was described, and then Dr. Heron went on to say that the consumptive must be taught how he might avoid spreading infection both in his own person and among those round about him. Spitting flasks were shown, the best methods of disinfecting them were described, and the way in which infected sputum should be dealt with was indicated. Spitting in public ought to be made punishable by a fine attached to it.

To prevent infection there should be a system of visits to patients by trained nurses who would both instruct them and see that the instructions of others were carried out. The home treatment of consumptives who were poverty-stricken was a hopeless thing. Some local authority should be given the power to ascertain where they lived; in other words, there should be notification. In the early stages of the disease the authority should have the power to send the patient to a sanatorium or hospital, and to find sustenance for his family, including the education and clothing of the children, while he was under treatment. Consumption was not like scarlet fever, in being limited as regards time, but was often infectious for years. The later stages of consumption were especially dangerous in this respect; institutions for dying consumptives should therefore be provided.

Teaching as to the nature of the infectiousness of consumption and other matters of health should be given to the elder boys and girls in schools; similar instruction on the rudiments of public health should be given in the universities. In the schools the teaching could be given by junior medical practitioners, and so an educated public opinion would be built up.

Ten years ago he had calculated that there were 500,000 consumptives in the United Kingdom. In 1838 the mortality from consumption was 38 in 10,000; in 1899 it was only 13 per 10,000, a fall due solely to improved sanitation. Perhaps there might now be 300,000 people with consumption in this country, and perhaps 100,000 of these could not provide treatment for themselves. At the Victoria Park Hospital each consumptive cost 30s. a week for maintenance, a moderate sum for the purpose. About £7,800,000 a year would be required for the keep alone of these 100,000 consumptives. For the sustenance of the consumptive's family a great addition to the expense was involved, how great he was not prepared to estimate. A hospital cost on an average from £300 to £600 a bed. This was perhaps too much, and buildings of the temporary type might be erected at £80 a bed and would suffice; for such erections £8,000,000 would be required for the accommodation of 100,000 consumptives. State help was absolutely necessary, and this was in the control of the voter. He urged that candidates of any political party should be instructed that their duty if they were returned to Parliament should be to press on the Government the need for such measures, and not to wait for the Government to move in the matter.

After Dr. Heron had concluded his address a delegate asked if the burying of a consumptive person would be dangerous from the risk of contagion, and if disinfection was required. He thought an old-age pension scheme would be of much value in helping the State to deal with consumptives and their families. The scheme was of too great magnitude under present conditions. He asked if a pamphlet of information could be prepared on the lines of Dr. Heron's address which could be issued with hospital letters.

Dr. Heron said there was no evidence of the spread of consumption from the dead, and he consented to draw up a code.

Another delegate asked if the children in the elementary schools were examined for consumption, and Dr. Heron replied that so far nothing had been organized in that direction, but it was a matter of importance.

Another question was as to the necessity of disinfection of clothing and surroundings after death from consumption. Dr. Heron replied that everything that had been in contact with the consumptive should be disinfected, and that at the public expense.

A vote of thanks to Dr. Heron for his address was enthusiastically carried, and the thanks of the delegates were tendered to the Managing Committee of the Victoria Park Hospital for the use of the waiting hall for the address.

The Mount Vernon Hospital for Consumption and Diseases of the Chest, Hampstead.

Opening of a New Wing.

In spite of the somewhat unfavourable weather a large number of friends of the hospital assembled to celebrate the completion of the building by the opening of the new east wing, and the large dining-hall was filled to overflowing.

The Marquis of Zetland, K.T., who presided, in declaring the new block open, briefly reviewed the progress of the hospital since its foundation in 1860. It commenced its work in a small street near Fitzroy Square, where an out-patients' department was established. A few years afterwards a house was rented at Hampstead, where six persons were received as in-patients, and subsequently a larger property was taken near the site of the present hospital. The present building was commenced in 1880, and the Western Block (providing accommodation for about 25 patients) was then completed. In 1893 the Central Block was built, increasing the accommodation to 60 beds. In 1899 this number was raised to 70, and later to 100. The present extension will provide for 45 additional beds. By the adoption of the "open-air" treatment and its results the hospital became known all over the country, and for a long time there had been more applicants for admission than can be entertained. At the present time there were 270 approved applicants waiting for admission, some of whom are under treatment as out-

patients. About one-half of those who applied for admission were rejected, some because their condition precluded hope of permanent benefit being obtained, and others solely for want of room. Male applicants were waiting 24 weeks before they could be received, and females 16 weeks. The present extension, which had cost £16 000, in addition to providing accommodation for 45 patients, contained service and staff rooms, sleeping accommodation for five nurses, and also a sitting-room and dining-room for the whole of the nursing staff. The south-west front had been constructed on the gallery principle in order that patients might enjoy as much fresh air as possible. Care had been taken to provide arrangements whereby, during severe weather, adequate protection could be ensured. In addition to the extension at the hospital, a large out-patients' department had been purchased in Fitzroy Square. When the alterations were completed, which it was hoped would be the case in about a month, the needs of the hospital in this particular would be fully supplied. The cost of this department was £6,000, part of which had been raised by a mortgage on the property. Two years ago the name of the hospital had been changed from the North London Hospital for Consumption to the Mount Vernon Hospital for Consumption, its old name not being sufficiently distinctive.

Mr. Benjamin Lyon, Chairman of the Hospital, in proposing a vote of thanks to the Marquis of Zetland, spoke of the progress which had been made during the fifteen years that he had been Chairman of the Committee. When he first occupied that position the number of beds was only 32. Now, with the 100 beds which the new building at Northwood would give them, the hospital would be the second largest consumption hospital in the metropolis.

Sir Hermann Weber seconded the vote of thanks, and said that the Mount Vernon Consumption Hospital deserved support more than any other similar institution. It was not the first hospital for the treatment of consumption, but the foresight of the Committee in selecting a pre-eminently healthy site, away from the smoke and crowding of the central parts of London, gave the hospital a great advantage. As a pioneer in the open-air treatment of consumption also the hospital had a special claim for consideration and support.

After the ceremony the guests inspected the hospital, including the new wing into which a number of patients have already been admitted.

Voluntary Notification.

The County Borough of Croydon has recently decided that for the next two years phthisis shall be made a voluntarily notifiable disease. It is intended that each case should be visited soon after notification and at subsequent intervals with the object of (1) endeavouring to ascertain the probable origin of the case; (2) imparting instruction on the lines of a leaflet prepared by the Medical Officer of Health (Dr. H. Meredith Richards); and (3) ascertaining whether any insanitary conditions exist at the house or workplace. Arrangements are also made for examination of sputum, and for free disinfection of rooms recently occupied by phthisical patients. This seems to limit notification to those cases which the medical attendant wishes to be visited by the sanitary officers. If this should prove to be the effect it would limit the statistical value of the information to be obtained. The leaflet referred to gives simple instructions to those suffering from consumption, and advice to those wishing to avoid the disease.

CONTRACT MEDICAL PRACTICE.

A Series of Propositions.

Dr. A. D. Williams, Honorary Secretary of the Devonport Division of the South-Western Branch of the British Medical Association, writes: It seems likely that for the next few months members will be more than ever busy with the questions involved in club, contract, and gratuitous practice. Of the subjoined series of propositions, some at least should be acceptable by all parties to the discussion, and may elicit help in arriving at practicable and detailed advances, if not conclusions, in dealing with the very urgent subject in the Branches and Divisions.

Propositions.

That the knowledge and skill of the medical profession are, to a larger extent than ever before, capable of relieving pain, prolonging life, preventing disease, and diminishing the distress and loss caused by disablement; and are of value to the community.

That all classes of the community benefit directly or indirectly by this service, and that it should be possible for all to benefit to the fullest extent.

That it is not reasonable that this benefit should be conferred so largely at the expense of the profession as it is at present.

That it is reasonable that these services should be remunerated sufficiently to enable those who render them to live in reasonable comfort by their (always responsible, often dangerous and exhausting) labour; to gain a reasonable return of the capital expended in money, time, and labour in acquiring ability to render them; to maintain and educate their children to render social service in their turn; and to provide for their own sickness and old age.

That those members of the community who are not able, or able only in part, to pay personally and reasonably for medical services should for the general advantage be provided with, or assisted to obtain, them.

That one satisfactory method of doing this is by provident insurance, as attempted by the Friendly Societies and other clubs.

That it is undesirable that the medical practitioner should himself undertake this insurance on the small scale, as is now generally done, but that the cost of medical services should be met in reality by mutual co-operation.

That the low rates of payment hitherto generally made by the societies and clubs have been accepted by the profession in part as a quasi-charitable constitution in its rôle of official vicarious philanthropist to the sick poor, in part on the principle that a little is better than nothing, and in part because as a quasi-charity all members did not take advantage of the small payments.

That the societies and clubs themselves now properly repudiate this relation, and claim that their arrangements for medical service are made on a business basis; that they pay at market price for what they need; and that no inquiry into the circumstances of members is admissible.

That this claim should be accepted by the profession, and that the payments required by it should be (in accordance with the principles of paragraph 4) for services rendered to individuals, on a scale to be agreed upon in each neighbourhood between the representatives of the societies and of the profession, with the assistance, if necessary, of the central governing bodies of each.

That the societies should, on the principle of mutual insurance, establish such funds as will meet the expenses for medical service, to be assisted, if necessary, by contributions from other sources interested in the welfare and efficiency of their members.

That public expenditure, such as that on sick-poor relief, might properly be such a contribution towards membership of a provident society.

That, if a patient cannot be properly treated at home, he may be treated in a hospital to be maintained and administered by a public authority, and his treatment and maintenance therein paid for according to circumstances, either by himself or his relatives, his employer, his provident society, or by public funds.

Juvenile Branches.

Medicus writes: A Friendly Society has recently established a junior section which provides payment of a certain sum at death, and, at the option of the parent, secures medical attendance, and medicine in case of sickness, for each child in the family on payment of a half-penny a week for each child. This section has been established without the knowledge or without consulting the medical officer who has been connected with it for many years, and it has been made imperative that the medical officer of the adult branch must also act for the junior section on the terms above stated or resign the adult connexion. The question, then, is as follows:—Is the medical officer justified in holding this society, and can it be classed as a medical aid society although connected with a Friendly Society?

*** The organization which our correspondent describes is a juvenile branch of a lodge. We think (1) that the attempt to establish such a branch without consulting him is not only inconsiderate but unbusiness-like; and (2) that he would not be well advised under any circumstances to accept the terms mentioned, which cannot be remunerative. We would counsel him to communicate the facts to other practitioners in the district, if possible through the Division of the British Medical Association.

LUNACY IN LONDON.

The report of the London County Council's Asylum Committee for the year ending March 31st, 1903, commences with the statement that it has once more to chronicle a large increase in the number of certified lunatics. On January 1st, 1903, there were 16,689 patients in the county, and in addition there were 6,263 lunatics in imbecile asylums, workhouses, or with relatives and friends, giving a total of 22,952, and showing an increase of 639 for the year, the great bulk of them being in asylums and licensed houses, while the average increase for thirteen years is only 507.

Accommodation Required.

On January 1st, 1890, the Committee was called upon to find asylum accommodation for 61.74 per cent. of their lunatics, and this percentage had risen on January 1st, 1903, to 72.71 per cent.

The fire at Colney Hatch Asylum is referred to in the report, and the extra pressure brought upon the Committee to find additional accommodation by that lamentable event resulted in the adoption of plans for a replica of the asylums at Bexley and Horton, while the expenditure of a sum of £97,210 for foundations, roads, architect, etc., was authorized. During the year 4,493 applications for beds were received, as against 4,277 in the previous year.

Recoveries.

There were 4,978 patients admitted and the total number discharged recovered was 1,159, giving a recovery rate of 23.28 calculated upon the total admissions. This somewhat low recovery-rate is accounted for by the large number admitted into the newly opened asylum at Horton which received 2,019.

Cost.

The average cost per head per week works out at 11s. 5d.

The Epileptic Colony.

It is a matter for regret that the epileptic colony buildings at Epsom for 300 male patients which were ready for occupation could not be occupied owing to the absence of any sewage outfall. Although prolonged negotiations have been carried on with the Epsom Urban District Council for the purpose they have been unsuccessful and the matter has therefore been reported to the Local Government Board which it is hoped will put an end to further procrastination.

Proposed Legislation.

The proposal for the County Council to obtain power to erect receiving houses is mentioned, and it is stated that a Bill was introduced into Parliament with that object by Lord Carrington and read a first time. The Bill will require serious amendment if its promoters wish to see it pass the Commons for strenuous opposition to it in its present form is certain. It is interesting to note the opinions of asylum medical superintendents upon the recovery rate of the patients in connexion with the erection of receiving houses, which if allowed to become merely places for detention and experimentation will tend to seriously effect their recovery; for as it is truly stated "many of the recoverable cases once sent to the asylum are now kept in the wards of the union infirmaries (which at present act as receiving houses) and the recovery rate is proportionately lower.

Pathological Investigations.

Dr. Mott's report upon the pathological work done at the laboratory is as full and complete as usual, and worthy of his high reputation. This report has been issued in the second volume of the *Archives of Neurology*, published by Macmillan and Co., and constitutes a record of the valuable research work which he has carried out at Claybury.

Dysentery.

Dr. Mott's inquiry into the subject of dysentery and diarrhoea, so frequent in asylums where large numbers of the insane are congregated, is most important in its bearing upon this scourge of asylum life. He finds that although the cases of dysentery have increased in number it is due to their having been more frequently recognized, and not to real increase in the numbers attacked. In some of the cases which were old ones the disease "appears to have been lit up again," and he comes to the important conclusion that "the outbreak in wards (except in the cases mentioned, and then only in a small way) have practically disappeared with isolation."

Dr. Stansfield, the Medical Superintendent of the Heath Asylum, Bexley, in alluding to the subject, says: "Colitis or dysentery continues to occur, and its incidence does not appear to have been materially affected by the rigid isolation which has been practised," and after giving instances of cases isolated he states, "A study of the table of incidence leads one seriously to doubt if the infectivity of this condition is by any means so great as is claimed for it, and causes one to look for other possible causes." Dr. Alexander, at Hanwell, has to record 41 cases as against 64 in 1901, and he hopes this gratifying reduction in the numbers of cases is an earnest of a still further decrease as the result of not only treating all frank dysenteric cases with the most rigorous disinfectant and segregative precautions, but of applying the same germicidal practice to all cases of apparently innocent diarrhoeal stools.

At Colney Hatch Dr. Seward records that 12 males and 53 females suffered from colitis or dysentery, with 5 cases of relapse from previous attacks. All the cases were patients. No member of the staff suffered from the disease. Every case was at once removed to the isolation hospital.

Dr. Moody, of Cane Hill, had 12 men attacked. They were promptly isolated and the disease stamped out.

At Banstead cases who have had dysentery are treated by Dr. Johnston Jones by notification, and kept as far as practicable in one ward. Special tickets are issued informing those in charge of the nature of the disease and the precautions required to be taken.

It is evident, therefore, that the medical superintendents are on the alert, and a close watch is maintained over the patients, so that the disease can be at once recognized and isolated. The practice, however, of issuing "caution cards" is not an unmixed benefit. These cards are very properly issued for suicidal cases, but too many "caution cards" may tend to reduce the caution so absolutely necessary in watching suicides.

Tuberculosis.

Dr. Mott states that out of 190 necropsies at Claybury Asylum tuberculosis heads the list as a cause of death with 35 cases, 17 in men and 18 in women. The total percentage of cases diagnosed as tuberculosis before death is given as 68·9 per cent., which, considering the very many difficulties of diagnosing disease in the insane is in his opinion very creditable to the medical officers. He notices the fact that very few cases of general paralysis suffered from tubercle, and also very few epileptics, and he says that there were 23 cases of tuberculosis discovered *post mortem* in which tubercle was not diagnosed during life. This is inevitable, for it is astonishing what grave pulmonary lesions may occur in the insane from pneumonia downwards in which the subjective symptoms are absent, or so masked by the mental and physical condition of the patient as to defy detection on the most careful examination.

Introductory Addresses

AT THE

OPENING OF THE MEDICAL SCHOOLS.

BELFAST MEDICAL SCHOOL.

THE HISTORY OF THE ROYAL HOSPITAL, BELFAST.

The opening address of the session was delivered by Dr. J. Walton Browne, Chairman of the Medical Staff, in the Extern Department of the new hospital, on Tuesday, October 20th. In addition to all the staff of the hospital, several professors of allied subjects from the College and many medical men of the town and district and students were present. After a short introduction on the origin of the new building,

Dr. Browne said:

We have left Frederick Street, and I assure you I felt sad when I took my last look at "Charters Wing" and the old wards, in which I had worked for twenty-eight years, and my good father before me for twenty-four years. The hospital in Frederick Street did a noble and good work in its day, and I trust the results of treatment in our new hospital will be as successful. How many of the thousands who subscribed to the funds for the support of Frederick Street are aware of the immense amount of relief which the charity afforded since its foundation; of the invaluable benefits which were freely bestowed upon the city through its incessant operations; of the large number of honest, hard-working artizans its friendly hand aided? Few can so thoroughly appreciate the almost boundless extent of its charity as myself, who have been running about the building for over half a century. I remember seeing an operation performed by my father when I was only six years old; subsequently I became a student, resident pupil, house-surgeon, member of the visiting staff, of which I am now the senior.

Dr. Browne then proceeded to give a most interesting history of the charity. He said that it appeared we learn from the records of the "Charitable Society" that as early as 1631 an association existed for affording relief to the poor at their own homes; in 1641 an epidemic of an unknown nature raged in the north of Ireland, and the first mention of a hospital dated from that epoch. It was recorded that thousands of the stricken were crowded into "the great hospital at Belfast." In 1771 the poorhouse and infirmary, now called the Charitable Institution, was built, and the *Belfast News Letter* of April 10th, 1792, contained a record of a public meeting to

consider a proposal to establish a public dispensary; this was the origin of the present hospital. Dr. Browne then described the vicissitudes of the charity, its changes of name, the meetings for its support when in difficulties, and some of the members of the staff whom he personally knew, or had more or less immediate record of—Dr. McDonnell, Dr. Drummond, Professor Gordon, Dr. Henry MacCormac, his son, the late Sir William MacCormac, and many others.

In 1815 the foundation-stone of the hospital was laid by the Marquis of Donegal, and the patients were transferred from West Street to Frederick Street in 1817, just as in 1903 they were transferred from Frederick Street to Grosvenor Road. In 1820 pupils were allowed, and in 1826 formal clinical instruction was commenced, and in 1849 the Medical Faculty of the Academical Institution was replaced by that in the Queen's College. Amongst other reminiscences given by Dr. Browne was a description of extern patients, who sat on forms in a dimly-lighted central corridor, and had their wounds dressed at the door of the nurses' kitchens. To Dr. Browne's father—the late Dr. Samuel Browne—belonged the credit of establishing an ophthalmic dispensary in or before 1848, the first in Belfast to give skilled attention in this department to the poor (subsequently a regular special department was opened in the hospital). Dr. Browne finally urged upon students the immense importance of hard and conscientious clinical work. He warned them when qualified to be careful in the choice of their career. The Government services had been improved chiefly through the efforts of the British Medical Association; he could not recommend the Irish Poor-law Medical Service; a general endeavour was being made to improve it, but, until reform had been carried out, it should be left severely alone.

A vote of thanks to Dr. Browne was proposed by Mr. J. C. Marsh, Honorary Secretary of the Hospital, seconded by Dr. McMaster, of Broughshane, and passed with acclamation.

ENTRIES AT THE MEDICAL SCHOOLS.

By the courtesy of the Deans, Wardens, or other officers of the medical schools mentioned below, we are enabled to publish the following particulars in regard to the number of students who have entered the medical schools in England and Wales this session. The number of students who have joined for the full curriculum is shown in the first column (A).

	A.	B.	C.	D.
St. Bartholomew's Hospital	80	29	0	24
Charing Cross Hospital	18	35	31	4
St. George's Hospital	20	35	0	10
Guy's Hospital	70	49	32	30
King's College Hospital	21	220	1	7
London Hospital	67	79	2	17
St. Mary's Hospital	42	35	0	6
Middlesex Hospital	18	48	10	1
St. Thomas's Hospital	48	8	0	9
University College Hospital	25	45	0	24
Westminster Hospital	10	30	0	0
London School of Medicine for Women	36	4	0	19
London School of Tropical Medicine	25	2	0	0
London School of Dental Surgery	0	0	45	0
National Dental Hospital	0	0	18	0
Cambridge University	104	0	0	0
Oxford University	—	—	—	—
Durham University, College of Medicine	26	32	3	80
Bristol University College	12	2	2	11
Owens College, Manchester	51	50	30	31
Liverpool University	111	7	26	23
Yorkshire College, Leeds	24	51	2	20
Birmingham University	—	—	—	—
University College, Sheffield	4	0	4	0
University College, South Wales, Cardiff	13	8	5	15
Liverpool School of Tropical Diseases	9	0	0	0

A. Number of students who have joined for the full curriculum.
B. Number of students who have joined for special courses.
C. Number of dental students.
D. Number of students who have joined classes for preliminary scientific instruction.

From the above table it would appear that the total number of students who have entered for the full curriculum at the metropolitan schools (excluding the London School of Medicine for Women, the School of Tropical Medicine, and the two dental hospitals), is 419, as compared with 390 in 1902, 418 in 1901, 465 in 1900, and 536 in 1899. The difference, therefore, between the entries at the earliest period mentioned and those this year is very considerable, being equal to a deficit of about 21 per cent. Nevertheless, it will be noted that a considerable improvement is shown between the entries this year and those at the corresponding period in 1902, while the number of students who have entered for the special courses in particular has very materially increased. It will also be noticed that the number of entries for the full curriculum in England and Wales (excluding for purposes of comparison the dental schools, the schools of tropical medicine, and the Universities of Oxford and Birmingham) is 800, as compared with 688 in 1902, 730 in 1901, 734 in 1900, and 929 in 1899; the total, therefore, this year is higher than any shown for the last three years.

In drawing up the return it has been necessary still to adhere to the plan employed in previous years, since the objections felt by the authorities of the schools concerned to supplying the information required under any other headings still exist. As last year, therefore, it is necessary to point out the possibility that certain fallacious deductions might be based upon the returns. The chief of these sources of error is that the entries in column A do not absolutely indicate whether the enumerated students are beginning their medical curriculum or whether they are merely continuing it in a new school, particularly in regard to its clinical departments. It appears that it not very rarely occurs, for instance, that a student after entering at one school and figuring in its returns subsequently joins another and enters thereat for the full curriculum. The result, therefore, is that these figures cannot be used without qualification as a basis for considering the attractions of the medical profession to the younger generation year by year, as represented by the number of students who enter for courses of study in England or Wales. In effect, the tendency of such a method of calculation would be to exaggerate the real number of students working in any term of years, and so estimate too highly the effect of current entries on the number of medical men who will be in practice in the future.

ASSOCIATION NOTICES.

ELECTION OF MEMBERS.

ANY candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are fitted up for the accommodation of the Members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 a.m. to 5 p.m. Members can have their letters addressed to them at the office.

GUY ELLISTON, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

BIRMINGHAM BRANCH: COVENTRY DIVISION.—The next meeting of this Division will take place on Tuesday, November 3rd, at 8.30 p.m., at the Coventry and Warwickshire Hospital. Agenda: Matters referred to the Division for discussion and report—(1) Proposed modification of the Vaccination Acts, (2) Draft Medical Acts Amendment Bill, (3) suggested representation on the General Medical Council. As the matters on the agenda are printed *in extenso* in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of August 22nd last, members will probably find it a convenience to bring their copies of that SUPPLEMENT with them.—E. H. SNELL, Knighton House, Coventry, Honorary Secretary.

EAST ANGLIAN BRANCH: SOUTH SUFFOLK DIVISION.—A meeting of this Division will be held at the Crown and Anchor Hotel, Ipswich, on Thursday, November 5th, at 2.30 p.m. Business: Adoption of Rules, consideration of the Medical Acts Amendment Bill, the Vaccination Act, representation on General Medical Council.—JOHN GUTCH, 28, Fonnereau Road, Ipswich, Honorary Secretary.

MIDLAND BRANCH: LEICESTER DIVISION.—A meeting of this Division will be held on Wednesday, November 11th, at 4 p.m., at the Association Hall, East Street, Leicester. Agenda: Election of a second Honorary Secretary; to discuss the draft of the Medical Acts Amendment Bill, etc.—ASTLEY V. CLARKE, 37, London Road, Leicester, Honorary Secretary.

PERTHSHIRE BRANCH.—The annual meeting of this Branch will be held in the Station Hotel Perth, on Friday, November 6th, at 4 p.m. Business: Read minutes, election of office-bearers, report of Council, report of Treasurer, minutes of condolence, President's address on Medical Acts Amendment Bill, any other competent business, presentation of Dr. H. Stirling's portrait on the occasion of his jubilee. Dinner (3s. 6d.) at 5.30 in the hotel. Morning dress. Members intending to be present would facilitate arrangements by informing the Honorary Secretaries.—A. R. URQUHART, W. A. TAYLOR (Perth), Joint Honorary Secretaries.

Staffordshire Branch.—A meeting of this Branch will be held at the North Stafford Hotel, Stoke-upon-Trent, on Thursday, November 26th, at 4 p.m. The Secretary would be glad to have a note of papers and cases.—G. Petgrave Johnson, Stoke-on-Trent, Honorary Secretary.

Staffordshire Branch: Mid-Staffordshire Division.—A meeting of this Division will be held at the Staffordshire General Infirmary, Stafford, on Thursday, November 5th. The Chairman, Dr. Lowe, will take the chair at 4.30 p.m. Agenda: Minutes of the last meeting, exhibition of living cases, pathological specimens, report by Dr. Lowe as representative of the Division to the annual meeting at Swansea, to discuss the Medical Acts Amendment Bill, the Vaccination Acts, and the resolution passed by the representative meeting at Swansea (published in the Supplement to the British Medical Journal of August 22nd, p. cxciii), to decide the place for the next meeting.—F. Nesfield Cookson, Martin Street, Stafford, Honorary Divisional Secretary.

SPECIAL CORRESPONDENCE.

PARIS.

Société Médicale des Hôpitaux: Treatment of Tetanus with Antitoxin.—Académie de Médecine: Three Patients with Sleeping Sickness.—A Chemist Fined for Selling Morphine without a Doctor's Prescription.—Sixteenth Annual Meeting of the Association Française de Chirurgie.—The International Sanitary Conference.

At a recent meeting of the Société Médicale des Hôpitaux Dr. J. A. Sicard made a communication on three cases of tetanus which recovered:

The first case was a girl of 19 years, in whom trismus appeared eight days after a contused wound of the right knee. She came into the Salpêtrière Hospital on the fourth day of her trismus with a temperature of 39° C. (102.2° F.), slight tachycardia, respirations 34 per minute, and typical generalized contractions. Two injections of 15 c.cm. of antitetanus serum were given into the subarachnoid space in the lumbar region with forty-eight hours' interval between each. At the same time four subcutaneous injections of the same dose were also given. Chloral was administered by the rectum. Four days after the first injection the patient improved, and convalescence set in on the fifteenth day. The second case was a young mason who, falling from a certain height, twisted his foot and received a contused wound. Before the cicatrix formed he worked barefooted in a cellar. About the twelfth day after the accident trismus was noticed. M. Sicard saw the patient on the third day of the disease, when contractions were generalized with attacks of anguish and tachycardia. The pulse was 116, the temperature 39° C., and perspiration profuse. That evening the patient received two injections of 20 c.cm. each, one in the subarachnoid space, the second—in two portions—deeply in the neighbourhood of the right sciatic nerve. Chloral was given by the rectum. The next day the patient's condition was unchanged, the temperature rose to 39.8° C., but more urine was excreted. After an interval of forty-eight hours two fresh injections of serum were given as before. Twenty-four hours later improvement began. Every other day for a week a deep injection of serum was made near each sciatic nerve. Convalescence soon set in. The third case was treated by Dr. Dupaigne in a similar way.

The new idea in these cases is the utility of injecting the antitoxin in the neighbourhood of the large nerve trunks. Recent researches on the absorption of the tetanus toxin by Marie and Morax (*Annales de l'Institut Pasteur*) proved that the peripheral nerves could take up the toxin from the surrounding lymphatic spaces, and after absorption the toxin followed a centripetal path towards the nerve centres. M. Sicard concluded that in a case of tetanus, in addition to chloral by the rectum in large doses, isolation, and rest, it was legitimate to use at the same time the antitoxin as follows:—(1) 5 to 10 c.cm. injected more or less deeply round the contusion or seat of infection; (2) 15 to 20 c.cm. deeply injected close to the median and large peripheral nerve trunks; (3) 15 to 20 c.cm. injected slowly and progressively into the subarachnoid space in the lumbar region, the serum being heated in a water bath to 37° or 38° C. Forty-eight hours later a second series of injections might be given.

At the last meeting of the Académie de Médecine, Professor Blanchard showed three negroes suffering from sleeping sickness who had arrived the same morning from the French Congo. Two were suffering from the ordinary form of the disease, while the third, a boy of 13, had the ganglionary form. Dr. Emile Brumpt, from Professor Blanchard's laboratory, was sent out by the Institute of Colonial Medicine. In the French and Belgian Congo he saw 37 cases; of these, 28 were punctured, and the trypanosoma was found in the cerebro-spinal fluid in 78 per cent. Dr. Brumpt, in a paper published in June, 1903, put forward the theory that a fly of the species *Glossina* transmitted the disease. Information obtained from missionaries and natives was to the effect that this fly existed from Dakar to the south of Angola, and it was precisely within these limits that sleeping sickness was found on the West Coast of Africa. The patients are now in the Hospital of the Association des Dames Françaises, which this Society has placed at the disposal of the Institute of Colonial Medicine for clinical teaching.

An interesting case has just been tried in Paris, from which it appears that the selling of morphine without a prescription is a criminal offence. M. Roullod, a *maitre d'hôtel* in a Paris restaurant, after fifteen years of happy married life, noticed that his wife became completely indifferent to him and to everything in the house, which she rarely left, latterly spending the greater part of the day in bed and asleep. Early in the present year he found her more nervous and daily becoming more wasted. He watched and found that the cause of this was morphine, which was obtained without a prescription from a neighbouring chemist. When Madame Roullod could not go herself she sent their son, aged 14, for the drug, and when she was in the country it was sent to her by parcels post. She had begun by spending 1 fr. 25 c. a day, and increased to 4 fr. worth daily. M. Roullod, accompanied by a *huissier*, caught the chemist in the act of supplying the morphine. The Correctional Court fined the chemist 100 fr., and directed him to pay £200 damages to M. Roullod, whose wife has only been cured after a long course of treatment and who is still far from well.

The sixteenth annual Congress of the Association Française de Chirurgie was held during the past week in Paris. About 200 members attended, many coming from the provinces and abroad. M. Perier, member of the Académie de Médecine and Principal Surgeon of the Nord Railway Company, was President for the year, and devoted his address to prognosis after accidents. It would seem that the meeting was not so successful as in the younger days of the Association; the communications have fallen off in number to such an extent that this year all the morning sittings with one exception were suppressed.

The International Sanitary Conference is holding its sittings *in camerâ*, and the public is receiving little or no information with regard to its discussions.

BERLIN.

The Position of Surgeons in Municipal Hospitals.—Opening of the New People's Sanatorium at Ambrock.—A Fund in Aid of Patients' Families.

Hospital affairs formed the chief subject of discussion at the last meeting of the Berlin City Council, and the debate grew almost heated over the question of the position of head surgeons in the municipal hospitals, which is considered extremely unsatisfactory. In the Internal Diseases department of the municipal hospitals the chief physicians (*dirigirende Aerzte*) are entirely independent, being free to adopt any form of treatment they choose, and are co-ordinate with, not subordinate to, the medical director (*aerztlicher Direktor*). But in the surgical departments the director alone has the supreme responsibility, and his assistant (to whom the title *Oberarzt* is given) is obliged to consult him as to the plan of treatment to be adopted in each case. Now the hospitals are at times so crowded that the amount of work falling upon the director is very great, so that more than once it has happened that patients in need of operation have had to wait for days until the director could find time to consider their cases. After a long discussion, and in spite of strenuous opposition, chiefly on technical grounds, from some members of the Council, a resolution was carried recognizing the truth of the grievances alleged, and ensuring for the municipal surgeons an independent position as regards the treatment of the patients committed to their charge.

On October 22nd, the German Empress's birthday, a new people's sanatorium was opened at Ambrock in Westphalia. The burgomasters of Dortmund and Hagen, the chief Government officials of the district, the President of the Westphalian Insurance Society, and Professor Pannwitz of Berlin (Delegate of the Central Committee), were present to represent those most interested in the erection of the new building. Speeches were made, and a congratulatory telegram from the Empress, who is Patroness of the German Society for Combating Tuberculosis, was read. The sanatorium is in a beautiful situation, and its grounds are so arranged as to supply outdoor work for such of the patients as are strong enough to undertake it.

A sum of 250,000 marks (£12,500) has been raised by voluntary contributions, and is to form a fund for the assistance of patients' families.

VIENNA.

Measures against Tuberculosis.—Reforms in the Study of Obstetrics.—Vaccinating a whole Country.—Syphilis and Leprosy in Southern Austria.—Dangers of Anaesthesia.

THE alarming number of cases of tuberculosis in Vienna has for a long time been the cause of grave anxiety to all members of the Board of Health. The disease even bears the name of "morbus Viennensis" in our hospitals, or "morbus communis," because it is so very common among the lower class of the population. With a view of checking its increase the health department of the Ministry of the Interior a few days ago issued an order requiring all practitioners and all hospitals to notify every case of tuberculosis to the local authorities. By this order tuberculosis will be considered on the same level as diphtheria, scarlatina, measles, small-pox, and whooping-cough. Only cases in which the sputum has been examined and found to contain the tubercle bacillus are to be notified. The virtual effect of the new regulation will be to make it necessary to keep "dangerous" patients under control, and to teach them the laws of prophylaxis for the benefit of their family and surroundings. As, however, the number of sanatoria for pulmonary diseases is quite inadequate to the demand, a detention of all the dangerous cases is at present impossible.

The results of the Congress of Students of Medicine in Austria, held a few weeks ago in this city, are being made public. A resolution dealing with reforms in the teaching of midwifery and gynaecology was passed at the meeting, and the directors of the Gynaecological and Obstetrical Clinics have now published new regulations for students desiring to follow up their studies in these subjects. The student will be required to spend at least three times during the semester a week or a fortnight in the clinic, holding the post of junior dresser or assistant in minor operations; the number of clinical assistants to be increased to six, each having a small number of students under his special supervision. Every student will be required to have been present at least twice at labours, and to attend the gynaecological ambulatorium attached to each clinic. Thus the grounds of the complaint of the students that there was a lack of opportunity for study in these subjects will be removed.

Among the topics discussed at the Congress for Dermatology and Syphilis in Sarajevo (Bosnia) in the last week of September may be mentioned the subject of vaccination, syphilis, and leprosy raised by Drs. Glück and Kobler. Since 1880 systematic vaccination of the inhabitants of the provinces of Bosnia and Herzegovina, which were assigned to Austria by the Treaty of Berlin (1877) has been carried out. The reluctance of the Mohammedan population soon diminished, especially as the results were very favourable. Bosnia, formerly a hotbed of small-pox, is now entirely free from it, and in Herzegovina also it is a thing of the past. It was an experiment of vaccination on a grand scale. The scientific results are very remarkable. In epidemics the vaccinated were only attacked in very small numbers, and only in a mild form. Since 1901 not a single case of small-pox has come to the knowledge of the authorities in the two countries, whereas before the vaccination—which is compulsory—a large number of people succumbed to small-pox every year.

Syphilis is very common in Bosnia and Herzegovina, especially the secondary and tertiary stages. Primary lesions are very rarely met with, and it seems that they must in most cases be extragenital. The later manifestations are of a very severe kind, serpiginous forms being very frequent. Cerebral syphilis is rare, and tabes dorsalis less abundant than in more civilized regions. Leprosy occurs only in a few places in Bosnia and Herzegovina. Evidence in favour of the contagious nature of the disease is afforded by the case of a man who came from a leprosy-free country, from a healthy family, and married a girl who later on developed symptoms of lepra maculosa and anaestheticans. After living with her for two years he too showed signs of leprosy. As no fish nor maize is eaten in this country, there seem to be at least other causes as well as the two mentioned kinds of food which will produce lepra.

Statistics of chloroform and ether narcosis for the last three years, including those of all surgical clinics and departments in all the Vienna hospitals, show that only two deaths occurred during anaesthesia out of more than 30,000 operations. This ratio is regarded as extremely favourable, it being much smaller than at any other time since statistics have been kept.

MANCHESTER.

Lectures on Rays and Radio-activity: Ions and What they may Do.—The Rainfall of Manchester and other Districts.—The Royal Infirmary.—Analysis of Sewer Air.—A Novel Form of University Extension Lectures.

A LARGE number of medical men attended the first lecture of the course on Rays and Radio-activity delivered by Professor Schuster in the Physical Laboratory of Owens College on October 21st. The recent discovery of a group of metals which seem to be of an unstable nature and slowly to change into something else need not lead us to alter fundamentally our ideas of the constitution of matter. The surprising thing in connexion with the new discoveries is that they have not been brought about by our power to act on the atom by external agencies. The atom alters, but not under the influence of violent treatment or subtle persuasion, but rather under the action of some internal instability over which we have no control. The practical utility of the new metals has increased their market price fivefold or sixfold. Before proceeding to discuss the rays emitted by radium the lecturer referred to the "atomic" constitution of electricity. It followed atomic laws and had an atomic constitution. The term "atom" here was not used in the sense in which it was employed by the chemist. When an electric current was passed through an electrolyte each "ion" into which the electrolyte was decomposed carried with it a certain amount of ether + (positive) or − (negative) electricity, which was the same whatever the nature of the ion. When a current passed through a gas each part of the molecule of gas carried with it a + or − charge, which was again of the same amount whatever the nature of the gas, and was identical with that carried in electrolysis. When in a vacuum tube cathode rays were produced, each of the luminous particles behaved as if it carried a charge which, when measured, turned out again to be of the same amount. All these facts pointed towards this amount being the "unit" which was indivisible. Hence the use of the word "atomic" in connexion with the constitution of electricity. These "ions" or "ergons" of the physicist moved independently of matter. Compared in size with the molecules of a gas, they had to be represented by something many million times smaller, something represented by tenth to the twentieth power or thereabouts. In ordinary air there were about 3,000 in a cubic centimetre. Though not numerous, they produced important effects, and were constantly reproduced at the rate of 15 per second. The chemical constitution of the air seemed to be fundamentally the same from whatever source it was collected. There were, however, great differences in the ions, and they might be of great importance. Some persons could detect the approach of a thunderstorm, although there was no perceptible electrical effect before the storm broke out, or before the first flash of lightning. Experiments were shown whereby the number of ions in the air could be traced. Gases were "ionized" by a flame or very hot body, as well as by ultra-violet rays and *x* rays, but ultra-violet rays did so only at the surface of a body. Radium sets up ionization. Town air contained far fewer ions than air at the seaside or on mountains, especially if the town air were dusty. The nearer air was to its moisture saturation-point the smaller the number of ions it contained. Air charged with tobacco smoke also contained fewer. Cloud formation also diminished them in number. Obviously a study of these "ions" was of great importance to medical men. It had often been asked why certain medicinal waters produced better effects when consumed at their source than when they were bottled and consumed at home. This, as well as the beneficial effects of sea air and mountain air, might be due to these wonderful "ions," and it might be necessary to look to them rather than to any slight change in the chemical constitution of the atmosphere as the potent factors of health-giving breezes.

The present remarkable rainfall all over the country has led to comparisons of "areas" reputed to be "rainy." One inch of rainfall is equivalent to a gallon of water spread over two square feet, or 101 tons upon an acre of land. The mean annual rainfall in Manchester during the past 11 years is 29.650 in. The maximum fall of 32.988 in. occurred in 1894, and the minimum, 25.568 in., in 1902. Up to October 20th of

the present year the fall has been 29.206 in., of which 4.381 in. fell in September and 4.350 in. since October 1st. Surprising as these statistics are, the rainfall of Manchester is not abnormal. The average rainfall for England and Wales—over 10 years—is 32.290 in., and the corresponding average for Manchester is 29.394 in. The rainfall of London is 10 in. below the average for the whole country. Bristol has 32.59 in., Stonyhurst 48.16 in., Bath 30.79 in., Buxton 43.88 in. Even in intensity on occasion Manchester can be beaten. On September 3rd, one of our worst days this year, the Manchester record was 0.93 in., Liverpool 1.01 in., and Southport 1.39 in. London it appears is 12.88 in. above its average for the first nine months of the year, Birmingham 4 in., and Bath 5 in. The annual rainfall of the Lake District is 126.34 in. (at Seathwaite), North Devon 51.68 in., South-West Ireland 60.50 in., and in Northern Counties of Scotland 78 46 in.

The fifteenth annual medical dinner of the Owens College and Manchester Royal Infirmary was held in the new Midland Hotel last week, when Professor G. A. Wright, M.B., F.R.C.S., presided. The first instalment of £100,000 of the purchase money for the site of the Royal Infirmary has been paid to the trustees of this institution by the City Corporation. The title deeds, however, will not be handed over to the Corporation until the final instalment is paid.

The question of analysing the air in the Manchester sewers with a view to determining its injurious effect, if any, on the health of the public has been recently carefully studied by Professor Delépine and Dr. Fowler. Apparatus has been devised and will shortly be placed in positions for experimenting, and the results recorded.

A new departure has been made with regard to the teaching of practical bacteriology in connexion with the Public Health Laboratories of Owens College. A class, consisting of over twenty medical men from Burnley and the neighbourhood, has been formed and meets once weekly in the Technical Institute of Burnley. The course will consist of twenty meetings for practical work, and is conducted by Professor Delépine and his assistants.

CORRESPONDENCE.

THE BRITISH MEDICAL BENEVOLENT FUND: AN APPEAL.

SIR,—At the monthly meeting of the British Medical Benevolent Fund held here this afternoon, twelve members being present, I was called upon by a unanimous vote to make an appeal on behalf of the fund.

The circumstances are as follows. There were nineteen applications for help from medical men, their widows, or daughters; while at the opening of the meeting our Treasurer, Dr. West, announced that there was a deficit of £52, the account having been overdrawn to this amount in consequence of the urgency of the cases brought before the Committee in September. Notwithstanding this, the Committee proceeded to vote £39, making a total adverse balance of £91, in the hope that somehow or other the money would be got together rather than refuse the more distressful applicants the aid they need. They could not venture on more.

The following are examples of the distress the Fund is called upon to relieve, and it must be borne in mind that it is the only professional charity open for the wreckage of the profession.

Mr. C., aged 57, M.R.C.S., L.S.A. Suffers from varicose veins and ulcers, which have prevented active practice for some years past; now only able to earn about £20 per annum.

Miss B., aged 27. Suffers from acute spinal disease and has not walked for eight years. Only means of support 5s. a week allowed by a friend.

Mr. W., aged 50, M.R.C.S., L.R.C.P., who practised for many years in London; incapacitated by advanced valvular disease, with dropsy and embolism; savings exhausted; three children partially dependent.

Mrs. L., aged 49, a widow. Husband practised in the north of London; but made no provision for his wife, who has supported herself for several years as an obstetric nurse; now incapacitated by cataract in both eyes.

Mrs. B., aged 41, a widow. Husband had an excellent practice in the Midlands, but lost it through a five years' illness, leaving wife and four young children quite unprovided for.

Mr. H., aged 45, who practised in South Africa. Savings exhausted by a three years' illness. Honorary local secretary reports that applicant is nearly starving, and that his destitute condition is due to misfortune, not to any fault of his own.

Miss D., aged 49, whose father practised in Staffordshire; has supported herself as governess for thirty years, but health has now broken down.

The two last were on to-day's list. £5 was voted to one, and the other had to be postponed, as out of five new cases four were not even considered, owing to the impossibility of helping. Of the old cases, some were postponed in the hope of having money available next month, and to two or three quite small and inadequate grants were made.

The annuity department of the fund has continued to prosper, and has now a list of 115 rescued from actual destitution in their old age. Every really necessitous case over the age of 60 coming to the notice of the Committee is entered as a candidate, and as vacancies occur they are at once filled up from the list, after careful inquiry. Twenty-seven are now waiting their turn, and in 1902 fifteen were elected at ages varying from 90 to 60, amongst them a M.R.C.S. aged 74.

It is the donation department which is in need of help. Last year grants were made to 161 applicants, the amount voted being £1,723, mostly paid in monthly instalments, since this method has been found greatly to enhance the benefit to the recipients.

Times almost everywhere are bad, and the profession is suffering from the general financial depression, but we must not let the unfortunate of our number suffer from cold and hunger during the winter months, and look forward to Christmas and the New Year in actual privation.

There are few more piteous cases than those of widows and daughters of medical men left unprovided for by the premature death or totally inadequate earnings of the husband or father. Many of those who are ultimately driven to seek the aid of the Fund have maintained themselves for years till overtaken by old age or illness.

Donations may be sent to the Honorary Treasurer, Dr. West, 15, Wimpole Street; or I shall myself be happy to acknowledge them.—I am, etc.,

W. H. BROADBENT,
President of the Fund.

Brook Street, W., Oct. 20th.

PRELIMINARY EDUCATION.

SIR,—I thank you for your courtesy in sending me a copy of the BRITISH MEDICAL JOURNAL of October 24th, in which I have read with interest your leading article on "Medical Education." It is quite true that the remarks in the preliminary report of my tour in Canada and the United States regarding the period of time spent inside the colleges with purely secondary scholastic work somewhat detract from the observations which I make about the previous preparation of the students for professional training. Certainly the fact that in some engineering institutions a large amount of time is given to English, modern languages, and rhetoric shows that in the opinion of those in charge these subjects are not adequately dealt with in the secondary schools, although the students do not leave the latter until the age of 18. It also shows that the entrance examination is not in itself sufficiently stiff to weed out the undesirables. In regard to other subjects, I quite agree with you that physics and chemistry can be well taught, especially for subsequent medical training, in the secondary schools; whether they can be so well taught for subsequent engineering training is another matter entirely. My observations, however, led me to the conclusion that such good teaching of these subjects is not general in American secondary schools.

Referring to one other point, there is a widespread opinion in the States that in the engineering professions the young men should not expect to be in a position to take up actual professional work until they are at least 22 years of age, so that the opinion commonly accepted in this country that an American boy is at work long before an English boy is quite erroneous as regards the higher ranks of professional activity.—I am, etc.,

R. MULLINEUX WALMSLEY,
Principal, Northampton Institute, Clerkenwell, London, E.C.

October 28th.

THE NORTHERN UNIVERSITY TRIAD.

SIR,—I am obliged to the Principal of the University of London for his kind letter. Of course, in the absence of any published indication I could not know that he appeared before the Privy Council in another capacity, and representing another university.—I am, etc.,

VICTOR HORSLEY.

London, Oct. 27th.

SIR,—Yesterday an influential member of the Senate of the University of Cambridge accosted me, in some discomposure, to say that on an important public occasion—namely, in an address to the University of Birmingham—Sir Victor Horsley had stated that "the strenuous effort..... of Liverpool to

.....develop its College into a University.....was resisted by the University of Cambridge." My friend asserted, and with absolute truth, that this subject had never been discussed, mentioned, or even alluded to in the Senate of this University. (Here I may explain that in Cambridge the Senate consists of all Masters of Arts and Doctors of Faculties whose names are on the *Register*.) Turning from public action to private sentiment, my friend said further, and with no less truth, that as individuals the resident members of the Senate—probably without exception—welcome cordially every effort in all provinces of the kingdom to raise the standard of learning, whether by foundation of universities or in any other such ways as Liverpool and the several counties and cities may for themselves decide. Sir Victor Horsley's words were quoted to me as a life governor of the Yorkshire College, and a senior member of the Court of the Victoria University; but at this moment I called to mind a letter addressed by Principal Rücker to the British Medical Journal of October 24th, which I had not regarded as concerning business of mine, and had not read carefully. I have now read Sir Arthur Rücker's letter carefully, and I apprehend that as Sir Victor Horsley regarded Principal Rücker's action as representative of the London University, so he may have regarded some action of mine in respect of the disruption of the Victoria University, as representing the opinions of Cambridge. If Sir Victor put such a construction on my part, as a graduate and officer, in the affairs of my own Northern University, I venture to say that he is hardly to be excused in declaring on such fallacious grounds his censure of the University of Cambridge. Principal Dale is a member of the Universities of Victoria and of Cambridge, as I am; and for many years he was an influential resident member of the Cambridge Senate; Principal Dale threw himself into the separatist movement of Liverpool, but he was never construed as thereby implicating his Cambridge colleagues. Lord Spencer, and other public men who also spoke warmly on the one side or the other, never dreamed that they might be supposed thus to implicate in their opinions any other public bodies of which they were members.

Each and every member of the University Court of Victoria had given evidence in the past of his earnest desire to forward the higher education by local developments; they differed as to the means: some of us preferred to promote a great and growing University already in being; others preferred to separate the Colleges, and to rely on the vigour and endowments of the parts to achieve even a larger sum of success than the "Triad" could achieve. The minority may have been wrong; but, surely, to deprecate disruption of a university is a very different thing from opposing a charter to any one of its Colleges after disruption was virtually carried, and differs utterly from an attempt to drag in Cambridge as obscurantist, and as an opponent of new universities.

Finally, if Sir Victor Horsley was referring more particularly to my evidence against disruption before the Privy Council, let me remind him that in this evidence I plainly stated that I should confine myself to one argument only—namely, to the evil of multiplying yet more the number of bodies empowered to qualify in medicine—an evil already of large dimensions. Now in this opinion I have reason to think that Sir Victor Horsley and myself are at one.

It is with peculiar regret that I betray any resentment of a public declaration of Sir Victor Horsley at a time when the nation is sympathizing with him in the loss of his distinguished father, but the matter is one of too much importance to be ignored.—I am, etc.,

T. Clifford Allbutt, M.D.Cantab., D.Sc.Viet.

Cambridge, Oct. 26th.

DEPARTMENTAL SWEATING.

Sir,—I sympathize with "A Medical Fiscal Reformer" in the grievance he brings to our notice in the British Medical Journal of October 24th. In all trades there is a standard rate of wages paid weekly or fortnightly, as the case may be, and at least they are sure of the money, whereas professional men like ourselves have the ignominy and degradation of getting our money in as we can by weekly instalments, for which we pay our men a commission, and when there is the least depression in trade we are the first to be put off, the matter being settled and dismissed in a neighbourly fashion by the woman of the house remarking, "It is only the doctor's man; he must wait: he gets his money easily enough." As a matter of fact that is the hardest part of our work. Law has its plums; I know a magistrate's clerk who receives £400 per annum for a few hours' work per week. I presume he will contend that it is professional, of a highly responsible character, and not over-well paid.

Whereas in my own case during a recent epidemic of small-pox, I had the responsibility of human lives and suffering, entailing work both long and arduous, during which to save myself and as a protection to the inhabitants I engaged a medical man for hospital work, and had to pay a part of his salary out of my own pocket instead of being complimented on cutting short an epidemic.

If a person sends up a bundle of useless leavings to the hospital the good housewife is thanked for her gift. I was mulcted in a good sum for doing my duty, but 'twas ever thus. I, with your correspondent, put my fee second always, and with him wonder where the bank balance will come from and how the provision for old age is to be secured, for we do hasten on old age with all our might.—I am, etc.,

October 26th. A Sufferer.

THE OPERATIVE TREATMENT OF ASCITES DUE TO CIRRHOSIS OF THE LIVER.

Sir,—In the British Medical Journal for October 10th, 1903, p. 898, Mr. Sinclair White records "Two Cases of Ascites Secondary to Alcoholic Hepatitis Treated Successfully by Operation," and Mr. William Sheen also records an instance of operative treatment for cirrhosis of the liver. Our object in writing is to point out that each of the three cases had chronic peritonitis in addition to cirrhosis, as is shown by the description of the omentum and other parts of the peritoneum in each.

This chronic peritonitis seems to us, for reasons we have given elsewhere,[1] to account for the ascites in these three instances, for we have shown that when ascites is directly due to the cirrhosis the patients hardly ever survive the tapping more than a few weeks, but when the ascites is due to accompanying chronic peritonitis the prognosis is very much better, and it is just these cases which, in our opinion, are sometimes benefited by operation, and not those in which the ascites occurs as the result of uncomplicated cirrhosis.

The point has an important practical bearing, for, if the distinction is recognized, care will be taken in the future to operate only on those cases in which the ascites is due principally to chronic peritonitis. Our suggestion that in the three cases spoken of above, the ascites was not principally due to cirrhosis is further supported by the fact that not one of the three patients had jaundice or haematemesis.—We are, etc.,

W. Hale White.
H. Campbell Thomson.

London, W., Oct. 21st.

THE WAR OFFICE AND THE MEDICAL PROFESSION.

Sir,—I desire to call attention to what appears to be an attempt of the War Office to secure the services of members of our profession in cases of emergency for a paltry remuneration, with no proper agreement as to duties, and with no regard whatever for the inconvenience caused should such services be required. The following note was received by me from the principal medical officer of this district, and I understand a similar one has been sent very generally to medical men who live convenient to military stations:

——— Barracks, 1903.

Dear Sir,—In the event of mobilization of the troops for home defence are you willing to offer your services as civil medical officer at the rate of 12s. 6d. per diem to do duty with the troops at ——— ?—Faithfully yours,

———, P.M.O., etc.,
——— Division, ——— Army Corps.

In reply to this characteristic production I wrote asking some explanation and particulars, but received no reply. I trust no medical men have been foolish enough to give their names to such a vague agreement. The services of civil practitioners were much appreciated in the hour of need, and I believe the War Office should at all times have a number of names on its list, but there ought to be a regular agreement with some fixed remuneration whether their services be required or not. Why should the profession be treated differently to wealthy shipping companies?—I am, etc.,

October 21st. Protection.

[1] *Guy's Hospital Reports*, vol. xlix. p. 1; *Trans. Roy. Med. Chir. Soc.*, 1902, vol. lxxx.v.

THE FOOD AND OTHER FACTORS IN EDUCATION.

Sir,—The occasion of my former letter on the above subject was a leading article in the British Medical Journal dealing with the great importance of proper nourishment in education, and to it I beg to refer Dr. Miall for a sound opinion on that question. My purpose, however, was to direct attention to the conditions attending school life, which I hold to be prejudicial to health, and therefore opposed to the true interests of education. Loss of appetite, besides being an evil in itself, is a symptom of vital importance in the child, as indicating a low condition of health tending to illness and disease. In individual cases it gives rise to some anxiety and careful inquiry as to cause, resulting probably in removal of the child from school, and instructions to let him be as much as possible out-of-doors. When we find this symptom prevailing very generally among school children, we naturally look to school procedure for the cause. In view of the immense numbers concerned—practically the whole of the rising generation—and of its bearing upon the all-important process of growth and development, the inquiry is, I think, one of the utmost importance in relation to public health. Along with loss of appetite we also have a prevalence of headaches, nervous disorders, and ophthalmic affections intimately associated with school life and all pointing to the fact that the conditions are not according to health.

Dr. Miall asks: "Is not mental cultivation one of the elements of health?" To my mind this is like putting the cart before the horse, as it is certain that the highest attainable standard of health is a first condition of cultivation, which means promoting and guiding the natural process of growth and development. It is true that teachers profess to develop the mental faculties by means of school lessons; but this is possible only on the lines of normal and healthy action as indicated by the inclinations of the pupil. To ignore these instinctive promptings and employ punishments and prizes to enforce the learning of lessons arbitrarily imposed is, I hold, a most dangerous method of procedure in dealing with the young mind. In a matter of stone and lime some latitude might be allowed to an ingenious builder, although, even there, the best results are obtained from adhering strictly to architectural rules and principles, but when it is a question of brain cells and filaments, and of the whole infinitely delicate and mysterious structure of the human organism, the claim to proceed upon arbitrary lines would be simply ludicrous were it not so disastrous in its working. To illustrate this we have only to suppose a like method applied to the other natural activities in the young, keeping in view the immature and growing condition of the organism. What would be the effect upon nutrition of, day by day, placing before a number of children an assortment of foodstuffs selected and apportioned without regard to taste or appetite, compelling the swallowing of it by punishments, and offering a prize to the one who swallowed the most? We can scarcely conceive of any one being so foolish as to attempt to feed the stomach in this way. Is it any less foolish to apply such a method in feeding the mind, which is quite as efficiently provided by Nature with taste and appetite? Or again, suppose punishments applied as a means of keeping the muscles on the strain for so many hours a day, irrespective of any feelings of fatigue or dislike. Would such be promotive of growth and development? We have, or had, ample demonstration to the contrary in the physique of men in employments in which, as boys, they have been put to hard bodily work. Their health may not have been affected in boyhood, indeed they may then have been stronger than others of their age from premature development; but as men they are stunted in growth, with poor physique, and they break down early in life. Do we find, or have reason to expect, a different result from a like treatment of the young brain? The prevalence of headaches, nervous disorders, etc., so prevalent among school children, the alarming increase of insanity, as shown by the annual reports of the Lunacy Commissioners, and the increasing frequency of mental breakage in various forms coincident with educational (?) high pressure of recent years are very significant in this connexion, and cry aloud for inquiry into the *modus operandi* of the schools. There is also every reason for inquiry on the ground of educational results, as shown by the recent report of the Education Department on the Leaving Certificate Examinations of this year.

In all this I do not blame the teacher, who simply follows the methods to which he has been trained, and, as a rule, works hard and conscientiously in an uphill fight against Nature. But I would ask earnestly, Is it creditable to our profession, as the only exponents of physiological law, if we simply stand by content to deal with individual cases of illness, disease, and death, which we know to be the direct consequences of a wrong system of school procedure, giving no word of warning and affording no light and leading in a province so peculiarly our own?

I have to thank "M.D." for his sympathetic and instructive letter, but I would ask him, as a doctor and a father, to do something more than grumble at "the cruelty of the present school system." If all who think as he does would make a stand against the system in defence of the health and happiness of their children, and would make their voice heard and their influence felt as far as these could reach, much good might be done.—I am, etc.,

Dollar, N.B., Oct. 16th. John Strachan.

THE INFLUENCE OF ETHER ADMINISTRATION ON NITROGENOUS METABOLISM.

Sir,—My residence in Cape Colony is my reason for asking you to kindly insert a belated reply to Captain Statham's criticism on my article published in the British Medical Journal of June 20th.

This officer quite rightly takes exception to my "composite case," in which, as in his own corrections thereof, the gravest arithmetical blunders have been committed. This composite case was, of course, of no scientific value, and his objection to it, though correct, does not, as he seems to think, dispose of my research. My contention is that certain of the urines show that a very large amount of the total nitrogen is not accounted for by the hypobromite and Gowland-Hopkins processes, and this balance I have credited to xanthin bodies.

My critic takes exception to the large percentages of nitrogen credited to urea in certain cases on the grounds that: (*a*) Such percentages are greatly in excess of those previously determined; (*b*) that the hypobromite process itself is faulty. With regard to (*a*), it will be seen on reading through the bibliography quoted in my paper, that many most competent observers quote figures largely in excess of 90 per cent.; and with regard to (*b*), that my average percentage of total nitrogen credited to urea nitrogen is less than Paton and Eason's estimate[1] of 86 per cent., instead of being more, as on Captain Statham's showing it ought to have been had the hypobromite process given an excess error of 5 to 15 per cent.

The matter requires further research before the work of so many observers can be set aside.—I am, etc.,

Molteno, C.C. H. J. Pechell, M.B.

THE PHYSICAL EXAMINATION OF THE UPPER CHEST.

Sir,—I think that most of the statements by Dr. Lloyd Jones in his paper on the Physical Examination of the Upper Regions of the Chest, published in the British Medical Journal of October 24th, p. 1038, would be subscribed to by those possessing a practical acquaintance with chest diagnosis, but his remarks on the height of the apex in inspiration, and on auscultation of the apex appear to me to require modification. Dr. Jones finds that during inspiration, there is an increase of resonance at the apex which he regards as due to "changes in the resonating cavity" and not to an upward expansion of the lung itself. This is a point which I carefully went into some little time ago, and in a paper published in the *Lancet* of February 14th, 1903, I described and depicted an upward expansion of the apex in the normal chest after a deep inspiration to the extent of about ¼ in. Why this upward increase of resonance should be regarded by Dr. Jones and possibly by some others, as not indicating a true excursion on the part of the apex itself I am at a loss to understand, considering the pliant character of the apical roof. Proof, however, is better than supposition, and so I may quote the following remarks from Woods Hutchinson:[2]

"I happen to have seen personally two operations in the surgical clinic for the removal of huge masses of (tuberculous) cervical glands, in the process of which, the upper aspect of the pleural sac was freely exposed, and the way in which it plunged up and down with the respiratory rhythm was little short of appalling, and seriously added to the risks of the operation, and the possibility of an accidental puncture with the surgeon's knife. In one case, in a child about 7, the membrane appeared to have a range in the vertical direction of at least 1 in., if not 1½ in., although seen at the bottom of a gaping wound in the neck half filled with blood, its real range would appear distinctly exaggerated."

[1] *Journ. Phys.*, vol. xxvi, p. 109.

[2] *Studies in Human and Comparative Pathology*, 1901, p. 85, et seq.

He goes on to state that the actual state of activity of the pulmonary apex has been very much under-estimated, and that "after *post-mortem* rigidity has set in, the elastic and continually changing roof of the pleural dome becomes as rigid and unyielding as its bony walls."

Under the heading "Auscultation" Dr. Lloyd Jones speaks of the breath sounds at "the apex" possessing certain characters, but without specifying what particular part of the area of the apex he refers to. For instance, the breath sounds anterior to the margin of the trapezius are very different in character to those over the trapezius, and the same is true of the sounds heard over the posterior apex. Also there are differences in these regions on the two sides. This fact led me to adopt the plan of dividing the apical region into segments—namely, the anterior, middle, and posterior segments (*vide* paper in the *Lancet* referred to), and of describing the auscultatory signs on the two sides in terms of these segments. It is necessary, also, to adopt a different style of percussion over these individual segments owing to the differences in thickness of the overlying tissues.

One other remark, and I have done. It is sometimes stated that in a given number of cases the tactile vibration (or vocal fremitus) was greater on the right side in a certain percentage, while the vocal resonance was greater in a different percentage. Now, it may be asked how these phenomena can possibly vary in this way, seeing they are both due to the same vibrations communicated to the chest wall. Provided any vibrations are present at all, the vocal fremitus must of necessity correspond to the vocal resonance. I may add that I have never yet found these signs present at the left apex, having an intensity equal to (or greater than) that at the right, without at the same time finding other indications of abnormality at the left apex.—I am, etc.,

London, October 24th. A. G. AULD.

THOMSEN'S DISEASE.

SIR,—I have followed with much interest the correspondence on the above subject in your columns, as I myself am a sufferer from something of the same sort. Last spring, as a result of being put in a damp hotel bed, I had a sharp attack of muscular rheumatism. Ever since then the middle joints of the ring and little fingers of the left hand have been affected in the manner described by Professor Clifford Allbutt in his letter of October 3rd.

I have at present no other rheumatic symptom, and this affection is not particularly painful, but is exceedingly uncomfortable. It is most marked on waking in the morning or during the night, and is also troublesome after any period of rest, such as when sitting reading. It is sometimes on these occasions impossible to extend the ring finger without help from the other hand; it then extends with a snap. It is worse in cold, damp weather.

Various explanations have been given me by professional brethren. One says it is due to nerve pressure while riding my motor bicycle. The condition was, however, distinctly worse while I was staying at the seaside for a fortnight, during which period I did no cycling at all. Another says it is commencing osteo-arthritis. I hope not! No treatment has been tried, but I have considered the advisability of trying radiant heat or the effect of high-frequency currents. Should Professor Allbutt desire to further investigate the matter, I should be delighted to visit him at Cambridge in the hope that he might advise some suitable form of treatment.

I must say that the condition does not follow the description of Thomsen's disease or "myotonia" as given in the textbooks, but as bearing on the question of "trigger-finger" it may be of interest.—I am, etc.,

GODFREY LOWE, M.R.C.S., L.R.C.P., L.S.A.

Lincoln, Oct. 12th.

P.S.—I should say that the same fingers of the right hand are occasionally slightly affected.

THE ELECTRO-VIGOUR COMPANY.

SIR,—To the medical man of the world having his eyes fairly well open to what is going on around him in the domain of quackery, the exposure of the internal economy of the "Electrical Establishment," made at Bow Street on Tuesday, October 13th, can cause neither surprise nor astonishment. Some aspects of the case have called forth your editorial comment; a few more particular points deserve, I think, a little attention.

The Medical Defence Union went out of its way to prosecute; and if no private association of the kind takes upon itself such an invidious duty, proceedings to enforce the Medical Acts are impossible. The General Medical Council has no power to interfere; no public prosecutor is charged with the duty. The penal clauses of the Medical Acts are consequently almost entirely dead letters. Then again the man was not charged with any offence relative to the actual trade he was engaged in. For this he was not amenable to the law, nor need he, with small care, render himself amenable. His sole offence legally was the assumption of forfeited titles.

Lastly, the case serves to enforce the suggestion which I have lately put forth—namely, that the efforts of medical law reformers ought to be directed mainly to promoting the appointment of a Royal Commission to inquire into the whole subject of unqualified practice and quackery, including the manufacture and sale of quack medicines. Such an inquiry would prove and make plain that legislation directed against fraudulent quackery of every kind, although it might do something to the advantage of the profession, would do a thousand times more for the stupid, ignorant, or too confiding masses whose sufferings and weakness render them an easy prey to cynical knavery. It will be necessary to bring these facts home to the minds of our legislators before the smallest chance for the acceptance of any new project of medical law can be created. Proposed legislation of the kind is at present looked upon as a tradesmen's union move for selfish ends by the doctors. Every one who knows anything about the history of medical legislation must recognize that without the education in the question which members of Parliament almost entirely lack, no House of Commons will listen with patience to a Medical Act Amendment Bill; and I venture to prophesy that if the Bill of the British Medical Association now in preparation be presented without the preliminary action which I suggest, it will have not the smallest chance of favourable consideration, albeit backed, as it may be, by the united voice of 20,000 medical practitioners.—I am, etc.,

Cavendish Square, Oct. 26th. HENRY SEWILL.

"BUSINESS (AND MEDICINE) FOLLOWS BRAINS."

SIR,—In the latest number of *The Nineteenth Century and After* I find the following:

> The address of Sir Norman Lockyer, the distinguished President of the British Association, delivered at the meeting at Southport, attracted more public attention than is usually given to such utterances. Sir Norman, abandoning the line generally followed by Presidents of the British Association, discussed with great fulness, knowledge, and power one of those practical questions of the day which deal with the race between the nations of the earth for commercial supremacy. His contention was that "business follows brains," and that, unless brains are properly utilized in advancing our commercial and material prosperity, we must submit to defeat in the strenuous competition. The grave deficiency in our universities, both in numbers and equipment as compared with other countries, above all Germany and the United States, was pointed out by Sir Norman, who supported his contention by statistics that must have startled the country. His demand for a large sum of public money—in round figures twenty-four millions—is one that must be left to the decision of Parliament and instructed public opinion; but he has done good service in calling attention in this emphatic manner to one of the most serious of the many difficult problems which await the consideration of the statesmen of the future.
>
> WEMYSS REID.

I quote the foregoing paragraph for the benefit of the anonymous gentleman whose charming letter concerning eyestrain appears in the BRITISH MEDICAL JOURNAL of October 3rd. He correctly names himself "Jabberwocky"—as do I.—I am, etc.,

GEO. M. GOULD.

ISOLATION HOSPITALS.

SIR,—In an able letter in the BRITISH MEDICAL JOURNAL of October 17th, p. 1013, Dr. Mearns Fraser says: "We are told that it is very injudicious to disturb the public confidence in these institutions, and that all leading sanitarians have believed in them for years." The disturbance of public confidence is already a *fait accompli*, and this distrust is already extending to those who are responsible for the continuance of the aggregation system. That a formidable indictment of the "isolation" fad is on the way is beyond question. Before what tribunal shall it be arraigned? Will it be wise for the public health profession to leave to an incensed public the work already begun by Drs. Millard, Fraser, and others? What will be the effect on the position of sanitary officials? What on future sanitary progress?

As to the belief in the efficacy of the aggregation system, one wonders what have been the foundations of that belief. So far as I am aware there is only one instance on

record in which a responsible official, when advocating the building of these hospitals, was able to point to the good results which had already been obtained.

The late Sir Richard Thorne-Thorne, when giving evidence before the Royal Commission on Small-pox, pointed out that such results had accrued at Leicester and Warrington. Twelve months later he asked to be allowed to correct this statement, having discovered that "isolation" in both towns had been accompanied by a very decided increase in the number of cases of scarlet fever. The foundations of belief in the usefulness of these institutions must have been profoundly shaken by the accumulated experience of "isolation" during the last thirty years. Is it believable that if the end could have been seen from the beginning, any sanitary authority in the three kingdoms would now be the possessor of one of these pest houses? Is it conceivable that millions of money would have been spent on preventive institutions which not only do not prevent, but spread disease?

Can it be imagined that municipalities would thus have burdened themseves with debt had it been known that the "isolated"—compulsorily isolated sometimes—could not be shielded from second attack, from attack by that formidable aggregation disease post-scarlatinal diphtheria, as well as from those other contagia which bloom perennially in these institutions, and that on their discharge they would be a source of far greater danger to their surroundings than if they had been left alone? A man's faith must be great indeed when not a tittle of evidence is forthcoming of any good accruing anywhere, while the harm that is being done is a matter of daily experience.

The isolation hospital is a blunder. It will conserve the interests of the public health profession in the highest degree to confess it openly.—I am, etc.,

Nottingham, Oct. 17th. EDWARD DEAN MARRIOTT.

SIR,—I would strongly support Dr. Killick Millard's plea for an investigation, under the sanction of some recognized authority, into the results of hospital "isolation" as affecting the prevalence and fatality of scarlet fever. For the present position of the question is surely most unsatisfactory. Abundant evidence on the subject is obtainable, yet the apologists for the orthodox doctrine have scarcely attempted to support their contention by statistics, but have thought it sufficient to show—what nobody disputes—that the strongly presumptive evidence set forth in Dr. Millard's admirable paper (read before the Society of Medical Officers of Health) does not amount to absolute proof. His argument remains, in my opinion, substantially unshaken, and the conclusion to which it tends is the same as that to which my own experience was gradually leading me, even before I found confirmation of my doubts in the valuable *Contribution to the Natural History of Scarlet Fever*, by Dr. Wilson, in 1897. That experience has now extended over more than twenty years, during which period I have myself inquired into the circumstances of almost every case which has been reported to me. I think, therefore, that I am entitled to express my confident opinion that, in conditions such as those which exist in this neighbourhood, and so long as the disease is of the same mild type as that which has prevailed for the last five-and-twenty years, cases of scarlet fever can be sufficiently segregated in their homes, and for the most part best treated there. Certain it is that we in Windsor have had little cause to think that the health of the town has suffered at all from the want of a fever hospital, for in respect both of the frequency and the fatality of scarlet fever we have been eminently fortunate.

That a prima-facie case for investigation has been made out cannot reasonably be denied, and the duty of carrying it out, unwelcome though it may be, cannot be avoided without damage to the credit of the sanitary profession.—I am, etc.,

Windsor, Oct. 21st. EDWARD CASEY, M.O.H.

THE LEPROSY DISCUSSION.

SIR,—I am obliged to Mr. Hutchinson for the way in which he has referred to me in the BRITISH MEDICAL JOURNAL of October 17th. At the same time, I cannot let some of his remarks pass without comment. It is a little misleading for Mr. Hutchinson to write:

> I am glad, also, to recognize that such an opinion as to the uselessness of segregation must imply a disbelief in the contagiousness of the disease by any of the methods more generally suspected.

I have not stated that segregation was useless. On the contrary, I believe that segregation, such as it was, in mediaeval times for instance, was a factor in the eradication of the disease from our midst. The question of segregation is a complex one, and involves considerations of race, grade of civilization, climate, and so forth. I alluded to a specific example—namely, segregation for life of Europeans on an island, as appears to be the case in Cape Colony. If I were practising in Cape Colony I should certainly not notify any European case of leprosy that came under my notice, knowing the fate in store for the patient—a terrible one in the early stages of a disease that may go on for many years. A medical man's first duty, I take it, is to his patient. Disease, whether it be leprosy or syphilis, is not a crime. In Norway lepers are not strictly and absolutely confined to the hospital grounds. Moreover, they are sometimes—every second or third year—allowed to visit their relatives for a short time under certain regulations.[1] According to the new Russian laws, the domestic isolation of a leper is especially to be taken into account and each case judged on its merits.[2] Mr. Hutchinson's conclusion, therefore, that a disbelief in the contagiousness of the disease follows must fall to the ground. I was careful to say that I considered leprosy was an infective contagious disease, an opinion which must be shared by all who are able to look at the matter from the point of view of modern pathology and bacteriology.

As to Mr. Hutchinson's qualification of the contagiousness of the disease "by any of the methods more generally suspected," it is a little cryptic, as is also the reference to "commensal communication," which to me amounts to putting the fact of contagion into other words.

By all means let Governments all over the world, London included, take precautions against the sale and consumption of bad fish, and, it might be added, of bad meat, bad eggs, and other bad things, which the diabolical ingenuity of our fellow-men gets into our stomachs willy-nilly.—I am, etc.,

London, N.W., Oct. 19th. GEORGE PERNET.

SIR,—Mr. Hutchinson's paper on leprosy and the discussion which followed it at the recent meeting of the Association at Swansea will no doubt receive very wide attention by the medical profession, but I venture to think that the vast majority of observers in the tropics, who are brought into daily contact with the disease, will by no means favour the fish theory.

Doubtless Mr. Hutchinson and Dr. Abraham have founded their indictment against the "terrible" and "monstrous" "leper prison" of Robben Island after more than a mere flying visit to it, and the Government Asylum there has much deteriorated since the time I spent several weeks on the island some seventeen years ago; otherwise I fail to see the justification of such epithets used to such an institution.

The argument that leprosy is not contagious because the natives of Egypt do not dread it is but of little value; my experience of the African and Oriental, among whom I have lived for over twenty years, is that they dread no form of disease from fear of "catching it"—certainly not leprosy, small-pox, cholera, or plague, in even their most infective and repulsive stages.

The opinion of natives on the subject of infection and contagion are usually as valueless as their replies when cross-examined as to their food and manners and customs generally. Accurate observation of facts by trained medical men living among them and able to speak to them without the aid of an interpreter alone can be relied on.

If Mr. Hutchinson could spend only a few months in the Malay Peninsula he would find it a most interesting field of study, and would there learn a fact, of which from his remarks he is apparently not yet aware, that the Malay is not a great victim to the disease, though he is a great fish eater—fresh, salted, and smoked—and especially of *blotcham*, which is made from almost putrid fish.

Segregation may be hard on individuals, but it is absolutely necessary in leprous countries. Those who for years have lived in such countries will, I am sure, bear me out in this; for, until the etiology of the disease is known, it behoves us to guard against it by the only means in our power.—I am, etc.,

London, E.C., Oct. 17th. P. A. NIGHTINGALE, M.D.Edin.

SIR,—In Mr. Hutchinson's reply to comments on his fish-eating theory of leprosy he makes the following statement:

> In Egypt, under religions which discourage fish eating, the disease, in spite of absolute neglect of segregation, has almost died out.

[1] See my artfcle on Leprosy, *Quarterly Review*, April, 1903.

[2] Professor Dehio, of Dorpat, *Lepra Bibliotheca Internationalis*, vol. iv, Fasc. 1.

I do not know what Mr. Hutchinson's authority for this statement may be, but it is altogether misleading. It is true that the eating of preserved fish ("fisikh") is discouraged by certain Mohammedan sects but this is in theory only: in practice, fish eating is all but universal among the poorer classes.

Segregation was certainly taught by Mohammed in the saying, "Flee from a leper as you would from a lion," but this is as certainly neglected in practice. I know of no reliable figures on the incidence of leprosy either in the past or at the present time, but certainly it is still exceedingly common in Egypt. I do not know that any special conclusions can be drawn either in favour of or against Mr. Hutchinson's theory from Egyptian experience, but it is as well that the facts should be accurately stated.—I am, etc.,

Cairo, Oct. 20th. C. GOODMAN.

PAIN IN CANCER OF THE CERVIX UTERI.

SIR,—Had Professor Japp Sinclair considered the position with a little more calmness he would hardly have penned his denunciatory letter under this heading in the BRITISH MEDICAL JOURNAL of October 24th. Nor would he have credited me with the peculiar inference concluding his first paragraph.

The malady under discussion was tuberculosis, generally painless, or nearly so. It is now admitted that this affects the cervix much more frequently than had previously been supposed. It has further been proved, and amply proved, by the cases published by Lewers and others, that the lesion has always been mistaken for cancer, the uterus being removed under that impression. I think nothing more need be said in support of my plea for a little more caution in resort to hysterectomy.

But Professor Sinclair says "I do not know any one fact concerning cancer of the cervix more completely and unquestionably established than the comparatively late occurrence of pain as a symptom of the disease." In that I directly join issue with him.

It is dangerous to lay down a dogmatic rule in matters purely subjective. In no local cancer development is pain a more agonizing or earlier feature than in tongue epithelioma. Yet I not seldom see cases of advanced disease in which the patient states that he has little or no pain. Then, however, I invariably find one of two attendant circumstances: (*a*) The patient is continuously alcoholic; or (*b*) there is cerebral derangement.

So with uterine cervical cancer. I should be sorry to deny absolutely that pain may sometimes be absent, especially under these latter conditions. But otherwise, so far as I have seen, every true case of carcinoma is characterized *ab initio* by continuous gnawing lumbar pain and by marked impairment of general health. Hence with the utmost respect for Professor Sinclair's experience, and perfectly accepting his contention for early operation in undoubted cancer, I would still urge the desirability of hesitancy when this symptom is wanting.—I am, etc.,

London, W., Oct. 27th. HERBERT SNOW.

A MINISTER OF PUBLIC HEALTH.

SIR,—There are many who sympathize with Surgeon-General G. Evatt's letter, in which a plea is put forward for a Health Minister for India. Charity should begin at home, and the question comes, How is it possible to create as healthy a public opinion on the needs of State medicine as on our fiscal policy or War Office? It might be done by the slow progress of our educational system or by panic legislation or action, as was the case in so many sanitary improvements in the past (after cholera and small-pox to wit), or, as I suggest, by the creation of a popular "vote" in the interests of public health. Mr. Balfour recently expressed the striking sentiment of a "policy of humanity" being a "policy of wisdom." It applies with equal force to the prevention of disease. Such a popular "vote" could be formed if an Association, as the British Medical, united in the favourable consideration of the formation of an Imperial Ministry of Health with those Associations interested in the national health, together with representatives of governing bodies. By the continuous educational influence of such a Ministry, with a Minister at the head of a strong central department, trained in the science of preventive medicine, the physical conditions of the race would be safeguarded. The relations of such a Minister to the Cabinet might be determined in a similar way to that which Lord Rosebery would apply to the expert head of a reconstructed War Office. Further, if the subject were made "official" by the international committees of future hygiene and medical congresses, world-wide opinions could be obtained and sound conclusions arrived at.—I am, etc.,

Plymouth, Oct. 20th. F. BUSHNELL.

ETIOLOGY OF SLEEPING SICKNESS.

SIR,—I have just learnt that I have been credited in certain newspapers this week with the statement that a Liverpool student discovered the cause of sleeping sickness. I did not make any such statement, nor have any of the members of our Liverpool school ever made such a statement. We have not sent any expeditions from Liverpool to the sleeping-sickness area, with the exception of the expedition very recently sent to the Congo.

I would be much obliged if you could give publicity to this statement.—I am, etc.,

University of Liverpool, Oct. 23rd. RUBERT BOYCE.

OBITUARY.

ROBERT JOHN GARDEN, M.D.,

Consulting Surgeon, Aberdeen Royal Infirmary.

WE regret to announce the death of Dr. Robert John Garden, which occurred on October 22nd. Though in failing health for many months, it was only a few days ago that his friends realized that death was impending.

Dr. Garden graduated in 1872 after a brilliant career as a student. He then spent two years in the Continental schools, and returned to Aberdeen in 1874 to start practice.

In 1876 he was appointed to the surgical staff of the infirmary, and in the next year to the Hospital for Sick Children, an institution in the development of which he had taken an important part.

It was as Surgeon at the Infirmary that he won universal recognition as a most dextrous operator. His quickness of thought, his neatness and rapidity of action appealed strongly to onlookers. His teaching was emphatic and terse, showing wide scientific knowledge. His marked inclination to controversy showed clearly in his frequent attacks in lecture room and theatre on antiseptic methods, but his clear and logical teaching on clinical cases was of the greatest use to students who could appreciate the quickness of his observations and the quick logic of his mind.

For many years he was the Lecturer on Diseases of the Skin, and his handbook on the subject was valued by his students, illustrated as it was by his clinical demonstrations.

Abrupt and sometimes even disconcerting in his manner, he was nevertheless at all times ready to give his help and advice. Such qualities, accompanied by a keen and ever-ready sense of humour, made him a most popular teacher.

Dr. Garden, before his illness prevented his undertaking active work, had a large practice; and his loss will be felt throughout the town and county of Aberdeen as that of a strong personality and a most able surgeon.

WILLIAM DOBBIN, M.A., M.D., F.R.C.S.I.

IT was with deep regret that the profession in the North of Ireland heard of the death of Dr. William Dobbin, of Banbridge, which occurred on October 18th in a private hospital in Belfast. Dr. Dobbin had been ailing for the past few months, and had diagnosed only too accurately the nature of his illness. Owing to urgent symptoms he put himself under the care of Professor Sinclair who, assisted by Mr. Kirk, operated successfully as regards the immediate cause, organic stricture of the bowel. Unfortunately, heart failure supervened, and, although relieved, he gradually sank.

Dr. Dobbin was in his 61st year; he was educated in Belfast, and took some of the highest honours in his collegiate and university course; he was senior scholar in natural science, and took the B.A. degree with first-class honours and a gold medal; in 1866 he took the degree of M.A. with honours, and in 1867 that of M.D. in the old Queen's University. He became a Fellow of the Royal College of Surgeons, Ireland, in 1886, and from time to time he made valuable contributions to the medical journals. He was medical officer to the Banbridge Dispensary District. It was felt by many of those who knew him that his abilities required the scope of a large town for their full development, but he enjoyed a large and lucrative practice in Banbridge and the surrounding district, and his name was known not merely in the

county but throughout Ulster, and was a synonym not only for professional skill but also for sterling worth and great kindliness of heart.

Dr. Dobbin leaves a widow, a daughter, and two sons, with whom sincere sympathy is felt. One son is an M.B. of Edinburgh University, and the other is a member of the North-Eastern Bar.

W. E. IMAGE, F.R.C.S., L.S.A.

On September 26th there passed away peacefully, at Herringswell House, near Mildenhall, Suffolk, a member of the profession whose life, though he had long given up practice, is well worthy of record. Born eight years before the battle of Waterloo, Mr. W. E. Image was at the time of his death in his 97th year, and must therefore have been one of the oldest, if not quite the oldest, medical men in England. He began his professional life under Mr. Cross, a surgeon of some note, and entered as a student of Guy's Hospital, where he had as a comrade Cock of perineal fame. Later on he went to Paris, where he graduated in 1828 as Bachelier ès Lettres. There he married, but on the outbreak of the revolution in 1830 he returned to England. In the same year he became a Licentiate of the Society of Apothecaries, and in the year following a Member of the Royal College of Surgeons, of which body he was later on (in the year 1844) elected a Fellow. After thus qualifying for his profession he settled in Bury St. Edmunds, where he soon came to be held in the highest respect, not only on account of his medical and surgical knowledge, but also for his great skill and kindness towards those whom he helped in their bodily troubles. His great local reputation, however, was, perhaps, chiefly built up on the great interest he took in the question of toxicology in the Forties. At this time murder by arsenical poisoning was rife in the Eastern Counties, and it may fairly be said that the energy he displayed in connexion with this subject, and the clear evidence which he repeatedly gave at trials, materially contributed to wipe criminal arsenical poisoning off the list of crimes in East Anglia. At one sessions he gave evidence in as many as three cases of arsenical poisoning, and the last prisoner within this category, Katherine Foster, was executed at Bury in 1849 for the murder of her husband. From that time he sprang into wide repute, and up to the time of his retirement in 1873 the greater part of all the important consultation cases within a radius of twenty miles from Bury had the benefit of his knowledge. The last thirty years of his life he spent in well-earned leisured ease at Herringswell, but nevertheless took a considerable part in public affairs. Thus, he was a Justice of the Peace for Suffolk and Deputy Lieutenant, and in 1887-8 was High Sheriff of the county. He made some contributions to the *Transactions* of the Royal Medical and Chirurgical Society, and remained one of its Fellows up to the time of his death.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been made at the Admiralty: Edwin Folliott, Surgeon, to the *Imogene*, October 21st; Edward Haines, Surgeon, to the *Pembroke*, for Chatham Dockyard, October 21st; Joseph R. McDonnell, M.B., Fleet Surgeon, to the *Æolus*, November 3rd; Timothy J. Crowley, Fleet Surgeon, and Arthur F. Fraser, M.B., Surgeon, to the *Albemarle*, November 12th; Horace X. Browne, Fleet Surgeon, to the *Cambridge*, October 25th; John K. Robinson M.B., Staff Surgeon, and John G. Peebles, M.B., Surgeon, to the *Donegal*, November 5th; Evan St. M. Nepean, Staff Surgeon, and Stanley S. H. Shannon, Surgeon, to the *Centurion*, November 3rd; Joseph C. Wood, Staff Surgeon, to the *Arrogant*, November 3rd; James L. Smith, M.B., Staff Surgeon, to the *Revenge*, November 12th; William Bett, Staff Surgeon, and M. J. Laffan, Surgeon, to the *Bedford*, November 11th; Arthur J. Sheldon, Surgeon, to the *Hearty*, for the *Landrail*, November 12th; Henry Hunt, Surgeon, to the *Fire Queen*, additional, October 31st; William R. Harrison, Surgeon, to the *Tweed*, undated.

Fleet Surgeon Albert Charles Queely died on September 23rd, aged 55. He was appointed Surgeon, October 1st, 1872; Staff Surgeon, October 1st, 1884; and Fleet Surgeon, December 24th, 1893; retiring from the service January 20th, 1894. He was Senior Surgeon of the *Triumph* during the war between Chili and Peru in 1879-81, and was detailed for duty at the hospitals at Lima to aid the sick and wounded during the course of hostilities; for this he received the approval of the Admiralty and the thanks of the Provisional Government of Peru.

ROYAL ARMY MEDICAL CORPS.

Major J. W. F. Long, from half-pay, to be Major, with precedence next below B. A. Maturin, October 6th. Major Long was placed on half-pay on account of ill-health, October 5th, 1902.

Major M. T. Yarr, F.R.C.S.I., is seconded for service on the staff of the Governor of Bombay, October 9th.

EXCHANGES.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 3s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

A Major, R.A.M.C., serving at home is willing to exchange with an officer under orders for foreign service.—Address, "Fort Manoel," care of Holt and Co., 3, Whitehall Place, London, S.W.

A Captain R.A.M.C. writes to point out that the dinner of the Royal Army Medical Corps reported in the British Medical Journal of October 24th was a special dinner for the purpose of entertaining distinguished civilian guests, and that the annual dinner of the corps was held earlier in the year.

ARMY MEDICAL SERVICE.

Field Officer R.A.M.C. writes: Surgeon-General Evatt, A.M.S., has to retire from the service, owing to the age limit, on November 11th. That officer has great organizing ability, and the energy of a young man. Is it wise to allow such a man to drift away from all living touch with the service he has so many years zealously served? My reply is distinctly in the negative. One of the most important duties before those who have taken up the reorganization of the Army Medical Service is the evolution of two of its branches; I allude to (1) the volunteer companies of the Royal Army Medical Corps, and (2) the militia medical unit.

Those bodies, in conjunction, ought to be the reserves of the Royal Army Medical Corps, and for the important duty of thoroughly organizing such reserves I know of no officer better fitted than is Surgeon-General Evatt.

It would be, I am confident, a wise step to secure the continued service of that officer by appointing him, on his retirement from the active list, Inspector-General of all Volunteer and Militia units.

I believe that the work would be congenial to him, and I for one feel sure that we would soon have a Volunteer medical unit of high efficiency—one thoroughly organized, and ready at short notice to assist in times of stress the Royal Army Medical Corps.

INDIAN MEDICAL SERVICE.

Hatim Tai writes: With reference to the report regarding certain disabilities of service in the Indian Medical Service, published in the Supplement to the British Medical Journal of August 15th, p. clxxxviii, I write to point out that the remedies suggested—namely, that those officers who entered the service after having attained the age of 25 years, and who, unless promoted to the administrative grade, cannot serve for 30 years, with consequent loss of the full pension of £700, should be allowed to serve on up to a limit of 58 years, only partially meets the case. Would it not be better to allow such officers to add to their service a period, not exceeding 3 years, so as to enable them to count 30 years' service before attaining the age of 55 years? This would do away with the necessity of officers serving on in the executive grades beyond 55 years of age. The principle of adding periods of service on account of professional or special qualifications is not new, but is already laid down in the Civil Service Regulations of India. I regret that, for want of a copy of these regulations, I am unable to give a more exact reference.

IMPERIAL YEOMANRY.

David M. Macdonald, M.D., to be Surgeon-Lieutenant in the Scottish Horse, October 24th.

VOLUNTEER RIFLES.

Surgeon-Lieutenant T. S. Allen, 1st Volunteer Battalion the Duke of Cambridge's Own (Middlesex Regiment), resigns his commission, October 24th.

VOLUNTEER INFANTRY BRIGADE BEARER COMPANY.

Lieutenant D. J. Kelly, M.B., the Seaforth and Cameron Company, resigns his commission, October 17th.

The announcements under the heading "5th London," which appeared in the *London Gazette* of July 28th and September 25th respectively, are cancelled.

[The announcement of July 28th was to the effect that Surgeon-Captain J. G. Fraser, M.B., 10th Middlesex Volunteer Rifle Corps, was appointed Captain, 5th London Volunteer Infantry Brigade Bearer Company, and to command the said company; that of September 25th that he was to remain supernumerary while in such command.]

MEDICO-LEGAL AND MEDICO-ETHICAL.

FAITH HEALING IN IPSWICH.

At the Ipswich Borough Quarter Sessions on October 22nd, Alfred Ernest Sach was charged before the Recorder with having unlawfully and wilfully neglected Vera Dorothy Sach, a child of five years of age, in a manner likely to cause such child unnecessary suffering at Ipswich on August 13th.

Mr. Walter Stewart prosecuted and Mr. Wild defended.

It appeared that on August 8th the child in question was knocked down in Tavern Street, Ipswich, with the result that her leg was broken. Arthur Benham, the man who was driving the cart which caused the accident, subsequently called to inquire after the child, and advised the defendant to consult a doctor. The prisoner said that he trusted in the Almighty to heal the child. An inspector of the Society for the Prevention of Cruelty to Children subsequently called, when he saw the prisoner and his wife. The prisoner said he really did not know what the injuries were. He added that they belonged to the Christian Catholic Church in Zion, and it was against their creed to call in medical aid. The inspector then saw the child, which had been lying on its back since the accident. The right thigh was considerably swollen and there was a bruise above the knee-cap. The inspector pointed out that if the defendant persisted in not calling in a medical man he was committing an offence, and was liable to proceedings. The defendant said he was prepared to meet them, and informed

the inspector that he was going to consult an "evangelist" named Cantel. Eventually the inspector applied for a search warrant, and brought a doctor (Dr. Brown) to see the child.

Dr. Brown, in giving evidence for the prosecution, said that the child's right thigh had been fractured a little above the middle, and that the ends of the fractured bone were not in position; they were overlapping to the extent of about 3 in. In his view it would have been impossible for the ends of the bone overlapping in that way to have reunited properly without some human agency, while the contraction of the muscles would tend to increase the resulting deformity. Every movement of the limb would have caused the child pain

It was contended, on behalf of the defendant, that it was for the jury to decide whether or not the views of the defendant were so utterly wrong-headed and unreasonable that a person who held them and preached them would incur the penalty of the criminal law. It lay upon the prosecution to show them that the child was caused unnecessary suffering by the failure to call in Dr. Brown.

The Recorder: Or treated in a way likely to cause unnecessary suffering.

Mr. Wild, continuing, said that it looked as though the old days of intolerance were coming back when people were told that because they did not think as others thought they were to be punished, or at all events convicted. The defendant did not believe it was right to call in a doctor, and therefore he did not do it, but called in people who would be called as witnesses, and who took over the care of the child and prayed over it. The child had been cured by faith of knock-knees and of a bad squint. He would call evidence of Bright's disease and a broken arm cured by faith.

The Recorder: How can you do that, Mr. Wild?

Mr. Wild: It is for me to prove that this man's belief was founded on reason.

The Recorder; It has nothing to do with any belief whatever. It is the Act of Parliament.

In the course of his evidence the defendant admitted that three years ago he had met with a bicycle accident, and that he then called in a doctor. He prayed then that his shoulder would come right, but did not pray in faith. That was before he had become a member of this religious community.

Subsequently, a lady was called who said that she had been cured of Bright's disease by faith.

In the course of his summing up the Recorder said that persons might hold what views they liked so far as it only affected themselves, but if it affected little children under their care, and in consequence necessary medical aid was withheld, then they committed an offence against the Act of Parliament, and were liable. Here the defendant had intentionally neglected to call in a doctor. Was the treatment of this child likely to cause injury to the limb? The jury had heard the evidence, and would judge of that. The action of these people was dangerous, and was such as the Act of Parliament was aimed at.

The jury returned a verdict of guilty.

In imposing a fine of £20 the Recorder said that he did so not so much for the purpose of punishing the defendant personally, as to prevent others doing the same thing; and showing others who held the same tenets that they must not carry them into practice as regards little children.

AN ASSISTANT AND HIS ENGAGEMENT.

A CURIOUS case, which arose owing to the omission of a practitioner to require his assistant to sign a bond containing a covenant not to practise within a certain radius after the termination of the employment, was heard on October 20th at the Auckland County Court. It appears that a claim was made by Mrs. Ellis, of Bishop Auckland, widow of the late Dr. Ellis, against Dr. Malcolm Smith, formerly assistant to Dr. Ellis, for £50 damages for alleged breach of contract not to practise within a certain radius, and for an injunction to restrain such practice.

Mr. Mitchell Innes was for the plaintiff; Mr. Smith (solicitor) for the defendant.

It appeared that the late Dr. Ellis in April, 1902, wrote to Mr. Goodall, medical agent, Edinburgh, with a view to getting an assistant. He offered a salary of £150, with one month's notice, and also said that the assistant would be required to sign the customary bond. This covenant was never in fact reduced into writing, but Dr. Smith entered into the service of Dr. Ellis, and remained in that service until a few months later, when Dr. Ellis was killed in an accident. It was alleged on the part of the plaintiff that there had been a conversation between Dr. Smith and Dr. Ellis, in which Dr. Smith had expressed himself quite agreeable to the covenant. After the death of Dr. Ellis his widow came to an arrangement with a Dr. Farquharson, and it was arranged that Mr. Reginald Ellis should join the practice later. When Dr. Farquharson entered into the partnership he found that the covenant was not in writing, and he suggested that it should be so. Dr. Smith, however, subsequently gave a month's notice, and commenced practice in the town and continued to practise.

Mr. Reginald Ellis gave evidence to the effect that he had heard the conversation in which Dr. Smith had stated that he was willing to enter into the bond. The medical agent also stated that when Dr. Ellis applied to him it was expressly stated that the assistant "must be willing to sign the usual bond." These agreements were frequently left unsigned for months after the engagement.

Dr. Farquharson said that he delayed getting a signed agreement from Dr. Smith because he relied on Dr. Smith's word of honour, but he did place it before Dr. Smith so soon as he gave his notice.

The defendant, who said that he was a Bachelor of Medicine, denied in the course of his evidence that anything had been said about his signing a bond when he was employed. He had had two assistantships before this and was never asked to sign a bond. If it had been suggested in a conversation such as was spoken to by Mr. Reginald Ellis that a bond was required he would have felt himself in honour bound to sign it.

His Honour: Bound in honour and equity too.

His Honour, in the course of his judgement, said that the question of contract or no contract was fundamental. The only evidence in support of the contract was that so honestly given by Mr. Reginald Ellis, who would not go farther than to say that the defendant seemed to give an affirmative recognition to what his father said. He (the learned judge) did not think the contract proved, and therefore gave judgement for the defendant, with costs.

*** This case affords a striking illustration of the importance of reducing the contract between principal and assistant into writing at the earliest possible moment. In ninety-nine cases delay may be of no consequence; but in the hundredth case the parties are placed in a difficulty. Some members of the medical profession imagine—and indeed not without good grounds—that the covenant not to practise within the district is implied; but this is not so. Every contract in restraint of a calling is regarded with jealousy by the courts, and will only be enforced upon the clearest possible evidence. That evidence is best supplied by a written document. The defendant, it will be observed, stated in evidence that had the request to sign a bond been made to him by the late Dr. Ellis he would have felt bound in honour to sign it, and the judge observed that he would have been bound in equity also. There may be circumstances in the case with which we are not acquainted, but judging from the published report Dr. Smith seems to us not to have acted quite in accordance with the injunction to do unto others as he would be done by.

INQUESTS WITHOUT MEDICAL EVIDENCE.

A RECENT issue of the *Sunderland Daily Echo* contains an account of an inquest held concerning the death of a married woman who was found dead in her bed. She was living apart from her husband, and was given to habits of intemperance and to the taking of laudanum. A medical man was sent for, who found her dead, but he was not called to the inquest. The chemist who was in the habit of selling her laudanum gave evidence to that effect, and a "medical dispenser" who was called to the case said he saw the body and the bottles produced, both of which had contained laudanum. He found them on the table; one contained an ounce, and the other half an ounce. No necropsy was made, but the jury decided that death was due to an overdose of laudanum.

In another case a boy, aged 9, complained of stomach-ache: a medical man was sent for, but found the boy dead on his arrival. An inquest was held in due course, but no medical evidence was called or necropsy made. The jury were satisfied, however, to return a verdict that the deceased died from "natural causes, probably inflammation of the bowels."

*** We need hardly say that in both the above cases the coroners were solicitors, or they would hardly have been content to record verdicts full of such doubt and uncertainty. Such inquests conducted without medical evidence become really a farce, and bring the office of coroner into disrepute. It is not to be wondered at that medical practitioners frequently call our attention to these cases, because they know that if inquests are held in the manner described neglect and even crime may be committed with impunity, if the only certain means for its detection is dispensed with and ignored.

DR. JOHN WELCH (Chester) writes to inform us that recently he was called by the police to attend a boy who had been dragged out of a canal. After artificial respiration had been performed some time he had to pronounce life extinct. He states that he was not called to give evidence at the inquest, and that he has received no consideration for the services he rendered at the time of the death.

*** We consider that our correspondent should have been called to give evidence at the inquest, but the coroner is not bound by law to call medical evidence, if the jury are satisfied to return a verdict without it. This is usually a very unsatisfactory mode of procedure. If the police called our correspondent to the case he can claim the small fee allowable for that purpose.

THE STATUS OF A VETERINARY SURGEON.

MR. GEO. THATCHER (Solicitor to the Royal College of Veterinary Surgeons, London) writes: My attention has been called to a paragraph in the BRITISH MEDICAL JOURNAL of October 17th as to the status of a veterinary surgeon and his right to exemption from service on juries, and I would venture to traverse your dictum that a veterinary surgeon is not a medical practitioner. Your quotation from the Juries Act for England is practically correct, and the clause in the Irish Juries Act is similar, except that the words there are "licensed medical practitioners," instead of "registered medical practitioners," as in the English Act. In Ireland it has been decided in the case *re* Allen, 37, *Irish Law Times*, C.C.R. 154, that a veterinary surgeon is a licensed medical practitioner, and consequently exempt from service on juries.

Veterinary surgeons first obtained any rights under their charter of 1844, which recognized the art and practice of veterinary surgery and medicine as a profession. The Juries Act was passed in 1870, and at that time there was no recognized register of veterinary surgeons in existence. By a Supplemental Charter of 1876 a Register of Veterinary Surgeons was established and by the Veterinary Surgeons Act, 1881, only persons on this Register or holding a veterinary certificate of the Highland Society were entitled to call themselves veterinary surgeons. The Act of 1881, Section 11, defines veterinary surgery as the art and science of veterinary surgery and medicine, and it seems to follow that a person who practises medicine must necessarily be a medical practitioner, and, being on a register recognized by law, seems to come within the definition of a registered medical practitioner. At all events that is the contention; and a case will shortly be brought before the Divisional Court in this country for the determination of the question.

It must be remembered that the qualifications of a veterinary surgeon are very different to what they were even when the Act was passed; a student must produce a certificate showing that he has passed a test in general education which is almost precisely the same as that required by the General Medical Council for their students; he must pass four severe professional examinations and study at some recognized school for four years. I enclose you a syllabus, from which you will be able to judge of the quality and severity of the examinations and course of study, and I beg you to refrain from any further adverse comment until after the case I have mentioned has been disposed of. Trusting to your fairness and courtesy to insert this explanation after your comment.

MEDICAL WITNESSES' FEES AT ASSIZES IN CIVIL CASES.

M.—(*a*) The fees allowed at assizes courts are at the rate of 1 guinea a day, with travelling expenses. (*b*) The solicitor engaged in the case will no doubt inform our correspondent as early as possible the day on which it is expected to be taken, but it is certainly advisable for him to engage a *locum* for a week, as he is very likely to be detained for two or three days. (*c*) An arrangement should be made beforehand with the solicitor, when giving a *précis* of evidence, that a fixed sum, say 10 guineas, should be paid to our correspondent to compensate him for his trouble, loss of time, and expenses, in addition to the guinea a day. Whether the case is lost or won makes no difference as regards the medical witness's fees.

MEDICAL DEFENCE.

The following is a by-law of the New York State Medical Association relative to suits of alleged malpractice to be defended by the Association:

"The Council shall, upon request and compliance with the conditions hereinafter provided, assume the defence of suits of alleged malpractice brought against members of this Association. The Council shall not undertake the defence of any suit based upon acts prior to the qualification of the accused as a member of the Association. A member desiring to avail himself of the provisions of this section shall make application to the Council through the Secretary, shall sign a contract renouncing his own and vesting in the Council sole authority to conduct the defence of said suit or to settle by compromise, and shall make such other agreements as the Council may require. The Council shall thereupon contract with said applicant to take full charge of said suit, to furnish all necessary legal services, to pay all necessary expenses, and not to compromise said suit without consent of the accused, but the Council shall not obligate the Association to the payment of any damages awarded by decree of court or upon compromise."

A movement is in progress to bring about the amalgamation of the New York State Medical Association and the Medical Society of the State of New York.

HORSE OR MOTOR CAR?

S. A. M. writes that he has recently joined another practitioner in partnership. To work the practice two horses have hitherto been used. One of the partners thinks that the working expenses might be lessened if, instead of one of the horses, a motor bicycle or motor car were employed. The other does not agree. Would it be fair for each partner to provide his own means of getting about?

*** It is a very common arrangement in medical partnerships for each partner to supply himself with the mean of getting about, so that he may profit by economy in this respect; but it is not allowable to extend such economy to the detriment of the common practice.

ADVERTISING.

Perplexed writes: Much indignation has been caused in Manchester medical circles by the insertion several times of the following advertisement in the *Guardian*, a non-medical paper:

NOTICE.—Qualified Members of the Medical Profession are not allowed to advertise themselves in any way, or to advertise any remedy or medicine for the cure of disease, under a penalty of being judged guilty of infamous conduct in a professional respect and their names removed from the *Medical Register*.

It can be clearly seen that such advertisement is not authoritatively public, and I should like to know what is meant by inserting such a notice in a non-medical paper.

The advertisement has also appeared in the *Tyldesley Weekly Journal and Atherton News*.

*** We do not see the grounds for the indignation said to be aroused. The doctrine appears to be sound and should not become offensive because it appears in a non-medical paper. If it is of the nature of preaching to the converted, medical circles in Manchester should not be irritated by it. It may be interesting to note that the following advertisement appears at frequent intervals in the London newspapers:

THE STOCK EXCHANGE.

NOTICE.

No MEMBER of the STOCK EXCHANGE is ALLOWED to ADVERTISE for business purposes, or to issue Circulars to persons other than his own principals.

Persons who advertise as brokers or Share dealers are not members of the Stock Exchange, or under the control of the Committee.

A List of Members of the Stock Exchange who are stock and share brokers may be seen at the Bartholomew Lane entrance to the Bank of England, or obtained on application to

EDWARD SATTERTHWAITE,
Secretary to the Committee of the Stock Exchange.
Committee Room, The Stock Exchange, London, E.C.

FEES FOR "MEDICAL VISITATION" OF LUNATIC.

F. W.—Without a knowledge of all the circumstances, the fees paid for the patient of unsound mind at the "private house," and to the inquirer himself for his attendance, it is difficult to answer the question. If the case was an ordinary one, so that the fortnightly examination and entries were easily made by the general practitioner, perhaps half a guinea a fortnight would meet the matter.

MEDICAL ADVERTISING IN LAY NEWSPAPERS.

Pons asks whether he might advertise in a daily newspaper his willingness to take charge of a boy of delicate health wishing to spend the winter abroad, providing that he omits his name and all reference to his qualifications, except that he is a medical man.

*** We have repeatedly expressed our opinion that such advertisements should be confined to the medical press.

THE DUTIES OF A PUBLIC VACCINATOR.

M.R.C.S.—We are strongly of opinion that a public vaccinator should be most careful to avoid poaching upon the patients of other practitioners with whom his public duties may lead him into contact. If, in the case stated, a public vaccinator undertook charge as requested, he would give just cause of complaint to the regular medical attendant.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

Sanitary Science Examination.—The following candidates have satisfied the Examiners in both parts of the examination, and are entitled to the Diploma in Public Health:

T. Adam, J. Beard, C. S. Brebner, D. Brough, W. F. Brown, P. J. Cammidge, P. L. L. Craig, T. Divine, F. P. Franklen-Evans (St. John's), Lila Stevenson Greig, A. Harris, A. King, L. Kingsford, J. McGlashen, W. Moir, J. Owen, J. S. Purdy, J. E. Sandilands (Trin.), A. B. Smaliman, D. J. Smith, G. W. Smith, J. C. Wilson.

Botany.—Mr. F. F. Blackman, St. John's, has been appointed deputy for the Reader in Botany, Mr. F. Darwin, M.B., F.R.S., during his absence from Cambridge.

Examiners.—The following have been appointed Examiners for medical and surgical degrees:—Chemistry: J. E. Purvis, St. John's, and H. O. Jones, Clare. Physics: P. V. Bevan, Trinity, and S. Skinner, Christ's. Biology: A. E. Shipley, Christ's, and F. F. Blackman, St. John's. Anatomy: Dr. A. Hill, Downing, and Dr. A. Birmingham, Dublin. Physiology: W. M. Fletcher, Trinity, and Dr. G. T. Brodie, London. Pharmacology: Dr. J. B. Bradbury, Downing, and Sir T. R. Fraser, Edinburgh. General Pathology: Professor G. S. Woodhead, Trinity Hall, and Professor S. Delépine, Manchester. The Examiners in medicine, surgery, and midwifery were appointed last term.

Honorary Degree.—The complete degree of M.A., *honoris causa*, was on October 29th conferred on Mr. Howard Marsh, the Professor of Surgery.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ANNUAL REPORT OF THE COUNCIL, 1903.

The annual report of the Council for the year August, 1902, to August, 1903, has been issued.

Annual Meeting of Fellows and Members.—The resolutions passed at the annual meeting of Fellows and Members on November 20th, 1902, are duly recorded, and the results of the consideration given by the Council to the resolutions in question. Delegates appointed by the Royal Colleges of Physicians and Surgeons to consider the practicability of combining with the University of London for a system of common examination for a medical degree decided by 9 to 5 against the proposal.

Inspection of Examinations.—The General Medical Council having decided to inspect the First Examination of the Conjoint Examining Board, Dr. B. C. A. Windle and Professor J. Campbell Brown, the visitor and inspector appointed for the purpose, furnished a report to the General Medical Council. In respect to this report the Council of the College remark that the visitor and inspector "have no fault to find with the status of the examiners, with the discharge of their duties, or with the arrangements of the examination." Nevertheless the General Medical Council considered the examination insufficient, and adopted a resolution that the courses of study in many of the teaching institutions which had been recognized by the Examining Board in England, but not approved by the General Medical Council, were in the opinion of that Council insufficient. Upon this a conjoint Committee of the Royal Colleges recommended that the form of the examination should be altered, so as to encourage a more thorough and practical course of instruction in the subjects of the examination—namely, Chemistry, Physics, and Biology. These recommendations have been approved by the College of Physicians, but the Council of the College of Surgeons did not consider them until the present month (October), so that their decision does not appear in the annual report.

Alteration in Regulations for Diplomas.—The report notices small alterations in the regulations for the Fellowship, for the licence in dental surgery, and for the diploma in Public Health.

Disciplinary Measures.—A member has been removed from the College List in consequence of misconduct (circulating handbills of an objectionable character); and the name of one person from the *Dentists' Register* (for wrongfully assuming the title "L.D.S., R.C.S.")

The Brussels Conference on Venereal Diseases.—Sir Alfred Cooper's report on the Brussels Conference regarding syphilis finds a place in the report.

Inquests in London.—The College Council having received a letter from the London County Council resolved that it was desirable that necropsies in inquest cases of a special nature should be entrusted to specially skilled pathologists; but would not suggest the names of well qualified pathologists to make the necropsy and give evidence in such cases. They also considered that the remuneration offered, namely, two guineas for the services required from medical men so highly accomplished as skilled pathologists, was inadequate.

Prizes and Gifts.—The award of the Jacksonian Prize, and of the John Tomes Prize; the celebration of the last Hunterian Festival; and the enumeration of the lectures delivered during the past year in the College; the closure of the experimental laboratory and research workrooms of the laboratories of the two Colleges; and the acquirement of a marble bust of the late Sir W. MacCormac and of a portrait of the late Mr. H. Hancock, and of certain objects of antiquarian interest are all duly set forth. The bequest of the late Mr. J. W. Groves for the benefit of the museum will, it is stated, probably not be far short of £30,000.

Finances.—The finance of the College shows that whilst the income for the past year was £26,421, the expenditure for the same period was £24,416.

Diplomas Issued.—Diplomas were issued during the year to 450 members and 59 Fellows.

Miscellaneous.—The death of Mr. William Cadge; the attendances of members of the Council at councils and committees; the elections to the Council and of its members to various offices; and the additions to the museum and to the library, conclude the body of the report.

Appendices.—In appendices are given the returns of the results of professional examinations, the annual statement of receipts and expenditure, and lists of Fellows (26), and members (253) deceased during the year.

Annual Meeting.—The report, it is notified, will be laid before the meeting of Fellows and Members at the College on Thursday, November 19th, at 3 p.m.

UNIVERSITY OF EDINBURGH.

Graduation Ceremonial.

A SUPPLEMENTARY graduation ceremonial took place in the McEwan Hall of the University of Edinburgh on October 17th, when degrees in Arts, Science, and Medicine were conferred. Principal Sir William Turner addressed the new graduates in brief terms, and on behalf of the Senatus Academicus offered them good wishes for success in their various departments of life. He hoped they would keep in view that each one of them was a representative of the University, and that the honour, the dignity, and the reputation of their Alma Mater were in their keeping. The following degrees were then conferred:

Doctor of Medicine.—E. T. Potts, M.B., Ch.B. Thesis on Adenoid Vegetations in Children.

Bachelor of Medicine and Master of Surgery.—F. R. Bremner, M.A.

Bachelor of Medicine and Bachelor of Surgery.—R. T. G. Aickin, F. Ali, B.A., J. Allan, M. A. Ash-Kenney, T. C. Blackwell, W. A. Brown, B.Sc., E. E. Cassady, J. W. Cathles, A. B. Cox, W. B. A. K. Cullen, G. G. Cumming, G. A. Davies, B.A., J. Findlay, A. C. Geddes, W. Godfrey, W. D. S. Harrison, J. O. Heyns, A. F. Hughes, M. I. A. Khan, J. M. Lovett, T. A. MacKenzie, W. Mackenzie, M.A., B.Sc., C. E. Marshall, P. W. Mason, J. H. C. Orr, T. C. E. Parry, W. H. Simpson, T. T. Thomson, E. A. Turpin, Caroline Twigge, J. A. L. Wallace, and D. C. Welsh.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

AT a meeting of the College held on October 21st, the following gentlemen, having passed the necessary examinations, were admitted Fellows of the College:

N. N. Blanchard, L.R.C.S.E.; H. N. Barnett, L.R.C.S.E.; R. A. Belilios, M.B., Ch.B.; J. M. Bowie, M.D., M.R.C.P.E.; P. Carr-White, M.B., C.M., Major I.M.S.; R. L. Davies, M.B., L.R.C.S.E.; G. Day, L.R.C.S.E.; S. Gramshaw, M.D., L.R.C.S.E.; J. A. Hamilton, M.B., C.M., Captain I.M.S.; L. F. Hemmans, M.B., Ch.B.; W. S. Kerr, M.B., C.M.; C. E. Lester, L.R.C.S.E.; P. Murray, M.B., Ch.B.; R. Odell, M.R.C.S.Eng., L.R.C.P.Lond.; G. H. Peake, L.R.C.S.E.; L. F. Robertson, M.D., M.R.C.S.; W. M. S. Robinson, L.R.C.S.E.; S. Ryan, L.R.C.S.E.; A. Stookes, M.B., L.R.C.S.E.; W. J. Stuart, M.B., Ch.B.; W. H. Swaffield, M.B., L.R.C.S.E.; and F. W. K. Tough, L.R.C.S.E.

VICTORIA UNIVERSITY OF MANCHESTER.

The Chancellorship.

EARL SPENCER has written to the Convocation of the University of Manchester saying: "I wish to comply as far as possible with your flattering request that I should continue Chancellor, and, at all events for the present, I shall not press my resignation on the University."

Representative on the General Medical Council.

At the next Convocation the following resolution will be moved: "That in the opinion of Convocation it is desirable that a representative of the Victoria University of Manchester upon the General Medical Council should be elected by the medical graduates who are also members of Convocation."

SOCIETY OF APOTHECARIES OF LONDON.

PASS LIST, October, 1903.—The following candidates passed in:

Surgery.—J. Bromley (Sections I and II), Guy's Hospital; A. D. Edwards (Sections I and II), Cardiff and London Hospital; F. H. Hand (Section I), St. Mary's Hospital; C. H. Pring (Section I), Westminster Hospital; D. A. Stepney (Section I), Royal Free Hospital; A. J. Urquhart (Sections I and II), Adelaide and Guy's Hospital.

Medicine.—C. E. Adams (Sections I and II), Guy's Hospital; F. H. Hand, (Section I), St. Mary's Hospital; T. W. S. Hills (Section II), Cambridge and St. Mary's Hospital; K. R. Jay, Royal Free Hospital; F. C. R. M. Knight, Guy's Hospital; D. J. Lewis (Sections I and II), London Hospital; W. S. Lewis (Section I), Birmingham; A. J. Urquhart (Sections I and II), Adelaide and Guy's Hospital.

Forensic Medicine.—C. E. Adams, Guy's Hospital; A. Anderson, Leeds; K. R. Jay, Royal Free Hospital; D. J. Lewis, London Hospital; W. S. Lewis, Birmingham; A. Rogers, Cardiff and St. Mary's Hospital; J. W. Rollings, Charing Cross Hospital; A. J. Urquhart, Adelaide and Guy's Hospital; S. Zweiback, Konigsberg.

Midwifery.—K. Heanley, Royal Free Hospital; P. S. Klots, Leyden; J. W. Peatt, London Hospital; A. J. Urquhart, Adelaide and Guy's Hospital.

The Diploma of the Society was granted to C. E. Adams, A. D. Edwards, K. Heanley, T. W. S. Hills, K. R. Jay, D. J. Lewis, A. J. Urquhart.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

THE PUBLIC VACCINATORS' ASSOCIATION OF ENGLAND AND WALES.

A MEETING of this Association was held at the Hotel Cecil on Friday, October 23rd, and was largely attended. Dr. Climson Greenwood, the President, took the chair at the commencement.

After the usual preliminaries, the Chairman proposed that of "The Boards of Guardians." In the course of his remarks complained of the attitude taken by some Boards with regard to the fees of public vaccinators. He thought that an important public position should not be treated as to a professional man, often a university graduate, for a visit, frequently of a by no means short duration, for something he could not understand; and it seemed to him that both them as public officials and also to the profession to which they belonged.

Mr. List, Clerk to the Croydon Board, in responding, said that that Board had always highly valued the services of its public vaccinators, and never grudged them their fees, which were paid on a scale above the minimum laid down by the Local Government Board.

Mr. Stuart Sankey proposed "The Visitors," and Sir Wm. Church, in responding, expressed his opinion of the important services rendered to the community by public vaccinators. When considering their fees, it ought to be clearly shown to the public how small they were in the gross when compared with the tax on the ratepayers caused by small-pox epidemics. The Imperial Vaccination League had endeavoured to do this, and had done much valuable work. He alluded to an opinion he had heard expressed by a celebrated African explorer, who had told him of the eagerness shown by natives of Central Africa to be vaccinated. This gentleman had little sympathy with the antivaccinist, and expressed surprise that his intelligence in this matter should be inferior to that of African savages.

Dr. D. B. Balding said that he responded as a public vaccinator of the old régime and one who had had no experience of the present Act. In the past he had often regretted the inefficient character of much of the vaccination he had come across. He was glad to find that under the new law vaccination had become far more efficient.

Mr. W. D. Elsam said that he spoke as a vaccination officer, and claimed for the class to which he belonged a share of the merit for increased efficiency of public vaccination. They prepared the way for the public vaccinator, who would be unable to carry out his duties without their assistance.

Dr. Foster J. Palmer proposed "The Representatives of the Public Vaccinators' Association before the Departmental Committee of the Local Government Board," and especially eulogized the work of Dr. Cope, who seemed acquainted with every detail of vaccination law. His evidence before the Committee must have been of the greatest importance, and he felt sure their case could not have been in better hands.

In responding, Dr. Cope gave a short account of the evidence given by him and his colleagues. He had formed the impression that the logic and strength of their case had impressed the Committee, and that at least there would be no attempt made to reduce the present minimum.

Dr. Arthur Drury said that the present inquiry had involved the representatives in much extra work. Information had been obtained which had brought into prominence important matters hitherto imperfectly recognized connected with the extent of the duties of public vaccinators.

Dr. C. J. Palmer proposed "The Chairman and Honorary Secretaries of the Representative Councils," and pointed out how largely their organization had increased through them, and commented on the healthy state of their numerous branches throughout England and Wales. This was acknowledged by Dr. Lovell Drage and Dr. S. Woodcock, the former intimating that in his opinion it was a pity that the work of the Association could not be done by the British Medical Association.

Dr. V. A. Jayne proposed "The Health of the President," who, in responding, deprecated any eulogium on his own services, and said that the thanks of the Association were rather due to Dr. Cope, who ought to occupy his place, and to Mr. Charles Greenwood, through whose organizing capacity much of their present success had been attained.

"The Health of the Organizing Secretary" was then drunk with musical honours.

EPIDEMIC MORTALITY IN LONDON.

[SPECIALLY REPORTED FOR THE BRITISH MEDICAL JOURNAL.]

THE accompanying diagram shows the prevalence of the principal epidemic diseases in London during the third, or summer, quarter of this year. The fluctuations of each disease, and its relative fatality as compared with that recorded in the corresponding periods of recent years, can thus be readily seen.

Small-pox.—There were 3 fatal cases of small-pox in London last quarter, against 5 and 2 in the two preceding quarters; the corrected average number in the third quarters of the ten preceding third quarters being 25. Of these 3 deaths, 2 belonged to Lambeth and 1 to the City of Westminster. The number of small-pox patients admitted into the Metropolitan Asylums Hospitals during the last quarter was 120, against 39 and 167 in the two preceding quarters; 21 cases remained under treatment at the end of September, against 13 and 57 at the end of the two preceding quarters.

Measles.—The deaths referred to measles, which had been 671 and 759 in the two preceding quarters, declined again last quarter to 247, and showed a decline of 204 from the average number in the corresponding periods of the ten preceding years. Among the various metropolitan boroughs, measles was proportionally most fatal in Fulham, St. Pancras, Finsbury, Shoreditch, Stepney, and Battersea.

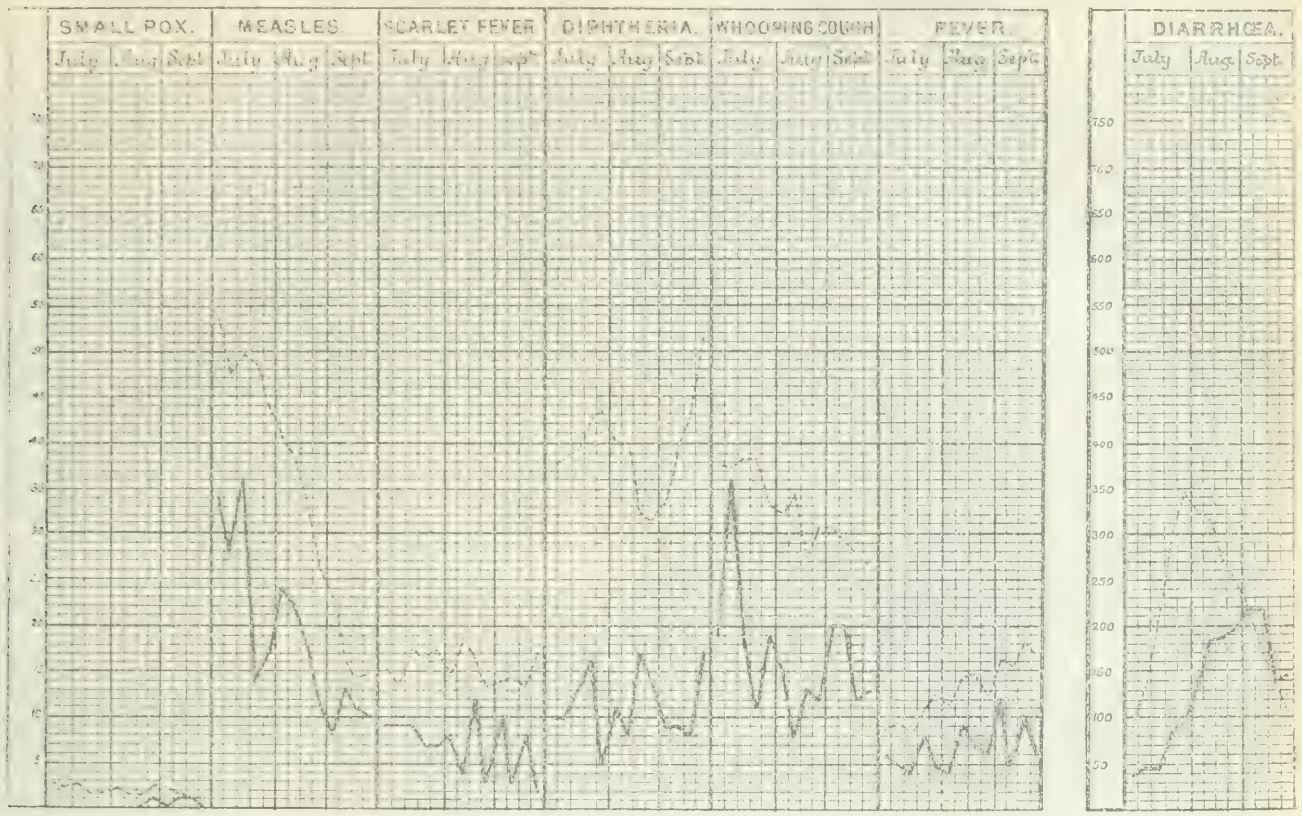
Scarlet Fever.—The fatal cases of this disease, which had been 109 and 82 in the two preceding quarters, rose again last quarter to 91, but were 111 below the corrected average number. Among the various metropolitan boroughs this disease showed the highest proportional mortality in Paddington, Bethnal Green, Bermondsey, and Deptford. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals, which had been 1,704 and 1,014 at the end of the two preceding quarters, had risen again to 1,849 at the end of last quarter. The number of new cases admitted into these hospitals during the quarter was 3,006, against 2,705 and 2,681 in the two preceding quarters.

Diphtheria.—The deaths referred to diphtheria in London, which had been 241 and 175 in the two preceding quarters, further decreased last quarter to 147, as compared with an average of 511 in the ten preceding third quarters. This disease was proportionally most fatal in St. Marylebone, Bethnal Green, Poplar, Bermondsey, and Deptford. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 903 and 781 at the end of the two preceding quarters, had further declined to 671 at the end of last quarter: 1,464 new cases were admitted during last quarter, against 1,761 and 1,495 in the two preceding quarters.

Whooping-cough.—The fatal cases of this disease, which had been 760 and 445 in the two preceding quarters, further declined last quarter to 217, and were 206 below the average number in the corresponding periods of the ten preceding years. Among the various metropolitan boroughs whooping-cough was proportionally most fatal in Finsbury, Shoreditch, Bethnal Green, Stepney, Battersea and Greenwich.

"Fever."—Under this heading are included deaths from typhus, from enteric fever, and from simple continued fever. The deaths referred to these different forms of "fever," which had been 91 and 49 in the two preceding quarters, rose again last quarter to 87, but were only about one-half of the corrected average number. Of these 87 deaths 2 resulted from simple continued fever, but not any from typhus. The highest

Deaths from Epidemic Diseases in London during the third Quarter of 1903.



Note.—The black lines show the *recorded* number of deaths from each disease during each week of the quarter. The dotted lines show the *average* number of deaths in the corresponding weeks of the ten preceding years 1893-1902.

"fever" death-rates last quarter were recorded in Fulham, St. Marylebone, Hackney, the City of London, Stepney, and Lewisham. The Metropolitan Asylums Hospitals contained 247 enteric fever patients at the end of September, against 92 and 88 at the end of the two preceding quarters: 379 new cases were admitted during the quarter, against 213 and 149 in the two preceding quarters.

Diarrhœa.—The 1,737 deaths from diarrhœa registered in London during the three months ending September last were 1,147 below the corrected average number in the corresponding periods of the 10 preceding years. Among the various metropolitan boroughs this disease was proportionately most fatal in Fulham, Shoreditch, Bethnal Green, Stepney, Poplar, and Southwark.

In conclusion, it may be stated that the 2,529 deaths referred to the principal epidemic diseases in London last quarter were nearly 46 per cent. below the average in the third quarters of the 10 years 1893-1902. The lowest death-rates from these epidemic diseases in the several metropolitan boroughs were recorded in Chelsea, the City of Westminster, Hampstead, Stoke Newington, Holborn, and the City of London; and the highest rates in Fulham, Finsbury, Shoreditch, Bethnal Green, Stepney, and Bermondsey.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,386 births and 4,610 deaths were registered during the week ending Saturday last, October 24th. The annual rate of mortality in these towns, which had been 15.8 per 1,000 in each of the two preceding weeks, increased last week to 15.9 per 1,000. The rates in the several towns ranged from 4.0 in Hornsey, 6.8 in Leyton, 7.1 in Burton-on-Trent, 7.4 in King's Norton and in Newport (Mon.), 9.0 in Willesden and in Wallasey, and 9.2 in Aston Manor, to 21.8 in Merthyr Tydfil, 21.9 in Preston, 23.0 in Sunderland, 23.1 in Hanley, 24.1 in Middlesbrough, 24.2 in Salford, 24.6 in Rotherham, and 30.8 in Tynemouth. In London the rate of mortality was 15.1 per 1,000, while it averaged 16.3 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.8 per 1,000 in the seventy-six towns; in London this death-rate was equal to 1.4 per 1,000, while it averaged 2.0 in the seventy-five large provincial towns, and ranged upwards to 4.1 in Birkenhead, 4.4 in Merthyr Tydfil, 4.6 in Rotherham, 4.7 in West Bromwich, 4.9 in Middlesbrough and in Sunderland, 5.8 in Burnley, 6.3 in Warrington, and 6.5 in Preston. Measles caused a death-rate of 2.8 in Sunderland and 5.5 in Warrington; scarlet fever of 1.6 in West Bromwich; diphtheria of 1.7 in Bournemouth; whooping cough of 1.8 in Birkenhead; "fever" of 1.5 in Merthyr Tydfil; and diarrhœa of 2.7 in Rotherham, 2.8 in West Ham, 2.9 in Birmingham, 3.3 in Aston Manor, 4.1 in Preston, 4.4 in Middlesbrough and 5.2 in Burnley. One fatal case of small-pox was registered last week in Gateshead, but not one in any other of the seventy-six large towns. The number of small-pox patients under treatment in the Metropolitan Asylums Hospitals, which had been 21, 17, and 11 at the end of the three preceding weeks, had risen again to 34 at the end of last week; 26 new cases were admitted during the week, against 1, 2, and 1 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital on Saturday last, October 24th, was 1,858, against 1,876, 1,881, and 1,861 on the three preceding Saturdays; 209 new cases were admitted during the week, against 235, 240, and 208 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, October 24th, 935 births and 540 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 17.3, 16.0, and 16.1 per 1,000 in the three preceding weeks, further rose last week to 16.7 per 1,000, and was 0.8 per 1,000 above the mean rate during the same period in the seventy-six large English towns. The rates in the eight Scotch towns ranged from 11.8 in Leith and 13.9 in Perth, to 19.5 in Paisley and 21.0 in Greenock. The death-rate in these towns from the principal infectious diseases averaged 2.4 per 1,000, the highest rates being recorded in Aberdeen and Greenock. The 262 deaths registered in Glasgow included 16 which were referred to measles, 4 to whooping-cough, 2 to "fever," and 14 to diarrhœa. Two fatal cases of scarlet fever, 2 of diphtheria, and 4 of diarrhœa were recorded in Edinburgh. Two deaths from "fever" and 6 from diarrhœa occurred in Dundee; 2 from scarlet fever, 2 from whooping-cough, and 7 from diarrhœa in Aberdeen; 2 from diphtheria and 3 from diarrhœa in Paisley; 2 from "fever" and 2 from diarrhœa in Greenock; and 2 from diarrhœa in Leith.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, October 24th, 502 births and 348 deaths were registered in six of the principal Irish towns, against 587 births and 301 deaths in the preceding period. The mean annual death-rate of these towns, which had been 19.2, 16.8, and 17.3 per 1,000 in the three preceding weeks, rose to 19.7 per 1,000 in the week under notice, this figure being 3.8 above the mean annual rate during the corresponding period in the seventy-six English towns. The deaths in these six Irish towns ranged from 12.6 in Londonderry and 18.2 in Belfast to 22.6 in Dublin and 23.4 in Waterford. The death-rates from the principal zymotic diseases in these six Irish towns averaged during the week 1.9 per 1,000 or 0.4 more than during the preceding period. The highest point, 3.9, was reached in Waterford, while Londonderry registered no deaths from zymotic disease at all. In Dublin no deaths from small-pox, measles, scarlet fever, diphtheria, or simple continued fever were registered, but 1 death was ascribed to whooping-cough, 4 to enteric, and 8 to diarrhœal diseases. In Belfast 2 deaths were ascribed to whooping-cough, 1 to diphtheria, 3 to enteric, and 7 to diarrhœal diseases. In Limerick 1 death was ascribed to typhus, but except for this case and 1 of measles in an outlying district, Ireland last week registered no deaths from any of the principal exanthemata.

THE SMALL-POX OUTBREAK AT ECCLES.

Dr. W. M. Hamilton, Medical Officer of Health of the borough of Eccles, has issued a short report on the outbreak of small-pox there in the end of

last year and the beginning of the present year. The total cases numbered 17. The first 4 were tramps who had not been vaccinated since infancy. The fifth was a labourer who had never been vaccinated. The rest were of various occupations, 10 having been vaccinated in infancy, and 2 having never been vaccinated. The youngest of the 17 persons attacked was aged 16, and the oldest aged 56. Children, therefore, entirely escaped the disease. Two deaths occurred, both of the fatal cases being among the 3 persons who had never been vaccinated. It is stated that there is no doubt as to their non-vaccination. Among the 14 vaccinated attacked none showed 4 vaccine cicatrices, and Dr. Hamilton is of opinion that the insertion of lymph in only one or two places has been largely to blame for discredit of vaccination. In the workhouse, to which the first case came, all contacts were revaccinated, and afterwards quarantined for 14 days. Subsequently the guardians only admitted to the casualty ward persons who had been revaccinated, or who would submit to revaccination. All the cases of small-pox were removed to hospital immediately on their being discovered. The common lodging-houses were visited nightly, and from them also new comers were excluded unless they submitted to revaccination or had recently been revaccinated. A reception house was provided for contacts. Contacts who submitted to revaccination were allowed to follow their usual occupations after disinfection had been completed. All were kept under observation for a fortnight. Chicken-pox was made notifiable. As regards children, Dr. Hamilton records the interesting fact that during the course of the outbreak some of the teachers in elementary schools made an object lesson of vaccination, and that as a result many children were vaccinated. Four cases occurred in King Street on January 8th. Every house in the street was visited, and, as a result of repeated visits and persuasion, after two days every resident in the street had been vaccinated or revaccinated. Cleansing and disinfection were also carried out, and no further cases occurred in King Street nor its crowded neighbourhood. The town of Eccles and its medical officer are to be congratulated on the success which attended the measures used to combat the disease.

ISOLATION HOSPITALS.

Dr. Edward Haughton (Upper Norwood, S.E.) writes with reference to statistics as to isolation hospitals as follows: I have examined some of these figures and can find no flaw in their evident tendency. It will be very regrettable, after further expenditure of public money has been called for, to find that what are called return cases should continue to increase, and that the hospitals themselves are regarded as centres for the diffusion of infectious diseases. That such diffusion is always or even generally by means of personal infection, is by no means proved, as no report is made of the sanitary condition of the houses where the disease arises or recurs; but in any case a perseverance in a policy of failure is self-condemned in the mind of all intelligent persons, especially those who have the responsibility of carrying out its provisions. I therefore have no hesitation in asking for further investigations as to the results of segregation, as it is evident that in no other way can the public mind be satisfied with the very serious infringement of liberties, hitherto enjoyed, without taking into account the enormous expenditure which is obviously required for the purpose indicated.

MEDICAL NEWS.

Presentation.—The medical and nursing staff of Mill Road Infirmary, Liverpool, have presented Dr. Nathan Raw, the Medical Superintendent, with an academic costume as Doctor of Medicine.

We are informed that at the quarterly meeting of the Matrons' Council a resolution was adopted supporting the opinions of those of our correspondents "who consider that registration of trained nurses by the State is the only means whereby effective organization of their work and professional discipline can be obtained."

In the article on Public Health Instruction in the Educational Number of the British Medical Journal, it should have been made plain that at the Medical School of St. Bartholomew's Hospital instruction is given in all the divisions of the D.P.H. examination, and not in bacteriology only.

Among the prizes awarded by the Royal Scottish Society of Arts for communications read or reported during the session 1902-3 is a Keith prize to Dr. Dawson Turner for his papers on Improvements in Roentgen Apparatus; An Apparatus for Measuring the Electrical Resistance of the Blood, with some Deductions therefrom; and an Experiment with Ultra-violet Light.

In conformity with his promise to add five shillings to every pound collected on Hospital Sunday in the metropolis, Mr. George Herring has forwarded to the Treasurer of the Metropolitan Hospital Sunday Fund for this year's collection the sum of £12,312. The contribution made by him last year upon the same lines was £11,575, while in each of the three preceding years he sent the sum of £10,000.

Swiney Prize.—The Society of Arts announces that the prize for the best published work on Jurisprudence, founded by Dr. Swiney in 1844, will be awarded in January, 1904. The prize, which is a silver cup of the value of £100, and money to the same amount, is awarded on every fifth anniversary of the testator's death. Any person desiring to submit a work in competition, or to recommend any work for the consideration of the judges, should do so by letter, addressed to the Secretary of the Society of Arts, at John Street, Adelphi, London.

Chelsea Clinical Society.—This Society inaugurated its seventh session by a meeting on October 20th at the new Chelsea Dispensary, Manor Street, King's Road, when a large number of members and their friends assembled. The President, Dr. Vincent Dickinson, chose for his opening address the subject of medical societies, giving an interesting and amusing account of medical men and their patients. His address was followed by a smoking concert, at which an excellent programme was successfully carried through by Messrs. Clarke, Long, and Warmsley, with the Rev. Dr. Collisson presiding at the piano.

We understand that the appointment of Medical Officer of Health to the Edmonton Urban District Council is vacant. The population of Edmonton at the last census was a little below 50,000, but as the district is rapidly increasing it may perhaps already have attained this limit. There is therefore a moral, if not a legal, obligation upon the Urban District Council to appoint a candidate who possesses the diploma of D.P.H. We are informed that the appointment has been advertised locally, that the salary is £150 a year, and that applications must be received by November 2nd.

MEDICAL VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BELGRAVE HOSPITAL FOR CHILDREN, Kennington.—(1) Resident Medical Officer. Salary at the rate of £40 per annum. (2) House-Surgeon, resident. Salary at the rate of £40 per annum.

BIRKENHEAD UNION.—Resident Medical Officer for the Infirmary, Workhouse, and Sanatorium. Salary £120 per annum.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—House-Surgeon, resident. Salary, £140 per annum.

CANCER HOSPITAL (FREE), Fulham Road.—Superviser of the Electrical Arrangements. Honorarium, £26 5s. annually.

CHELSEA HOSPITAL FOR WOMEN, Fulham Road.—Physician to Out-patients.

DUNMOW UNION.—District Medical Officer and Public Vaccinator.

EDINBURGH ROYAL COLLEGE OF SURGEONS.—Conservator of the Museum. Salary, £105 per annum.

EDMONTON URBAN DISTRICT COUNCIL.—Medical Officer of Health. Salary, £150.

GLASGOW UNIVERSITY.—Examiner for Degrees in Medicine. (1) In Anatomy, (2) in Medical Jurisprudence, and (3) in Midwifery. Annual salaries, £30 for (1) and £20 for (2) and (3). Also Examiner in Botany for degrees in Arts, Science, and Medicine. Salary, £50.

GRAVESEND HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

GRIMSBY AND DISTRICT HOSPITAL.—Resident House-Surgeon. Salary, £80 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—(1) Resident House-Physician. Honorarium, £25 for six months. (2) Dental Surgeon.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—(1) House-Surgeon resident. Salary, £20 for six months, and £2 10s. washing allowance. (2) Radiographer.

LEEDS GENERAL INFIRMARY.—Resident Casualty Officer. Salary, £100 per annum.

LIVERPOOL INFECTIOUS DISEASES HOSPITALS.—Assistant Resident Medical Officer. Salary, £120 per annum.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House-Surgeon, resident. Salary £90 per annum.

MELBOURNE UNIVERSITY.—Chair of Physiology and Histology.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney Road.—(1) Assistant Physician. (2) House-Physician, resident. Salary at the rate of £80 per annum. (3) Resident Medical Officer. Salary, £120 per annum.

NOTTINGHAM CITY ASYLUM.—Junior Assistant Medical Officer (male), resident. Salary, £150 per annum.

PORTSMOUTH: ROYAL PORTSMOUTH HOSPITAL.—Assistant House-Surgeon, resident. Salary at the rate of £50 per annum.

ROYAL DENTAL HOSPITAL FOR LONDON, Leicester Square, W.C.—Dental Superintendent. Honorarium, £250 per annum.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road.—Assistant Physician.

SALISBURY INFIRMARY.—Assistant House Surgeon, resident. Salary, £75 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Resident Assistant House-Surgeon, Salary, £80 per annum.

SHEFFIELD ROYAL HOSPITAL.—House-Surgeon, resident. Salary, £120 per annum.

WESTERN DISPENSARY, Rochester Row, S.W.—(1) Resident Medical Officer. Salary, 100 guineas per annum. (2) Two Attending Medical Officers.

WISBECH: NORTH CAMBRIDGESHIRE HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

MEDICAL APPOINTMENTS.

ANDERSON, Charles M., M.D., C.M.Edin., M.R.C.S.E., L.R.C.P.Lond., Clinical Assistant to the Samaritan Free Hospital.

BLETCHLEY, G. P., M.B.Lond., M.R.C.S., Certifying Factory Surgeon for the Nailsworth District, Gloucestershire.

BOWLBY, G. H., M.D., L.R.C.P., M.R.C.S., as Clinical Assistant to the Chelsea Hospital for Women.

BRIDGER, S., M.R.C.S., L.R.C.P.Lond., Certifying Factory Surgeon for the Southend District, Essex.

BROWNE, Oswald A., M.D.Cantab., F.R.C.P.Lond., Consulting Physician to the Metropolitan Hospital.

CAUTLEY, Edmund, M.D.Cantab., F.R.C.P.Lond., Physician to the Metropolitan Hospital.

CRAIG, J., M.B., Certifying Factory Surgeon to the Biddulph District, Staffordshire.

DANIELL, G. W. Bampfylde, M.R.C.S., L.R.C.P., Instructor in Anæsthetics to the Royal Infirmary, Edinburgh.

EDINGTON, Geo. H., M.D., M.R.C.S.Eng., L.R.C.P.Lond., Lecturer in Surgery at Western Medical School, Glasgow, *vice* R. H. Parry, F.R.C.S.Edin. resigned.

GOULD, F. Clayton. L.R.C.P.Edin., L.R.C.S.Edin., L.F.P. & S.Glasg., Medical Referee to the Star Life Assurance Company, Birmingham District.

HAMILTON, Arthur Francis. M.B.Lond., M.R.C.S., L.R.C.P., appointed House-Surgeon to the West London Hospital.

HANSON, F. C., L.R.C.P. & S.Irel., Certifying Factory Surgeon for the Bray District, Wicklow.

JACOB, F. H., M.D.Lond., M.R.C.P., Assistant Physician to the Nottingham Children's Hospital.

JOB, H. Percy, M.R.C.S., L.R.C.P.Lond., Medical Officer for the Coddington District of the Newark Union.

MASSIE, Thomas, M.B., C.M.Aberd., Medical Officer at the St. George's Workhouse, Southwark Union, London, S.E.

OWEN, J. Lewis, M.R.C.S., L.R.C.P.Lond., Medical Officer [of Health for the Holyhead Rural District.

PENNY, W. E., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Greenodd District, Lancashire.

SAVILL, Mrs. Agnes F., M.D.Glasg., Clinical Assistant to the New Hospital for Women, Euston Road.

SCURFIELD, Harold, M.D.Edin., D.P.H.Camb., Medical Officer of Health for Sheffield, *vice* John Robertson, M.D.Edin., resigned.

STEWART, C. P., M.B., C.M.Edin., Certifying Factory Surgeon for the Perth District, Perthshire.

STOKE, E., M.B.Lond., Medical Officer of Health for Bury St. Edmunds.

THOMAS, Edwin R., junior., L.R.C.P. & S.Edin., L.F.P.S.Glasg., Medical Officer of Health to the Beaumaris Town Council.

THURSFIELD, Hugh, M.D.Oxon., M.R.C.P.Lond., Assistant Physician to the Metropolitan Hospital.

TURNER, George Albert, M.B., B.S.Aberd., D.P.H., Medical Officer of Health [for Kimberley, *vice* H. G. H. Monk, M.R.C.S., D.P.H., resigned.

WATERSTON, David, M.A., M.D., F.R.C.S.E., F.R.S.E., Senior Assistant in Anatomy and Lecturer in Regional Anatomy in Edinburgh University.

DIARY FOR NEXT WEEK.

WEDNESDAY.

Obstetrical Society of London, 20, Hanover Square, W., 8 p.m.—Specimens will be shown by Dr. Lewers, Mrs. Stanley Boyd and others. Short communications will be read by Dr. W. H. B. Brook on Ovarian Cyst which had made its way between the layers of the mesosigmoid, both broad ligaments and the mesocaecum; and by Dr. E. A. Barton on a Fetus Compressus. Paper: Dr. George J. Maguire, Acute Contagious Pemphigus in the Newly-born.

THURSDAY.

Harveian Society of London, Stafford Rooms, Titchborne Street, Edgware Road, W., 8.30 p.m.—D. B. Lees: The Treatment of Some Acute Visceral Inflammations.

Roentgen Society, 20, Hanover Square, W., 8.30 p.m.—The President will open the session with an address.

FRIDAY.

West Kent Medico-Chirurgical Society, Royal Kent Dispensary, Greenwich Road, S.E., 8.45 p.m.—Dr. W. H. Payne, Case of Osteitis Deformans. Mr. G. Bellingham Smith, F.R.C.S., on Menstrual Pain and its Treatment.

West London Medico-Chirurgical Society, West London Hospital, Hammersmith, W., 8 p.m.—Clinical evening. Cases will be shown by Dr. Seymour Taylor, Dr. Herbert Tilley, Dr. E. A. Saunders, Mr. C. B. Keetley, Mr. Meadam Eccles, and Mr. Garry Simpson.

Laryngological Society of London 20, Hanover Square, W., 5 p.m.—A Discussion On the After-treatment of Nasal Operations (excluding Pharyngeal) will be opened by Sir Felix Semon.

POST-GRADUATE COURSES AND LECTURES.

Charing Cross Hospital, Thursday, 4 p.m.—Demonstration of Dermatological Cases.

Hospital for Consumption and Diseases of the Chest, Brompton, Wednesday, 4 p.m.—Lecture on the Diagnosis of Pulmonary Cavities.

Hospital for Sick Children, Great Ormond Street, W.C., Thursday, 4 p.m.—Lecture on the Surgical Anatomy of Congenital Dislocation of the Hip.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—Demonstrations will be given at 4 p.m. as follows: Monday, Skin; Tuesday, Medical; Wednesday, Surgical. Thursday, Surgical; Friday, Ear. Lectures will also be given at 5.15 p.m. as follows: Monday, Some Cases of Gastric Surgery and their Results; Tuesday, On Certain Common Disorders of Menstruation; Wednesday, Unreduced Dislocations; Thursday, Retroversion of the Gravid Uterus; Friday, Pleural Effusion, Causes and Treatment.

Mount Vernon Hospital for Consumption and Diseases of the Chest, 7, Fitzroy Square, W., Thursday, 5 p.m. Heart Disease in Relation to Phthisis.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C.—Lectures will be delivered at 3.30 p.m. as follows: Tuesday, Cases in the Wards; Friday, Peripheral Neuritis.

Post-Graduate College, West London Hospital, Hammersmith Road, W.—Lectures will be delivered at 5 p.m. as follows: Monday, Anaesthetics; Tuesday, Practical Medicine; Wednesday, Gout; Thursday, Practical Surgery; Friday, Skin Cases.

Samaritan Free Hospital for Women, Marylebone Road, N.W., Thursday, 3 p.m.—Lecture on Dermoids, ovarian and pelvic.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS

ALLARDICE.—On Tuesday, September 8th, at 8, King Street, Newcastle, Staffs., the wife of William C. Allardice, M.D.Glasg., of a son.

CLARKE.—On September 22nd, at Teluk Anson, Perak, Federated Malay States, the wife of J. Tertius Clarke, M.R.C.S., L.R.C.P., District Surgeon, Lower Perak, of a son.

PULFORD.—On October 23rd, at 30, Kemplay Road, Hampstead, N., the wife of Herbert Pulford, M.A., M.B., B.C.Cantab., of a daughter.

THOMPSON.—On October 17th, at Gloucester House, Tutshill, Chepstow, the wife of C. C. S. Thompson, M.R.C.S., L.R.C.P., of a son.

WOAKES.—On October 25th, at 73, Bickenhall Mansions, Gloucester Place, W., the wife of Claud Woakes, of Harley Street, of a daughter.

MARRIAGES.

STEELE-PERKINS—HARRILD.—On October 27th, at Holy Trinity Church, Sunningdale, by the Rev. G. F. Watson, M.A., Vicar of St. John's, Woolwich, cousin of the bride assisted by the Rev. W. R. Acworth, M.A., John Shirley Steele-Perkins, B.A., M.B., B.C.Cantab., M.R.C.S.Eng., L.R.C.P.Lond., eldest son of Alfred Roberts Steele-Perkins, J.P., Surgeon, of Exeter, to Elsie Charlotte Ann, younger daughter of the Horton Harrild, Surubs Hill Place, Sunningdale, and formerly of Westwood, Sydenham.

HARRIS—CUMMINS.—On October 24th, at St. George's Church, Bloomsbury, by the Very Rev. the Dean of Worcester, assisted by the Rev. E. B. Tollington, M.A., Vicar, Henry Arthur Clifton Harris, M.R.C.S.Eng., L.R.C.P.Lond., eldest son of the late Henry Harris, M.R.C.S.Eng., to Lilian Maud Cunard Cummins, L.R.C.P.Irel., L.R.C.S.Irel., elder daughter of the late William Alves Cummins.

DEATHS.

ALLARDICE.—At 8, King Street, Newcastle, Staffs., on October 25th, Henrietta Lawrence, wife of William C. Allardice, M.D.Glasg.

WILLS.—James Wills, M.D., 282, Old Kent Road, on October 16th, aged 49 years.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Astiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

MAINTENANCE OF THE INSANE POOR.

LL.D. is anxious to obtain the names of any countries in Europe, America, or the Colonies, where the whole cost of the insane poor is paid for by the Government, and does not come out of the local rates.

ELECTROLYSIS OF SUPERFLUOUS HAIRS.

C. B. M. B. asks for information as to the possibility of satisfactorily employing a 4-volt motor accumulator, with easily regulated resistance inserted, for the eradication by electrolysis of superfluous hairs, moles, or naevi? He has been in the habit of using a battery of twelve cells in series, but finds it bulky and awkward to carry about. As most of his cases are done at their homes, if he could use a small accumulator it would be much more convenient.

ANSWERS.

THE PASSAGE OF FOREIGN BODIES THROUGH THE ALIMENTARY CANAL.

MR. RAYLEY OWEN (London, W.) writes: In answer to Major Clark's inquiry as to length of time occupied by foreign bodies passing through the alimentary canal, I can tell him that a good many years ago a patient came to see me about 6.30 one Sunday evening complaining of pain in his rectum. Examination showed a piece of bone just inside the bowel, and when removed proved to be a piece of rabbit bone. The only time he had eaten rabbit was at 8.30 for breakfast that morning. So only ten hours had been occupied in the journey, the rabbit thus beating the half-crown easily.

DR. JOHN GRIFFITH (Bethesda) writes: A patient of mine swallowed a half-crown piece on August 19th, 1893, and after the lapse of exactly seven weeks it was voided per anum. Yesterday I actually saw the piece of silver, and the patient is very proud of it, having had it mounted as a medal enclosed in a case. The surfaces about the edges are tarnished, but otherwise it is none the worse, the date and the rest of the facings being plainly discernible.

DR. J. P. T. BURKE (Abertridwr) writes in answer to the same query: I had a case on October 25th in which a boy aged 7 swallowed a shilling at 6.20 p.m. one evening and passed it at 12.20 mid-day on the following day, or in exactly eighteen hours. I think this is a record. The patient was not allowed to take any aperients. This compares very favourably with Major Clark's case in comparison of age and size of coin.

MALPIGHI AND THE COMPOUND MICROSCOPE.

MR. W. ROGER WILLIAMS (Clifton, Bristol) writes: In your report of the Harveian Oration, I notice that Malpighi, Leuwenhoeck, and the other seventeenth-century pioneers of histology are represented as having made their remarkable discoveries with the "compound microscope." I should like to ask Dr. Allchin whether this represents his view of the matter, or has there been some misinterpretation? I ask this question because, when studying the history of the invention of the compound microscope some time ago, I came to the conclusion that, although the compound microscope was known to most of these pioneers, it was for practical purposes discarded by them, on account of its inefficiency, in favour of the simple microscope, in which more than a single lens was, however, commonly employed. It would be interesting to know what evidence there is as to Malpighi or his co-workers having made any of their discoveries with the compound microscope. From the time of its invention—near the end of the sixteenth century—until early in the nineteenth century, the compound microscope is commonly represented as having been merely a scientific toy, useless for purposes of magnification beyond the range of the simple microscope owing to the disturbing effects of chromatic and spherical aberration.

NOTES, LETTERS, Etc.

HEPATIC PHLEBOTOMY.

STAFF SURGEON REGINALD BANKART, R.N., M.V.O. (His Majesty's yacht *Victoria and Albert*), writes with reference to the letter from Fleet Surgeon Eames, R.N., under this head in the BRITISH MEDICAL JOURNAL of October 3rd, p. 868: Fleet Surgeon Eames mentions that Surgeon-General W. Maclean had anticipated Dr. Harley's treatment of acutely congested liver (as met with in the tropics) by means of blood-letting. I recollected that in Maclean's *Diseases of Tropical Climates*, 1886 (Macmillan and Co.) (see page 300, Lecture XIV), there was a passage bearing on the subject. This I have now looked up, and as it may possibly interest your readers and support Fleet Surgeon Eames's statement, I

forward a copy herewith: "I have argued strongly against the practice of bleeding, but there is a method of abstracting a small quantity of blood *directly* from the liver, which I should be inclined to try were I again in a position to deal with this disease in healthy subjects in India. On several occasions in this hospital I have had the following experience: We have had men admitted here with symptoms pointing to the existence of hepatic abscess, with, at the same time, sharp local pain in the liver over well-defined limits; into such spots I have several times introduced the hollow needle of an aspirating syringe in the expectation of finding pus. On applying the syringe, instead of pus 5 oz. or 6 oz. of blood have been drawn off, with immediate relief of all the symptoms and without any unpleasant results. I have thus been led to think that in this way, at the sacrifice of a small quantity of blood in the acute stage of inflammation of the organ, we might look for good results. I am sure of this, that I have seen this small bleeding much more effective than the abstraction of twice or even three times as much from the integuments over the liver by leeches or cupping. I throw this out as a hint worth trial in cases where the symptoms are so acute as to raise in your minds a suspicion that the direct abstraction of blood might relieve pain and ward off the danger of suppuration."

DIARRHOEA AND SURFACE WATER.

DR. J. B. CURGENVEN (Hildenboro') writes: Fleet Surgeon Lloyd Thomas, in his excellent paper in the BRITISH MEDICAL JOURNAL of August 22nd, p. 405, says, "At Tientsin it has long been considered that the drinking water produces diarrhoea amongst the new comers, and this was said to be due to the suspended particles of clay and marl." Again, Dr. Thresh, in the JOURNAL of September 26th, ascribes an outbreak of diarrhoea in Chelmsford to surface water finding its way to an open reservoir.

My personal experience confirms the fact that surface water, especially from cultivated land, is the fertile source of diarrhoea and dysentery. In 1855, on a voyage out to the Crimea, a supply of water was taken from the stream called the "Sweet Waters of Europe" at Constantinople for use on board. Thereafter several of the sailors had diarrhoea as well as myself, and I continued to suffer from the complaint, on and off, until my return to England at the end of six months. All that time the drinking water was obtained from running water; at Balaclava from a stream running through a vineyard. Since that date I have had an attack of diarrhoea every August, which I have ascribed to chill during the prevalence of a north-west or north-east wind. The quarter of a Bon Chretien pear will to this day provoke an attack, so will a glass of champagne, the attack lasting some days.

Shortly after coming to reside at this place, about one and a-half miles south of the Sevenoaks railway tunnel, I became affected with diarrhoea, which continued with short intermissions from remedies, for four years producing considerable bodily weakness. The water supply I was assured was good and derived from a spring in the Sevenoaks tunnel, conveyed some of the way through an open channel, and the rest through pipes. I obtained a Berkfeldt filter, and found that the water contained a considerable amount of clay, derived doubtless from surface water flowing into the open channel. Believing this clay to be the cause of my continued diarrhoea, I arranged with my landlord for a supply from the Tunbridge Waterworks. This on passing through the filter deposited a considerable amount of oxide of iron and my diarrhoea ceased the day after I commenced its use, now four years since, and I have had no recurrence, except in August of each year, when I have been away from home. This district is on the weald clay; under the clay lies firm sand and gravel. The Tonbridge water is obtained from below the gravel and is similar to the ferruginous water of Tunbridge Wells.

*** Since penning this letter the writer has died. An account of his career was given in the JOURNAL last week, p. 1104.

CONTINUOUS RECTAL ALIMENTATION.

DR. D. J. MACKENZIE (Glossop) writes: In answer to a question asked by Dr. Ewart at the meeting of the Association, and recorded in the BRITISH MEDICAL JOURNAL of October 17th, page 1044, perhaps you will allow me to state that I described methods of continuous rectal alimentation in the JOURNAL of June 19th, 1887, and July 2nd, 1887.

FELLOWSHIP OF THE ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

DR. CHARLES FREDERICK KNIGHT (Edinburgh) writes: Mr. Wilson very ingeniously quotes the latter half of the first section of the Medical Act, 1876, as the first half disposes of his original objection. He now makes a second mistake in supposing that by-laws are Acts of Parliament. Section 1 of the 1876 Act is: "The powers of every body entitled under the Medical Act to grant qualifications for registration shall extend to the granting of any qualification for registration granted by such body to all persons without distinction of sex, provided always that nothing herein contained shall render compulsory the exercise of such powers, and that no person who but for this Act would not have been entitled to be registered shall, by reason of such registration, be entitled to take any part in the government, management, or proceedings of the universities or corporations mentioned in the said Medical Act" This Act clearly empowers the College to admit women to the Fellowship. The by-laws can be altered at any time if it is thought desirable to exclude women from attending the meetings of the College.

PROPOSED MEMORIAL TO THE SISTERS WHO DIED IN THE SOUTH AFRICAN WAR.

WE have received the following communication, signed by Miss Isla Stewart, President of the Matrons' Council, and Mrs. Bedford Fenwick and Miss M. Mollett, Councillors: the letter is dated from the Matrons' House, St. Bartholomew's Hospital:

Nearly two years have elapsed since the conclusion of the war in South Africa, and a duty still remains to be fulfilled which we venture to commend to the generous sympathy of the whole nation. While all honour has been accorded to the nurses who have returned from active service, and acknowledgement has been made of the value of their work by the award of orders and decorations, nothing has been done to express the nation's appreciation of the devotion of those nursing sisters who died in the service of their country. Surely it is fitting that their names should be perpetuated in connexion with some national memorial erected to their honour. The Matrons' Council of Great Britain and Ireland at a recent meeting decided that steps should be taken to open a fund for this purpose. To give effect to this decision a representative committee is now being formed to organize this national memorial, and it is proposed at an early date to invite subscriptions from those who are desirous of honouring the memory of our colleagues who died on active duty in South Africa.

ERRATUM.—In Dr. Lloyd Jones's paper on the Physical Examination of the Upper Regions of the Chest in the BRITISH MEDICAL JOURNAL of October 24th, page 1039, col. 1, lines 42 and 43, should read, "the *left* side is slightly less resonant than the *right*," and not as printed.

LETTERS, COMMUNICATIONS, ETC., have been received from:
A Professor T. Clifford Allbutt, Cambridge; Dr. A. G. Auld, London; A. E. J. W.; Dr. T. R. Atkinson, Chadwell Heath; Antihumbug. **B** Miss L. Bayly, Bournemouth; Dr. E. P. Baumann, London; Mr. T. Bell, Uppingham; Mr. W. M. Beaumont, Bath; R. Boyce, M.B., Liverpool; Miss M. Breay, London; Dr. E. M. Brockbank, Manchester; H. L. Barnard, M.B., London; Dr. C. Buttar, London; Barleycorn Co., Manager of, London; Mr. L. A. Bidwell, London; Sir W. Broadbent, Bart., K.C.V.O., London; Benjamin; Mr. J. J. Burke, Abertridwr; Dr. N. Benoly, London. **C** Dr. J. M. Clarke, Clifton Mr. W. S. Curgenven, London; Mr. T. S. Chapman, London, Mr. A. F Cole, London, Dr. E. Casey, Windsor, Dr. A. V. Clarke, Leicester; Communis; R. J. Cahill, M.B., Dundrum; Mrs. Cunningham, Edinburgh; County Doctor; Dr. F. N. Cookson, Stafford; C. W.; Cactus; Messrs. T. Christy and Co., London; Mr. W. H. Coupland, Lancaster; Civil Employ; Mr. A. A. Cooper, London; "Chemist and Druggist," Editor of the, London; Mr. M. Christy, London; Mr. A. Cooper, London; Mr. R. C. Chicken, Nottingham; Mr. C. Chadwick, London. **D** Mr. W. Doubleday, London; H Distin, M.B., Enfield; Dr. A. Duke, London; Dr. E. W. Diver, Shotley Bridge; D. B. **E** Dr. W. A. Evans, Bradford, H. P. Elliot, M.B., Birkenhead; Dr. W. Meo. Ellis, Bath; R. J. C. Edwards, M.B., Swansea; Enquirer; Mr. A. Edler, London; Electrolysis. **F** Dr H. E. Fraser, Dundee; F. R. Fothergill, M.B., London. **G** G.P.; Dr. J. Gutch, Ipswich; Mr. J. Griffith, Bethesda **H** Mr. E. F. Hickman, London; Dr. W. J. Horne, London; W. D. Harmer, M.B., London; Dr. J. P. Henry, London; Hatim Tai; Mr E. S. Hawthorne, Mudgee, N.S.W.; Dr S. H. Habershon, London; Dr. C. O. Hawthorne, London; Dr. J. B. Hellier, Leeds; Sir V. Horsley, London; Mr. J. Houston, London. **I** Mr. F. P. Image, Wolverhampton. **J** Dr. J. Johnston, Bolton; Dr. E. L. Jones, Cambridge. **K** Mr. V Knowles, Reading; Mrs. Kerr, Edinburgh; Dr. C. F. Knight, Portobello. **L** Dr H G. Lee, Thame; F. H. Low, M.B., London, G. R. Livingstone, M.B, Dumfries; LL.D Dr. A. E. Larking, Folkestone; Lieutenant-Colonel I.M.S.; Liverpool Medical Institution, Secretary of, Liverpool; Mr. P. G. Lodge, Bradford; Mr. M Lomax, Minchinhampton. **M** A. Mackintosh, M.B., Chorley; J. L. Martin, M.B., Chelmsford; Mr. A. H. Marston, Birmingham; Medicus; Mr. C. B. Moss-Blundell, Thornton Heath; M.D. and Onlooker; Mr. D P. Menzies, Glasgow; Mr. W. B. Magna, Swindon; M.; Dr. D. J. Mackenzie, Glossop; Dr. A. Mackay, Crook; Mr. J. McLaren, London; Mr. H. F. Mole, Clifton; Mr. J G. Morris, Mardy; Mr. A. Maude, Westerham; Mr. J. T. J. Morrison, Birmingham; Midland Medical Society, Secretary of, Birmingham. **N** Dr. Nuttall, Cambridge; Neurology. **O** Mr. T. H. Ollerhead, Wrexham; Mr. S. Osborn London; Mr. R. Owen, London. **P** Puer; Protection; J, Paxton, M.B., Butterknowle; Perplexed; A. C. Profeit, M.B, Netley; Captain A. E. H. Pinch, London Pinner; Dr. A. C. Pearce, Canterbury. **R** Dr. H. M. Richards, Croydon; Sir A. W. Rucker, London; Mr. J. Robertson, Edinburgh; Major R. Ross, C.B., Liverpool; Mr. J. Russell, Wetherham; Dr. N. Raw, Liverpool; Mr. F. J. Rebman, London. **S** Dr. E. L. Shaw, London; Senex; Messrs. W. B. Saunders and Co., London; Dr. G. A. Sutherland, London; Messrs. Squire and Sons, London; Dr. E. H. Snell, Coventry; Dr G. Sharp, Leeds; Sardam; Mr. M. H. Sava, New York; Mr. P. Stewart, Pretoria; Sapiens; Mr. H Sewill, London; Messrs. E. S Shultes and Co., London; Dr. H Snow, London; Subscriber; Mr. F. J. Stuart, Northampton; Dr. H. J. Starling, Norwich. **T** Dr. St.J. Thomson, London; Miss H. Todd, Bournemouth; Mr. G. Thatcher, London; Dr. A. H. Thompson, London; Mr. R. R. B. Taylor, Santander; G. Turner, M.B., Pretoria; Dr E. F. Trevelyan, Leeds; Dr. W. A. U. Thomson, Maidenhead. **U** Dr. A. R Urquhart, Perth **V** Mr S. G. Vinter, Torpoint. **W** Mr. A H. Walker, Cranleigh; W. W. Westcott, M.B, London; Dr. A. T. Wear, Newcastle-on-Tyne; Dr. F. Willcocks, London; Mr. W. R. Williams, Clifton; H. A. Watson, M.B., Worcester; Dr. T. J. Wood, Bradford; W. B.; West London Medical Chirurgical Society, Secretary of, London; Mr. T. M. Watt, Goxhill. **X** X. Y. Z. **Y** Dr. E. S. Yonge, Manchester.

BOOKS, ETC., RECEIVED.

University Correspondence Calendar 1903-4. Matriculation Directory, No. XXXV, September, 1903. With list of text-books for use under new regulations. Cambridge: Editorial Offices. 1903. 1s.

Elements of Surgical Diagnosis. By A. Pearce Gould, M.S.Lond., F.R.C.S.Eng. Third edition. London: Cassell and Co., Limited. 1903. 7s. 6d.

A Manual of Electro-static Modes of Application, Therapeutics, Radiography, and Radiotherapy. Second edition. By William Benham Snow, M.D. New York: A. L. Chatterton and Co. 3 dols.

The Art of Photographic Dodging by an Artful Photographic Dodger. By "Richard Penlake" and "William Tylar." Birmingham: W. Tylar. 3d.

Tourist Guide to the West Indies. Compiled by C. E. Vazey. London: Royal Mail Steam Packet Company. 1903.

The Illustrated Medical Dictionary. By W. A. Newman Dorland, A.M., M.D. Third edition. London, Philadelphia, and New York: W. B. Saunders and Co. 1903. 19s.

The Children Who Ran Away. By Evelyn Sharp. London: Macmillan and Co., Limited. 1903. 6s.

Old Christmas. From the Sketchbook of Washington Irving. London: Macmillan and Co. 1903. 2s.

The Pocket Medical Dictionary. Edited by W. A. Newman Dorland A.M., M.D. Fourth edition. London, New York and Philadelphia: W. B. Saunders and Co. 1903. 5s.

Textbook of Operative Surgery. By Dr. Theodor Kocher. Translated from fourth German edition by Harold J. Stiles, M.B., F.R.C.S Edin. London: Adam and Charles Black. 1903. 20s.

The Edinburgh Medical School Calendar and Guide to Students, 1903-4. Edinburgh: E and S. Living-tone. 2s.

Mr. Woodhouse's Correspondence. By G. R. and E. S. London: Methuen and Co. 1903. 6s.

The After-treatment of Operations. By P. Lockhart Mummery, F.R.C.S.Eng., B.A., M.B., B.C.Cantab. London: Baillière, Tindall and Cox. 1903. 5s.

Bracebridge Hall. By Washington Irving. London: Macmillan and Co. 1903. 2s.

*** In forwarding books the publishers are requested to state the selling price.

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N.B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.

An Address
ON
SCIENCE AND MEDICINE IN THE MODERN UNIVERSITY.

Delivered to the Toronto University Trustees and Senators and to the Medical Profession of Ontario and their Guests on the Occasion of the Opening of the New Medical Buildings of the United Faculties of Toronto and Trinity Universities.

By C. S. SHERRINGTON, M.D., F.R.S.,
Professor of Physiology in the University of Liverpool.

Believe me, it is a difficult thing for a stranger, even at your invitation, to address you on an occasion like the present. So many significant events crowd in upon him, and time for reflection is needed to weld into a connected whole the impression he would wish to offer to you. Not that the growth and doings of this University have not been followed and watched with interest by us in the Old Country. On the contrary, your activity has been felt not only as a matter of mutual congratulation, but as a spur to arouse us to effort in our own similar pursuit of educational aims. But the stranger coming among you necessarily feels the shortcomings of his acquaintance with the details of these academic enterprises you have taken in hand. One advantage, however, is his. His view, gained from a distance, necessarily has freedom and truth of perspective that may give it a value in your eyes.

Some things lose by perspective. Some things, large when close at hand, dwindle when viewed from afar. Not so Canada. The perspective given by the width of the Atlantic is but an appropriate setting across which to view her greatness and her far-reaching activity. And this event, this academic celebration, this *dies festus*, in your University today retains from afar off all the significance of a great event. It loses no tittle of its dignity and import when viewed across ocean from the crowded turrets of the older Cambridge or the hoary spires of Oxford. It shines, I assure you, like a beacon to the new University whose buildings are as yet unfinished on the hill above the port of Liverpool.

Coming from a region where history is long and the land little to this, where written history is short and the expanse of land incomparably great, one realizes how relative is size. And in regard to the event of to-day, the largeness of this country rises in my thought, not as a matter of mileage, but because with you more than with us in the old country the size of to-morrow is vaster than the size of to-day. Each step of progress here, more than with us, has to be measured by its ample consequences in a more rapidly-widening horizon of the morrow. These new laboratories have a field already demanding them, and a still larger lies before them in an immediate and historic future.

Pursuit of Science a Civic Duty.

Biology is the study of life in regard especially to growth and organization. Every medical man is a biologist, and as a biologist it may be but natural if I regard to-day's event from a biological standpoint, and the community as an organism, and the university as a living organ, essential to the healthy life of the community.

Science, especially medical science, is growing in importance to the community. We must have organization in science as in industry. This University to-day makes provisions of first-rate importance for the organization of medical and allied sciences in the region which centres here. Capacity to rear and support men constitutes the extent of a country, and population is the biological measure of the social organism. The ceaseless energy of the race has begun to plant a great population in this land. Growth, great and rapid, is inevitably before it. Now, the growth of nations, as of individuals, requires the vigilance of guiding hands. Growth, for it to take its course rightly towards perfection, requires provision for the security and expansion of the liberal arts and sciences to forerun rather than to halt behind the actual requirement of the hour. The sciences are of value not only for their direct utilitarian service; they form a whetstone for man's most universal tool, his intellect. Also a discipline for character, in the pursuit of truth for its own sake. Scientific truth, when found, has often proved unpalatable to man—as when it dethroned him from his fancied seat at centre of the whole perceptible universe—a universe he had imagined simply subservient to his needs; or, again, as when it taught him that, instead of being a creature altogether apart from brute creation, there are flesh and blood bonds between himself and brutes. Regardless of its cost to his cherished fancies, man strives for scientific truth. And, as the old Greeks said, this purpose puts him further from the brutes and nearer to the gods.

In nurturing science I would urge that a community cultivates more than mere utility. And even with regard to mere utility, as the fields of knowledge fall ripe under the ceaseless husbandry of the world's thought, those who would join in the great reaping, and not merely glean where others reaped before them, must cultivate for themselves. To do this requires more than the devotion of individuals. It requires the intelligent co-operation of whole groups of individuals. Organized scientific inquiry becomes in advanced countries a conscious aim of the community as a community.

The Various Workers.

That society may draw due benefit from wells of natural knowledge, three kinds of workers have to stand side by side, First, the investigator, who, pursuing truth, extends discovery, with little or no reference to practical ends. He constitutes the fountain-head of the knowledge that is for distribution. Other hands may reap the harvest, but his set and rear the seed.

After the investigator comes the teacher. To him it belongs to diffuse the knowledge won. This honourable and difficult task receives its best reward in seeing the small spiritual beginnings of a pupil widen into the spiritual beginnings of a master. Thirdly, there is the applier of natural knowledge. His part consists in making scientific knowledge directly serve practical needs. It is this work which to the popular idea often represents the whole of science, or all of it that is commonly termed "useful." The practical results of this work are often astounding to those ignorant of the steps by which they have been reached. The greatest of these steps, however, is usually the first one, made in the laboratory of the investigator. These three co-workers are coequal in the priesthood. Science and the applications of science are one growth, united together even as the fruit and the tree. The proper hearthstone round which the community should group these labourers, labouring for a common end, is the university. There the sacred flame of learning is fed from many sides by many hands.

The Biologist as Citizen.

It is sometimes said that pursuit of science renders a man deaf to the appeals of practical life; that it tends to withdraw him from the everyday interests of the people. That I do not believe of any science. Certainly not of biology and the medical sciences. Why, from their very outset these subjects draw the mind toward study of an organization the most complex and the most perfect it can examine. The ancient simile that our old school classic, Livy, drew between the human body and the body politic, the State, has not lost but won significance as the centuries have run by. The achievement of the microscope has been the discovery that living things, whether plant or animal—all living things of more than minutest size—are commonwealths of individually living units. These cells, as they are called, are living stones that build the house of life. In that house each stone is a self-centred individually living microcosm, individually born, breathing for itself, feeding itself, consuming its own substance in its living, and capable of and destined for an individual death. Each cell lives by exchanging material with the world surrounding it. In other words, its bulk depends on its surface. Hence surface increasing as the square, and volume as the cube, cell size, is circumscribed by tiny limits—microscopic limits. Had the dependence been greater than it is, and the average size of the cells less, and too small for resolution and discovery by the microscopes of seventy years ago, it is hard to imagine where biology would stand to-day. For two generations every biologist has been accustomed to think in terms of the cell theory. Every shred of the body he knows as an intricate interlacement, embodying co-operation and mutual support of associate thousands of individually existent cells. Division of labour has gone on, and with it differentiation of structure; while this group of cells combines with its own inner life some special function subservient to the needs of the great commonwealth as a whole, another group is specialized for another duty again subser-

vient to the general needs. Each organism, with all its solidarity, each one of ourselves here, is built up of living myriads. Each such organism consisted at outset but of a single cell, and from that in his life's growth have arisen the countless myriads composing him to-day. The blood relationship is close between all the cells of each one individual body. The cells of our nerves, or of our muscles, of our lime-hardened bones are all blood relations through one common ancestor. Yet so far has specialization of these unit lives gone on, so far does function reflect itself in microscopic form, that there is greater likeness between my nerve cells and the nerve cells of a fish than between my nerve cells and my own muscle cells, despite the blood relationship between these latter. And in the commonwealth of cells that constitutes each one of us goes forward day long, night long, as in the body politic, the birth of new units to replace the ones outworn, the subordination of many individual purposes to one, the sacrifice and destruction of the individual life for the benefit of the many.

Trained in study of such an organism, surely the biologist and the medical man will be the last to underrate the importance of organization to the community for the commonweal. Therefore I am rejoiced, but I am not surprised, that it is your Faculty of Medicine which to-day, in its public spiritedness, erects and instals these fine laboratories, this potent addition to the organization of your community for its activities in medicine and in biological science. I would also, as a friend among you, offer you my congratulations on the consolidation of your two schools of medicine into one. Union means not only greater strength, but the more effective application of that strength.

Twofold Aspect of Medicine.

I need not to this assembly extol medicine. Many of her votaries are here; I venture to count myself as one. But to-day the relation toward her of education is a matter on which our minds are naturally set. Am I wrong if in regard to this it rises saliently to me that from the educational standpoint medicine, like Janus of old, in a good sense, bears a double face? On the one hand she is an empiric. She has learned to cure by what the comparative psychologist calls the "method of trial and error." Conquests over sickness acquired purely as result of experience, without help either from *a priori* or from inductive reasoning. And great and glorious is the rôle of her achievement on these lines. Of her humanitarian triumphs probably still—certainly until a generation ago—the greater share is assignable to this part. The use of quinine in malaria, the curative effects of the iodides and various metals, the discovery of chloroform and ether as anaesthetics—these and the names of a long line of famous physicians from the Renaissance down to some as justly famous as the past, and with us now to-day, suffice to certify the inestimable gifts that medicine as *empiric* has given to mankind in his suffering. This face of medicine well may wear a garland.

Medicine and Science.

In her other aspect, medicine is not an empiric, but a scientist. Who will refute me if I assert that medicine is as well as an art a science. Somewhere it is said that woman is the last thing that man will ever civilize. So the scientific aspect, the male face of two-visaged medicine, thinks of that female face, the empiric, with whom his lot is linked. He feels sometimes that his other half is the last thing science will ever render wholly rational. By dint of patient toil he improves her practice, showing her a reason now and then. No sooner is that done than she is off on a fresh flight into the inexplicable, and he must cudgel his brains anew to find her a fresh logical position.

The feminine, ever youthful trait in medicine, has to the student an undying charm. But on the whole, the countenance of medicine has of recent years, for the student, become masculinely severe. This masculine head of medicine has indeed become the larger. Hydrocephalic in appearance, it yet is filled, not with water, but with reasoned facts. The development proceeds in the main from certain data acquired in the century just passed. For instance, the chemist, in discovering that all the million-sided chemical diversity of the perceptible universe is composed from a few—some 70—substances, therefore called elemental, discovered also that living matter, instead of containing elements different from and subtler than those of the dead world, consists of just a few of the most common of those same ones. Further, the doctrine of the indestructibility of matter was demonstrated in a new form, namely, as the indestructibility of energy, and the convertibility of any one form of energy into other forms. Thus dead and living matter became united as subject material for study. It became really possible to consider the living body as a chemical and physical machine, a machine to which the laws of chemistry and physics can be applied.

Historical Sketch.

But this scientific progress in medicine, fruitful of benefit to the community, lays on the community a burden of obligation. The empirical part of medicine is at once the most easy and the most difficult thing to teach. The preparation for learning it requires but little training in other subjects. Its facts lean on nothing but themselves.

With the scientific part of medicine it is different; that is based upon initiatory studies. Medicine, historically traced, we find first drawing help from the simplest and nearest at hand of these adjuvant studies. First she bent to the study of the gross form of the parts and organs of the body. The gross form of these is significant chiefly where they are machinery for application of mechanical powers. The greater part of the corporeal machinery is, however, not destined for such work, but has its purpose in processes chemical, thermal, and electrical, to which—marvellous appendage—mentality is adjunct. Medicine in the course of the seventeenth and eighteenth centuries sucked dry for the most part what the study of the gross form of the body's parts could yield her. She then turned to study of microscopic form—examined what Bichat first named the tissues, the fabric of the body. In so doing she came upon a great generalization, the cell doctrine, discovering an essential and visible similarity of microscopic structure in all that has life, differentiating it from all which has not life.

But even before the advent of the cell theory, medicine had begun to ask of chemistry what it could give her. With the discovery of oxygen and of the nature of combustion the links between biology and chemistry began to be tightly drawn. The young Oxford physician, Mayow, had performed the fundamental experiments on respiration and had discovered oxygen more than a century before Priestley and Lavoisier, but the time was not yet ripe until the stupendous work of Lavoisier had founded modern chemistry. The cell theory was from the first not only morphological, but physiological. It meant for the application of chemistry to biology that the chemistry of the body or of one of its organs was a chemistry resultant from a thousand tiny living furnaces, individual degrees of oxidation, deoxidation, polymerization, hydrolysis, and what not.

Not only that, but the living laboratory of the cell itself manufactures even the medium in which the cells themselves exist: the saps and juices of the body. And we are beginning to know, thanks to pathology, that every species of animal produces an internal medium specific to itself. Further, your distinguished physiologist here, Professor Macallum, who has so revealed the distribution of the chemical elements within the cell, tells us that the internal medium which the cells of even the highest animal forms produce as appropriate for themselves, still approximates in its salts to the water of the ancient geologic seas in which their ancestry arose, and still reveal in fact the composition of that ancient ocean. In that respect these living cells, with all their flux of change, have been more durable and constant even than ocean itself. The contrast brings home to us a deep distinction between dead matter and living—the latter a moving equilibrium gaining stability from the very motion of itself.

By Schwann and Pasteur the bonds between chemistry and medicine were drawn still tighter through their discoveries concerning those subtle influences named "ferments." Pathology, the study of these processes of the body in disease, even more than physiology, as yet has drawn help from this part of modern chemistry. If the processes of health are in fact the resultant of the due co-operation of ten million little foci of healthy chemical action in the body, the processes of disease are similarly divisible, and have to be traced to the unhealthiness of certain of these minute centres of activity. How extreme is the importance of chemistry to modern medicine no single statement can perhaps emphasize so well as this—that is, I believe, acknowledged on all hands—that in virtue of his chemistry, a chemist, Louis Pasteur, during the latter half of last century, was able to do more to alleviate the diseases of mankind and animals than any single physician of his time.

To the physicist also medicine has made appeal. From him she has got understanding of the body's heat, the basis of the knowledge of fever; she has learned the intricacies of

the mechanism of the eye and refined methods of examining that organ and remedying many of its defects; the laws that govern the circulation of the blood and the subtlest means of detecting the forces liberated in the working of the nervous system. In some cases, as sciences grow, their discoveries seem to sunder them the further one from another. In my belief, that merely shows they are then at the outset of their career. To-day we find physics and chemistry converging and conjoining within a field of physical chemistry. It early became convenient to have a specific name for living material, wherever found. The name given was protoplasm. It might have been better to call it *x* or *y*, so far was it in many respects an unknown quantity. Instead of looking forward to this material as a chemical entity, we incline now to regard it rather as a *field* for chemical action, satisfying certain particular conditions. Probably discoveries regarding these conditions will fall to the physical chemist, perhaps in a future very near at hand. Probably such discoveries will be among the most valuable that medicine has yet received from any source.

Medical Education.

I have said enough to remind us how interlocked with science medicine has become. She is applying sciences to her own problems, and they form a vast capital fund from which she can draw wealth. To give instruction in this part of medicine, to turn out men trained in it, is now one of the duties of every medical school worthy of the name. The earnest student has a right to expect such training from his Alma Mater. For this, however, the requirements are importantly different from those that suffice as introduction to empiric medicine. In the first place, as Pasteur said, we cannot have the fruit without the tree. For scientific medicine the student must, perforce, be thoroughly trained in his sciences before he can really grasp instruction or truly profit from his medical teaching. One of the aims of his instruction in empirical medicine is to teach him to observe for himself; so in his instruction in scientific medicine one of its aims is to enable him to apply science for himself. How small a fraction of all the realities of medical practice can be met in the few years of preparation of the student in the clinic as he passes through it in his school career. His teacher knows that well, and uses the cases there as types whereby the principles of medicine can be fixed as a beginning. The rest must be accomplished by the man himself, as his life's work. The more necessary that the man go forth from his school equipped not only with the present applications of science to disease, but so possessed of root principles of the sciences adjunct to medicine that he may grasp, and intelligently use, the further developments of scientific medicine after he is weaned from his instructors and the school. That is a way to obtain enlightened progress in professional practice. What truer safeguard can a man have, alone, it may be, and isolated from the centres of knowledge, what truer safeguard can he have against all the pseudo-scientific quackeries of the day than some real knowledge of the principles of the sciences along whose lines the discoveries of medicine must develop.

Burden on Teachers.

Therefore it is that the burden of obligation falls heavy nowadays upon the teaching resources of every Faculty of Medicine worthy of the name. There is, in the first place, the burden of increased intellectual labour. For both the learner and the teacher is this true. To seize the proffered assistance of these great and complex sciences is not always easy. These studies are more difficult than those that were needed once, and they take longer to acquire. The mere instrumentarium of modern chemistry and physics as applied to medicine, and of physiology and pathology, and bacteriology, of itself suffices to bring conviction of the increased difficulty and longer training due for these studies now preparatory to medicine.

Further, these initiatory studies have become vastly more costly than was all that was formerly required. Experts have to be found who can devote themselves heart and soul and undividedly to their particular subject. Laboratories have to be erected and equipped, and on a scale that makes them a distinct feature of the modern world. Those that we see now here are models of their kind: wise foresight has planned them; public-spirited enterprise has constructed them accordant with that plan. Nor does the achievement end with their erection. The laboratories and their equipment are but the factory and the plant; both fail in their purpose if they halt for sustenance. And beyond that the likeness does not go. The factory, once started, if it be wanted, can expect to pay, to support itself. Not so the laboratory. The laboratory is both a school of instruction and a school of thought. Well, no higher instruction can be expected unaided to pay the expenses it involves; it can only do so at the expense of those who come to learn, and that is to put its teaching beyond the reach of all but the wealthier few. One reason why the instruction is costly is that it has to be practical. And another source of expense is that the laboratory has not only to distribute knowledge, but to manufacture it. The duties of a university do not begin and end with the disciplinary and didactic. Besides schools of instruction, they must be schools of thought.

School of Thought.

To be this latter the laboratory must pursue research. Even for the welfare of the class-teaching this is essential. Instructive lectures may be given by men of ability the whole of whose knowledge is secondhand, but it is doubtful whether the real life of science can be fully felt and communicated by one who has not himself learnt by direct inquiry from Nature. Nothing so augments the teacher's power of impressive and incisive teaching as himself to have faced the problems of his subject as an original inquirer. And, after rudiments have been once fairly acquired, there is for good students no training equal to that given by following even a small research under an experienced leader.

So truly does the laboratory become a school of thought. Your laboratories here are arranged with admirable provision for research. The student should enter on his study of a natural science through the portal of its fundamental experiments. The attitude his mind thus takes is the true one—the only true one—for further insight into the subject. Too often humanistic studies at school have tended to kill the natural philosopher within the child—to destroy that innate curiosity for facts, the healthy heritage of childhood. He leaves school a little bookman. Even as to the phenomena of Nature he has been insensibly led to ask for statements upon authority rather than to turn his own senses and observation to the phenomena themselves. To learn a science or acquire an art resting upon sciences, the first thing to do is to look at the fundamental facts for yourself. Our great teachers of medicine teach upon this plan. They teach where they learned, not in the library, but from the bedside of the sick. In laboratories such as those raised here for physiology and pathology students can learn these sciences as medicine is learned in the hospital ward, by direct inquiry into Nature. The teachers you give them are men who have won widely-recognized distinction themselves as direct inquirers into Nature. Worthy students will appreciate the double boon their Alma Mater thus gives them—the means of learning at first hand those secrets of Nature which lie at the root of their craft's skill, and to learn them under guidance from men who excel in unravelling such secrets.

English Action.

Only by enabling men to continue their learning after their teaching is over can we secure the greatest advantage any educational system can afford. Your laboratories here will encourage post-graduate work. We look with keen interest to the researches that will flow from them. No subjects offer finer fields for research than do the progressive studies—physiology, pathology, and hygiene—to which your new University buildings are consecrated. And of the functions of a laboratory, research is not the least costly. We in the old country find that. Our central Government has done little to support research. Our nation, proud of its success in things practical, has been prone to despise the abstract and the theoretical. We do so foolishly; we do so at our peril. Behind all practical application there is a region of intellectual action to which, though our practical men have contributed little, they owe the whole of their supplies. Theory, if a goose, is the goose of the fairy tale that lays the golden eggs. No more such eggs if once you let her die. To speak of theoretic knowledge slightingly is for the lips of a fool. The value of abstract research to a country is becoming more widely acknowledged among us than it was. Sir John Brunner said the other day, at Liverpool, that there was no better investment for a business man than the encouragement of scientific research, and that every penny of the wealth he possesses has come from the application of science to commerce and to manufacture. And we find that munificent citizens have and do come forward among us and meet by their individual gifts the pressing needs in this respect of our community at large.

New Era Dawning.

But we welcome a new era dawning on us. Liverpool, Birmingham, Sheffield, and other great centres begin to regard the local university as an institution entitled to support from the public means—for instance, by subsidy from public rates. Such subsidies can be used also for studies which do not come within allotment from the smaller subsidy from the central Government—medicine, for instance. Proud of the young universities—to which yours of Toronto is a time-honoured veteran—communities and local governments are encouraging research within our universities. They do not expect such research to be able to pay its own way, but they recognize that indirectly it does pay the community that gives it a home. They feel it a duty which they owe themselves. Is not the university a part of their own life, and is not research a part of the university's life blood? They feel it a right due to their own higher selves. It stimulates progress. Supported by the large-handed sympathy of the community and the local government, it means quicker advance, both material and mental, it means invention, and it means medical discovery. *Qui facit per alium facit per se:* that is a motto worthy of a State.

Uses of Laboratories.

What, then, are finally the uses of these laboratories now opened by your University? They will assist in training men for various honourable callings, especially for that most ancient one of medicine. They will assist, no doubt, also to render life, by practical applications of science, superficially still more different from what it was only a short generation ago. They will assist to bring home and distribute to your community treasures of knowledge from all the quarters of the globe. They will assist—and it is a thought dear to a high-spirited people—themselves to add to the sum total of the treasures of knowledge of the whole human race. "*Noblesse oblige*" appeals not only to chivalrous individuals, but to chivalrous nations.

Yet their highest office seems to me, perhaps, not even these high ones, but a more difficult still. Genius cannot by any community, however wealthy and powerful, be made to order. In biblical language, it is the gift of God. All a community can do toward obtaining it, be our riches and willingness a thousandfold what they are, is to ensure the rare and glorious plant a meed of freedom, light, and warmth for blossoming upon our soil. Who can doubt that in this population here genius exists—not sown, it is true, broadcast, for nowhere is it thus—yet existent, scattered up and down? This it is for the community to foster, to discover.

By help of these finely-built and complete laboratories this much in one direction can be done. The problem to which a wise country turns is the discovery less of things than of men. By these laboratories, adequately supported, your community can create opportunity for the exercise of powers which come from sources within itself, but are utterly beyond its power to produce at will. Their loftiest function is creation of this opportunity. For that aim the studies in them must be followed with no single narrow technical purpose, but must be wide of scope and free of access to every rank of students. So shall these laboratories prove a corner-stone for the upbuilding of a temple of knowledge, and a touchstone for the best ore of intellect within the bounds of this great land.

An Address
ON
THE MASTER-WORD IN MEDICINE.

Delivered to Medical Students on the Occasion of the Opening of the New Laboratories of the Medical Faculty of the University of Toronto, October 1st, 1903.

By WILLIAM OSLER, M.D., F.R.S.,
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I.—The University of Toronto: Present—Past.

Before proceeding to the pleasing duty of addressing the undergraduates, as a native of this province and as an old student of this school I must say a few words on the momentous changes inaugurated with this session, the most important, perhaps, which have taken place in the history of the profession in Ontario. The splendid laboratories which we saw opened this afternoon, a witness to the appreciation by the authorities of the needs of science in medicine, make possible the highest standards of education in the subjects upon which our art is based. They may do more. A liberal policy, with a due regard to the truth that the greatness of a school lies in brains not bricks, should build up a great scientific centre which will bring renown to this city and to our country. The men in charge of the departments are of the right stamp. See to it that you treat them in the right way by giving skilled assistance enough to ensure that the vitality of men who could work for the world is not sapped by the routine of teaching. One regret will, I know, be in the minds of many of my younger hearers. The removal of the departments of anatomy and physiology from the biological laboratory of the University breaks a connexion which has had an important influence on medicine in this city. To Professor Ramsay Wright is due much of the inspiration which has made possible these fine new laboratories. For years he has encouraged in every way the cultivation of the scientific branches of medicine, and has unselfishly devoted much time to promoting the best interests of the Medical Faculty. And in passing, let me pay a tribute to the ability and zeal with which Dr. A. B. Macallum has won for himself a world-wide reputation by intricate studies which have carried the name of this University to every nook and corner of the globe where the science of physiology is cultivated. How much you owe to him in connexion with the new buildings I need scarcely mention in this audience.

But the other event which we celebrate is of much greater importance. When the money is forthcoming it is an easy matter to join stone to stone in a stately edifice, but it is hard to find the market in which to buy the precious cement which can unite into a harmonious body the profession of medicine of two rival medical schools in the same city. That this has been accomplished so satisfactorily is a tribute to the good sense of the leaders of the two faculties, and tells of their recognition of the needs of the profession in the province. Is it too much to look forward to the absorption or affiliation of the Kingston and London schools into the Provincial University? The day has passed in which the small school without full endowment can live a life beneficial to the students, to the profession, or to the public. I know well the sacrifice of time and money which is freely made by the teachers of those schools, and they will not misunderstand my motives when I urge them to commit suicide, at least so far as to change their organizations into clinical schools in affiliation with the central University, as part, perhaps, of a widespread affiliation of the hospitals of the province. A school of the first rank in the world, such as this must become, should have ample clinical facilities under its own control. It is as much a necessity that the professors of medicine and surgery, etc., should have large hospital services under their control throughout the year as it is that professors of pathology and physiology should have laboratories such as those in which we here meet. It should be an easy matter to arrange between the provincial authorities and the trustees of the Toronto General Hospital to replace the present antiquated system of multiple small services by modern well equipped clinics—three in medicine and three in surgery to begin with. The increased efficiency of the service would be a substantial *quid pro quo*, but there would have to be a self-denying ordinance on the part of many of the attending physicians. With the large number of students in the combined school no one hospital can furnish in practical medicine, surgery, and the specialities, a training in the art an equivalent of that which the student will have in the science in the new laboratories. An affiliation should be sought with every hospital in the city and province of fifty beds and over, in each of which two or three extramural teachers should be recognized, who would receive for three or more months a number of students proportionate to the beds in the hospital. I need not mention names. We all know men in Ottawa, Kingston, London, Hamilton, Guelph, and Chatham who could take charge of small groups of the senior students and make of them good practical doctors. I merely throw out the suggestion. There are difficulties in the way, but is there anything in this life worth struggling for which does not bristle with them?

Students of Medicine.—May this day be to each one of you—as it was to me when I entered this school thirty-five years ago—the beginning of a happy life in a happy callling. Not one of you has come here with such a feeling of relief as that which I experienced at an escape from conic sections and logarithms and from Hooker and Pearson. The dry bones became clothed with interest, and I felt that I had at last got

to work. Of the greater advantages with which you start I shall not speak. Why waste words on what you cannot understand? To those only of us who taught and studied in the dingy old building which stood near here is it given to feel to the full the change which the years have wrought, a change which my old teachers, whom I see here to-day—Dr. Richardson, Dr. Ogden, Dr. Thorburn and Dr. Oldwright—must find hard to realize. One looks about in vain for some accustomed object on which to rest the eye in its backward glance—all, all are gone, the old familiar places. Even the landscape has altered, and the sense of loneliness and regret, the sort of homesickness one experiences on such occasions, is relieved by a feeling of thankfulness that at least some of the old familiar faces have been spared to see this day. To me, at least, the memory of those happy days is a perpetual benediction, and I look back upon the two years I spent at this school with the greatest delight. There were many things that might have been improved—and we can say the same of every medical school at that period—but I seem to have got much more out of it than our distinguished philosopher friend, J. Beattie Crozier, whose picture of the period seems rather hardly drawn. But after all, as some one has remarked, instruction is often the least part of an education, and, as I recall them, our teachers in their life and doctrine set forth a true and lively word to the great enlightenment of our darkness. They stand out in the background of my memory as a group of men whose influence and example were most helpful. In William R. Beaumont and Edward Mulberry Hodder we had before us the highest type of the cultivated English surgeon. In Henry H. Wright we saw the incarnation of faithful devotion to duty—too faithful, we thought, as we trudged up to the 8 o'clock lecture in the morning. In W. T. Aikens a practical surgeon of remarkable skill and an ideal teacher for the general practitioner. How we wondered and delighted in the demonstrations of Dr. Richardson, whose infective enthusiasm did much to make anatomy the favourite subject among the students. I had the double advantage of attending the last course of Dr. Ogden and the first of Dr. Thorburn on materia medica and therapeutics, and Dr. Oldwright had just begun his career of unselfish devotion to the cause of hygiene. To one of my teachers I must pay in passing the tribute of filial affection. There are men here to-day who feel as I do about Dr. James Bovell—that he was one of the finer spirits, not uncommon in life, touched to finer issues only in a suitable environment. Would the Paul of evolution have been Thomas Henry Huxley had the Senate elected the young naturalist to a chair in this University in 1851?

Only men of a certain intensity rise superior to their surroundings, and while Dr. Bovell had that all-important combination of boundless ambition with energy and industry, he had that fatal fault of diffuseness in which even genius is strangled. With a quadrilateral mind, which he kept spinning like a teetotum, one side was never kept uppermost for long at a time. Caught in the storm which shook the scientific world with the publication of the *Origin of Species*, instead of sailing before the wind, even were it with bare poles, he put about and sought a harbour of refuge in writing a work on *Natural Theology*, which you will find on the shelves of second-hand book shops in a company made respectable at least by the presence of Paley. He was an omnivorous reader and transmutor, and could talk pleasantly, even at times transcendentally, upon anything in the science of the day, from protoplasm to evolution; but he lacked concentration and that scientific accuracy which only comes with a long training (sometimes, indeed, never comes), and which is the ballast of the boat. But the bent of his mind was devotional, and early swept into the Tractarian movement, he became an advanced Churchman, a good Anglican Catholic. As he chaffingly remarked one day to his friend, the Reverend Mr. Darling, he was like the waterman in *Pilgrim's Progress*, rowing one way, towards Rome, but looking steadfastly in the other direction, towards Lambeth. His *Steps to the Altar* and his *Lectures on the Advent* attest the earnestness of his convictions: and later in life, following the example of Linacre, he took orders and became another illustration of what Cotton Mather calls the angelical conjunction of medicine with divinity. Then, how well I recall the keen love with which he would engage in metaphysical discussions, and the ardour with which he studied Kant, Hamilton, Reed, and Mill. At that day to the Rev. Professor Bevan was entrusted the rare privilege of directing the minds of the thinking youths at the provincial University into proper philosophical channels. It was rumoured that the hungry sheep looked up and were not fed. I thought so at least, for certain of them, led by T. Wesley Mills, came over daily after Dr. Bovell's four o'clock lecture to reason high and long with him

> On Providence, Foreknowledge, Will and Fate
> Fixed Fate, Freewill, Foreknowledge absolute.

Yet withal his main business in life was as a physician, much sought after for his skill in diagnosis and much beloved for his loving heart. He had been brought up in the very best practical schools. A pupil of Bright and of Addison, a warm personal friend of Stokes and of Graves, he maintained loyally the traditions of Guy's, and taught us to reverence his great masters. As a teacher he had grasped the fundamental truth announced by John Hunter of the unity of physiological and pathological processes, and, as became the occupant of the Chair of the Institute of Medicine, he would discourse on pathological processes in lectures on physiology, and illustrate the physiology of bioplasm in lectures on the pathology of tumours to the bewilderment of the students. When in September 1870 he wrote to me that he did not intend to return from the West Indies, I felt that I had lost a father and a friend, but in Robert Palmer Howard, of Montreal, I found a noble stepfather, and to these two men and to my first teacher the Rev W. A. Johnson, of Weston, I owe my success in life, if success means getting what you want and being satisfied with it.

II.—On Work and Worry.

Of the value of an introductory lecture I am not altogether certain. I do not remember to have derived any enduring benefit from the many that I have been called upon to hear, or from the not a few that I have inflicted in my day. On the whole I am in favour of abolishing the old custom, but as this is a very special occasion, with special addresses, I consider myself most happy to have been selected for this part of the programme. To the audience at large I fear that much of what I have to say will appear trite and commonplace, but bear with me, since indeed to most of you, how good so ever the word, the season is long past in which it could be spoken to your edification. As I glance from face to face the most striking single peculiarity is the extraordinary diversity that exists among you. Alike in that you are men and white, you are unlike in your features, very unlike in your minds and in your mental training, and your teachers will mourn the singular inequalities in your capacities. And so, it is sad to think, will be your careers; for one success, for another failure; one will tread the primrose path to the great bonfire, another the strait and narrow way to renown; some of the best of you will be stricken early on the road, and will join that noble band of youthful martyrs who loved not their lives to the death; others, perhaps the most brilliant among you, like my old friend and comrade Dick Zimmerman (how he would have rejoiced to see this day!), the fates will overtake, and whirl to destruction just as success seems assured. When the iniquity of oblivion has blindly scattered her poppy over us, some of you will be the trusted counsellors of this community, and the heads of departments in this Faculty; while for the large majority of you let us hope is reserved the happiest and most useful lot given to man—to become vigorous, whole-souled, intelligent general practitioners.

It seems a bounden duty on such an occasion to be honest and frank, so I propose to tell you the secret of life as I have seen the game played, and as I have tried to play it myself. You remember in one of the *Jungle Stories* that when Mowgli wished to be avenged on the villagers he could only get the help of Hathi and his sons by sending them the master-word. This I propose to give you in the hope—yes, in the full assurance—that some of you at least will lay hold upon it to your profit. Though a little one the master-word looms large in meaning. It is the open sesame to every portal, the great equalizer in the world, the true philosopher's stone which transmutes all the base metal of humanity into gold. The stupid man among you it will make bright, the bright man brilliant, and the brilliant student steady. With the magic word in your heart all things are possible, and without it all study is vanity and vexation. The miracles of life are with it; the blind see by touch, the deaf hear with eyes, the dumb speak with fingers. To the youth it brings hope, to the middle aged confidence, to the aged repose. True balm of hurt minds, in its presence the heart of the sorrowful is lightened and consoled. It is directly responsible for all advances in medicine during the past twenty-five centuries. Laying hold upon it Hippocrates made observation and science the warp and woof of our art.

Galen so read its meaning that fifteen centuries stopped thinking and slept until awakened by the *De Fabrica* of Vesalius, which is the very incarnation of the master-word. With its inspiration Harvey gave an impulse to a larger circulation than he wot of, an impulse which we feel to-day. Hunter sounded all its heights and depths, and stands out in our history as one of the great exemplars of its virtues. With it Virchow smote the rock and the waters of progress gushed out; while in the hands of Pasteur it proved a very talisman to open to us a new heaven in medicine and a new earth in surgery. Not only has it been the touchstone of progress, but it is the measure of success in every-day life. Not a man before you but is beholden to it for his position here, while he who addresses you has that honour directly in consequence of having had it graven on his heart when he was as you are to-day. And the master-word is Work—a little one, as I have said, but fraught with momentous sequences if you can but write it on the tables of your heart and bind it upon your foreheads. But there is a serious difficulty in getting you to understand the paramount importance of the work-habit as part of your organization. You are not far from the Tom Sawyer stage with its philosophy "that work consists of whatever a body is obliged to do, and that play consists of whatever a body is not obliged to do." For most of us it means a hard battle; the few take to it naturally; the many prefer idleness and never learn to love to labour. A great many hard things may be said of the work-habit. Listen to this—says Robert Louis Stevenson:

> "Look at one of your industrious fellows for a moment, I beseech you. He sows hurry and reaps indigestion; he puts a vast deal of activity out to interest, and receives a large measure of nervous derangement in return. Either he absents himself entirely free from all fellowship, and lives a recluse in a garret, with carpet slippers and a leaden inkpot: or he comes among people swiftly and bitterly, in a contraction of his whole nervous system, to discharge some temper before he returns to work. I do not care how much or how well he works, this fellow is an evil feature in other people's lives.

These are the sentiments of an overworked, dejected man; let me quote the motto of his saner moments: "To travel hopefully is better than to arrive, and the true success is to labour." If you wish to learn of the miseries of scholars in order to avoid them read Part I, Section II, Member 3, Subsection xv, of that immortal work, the *Anatomy of Melancholy*, and I am here to warn you against these evils, and to entreat you to form good habits in your student days.

At the outset appreciate clearly the aims and objects each one of you should have in view—a knowledge of disease and its cure, and a knowledge of yourselves. The one, a special education, will make you a practitioner of medicine; the other, an inner education, may make you a truly good man, four square and without a flaw. The one is extrinsic, and is largely accomplished by teacher and tutor, by text and by tongue; the other is intrinsic, and is the mental salvation to be wrought out by each one for himself. The first may be had without the second; any one of you may become an active practitioner without ever having had sense enough to realize that through life you have been a fool; or you may have the second without the first, and, without knowing much of the art, you may have endowments of head and heart that make the little you do possess go very far in the community. That with which I hope to infect you is a desire to have a due proportion of each.

So far as your professional education is concerned, what I shall say may make for each one of you an easy path easier. The multiplicity of the subjects to be studied is a difficulty, and it is hard for teacher and student to get a due sense of proportion in the work. We are in a transition stage in our methods of teaching, and have not everywhere got away from the idea of the examination as the "be-all and end-all;" so that the student has constantly before his eyes the magical letters of the degree he seeks. And this is well, perhaps, if you will remember that, having in the old phrase commenced Bachelor of Medicine, you have only reached a point from which you can begin a lifelong process of education.

So many and varied are the aspects presented by this theme that I can only lay stress upon a few of the more essential. The first step towards success in any occupation is to become interested in it. Locke put this in a very happy way when he said give a pupil "a relish of knowledge" and you put life into his work. And there is nothing more certain than that you cannot study well if you are not interested in your profession. Your presence here is a warrant that in some way you have become attracted to the study of medicine, but the speculative possibilities so warmly cherished at the outset are apt to cool when in contact with the stern realities of the classroom. Most of you have already experienced the all-absorbing attraction of the scientific branches, and nowadays the practical method of presentation has given a zest which was usually lacking in the old theoretical teaching. The life has become more serious in consequence, and medical students have put away many of the childish tricks with which we used to keep up their bad name. Compare the picture of the "Sawbones" of 1842, as given in the recent biography of Sir Henry Acland, with their representatives to-day, and it is evident a great revolution has been effected, and very largely by the salutary influences of improved methods of education. It is possible now to fill out a day with practical work, varied enough to prevent monotony, and so arranged that the knowledge is picked out by the student himself, not thrust into him willy-nilly, at the point of the tongue. He exercises his wits, and is no longer a passive Strassburg goose, tied up and stuffed to repletion.

How can you take the greatest possible advantage of your capacities with the least possible strain? By cultivating system. I say "cultivating" advisedly, since some of you will find the acquisition of systematic habits very hard. There are minds congenitally systematic; others have a lifelong fight against an inherited tendency to diffuseness and carelessness in work. A few brilliant fellows try to dispense with it altogether, but they are a burden to their brethren and a sore trial to their intimates. I have heard it remarked that order is the badge of an ordinary mind. So it may be, but as practitioners of medicine we have to be thankful to get into this useful class. Let me entreat those of you who are here for the first time to lay to heart what I say on this matter. Forget all else, but take away this counsel of a man who has had to fight a hard battle, and not always a successful one, for the little order he has had in his life. Take away with you a profound conviction of the value of system in your work. I appeal to the freshmen especially, because you to-day make a beginning, and your future career depends very much upon the habits you will form during this session. To follow the routine of the classes is easy enough, but to take routine into every part of your daily life is a hard task. Some of you will start out joyfully, as did Christian and Hopeful, and for many days will journey safely towards the Delectable Mountains, dreaming of them and not thinking of disaster until you find yourselves in the strong captivity of Doubt and under the grinding tyranny of Despair. You have been over-confident. Begin again and more cautiously. No student escapes wholly from these perils and trials; expect them and be not disheartened. Let each hour of the day have its allotted duty, and cultivate that power of concentration which grows with its exercise, so that the attention neither flags nor wavers, but settles with a bull-dog tenacity on the subject before you. Constant repetition makes a good habit fit easily in your mind, and by the end of the session you may have gained that most precious of all knowledge—the power to work. Do not under-estimate the difficulty you will have in wringing from your reluctant selves the stern determination to exact the uttermost minute on your schedule. Do not get too interested in one study at the expense of another, but so map out your day that due allowance is given to each. Only in this way can the average student get the best that he can out of his capacities. And it is worth all the pains and trouble he can possibly take for the ultimate gain—if he can reach his doctorate with system so ingrained that it has become an integral part of his being.

The artistic sense of perfection in work is another much to be desired quality to be cultivated. No matter how trifling the matter on hand, do it with a feeling that it demands the best that is in you, and when done look it over with a critical eye, not sparing a strict judgement of yourself. This it is that makes anatomy a student's touchstone. Take the man who does his "part" to perfection, and who has got out all there is in it, who labours over the tags of connective tissue and who demonstrates Meckel's ganglia in his part—this is the fellow in after years who is apt in emergencies, who saves a leg badly smashed in a railway accident, or fights out to the finish, never knowing when he is beaten, in a case of typhoid fever.

Learn to love the freedom of the student life, only too quickly to pass away, the absence of the coarser cares of after-days, the joy in comradeship, the delight in the new work, the happiness in knowing that you are making progress. Once only can you enjoy these pleasures. The seclusion of the student life is not always good for a man, particularly for those of you who will afterwards engage in general practice, since you will miss that facility of intercourse upon which

often the doctor's success depends. On the other hand sequestration is essential for those of you with high ambitions proportionate to your capacity. It was for such St. Chrysostom gave his famous counsel,

Depart from the highways and transplant thyself into some enclosed ground, for it is hard for a tree that stands by the wayside to keep its fruit till it be ripe.

Has work no dangers connected with it? What of this bogie of overwork of which we hear so much? There are dangers, but they may be readily avoided with a little care. I can only mention two, one physical, one mental. The very best students are often not the strongest. Ill-health, the bridle of Theages, as Plato called it in the case of one of his friends whose mind had thriven at the expense of his body, may have been the diverting influence towards books or the profession. Among the good men who have studied with me there stand out in my remembrance many a young Lycidas, "dead ere his prime," sacrificed to carelessness in habits of living and neglect of ordinary sanitary laws. Medical students are much exposed to infection of all sorts, to combat which the body must be kept in first-class condition. Grosseteste, the great Bishop of Lincoln, remarked that there were three things necessary for temporal salvation—food, sleep, and a cheerful disposition. Add to these suitable exercise and you have the means by which good health may be maintained. Not that health is to be a matter of perpetual solicitude, but habits which favour the *corpus sanum* foster the *mens sana*, in which the joy of living and the joy of working are blending in one harmony. Let me read you a quotation from old Burton, the great authority on *morbi eruditorum*. There are

many reasons why students dote more often than others. The first is their negligence; other men look to their tools, a painter will wash his pencils, a smith will look to his hammer, anvil, forge; a husbandman will mend his plough-irons, and grind his hatchet, if it be dull; a falconer or huntsman will have an especial care of his hawks, hounds, horses, dogs, etc.; a musician will string and unstring his lute, etc.; only scholars neglect that instrument, their brain and spirits (I mean), which they daily use.

Much study is not only believed to be a weariness of the flesh, but also an active cause of ill-health of mind in all grades and phases. I deny that work, legitimate work, has anything to do with this. It is that foul fiend Worry who is responsible for a large majority of the cases. The more carefully one looks into the causes of nervous breakdown in students, the less important is work *per se* as a factor. There are a few cases of genuine overwork, but they are not common. Of the causes of worry in the student life there are three of prime importance, to which I may briefly refer.

An anticipatory attitude of mind, a perpetual forecasting, disturbs the even tenor of his way and leads to disaster. Years ago a sentence in one of Carlyle's essays made a lasting impression on me; "Our duty is not to see what lies dimly at a distance, but to do what lies clearly at hand." I have long maintained that the best motto for a student is, "Take no thought for the morrow." Let the day's work suffice; live for it, regardless of what the future has in store, believing that to-morrow should take thought for the things of itself. There is no such safeguard against the morbid apprehensions about the future, the dread of examinations and the doubt of ultimate success. Nor is there any risk that such an attitude may breed carelessness. On the contrary, the absorption in the duty of the hour is in itself the best guarantee of ultimate success. "He that regardeth the wind shall not sow and he that observeth the clouds shall not reap," which means you cannot work profitably with your mind set upon the future.

Another potent cause of worry is an idolatry by which many of you will be sore let and hindered. The mistress of your studies should be the heavenly Aphrodite, the motherless daughter of Uranus. Give her your whole heart, and she will be your protectress and friend. A jealous creature, brooking no second, if she finds you trifling and coquetting with her rival, the younger, earthly Aphrodite, daughter of Zeus and Dione, she will whistle you off and let you down the wind to be a prey perhaps to the examiners, certainly to the worm regret. In plainer language, put your affections in cold storage for a few years, and you will take them out ripened, perhaps a bit mellow, but certainly less subject to those frequent changes which perplex so many young men. Only a grand passion, an all-absorbing devotion to the elder goddess, can save those with a congenital tendency to philandering, those flighty Lydgates who sport with Celia and Dorothea, and upon whom the judgement ultimately falls in a basil-plant of a wife like Rosamond.

And thirdly, one and all of you will have to face the ordeal of every student in this generation who sooner or later tries to mix the waters of science with the oil of faith. You can have a great deal of both if you only keep them separate. The worry comes from the attempt at mixture. As general practitioners you will need all the faith you can carry, and while it may not always be of the conventional pattern, when expressed in your lives rather than on your lips the variety is not a bad one from the standpoint of St. James, and may help to counteract the common scandal alluded to in the celebrated diary of that gossipy old parson-doctor, the Rev. John Ward: "One told the Bishop of Gloucester that he imagined physicians of all other men the most competent judges of all others' affairs of religion; and his reason was because they were wholly unconcerned with it."

III.—On Consuming Your Own Smoke.

Professional work of any sort tends to narrow the mind, to limit the point of view, and to put a hall mark on a man of a most unmistakable kind. On the one hand are the intense, ardent natures, absorbed in their studies, and quickly losing interest in everything but their profession, while other faculties and interests fust in them unused. On the other hand are the bovine brethren, who think of nothing but the treadmill and the corn. From very different causes, the one from concentration, the other from apathy, both are apt to neglect those outside studies that widen the sympathies and help a man to get the best there is out of life.

Like art, medicine is an exacting mistress, and in the pursuit of one of the scientific branches—sometimes, too, in practice—not a portion of a man's spirit may be left free for other distractions, but this does not often happen. On account of the intimate personal nature of his work the doctor, perhaps more than any other man, needs that higher education of which Plato speaks, "that education in virtue from youth upwards which enables a man eagerly to pursue the ideal perfection." It is not for all nor can all attain to it, but there is comfort and help in the pursuit even though the end is never reached. For a large majority the daily round and the common task furnish more than enough to satisfy their heart's desire and there seems no room left for anything else. Like the good, easy man whom Milton scores in the Areopagitica, whose religion was a "traffic so entangled that of all mysteries he could not skill to keep a stock going upon that trade," and handed it over with all the locks and keys to "a divine of note and estimation," so it is with many of us in the matter of this higher education. No longer intrinsic, wrought in us and ingrained, it has become, in Milton's phrase, a "dividual movable," handed over to the daily press or to the hap-hazard instruction of the pulpit, the platform, or the magazines. Like a good many other things, it comes in a better and more enduring form if not too consciously sought. The all-important thing is to get a relish for the good company of the race in a daily intercourse with some of the great minds of all ages. Now, in the springtime of life, pick your intimates among them and begin a systematic cultivation of their works. Many of you will need a strong leaven to raise you above the level of the dough in which it will be your lot to labour. Uncongenial surroundings, an ever-present dissonance between the aspirations within and the actualities without, the oppressive discord of human society of which we have to see so much, the bitter tragedies of life, the *lachrymae rerum* beside the hidden springs of which we sit in sad despair—all these tend to foster in some natures a cynicism quite foreign to our vocation and to which this inner education offers the best antidote.

Personal contact with men of high purpose and character will help a man to make a start, to have the desire at least, but in its fullness this culture—for that word best expresses it—has to be wrought out by each one for himself. Start at once a bedside library and spend the last half-hour of the day in communion with the saints of humanity. There are great lessons to be learned from Job and from David, from Isaiah and St. Paul. Taught by Shakespeare, you may take your intellectual and moral measure with singular precision. Learn to love Epictetus and Marcus Aurelius. Should you be so fortunate as to be born a Platonist, Jowett will introduce you to the great master through whom alone we can think in certain levels, and whose perpetual modernness startles and delights. Montaigne will teach you moderation in all things, and to be "sealed of his tribe" is a special privilege. We have in the profession only a few great literary heroes of the first rank, the friendship and counsel of two of whom you cannot too earnestly seek. Sir Thomas Browne's *Religio Medici* should be your pocket companion, while from the *Breakfast Table* series of Oliver Wendell Holmes you can

glean a philosophy of life peculiarly suited to the needs of a physician. There are at least a dozen or more works which would be helpful in getting that wisdom which only comes to those who earnestly seek it. A conscientious pursuit of Plato's ideal perfection may teach you the three great lessons of life. You may learn to consume your own smoke. The atmosphere of life is darkened by the murmurings and whimperings of men and women over the non-essentials—the trifles that are inevitably incident to the hurly burly of the day's routine. Things cannot always go your way. Learn to accept in silence these minor aggravations; cultivate the gift of taciturnity, and consume your own smoke with an extra draught of hard work, so that those about you may not be annoyed with the dust and soot of your complaints. More than any other man the practitioner of medicine may illustrate the second great lesson, that we are here not to get all we can out of life for ourselves, but to try to make the lives of others happier. This is the essence of that oft-repeated admonition of Christ, "He that findeth his life shall lose it and he that loseth his life for my sake shall find it," on which hard saying if the children of this generation would only lay hold there would be less misery and discontent in the world. It is not possible to have better opportunities to live this lesson than you will enjoy. The practice of medicine is an art, not a trade, a calling, not a business—a calling in which your heart will be exercised equally with your head. Often the best part of your work will have nothing to do with potions and powders, but with the exercise of an influence of the strong upon the weak, of the righteous upon the wicked, of the wise upon the foolish. To you as the trusted family counsellor the father will come with his anxieties, the mother with her hidden griefs, the daughter with her trials, and the son with his follies. Fully one-third of the work you do will be entered in other books than yours. Courage and cheerfulness will not only carry you over the rough places of life, but will enable you to bring comfort and help to the weak-hearted, and will comfort you in the sad hours when, like Uncle Toby, you have "to whistle that you may not weep."

And the third great lesson you may learn is the hardest of all—that the law of the higher life is only fulfilled by love or charity. Many a physician whose daily work is a daily round of beneficence will say hard things and will think hard thoughts of a colleague. No sin will so easily beset you as uncharitableness towards your brother practitioners. So strong is the personal element in the practice of medicine, and so many are the wagging tongues in every parish, that evil speaking, lying, and slandering find a shining mark in the lapses and mistakes which are inevitable in our work. The opportunities are numerous, but there is no real reason for discord and disagreement, and the only way to avoid trouble is to have two plain rules. From the day you begin practice never under any circumstances listen to a tale told to the detriment of a brother practitioner. And when any dispute or trouble does arise, go frankly ere sunset and talk the matter over, in which way you may gain a brother and a friend. Very easy to carry out you may think. Far from it—there is no harder battle to fight. Theoretically there seems to be no difficulty, but when the concrete wound is rankling, and after Mrs. Jones has rubbed in the cayenne pepper by declaring that Dr. J. told her in confidence of your shocking bungling, your attitude of mind is that you would rather see him in purgatory than make any advance towards reconciliation. Wait until the day of your trial comes, and then remember my words.

And in closing may I say a few words to the younger practitioners in the audience whose activities will wax, not wane, with the growing years of the century which opens so auspiciously for this school, for this city and for our country? You enter a noble heritage, made noble by no efforts of your own, but by the generations of men who have unselfishly sought to do the best they could for suffering mankind. Much has been done, much remains to do; a way has been opened, and to the possibilities in the scientific development of medicine there seems to be no limit. Except in its application as general practitioners, you will not have much to do with this. Yours is a higher and a more sacred duty. Think not to light a light to shine before men that they may see your good works; contrariwise, you belong to the great army of quiet workers—physicians and priests, sisters and nurses—all over the world, the members of which strive not neither do they cry, nor are their voices heard in the streets, but to them is given the ministry of consolation in sorrow, need, and sickness. Like the ideal wife of whom Plutarch speaks, the best doctor is often the one of whom the public hears least; but nowadays in the fierce light that beats upon the hearth it is increasingly difficult to live the secluded life in which our best work is done. To you, the silent workers of the ranks, in villages and country districts, in the slums of our large cities, in the mining camps and factory towns, in the homes of the rich and in the hovels of the poor—to you is given the harder task of illustrating in your lives the old Hippocratic standards of learning, of sagacity, of humanity, and of probity. Of learning that you may apply in your practice the best that is known in our art, and that with the increase in your knowledge there may be an increase in that priceless endowment of sagacity, so that to all everywhere skilled succour may come in the hour of urgent need. Of a humanity that will show in your daily life tenderness and consideration to the weak, infinite pity to the suffering, and a broad charity to all. Of a probity that will make you under all circumstances true to yourselves, true to your high calling, and true to your fellow man.

The Bradshaw Lecture

ON

TUBERCULOSIS OF THE NERVOUS SYSTEM.

Delivered before the Royal College of Physicians of London.

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My first duty is to acknowledge the honour done to me in asking me to give this lecture and to express the hope that I may prove worthy of it.

I propose to address my remarks (1) to the forms which the tuberculous infection may assume in the nervous system, (2) to the mode of infection of the brain and meninges, (3) to some points in diagnosis connected with spinal puncture, and finally to the possibility of recovery. I have to express my obligations to my colleagues on the staff of the Leeds General Infirmary for permission to use the records of 114 fatal cases which have occurred during the past twenty years in that institution. I must also thank Dr. Ursula Chaplin for much able help in laboratory work.

The Forms of Tuberculous Infection.

The various forms of tuberculosis of the nervous system consist of tuberculosis of the dura mater, tuberculous meningitis in its more general and limited forms, tuberculous masses in the brain and cord, and a possible miliary tuberculosis of the brain itself.

An old question raised many years ago by Rilliet and Barthez[1] has been much discussed lately, as to whether it is possible to have a tuberculous meningitis without the presence of tubercles, or, at any rate, with only a minimal tubercle formation. Such an affection has been compared to certain benign tuberculous affections of joints and serous membranes, and the name of "tuberculous meningopathy" has been suggested to distinguish it from the ordinary fatal form of tuberculous meningitis. Poncet,[2] Patel,[3] Sepet,[4] Galliard[5] are the chief exponents of this view, and the subject has been well summarized by Bouclier[6] in a recent Lyons thesis. Among the Leeds cases there are 14 in which thickening or exudation is noted at the base of the brain without visible tubercles. Cerebral symptoms were present before death in 12 of these cases, and abundant tuberculous lesions elsewhere in the body in all. I think it is fair to conclude that tubercle formation was at its minimum—or even absent, in some of these cases at any rate—and that the changes noted were a manifestation of the tuberculous infection, and were responsible for the symptoms. It has been suggested that the poisons of the tubercle bacillus may cause this more exudative or serous form of meningitis. Armand Delille[7] has separated a poison which produced in his experiments productive tissue changes. In three instances of intrameningeal injection of measured quantities of tuberculin I found no local effects, but progressive wasting, ending, in one guinea-pig, in death. More information is obviously wanted about this benign form of tuberculous meningitis and its anatomical counterpart.

The limited meningitis described by French authorities

(Chantemesse,[8] Combe,[9] Monnier,[10] and others) consists of a great thickening with tubercle formation over a limited portion, usually of the motor cortex. It is said to occur in phthisis, and its symptoms, as Combe points out, differ from those of ordinary tuberculous meningitis. There are 9 cases in my series in which such localized thickening over a limited area of the cortex was noted; the most marked case was in a boy of 7. The plaque occurred over Broca's convolution, and difficulty in speech was noted during life. In this case there were miliary tubercles in the lung, and in 3 other cases phthisis. This localized lesion may be produced experimentally (Sicard), and I have myself seen an instance of it.

Tuberculous masses in the brain are not infrequent. They were present in 33 of the 114 cases. In 15 they appeared to be recent and but little antecedent to the existing meningitis. In only 17 of the 33 cases were they multiple, a smaller proportion than usual. The largest number present in one case was 4. In size they vary from a millet seed up to an orange and larger. They are mostly well defined, and shell out with ease. Minute tubercles are often visible in their bed and on their surface, making recognition easy. They are often surrounded by an area of vascular engorgement, but as a rule there is no definite capsule. They vary in consistency, and when laid open display mostly a yellowish and caseating centre and a peripheral growing zone made up of recent tuberculous tissue. Tubercle bacilli may or may not be found in this peripheral zone. As a rule these masses show little tendency to break down, still less to calcify. Except in the pons, medulla, and cord, where they are usually surrounded by nervous tissue, they most often project on to the surface. The infection of the cerebro-spinal fluid is thus easily brought about, as Ziegler[11] points out. In as many as 23 of my 33 cases there was present a tuberculous meningitis. In one of my cases there was a loose tumour in the fourth ventricle undoubtedly tuberculous, although no giant cells or tubercle bacilli have been seen in it. There were other tuberculous lesions in the body. Tuberculous tumours of the spinal cord are not common. Dr. Barrs had this drawing made of one and I have brought the other, which came from a child of three with other similar masses in the brain.

In one of the Leeds cases an abscess, possibly tuberculous, was found in the pons along with other tuberculous masses in the brain. There is at present a beautiful specimen on view in St. George's Hospital museum, which shows multiple tuberculous masses breaking down into abscesses containing tubercle bacilli. The relatively rare tuberculous tumours of the dura are nearly invariably multiple and grow from its inner vascular surface in the posterior fossa or from the falx cerebelli. One of the two specimens from our museum came from a child of 6 with tuberculous cavities in the lungs, caseous, bronchial, and mesenteric glands and intestinal ulceration. Miliary tubercles were noted twice, once by Dr. Wardrop Griffith, to whom I am indebted for many valuable comments upon the necropsies made by him.

Mode of Infection of the Brain and Meninges.

It is admitted that a complete examination almost invariably reveals an older tuberculous focus somewhere in the body. In only 6 cases was no such focus found, and here the notes are incomplete. Under congenital tuberculosis I need only refer to Demme's well-known and almost unique case of a tuberculous cerebellar tumour in an infant aged 23 days.

If our knowledge of the infection of meninges and brain were at all complete, which is by no means the case, we should know where the infecting focus is, what brings about the mobilization of the tubercle bacillus from it, what channels it travels by, and what determines its settling down in any given area in the brain. The actual infecting focus may exceptionally be small and easily overlooked, and it is obvious that the oldest lesion is not necessarily the infecting one.

A direct infection through the nose is believed to be possible, as in Demme's case, quoted by Cornet.[12] A spread from tuberculous disease of the ear may take place, though not quite direct, because the ear would appear to be infected through the lymphoid tissue of the naso-pharynx. Grimmer,[13] who has worked at the subject, puts down tuberculosis as the cause of middle-ear disease in 65 to 70 per cent. in children under five, and 16 per cent. above that age. Ten of my 114 cases had obvious ear disease, and were mostly admitted under Mr. Secker Walker and Mr. Whitehead. Although the ear disease was not proved to be tuberculous, it is interesting to note that in 7 of these cases there was another old, possibly infecting, focus in the body, and in another 2 the state of the glands is not noted. Experimentally I believe it is very difficult to infect the brain and meninges through the accessory cavities. In spinal caries I take it that a general tuberculous meningitis is not a common occurrence. There are only 4 such cases in my series. In 2 the organs are said to be normal, in 1 the mesenteric glands are said to be enlarged, and in the other the glands are not noted at all. Miliary tubercles on the inner surface of the dura were noted in one case. In Dr. Churton's case of a large tuberculous tumour in the frontal lobes the spread from the bone to the dura and brain seemed obvious. Poli[14] maintains that the dura mater is an important barrier against this inward extension. In a single experiment devised to test this view, I quite failed to confirm it.

The lungs were normal in 28 cases. It has been proved that tubercle bacilli may pass through the lungs without leaving an obvious recognizable lesion. A miliary tuberculosis of the lungs was noted in 54 cases; 18 cases presented the lesions of phthisis, together with a miliary lesion in 8 of them. Phthisis is said to be the most common cause of tuberculous meningitis in the adult. Personally I have had very little experience of this complication in obvious clinical phthisis, although during the past four years I have had the opportunity of watching the course of phthisis in a considerable number of cases in connexion with the Leeds Tuberculosis Association. One case I saw with Dr. Wainman I have reason to remember, as I failed to assign the quite early vomiting to its proper cause.

Joints and bones were affected in 23 out of the 114 cases—namely, the hip in 13, the ankle in 3, the knee, elbow, and wrist each in 1. In 4 cases 2 joints were involved. The hip disease was old in 2 cases. The bones affected were the spinal column in 4, and the frontal bone and ribs each in 1 case.

In 4 cases the kidney was the seat of extensive tuberculous disease. It was associated in 1 case with pulmonary and laryngeal phthisis, in another with hip disease, and in a third with ear disease. The generative organs, no doubt not always examined, are noted as diseased in 2 cases, once in a man with a tuberculous testis and vas deferens, and once in a woman with tuberculous Fallopian-tube disease and tuberculous peritonitis. Simmonds's statistics[15] show an extraordinarily high percentage; thus in 60 cases of tuberculous meningitis one-third had genital tuberculosis; 35 of the 60 were men, and here the proportion was one-half.

Ordinary tuberculous peritonitis was noted in 8 cases, and intestinal ulceration, mostly recent, in 28 cases. In another case there was extensive tuberculous ulceration of the colon and rectum.

The relation of the lymphatic glands to tuberculous meningitis is of the first importance; unfortunately my records are distinctly incomplete in this respect. The lymphatic system constitutes a most important defence, especially in the child, against a general tuberculous infection. Manfredi and Fresco[16] have been able to demonstrate, even in so susceptible an animal as the guinea-pig, the important rôle they play. Glands, it must be remembered, may contain virulent tubercle bacilli, and yet appear as normal to the naked eye. The glands which stand in the most direct relation to tuberculous meningitis are the mediastinal. Haushalter and Fruhingsholz[17] have recently found old and caseating lesions in the pretracheo-bronchial glands in 63 out of 67 cases of tuberculous meningitis. It is a particularly striking fact that in as many as 40 cases (35 with miliary tuberculosis) no old focus was present other than the adenopathy. This close relationship can only be connected with the all-important fact that the lungs constitute the port of entry of the tubercle bacillus in the large majority of these cases. Carrière[18] believes that the mesenteric glands may be the infecting focus in a goodly number of cases of tuberculous meningitis. It should be remembered that the infection of the mesenteric glands in a retrograde fashion from the mediastinal glands is obviously an anatomical possibility. We are obliged to appeal to this retrograde infection to explain some features in the spread of experimental tuberculosis. This mode of infection is more likely to be effective if there is any pressure upon the thoracic duct by enlarged and caseating mediastinal glands.

More puzzling yet than some features connected with the infecting focus is the mobilization of the tubercle bacillus from it. It has been suggested that tuberculin may bring about this effect. Rutimeyer's[19] case of phthisis, in which tuberculous meningitis appeared at the close of a course of

tuberculin treatment, is very suggestive. I am aware that Cornet,[12] in his admirable work on tuberculosis, will have none of this explanation. Dr. Simmonds has seen cases of genital tuberculosis in which tuberculous meningitis ensued within a few weeks to months after marriage.

Tuberculous meningitis occurred shortly after an operation in 8 out of the 114 cases. The interval between the operation and the meningeal infection forcibly reminds one of the incubation period in experimental tuberculosis. This interval has varied from one up to six or seven weeks; at least one case must be excluded as the interval is too short. The operations were upon the cervical glands, the ankle and hip-joints, also a laparotomy, etc. Some have thought that tubercle bacilli have been liberated in the field of operation and have then gained access into the blood current. No doubt this view should receive practical attention. In the parallel case where an early phthisis blazes out after an operation into a fatal activity, of which I have recently seen two cases (one with Dr. Gordon Sharp), an explanation appears to me to be at hand. It may be attributed to an actual inhalation infection of hitherto sound parts of the lung brought about by the deep inspirations caused by the anaesthetic. Rodocanachi[20] has also recently published two cases of a fatal aggravation of the pulmonary lesion after operation. It has been suggested in cases of tuberculous meningitis following rapidly upon injury as in a recent case by Mollard, quoted by Bouclier, that the actual mechanical concussion may have led to an escape of tubercle bacilli from the infecting focus, but this is not by any means convincing. There appears to be no satisfactory explanation of the occurrence of the disease at an interval after measles, whooping-cough, etc.

The route by which the bacilli travel from the infecting focus to the meninges or brain is far from satisfactorily worked out. It is either by the blood or lymphatic vessels. A striking fact in connexion with tuberculous meningitis is the marked alteration in the blood vessels. In one case under Dr. Barrs the Sylvian artery was blocked. Similar lesions have been recorded by several observers. In Cruchet's[21] case of at least a temporary recovery from tuberculous meningitis there were abundant old tubercles about the posterior cerebral and basilar arteries, the latter being almost occluded. In laying open the branches of the Sylvian arteries in one case I could see tubercles in the vessel walls. Sicard[22] has shown experimentally that the meninges may be infected, though with some difficulty, by injecting tubercle bacilli into the carotid artery. A pulmonary tuberculosis, however, is the common result unless the jugular veins are tied. Cornil, Bezancon, and Griffon[23] have studied the changes in the brain after injecting tubercle bacilli into the carotid artery of rabbits. No bacilli were found in the arterioles, but they had multiplied in the perivascular sheath, which were filled with large swollen cells. The process illustrates, according to the authors, the development of tubercle at the expense of the lymphatic sheath. On the other hand, Sicard states as the result of his investigations that it is impossible to infect the meninges through the lymphatic system. These changes in the vessels along with the experimental evidence make it appear almost certain that the tubercle bacilli arrived by way of the blood stream. If they arrive in numbers they produce an ordinary general tuberculous meningitis; if few in numbers (or perhaps attenuated), they give rise to tuberculous tumours or even a meningitis *en plaque*, an expression of a less virulent infection. Occasionally, and then, I think, almost only in the pons, the tuberculous tumour looks as if it had been formed, or is forming, by the coalescence of several foci of infection. Broca and Souques[24] endeavour to explain the relative frequency of cortical tuberculous masses in the paracentral lobule (and Dr. Churton[25] some years ago recorded a well-marked case of the kind) by the rich vascular supply and the slowing down of the blood current here. It is curious that the lesions of the ordinary tuberculous meningitis should usually mainly focus themselves about the middle cerebral artery and its branches, whereas tuberculous tumours are more frequently found in the distribution of the basilar and posterior cerebral arteries.

Examination of Spinal Fluid.

Undoubtedly a most important addition to our resources in diagnosis consists in the examination of the cerebro-spinal fluid by Quincke's spinal puncture. During this year I have examined the fluid from 5 cases of tuberculous meningitis.

1. In one case of a boy aged 6 in the infirmary whom I saw by the kindness of Dr. Chadwick there was a pleural effusion present when the cerebral symptoms supervened; 10 c.cm. of clear fluid were drawn off. It contained a faint cloud of albumen and in the deposit lymphocytes were alone found but no tubercle bacilli. A small quantity of fluid, less than 2 c.cm. injected subcutaneously tuberculized a guinea-pig.

2. Another case, seen with Dr. Roper, of Leeds, occurred in a boy at 7 years, who had just passed through an attack of scarlet fever. The urine contained albumen, and the vomiting in the very early days suggested to us a uraemic origin for the symptoms. On the second occasion on which I saw him there was a slight facial paralysis and the nature of the case seemed obvious. The clear spinal fluid contained very little albumen, the deposit showed many polymorphonuclear cells but no tubercle bacilli were found. The inoculation test gave a positive result.

3. In a third case of a girl at 4 years whom Dr. Norman Porritt, of Huddersfield, asked me to see, lymphocytes were present but no tubercle bacilli were found. The inoculation test also gave a positive result.

4. In another infirmary case the fluid was obtained after death. Albumen was present and lymphocytes were found in the deposit but no tubercle bacilli.

5. A quite recent case occurred in a lad at 16 whom I saw with Dr. McCann, and who was transferred to the infirmary under my care. He was punctured at my request by Dr. Watson, resident medical officer, on three separate occasions, and 15 c.cm., 35 c.cm., and 13 c.cm. were drawn off on the second occasion. The pressure (4½ in. in terms of the fluid) was estimated by Kronig's apparatus. Death occurred about the seventeenth day. There was miliary tuberculosis of the meninges, peritoneum, and upper lobe of the left lung. The bronchial glands were caseating and the mesenteric glands enlarged. The fluid was clear, with a few small flocculi in it on two occasions, and on the third it was more straw-coloured. It was slightly alkaline, and contained a considerable amount of albumen (3 pro mille Esbach). The specific gravity was 1006. The cellular elements were few but consisted solely of lymphocytes. Some of the fluid was incubated at 37° after Langner's method, and flocculi were withdrawn from time to time and examined, but no tubercle bacilli were found. 0.1 c.cm. was inoculated upon serum agar and glycerine agar. About 2.5 c.cm. were injected subcutaneously, 2 c.cm. intraperitoneally, and about 1 c.cm. intrameningeally into guinea-pigs. These three tests were made with a view of comparing the results, as there has been a discussion about the best method. (As yet there has been insufficient time to obtain results from the culture and inoculation tests.) The cryoscopic point was 0.53 as against 1.03 obtained in some hydrocephalic fluid which was in my laboratory. The chlorides (one estimation) were 0.177 per cent. as against 0.223 (five estimations) in the hydrocephalic fluid. The permeability test was negative.

It will be seen from the above that I have never once been able to find the tubercle bacillus in the deposit. In 4 of the 5 cases lymphocytes were alone found, and in 1 only polymorphonuclear cells exclusively. The inoculation test gave a satisfactory result in 3 out of the 4 cases, and is as yet incomplete in the fourth case.

The points of importance in the examination of the spinal fluid are the presence of the tubercle bacillus and lymphocytes in the deposit, and the results of the inoculation test. I look upon the cryoscopic and permeability tests as of small significance. The finding of the tubercle bacillus in the deposit is by far the best test for clinical purposes. It requires little time, and it has given positive results in the hands of various observers up to half to three-quarters of the cases. I look upon my want of success as a matter of accident. The inoculation test is very valuable, but the disadvantage is the delay. Slawyk and Manacatide[26] recommend the injection of 4 c.cm. intraperitoneally. Hellendall[27] advises lumbar inoculation as requiring less fluid. No doubt negative results may be due to the use of too small a quantity of fluid, but less quantities than those named above have answered my purpose. It is well, however, to be on the safe side. I take it that if an acid and alcohol-fast bacillus resembling the tubercle bacillus is found in the deposit from spinal fluid obtained from a case with symptoms of meningitis, the nature of that meningitis is determined, even if the inoculation test should subsequently give a negative result. Therefore, I do not quite see the reason for M. Chipault's[22] hesitation in a case subsequently to be referred to. The tubercle bacillus may be cultivated from the spinal fluid. Slawyk and Manacatide recommend the use of a fairly large quantity of the fluid for this purpose. Langner (quoted by Hellendall[27]) incubates the fluid at 37°, and in eight days there is a rapid multiplication of the tubercle bacillus. In one of the cases where I tried this method I obtained a considerable streptococcus growth which I looked upon as a terminal infection. Much has been written lately about lymphocytosis in tuberculous meningitis. It certainly badly misled in Rendu and Gerand's[28] case. Nobécourt and Voisin,[29] Simon,[30] etc., have found it in cases of tuberculous tumour without meningitis. They look upon it as a sign of irritation of the membranes. If any polymorphonuclear cells are present a differential count should be made, as recommended by Achard and

Laubry.[31] Leri[32] pointedly remarks that if the clinical and cyto-diagnosis are not in agreement, the cyto-diagnosis is not always right. This applies to one of my cases, though fortunately the inoculation test settled it.

The study of the spinal fluid obviously yields results which are of the first importance in the differentiation of the various forms of meningitis. If aspiration is avoided, there is no danger in it in meningitis, and I see no reason why it should not be used as a routine method in suspected cases of this disease.

Recovery from Tuberculous Affections of the Nervous System.

Very occasionally one has the good fortune to meet with recovery from symptoms of grave organic disease of the brain where a tumour has been suspected and syphilis can with almost certainty be excluded. I have notes of two such cases in children treated in the infirmary, and possibly of a third. Recovery is often incomplete, blindness remaining. Some great authorities (such as Gowers[33] and others) say that in tuberculous tumours arrest is not uncommon. Presumably, some of the recoveries referred to above may be of this nature. It is, therefore, interesting to inquire what pathological evidence is forthcoming in favour of this view. In 2 cases from the records of the Leeds Infirmary with healed phthisis there was in 1 case a nodule in the left lenticular nucleus which Dr. Barrs regarded as a healed tuberculous lesion, and in the other a calcareous mass of the size of a pea attached to the dura. Sufficient proof as to the exact nature of these lesions is not forthcoming. I have only been able to find in literature a few cases of recovery from tuberculous tumours. In Dr. Williamson's[34] case there was a small yellowish mass, which had caused Jacksonian epilepsy four years previously; in Dr. Ashby's[35] case a small cyst with cretaceous walls; in Dr. Bristowe's[36] case a hard mass in the cerebellum; and in Kahlmeyer's[37] case a cicatrix in the cerebellum, in a man who had cerebellar symptoms eleven years previously. In the first 3 cases there were other masses in the brain, and the patients died of tuberculosis, and in the fourth case there was phthisis. The quiescent lesion showed a dense fibrous capsule in the first 3 cases. Oppenheim[38] says that these tumours may calcify and then become encapsuled, as, if encapsulation were, as it probably is, the most important process. Calcification is nearly always a very limited process in the mass, and other encephalitic lesions, as Oppenheim points out, may calcify. By the kindness of the authorities of the London Hospital Museum I have looked through a relatively large number of tuberculous tumours, but I cannot say that I have seen any which could be looked upon as definitely healed. The very slender possibility of recovery from a tuberculous tumour is no doubt established by the above-named cases, but as Dr. Ashby well points out, we must set off against this chance the possible developments of other masses in the brain, or the child may die of tuberculous meningitis or other form of tuberculosis. Tuberculous tumours are sometimes latent until the symptoms of meningitis suddenly appear, as in Dainville's cases.[39]

In considering recovery from tuberculous meningitis a distinction must be drawn between the ordinary more generalized form and the limited meningitis *en plaque*. Monnier and others strongly recommend operation for the latter.

Dr. Gee[40] in his article on tuberculous meningitis in 1868 graphically described recovery as a matter of science. Many great clinicians have related cases of recovery, but up to recently the absolute proof was wanting unless the patient died later and anatomical demonstration of the healed lesion was provided (Rilliet,[41] Barth,[42] Politzer,[43] Cadet de Grassicourt,[44] Carrington,[45] and others, and more recently Jannsen,[46] and Rocaz and Cruchet[21]). Another proof, but not so satisfactory, is the presence of choroidal tubercles controlled by a skilled ophthalmologist as in the cases of Dujardin-Beaumetz[47] and more recently of Thomalla.[48] The presence of an unmistakable tuberculous lesion such as phthisis elsewhere in the body as occurred in the cases of Cuffier (quoted by Chantemesse) and Chappet (quoted by Bouclier) make the diagnosis almost certain. Mr. Ward had a case in the Leeds Infirmary with tuberculous disease of the ankle which developed the symptoms of meningitis. The child recovered, though unfortunately blind, and is living still.

Bacteriological proof of the nature of the meningitis has been provided in the cases of recovery recorded by Freyhan,[49] Henkel,[50] Barth.[51] Gross,[52] Winter and Gohl (quoted by Chipault),[53] since tubercle bacilli were found in the spinal fluid in all these cases. The diagnosis in the cases of recovery reported by Rocaz (subsequently anatomically proved by Cruchet), Mottard (quoted by Bouclier), and Sepet, rest on the Courmont-Arloing serum reaction, the value of which is not by any means universally accepted. In October last Parrenin (*Thèse de Bordeaux*, 1903) ascertained that the cases of Thomalla, Henkel, Barth were living and well; Gross's case showed signs of early phthisis; Freyhan's case, well in 1899, had not been heard of since.

In inquiring under what conditions recovery has taken place it is only necessary to mention large doses of iodide, creosote, without confounding cause and effect. Spinal puncture, though possibly of value in a simple meningitis (Hirsch),[54] is of quite doubtful utility in tuberculous meningitis. The cases of Freyhan, Barth, and of Winkler and Gohl were punctured once each, whereas in the cases of Henkel and Gross the puncture was repeated three times. Chipault is inclined to attribute some value to it in Winkler and Gohl's case, but only a small quantity of fluid was drawn off. In Gross's case the patient felt much relieved after it. In my case (referred to above) three punctures were made, and 63 c.cm. in all drawn off, with no real effect. Excess of fluid is not responsible for all the threatening symptoms, as Peron[55] points out from his experimental investigations. Experimentally Martin[56] noted an improvement in a rabbit after withdrawing 2 c.cm. fluid, but it was only temporary. Some of my experiments were undertaken with this object, but mostly very little fluid was found. Operations have been undertaken for the relief of this disease by Lannelongue and Keen (quoted by Barlow),[57] Ord and Waterhouse,[58] Parkin,[59] Paget,[60] Kendal Franks,[61] and others. A case under Dr. Churton and Mr. Mayo Robson[62] has been quoted by some authorities as a possible recovery from tuberculous meningitis, although neither of these authors described it as such. I was resident medical officer at the time this girl was in the infirmary, and she attended my out-patient room with epilepsy for several years previous to her death last year. She was trephined on account of focal symptoms, which it was thought might be due to abscess secondary to ear disease. The case was obscure and occurred during the influenza epidemic of 1889-1890. In her subsequent history she contracted syphilis, but never showed any manifestation of tuberculosis.

Notwithstanding the above-mentioned remarkable recoveries from severe tuberculous meningitis, the prognosis must still be looked upon for practical purposes as hopeless. If a benign type of disease really exist, systematic examination of the spinal fluid in possible cases should bring it to light. With such a prognosis before us, prophylaxis is worthy of the closest attention. The danger which a careless phthisical patient is in his own home has been placed beyond doubt (Cornet,[12] Coates,[63] and others). This danger specially menaces susceptible young children who crawl about the floor stirring up infected dust. Dieudonné[64] has actually found tubercle bacilli on the hands of children in phthisical homes. Clinical evidence has also furnished some striking examples (Variot[65] and others) in the same direction. The tubercle bacillus is thus inhaled, and a potential infecting focus is established in the bronchial glands. The notification of phthisis with disinfection, and the isolation in special hospitals of confirmed consumptives from careless homes, especially where there are young children, are indispensable steps in the prevention of tuberculous meningitis and generalized tuberculosis. I am glad to say we are about to open an institution of this kind in the centre from which I come.

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An Address
ON
THE INSTITUTIONAL TREATMENT OF INEBRIETY.

Delivered before the Society for the Study of Inebriety.

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I AM here to-night not as a volunteer but under compulsion. The amiable importunity of your indefatigable Secretary has not only commanded my attendance, but has prescribed the subject of my paper. I do not myself claim to know enough about the treatment of inebriety to presume to lecture others on the subject. But the speaker and the subject having been both the selection of another I am accordingly relieved of all responsibility.

It is rather from the administrative than from the therapeutic point of view that I approach the question. I have seen something of the treatment of disease with and without the ordinary use of alcohol; in a city hospital flowing with port and brandy; and in the severe austerity of the institution in the Hampstead Road.

I have as a visitor of Aylesbury Gaol shared the slender privileges and duties cautiously confided to such functionaries by the Home Office, as well as the superadded anxieties attaching to the recent establishment of the adjacent State Inebriate Reformatory. As a county councillor I have watched the potent influence of drink in replenishing our asylums, and during the last few years I have assisted in the inauguration and management of their certified reformatory. These are insufficient grounds, in my judgement, upon which to attempt, with any approach to finality, to dogmatize upon the treatment, institutional or otherwise, of the large, increasing, and heterogeneous class covered by the general term "inebriate."

The treatment of the inebriate, indeed, is not a thing by itself; the new departures which recent legislation has sanctioned open up questions involving our whole penological system.

PRISON REFORM.

When Samuel Romilly set himself the uphill task of ameliorating our criminal code, he encountered the active hostility of Sir William Grant and other unbending pillars of the constitution, who were never weary of praising the "wisdom of our ancestors," and were content to take refuge in the comfortable doctrine of letting things alone. On one of these occasions it having been alleged, in reply to Romilly, that a certain enactment dated from Edward I, and not, as he had alleged, from Henry VIII, Romilly incontinently retorted, "What care I whether this law was made by one set of barbarians or another?"

If the criminal law and its application and administration in the eighteenth, and part of the nineteenth, century may be taken as an example of the aforesaid "wisdom of our ancestors," we might derive satisfaction from the thought that at least in our dealing with social offenders we may be wiser than our forefathers; and it does not require the knowledge or the eloquence of a Romilly to denounce their methods as "methods of barbarism."

When John Howard in 1773 was appointed High Sheriff of Bedfordshire it was a bad day for the "letting-things-alone" party and for insolent officialism and bumbledom all over the country. Disgusted at the iniquitous fee system which he found in vogue in Bedford Gaol, he was led to investigate the prisons, asylums, and lazarettos of Europe, travelling 50,000 miles notebook in hand, spending some £30,000, and dying a martyr to his mission in the Crimea. It was fitting that this life-mission, which initiated that prison reform and amelioration of the prisoner's lot that has been going on ever since John Howard's death should have begun in the very gaol in which a century earlier the kindred spirit of John Bunyan was immured for twelve years, purging his offence against the divine right to do wrong, making tag laces, and composing for all time the soul-stirring and most popular epic in our vernacular.

THE GROWTH OF HUMANITY IN POLITICS.

Readers of J. R. Green's *History* will recall how he traces with convincing clearness the growth of humanity in British politics, and shows us how that larger sympathy of man with man which took origin in the darkest days of the eighteenth century drew its strength from such influences as the names of Bunyan, the Wesleys, and Whitefield, and Howard and Romilly stand for. The force of that crusade, though running in a hundred channels, is not spent yet. The prison, the asylum, the hospital, the reformatory, the school, indeed our social life at every turn, have felt its benignant influence. Instead of the squalor and brutality that Howard noted and Hogarth portrayed, we have the model prison, the aseptic ward, the palatial asylum, the inebriate retreat, the farm colony, and we may add—the garden city. A thousand agencies, individual, corporate, municipal, or State-directed, are competing, and sometimes conflicting, for the betterment of the physically and mentally afflicted, for saving the sinner and the sot, and reforming the reprobate. Instead of thrusting out of sight and mind the fever-stricken and the village fool for the selfish reason that they were calculated to displease or damage the King's people, Lazarus nowadays is sought out for altruistic reasons, and, even when he has brought misfortune and disease upon himself, is the object of compassion and disinterested solicitude. Indeed there are those who think the process of amelioration has gone far enough, who have little patience with the offender, are loud in advocacy of the cat and the gallows, regret our lavish expenditure on the insane, and with a Spartan rigour, impartially directed against all save themselves, denounce the softness which characterizes this degenerate dispensation.

I should be the last to deny that in administrative matters softness of heart is a sorry compensation for the lack of hardness of head. I am sometimes oppressed by the want of symmetry in our arrangements for those who are State or rate supported, social parasites as they have been called. We are often lavish in one direction and parsimonious in another—penny-wise in our cures and pound foolish in our prevention of social ills. I have some sympathy with the critic who complains of the care that is taken of the evildoer who, by his own persistence in self-indulgence and his suicide of self-respect, has qualified for an asylum, a hospital, or an inebriate reformatory, while the struggling labourer who does not tipple, and is not vicious, has to keep body and soul together, and perhaps maintain a wife and family in a couple of rooms, at 8s. or 9s. a week, out of an average wage of 21s. to 24s. If rents for the temperate sane were to a fractional extent paid out of rate, the journals who vouchsafe to lecture us on orthodox economics would be eloquent in denunciation of the municipal socialism thereby disclosed. But, while our Poor Law remains unreformed and undiscriminating, and old-age pensions for the industrious aged are as unsubstantial as a dissolving view merely cast on the screen at election times and then forgotten, some force will remain in the criticism that the ways of the transgressors are relatively too soft. It is, indeed, alleged that an inmate of a model prison in New York State, in a letter to a friend, recorded his commiseration of the sad lot of the neighbouring villagers, whom he watched from the gaol window on a winter's night, entering their miserable homes, while *he* was writing in brightness and warmth, with the pleasant odour of the prison supper regaling his olfactories.

I have approached the subject which I have been invited to discuss by this somewhat circuitous route as I desire to insist on the need there is to regard the question of dealing with the inebriate as but part of a larger question, as one of extreme complexity, and, above all, as one on which many lines of thought should be brought to converge and focus if any approximation to a successful experiment is to be made. For as an experiment I approached the question, and as an experiment I still regard our work, though assuredly one deserving to be well and faithfully tried. The infallible method in dealing with this problem is the happy and exclusive prerogative of the charlatan and the quack.

As I have said elsewhere, "the prison, the asylum, the

hospital, the reformatory, are all needed, but the sorting of their contents is at present very imperfectly done." The mad and the bad pass by insensible gradations the one into the other. In that quaint work *Erewhon*, by that brilliant author the late S. Butler, crime is treated as disease, and disease as crime. He fancifully puts a consumptive on his trial for having harboured the deadly bacillus, and in the same hypothetical society it was regarded as indelicate to make the accustomed salutation of "how-d'ye-do" as implying the latent possibility of criminality. The jest, though extravagant, may serve as a useful check to those who regard man as made for institutions rather than institutions as made for man; and I am not reassured when I learn from one of our most experienced inspectors that there are convicts by the score in one of our large prisons who are criminal because they are mentally unsound, morally and intellectually defective, and utterly unfit for ordinary prison discipline.

Probably in no department of human activity is the poet's lament that "knowledge comes but wisdom lingers" truer than in regard to prison reform and penology generally.

Take up the report of the Prisons Commission for the year ending March 31st, 1902, and you will read with amazement that that year of grace was the first to witness the abolition of the tread-wheels in our gaols. Truly, as the Blue Book remarks, it constitutes "an epoch in prison administration"—but why, Oh why, delayed for nineteen years after Charles Reade went to his long home and thirty-eight years after his master-piece of solid fiction denounced such punishment as "a monster got by folly upon science, to degrade labour below theft."

The report proceeds to relate how "the large rooms and spaces which have become available by the break up and removal of the old tread-wheels are being largely utilized as workshops or places where prisoners can be placed in association for industrial purposes." Reverse this sentence and what does it imply but that for years and years large rooms and spaces that might have been devoted to teaching prisoners a useful trade have been ignorantly, cruelly, and wastefully allocated to arduous idling and a soul-destroying labour of Sisyphus?

That a more generous form of dietary, under which 70 per cent. gain in weight as against the old diet condemned in 1898 under which 70 per cent. lost weight, is unanimously approved by the medical officers appears to come as a revelation to the Commission. Again that the power to earn remission of sentence by good conduct has a salutary effect upon the mind of the prisoners and on prison discipline, though seemingly an elementary proposition to the man in the street appears to have at last permeated the official conscience. Is it not, however, with the astonishment as at something born out of due time that one reads in the official Blue Book of the second year of the twentieth century the following paragraph:

> The promiscuous consignment to the common form of imprisonment, an attractive because an easy remedy, in every case where the law has been broken, is in our opinion to be deprecated where the widely different circumstances in the character of different acts ought to, and under the Act of 1898 can, be recognized by a differentiation of penalty.

Reformatory, Asylum, or Prison?

I dwell upon this question of prison reform because until but recently the only institutional treatment of inebriates was in prisons, and even now the principles which should determine the class of case suitable respectively for a reformatory, an asylum, and a prison are of the haziest description. I recall a case I have watched in her progress from repeated short term imprisonments in gaol to a certified reformatory, thence to a State reformatory, whence at last, after repeated courses of the punishment cell and the strait waistcoat, she graduated for an asylum. In reference to this poor creature the medical officer of the asylum wrote me

> She has been extremely morose since her admission here, and puts one in mind of a wild animal at bay. Last night she attempted suicide in a very determined manner by tying some thread tightly round her throat. If asked to give a name to her mental condition I should be inclined to describe it as moral insanity with suicidal impulse, and I think the prognosis is very unfavourable.

Comment is superfluous. I make no reflection on any one, but I claim that the whole treatment of these social recusants of which the so-called recidivists (not inebriates alone) are the most perplexing, demands the earnest attention of our most thoughtful minds, medical and non-medical, philosopher and administrator, lo ty idealist, large-hearted philanthropist and common-sense scientist. Tallack says: "There is a peculiar and almost inevitable tendency to indolence and inertia in State functionaries as such." It may be we expect too much and pay too little in providing as we do for the staffing of our gaols and reformatories; and if Mr. Tallack be right there was until recently but little provision for outside and unofficial corrective influence to be brought to bear alike on officers and inmates.

Indeed, somewhat curiously, while the tendency of legislation of late years has been centrifugal rather than centripetal by delegation from the central to the local representative authority, in the case of our prisons the tendency has been in the opposite direction. Originally in private hands, they passed to the control of the county justices and the town councils, but by the Act of 1877 the management of all prisons was, after prolonged controversy, transferred to the central Government as represented by the Home Secretary. Since 1898, however, a laudable attempt has been made to introduce a non-bureaucratic element by way of Boards of Visitors, the avowed object being to "afford security to a prisoner against any chance of injustice or abuse, and a guarantee to the public that things are being ordered in the remote convict prisons of the country in a way that does not fear inquiry." How far the more representative character of the controlling bodies of our asylums and the better salaries paid to their officers generally secures quicker touch with modern thought and ideals, and more expert and skilful service is a matter well worthy of consideration.

The psycho-pathological problems involved in the diagnosis and treatment of these moral paralytics demand the best-trained and the best-paid intelligences. Sir William Hamilton used to say: "In the world there is nothing great but man, and in man there is nothing great but mind." How great, then, should be the mental altitude of one who seeks to minister successfully to a mind diseased! For such high services to the State we must see to it that we are not fobbed off by a parsimonious Treasury with the second-rate and the commonplace. Let us recall the scalding invective in which Charles Reade described the commonplace official in *Never too late to Mend*. He said:

> Yet Mr. Jones was not a hypocrite, nor a monster; he was only a commonplace man—a thing moulded by circumstances instead of moulding them. In him the official outweighed the apostle, for a very good reason—he was commonplace. . . . . His inclinations were good but feeble—he was commonplace. His heart was good but tepid—he was commonplace. . . . . When the thief cursed this man he was guilty of an extravagance as well as a crime; the man was not worth cursing—he was commonplace.

It is, then, I venture to think by enlisting the best minds we can obtain in the study of the natural history of social offenders and "habituals" that we may be able to rise superior to the commonplace and official routine in our methods of treatment. By bringing a broad and philosophic insight to bear upon the problems we may find that a little knowledge beforehand might have furnished us with conclusions as well as, and more economically than, the failure afterwards.

The History of Legislation for Inebriety.

The institutional treatment of inebriety, which has so rapidly developed of recent years, will be thrown away unless the opportunities of systematic and scientific study, which regular observation in such institutions affords, is fully utilized. Already the most superficial inspection of the inmates of our retreats, private homes, certified and state reformatories, must suffice to show that very different types are lumped together under the term "inebriate." Between the voluntary co-operant in his own amelioration and the criminal recidivist who rejoices in free indulgence, who has no self-respect, but prefers to remain a social parasite, and rebels alike against restraint and reform, there is a world of difference necessitating great discrimination and diversity in treatment.

From a most useful volume prepared by Dr. Branthwaite entitled *A Collection of British, Colonial, and Foreign Statutes Relating to the Penal and Reformatory Treatment of Habitual Inebriates*, we may gather that forty years ago the only laws existing in regard to drunkards throughout the civilized globe were of a penal nature and were represented in the main by fine or short periods of imprisonment. Here and there the imprisonment gradually lengthened, until it apparently became more a question of control than punishment. Then the principle of irresponsibility forced itself upon the notice of legislators, and laws assumed more of a reformatory and less of a penal character. Some countries by "interdiction," framed laws to prevent an inebriate from obtaining liquor. Others either stretched guardianship laws already in force, or enacted fresh ones to apply to the inebriate. Then came the insti-

tutional treatment, and New York State in 1854 gave legal recognition to the pioneer reformatory for inebriates, largely as the result of the advocacy of Dr. J. E. Turner, of Bath, Maine. After twenty-five years' useful work the New York State Inebriate Asylum appears to have come to an untimely end. According to Dr. Crothers of Hartford, Connecticut, "it had proved the wisdom of its founder, and showed that inebriety was both a disease and curable, and its failure was largely due to political influences and the frequent change of officers who were unacquainted with the work, and could not manage it along independent and scientific lines."

In England Select Committees sat in 1834, 1867, and 1872, and inquired and reported on the modes of dealing with habitual drunkards; with their labours the names of J. S. Buckingham and Dalrymple are honourably associated. In 1879 the first legislative recognition in this country was accorded to the habitual drunkard, who was then and there defined as "a person who not being amenable to any jurisdiction in lunacy, is notwithstanding, by reason of habitual intemperate drinking of intoxicating liquor at times dangerous to himself or herself, or to others, or incapable of managing himself or herself, and his or her affairs." Licensing authorities and "retreats" were recognized; entrance to the latter was a voluntary act, though once there by request the volunteer becomes a prisoner *malgré lui* for the period specified, the Legislature declining out of jealous regard for the liberty of the subject and fear of the abuse of compulsory incarceration, to go farther at that time. This Act, though amended in 1888, did not prove a conspicuous success. The reasons of non-success have been variously given as: want of compulsion to secure the admission of dangerous and confirmed inebriates, insufficiency of the maximum period of detention—then thirteen months—difficulties attending the treatment of refractory patients, escapes, etc.

Accordingly, after a further inquiry by a Departmental Committee in 1893, the Inebriates Act of 1898 was placed on the statute book. Under it the institutional treatment of the inebriate is provided for in certified reformatories and State reformatories which supplement the voluntary retreats established under the earlier Acts. The Act created entirely new law. It enabled magistrates to substitute reformatory treatment for imprisonment in the case of habitual drunkards who had brought themselves within the purview of the law by way of crime committed under the influence of drink, or who, by repeated appearances for certain scheduled offences connected with drunkenness, had demonstrated the hopeless inefficacy of short imprisonments. So that at the present time the institutional treatment of inebriety falls naturally under the three classes of institutions which have received legislative recognition, and all of which are now at work. The "retreats" receive private patients—that is, those who desire such treatment and seclusion, but who do not sign away their liberty by any "form of request for reception," as well as those who, not having rendered themselves amenable to the law by reason of drunken offences, are yet desirous of treatment and compulsory detention for a period not exceeding two years. Then there are the certified inebriate reformatories established at the option of local authorities (town or county councils), receiving, under Section II of the Act of 1898, such cases as the magistrate may see fit to send and the managers may be willing to receive. Lastly, in order both of time and severity of discipline, we have the State inebriate reformatories established by the Home Secretary, which, by original design, or rather as the result of experience, have been destined to receive the more criminal class of offender, or those for whom the lenity and amenities of certified reformatories have been found in vain.

The Action of the London County Council.

At the present time there are some score or more of "retreats," with accommodation for some 400 inmates; half-a-dozen certified reformatories, with some 500 beds; and two State reformatories, all at work for the reclamation of the habitual drinker by various methods of more or less disciplinary regimen.

The London County Council was the first municipal body to establish a certified reformatory under its own entire management, and it is chiefly in connexion with its home—Farmfield, near Horley—that I, as the first Chairman of the Committee of Managers, have had occasion and opportunity of studying the institutional treatment of inebriety.

The London County Council has been so long regarded by superior persons as a fit and proper subject for criticism on all occasions, suitable or unsuitable, that it would have been a marvel if this small department of its work had by some strange omission escape uncriticized. It has not done so, and perhaps it is therefore well, in as few words as possible, to tell the story of its work under the Act of 1898.

The Act came into operation on January 1st, 1899. Under Section IX it was optional for the London County Council to contribute to a reformatory or not, or to establish and maintain a reformatory of its own or not. On February 28th, 1899, the Council decided to exercise these optional powers, and appointed a Committee to carry out the work. Not until April 1st, 1899, did the Home Office contribution towards the maintenance of inmates, authorized by Section VIII of the Act, come into force. On June 13th, 1899, a sum of £2,000 was voted towards maintenance of inebriates in existing reformatories pending consideration of the propriety of the Council establishing one of its own. Contracts were entered into with Lady Henry Somerset's pioneer colony at Duxhurst, and (for Catholics) with the Ashford Home, on July 18th, 1899, for women inebriates from London police-courts.

Meanwhile our Committee proceeded to ascertain the nature and amount of the work which it might advise the Council to undertake. We sought and obtained most courteous and valuable information by visiting Lady Henry's Home at Duxhurst. We not unnaturally sought information from the Chief Metropolitan Police Magistrate as representing his colleagues from whom, when ready, we should receive our "patients." We were favoured with the following luminous reply:

> I do not think it falls within the province of the police magistrates to enter upon the discussion of that question with any other public body except by the direction of the Secretary of State. As a matter of fact, the magistrates are not possessed of any sufficient data from their experience on this rather intricate subject, which would enable them to express at present any opinion that could to the smallest extent be relied on as affording a safe line for the County Council to adopt in respect of the probable amount of accommodation required for adequately carrying out the law.

We made no complaint of the lack of magisterial knowledge, but we felt that, in view of the information thus vouchsafed by the stipendiaries, we might have been spared some of the caustic and uncalled-for remarks from the Bench with which the public were edified during the earlier months of the Council's operations.

On October 17th, 1899, the Council, on the recommendation of its Committee, purchased an estate (Farmfield) near Horley, in Surrey, consisting of 374 acres, with two mansions upon it, for £13,000. Some £7,000 was spent in adapting the estate and buildings for thirty patients. We were fortunate in securing an excellent matron, and Farmfield was quietly opened for the reception of female patients on August 28th, 1900.

Pending our opening, we thought it right to visit the prisons with a view to see the class of inmates with whom we should have to deal. The prison officials afforded us all information, but appeared to regard our scheme as Utopian, so impressed were they with the degradation of the "habituals" who haunt their cells. To these we made the modest reply that at the lowest we stood in the relatively fortunate position of the empiric who claimed that he had a remedy that had never been known to fail—it had not been tried; whereas it was on all hands admitted that the old dreary round of reiterated short sentences was at best a sorry and revolting farce.

The demand for accommodation grew rapidly, and accordingly in November, 1902, a new building adapted for eighty additional patients in six different blocks was completed at a cost of £23,000. This affords opportunity for much-needed classification. Each patient has a separate bedroom brightly furnished. There is a day room, dining room, and small kitchen common to each block. A corridor connects the blocks with the central offices, large kitchen, store room, and chapel. The building is electrically lighted and fitted with telephones. A picturesque flower garden, with lawn and lake, adjoins the old mansion-house. At the rear is a large vegetable garden which both supplies and employs the inmates. There is a recreation room furnished with harmonium and piano; a large washhouse with drying rooms and well-ventilated work rooms.

At the home farm a quarter of a mile off is a model dairy where the better-behaved are instructed in butter-making, baking, etc. Poultry, bees, fruit-farming, potato-picking, weeding, and hay-making are among the outdoor duties of the women, and everything is done to take the patients back to simple natural life such as is typified in the English country home-

stead. A system of marks has been arranged whereby the women are enabled by industry and good conduct to earn something against their time of departure. There are punishment cells, spacious and light, resorted to only when moral suasion has been exhausted. The doctor calls daily, but there has been little serious illness, the patients thriving remarkably after a short stay. The matron is the head official, and is assisted by a staff of twenty-five. The rector of the neighbouring parish acts as chaplain. The whole of the accommodation is now occupied, though we have limited the cases we receive to those under 45 years of age.

The Council has been blamed for having done too much and wasting the ratepayers' money upon costly and useless experiment; it has been not less severely attacked for having done too little, and it is said that the accommodation provided is even now grossly insufficient. Some satisfaction may be derived from the mutually destructive character of these two lines of criticism of equal force but of opposite direction.

The opening of the State reformatory at Aylesbury has enabled some of the more intractable cases, which interfered with the lenity of treatment it was desired uniformly to observe at Farmfield, to be transferred thither. Some 10 or 12 per cent. are of this character and if retained would imperil the whole tone of the reformatory. Indeed, at Aylesbury their conduct has often been of the most violent, destructive, and turbulent nature, more trying to the officials than that of the ordinary convicts. That any order was maintained before the power of transfer was available, having regard to the formidable characters the magistrates sent us at the start, affords strong testimony to the tact and pluck of our first matron, Mrs. Mathias.

Secret Systems of Cure.

As to methods of treatment I regret I know of no royal road, no short cut from vicious habit to the path of virtue. That such there be, we are frequently assured, both by those who are financially interested as well as by some whose disinterestedness I should be ashamed to doubt. At a time when diagnosis by germ-culture and treatment by the squirt have become familiar methods and our advertisement columns are full of serums good against anything from yellow fever to lock-jaw, when an extract of retinae is recommended to alleviate blindness, and a distinguished physiologist not long since discovered an antisenility elixir; it seems, I confess, old-fashioned and unenterprising not to come forward with some new drug or serum good against habitual drunkenness. As of old, the fine-sounding and the magnificent are more attractive than the unpretentious. So, now-a-days, Abana and Pharpar have their votaries who would scorn to bathe in the waters of the homely Jordan.

Why should remedies alleged to be little short of infallible in their results be kept secret by their discoverers in opposition to the general habit of the profession? I can only conceive two possible reasons for secrecy. One financial—to secure a monopoly of the treatment and the rewards it may bring; the other, that of occultism, that is, to surround the alleged remedy with a halo of mysticism and ritual, wherewith to confound the vulgar, and deceive, if that were possible, the very elect. I have no sympathy with either motive, nor do I envy the reflections of any man who, believing he holds in his hands a true remedy for this widespread evil, is content for such reasons to withhold it from publication. I am willing to admit, however that, human nature being what it is, there is some force in the latter of the two motives, for have we not read the pretty story of Joanna Stephens and her cures for stone which excited our ancestors of the eighteenth century? Her cures were so remarkable and indisputable that a general demand arose for the revelation of her secret for the public benefit. Have we not read how—led by the Archbishop of Canterbury—Fellows of the Royal Society, physicians, noblemen, and great ladies subscribed towards the sum which Joanna demanded for her infallible nostrum, how even Parliament stepped in and passed an Act to complete the required £5,000 as the valuable consideration for the "proper discovery" of the great Stephens stone solvent; and the prescription they got for their money was—calcined egg shells, snails, carrot seeds, hips and haws, soap and honey! The virtue of the remedy did not apparently long survive the knowledge of its composition.

The Pathology of Inebriety.

It is all very well to assert, as many of your previous lecturers have done, that inebriety is a disease. A disease it may be called, but *a disease of the will* (if one may couple terms derived from the opposite poles of the material and the volitional), and assuredly a disease in which the individual possessed has in many instances a most essential co-operative influence in his own worsement or betterment. Speaking of a hysterical woman who said she was suffering from paralysis, I think it was Paget who tersely remarked, "She says 'I cannot,' it looks like 'I will not;' it is '*I cannot will.*'" So it is with many an inebriate; they will tell you "I will if I can," whereas they should cultivate the "can if I will." They are profuse in promise but inept in performance. Like the younger of the two sons who said, "I go, sir," and went not, there is often no go in them. How to restore this will power is, then, the problem which underlies the therapeutics of inebriety.

I am convinced that we may look in vain to the teaching of a materialistic philosophy for any hopeful dealing with the class of offenders we are now studying. Hedonism and necessitarianism will, I believe, prove false guides and uninspiring mentors in the task of individual reclamation and social regeneration, though they pursue the paths of despotic philanthropy, so much in vogue in esoteric circles.

Appeal must be made to higher sanctions than those of pleasure, or even those of prudence. And unless we recognize in each individuality a conscious partnership in the architecture of his or her own character, that is to say, a will free to choose, a self-conscious power actuated by ideals which transcend the natural and merely physical sanctions, a will animated by a sense of moral obligation, of duty to the right and to the disinterested good, our efforts are foredoomed to failure.

Prudential motives based on the acquisition of some material good or the fear of deprivation of it may suffice to train a good animal but will not rehabilitate a human will. Something more is required than the mere exhibition of pains and pleasures. It is on the moral plane that we must work if we are to reconstruct character and not merely regulate conduct.

> Unless above himself he can
> Erect himself, how poor a thing is man!

Perhaps it is necessary, in order to guard against misapprehension, that I should here remark that it must not be assumed that I undervalue the enormous importance of securing in the first instance the physical well-being of the social wrecks which enter our reformatories. Nay, I would lay it down that to secure a return or approximation to a physical norm is a preliminary essential to any and all other treatment.

The Prison Commission says, in regard to those who find their way to Aylesbury Gaol: "It is hardly possible to conceive humanity fallen to a lower state than is presented by these unfortunate women."

The interaction of mind and body needs not to be enforced. We all know how

> distemper'd nerves
> Infect the thoughts: the langour of the frame
> Depresses the soul's vigour.

To get the physically abnormal or subnormal up to normal by good diet, regular hours, exercise and rest, in sanitary dwellings, is the first step, a sufficiently obvious one, and perhaps the easiest. To restore physical health, then, is the beginning of treatment, but only the beginning. As regards alcohol, I firmly believe that in all inebriates, as also in delirium tremens, its immediate and complete withdrawal is the only rational course, and I have never seen any but good results follow from such practice.

As to the existence of what is so much talked of as the "drink crave," if this is intended to imply the existence of a physical want akin to thirst or hunger, I confess I am sceptical of its existence. My experience leads me to believe that it is often alleged as a sort of Demiurgos upon whom unpleasant consequences and unforeseen results can be blamed. What the inebriate wants is the secondary results of the drink by way of a mental alterative, or exaltant or narcotic. In a word, there is "a desire for intoxication," not a "crave for drink." But in many inebriates, I am convinced, paradoxical as it may seem, alcohol is not the all-important factor in the mental state.

Many habitual drunkards, in my opinion, either by temperament or by loss of self-control and chronic self-indulgence, have got into a mental and moral condition that is apt for crime apart from drink. Or, again, alcohol is not infrequently, as it were, the reagent which evokes a latent

criminal tendency. It saps the will power at its source, and where this is weak congenitally, or has become so by repeated unfaithfulness to the sanctions of conscience, the will-palsy which alcohol evokes lets slip the curb and gives the rein to passion. In proof of this contention I would cite the report of the medical officer of the Aylesbury State reformatory. He says:

A large majority of the cases are greatly deficient in moral self-control. Several of the younger ones are highly hysterical and emotional. A small proportion are greatly below the average intellectually. The want of self-restraint is the worst feature in these cases. It exhibits itself in violent outbursts of passion, which are characterized by acts of violence and destructiveness, frequently extending over several days. Only those who have had the charge of such cases have any idea of the amount of destruction and violence these women can accomplish when once they let themselves go.

Now any rational system of punishment premises the possession of a will, a volitional responsiveness to motives. To expect results from pains and penalties where will is absent or in abeyance is fishing in fishless water. It is worse than folly—it is cruel, it is criminal.

Not a few so-called inebriates, of the class we get through the police-courts, are more suitable for asylum than reformatory treatment, and society has a right to demand that in default of adequate care by their friends they shall be taken care of by the State. The discrimination of such cases needs time and care and a proper co-ordination and communication between the committing authorities and the receiving authorities, which is now conspicuous by its absence. The Bill introduced into Parliament last session to sanction the establishment of receiving houses, though unsuccessful, embodied a principle capable of extension to include all cases needing observation before being sent to asylum, reformatory, and perhaps prison.

Then, assuming all that can be done by improving the physical norm has been accomplished and alcohol banished, whether as drug or beverage, there comes the question of seclusion or association. Unless and until voluntary co-operation of the individual in his or her own restoration is secured I do not believe we are on the threshold of reform. Some desire seclusion, and where that is the case it is probably good for them so long as they desire it, provided proper observation is kept up. A large number of the women sent to Farmfield were well known to one another, and removal from habitual environment is robbed of half its value if old associations are revived by personal communication in the reformatory. By such undesirable association prisons have often proved seminaries of crime rather than agencies of reform.

Next come attempts to foster will power. Habits of industry must be inculcated, especially on work that grows and progresses under the hand, so as to afford, as it were, an end in view and stimulate a fixity of purpose in attaining to the goal. Not too much of the wash-tub but plenty of out-door work on the farm and in the garden. "Back to Nature" seems a natural resort for these social wrecks, mostly denizens of the festering courts of the great city. Maybe as the poet tells us:

> One impulse from a vernal wood
> Will teach them more of man,
> Of moral evil, and of good
> Than all the sages can.

Or, it may be, that work in farm or garden acts in a way which James Hinton suggests in his *Mystery of Pain*. He reflects how in such occupations an essential part of the pleasure is furnished by the slight inconveniences involved. "The little claim on the endurance constitutes a real part of the charm," and he dwells on the ethical value of "willingly-accepted inconveniences."

The law of association should be laid under contribution, and the memory exercised as a valuable adjuvant to volition. Reading aloud by the officers of happily-selected books during meal times has been found of service in more ways than one. On a higher plane come those ultra-physical and supra-natural sanctions, under which disinterested actions and propensions are most likely to awaken and flourish.

All education has been said to consist in contact with a superior mind, and if this be true it is needless to dwell on the constructive influence on character of a reverent allegiance to some great personal affection or to some lofty personal ideal.

The children's home at Lady Somerset's colony seems to have been admirably conceived to arouse altruistic sentiment. The magnetic personal influence of those in command is, though intangible, almost omnipotent in its effect. The tact which remembers that you can never displace one emotion except by another will cease from idle striving, await its opportunity, and not avenge personal pique by vindictive punishment.

I must leave it to others to speak of any drug treatment of inebriety that they may deem efficacious. I know of none. It was said of Paracelsus that in his zeal for psychical treatment of disease he made a bonfire of the books of the apothecaries, and mortally offended the pharmacists who were not remunerated by his transcendental prescriptions. With all apology to that useful profession, I fear it is not by means they can dispense, least of all by anything out of a bottle, that the sot will be enabled to regain his self-respect and self-control.

Lastly, the return to liberty, the discharge upon the world, needs infinitely more attention and effort than has yet been given to it. There is much to be said for the Elmira method of elastic sentence in the case of all repetitive offenders, and for effecting return from restraint to liberty by graduated stages. The careful provision of some guide, philosopher, and friend for each patient as discharged is the best security for good behaviour which can be required or given.

These are some of the unheroic methods which seem to me best calculated to restore self-mastery and fidelity in these moral paralytics. If in our institutional treatment we begin by endeavouring even for the most degraded to idealize the real, it is possible that they may at last realize the ideal.

THE OVERLAYING OF INFANTS.*

By WILLIAM WYNN WESTCOTT, M.B.,
His Majesty's Coroner for North-East London; Chairman of the Division.

So far as I have been able to learn, England excels all other countries in Europe in the proportion of deaths of infants under 1 year of age from suffocation in bed with their parents or nurses. During the recent ten years there were 15,009 overlain infants in England and Wales, and in the year 1900 there were 1,774. In Liverpool during one year there were 143 cases out of 960 inquests, more than 1 in 7 cases.

The death-rate from this cause in London is shamefully high. In the year 1900 there were 615 such cases, in 1901 there were 511, and last year (1902) there were 588 overlain infants in London alone. The inquests for London were about 8,000 in number in each of these three years, so that 1 inquest out of every 14 was upon a case of overlaying. The proportion in the districts of the nine London coroners varies considerably, being high in proportion to the poverty of the inhabitants of the district. Dr. Templeman, of Dundee, classified 258 deaths of infants from overlaying, with this result as to age: Under 1 month there were 62; 1 to 2 months, 67; 2 to 3 months, 66; 3 to 4 months, 21; 4 to 5 months, 16; 5 to 6 months, 13; 6 to 7 months, 5; and the others 4 or fewer. These figures show that the mortality diminishes with the age of the infant until at a year old the risk of sleeping in bed with the mother is but trifling. This is because with advancing age babies, being stronger, are able to save themselves by their struggles, and so arouse their parents before a fatal suffocation has occurred. Many more infants were found dead in bed with parents and others: but in the remaining cases the deaths were referred to natural causes, mostly to convulsions having occurred during the sleep of the parents. It is true that it is often difficult to distinguish between these two causes of death.

It is certain that an infant may die from gradual suffocation under the bed clothes without the production of any signs of external injury. On the other hand, an infant's body may show discoloration of the skin due to having lain many hours in the position of death, even if it have died of natural convulsions; supposing the death to have occurred early in the night, and the discovery of the death not to have been made until the time for getting up in the morning.

Some overlain bodies show undoubted marks of pressure upon the body or face, for example, a flattened nose is often seen. Apart from any definite marks of overlaying, the dead infants I refer to present the well-known signs of death by suffocation. There are bluish lips, a livid complexion (which may soon pass off), flexion of the legs and arms, clenched hands, and froth, often blood-stained, in the nostrils and mouth. In some cases the tongue is protruded and discoloured; the neck and face turgid, the nails blue, the whites of the eyes reddened, and punctiform marks on the conjunctivae

* Read before the St. Pancras Division of the Metropolitan Counties Branch.

and eyelids. Many of these external signs may be due to asphyxia resulting from a spasm of the glottis, or from convulsions due to dentition, or to disease of the brain and its membranes; as well as to suffocation due entirely to external causes, such as the pressure of the mother's breast or arm, or to compression of the chest from being actually lain upon, or to simple excess of clothes covering over the nose and mouth. I have found occasionally that one child in bed has moved in its restlessness and has lain over another; or, again, an infant may roll over and hide its own mouth and nose in a pillow, causing death. I have also had 3 cases in which a baby has been overlain while asleep by the domestic cat.

It cannot be doubted that a considerable number of infants are overlain by parents who, habitually sleeping with a baby in bed with them, yet follow the same practice when they go to bed well knowing that they are intoxicated with alcoholic drink and reckless of the consequences. It is likely also that if a drunken mother give her infant the breast milk before going to sleep the baby may become more or less stupefied by the alcohol in the milk, and so fall an easy prey to gradual suffocation. It is in such cases that the law ought to be able to secure a punishment for guilty parents.

It has also been alleged that some dissipated, worthless, and criminal parents have connived at the overlaying of an infant to secure insurance money, which leaves a margin of cash after the payment of funeral expenses. I am quite convinced that the majority of overlain babies come to death in a manner truly accidental, and such deaths will continue to happen so long as English custom acknowledges the right of parents to take infants under 1 year old into their own beds during the night. Such accidents have happened to parents of the clearest character for sobriety and carefulness for their children.

The question arises, Should it not be declared to be an obligation on every parent to provide a cot or cradle for the infant's use? In Germany and France parents rarely sleep in the same bed and never have an infant in bed with either of them; the use of a cot, cradle, or berceaunette or perambulator is universal, and in the country districts of England the use of a cradle is general. From Casper's *Forensic Medicine*, 1862 (English edition), we learn that under the old penal code of Prussia mothers and nurses were forbidden, under pain of imprisonment, to have children under 2 years of age in bed with them. He adds that: "The new penal code of Germany does not contain this law, but the Public Prosecutor is to take legal proceedings against persons who suffocate infants in bed with them as cases of manslaughter by neglect, according to Section 184 of the Penal Code, and on conviction either a fine or imprisonment may be inflicted.

My recent information is that in Germany, if a physician reports a death of a baby from suffocation in bed with an adult, the Public Prosecutor is informed, and may charge the person under Section 222, "Causing the death by carelessness" (*Fahrlässige Tödtung*); and such person may be punished with imprisonment up to three years. Charges of manslaughter and of murder are also possible.

On the Continent women drink very little, and only of a light wine or lighter beer; and mothers rarely drink any intoxicating liquor while suckling, while spirit drinking by women with babies is almost unkown. One may pass years in France or Germany without seeing a drunken mother with a baby. From one of the largest towns of Westphalia I hear that the police have not heard of an overlain baby for twenty years. On the other hand, in the slums of London, Liverpool, and Glasgow the drunken mother is a common sight.

The excuse of the poor dwelling in our cities is want of space, and this is a defence which I fear is often well founded. In my district of North-East London space for living room is terribly restricted, and rents are abnormally high; still, a cot could be used at night, and during the daytime could be placed upon the parental bed, and so out of the way. Poverty and low wages render it difficult for poor parents to buy even the cheap cradles now obtainable. Dr. Danford Thomas often recommends them to get an empty orange box.

I have thought that a desirable form of charitable institution would be one to provide cradles for the poor. The clergy and ministers of all the denominations might do much in way of warning poor and ignorant parents against the dangers of taking their young infants into bed with them. The long-continued and painstaking preaching of coroners on this reform does not reach widely enough to prevent this holocaust of deaths; they require the assistance of the clergy and lady visitors in this matter, as I have often pointed out to the press, but no clerics have as yet offered to help in this crusade.

These deaths of infants in bed form a class of cases which differ from almost all others, in that the cause of death is not made much clearer by *post-mortem* examination. I have already said the external signs of suffocation are generally all present, and in the same way I may say that the appearances of the heart, lungs, and brain will be much the same, whether the suffocation has been due to the spasm or the convulsions of natural disease, or to deprivation of air by clothing or by actual pressure on mouth or nose.

The most common appearances found by a *post-mortem* examination of an infant who has died from suffocation in bed are an unusually dark-coloured fluid state of the blood, the lungs engorged with blood, and sometimes oedematous, the brain and members congested, and showing minute red points, the heart's right side containing soft clot, and the left side empty; the pleurae and pericardium showing minute ecchymoses, and the mucous lining of the windpipe reddened of a curious cinnabar colour. In the case of a death by suffocation many years ago Christison remarked "that the common conviction that a medical man should always be able to detect death from suffocation simply by an inspection of the body, and without a knowledge of collateral circumstances, is erroneous."

We may take it then that, given the signs of suffocation, the doctor, coroner, and jurors have to decide on the proper verdict from a consideration of the collateral circumstances attending the death.

We may also feel sure that, although most cases of overlaying are of an accidental nature, yet there are a number of cases in which the death has occurred under such conditions of carelessness, or reckless indifference to the infant's welfare, or to culpable neglect of precautions during intoxication, that parents should be committed for trial for manslaughter. This is done in a few cases in England, but it is difficult to prove gross and culpable neglect, and conviction has seldom followed.

In cases where an infant has been suffocated when there was but one person in bed, or when the baby has been in bed with two parents, we may call for the evidence of the doctor and the neighbour or the person first called in to see the dead body, and we can call the father or mother to identify the child. But the father is not a witness we can compel to prove that the mother was drunken, careless, or incapable, nor the mother vice versa.

In twenty years of experience I have known but three mothers confess they were drunk when overlaying took place, and in neither of these cases would the jury send the woman for trial. In another case a woman had overlain one baby when drunk, and then overlaid a second when believed to have been sober; in the latter case, because she had done the thing twice, she was sent for trial for killing the child by neglect; but the grand jury threw out the bill of indictment, and there was no trial on the coroner's warrant.

Last autumn a father was sent for trial on a charge of manslaughter of his child by overlaying, at the Durham Assizes, but the judge directed the jury that they could not commit upon the evidence before them. I have never yet had occasion to commit any person on a charge of wilful murder for the intentional and malicious overlaying of an infant.

The truth is that it is impracticable to secure conviction for the manslaughter of infants by overlaying at the present time in England. Public opinion does not sufficiently condemn parents for risking the lives of infants by taking them into their beds, to make it feasible to get parents punished for what is often gross carelessness and neglect of simple precautions. The machinery of procedure of sending an erring parent to the Central Criminal Court seems to the public too portentous for the fault committed. Were the culpably careless suffocation of infants an offence with which a magistrate could deal by summary procedure, and by the infliction of a week or two's imprisonment, no doubt these deaths from carelessness would become rare by the frequency of a successful prosecution.

In the course of discussions now taking place in Germany as to the financial position of the Empire, it has been stated that in Bavaria, where brewing is the staple industry, each inhabitant on the average drinks 245 litres of beer per annum, while the rest of the Germans drink 145 litres a head per annum.

CASE OF PUERPERAL SEPTICAEMIA TREATED WITH ANTISTREPTOCOCCUS SERUM: RECOVERY.

By W. J. CAIE, M.A., M.B., B.Ch.Aberd.,
Bury St. Edmunds.

THE use of antistreptococcus serum in cases of streptococcus infection has been advocated for a number of years, and its advantage in case of pure streptococcus intoxication is now generally admitted. The results, however, of its use in severe cases of so-called puerperal septicaemia, where there is most probably a mixed infection, have not been hitherto such as to enhance much its reputation in this direction, and its value as a therapeutic agent in these is doubted.

The following case of puerperal septicaemia which came under my care was treated successfully by its use, and it appears to me, though the evidence of one case is apt to be misleading, that in the case in question it materially helped to avert a fatal issue.

CASE.

On February 14th, Mrs. B., primipara, aged 25 years, and previously a healthy woman, was delivered of a dead, full-time child, which weighed over 12 lb. The child was only recently dead. There was nothing abnormal about the labour, except that the second stage was prolonged owing probably to the large size of the child, and that there was slight *post-partum* haemorrhage, due, probably, to the prolongation of the second stage already referred to. The puerperium was uneventful till the ninth day, when the lochia became foul, and the same evening patient had a sharp rigor. A vaginal, followed by an intrauterine, douche of creolin solution was given the same night. Her temperature before the douche was 105° F., and her pulse 150; one hour after the douche the temperature was 102° and the pulse 135. The patient was put on a strict milk diet and an aperient administered. Next morning the condition was as follows. She had passed a restless, sleepless night, though without any rigor, pulse 152, small and thready, temperature 104°, lochia stopped, respirations shallow and rapid, while her appearance was typically that of a septic condition: the bowels had acted. The intrauterine douche was repeated, the patient sponged with tepid water, and gr. x quin. sulph. were administered. The patient took Oij milk during the night. In the afternoon the condition was practically unchanged, save that the temperature was 102°. In the evening, however, it rose to 103°, when the douche was repeated, and 10 c.cm. antistreptococcus serum injected in the left umbilical region. Next morning the condition was improved, patient had passed a good night, and said she felt better; temperature 100°, pulse 108. In the afternoon her temperature rose to 102°, and the injection of 5 c.cm. serum was deemed advisable, which was followed by 10 c.cm. more in the evening. Brandy ℥ss every two hours was ordered. After this there was a marked improvement, though, owing to slight rises of temperature, 5 c.cm. serum were injected daily for a week; these rises, however, were never above 101°, and after the week the temperature never rose above 100°, though it did not touch normal till the end of the third week after the seizure. Brandy was kept on in diminishing doses for a fortnight, suitable nourishment administered, and during the first fortnight a mixture of strychnine, strophanthus, and a diaphoretic. After the third week convalescence, if slow, was uneventful, save for one or two incidents to be noted below.

The improvement in this case dated undoubtedly from the first dose of antistreptococcus serum, which caused a large drop in temperature, with a corresponding improvement in the general condition. Each injection of serum, indeed, was followed by a lowered temperature, though, as was observed above, repeated injections were required to combat the septic process.

In each case the injections were administered (under the most strict antiseptic precautions) in the abdominal wall with no apparent local effect save a little tenderness, till about a week after they were discontinued, when there appeared almost simultaneously on both sides a small patch of red, tender, and almost erysipelatous-looking skin, accompanied at the same time by a small abscess formation over the outer side of the right elbow-joint. These were all fomented, and the latter resolved without any trouble, but the two former were opened, and discharged about ℥j each of thin pus, the skin over each breaking down and leaving an ulcer which was extremely sluggish and intractable. Both these ulcers took over three months to heal, and, I believe, considerably retarded the progress of convalescence.

That metastatic abscesses have followed the injection of antistreptococcus serum has been observed before, but I should be interested to hear if any local suppuration, such as I have noted, has ever manifested itself. If so, it cannot, I think, be hastily put down to a fault in antisepsis during the process of injecting, but rather to some infection from the serum *per se*, with which the low vitality of the body, always necessarily in such cases enfeebled by the course of the disease, is unable to cope.

The serum should be perfectly fresh, and should be administered as soon as it is ascertained that the case is septic. Antiseptic intrauterine douches may be useful, but should not be relied on too long in the hope that they may be sufficient, as a delay of hours even in using the serum may make all the difference towards averting a fatal result, and the admitted high mortality of the disease warrants drastic measures being used in the very early stages.

CASE OF PUERPERAL SEPTICAEMIA TREATED WITH ANTISTREPTOCOCCUS SERUM.

By RICHARD JONES, L.R.C.S., L.R.C.P.I.,
Honorary Physician, Bendigo Hospital, Victoria.

THE following case illustrates the value of antistreptococcus serum in the treatment of severe puerperal septicaemia.

CASE.—Mrs. F., aged 31, a multipara, was confined, thirty miles away, by a midwife on October 19th, 1901. The following day the patient complained of headache with flushes and frequent chills, together with pain throughout the body. The condition was put down to "milk fever." Her illness speedily increasing, I was sent for on October 22nd, or on the third day after delivery. On my arrival at 6 p.m. I was struck by the appearance of the patient, and at once ascertained that frequent digital examinations had been made during labour. One could see at once what was wrong; she had fever, but not milk fever. She was restless and muttering to herself, having a pulse of 110, a temperature of 104.6°, and a respiration-rate of 22. All the muscles in her body were twitching, more especially the facial. The urine was scanty and high-coloured: the lochia scanty, but in no way offensive; thirst was great. There had been two copious watery, dark, and most offensive motions. Insomnia was complete. The tongue was covered with a thick yellow fur. There was no milk in the breasts. There was general distension of the abdomen, which was tympanitic throughout. The area over the uterus and that to its right was somewhat tender to the touch. Per vaginam the roof to the right of the cervix was somewhat thickened and tender to the touch, but there was nothing else to note. The poison having already passed the uterus and become general and of a very severe type, I purposely withheld a treatment which under different circumstances I would have at once adopted—curettage. I therefore relied upon continuous uterine irrigation with 1 in 500 carbolic lotion, so highly recommended by Pozzi in preference to intermittent irrigation with mercury perchloride solution, and by so doing avoid the risk of a further charge of infection through vessels opened up by curettage. I prescribed calomel gr. viij, with opium ½ gr. and quinine sulph. 9j, and I put a trained nurse in charge.

October 23rd. Morning temperature, 102.2°; evening temperature, 105°. Seven profuse watery motions.

October 24th. Morning temperature, 103°; evening temperature, 100.8°. Increasing abdominal distention. Per vaginam as before: diarrhoea continuing; general condition worse.

October 25th. Morning temperature, 102.8°; evening temperature, 100.8°; pulse, 170; respirations had increased from 22 to 36. Five profuse watery motions; with delirium; several rigors.

October 26th. Morning temperature, 103.2°. Patches of pneumonia at base of both lungs; abdominal distension increasing. Starch and opium injections used to keep diarrhoea under control. Motions and urine passed involuntarily. All treatment appearing useless and it being plain that the patient could not last many days, I decided to give antistreptococcus serum (Pasteur Institute), and gave a first injection of 10 c.cm. Evening temperature, 105.6°; pulse, 150; respirations, 42. There was fair sleep; the skin became moist and there was a general calming down of the patient. Seven profuse watery motions.

October 27th. Morning temperature, 104.4°; pulse, 140. Urine and six profuse watery motions passed involuntarily as before. Herpes on the lips; patient unaware of her surroundings; tongue brown and cracked, gums bleeding, and covered throughout their whole extent with sordes; the lips were also cracked and bleeding, and the heart was failing fast; 10 c.cm. antistreptococcus serum were injected. Evening temperature, 103.6°; pulse, 118.

October 28th. Morning temperature, 104.2°; pulse, 130; evening temperature, 105.6°; pulse, 145. Urine and seven profuse watery motions passed involuntarily; abdominal distension increasing; had fair sleep; skin moist; condition generally worse.

October 29th. All day temperature stood at 104.4°; pulse, 150; respirations, 42. Every joint in the body swollen, even the fingers; abdominal distension increasing; no signs of dullness; vaginal examination suggestive of pus high up but no sense of fluctuation whatever. Four watery motions, not so watery or copious as before, but passed involuntarily. Gave a mixture of tr. cinchon. co. and ammon. carb. in full doses every four hours, and one sixtieth strychnine hypodermically every four hours, as patient was going from bad to worse.

October 30th. Profuse sweating. Morning temperature, 103.6°; pulse, 140; evening temperature, 104°; pulse, 160; respirations, 42. No change in lungs; seven motions passed involuntarily.

October 31st. Morning temperature, 102.4°; pulse, 150; 10 c.cm. antistreptococcus serum injected; evening temperature, 104.6°; pulse, 146; respirations, 60. Three watery involuntary motions; condition of

patient shockingly bad; expected to pass away at any moment. Hypodermic injections of ether and strychnine relied upon.

November 1st. 10 c.cm. antistreptococcus serum injected. Morning temperature, 103.4°; evening temperature, 105.6°; pulse, 160; respirations, 46. Profuse sweating; one involuntary motion; abdomen and vagina the same.

November 2nd. Indications of abdominal distension going down; the boggy feeling to the right of the cervix more suspicious of suppuration higher up, but no bulging whatever. Emaciation and exhaustion very extreme. Great care was needed to protect against bedsores, of which there was evidence everywhere. Morning temperature, 102.8°; evening temperature, 103.8°; pulse, 140 and 160; respirations, 54. Two voluntary motions.

November 3rd. Morning and evening temperature, 103.4°; pulse, 140; respirations, 56; 10 c.cm. antistreptococcus serum injected. No motions.

November 4th. Morning temperature, 101.4°; pulse, 130; respirations, 46; evening temperature, 103.2°. Abdominal distension falling; tongue improving; one motion, improved; 10 c.cm. antistreptococcus serum injected. Fair sleep, moist skin, and general calming down, which followed each previous injection.

November 5th. Morning temperature, 102.4°; pulse, 117; evening temperature, 104.4°; pulse, 126; respirations, 56. Abdominal distension falling well; swelling in joints going down; general state improved. No further trouble with motions. Injections of starch and opium, etc., withheld; 10 c.cm. antistreptococcus serum injected.

November 6th. Morning temperature, 101.2°; pulse, 130; respirations, 50; evening temperature, 104.4; pulse, 150; respirations, 48. Abdominal distension falling well, especially on left side, showing up dullness on the right side, evidently leading from the uterus to the kidney. Vaginal examination revealed no more than before. Patient holding her own. One motion under control.

November 7th. Temperature and pulse all day 103.2° and 160. Certain signs of improvement.

November 8th. 10 c.cm. of antistreptococcus serum injected. Profuse sweating. Morning temperature, 102°; pulse, 130; evening temperature, 103°; pulse, 150.

November 9th. Morning temperature, 98.6°; pulse, 140; respirations, 60. Abdominal distension gone down well, showing up a large abscess of extent previously suspected. Bimanual examination gave distinct fluctuation through abdomen, but not through vagina.

November 10th. Morning temperature, 99.4°; pulse, 150; evening temperature, 101.2°; pulse, 126.

November 11th. Morning temperature, 102.8°, pulse 130; respirations, 46; evening temperature, 102.2°; pulse, 130. The last injection of 10 c.cm. antistreptococcus serum given.

November 12th. Morning temperature, 103.2°; evening temperature, 103.6°. From this gradual improvement was made, temperature not getting above 102°, pulse from 130 to 115; hair falling out.

November 25th. Patient had by this time gained sufficient strength to be removed upon her air bed by train to a private hospital. There was a large bedsore over the sacrum and another on the neck, whilst other parts were saved with difficulty.

November 28th. Under ether I opened the abdomen and removed an enormous quantity of pus from a cavity exposing the uterus and kidney. The patient all but died on the operating table. The temperature ran an irregular course until January 18th, 1902, on which date the pulse, temperature, and respirations became normal after three months.

Throughout the mixture and hypodermic injections were continued every four hours alternately, with a liberal supply of champagne, and she took large quantities of the best nourishment. In all she had nine injections of serum—90 c.cm. (Pasteur Institute). I have seen the patient twice towards the end of the year, and again quite recently, and she expressed herself as never having been so well in her life.

There were no cultivations made, but there can be little doubt that the case was due to streptococcus pyogenes, producing streptomycosis, hence the good results produced by the antistreptococcus serum. It must, of course, be admitted that puerperal infection may be independent of streptococci, but the conjunction of certain symptoms—rigors, high temperature, very rapid pulse and breathing, sweats, and very rapid bodily waste—points beyond all doubt to streptococcus infection.

PUERPERAL ECLAMPSIA BEFORE DELIVERY.

By JOHN LITHGOW, M.D.,
Cleland.

The two cases of puerperal eclampsia here reported occurred recently in my practice. In both the fits came on before the birth of the child.

Case I.—Mrs. A., a farmer's wife, a strong, healthy woman, who had always enjoyed the best of health, pregnant for the eleventh time, sent for me about 5 a.m. on June 17th, 1903. She was suffering from severe abdominal pain, persistent vomiting, and headache. She did not expect her confinement for some time, and assured me that her pains were not uterine, but due to something she had eaten the previous evening. I gave opium (gr. ½ in pill), ordered hot local applications, and tablespoonful doses of milk and soda water. On calling again about four hours after her husband informed me she had had a "turn" shortly before my arrival, but could give me no description of it. I ascertained that the urine had been very scanty for a few days; with difficulty she passed about 1 oz. of high-coloured urine, which on testing roughly in a metal tablespoon over a lighted candle I found to become almost solid. I gave her a dose of calomel, and left instructions that if she took another "turn" I was to be sent for immediately. In about two hours' time, when returning to see her, I met a messenger who informed me she had another seizure. I found her dazed but conscious, and a neighbour woman who was present described the attack, which was undoubtedly puerperal eclampsia. She soon had a third and very severe fit. Immediately on the commencement of the convulsion I gave a hypodermic injection of morphine (gr. ¼), and administered chloroform, which soon controlled the spasms. As the patient did not recover consciousness, I sent for assistance, and injected underneath the skin of the abdomen about two pints of a saline solution (common salt ʒj, potassium carbonate ʒj, as recommended by Jardine.[1] A fourth and still more severe fit soon seized her, during which chloroform was again administered, when this convulsion ceased her pulse was so feeble and irregular, and her condition altogether so desperate, that I was of opinion that another fit would prove fatal, and decided to empty the uterus. I introduced my hand with some little difficulty into the uterus, was fortunate in immediately seizing the feet—the presentation was cranial—and I had no difficulty in turning and delivering the child, a full-termed female, which apparently had been recently alive, though I was unable to resuscitate it. A little pressure expelled the placenta, and altogether the time occupied in delivery was less than fifteen minutes. Dr. Robertson now arrived, and we considered the woman's condition to be almost hopeless. She had another eclamptic fit, less severe than the former. Chloroform was administered, and hypodermic injections of strychnine, morphine, and pilocarpin. In about an hour her pulse again became perceptible, and her condition a little more hopeful. When we left her she was still unconscious. A mixture of potassium bromide and chloral was sent her to be taken every two hours after she was able to swallow. No more convulsions occurred, but she remained in a semi-conscious condition during the night and part of the following day. The following evening she discussed with me when she expected her confinement, and, on my putting the question to her, said she had felt no movements that day. She was very much surprised when told that her baby was born. She made a complete recovery.

Case II.—Mrs. L., a gamekeeper's wife, sent for me about 11 p.m. on June 25th. She was a strong young woman, pregnant for the first time and at her full time. Pains had commenced, and on examination I found the os but little dilated. On the following morning she had made little progress. I called again about 7.15 p.m., and on opening the door found her sitting in bed; before I had entered the room she had fallen down in a most typical and severe eclamptic fit. I had my forceps rapidly prepared, put her in the midwifery position, found the head of the child well down on the perineum, immediately applied the blades, and she was delivered almost by the time the convulsion had ceased. The child was a well-formed male and alive. There was some delay with the placenta, and before it was expelled the patient had regained consciousness. There were no more fits. On inquiry, I found that the urine had been scanty for some days previously. Next day, on asking this patient what she remembered of the occurrence, she said she saw me arrive, but knew nothing more till the confinement was over and the binder was being applied.

These two cases of puerperal eclampsia occurring in private practice, and within eight days of each other, in women before delivery lend themselves to comparison. Save the scanty and albuminous urine, there were no symptoms common to both. The one is a woman presumably at the end of her child-bearing period, aged 45, and carrying her eleventh child, labour had not commenced, and for from six to seven hours before the onset of the first seizure she had had prodromal symptoms in the shape of severe epigastric pain accompanied by vomiting and headache. The other a young woman, aged 27, pregnant for the first time, nearing the end of a protracted labour, without the least warning to either herself or her attendant, is suddenly struck down with a seizure.

Treatment in both cases, except that of emptying the uterus, was entirely different. In the first case purgatives—morphine, saline injections, chloroform, pilocarpin, and strychnine—were administered. Venesection was discussed but, owing to the patient being pulseless, was abandoned. Still she had five severe fits, which brought her very near to death. In this case the child was lost.

In Case II no treatment was directed to the relief of the fits, but the uterus was immediately emptied with the best possible result to both mother and child, in that there were no more fits and the child alive.

Dr. McDowell[2] remarks "that the patient had no return of the convulsions after delivery," this after thirteen fits, during which time all the recognized forms of treatment had been tried. My first case had four most severe fits, during which time similar treatment had also been exhibited without benefit; indeed, the fits were becoming more severe in character, of longer duration, with less time between. No

relief was obtained till the uterus was emptied, after which she had only one slight convulsion.

Puerperal eclampsia is one of the most alarming and fatal diseases that attack pregnant or puerperal women; the mortality to mother and child is very great, and is more so when the fits come on before the birth of the child. On the uterus being emptied, the mortality is very much reduced. According to Duhrssen, "Emptying the uterus is said to be a certain method of checking the fits."[3] The longer this treatment is delayed the more serious becomes the condition of the patient, and often no attempt is made to do so till it is too late. Dr. Jellett puts it that, if the patient survives the emptying of the uterus, whether by artificial or natural means, she will certainly recover.[4]

In Case I the uterus could have as easily been emptied after the first fit as it was after the fourth; had that been done, instead of putting off valuable time disinfecting and boiling instruments for hypodermic injections, I have no doubt that the child would have been saved, and the woman's life not put in jeopardy; being a multipara with the soft parts easily dilatable, the case certainly was one for rapid and easy delivery.

If ever it be my lot to attend a case of puerperal eclampsia again, I shall immediately attempt to empty the uterus, and in doing so will feel confident I am doing the best for my patient.

REFERENCES.

[1] Jardine, *Glasgow Medical Journal*, March, 1899. [2] BRITISH MEDICAL JOURNAL, July 25th, 1903. [3] Duhrssen, *A Manual of Obstetric Practice*, 1897. [4] *Encyclopaedia Medica*, vol. iii.

THE TREATMENT OF ECLAMPSIA BY HYPODERMIC INJECTIONS OF MORPHINE.

By W. BOXER MAYNE, M.R.C.S., L.R.C.P.,

Swindon, Wilts.

ECLAMPSIA being so important and serious a subject, I venture to give particulars of two further cases in which the hypodermic administration of morphine has promptly checked the convulsions.

CASE I.

A woman, aged 32, scarcely five months advanced in her third pregnancy, who had apparently been in usual health till one day she developed an eclamptic fit. She was alone at the time, but a neighbour, hearing her groaning, rushed in to find her in a fit. By the time I arrived the woman had emerged from the consequent comatose condition, was vomiting freely, and was quite unable to recognize those around her or comprehend what was said. Vaginal examination was out of the question, as any attempt produced great mental excitement. I gave a hypodermic injection of morphine gr. ½, croton oil ♏ij, and had her wrapped in blankets. There was no recurrence of the fits; she miscarried during the night, was quite rational the next day, remembering nothing of her illness; progress was uneventful. The urine passed the morning following the fit was small in amount, bright red with blood, and contained much albumen.

CASE II.

A primipara, aged 23. When called to her confinement, I found that she had been about twenty-four hours in labour, that the os was fully dilated and the head engaged in the brim. Birth was effected after very difficult forceps extraction. At the conclusion of a straightforward third stage I left the patient, though naturally fatigued, bright and comfortable. I had not, however, got very far before I was overtaken by the husband, who begged me to return as his wife was dying. Rushing back fearing *post-partum* haemorrhage, I was relieved to find that the patient was by no means dying, but was in the stertorous comatose condition with face congested following a fit; the fit had developed suddenly without warning; the limbs had been convulsed and froth had appeared at the lips. I gave a hypodermic injection of morphine (sulphate), gr. ⅓, and, as the pulse was very feeble, strychnine gr. 1/60, and had the woman wrapped in a hot wet pack. Revisiting her in the course of a couple of hours, I found her sensible. I administered calomel gr. x, and left a mixture of bromide and diuretics. Progress was straightforward, there being no recurrence of fits. The urine contained for a few days a decided deposit of albumen.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

CASE OF CORROSIVE SUBLIMATE POISONING.

A. B., a dispenser, aged 29, dissolved 60 gr. (or more) of corrosive sublimate in hot water (℥v) intending to make a bath for an eruption which he believed to be scabies. He sponged his arms, abdomen, thighs, and scrotum, with the warm fluid, and then went to attend to people in the shop. A smart tingling came on at once, which, when he had attended to three customers, became severe pain, principally in the penis and scrotum.

When I saw him half an hour after the application the penis and scrotum were red and much swollen, and there was a papular rash on the groin and slightly on the abdomen. He was suffering very severe pain, was twitching very much, and was very jerky in his speech. I administered morphine ¼ gr. and cocaine ¼ gr. hypodermically, and sponged the body with flour and water and egg albumen, also administering the whites of two eggs in tea. There was difficulty in swallowing the second cup (one hour and a-half after the application). At the end of another hour he was worse in every way, could hardly speak, swallowed with the greatest difficulty; the left hand was clawlike and stiff, and there were severe tremors. I gave morphine gr. ½. He complained of burning of his lips, throat, and stomach. Four hours later he retched violently, but with little result, and had a severe general clonic spasm lasting about twenty seconds. I sent for Dr. Bishop to assist me. The spasms recurred about every ten minutes, and did not seem to be induced by outside stimulation. Twice marked opisthotonos occurred. During the attack there was absolute general rigidity, inability to breathe at all (lasting once for ninety seconds); the pulse, which between the spasms was about 100, became running in character. There was an expression of terrible fear. A general tremor preceded each attack, with an elevation of the shoulders. Rigidity was partial during the intervals, and the breathing was very shallow and mostly abdominal. The symptoms were all at their height five hours after the application.

Two hypodermic injections of brandy ♏xx, and morphine gr. ½ were given. The patient was surrounded by bottles full of hot water wrapped up in bath towels wrung out of boiling water. Amyl nitrite and chloroform were administered with good results, though the shallowness of the breathing delayed it somewhat. The rigidity between the attacks diminished, but when after two hours' administration chloroform was stopped, another rather sharp, though not prolonged, spasm came on. Chloroform was then given for three more hours, and stopped nine hours after the application of the poison. The case then went on well. For two days there was a burning sensation, and one or two attacks of sickness, but there was no salivation, no suppression of urine, and no purgation. Large grey blisters covered the scrotum. There was marked weakness of the left hand, which improved every day for a week, and on the first day inability to protrude the tongue, which deviated towards the left.

The previous history probably accounts for the unusual symptoms, the patient having been wounded in the late war, and spending seven months in hospital with paralysis of the left side, from which he had completely recovered. While there he had had some extraordinary temperatures on several occasions.

Bedford Park, W. S. F. HOLLOWAY, M.R.C.S., L.R.C.P.

LANCASTER MEDICAL BOOK CLUB.—The first meeting of the fourth session of the clinical section of the Lancaster Medical Book Club was held at the Royal Lancaster Infirmary, on October 23rd. Mr. Charles Dean, F.R.C.S.Ed., being in the chair. The Honorary Secretary showed a case of tuberculous dactylitis, and a radiograph of the condition was thrown on the screen.—Dr. R. G. Rows, M.D., followed with a very interesting demonstration of cavities in the spinal cord, illustrated by the lantern; at its close questions arising out of the demonstration received reply from Dr. Rows, and he was accorded a hearty vote of thanks. Card specimens were shown by the President, malignant disease of larynx; by Mr. W. C. Helme, malignant uterus removed by vaginal hysterectomy. New books were shown and specimens exhibited under the microscope.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ROYAL ALBERT EDWARD INFIRMARY, WIGAN.

A CASE OF ACUTE PERIOSTITIS OF FEMUR FOLLOWED BY OSTEOMYELITIS: LIGATURE OF SUPERFICIAL FEMORAL: AMPUTATION THROUGH HIP-JOINT: RECOVERY.

(Under the care of Wm. Berry, F.R.C.S.I., Senior Honorary Medical Officer.)

[For the notes of this case we are indebted to H. J. Slade, M.R.C.S., L.R.C.P., Senior House-Surgeon.]

J. H., aged 15, was admitted on December 2nd, 1902, with a large swelling of the right thigh.

Condition on Admission.—He was a pale, extremely emaciated boy of about the normal height. His face was thin, yellow, and drawn; the hair was sparse, lustreless; scalp seborrhoeic. The teeth were strumous (lack of enamel). He was extremely wasted, the temperature 100°, and the pulse weak and small. He complained of no pain except on pressure of right thigh, which was swollen in its upper two-thirds. The skin was smooth and shining, and on palpation much fluid was found.

Operation.—On December 23rd, 1902, a long incision was made on the anterior and outer side of the thigh, and the pus evacuated; a counter-incision was made below and to the inner side for free drainage, and the whole swabbed out with glycerine and chinosol. The abscess cavity extended from the upper to the lower epiphysis of the femur, denuding the bone of the periosteum (except on the narrow posterior surface) in its whole length. The muscles formed a thin shell beneath the skin. The pus, which was tuberculous in appearance, was mixed with darkish clot, evidently from recent haemorrhage into it.

Course of the Case.—The wound was kept open and plugged daily with carbolic lint, and for three weeks the patient showed signs of septic absorption. Granulations grew slowly. At times the dressings were covered with blood from small vessels which could not be picked up, and his temperature ranged from 102° to 104°. On January 15th a further incision was made, and the bone gouged; the interior was found lined with pus. Strong carbolic was used to swab out the cavity, which was plugged with iodoform gauze. The patient progressed slowly, and on February 13th the wound was again opened up and swabbed out. On March 10th, owing to frequent free haemorrhage, the superficial femoral was ligatured. On March 18th, as there was not much sign of life in the bone and the boy was sinking, amputation at the hip-joint was decided upon and performed. This had suggested itself many times before, but the condition of the patient seemed entirely against it. The boy recovered from the shock in a surprising manner, and in a week developed a good appetite, which was encouraged: and with the help of a generous diet he has grown from a skeleton to the fat lad he is now.

Remarks by Mr. Slade.—The history is that the boy was taken suddenly ill three weeks before admission. The disease must have commenced by a tuberculous deposit either in the bone itself or the periosteum—most probably the bone itself—and became infected by pyogenic organisms from the blood, as there was neither wound nor inflammatory mischief of the skin such as a boil. The reason of the deposit being in the shaft and not in the epiphysis, which is the much more common seat, was probably that its vitality was lowered by injury, of which, however, there is no history. The diagnosis of such cases is generally indicated by the symptoms, which commence with violent fever and great pain, followed by a typhoid state. Pain is generally intense and fluctuation felt over the bone, and skin later on red and inflamed. The treatment is early and free incision through the periosteum and washing out the pus, then gouging the bone down to the medullary cavity and scraping out all the disease. In this case, which did not come under our care till the later stages, amputation was indicated, but the condition of the boy seemed entirely against it, and resort had to be taken to the apparently hopeless task of trying to save the leg, until his general condition was a little improved.

British Medical Association.

PROCEEDINGS OF DIVISIONS AND BRANCHES RELATING TO SCIENTIFIC AND CLINICAL MEDICINE.

BIRMINGHAM BRANCH.

Jordan Lloyd, F.R.C.S., President, in the Chair.

Birmingham, Thursday, October 8th, 1903.

Prostate Removed by Suprapubic Enucleation.—Mr. George Heaton showed an enlarged prostate which he had removed the previous day from a patient aged 74 by enucleation through a suprapubic opening in the bladder. The specimen consisted of a considerably hypertrophied gland, the left lobe being the larger. The patient had suffered from symptoms referable to his prostate for some years. For five days previous to the operation he had had complete loss of voluntary micturition, and daily increasing difficulty in the passage of a catheter owing to the presence of a urethral stricture in addition to the enlarged prostate. The patient bore the operation well.

Foreign Body in Bladder.—Mr. Albert Lucas showed a solid piece of indiarubber, 14 in. in length and ⅝ in. in diameter, which he had removed from the bladder of a man aged 40. It was found impossible to remove the foreign body without an anaesthetic. The bladder was examined with the cystoscope; the piece of tubing was seen coiled up, and it was seized with a lithotrite and removed.

Watering Places of Savoy and Dauphiny.—Dr. A. Foxwell read a paper on this subject under the following headings: Brief description of places visited, namely, Aix-les-Bains, Evian, Thonon, Allevard, Challes, Marlioz, Uriage, Brides-les-Bains, and St. Gervais. The chief characteristics of their springs. The methods of administration. The therapeutic action of the waters so administered.—The paper was discussed by Dr. Wyer and Dr. Kauffmann; and Dr. Foxwell replied.

Remarks on Cases of Perforation of the Stomach and Small Intestines.—Mr. A. Lucas read a paper of which the following is a synopsis: Perforated gastric and duodenal ulcers; typhoid ulcers. Perforation due to injury without a wound of the abdominal wall. Diagnosis and treatment. Importance of early diagnosis and operation if to be successful. Records of cases.—Mr. Barling, Mr. Morrison, Dr. Emanuel, and the President took part in the discussion; and Mr. Lucas replied.

NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCH.

John Mason, M.D., Vice-President, in the Chair.

Kendal, Wednesday, October 28th, 1903.

Antitoxins in Private Practice.—Dr. G. A. Johnston read a paper on the use of antitoxins in private practice. He confined his remarks chiefly to diphtheria. He emphasized the importance of giving large doses, expressed a preference for the intravenous method of administration when rapid action was necessary, and advocated prophylactic injections. His remarks were illustrated by references to numerous cases.

Immunity.—Dr. W. H. Coupland explained Professor Ehrlich's theories of immunity by means of cardboard models, and drew some practical conclusions.

Cases, etc.—Dr. W. Baron Cockill exhibited an apparatus for the application of hot air, and also showed a severe case of hydrocephalus.—Dr. R. W. Leeming showed a patient on whom he had performed lumbar colotomy, and also one convalescent from small-pox who had been treated by red light. He drew attention to the absence of secondary fever and the very slight pigmentation.—Dr. A. J. McCallum showed a little girl with typical congenital double dislocation of the hips; also a middle-aged woman suffering from well-marked elephantiasis, chiefly affecting the legs. As the patient had a sister similarly affected, and as careful search had failed to discover filaria, it was considered that the case corresponded with the description given by Hafercorn of elephantiasis mollis, the disorder being due more to stasis from weakness and dilatation of lymph channels than to their actual obstruction.—Dr. P. F. Sturridge showed several cases illustrating extraction of cataract, and also a boy who had suffered

from septicaemia following a spinal abscess, and had recovered completely after the use of antistreptococcus serum.

Specimens, etc.—The following specimens were on the tables:—Dr. Leeming: Abnormally long appendix.—Dr. Mason: Melanolic sarcoma of toe.—Dr. Mason: Old wooden pessary removed after many years' repose in the vagina.—Dr. P. F. Sturridge: Gall stones removed during pregnancy.—Mr. A. S. Barling: Renal calculi removed from various cases by nephrolithotomy.—Dr. W. Baron Cockill had the new horse ambulance of the Kendal St. John Ambulance brigade in attendance, and it met with much approval.—Dr. W. H. Coupland demonstrated the following under the microscope:—(1) Section of diphtherial membrane showing bacilli; (2) ova of bilharzia haematobia: (3) section of pancreas showing islands of Langerhans.—Messrs. Parke, Davis, and Co. kindly lent a series of lantern slides illustrating the preparation of sera.

SOUTH WALES AND MONMOUTHSHIRE BRANCH: WEST WALES DIVISION.

D. J. Williams, F.R.C.S., President, in the Chair.

Tenby, Friday, September 25th, 1903.

President's Address.—The President delivered an address on some cases of lung surgery. Drs. Bowen Jones, Price, Owen Williams, and Dr. Phillips took part in the discussion.

Intussusception of the Bowels.—Dr. Bowen Jones read a paper on this subject. The following are brief notes of a case, which was admitted into the Carmarthenshire Infirmary on July 20th, 1903:

The patient was a bright intelligent little girl of 9 years of age, with fair hair and blue eyes. No history of the illness could be obtained from the friends, and when seen by Dr. Bowen Jones she complained of slight recurring pain in the epigastric region. She said that she occasionally felt sick, although there was never any actual vomiting. She could not say how long she had been ill, and could give no further information. The bowels had not acted since admission; there was no elevation of temperature; pulse normal, about 76. On examination nothing abnormal could be seen in the abdomen, but a large pear-shaped mass could be felt in the epigastrium. There was no tenderness, and the swelling appeared to vary in shape from time to time, and according to the position of the patient in bed. In consultation with colleagues, a variety of opinions were advanced as to the nature of the tumour. The probability of its being a case of intussusception was discussed, but in the absence of any history it was decided to wait and watch for symptoms. A small dose of calomel was administered, which acted twice and freely on the bowels. In the meantime Dr. Bowen Jones wrote to the medical man who had sent her in, Dr. Llewellyn Jones, of St. Clears, asking about any history to confirm the diagnosis of intussusception, and also for any opinion which he might have formed himself about the nature of the case. That gentleman promptly replied that the child had been ill for three weeks, and that at the commencement of her illness there had been severe pain in the abdomen with passage of mucus and blood, and that he had experienced considerable difficulty in obtaining a satisfactory history from the parents. He had come to the conclusion that it was a case of intussusception, and had advised her to be sent to the infirmary for the purpose of an operation. This information, coupled with the fact that the child was beginning to complain of more frequent and more severe paroxysmal pain at the seat of the tumour, decided Dr. Bowen Jones to open the abdomen and examine the mass. Accordingly, on the morning of July 24th the patient, having been placed under the influence of A.C.E. in bed, was carried down to the operating room, and, under strict antiseptic precautions, Dr. Bowen Jones made an incision about 3 in. long directly over the tumour in the median line between the umbilicus and the ensiform cartilage. On opening the abdominal cavity he found that his incision was too small to admit of the mass being brought through the opening. He therefore prolonged the incision downwards to one side of the umbilicus and on bringing the tumour forwards found it consisted of a large mass of invaginated large intestine. By gently compressing the mass in the palm of his hand he managed to squeeze out, so to speak, the invaginated portion, and found that the whole of the "caput caecum coli" together with the vermiform appendix and the greater part of the ascending colon had become invaginated into the transverse colon. It was then seen that the convex surface of the caput, close to the attachment of the vermiform appendix, at a portion traversed by one of the longitudinal bands, was the first part to have become invaginated, and at this point there were found a few flakes of inflammatory lymph and a portion of the band as well as the intestine was covered with some hard calcareous matter, whether of a tuberculous nature or not was doubtful. After reduction the slightest amount of manipulation tended to cause a recurrence of the folding in of the intestine and the possibility of the mischief recurring. Having replaced the intestine in the abdominal cavity, and carefully adjusted the great omentum, the opening was closed with three sets of sutures. The wound was dressed antiseptically and left untouched for eight days when the superficial sutures were removed, the wound having united by primary union. On the evening of the operation the temperature rose to 99.8° F., but fell to normal the following day. The patient made an uninterrupted recovery and was up and about in less than a fortnight.

The salient points of the case to which Dr. Bowen Jones drew attention were the difficulty in forming an accurate diagnosis in the absence of any history, the question of how long after the onset of symptoms one could hope to operate successfully on a case of intussusception—in this case an interval of three weeks' duration—and, thirdly, the question of the amount of adhesions that had taken place, and consequently the probabilities of being able to reduce the intussusception or not. The last question was fully discussed before the operation, and whilst some thought that after so long a period from the commencement of symptoms the intestine was bound to be hopelessly adherent, others maintained that the absence of any very acute symptoms together with the absence of any signs of obstruction as well as the free action of the bowels, pointed more to simple incarceration rather than strangulation of the intestine. The latter theory proved to be the correct one; and although Dr. Bowen Jones was prepared in case of necessity to remove the whole mass and short-circuit the bowel, it was far more satisfactory to find that complete reduction of the intussusception was so readily and easily brought about by a, comparatively speaking, very simple operation. Curiously enough, Dr. Bowen Jones added, a few weeks after the occurrence of this case a somewhat similar one was recorded in the *Lancet* for August 29th.

ULSTER BRANCH.

Professor Sinclair, and subsequently Dr. T. McLaughlin, Derry, in the Chair.

Londonderry, Wednesday, October 28th, 1903.

President's Address.—The President delivered his opening address, which dealt with the history of the profession in Derry. He gave accounts and anecdotes of many of the well-known members.—Dr. Darling (Lurgan) proposed, and Dr. Killen (Belfast) seconded, a vote of thanks to the President for his most interesting and instructive address. This was passed with applause.

Retrobulbar Neuritis.—Dr. Cecil E. Shaw (Belfast) read notes of two cases. He thought they would be of interest not merely as eye cases, but as examples of a primary interstitial inflammation in a nerve. As such they might throw some light on a similar process occurring in other nerves. Both the cases were in young women. The details were briefly as follows:

1. Miss F. came to him in May, 1901, complaining of dimness in her left eye, noticed first five days previously. She was a stout healthy-looking girl, who had never had any illness since childhood, except occasional amenorrhoea, from which she had suffered for the past few months. Her mother said that lately she had seemed easily tired. Dr. Shaw found the right eye normal. In the left vision was reduced to counting fingers at 3 ft. Ophthalmoscopic signs at first seemed nil, but on careful comparison with the right eye some haziness of the edge of the disc was seen. Dr. Shaw sent her to Dr. Campbell, who had seen her before, and he found all the other organs normal. In three days there was distinct neuritis and pain on pressure over the eye, and in five days a rather intense neuritis, with a small haemorrhage over the disc. Vision was reduced to counting fingers at 10 in. with difficulty, and at the outer side of the field only. Dr. Shaw had a consultation with Dr. McKeown, who agreed in the diagnosis of acute retrobulbar neuritis, and suggested the use of pilocarpin injections. He began treatment at once, giving $\frac{1}{8}$ gr. of the nitrate, increased gradually to almost $\frac{1}{2}$ gr. daily, with wet cupping on the temple at night. Vision began to improve in two or three days, and in a fortnight the disc appeared almost normal, and vision was $\frac{6}{18}$. The injections were stopped and tonics given. After this vision continued to improve slowly, and in six months was $\frac{6}{6}$. 2. Miss S. was sent to Dr. Shaw by Dr. Martin of Portrush last month. She was a healthy but not very robust girl. During her last menstrual period she had been going about Portrush freely, and on the third day felt very tired and exhausted. The next day she had headache, and noticed the sight dim in the right eye. Vision rapidly diminished, and when Dr. Shaw saw her on the seventh day after the onset she had not even perception of light. She complained of slight frontal headache, and distinct pain on pressure over the eye or on moving it laterally. On ophthalmoscopic examination the right eye showed distinct, but not at all intense, optic neuritis, but no haemorrhages. The left was normal. He used pilocarpin injections at once, beginning with $\frac{1}{8}$ gr. and increasing to $\frac{1}{2}$ gr., which produced free sweating. This was continued sixteen days, with dry cupping on the temples at night. Vision began to return in four or five days, and at the end of sixteen days was equal to counting fingers at 4 ft., when he stopped the injections and gave mercurial inunctions for nine days. At the end of this time, twenty-five days from the beginning of treatment, vision was $\frac{6}{12}$, and ophthalmoscopic appearances were normal. Four days later vision was $\frac{6}{6}$, and he had every expectation that it would improve still further.

Dr. Shaw pointed out that in both cases the ophthalmoscopic appearances were not such as to account for any great loss of sight, and in the first case vision was greatly reduced before the neuritis developed. This, with the pain on pressure and on movement of the eye, left no doubt that the retrobulbar portion of the nerve was affected. Retrobulbar neuritis was common enough in its chronic form, when it was seen as axial neuritis or toxic amblyopia. In this the axial or macular bundle of fibres in the optic nerve was alone affected as a rule, causing a central scotoma. It was not possible to tell if this part of the nerve was first affected in his cases, but in the second one it was noticeable that the peripheral part of the field of vision cleared up much more quickly than the central, so that the patient could see furniture in the room and pictures on the walls when she could only count fingers at 3 ft. or 4 ft. Acute retrobulbar neuritis was by no means a common affection. According to Deyl, of Prague, it generally affected both eyes, and comparatively often the patients were found to be suffering at the same time from encephalitis or myelitis, or from the sensory or motor manifestations of these lesions. The only pathological examination of which he could find a record was made by Elschnig, who found a primary interstitial neuritis. The whole cross section of the entire length of the nerve showed extensive infiltration of fat granules, the fibres being compressed and degenerated. He found, however, a similar appearance in the internal capsule of the brain, where symptoms of brain disease were present. To explain the origin of the whole process Elschnig suggested the presence of some toxic agent which attacked both the brain and nerve. This, of course, would agree with the causation of the chronic form, which was certainly toxic. Dr. Shaw saw one great difficulty in this theory, however: in ordinary toxic amblyopia both eyes were always affected, whereas in these cases only one eye was affected. As regarded the possible relation to multiple neuritis, he expressed a wish to hear the opinion of some physician present. It was, however, worth noting that according to Knies an axial neuritis of the optic nerve occurred sometimes in the course of multiple neuritis, causing the same symptoms as the ordinary axial neuritis which was the cause of toxic amblyopia. If this were so it would seem to show that acute retrobulbar neuritis was quite a different affection from that occurring in multiple neuritis.—The paper was discussed by Drs. Nelson, J. Campbell, and Donaldson.

Banti's Disease.—Dr. Cunningham (Derry) showed a case of Banti's disease, with anaemia, enlarged spleen, and rapidly recurring ascites, which required tapping once weekly. He had been tapped over 200 times.

Multiple Exostoses.—Dr. Cooke (Derry) showed a patient suffering from multiple exostoses, which were symmetrical. One had caused an aneurysm of the popliteal artery, which had necessitated amputation. Both patients were examined subsequently by many members.

Prognosis in Valvular Disease.—Dr. Lindsay (Belfast) read a paper on prognosis in valvular disease of the heart. The statistics were based on 200 consecutive hospital cases, and dealt exhaustively with the subject.—The paper was spoken to by Drs. McQuitty and McKisack.

Cranks.—Dr. Walter Bernard read a paper on the cause and prevention of cranks. The paper dealt with the treatment of those who were mentally deficient, especially in the inhibitory powers of self-control, from the earliest age. He showed two patients, one a young lad somewhat of the microcephalic type, the other a little boy who had been subject to violent and uncontrollable fits of passion. Both manifested considerable discipline and respectful behaviour, and answered intelligently the questions put to them. Dr. Bernard asked that the subject should be taken up by the Council of the Branch.—Drs. O'Neill and MacCormac (Belfast) spoke in terms of approval of the effort; and finally Dr. Bernard's recommendations were handed to the Honorary Secretary to be laid before the Council.

Cases.—Dr. Mitchell (Belfast) showed (*a*) a simple splint for club-foot, for which he advocated the advantages of easy removability and applicability; (*b*) some illustrations of breast tumours; (*c*) 6ft. of intestine successfully removed from a patient aged 60.

[*The business portion of the Proceedings will be published in the* Supplement].

Medical Magistrate.—Dr. George Harvey, of Wirksworth, has been placed on the Commission of the Peace, upon the nomination of the Duke of Devonshire, Lord Lieutenant of the county.

REPORTS OF SOCIETIES.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

John Tweedy, P.R.C.S., President, in the Chair.

Thursday, October 29th, 1903.

The President delivered his opening address, in which he briefly sketched the history of the Society. He drew attention to several of the past Presidents, and made a feeling allusion to the recent death of one of the oldest members of the Society, Mr. George Lawson.

Tumour of the Choroid.

This case was related by Mr. Nettleship.

The patient was a female, aged 24, who had lost the use of the right eye. The eye was quite blind and in a condition of absolute glaucoma. The eye was removed by Mr. Nettleship in 1894, and when last heard of six years later the patient was in good health. There was a doubtful history of tuberculosis in the family. The vision of the eye was defective when the patient was 15 years of age from detachment of the retina. There was a bulging in the ciliary region, and as the eye was painful it was removed. There was a large staphyloma near the ciliary region on the outer side, and corresponding to it internally there was an angiomatous sarcoma; the cells were round and oval, and it was somewhat pigmented. This was surrounded by a stratum consisting of fibrous tissue in which there was much cholesterin. The optic nerve was atrophied and there were one or two outlying nodules. Probably haemorrhage was the origin.

Mr. J. H. Parsons thought the case was almost unique. Fuchs and Leber had collected cases associated with shrunken globes and definite cyclitic changes. He thought the condition suggestive of necrosis of the sarcoma.

Tumour of the Choroid.

Mr. J. H. Fisher described this case.

The patient was a woman, aged 52, whose left eye he had excised in October, 1902, six years before, there was a cataract, with detachment of the retina, ascribed to a blow. The eye was removed on account of pain. A small vascular spindle-celled growth was found near the entrance of the optic nerve. It was pigmented and haemorrhagic, and showed some signs of necrosis. A column of sarcoma cells could be traced along one of the posterior ciliary nerves.

The speaker discussed the possible transmission of material from one eye to the other as in those doubtful cases where sympathetic disease had been said to follow similar conditions.

Tobacco Amblyopia.

Major F. O'Kinealy described this case.

The patient was an Irishman, aged 42, with a specific history. He had lived in India nearly all his life and was a clerk. He had been a very heavy smoker, accounting for as many as 500 Burmah cheroots per month of the cheap and rank variety. The vision was only $\frac{6}{60}$ and J. 18. There was a central defect in both eyes, and a limitation of the fields of vision for white. There were several irregular-shaped scotomata situated about the fields of vision. Tobacco and alcohol were cut off, and strychnine and iron were given with pilocarpin. Four months later the vision was restored to $\frac{6}{6}$ and J. 1 with glasses, though the fields were even more contracted and the multiple scotomata had run together into a complete ring, colour perception was still defective.

The speaker also cited another patient, a Eurasian, whose vision was from the same cause reduced to J. 18 with loss of fields for red and green and yellow, in two months he improved to $\frac{6}{6}$ and J. 1. The scotomata disappeared and colour vision returned.

Mr. Lang referred to a statement made by Wingrave that he had observed a corresponding defect in hearing in patients suffering from tobacco amblyopia which, with the vision, had improved after giving up tobacco.

Mr. Nettleship commented on the unusual occurrence of a further reduction of fields while the vision was improving.

Mr. Holmes Spicer thought that a syphilitic retinitis might have had something to do with both cases, but Major O'Kinealy said that there was not the slightest evidence of this condition being present.

Mr. Johnson Taylor said he had never seen deafness associated with tobacco amblyopia.

The Anatomy of the Plaques in Xerosis.

Mr. Mayou described this condition, drawing his observations from six typical cases. The plaques were situated on either side of the cornea, and covered with bubbles of Meibomian secretion. The xerosis bacillus was found in five of the cases. Sections showed that they adhered only

to the surface and did not penetrate. He gave his reasons for not considering these the cause of the disease. The changes in the epithelium were those due to exposure, and the superficial layer showed a well-marked layer of keratin on the surface. Beneath this was a layer of keratohyalin. There was a complete absence of cells showing mucoid degeneration. Mr. Mayou thought that the mucin cells were one of the most important factors in bringing about hydration in the normal conjunctiva, and that therefore the essential change was keratinization of the epithelium, due partly to exposure and partly to deficient lachrymal secretion occurring in children of delicate health, and that the Meibomian secretion and organisms were simply adherent to the plaques owing to the altered surface tension due to keratinization of the epithelium and the absence of mucoid changes therein.

Major HERBERT said that he had observed similar changes in other mucous membranes. He attributed these bad cases of xerosis to an absence of the mucoid cells in the lining epithelium.

CARD SPECIMENS.

Mr. G. H. GOLDSMITH: A case of retinitis proliferans.—Mr. W. ADAMS FROST: A demonstrating ophthalmoscope.—Mr. R. W. DOYNE: A case of varicose retinal veins with thrombosis.—Messrs. DOYNE and S. STEPHENSON: A case of retinitis circinata.—Mr. W. H. JESSOP: A case of proptosis.

NORTH OF ENGLAND OBSTETRICAL AND GYNAECOLOGICAL SOCIETY.

J. E. GEMMELL, M.B., President, in the Chair.

Friday, October 16th, 1903.

INTRAUTERINE FIBROID WITH EXTENSIVE ATTACHMENTS.

Mr. LLOYD ROBERTS (Manchester) related a case of intrauterine fibroid with extensive attachments. He had attacked it per vaginam, but the operation lasted two hours, and he had experienced considerable difficulties in its later stages. He discussed these, and raised the question of what was absolutely the best mode of operating under similar circumstances.

Professor BRIGGS (Liverpool) favoured the vaginal route but preferred to use a blunt-pointed bistoury, cutting alternately on right and left, and extracting the growth in the form of a chain-like mass.

CAESAREAN SECTION THREE TIMES IN THE SAME PATIENT.

Professor W. J. SINCLAIR (Manchester) related a case in which he had successfully performed Caesarean section for the third time in the same patient.

The case was discussed by Dr. NATHAN RAW, who had performed Caesarean section twice and embryotomy once on the same patient, and was glad to find that Professor Sinclair was opposed to rendering a patient sterile by removal of the ovaries in the course of the operation.

PRESIDENT'S ANNUAL ADDRESS.

Dr. GEMMELL then delivered the President's annual address, in which he discussed the influence of environment upon women in relation to obstetrics and gynaecology. Among other remarks, he said that one result of the mental and physical education which women of the middle and upper classes now underwent was a great improvement in physique, so that the use of forceps was on the wane, and difficult and tedious labours occurred mainly among women of the working and shop-girl class who led sedentary lives. A great deal of nonsense had been talked about dress, a matter in which women must be left to work out their own salvation, and, to some extent, had already done so. Unequal distribution of heat and weight might produce many evils, but from the gynaecological point of view he had never met with pelvic disorder which could be directly attributed to dress, except perhaps in a few cases where very tight lacing had caused uterine displacement. Remarks were also made on the effect of the aggregation and employment of women in large cities and to the diminished birth-rate. Some of the latter might be due to the intentional avoidance of pregnancy, but a good deal of it was probably natural, and due to nerve energy being diverted into other directions.

CARD SPECIMENS.

Dr. J. B. HELLIER: An adeno-sarcoma removed by panhysterectomy.—Professor BRIGGS: A fibroid, showing the impossibility of enucleation: a pregnant decidua from a patient whose tubes were apparently closed: a mixed dermoid and cystic adenoma of the ovary; a seven days' ovum; a fleshy mole in its decidua.—Dr. A. WALLACE: A multilocular cystoma with twisted pedicle; a uterus with right hydrosalpinx and left pyosalpinx.—The PRESIDENT: A series of pen-and-ink drawings illustrative of pathological conditions.—Dr. BLAIR BELL: "Nest"-spring reels for ligatures, with portable sterilizer.

HUNTERIAN SOCIETY.—At a meeting on October 28th, Dr. F. J. SMITH in the chair, Dr. J. H. SEQUEIRA showed four syphilides: (1) in a girl aged 16, whose nose, upper lip, and palate had been the seat of gummatous ulceration, and who had a Hutchinson tooth: (2) a woman of 50, with gummatous infiltration of the skin; (3) a male of 48, with hyperkeratosis of the sole and ankle; (4) a congenital rash in an infant of three months. As regarded the first case, the rarity of tertiary symptoms in congenital syphilis received notice.—Dr. LEWIS SMITH showed a case of lymphatic leukaemia in a male of 47, the interesting points of which were the enormous increase of lymphocytes, as shown by the blood count, absence of enlargement of the spleen, the variations in the size of the enlarged glands while under observation, the great improvement under large doses of arsenic. The case was discussed by Dr. F. J. SMITH and Mr. H. BARNARD.—Dr. BERTRAND DAWSON showed a case of left hyphochondriac tumour which he was inclined to consider a movable kidney. The diagnosis was discussed by Messrs. F. J. SMITH, GLOVER LYON, and BARNARD.—Dr. DAWSON also showed a woman in whom syphilitic perihepatitis had apparently produced a large tongue-shaped Reidal's lobe, and another in which a Reidal's lobe was probably due to tight corsets. With reference to the diagnosis in the first case, Dr. Dawson could not altogether exclude malignant disease, owing to the number and hardness of the nodules on the liver. Dr. F. J. SMITH thought the case might be one of intermittent hydronephrosis: and Mr. BARNARD discussed the several causes to which a Reidal's lobe might be due.—Dr. F. J. SMITH showed a case in which an enlarged tuberculous kidney was apparently consecutive to a traumatic abscess of the testicle, which had occurred twenty-seven years before.—Dr. KELSON showed a woman, aged 38, in whom the posterior pillars of the fauces were adherent to the pharyngeal wall and to one another in the middle line. The condition, which gave the patient no inconvenience, was ascribed to scarlet fever in childhood.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—At a meeting on October 9th at the Holborn Restaurant, Dr. E. GROVES, the President, delivered an address on rural water supplies, which he considered the most important of the means by which the health of the urban communities was affected by that of the rural districts. Water frequently caused typhoid fever directly in the country, and indirectly through milk or other ways in the towns. After describing the distribution of the water-bearing strata in each geological formation, and the origin of springs, he proceeded to discuss the ways in which they became polluted: (1) in shallow wells the entrance of surface washings and insufficient natural filtration through excessive porosity of the soil, and (2) in deep ones through fissures in the rock. The only trustworthy test was that which he called the sanitary test, or the proved absence of any possible source of pollution, for valuable as was the evidence of pollution afforded by the chemical and bacteriological examination of waters, they were useless as evidence of purity. Virulent organic and specific pollution might be so small in quantity as to elude the former, and the pathogenic bacteria might have died out before the examination, or, again, the pollution might be of a local, occasional, or intermittent nature. A water of unusual chemical purity with only 15 innocent bacteria to 1 c.cm. had been the cause of 500 cases and 50 deaths from typhoid fever, through accidental communication having been opened up with an ancient cesspit. He had foreseen this occurrence and had urged the boiling of the water, but the public relied on the reports of the two water experts. More use might be made of rainwater, with precautions as to collection and storage, especially where surface waters only were available. He was altogether opposed to the use of river waters, since rivers were the natural drains of the country and always exposed to pollution. If there were no other source available, the water should be submitted to alternate upward and downward filtration through contiguous chambers filled with graduated gravel and sand, and the growth of the green film of algae should be encouraged so long as it did not arrest the flow. Hillside rivulets might easily be impounded, and the water distributed by pipes. Adits run into chalk hills near the base often yielded good supplies, as did those running between wells sunk in the greensand. Windmills

were the best and least costly means of raising water from deep wells, and turbines from running streams. The poorer class of cottagers often obtained very satisfactory supplies from agricultural drains laid 3 ft. or 4 ft. below the ground, and with their ends projecting from a bank, provided all surface waters were excluded; but shallow wells could stand the sanitary test only if they were lined to the level of the water with brick, set in and faced with cement and backed by concrete, the brickwork carried to the height of 1 ft. from the surface of the ground, and the mouth securely but not irremovably closed, a pump being substituted for the ancient bucket.

Society for the Study of Disease in Children.—A meeting was held on October 16th, Mr. Clinton Dent being in the chair.—Mr. R. Clement Lucas, after narrating a case in point, summarized the symptoms peculiar to strangulated hernia in infants as follows: Its onset is marked by violent and persistent screaming; there is a tendency to suppression of urine, as well as constipation; rapid effusion into the sac occurs, often followed by general peritoneal effusion; collapse occurs rapidly. Dr. Skelding (Bradford) described the advantages in infant patients of carrying the incision from the external ring outwards and upwards toward the iliac crest. Mr. Thomson Walker pointed out certain difficulties in diagnosis which arose from early effusion, and Mr. Jackson Clarke mentioned a case in which apparent strangulation of a scrotal hernia in a newly-born infant was due to interruption of the small intestine at the site of Meckel's diverticulum.—Mr. T. H. Chaldecott described his use of ethyl chloride as a general anaesthetic: he considered it the best for short operations about the air passages, or as a preliminary to ether or chloroform in children. Mr. Atwood Thorne agreed in the main, but had not always found it satisfactory. Mr. S. Stephenson was thoroughly satisfied with it, and believed vomiting was due to overdosage.—Dr. Porter read notes of a case in which the diagnosis rested between hemichorea and hemiplegia, with athetosis. Preference was given to the former owing to the knee reflex being normal and the plantar reflex of the flexor type; the diagnosis was confirmed by subsequent developments. Dr. Purves Stewart discussed the factors which went to make up chorea and ascribed the immunity of infants to their not having learned to imitate gestures expressive of emotion.—In a paper on skeletal deformities and affections of the throat Mr. Jackson Clarke contended that hyperplasia of adenoid tissue was not less characteristic of rickets than corresponding overgrowth of the epiphyses, and drew attention to gout as one cause of throat affections in children. Dr. Percy Lewis agreed generally with these views, but did not consider rickets the sole cause of adenoid hypertrophy, and Dr. C. W. Chapman expressed regret at one more evil being laid at the door of uric acid.—A case of gastro-intestinal catarrh was narrated by Dr. Macalister (Liverpool) provoked, apparently, on two occasions by the cows from which the child's milk was obtained being turned out to grass. Enormous distension of the abdomen occured after each first morning meal, vanishing at night. Milk being excluded from the diet, the child recovered.

Medico-Psychological Association: Northern and Midland Division.—A meeting was held on October 9th at the Northumberland County Asylum, Morpeth, by the kind invitation of Dr. McDowall, who occupied the chair. The members first visited a villa for forty male patients. The accommodation was excellent; there were no locks, the patients being free to go in and out at will. The cost was very moderate, £120 a bed, including furniture. Dr. McDowall said that about 25 per cent. of pauper patients could be accommodated in such villas at much less expense and with much more comfort to them than in a large asylum building. He further claimed that chronic patients improved mentally on removal to the more homely surroundings provided in small houses.—Dr. Campbell, of Rainhill, gave a demonstration of histological studies of cortical localization, which included a detailed account of a long series of researches into the structure of the cortex. He showed a beautiful series of drawings of sections of cortex, and demonstrated the differences in structure between the different areas. His results, he said, confirmed the previous conclusions of Dr. Bevan Lewis, which at one time had seemed to be in opposition to experimental results, though the conclusions arrived at by histological investigation as regarded the limits of the motor area had now been fully confirmed. Dr. Middlemas exhibited a case of development of general paralysis in which the history and signs of congenital syphilis were very clear. He pointed out the gradual growth in opinion that general paralysis was always due to syphilis, acquired or inherited. Drs. McDowall, Maule Smith, and Menzies joined in the discussion which followed. Dr. Bedford Pierce showed an automatic fire alarm box containing exit key, which he claimed was a great safeguard in case of fire, and prevented the key being used by unauthorized persons.—Dr. Norah Kemp read notes of a case of a chronic maniacal and utterly incoherent patient who had had a lucid interval lasting a few days on four occasions following the administration of thyroid extract. The President, Drs. Middlemas, Maule Smith, and Bedford Pierce discussed the matter, all agreeing that on the whole the results of thyroid treatment were very disappointing, while the President pointed out the real danger of cardiac failure from using the drug.

West Kent Medico-Chirurgical Society.—At a meeting of this Society on Friday, October 2nd, the following gentlemen were elected its officers for the year 1903-4, being the forty-eight session since the foundation of the Society:—*President:* Robert E. Scholefield, M.A., M.B., B.Ch. *Vice-Presidents:* G. Chisholm Williams, F.R.C.S.E., and F. S. Toogood, M.D., D.P.H. *Members of Council:* F. Septimus Barnett, M.R.C.S., L.R.C.P., J. H. Bryant, M.D., H. A. Munro, M.A., M.D., B.Ch., Chas. Heath, F.R.C.S., W. H. Payne, M.R.C.S., L.R.C.P., H. Bowen Williams, M.D., H. Leonard Williams, M.D. *Treasurer:* J. P. Purvis, M.R.C.S., L.S.A. *Secretary:* J. P. Henry, B.A., M.D., B.Ch. *Librarian and Assistant Secretary:* H. B. Kitchin, M.D.

Glasgow Northern Medical Society.—This Society held the first meeting of the session 1903-4 on October 13th, when the business reports of last session were read, after which the retiring President (Dr. J. Steel Muir) addressed the meeting. The following gentlemen were elected office-bearers for the ensuing session:—*President:* Dr. A. Thomson Campbell. *Vice-Presidents:* Dr. Charles F. Spinks, Dr. James Galbraith Connal. *Treasurer:* Dr. James Todd. *Secretary:* Dr. John G. Gray. *Reporting Secretary:* Dr. John A. C. Macewen. *Stalkeeper:* Dr. John C. Edmiston. *Auditors:* Dr. Thomas Dow Waddell, Dr. John Ritchie. *Ordinary Members of Council:* Dr. James W. Allan, Dr. J. A. Wilson, Dr. James B. Miller, Dr. John Baird, Dr. Malcolm Black, Dr. Robert G. Inglis, Dr. William Campbell, Dr. Malcolm Campbell, Dr. James Rutherford, Dr. Campbell S. Marshall, Dr. J. Steel Muir, Dr. John Donald.

Bradford Medico-Chirurgical Society.—The new session was opened on October 20th by an address from the President on types of dyspepsia. Pawlow's investigations into digestion were related, and deductions drawn from them. The essential factor of indigestion was usually a functional derangement of the nervous system, whereby the glands concerned in gastric secretion responded to stimulation too readily or too slightly. But in another class of case often met with in anaemia increased or diminished gastric muscular movement was a leading feature. Fats were counter-indicated in cases of diminished secretion, but useful when excess existed. The same conditions might respectively be met by hydrochloric acid and the alkalies, especially magnesia. Where mobility was at fault, pepsin or pancreatin was indicated.—Mr. J. T. Crowe showed a case of Pott's disease after costo-transversectomy performed by Mr. H. Brook, of Lincoln. The patient had regained the power of walking, sensation in the lower limbs, and control over his sphincters.—Mr. W. H. Horrocks read notes of a case of pregnancy complicated by uterine fibroids and successfully treated by abdominal hysterectomy. Before incising the uterus one uterine artery was tied and a ligature placed round the other. Practically no loss of blood occurred, and the patient left the table with a pulse of 84, subsequently with the child making a good recovery.—Mr. J. B. Hall showed an adenoma of the thyroid and a very large vermiform appendix.—The annual dinner of the Society was held on October 13th. About 70 members and guests were present, and before it an address on some conditions leading to chronic septic absorption was read by Mr. Rickman J. Godlee.

REVIEWS.

SIR WILLIAM STOKES'S LECTURES.

THE publication of the collection of *Selected Papers on Operative and Clinical Surgery*,[1] a work already begun by the late Sir William Stokes before his departure for South Africa, has been ably and faithfully completed by one who was closely associated with the lamented author during the closing years of his life. Dr. TAYLOR has shown much judgement and devoted respect in the revision and selection of the material submitted for his consideration, and the volume before us, though bulky, and containing no less than thirty-six different articles, does not include, we believe, a single one that could reasonably have been omitted. The book so carefully and ably edited contains papers of varying scope, but all of interest. Most of these deal with subjects of practical surgery; others, such as those on finality in surgery, the relations of surgery to medicine, and the ethics of operative surgery, with the more general aspects of surgical work; and the two concluding South African papers present the last and not least valuable additions to the abundant results of long and zealous surgical research.

The interest of this volume is enhanced by an introductory memoir of the late author of all these papers by Professor Ogston, in which are well portrayed the characteristics of one recognized by all as an eminent and representative surgeon, and by those closely associated with him as a kind-hearted and highly cultured man. The papers on practical surgery, which deal mostly with operative treatment, afford in many instances excellent examples of concise and yet full and lucid clinical instruction. Some deal with points of surgical therapeutics that are still uncertain and disputed. Sir William Stokes seems to have never lagged behind the times, but was ever prepared to the latest stage of his long and active professional career to test the value of the latest developments in different branches of surgical work. The reader will find here sound and thoroughly practical articles on pylorectomy, on the operative treatment of goitre, on nerve-stretching in tabes dorsalis, on the wiring of fractured patella, and other comparatively recent methods of still disputed value. That much of his own has at the same time been added to the resources of modern surgery is shown here by the interesting articles on supracondyloid amputation of the thigh, and on rhinoplasty. That a close attention to special and technical subjects relating to surgical practice was associated in this gifted surgeon with liberal and genial views of the general interests of his profession is shown here by the addition of occasional addresses, including that delivered at the jubilee meeting of the British Medical Association at Worcester in 1882.

THE BOER WAR.

DR. HERZ, a staff surgeon in the Austrian army, has written an interesting account of the first year of the Boer war from a medical point of view. His pamphlet[2] is divided into four sections. The first describes the country, especially with regard to climate, water supply, and the prevalent diseases. He ventures the opinion that the climate is on the whole favourable to Europeans, though the great differences between the day and the night temperature in the cold season predispose to intestinal affections. As there are few springs, an army is mainly dependent on river water, while the scarcity of trees for fuel made the boiling of water on a large scale often an impossibility. In the second section Dr. Herz considers the organization of the army medical service and the work falling to its different parts during the war. He tells how first aid was given on the field often under fire by the surgeons who accompanied the troops into action; the wounded were taken on stretchers or ambulances to the dressing station, sheltered from direct fire, to be there examined, washed, and bandaged, and sent on to the field hospital; provided with an operation tent, where examinations were conducted under chloroform in the more severe cases, and with beds in which the wounded usually stayed a night before being sent to the base hospitals. The speed with which all these operations were carried out was, he says, remarkable. At Spion Kop, for example, the discovery of the wounded and their removal down the steep, rocky descent was a specially difficult and tedious matter. Yet by 11 o'clock on the morning after the fight 21 officers and 326 men had passed through the field hospitals of the 5th Brigade and were on their way to the rear, while the hospital itself had been got ready for the next march. The frequency with which wounds healed under the first bandages put on on the field of battle gave proof of the efficiency of the first aid. Dr. Herz bestows nothing but praise on the base hospitals, and the hospital trains and ships. The operating rooms were lighted by electricity and well supplied with instruments, sterilizing apparatus, and Roentgen ray apparatus. The isolation of typhoid cases was absolute. The only unfriendly critics of the hospitals, according to the author, were English society ladies who had been rejected as nurses and came home to start a newspaper campaign against military doctors and hospitals. The third section deals with the wounds inflicted, their treatment and progress. The proportion of killed to wounded on the field of battle did not differ materially from that obtaining in other wars of the last century. But the number of deaths in hospital from wounds was relatively less. Thus, taking a similar number of cases in both instances, 14 per cent. of wounded in hospital died during the Crimean war, as compared with 5 per cent. in the Boer war. He calculates that if those dying from septicaemia, pyaemia, and tetanus be excluded, the mortality in the Crimean war is reduced to 6 per cent. He thinks that while the antiseptic treatment of wounds is largely responsible for the lessened mortality, several other important factors must be remembered. Thus, the dry, hot air of the veld quickly dried up the blood oozing from a wound, and a protective covering was formed under which the wound in many cases healed by first intention. The Mauser bullet was aseptic, and, where khaki uniform was worn, seldom carried fragments of clothing into the wound. To these causes he would add the promptitude and care with which the first aid was administered. Dealing with wounds of the different regions more in detail, he finds that the results reported in the wounds of the abdomen and joints were surprisingly good. He thinks the favourable course run by abdominal wounds where no operation was performed was in some cases due to the fact that the gut slipped away and was not perforated by the bullet. Where this explanation cannot apply he mentions the suggestion of Major Dick, R.A.M.C., that recovery was due to the fact that the wounds in the gut were small, and the shock not great enough to paralyse the gut, but only to cause contraction of its muscle with a consequent further diminution in the size of the wound. Further, Dr. Herz thinks it probable that in such cases there was no food in the intestine at the time the injury was sustained. As regards injuries to joints Dr. Herz points out that according to Longmore no case was recorded during the Crimean war in which a patient retained both life and limb after a shot injury of the knee-joint. In the Boer war, however, few deaths followed this injury and there was in many cases full recovery of the mobility of the joint. In cases of fracture of bones primary amputation was seldom performed, even complicated fractures of the femur recovering without operation. The small outlet openings of the Mauser bullets gave no clue to the presence or absence of a fracture, but the Roentgen rays proved most useful in determining the exact nature of the injury to bone. Little external primary haemorrhage followed Mauser bullet wounds, but where the larger arteries were involved aneurysms often resulted and operations were performed on aneurysms of the profunda femoris, the common carotid, the popliteal and subclavian arteries amongst others. It was found that long journeys by ambulance wagon had a bad effect on the wounded. Fractures of the femur, for instance, almost always took an unfavourable course if a wagon journey had to be undertaken during the first few days after the injury, but this risk was avoided if treatment in a stationary hospital could be given for the first five days. Journeys in hospital trains had no such bad effect. In the section on diseases the author praises most highly the devotion and energy of the medical officers in the actual treatment of cases, but he laments the lack of adequate preventive measures so often noticed during the war. He points out, however, that although the medical officers were blamed for

[1] *Selected Papers on Operative and Clinical Surgery.* By the late Sir William Stokes, M.D., M.Ch.Univ.Dub.; F.R.C.S.I., Kut.; Surgeon-in-Ordinary to Her Majesty Queen Victoria in Ireland; Surgeon to the Meath Hospital and Co. Dublin Infirmary, etc. Edited by William Taylor, B.A., M.B.,Univ.Dub., F.R.C.S.I.; Surgeon to and Lecturer on Clinical and Operative Surgery, Meath Hospital and Co. Dublin Infirmary, etc. With a Memoir of the Author, by Alexander Ogston, M.D., Regius Professor of Surgery, University of Aberdeen; Surgeon-in-Ordinary to the King in Scotland. London: Baillière, Tindall and Cox. 1902. (Demy 8vo, pp. 434, 52 illustrations, 4 plates. 10s.)

[2] *Der Sanitätsdienst bei der englischen Armee im Kriege gegen die Buren.* Von Dr. Leopold Herz, k. u. k. Stabsarzt. Wien: Josef Safar. 1902. (Demy 8vo, pp. 100. M 2.25.)

defective sanitary regulations, the commanding officers alone had power to enforce them. Every natural aid to the spread of typhoid was present. Good drinking water was almost unobtainable, and flies and dust, which have been conclusively shown in this war and in the Spanish-American war to spread the disease, penetrated everywhere. It was impossible for the medical officers to combat successfully the carelessness of the soldiers themselves in the matter of drinking water. At Paardeburg, while attempts were being made to supply good drinking water, the men filled their flasks every day at the river in which corpses of men and animals were floating. The difficulty in dealing with the resulting outbreak of typhoid at Bloemfontein was very great. Three hospitals were lying blocked on the railway, while shelter for the sick could scarcely be found in the town. Some idea of the work falling upon the medical officers and nurses may be gained from the report of the commander of General Hospital No. 8, who says that between 7 and 10 o'clock one evening 373 sick and wounded arrived for treatment in the hospital. Many medical officers fell victims to the disease during this outbreak. A favourable report is given of the results of inoculation with Wright's serum, especially where the operation was twice performed and where fresh serum was used. At Ladysmith 14.1 per cent. of those not inoculated were attacked by typhoid fever as compared with only 3.5 per cent. of the inoculated, and the disease commonly ran a milder course in the latter. Dr. Herz does not seriously attempt to decide upon whom rests the main responsibility for the outbreaks of disease during the war. He points out, however, that many lives might have been saved if the Government had accepted Sir Walter Foster's suggestion that a small commission of experts should be sent out at the beginning of the war to advise on sanitary matters. The pamphlet is of value as being a careful history of the facts of the war as understood by a fair-minded critic from outside.

Among the indirect literary results of the recent South African war must be included Major F. Smith's small book on *Modern Bullet Wounds and Modern Treatment*,[3] which, as part of the Alexander Prize Essay for 1903, and based upon the author's experiences in the Boer war, is specially directed to gunshot injuries of the long bones and joints, field appliances, and first aid. Under these four main headings the subject is ably and concisely considered. The dominant note is a plea for non-meddlesome surgery on the field and a rational reliance upon conservative treatment. The writer dwells upon the remarkable infrequency with which, under modern conditions, amputation is needed for gunshot injuries to the knee-joint, but aptly points out that the same does not hold good for injuries to the wrist and ankle. He draws the general conclusions that, coincident with the adoption of modern rifles, wounds of joints and bones have become more amenable to treatment. To some extent this is due to the changes in arms and projectiles, but to a greater extent it is the outcome of a better appreciation of aseptic methods, and in a lesser degree is contributed to by improved medical, transport, and supply services. In his criticism of equipment the author advocates for field splints the use of stout hoop iron or its equivalent, in pieces about 4 ft. long, which can be moulded and adapted readily to the needs of various parts. Like several other writers who have had surgical experience in South Africa, Major Smith objects to unnecessary keenness to clear the wounded from the field hospitals. When circumstances permit this is undoubtedly sound, but the first great principle of medical administration in the field is that the field hospitals must be emptied as soon as possible; it must not be overlooked that any infringement of that fundamental principle strikes at the root of mobility, which is essential to efficiency. In closing this notice of a book which might well have been made larger and more ambitious, we would say that it is eminently practical, and well deserves perusal by all engaged in military practice.

CANCER.

The special object which Dr. Ludwig Feinberg has set before himself in his work on the nature and causation of cancerous tumours[4] is to prove by histological methods the identity of certain bodies in the epithelia of carcinoma with a certain class of sporozoa. The first part—more than half of the book—is devoted to a description of the various unicellular animal organisms. Throughout this description special attention is devoted to the structure of the nucleus, and it is from the examination of this nuclear structure that the author derives his strongest histological argument. The distinctive character of the protozoan nucleus is stated to be that it consists of a compact chromatin body with a surrounding "halo" of nuclear sap: it contrasts with the metazoan nucleus in the absence of a nuclear network and of a nucleolus and nucleolar substance. A distinction is also drawn between the protozoan nucleus and that of the yeasts, in that in the latter there is no nuclear sap; but the distinction is weakened by the fact that this is also absent in some of the protozoa—for example, the trypanosomata. From these histological considerations the author next passes to a general survey of the part played by the unicellular organisms as animal parasites, and lays special emphasis on the fact that we are acquainted with certain of these organisms which affect only special tissue elements, and in these alone are able to maintain themselves and exercise their functions. In the second part an endeavour is made to show that in the epithelial cells of carcinomata are to be found bodies which must be considered animal parasites—sporozoa. Dr. Feinberg also maintains that the circumstances of their occurrence in the tumours indicate their etiological importance. The definition of a malignant growth which he gives is as follows;

> A malignant growth is one which exhibits an undefined destructive invasion of the surrounding tissues, and by the formation of secondary growths of the same structure in different parts of the body exercises in these situations also the same destructive invasion.

He argues with some force against the views of Hansemann, Ribbert, and other pathological anatomists. Even granted the "anaplasia" of the former, how, he asks, is the etiological question answered by such an assumption, and what is the cause of such anaplasia? Ribbert's views he does not so directly attack, but confesses himself unable to consider the inflammatory invasion of the connective tissues a sound theory of the genesis of the epithelial proliferation of carcinoma. The parasitic view of the origin of carcinoma is considered to elucidate the following points: That only a small percentage of mankind, and chiefly the older individuals, suffer from the disease; that its origin is from normal epithelial cells; and that it may arise in all parts of the body where epithelium exists. Dr. Feinberg thinks the animal nature of the parasite is suggested by the limitless and atypical character of the new growths, the incurable nature of the disease, and the occurrence of metastases. To the organism described he gives the name "Histosporidium carcinomatosum." Except for the description of a staining method, which is somewhat similar to that used by Foà ten years ago, the account of the appearances to be seen differ from those of other observers only in an insistence on the characteristic structure of the nucleus and its identity with that of known unicellular animal parasites. An attempt is made to prove that it can be differentiated with certainty from the yeasts, but this is not entirely successful. Some of the statements made in support of the contention are not accurate, and show a rather limited acquaintance with the structure of these polymorphic organisms. Dr. Feinberg's work has been confined to histological investigation. As an element in the discussion the book is of importance, first, as an argument for the parasitic nature of the intracellular bodies on histological grounds, and, in the second place, as a piece of clearly and logically expressed pleading in favour of the parasitic view of carcinoma etiology.

In his monograph upon the etiology and treatment of cancer[5] Dr. Félix is in many points at variance with generally accepted opinions. Dealing with the first part of his subject, he ascribes not merely pre-eminent but sole importance to traumatism, irritation, and inflammation as causes of cancer. He denies the existence of the cancerous diathesis, except in so far as that in gouty subjects the deposition of urate crystals may determine cancer growth. His rejection of heredity appears to be inadequately founded upon citation of cases in which this was not apparent as a factor. Dealing with treatment, the author strongly advocates the use of his own caustic paste (which contains carbolic acid, zinc chlorate, iodol, etc.) in preference to the knife; and his own statistics compare very favourably with those of other writers. With

[3] *Modern Bullet Wounds and Modern Treatment.* By Major F. Smith, D.S.O., R.A.M.C. London: J. and A. Churchill. 1903. (Crown 8vo, pp. 100. 3s.)

[4] *Das Gewebe und die Ursache der Krebsgeschwülste unter Berücksichtigung des Baues der einzelligen thierischen Organismen.* Von Dr. Ludwig Feinberg. Berlin: A. Hirschwald. 1903. (Demy 8vo, pp. 231, 6 plates. M. 10.)

[5] *De l'Etiologie des Affections Cancéreuses et de leur Traitement.* Par le Docteur Jules Félix. Paris: Société d'Editions Scientifiques. (Demy 8vo, pp. 70. Fr. 3.)

regard to prophylaxis, the author, believing as he does in the sinister power of the gouty diathesis, lays special stress upon regimen and diet. The most valuable part of his work is the discussion of the palliative treatment of hopeless cases.

CLINICAL PATHOLOGY.

DR. BLUMENTHAL'S essays[6] in the *Deutsche Klinik* on the clinical examination of the urine were so favourably received that the publishers asked him to publish an expansion of them as a book. No doubt such an undertaking to Dr. Blumenthal meant practically the production of a monograph likely to prove a rival to similar works already in the field. After finding, however, that his former teacher Professor Salkowski declined to issue a second edition of the book compiled by Leube and himself over twenty years ago, Dr. Blumenthal effected a compromise with considerable grace. In order to keep the present publication within reasonable bounds, and in thorough appreciation of the value of such works as those by Leube and Salkowski, and by v. Noorden, we are referred to these authors' works for references to the literature of the subject previous to 1893; from that year onwards Dr. Blumenthal himself supplies references to most of the important contributions on the subject of the chemistry of the urine. By this admirable plan it is easy to gather what views are more or less established in connexion with urinary disease, and at the same time what are the newer investigations. Dr. Blumenthal is careful to say that he has not written an elaborate treatise on the methods of examination of the urine; his main object has been to write a monograph dealing completely with the chemical study of the urine from a clinical point of view. We are therefore spared the perusal of numberless methods of analysis, and are constantly brought face to face with the practical application to diagnosis of the various discoveries in the examination of the urine.

Following the plan of the Leube-Salkowski publication, the volume is divided into two parts, the first dealing with a consideration of the various constituents of the urine, and with the best and most modern methods of detection; the second being a consideration and summary of the changes met with in the urine in various diseases. A complete index to authors and subjects further adds to the value of the work. It need hardly be said that a monograph inspired by the teaching of Salkowski and v. Leyden must command the thoughtful perusal of all clinicians, and, if we are not greatly mistaken, the book will prove a standard work of the future. Not only is it a vast storehouse of information, but, as its author implies, it is intended to arouse in the reader an interest in facts which at present, though of no apparent clinical importance, probably will be essential to those workers who are endeavouring to advance the study of the urine beyond the investigation for albumen and sugar. One of the most striking effects produced upon the reader is the way in which the author, whilst giving adequate consideration to the changes produced in the urine in association with renal changes, gradually awakens in him the idea that such changes in the kidney are no longer to be considered as the causes of the urinary alteration, but with the latter are final consequences of metabolic disorder. In fact, the effort made by Dr. Blumenthal to enlighten us upon the subject of metabolism is quite a feature of the volume under consideration, though, as he says, a fuller understanding must be gained by the perusal of v. Noorden's work on the subject. To the average student diabetes mellitus is a clinical entity endowed with a nebulous etiology and a pathology which puzzles the elect; here the reader's attention is drawn to the fact that glycosuria may depend upon disease of the pancreas, the liver, the kidney, the suprarenals, muscle, etc., and we find that other sugars, such as pentose, occur in the urine alone or in combination with other members of the carbohydrate group. Dr. Blumenthal's point of view is, however, seen best in the chapter dealing with the study of uric acid. To most of us, biurate and quadriurate of soda are of very great importance in the study of gout. Dr. Blumenthal, however, warns us against such an attitude, and would draw our attention to the lessons to be drawn from the output of uric acid in leucocythaemia—a disease apparently so different from gout—and would invite a closer study of the nutritional disorders which are associated with alterations in the output of alloxur bases. The importance of metabolic study is insisted on in another direction, for, since the introduction of Widal's reaction, the diazo-reaction of Ehrlich has fallen into the background undeservedly, and we are told of the occasions in which its occurrence in other diseases is of extreme value in diagnosis. So too, though at present of little clinical value, the study of the conjugated sulphates is pointed to as a possible means of determining whether body or food proteids are undergoing dissolution. The perennial question of the meaning and origin of urobilinuria is raised, and with the proverbial swing of the pendulum we are told of undoubted cases of urobilinaemia associated with urobilinuria, the urobilin being derived from blood pigment. Despite this statement, we meet with the aphorism that "the occurrence of urobilin in the urine in catarrhal icterus is also a sign that the common bile duct again permits the entrance of bile into the intestine," implying that there is but one source of urobilin namely, the bile. However, such anomalous statements in Dr. Blumenthal's publication are not exactly faults; they merely express the fact that he prefers, in doubtful questions, not to commit himself to one view, but to state all the views, even though in such conflict as the above. In the sixteenth chapter, the more recent attempts to establish, by means of cryoscopic investigation and by the use of methylene blue and phloridzin, functional alterations in the activity of the renal epithelium are passed in review. Dr. Blumenthal insists on the hopelessness of the application of such methods in cases of bilateral renal disease, but points out their extreme use in cases where the urine drawn from each ureter can be so tested; by this means differences in the activity of the kidneys can be well established, and hence the importance of this method of investigation in surgical practice. We hope that we have given some insight into the character of this monograph, and trust that our readers will be encouraged to make their own acquaintance with its store of information.

[6] *Pathologie des Harnes am Krankenbett für Ärzte und Studierende.* [Clinical Pathology of the Urine for Physicians and Students]. Von Priv. Doc. Dr. Ferdinand Blumenthal. Berlin und Wien: Urban und Schwarzenberg. 1903. (Medium 8vo, pp. 448; 39 illustrations, some coloured. M 9).

GYNAECOLOGY.

THE author of *Pregnancy with Ovarian Tumour*[7] is already known as an authority on the subject. At a meeting of the Obstetrical Society of London in December, 1897, he read a valuable communication on the Obstruction of Labour by Ovarian Tumours in the Pelvis, which is to be found in the thirty-ninth volume of the Society's *Transactions*. It gave rise to an instructive discussion, in the course of which several authorities in obstetrics brought forward reports of cases in their own experience. Further researches were embodied by the author in a University *Thesis*, which embraced the whole subject of ovarian tumours in relation to gestation, and was issued in 1898. Finally, Dr. MCKERRON has added recent experiences to the records in his thesis. The days are past when operators dreaded to perform ovariotomy during pregnancy, but there are still not a few who sometimes postpone the operation until after convalescence from childbirth. Sir John Williams, Bland-Sutton, and Orgler, to mention current writers, have shown that ovariotomy during pregnancy presents no special dangers, whilst as a complication in labour an ovarian tumour is a source of peril. When the puerperium is past the patient is by no means safe. Childbirth has a most prejudicial influence on the tumour, which is often already damaged by torsion of the pedicle, a common event in the course of a pregnancy. The French obstetricians turned attention to the frequency of puerperal infection of ovarian tumours more than ten years since. In 1902 Doran published an analysis of 15 cases of ovariotomy in his own practice where pregnancy had existed and the tumour was known to be present before labour. In nearly every instance the influence of gestation was prejudicial, Dr. McKerron, commenting on the effects of the puerperium on ovarian tumours as shown by these clinical records, insists that the more critical the condition of the woman, the more urgent the necessity for operation. In short, the subject is far too grave to be dismissed in one paragraph buried in a treatise on diseases of women, or in a statistical report by one author. Hence Dr. McKerron's valuable monograph supplies a want. The work begins with a chapter on ovarian disease as a cause of sterility, and on the frequency of pregnancy complicated by ovarian tumour.

[7] *Pregnancy, Labour, and Childbed with Ovarian Tumour.* By R. G. McKerron, M.A., M.D., Physician to the Maternity Hospital: Assistant to the Professor of Midwifery in the University; Senior Physician, Royal Hospital for Sick Children, Aberdeen. London: Rebman, Limited. 1903. (Crown 8vo, pp. 289. 7s. 6d.)

No fewer than 1,290 cases have been collected by Dr. McKerron, 586 from tables already issued, 704 from reports in journals, and from correspondence with operators who have furnished unpublished reports. The analysis of this copious source of information makes up the rest of the work. It is interesting to find that although the total series includes 1,290 pregnancies in cases of ovarian tumour, the actual number of patients is only 1,154, many of the women having passed through more than one pregnancy while suffering from the tumour. The tables which accompany many of the chapters are highly instructive, and the bibliography is enormous: indeed, the list at the end does not include many important papers quoted in the text. The operation cases are carefully classified under headings according to the month of pregnancy when the tumour was removed; bilateral and vaginal operations are placed separately. The tables of cases of labour obstructed by tumour are arranged according to the treatment—expectant, surgical, or obstetrical; lastly, comes an instructive series of *post-partum* ovariotomies. Abdominal surgery has no doubt made vast strides, a fact which we are not likely to forget, first because of its intrinsic importance, and secondly because we are so often reminded of the fact in addresses, lectures, and essays. There is a general impression that the profession desire a little more analytical work in relation to this subject, whilst it can dispense for awhile with series illustrating the operative triumphs of their own compilers. Such work was valuable, nay necessary, when few surgeons dared to do even an ovariotomy, but its value and necessity fall yearly owing to well-known circumstances, and it has all the disadvantages of labour, the value of which is difficult for the reader to estimate with accuracy and easy for the author to rate too highly. We want more books like Dr. McKerron's; there are other branches of abdominal surgery besides ovariotomy which demand more light than the operator can thrown on his own cases, however upright as well as skilful he may be.

FORENSIC MEDICINE.

Major Collis Barry, I.M.S., has now completed his textbook on *Legal Medicine (in India) and Toxicology*,[8] the first volume of which was reviewed in the British Medical Journal of January 31st, p. 261. This second volume is entirely devoted to illustrative cases. These are arranged systematically according to the sections into which the subject was divided in vol. i. Each case has a brief descriptive heading, and a reference to its source. A concise statement of the details of the case is also furnished. In the second part of the volume devoted to toxicology the data are presented in tabular form. The number of cases thus recorded is 4,295. They are derived from a great variety of sources, many of them from well-known authors, such as Casper, Tardieu, Orfila, Christison, Beck, Taylor, Ogston, Chevers, etc: many from medical periodicals—English, American, and Indian—and many, directly or indirectly, from law reports. The compilation has thus an ambitious aim, and seeks to supply information and references, encyclopaedic in character and universal in application. The specialities of medico-legal practice in India are not prominently or copiously presented. The volume is indicative of remarkable industry and power of orderly arrangement and clear condensation. An excellent index facilitates access to its contents. An explanatory table of initials and contractions ought to have been added. For example, the letters N.A.R. are frequently used. They probably imply the Indian *Nizamut adalut* (criminal court) Reports, from which Chevers drew so much interesting and valuable material. But how many readers will solve the riddle? and there are many others of the same kind. The collection of cases will be found of great service in India and elsewhere by both medical and legal practitioners.

Professor Valentini's small book on toxicology,[9] which is one of a series published by Hoepli, is intended to give a concise but comprehensive account of the principal known facts concerning the methods of detection of poisons from a practical point of view. Professor Valentini has had much practical experience in toxicology, and in the book before us chiefly confines himself to a description of those methods which he has himself proved to be of value. The first portion deals generally with methods of procedure, with the making of necropsies, with the effects produced by various poisons upon the different organs, with the best way of preserving the organs for subsequent examination, with the reagents used, and with the general methods of analysis. The second describes the special processes necessary for the detection of the individual poisons. Some of these poisons are considered with considerable fullness, as, for instance, arsenic and phosphorus, whilst others are more briefly dealt with. On the whole, however, the accounts given seem to be quite sufficiently detailed for practical work, and all the more important poisons have been included.

[8] *Legal Medicine (in India) and Toxicology.* Illustrative Cases. By Major Collis Barry, I.M.S., F.R.C.S.E., F.I.C., etc., Chemical Analyser to the Government of Bombay, etc. Vol. ii. Bombay: Thacker and Co. (Demy 8vo, pp. 611. 20s.)

[9] *Manule di Chimica Legale (Tossicologia).* Por Professor Cav. Nicola Valentini. Milan: Ulrico Hoepli. 1902. (Fcap. 8vo. pp. 255. L2.50.

NOTES ON BOOKS.

Law and Assurance.

We have received the earlier parts of a new edition of *Cassell's Family Lawyer*,[10] which is now in course of publication, and we feel bound to say that, while the work continues to supply a want, it is not likely to lessen materially the need for calling in the legal adviser when occasion arises. The layman would be ill-advised to bring an action-at-law on the strength of the legal knowledge acquired from a perusal of this book, and, indeed, the author expressly warns his readers not to attempt such a course: but to one who wants to know generally what his rights are as regards his family, servants and neighbours, his public duties, his legal position as affecting his business relations, his property, and numerous other matters of everyday life, the *Family Lawyer* should prove a useful book of reference, and might not infrequently assist in the settlement of those neighbourly bickerings which so often end in a court of law—to the mutual dissatisfaction of all parties. The author writes in an attractive style, and has succeeded in making a somewhat dry subject eminently readable and interesting to the "average man," for whom it is stated that it has been compiled. There is much that should be worth the perusal of members of the medical profession—for example, the chapter on "Life Insurance." Much of the information which it contains is elementary: on the other hand, it is not every man who knows whose lives he may insure, for how much certain lives may be insured, or how he can take out a policy which shall be absolutely free from his own debts and liabitities. One of the most important matters in connexion with life insurance is the choosing of an office, and the author explains clearly the relative advantages and disadvantages of proprietary, mixed, and mutual societies, and the considerations which should guide the family man in seeking an office with which to insure his life. Turning to another subject almost at random, we would suggest a perusal of the chapter on "Bills, Notes, and Cheques," especially the pages dealing with cheques. It will, we think, surprise many people to learn of the dangers which may arise from even a little delay in the cashing of a cheque, how soon a cheque becomes "stale," and how the crossing of a cheque does not render it quite safe if it should get into dishonest hands in the course of its career. The way in which complete protection may be obtained against improper dealing with a cheque—a point which should be learnt and remembered by all those persons who have occasion to receive or remit money through the post—is explained. The present edition seems to be up to date, and generally free from error, but we notice that the author continues to speak of the "Queen's Exchequer," although His Majesty King Edward VII is approaching the completion of the third year of his reign. A feature of the book is that the law of Scotland is specially treated and explained, in so far as it differs from that of England.

The *Insurance Register* for 1903,[11] a publication which has now reached its 35th year, contains an account of British insurance associations and of their yearly progress and present financial position, and the names of their principal officers and agencies. There is also an ample review of general life insurance work during the last year or two, by Mr. A. Wyndham Tarn, F.I.A. Its utility as a technical directory seems to be proved by the age which it has attained, though the

[10] *Cassell's Family Lawyer.* By a Barrister-at-Law. Cassell and Co. (Limited): London, 1903. (To be completed in 27 parts, price 6d. each).

[11] The *Insurance Register.* London: Charles and Edwin Layton. (Demy 8vo, pp. 164. 1s.)

information given on one society with which we are acquainted appears to be inadequate.

Mr. A. ARTHUR READE, editor of *Business*, the author of *The Story of Life Assurance*,[12] tells us that most people consider life assurance a dry subject, but that he himself has always found it fascinating and has long been intending to snatch time from a harassing editorial life to write a popular account of it. This book is the result of his efforts, and conveys the main outlines of the history and advantages of life insurance from the point of view of persons of all classes, old and young. It is divided into a large number of short chapters, written in a chatty style and many of them illustrated by humorous and other sketches.

LITERARY NOTES.

MESSRS. SMITH ELDER AND CO. announce for publication "shortly" a book by Mr. Brudenell Carter, Knight of Justice of the Order of the Hospital of St. John of Jerusalem, etc., a book entitled *Doctors and their Work, or Medicine, Quackery, and Disease.*

A *Cambridge Companion to Greek Studies* is to be issued by the Cambridge University Press. Among the contributors is Professor Clifford Allbutt.

Signor Ulrico Hoepli, the well-known publisher of Milan, has just issued a magnificent edition of the complete works of Professor Golgi, the distinguished Rector Magnificus of the University of Pavia, and one of all the scientific writings of the late Professor Bizzozero, of Turin. The works of Professor Golgi are in three quarto volumes, those of Bizzozero in two. In both cases the original plates are reproduced. The price of the set of five volumes is 150 lire, or the works of Golgi may be had separately for 90 lire and those of Bizzozero for 70 lire.

La Clinique Infantile is the title of a new French journal devoted to the diseases of children. It will be published fortnightly. The editor is Dr. G. Variot, physician to the Hôpital des Enfants Malades, who has the co-operation of Dr. G. Lazard and Dr. Paul Roger. The first number, which appeared in Paris on November 1st, contains an interesting account by the editor of the important system of milk distribution to mothers known as the *Gouttes de Lait*.

The *Daily Mirror*, which made its first bow on the journalistic stage on November 2nd, owes its existence to the enterprise of Mr. Alfred Harmsworth. Its nature and scope are set forth by him in an introductory article. He says "it is no mere bulletin of fashion, but a reflection of women's interests, women's thought, women's work. The sane and healthy occupations of domestic life, the developments of art and science in the design and arrangements of the homes of all classes, the daily news of the world, the interests of literature and art—these will all be found equally represented, beside those more intimate matters in which (fortunately for the decoration of this dull world) women still take an interest." *Quidquid agunt feminae*, in fact, is the province of our new contemporary. We wish the *Daily Mirror* the success which, as far as can be judged from the numbers that have appeared, it fully deserves.

The following quotation from a back number of 1803, which appeared in a recent issue of the *Times*, shows how quacks advertised a century ago:

> Those who wish to know that our great Creator is merciful as he is omnipotent, and that he never intended to torture mankind with disorders of extreme pain, without putting it in their power to relieve themselves, are requested to attend at Copenhagen House on Monday next at two o'clock, where a game at fives will be played by ten men, all of whom have been cured by the Guestonian Medicines after they had been returned from the London Hospitals as being incurable. The Attendance of any Medical Gentlemen belonging to these said Hospitals will be esteemed a favour conferred on their most obedient servant, B. Guest, No. 9, Great Surrey Street.

The Guestonian medicines, like other panaceas, have had their day and ceased to be. But we have with us countless heirs of his invention who would doubtless undertake to get together two football teams composed of men cured of all manner of ailments by pyrotechnic pills, or to arrange a cricket match between elevens for whom Death's dart has been made a *telum imbelle sine ictu* by arborivital force. In this matter men in 1903 are, as they were in 1803, and as doubtless they will be in 2003, and for that matter in 3003. As the immortal Robert Macaire said, *Tout passe; mais les badauds ne passeront pas.*

Mr. Arthur Cooper (Old Burlington Street) writes: Now that we are hearing so much about toxins and antitoxins it may be worth while to recall what Sir Thomas Browne wrote more than 250 years ago: "I say moreover, and I ground upon experience, that poisons contain within themselves their own antidote, and that which preserves them from the venom of themselves; without which they were not deleterious to others only, but to themselves also."—(*Religio Medici.*)

In the July number of the *Johns Hopkins Hospital Bulletin* Dr. J. C. Mumford, of Boston, gives an interesting account of the famous American surgeon, Dr. John Warren Collins, whose name is imperishably associated with the introduction of anaesthesia. He was the eldest son of John Warren, who served in the Revolution and founded the Harvard Medical School. He was born at Boston in 1778. Of his surroundings in his early days he has given an amusing sketch:

> At the period when I left college and became an inhabitant of Boston it was thought necessary to undergo the operation of a barber half an hour every day. This consumed much time, besides the horrid consequences of carrying on one's head a quantity of curls, pomatum, flour, and the long cue or heavy club. The dress at that time was a coloured coat with metal buttons, usually yellow; coloured waistcoat, short breeches, buttoning at the knees; long boots with white tops, and when riding on horseback, a pair of leather breeches, instead of pantaloons, of drab cloth. These yellow breeches were daily cleaned with yellow clay, which required that the coats should never be brought in contact with them. Then a short ruffle at the breast and about the wrists, a white cravat filled out with what was called a pudding, the use of which, from the effect of habit, could not be dispensed with for some years. Cocked hats were very much worn at the time, but not by the young. Gentlemen of a certain age wore wigs, which were sent to the barber's once a week to be fresh dressed, so that on Saturday night we saw the barber's boys carrying home immense bundles of wig boxes as a preparation for going to church on Sunday. Physicians who had much business in those days rode on horseback. Riding in a chaise was very rare, and in a four-wheeled carriage still more so. My father rode on horseback till a few years before his death.

Warren was intended by his father for a mercantile life, but the suitable opening not immediately presenting itself after he left college, he passed a couple of years at French and the pretended study of medicine, as he himself says. Then he went to Europe and settled down to serious work; that was in 1799, when he was 21 years old. He worked in London first under William, later under Astley, Cooper. Afterwards he spent a year at Edinburgh, where he took his Doctor's degree. A final year was spent in Paris, where he lived with Dubois, who afterwards rose to fame as an obstetrician. On his return home, in 1802, he took over the bulk of his father's practice, often making fifty professional visits a day. In 1806 he was appointed Adjunct to his father in the Chair of Anatomy and Surgery at Harvard, and he succeeded to the full Professorship on his father's death in 1815. He took part in founding the *Boston Medical and Surgical Journal*. He also took a leading part in founding the Massachusetts General Hospital, which was opened in 1821. It was in that hospital that a quarter of a century later Warren, after operating on a patient under ether administered by Morton, uttered the memorable exclamation, "Gentlemen, this is no humbug!" Warren was then in his 70th year. He was a bold operator and a copious writer. All through his life he devoted himself to the gathering of anatomical specimens, and his collection formed the nucleus of the Warren Museum of the Harvard Medical School. He died in 1856.

An interesting sidelight on Laënnec is found in an article on Fauriel, a critical student of primitive and popular literatures, by Sainte-Beuve in his *Portraits Contemporains* (t. iv, p. 324). Sainte-Beuve says:

> Another man who shared more in Fauriel's enthusiasm for the primitive was—will it be believed?—the great physician, Laënnec. That excellent person had been introduced to Fauriel by M. Cousin, whose physician and friend he was. The songs of Brittany became their favourite subject of conversation, and as it were the passionate meeting ground of those two spirits, come from such different shores. Fauriel knew the words, but Laënnec knew the airs, those airs learnt in childhood and never forgotten. He used to bring his flute (and one must have seen Laënnec to picture him in the character of Lycidas), and as the other recalled the words he tried to note them: *Numeros memini, si verba tenerem.* Touching scene, the mere thought of which makes one smile, and which was worthy of those spirits, those hearts, truly antique and simple.

The phrase about Lycidas seems to show that Sainte-Beuve had been privileged to see the discoverer of auscultation playing the flute.

[12] *The Story of Life Assurance.* By A. Arthur Reade, Editor of *Business.* Manchester: Published by the Author. (Crown 8vo, pp. 165. 5s.)

THE SECOND BRIGHTON LIFE TABLE.

In the report of the census of 1881 there was for the first time given the age and sex classification of the populations of the separate sanitary districts into which England and Wales is divided, but it was not until the report for the succeeding census of 1891 appeared that it became possible satisfactorily to construct local life tables based on the experience of a decennium.

Among the first of the comparatively few medical officers of health who availed themselves of the opportunity of working out life tables for their respective districts, based on the vital experience of the ten years 1881-90, was Dr. Arthur Newsholme, the Medical Officer of Health of Brighton, who has recently, with the collaboration of Dr. T. H. C. Stevenson, published a second life table based on the experience of 1891-1900, and has thus added greatly to the value of his previous work by affording the means of the most exact comparison possible between the two decennial periods.

In offering some brief comments on this second life table we have to refer (1) to the data upon which the life table has been founded; (2) to the methods employed in its construction; and (3) to the results obtained and the deductions from them.

I.—Data.

Only those who have actually undertaken the task of compiling the foundation numbers of population and deaths necessary for the construction of a life table can appreciate the great amount of labour involved in this alone. Both life tables have been based on the census returns and the deaths belonging to the Parliamentary borough of Brighton (including Hove). On this last occasion Dr. Newsholme's work was somewhat complicated by the fact that, during the intercensal period, the district of Aldrington had been added to Hove. However, as accurate returns have been obtained both of the age and sex classification of the added district as existing at the census of 1891, and of the deaths which occurred in the whole area during the ten years 1891-1900, the foundation numbers are as perfect as official records can make them.

Dr. Newsholme justly points out that the census returns understate the average population of the combined districts, and also that the death records overstate the true mortality, owing to the inclusion of many deaths of invalid visitors, other than those which occur in public institutions; and that both these causes concur in making the life-table results not so good as they would otherwise have been.

II.—Methods.

In a review intended for the general body of medical readers it would scarcely be fitting to enter into a minute analysis of methods.

Those who have any knowledge at all of what a life table is will be aware that the problem of constructing an "extended" life table resolves itself into so dealing with the foundation numerical facts as to population and deaths, which are given classified into groups of ages, as to obtain for each separate year of age which is known as the p_x value, that is the fraction which expresses the chance of surviving from any given age x to the next age $x+1$.

This series of values when plotted out to scale forms the "p_x curve."

However calculated this curve can only be an approximation to the true curve, which could only be obtained by an exact knowledge of the numbers living and dying at each separate year of age.

This hypothetical true curve can almost certainly be assumed to be one which changes from any age to the next by such gradual transition as to be free from sudden breaks or angularities.

Any calculated p_x curve can be tested (*a*) by setting down the series of p_x values in a column and taking the successive numerical differences of the first and succeeding "orders," and (*b*) by plotting out the series of values to scale and thus making the curve visible, and showing it in association with the mean p_x values calculated from the total numbers of population and deaths belonging to each of the given age groups.

The method which has been employed by Dr. Newsholme in both of his life tables is the so-called "graphic" method of dividing up the given population and death numbers into sub-divisions for each separate year of age. The details of this method are not entered into in the text of the recent life table, as Dr. Newsholme is able to refer those interested in the matter to the last edition of his well-known work on *Vital Statistics*, and also to a paper published jointly by himself and Dr. T. H. C. Stevenson in the *Journal of Hygiene*, vol. iii, No. 3, July, 1903.

When tested by the methods above indicated the p_x curves of the life tables which had been previously constructed by the graphic method (including Dr. Newsholme's first life table) have left very much to be desired, that is they have shown angularities and zig-zag variations which could only be due to defects of method, and which could in no sense be considered to have any relation to the true curve.

However, by adopting some improvements in method and especially by utilizing the mathematical process of "differences" for the later ages, Dr. Newsholme has in his second life table produced p_x curves which can be contemplated with a considerable degree of satisfaction, and which approximate very closely to those which would be obtained by the most exact "analytical" methods, as has been determined, in part at least, by actual trial. They are not, it is true, perfect in a mathematical sense, but they are sufficiently so for all practical purposes.

III.—Results of the New Life Table and Deductions Therefrom.

The special value of a local life table when constructed is that by its means exact comparisons may be made (*a*) between it and any preceding life tables for the same district which may have been prepared; (*b*) between it and the life table for the whole country for the same period; and (*c*) between it and any other life tables relating to the same period for other districts which may have been published; the value and accuracy of these comparisons, of course, depending to a large extent upon whether the respective life tables have been constructed by the same methods, or by methods which give at least approximately identical results

As regards (*a*) the leading points brought out are: (1) That there having been in Brighton during 1891-1900, in common with the experience of the whole country, an increase in infant mortality, as compared with 1881-90, the p_x values both for males and females are less; (2) that with this and a few other unimportant exceptions, the remaining p_x values are in the main greater, and therefore there is an increase in the numbers of survivors at ages after 2 for males, and at ages after 4 for females; and (3) that with insignificant exceptions there is an increase in the expectation of life at all ages, the increase for males at birth being 1.34 year, and for females at birth 0.95.

With respect to (*b*), the comparison between a local life table and the one for the whole country for the same decennium is one which must always have considerable interest, and it is to be regretted that so long a delay occurs before the publication of the official life table for a decennial period.

The work involved in the compilation of the *Decennial Supplement* of the Registrar-General is, of course, so enormous that its publication in entirety must of necessity be delayed, but it would surely be possible to publish the life table and other matters relating to the whole of England and Wales in advance of the elaborate tables belonging to each of the registration districts.

In the absence of an official life table Dr. Newsholme has been able to avail himself of an unofficial life table for England and Wales based on the experience of the ten years 1891-1900 which was published in the last number of the *Journal of Hygiene* for July, 1903; it was calculated by an extended method dissimilar to Dr. Newsholme's, but is one which gives results fairly comparable with it. The results of the comparisons made are very favourable to Brighton.

When we come to (*c*) it is obvious that those medical officers of health who are earliest in the field have the least material to deal with. Dr. Newsholme has only been able to show comparisons between his life table and those which had previously been published for London and Haydock, the results of such comparison being greatly to the advantage of Brighton.

An incidental reference, however, is also made to the life table for New Zealand by Dr. W. J. Barclay, which appeared in the October number of *Public Health*. The comparison shows that even so favoured a locality as Brighton is a long way behind the progressive colony of New Zealand in the matter of life-table results.

The concluding portion of Dr. Newsholme's work is devoted to a very full and able discussion on the bearing of life-table statistics on the question of the "alleged physical degeneration of the nation," and in the light of the convincing

evidence brought forward, based not merely on the comparison of the two Brighton life tables but also on the comparison of the two corresponding life tables for the whole country—already alluded to as published in the *Journal of Hygiene*—it is certainly a matter for those who support the allegation to disprove if they can Dr. Newsholme's contention.

In conclusion, it may be said that Dr. Newsholme is to be most heartily congratulated on having so successfully accomplished another addition to his many previous contributions to the science of vital statistics. Some reference is also due to the excellent manner in which the new life table has been printed and to the admirable clearness of the diagrams with which it is illustrated, and the whole work may be commended to those interested in the subject as well worthy of an attentive study.

PREVENTION OF CONSUMPTION.

Open Wards in Bath Workhouse.

The Bath Board of Guardians some two years ago decided that, instead of joining with Bristol in the erection of a sanatorium for the rate-supported consumptive poor, they would arrange for the open-air treatment in their own workhouse. Two wards have been prepared for this purpose, and airing grounds have been laid out. These were formally opened recently by the Chairman of the Bath Board of Guardians (Prebendary Norton Thompson), in the presence of the guardians, officials, and others interested in the movement. Dr. Ellis, to whom the movement was largely due, gave an account of the history of the events which led up to the step, and described the advantages which it was anticipated would result, not only to individuals, but the community. The Chairman, in declaring the wards open, acknowledged the debt of gratitude which they owed to Dr. Weatherly and to Dr. Ellis.

Australia.

Queensland.—A deputation recently waited upon the Minister for Railways from the Queensland Association for the Prevention of Consumption for the purpose of placing before him the following matters: (1) The prevention of indiscriminate expectoration in public buildings by the provision of spittoons, etc.; (2) enactment of regulations forbidding expectoration in railway carriages; (3) making use of some country hospitals for the accommodation of consumptives; (4) extending the time of residence of the consumptives at Dalby to three months. The Minister, Mr. Leahy, in reply, said that the hospitals had power now to take in consumptives. Dalby Sanatorium was really only a training school where patients might learn how to treat themselves. He would consider the proposal with regard to public buildings, and he would ask the Commissioner for Railways to enforce the regulation to prevent expectoration.

Belgium.

The reports presented to the general assembly of members of the Brabant Section of the Belgian National League against Tuberculosis shows that in Belgium, as in other countries, the campaign against tuberculosis is being vigorously and systematically conducted. This Section was founded in 1899 as the result of a resolution passed at the International Congress of Hygiene at Brussels in 1897. Some time was occupied in forming the committee, as it was considered essential that this should be fully representative. The first work of the Committee was to prepare and distribute simple literature on the subject of tuberculosis, and notices requesting persons not to spit on the ground, and by the end of 1902 many thousands of pamphlets and cards had been sent out. In 1900 the Committee decided to establish in Brussels an antituberculous dispensary on the lines so successfully initiated by Professor Calmette at Lille and Liége. A suitable building was, however, not obtained until last year, and the dispensary was formally opened on December 3rd, 1902, by Prince and Princess Albert.

The report of the Albert-Elizabeth Dispensary, of which Dr. Van Ryn is the Medical Director, shows that it has already done good work. From September 21st, 1902, to the end of that year 375 patients had attended 1,000 times in all. These patients were not all tuberculous, and only 159 were retained for treatment as proper cases for treatment for a special antituberculous dispensary. Of these, 74 have improved, some of them in a very marked degree. Thus, without taking into account the valuable educational and prophylactic tendency of the dispensary, there are already some tangible results of value.

THE PLAGUE.

Prevalence of the Disease.

India.

During the weeks ending September 24th and October 1st and 8th the deaths from plague in India numbered 13,996, 13,843, and 13,869 respectively. It will be seen that the epidemic in India has, for the time being, assumed a temporary steadiness. During the weeks ending October 1st and 8th the deaths from plague in the important centres of the disease were as follows: Bombay city, 91 and 79; Bombay Presidency, 9,163 and 8,868; Bengal, 46 and 41; North-West Provinces and Oudh, 80 and 95; Punjab, 211 and 80 (reports during latter week incomplete); Central India, 1,899 and 1,820; Central Provinces (including Berar), 1,198 and 1,231; Rajputana, 21 and 38; Hyderabad State, 940 and 872; Mysore State, 673 and 554; Kashmir, 7 and 21; Karachi, 1 and 5; Madras Provinces, 127 and 146. During the week ending October 1st the deaths from plague in Calcutta numbered 27.

Cape Colony.

During the weeks ending October 3rd and 10th the plague report in Cape Colony was as follows:

Port Elizabeth.—Fresh cases were 2 and 0; deaths, 2 and 0; remaining in hospital, 2 and 1. No fresh cases of plague were discovered.

Queenstown and East London were on October 10th quite free of the disease.

At Knysa a European child is under observation as a suspected case of plague. Plague-infected rats have been found at Port Elizabeth, Knysa, and East London, but in no other place.

Hong Kong.

During the week ending October 17th 2 fresh cases of plague were reported in Hong Kong, and 2 deaths from the disease. Clean bill of health issued from Hong Kong from October 27th.

Mauritius.

During the weeks ending October 22nd and 29th the fresh cases of plague in Mauritius numbered 100 and 117 respectively, and the deaths from the disease 66 and 55 respectively.

CONTRACT MEDICAL PRACTICE.

Swansea.

The Council of the Medical Practitioners' Association, which was formed for Swansea and its district in June, 1902, has issued a report upon the first year's work. One of the matters earliest taken in hand was a negotiation with the Friendly Societies in respect of the rates paid by them for medical attendance. The Friendly Societies at first would not listen, and expressed their intention of forming a Medical Aid Association if their medical officers refused to serve them upon the old basis. Later on, however, a conference was held between the Medical Practitioners' Association and the Friendly Societies, which led to a considerable improvement in their relations. In the end the very moderate demands made were accepted by the Friendly Societies, though in a somewhat modified form. The Council in its report expresses the opinion that it is a matter for congratulation that the Societies did not persist in their intention to form a Medical Aid Association, since the latter would undoubtedly have formed a centre from which much unpleasantness would have emanated. The results attained are not all that could be wished, but settlement was complicated by the question of dual payments. Definite improvement has, however, been effected, since formerly the payments were in some cases as low as 4s. a year for a man and his family. Among other questions dealt with by the Council was one raised by the guardians with reference to vaccination, which was satisfactorily settled. On one or two occasions also the Council has successfully intervened as arbitrator in disputes between medical men, and thus brought about a resumption of friendly relations. The question of the amalgamation of the Association with the Swansea Branch of the British Medical Association, which it has been suggested would greatly add to its authority and weight, is to be considered at an early date.

St. Thomas's Hospital.—Upon the application of the Governors of St. Thomas's Hospital, the Charity Commissioners have prepared a draft scheme to govern the admission of paying patients. The scheme would authorize the Governors to set apart in the building which it is intended to use primarily as a home for nurses, and is about to be erected within the precincts of the hospital, two floors for the reception of not more than forty patients who would pay not less than 8s. a day for their maintenance and treatment. The Governors would be authorized to make such rules and regulations for the admission, treatment, and discharge of such patients as they may think fit.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1903.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, NOVEMBER 7TH, 1903.

THE MASTER-WORD IN MEDICINE.

Professor Osler, as may be gathered from the discourse delivered by him to the students of the Medical Faculty of the University of Toronto, which is published elsewhere, is doubtful as to the value of introductory addresses. That doubt is shared by many on this side of the Atlantic, and in the metropolitan schools the efflorescence of homiletic oratory which used to usher in the winter session is already, to a considerable extent, a thing of the past. Although Professor Osler is, on the whole, in favour of abolishing the old custom, his own address furnishes an excellent justification of its existence. It is impossible to believe that the dullest or most indifferent student can have listened to it without being moved to a loftier intellectual ambition, a higher conception of professional duty than he had before. And men whose outlook has been narrowed by routine or darkened by the clouds of error or misfortune may find inspiration and guidance to a larger and better life in Professor Osler's lay sermon.

Yet there is nothing startlingly novel in his teaching. The master-word in medicine, as in every other sphere of human effort, is Work. It is not only for the acquisition of knowledge that work is necessary, but for the building of character. This inner education is more important than that which is got from teachers and from books, for without knowing much of his art a practitioner may have endowments of head and heart that make the little he does know go very far in the community. On the other hand, as Professor Osler puts it, any one may become an active practitioner without ever having had sense enough to realize that throughout life he has been a fool.

In professional education the first step is that the student should be interested in his work. This, with not a few, is a difficulty that is never overcome. Professor Osler seems to us to pass rather lightly over this matter, which lies at the root of many failures in the case of practitioners as well as students. If medicine is adopted simply as a trade, the study and the practice of it are alike the dreariest drudgery. To most the beginnings are distasteful, if not actually repulsive. The student will soon, however, come to love his work if he applies himself strenuously to master it, for, as Joubert has well said,* one learns to like any task however irksome it may have been at first, when one can do it well. Professor Osler attributes the greater seriousness of the medical students of the present, as compared with those described in the recent life of Sir Henry Acland, to the more practical way in which they are taught it is also, we think, due to the higher standard of general education now required of candidates.

Professor Osler insists on the importance of system in work. To the average sensual man the acquisition of systematic habits is not easy, and want of system has even come, like bad writing, to be regarded by many as a mark of intellectual superiority. Professor Osler urges that each hour of the day should have its allotted duty. By the cultivation of system and of concentration, the habit of work is formed and strengthened by exercise. Lord Russell of Killowen ascribed his success in life to his power of concentrating all his faculties on the matter in hand whether it was the reading of a brief or the eating of an oyster. This is the secret of all successful men; whatever they do, they do it with their might.

Professor Osler rightly holds that work with reasonable limitations and under proper conditions is seldom a cause of physical or mental breakdown. But like other counsellors he warns students against worry. He agrees with Carlyle that "our duty is not to see what lies dimly at a distance, but to do what lies clearly at hand." He advises medical students to take no thought for the morrow. The day's work should suffice; they must banish morbid fears about examinations, nor must they consider too curiously of the event in thinking of their future. The precept is virtually that of Sydney Smith, who was never tired of urging people to take short views of life. The advice is unquestionably sound, and is applicable to practitioners not less than to students. The difficulty is to follow it; to many the injunction not to worry is like a recommendation not to feel pain. The tendency to worry should, however, be treated as a temptation, and resolutely suppressed.

To men engaged in the fierce struggle of medical practice we commend Professor Osler's advice to seek for mental recreation in the best literature. A habit of daily converse with the best minds of all ages will give them repose from the anxieties and vexations of their profession and make them indifferent to the manifold petty annoyances of life. Do what we will we cannot always bend circumstances to our will. Quarrels will be thrust upon us; slander will undermine our reputation; disappointment and even failure must occasionally be our portion. Let us act in the spirit of Carlyle's song:

> The world will wander its own wise way,
> I too will go by mine.

Or, as Professor Osler expresses it, let us cultivate the gift of taciturnity and consume our own smoke with an extra draught of work, so that those about us may not be troubled with the dust and soot of our complaints. Golden words, which contain the marrow of all practical wisdom. They should be graven on the hearts of all whose life work is a constant struggle against disease, folly, and wickedness.

* Speaking of the method by which one may reconcile oneself to disagreeable duties, in a letter to Chénedollé, Joubert says: "Je vous préviens qu'il y a deux moyens infaillibles de s'y plaire: le premier est de les remplir parfaitement, car on parvient toujours à faire volontiers ce qu'on fait bien; le second est de vous dire que tout ce *qui devient devoir doit devenir cher*. C'est une de mes anciennes maximes et vous ne sauriez croire quelle facilité étonnante on trouve dans les travaux pour lesquels on se sentait d'abord le plus de repugnance, quand on s'est bien inculqué dans l'esprit et dans le coeur une pareille pensée; il n'en est point (mon expérience vous en assure) de plus importante pour le bonheur."

A CLERICAL DRUG-TOUTING PROPOSAL.

We published last week a short account of two instances of a method of touting practised in the interests of proprietary drug vendors, and information which has since reached us appears to show that the method, probably of Transatlantic origin, is followed more extensively than we

had supposed. Hard upon this has followed the exposure by Sir Edward Fry, in a letter addressed to the *Times*, of a system—in which a similar method of touting is combined with the barefaced offer of a secret commission. Sir Edward Fry gives in full a letter addressed by Violet E. Hill, director of Violet's Progressive Chemists (Limited), of 1, Princes Terrace, Bournemouth, to "The Right Reverend the Lord Bishop Suffragan," of Kensington. With the letter was enclosed a circular addressed apparently to clergymen of the Church of England.

In her circular to the Bishop she comments upon the poverty of the clergy of which so much has been said in recent years and states that the company has devised a plan by which "their distress may be in some measure alleviated." It turns out that the plan which this lady has developed for adding to the scanty incomes of the clergy is that of touting amongst the sick and suffering people of their parish for the sale of a proprietary remedy for gout! A bonus of 20 per cent. is offered upon all bottles purchased as a consequence of the clerical recommendation. "You are never known in the transaction" the clerical recipient of the circular is assured. "Nothing can possibly transpire in any way derogatory to your sacred calling. The information you give us is in strict confidence; we simply write to the sufferers as if we had casually heard of their malady. You may thus easily make a large sum of money by merely writing a few names. We are making this offer only to one gentleman in each locality, and we shall give you this honorarium not only on the sales we may make to those persons whose names you send us, but on all orders coming from your immediate neighbourhood, whether direct or through chemists."

It was to obtain episcopal sanction for the issue of this impudent circular letter that Miss Violet Hill addressed the Bishop of Kensington, and it may be taken as most probable that the bishops of other dioceses were also applied to for their approval. The letter to the Bishop is really a gem in its way, and we cannot resist the temptation to make one more quotation. Miss Violet Hill writes: "In the course of their parochial visits, and through other sources, the servants of the Church become acquainted with persons suffering from the complaint that the medicine mentioned in the enclosed pamphlet is intended to cure, and we trust that you will agree with us in thinking that in furnishing us with the names of such sufferers they will not be in any way derogorating from the dignity of their spiritual calling. No expenditure of either time or money is involved in so doing, and as a humble contribution towards the solving of a great problem we trust that this plan will merit your episcopal sanction."

The picture of vicars and curates diligently hunting up gouty cases in their districts and tumbling over one another to be first home to forward the addresses of such to "Violet's Drugs Company," is only one of many which come before the mind's eye when reading the letter from which we have just quoted.

Sir Edward Fry, in commenting upon the incident, writes: "Miss Hill's scheme will be found to be one of very varied benevolence. It will relieve the poverty of the clergy; it will assuage the sufferings of their flocks; it will help to fill the coffers of the limited company to which she has so graciously lent her Christian name. In her effusions fraud and hypocrisy have kissed each other." We do not think it necessary to attempt to add anything to this emphatic phrase, and we believe that the clergy will indignantly decline to make money by such means. We cannot, however, forget that the so-called religious newspapers must derive a large income from quack advertisements, and that many if not most quack medicine-vendors advertise testimonials given by clergymen of various denominations.

There is another aspect of the matter to which attention ought to be directed. The Legislature enacted in the Pharmacy Acts that for the protection of the public certain things which it falls to the duty of the pharmacist or chemist to do shall only be done by persons who have undergone a certain training, and passed certain test examinations, and even these trained persons in performing certain of these acts must keep a record in a manner prescribed by the statutes. The Acts speak throughout of a person, and in 1880 the House of Lords decided on appeal that a company was not a person within the meaning of the Acts, consequently it is held that none of the provisions inserted in the Act for the protection of the public apply to a company. It is rather extraordinary that such an anomalous state of things should have been permitted to continue for nearly a quarter of a century. The Pharmaceutical Society, which is the statutory body mentioned in the Acts, has suggested to Parliament that it should enact that the provisions which apply to persons should be made also to apply to companies, but, so far, the House of Commons has not found leisure to deal with the matter. The decision in the House of Lords has still a further effect because the Medical Acts also refer to persons. The incorporation of medical and dental companies formed with the effect and presumably with the purpose of evading the provisions of the Medical Acts still goes on, and indeed a circular largely and continuously issued by a firm of company agents avows that object in set terms. We are informed, in response to an inquiry, that the efforts to interest the Government in the subject have not been relaxed, and that an endeavour made last session met with encouragement, and is believed to have fallen through on account of the pressure of other business. It will be remembered that clauses, drafted under the direction of the Lord Chancellor, prohibiting medical practice by companies, and regulating, in the case of dental companies, the conditions under which it might be carried on so as to prevent company incorporation being used as a cover for unqualified practice actually stood as a part of the Companies Act, 1900, until a late stage, when they were dropped out by Mr. Ritchie, with the express declaration that he approved them in principle, but considered that they were not germane to the Bill, which was a financial one.

THE ADMINISTRATION OF THE MIDWIVES ACT.

In our issue of last week (page 1170) will be found an extremely interesting summary of answers received from county medical officers to inquiries made as to the action taken by various county councils in reference to the local supervision of midwives under the Midwives Act. It will be seen that a very earnest effort is being made to grapple with a question which throws a large amount of responsibility upon county authorities, and which, alike from the amount of detail indicated in the rules issued by the Central Midwives Board and from the variety of conditions which exist in various localities, presents problems of very considerable difficulty.

So far as the information contained in the analyses of replies is concerned, a complete agreement seems to exist that the powers vested in county councils should not be

delegated to district councils, but exercised by the county councils themselves, acting either through a sanitary committee where such exists, or through a special Midwives Act Committee, the county medical officer acting as executive officer in either case. The advantages of a central authority acting in a county are very obvious. In the first place, there would be uniformity of administration throughout the county; secondly, all risk of overlapping would be avoided; thirdly, no financial difficulties would be created; fourthly, the risk of personal feelings or other conditions possible in small districts, preventing a due carrying out of the supervision, would not arise; and lastly, the disadvantages inherent to the district medical officer of health being himself, as in most instances he is, in general practice, would not be felt.

On the other hand, the due carrying-out of the Act by a central authority or committee must present difficulties which it will be difficult altogether to overcome. We await with interest the appearance of the suggestions promised by the Central Midwives Board, but in the meantime we may indicate directions in which these difficulties will be felt.

In Section E of the Rules framed by the Central Midwives Board a very large number of regulations are laid down for midwives to follow. How is a county committee, as the local supervising authority, to ascertain that these regulations are systematically carried out? Take for instance Rule 17 which lays down the circumstances under which a midwife must decline to attend alone, and must advise that a registered medical practitioner be sent for. A large number of conditions affecting a pregnant woman, a woman in labour, a woman after delivery, or affecting the child, are mentioned. What provisions can a county committee make to ensure that every midwife loyally observes these instructions? Again Rule 20 "The supervising authority shall make arrangements to secure a proper inspection of every midwife's case book, bag of appliances, etc., and when thought necessary, an inspection of her place of residence, and an investigation of her mode of practice." In a county, which has 135 districts and more than 1,000 females engaged, how can a county council committee properly perform all the administrative duties assigned to it under the Act?

It seems clear that under such circumstances there must to some extent be local delegation, though the degree to which this will be required can only be ascertained as further knowledge is gained by experience in administrative working. Three factors will have an important influence in deciding as to the amount of delegation which will be required in any particular county. One of these factors is already known, the size and population of the area. A second is known or will shortly be ascertained; it is the average number of midwives engaged in work in the area, and the custom as to their employment, a matter which differs much in various parts of the country. The third factor no one can as yet foresee—that is to say, whether the effect of the Act will be to diminish the number of midwives in actual work, or whether, as is perhaps more likely, the new condition of things and the efforts which will doubtless be made to educate candidates may not attract a large number of women to this vocation, and largely increase, in some areas at least, the number of midwives.

Another argument for delegation in some directions seems to exist in E, Rule 5, which prescribes "Whenever a midwife has been in attendance upon a patient suffering from puerperal fever, *or from any other illness supposed to be infectious*" (the italics are ours), she must disinfect herself, her instruments, and her clothing to the satisfaction of the local sanitary authority, and unless otherwise directed by the local supervising authority washable clothing must be boiled, and other clothing stoved by the local sanitary authority. There is rather a muddle here between the local *sanitary* authority and the local *supervising* authority, out of which might arise endless confusion. In Derbyshire it has been determined to ask each medical officer of health for a local sanitary authority to report on the circumstances of each case of puerperal fever notified to him as occurring in the practice of midwives in his district, and to pay a fee for such report, which is to be made upon the form published last week, page 1170. It is probable that other counties will eventually find it necessary to secure the assistance of local medical officers of health in this direction and probably in some others also.

In counties of a moderate size, and with no crowded population, a central authority may manage well enough, but when these conditions do not obtain, it would seem to be essential that some of the duties at least should be discharged by local officers.

In the foregoing observations we have had in mind only those counties which possess a county medical officer of health. Where no such appointment has been made the difficulties will be much increased. Indeed, we do not see how any county council committee can properly carry out its responsibilities under this Act without the assistance of a medical officer. To retain the services of a trained expert for this purpose would involve a certain amount of expenditure, and it would appear to be the wiser course for county councils at present unprovided with medical officers of health to secure, by a slight additional outlay, as one of the county staff an officer who would be able in many other ways to aid them in their work. Questions will arise in connexion with educational matters now delegated to county authorities, where such an official would be of much service, and there is no doubt that in the future further responsibilities will devolve upon county councils, where the aid of such an official will be needed. Some sympathy may exist for those counties which have not, up to the present, appointed medical officers of health, owing to the unsatisfactory condition in which the Act left this matter, but the working of the Midwives Act seems now to leave them no choice but to obtain such skilled help.

The postponement till 1905 of the provision as to assumption of title and to 1910 of that forbidding the practice of uncertified midwives lessens the pressure in getting all details connected with the administration of this Act into thorough working order, as the local supervising authorities will not of course have anything officially to do with those who are not registered, and so the number of midwives coming under the purview of the authority may not at first be very large. But it is nevertheless important that a good beginning should be made, so that the Act may not become, as it otherwise easily might, a dead letter. The zeal already being shown in many counties augurs well for future efficiency of the supervision which they have to exercise.

THE KING EDWARD VII SANATORIUM.

The King laid the foundation stone of the open-air sanatorium which is to bear his name on November 3rd, in the presence of a larger concourse of people than had, in all probability, ever before come together on the remote

Sussex down which has been selected as the most suitable site within reasonably easy reach of London. The finding of the site has been in a large measure due to inquiries undertaken by Dr. Theodore Williams, to whose zeal the King paid a warm tribute. Sir William Broadbent, as Chairman of the Advisory Board, presented a report which rehearsed the history of the scheme and its development down to the present time, and the King, as will be seen by the verbatim report of his speech published elsewhere, gave an assurance of his deep interest in the scheme, an assurance which, in view of his presence and of the fact that the plan took shape entirely through his own decision to devote to this purpose the sum of money presented to him by Sir Ernest Cassel, was almost superfluous. The sanatorium is to provide accommodation for one hundred patients. The plans have been most carefully thought out, after careful study of other sanatoria, and it will doubtless be a model building of its kind, providing accommodation for patients not of the poorest class, with some rooms for well-to-do sufferers. It will not be a cheap building, and it will, therefore, not serve as an example to those who are seeking to multiply open-air sanatoria which will cost little and be able to receive patients at a low rate which will yet cover cost of maintenance, or be within the expenditure which public bodies providing for the poorest patients would be justified in incurring. But while there may be a tendency in some instances to spend too much on bricks and mortar it must be remembered that there is a large class between the very poor and the rich who are very deserving of assistance when struck down by so exhausting a disease as consumption. To give them assistance in the best way it is advisable to provide a degree of comfort and privacy which is not necessary for the poorest, nor perhaps deserved by persons who, as a rule, have few resources within themselves. By the interest which His Majesty has displayed in the open-air treatment of consumption, and indeed in the whole subject of the prevention and treatment of tuberculosis, he has again shown how deeply he is imbued with the desire to relieve suffering, and, what is more, he has given another proof of the acumen with which he follows the development of medical science, and the readiness with which he grasps the significance of every advance in the medical art.

THE UNIVERSITY OF TORONTO.

We publish elsewhere some account of an interesting ceremony which took place at the opening of the winter session in Toronto. On this occasion the amalgamation of the Trinity Medical College of Toronto with the University of Toronto was completed and celebrated. The University of Toronto is the State University of Ontario, and receives, we understand, a large subvention from the funds of that province. Last May, as we learn from a circular issued to graduates and undergraduates of Trinity Medical College, that body had completed arrangements by which the faculty of the College was to become the medical faculty of Trinity University, Toronto, and it was then proposed to erect new buildings adjoining those of Trinity Medical College. While the details of this proposal were still under consideration it was strongly represented to the authorities of Trinity Medical College and University that the interests of all medical students in Toronto, both present and future, would be better served by co-operation with the medical faculty of the provincial University than by the perpetuation of two rival institutions in medicine. These counsels prevailed, and the two faculties are now amalgamated and form the medical faculty of the University of Toronto. The rights of graduates and undergraduates of Trinity are saved, and there appears to be a general consensus of local opinion that the amalgamation will be very greatly to the advantage of medical education in Toronto. Professor Sherrington, of Liverpool, in the address, published at page 1193, which he delivered at the opening ceremony of the new medical buildings, congratulated Toronto on the consolidation of its two schools of medicine into one, and we would venture to join our congratulations to his. Professor Sherrington went on to show how science and medicine were interlocked, and how it was the duty of the modern university, among other things, to give to every man in practice who may in the future be isolated from centres of knowledge that safeguard against the pseudo-scientific quackeries of the day, which some real knowledge of the principles of science could alone afford. Thus the burden of obligation to provide this safeguard falls ever more heavily upon the teaching resources of every faculty of medicine. Not least among these obligations is the provision of adequate laboratories to serve both as schools of practical instruction and as schools of thought. But the provision of such laboratories is costly in the first place, and their maintenance also costly; therefore, looking at the matter from the economic point of view, the advantage of an amalgamation such as has taken place in Toronto is obvious. It has this further advantage, that the united faculty can appeal with greater force for that State aid which, in common with Sir Victor Horsley and others who have dealt with the subject during the last few weeks, Professor Sherrington perceives to be a necessity if laboratory teaching is not to be put beyond the reach of all but the wealthier few. The new buildings are interesting from many points of view, more especially in the adoption of the unit system, which, it will be seen from the description published at page 1240, affords great facilities for adjusting the accommodation to varying needs, while at the same time rendering extension easy. By the possession of these fine laboratories the amalgamated medical faculty of the University of Toronto is in a position to afford to all its students that grounding in fundamental sciences which is necessary for every practitioner of medicine in these days. Further, it will afford to its professors opportunities for carrying out original researches, and last, but not least, it will be in a position to give to every student an opportunity of showing the stuff of which he is made, so that it may breed men fit in due time to take the place of those who are now teachers.

AN INTERNATIONAL SANITARY BUREAU.

If the International Sanitary Conference now sitting in Paris carries out the intention attributed to it by the *Times* correspondent of recommending the establishment of an international sanitary bureau, it will have taken a step of considerable importance. It was hoped that this proposal would be made at this Conference, for it has been in the air for some years, and no one who has given a moment's thought to the subject can have doubted that such an office ought to be established. As the correspondent truly says, the want of the information which such a bureau would authoritatively supply "every now and then weighs heavily on international commerce." That friction among the great States affected has been occasioned in the past by the application of stringent quarantine regulations is only too true, and it is satisfactory to be told that diplomacy is now willing to approve means for removing this source of friction. The political press now fortunately gives so much attention to sanitary questions, and its correspondents send news of outbreaks of epidemic disease so promptly and fearlessly that such occurrences seldom remain long unknown, but hitherto States have had to rely for official information mainly upon the facts collected and published by the Marine Department of the United States. The telegram states that the proposed international sanitary bureau is to be established in Paris in recognition of the fact that France has taken the initiative in bringing the matter before the Conference. Probably no better place could be found, but wherever the international office is established there can be no question that the responsibilities of the British empire will be greater than those of any other Power. We shall be responsible for obtaining for the use of the international bureau information not only from Great Britain and the Colonies, but also from India, the diffuser, if not the endemic home, of cholera and plague. Incidentally one result of the scheme, if carried out, as we trust it may be, will be to compel the Foreign Office to take a step which it has long and unduly delayed. This is the organization of a medical and sanitary department. There will be plenty for it to do in addition

to the collection and arrangement of reports for the information of the international bureau. Probably another incidental result of the establishment of an international office will be materially to strengthen the hands of the foreign delegates on the Ottoman Board of Health in Constantinople.

"PROGRESSIVE" LONDON.

The result of the recent borough council elections in London has been surprising and significant. London has been, generally speaking, Conservative in politics but "Progressive" in matters over which its County Council presides. The old vestries, which died an unlamented death in 1899, were generally reactionary, but had become so unrepresentative in any real sense that it was difficult to speak of the somnolent administration they stood for as possessing any particular political complexion. It was feared that the borough councils which replaced them three years ago, and whose inauguration marked a stage in simplifying London's chaotic administration, would be but our old friends the vestries with a new face. While some have regretted that too much attention has in some instances been given to the appurtenances of office and to sartorial displays, it is at least satisfactory to find that the London ratepayers have been quickened into a fresher interest in their parochial government. We need not say we take no side in party conflict; but a vote which results in changing the district councils from a state of 20 "Moderate" to 8 "Progressive" to one of 16 "Progressive" to 12 "Moderate" cannot be otherwise than expressive of a revulsion of popular feeling. The felicity of appellation is certainly with the Progressives, but we are perfectly willing to allow that in matters of sanitary vigilance, housing the working classes, and provision of rapid transit as auxiliary to the correction of overcrowding, the party which assumes the title of "Progress" has shown a growing belief in, and a desire to achieve, real reforms; a belief and desire not always so well marked in the political party of which they appear to desire to be the municipal forerunners. From the point of view of combating infectious disease, of supplying proper water supply, and main drainage, the conception of the unity of London has sometimes not been sufficiently prominent in the actions of the opposite party. We hope the Progressives will use their victory wisely and well. London has still arrears of legislative neglect and administrative apathy to overtake, and we trust that within their "three years' radius" the new Councils will address themselves to a vigorous discharge of their civic duties.

THE *INDEX MEDICUS*.

In the early part of the present year it was announced in the British Medical Journal that the *Index Medicus* had, thanks to the enlightened liberality of the Carnegie Institution, Washington, been revived. The publication had at that time been suspended for nearly four years to the grievous inconvenience of scientific workers throughout the world, by whom its revival was hailed with the greatest satisfaction. The Carnegie Institution promised an annual subvention of £2,000 for three years. This grant was, however, made on the understanding that its continuance would depend on the amount of active support received from the medical profession, in whose interest the *Index* was revived. Unfortunately the number of subscribers has not so far been sufficient to encourage the hope of a prolongation of the existence of the *Index* beyond the period for which the grant is promised. We are informed by the Secretary of the Carnegie Institution that the future of the periodical is not so much a matter of financial support as of usefulness to the medical profession. If it is manifest that the *Index Medicus* is a publication which the profession would not willingly let die; if it is found to supply a real and widespread need among its members throughout the world, and a due sense of its value is shown by subscriptions, there can be little doubt that the Trustees of the Carnegie Institution will take care that it shall not perish for want of financial aid. On the other hand, if the profession appears indifferent to an enterprise intended solely for its benefit, the Trustees will certainly consider the question whether there is any sufficient reason for the continued existence of the *Index*. It is earnestly to be hoped that a publication of such importance to the progress of medical science will not be allowed to die for want of the moderate amount of support required. The *Index Medicus* supplies the only literary machinery we have in the English language for the co-ordination of research and the correlation of facts and observations on medicine and the allied sciences published by workers of all nations. It is absolutely necessary to every one engaged in research or compilation, and should find a place in every medical library. It will be deplorable if the apathy of the profession allows it to perish a third time.

FARMING AND GARDENING FOR WOMEN.

The Lady Warwick Hostel at Reading was founded in 1898 by Lady Warwick for women who wished to study agriculture and gardening at the Agricultural College at Reading. The growth of the scheme was steady, and after beginning with one house with twelve students, house after house was added until, in July, 1902, a large staff of lecturers was engaged, and a course of study—independent of college instruction—was instituted for the forty students in residence. The premises at Reading having been found inadequate to accommodate the number of students wishing to go through the course, and the lease having fallen in, Studley Castle in Warwickshire has been chosen by Lady Warwick as an ideal spot for her new college. Here sixty students can find accommodation immediately. The house is fitted with electric light, and there are plenty of bath rooms and modern conveniences while one of the rooms, measuring some 24 ft. square, would be well suited for a gymnasium or room for games. In a pamphlet describing the new College we are told that the farm which properly belongs to the estate has been let off, but it is proposed to adapt some of the stabling, formerly holding nearly 100 horses, to rooms for fruit preserving, laundry, workshop, marketing office, etc. There are lakes and ponds, and there already exist the beginnings of nearly every garden, from the rose to the Italian garden, while there are about 400 ft. of glass, and a large orchard. To show the success of the scheme for teaching women agriculture and gardening, it is only necessary to state that 225 students have passed through the Hostel at Reading in five years. Posts as gardeners, poultry women, and dairy managers, etc., with sufficient salary to constitute a living wage, have been secured for any student desiring to obtain them—33 in all. Those who have not put their practical training to the test yet, have, at any rate, the satisfaction of knowing that they can earn their living if obliged by circumstances to do so, and for those who have gardens or farms of their own the advantage of the training is obvious. Studley Castle has the advantage of being only 15 miles from Birmingham, and is between Alcester and Redditch. The fees for full training, with board and residence at the College, are from £80 to £100 a year. Non-resident students living in the neighbourhood are received. At the first meeting of the Council Lady Warwick, to show the overcrowded state of the market for educated women wishing to earn their living, stated that in the month of September alone she had received 144 applications from educated women—wives and daughters of educated men—who asked for advice as to how they should turn the education they had received to account. The women who were taught at the College must be prepared to go in for a sound training, to work, and to drop all class prejudice, for they had to fight against the natural prejudice of professional gardeners and farmers. We understand that students going through the course of dairying are taken from time to time to see the working and management of model dairies and farms in the neighbourhood. We think that it would be quite as important that they should be taken to see the state of ordinary farms. The revolting conditions under which most of them are

conducted, would, we venture to predict, awaken a desire on the part of the students to try to better the existing system when they had finished their course of instruction. Many of them might find employment as manageresses of large dairy farms, to the advantage of farmers and the public. They would have it in their power to do valuable work in setting the example of dairy farms worked upon scientific principles; as educated women they could impress upon the farmer that cleanliness and method are perfectly possible with very little—if any—extra cost; as philanthropists they would confer an inestimable benefit upon the nation at large and upon the infants of the poor in particular, by laying the foundation of a system in Great Britain for the scientific handling of milk. They would hold in their hands the keynote to the cause of the deterioration of the national physique, for under a reign of clean milk the appalling infant mortality which now exists would cease, and thousands of the survivors would be launched in life robust and healthy, instead of puny and rickety as they are now. If Lady Warwick succeeds in accomplishing this, she will have conferred a debt on the empire impossible to estimate.

THE RAINFALL OF 1903.

FROM every district in the British Isles come reports of excessive rainfall in the present year; but in the Metropolis and the Thames Valley the excess has apparently been greater than elsewhere. In London more rain fell in October both at Brixton (5.32 in.) and at Camden Square (6.02 in.) than in any previous month of the year, with the exception of June; and the rainfall for the ten months of 1903 now completed, amounting to 34 55 in. at Brixton and to 34.94 in. at Camden Square, exceeded the amount measured in the whole of any previous year since 1842, except 1852, when the total rainfall of the year was 35.34 in. But as there are still two months of 1903 to run it is highly probable that this year will on December 31st stand as the wettest "on record." The average rainfall of London in *British Rainfall* is given as 24.99 in.; the meteorological records place it at 24 58 in. The rainiest series of years since 1842 in London was from 1875 to 1882, when the amount measured was respectively 28.44, 26.16, 28.17, 34.08, 33.82, 30.28, 27.92, and 27.14 in.; and the driest period has been the twenty years from 1883 to 1902, when the average was exceeded only six times, and in no single year was the amount over 28.0 in. From 1895 to 1902, both inclusive—that is, for the last eight years—the average was not once reached, and 21.47 in., 23.52, 22.86, 17.69, 22.54, 23.28, 22.17 and 20.84 in. respectively were recorded. The year 1898, with its rainfall of 17.69 in., was the driest since 1864, when 17.04 in. fell. At Camden Square there were only five rainless days in October; whilst in previous years the greatest number of rainy days was 23. In all parts of the country, however, October was a very wet month; in many places the rainfall was double the average. The smallest amounts fell on the east coasts of England and Scotland. Few places had less than 6 in.; and at Harrogate the fall measured 9 in. As a result, disastrous floods have occurred in the valleys of the Thames and other rivers in various parts of the country. In Edinburgh, where the average annual rainfall is 26.42 in., the driest year since 1850 was 1885, when 17.58 in. of rain were measured; and the wettest year 1872, with a total fall of 38.96 in. In that year (1872) at the end of October 33.28 in. had fallen; in the second wettest year (1877) the ten months' fall was 32.43 in. In October of this present year 5.80 in. of rain fell; and during the ten months ending October 31st the fall had been 30.79 in.; and it was at that date the third wettest year since 1850. The rainfall of the last two months of the year has varied between 1.80 in. (in 1885) and 10.53 in. (in 1860). In Dublin, however, the rainfall of October, though frequent (22 days), was below the average. It equalled 2.61 in., compared with a 35 years' average of 2.94 in. on eighteen days. The rainfall during the ten months ending October 31st amounted to 27.88 in. on 196 days, compared with 22.82 in. on 163 days. But whilst Londoners and many others have been bewailing rainy skies and frequent downpours they have only to turn their attention to another spot in England, Borrowdale, at the head of Derwent water, below Scafell, to find a rainfall which many times exceeds that of South-Eastern England. In Borrowdale the average annual rainfall for forty years has been 132½ in., on 216 days; and its "record" is 180½ in. on 256 days. It is quite probable that Borrowdale may this year beat even that "record."

MEDICAL MEN AND THE PROPOSED MOTOR REGULATIONS.

WE published a short time ago (October 24th, p. 1112) a letter from a medical man with reference to the restrictions which he feared might be placed upon the use of certain roads under the Act, passed last session, by self-propelled vehicles, and we have since received a communication upon the same subject from "A Country Doctor." The latter thinks that the matter is of sufficient importance to justify the British Medical Association in making representations to the Local Government Board on behalf of the profession, and says that he does not think medical men at present realize how grave a hardship will be inflicted upon them if in the future they are restricted to certain roads only in their use of automobiles and motor cycles. There would appear, however, to be some misapprehension on the matter. It is true that a clause was introduced into the Act at the last moment, and passed practically without discussion, which empowers local authorities to exclude self-propelled vehicles from certain highways, and reference was specially made to certain narrow tortuous hill-roads in the Lake district. In order, however, to come within the terms of the Act, any road which it is desired to close either to automobiles or to autocycles must be less than 16 ft. in width when measured from hedge to hedge, and except in certain parts of England the number of such roads is very limited. Nevertheless they do exist, and doubtless their closure would in many cases be inconvenient to medical men in country practice. The Local Government Board, however, does not propose, and indeed has no authority, to issue any general regulation closing roads of this character, and can only issue orders in specific instances if the county council can succeed in convincing it that the closure of any given road is desirable in the public interest. Before giving its consent and authority, the Local Government Board would take into consideration the question whether the use of such road by a self-propelled vehicle would be dangerous apart from and in addition to its narrowness. This again limits the number of cases in which the question can become one of medical interest, for in the greater number of cases in which roads in England are under 16 ft. from hedge to hedge, they are, it is believed, cart lanes to individual farms and no question of special danger from the nature of the road apart from narrowness would be likely to arise. It is to be remembered, moreover, that if an authority is successful in obtaining permission to close a road it will be put to the expense of erecting notice boards at each point where such road joins other highways, and if the road should be one of any importance the authority would ultimately be called upon to widen it. The matter therefore at present rests in the hands of the local authorities of each district, and it is local, not central, influence that is required to keep any specific lane open. It is all the less likely that county councils will ask for authority to close roads under the Act, except upon very strong grounds, because it is not alone the interests of medical men which would be affected thereby. It is becoming more and more common for the road, water, and other officials of district authorities to use autocycles in the course of their work, and the closure of lanes would affect them in the same way, though possibly not to the same degree, as medical men. In certain districts such as Hampshire associations are being formed specially to look after this question in the interests of users of cars, and in default of any such organization in his district, any medical man who fears that lanes useful to him may be closed would do well to put himself into communication with the Motor Union. It is now a widespread body, and

in default of other sources of information the name of the local representative of any district could probably be obtained by writing to the Automobile Club at 119, Piccadilly, a body which is believed to be in close touch with the Local Government Board upon all questions with which the latter will have to deal under the new Act.

THE OVERLAYING OF INFANTS.

To medical men perhaps the chief interest of the paper by Dr. Wynn Westcott on the overlaying of infants, published at page 1208, will lie in his clearly-worded descriptions of the ordinary appearances of an overlain infant, crystallized as they are from a twenty years' experience as a medical coroner. The subject which he discusses, however, is of a good deal more than merely pathological interest. To those who have kept their eye upon the matter the extent of the evil to which he draws attention will not be surprising, but to those who have not the figures which he gives should prove startling; while his comments upon the causes of the evil and suggestions as to how they may be met may possibly serve to awaken public interest in the matter. The infant mortality rate, that is to say, the number of children who die under the age of 1 year, or from the point of view of the State practically almost as soon as they are born, is, and must be, inevitably great; but it is a lamentable thing that it should be seriously increased by purely preventable cause. No fewer than 15,009 babies during the last ten years have been proved at inquests to have been killed by their mothers, parents, or nurses, who carelessly overlay them while asleep; and this number, apparently, is in addition to many other fatalities where death, though it occurred while children were sleeping with grown-up persons, was ascribed by juries to natural causes. Speaking of London in particular Dr. Westcott, using no exaggerated language, says that the death-rate from this cause is shamefully high. Thus, in the year 1900, 615 cases occurred; in the year following 511, and last year 588, or a total of 1,714 deaths from overlaying in London alone in the short space of three years. Dr. Westcott is of opinion that in the vast majority of cases these deaths are truly accidental in the sense of being unintentional and brought about unwittingly; but, on the other hand, a great many of them are due to what is really criminal recklessness. Such are those cases in which parents who habitually have babies in bed with them follow the same practice when they are conscious of being intoxicated, but are reckless of what may be the result of plunging into a bed beside an infant. Occasionally and in the grosser instances a death of this character may lead to the parent being committed for manslaughter, but in the present state of public feeling on the matter any such procedure is useless, for it is impossible to get a jury to convict. No corresponding difficulty is experienced abroad, where deaths from overlaying appear to be comparatively very rare. In Germany at one time it was forbidden by law that parents should sleep in the same beds as children under two years, and by the modern code in force in Germany fatalities of this character are punishable by imprisonment up to three years. Dr. Westcott, though he would like to see fatal overlaying in certain instances made an offence with which a magistrate could deal summarily by imprisonment for a week or two, would as a remedy for the whole evil rather appeal to the influence of public feeling than to that of the law. The practice of allowing small babies to sleep with their parents would be far less prevalent if public opinion decreed that it was an improper thing. He also points out that the custom is chiefly an urban one and mainly prevalent in large towns where poverty and overcrowding are rife. Even if there be space in their rooms many of the poor cannot afford to buy cradles, and to this latter point he thinks some of the charitable agencies might well attend. To this suggestion we might add that the introduction in England of the common custom of South-east Europe would get over the difficulty both of expense and space. It consists in putting the baby into a rough hammock of sacking stiffened by a stick at each end and slinging it out of the way from a hook in the ceiling.

FREE ADVERTISEMENT.

We have been shown a letter sent recently to the secretary of a public hospital in London by a person named Pressland, who wrote on paper bearing an address at Clapham Junction. In this circular he offers to forward to the hospital, "free of all cost except carriage," a bale of 50,000 "toilet papers" similar to a sample enclosed. Upon examination it was seen that on the toilet paper was printed in large letters an advertisement of the "Ladies' Great Remedy, Dr. John Hooper's Female Pills, Never Known to Fail, Perfectly Harmless, Genuinely Good." Underneath we read that each box of these pills is surrounded by a coupon, and that "bonuses will be given to the persons sending in the greatest number of these coupons to Messrs. May, Roberts, and Co., 9, Clerkenwell Road, London, E.C., by the 30th of June." No year is stated. Pressland has the assurance to inform the secretary of the hospital that the pills are "approved of by many in the profession"—this apparently to salve the hospital's conscience. But as a commercial inducement he points out that "the same quantity of plain paper in rolls could not be purchased under 25s. to 30s." The tempting offer has been declined by the hospital, but it is really surprising that even a drug tout should be so obtuse as to suppose that a hospital would permit itself to be the means of advertising what Pressland calls a "patent medicine." It would appear from this and the two illustrations which we published last week that touting methods of this sort are becoming more common. We do not profess to be experts in commercial morality, but we cannot help thinking that such methods would not have commended themselves to respectable traders at an earlier period. Be this as it may, the notoriety which such measures have now obtained may perhaps bring to those who have adopted them some sense of shame, and cause them to abandon a system which can only reflect discredit upon those who resort to it.

AN ANTIVACCINATION QUACK.

Brighton rejoices in the possession of a "medical botanist" who also professes to have convictions against vaccination. We have become aware of the existence of W. D. Stokes through one or two handbills or posters with the advertising headline—"£1,000 reward." After making various wild allegations regarding vaccination and other more or less relative matters, Stokes says, near the end of the bill, that £1,000 will be paid "to any person if they can prove the above statements to be false." Here is one of the statements: "Lymph, guaranteed as pure, is nothing but poisonous decomposed matter taken from ulcers in unhealthy calves. Poisonous matter is often taken from boils, tumours, abscesses, etc., in unhealthy human beings, passed through the calf, and called pure calf lymph." Nothing could well be more flagrantly and shamefully false than this, and the punishment of its author by relieving him of his £1,000 is a temptation to the natural man. But the medical botanist is too cautious to be caught so easily. The condition of the "reward" is the proof not that a statement or ten statements in the bill are false, but that "the above statements," that is, all of them, are false. The "medical botanist," therefore, has no difficulty in protecting himself. Here is an example of how it is done. Referring apparently to the Royal Commission, which "did not give to the Government a true statement respecting the effects of vaccination," the challenger dons the cloak of the seer, and prophesies that "all such dishonest, untruthful, deceitful, wicked people (doing differently from that which they would wish to be done by) will find themselves on the Left Hand of God in the Great Judgement Day." To prove this to be false it is obviously necessary to wait till the Day of Judgement, and so the creature crawls sanctimoniously out of his pretended offer. Apparently encouraged by the immunity which this unctuous dodge had secured for him, the "medical botanist" has made a variation in his "challenge," and has succeeded in dancing even more closely along the line which separates him from the

pecuniary punishment which he so richly deserves. He has produced another bill, entitled "A straightforward appeal and a challenge to medical men." In it, describing himself as "a humble servant of Almighty God," he reminds the medical men whom he purports to address that God "has said 'Thou shalt do no murder,'" and he asks "Is it not worse than murder....to torture to death old and young by causing their flesh to rot from their bones?" Then he goes on to talk of the "unscrupulous medical practitioner who for mercenary motives" prescribes "poisonous minerals, burning acids, anodine tinctures, etc.," and who "will assuredly find that God will not let go unpunished such hellish practices," and he brings his bill to a conclusion thus: "I, the undersigned, will forfeit the sum of £1,000 if any vaccinating doctor will come forward on any public platform in Brighton and successfully prove that vaccination will prevent or mitigate small-pox." But here again he slinks out of the challenge which he wishes his dupes to believe he has made. He will "forfeit" the money. To whom will he forfeit it? To his wife or his child, or his brother, or to any one else he pleases. And who is to be the judge? Is it to be the challenger himself, or one of his own kidney, if any other such contemptible persons exist in Brighton? And is the evidence again to refer to the future only? It can be proved that the sun *has* risen and set, but who knows that it "will" rise to-morrow? In short, the "straightforward appeal" is a crooked equivocation, entirely unworthy of notice excepting in so far as a hasty perusal of its scurrility may delude some poor fool to his own undoing. We have read a good deal that has been written in abuse of vaccination, but in justice to the Anti-vaccination League we are bound to say we know of nothing they have ever published which is so disgraceful and disgusting as the effusions of this "medical botanist."

MR. CHAMBERLAIN AT LIVERPOOL.

MR. CHAMBERLAIN wound up his visit to Liverpool last week in characteristically energetic fashion. As is already well known, his reign at the Colonial Office was made memorable from a medical point of view by the steps which he took to promote and encourage the study of diseases peculiar to the tropics, and his action at Liverpool made it evident that his interest in the matter was genuine and personal, and that he has not thrown the subject aside together with the other cares of office. The night before he was to leave Liverpool he expressed a wish to visit the new University and the Royal Southern Hospital at which the clinical study of cases from the tropics in connexion with the Liverpool School of Tropical Medicine is carried on. On the following morning he carried out his intention. He went all over the hospital, being accompanied by Mrs. Chamberlain throughout, but paid special attention to the patients in the tropical ward, putting questions to them and to the medical officers of a kind which showed that he had a practical working acquaintance with the leading symptoms and causation of the better known special diseases of the tropics. At his visit to the University, which preceded that to the hospital, besides showing keen interest in the general details of the scheme upon which the University intends to carry on its work, he again paid particular attention to the arrangements made for the School of Tropical Medicine in the Johnston Laboratory, over which he was shown by Professors Ronald Ross and Boyce. In another laboratory Mr. Chamberlain had demonstrated to him the apparatus which Professor Sherrington used in his investigations as to the amount of chloroform under which the mammalian heart can and cannot continue to work efficiently in the experiments conducted by him for the British Medical Association (a report of which appeared in the SUPPLEMENT to the JOURNAL of July 18th, p. cxlvii). Necessarily, the explanations given to him were of a somewhat abstruse and complicated character, but that he had fully followed them was shown by the succinctness with which he subsequently conveyed the main points to Mrs. Chamberlain. The opportunity of Mr. Chamberlain's visit to the University was taken to point out to him the great disadvantages under which scientific research labours in England owing to the fact that the Universities have neither subventions from Government, as on the Continent, nor in late years have received assistance from millionaires in the same fashion as that which has rendered it so easy in the United States to create magnificent laboratories and other places of scientific study. To these observations Mr. Chamberlain made a characteristic reply to the effect that there was a good time coming and that "after all this country has not done so badly in science." It is needless to say that the students of the University in all faculties gave the visitors a hearty welcome as soon as they learnt of their presence, but they were not successful in tempting Mr. Chamberlain to make a speech.

CONVALESCENT HOMES IN URBAN PARKS.

WE have from time to time urged the advantages which would result if some arrangements could be made for utilizing some of the mansion houses in the County Council parks for the purposes of convalescent homes, more especially for London children suffering from chronic diseases of bones and joints. The need for combining the advantages of fresh air and sunshine, upon the beneficent agencies of which the King has recently insisted, with proximity to skilled surgical attention, is in such cases of paramount importance—a reference to the researches of Mr. Tubby, M.S. (BRITISH MEDICAL JOURNAL, 1903, vol. i, p. 454) would convince the most sceptical on this point. We observe that at the last meeting of the County Council the Chairman of the Parks Committee was interrogated by Sir W. J. Collins as to the beneficent purpose to which the house at Golder's Hill was at the present time being devoted. It will be within the recollection of our readers that when the continued use of this mansion as a convalescent home was being advocated, local opposition sprang up, suggesting many alternative modes of utilizing this beautiful site to the better service, as it was contended, of the public. It is somewhat disappointing to find that the Chairman of the Parks Committee (Mr. Cleland) was only able to vouchsafe the information that the mansion was standing idle, and that a notice had been posted intimating that this costly wastefulness would continue for the next five or six months at least. There were those who at the time of the discussion alluded to suggested that it would be better to raze the building to the ground rather than allow this dog-in-the-manger attitude to continue. If the final issue of the dispute be the devotion of this mansion to the exclusive residence of the park superintendent, we do not hesitate to say it will constitute a grave public scandal. Meanwhile, we hear that the house at Avery Hill, though less eligible for the purpose, is still available for a convalescent home provided the requisite financial support is forthcoming. If any wealthy citizen of London desired to confer a lasting benefit on his poorer neighbours, he could hardly find a more suitable outlet for his charitable benefactions if the County Council will meet the objections which have been pointed out.

BIRMINGHAM UNIVERSITY AND VIVISECTION.

A MEETING has been held by the Birmingham Branch of the National Antivivisection Society to protest against the application of the University of Birmingham for a vivisection licence. A letter from Mr. Chamberlain, the Chancellor of the University, which was read at the meeting, was as follows: "Madam,—I beg to acknowledge the receipt of your letter of 19th inst., and to say that I am certainly opposed to the torture of animals, but that I entirely approve of the application of the authorities of the University of Birmingham for a licence to promote scientific research. I think that it is a cruel libel upon men like Sir Oliver Lodge, Dr. Windle, and others, to attribute to them the possibility of any act of cruelty. I shall be obliged if you will read this letter to the meeting which you propose to hold.—I am, Madam, yours obediently, J. CHAMBERLAIN." The following motion was moved and adopted with only two dissentient voices: "That this public meeting of Birmingham citizens learns with regret

that the University of Birmingham has applied for the registration of a place connected with the University, where experiments on living animals may be performed, and earnestly trusts that the Home Secretary will refuse the application." The usual speeches were made by men who, though influenced by the best motives, obviously did not understand the subject about which they were talking. It was even stated that vivisection led to needless surgical operations and unjustifiable experiments on patients in the hospitals. The local newspapers are full of letters in opposition to the application, and a petition to the Birmingham University is being circulated in the city by the National Antivivisection Society in opposition to the establishment of a "vivisectional laboratory for experiments upon living animals."

VETERINARY SURGEONS AND JURY SERVICE.

We publish elsewhere the report of an Irish case in which a veterinary surgeon was held entitled to exemption from service on a jury on the ground that he is a "medical practitioner," and as such entitled to be excused. So far as we are aware this is the first time any Court in the United Kingdom has so extended the definition of medical practitioner. But it is to be observed that in giving their decision the Irish King's Bench Division had to interpret the exemption clause in the Irish Juries Act of 1876, which differs in certain essential particulars from the English Juries Act of 1870. According to the law applicable to England and Wales the following persons (*inter alios*) are excused from service on juries: English Members and Licentiates of the Royal College of Physicians, London, if actually practising as physicians; Members of the Royal College of Surgeons in London, Edinburgh, and Dublin, if actually practising as surgeons; apothecaries certificated by the Court of Examiners of the Apothecaries' Company, and all registered medical practitioners and all registered dentists (if they so desire), and registered pharmaceutical chemists if actually practising as apothecaries, medical practitioners, or pharmaceutical chemists respectively." To put it generally, the English Act grants exemption to registered medical practitioners in actual practice. In Ireland, however, exemption is accorded to "licensed medical practitioners actually practising." No such person as a "licensed medical practitioner" is known on this side of the Channel; and, if the Irish judges think fit to include a veterinary surgeon in the term, their judgement is no precedent to be acknowledged in any English Court. It is interesting to observe that by the 6 Geo. IV, c. 22, s. XI, exemption in Scotland is granted to "all physicians and surgeons duly qualified and actually practising as such."

EXPERIMENTAL PSYCHOLOGY.

Dr. W. G. Smith, M.A., who was appointed only last year to the recently established Lectureship on Experimental Psychology at King's College, London, has resigned his post there in favour of a similar one at the University of Liverpool. The Council of King's College has just elected to the post Dr. C. S. Myers, M.A., of Cambridge, who is well known as a colleague of Dr. Rivers, both as a teacher of the subject and in the expedition sent out from Cambridge to the Torres Straits. The new laboratory at the College is now in full working order, and those who desire to work at this branch of science can obtain all particulars by writing to Dr. Myers, or to Professor Halliburton, at King's College.

The authorities of Yale University, U.S.A., have invited Dr. Sherrington, F.R.S., Holt Professor of Physiology in the University of Liverpool, to succeed Dr. J. J. Thomson, F.R.S., Professor of Physics in the University of Cambridge, as Lecturer under the Silliman Memorial Endowment. The lectures will be delivered at Yale University in the spring of next year.

The action, Bayliss v. Coleridge, is down in the list of the High Court of Justice for hearing, and is likely to be reached early next week. It will be remembered that the action is brought by Dr. W. M. Bayliss, Assistant Professor of Physiology at University College, London, for slander and libel arising out of certain statements made by the Hon. Stephen Coleridge in a speech delivered at the annual meeting of the National Antivisection Society held in St. James's Hall on May 1st, 1903.

Ireland.

The Medical Profession and the Temperance Question.

The quarterly meeting of the North of Ireland Branch of the British Medical Temperance Association was held on October 30th in the Medical Institute, Belfast. Dr. Kevin, President, occupied the chair. After some routine business, a discussion on the attitude of the medical profession towards the temperance question, was introduced by Dr. Kevin, who showed that the attitude of the profession had greatly changed of late years, and that it was now generally admitted that alcohol was quite unnecessary and even harmful in health, while even as a drug in disease alcohol was regarded as useless or even harmful in many cases where formerly it was held to do good. Dr. Norman Barnett felt that the profession ought to speak their mind more freely on the subject, since the public were awakening to its harmful influence. Dr. Henry O'Neill hoped the members of the profession would use the great power they possess in their consulting rooms to battle against intemperance. Dr. McMurtry advocated the use of the profession's knowledge and power in a wide and general sense as well as in personal influence.

Supposed Case of Small-pox in Belfast.

A young man who had arrived from Glasgow on October 28th took ill during the day and was removed to the Union Hospital. The nature of the symptoms pointed to small-pox, and he was immediately removed to the small-pox hospital at Pardysburn, where he has since being doing well. Inquiries were immediately set on foot to discover all those who had come in contact with him; a large number were vaccinated and some sent to the intercepting hospital at the Twin Islands.

Cork Medical and Surgical Society.

This Society, which is in a most flourishing condition from every standpoint, has entered upon its work for the session 1903-4. According to custom, the annual dinner took place on October 24th. It was attended by a large number of members and guests, and a thoroughly enjoyable evening spent. On October 28th the first business meeting was held, when the President of the Society, Dr. J. Cotter, delivered the inaugural address on a Plea for Earlier Operation in Certain Abdominal Cases. The meeting was well attended and a most interesting winter's work is anticipated.

Queen's College, Cork.

Queen's College, Cork, has come out well as regards the honours list in the recent examinations held by the Royal University of Ireland. Two of the new M.D.'s are Queen's College men; the first place in all Ireland and the only exhibition awarded at the M.B. Examination was won by a Cork student, while in the First and Third Examinations in Medicine honour men from Cork swell the list. As regards the passes, Queen's College, Cork, claims a large proportion of the whole. This is most interesting in view of the fact that in order to settle the university question it is proposed to demolish the above College, and, of course, with it the Medical School. It is felt in Cork that the Government will never, at a time when new universities are the order of the day, sanction the sweeping away of a medical school whose teaching and clinical instruction is second to none in Ireland. It is urged that Captain Shawe Taylor can hardly be justified in believing that by depriving such a large section of Ireland of a good medical school he could possibly bring "the highest education within the reach of all Irishmen."

Granard Union.

The guardians of this Union have declined to obey the orders of the Local Government Board to proceed to the election of a new Master. It was openly stated that "it is still a fight for the nuns, and the Local Government Board would have dissolved us long ago only they knew that." It is very plain that there is a widespread organization in the district to hamper in every way the administration of the law as it affects the nursing in workhouse hospitals. The superior authority is openly defied; the position is becoming farcical.

If the Local Government Board does not at once dissolve the local authority and appoint paid guardians the declaration of one of the guardians already quoted will be accepted as true.

Scotland.

CONGRATULATIONS TO SIR WILLIAM TURNER.

SIR WILLIAM TURNER, K.C.B., Principal and Vice-Chancellor of the University of Edinburgh, was the guest of the Edinburgh Cap and Gown Club at their first monthly meeting on the evening of Saturday, October 31st. The Right Hon. Lord Kingsburgh, K.C.B., Lord Justice Clerk of Scotland, presided, and about ninety members and guests were present. After the toast of "The King," Lord Kingsburgh proposed the health of the guest of the evening. It had, he said, been their happy practice for some years, when any of their fellow citizens had attained to any high position, or had passed from one high position to another, to do themselves the satisfaction of wishing him godspeed and success in his new appointment; and he was sure of this, that there was no one to whom they would more readily do so than their friend Sir William Turner. He succeeded Goodsir as Professor of Anatomy in Edinburgh University, and had had in that position certainly as distinguished a career as any medical professor in the whole country. But, while devoted to his subject, and showing himself to be not only a great student, but also a most able teacher, turning out a vast number of students who had done credit to his teaching and to their University, his labours were not limited to the work of his own class and his own department. All of them who had had to do with the government of the University knew quite well that no one ever devoted himself more earnestly to the interests of the University as a whole than their guest. They had had the benefit of his indomitable industry and great personal sagacity in the University Court, and for the great progress that had been made in university affairs they had to thank Sir William Turner for having given most excellent and valuable services. He could not but express his own personal gratification with the appointment of Sir William Turner to the Principalship of Edinburgh University, because all connected with that institution, from the University Court down to the youngest student, would have felt it to be a great misfortune and a great injustice if a man who had done so much for the University, and had endeared himself so much to all associated with it, had been passed over for somebody else as its Principal. Sir William Turner had spent his life in that University, and it was quite natural that all who knew his work for it should desire to see him placed at its head. They rejoiced to see him in that dignified position, and they felt that in having him as Principal they had a man who would do honour to the University, which, he was confident, would never be better served than by their friend, Sir William Turner. Sir William Turner, after the toast had been pledged with much enthusiasm, replied in a speech of reminiscences.

HONOUR TO SIR WILLIAM MUIR.

The medal of the Royal Asiatic Society has just been conferred on Sir William Muir, the late Principal of the University of Edinburgh. The triennial medal, which is conferred by the Royal Asiatic Society on some noted statesman, traveller, military man, or scholar, is a rare and highly esteemed honour. His advanced age prevented Sir William Muir from journeying to London to receive the medal, but Lord Reay, writing to Sir William, says:

> It gives me much pleasure herewith to tender you the medal of the Royal Asiatic Society. It is the highest distinction which the Society has in its power to confer on an Oriental scholar, and I am sure that you will appreciate the distinction conferred on you by the Society. I consider it a privilege to act as their representative in asking you to accept it, and I greatly regret that circumstances do not allow of giving a more ceremonial character to the presentation in accordance with the wishes of the Society.

ANAESTHESIA AND THE TEACHING OF ANAESTHESIA IN EDINBURGH.

About two years ago the Court of the University of Edinburgh, on the recommendation of the Medical Faculty, appointed Dr. T. D. Luke to be Anaesthetist and Instructor in Anaesthesia and Anaesthetics to the University Surgical Wards of the Edinburgh Royal Infirmary. The instruction given by Dr. Luke is open to all students attending the class of clinical surgery. The instruction consists of (*a*) six lectures on the theory of anaesthetics; (*b*) administration of anaesthetics by the student under the supervision of the special instructor or some other qualified and competent gentleman. Students in order to obtain a special certificate must have attended at least four of the six lectures, and must produce evidence of having administered anaesthetics under the superintendence of the special instructor or other qualified gentleman in not less than ten cases. At the close of the course the student who has fulfilled the above conditions receives a certificate. Dr. G. W. B. Daniell has recently been appointed instructor in anaesthesia to the students attending the surgical wards under the charge of Mr. Cathcart. With regard to other infirmary surgical wards, matters are in a transition state. It must be added that to Professor Annandale in the first instance, and now to Mr. Cathcart, the credit is due of having appointed a skilled anaesthetist to give instruction to students on the selection and administration of anaesthetics. The managers of the Royal Infirmary have shown some indifference in regard to this important part of surgical procedure. They neither appoint nor pay a single anaesthetist, as do all the great London hospitals. This is not as it ought to be in any important hospital, much less in a hospital which mainly owes its position and pre-eminence to the fact that it is an integral part of a great medical school. We are informed that in the year 1901, 2,901 operations were performed, while in 1902 the number was over 3,000. We have been unable to discover with any degree of accuracy the number of deaths under anaesthesia in these two years. Here, again, the Edinburgh Royal Infirmary compares unfavourably with such a hospital as St. Bartholomew's, for instance, which has systematically published in its annual reports for a period of twenty-six years not only the number of deaths under anaesthesia, but notes of the important points in connexion with each case.

In the Extramural Gynaecological Department of Royal Infirmary Dr. D. C. A. McAllum holds the official position of instructor in anaesthetics. Students are taught by clinical and practical demonstrations in the Royal Edinburgh Hospital for Sick Children. In March, 1900, Dr. McAllum was appointed anaesthetist to the hospital by the directors, and he is paid a fixed annual salary by them. No systematic instruction in the use of anaesthetics is attempted. Dr. McAllum informs us that from March, 1900, to October, 1903, he administered anaesthetics 1,550 times. There were 4 fatalities—sarcoma of kidneys, January, 1901; general suppurative peritonitis, January, 1902; inguinal hernia, March, 1903; amputation at knee, September, 1903. In all these cases chloroform was first used, and mixture of ether and chloroform subsequently. Chloroform is the routine anaesthetic; sometimes chloroform and ethyl-chloride ether for short operations.

In the Dental Department of the Royal Infirmary, begun eight years and a-half ago, both Dr. Guy, the Surgeon to the department, and his assistant Mr. J. H. Gibbs, F.R.C.S.E., are skilled anaesthetists, and students receive careful instruction from, and practise under the supervision of, these gentlemen. There are not less than 1,200 operations under anaesthetics every year. For extractions up to four teeth gas alone is used, over that number gas and ether in the proportions of 25 per cent. gas and 75 per cent. gas and ether. In addition, ethyl chloride both as a local and general anaesthetic, and as general anaesthetics ethyl chloride with gas, somnoform, and somnoform and gas, have been used. Chloroform is not used at all in this department, the great object of the surgeon in charge being to demonstrate that its use in dental surgery is never necessary. During these eight and a half years there has been no accident with anaesthetics, a pair of tongue forceps or artery forceps to draw forward the tongue has never been used, nor has a sponge or swab ever been used in the mouth. All the operations have been done with two pairs of forceps. In this relation it may be of interest to note the anaesthetics used at the Incorporated Edinburgh Dental Hospital and School during the last six years:

	1897.	1898.	1899.	1900.	1901.	1902.
Chloroform	290	293	168	78	61	15
Gas and ether	0	46	447	585	1,741	2,506

Here, also, it has to be added that no accident with gas and ether has occurred during these six years.

KING EDWARD VII SANATORIUM.

Foundation Stone Laid by the King.

The King laid the foundation stone of the King Edward VII Sanatorium, near Midhurst, on November 3rd. His Majesty was attended by Lord Suffield and Colonel Legge, and travelled to the sanatorium by way of Haslemere, where he was received by Viscount Midleton (Lord Lieutenant of Surrey), Sir William Broadbent, and others. At the site of the sanatorium the King was received by the Marquis of Abergavenny (Lord Lieutenant of Sussex), the Earl of Winterton (Chairman of the West Sussex County Council), Sir R. D. Powell, Sir F. Laking, Sir F. Treves, Sir F. Semon, and Sir H. Weber.

Sir William Broadbent presented an address from the Advisory Committee, of which he is the Chairman. The address stated that the sanatorium would command a view over the valley of the Rother to the South Downs. The part of the building to be occupied by patients would be a long two-story building. Each patient would have a separate room, and there would be a balcony upon which the patients could sit out, or upon which the bed in case of need could be wheeled. The total number of beds would be 100, and at His Majesty's suggestion accommodation had been provided for twelve well-to-do patients. Some delay had been occasioned by difficulties with regard to the water supply, but that had been overcome.

The King, who spoke in clear tones which reached the crowd beyond the enclosed space, said:

My Lords and Gentlemen,—It gives me great pleasure to come here to lay the foundation stone of my sanatorium for tuberculosis. When a generous donor, whom I regret I am not allowed publicly to thank, placed at my disposal a large sum of money, I at once decided to devote it to the erection of an open-air sanatorium, having been so greatly impressed with the immense benefit which institutions of this nature conferred on those suffering from pulmonary diseases. It is my hope that by these means the malady may be arrested in the case of not a few of those who will be treated in the institution, while I further trust that on their return home, by diffusing among their relatives and friends a knowledge of the infinite importance of fresh air and sunshine in maintaining health, the conditions under which in so many homes tuberculosis flourishes will be sensibly diminished. I note with satisfaction that the site which my Committee have secured fulfils all the essential requirements of a sanatorium, and I trust the sandy soil, the southern aspect, and the pine trees which give protection from the north and the east, will assist in restoring health to the inmates of the institution. I am aware that this site has not been chosen without investigating many others, and I thank my Committee, and especially among them Dr. Theodore Williams, for the many visits which they have paid to other possible sites in various parts of England. You, Sir William Broadbent, have alluded to the difficulty experienced in obtaining a satisfactory supply of water, and to the delay which has in consequence been caused in commencing the building of the institution. This was unavoidable, for without a proper supply of water an otherwise excellent site becomes valueless. I am glad now to know that, through the ingenuity and skill of Mr. Brough Taylor, all difficulties have been overcome, and that an ample supply of absolutely pure water has been obtained. I observed with satisfaction in driving here the condition of the road leading to the institution which has recently been constructed The great rapidity with which this has been completed, under the supervision of Messrs. John Aird and Sons, is, I hope, an earnest of the way in which the building of the sanatorium itself will be pushed forward now that all preliminary difficulties have been overcome. You have alluded in general terms to the character of the building which will be erected. As you have rightly stated, it will be for the accommodation, not of the very poor—they are already being provided for—but of those of slender means who are unable to meet the expenses of prolonged residence in private sanatoria. A certain number of beds will also be reserved for more wealthy patients. I am glad to know that while no necessary comforts which will add to the well-being of the patients will be omitted, there will be a total absence of all luxury, and of expenditure of money on superfluous appointments. I regret that it was not possible for the Queen to accompany me here to-day. Like myself, she is deeply interested in the fight against tuberculosis, and has proved it by permitting the Queen Alexandra Sanatorium at Davos to be called by her name. We both of us pray that the institution may receive the blessing of God, and that those who come to reside here may find renewed health and strength to enable them to resume their duties in the world.

The King then laid the foundation stone and "proved" it in the recognized manner. The religious ceremony connected with the laying of the stone was conducted by the Bishop of Chichester, and, after the King had departed with the usual honours, the company dispersed to inspect the site under the guidance of members of the Committee.

The Site of the Sanatorium.

The site of King Edward VII Sanatorium consists of 151 acres on the southern slope of Easebourne Hill, almost coterminus with the tract marked as Lord's Common on the ordnance map, lying six miles south of Haslemere, and about four from Midhurst. The ground slopes gently to the south, and is well wooded with pine trees, the western border consisting of open moorland ending in a ravine. The most southerly portion of the site consists of park-like ground of considerable extent, and on the upper part of this, backed by lofty pines at an altitude of 495 ft., the sanatorium is being erected, with an extensive view over the south downs, reaching as far as the Chanctonbury Ring. This spot is sheltered to the north and east by the rising ground and the pines, and is also to some extent screened to the west and south-west. The large tract in front is well sheltered, and will be laid out as gardens. A series of walks will be cut in the pine-wood and moorland, not only commanding picturesque and fine views, but graded as required for the treatment of patients, so that it will be possible to prescribe the right gradient for each degree of lung power.

The soil is the lower green sand of the lower cretaceous series. Water is supplied from the vicinity of the site, and the minimum supply of 20,000 gallons a day is assured even in dry seasons, as there will be generally sufficient to yield 60,000 gallons.

The climate of the district is largely influenced by proximity to the sea and by the shelter from the hills. It is mild and equable. The annual rainfall is 30 in., and the average number of hours of sunshine is 1,689 for the year, and 35 for the week.

The primary object of the sanatorium is to provide for sufferers from phthisis belonging to a class above the very poor—teachers, governesses, and members of other ill-paid professions, clerks, shop attendants, and the like—for whom no provision in sickness of this kind exists. But since the sanatorium was intended to be the best which could be constructed, the King did not think it right that those members of the community who could afford to pay for good accommodation and skilful treatment should be entirely excluded from the benefit of the institution. The architect, Mr. Percy Adams, and the Advisory Committee, consisting of Sir W. Broadbent, Sir R. D. Powell, Sir F. Laking, Sir F. Semon, Sir H. Weber, Dr. C. T. Williams, Lord Sandhurst, Sir F. Treves, and Colonel Lascelles, have had first to keep in view the presence of two classes of patients for the sanatorium; a small number of the "well-to-do" and a large number of the "less well-to-do," and also the desirability of separating the more active and robust patients from those in advanced disease or suffering from fever, who would require more nursing.

The plans of the sanatorium show that it will be divided into two distinct parts—the administration building and the patients' building connected by a broad central corridor, both buildings being planned upon parallel lines east and west. The administration building has a main central entrance to the north with accommodation for waiting, consulting, and other rooms for medical officers. On the first floor provision will be made for living rooms for the medical officers, and on the second floor will be the bedrooms for nurses and servants.

The patients' building is divided into three distinct blocks to be connected by corridors. On the ground-floor of the centre block will be the recreation rooms for the necessitous patients, and the wards will be on the first floor, with two rooms for patients of the well-to-do class. All these rooms will have a balcony facing south, 8 ft. wide, so arranged that each patient can have a part screened off for his or her use with canvas fall-down blinds. There will be a covered promenade for use in wet weather 50 ft. long. Upon the top floor of the central block accommodation will be provided for twenty-two necessitous patients too ill to leave their rooms; this block will have a balcony 8 feet wide facing south.

The remaining portions of the patients' building will be arranged for bedrooms, nurses' rooms, linen rooms, bath rooms, etc.

Introductory Addresses

AT THE

OPENING OF THE MEDICAL SCHOOLS.

UNIVERSITY COLLEGE, BRISTOL.

By Sir WILLIAM RAMSAY, K.C.B., F.R.S.,
Professor of Chemistry, University College, London.

MEDICAL EDUCATION.

I HAD once the good fortune to listen to a sermon preached in a collegiate chapel by a very distinguished man, of which the text ran thus: "What shall it profit a man if he shall gain the whole world and lose his own soul?" The preacher said that every one among his hearers would be familiar with the usual interpretation attached to these words. He did not intend to dwell upon it; but he suggested that for the young men he was addressing his text might be paraphrased thus: "What shall it profit a man if he succeed at every examination, if he carry off every possible honour, and if he at the same time lose his spirit of originality and become a mere question-answering machine?" Some of you have been successful in your year's work and have carried off honours; some—the majority—have failed to be first; let the former see to it that they do not lose their souls, and let the latter not be disheartened; "the race is not always to the swift nor the battle to the strong."

After all, the world cares little for what a man knows; it values him by what he can do. If there is anything to be gained by the consciousness of having benefited one's fellow creatures, having helped to increase knowledge, having left the world better by one's short passage through it, it is achieved by doing. Though a man have a mind stored with all the lore of the centuries, though he may be able to produce his knowledge of every subject on demand, it leads to little unless he can use that knowledge so as to further the progress of civilization, to help his fellow mortals to be better and happier. I am addressing an assembly consisting largely of medical students, and I will therefore pass from the general to the particular.

Those of you who are beginning the study of medicine have a long period of study before you. I refer to the time which you will spend as formal students—at least five years. I hope you will not be dismayed to be told that if you are to do justice to your calling you must devote your lives to study. Medicine and surgery are not stationary; new methods of curing, and, what is better still, of avoiding disease, are continually being discovered; new operations are successfully tried, and in time become the commonplaces of surgical practice. With these advances you must keep in touch; and it is only by reading, by occasionally visiting hospitals where such cases and such operations are studied, that you can keep abreast of the advances made in your profession.

But it is not of such future studies that I am now speaking. I wish to dwell for some minutes on the course of study laid down for medical students during their stay at a medical school and before they are qualified practitioners. As you know, it lasts for five years. The fifth year was added to the former four years' course of study, because it became evident that nowadays a good working practitioner could not be turned out in a shorter time than five years; the subject has grown, and the demands on the part of the public that medical men shall be competent have also increased. The number of examinations, too, is greater than it used to be.

I have no right to speak regarding the purely professional years of study of a medical student. I am, it is true, a doctor of medicine, but my claim to the title exists only on parchment. But I have had many years' experience of the early so-called "scientific" training of medical students, and my observation has led me to certain conclusions, which I now venture to bring before you.

The dictum "Ars longa, vita brevis" applies with special force to the student of medicine. During his five years' existence he has to master chemistry, physics, zoology, botany, anatomy, physiology, materia medica and pharmacology, pathology, medical jurisprudence, obstetrics, medicine, and surgery—twelve large subjects in five years, or five months for each. There are some men so happily constituted that they do not suffer from dyspepsia. But these men are rare. I will confidently affirm that any average medical student who is troubled by a conscience which makes him attempt to swallow all the mental pabulum administered to him, will exist in a state of chronic mental dyspepsia. But fortunately few men consent to swallow all that is put before them.

Now can nothing be done to lessen the load? As a chemist, I am convinced that the sciences of chemistry and medicine are very closely allied. The human organism is a large chemical manufactory, where the fuel consumed is gradually burned to carbon dioxide, water, and urea and its concomitants; the chemical energy in the food is converted into equivalent energy in the form of heat, kinetic energy, and possibly other forms of which we have less knowledge. The material is changed during this process of assimilation and rejection; many intricate compounds are formed as half-way products; and the worn-out machinery of the manufactory is constantly removed and replaced. Some of the processes which go on in this laboratory are to some extent understood; most are still under investigation, and but little known; but all are the legitimate subjects of chemical research. It is the province of the chemist to ascertain not merely what compounds exist in the organism, but also the laws and conditions of their transformation. But it is necessary sadly to confess that the compounds are so complex, the changes so intricate, and the laws of change so obscure, that only a small part of the field has been explored.

Is it possible to give a medical student such a training in chemistry that he can make use of discoveries relating to the chemical mechanism of the human body and its functional disorders, so as to be able to form an intelligent opinion as to which suggested remedies should and which should not be attempted? I think that the answer must be a decided negative. Even an accomplished organic chemist is far from being in a position to follow the most recent researches in physiological chemistry; the changes which occur in the organism relate not merely to the fact that products are transformed, but to the conditions under which they are transformed—to physical as well as to organic chemistry. And the number of men able to handle both divisions of the science is a small one; they are to be found only among the most distinguished chemical and physiological investigators in the world. The problems to be solved are almost infinitely complex, and up to the present they have received inadequate study.

To give you an idea of the intricacy of such questions, let me mention the fact that such a change as is produced by the action of the pancreatic juice is conditioned by catalysis—the action of minute quantities of compounds of unknown chemical composition in accelerating or retarding the rate of chemical change; a subject about which little is known, and that little is only empirical; that the transfer of materials is conditioned by osmotic pressure, itself a subject of which the laws have been discovered within the last fifteen years, ans about which much remains to be learned: that the substancet changed are albuminoids, a class of bodies which the chemisd has avoided, until recent years, owing to their unattractive (that is non-crystalline) nature, and which has only recently been explored by Professor Emil Fischer, of Berlin; and you will agree with me that however much definite knowledge is to be desired, we are far from having attained it. We may, therefore, conclude that however desirable it may be to enable the chemical pathologist and physiologist to master these subjects, he must be a jack-of-all-trades first, and a physiologist and pathologist later.

What then is the use of chemistry to the medical student? Should it form part of his curriculum at all? Must he learn physics, zoology, and botany too? Do they bear on his profession?

We must, I think, recognize the fact that of the medical students who pass through our medical schools at least 95 per cent. become general practitioners; at most 5 per cent. become specialists or investigators. For the latter it is impossible to place the standard of knowledge too high. Should we wish to pass regulations on the scope of their education, they might be formulated thus: Such men should first take a science degree, specializing in chemistry; this requires at least three, and better four, years' continuous work; they should be examined at an intermediate stage in chemistry, physics, and its necessary mathematics, zoology, and botany, so far as the elements of these sciences are concerned; and later they should specialize in organic chemistry, with special

attention to physical methods. After, or even before, graduating in science, they should carry out some special research dealing with these two branches of chemical science. Then, and not till then, should they begin the formal study of a medical career. Their period of incubation, if I may be permitted the expression, should not be less than eight, or even nine, years. Beginning at the age of 17, at the age of 28 a man may hold a demonstratorship, at 32 a chair: or if he choose a specialist's career, at 28 he may assist a specialist, at 35 he may begin to acquire a specialist's practice. But what of the 95 per cent.? How are they to be trained?

To remove the study of science from the curriculum would be a mistake. Not merely every medical man, but every educated man, should be able to appreciate to some extent the development of science and its influence on human thought and endeavour. It is not possible, however, to push back these studies into the schoolroom. The mind of a boy of 14 is not developed sufficiently to enable him to study profitably the doctrines of chemistry and physics. I am all in favour of object lessons in school: of playing with scientific toys; but it is no more possible to give a youngster education in chemistry and physics than in ethics, or in comparative philology; the mind is not sufficiently developed, and an attempt to do so is like an attempt to feed a baby with beefsteak. A considerable experience has taught me that we have no use for the youngsters who have learned chemistry at school: if they are clever fellows we have to teach them in the laboratory what they should have learned at school, to write legibly, to spell correctly, to express themselves intelligibly, to read simple books in French and German. The schoolboy's "lot is not an easy one," in these days of numerous subjects and constant competitive examinations.

But there is, I think, a way out of this difficulty, and an example will indicate the direction of that way. Every one of my audience, I assume, is a novel reader. And every one, I imagine, who is asked, six months after reading a novel, to tell the story and to give a connected account of the plot, would find his memory at fault. In most cases, I think, it would be a blank: even the name of the novel would be recalled with difficulty. But if any one opens that novel, after reading a very few pages he will become aware that he has read it before. He will probably, after the plot of the story has begun to dawn on him, be able to turn to pages where some soul-stirring scene or some noteworthy expression has struck his imagination during his first perusal. In short, the novel has produced a mental impression, even though all details have vanished.

Now I contend that what we should do with our average medical students as regards science is to give them such a mental impression. I should keep their curriculum in science, so far as relates to chemistry, physics, and biology; but I should not expect them to acquire these subjects up to examination pitch, that is to be able, at the end of the session, to have at their finger-ends the minutiae required by the usual examination paper. I think it was Lord Chesterfield who was asked whether Latin was a necessary branch of knowledge for a gentleman, he is said to have replied: "Every gentleman should have learned Latin." Although I do not agree with Lord Chesterfield as regards Latin, I do think that every educated man should have some idea of physical science.

My proposal is therefore that the first year of a medical student's curriculum should, as now, be devoted to hearing lectures on chemistry, physics, and biology: that he should be required to do the usual class work, including frequent short examinations and exercises, to make sure that he understands what he is learning; in a convenient phrase, "that he should attend the courses to the satisfaction of his teachers," but that he should not be required to show that he has crammed up the subject so as to satisfy an external examiner at the end of his year of study.

It will no doubt be argued that this course throws much responsibility on the teacher, and that some teachers cannot be trusted to act honourably; that "signing up" is an unsatisfactory criterion of satisfactory attendance, and that no real guarantee of training would be secured. Well, I will reply to this by pointing out that there are two countries in the world besides England where the testimony of the teacher is not accepted; these are New Zealand and China; and I am afraid I am doing an injustice to China, for I believe that they have within the last few years adopted German methods.

Again, I may be told that abroad the passing of a State examination is the only door to medical practice. True, but the State examinations do not relate to science studies, but only to ascertaining whether the candidate can be trusted to practise without undue danger to his fellow creatures. It is a qualifying examination in medicine and surgery; not in their concomitants. It is the universities which deal with science, and the examinations are wholly in the hands of the teachers. It is only by trusting the teachers that a spirit of responsibility and a sense of honesty can be attained; and if it is a teacher's duty to instruct students, it is surely also his duty to see that they profit by his instruction. And if the teacher is carefully chosen—a man who has had experience in a subordinate post, who has shown himself capable of advancing his subject and of creating enthusiasm in his pupils—he may safely be entrusted with the much less onerous duty of testifying which of his pupils has profited by his instruction, and which have failed to profit.

I therefore suggest that although a year is far too short a time to make a chemist, a physicist, or a biologist, it is not too short a time to create a mental impression on a medical student which will be of great advantage to him in his future career. But if, as has heretofore been the case, the qualification required is that the student has been successful in an examination held in such preliminary studies, then we must face the fact that the burden is too great; that most students are casual in their attention throughout the year, and trust to make up lost ground by a rapid bout of cramming shortly before the examination, and "lightly gained, lightly lost." What is quickly learned is superficially learned; what is slowly absorbed remains as a permanent possession. I know that the medical student's burden is already heavier than he can bear; I know also that a strong feeling exists that more time should be devoted to purely professional subjects, and I have attempted to suggest a remedy.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

By Sir Lambert Ormsby.

President.

THE TRAINING AND PROSPECTS OF THE IDEAL PHYSICIAN.

Sir Lambert Ormsby commenced his address by a consideration of the reasons which seemed to him to justify the maintenance of the custom of an introductory address at the commencement of each year's work, and then turned to the text which he had chosen as the starting-point of his general address. This was the training and future prospects of the ideal physician. The student should early set before him an ideal and, paying due respect to the performances of the early pioneers of medicine, should crystallize his ideas by taking the career of some successful leader of medicine and endeavouring to ascertain what factors of industry, skill, tact, or all three, had contributed to his success, and then try to acquire for himself corresponding qualities. Having lightly passed over this portion of his subject, Sir Lambert Ormsby passed on to the future prospects of the physician, making that term cover all practitioners of medicine in any branch, and urging his auditors, whatever branch they might take up, to aim always at being good doctors and courteous gentlemen. The careers open were private practice, the navy, the army, the Indian Medical Service, foreign appointments, ship surgeoncies, and the Irish Poor-law service, but it would be impossible to deal with them all, and he would therefore only touch upon the Naval Medical Service, the Indian Medical Service, and the Irish Poor-law Medical Service.

The Naval Medical Service.

This was a service which ought to be the most popular of all, but it was not: so far there were at least six points, on which those who joined it had definite and good ground of complaint. Some of these had, to a slight extent, been remedied by recent regulations, but in the main they persisted. These grievances were the lateness of promotion as compared with the executive branch, unfairness in the regulations regarding home and foreign service, by which a medical officer after eight years abroad was usually appointed, after merely six weeks' leave, to what was nominally home service, but under circumstances which practically made it impossible for him to see anything of his family. Others were the refusal to accord to senior medical officers disciplinary control over the sick berth staff, and the fact that it was still in the power of any captain to override an established custom, by which the medical officers of ships lying aside one another in harbour could replace one another by arrangement, the custom known as "medical guard."

The Indian Medical Service.

Sir Lambert Ormsby quoted from the British Medical Journal of October 3rd the improvements lately effected in this service of which he generally approved, but expressed the hope that some of the advantages now offered would be made retrospective. Certain improvements still remained to be made, but eventually he believed the service would offer as attractive a career as it had done in former times.

The Irish Poor-Law Medical Service.

Dealing with this subject, Sir Lambert Ormsby spoke as follows: Last year I thought I said all that the head of a College could possibly say to you on the subject. But twelve months has proved to me that if the Poor-law medical officers are to be supported in their manly fight against injustice and dishonour it behoves all those in any position in the profession to speak in season and out of season against the gross treatment which is meted out day by day to our brethren whose unfortunate lot it is to serve in the Irish Poor-law Medical Service. The Right Hon. Mr. George Wyndham, M.P., the able Chief Secretary for Ireland, has since this time last year piloted a most successful Bill through Parliament for the "better union of hearts," and for the settlement of the land question and for the satisfaction and contentment of all parties concerned. But if I am asked what has been done for the Irish dispensary doctor, I regret to be obliged to say—nothing.

Now let me enumerate the grievances and disabilities which an Irish dispensary doctor labours under at the present time, as related to me by one who has been an Irish dispensary doctor for over thirty years. His first and most pressing grievance is that in many instances the salary is not sufficient to pay the expenses of working the district. Then the law declares him qualified for superannuation, but leaves h m entirely in the hands of men who are a changing body, liable to be swayed by the transient influences of the moment, and who perhaps resent a dispensary medical officer as being, in the words of a popular M.P., a "blue-blooded official." When this is the feeling of a member of Parliament towards our dispensary medical officers one can easily guess in what estimation he is held by the rank-and-file. The dispensary officer becomes sick and tired of the everlasting abuse showered upon his colleagues at the different weekly meetings of the Boards of Guardians throughout the country, and the treatment of the Local Government Board is no better. They heap new duties on their medical officers, and when for once a generous and reasonable Board of Guardians grants an increase of salary they will not sanction it. Then the mode of election is corrupt, root and branch. Think for a moment of the position involved in having to solicit the votes of members of boards where he is fully conscious that the most incompetent duffer who had local or political influence would beat the President of the Royal College of Surgeons for a dispensary or union if he were a candidate for one.

The pressing grievances of the service are therefore narrowed down under six heads:

1. Insufficient salaries, which should raised to at least £200 a year.

2. Travelling expenses. A medical officer ought not to be compelled to pay the travelling expenses incurred in his public duties. No other service is asked to do so without payment.

3. Annual holidays. To amend Dispensary Rule 28 so as to give to medical officers the leave the Local Government Board intended as a matter of right they should have—namely, a full month's holiday in the year.

4. Incidence of expense. To repeal Clause 6 of the Local Government Amendment Act so as to permit the recoupment from imperial sources of the full half of the salaries paid to medical officers, and not limit it as it does now to the salaries previously paid.

5. That superannuation to medical officers be paid on the Civil Service scale, and that it should be mandatory and not optional.

6. Mode of election. This should be placed under Civil Service rules, and each candidate should enter the service by competition after examination.

The amelioration of the present conditions rests with yourselves. Many of you will be shortly qualified, vacancies occur nearly every week, but I urge you in the strongest manner to refuse to enter a service which imposes such degradation on its officials. Never before in the history of Ireland has the service risen as one man to revolutionize old traditions by joining the Irish Medical Association, and thus enroll recruits who before were afraid to utter one word of complaint lest dismissal should follow.

You ought to prefer to break stones on the roadside sooner than enter a service which employs you on starvation terms, and the recreants who are mean enough in face of such warning to compete for dispensaries at a lower salary than £200 a year deserve to be regarded as unworthy of the name of men. If they are subsequently treated badly it is only the proper punishment of persons so far forgetful of the duty they owe to their profession and the respect they owe to themselves.

I am well aware of the responsibilities I incur as President of this College in speaking in such condemnatory terms of a service, even though I believe it to be the worst in Europe. But I urge you to stick together; become members of the Irish Medical Association; be determined and the Government must give way, if the sick poor are to be properly relieved and the service made efficient.

Contingencies of the Future.

The speaker then turned to the subject of medical defence and provision for the contingencies of the future. Every medical man, he thought, should join the Medical Defence Association, and the young medical man should become an subscriber to the Irish Medical Benevolent Fund; the first fees he earned after qualification should be handed to it.

General Considerations.

Sir Lambert Ormsby devoted the rest of his address to a consideration of the position which he considered medical men should take in the management of the affairs of the nation. The profession had been too modest in the past, but scientific medicine should and would take an exalted position in the world when the component parts of the great ship of State were properly adjusted. The profession of law, with its legal peers and Lord Chancellors; the army and its military lords; and the Church with its spiritual peers, would have to make room for their Cinderella sister Medicine, and a Minister of Health and Sanitary Science must be an appointment of the near future. The speaker concluded his address by an eloquent description of what he had meant to convey by his term of the ideal physician. The profession of a doctor was a noble one, said Sir Lambert, and it should ennoble whosoever practised it, deepening his sympathies and idealizing his life. No man knew better than the doctor the frailties of his fellow creatures; no man had more reason to think pitifully, or severely, or even contemptuously of mankind. But there was no man more broad in his charity, more lenient in his judgements, than the ideal doctor. He heard everything, yet he betrayed no confidence. In many families the doctor was held in as great love and reverence as the priest. He was with them in trouble and in joy, and from his lips issued the fiats of life and death. He must bend his ear to catch the first wailing cry when the infant took up the burden of life, the last tired sigh when the old man laid it down. He had to wrestle with the great foe of humanity at every turn; to him the blanched mother might owe her fluttering life when giving birth to another; and it was he who, when friends were paralysed with fear of contagion, must face the hideous features of cholera, typhus, and small-pox, showing a calm front to the demands made upon his vital energies, and the exaggerated expectations formed of his power to aid, while science stood humbled and impotent in the presence of death. With all his deep learning the ideal doctor was modest; with all his knowledge of the world he was tolerant; he was wise as well as witty, gentle as well as powerful, a tower of strength to the weak, and ever on the alert to shield the reputation of a brother practitioner.

Sir Lambert Ormsby ended his address with the following words: Gentlemen—Many of you are now, as I have said, on the threshold of active life. There is always something that disposes to reflection in communion of mind between those who are on the verge of manhood and one who has already passed its meridian. It is natural, at my age, when looking back at a long life of professional toil and anxiety, that many things should wear a more serious aspect—I might almost say a sadder one—than at yours. Yet I confess that when I see around me so many robust frames and ardent spirits, trained with so much care for the service and commonweal of King and country, I am disposed to view your future prospects as hopefully as you do yourselves. May all success attend you in your future endeavours. May the name

of Irishmen in your safe keeping continue to be held in high honour amidst the nations of the world. And if in the days of your matured success your thoughts should wander back to this day, and to the memory of him who, through the favour of the Fellows of this College, is in the position of addressing you, think of him as of one who, while he lived, never ceased to entertain a warm sense of your kindness and a lively interest in your welfare as true gentlemen, and, as nearly as you can, attain the position of ideal physicians.

OPENING OF THE WINTER SESSION IN THE MEDICAL SCHOOLS.

UNIVERSITY COLLEGE, BRISTOL.

The annual prize distribution in connexion with the Faculty of Medicine of Bristol University College took place on October 30th, the chair being taken by Mr. D. J. Worsley. After the Dean, Dr. E. Markham Skerritt, had read the list of prizewinners, Sir William Ramsay, a former Principal of the College, distributed to prizes to the successful students, and delivered the address published at p. 1236.

After the address a vote of thanks was moved by Mr. N. C. Dobson and seconded by Professor Lloyd Morgan, and carried with acclamation.

In the evening the annual dinner, at which Sir William Ramsay was the guest, was consumed.

HOSPITAL FOR WOMEN AND CHILDREN AT LEEDS.

The new Hospital for Women and Children at Leeds was opened by the Viscountess Mountgarret on October 30th. The old hospital, opened in 1861, had for some time been inadequate for the work.

In future patients will be lodged and treated in the new group of buildings. The old building will be adapted as a residence for the nurses and servants, and for some other requirements of the administrative work of the hospital, until such time as it may become possible to complete the scheme by replacing this older structure by a more suitable and comfortable one.

The Out-patient Department.

This consists of a one-storied block at the extreme north-east corner of the plot. It has a separate entrance, and only communicates with the central block by a small passage. Opening into the entrance lobby are the offices for registration, and small rooms for other similar purposes. The out-patient waiting hall is a large room, 44 ft. by 24 ft., lighted from the top and also by large windows at the east and west ends. Windows open from the dispensary into the waiting hall for the supply of medicine. Along its north side are the consulting and examination rooms. There are two consulting rooms, both of which communicate on the one hand with the waiting hall, and on the other with the examination room.

The Ward Pavilion.

The wards for the reception of in-patients occupy a long two-storied pavilion, extending southwards from the central block. They are arranged in two sets, forming a complete unit on each of the two floors. The space under the ground floor is, owing to the fall of the ground, very extensive, especially at the southern end. This space is left unoccupied, and being freely perforated, allows of a free circulation of air beneath the entire pavilion. The length of each ward is 100 ft, width 24 ft., and height 13 ft. This gives a linear bed space of 10 ft., a floor space per bed of 120 sq. ft., and cubic space per bed of 1,560 cubic feet.

The floors are laid with marble terazzo. The walls and ceilings are prepared with granite silicon plaster, covered with a surface of "Ripoline" enamel. The woodwork is enamelled. All unavoidable projections are rounded, and all angles are replaced by curves. The wards are warmed by large Teale fire-grates in the centre, and by steam coils.

The window surface is large, and all the windows are double. They consist of an outer sash window and an inner one, of which the lower portion is a hinged French window, and the upper portion is hung with hinges at its lower part to fall inwards. Glazed triangular sides prevent side draughts when these are open.

Each alternate double window contains in the enclosed space a steam radiator, with a small ventilating grate behind it, so that, if required, air can be warmed in the space as it passes through from the grating to escape into the ward by the openings above.

The Operation Department.

The operating room measures 24 ft. by 24 ft., exclusive of an arched annex about 12 ft. by 6 ft. It is lighted from the north side by a window 12 ft. in width. It is made up of four sheets of plate glass, arranged one above the other, so that the lowest is vertical and the others at angles, the uppermost being almost horizontally placed in the roof. A good diffused horizontal to vertical light is thus obtained. The artificial lighting is electric, the heating is effected by steam radiators. An extract ventilating shaft is fixed in the south wall, near its upper part.

Along the north wall are fixed lavatory basins and sink. Electric fittings for special lighting and for cauteries are placed midway beneath the window. The floors throughout are of marble terazzo, and in the operation room the floor is slightly inclined to facilitate flushing by a hydrant. All the lavatories and sinks are worked by pedals. A free supply of hot and cold water is always available; but in addition, sterilized water is provided by means of a Kay-Scheerer apparatus, in which the water, after filtration, is boiled by high-pressure steam coils, and for use its temperature lowered by cold water refrigerating coils.

The Maternity Department.

The maternity department occupies a self-contained suite of rooms and the necessary offices situated on the third floor of the administrative department. It is thus one story above the level of the hospital buildings, and is completely separated from the ward pavilion.

There are four wards. One of the larger ones is intended for a labour ward. Of the other three, two will accommodate two lying-in patients in each and the other a single patient; but in case of need they could be used as labour or lying-in wards in rotation. The ward kitchen, bathroom, and sanitary offices are suitably fitted, and all necessary appliances are arranged for the complete service of the department independently of the general work of the hospital.

Accommodation is therefore provided for five maternity patients, who will be admitted under the usual conditions necessitated by the modern requirements of aseptic midwifery. There has hitherto been no special provision for lying-in patients in Leeds.

BRITISH MEDICAL BENEVOLENT FUND.

The following sums have been received in response to Sir William Broadbent's appeal:

	£ s. d.		£ s. d.
Sir William Broadbent, M.D., F.R.S.	50 0 0	Dr. Baskett	1 1 0
Miss Broadbent	5 0 0	Dr. Edward Martin ...	1 1 0
Dr. R. J. Kerby	10 10 0	Dr. Burney Yeo	5 0 0
Dr. H. De Tatham	25 0 0	Dr. J. Stewart	1 1 0
Dr. M. Greenwood	1 1 0	Dr. Thos. Moreton	2 2 0
Dr. Marion Andrews ...	0 10 0	Dr. Price Williams	5 0 0
Dr. M. J. Doidge	1 1 0	M. Cutcliffe, Esq.	1 0 0
Dr. Ragley Owen	1 1 0	Dr. Mary Thorne	1 1 0
Dr. Nixon	5 5 0	Dr. Hector Robinson ...	1 1 0
		Dr. E. H. Hicks	2 2 0

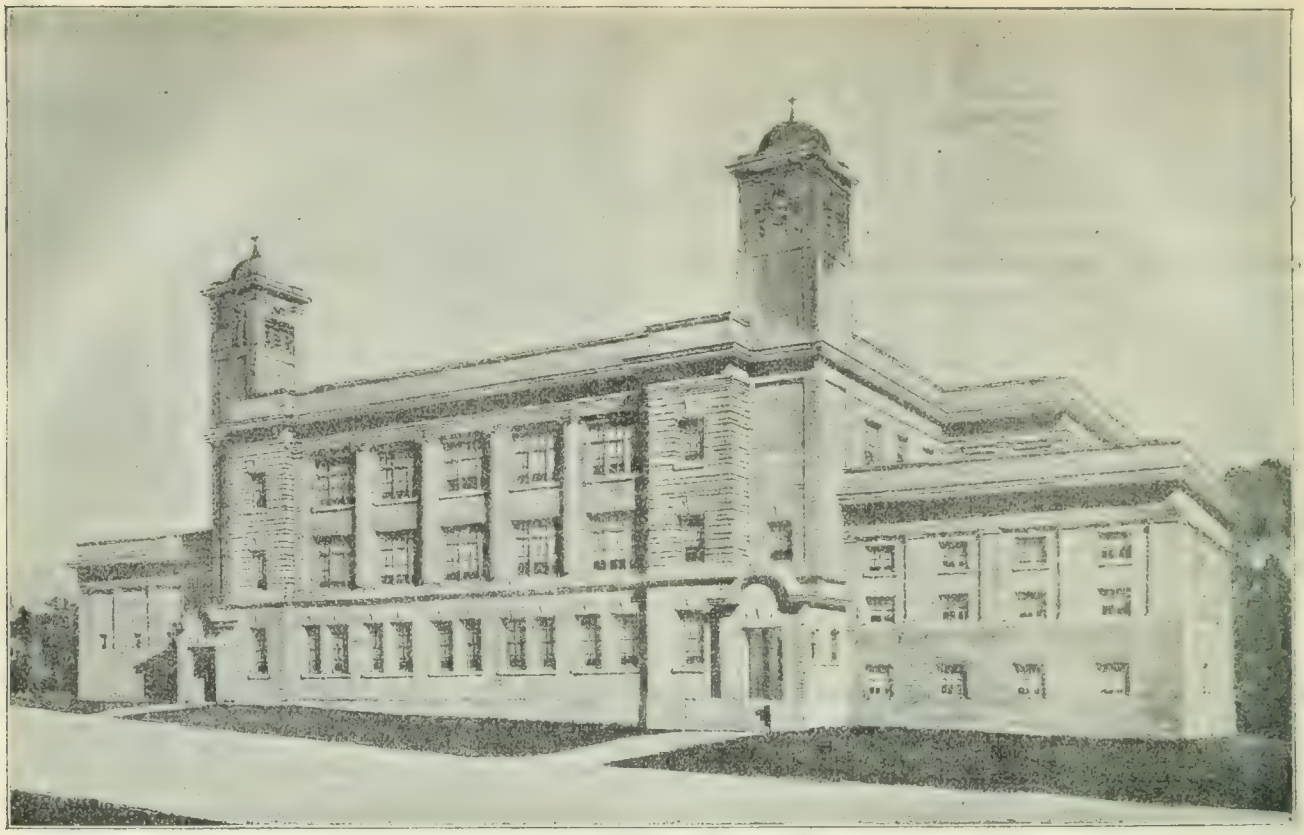
Dr. Satchell offers a donation of 10 guineas on condition that 16 other donations of £5 each, or 8 of £10 each, are received in response to the appeal before the end of December.

The sums thus received do but little more than cover the amounts already granted in relief, and leave little to meet the demands outstanding, which had to be postponed at the last meeting for want of funds, and make no provision for the applications which have been received since, and which will increase in numbers as the winter approaches.

Further help is urgently needed. Subscriptions and donations will be thankfully received by the Treasurer, Dr. Samuel West, 15, Wimpole Street, W.

Bequests to Medical Charities.—Miss Harriet Doxat, of 17, Devonshire Street, Portland Place, W., has bequeathed £3,000 to the Brompton Consumption Hospital, and £2,000 to University College Hospital.—Mr. Frederick Henry Ball of Moseley has left £100 to the Birmingham General Hospital, £100 to the Birmingham General Dispensary, and £100 to the Queen's Hospital, Birmingham.

Hospital Accommodation in Paris.—Official statistics recently collected by order of the French Minister of the Interior show that the total number of beds in the hospitals of Paris is 12,000, a proportion of 1 to 208 inhabitants.



New Laboratories of the Medical Faculty of the University of Toronto.

THE NEW MEDICAL BUILDINGS OF THE UNIVERSITY OF TORONTO.

DESCRIPTION OF THE BUILDINGS.

THE University of Toronto nearly two years ago took up the question of erecting new laboratories for physiology and pathology. The University trustees accepted the recommendation of the Medical Faculty, and the construction was begun in August, 1902. The erection of the buildings proceeded with the rapidity which is so generally attained on the Western continent and so rare of attainment in the old country. Large and handsome, with an architectural dignity well suited to its academic rank, the great stone and brick building has taken only thirteen months to complete, even to the inclusion of all the internal fittings.

The edifice is detached and independent, falling into appropriate series with the biological laboratory and other buildings that surround and front upon the noble lawn of the University *campus*. Trees of fine growth stand near it and about it, as they do about the biological laboratory not far removed from it. The situation resembles somewhat that of the physiological laboratory at Oxford, were that laboratory unfenced by any rail and unobscured by shrubbery, footed upon and facing into the open lawn of the University Park. But the Toronto building is much loftier and larger than the Oxonian. The front elevation is characterized by a tier of columns between which lie in double series large windows handsomely mullioned.

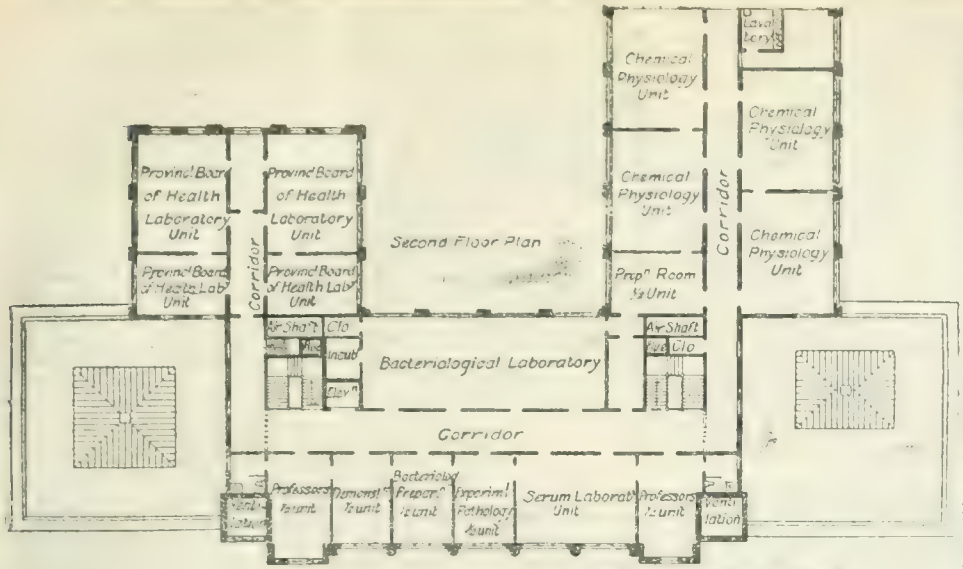
The general plan of the building, as will be seen from the block plans introduced, consists of a centre and two wings running backwards, away from the University *campus* into the timbered edge of the park. But in addition to the large backward-running wings the central mass of the building is flanked on either side by less lofty wing-like extensions. These hold the lecture theatres for physiology and pathology respectively. This arrangement allows the lecture theatres to be lighted from the roofs, and avoids interfering with the lighting of the other rooms in the laboratories.

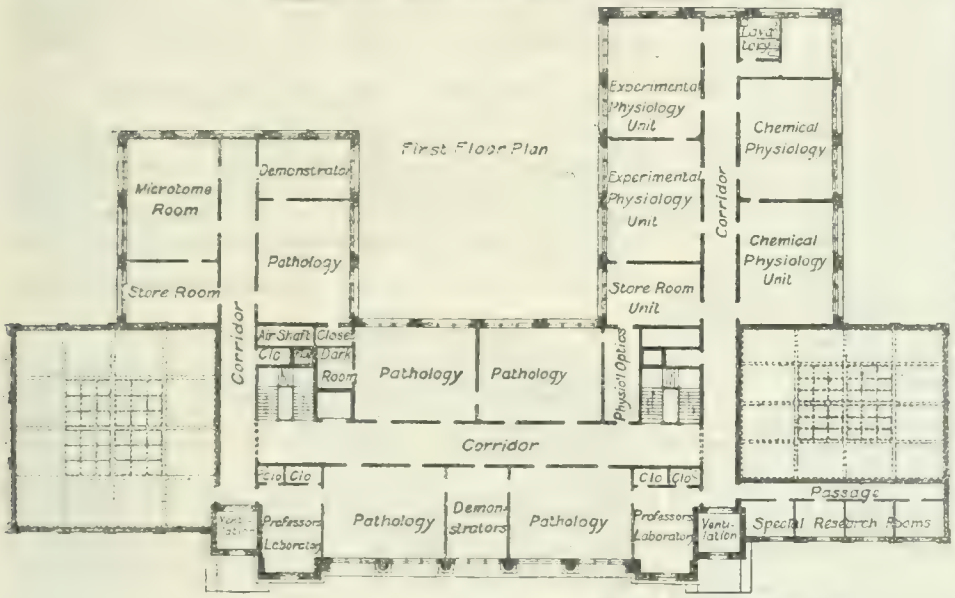
The two large rearward-running wings are five stories in height. The main frontage uniting these is only three stories in height. This arrangement is due to the rear part of the building having its site in a shallow ravine.

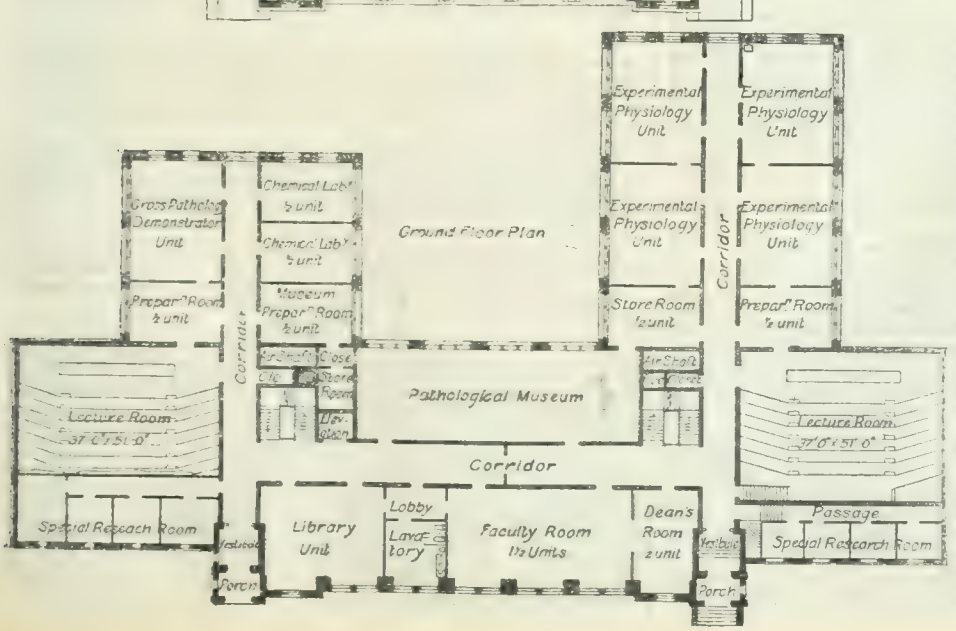
The building, which is of white brick faced with stone, contains, besides rooms purely for laboratory purposes, a fine oak-panelled chamber for meetings of the medical faculty, and a library room, in which many volumes have already been placed.

The internal construction of the greater part of the whole building is according to the plan which has been termed the "unit system." The main features of the "unit system" are all comprehended in the character of the laboratory "unit" room. This must, first of all, be no larger than is required to accommodate readily the maximum number of students whose practical instruction a single demonstrator can efficiently guide and control. It must also be of such dimensions that it can at need be made to serve as a library, or as a reading room, or a small lecture room, or a room giving accommodation and yet privacy for an individual research. The units must be so placed with respect one to another, that by removal of the partitions separating them rooms of larger dimensions may when desired be obtained at minimum cost and in a short time. The dimensions of such a unit are 23 ft. by 30 ft., accommodating twenty-four working students, the utmost that should be under the supervision of a single class demonstrator. The system offers the great advantage of elasticity, for a laboratory director may enlarge or contract according to the needs of the occasion the accommodation provided for his classes. Also, the cost of construction is low, and subsequent extensions and additions can be made without disturbance of the working plan.

In the Toronto laboratories, besides the lecture theatres, sixteen units are devoted to physiology. The remaining twenty-three units are given to pathology and to hygiene. The units are for the most part grouped in pairs on each side of the corridors on the various floors. The walls of the corridors are of brick, but the walls which separate the units from each other are of wood and plaster only; these latter can therefore be removed in a few hours without leaving traces of their disturbance other than those on the line of the fresh plaster added. Each unit communicates directly with its neighbour by a door, and further has two doors opening into the corridors. It is thus possible at any time to form two rooms out of a unit, each of which will communicate directly with the corridor.







The window space devoted to each unit is 242 sq. ft., while the outer wall of each unit measures 420 sq. ft. The window area is therefore nearly three-fifths of that of the outer wall. The terminal units have additional window space, and indeed the lighting throughout the rooms is brilliant, surrounded as they are by the clear bright Ontario atmosphere.

A feature of special interest is presented in the research rooms. The half-unit room forms a convenient individual unit room for most research work. There are fifteen of these half-unit rooms reserved for individual workers carrying on selected investigations. Indeed, the arrangements have been designed with the view of making the buildings a home of research. That this intention will be fulfilled is guaranteed by nothing more surely than by the prestige that the University of Toronto already has secured in that respect, and by the fact that the direction of the new laboratories is entrusted to Professor A. B. Macallum, whose researches on microchemistry are so widely known, and to Professor Mackenzie, the able and energetic pathologist. The instrumental equipment and installation of the laboratories is well provided for, although not yet, owing to pressure of time, complete. The laboratories will, with their equipment, rank among the best for physiology and pathology in the whole American continent, and give an example, worthy the attention of the old country, of the enlightened progress of the great Dominion in matters medical and educational.

The total cost of the building is stated to have been 175,000 dols. (about £35,000).

Inaugural Ceremonies.

By a happy coincidence the opening of the new laboratories on October 1st fell at the same time as the accomplishment of a step of good augury for the welfare of medical education not only in Toronto and Ontario but in the Dominion generally. The two old rival schools of Trinity and of the Provincial University itself have arranged to unite. The authorities of the Medical College and of the University have felt that the interests both of the present and the future would be better served by co-operation than by perpetuation of two rival institutions in medicine in one centre. The amalgamated Faculties of Medicine begin work in these fine laboratories. As was said in Professor Sherrington's inaugural address, the federation is "felt as a matter for mutual congratulation; union means greater strength; and not only that, it means the more effective application of that strength."

We believe that the University of Toronto enters upon this new and enlarged phase of its career in medicine with an entry of first-year students in medicine numbering this October no less than 165, a large proportion of these men having already graduated in Arts.

The gathering at the opening ceremony was most representative, for the list of speakers included Professor Sherrington of Liverpool, Dr. Osler of Johns Hopkins, Professor Porter of Harvard, Professor Chittenden of Yale, Dean Roddick of McGill, Professor Barker of Chicago, Professor Abbott of Pennsylvania, Professor McMurrick of Michigan, Professor Welch of Johns Hopkins, Dr. Park of Buffalo, and Senator Sullivan of Queen's. Present also were Professor Goldwin Smith, D.C.L.Oxon.; Mr. Alfred Mosely, C.M.G., of the Mosely Education Commission; Hon. W. Charlton, the Minister of Education; Dean Reeve; Professors Adami, Cameron, Keen, McPhedran, Macallum, Mackenzie, Rudolf, Ramsey Wright, and many others.

After Dr. Hoskin, K.C., Chairman of the Board of Trustees, had opened the proceedings by handing over the building to Professor Loudon, Professor C. S. Sherrington, F.R.S., of Liverpool, delivered the inaugural address, which is published at p. 1193.

At the conclusion of Professor Sherrington's address, President Loudon read telegrams from the Vice-Chancellors of the Universities of Oxford and Liverpool, and Professors C. S. Minot and Bowditch of Harvard University, congratulating the University of Toronto on the opening of the new medical buildings.

Professor Welch, speaking in the name of the Johns Hopkins University, Baltimore, congratulated Toronto on the opening of the laboratories, which would greatly increase the usefulness of the University. In the United States, as in Canada, the medical departments had begun as integral parts of universities, and had then lapsed into proprietary schools. The conditions, however, were now changed, and the medical departments were now recognized to be worthy of liberal support from the State. This was a return to the conditions which existed when medicine began to be studied seriously in the Middle Ages. In no direction could the university do more good for mankind than in the furtherance of higher medical education. He agreed with Professor Sherrington that medicine was a department of knowledge in which the field for applied sciences was bound to increase, so that the fundamental sciences—chemistry, physiology, and biology—should be cultivated to the fullest extent.

Professor Chittenden then offered the congratulations of the Yale University. The new laboratories, he said, were a notable contribution to the advancement of physiological chemistry, which was becoming a fundamental science in medical practice. On it rested the solution of such important problems as that of nutrition; but it should be recognized that physiological chemistry was a branch of physiology, and that the value of its work consisted in the physiological interpretation of chemistry.

Professor Porter (Harvard) then read a congratulatory letter from Professor Bowditch, himself detained by illness.

Dr. Roddick (Dean of McGill University, Montreal) pointed out the advantages which would flow from the institution of a uniform matriculation throughout Canada, and added that it would advance the scheme of Dominion registration in which he had long been interested; the scheme was at present opposed by the Province of Quebec, but he had assurances that all opposition was likely to disappear.

Professor A. C. Abbott offered the congratulations of the University of Pennsylvania.

Professor McMurrick then spoke in the name of the University of Michigan, and referred to the pleasure with which he revisited his Alma Mater. He dwelt on the importance of establishing local laboratories.

Professor Barker, of the University of Chicago, expressed the pleasure with which, as an old student of Toronto, he saw the amalgamation of the medical faculties of Toronto and Trinity into one great medical school. He congratulated the University on the large number of rooms devoted to research in the new buildings.

Professor Roswell Park offered the congratulations of the University of Buffalo, and suggested that one of the first investigations to be conducted in the new laboratories should be with regard to the poison recently brought back from the Philippines by an Irishman, who said of it "place one drop on the tongue of a cat and it will kill the strongest man."

Senator Sullivan, of Queen's University Medical Faculty, also spoke, and the company then visited the laboratories.

On the evening of the same day Professor Osler delivered an address to the students. Professor Osler was warmly received by his audience, which included many members of the University and residents of Toronto. The address which he delivered is published at page 1196, and at its conclusion Dr. Reeve, Dean of the Faculty, thanked Professor Osler; and Dr. Temple, speaking in the name of Trinity Medical Faculty, said that he and his colleagues had laid aside personal feelings, and in agreeing to the amalgamation had acted in the best interests of the profession.

Honorary Degrees.

At the annual Convocation of Toronto University, held on October 2nd, the honorary degree of LL.D. was conferred upon Professor William Osler, Professor Sherrington, Professor Welch, Professor Keen (of Jefferson Medical College, Philadelphia), and Professor Chittenden (of Yale University). The degree was also conferred *in absentiâ* on Professor Bowditch (of Harvard).

ASSOCIATION NOTICES.

ELECTION OF MEMBERS.

Any candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

Members are reminded that the Library and Writing Rooms of the Association are fitted up for the accommodation of the Members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 a.m. to 5 p.m. Members can have their letters addressed to them at the office.

Guy Elliston, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

Bath and Bristol Branch: Bristol Division.—A meeting of this Division will be held at the Medical Library, University College, Bristol, on Wednesday, November 18th, at 8.15 p.m., to consider the Draft Medical Acts Amendment Bill, published in the Supplement to the British Medical Journal of August 22nd, 1903, and other questions referred to the Divisions by the Council of the Association.—J. Michell Clarke, Clifton, Honorary Secretary.

Lancashire and Cheshire Branch: Altrincham Division.—The next quarterly meeting will be held at Altrincham on Thursday, November 19th, at 4.45 p.m. The principal business will be the discussion on the Medical Acts Amendment Bill; and Dr. S. Woodcock, of Old Trafford, has promised to attend. It is proposed that the members should dine together after the meeting.—F. W. H. Garstang, Honorary Secretary.

Midland Branch: Leicester Division.—A meeting of this Division will be held on Wednesday, November 11th, at 4 p.m., at the Association Hall, East Street, Leicester. Agenda: Election of a second Honorary Secretary; to discuss the draft of the Medical Acts Amendment Bill, etc.—Astley V. Clarke, 37, London Road, Leicester, Honorary Secretary.

South Wales and Monmouthshire Branch: West Wales Division.—The next meeting of this Division will take place at Llanelly in May. The Honorary Secretary will be pleased to hear from gentlemen who will kindly read a paper at that meeting.—Glanville Morris, M.D., Mardy, Glamorgan, Honorary Secretary.

Staffordshire Branch.—A meeting of this Branch will be held at the North Stafford Hotel, Stoke-upon-Trent, on Thursday, November 26th, at 4 p.m. The Secretary would be glad to have a note of papers and cases.—G. Petgrave Johnson, Stoke-on-Trent, Honorary Secretary.

West Somerset Branch.—The autumn meeting of this Branch will be held under the presidency of Dr. David Brown, at the Taunton and Somerset Hospital, on Friday, November 27th, at 4 p.m. Mr. H. Percy Dean, M.S., F.R.C.S., Surgeon to the London Hospital, has kindly undertaken to give an address on Jaundice: its Causes and Treatment from a Surgical Standpoint, followed by a discussion. Any member wishing to bring any communication before the meeting should give the Honorary Secretary early notice. The Annual Dinner for medical men residing in West Somerset will be held at the London Hotel, Taunton, at 6 p.m. for 6.30 p.m. punctually. The chair will be taken by Dr. David Brown. A programme—musical, etc.—will be carried out after dinner. Tickets 6s. each. Members are at liberty to bring guests, for whom tickets may be obtained at the same price. In order to make these dinners as successful as possible, it is hoped that as many as possible will make an effort to be present. Members intending to be present should inform the Honorary Secretary by November 23rd.—W. B. Winckworth, 3, Carlton Terrace, Taunton, Honorary Secretary.

SPECIAL CORRESPONDENCE.

SYDNEY.

Royal Commission on the Birth-rate.—Death of Dr. Pickburn.

Mr. Coghlan, the New South Wales Government statistician, recently published an *Essay in Statistics*, in which he placed before the public in a startling form the serious outlook in regard to the steady decline in the birth-rate in this State during the last ten years. This has now fallen to about 25.5 per 1,000. As a result of this disclosure the Premier, Sir John See, requested his Excellency Sir Harry Rawson, the State Governor, to appoint a Royal Commission to investigate this question. This Commission includes the names of the following medical men: The Hon. Dr. C. K. Mackellar (President), the Hon. Sir Normand MacLaurin, M.D., Dr. Foreman, Dr. Paton (Government Medical Officer), and the Hon. Dr. Nash. The members of the Commission are required "to make a diligent and full inquiry into the causes which have contributed to the decline in the birth-rate of New South Wales and the effects of the restriction of child-bearing upon the well-being of the community." They are also required to furnish their report within three months from the date of the issue of the Commission. The Premier considers that the detailed evidence that will be taken by this Commission should not be published by the press, but the Commission would be asked to furnish to the press a summary of each day's proceedings. In the same way the final report of the Commission will be presented to Parliament, detached from the detailed evidence given by the witnesses. At the first meeting of the Commission the general lines of the inquiry were decided, and a large number of statistics were placed at the disposal of the Commission by Mr. Coghlan. It is expected that the scope of this inquiry will be extensive, and will include the question of the restriction of the possibility of employment of the young men in private enterprises in consequence of the growing tendency towards State Socialism.

A well-known medical practitioner in Sydney has passed away in the person of Dr. Thomas James Pickburn, at the age of 57 years. He was born in London, and was the son of Mr. J. T. Pickburn, founder and original proprietor of the London *Daily Chronicle*. He was educated at the University of Aberdeen and St. Bartholomew's Hospital, London. He took the degrees of M.B., C.M. at Aberdeen, and the L.S.A. in London in 1868. He arrived in New South Wales about thirty-five years ago. After some years in practice in the country he returned to England, and took the M.D. degree. He then returned to Sydney, and settled in College Street, where he has practised for the last twenty-five years. For the last six years he has been in partnership with Dr. Maitland Gledden. He was for some years honorary physician to the Sydney and St. Vincent's Hospitals. He had been in failing health for some time, and only two or three weeks ago had a severe attack of angina pectoris. He rested for two or three weeks, and returned to practice only the day before he died. When in his consulting room, having just seen a patient, he was seized with another attack of angina, and after three hours of intense agony he passed away. He was twice married, and leaves a widow and a large family. The funeral took place at Waverley Cemetery, and was largely attended by members of the profession and many of his numerous patients.

MANCHESTER.

Deficits in Hospital Balance-sheets.—"First Aid" by the Police Force.—Professor Annandale on Past and Present Curricula.—Professor Schuster's Lectures on "Rays."—Salford and Medical Inspection of School Children.

This is the period when hospital meetings take place, and the governors of these institutions very frequently, alas! have to present an adverse balance-sheet. The annual meeting of St. Mary's Hospital was held on October 28th. The new hospital in Oxford Street is not yet ready for the reception of patients. The total income for the past year was £4,141 and the expenditure £4,552. In 1901 legacies to the amount of £20 were left; in 1902 £653 was received in this form. The accrued balance of expenditure over income over a series of years is £2,238. A very heavy financial obligation lies on the special committee charged with the decoration and furnishing of the new St. Mary's Hospital, as some £25,000 is required. The £70,000 offered some years ago by the David Lewis Trustees for the benefit jointly of St. Mary's and the Southern Hospital, but which unfortunately owing to various considerations was not accepted, would have been a most useful asset in the present period of financial stress. At the annual meeting of the governors of the Salford Royal Hospital it was stated that the deficit on the year's working was £1,969, the income having been £6,010 and the expenditure £7,979. The ground for the new Southern Hospital near the Stanley Grove estate is rapidly being cleared and building operations will be begun shortly.

The Watch Committee of the Manchester Corporation has since 1888 encouraged the members of the police force to complete the education in methods and principles of "first aid," and now 956 members hold St. John Ambulance certificates, that is, practically all the men who are permanent members of the force. As showing how useful such a training is in a large city we may quote the following:

> During the last six years the Manchester police had been called upon to attend over 14,000 persons who had met with accident or been overtaken with sudden illness in the streets, and in each of these cases the police have rendered first aid, and then either conveyed the patients to some institution or assisted them home or to friends. During the same period the police had been instrumental in saving the lives of no less than 88 persons, namely, burning, 43; drowning, 19; poisoning, 5; asphyxia, 4; strangulation, 3; other causes, 4; total 88. In 1901 the Watch Committee established a service of horse ambulances for the speedy removal to the infirmary and similar institutions of serious cases of accidents in the streets. Four ambulances were provided . . . . during the last twelve months these ambulances had responded to no less than 1,400 calls.

The annual dinner of the Manchester Edinburgh University Club (founded in 1874) was held on October 29th, when Professor A. M. Paterson, of Liverpool, presided, and Professor Annandale, of Edinburgh, was the guest of the evening. In replying to the toast of his health, the Edinburgh professor, while admitting that in his long connexion with the University of Edinburgh he had seen many changes affording students more facilities for working than they used to have, expressed the opinion that there was a good deal that was of advantage in the old days. There were not then so many lectures; nowadays there were, he often thought, too many. In former days a man was supposed to observe for himself. Now there were many who expected everything to be told them, and whose chief aim was to pass. They had, indeed, too many subjects, and in his opinion the medical student got more and more "crammed." He thought they might hope to see a modified curriculum, enabling them better to turn out men more fitted for practice than many now were.

Professor Schuster, at his second lecture on "rays," dealt chiefly with the cathode rays as manifested at the cathode in a vacuum tube. The cathode rays consisted of electrified particles sent out with great velocity, and of a mass so small that they could traverse thin plates of aluminium. The velocity was such that they could travel from Liverpool to New York in one-twentieth of a second. The lecturer doubted if the Roentgen rays were really waves of very short length. Some bodies became fatigued under their influence. It appeared that when these rays, of great velocity and possibly particulate, entered the skin, they were transformed into slower vibrating rays. The rays of radium were not all of one kind. Some were similar to Roentgen rays, and others identical with them. Radium also sent out rays or particles having twice the mass of an atom of hydrogen, and projected with a velocity of one-tenth that of light. These rays, charged with positive electricity, produced very strong effects and were easily absorbed. They set free "ions," which act as "nuclei" or foci of condensation, much, perhaps, as "ions" acted in the formation of clouds. The radium rays produced effects not at once, but two or three weeks after exposure to them; the ions which penetrated the skin lying apparently latent for a time, and then influenced the nutrition of the tissue, acting, in fact, as regards time, like a very slow developer on a photographic plate. The α rays with a positive charge and a large mass produced strong effects on bacteria. The radium rays produced even fatal effects in a mouse or guinea-pig when the radium was placed under the skin.

Under the new Act the education authority is relegated to the Town Council of Salford. The Education Committee of

the Council has wisely determined to appoint a medical man to report on the health of the scholars in the schools under its direction. The Education Committee recommended that the present medical officer of health should be appointed the medical officer of the Committee, with an increase of salary. The idea is to have, as in other departments of the corporation, a chief, with a competent assistant, the assistant to receive £200 per annum. The recommendation of the Committee was eventually carried, against an amendment that a medical man be appointed at a salary of £400 per annum. In this case the contention was that the duties of the office were so important as to demand the whole time of the officer appointed. One alderman advocated the appointment of a gentleman, to devote the whole of his time to the work, with a lady doctor as his assistant.

CORRESPONDENCE.

THE NORTHERN UNIVERSITY TRIAD.

SIR,—Though I may acknowledge the kind expressions in the letter of Professor Clifford Allbutt I must decline to accept any responsibility for a situation which, as his letter shows, he himself created. Though it was as Regius Professor of Physic of Cambridge he opposed the foundation of the University of Liverpool he desires us to regard him as a second Pooh-Bah, in that though he appeared before the Privy Council in the bodily shape of the leader of the Medical Faculty of Cambridge he was in reality speaking as somebody else—a member of the Victoria University.

Even if we grant the Regius Professor of Cambridge his alias, our grace can really extend no further, for his opposition to the proposed Liverpool University was based on the one point by which it evidently would compete with the existing Universities, notably Cambridge, namely, what I have spoken of as a degradation for a University—the manufacture of an ordinary State qualification to practise.

Had Professor Allbutt taken Professor Rücker's higher scientific line of objection I should have had more sympathy with him in his present position, but in complaining as he did to the Privy Council of the mote in the proposed charter of the Liverpool University when the beam was so very much larger in the charters of his own Universities he laid himself open to just criticism.—I am, etc.,

London, W., October 31st. VICTOR HORSLEY.

KING'S COLLEGE HOSPITAL REMOVAL FUND.

SIR,—As already reported in your columns, at a meeting of the Governors held on October 12th, 1903, it was finally decided to remove King's College Hospital from its present position to a site in South London. The main object of the removal is more fully to carry out the idea of the charity by transferring it from a district largely denuded of its poor inhabitants to one in which there is a dense population urgently in need of hospital accommodation. By the removal this urgent need, which has long existed in South London, will be met without the addition of another large general hospital to those at present existing, most of which already have a constant struggle in meeting their necessary expenditure.

The Governors, when sanctioning the present course, authorized the Joint Committee appointed by the Council of King's College and the Committee of Management of the hospital to act for them in all matters appertaining to the removal. In accepting this authority the Committee are fully conscious of the great responsibility they have taken upon themselves, and they are determined to guard jealously the traditions of the Charity and the many benefactions made to it.

A sum of not less than £300,000 will be required to build and equip the hospital, so as to enable it to meet the needs of the three-quarters of a million of population who will be benefited by the removal.

The Committee now appeal to the public for help towards raising this required sum, and they feel confident that they will not appeal in vain.

They are allowed to add that this appeal is issued with the approval of His Royal Highness the Duke of Cambridge, President of the hospital. It also has the cordial support and hearty approval of His Grace the Archbishop of Canterbury, one of the Vice-Presidents of the hospital and visitor of the College.

A suitable site of twelve acres in South London has been presented to the hospital.

It remains but to say that donations to the Removal Fund will be thankfully received by the Treasurer, Charles Awdry, Esq., 2, Hyde Park Street, W.; by Lloyd's Bank, Limited, Law Courts Branch, 222, Strand, Bankers to the hospital; and at King's College, Strand, by A. Macleod Forest, Esq., the Secretary, King's College Hospital Removal Fund.—We are, etc.,

W. F. D. SMITH,
Chairman of the Joint Committee Removal of King's College Hospital.
METHUEN, Lieutenant-General
Chairman of the Hospital Committee.
E. S. ROFFEN.
LISTER,
Vice-President and Consulting Surgeon of the Hospital.
CHARLES AWDRY,
Treasurer.
ARTHUR C. HEADLAM,
Principal of King's College.
DAVID FERRIER,
Senior Physician of the Hospital.
W. WATSON CHEYNE,
Senior Surgeon of the Hospital.

November 2nd.

SOCIETY FOR THE RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.

SIR,—Will you allow me to supplement Sir William Broadbent's appeal for the British Medical Benevolent Fund (to which I am a subscriber), by pointing out that no practitioner residing within twenty miles of London ought or need to leave his widow and orphans unprovided for, if he will but join the Society for the Relief of Widows and Orphans of Medical Men, and pay one guinea subscription half-yearly up to the time of his decease? The office of the Society is at 10, Chandos Street, Cavendish Square.—I am, etc.,

CHRISTOPHER HEATH, F.R.C.S.,
London, W., Oct. 31st. President.

THE SICK AND WOUNDED IN WAR.

SIR,—Permit me to draw the attention of your readers to the following:

The Central British Red Cross Committee has been charged with the duty of making known to the British public the existence of a fund instituted by H.I.M. the Dowager Empress Marie Féodorovna of Russia for encouraging inventors and others to devise improvements in the means of dealing with wounded and sick in the field.

The announcement of the foundation of this fund was made at the seventh International Conference of Red Cross Societies held at St. Petersburg in May, 1902. The money set apart for the above object, and which is called the Empress Marie Féodorovna International Red Cross Fund, consists of a sum of 100,000 roubles (about £11,000) graciously presented by Her Majesty, the interest of which is to be expended every fifth year in prizes to be awarded at each successive International Red Cross Conference.

The prizes at the first competition which will take place in 1907 (country to be hereafter named), will be three in number. They will be awarded to competitors who submit, in whole or in part, the best solution of problems connected with rendering aid to the wounded, whether on land or sea, and in the following directions:

The surest and quickest means of searching for and removing the wounded from the field of battle; the best type stretchers or vehicles for moving the wounded to the dressing stations with the greatest rapidity and with the least degree of suffering; the means of saving lives at sea: the best installations in movable hospitals, wagons, ships, etc., for the final evacuation of wounded and sick.

The competition is an open one, and intending competitors are informed that they will have to send their inventions to the exhibition of ambulance material which it is proposed shall be held quinquennially in connexion with the International Conference of Red Cross Societies. Further details can be obtained on application to the Honorary Secretary, Central British Red Cross Committee, 68, Victoria Street, London, S.W.—I am, etc.,

KNUTSFORD,
London, S.W., Oct. 31st. Chairman.

THE "EPITOME OF CURRENT MEDICAL LITERATURE."

Sir,—Will you allow me to thank you most heartily for the very able and informative abstracts in Epitome of Current Medical Literature for October 21st? I have to confess I have not been in the habit of studying those abstracts as they deserved; but in future I intend to do so more carefully and to see that they are kept for future reference. Like most members of the Association, I have long ago ceased to keep the half-yearly volumes of the British Medical Journal, from the impossibility of providing sufficient shelf room. May I take this occasion to suggest that the publication of more photographs and lithographs with the Journal would do much to encourage us to preserve the Epitome? As a matter of duty I became a subscriber to the Sydenham Society's *Atlas of Pathology*, which I fear is not supported so largely as it deserves to be. With 25,000 of an assured issue, the cost of printing each of these illustrations would be comparatively small, while, as I have said, such a series of plates would ensure the binding up of the Epitomes.—I am, etc.,

October 26th. W.B.

THE ETIOLOGY OF ACUTE RHEUMATISM.

Sir,—In opening the discussion on "The Upper Respiratory Tract as a Source of Systemic Infection" at the last Association meeting Dr. de Havilland Hall made some very suggestive remarks relative to the etiology of acute rheumatism. Whilst engaged for several years in country practice I made it a rule always to investigate the sanitary condition of the dwelling occupied by any patient of mine suffering from rheumatic fever, and in every instance there was found some gross defect in sanitation. Whether the poison enters the system by inhalation or by contaminated milk or water, I feel no doubt that in at least the great majority of cases there is a close connexion between this disease and exposure to sewer gas; if so, it is only to be expected that acute tonsillitis should frequently usher in the attack.

I venture to think that inquiries as to the condition of the house drains should be instituted in all cases of acute rheumatism, and to hope that the time is not far distant when rheumatic fever will be made a notifiable disease, if only with the object of preventing the spread of the disorder.—I am, etc.,

E. B. Hulbert, M.D.Durh., etc.

St. Marylebone General Dispensary, Nov. 2nd

THE PHYSICAL EXAMINATION OF THE UPPER CHEST.

Sir,—In his letter to the British Medical Journal, October 31st, p. 1181, Dr. Auld finds the proof of an upward expansion of the apex of the lung during inspiration in an observation of Woods Hutchinson to the effect that, after free exposure of the upper aspect of the pleural sac during operative procedure, the way in which this structure plunged up and down with the respiratory rhythm was little short of appalling.

It is, however, perfectly clear, under the conditions described by Woods Hutchinson that the upward movement of the pleural sac must occur during *expiration* and the downward movement during *inspiration*. Dr. Eric Pritchard and I pointed this out a year or two ago in a paper that we contributed to the *Lancet*,[1] and I have in my possession a letter from Woods Hutchinson in which he admits the cogency and accuracy of our contention on this point. No doubt, as Dr. Auld says, proof is better than supposition, but it is necessary to be uncommonly careful in the selection of your proofs. In this case Dr. Auld's so-called proof amounts to nothing more than a direct and complete refutation of the point that he wishes to substantiate.

I have elsewhere pointed out,[2] in contradiction to the almost universally accepted belief and teaching, that the statical and dynamical conditions which exist at the apices during inspiration not only do not permit of the upward expansion or extension of these portions of the lungs, but operate rather in the reverse direction. I am glad to be able to record that Dr. Arthur Keith has recently, on anatomical grounds, come to a similar conclusion.

During the last few years I have examined a very large number of apices under normal and abnormal conditions, and neither in health nor in disease have I been able to discover any clinical evidence whatsoever of an upward expansion or extension of the apices of the lungs during inspiration. In point of fact the evidence I have obtained has invariably indicated the kind of apical respiratory movement which, on theoretical considerations, I should expect.

I am firmly persuaded that the upward (or cervical) increase of resonance in the supraclavicular fossae during inspiration which is described by Dr. Auld and others is the outcome of inappropriate clinical methods.—I am, etc.,

London, W., Nov. 2nd. E. H. Colbeck.

Sir,—On the whole I think that Dr. Auld and I are substantially agreed about the matters referred to in my paper and his letter.

I think the title of my paper shows to what parts of the chest my remarks referred, and if in one subsection I used the term "apex" with a wider signification than that to which I usually apply it, it was on the tacit understanding that the title of the paper saved words.

I did not enter into the minuter typographical differences because my paper was necessarily a short one, and at Swansea I actually exceeded my time limit by the courtesy of the meeting.

Such local differences as that observed in auscultation, when the border of the trapezius is transgressed were, I thought, sufficiently suggested by remarks under the headings "palpation," "method of procedure," etc., for, taken in conjunction with the remarks on percussion, etc., it was obvious that the breath sounds would become less loud over the border of that muscle.

I am not convinced, even by his interesting quotation, that the pulmonary apices rise higher into the neck during inspiration, but I am quite ready to be convinced if reason be shown me for changing my position of agnosticism.

I regret that I have not yet referred to Dr. Auld's paper. To do so will be a pleasant duty.—I am, etc.,

Cambridge, Nov. 3rd. E. Lloyd Jones.

THE F.R.C.P., M.R.C.P.Edin.

Sir,—I notice in the British Medical Journal of October 24th some comments by Dr. Dutton upon the unsatisfactory relationship of the London and Edinburgh Colleges. There can be no manner of doubt about the rigorous boycott of any but London qualifications in all London hospital appointments, and in some of the large provincial hospitals. Now—why is this? The natural assumption is because of the superiority of the one diploma over all others. But is this so? True until quite recently there was a wide gulf fixed—now rapidly narrowing—between the F.R.C.S.Eng. and F.R.C.S.Ed., but there has never been this disparity between the M.R.C.P.Lond. and the corresponding Edinburgh College. In my own case, I had originally intended practising in Edinburgh and so took the Membership of the R.C.P.Edin. If I could have foreseen the fate that settled me in England (as distinct from Scotland), I should most certainly have taken the Membership of the sister College in London. Indeed, but for additional fees, I should have followed the one up by taking the other, and, from a comparison at the time of the examination papers, I feel confident that, but for the paper on psychological medicine (additional in the M.R.C.P.Lond.), I had read more than enough for the London examination. But I suppose few will contest that the London and Edinburgh Colleges of Physicians stand at least on the same dignified footing as to the terms on which they grant the distinction of the Membership and Fellowship.

One more question. Why, in subscribing his qualifications, does a London physician put F. or M.R.C.P. and not add London? Is it because he wishes it to be noted that he belongs to an ineffable body known as *The* College of Physicians? Personally, as a Member of the sister College, I also subscribe myself now as

October 29th. M.D.Ed., M.R.C.P.

DOCTORS IN PARLIAMENT.

Sir,—I see that in the report of the doings of the Medico-Political Committee it is resolved "that the medical members of Parliament be invited to confer, etc., with a view to forming a Medical and Public Health Committee of the House of Commons."

Now, it is only perhaps on other considerations that a

[1] An Explanation of the Vulnerability of the Apices in Tuberculosis of the Lungs, *Lancet*, June 8th, 1901.

[2] The Phenomena of Tidal Percussion at the Apices of the Lungs and their Interpretation, *Practitioner*, March, 1903.

doctor is found to be a member of Parliament; and those other considerations are paramount in his mind, and medical matters take a secondary place.

Why not, then, let this particular Committee discuss and recommend to the Council of this large Association the desirability of finding doctors who are prepared to offer themselves at the next general election, who shall champion the cause of medicine in the House of Commons? A few good voices in Parliament asserting the wants of the profession, in season and out of season, will do much more for the doctors than all the volumes of resolutions that have been written and all the deputations that have been arranged.

Other Associations, not so strong nor so wealthy as ours, have their direct representatives in Parliament, therefore let this Association follow suit. A strong tide of political feeling is running just now and the present occasion is most opportune, and advantage should be taken of it and without delay. There are no doubt constituencies in small boroughs where a doctor would have a good chance. But the Association must not act niggardly in the matter, but be prepared liberally to pay election expenses and provide an income for doctors who will be their representatives in the House of Commons.

It may be that a great sacrifice must be made by any doctor offering himself. His practice may be given up, and if he has no fortune he cannot bear the drain on his purse. No time, therefore, should be lost to avail ourselves of the present opportunity. A general election will be upon us possibly within a few months.—I am, etc.,

EDWARD JEPSON, M.D.,
President, County of Durham Medical Union,
Member of the Council North of England Branch.

Durham, Nov. 2nd.

OBITUARY.

FRAY ORMROD, L.R.C.P., L.M., L.R.C.S.EDIN.,

Gold Medallist of the Association.

THE news of the death of Dr. Fray Ormrod, of Hindley, Workington, Cumberland, will be heard with regret by many members of the profession other than those with whom he was constantly associated in practice and other professional matters. He had been in failing health for some time, and practically ceased to practise, but his death on the morning of November 3rd from cerebral haemorrhage was quite unexpected.

Dr. Ormrod was a medical man who took up the profession of medicine not because it was a career which lay immediately in front of him, but because it was work for which he felt he had a distinct calling. Born in 1843, of an old and well-known Lancashire family, a branch of which settled near Bolton over 200 years ago, Dr. Ormrod was originally intended for the engineering profession, and indeed worked for some time at Sir William Fairbairn's works at Manchester. Having witnessed, however, the ravages of an outbreak of cholera in 1866, he became imbued with a desire to take up a medical career, and began the study of medicine at Belfast, but moved later on to Glasgow, and finally took the diplomas of L.R.C.P., L.R.C.S., at Edinburgh. Soon afterwards he was taken into partnership by Dr. Douglas, of Lairthwaite, whom he had previously assisted, and upon the death of the former a few years later he became head of a firm which has ever since been a prominent one in the district of Workington. Dr. Ormrod was beloved by his patients and esteemed and respected by his townfellows, and his name was on everybody's lips at the time of the disastrous explosion at St. Helen's colliery in 1888. Of this colliery he was surgeon, and he volunteered to be let down the shaft to explore the tunnels and to give assistance upon the spot to those who were injured but who still survived. The devotion to duty which he displayed upon this occasion attracted the attention of the British Medical Association, and upon the motion of Dr. Henry Barnes, seconded by Sir Walter Foster, it was decided by the Council to award him a gold medal. This was presented to him by Sir William Gairdner at the annual meeting of the Association at Glasgow in the same year.

His connexion with several collieries brought him a good deal of surgery, and he took an active part in the foundation of the Workington Infirmary in 1885, being at the time of his death its Senior Medical Officer, as well as one of the surgeons of the older established dispensary in the same town.

In the latter part of his career Dr. Ormrod took an active interest in the affairs of the Association, and was President of the Border Counties Branch during the year 1901-2, and contributed largely to the successful introduction of the new organization scheme in his district. He also took considerable interest in general politics, being a staunch Liberal and the President at the time of his death of the Liberal Association in his town, as well as a member of the Cockermouth Division Liberal Executive. He leaves behind him a widow, who was the only daughter of the late Mr. Mark Brayton, of Whitehaven, as well as two sons and a daughter.

IT was with deep regret that the profession and the public generally in County Wicklow heard of the death of Dr. RICHARD F. B. HALPIN, which occurred at his residence, Ferrybank, Arklow, on October 19th. Dr. Halpin got a severe wetting while seeing a patient on the night of October 12th, pneumonia setting in two days afterwards. He progressed favourably for some days, when symptoms of heart failure supervened, and despite all that medical skill and careful nursing could do he succumbed on the sixth day. Dr. Halpin was in his 45th year. He pursued his medical studies in London, becoming a Member of the Royal College of Surgeons in 1883, and afterwards obtaining the Licence of the Royal College of Physicians, Ireland. He was for some time house physician to the Hospital for Diseases of the Chest, and afterwards surgeon in the service of the Eastern Telegraph Company, of which his uncle, the late distinguished Captain R. C. Halpin, was the marine superintendent in London. In 1885 he settled down in his native town of Arklow, succeeding to the very extensive practice of his father, the late Dr. Stopford Halpin, in addition to holding many public appointments, including that of physician to Arklow Fever Hospital, of surgeon and agent to H.M. Coastguards, and of medical attendant Royal Irish Constabulary. He was held in high esteem by both rich and poor, and the large attendance at his funeral on October 22nd was in itself sufficient evidence of his popularity, the predominant feeling in the breasts of all being "that a thorough gentleman and an ornament to his profession" had passed from amongst them. Dr. Halpin leaves behind him three children and a widowed mother, with whom sincere sympathy is felt.

THE LATE SIR GEORGE DUFFEY AND THE LATE MR. CROLY.—At the annual general meeting of the Royal Academy of Medicine in Ireland the following resolutions were passed:

1. That the Fellows of the Royal Academy of Medicine in Ireland assembled at this annual general meeting wish to record their regret and sorrow at the death of Sir George F. Duffey, an original Fellow of the Academy and one of the trustees of its funds. Sir George was one of the most steadfast and faithful supporters of the Academy. Year after year he submitted to one or other of the sections communications of great scientific clinical or pathological interest and value, and on all occasions he shed lustre upon the Fellowship of the Academy by the high standard of professional honour which he set before him, and up to which he consistently lived. The Fellows of the Academy also desire to convey to Lady Duffey, Dr. Arthur Cameron Duffey, and the other members of the family of their friend and colleague an expression of sympathy with them in their bereavement and sorrow.

2. That the President and Fellows of the Royal Academy of Medicine in Ireland desire to record their sense of the loss which hospital work has sustained by the death of Mr. Henry Gray Croly, who has been for so many years an active teacher of surgery and a prominent Fellow in this Academy. The Academy desires to express condolence with the members of his family.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are Dr. Domenico Tibone, Professor of Obstetrics in the University of Turin, aged 70; Dr. Riccardo Secondi, Senator of Italy, sometime Professor of Ophthalmology and Rector of the University of Genoa, aged 70; Dr. Otto F. J. Nasse, Professor of Pharmacology and Physiological Chemistry in the University of Rostock, aged 65; Dr. Th. Betz of Heilbronn, editor of *Memorabilien für praktische Aerzte*, aged 82; Dr. A. H. Cézilly of Paris, founder of the Concours Médical, an organization for the promotion of the interests of the profession, which has branches all over France, and one of the founders of the French Medical Press Association; Dr. P. Lemaistre, Professor of Anatomy in the Medical School of Limoges; Dr. Brassac, the first Director of the School of Naval and Colonial Medicine at Bordeaux and a recognized authority on tropical diseases; and Dr. Charles Arthur Gallet, Senior Surgeon to St. John's Hospital, Brussels, aged 47.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

INDIAN MEDICAL SERVICE.

Reckoning Service for Pension.

We learn on inquiry at the India Office that the provisions of the new warrant with reference to reckoning time at and after Netley as service for pension are not retrospective. Officers who entered the service between 1890 and 1902 reckon their service for pension from the date of leaving Netley; officers who entered the service in September, 1902, or subsequently will reckon service for pension from the day of entering Netley. It appears therefore that for the present there will be in the Indian Medical Service three methods of reckoning service for pension:

1. Officers who entered the service before 1890 will reckon their Netley service, but not the interval between leaving Netley and arrival in India.

2. Those who entered from 1890 to September, 1902, will reckon their service from the date of leaving Netley.

3. Those who entered in September, 1902, or subsequently, will reckon their service for pension from the date of entering Netley.

It seems to us a matter of regret that the Indian Government has not been able to make up its mind to deal with all its medical officers on a uniform principle in this respect. It is a relatively small matter, although it may inflict a serious injustice upon some officers in the future when they come up for pension. We can see no logical principle underlying the distinction now made.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been made at the Admiralty: Herbert L. Penny, Surgeon, to the *President*, for three months' study at a civil hospital, November 4th; George E. Glynn, Surgeon, to the *Excellent*, November 4th; Frederick F. Mahon, Surgeon, to Jamaica Hospital, October 30th; Gerald M. Eastment, Surgeon, to the *Prince George*, October 30th; Richard S. Osborne, Surgeon, to the *Roscawen*, October 30th; Alfred H. Jeremy, B.A., M.B., Surgeon, to the *Sutlej*, November 2nd.

Fleet Surgeon Bernard Renshaw died at Southsea recently, at the age of 58. He was appointed Surgeon, August 17th, 1869; Staff Surgeon, March 23rd, 1880; and Fleet Surgeon, April 9th, 1890. He retired from the service, March 4th, 1898. He was Fleet Surgeon of the *St. George* at the bombardment and capture of the Sultan of Zanzibar's palace on August 27th, 1896, and afterwards served in the expedition against the King of Benin sent to punish that monarch for the massacre of the political expedition in 1897, and was at the capture of Benin City, receiving a medal with clasp.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel W. O. Wolseley to be Colonel, *vice* W. L. Gubbins, promoted, August 27th. Colonel Wolseley was appointed Surgeon, March 6th, 1880; made Surgeon-Major, March 6th, 1892; granted the rank of Lieutenant-Colonel, March 25th, 1896; and made Brigade-Surgeon-Lieutenant-Colonel, October 3rd, 1898. He was with the Ashanti Expedition in 1895-6, for which he was honourably mentioned, promoted to be Surgeon-Lieutenant-Colonel, and received a star. He was also in the campaign on the North-West Frontier of India in 1897-8 with the Tirah Expeditionary Force, receiving a medal with two clasps.

Lieutenant-Colonel A. T. Sloggett, C.M.G., is also promoted to be Colonel, *vice* W. B. Allin, M.B., deceased, September 9th. Colonel Sloggett entered the Service as Surgeon February 5th, 1881; was made Surgeon-Major February 5th, 1893; granted the rank of Lieutenant-Colonel November 10th, 1899; and appointed Brigade-Surgeon-Lieutenant-Colonel October 27th, 1898. He served with the Dongola Expeditionary Force in 1896 as Senior Medical Officer with the British troops, including the engagement at Firket and the operations at Hafir (mentioned in dispatches, promoted to be Surgeon-Lieutenant-Colonel, 4th Class of the Osmanieh, and Khedive's medal with two clasps). He was also in the campaign in the Soudan in 1898 as Senior Medical Officer 1st Brigade British Division, and was at the battle of Khartoum; dangerously wounded, horse shot (mentioned in dispatches, promoted to the higher grade of his rank, 3rd Class of the Medjidie, English medal, and clasp to Khedive's medal). In the South African war in 1899-1902 he was Commandant Deelfontein District, Principal Medical Officer and Commandant Imperial Yeomanry Hospitals up to March 31st, 1901; after that date as Principal Medical Officer 21st General Hospital, Deelfontein (mentioned in dispatches, C.M.G., medal with three clasps, rank of Colonel in South Africa).

Colonel E. H. Fenn, C.I.E., now serving with the 2nd Army Corps at Salisbury, has been appointed Principal Medical Officer at Bermuda.

Memorandum.—Lieutenant-Colonel J. E. Nicholson, Reserve of Officers, late Royal Army Medical Corps, is placed on retired pay, November 28th, 1902.

Exchanges.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 3s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

A Captain R.A.M.C., 11 years' service, who arrived home March, 1903, is willing to exchange with an officer under orders to proceed to India in February, 1904.—Address "Centurion," care of Messrs. Holt and Co., 3, Whitehall Place, London, W.

A Major, R.A.M.C., under orders for India, wishes to exchange with an officer having at least eight months longer to serve at home.—Address, No. 5450, Office of British Medical Journal.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel (temporary Colonel) T. J. H. Wilkins, Madras Establishment, to be Colonel, June 30th. He was appointed Assistant-Surgeon September 30th, 1875, and became Brigade-Surgeon-Lieutenant-Colonel, July 14th, 1899. He was with the Burmese Expedition in 1885-6, for which he has the Frontier medal with clasp.

The undermentioned Captains to be Majors, dated July 28th: *Bengal*—B. H. Deane, B. C. Oldham, R. Bird, M.D., S. B. Smith, J. S. S. Lumsden, M.B., G. H. Frost, M.B., E. Wilkinson, G. F. W. Ewens, M.D., C. Doig, M.D., H. S. Wood, M.B. *Madras*—J. Enrican, M.B., W. G. Pridmore, M.B., C. Donovan, M.D., J. Penny, D. H. M'D. Graves, M.B., C. H. L. Paul, M.B. *Bombay*—T. W. Irvine, M.B. Their first commissions are dated July 28th, 1901.

The undermentioned Majors are promoted to be Lieutenant-Colonels from September 29th: J. J. Pratt and R. Shore, M.D., Bengal Establishment; W. B. Bannerman, M.D., and H. Thomson, M.B., Madras Establishment; C. J. Sarkies, M.B., Bombay Establishment. Their first commissions date from September 29th, 1883. Their war records are as follow: Lieutenant-Colonel Pratt, Zhob Valley Expedition, 1884; Lieutenant-Colonel Bannerman, Burmese Expedition, 1885-9 (medal with two clasps); Lieutenant-Colonel Thomson, Burmese Expedition, 1885-7 (medal with two clasps); Lieutenant-Colonel Sarkies, Burmese Expedition, 1887-8 (medal with clasp), and Tirah Expedition, 1897-8 (medal with two clasps).

Lieutenant-Colonel S. F. Bigger, M.B., Bengal Establishment, retires from the service, from September 1st. He joined as Surgeon, March 30th, 1878, and was made Surgeon-Lieutenant-Colonel, March 30th, 1898. His war services include: The Afghan war, 1879-80, including the Zaimusht Expedition, the capture of Zawa, and operations in the Kuram Valley (medal); the Chin-Lushai Expedition 1889-90 (mentioned in dispatches, medal with clasp); the Waziristan Expedition 1894-5 (clasp); and the Tirah Expedition in 1897-8, including the action at Dargai (mentioned in dispatches, medal with two clasps).

Major Basanta Kumar Basu, M.D., Bengal Establishment, also retires from the service from August 21st. He was appointed Surgeon, April 1st, 1886, and Surgeon-Major, April 1st, 1898. He was with the Dongola Expedition in 1896 (British and Khedive's medals), and in the campaign on the North-West Frontier of India in 1897-8, including the capture of the Tonga Pass (medal with clasp).

Major W. H. W. Elliot, D.S.O., M.B., Bengal Establishment, is appointed Secretary to the Principal Medical Officer of His Majesty's Forces in India, *vice* Lieutenant-Colonel J. Shearer, M.B., D.S.O., Bengal Establishment, vacated, August 13th.

IMPERIAL YEOMANRY.

Mr. Francis E. Little, to be Surgeon-Lieutenant in the Royal 1st Devon, October 31st.

Surgeon-Lieutenant-Colonel W. W. Wingate-Saul, M.D., Duke of Lancaster's Own, retires under the provisions of paragraph 54, Yeomanry Regulations, is granted the honorary rank of Surgeon-Colonel, and retains his uniform, October 31st.

Surgeon-Lieutenant E. M. Rooke, 3rd County of London (Sharpshooters), resigns his commission, October 31st.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

Surgeon-Lieutenant H. McI. W. Gray, M.B., 1st Aberdeenshire, to be Surgeon-Captain, October 31st.

Charles G. Mackay, M.B., late Lieutenant, to be Surgeon-Lieutenant in the Highland Regiment, October 31st.

VOLUNTEER RIFLES.

Daniel O. Kerr, M.B., to be Surgeon-Lieutenant in the 1st Surrey (South London), October 31st.

MEDICO-LEGAL AND MEDICO-ETHICAL.

VETERINARY SURGEONS AND JURY SERVICE.

In the British Medical Journal of October 17th an Irish decision on the above question was mentioned. We are indebted to the Editor of the *Chemist and Druggist* for calling our attention to a report of the case published in that journal.

It appears that in June of the present year, Mr. Charles Allen, veterinary surgeon, of 43, Rutland Square, Dublin, applied for exemption from jury service on the ground that he was a medical practitioner. His case came on for hearing before the Lord Chief Baron and six judges of the King's Bench Division in Dublin.

Mr. Dudley White argued for the petitioner that he was exempted from jury service as he came within the description of persons exempted in Section xx of the Juries Procedure (Ireland) Act, 39 and 40 Vict., c. 78, as being a licensed medical practitioner, and further, of persons heretofore exempted by virtue of prescription, charter, grant, writ, or local Act of Parliament. The Charter of the Royal College of Surgeons, dated March 8th, 1844, declares and grants that the veterinary art, as practised by the members of the body politic and corporate of the College of Veterinary Surgeons should thenceforth be recognized as a profession, and that the members of the said body should be recognized as of the said profession. Mr. White cited various sections of the Medical Acts bearing upon the question, and also the decided cases.

Mr. Cecil Atkinson (instructed by Sir P. Coll, C.B., Chief Crown Solicitor), submitted that the Court must look at the Juries Act itself, and give the exemption therein specified the strict and literal construction that the Act intended, and he contended that "medical practitioner" could only mean a person engaged in the practice of medicine in the ordinary acceptation of the term, and could not be extended so as to include a totally separate class of persons, even though in the exercise of their skill they might be concerned in the mixing of drugs. Their grievance must remain, as in the case of the dentists, until some future Act of Parliament relieved them from this duty.

The judges having consulted, the Lord Chief Baron announced that the majority were of opinion that the petitioner was entitled to the exemption claimed.

THE ART OF PUFFING.

A distinguished English specialist has shown us a letter he has received from a representative of a weekly newspaper published in Paris called

the *Paris-American*, asking him to fill up and return an order form for an advertisement, and to send a packet of his cards for distribution. The letter adds, "we may, if you wish it, make the insertion of a special article somewhat similar to the *Herald's*." The explanation of this application appears to be that, in response to an inquirer, a correspondent of the *New York Herald* gave the specialist's name as that of one who had given him good advice. The representative of the *Paris-American* has apparently assumed that this letter was an artful puff which was paid for, and desires to share the golden harvest. The natural indignation with which our colleague received this application can be readily imagined, but the transaction throws a curious sidelight upon the methods of some part of the press.

HOSPITAL OFFICERS AS WITNESSES AT CORONERS' INQUESTS.

H. A. W.—As the person upon whose body the inquest was held died in an infirmary to which A was attached as one of the honorary medical staff, and had been attended therein by him in such capacity, we are advised that he is not entitled to claim a fee for attending and giving evidence at the inquest by virtue of Proviso 2 to Section XXII of the Coroners' Act, 1887, which is specific and imperative in its terms.

ADVERTISING.

ANTI-QUACK writes: It is obvious that the notices in the *Manchester Guardian* and *Tyldesley Journal* (BRITISH MEDICAL JOURNAL, October 31st, p. 1187) are intended to inform the public that the persons who advertise quack remedies and medicines for the cure of disease are not qualified members of the medical profession. It is no wonder the public is deceived when they see the flagrant assumption of medical titles by unqualified persons who advertise Dr. So-and-So's pills or remedies guaranteed to cure all the ills that flesh is heir to, or Mr. So-and-So, the eminent (self-styled) specialist, etc., has rooms, and can be consulted at such a place. If Government or the Public Prosecutor do not stop these practices, then the only remedy is in the hands of the medical profession, who should at least warn the public who are qualified and who are not; then they can please themselves whom they can consult. It is difficult to think how any qualified practitioner could be indignant at the notice referred to. I can understand persons directly or indirectly financially interested in the sale of quack medicines being indignant, but certainly not qualified medical men.

ASSUMPTION OF TITLE.

X.Y.Z.—The Medical Act, 1858, Section XL, lays down that the person must wilfully and falsely pretend to be or take or use the title, etc., and the addition D.M.D. Boston University would in all probability be held to be explanatory of the "Dr." prefixed to the name. We do not know what diploma is thereby indicated: the medical and dental departments of Harvard University are located in Boston, and there is also a independent dental college which grants diplomas. There is a Boston University School of Medicine, which according to Dr. Rauch's report (1891) to the Illinois State Board of Health is homoeopathic.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

Degrees.—At a congregation on October 29th the following medical degrees were conferred:—*M.B.* and *B.C.*: G. G. Ellett, St. Catharine's: J. R. Bentley, Emmanuel. *M.B.* only: E. Weatherhead, St. John's; H. B. McCaskie, Caius; B. Butterworth, Christ's; J. M. Stenhouse, Sidney Sussex.

UNIVERSITY OF EDINBURGH.

MEETING OF THE UNIVERSITY COURT.

THE Edinburgh University Court met on October 19th. There were present: Principal Sir William Turner, K.C.B., in the chair; the Hon. Lord Stormonth Darling, Mr. David Dundas, K.C., Sir Patrick Heron Watson, Professors Sir T. R. Fraser, A. S. Pringle Pattison, Crum Brown, Rankine, Dr. Joseph Bell, and Mr. J. Campbell Lorimer.

Temporary Absence of Lecturers and Assistants.

It was agreed to forward to the Senatus for their information and for such observations as they might see fit to make copies of the Court's draft regulations as to the performance of the duties of University lecturers and assistants during their temporary absence or disability.

Recognition of Extra Academical Teachers.

Recognition was granted to the following extra academical teachers for the purpose of graduation in medicine: (1) H. H. Swinnerton, Doctor of Science, The University College, Nottingham, in Zoology; (2) Professor David Hepburn, M.D., University College, Cardiff, in Anatomy; (3) J. Lamond Lackie, M.D., Edinburgh, in Midwifery.

University Lecturer in Anatomy.

The Court appointed the following University Lecturer for the current academical year: Dr. David Waterston, in Anatomy.

Finance.

The Finance Committee's report on lectureships, assistants, and class expenses for 1903 and 1904, was submitted, adjusted, and approved. Various reports by the Finance and Works Committees were submitted and approved.

GENERAL COUNCIL.

The statutory half-yearly meeting of the General Council of the University of Edinburgh was held on October 30th; Principal Sir William Turner presided, and there was a large attendance.

Assessors in the University Court.

Dr. J. A. Trail moved the re-election of Dr. Joseph Bell and the appointment of Dr. Robert Mackenzie Johnston, Edinburgh, in place of Sir Patrick Heron Watson, who had intimated that he did not desire re-election. The motion was unanimously adopted. On the motion of Dr. Trail, Sir Patrick Heron Watson was awarded a vote of thanks for the long service he had given as the assessor of the General Council in the University Court. On the motion of Dr. Trail, seconded by the Rev. James Davidson, it was remitted to the Business Committee to consider as to an alteration of the ordinance in regard to the procedure of the election of assessors to the University Court.

Degrees in Veterinary Medicine and Surgery.

A communication from the University Court with draft ordinance for veterinary degrees and relative regulations was considered, and Dr. Trail, Convener of the Business Committee, moved that

The General Council respectfully represents to the University Court that, while welcoming an endeavour to advance veterinary science to a definite place in the university system, the General Council is unable to approve of the draft ordinance now submitted, and humbly suggests that the University Court should further consider the draft ordinance.

Mr. David D. Buchan, in seconding, said that the Business Committee suggested two views which the University Court might adopt, one was, that the degrees should be along the lines of advance upon the present qualifications for the diplomas of the Royal College of Veterinary Surgeons. The other view was that this degree should be confined to the higher study of veterinary science, and that it should be open only to men who had, before they came to the University for training, got the diploma of the Veterinary College. The difficulty was to be sure which of these views had been systematically carried out in the ordinance as prepared.

Mr. Campbell Lorimer wished to know whether it was necessary that students should attend qualifying classes in the Veterinary College in addition to the classes which were necessary in order to secure the University degree. He would also like further information as to whether there was a prospect of the University attracting students if they had to be subjected to double examinations and be compelled to attend double sets of classes.

Principal Sir William Turner objected to the statement in the report that "the scheme in important respects runs counter to and falls below the Royal College regulations." That statement showed entire misapprehension of the meaning of the ordinance. Mr. Campbell Lorimer had asked if the students must go through two sets of examinations, one for the diploma of membership of the Royal College of Veterinary Surgeons, and the other for the degree to be given by the University of Edinburgh. Obviously the students must. The University must conduct its principal examinations by its own examiners. The University could not give its degrees for examinations passed before other bodies. There were certain exceptions specified in the draft ordinance.

After a long discussion and various explanations by the Principal, Principal Laurie moved:

That the General Council welcomed the endeavour to advance veterinary science to a definite place in the University system, and generally approved the ordinance submitted by the University.

Mr. William C. Smith, K.C., seconded. On a division the amendment was carried by 32 to 16 for the motion. Dr. Matheson Cullen moved:

That the Council respectfully represents to the University Court the advisability of considering the question of giving a degree in veterinary science to those who have diplomas before the passing of the ordinance.

Mr. Stirling Craig seconded. On a division, 11 members voted for the motion and 11 against, and the Principal gave his casting vote in favour of the motion.

Proposed Alteration of the Medical Curriculum.

The Memorandum of Conference between small Committees of the University Court and General Council, which was transmitted to the University Court, is still under consideration of the Senatus, which has intimated to the Court that it recognizes the desirability of some changes being made in the medical curriculum, and is considering alternative schemes, and will submit a further report at a later period, when the whole subject will be taken up by the Court.

UNIVERSITY OF LONDON.

FACULTY OF MEDICINE.

A MEETING of the Faculty of Medicine was held at the University on Friday, October 30th.

Election of Officers.

Mr. Butlin, the Dean of the Faculty, presided. There were forty-one members present.

Sir Isambard Owen was reappointed Vice-Dean, and Dr. Lauriston Shaw Honorary Secretary for the ensuing year.

Degrees in Veterinary Science.

Certain communications from the Royal Veterinary College, from the Board of Agriculture, and from the Royal Agricultural Society with regard to the establishment by the University of London of a degree in veterinary science, were considered. It was resolved:

"That in the opinion of the Faculty of Medicine it is desirable to encourage the teaching and study of veterinary science within the University."

Composition of the Boards of Studies.

The reports of the several Boards of Studies as to their composition for the ensuing year were considered, and, with slight modifications, approved.

Special Examinations in Organic Chemistry, 1904.

A report from the Board of Intermediate Medical Studies upon the arrangements for the special examinations in organic chemistry which had been rendered necessary by the recent modifications in the curriculum, was considered and approved.

Chemistry and the New Medical Curriculum.

A report was received from the Board of Intermediate Medical Studies defending the recent alterations in the curriculum so far as they concerned the teaching and examination in Chemistry. The Faculty resolved to refer this matter to a special committee for consideration and report. The Committee was constituted as follows: Dr. Bradford, Mr. Butlin, Dr. Chatterway, Mr. Pearce Gould, Professor Halliburton, Dr. Hector Mackenzie, Dr. Norman Moore, Sir W. Ramsay, Professor Remold, Dr. Ridewood, Mrs. Scharlieb, Mr. Shattock, Dr. Lauriston Shaw, and Professor Thane.

MEETING OF THE SENATE.

Human Anatomy and Morphology.—A report from the Board of Studies in human anatomy and morphology upon suggested regulations for the B.Sc. honours degree in human anatomy and morphology was received by the Senate. The report is also under the consideration of the Academic Council.

Matriculation Examination.—It was resolved to discontinue the restriction as to certain subjects not being taken at the September matricula-

tion examination, and to add to the regulations under the heading "elementary biology—botany" the following words: "In this examination special stress is laid upon competence in drawing." The examination in January, 1904, will be held also in the Leeward Islands (Antigua), New South Wales (Sydney and Goulburn), Western Australia (Perth), St. Lucia, and Malta.

Boards of Studies.—It was resolved: "That since the new curricula and schemes of examination have been completed with the issue of the calendar for the session 1903-4, the Senate desired to convey to the various Boards of Studies, and more especially to their chairmen and secretaries, their thanks for their arduous labours."

The Physiological Laboratory.—Dr. N. H. Alcock has been appointed demonstrator in the physiological laboratory.

General Medical Council.—Dr. P. H. Pye-Smith was reappointed representative of the University on the General Medical Council.

ROYAL UNIVERSITY OF IRELAND.

MEETING OF SENATE.

THE Senate met on October 28th. The Right Hon. the Earl of Meath, Chancellor of the University, presided.

The reports of the recent examinations were submitted and awards made. The several committees for the ensuing year were appointed.

THE ROYAL COMMISSION ON UNIVERSITY EDUCATION.

Upon the motion of the Most Rev. Dr. O'Dwyer, Bishop of Limerick, seconded by the Rev. Dr. Hamilton, it was unanimously resolved:

"That, while we are satisfied that the Royal University of Ireland, under its present constitution, has done good work within the limits of the powers committed to it, we are of opinion that the findings of the Royal Commission on University Education in Ireland must, unless followed by some measure of reform giving promise of permanency, react injuriously upon the university, and, through it, upon the most vital educational interests of the country, and therefore we beg most earnestly to represent to the Government the urgent need of taking this question into their immediate consideration."

It was ordered that copies of this resolution be forwarded to his Excellency the Lord Lieutenant, the Prime Minister, and the Chief Secretary.

Exhibitions, Etc.

The following exhibitions have been awarded: Second, Examination in Medicine: V. J. M'Allister, Catholic University School of Medicine, and C. R. Harvey, Queen's College, Belfast, £15 each. Third Examination in Medicine: J. S. Dickey and R. Jamison, both of Queen's College, Belfast, £20 each. M.B., B.Ch., B.A.O. Degree: M. Cagney, Queen's College, Cork, £25. The Dr. Henry Hutchinson Stewart Scholarship in Medicine has been awarded to V. J. M'Allister, Catholic University School of Medicine.

VICTORIA UNIVERSITY OF MANCHESTER.

MEETING OF CONVOCATION.

AT its meeting on October 28th, the Chairman said that the re-birth of the University had been successfully accomplished, and spoke of the prospects of the University as extremely hopeful. It seemed to him that there were signs of new interests and new possibilities of action in connexion with the higher education in the district.

There was a discussion as to how the representative of the University on the General Medical Council should be elected. Ultimately a motion was carried expressing the opinion that the representative on the General Medical Council should be nominated by the medical graduates for election by Convocation.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

THE ordinary quarterly comitia was held on Thursday, October 29th, the President, Sir W. S. Church, in the chair.

Membership.

The following gentlemen having passed the required examination were admitted as Members: Sydney Walter Curl, M.A., M.B.Cantab., L.R.C.P.; Charles Edwin Percy Forsyth, M.B.Aberd.; James Edward Hill Sawyer, M.A., M.D.Oxon.; Jacob Snowman, M.D.Brux., L.R.C.P.; James George Taylor, B.A., M.B.Cantab., L.R.C.P.

Special Lecture.

The President announced that Sir Hermann Weber would deliver a lecture at the College on the Means for Prolongation of Life on an early day in December.

Weber-Parkes Prize.

The President also announced that he had nominated Drs. Green, Seaton, and Wethered as examiners for the Weber-Parkes prize.

Communications.

Communications were received from:

1. The Board of Trade, forwarding a translation into English of a report by a Norwegian Committee respecting beri-beri occurring on European sailing ships. The President, Dr. Payne, and Sir Patrick Manson were appointed a committee to examine the document and to report to the College.

2. The Secretary of the College of Surgeons, reporting certain proceedings of their Council on August 4th and October 15th.

3. The President of the General Medical Council, enclosing reports of the Committee on the science teaching recognized by the Royal Colleges, and on the report by the visitors of the first examination; with the resolutions of the Council thereon; and inviting the Colleges to a conference on these subjects. The President, the Senior Censor, the Registrar, the Representative on the General Medical Council, and Drs. Taylor, Sharkey, Fowler, and Starling were appointed to represent the College at the conference.

4. The Society of Arts, inviting the College to form with them a joint committee for advising on the award of the Swiney prize in January next. In accord with the usual custom the officers of the College were appointed.

5. The Incorporated Society of Medical Officers of Health, enclosing a memorial to the Home Secretary, urging the raising of the standards of ventilation for factories and workshops, and asking the co-operation of the College. It was resolved: "That the College did not see its way to take action in the matter."

6. Professor Silvanus Thompson, on the approaching tercentenary of the death of Dr. William Gilbert, President of the College, A.D. 1600. The Treasurer and Drs. Dickinson and Abercrombie were selected to represent the College on any responsible committee that might be appointed for the purpose of instituting some memorial of Dr. Gilbert.

Finance.

The audited accounts for the year ending September 29th last were laid before the College.

Committees.

Dr. Norman Moore, who retired by rotation, was re-elected a Member of the Committee of Management; and Dr. Sidney Martin was re-elected a member of the Laboratories Committee.

Reports.

The following reports were received and adopted

(*a*) The quarterly report of the Finance Committee.

(*b*) From the Censors' Board on a communication from the Company of Spectacle Makers, referred to them by the Comitia of July 29th for consideration and report. The Board reported that whilst they considered the present form of certificate granted by the Company of Spectacle Makers unobjectionable, they considered the proposed additions and alterations in it undesirable in the interests of the general community.

c. From the Committee of Management, dated October 5th, recommending that Cranbrook School be added to the list of institutions recognized by the Examining Board in England for instruction in chemistry, physics, and practical chemistry.

d. From the Laboratories Committee, dated October 9th, reporting: (1) That during the three months ending September 4th 7,602 doses of diphtheria antitoxin, each containing 3,000 units, have been supplied to the hospitals of the Metropolitan Asylums Board, making a total of 21,186,000 units; (2) that during the quarter further batches of antitoxin supplied by Messrs. Parke, Davis and Co. have been tested in the laboratory, and a certificate granted showing its strength, sterility, and freedom from excess of antiseptic; (3) that under the conditions approved by the two Royal Colleges in 1889, regulating the management of the laboratories, Dr Sidney Martin and Mr. Henry Morris now retire in rotation from the Committee.

e. The quarterly report of the Examiners for the Licence on the July examinations.

Membership.

An application from Horatio George Adamson, M.D.Lond., praying that the Membership which he resigned in 1897 may be restored to him, as he is now practising in accordance with the By-laws, was considered for the second time, and it was resolved that his name be placed on the list of Members.

Library.

Books and other publications presented to the Library during the past quarter were received and thanks returned to the donors.

CONJOINT BOARD IN ENGLAND.

THE following have passed the First Examinations of the Board in the subjects indicated:

Chemistry.—E. C. Banks, Owens College, Manchester; A. W. Beves, St. Mary's Hospital; M. F. Bliss, London Hospital; A. H. C. Dawes, University College, Bristol, and University College Hospital; W. Deane and J. E. Ellcome St. Thomas's Hospital; J. B. Fairclough, Yorkshire College, Leeds, and Bradford Grammar School; H. B. Farrant, Owens College, Manchester; S. K. Harrison, London Hospital; E. C. Holtom, St. Mary's Hospital; A. James, Kingswood School, Bath; A. G. Jenner, University College, Liverpool; D. W. Jones, Guy's Hospital; M. Nurick, University College, Liverpool; P. S. O'Bryen-Taylor, St. Mary's Hospital; B. C. N. O'Reilly, P. C. Raiment, and L. M. Waldron, London Hospital; Q. H. Richardson, Technical School, Plymouth.

Practical Pharmacy.—W. S. Alderson, Yorkshire College, Leeds; J. H. Burridge and T. A. Clarke, King's College Hospital; T. W. Byrne, University College, Liverpool; W. G. Cheatle, St. Mary's Hospital; A. S. Daly and A. C. Dixon, London Hospital; W. Damms, University College, Sheffield; E. H. G. Duncan, St. Bartholomew's Hospital; P. Farrant, Westminster Hospital; H. G. Gibson, Guy's Hospital; P. T. Harper and A. H. Hudson, St. Thomas's Hospital; A. Hawkins, Cambridge University and St. Bartholomew's Hospital; R. W. Hill, Owens College, Manchester; A. James, Kingswood School, Bath; H. Leach, Yorkshire College, Leeds; R. G. Maglione, Owens College, Manchester; O. C. H. L. Mole, Guy's Hospital, Durham and Cambridge Universities; R. Mugliston, W. G. O'Malley, J. S. Pearson, and G. R. Plaister, London Hospital; G. Munn, C. M. Ockwell, and J. E. Prentis, Guy's Hospital; H. J. D'A. G. Price, Birmingham University; F. J. Rees, St. Bartholomew's Hospital and Medical College, Calcutta; S. G. Scott, King's College Hospital; A. B. Scott, H. W. Skan, and F. Weber, St. Bartholomew's Hospital; G. Stone and R. T. Taylor, London Hospital; G. Wacher, Guy's Hospital; A. Whitehead-Smith, St. Thomas's Hospital.

Elementary Biology.—A. W. Bevis, St. Mary's Hospital; R. J. Cyriax, Birkbeck Institute; M. W. Morrison, University College, Bristol.

CONJOINT BOARD IN SCOTLAND.

THE quarterly examinations of the above Board, held in Edinburgh, were concluded on October 26th with the following results:

First Examination (Four Years' Course).—D. J. O'Connell.

First Examination (Five Years' Course).—H. R. Leonard, O. D. Gunasekara, H. H. Bradley, J. P. Synnott, T. J. Vaughan, R. McC. Blair, and W. J. V. Curtain.

One passed in Physics, 3 in Elementary Biology, and 1 in Chemistry.

Second Examination (Four Years' Course).—F. F. Middleweek and J. R. Lawther.

One passed in Anatomy.

Second Examination (Five Years' Course).—W. Murphy, R. J. Crawford, C. H. A. Alderton, A. R. F. Douglas, J. S. Morris, A. C. Mackay, J. F. M. O'Flaherty, J. H. Simpson, D. Steele-Perkins, M. A. Mulrain, B. W. Dakers, J. S. Macdonald, T. M. R. Waddell, W. H. Clarke, and W. A. Huston.

One passed in Anatomy and 2 in Physiology.

Third Examination, Five Years' Course.—A. C. Vidal, J. W. Pell, L. E. Ashley-Emile, W. N. Alexander, W. M. Johnston, D. C. Woods, J. Taylor, W. Dick, E. E. Murphy, E. F. Nyhan, M. P. Desmond, S. J.

Bhatheua, G. S. Thadani, J. D. Kennedy, D. M. Donovan, and C. G. Dyer.

Two passed in Materia Medica.

Final Examination.—J. V. Connell, H. C. Featherston, A. J. O'Leary, M. J. Perkins, H. A. Hagenauer, H. E. Munroe, Evelyn N. L. Wilson, L. Levi, J. D. Munsiff, T. F. Bayfield, R. S. Walker, Katharine Mary Chapman, Evelyn M. Franklin, A. C. M. Macrae, W. D. Sutherland, F. Keyt, S. J. Graham, W. T. Williams, J. H. Munro, G. A. Paulin, K. G. Gharpurey, W. Adams, W. Ness, S. G. Allwood, C. J. Todd, Irene M. Dewey, R. W. Chester, R. C. Hiscock, L. E. Ashley-Emile, L. A. Ekanayaka, D. G. Gellatly, Mary L. Calderwood, C. S. Hunter, F. G. Heyer, E. G. Rawlinson, A. F. Bell, R. McL. Watson, C. S. Buck, J. J. Uniacke, and J. D. Jones.

Seven passed in Medicine and Therapeutics, 1 in Surgery and Surgical Anatomy, 11 in Midwifery, and 10 in Medical Jurisprudence.

At the October sittings in Glasgow the following candidates were admitted diplomates in Public Health (D.P.H.):

R. V. C. Ash, M.B., G. H. Clark, M.B., C. G. Evers, L.M.S., A. Maclean, M.B., J. T. Malloch, L.R.C.P. and S., P. G. Marshall, L.R.C.P. and S., A. Mason, M.D., S. G. Ranaday, L.M.S., M. W. Robertson, M.B., A. S. Sieger, L.R.C.P. and S., J. Wilson, M.B., and W. R. Wylie, M.B.

CONJOINT BOARD IN IRELAND.

CANDIDATES have passed the Second Professional Examination (New and Old Regulations) as follows:

Honours.—I. R. Tobin.

Pass.—G. W. N. Anderson, A. P. Barrett, T. A. Burke, F. P. Byrne, G. H. Caldwell, M. Cohen, A. I. Faulkner, A. Hogan, W. P. Kelly, T. H. Massey, F. I. Morris, R. V. Murphy, J. M. O'Connell, G. Petit, E. P. Punch, W. Roche, C. R. Wallace, R. Welply, G. F. Wright.

Candidates have passed the Third Professional Examination as undernoted:

Old Regulations.—I. S. Ashe, P. Donnellon, S. B. Hanbury, W. F. Hegarty, H. F. C. Rutherford.

New Regulations.—I. M. Alcorn, I. R. P. Allin, M. Ambrose, E. A. Bernard, E. C. Byrne, S. Claud, I. I. Connolly, D. E. Crosbie, M. T. Donovan, I. S. Dunne, H. B. Evans, G. H. Gallagher, E. P. Harding, R. W. D. Leslie, T. C. C. Leslie, M. Lochrin, K. P. Neary, A. O'Neilly, E. Purcell, T. I. Ryan, W. W. Stuart, A. I. Swanton, S. W. Talbott, W. I. Trimble.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

THE ASSOCIATION OF PUBLIC VACCINATORS OF ENGLAND AND WALES.

ANNUAL REPORT.

THE annual meeting of this Association was held on October 23rd, at the Hotel Cecil, the President, Dr. E. Clinson Greenwood, occupying the chair.

The reports of the Council, and of the Organizing Secretary, showed that as a result of various representations the President of the Local Government Board had instituted a departmental inquiry as to the payments to public vaccinators and vaccination officers. Evidence was being tendered on behalf of the Association by three of its members. The Association had thus been officially recognized as a representative Association. Another encouraging feature was the liberal response of the members to the appeal for a special guarantee fund. The most important part of the work of the year, however, had been in the direction of organization, the establishment of fourteen district councils representing all the public vaccinators in various districts of England and Wales indicating the amount of success achieved. The report and balance sheet were passed, and Dr. E. Clinson Greenwood was unanimously re-elected president for the ensuing year. The election of the Council produced three changes in its *personnel*. Dr. Arthur Drury (Halifax), Dr. S. Woodcock (Manchester), and Dr. G. W. Brabyn (Wimbledon), taking the places of Drs. Mahomed, C. P. Oliver, and Thompson. Dr. Cope referred to the immense amount of work the Organizing Secretary had accomplished during the past year and said that to his indefatigable exertions was mainly due the success of the Association. The Organizing Secretary briefly dwelt on the progress the Association had made during the year, referring particularly to the establishment of the district councils which it was expected would be of immense service to them. Since the issue of the report four more councils had been established, bringing the number up to eighteen, and three others would be shortly added to the number, so that they hoped gradually to cover the whole of England and Wales.

THE IMPROVEMENT OF THE VACCINATION SYSTEM.

Dr. A. E. Cope read a paper on Our National System of Vaccination: How can it be Improved? He thought that the one all-important factor in any really national system of vaccination should be the absolute equality and uniformity of administration in every part of the country, and that could only be obtained by centralizing the system. There was one branch of the public service which was completely organized and uniformly administered, and free from all local political influence. That was the registration service. That system was ready to hand as a framework on which to expand and develop a national system of vaccination. Vaccination should, he held, be approximated to registration in its organization and method, and gradually withdrawn from its Poor-law associations. While Poor-law administration was still a local administration, vaccination should be considered as a national administration the same as registration. The new organization could be built upon the existing substructure. There would be eleven divisions, as at present for registration purposes, which would be subdivided into counties and districts, and each division would have a superintendent public vaccinator and a superintendent vaccination officer. He believed that an extension of vaccination organization in the direction indicated, accompanied by fixity of tenure, would greatly improve the system, and make it truly national. After touching upon the question of how vaccination should be paid for, Dr. Cope went on to deal with the payment of the public vaccinator himself. It would be desirable that in metropolitan and large urban districts, at all events, the public vaccinator should be either a whole-time man, or should not engage in practice which would put him in competition with the medical men in his district. He thought that all opposition would be disarmed, and the public vaccinator would be able to render more efficient service if that were the case. He need not be restricted entirely to vaccination in all cases. He (Dr. Cope) could not see why the public vaccinator should not be allowed to take appointments which would not interfere with his vaccination work, such as district medical officer, or why he should not be permitted to engage in special or consulting practice provided he obtained the sanction of the Local Government Board or the controlling authority. This vaccination appointment should be permanent and carry with it superannuation. Dr. Cope also dealt with the necessity for a system of revaccination after the manner obtaining in Germany, and he strongly urged that something should be done towards educating the public on vaccination matters.

Dr. Maude agreed in the main with the views expressed. They could not expect such an efficient system of registration in this country as obtained in Continental countries, but they should make the best use they could of the available machinery, and if they connected vaccination with State registration he considered it would be best. He strongly favoured the adoption of a system of revaccination approaching as near as possible to the German system.

Dr. Miskin suggested that as so many children escaped vaccination through the parents moving, it should be compulsory for changes of address to be notified to the registrar or vaccination officer.

Dr. Gosse hoped that the new Act would make it very clear that the onus of having the child vaccinated should be on the parents. If the parents failed to carry out the law they should be punished. He saw objections to rural districts being covered entirely by a man who did nothing else.

Dr. Holder differed considerably from Dr. Cope on the question of a public vaccinator not being allowed to engage in medical practice. He had been a vaccinator for thirty years, and had never in his vaccination visits given cause for discontent to any private practitioner. What the Government would consider, however, was what was the most efficient form of vaccination. They, as public vaccinators, had been doing their work efficiently, and he could see no reason why the Government should wish to make a change and take the duties from those who had attended to them for so many years.

Dr. Drury said that Dr. Cope had gone to the very fountain head as to the possible improvement, and perhaps the only thing for improvement under the present Act. There were many things to be said in favour of whole-time appointments, but only in large, congested areas. It would not be practicable in rural districts. Dr. Cope himself had suggested an argument against it where he insisted on the desirability for uniformity. During the last five or six years the tendency was for the guardians, when vacancies occurred, to cut up the districts rather than to enlarge them.

Dr. Clemmey said with regard to the conscience clause that if a parent came before the magistrate and produced two certificates, one signed by a medical practitioner and the other signed by the public vaccinator of the district, to say that vaccination would be injurious to the child, the magistrate should grant the certificate of exemption, which should be in force till the child reached the age of 5.

Dr. Jaynes said that the first object of the Association was to improve the position of the public vaccinator; but if they had whole-time public vaccinators they snuffed out half of them. What they wanted, he considered, was to be under the Local Government Board and to have fixity of tenure.

Dr. Wilson agreed that they should do their utmost to get under the Local Government Board.

Dr. Pigott spoke a good word for the treatment he had experienced at the hands of the guardians.

Dr. Woodcock said it was of the utmost importance that the authority controlling the public vaccinator should be a central authority. Another important matter was that they should have some indication as to what was regarded as efficient vaccination.

Dr. Elliott was of opinion that, before considering the efficiency of vaccination, fixity of tenure should be obtained. With regard to whole-time public vaccination, he suggested the adoption of the Irish plan. In Ireland medical men were registrars of births, and they had the whole of the vaccination in their hands. Why not refuse a certificate of birth to the parents until they could prove that the child had been vaccinated?

Dr. Wakefield had always thought that a whole-time officer would be the best, but he did not know how they would get on in rural districts which were very scattered. He gave some amusing instances from his own experience of long and fruitless journeys for the purpose of vaccination. Comparing the public vaccinator with the private practitioner, he thought the former ought to rank as a specialist. He had the best lymph, and took the greatest precautions.

Dr. Cope, in reply, wished it to be understood that what he had written in his paper was absolutely irresponsible so far as the Association was concerned. In regard to his remarks about the whole-time public vaccinator or the man who was restricted with regard to private practice, that had a very limited application. There were half a dozen men in London who were occupying that position at present. He would distinctly limit it to the metropolis and large urban districts. He would never lift a finger to enlarge a public vaccinator's district at the expense of any other public vaccinator, nor would he prevent a public vaccinator taking an adjacent appointment if it were vacant. Dr. Miskin's suggestion about reporting removals he thought would be unworkable. No penalty which could be imposed would ensure the due registration of changes of address. He agreed that a child should be required to produce evidence at 5 years of age of having been vaccinated.

A hearty vote of thanks was accorded to Dr. Cope for his valuable paper.

THE REGISTRAR-GENERAL'S QUARTERLY RETURN.

[SPECIALLY REPORTED FOR THE BRITISH MEDICAL JOURNAL.]

THE Registrar-General has just issued his return relating to the births and deaths registered in the third quarter of this year, and to the marriages during the three months ending June last. The marriage-rate was equal to 17.5 per 1,000, and was 0.7 per 1,000 above the mean rate in the corresponding periods of the ten preceding years.

The births registered in England and Wales during the quarter ending September last numbered 241,125, and were equal to an annual rate of 28.7 per 1,000 of the population, estimated by the Registrar-General at 33,378,338 in the middle of the year. The birth-rate last quarter was 0.6 per 1,000 below the average for the ten preceding third quarters.

The birth-rates in the several counties ranged from 22.3 in Rutlandshire, 22.6 in Sussex and in Westmorland, 22.8 in Cornwall, 22.9 in Devonshire, and 23.0 in Somersetshire, to 32 5 in Staffordshire and Northumberland, 32 7 in Nottinghamshire, 33.3 in South Wales, 35.4 in Monmouthshire, and 35.5 in Durham. In seventy-six of the largest English towns, including London, the birth rate last quarter averaged 29.8 per 1,000, being 1.1 per 1,000 in excess of the general English birth-rate. In London the rate was 28.4 per 1,000, while it averaged 30.5 in the seventy-five large provincial towns, and ranged from 16.6 in Bournemouth, 19.3 in Hastings, 21.3 in Halifax, 21.4 in Hornsey, and 22.9 in Rochdale, to 36.0 in Gateshead, 38.0 in Middlesbrough, 38.1 in St. Helens, 39.6 in Merthyr Tydfil, and 40.4 in Rhondda.

The births registered in England and Wales during the three months under notice exceeded the deaths by 124,518, this represents the natural increase of the population during that period. From returns issued by the Board of Trade, it appears that 140,456 emigrants embarked during last quarter for places outside Europe, from the various ports of the United Kingdom at which emigration officers are stationed. Of these 140,456 emigrants, 60,585 were English, 12,837 Scottish, and 14,570 Irish; while 52,464 others were of foreign nationality. Compared with the averages in the corresponding quarters of the three preceding years, the proportion of English emigrants showed an increase of 38.8 per cent., that of Scottish emigrants an increase of 33.9 per cent., and that of Irish emigrants an increase of 14.0 per cent.

During the third quarter of this year the deaths of 116,607 persons were registered in England and Wales, equal to an annual rate of 13.9 per 1,000 against an average rate of 16.9 per 1,000. The lowest county death-rates last quarter were 9.7 in Rutlandshire, 10.4 in Dorsetshire, 10.5 in Bedfordshire, 10.6 in Surrey, 10.8 in Hertfordshire, and 10.9 in Berkshire and in Somersetshire; and the highest rates were 16.3 in the North Riding of Yorkshire, 16.4 in Lancashire, 16.5 in Durham, and 16.9 in Northumberland. In the seventy-six large towns the death-rate averaged 15.1 per 1,000; in 103 smaller towns, the mean rate was 13.0 per 1,000; while in the remaining, and chiefly rural, parts of England and Wales, containing a population of about 14½ millions, the rate of mortality was 12.8 per 1,000. In London the death-rate was 14.1 per 1,000; while it averaged 15.6 in the seventy-five large provincial towns, and ranged from 7.1 in Hornsey, 8.4 in Handsworth, 8.6 in Kings Norton, 9.6 in Croydon and in East Ham, and 9.7 Leyton and in Bournemouth, to 19.8 in Birkenhead and in Newcastle-on-Tyne, 20.1 in Wigan, 20.5 in Sheffield, 21.6 in Bootle, and 22.1 in Middlesbrough.

The 116,607 deaths registered in England and Wales during the three months ending September last included 15,060 which were referred to the principal infectious diseases; of these, 9,776 were attributed to diarrhœa, 1,661 to whooping-cough, 1,351 to measles, 1,280 to diphtheria, 900 to scarlet fever, 845 to "fever" (principally enteric), and 138 to small-pox. The mortality from small-pox slightly exceeded the corrected average, but the mortality from each of the other principal infectious diseases showed a decline. Of the 138 fatal cases of small-pox last quarter, 16 belonged to Liverpool, 13 to Cambridge, 7 to Newcastle-on-Tyne, 5 to Leeds, 4 to York, 4 to Gateshead, 3 to London, 3 to Hanley, and 3 to Halifax.

The rate of infant mortality in England and Wales last quarter, or the proportion of deaths among children under 1 year of age to registered births, was equal to 133 per 1,000, or 61 per 1,000 below the average. In seventy-six of the largest English towns, including London, the proportion was 159 per 1,000; in London the rate was 141 per 1,000, while it averaged 166 in the seventy-five large provincial towns, and ranged from 50 in Hornsey, 65 in Bournemouth, 80 in Coventry, 85 in Hastings, 86 in Handsworth, and 87 in Kings Norton, to 224 in Aston Manor and in Hull, 239 in Bootle, 251 in Burnley, 258 in Sheffield, and 260 in Birkenhead.

The mortality in England and Wales last quarter among persons aged between 1 and 60 years was equal to 6.9 per 1,000 of the estimated population at this group of ages, and was 1.2 per 1,000 below the average rate in the corresponding quarters of the ten preceding years. In the seventy-six large towns the mortality at this age-group was equal to 7.7 per 1,000, and ranged from 3.7 in Hornsey, 4.3 in Kings Norton, 4.4 in Norwich and 4.5 in Croydon, to 10.8 in Wigan, 10.9 in Newcastle-on-Tyne, 11.0 in Bootle, 11.5 in Warrington, and 12.3 in Middlesbrough.

Among persons aged 60 years and upwards the death-rate in England and Wales last quarter was equal to 52.3 per 1,000 of the population estimated to be living at this group of ages, and was 0.8 per 1,000 below the average rate. In the seventy-six large towns this death-rate averaged 54.0 per 1,000, the lowest rates being 30.8 in Handsworth, 31.0 in East Ham, 33.5 in Leyton, 34.7 in Kings Norton, and 39.7 in Tottenham and in Reading; and the highest rates, 67.2 in Halifax, 67.4 in South Shields, 67.5 in Huddersfield and in Merthyr Tydfil, 73.3 in Burnley, 73.6 in Preston, and 79.4 in Bolton.

The mean temperature of the air in the London district was 60.2°, the highest reading of the thermometer being 87.8°, and the lowest reading 32.8°. The amount of rain measured during the quarter was 11.70 in., or 4.86 in. more than the average.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,812 births and 4,715 deaths were registered during the week ending Saturday last, October 31st. The annual rate of mortality in these towns, which had been 15.6, 15.8, and 15.9 per 1,000 in the three preceding weeks, further rose last week to 16.2 per 1,000. The rates in the several towns ranged from 4.7 in Hornsey, 8.9 in Reading, 9.0 in Leyton, 9.2 in Southampton, 9.5 in Croydon, 12.2 in Hastings, and 12.4 in East Ham and in Newport (Mon.), to 21.0 in Wigan and in Oldham, 21.1 in South Shields, 22.0 in Walsall, 22.1 in Rochdale, 23.6 in Sheffield, 24.6 in Rotherham and 29.9 in Warrington. In London the rate of mortality was 15.9 per 1,000, while it averaged 16.5 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.8 per 1,000 in the seventy-six towns; in London this death-rate was equal to 1.1 per 1,000, while it averaged 1.9 in the seventy-five large provincial towns, and ranged upwards to 4.0 in Great Yarmouth, 4.2 in Wigan, 4.4 in Merthyr Tydfil, 4.5 in Gateshead, 4.9 in Hanley, 5.2 in Preston, 6.3 in Sunderland, 7.3 in Rotherham, and 11.6 in Warrington. Measles caused a death-rate of 1.2 in Bury and Rotherham, 2.7 in Preston, 3.6 in Sunderland, and 10.2 in Warrington; scarlet fever of 1.2 in Walsall and 1.4 in Devonport; diphtheria of 1.1 in Portsmouth, 1.2 in Walsall, and 1.3 in York; whooping cough of 1.2 in Rochdale, 1.5 in Merthyr Tydfil, and 1.7 in Wigan; "fever" of 1.2 in Walsall, and 1.5 in Merthyr Tydfil; and diarrhœa of 2.0 in Blackburn, 2.7 in Handsworth, in Preston, in Rotherham, and in Middlesbrough, and 4.1 in Hanley. Two fatal cases of small-pox were registered in Gateshead, 1 in King's Norton, and 1 in Stockport, but not one in any other of the seventy-six large towns. The Metropolitan Asylums Hospitals contained 42 small-pox patients at the end of last week, against 17, 11, and 34 at the end of the three preceding weeks; 12 new cases were admitted during the week, against 2, 1, and 26 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital, which had been 1,881, 1,861, and 1,858 on the three preceding Saturdays, had further declined to 1,828 on Saturday last, October 31st; 197 new cases were admitted during last week, against 240, 208, and 209 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, October 31st, 831 births and 557 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 16.0, 16.1, and 16.7 per 1,000 in the three preceding weeks, further rose to 17.0 per 1,000 last week, and was 0.7 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 14.4 in Leith and 14.9 in Edinburgh to 20.1 in Perth and 22.0 in Paisley. The death-rate from the principal infectious diseases averaged 1.9 per 1,000 in these Scotch towns, the highest rates being recorded in Paisley and Greenock. The 259 deaths registered in Glasgow included 9 which were referred to measles, 2 to diphtheria, 3 to whooping-cough, and 17 to diarrhœa. Six deaths from diarrhœa occurred in Dundee, 3 in Edinburgh, 2 in Aberdeen, and 2 in Greenock. Two fatal cases of scarlet fever, and 2 of diarrhœa were recorded in Paisley.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, October 31st, 482 births and 324 deaths were registered in six of the principal Irish towns, against 502 births and 348 deaths in the preceding period. The mean annual death-rate of these towns, which had been 16.8, 17.3, and 19.7 per 1,000 in the three preceding weeks, fell to 17.5 per 1,000 in the week under notice, this figure being 1.2 above the mean annual rate during the corresponding period in the seventy-six English towns. The deaths in these six Irish towns ranged from 10.1 in Londonderry and 10.9 in Limerick to 22.3 in Dublin and 31.2 in Waterford. The death-rates from the principal zymotic diseases in these six Irish towns averaged during the week 0.8 per 1,000 or 1.1 less than during the preceding period. The highest point, 1.4, was reached in Cork, while Limerick and Waterford registered no deaths from zymotic disease at all. In Dublin 1 death was registered from scarlet fever, 2 from whooping-cough, and 4 from diarrhœal diseases, while Belfast had 1 death from scarlet fever, 3 from whooping-cough, 1 from enteric, and 3 from diarrhœal diseases. Londonderry had 1 death from diphtheria, but otherwise, like Waterford and Limerick, had no occasion to register any deaths from zymotic disease at all.

WHAT IS A HOSPITAL?

The question, What is a hospital in the eyes of the law? has recently arisen in a case heard in the Court of Appeal. It appears that by the Poor Removal Act, 1846, Section 1, it is provided that the time during which a person shall be "confined.....as a patient in a hospital" shall be excluded from the computation of the period which renders a pauper irremovable. In the case under notice an epileptic subject was admitted as a patient into an institution called the Home for Epileptics at Maghull in the Ormskirk Union, suffering from epilepsy. He remained in the home for about nine years, when he was discharged as incurable. He then became an inmate of the Chorlton Union workhouse. It was alleged on the part of the Chorlton Union that the Home for Epileptics was not a "hospital" within the meaning of the Act, and that the patient had therefore become chargeable to the Ormskirk Union by reason of his residence therein. The Home had been established and partially endowed in 1888 by one Cox, deceased. It was supported by donations, annual subscriptions, and payments made on behalf of the patients under treatment therein. It was urged that the Home was not a hospital because payments were made by the patients' friends, and that the residence in hospital contemplated by the Act was involuntary residence.

In giving judgment, Lord Justice Vaughan Williams said: "I do not think it necessary to define what is or is not a hospital within the meaning of this section; but, in my opinion, this institution comes within the term hospital. It is a house in the country where epileptic patients are taken in for the express purpose of obtaining hospital treatment combined with such possibilities of outdoor life as would be calculated to make that treatment more effective."

This case is of no little importance to Poor-law guardians whose district happens to be well provided with hospitals and convalescent homes. If the inmates of such institutions were to be entitled to support by reason of their settlement in the district, a very serious burden might be imposed upon the ratepayers.

NURSING IN WORKHOUSES.

A meeting convened by the Hospitals Association was held in the Governors' Hall of St. Thomas's Hospital on October 29th, under the chairmanship of Mr. Thomas Bryant, F.R.C.S., to discuss the report of the Departmental Committee on Nursing appointed by the President of the Local Government Board.

The discussion was opened by Dr. T. D. Savill, formerly Medical Superintendent of Paddington Infirmary, who said that it had been estimated that the number of beds for the indigent sick poor in England and Wales referred to in the report was about 73,000. The question was how these people were to be nursed, how the nurses were to be obtained, and how the best kind of nurses could be educated. The reason for the report was the deficient supply of nurses obtainable for the workhouses and infirmaries in England and Wales. The report admitted that there was a deficiency, mainly in the smaller country workhouses. One of the suggestions of the report was that in England and Wales there should be instituted in the smaller workhouses infirmary training schools for nurses where, after twelve months' training, provided there was a superintendent nurse and a visiting medical officer, a probationer so trained should be regarded as a qualified nurse who should be recognized by the Local Government Board as a proper person to fill any post in the nursing service to which she might be appointed by guardians. In the small country workhouses the material for instruction was necessarily limited, the surgery was scarcely up to date, and twelve months was a ridiculously short time in which to train a nurse. In his opinion, to call any one thus trained a qualified nurse was a misnomer. The recommendation was an insult

and injury to adequately-trained nurses, and by lowering the standard of efficient nursing would be an injury to the general community. Dr. Savill criticized the constitution of the Departmental Committee. He observed that it consisted of Local Government Board officials, and its report would have been received with more confidence if the Committee had had amongst its number one or more independent persons with some expert knowledge in the matter of nursing.

Miss Gibson, Matron of the Birmingham Infirmary, considered that the suggestion of the Local Government Board Departmental Committee to form a new grade of nurse to be called a "qualified nurse" was dangerous and retrograde. It was impossible to secure the best type of nurse for Poor-law work, because the position of a superintendent nurse was intolerable: she was responsible to the guardians, to the medical officer, to the master, and to the matron. Poor-law nursing could be improved by persuading the Local Government Board to form a special department to deal with the question, and women inspectors should be appointed to visit and report on the nursing of the small unions.

Mrs. Baker, a guardian of the Holborn Union, said that one of the minor schools suggested by the report had already been instituted at St. Luke's. It was a perfect farce to call women trained in these schools qualified nurses, and she hoped that some step would be taken to stop the movement.

Mr. White Parkinson, a workhouse master, thought the question might be left to the Local Government Board; and Mr J. T. Macnamara thought the department was trying to raise the tone of the nursing in small workhouses, but that the establishment of a second grade of nurses was a retrograde step.

Dr. A. Scott, of Braintree, showed that the nurses in workhouses should be under the control of the medical officer.

After Mrs. Bedford Fenwick had spoken, a resolution was passed disagreeing with the proposal of the report to create minor training schools, and with the recommendation that a probationer who had undergone one year's training in such schools should be considered a "qualified nurse." It was also agreed that the President of the Local Government Board should be asked to receive a deputation on the subject.

THE HOUSING OF THE WORKING CLASSES ACT, 1903.

THE new Housing Act of 1903 is the most considerable amendment of the law since 1890, and a circular has recently been issued by the Secretary of the Local Government Board drawing attention to it. By Section 1 provision is made that the maximum period for which money may be borrowed is eighty years, which is an extension of time of twenty years for repayment of housing loans. Section 11 of the new Act provides for the transfer of powers and duties hitherto devolving upon the Home Office to the Local Government Board. An important amendment is the requirement that, when persons of the working class are displaced under Parliamentary powers by public companies, School Boards, and in the course of certain kinds of public improvement, the displacing authority shall not acquire more than a prescribed number of houses occupied by working class people unless they have provided for rehousing, and obtained approval of their scheme. Further amendments concern modifications of Part II of the principal Act, one of the most important being that it will not be necessary in future, as in the past, to serve a notice for abatement of nuisance before obtaining a closing order, if in the opinion of the local authority the house is (*a*) not reasonably capable of being made fit for habitation, or (*b*) is in such a state that its occupation should be immediately discontinued. New provisions as to expenses of demolition, as to provision of dwelling accommodation, and as to the service of notices, have also been made.

POOR-LAW MEDICAL OFFICERS AND SCHOOL BOARD CERTIFICATES.

SAPIENS writes: As a Poor-law medical officer I write certificates for the information of the guardians respecting the unfitness of children to attend school. Has the London School Board the right to demand certificates without the payment of any fee in the case of pauper children, or have the guardians power to order me to give certificates to the School Board?

*** A district medical officer is only required to give certificates relating to pauper patients for the information of the guardians. The latter cannot lawfully order him to give a certificate to any other body. The duties of a district medical officer in this respect are governed by Art. 205, No. 3, of the General Order of July 24th, 1847. By that section he is required to give a certificate of sickness, if required, either by the guardians, the relieving officer, or the pauper patient.

THE FACTORY AND WORKSHOPS ACT.

M.O.H. writes: (*a*) What is the position of medical officer of health with regard to the Factory and Workshops Act, 1901? Should the inspection of workshops, etc., be made by him or by the inspector of nuisances? (*b*) Whose duty is it to procure list of workshops, etc., for entry in the register? Up to the present time very little has been done in connexion with the Act, the provisions of which have been advertised and the factory inspector of the district asked to supply a list of the factories and workshops in the district, but without any result. (*c*) Assuming that the inspection of factories and workshops comes within the duties of the medical officer of health, is he obliged to make any special inspection beyond that which would come within the scope of his ordinary duties?

*** The answers to our correspondent's questions are as follow: (*a*) The duty would probably fall to the inspector as a rule, but the medical officer of health is responsible, and when necessary will make the inspections himself. (*b*) Presumably the inspectors, but here again obviously it is a matter to be arranged by the medical officer. Lists of outworkers are to be furnished by employers under Section CVII. (*c*) This depends upon what he considers the extent of his ordinary duties. The sanitation of workshops is now among his ordinary and statutory duties.

THE President and Council of the British Gynaecological Society have issued invitations to a dinner at the Café Monico, London, W., on Friday, November 27th, at 7.30 p.m.

THE GOXHILL ISOLATION HOSPITAL.

WE have received a further letter from Dr. Watt on the subject of the alleged refusal of the local authority to open this hospital, but owing to pressure on our space we are unable to publish it in full. The following summary, however, contains, we believe, all the points which Dr. Watt desires to make:

Dr. Watt, as a resident and ratepayer, thought it his duty to find fault with the administrative action of the District Council, but he had not the slightest intention of reflecting unfavourably upon that of the medical officer of health. The remarks, moreover, which he was led to believe had been made by the latter, should, he finds, have been ascribed to the member of the Council who accompanied the M.O.H., and they were qualified, he learns, by a promise that the hospital should be opened if satisfactory arrangements could not be made for the boarding-out of the healthy children. If he was incorrect, however, in this particular, the M.O.H. is not more happy in his description of the isolation of the premises in which the first cases of scarlet fever occurred. The house is one of a hamlet of a score or more of detached houses, and stands flush with the highway, having no yard or space in front of it. It is, therefore, not separated from the road in any way, nor was there anything to prevent the child occupants of the nearest house—which is only 200 ft., not 200 yards away—communicating with the desquamating children. The parents were under notice to quit in fifteen days, and the owner was waiting to come in himself, and out of this *impasse* removal to the hospital offered an easy means of escape. The lapse of thirty-five days before outbreak of the disease occurred in any other family in the hamlet proves not that the precautions taken were what they should have been, but strongly suggests that if the first family had been removed and interned, further spread might have been avoided altogether; while the incoming tenant would not have been kept out of his property for five weeks owing to its being practically seized and used as an isolation hospital. The owner moreover has not, as stated, received compensation from the Council. Dr. Watt regrets very much to learn that his telegram to the Local Government Board obliged Dr. Goodman to cut short his vacation, but local effort having failed, a telegram to the supreme authority was the only possible course; for with two cases of scarlet fever and one of bad diphtheria in a small village public-house, the position was already desperate, and the addition of two cases made any further attempt at isolation impossible. With reference to the after-history of the epidemic, Dr. Watt wishes to state that all the cases occurred in the houses of the working classes in which, no servants being kept, the mother was factotum, and isolation consequently was impossible. Except in the typhoid family none of the parents desired the removal of their children to the hospital, and consent had to be obtained by persuasion on Dr. Watt's part. On an occasion which has since occurred the Council has offered to take a family into hospital, a circumstance which Dr. Watt accepts as a proof of the justice of his cause, and which will make any further word from him unnecessary.

HOSPITAL AND DISPENSARY MANAGEMENT.

EDINBURGH ROYAL INFIRMARY.

THE following appointments have been made: Clinical Tutors for the current winter and ensuing summer sessions—John D. Comrie, M.B., Ch.B., to Dr. Byrom Bramwell's wards; James Burnet, M.B., M.R.C.P.E., to Dr. Andrew Smart's wards; F. M. Graham, M.B., F.R.C.S.E., to Mr. Cathcart's wards. Resident Surgeon for six months as from 1st inst.—A. Campbell Geddes, M.B., Ch.B., to Mr. Cathcart's wards. Clinical Assistant for six months as from October 1st—Herbert F. Alsop, L.R.C.P. and S.Edin., to Mr. Cathcart's wards. Anaesthetist to Mr. Cathcart's wards—G. W. E. Daniell, M.R.C.S. and L.R.C.P.

EDINBURGH MATERNITY HOSPITAL.

C. R. GIBSON, M.B., Ch.B. (James Scott Scholar), and J. M. Kirkness, M.B., Ch.B. (Buchanan Scholar) have been appointed Resident Surgeons for the period of three months beginning November 1st. During the same quarter Dr. J. W. Ballantyne will act as Assistant to Professor A. R. Simpson.

SUNDERLAND INFIRMARY.

THE Sunderland Infirmary, which commenced work as a dispensary under the auspices of the Sunderland Humane Society in 1792, has just issued its report for the year ending June, 1903, and, as nearly everywhere else, it is shown that work is increasing, 3,165 in-patients having been treated in the year under report as against 2,474 in 1901. A very creditable drop is shown in the cost of maintenance of each patient.

this now being £2 16s. 6d. against £3 13s. 1d. two years ago; while the average duration of stay for each patient has fallen in the same period from 25.9 to 21.4 days. Income also shows an increase from £12,872 to £15,540. A special feature of the accounts is the amount subscribed by working people; this forms over one-third of the total receipts of the institution. The report also shows that during the year 1,052 operations were performed at the infirmary under anaesthetics. Details of the nature of the latter are given, but no information is supplied as to whether or not any accidents occurred in connexion with them. The total number of deaths during the year was 156, of which 124 were the result of disease and 32 of accidents, the first number representing 4.9 per cent. of the total admissions. The daily average in hospital increased from 176.57 in 1901 to 188.06 in 1903. The eleventh annual report of the Aberdeen Convalescent Home, which works in connexion with the infirmary, is attached. The report contains a special expression of the appreciation by the Committee of the twenty-one years' service of its Secretary, Mr. Thomas Robinson.

INDIA AND THE COLONIES.

VICTORIA.

The City of Melbourne.—The report of the Medical Officer of Health of the City of Melbourne for the year 1902, dated June, 1903, is a brief statement relating to a population estimated at 67,550. A comparison is established in it between the six years ending December 31st, 1890, 1896, and 1902, and it is shown that the average annual death-rates during these periods were respectively 19.4, 15.96, and 14.59. By a further comparison it is attempted to show that the sanitary condition of Melbourne is in many respects better than that of the average English great town. The general and infant mortality-rates, and those from diphtheria and typhoid are taken for this purpose, and are shown to be somewhat less than those returned for London and the seventy-five chief English towns in 1902. It is stated that allowances were made for different conditions, but what correction figure was used is not disclosed, nor is information supplied as to the age and sex-distribution of Melbourne itself. The birth returns are limited to a bare statement of the number of births during the year, and nothing is said as to the ratio which this bears to the population. So far as we have been able to estimate it for ourselves it appears to be less than 20 per 1,000. The age-distribution, therefore, of Melbourne must differ very materially from that which holds in the seventy-six English towns. In a subreport by Dr. Cherry, of the University Laboratory, it is stated that among ninety samples of milk examined during the last three years only five have proved tuberculous. He remarks that there is some evidence to show that the guinea-pigs used as test animals were somewhat more resistant to bovine tubercle than their European ancestors, but nevertheless considers that after making due allowance for this fact it may be concluded that tubercle is less common in the milk retailed in Melbourne than elsewhere. Apart from this fact the report of the city analyst seems to show that milk difficulties are not less in Melbourne than in England, and further stringency in the local laws respecting adulteration is asked for.

MEDICAL NEWS.

On October 31st Lord Goschen was unanimously elected Chancellor of Oxford University in the room of the late Lord Salisbury.

The first of the three Harveian lectures before the Harveian Society of London was given by Dr. D. B. Lees at the Stafford Rooms, Titchborne Street, Edgware Road, on Thursday last. The subject of the course is the treatment of visceral inflammations. The other two lectures will be given on November 12th and 19th, at 8.30 p.m.

Presentation.—Dr. Scott, on the occasion of his leaving Shiraz to take up the duties of Medical Superintendent at Teheran, was presented with two handsome silver fruit dishes by a few Persian friends. Dr. Scott was also presented with a testimonial signed by the Imam-i-Juma and leading Mollahs testifying to his popularity.

The November dinner of the Aberdeen University Club in London will be held at the Trocadero Restaurant, Shaftesbury Avenue, W., on Wednesday, November 18th, at 7 p.m., Professor George Pirie being in the chair. Members desiring to be present should communicate with the Honorary Secretaries, Dr. R. J. Collie, or Mr. J. M. Bulloch, 25, Porchester Terrace, Hyde Park, W.

The annual general meeting of the Society of Members of the Royal College of Surgeons will be held at the Frascati Restaurant, Oxford Street, W., on Tuesday, November 10th, at 7 p.m. The meeting will be followed by a dinner at 7.30 p.m. Any member wishing to dine will oblige by communicating with the Honorary Secretary, Dr. W. G. Dickinson, West Hill, Putney, S.W.

The Medical Guild, Manchester.—Dr. David Owen, Honorary Secretary, informs us that at the quarterly meeting of the Medical Guild on October 30th the following resolution was adopted: "That in the opinion of this meeting it is desirable that the British Medical Association should undertake the individual and collective defence of its members as far as practicable."

Metropolitan Borough Councils Elections.—Dr. Robert Knox, of Highgate, has been elected to the Hornsey Borough Council, and Dr. Henry Dutch has been returned for the Grosvenor Ward of the City of Westminster Council.

A Fortunate Physician.—Dr. Faucher, formerly medical superintendent of the asylums of Neaugeat and La Charité-sur-Nievre, gained a prize of £20,000 at the last drawing of the Panama Canal allotments. Dr. Faucher retired not long ago, after 35 years' devoted work in the public lunacy service.

A Temperance Hospital for Chicago.—A hospital, to cost £15,000, is to be erected in Chicago, the physicians and surgeons of which must engage to prescribe no alcohol. The hospital will be called the Frances E. Willard National Temperance Hospital. The three schools of practice—regular, homoeopathic, and eclectic—will be represented on the medical staff.

French Congress of Social Hygiene.—A congress of social hygiene will be held on November 29th at St. Etienne, under the auspices of the departmental union of the mutual aid societies of the Loire, on the occasion of the meeting of the Fédération Mutualiste du Centre. M. Casimir-Périer, formerly President of the French Republic, will preside, and several former Ministers and members will attend.

Among the classes organized by the Plymouth Education Authority is one on bacteriology to be given by Dr. F. Bushnell. It is intended for students and graduates of medicine, dentistry, veterinary, and State medicine, for teachers, pharmaceutical chemists, and sanitary officers, missionaries proceeding to the tropics, and for post-graduate instruction. The course will be illustrated by diagrams, lantern slides, cultures, and microscopical and other demonstrations.

At a meeting held recently in the Town Hall, Chiswick, presided over by Dr. Joseph Smith, Chairman of the Chiswick District Council, it was resolved to form a Chiswick Health Society, to diffuse a knowledge of hygiene and sanitation among all classes of the population, and to aid the efforts of the public health authorities in this direction. The meeting also expressed its approval of the efforts of the Plumbers' Company to advance the training and registration of plumbers, and called upon the Government to afford facilities for passing the Plumbers' Registration Bill next session.

A Proposed Crematorium for Sydney.—A deputation, comprising a number of representative members of the medical profession and prominent citizens of Sydney, recently waited upon the Premier of New South Wales, Sir John See, for the purpose of urging the establishment of a crematorium. They asked that facilities should be provided for those who expressed a wish before death that their bodies should be disposed of by cremation. It was also requested that the Government should provide funds for the erection of a crematorium and its accessories. Sir John See said that he sympathized with the object of the deputation, and fully recognized the importance of the question, but he did not see why the Government should be called upon to meet the cost. A crematorium should properly form part of a burial ground. He promised to communicate with the trustees of Rookwood, and see if any arrangements could be come to between them and the Government. The question of expense was one of detail, and he recognized that a large section of the community should be afforded facilities for the disposal of their dead in this manner if they so desired.

Bequests to Medical Charities.—The following hospitals at Birmingham receive each £100 under the will of the late Mr. Henry Worton Elliott, of Elmfield, Selly Oak, Worcester, who died on March 31st, 1903: The General Hospital, the General Dispensary, the Queen's Hospital, and the Hospital for Sick Children.—Under the will of Captain Thomas Slingsby, of 24, Portland Place, W., who died on September 6th, 1903, the Middlesex Hospital benefits to the extent of £1,000.—Under the will of the late Miss Grace Elizabeth Turner, of Woodford, the sum of £500 has been bequeathed to the London Hospital.—Miss Jane Isabella Mewburn, of Randolph Gardens, Carlton Vale, has left the sum of £250 to the Hospital for Incurables at Putney.—Mrs. Mary Ann Baker, of Derby, has bequeathed £500 to the Manchester Royal Infirmary in memory of her late husband, who was a student and house-surgeon there; and £250 each to the Royal Medical Benevolent College at Epsom, and the British Medical Benevolent Fund, London.

ROYAL DENTAL HOSPITAL OF LONDON.—The annual dinner of the staff and past and present students will be held on Saturday, November 21st, at the Hôtel Métropole (Whitehall Rooms), under the presidency of Mr. F. J. Bennett, M.R.C.S., L.D.S.Eng. Gentlemen either now or formerly connected with the hospital or medical school, who may through inadvertence not have received special notice, and who desire to be present, are requested to communicate with the Dean at the Royal Dental Hospital, 32, Leicester Square, London.

ROYAL ACADEMY OF MEDICINE IN IRELAND.—At the annual meeting of the Royal Academy of Medicine in Ireland, Sir Thornley Stoker was elected President, Dr. John B. Story and Sir John Moore were re-elected General Secretary and Secretary for Correspondence respectively. The following Presidents of Sections were elected:—Medical, Sir A. V. Macan; Surgical, Sir Lambert H. Ormsby; Obstetrical, Dr. Alfred J. Smith; Pathological, Dr. H. C. Earl; Anatomy and Physiology, Dr. E. H. Taylor; State Medicine, Sir John Moore. At the same meeting Professor Brouardel (Paris); Dr. P. H. Pye-Smith, F.R.S. (London); Sir Frederick Treves, Bart. (London); and Professor von Bergmann (Berlin) were elected Honorary Fellows of the Academy.

AT the Edmonton Coroner's Court on Monday, Dr. Foster Burnes, after giving evidence at an inquest, took occasion to refer to the appointment of a medical officer of health for the district—a position that is now being advertised as vacant. He urged the need for appointing a candidate who possessed a diploma of Public Health, and said that there must be no hole-and-corner meetings for the purpose of running in certain candidates. Dr. Cane, who was also in court, said that it was not compulsory on the District Council's part to appoint a man with a D.P.H., and the practitioners of Edmonton, with the exception of Dr. Burnes, would regard it as a grievance if the District Council brought in an outsider, and subsidized him with £150 (the salary attached to the office), and allowed him to practise in the neighbourhood. They found it hard enough to live as it was. If the Council offered a salary of £500 or £600 a year, and stipulated that the medical officer should not practise, there would be nothing to complain of. It was a hardship on local doctors to create an agitation and bring down outsiders. In reply to a juryman, Dr. Cane said that no practitioner in the parish had a D.P.H., although there were one or two that nearly had it.

MEDICAL VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES.—Surgical Assistant. Honorarium at the rate of 52 guineas per annum.

BRIGHTON, HOVE, AND SUSSEX THROAT AND EAR HOSPITAL.—Non-resident House-Surgeon. Salary at the rate of £75 per annum.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—House-Surgeon, resident. Salary, £140 per annum.

CAMBERWELL PROVIDENT DISPENSARY.—Vacancy on the Medical Staff.

CANCER HOSPITAL (FREE), Fulham Road.—Superviser of the Electrical Arrangements. Honorarium, £26 5s. annually.

CHARING CROSS HOSPITAL.—(1) Medical Registrar. Salary, £40 per annum, and lunch. (2) Assistant Anæsthetist. Salary, £60 per annum.

GRIMSBY AND DISTRICT HOSPITAL.—Resident House-Surgeon. Salary, £80 per annum.

LANCASHIRE INEBRIATES' ACTS BOARD, Preston.—Director and Medical Officer for the Inebriates' Reformatories. Salary, £500, rising to £700 per annum.

LIVERPOOL INFECTIOUS DISEASES HOSPITALS.—Assistant Resident Medical Officer. Salary, £120 per annum.

LONDON HOSPITAL MEDICAL COLLEGE, Mile End, E.—Demonstrator of Biology. Salary, £75 per annum.

MANCHESTER AND SALFORD LOCK HOSPITAL.—Assistant Honorary Surgeon.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House-Surgeon, resident. Salary £90 per annum.

MARGARET STREET HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Pathologist.

MELBOURNE UNIVERSITY.—Chair of Physiology and Histology.

MOUNT VERNON HOSPITAL FOR CONSUMPTION.—Assistant Physician to Out-patients.

NOTTINGHAM CITY ASYLUM.—Junior Assistant Medical Officer (male), resident. Salary, £150 per annum.

PADDINGTON GREEN CHILDREN'S HOSPITAL, W.—(1) Surgeon to Out-patients. (2) Pathologist and Registrar. Salary, £50.

SALISBURY: FISHERTON ASYLUM.—Assistant Medical Officer. Resident Salary, £110 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Resident Assistant House-Surgeon, Salary, £80 per annum.

SHEFFIELD ROYAL HOSPITAL.—House-Surgeon, resident. Salary, £120 per annum.

MEDICAL APPOINTMENTS.

ANDERSON, Kenneth, M.B.Lond., M.R.C.S.Eng., Medical Officer for the Banwell District of the Axbridge Union.

ARGLES, E. E., M.R.C.S., L.R.C.P., Assistant, Medical Officer St. Marylebone Infirmary.

BUCHANAN, James, M.B., B.Ch.R.U.I., Medical Officer of the Workhouse of the Watford Union.

BYFORD, W. ..., M.R.C.S., L.R.C.P.Lond., Medical Officer to His Majesty's Prison at Ruthin vice J. R. Jenkins, M.D., resigned.

CHALMERS-FRANCIS, W. V., M.R.C.S., L.R.C.P.Lond., District Medical Officer of the Louth Union.

CROUCH, E. T., M.R.C.S.Eng., L.S.A., District and Workhouse Medical Officer of the Parish of Alverstoke.

CURTIS, H. J., B.S., M.D.Lond., F.R.C.S.Eng., Resident Surgeon to the Memorial Hospital, Bulawayo.

GROGAN, A. Gertrude, M.B., B.A.R.U.I., Second Assistant to the Cambridgeshire, etc., Asylum, Wilbourne.

ILLINGTON, Carlton E. M., M.R.C.S., L.R.C.P., L.M.S., Clinical Assistant, Samaritan Free Hospital, Marylebone Road.

LEECH, F. P., M.B.Camb., M.R.C.S., L.R.C.P., Medical Registrar of the Royal Infirmary, Manchester.

POWER, J. H., M.R.C.S., L.R.C.P.Lond., District Medical Officer of the Spalding Union.

PRICE, L. T., M.B., Ch.B.Edin., Assistant to the Professor of Anatomy at the University of Edinburgh.

REDMOND, Charles Stewart, L.R.C.P.I. and L.R.C.S.I., District Obstetric Physician for the south-west District of the Manchester Southern and Maternity Hospital.

TIMMS, A. B., L.R.C.P. and S.Edin., Assistant House-Surgeon to the Cardiff Infirmary.

WILLOUGHBY, W. G., M.D.Lond., D.P.H.Camb., Medical Officer to the Eastbourne Education Authority.

DIARY FOR NEXT WEEK.

MONDAY.

Medical Society of London, 11, Chandos Street, Cavendish Square, W., 8.30 p.m.—Clinical Evening. Cases: Dr. Essex Wynter: (1) Mitral Disease with Pulmonary Regurgitation; (2) Spondylitis Deformans. Dr. F. J. Poynton: Bilateral Facial Paralysis; Dr. Lewis Jones and Mr. C. S. Kingston: Series of Cases of Rodent Ulcer and Malignant Disease Treated by the Finsen Light and "X" Rays. Dr. S. E. Dore: Cases of Lupus Treated by the Finsen Light. Mr. W. G. Spencer: Sections of the Tongue (third year of exhibit on). Dr. Bertrand Dawson: (1) An Abdominal Case for Diagnosis, (2) Carcinoma of the Stomach.

TUESDAY.

Royal Medical and Chirurgical Society, 20, Hanover Square, W., 8.30 p.m.—Dr. Clive Riviere: The Anæmias of Infancy.

WEDNESDAY.

Hunterian Society, London Institution, Finsbury Circus, E.C., 8.30 p.m.—A discussion on Interval Appendicectomy, When and How it Should be Performed, will be opened by Mr. Harold L. Barnard, and the following will take part in the discussion: Mr. James Berry, Mr. G. Lenthal Cheatle, Mr. F. J. Steward, Mr. James Sherren.

Dermatological Society of London, 11, Chandos Street, Cavendish Square, W., 5.15 p.m.—Demonstration of Cases of Interest.

South-West London Medical Society, Bolingbroke Hospital, Wandsworth Common, 8.45 p.m.—O. F. F. Burghard on Modern Treatment of Some of the Commoner Forms of Dislocation and Fracture.

THURSDAY.

British Gynæcological Society, 20, Hanover Square, W., 8 p.m.—Specimens will be shown by Mr. Purcell, Dr. Macnaughton Jones, and Dr. Bedford Fenwick. Cases by Dr. Hodgson and Mr. Inglis Parsons.

FRIDAY.

Incorporated Society of Medical Officers of Health, 9, Adelphi Terrace, Strand, W.C., 7.30 p.m.—Dr. Sidney Davies: The Source of Infection in Tuberculosis.

British Laryngological, Rhinological and Otological Association, 11 Chandos Street, W.—Annual General Meeting. Papers will be read and cases, etc., shown by the President (Dr. Wyatt Wingrave), Dr. Lamb, Dr. Frederick Spicer, Dr. Kelson, Dr. Hastam, and others.

Clinical Society of London, 20, Hanover Square, W., 8.30 p.m. Dr. Frederick S. Bolton: A Case of Myositis Fibrosa. Dr. G. Newton Pitt: A Case of Measles with Coma. Dr. Pasteur: A Case of Pernicious Anæmia with Unusual Features.

POST-GRADUATE COURSES AND LECTURES.

Charing Cross Hospital, Thursday, 4 p.m.—Demonstration of Surgical Cases.

Hospital for Consumption and Diseases of the Chest, Brompton, Wednesday, 4 p.m.—Lecture on Pneumothorax.

Hospital for Sick Children, Great Ormond Street, W.C., Thursday, 4 p.m.—Lecture Croup.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—Demonstrations will be given at 4 p.m. as follows: Monday, Skin; Tuesday, Medical; Wednesday, Surgical, Thursday, Surgical; Friday, Eye. Lectures will also be given at 5.15 p.m. as follows: Monday and Tuesday, Common Forms of Paralysis in Children and Young Adults; Wednesday, Unreduced Dislocations; Thursday, Intestinal Obstruction; Friday, Tuberculous Disease of the Knee-joint.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C.—Lectures will be delivered at 3.30 p.m. as follows: Tuesday, Cases in the Wards; Friday, Myelitis.

North East London Post-Graduate College, Tottenham Hospital, N., Thursday, 4.30 p.m.—Surgical Diseases of Children.

Post-Graduate College, West London Hospital, Hammersmith Road, W.—Lectures will be delivered at 5 p.m. as follows: Monday, Practical Surgery; Tuesday, Alcohol as a Cause of Insanity; Wednesday, Rheumatoid Arthritis; Thursday, Practical Surgery; Friday, Dairies, Cowsheds and Milkshops.

Samaritan Free Hospital for Women, Marylebone Road, N.W., Thursday, 3 p.m.—Lecture on Hæmorrhage at and after the Menopause.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

HALL.—At 214, Portland Road, Newcastle-on-Tyne, on November 1st, the wife of W. T. Hall, M.B., C.M., of a daughter.

HARCOURT.—On October 30th, at Westbourne House, Lea Bridge Road, Leyton, the wife of G. R. Harcourt, M.B.Lond., M.R.C.S., L.R.C.P., of a daughter.

HARRIS.—On October 28th, at St. John's, Birchington, the wife of H. G. Harris, M.D., B.S.Durh., M.R.C.S., L.R.C.P., of a son.

LAST.—On October 23rd, at Bletsoe House, Littlehampton, the wife of Cecil E. Last, M.R.C.S., L.R.C.P.Lond., of a son, who did not survive his birth.

PRESTON.—On October 30th, at 129, Cheetham Hill Road, Manchester, the wife of J. M. S. Preston, M.B., of a son.

SIMPSON.—At 50, Melville Street, Edinburgh, on November 1st, the wife of G. F. Barbour Simpson, M.B., Ch.B., F.R.C.S.E., M.R.C.P.E., of a daughter.

MARRIAGE.

SAFFORD—BADCOCK.—On October 28th, at Dum-Dum, Bengal, India, by the Rev. Cowan, D.D., assisted by the Rev. C. H. Barlow, M.A., Vicar of Barlaekgrove, Arthur Hunt Safford, Captain, Royal Army Medical Corps, second son of Arthur Herbert Safford, to Dorothy Jeanne, elder daughter of A. P. Badcock. (By cable.)

DEATHS.

ORMROD.—On November 1st at Hindley, Wolverhampton, Fras Ormrod, L.R.C.P., M.R.C.S., aged 80.

REYNOLDS.—On October 25th, at Amen Court, Ottery St. Mary, Devon, after a long illness, the wife of F. Mortimer Reynolds, M.B., and daughter of the late T. Spencer Cobbold, M.D., F.R.S.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 3, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aetiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

Motor Cars.

STICK IN THE MUD writes: Can any medical man thoroughly recommend a motor car to carry four persons if required, and to be used ordinarily by a country practitioner in a hilly country?

*** We would advise our correspondent before purchasing a car to read the account of the reliability trials which was given upon page 934 of the BRITISH MEDICAL JOURNAL, October 10th, and await the publication of the report to which reference is therein made. It will contain with reference to all the principal cars now in the market judgements of a kind much more valuable than those of any individual.

H. H. writes: I am driving a Reading steam car, and should be obliged if any of your readers who have tried them would tell whether a paraffin burner is satisfactory, and what make is the best.

*** Of the automobiles which took part in the late reliability trials very few were steamers, but of those that were the majority used paraffin burners. There can be little doubt therefore that it is a satisfactory form of fuel for steam cars. One of the most efficient forms of burners is said to be the Clarkson patent, made and fitted by the Clarkson Company, Limited, Moulsham Works, near Chelmsford.

Motors in Frost and Snow.

ANXIOUS asks whether any member can give him information as to motors in snow and frosty weather and whether it would be safe to rely upon a car in all weathers and give up his horses entirely.

*** An expert has favoured us with the following comments on this query: Snow and frost present no obstacle to the use of motors; apart from the danger of falling horses being eliminated, wheels with india-rubber tyres, especially if pneumatic, get a very much better grip of the ground than any iron-bound wheel. As regards snow, long journeys have been made with success in countries without roads and covered deep in snow. As for giving up horses altogether, a motor is certainly equally useful in any weather, but there is this point to be considered by a medical man in an out of the way district or village. If a carriage breaks down or a horse goes sick, one or the other can commonly be borrowed on the spot, but with a car, an adjustment or small repair might occasionally prove necessary which could not be carried out speedily or perhaps at all in a small village. Any medical man, therefore, who under such circumstances would not be in position to borrow a carriage, but who desires, nevertheless, to be certain of being able to travel at a moment's notice, would be well advised to keep ready for occasional use a second small motor or a motor-cycle.

The Carrot Treatment of Consumption.

DR. J. DULBERG (Manchester) writes: May I ask you to allow me a few lines space to request my numerous correspondents whose inquiries I have answered personally or through your columns kindly to send me word whether and with what results they have tried the above treatment. I wish to arrive at a conclusion in the matter, and the opinion of those fellow practitioners who have also gone into it would be of great value to me.

The Administration of Medical Charities.

W. H. writes: A medical charity founded by wealthy patrons and successfully managed by a committee partly nominated by the founders and partly co-opted finds itself ineligible for grant from the Hospital Sunday Fund because the committee of management is not elected by a body of governors. It is proposed that such a body of governors be constituted on a monetary basis of a minimum annual subscription or donation, and it is feared that such a complete change of management might result in the formation of a body of governors who by a snatch vote would be able to exclude from the committee members who have done good service to the charity. Can any of your readers cite an instance of such a result having actually occurred?

Practice in the Eighteenth Century.

E. M. B. asks whether in the period 1725-1775 a man could practise surgery and midwifery in the provinces on the certificate given him as having served his term of apprenticeship to a surgeon, and without being examined by the Company of Barber-Surgeons (up to 1745), or by the Corporation of Surgeons after this date, or without a "Bishop's Licence."

*** There was nothing to prevent any one practising surgery or midwifery in the provinces during the eighteenth century without a licence from a corporate body so long as he did not practise in a town where there was a company of barber surgeons. If he practised in such a town as at York, Newcastle, Exeter, Oxford, etc., he was obliged to become a member of the company. In London it was expressly stipulated that he should not practise in the City or within seven miles around without a licence. It was greatly to the credit of a provincial surgeon who obtained a licence after examination when such a state of things existed and it was often done with the distinct idea of bettering the status of the profession.

The I.M.S. Examination.

M.B. writes: Could you give me any information as to what books it would be advisable to read in the subjects of chemistry and zoology for the Indian Medical Service examination?

*** The following books would be suitable to read, attention being paid chiefly to broad outlines and essential principles: In chemistry—*Chemistry, Inorganic and Organic*, by C. L. Bloxam. (London: J. and A. Churchill. Eighth edition. 1895. 18s.) In zoology—*Outlines of Zoology*, by J. A. Thomson, M.A. (Edinburgh and London: Young J. Pentland. 1899. 15s.

ANSWERS.

Medical Book-keeping.

G. P.—Several systems of medical book-keeping will be found described in the BRITISH MEDICAL JOURNAL, 1901, vol. i, p. 44; 1900, vol. ii, pp. 1760 and 1831; 1897, vol. ii, p. 259.

Attendance on Troops.

R.—The claims of civilian medical practitioners for attendance on troops should be made out and certified on the special form (Army Form, O. 1666), a copy of his contract being attached, reference being made to the paragraph 375 of the "Royal Warrant for Pay" as the authority for the issue of pay. The claims should be sent to the Principal Medical Officer of the Military District—from whom also the necessary army form can be obtained—and should be made quarterly in arrear. If the place is in the Thames district the address is "P.M.O., Thames District, Chatham.

The Passage of Foreign Bodies through the Alimentary Canal.

DR. H. RUSSELL PHILLIPS (Penzance) writes: The largest foreign body, in my experience, was passed by an undersized man, who came to me six weeks ago, having swallowed two artificial teeth with plate attached. He passed the plate and teeth entire after three weeks, during which time he suffered considerable pain in different parts of the abdomen. One would have hardly have thought it possible for him to have swallowed such a body, seeing it was close on 2½ in. long and over 2 in. wide; in fact, about the length of two half-crowns placed side by side. An amusing point in the case is that the plate is again in use, the patient being a poor working man. Seeing that the man had such a capacity I suggested his having a cord attached, so that in case the plate was again swallowed it might be more easily recovered.

DR. T. ARMSTRONG BOWES (Herne Bay) writes: A man under my care subject to malaria, took a 5-gr. sugar-coated tablet of quinine at 7 a.m., and voided the same per rectum at 11 a.m. the same day. The sugar coating was only slightly roughened.

Maintenance of the Insane Poor.

DR. J. MILSON RHODES (Didsbury) writes: "LL.D." will find a case of the kind he desires in the State of New York. Since 1895 the Legislature have laid a special tax on account of the dependent insane of the State, "for all purposes whatsoever, including buildings, repairs, improvements, maintenance, transportation of patients, general administration, in fact, every item entering into the cost of caring for the insane, directly or indirectly" (Ninth Annual Report of the New York State Commission in Lunacy). The State of Massachusetts is also adopting the same system. The Lunacy Act of 1900, Chapter 451, comes into force on the first day of next year, and is as follows: Section 1. The Commonwealth from and after the first day of January, 1904, shall, by the officers and Boards authorized thereto, have the care, control, and treatment of all insane persons who are now cared for by the Commonwealth, or by any city or town, or by any Board of officers thereof, or who may be committed to the institutions of the Commonwealth established by law for the care of the insane; and no city or town shall hereafter establish any asylum or other institution for the care of the insane, nor after the said date maintain any such institution, or be liable for the board, care, treatment or act of any insane person. As soon as practicable after the first day of January in the year nineteen hundred and four the State Board of Insanity may transfer all insane persons who are cared for by the Commonwealth or by any city or town or by any Board of officers thereof, and who are not cared for in any hospital, asylum, or receptable maintained by the Commonwealth, to such hospital, asylum, or receptacle so maintained, as the said Board of Insanity may deem expedient; but nothing contained in this Act shall be held to prevent the State Board of Insanity from placing insane persons at board in accordance with the provisions of law." The cost of maintenance was in the State of New York in 1897 3.58 dols., and by the Act that comes into force in the State of Massachusetts in January, 3.25 dols. per week. These amounts may appear high, but the diet is decidedly better in the States, where they also have the sense to have one diet for working patients and another for those who do nothing.

NOTES, LETTERS, Etc.

Medical Missionaries.

MR. W. F. ADAMS, M.R.C.S., L.R.C.P., Mission Hospital, Dera Ghazi Khan, Punjab, writes with reference to the letter on this subject, published in the BRITISH MEDICAL JOURNAL of September 19th, as follows: The writer's chief complaint is that medical missionaries are under

paid. This is perfectly true. But to consider such work as a "career" is a mistake. Our chief glory is that we give up all ideas of worldly advantage. Some of my personal friends have had most brilliant professional prospects and abandoned them to become missionaries. And unless a man be prepared to do likewise he had much better enter Government service or other more lucrative employ. And the societies do not wish for men who are not single-hearted in the work. We are only paid our "living expenses," not a remuneration for our services. In our society (Church Missionary Society), if a man of 20 years' experience remain a bachelor, he draws no more than a recent recruit. Perhaps more might be done in the way of a pension, but unless people give money specially for such an object the societies must keep down such expenses to the narrowest possible limits. They are ready to help those in actual want, and we are old fashioned enough to believe that He Whom we have tried to serve will not forsake us. But if the ideal of our profession is to relieve suffering, no position gives greater scope than that of a medical missionary. Most of us in one year cure more disease than we should have opportunity of doing at home in ten years. There is also the advantage we have of showing by example, as well as by precept, what Christianity is. But your columns are not the place in which to enlarge on our spiritual work. Your correspondent's strictures on the difficulty of treating large numbers are reasonable. But it is hardly fair to speak of "scamping the work." Why do such numbers come? In India, although some dislike the preaching, they come because they think, at any rate, that they get more consideration than in the Government dispensaries. How can we limit the numbers? Who are to be sent away? The only limit can be our own endurance. In most missions well-to-do patients are expected to contribute something to the hospital. As to being "mere relieving machines," is not that what we came for? Is it not our duty like our Master, "to minister rather than to be ministered unto"?

OPERATIVE TREATMENT OF ASCITES IN CIRRHOSIS.

DR. JOHN HADDON (Denholm, Hawick) writes: The letter of Drs. W. H. White and H. C. Thomson in the BRITISH MEDICAL JOURNAL of October 31st treats of a point of some importance and deserving of attention. I was present lately at the necropsy in a case which many years before had been tapped repeatedly for ascites and got well. There was some difficulty in the diagnosis at that time, but his recovery was unexpected. He took ill again, and had a pyriform swelling in the abdomen, which on being tapped was found to contain bloody fluid. It gradually enlarged, and he had haematemesis before death. The necropsy revealed a large circumscribed collection of bloody fluid, like a cyst formed by adhesions of the peritoneum. The liver was cirrhotic and small and the spleen large. The former ascites, in the light of the letter above referred to, was no doubt due to chronic peritonitis accompanying the cirrhosis, and not the ordinary ascites of cirrhosis, which tapping cannot cure.

THE ALVARENGA PRIZE.

THE Alvarenga Prize of the College of Physicians, Philadelphia, for 1903 has been awarded to Dr. W. S. Carter, of Galveston, Texas, for an essay entitled "The Relation of the Parathroids to the Thyroid Glands." The next award of the prize, amounting to about £36, will be made on July 14th, 1904. Essays intended for competition may be upon any subject in medicine, but must be unpublished, and must be received by the Secretary of the College on or before May 1st, 1904. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope, having on its outside the motto of the paper, and within the name and address of the author. The successful essay or a copy of it shall remain in possession of the College; other essays will be returned upon application within three months after the award.

ISOLATION HOSPITALS.

DR. J. F. D'ABREU, D.P.H.Camb. (Handsworth) writes: If we consider the etiology and infectiveness of scarlet fever we find besides other causes the infection of scarlet fever is given off by the breath and kidneys. After the usual period of segregation, a child is sent out with his disinfected garments after a bath. But what about the lungs? They are still the foci for fresh infection. No wonder, therefore, that the present huge buildings, costing millions of money, do not prevent but spread scarlet fever. Would it not be better for every isolation hospital to have convalescent homes to spend some time after the socalled infectious period. The money will be well spent in the extra cost in stamping out scarlet fever in a few years and save millions in the up-keep of these huge establishments. If a thing is worth doing at all it is worth doing well.

CORRECTIONS, ETC.

DR. J. BLUMFELD (London, W.) writes: Will you favour me with a small space in which to correct a statement wrongly attributed to me in the BRITISH MEDICAL JOURNAL, October 31st? The reviewer of my little book *Anaesthetics* writes that I make a statement that no "danger from inhalation of vomit will occur even in cases of intestinal stoppage if the anaesthesia is maintained deep enough." My words are "danger from inhalation of vomit is entirely averted by care on the anaesthetist's part." Such care concerns mainly the question of position, not only that of depth of anaesthesia.

MR. CHARLES P. CHILDE (Southsea) writes: In the report of my remarks in the Laryngological Section of the British Medical Association at Swansea I am described as "Assistant Surgeon to the South Hants Eye and Ear Infirmary." Somebody has made an error, and I shall be glad if you will correct it. I do not hold that position.

ERRATA.—The gentleman who demonstrated certain pathological specimens at the July meeting of the St. Pancras Division as reported in our columns on October 31st, p. 1150, was Dr. Herbert Rhodes, of the London Temperance Hospital, and not Dr. Rogers as therein stated.—In the annotation by Dr. Mackenzie, of Glossop, on Continuous Rectal Alimentation in the JOURNAL of October 31st, p. 1192, col. i, last line of note, for "June 19th, 1887," read "June 19th, 1886."

LETTERS, COMMUNICATIONS, ETC., have been received from:

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REPORT LXXVIII.

THE CONDITIONS THAT SIMULATE PERNICIOUS ANAEMIA.

By THOMAS HOUSTON, B.A., M.D.,
Research Scholar.
(From the Pathological Laboratory, Queen's College, Belfast.)

A STUDY of the literature of progressive pernicious anaemia leads us to the view that this disease is generally of cryptogenic origin, but nearly all writers on the subject admit that a number of cases clinically indistinguishable from progressive pernicious anaemia may occur as the result of such conditions as severe and prolonged haemorrhage, pregnancy, intestinal parasites, and cancer. Many of these cases were recorded before a detailed histological examination of the blood as an aid to diagnosis was customary. It now becomes an interesting and important question how far such cases can be distinguished by the condition of their blood from cases of Addison's anaemia as he defined it: "General anaemia occurring without any discoverable cause whatever, cases in which there was no previous loss of blood, no exhausting diarrhoea, no chlorosis, no purpura, no renal, splenic, miasmatic, glandular, or strumous enlargement."

The following case raises this question and shows, I think, that all such cases should be fully and carefully investigated not only on account of their rarity but because their detailed study is most likely to throw some important light on the much disputed pathology of Addison's anaemia.

Miss D., aged 42, professional nurse. In November, 1901, this patient was under the care of Dr. William Calwell, of Belfast, who, considering the interesting nature of the case, and that its clinical features closely resembled those of progressive pernicious anaemia, asked me to make several detailed examinations of her blood.

The history of the patient previous to this date was as follows: Two years ago a scirrhous tumour was removed with the right breast by Sir Thornley Stoker in the Richmond Hospital, Dublin. A recurrence in the neighbourhood of the clavicle of the same side was removed about a year ago by the same surgeon. While in hospital recovering from this operation she had several attacks of haemoptysis, but no physical signs of a lesion in her lungs could be detected. Haemorrhage was also detected coming at intervals from her throat and nose, and she stated that she frequently removed from her nostril a clot of blood, which was evidently a cast of the nasal cavity. She continued to bleed from the lungs, nose, and throat. At first there were no subcutaneous haemorrhages, but a few weeks previous to the period (November, 1901) at which the following observations were made she had noticed some petechial spots.

The following are my notes taken on the several occasions on which a blood examination was made:

November 7th, 1901. The patient is very anaemic-looking, and of a sallow, yellow colour. States that the haemorrhage coming from her nose has continued at intervals since the second time she was operated on (that is, about one year ago). Her sight is now dim owing to retinal haemorrhages; signs of gastric disturbance, nausea, and vomiting; heart dilated, systolic murmur.

Blood Examination.

Red cells	=	2,300,000 per c.mm.
White cells	=	6,700 per c.mm.
Haemoglobin	=	49.0 per cent.
Colour index	=	1.06

Differential Count of 500 Leucocytes.

Polymorphonuclear leucocytes	=	54.0 per cent.
Small lymphocytes	=	36.2 ,,
Large lympocytes	=	8.4 ,,
Transitional leucocytes	=	0.8 ,,
Eosinophile leucocytes	=	0.6 ,,

Twenty-nine megaloblasts and 16 normoblasts were found in counting 500 leucocytes. The films were stained with haematoxylin and eosine. So that possibly some of the cells classed as large lymphocytes were myelocytes (see examination on August 22nd, 1902). This blood picture, since it presented all the characteristic features of progressive pernicious anaemia and occurred in a case where the history pointed to there being a secondary malignant deposit in some of the internal organs, marked the case as one of great interest. I therefore made several examinations of the blood.

November 28th, 1901.—Clinical condition much the same as before. The symptoms due to the anaemia are more marked.

Blood Examination.

Red cells	=	1,600,000 per c.mm.
White cells	=	6,000 per c.mm.
Haemoglobin	=	33 per cent.
Colour index	=	1.03

Differential Count of 500 Leucocytes.

Polymorphonuclear leucocytes	=	56.4 per cent.
Small lymphocytes	=	38.3 ,,
Large lymphocytes	=	2.2 ,,
Transitional leucocytes	=	3.0 ,,

Twenty-seven normoblasts and 13 megaloblasts were found in counting 500 leucocytes.

January 4th, 1902.—Patient apparently much worse; nervous, restless and sleepless; requires a hypodermic of morphine every night; almost blind with retinal haemorrhages: haemorrhages from the nose and throat still continue, but hardly so severe as formerly; dyspnoea very troublesome; appetite at present fairly good, as the sickness and vomiting have disappeared; one or two subcutaneous petechial haemorrhages on the shoulder; considerable oedema of the lower limbs with some ascites and hydrothorax.

Blood Examination.

Red cells	=	1,070,000 per c.mm.
White cells	=	5,500 per c.mm.
Haemoglobin	=	27.6 per cent.
Colour index	=	1.38

Differential Count of 500 Leucocytes.

Polymorphonuclear leucocytes	=	67.2 per cent.
Small lymphocytes	=	30.4 ,,
Large lymphocytes	=	2.0 ,,
Transitional leucocytes	=	0.4 ,,

Two megaloblasts and 6 normoblasts were found in counting 500 leucocytes.

The oedema which has been mentioned above disappeared, and she improved considerably, as cases of pernicious anaemia often do under similar circumstances. I have already pointed out that in a certain sense this oedema occurring in pernicious anaemia is to be regarded as "critical," and there often accompanies its disappearance a temporary improvement in the patient's condition, as if this oedema were an effort to concentrate the over-diluted blood.[1] This temporary improvement lasted for several months, and she went to the country, so that I had not an opportunity of making a blood examination at this time. Relapsing again, she returned to hospital, and I had then another opportunity of examining her blood. This was the last occasion on which a blood examination was made before her death, which occurred some months afterwards.

August 22nd, 1902. My notes at this date are: Greatly troubled with vomiting and sleeplessness; the oedema has entirely disappeared and she is greatly emaciated. Her appearance is now more like that of a cancer patient than ever it was before. Her liver is very large and slightly tender, but no nodules can be felt. The systolic murmurs are still well marked. There is no haemorrhage at present coming from the nose but a good deal from her throat.

Blood Examination.

Red cells	=	1,000,000 per c.mm.
White cells	=	7,500 per c.mm.
Haemoglobin	=	25.6 per cent.
Colour index	=	1.28

Differential Count of 500 Leucocytes.

Polymorphonuclear leucocytes	=	53.4 per cent.
Small lymphocytes	=	43.4 ,,
Large lymphocytes	=	0.4 ,,
Transitional leucocytes	=	0.8 ,,
Eosinophile leucocytes	=	0.8 ,,
Neutrophile myelocytes	=	1.2 ,,

Ten megaloblasts and 8 normoblasts were found in counting 500 leucocytes. The films on this occasion were stained with Ehrlich's triacid mixture and with eosine and methylene blue to demonstrate the granular leucocytes, and 1.2 per cent. of myelocytes were found in the films.

From these examinations it will be seen that the blood of this case all along maintained the character of that of progressive pernicious anaemia, and that too in spite of pretty severe haemorrhage, which might be expected to have the effect of lowering the colour index, and thus giving the blood one of the characteristics of anaemia of a secondary type.

Fortunately, owing to the request of the patient made before death, we were enabled to obtain a partial necropsy on this case.

Post-mortem Notes.—A few small nodules were found in the skin on the front of the chest. These were of recent development. The skin was dry and tense. A scar was noted over the position of the right breast

(which had been removed as before stated). A small scar was also noted above the clavicle corresponding to the position of the second operation. On opening the abdomen a quantity of serous fluid was found in the pelvic cavity and lumbar fossae. The great omentum was contracted in a flat band of about 1 or 2 in. broad by cancerous growth. The liver was studded by secondary growths and greatly enlarged. The spleen showed one or two secondary nodules and the mass of splenic tissue had the hard feeling of amyloid degeneration. It did not, however, in the fresh condition give the iodine mahogany-brown reaction. The spleen and liver were put in dilute hydrochloric acid and potassium ferrocyanide solutions, but gave only an indefinite iron reaction. (In this point, therefore, the case differed from true pernicious anaemia, but as the liver was one mass of cancerous growth we could hardly expect it to function as a normal liver would do under similar circumstances.) The heart muscle showed well-marked fatty degeneration (tabby cat striation). There was a large amount of fluid in the pericardium and in each pleura. The left lung was much congested, particularly at the base. Both lungs were intensely oedematous. The organs generally had not the pallor met with in pernicious anaemia. A piece of the shaft of the right tibia was removed and showed nodules of carcinoma throughout the marrow. On microscopic examination of the marrow it was found that round the areas of cancerous deposit the pale marrow had been converted into red, and this tissue contained a large number of nucleated red cells (megaloblasts and normoblasts) and some myelocytes—it was in fact identical in appearance with the condition of the marrow found in true cases of pernicious anaemia.

The two points in this case which deserve special attention are:

1. The condition of the blood; and
2. The condition of the bone marrow.

1. The characteristic blood picture of pernicious anaemia was simulated in every detail.

(*a*) The red cells were greatly diminished in numbers, and ran as low as 1,000,000 per c. mm.

(*b*) The red cells showed marked poikilocytosis, and many of them were of large size (megalocytes); at the same time some very small cells (microcytes) were found.

(*c*) The blood was megaloblastic in type, that is there were generally more megaloblasts found in the films than normoblasts. Ehrlich regards this feature as the most essential characteristic of the blood of pernicious anaemia, and states that this megaloblastic condition never occurs in secondary anaemias due to haemorrhages, inanition, cachexias, blood poisons or cancer.[2] Most authorities agree that megaloblasts are excessively rare in other forms of anaemia, and that when they do occur they are not found in greater numbers than the normoblasts.

(*d*) The red cells showed signs of degeneration (polychromatophilia).

(*e*) The colour index was always high, increasing during the period of observation from 1.03 to 1.38 This high colour index is the most characteristic feature of pernicious anaemia, as will be shown in the sequel.

(*f*) The total number of leucocytes per c. mm. was about or slightly under the normal. There was a percentage increase of lymphocytes such as usually occurs in pernicious anaemia.

2. The second point of importance in this case was the condition found in the bone marrow. Unfortunately, it was impossible to make a complete examination of the marrow of all the bones, but as the portion of the tibia was taken at random, we may perhaps assume that this portion was fairly typical of the condition of the bone marrow generally. As has been already stated in the *post-mortem* notes, the marrow of the tibia was found infiltrated with secondary cancerous deposits, and the marrow in the neighbourhood of these deposits presented the appearance of red bone marrow, and microscopically was found to contain numerous megaloblasts, normoblasts, and myelocytes, and was in fact exactly similar to the condition of the marrow found in cases of progressive pernicious anaemia.

I have been unable to find an account of any case exactly similar to the case that has been recorded above. Several cases of tumours invading the bone marrow have indeed been recorded but none with similar blood changes.

The nearest approach to this case is one recorded by J. Epstein from Neusser's wards.[3] It may be instructive to quote Ehrlich's summary of this case.[4]

> In Epstein's case of metastatic carcinoma of the bone marrow there was found a considerable anaemia, with numerous nucleated red blood corpuscles, both of the normoblastic and megaloblastic type; their nuclei presented the strangest shapes, due not merely to typical nuclear division, but also to nuclear degeneration. The white corpuscles were much increased, their proportion to red was 1 in 25 to 1 in 40; the increase concerned in the main the large mononuclear forms, which bore for the most part neutrophile granulations, and were therefore to be called myelocytes. In all the specimens only two eosinophiles were found. . . . The appearance of myelocytes is most readily explained in this case by a direct stimulation of the remaining bone marrow by the surrounding masses of tumour. . . . In explaining the presence of megaloblasts in the blood of Epstein's case we must keep before us what we have said elsewhere on this kind of cell: they are not present in the normal bone marrow; they arise, on the contrary, when a specific morbid agent acts upon the bone marrow, as we must assume is the case in the pernicious forms of anaemia.

The fact that the case I have recorded in this paper presented the typical features of the blood of pernicious anaemia is another proof of the truth of Ehrlich's view that such changes are always the result of the stimulation of the marrow by a specific morbid agent.

My experience of other cases affords no justification for the attempt which has been made to show that it is impossible to differentiate between anaemias of the pernicious type and secondary anaemias of the gravest description.

The following table, compiled from my notebook, includes over 150 cases in which the haemoglobin was below 50 per cent.

(The number of corpuscles was estimated in these cases with the Thoma-Zeiss haemocytometer, and the haemoglobin by the Haldane-Lorrain Smith method.)

Date.	Hb.	Colour Index.	M*	N†	Type.	Diagnosis.
	%					
May 18, 1903	16.00	2.66	6	0	×	Pernicious anaemia.
Mar. 22, 1902	37.50	1.97	14	4	×	,, ,,
Dec. 9, 1902	16.00	1.81	—	—		,, ,,
Dec. 24, 1902	38.00	1.09	5	2	×	,, ,,
June 2, 1900	40.00	1.03	0	0		,, ,,
April 16, 1902	39.50	1.00	2	2		,, ,,
Jan. 25, 1902	22.20	1.54	14	0	×	,, ,,
May 18, 1903	27.36	1.50	0	0		,, ,,
Dec. 14, 1901	25.00	1.48	18	4	×	,, ,,
Jan. 21, 1902	23.70	1.48	12	2	×	,, ,,
Jan. 31, 1903	43.20	1.47	5	2	×	,, ,,
Jan. 21, 1900	31.00	1.40	0	0		,, ,,
Aug. 1, 1903	29.00	1.40	2	0	×	,, ,,
Feb. 27, 1902	25.00	1.38	6	4	×	,, ,,
Nov. 30, 1901	27.00	1.37	8	0	×	,, ,,
Dec. 5, 1901	20.00	1.30	10	2	×	,, ,,
Dec. 31, 1901	25.00	1.31	12	4	×	,, ,,
Jan. 11, 1902	20.60	1.37	2	0	×	,, ,,
Jan. 28, 1902	10.70	1.39	8	2	×	,, ,,
Feb. 18, 1902	15.80	1.35	12	54		,, ,,
Mar. 4, 1902	30.00	1.32	10	2	×	,, ,,
Mar. 14, 1902	29.00	1.31	8	0	×	,, ,,
Mar. 22, 1902	39.50	1.35	38	4	×	,, ,,
Mar. 21, 1903	24.48	1.31	15	0	×	,, ,,
Mar. 9, 1901	25.00	1.25	—	—		,, ,,
Jan. 4. 1902	27.00	1.29	2	6		Malignant disease. D.
Jan. 25, 1902	22.70	1.27	12	6	×	Pernicious anaemia.
Feb. 4, 1902	15.80	1.25	14	10	×	,, ,,
Mar. 4, 1902	35.00	1.25	0	0		,, ,,
Mar. 22, 1902	28.00	1.27	0	0		,, ,,
Mar. 31, 1902	25.60	1.28	18	18	×	,, ,,
April 16, 1902	23.70	1.23	4	4		,, ,,
May 4, 1902	39.50	1.23	6	2	×	,, ,,
May 29, 1902	35.00	1.26	2	0	×	Malignant disease. D.
Aug. 22, 1902	25.00	1.28	10	8	×	Pernicious anaemia.
Sept. 11, 1902	30.00	1.28	12	0	×	,, ,,
Dec. 11, 1902	21.70	1.20	27	10	×	,, ,,
April 3, 1902	33.00	1.10	75	300		,, ,,
July 12, 1901	18.70	1.10	22	10	×	,, ,,
Dec. 20, 1901	25.00	1.12	14	6	×	,, ,,
April 2, 1901	33.00	1.10	8	0	×	,, ,,
April 19, 1902	35.70	1.14	10	10		,, ,,
April 18, 1900	25.00	1.15	—	—	—	,, ,,
April 2, 1901	15.00	1.00	0	0		,, ,,
Aug. 10, 1901	40.00	1.04	0	0		,, ,,
Aug. 21, 1901	30.00	1.07	13	1	×	,, ,,
Jan. 25, 1902	49.50	1.05	0	0		,, ,,
Nov. 7, 1901	40.00	1.06	29	10	×	Malignant disease. D.
Nov. 28, 1901	33.00	1.03	27	13	×	,, ,,
Oct. 26, 1902	30.80	1.03	3	0	×	Pernicious anaemia.
Feb. 17, 1901	10.00	0.90	23	11	×	,, ,,
May 12, 1903	31.00	0.96	0	0		Acute lymphatic leukaemia.
Oct. 8, 1901	37.40	0.00	—	—	—	Splenic leukaemia.
April 23, 1901	45.00	0.85	0	0	—	Lymphatic leukaemia.
Aug. 8, 1901	43.00	0.88	—	—	—	Splenic leukaemia.
Feb. 22, 1903	38.80	0.88	0	2		Lymphatic leukaemia.
Aug. 12, 1901	44.70	0.80	0	0		,,
June 26, 1901	20.00	0.88	0	16		Splenic leukaemia.
July 9, 1901	41.00	0.81	0	0	—	Malarial cachexia.
Aug. 8, 1901	44.00	0.88	—	—	—	Splenic leukaemia.
May 20, 1902	44.00	0.88	0	0		Scurvy.
Aug. 20, 1901	43.00	0.82	0	12		Splenic leukaemia.
Jan. 29, 1902	43.40	0.80	0	0		Rheumatism and haemorrhage.
Feb. 28, 1903	38.80	0.80	0	0		Cancer of stomach.
June 14, 1901	35.00	0.82	0	0		Malarial cachexia.
Aug. 13, 1902	41.40	0.82	0	0		Endotheliomia (peritonei).
Dec. 20, 1901	35.00	0.81	0	0		Haemoglobinuria.
May 20, 1900	40.00	0.83	—	—	—	Splenic anaemia.
Nov. 23, 1900	37.00	0.79	0	0		Septic fibroid.

Date.	Hb.	Colour Index.	M*	N†	Type.	Diagnosis.
	%					
Mar. 13, 1903	40 30	0.76	0	0		Tuberculous peritonitis.
Feb. 16, 1901	38.00	0.79	0	0		Chlorosis.
June 7, 1901	37.40	0.74	0	0		Puerperal sepsis.
July 5, 1901	45.00	0.72	0	0		Splenic leukaemia.
Jan. 6, 1902	47.40	0.71	0	0		Bleeding piles.
July 3, 1902	49.30	0.77	0	0		Tuberculosis.
Oct. 12, 1902	28.00	0.79	0	0		Malignant disease.
June 12, 1901	33 70	0.73	3	18		Splenic leukaemia.
Feb. 12, 1900	45.40	0.71	0	0	—	Sarcoma.
Feb. 25, 1900	34.00	0.72	0	0		Chlorosis.
Mar. 20, 1900	30.00	0.70	0	0		"
Mar. 19, 1900	30.00	0.75	0	0		"
June 2, 1900	27.00	0.67	0	0		Splenic anaemia.
April 18, 1900	34.00	0.68	0	0	—	Chlorosis.
May 27, 1901	41.00	0.64	0	0		"
April 27, 1900	40.00	0.66	0	0		"
Mar. 28, 1902	32.00	0.61	0	0	—	"
Feb. 26, 1903	34.00	0.69	0	0		"
June 21, 1902	42.00	0.67	0	0		"
Aug. 25, 1902	48.00	0.64	0	0		"
Aug. 27, 1902	40.00	0.60	0	0	—	Bleeding piles.
						Anaemia following pregnancy.
May 1, 1902	28.00	0.61	—	—		Uterine haemorrhage.
Mar. 22, 1902	19.90	0.61	0	4		Uterine sepsis (haemorrhage).
Jan. 17, 1902	49.30	0.61	0	0		Chlorosis.
Jan. 9, 1902	29.60	0.60	0	0		"
Dec. 20, 1901	35.00	0.65	0	0		Haemoglobinuria.
Sept. 28, 1901	20.00	0.61	0	0		Bleeding piles.
Nov. 13, 1900	37.00	0.61	0	0		" "
Sept. 17, 1900	36 00	0.61	0	0		" "
Oct. 16, 1901	38.00	0.61	0	2		Hodgkin's disease.
Oct. 5, 1901	29.96	0.65	0	0		Chlorosis.
April 17, 1901	16.00	0.66	0	3		Lymphatic leukaemia.
Mar. 2, 1901	33.00	0.61	0	0		Chlorosis.
Feb. 28, 1901	37.00	0.61	0	1		"
Sept. 14, 1901	15.00	0.58	0	2		"
May 7, 1901	30.00	0.65	—	—	—	Splenic anaemia.
Mar. 9, 1901	25.00	0.56	—	—	—	" leukaemia.
Oct. 1, 1901	29.90	0.56	0	0		Chlorosis.
Mar. 12, 1901	24.00	0.51	0	0		"
May 18, 1903	28.80	0.55	0	0		"
June 25, 1900	22.40	0.54	0	0		Cancer of stomach.
Oct. 8, 1901	29 90	0.53	0	0		Chlorosis.
Mar. 14, 1901	40.00	0.50	0	0		"
May 29, 1901	30.00	0.50	0	0		Splenic anaemia.
Oct. 17, 1901	31.40	0.52	0	0		Chlorosis.
Sept. 24, 1900	45.00	0.56	0	0		"
Nov. 2, 1900	41.00	0.56	0	0		Splenic anaemia.
Jan. 18, 1901	38.00	0.58	0	0		Prolonged diarrhoea.
Jan. 22, 1901	40 00	0.50	0	0		Anaemia after pregnancy
Aug. 16, 1903	18.00	0.50	0	2		Splenic anaemia.
						Splenic anaemia of infancy.
Dec. 28, 1901	24.60	0.50	0	0		Chlorosis.
Jan. 6, 1902	21.70	0.51	0	0		Malignant disease.
Jan. 24, 1902	41.40	0.57	0	0		Sepsis.
Feb. 18, 1902	34.50	0.58	0	0		Chlorosis.
Mar. 17, 1902	35.50	0.54	0	0		"
Mar. 26, 1902	37.50	0.58	0	0		"
Nov. 22, 1902	46.00	0.55	0	0		Uterine haemorrhage.
Dec. 2, 1902	38.80	0.53	0	0		Faulty feeding (baby).
Dec. 4, 1902	36.00	0.51	0	0		" "
Feb. 10, 1900	34.00	0.51	0	0		Chlorosis.
Mar. 2, 1900	38.00	0.52	0	0		"
May 26, 1900	22.00	0.55	0	0		"
Jan. 26, 1902	30.00	0.45	0	0		"
April 23, 1901	35.50	0.49	0	0		Sepsis.
May 27, 1901	35.00	0.49	0	0	—	Chlorosis.
Feb. 19, 1901	16.00	0.45	0	0		Splenic anaemia.
Oct. 1, 1901	37.40	0.43	0	0		Chlorosis.
Oct. 15, 1901	33.70	0.47	0	0		"
Oct. 22, 1901	38.90	0.40	0	0		"
Oct. 10, 1900	15.00	0.47	0	0		"
Jan. 15, 1901	18.70	0.43	0	0		"
Jan. 2, 1902	24.60	0.41	0	0		Haematuria.
Jan. 21, 1902	34.50	0.49	0	0		Chlorosis.
Jan. 19, 1902	22.00	0.40	0	0		"
Jan. 28, 1902	39.50	0.47	0	0		Malignant disease.
Mar. 1, 1902	36.00	0.47	0	0		Chlorosis.
Feb. 22, 1902	35.50	0.46	0	0		"
Mar. 14, 1902	34.80	0.49	0	0		"
Feb. 26, 1900	42.00	0.43	—	—	—	"
May 26, 1900	32.00	0.44	—	—	—	Haematemesis.
May 20, 1900	29.00	0.44	—	—	—	Chlorosis.
Aug. 16, 1902	15.80	0.39	0	14		Splenic anaemia.
May 12, 1900	23.00	0.36	—	—	—	Anaemia in pregnancy.
Sept. 25, 1900	14.90	0.36	0	2		Chlorosis.
						"

* Number of megaloblasts found in counting 500 leucocytes.
† Number of normoblasts found in counting 500 leucocytes.
‡ Type: The symbol × indicates that the blood was megaloblastic.

This table clearly supports the view that secondary anaemias can always be distinguished from pernicious anaemia by their low colour index and generally by the absence of megaloblasts. The case which I have detailed stands out as a clear exception to the rule (this case is marked D in the table). Before considering further the various forms of secondary anaemia which are supposed to simulate pernicious anaemia I wish to emphasize the fact that, as far as my experience goes, I have found the high colour index the most reliable and characteristic feature of the blood of pernicious anaemia. Hayem was the first to demonstrate this high colour index, and Laache afterwards showed that this feature was probably due to the presence of many megalocytes with increased haemoglobin.

As Ewing points out[5] the megalocyte is derived from the megaloblast of the bone marrow. Hence the high colour index has the same significance as the presence of megaloblasts, and, as the table shows, is a much more constant feature of the pernicious anaemia type of blood. It further not only indicates the megaloblastic origin of the erythrocytes in this disease, but also that this is the predominant type. The presence of one or two megaloblasts without a high colour index in the corpuscles is not indicative of pernicious anaemia, nor does the absence of megaloblasts indicate in cases presenting a high colour index that the condition is not pernicious anaemia. I have examined the blood of some cases of undoubted pernicious anaemia again and again, and made an exhaustive search for nucleated reds but found none. Bearing this in mind, we may briefly consider the conditions which are said to simulate pernicious anaemia. These are:

1. Haemorrhage.
2. Intestinal parasites.
3. Pregnancy.
4. Cancer.

1. *Haemorrhage.*—I have examined a number of cases of profound anaemia, evidently the result of severe and prolonged haemorrhage, which, as far as their clinical symptoms were concerned, presented the features of pernicious anaemia with the exception that they were the result of haemorrhage, generally repeated small haemorrhages, as, for instance, bleeding piles, or bleeding from cancer of the stomach. The following is a list of such cases:

Date.	Red Cells per c.mm.	White Cells per c.mm.	Hb.	Colour Index.	Poly.	Lymph.	Eosines.	N.	M.	Diagnosis.
			%		%	%	%			
11/9/00	2,920,000	8,000	36 00	0 61	63.04	33 00	3.80	0	0	Bleeding piles.
25/9/00	2,050,000	5,600	14.98	0.36	53 00	43.00	4.40	0	0	Haematemesis.
13/11/00	3,090,000	8,000	37.00	0.61	66.00	28.80	5.00	0	0	Bleeding piles.
1/1/01	2,140,000	6,300	18 72	0 43	54.00	44.60	1.30	0	0	Haematuria.
27/8/02	3,330,000	6,300	40.00	0.60	—	—	—	—	—	Uterine haemorrhage.
22/11/02	4,170,000	10,000	46.00	0.55	67.00	32.00	1.00	0	0	Uterine haemorrhage.
§28/10/02	1,680,000	6,000	20.00	0.61	53.40	40.60	0.00	2	0	Bleeding piles.
6/1/02	3,320,000	4,100	47.40	0 71	50 80	49 20	0.00	0	0	Bleeding piles.
19/1/02	2,760,000	11,000	22.00	0.40	81.00	17.00	2.00	0	0	Melaena (cancer).
29/1/02	1,550,000	9,000	23.40	0.78	81.00	19.00	0.00	2	0	Melaena (cirrhosis of liver).
22/3/02	1,600,000	16,000	19.75	0.61	70.00	30.00	0.00	4	0	Uterine haemorrhage.

* Number of normoblasts found in counting 500 leucocytes.
† Number of megaloblasts found in counting 500 leucocytes.

Several of these cases were supposed before the blood was examined to be cases of pernicious anaemia. For instance, the case marked § in the table was admitted to the Belfast Royal Victoria Hospital presenting practically all the clinical features of pernicious anaemia, that is, extreme pallor (lemon yellow tint), flabbiness of all the tissues, slight pyrexia, dilated heart with haemic murmurs. He had, however, a history of prolonged bleeding from piles. His blood was found to have the characteristics detailed in the table. This blood picture is quite distinct from that of pernicious anaemia for the following reasons: (1) The blood is chlorotic in type, the colour index being 0.61; (2) the differential count shows an increase in the polymorphonuclear elements; (3) the blood was not megaloblastic, only a few normoblasts being found in the films. The rapid and permanent recovery of this case confirmed the diagnosis.

The contention of Stockman that pernicious anaemia is always the result of repeated small haemorrhages is not, so so far as my experience goes, supported by the examination of the blood of cases of severe anaemia resulting from haemorrhage. It will be seen from the above table that all the cases showed the characteristic features of a secondary anaemia. Stockman, however, states that there is no characteristic feature of pernicious anaemia. He does not even admit Addison's definition of the disease, but claims "that pernicious anaemia is preceded in a large majority of

cases by exhausting conditions, and that it results directly or indirectly from these conditions."

After a careful study of the history of over 50 cases of progressive pernicious anaemia, I have been struck by the fact that it is almost impossible in any case to assign any obvious cause for the anaemia. This, indeed, is one of the most characteristic features of the disease. Stockman also states that the haemoglobin of the red corpuscles is rich in the majority of cases of pernicious anaemia (that is, the colour index is high) but not in all cases. The cases which he quotes to prove that notable exceptions occur are open to very serious criticism. For instance, he gives as an undoubted case of pernicious anaemia the following:

A woman, aged 51, who presented the clinical features of pernicious anaemia, including yellow skin and stoutness. The anaemia was due to a bleeding polypus. The haemoglobin was 10 per cent., and the red corpuscles were 1,000,000 per c.mm., that is, the colour index was 0.5. There was marked poikilocytosis and several nucleated red cells. Again, he mentions that cases due to infection by ankylostoma duodenale often become cases of pernicious anaemia but with a low colour index. Such cases, however, cannot now be admitted as true cases of pernicious anaemia, as they neither correspond with Addison's definition, nor does their blood conform to the type characteristic of this form of anaemia.

Stockman offers an ingenious explanation of the high colour index which he admits usually occurs in pernicious anaemia. He infers that the haemorrhage usually occurs into the tissues, and that the extravasated blood is quickly absorbed and supplies the remaining corpuscles with iron, so that their normal amount of haemoglobin is thus kept up. From analogy I think it can be shown that this explanation is not correct. If in the cure of a secondary anaemia we give iron medicinally, the effect is to raise the number of red cells, and much more slowly the colour index. It may indeed occasionally be noticed that in the cure of chlorosis the red corpuscles may be found to exceed the normal while the haemoglobin is still low. Thus, in chlorotic or secondary anaemia, it would be impossible by means of iron to raise the haemoglobin without raising to a much greater extent the number of corpuscles, and therefore the colour index would still be below unity, at least, while any anaemia remained.[6] In this connexion it may be mentioned that iron is generally regarded as useless in the treatment of pernicious anaemia.

From these considerations it seems certain that haemorrhage, directly at least, is not the cause of the blood condition so characteristic of pernicious anaemia. Haemorrhage, however, is a frequent symptom of this disease and may sometimes be of considerable severity. The following cases in which severe haemorrhage from the stomach was the first symptom that made the patient call in medical aid will exemplify this fact:

His blood on examination was as follows:

Red cells	=	1,400,000 per c.mm.
White cells	=	5,500 per c.mm.
Haemoglobin	=	30 per cent.
Colour index	=	1.07
Differential Count of 500 Leucocytes.		
Polymorphonuclear cells	=	66.4 per cent.
Small lymphocytes	=	24.2 ,,
Large lymphocytes	=	8.6 ,,
Transitional cells	=	0.6 ,,
Eosinophile cells	=	0.2 ,,

Thirteen megaloblasts and 1 normoblast were found in counting 500 leucocytes.

This case shows the typical picture of pernicious anaemia in spite of the occurrence of severe haematemesis, which might be supposed to have the effect of lowering the colour index. The after-history of this case verified the diagnosis of pernicious anaemia. In some cases, therefore, if a careful examination of the blood be not made, the haemorrhage may erroneously be supposed to be the cause of the severe anaemia and not, as it is in this case, merely a symptom of the disease.

2. *Intestinal Parasites.*—There is a widespread idea that the changes in the blood produced by infections with ankylostoma and bothriocephalus are frequently indistinguishable from those occurring in progressive pernicious anaemia. With regard to ankylostomiasis, A. E. Boycott and J. S. Haldane have recently given an interesting account of a number of cases of anaemia occurring in the Dolcoath Mine in Cornwall,[7] the result of infection of the intestine by ankylostoma duodenale. They state that the essential alterations in the blood consist in an anaemia of the chlorotic type, with an increase in the total volume of the blood, a varying increase in the leucocytes, and a marked relative and absolute increase in the eosinophile cells. Quoting several severe cases they say, "The actual highest and lowest colour indices occurring among these cases are 0.81 and 0.53. The lowest colour indices appear to be associated with the lower percentages of haemoglobin; thus the average index for those cases with 30 to 39 per cent. of haemoglobin is 0.64, from 40 to 49 per cent. is 0.68, and from 50 to 59 per cent. is 0.75. Thus the more profound the anaemia the less does it show the high colour index characteristic of the pernicious type."

Since this account of ankylostomiasis in Cornwall was published Dr. Stockman has recorded in the JOURNAL of July 25th, 1903, an interesting case of the same disease occurring in a Lanarkshire miner. The disease was probably contracted in India. The red cells numbered 3,200,000 per c.mm., the leucocytes 9,000 per c.mm., and the haemoglobin was 28 per cent. The colour index was therefore 0.43. The eosinophile cells varied from 12 per cent. to 43 per cent. of the total leucocytes at different counts. Dr. Stockman states that this case is probably the first that has been observed in Scotland.

I am indebted to Dr. R. M. Beatty for the following details of the blood examination of a patient in the Victoria Barracks, Belfast, suffering from ankylostomiasis. This is, I believe, the first case of the kind observed in Ireland. The patient believed he had contracted the disease in Dinapur, India. Numerous ova and worms were found in the faeces. When the patient was most anaemic his blood count was as follows:

Red cells	=	2,710,000 per c.mm.
White cells	=	13,000 per c.mm.
Haemoglobin	=	24 per cent.
Colour index	=	0.44.

The eosinophile cells varied from 15 to 35 per cent. of the total leucocytes at different counts. Dr. Beatty also estimated the coagulation time of the blood with Wright's coagulometer, and found it considerably increased. A deficient coagulability of the blood in such cases might possibly account for the occurrence of the "bunches" or urticarial eruptions which are so characteristic of this disease.

In both these cases it will be observed that the anaemia was the secondary type, as the colour indices in both cases were under 0.5.

From these results it would appear that the characteristic blood features of pernicious anaemia, if they ever occur as the result of ankylostomiasis, must be an extreme rarity. It may also be mentioned that the eosinophilia which constantly occurs in ankylostomiasis is not a feature of the blood of pernicious anaemia. With regard to bothriocephalus anaemia, Ehrlich admits that in some cases the blood presents the typical megaloblastic features of pernicious anaemia,[8] but he regards this as due to the direct stimulation of the marrow by a specific toxin produced by the parasite.

3. *Pregnancy.*—Pregnancy is occasionally accompanied by a severe or even fatal anaemia, which from its symptoms closely simulates progressive pernicious anaemia. I had recently occasion to examine a case of profound anaemia occurring evidently as the result of the pregnant condition. The patient in a previous pregnancy had developed a similar anaemia. This patient had all the symptoms of profound anaemia—extreme pallor (lemon-yellow tint) general flabbiness of the tissues with considerable oedema, dilated heart, and cardiac murmurs. Her mouth was not in a septic condition, although she had several bad teeth. Her blood was as follows:

Red cells	=	2,000,000 per c.mm.
White cells	=	14,000 per c.mm.
Haemoglobin	=	15.8 per cent.
Colour index	=	0.39
Differential Count of 500 Leucocytes.		
Polymorphonuclear cells	=	75.6 per cent.
Small lymphocytes	=	21.6 ,,
Large lymphocytes	=	2.0 ,,
Transitional leucocytes	=	0.8 ,,

Seven normoblasts and one or two doubtful megaloblasts were found in the films in counting 500 leucocytes.

This, then, was not a case of true pernicious anaemia, but a secondary anaemia of a very grave type. Although her haemoglobin was below 16 per cent. she made a good recovery, and is alive and well at present. It will be seen on reference to the foregoing table that all the cases of anaemia occurring in association with pregnancy were found to be of the secondary type. The fact that pregnancy seems to have no peculiar influence in producing the blood changes of pernicious anaemia is borne out by all the recent work on this

subject. Ehrlich could find only one case of this description in recent literature.[9] At Sloane Maternity Hospital from 1892 to 1899 Ewing states that he saw many cases of severe anaemia but none of the progressive pernicious type.[10] Ahlfeld, with a wide experience, could not report a single case following pregnancy (1898).[11]

4. *Cancer.*—It has been often stated that cancer, especially cancer of the stomach, may give rise to the blood changes characteristic of progressive pernicious anaemia. Hunter, however, who has gone very fully into the literature of this subject, comments on the extreme rarity of such a connexion, as he was able to find only the following cases:—Quincke, 1 case; Eisenlohe, 2 cases; Letten, 1 case; Grawitz, 3 cases. He also states that these cases from the accounts given are not entirely free from question as to the character of the anaemia present.[12]

The following cases of severe anaemia associated with malignant disease will show that the blood changes are, as a rule, totally different from those of true pernicious anaemia.

Date.	Red Cells, per c.mm.	White Cells, per c.mm.	Hb.	Colour Index.	Pmn.	Lymph.	Eosines.	*N.	†M.	Diagnosis.
			%		%	%	%			
19/1/02	2,760,000	11,000	22.0	0.40	81.0	17.0	0.2	0	0	Cancer of stomach.
6/1/02	2,120,000	3,100	21.7	0.51	76.8	23.2	0.0	0	0	Cancer of stomach.
12/2/00	3,190,000	7,000	45.4	0.71	—	—	—	—	—	Lymphadenoma.
12/9/02	1,760,000	6,000	28.0	0.79	62.0	36.0	2.0	0	0	Malignant epulis.
13/8/02	2,480,000	9,000	41.4	0.82	65.5	34.5	0.0	0	0	Endothelioma (peritoneum).
28/2/03	2,180,000	6,900	38.8	0.89	70.0	30.0	0.0	0	0	Cancer of stomach.
17/10/00	2,060,000	37,500	37.0	0.90	92.2	7.4	0.4	0	0	Malignant disease of lung.
16/10/01	3,090,000	10,100	38.0	0.61	76.0	23.6	0.4	0	2	Hodgkin's disease.

* Number of normoblasts found in counting 500 leucocytes.
† Number of megaloblasts found in counting 500 leucocytes.

Considering, therefore, the extreme rarity with which the blood changes which are characteristic of progressive pernicious anaemia are associated with such causes of anaemia as haemorrhage, intestinal parasites, pregnancy, and cancer, and considering the fact that in the vast majority of cases such conditions produce an entirely different type of anaemia—namely, the secondary type—the question naturally arises, Are such cases, when they do occur, to be regarded as the direct result of the apparent cause, or is there not some additional factor which accounts for the departure of the condition of the blood of such cases from the secondary type of anaemia? The case which has been detailed seems to show that this additional factor was to be found in the malignant deposits in the bone marrow, and that there was a direct connexion between these deposits and the peculiar condition of the blood found in this case. In Epstein's case, which has already been referred to, Ehrlich has explained the condition of the blood as due to the direct stimulation of the remaining bone marrow by the tumour deposits. He also believes that the pernicious type of anaemia found in some cases of bothriocephalus infection is the result of the action on the bone marrow of some specific poison generated by the parasite. I think that a similar explanation applies to the case that is now recorded, and probably to all secondary cases associated with the pernicious type of blood.

If this explanation be the correct one, this case has an important bearing on a much disputed point in the pathology of progressive pernicious anaemia; for, by inference we are forced to conclude that the changes found in the bone marrow in cases of progressive pernicious anaemia are an essential lesion of the disease directly accounting for the condition of the blood, and not, as some have supposed, of a secondary nature—the result of the severe anaemia.

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MEDICAL MAGISTRATE.—Captain J. Booth-Clarkson, Reserve of Officers, District Surgeon and Health Officer, Alexandra County, has been appointed Justice of the Peace for Alexandra County, Natal, South Africa.

NOTE ON THE BODIES RECENTLY DESCRIBED BY LEISHMAN AND DONOVAN.

By Major R. ROSS, F.R.S., F.R.C.S., C.B.,
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(From the Johnston Tropical Laboratory, Liverpool.)

In May, 1903, Major Leishman, R.A.M.C., described[1] certain small oval bodies occurring in smear preparations made *post mortem* from the spleen of a soldier suffering from low fever, chronic dysentery, and cachexia. The observation was made in London at the Military Hospital, and the patient had contracted his illness at Dum-Dum, near Calcutta. Leishman gave a very accurate description of these bodies. He said that they existed in large numbers among the spleen cells and red corpuscles; that they were round or oval, and 2 μ to 3 μ in diameter; that on staining with Romanowsky's method they were found to contain two masses of chromatin—a large circular mass or ring, and another smaller mass, "usually in the form of a short rod set perpendicularly or at a tangent to the circumference of the larger mass." The outline of the bodies containing these two masses of chromatin was faintly visible with this stain. The bodies were usually isolated, but occasionally aggregated into "clumps composed of twenty to fifty members." Regarding their nature, he thought it probable that they were the residue of trypanosomes of which the vibratile membrane had disappeared after death, leaving behind the nucleus and micronucleus shrunk together in a small mass, and quotes in support of this view the occurrence of similar *post-mortem* changes in the trypanosomes of dead rats.

In July Captain Donovan, I.M.S., stated[2] that he had already found the same bodies on April 9th, 23rd, and 24th in *post-mortem* smears from the spleens of three consecutive cases said to have died from chronic malaria in Madras. At first he thought that the bodies represented the long-sought-for resting stage of the malaria parasite, but, after finding them in two other cases, began to think that they were *post-mortem* degenerations of spleen cells. On reading Leishman's paper he recognized their similarity to the bodies described by that observer; and next was able to recover them in blood taken *intra vitam* from the spleen of a boy suffering from irregular pyrexia (June 17th). He remarks that this case excludes the possibility of the bodies being due to *post-mortem* changes, and adds that nothing resembling trypanosomata could be found in the boy's blood.

Captain Donovan was good enough to send me three preparations well stained by the Romanowsky method—namely, one preparation from his case of April 9th (*post mortem*), one from his case of June 17th (*intra vitam*), and a third dated July 4th from the splenic puncture (*intra vitam*) of yet another case. I have examined these carefully, and as there has already been considerable delay over them I think that the following brief notes should be recorded at once as a verification of the previous papers:

1. All these preparations contain bodies agreeing exactly with Leishman's description, and he himself admits the similarity after having been so kind as to examine the specimens.

2. In Donovan's specimen of April 9th (*post mortem*) the bodies number about 30 in a field and measure about 2.5 μ. They are disconnected from each other, but often lie fairly close together in groups of 10 or more. In the specimen of June 17th (*intra vitam*) they number only about 1 in 12 fields, but are slightly larger—up to 3.25 μ. In that of July 4th they are also large, and number about 1 in every field or so; while groups of from 2 to 12 of them can often be found embedded in what seems to be some kind of matrix which stains a faint bluish-grey colour, and which has an oval contour measuring up to 8 μ in the long diameter. Some of the bodies appear even to be intracorpuscular, but this may be due to accidental superposition.

3. Both large and small nuclear masses are almost invariably present, and both are always stained a deep vivid crimson. The smaller one is very often rod-like and pointed at the large one, just as Leishman describes, and stains somewhat deeper than it. The bioplasm is generally colourless, but its contour is reddish in the specimens made *intra vitam*.

4. In none of the specimens can I find either entire trypanosomes or the remains of dead ones, such as the characteristic flagella.

It is to be hoped that Major Leishman and Captain

onovan will be able shortly to elucidate the nature of these very interesting objects. Their size and shape and the arrangement of their chromatin are so constant and characteristic that it is scarcely possible to doubt that they are parasites of some kind, probably protozoa. For my own part, I find some difficulty in adopting Leishman's view that they represent involution stages of trypanosomes in the *post-mortem* spleen. He describes accurately such forms in the rat; but there, it should be carefully noted, the stained flagella are always present (with a successful Romanowsky technique) in addition to the macronucleus and micronucleus, and are, indeed, the last of the elements to refuse colouration. If, then, these bodies are nothing but disintegrating trypanosomes, we should certainly find a few of the flagella among them. Then, again, neither the large nor the small nucleus in the preparations seems to me to recall those of trypanosomes; and they are, moreover, approximated in a much more regular manner than, I think, we observe in dead trypanosomes.

Lastly, as Donovan observes, his two preparations made *intra vitam* exclude *post-mortem* changes altogether, and should, therefore, contain some unaltered trypanosomes. Prima facie, then, I am strongly inclined to think that we have to do with some quite novel organism. As it has already been found in eight cases of fever and cachexia, it promises to be a common and important one. The charts of two of Donovan's cases sent by him to me certainly recall the chronic pyrexia with enlarged spleen so frequently observed in India, and are, indeed, not a little suggestive of kala-azar.

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FILARIASIS IN MAN CURED BY REMOVAL OF THE ADULT WORMS IN AN OPERATION FOR LYMPH SCROTUM.*

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FILARIASIS is very rarely met with in Canada; in fact, I am unable to find the record of a single instance in which filaria sanguinis hominis has been reported. In the case at present under consideration the patient had for many years been a resident at Barbadoes, and had contracted the disease whilst living there.

The pathogenesis of filariasis is well known, and we may sum up the historical record of our knowledge of filariae as follows:

The embryo filariae were first discovered in the fluid of chylous hydrocele by Demarquay in 1863. Lewis showed that the embryos had their normal habitat in the blood of a man in 1872. Bancroft found an adult worm in an abscess in a lymphatic gland in the arm in 1876, and later four others in a hydrocele of the spermatic cord. Manson,[1] who studied the disease in China, was the first to observe a periodicity in the occurrence of the embryos in the peripheral blood; his paper was read before the Pathological Society of London in 1881. As early as 1877 he had suspected the mosquito ([1], p. 291) as playing the part of the intermediary host, and of transmitting the infection to man. In 1879 he demonstrated the life history of the parasite in the body of the mosquito *Culex ciliaris*. Low in 1900 observed and described the filariae lying in the proboscis of the mosquito. In 1901 Annett, Dutton, and Elliott,[2] whilst studying the disease on the West Coast of Africa, determined still more accurately the manner in which the mosquito parted with the parasite; they found that the filariae passed into the labium of the mosquito, and made its way from thence into the blood of man by rupture of a thin chitinous membrane on the upper surface of the labium. It would thus appear that infection is communicated to man by the bite of the mosquito. There is another possibility, though it is considered a remote one—namely, that drinking water may become contaminated by the dead bodies of mosquitos containing filariae, and thus infection of man may occur.

The victim of filarial infection does not necessarily suffer any inconvenience from the presence of the worm and the embryos; in fact it would appear to be the exception for pathological lesions to manifest themselves in persons thus infected. Annett, Dutton, and Elliott[2] found in some localities of the West Coast of Africa as many as 50 per cent. of the inhabitants infected; it was extremely rare to find these individuals suffering any inconvenience whatever; seldom was any diseased condition manifested. Nevertheless filariae are capable of producing disease; this may be brought about by the adult worms blocking the lymphatics and thus interfering with the circulation of the lymph. Occasionally, too, parent worms may die and in process of disintegration may produce local inflammatory trouble. Then, again, the embryo forms are, under certain conditions, responsible for disease. The normal embryonic filariae are apparently incapable of producing any pathological lesion whatever; they circulate freely in the blood and cause no disturbance of function, but immature ova have been shown by Manson to be a cause of trouble. Under certain conditions, probably in consequence of injury to the parent worm, immature ova are discharged in large numbers into the blood, and as a result pathological conditions subsequently manifest themselves. This is due to the fact that the immature ova cannot move as smoothly in the circulation; they are apt more particularly to block the finer lymph vessels, and then trouble ensues.

The filarial diseases which may thus be produced have been enumerated by Manson[3] as follows: Abscess, lymphangitis, varicose groin glands, varicose axillary glands, lymph scrotum, cutaneous and deep lymphatic varix, orchitis, chyluria, elephantiasis of the leg, scrotum, vulva, arm, mamma, and elsewhere, chylous dropsy of the tunica vaginalis, chylous ascites, chylous diarrhoea, and probably other forms of disease depending on obstruction or varicosity of the lymphatics or on the death of the parent filaria.

The patient whose history I now record suffered from elephantoid fever, lymph scrotum, lymphadenitis, and abscess with varicose groin glands. The details of the case are as follows:

J. W. W., aged 47 years, a native of Barbadoes, West Indies, came under my care in the Toronto General Hospital on December 18th, 1900, in order to get advice concerning a swelling of the scrotum.

History.

He had lived in Barbadoes all his life with the exception of six or eight short trips which he had made to Canada and Europe. He gave the following history:

In 1881, when he was 28 years of age, he suffered from what he believed to be hydrocele, for the treatment of which both sides of the scrotum were tapped and fluid drawn off, after which iodine was injected. This apparently effected a cure. With the exception of the hydrocele he enjoyed perfect health and never had a serious illness of any kind until 1884, when on one occasion he became suddenly ill; an initial chill was followed by high fever and drowsiness. The chill was not repeated, but he was in bed for a week, the fever continuing, and there developed a painful swelling of the right leg below the knee; this gradually subsided and he fully recovered. He remained well for two years, when a similar attack occurred with exactly the same symptoms, but in addition, coincident with the occurrence of the chill, the glands in the right groin became swollen and tender. In subsequent attacks pain in the groin glands formed the first symptom and warned him of the approach of trouble. These attacks occurred at long intervals for the next few years: an interval of a year or eighteen months would pass without one. During an attack in 1891 an abscess developed in the calf of the right leg: this was opened and subsequently healed up without much trouble. At this date the scrotum first began to be affected and to swell up during the attack, and this became a feature of all subsequent seizures. At first the scrotal swelling would go down after the attack, but soon permanent thickening resulted. From October, 1899, until March, 1900, he had a series of successive attacks in Barbadoes: they were more severe than he had previously had. In all, seven attacks occurred during the six months mentioned. In one of them he had a severe rigor which lasted half an hour.

The patient never suffered an attack whilst in a cold climate, and hence during his visits to Northern Europe and Canada he has been free from the trouble altogether. A curious fact is that, in spite of the series of attacks such as I have described, filariasis had not been suspected, and he had never had his blood examined until he came under my care in Toronto. The history, too, would indicate that he had been a victim of the infection for sixteen, possibly for twenty, years.

Condition on Admission.

The whole scrotum was greatly thickened. There was sufficient enlargement to form a heavy, somewhat flabby mass about three times the normal size. He supported the scrotum in a flannel bag when he walked about. The enlargement diminished slightly after he had been lying down for some time, but there always remained a considerable amount of permanent thickening. The tissues of the scrotum had a thick, indurated, leathery feel on manipulation, and there was some additional enlargement in the region of each testicle. On the right side there was a nodule about the size of an almond apparently in the epididymis. The condition about the testicles might have been due to the hydrocele from which the patient had suffered in 1881.

Examination of Blood.

On my first examination of the patient I suspected that I had to deal

* Read before the Canadian Medical Association at Montreal.

with a case of lymph scrotum, probably of filarial origin. I stated my suspicions to Dr. J. H. Elliott, who happened to be in Toronto at the time. Dr. Elliott had just returned from the West Coast of Africa, where, whilst a member of the staff of the Malarial Expedition to Nigeria from the Liverpool School of Tropical Medicine, he had studied filariasis in man and in birds. He kindly undertook the examination of the blood, and subsequently succeeded in isolating the parent worm from the tissues which I excised at the operation. On the night of January 4th, 1901, Dr. Elliott drew some blood from the finger tip, and made three cover-glass preparations. In each of these he found the embryo filariae in large numbers. Thus under one cover-slip he counted 20 embryos. They were of a typical form, and were readily recognized as filaria sanguinis hominis nocturna. In all instances the embryo was seen to possess a distinct case, such as is characteristic of the nocturna variety of filaria.

Operation.

I operated on January 5th, 1901. Chloroform was administered, and the greater part of the indurated scrotum was removed by an elliptical incision, the long axis of the ellipse running from before backwards, beginning in front at the base of the penis, and ending behind at the most posterior part of the scrotum in the middle line. Having excised this portion of indurated skin, there were left two lateral flaps of scrotal tissue just sufficient to cover the testicles. The operation was simple and presented no difficulties whatever. There was very little bleeding, and no ligatures were required. The edges of the wound were brought together by interrupted silkworm-gut and continuous horsehair sutures. An antiseptic dressing was applied. The wound healed kindly by first intention, and the stitches were removed on the eighth day.

Examination of Specimen.

At the time of operation Dr. Elliott took charge of the scrotal tissue at the moment I removed it. He placed it in normal salt solution, and made a search for the parent filariae, teasing the tissue with a couple of needles. A number of fragments, apparently of an adult filaria, were floated off, but at first no complete worm. Then a small cyst-like body was observed on the surface, on opening which a drop of serous fluid escaped, while in it was found an adult filaria. On placing this in a dish of salt solution its movements became very active, coiling and uncoiling itself with extreme rapidity; it looked like a piece of animated white thread, about 6 cm. long. If momentarily its movements ceased it would seem to be in an inextricable coil. Further examination of the tissue failed to reveal any other adult worms. In the salt solution the adult filaria remained alive for some hours.

Observations on Periodicity.

In order to determine the periodicity of the appearance of the embryos in the peripheral blood a careful count was made every three hours from noon on January 28th to noon of the next day. Dr. Coutts, who was then assistant in the Pathological Department, made the counts. A glass pipette was used, and each drop of blood for examination was carefully measured so as to obtain the same quantity of blood under each cover slip; the embryos under each were then counted. Four cover-slips were prepared for each count, and the number of embryos in each cubic centimetre of the blood was calculated from the results obtained.

Date.	Time.	Embryos per c.cm. of the Blood.
January 28th	3.10 p.m.	126
January 28th	6.10 p.m.	840
January 28th	9.10 p.m.	1,175
January 29th	12.10 a.m.	1,680
January 29th	3.10 a.m.	1,540
January 29th	6.10 a.m.	1,764
January 29th	9.10 a.m.	273
January 29th	12.10 p.m.	0

After-history.

On February 19th, forty-six days after the operation, the patient suffered an attack of elephantoid fever. This was the first occasion on which he had experienced an attack of this nature in a cold climate. Immediately after lunch, in the middle of the day, he was seized with a chilly sensation, the skin became hot and dry, and he realized that he had what previously in the Barbadoes he had been the habit of calling an attack of "ague." When I saw him at 5 p.m. his temperature was 104.4° F., respirations 32 per minute, and pulse 120. A tender swelling about the size of a hen's egg existed in the posterior triangle at the root of the neck on the right side. The superficial tissues over this region were congested and oedematous. He tells me that in the early afternoon when the attack first manifested itself, he suffered severe pains in the back and limbs, with characteristic stretching and yawning, a feeling of lassitude and drowsiness such as he had always experienced in the tropics when an attack of this kind supervened. The local inflammatory condition subsided but recurred, and ten days after the onset of the attack the oedema and tenderness made me suspect pus, and I incised the cervical swelling. I found a mass of sloughy-looking material, composed of greyish, oedematous, broken-down glandular tissue. There was no pus formation. Careful search was made for parent worms, but none were found. The wound slowly healed.

On March 13th at midnight, and at 7 o'clock the next morning, a sample of blood was taken for the purpose of demonstrating the embryos to my class. I was surprised to learn that no embryos were to be found, and none could be discovered on subsequent occasions, although many attempts were made to secure a specimen. The following week Dr. Coutts made a systematic search for the embryos, proceeding in the same manner as he had done when making the counts for periodicity in January. The same quantities of blood drawn at similar hours were submitted to careful search. He succeeded in finding a single embryo in the blood drawn at 3.10 p.m. All the other samples were free from embryos: they had entirely disappeared. Subsequent to this, samples of blood taken at irregular intervals at night failed to discover any embryos.

It would therefore appear that not only had the patient got rid of his lymph scrotum, but the operation had resulted in freeing him of his filariae. The only possible explanation appeared to be that the filariae which Dr. Elliott found in the excised tissue were the parent worms, which were responsible for the production of the embryos in the blood, and that on their removal the embryos ceased to be produced, whilst those already in existence gradually disappeared, as, of course, they never come to maturity in the human blood, and must perish unless they are carried to an intermediate host.

My patient subsequently returned to the West Indies, where he at once adopted precautions to prevent reinfection, from the very first night sleeping under netting in order to keep the mosquitos from him. He writes to me under date July 25th, 1901, to the effect that he had had his blood examined. He was fortunate enough to have the examination made (at the request of Dr. Phillips, the medical attendant) by Dr. G. C. Low, of the London School of Tropical Medicine, who happened to be in the locality at the time. Dr. Low pronounced him still free from filaria embryos. This examination was made six and a-half months after my operation on the scrotum when the parent worms were isolated. One may therefore conclude that a permanent cure had been effected by the removal of the parent worms from the scrotum.

Dr. J. H. Elliott's Description of the Adult Worms.

Dr. Elliott was good enough to make a careful study of the adult worms found. He reports as follows: Microscopic examination of the fragments found showed them to be apparently from a fully-developed female. The one perfect filaria proves on examination to be a female not fully mature.

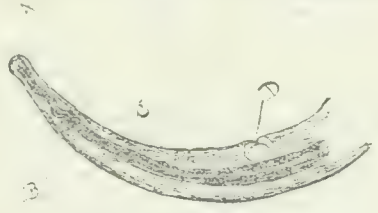


Fig. 1.—Anterior end × 60. A. Oral aperture. B. Nerve ring. C. Oesophagus. D. Vulva.

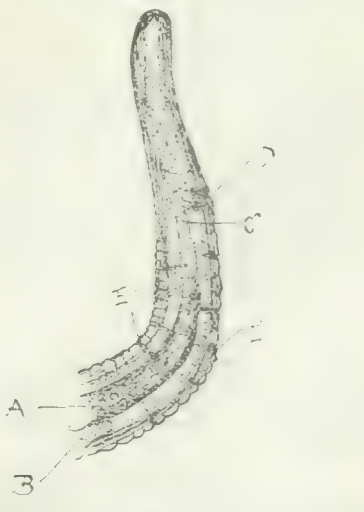


Fig. 2.—Posterior end × 90. A. Alimentary canal. D. Posterior horn of uterus. C. Cloaca. D. Anal orifice. E. Cuticular striations.

The length is 55 mm., and width 0.19 mm. (When mature the length of the filaria bancrofti varies from 88 to 155 mm. and the width 0.6 to 0.7 mm.) Both ends are tapered. The head end is slightly bulbous, measuring 0.052 mm. at its greatest diameter. The neck at its narrowest point has a diameter of 0.045 mm. The tail end tapers until it reaches a diameter of 0.044 mm., and then is abruptly rounded. The cuticle shows

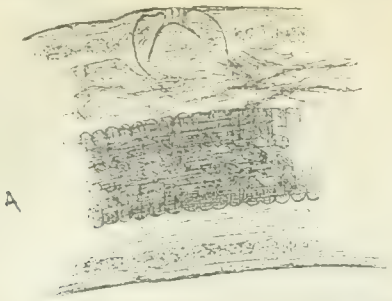


Fig. 3.—Region of vulva × 270. A. Alimentary canal.

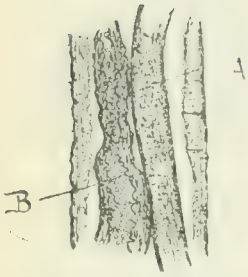


Fig. 4.—A point 3.48 mm. from head end × 90. A. Alimentary canal. B. Muscular walls of vagina.

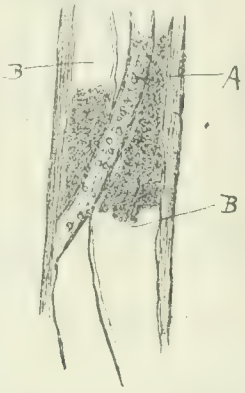


Fig. 5.—Near middle of the worm × 90. A. Alimentary canal. B. The two horns of uterus.

transverse striations, especially near the ends. The buccal orifice is centrally situated at the anterior end. The first part of the alimentary canal is thick-walled and muscular, but throughout the greater part of its length the walls are thin. The posterior opening is lateral, the anal orifice being marked by a slight depression 0.28 mm. from the end. What appears to be the nerve collar crosses the oesophagus 0.195 mm. from the anterior end. The vaginal orifice is situated at a distance of 0.67 mm. from the anterior end, being marked by a depression surrounded by a slightly-raised papilla. The width of the worm at the vulva is 0.125 mm. The vagina, which possesses thick muscular walls, extends backwards 3.45 mm., where it receives the two horns of the uterus. Only a small number of ova are present in the vagina, but the uterine horns are completely packed with them. The uterine walls are thin. The two horns make several turns about one another and the gut as they pass backwards to the posterior end. The gut has a constant diameter of 0.0347 mm. The rest of the coelomic cavity is taken up by the distended uterus. The uterus terminates blindly about 1.2 mm. from the tail.

Cobb's formula,[4] which was used extensively by the malarial expedition to Nigeria (2, p. 23), was devised so as to indicate the measurements of different parts of nematode worms as percentages of the whole length of the body. Reduced to Cobb's formula the size of the parent worm in this case was as follows:

— 0.36	3.64 ?	1.22	99.5
— 0.145	0.327 ?	0.254	0.147

Measurements for specimens of filaria Bancrofti do not appear to have been previously published. They could not be obtained for the work on *Filariasis* issued by the Malaria Expedition to Nigeria (2, p. 44).

Commentary.

The attack of lymphadenitis in the neck with the characteristic symptoms of elephantoid fever, which came on forty-six days after my operation, might be accounted for by supposing that immature ova had been discharged into the circulation by the parent worms during the manipulations at the time of operation. The immature ova, as has already been pointed out, are considered by Manson to be a frequent cause of trouble in individuals suffering from filariasis. In my case, it might be presumed, they brought about a lymph stasis in the cervical region, with the sequel of events described. This was the only attack of elephantoid fever suffered by my patient in a cold climate, and I think the observation is one of considerable interest. With this single exception he enjoyed complete immunity from such attacks whilst visiting Canada and Northern Europe; and it must be admitted that the single instance referred to occurred under very exceptional circumstances, directly traceable, no doubt, to the operation. The general observation might therefore be made, if we might conclude as much from the evidence here presented, that an individual the subject of filarial infection gets complete relief from attacks of elephantoid fever when he migrates from the tropics and takes up his abode in a cold climate. Immunity from such attacks was enjoyed, although, as examination showed, the embryos continued to circulate in his blood. The truth of this fact was not deduced from a single experience, but was proved repeatedly by my patient, who on many occasions sought and found relief from the frequent attacks which he suffered in the tropics by visiting a cold climate.

Many interesting observations have been made regarding the occurrence of the embryos in the peripheral blood. Manson[5] has determined by observations conducted *post mortem* on a man who committed suicide, and who had been a victim of filarial infection, that when the embryos are absent from the peripheral circulation they find shelter in the larger blood vessels, particularly the arteries, the majority being found in the vessels of the lung. Manson calls attention to the analogy which exists between filarial periodicity and that of the malarial parasite, "the two parasites of man subserved by the mosquito." In 1882 Stephen Mackenzie[6] reported a case of haemato-chyluria of filarial origin in the person of a private in the Royal Artillery who had come from India, and was admitted to the London Hospital. Mackenzie reversed the patient's usual hours of movement and rest, his meal times being correspondingly altered. The effect was a complete inversion of the filarial migration. The embryos were now found in large numbers during the daytime, and were absent during the night. On resuming his usual habits the nocturnal periodicity returned as before. No reasonable explanation of this is forthcoming.

In tropical countries it is not uncommon to find a type of filarial infection in which the embryos are only found in the peripheral blood in the daytime in individuals of ordinary habits of sleep, etc. In the case of this parasite known as the filaria diurna the periodicity is therefore the reverse of that described in my case. No marked pathological lesions have been encountered in connexion with this parasite, and this circumstance, as Annett, Dutton, and Elliott (2, p. 53) point out, accounts for the fact that their geographical distribution has not been made out with accuracy. No difference can be detected, in the embryonic form, between filaria nocturna and filaria diurna, and according to Annett, Dutton, and Elliott (2, p. 92) "the weight of evidence is on the side of the identity" of these two forms. If they are identical, then, for some unknown reason, there must be a reversal of the periodicity comparable to that established experimentally by Mackenzie. The parent form of filaria diurna has not been discovered. Manson suggested the possibility of filaria loa being the worm in question. This worm (filaria loa) is from 16 to 70 mm. in length (2, p. 50), it inhabits the connective tissues, and has frequently been observed moving about under the conjunctiva or under the thin skin of the eyelids. It moves about in such localities with marvellous rapidity. Two specimens of this worm have been obtained to my knowledge in Toronto, in both cases removed from the eyelids of individuals who had returned to Canada from the tropics. One case was reported by Dr. Frederick Fenton,[7] the other occurred in the practice of Dr. F. N. G. Starr. Unfortunately in neither case was the blood examined for embryos, as the suggestion regarding filaria diurna and its possible relationship to filaria loa had not then been made, and there was no reason to suspect the presence of parasites in the blood.

There are some forms of filarial infection in which no periodicity whatever occurs. For example, in filaria perstans, which is very common on the West Coast of Africa, embryos in small numbers are found in the peripheral blood at all hours of the day and night. The embryonic form of filaria perstans is very different from filaria diurna or filaria nocturna. It is much smaller than either of these, and differs markedly from them also by possessing no sheath.

Occasionally an individual may be the victim of filarial infection, and may present evidence of extensive lesions produced thereby without at any time showing filarial embryos in the peripheral circulation. This can only be explained on the hypothesis that the lymphatic channel has been so

blocked that the embryos are unable to find their way to the blood stream. Thus Strube in the *Deutsche medicinische Wochenschrift*[9] describes five such cases, from Natal and the Transvaal, where filarial embryos were found in the urine but none were present in the blood, which was carefully examined during the day and night. Lothrop and Pratt[10] (p. 284) cite this paper in support of the statement that embryo filariae had been found in the blood of the negroes of the Transvaal. As a fact, however, the blood was free from embryos in Strube's cases.

Manson[5] asserts his belief that before embryos can be found in the blood by ordinary microscopic examination large numbers of parent worms must be present in the lymphatics. Annett, Dutton, and Elliott ([2], p. 67) were led to believe from their investigations that Manson's conclusions were not justifiable. The case which I now place on record would seem to have a direct bearing on the question, and would go to show that very few parent worms may be responsible for a large number of embryos in the peripheral circulation. Lothrop and Pratt,[10] of Boston, report two cases of filariasis observed in that city, in one of which operation was performed for lymphatic varices and chylous hydrocele, with the removal of adult worms. In all nine worms were removed, of which two were males. There was, however, in their case no subsequent disappearance of the embryos from the blood; they were found present six months after operation. In their paper, which was published in 1900, they had collected 11 cases from the literature in which adult filaria bancrofti have been found, and, as far as they were able to ascertain, the adult worms had never before been found in the United States. I can find no case on record of a cure being effected by removal of the adult worms such as I now report. Manson ([3], p. 505) states that the disappearance of filarial embryos from the blood which sometimes occurs in cases of lymphatic varix of long standing is doubtless due to the death of the parent parasites, but there is no suggestion that such a result may be brought about by operation.

The interference with the lymph circulation is often very great in these cases, and those who have had much experience in operating state that there is danger in attempting to excise affected tissues, lest in so doing the anastomotic circulation of the lymph may be interfered with to such an extent that matters may be made worse rather than better. Godlee[11] has quite recently, on the suggestion of Manson, operated with the view of producing an anastomosis between one of the dilated lymphatic vessels and a tributary of the internal saphenous vein. Subsequently another lymphatic had been introduced into the spermatic vein. The result had been extremely successful.

Apart from the presence of embryos the blood has exhibited other peculiarities in infected individuals. Gulland[12] has shown that there is a distinct eosinophilia observable when the embryos are present in the peripheral circulation. This, Gulland observes, brings filariasis into line with other parasitic infections—for example, ascaris, oxyuris, ankylostoma, taenia, and trichina, in all of which eosinophilia exists. This, it is asserted, goes to show that the eosinophiles are concerned in protecting the body from the toxins of the parasites. Coles[13] has confirmed Gulland's observations and has found eosinophilia in bilharzia disease also. Calvert[14] made somewhat similar observations among Filipino prisoners at Manila, but he was of opinion that the eosinophilia was only characteristic of the early stages of filariasis, and that as the disease progressed the leucocytosis and increase in eosinophiles gradually decreased.

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BUBONIC PLAGUE ("KAUMPULI") IN CENTRAL EAST AFRICA.

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In the writings of several of the earlier explorers and missionaries in Uganda and in that part of German East Africa to the west of the Victoria Nyanza, frequent references are made to the occurrence of local outbreaks of a rapidly-fatal disease known in Uganda as "kaumpuli," and in German East Africa as "tubunga."

Their accounts of the disease are vague, but all seem to agree as to its being a bubonic affection, attended with a very heavy mortality. Some state definitely that it is plague. Thus Ashe, a missionary who saw much of the Baganda during the reign of M'tesa and M'wanga, says:[1]

> This frightful malady [small-pox] and the plague, a kind of black death, called kaumpuli, from time to time decimated the population of Buganda. The kaumpuli is recognized by the swellings in the armpits and in the groin, and by a terrible rise in the temperature of the patient. The fever runs its course in about twenty-four hours, and usually proves fatal. Small-pox perhaps kills more people, yet it is not so much feared by the natives as kaumpuli, of which they have the greatest terror, as it is supposed to be frightfully infectious.

Stuhlmann, referring to diseases prevalent amongst the Baganda, remarks[2] that the most feared is the so-called kaumpuli, which is in the highest degree contagious and deadly, and often wipes out whole villages. Where it appears the lymphatic glands begin to swell and suppurate, accompanied by symptoms of severe fever. Probably, he says, it is a kind of bubonic plague. The French missionaries use as a remedy plasters made by themselves, which they place upon the chest and back of the patient; but whether with good results or not he does not state.

Dr. Milne, acting Principal Medical Officer for Uganda, reports[3] that a chief near Kampala informed him that "in Lugard's time it [kaumpuli] carried off very many people; in fact, it was worse than war." He also states that the Collector of the Budu district, Mr. Prendergast, had in 1900 under his own observation at Masaka seventeen men of the country police force who died in forty-eight hours with all the manifestations of a bubonic disease, and that many more cases were reported to him. The result of Sir Harry Johnston's inquiries[4] was that

> from accounts of English and French missionaries and the German authorities to the south of the Uganda border there is little doubt that in Budu, and perhaps also in Busoga, the bubonic plague, or some disease related to that malady, exists in an endemic or chronic form.

Also that

> the bubonic plague, which is always simmering in these countries near the Victoria Nyanza, has visited Unyoro repeatedly, having largely brought about the depopulation of the Bwenli subdivision.

During 1900 and 1901 several letters were received by the administration authorities at Entebbe from the White Fathers of Bikira, a large missionary station in Budu, two marches south of Masaka, relating the occurrence of severe outbreaks of kaumpuli at their station and in its neighbourhood. One letter told of the death of one of the Fathers after only four days' illness; another stated that many rats had died in the huts of the natives and in the mission buildings. A medical officer was sent to them, but at the time of his visit there was no outbreak, nor did he discover any dead rats. I believe he came to the conclusion that the disease, whatever it was, was not plague. Shortly afterwards, early in 1902, the mission station at Bikira was closed by an order of the Bishop, and the Fathers were dispersed to other districts.

At the time of my recent visit to Uganda (November, 1902), a good deal of speculation as to the nature of kaumpuli was indulged in; but no medical officer of the Protectorate had succeeded in observing an authentic case of the disease. The Baganda are apt to apply their word for "plague" to any disease which carries people off suddenly; and, to add to the confusion, sleeping sickness was frequently called "kaumpuli" in the Sese Islands. It was certain, however, that sudden localized epidemics of some very fatal disease of a bubonic character, and of which the natives stood in great dread, did occur from time to time in the province of Budu, and had occurred in the past on a large scale in other parts of Uganda.

Having served for three years under the Indian Government as Special Medical Officer for Plague in the Bombay Presidency, I had been able to study the disease in the dark, ill-ventilated, low, mud houses, and filthy overcrowded

chawls of Bombay; and it appeared to me at first sight extremely unlikely that bubonic plague should be found in its most virulent form in the heart of Africa, where the natives live in grass huts, and where mud houses and overcrowding, from an Indian point of view, are almost unknown.

I left Entebbe on October 15th, 1902, with the object of journeying through Budu to make inquiries into sleeping sickness; but, after crossing the Katonga River into Budu, I found that sleeping sickness was practically unknown there. On the other hand, kaumpuli was talked of incessantly. From Masaka I paid a visit to the Sese Islands, where I learnt from Father Ramond, who spoke very good Kiswahili, that in kaumpuli swellings appeared in the neck and groin: while frequently there was great pain in the throat and chest, and sometimes dysentery. From Sese I returned to Masaka, and continued my march southward.

At Kiabogo I met with Father Essier, who had lived for some years at the ill-fated mission station of Bikira. He told me that in kaumpuli there was high fever and pain in the chest: the bubos, particularly those in the neck, were extremely painful, hard, and never had pus; they were treated with marking-nut or a cantharides blister. The odour from the patients was always very bad. Infection was conveyed, he thought, by clothing. In some cases there was dysentery. The average duration of the disease was three days. In the stage of collapse brandy or whisky was of great service. Most cases died suddenly. He informed me that hundreds of rats had died in the houses of the natives, but whether before the epidemics or after he could not say definitely.

From Father Gorgu, whom I afterwards met at Mbarara, I learnt that, of the many cases of kaumpuli that he had seen, all had bubos most commonly in the groin, but some in the axilla, a few beneath the jaw. They seldom suppurated, and were usually treated by the application of marking-nut, hot irons, or cantharides. He noticed no ulcerations, but dysentery and pneumonia were frequent: the latter cases were always fatal. Some cases died in six hours, but the majority lasted two or three days: all ages were affected; this year most of the cases were women. During the worst epidemics at Bikira deaths occured at the rate of seven per week; and, where two or three occurred in one house and the rest ran away, they usually developed the disease later and died of it. Seven out of the eighteen cases in the mission hospital died in one week. Father Gorgu informed me also that kaumpuli was well known to the natives and dreaded by them long before the missionaries came to Bikira, eight years previously. For the first two years it broke out almost every month: but, since then, the disease had been most prevalent in March, April and May. Cases always occurred as soon as the rains began in March. He attributed outbreaks of both kaumpuli and kawali (small-pox) to the fêtes which were held annually in February. Fêtes were also held in December, and after them cases of both were sure to occur. Two or three dead rats were always to be found in the huts in which persons were suffering from kaumpuli, and once or twice they had been found in the mission itself. Father Gorgu told me further that he had heard from Monseigneur Tivenhac, the first Roman Catholic Bishop of Uganda, and now in Algiers, that about 25 years ago kaumpuli frequently killed very many people at Rabaga, the headquarters of their mission at Kampala.

Father Achte, whom I met subsequently at Fort Portal, kindly supplied the following facts with regard to Bikira:

He said that April, 1895, was the most severe outbreak—seven or eight people dying in a day. The wife of a small chief near Bikira died of it. Then the chief caught it and was taken to the mission, attended by all his household. He died on the road, and within a few days 11 of his people, including sons, relations, and attendants, all died of kaumpuli—in fact, I believe (said he) all the people who came with him, except one, died. Some persons who went to live in the house these people had occupied at Bikira became infected and died in four or five days. During the week after the chief left many other people died in his village; then the outbreak ceased. Some were sick only six hours and died while talking rationally. Father Achte himself saw many dead rats in infected houses and even in the house he himself lived in.

On nearing Bikira, I instituted a careful search for cases of kaumpuli. I divided my police escort into three parties—one to look after the camp, one to visit all the plantations and villages on one side of the road, while I took the opposite side with the third party and visited practically every habitation for miles round, returning to camp to examine cases of illness brought in by the second party or going with them to visit persons who could not be moved. In this way I treated some 80 sick persons, but did not see a single case of kaumpuli, the majority of them suffering from ulcers, fever, or other simple disease. Throughout the chiefs asserted that there were no sick persons in their district. I found the mission station not altogether abandoned but in charge of a native priest. Although I spent a whole day in company with this man, three of my own people, one askari (policeman) and a native chief, examining every hut within a radius of a mile from the church and mission buildings, I found no kaumpuli—only a few cases of malaria, and one of venereal bubos. Out of 130 houses, only some 15 or 20 were inhabited, having been evacuated when the Fathers left the station six months before. Many of them contained beds, bedding, and cooking utensils, just as they had been left. There was no doubt that some serious outbreak had occurred, but it was equally clear that I had not been fortunate enough to arrive at a time when an epidemic of kaumpuli or any other disease was in progress.

After leaving Bikira I marched southwards to the Kagera river, on the south bank of which, at Kifumbero, in German East Africa, I had the pleasure of meeting Dr. Feldmann, the medical officer in charge of Fort Bukoba, who had very kindly arranged to meet me at that place. He at once declared kaumpuli to be genuine bubonic plague, and said that the disease was very well known at his station on the shores of the Victoria Nyanza and in the surrounding districts. At Fort Bukoba, in June, 1902, 15 cases of bubonic plague had occurred (he said), and 5 others were seen outside, resulting in the evacuation of the post for a fortnight, after which no more cases occurred. He had frequently found the bacillus pestis in the blood of the cases, both before and after death. Rats had died in numbers during the epidemic, and whilst it was threatening. Natives frequently brought them to the hospital, and he seldom failed, upon microscopic investigation, to find the bacillus in the glands, but he had then no media or apparatus for making cultures. He had had several cases of pneumonic plague, all of which proved fatal, but he had seen no plague carbuncles. The natives adopted no treatment for the disease, but as soon as a case occurred it was generally isolated in a hut specially built some distance from the village. If several cases occurred, the village was evacuated and a fresh one built some distance off. Dr. Feldmann said, too, that it was generally believed at Fort Bukoba that the plague was introduced each year into German East Africa from Budu because of its always occurring in the former place about June, when the rains had ceased, and when the natives were able to cross the Kagera River and journey southwards. This would appear to be supported by Father Gorgu's assertion that most of the cases at Bikira, in Budu, occurred during the rains in March, April, and May.

Dr. Feldmann's description of the various symptoms of the disease occurring at Fort Bukoba coincided accurately with those of bubonic plague in Bombay, as did all the accounts I was able to obtain from the missionaries, with the exception of the occurrence of bubos in the region of the neck. And there can be no doubt, however extraordinary it may seem to those who have studied the disease in India and elsewhere, that there exists at Bikira, in Budu, a province of the Uganda Protectorate, to the west of the Victoria Nyanza, a focus of bubonic plague, which annually gives rise to small but very virulent epidemics, and that from this focus the disease is carried at certain times of the year into German East Africa. It is also probable that the Egyptian epidemics have had their origin in this endemic centre in Uganda. The small epidemic of plague which occurred early in 1902 at Nairobe, in British East Africa, where some 40 cases, with 17 deaths, were reported, had its origin, in all probability, in India, for there is constant connexion between Bombay and the port of Mombasa, which is connected with Nairobe by means of the railway.

Kaumpuli seems, then, to have been known to the natives of Uganda for ages, but for the first account of the disease we are indebted to Koch, who, with Zupitza, a German colonial surgeon, proved that the disease was genuine bubonic plague.

Koch, in his report to the German Government,[5] gives an interesting account of his and Zupitza's work in German East Africa, and as this plague centre in Equatorial Africa is, I believe, quite unrecognized by British authors, I attach here a translation of those parts of Koch's report dealing with the subject. After stating that he was requested by the German Government, in a message dated June 30th, 1897, to proceed to German East Africa in order to investigate a disease that

had broken out there and much resembled plague, he says, writing under date August 12th, 1897:

The German Imperial officials in Dar-es-Salam received the first information regarding the occurrence of the disease in the German protectorate from Staff Surgeon Zupitza, stationed at Bukoba. He reported that in Kisiba,[6] a district the eastern boundary of which is the Victoria Nyanza, and which is separated from Uganda on the north merely by the Kagera river, a disease frequently appears which is accompanied by violent fever and swelling of the axillary and inguinal glands, and in most cases is swiftly followed by death. At the time of his report two banana groves were infected, and from five to six of the victims died each day. In the months of August and November last year Dr. Zupitza sent further reports, stating that the disease was spreading, and that two other banana groves had become infected. This news Zupitza had received from missionaries and natives. He himself, unfortunately, owing to his duties at the station, and in consequence of prolonged illness from fever, had been unable to study the disease at the place of its occurrence. Recently, after a two years' sojourn on the Victoria Nyanza, he returned to Dar-es-Salam, and an excellent opportunity was thus offered to me to learn from him all he knew regarding the subject. From this it appears that we are really face to face with a malady which, both as regards symptoms and the number of cases of death, does not differ from bubonic plague.

It is peculiar only that the disease has been introduced into Kisiba long ago and on various occasions, and has remained strictly confined to that territory.

In this, however, it resembles mahamari, the plague-like disease in the remote villages of the Himalayas, mentioned by me in reports of an earlier date. This malady also rages for years, and even for decades, in the mountain villages, until suddenly, favoured by conditions as yet unknown to us, it expands over large territorities of Northern India. In the same way bubonic plague can remain for a long time localized in Mesopotamia, until it unexpectedly invades the neighbouring countries. Therefore there may be localized, and may have been existing for a long time, a plague focus also in the interior of Africa, from which in former times, by means of the slave trade, plague was carried into Egypt, and in more recent times into Tripoli, where, as late as 1856 and 1874, plague appeared, though it could be shown to have been imported from Mesopotamia or other plague centre. In this case the plague-like disease in Kisiba might be one of the most southern outposts of this ancient African plague centre. Whether we are dealing with genuine bubonic plague, however, can only be settled by researches made in the districts invaded by the disease, above all in Kisiba.

Dr. Koch then points out that an expedition sent to the latter country, in order to investigate the matter, would require from two and a-half to three months for the journey from the coast to Kisiba, and the same amount of time for the return journey. Adding to this another two months spent in studying the subject, a period of eight months would be required for the enterprise. As it seems to him not desirable to devote so long a space of time to this one object merely, he suggests that Dr. Zupitza, already well acquainted with the subject and trained in his methods of research during the period that he acted as his (Dr. Koch's) assistant in Dar-es-Salam, should be placed in charge of the expedition, accompanied by another medical man as assistant. This arrangement would enable him (Dr. Koch) to devote his researches meanwhile to other matters of importance for the German colony, such as malaria, cattle plague, the discovery of a suitable situation for a sanatorium in a locality free from fever, malaria, etc. To these suggestions the German Government assented. On August 30th Dr. Zupitza left the coast, and arrived in Kilossa on September 12th, M'papa September 17th, Tabora October 9th, whence he proceeded to M'nanza at the southern end of the Victoria Nyanza, and crossing the lake arrived in Bukoba at the western shore on November 3rd.

In his report from Dar-es-Salam dated February 14th, 1898, Dr. Koch writes:

Zupitza at once, after his arrival, entered into communication with Mutatembwa, the Sultan of Kisiba; and, with the latter's consent, he proceeded to the infected territory, which begins a day's march west of Bukoba, representing a narrow strip extending westward. Camp was pitched at Gruczati, near the banana groves in which the plague was said to be localized; and excursions were made into neighbouring territory. The disease had recently been increasing again, so that Zupitza had at once occasion to report five cases of the malady called by the natives "ruburunga." They all showed high temperatures and very severe illness. Four of them had bubos in the inguinal region, one of them had a bubonic swelling at the corner of the jaw. Other symptoms were not discoverable. Especially it is to be noted that the functions of digestion, respiration, and circulation were unimpaired. Four of the patients died within a day or two; one only escaped. Zupitza drew blood from all of them by incision at the finger-point, and made microscopical glass-cover preparations. In two cases blood withdrawn by an incision near the glands was used. For the time being, however, only one obduction could be made, though the doctor hoped he would succeed in making other obductions later.

[The preparations and parts of the body preserved in alcohol reached me safely after my return from the Usumbara mountains in Dar-es Salam, and I discovered the following:

In the spleen, liver, and kidneys of the body dissected during the obduction, plague bacteria were found in an extraordinary quantity and in pure culture (*Rein-kultur*). The blood, also, which had been drawn from an incision in the bubo while the man was still alive, contained numerous plague bacteria. In the blood drawn from the finger in the other cases, only in two instances plague bacteria, and in small numbers only, were found.

I have compared the preparations with plague preparations from Bombay, and cannot discover the slightest difference between the plague bacteria from Kisiba and those from Bombay. They resemble each other as regards dimensions, appearance, and behaviour toward colouring matter, etc., so completely that it is not necessary to give a special description of the Kisiba bacteria.

Since the ruburunga plague in Kisiba also fully coincides with bubonic plague as regards clinical features and great mortality, there remains for me no longer any doubt that we are dealing here with genuine bubonic plague; and the opinion to which I heretofore gave expression, namely, that also in the interior of Africa, just as in Asia, a plague focus exists, and has, perhaps, been existing from the remotest times, is thus confirmed.

For this view another circumstance also speaks. During previous inquiries regarding the ruburunga plague I could not find out whether, at the time of a plague outbreak, there appears to be a notable mortality among the rats or not. Even Zupitza had not heard of such during his former residence in Bukoba. At present, however, he reports: "In the plague-stricken district rats are dying in great numbers; the people maintain that it is through these animals that the plague is spread and leave their huts as soon as they notice the dying of the rats." The very same thing was told to me during the plague epidemic in Bombay.

Fortunately, Zupitza succeeded in getting for investigation two rats which had died in different huts of a plague-stricken banana grove. In both specimens I found in all microscopical preparations, but especially in those taken from the spleen, plague bacteria in pure culture (*Rein-kultur*). Zupitza modifies his former statement regarding the ruburunga plague, in so far as, according to more recent and exact statements on the part of the missionaries, plague in this part of the country appeared for the first time seven or eight years ago; while, in the neighbouring district of Uganda it has been existing for forty years.

In a later report, Dr. Koch informs the Government that Dr. Zupitza supplied him with a great number of additional specimens prepared for microscopical research, as well as portions of infected bodies, and that in studying them he finds the fullest confirmation of the fact that the disease is genuine bubonic plague.

There being nothing new in this report, I merely give a translation of an extract referring to the alleged antiquity of the disease in Uganda, in which he says:

According to information received from the missionaries in Budu (the most southern part of Uganda), the plague has existed in Uganda for ages. During M'tesa's reign it ravaged the capital of the country. At present it occurs there sporadically only. In the course of time it has advanced more and more southward, and has been endemic in Budu for 30 to 40 years. Thence it has been repeatedly carried across the Kagera into Kisiba, the first invasion occuring about eight years ago.

References.

[1] *Two Kings of Uganda*, 1889. [2] *Mit Emin Pasha ins Herz von Afrika*, 1894. [3] *Medical Report on the Health of the Uganda Protectorate*, 1901. [4] *Uganda Protectorate*, 1902. [5] *Reise-Berichte über Rinderpest, Bubonenpest in Indien und Ost-Afrika. Tsetse oder Surra-Krankheit, Texasfieber, tropisitu Malaria, Schwarzwasserfieber* (Berlin, 1898). [6] In some of the English maps the name is given as *Usiba*.

A NOTE ON THE DIFFERENTIAL LEUCOCYTE COUNT IN WORM INFECTIONS.

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It has been well known for some years that the presence of many varieties of parasitic worms may be accompanied by an increase in the eosinophile leucocytes in the blood.[1] Positive evidence on this point is of proved value in diagnosis, but no inquiry seems to have been made on the frequency with which worms produce an eosinophilia, and hence the value of a normal differential count as excluding parasites is unknown. It seems worth while to put on record these few blood counts, since they are derived from a consecutive series of cases. Stained films have alone been examined, 500 or 1,000 leucocytes being counted in each case. It is therefore only the question of a relative, not an absolute, eosinophilia which is dealt with. The observations have, however, been made with the object of ascertaining how much information can be obtained by this simple method of examination. As far as could be seen none of the cases showed any considerable leucocytosis.

Table I. (p. 1268) contains the details of the counts of 18 children and 1 young adult who were infected with oxyuris. The eosinophiles vary from 0.4 to 13.7 per cent., the average being 5.8 per cent.; 42 per cent. of the cases show a percentage of

TABLE I.—*Oxyuris.*

	Age.	Sex.	Lymphocytes.	Intermediate.	Large Hyaline.	Neutrophile.	Eosinophile.	Mast Cells.
J. E.	8	M.	12.9	3.8	3.8	64.8	13.7	1.0
C. E.	6	M.	10.6	16.8	1.6	48.6	12.8	0.6
A. S.	7	M.	33.6	9.6	4.4	42.6	9.6	0.2
S.	7	M.	20.2	9.8	4.8	54.8	9.2	1.2
R. U.	3½	F.	23.4	7.6	3.2	57.0	8.6	0.2
M.	3	F.	38.2	12.2	5.8	35.8	7.4	0.6
V. H.	2½	F.	43.0	6.6	4.8	39.4	6.2	0.0
J. H.	10	M.	17.4	7.0	4.4	63.8	6.2	1.2
M.	2	M.	35.8	10.3	6.1	42.9	4.8	0.6
M.	4	M.	39.6	9.0	3.6	43.0	4.6	0.2
J.	4	F.	51.4	7.2	2.6	34.4	4.2	0.2
P.	12	F.	33.2	7.6	4.4	50.0	4.2	0.6
W.	3½	F.	31.2	8.2	6.4	50.2	3.8	0.2
M.	1½	F.	33.2	13.2	6.2	43.6	3.6	0.2
B.	7	F.	44.8	6.9	4.3	40.4	3.6	0.0
S.	6	F.	41.8	4.2	6.2	44.4	3.0	0.4
V.	4	M.	34.6	10.8	3.2	48.8	2.6	0.0
R.	2	F.	46.2	7.8	6.2	38.2	1.4	0.2
A. P.	18	M.	23.8		2.1	73.0	1.1	0.0
A. P.*	—	—	23.0		4.2	71.8	0.4	0.6

* Second examination.

more than 6—that is, a distinct increase—while 36 per cent. are less than 4 per cent. In less than half the cases, therefore, is any indication of diagnostic importance found in the blood examination. Indeed, it may be that the number of positive results should be considered to be lower even than this, since an eosinophilia may occur in children without any apparent cause. Zappert[2] was the first to call attention to this point, and for normal children gives 46 blood counts where the numbers of eosinophiles as a whole far exceed those recorded here, reaching in one instance the remarkable figure of 19 per cent. Zappert does not, however, exclude or take into consideration the question of worms, and it is at least not improbable that some, at any rate, of his children were infected with parasites. The experience of other observers has not confirmed the very high figures given by Zappert, though the fact that sporadic eosinophilias do occur in children has been confirmed. Table II. gives the percentage of eosinophiles in 10 consecutive cases of normal and (as far as could be ascertained) wormless children:

TABLE II.

Age.	Sex.	Eosinophiles.	Age.	Sex.	Eosinophiles.
		%			%
4	M.	0.0	½	F.	3.0
5	M.	0.6	5½	F.	3.2
3	F.	1.6	2½	M.	4.8
4	M.	2.8	5	F.	5.2
5	M.	3.0	3	F.	5.4

Average=3.0 per cent.

It seems, then, to be clear that in the present series children who harbour oxyuris have definite increase of eosinophiles in about two-fifths of the cases.

Table III gives a few results of the blood counts for other varieties of worms:

TABLE III.

	Age.	Sex.	Infection.	Lymphocytes.	Intermediate.	Large Hyalines.	Neutrophiles.	Eosinophiles.	Mast Cells.
E. P.	9	M	T. saginata	14.4	15.8	9.4	47.0	13.0	0.4
E. H.	25	F	Taenia	32.6	5.6	2.2	58.0	0.8	0.8
L.	10	M	,,		42.0		52.0	6.0	0.0
M. B.	13	F	,,	18.2	6.8	4.4	63.4	7.2	0.0
M. A.	27	F	T. solium, 3 yrs. history, July 19	41.6	9.4	3.2	42.0	3.0	0.8
			July 21	38.8	14.0	1.8	42.2	2.6	0.6
A. B.	47	M	,, 4 yrs. history, July 19	25.4	12.2	3.6	55.2	2.6	1.0
			July 22	15.8	20.4	8.8	49.2	5.0	0.8
F. M.	3	F	Ascaris	49.4	13.6	3.8	31.4	1.8	0.0
H. J. H.	5½	M	,,	19.2	8.0	3.8	66.0	2.8	0.2
R. J.	30	M	Bilharzia, S. Africa, March 7	23.2	15.0	5.4	42.8	12.2	1.4
			March 30	19.8	9.6	5.2	51.8	13.2	0.4
			April 20	10.0	6.4	3.0	32.0	47.6	1.0
			July 23	19.6	6.8	2.6	64.0	5.2	1.8

The case of bilharzia (haematuria only present) had much improved, and only occasional ova could be found when the percentage of eosinophiles rose to 47.6; later on, when the count had fallen nearly to normal, eggs were still present in the urine, though there had been no blood for some time. In neither of the cases of ascaris was any eosinophilia present.[3] Three of the six cases of tapeworms show some increase (6 to 13 per cent.), but the three cases in adults show normal counts.

An explanation of the irregular occurrence of an eosinophilia in these worm infections may possibly be found in the length of time for which the worm has been present. I have shown for ankylostoma[4] that the greatest leucocytic reaction occurs soon after infection, and after a time wears off without the worm leaving the intestine. The same may well be true for oxyuris and taenia, though here it is impossible to ascertain the date of infection, even approximately. Two of the present cases of taenia infection had long histories. On the other hand, the variation may be due to individual predisposition, and may possibly be connected directly with age, as some of these results suggest.

There is nothing further remarkable in any of the counts except that in some cases the mast cells reach a rather high figure. In the oxyuris cases there are three counts of 1 per cent. or more. The cases with an eosinophilia of more than 6 per cent. have an average for mast cells of 0.62 per cent., while those with less than 4 per cent. eosinophiles only reach 0.26 per cent. mast cells. The association is also seen in the case of bilharzia (eosinophiles 19.5 per cent., mast cells, 1.15 per cent.), and in the two cases of T. solium, though there is no eosinophilia, the counts of mast cells are rather high.

For two of the cases here recorded I am indebted to Dr. H. S. D. Browne and Dr. C. G. Seligman.

NOTES AND REFERENCES.

[1] The figures of Bucklers (*Münch. med. Woch.*, xli. 1894, p. 22) are classical, but refer largely to mixed infections. [2] *Zeit. f. klin. Med.*, xxiii., p. 244, 1893. [3] Has a case of pure trichocephalus infection with an eosinophilia been recorded? [4] *Journal of Hygiene*, vol. iii, 1903, p. 121.

THE ETIOLOGY OF BERI-BERI.

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IN this asylum beri-beri has been endemic since shortly after its opening in 1887, the deaths from the disease averaging 45 per annum and the number of cases treated about 150 per annum for the five years ending 1900 out of an average daily number of 207. Since that date the disease had been nearly stamped out. Our numbers having considerably fallen it has been possible to move the patients at every few days' interval from one part of the asylum to another, thoroughly cleaning and disinfecting up behind as we move; more attention has been paid to the disinfection of clothes, bedding, furniture, single rooms, etc., and the ventilation and drainage have been recently improved. Above all, three years ago, two small wards were constructed on the sea beach four miles from town, and here all cases have been sent upon showing the slightest symptoms of beri-beri. These wards are washed out, walls included, in sea water, and then in a solution of mercury perchloride weekly. All woodwork is frequently whitewashed or tarred. The bed boards are soaked in sea water and dried in the sun twice a week. All clothing, bedding included, is changed and disinfected twice a week. The whole compound, consisting of sand, is raked over weekly, and thus thoroughly exposed to the rays of the sun, and from time to time the surface sand is collected and put on the beach below high water mark for a tide and then returned. All patients are bathed for at least half an hour daily, and are kept in the open during the whole day. Massage is used in all cases. The administration of strychnine, digitalis, iron, and very free purgation is the common medical treatment. To these precautions our present immunity from the disease—12 cases to date for the year and but 5 deaths in the last two years—is, in my opinion, due. One of these 5 deaths occurred in the seaside hospital, the other 4 patients were too maniacal to be sent there for treatment. Our patients, I may add, are all fed on Siamese rice.

Thirteen years ago I separated twenty healthy native patients on admission in two cottage blocks, giving them European food and no rice whatever. At that time beri-beri was very prevalent among the natives—we have never had any cases in Europeans or Eurasians—and I wondered

if in any way the food was in fault. My experiment had to be given up in less than three months, as more than half of the twenty cases had by then developed symptoms of the disease. The opinion I then came to was that beri-beri was a place disease, that the soil and buildings were infected, and that people dwelling there were liable to absorb the poison, whatever it was, that this poison absorbed in sufficient quantities was the cause of beri-beri, and this opinion I have never seen reason to change. From that date disinfection has lately been relied on to combat the disease, and I can only regret that the more thorough manner in which we now try to carry it out was not adopted earlier.

An instructive instance of a small epidemic of beri-beri on shipboard came under my notice in 1900, entirely, I think, putting Siam rice out of the question as a cause of beri-beri. A well-found steamer carrying 28 Malay and 51 Chinese hands, sailed from Singapore for New Zealand and Australian ports. All were fed on Siam rice cooked in the same manner and in one galley. When in cold weather near New Zealand, beri-beri broke out in the starboard forecastle inhabited by 14 of the Malays, and in all there were 8 cases and 5 deaths. This forecastle had the galley situated immediately aft with but a thin wooden partition between. The heat from the galley caused the cabin to be always sweating and steamy, as it was somewhat wet from the bad weather experienced at the time; in fact converted it into a perfect incubation chamber. Such a condition has been noted many times as favourable to the spread of the disease. No food was taken to or consumed in the forecastle.

I was consulted by wire as to any precautionary steps that could be taken, and recommended the erection of shelters on deck to accommodate the hands occupying the forecastle, the thorough disinfection of the ship, paying special attention to the starboard forecastle, which should not be used for habitation during the remainder of the voyage, and some ordinary medicinal treatment. On the ship's arrival at Melbourne the 3 sick were sent to hospital, where they recovered; 5 had died, and no further case had occurred, nor did one. Had the rice been in fault it is difficult to understand why the 8 cases occurring should have all been among 14 men occupying one cabin, and that the remaining 65 hands should have entirely escaped.

THE PHYSICAL FACTORS IN PHOTOTHERAPY.

By J. E. BARNARD and H. DE R. MORGAN.
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[From the Lister Institute of Preventive Medicine.]

These investigations have been made with a view to ascertain to what agencies we may attribute any therapeutic effects that the light treatment may produce. To obtain exact experimental data on this subject would place the light treatment in a more satisfactory position, for despite the results recorded the methods may be said to be somewhat empirical.

One of the first questions that arise in considering the effect of the light treatment on any specific disease, such as lupus, is whether the result produced is due to bactericidal power of the light, or to the reaction which it excites in the tissues themselves. In other words, are the tubercle bacilli in lupus destroyed, or at any rate prevented from multiplying, by the direct action of the light, or does the tissue reaction caused by the light set up a condition inimical to the growth of the bacilli?

We have as yet no certain answer to this question. That light, without heat, destroys micro-organisms outside the body is well known, as the results of numerous experiments by many observers, and their results we have verified in the most conclusive way, as will be subsequently shown. But that bacteria lying inside the tissues of the body can be destroyed by the action of light is a matter of considerable doubt. Light is, in the first place, powerless to destroy bacteria in those cases where its rays are made to pass through any organic substance before impinging on the bacteria, even the thinnest film of agar, for instance, serving as a protection. Much less can the bactericidal rays in light penetrate living or dead tissue under the ordinary conditions of experiment. This statement has been proved in the following way:

The light from an automatic arc lamp, that is a lamp in which the carbon electrodes were kept at a suitable distance by means of a clockwork arrangement, was allowed to pass through a metal cylinder, through which water continually circulated in order to eliminate heat, and which was closed at each end with a disc of quartz. An agar plate thickly inoculated in the usual way with an active culture of bacillus coli communis was exposed to the light directly after inoculation, and then incubated for twenty-four hours or longer at 37° C. The light was only allowed to fall on a portion of the plate, so that on the other portion, unacted on by the light, the organisms should grow normally and serve as a control. A current was used of 7 ampères at a distance of 10 cm. from the arc. It was found that when exposed for as short a time as eleven seconds, the comparative number of surface colonies was greatly reduced, but that those in the depth were unaffected. The deep colonies were unaffected even after two hours' exposure to the light under the same conditions.

Again a portion of human skin, in one instance the cortical layer, in another the subcutaneous cellular tissue, was placed on the quartz disc of the apparatus before mentioned, covering it entirely. An agar plate on which had been spread, with a sterilized brush, an active culture of bacillus coli communis, was so placed that the light from an arc fell on it after passing through the water-circulating apparatus and the human skin. After two hours' exposure, and whatever the current used, no effect was produced on the bacilli, as on incubating the plate at 37° C. for twenty-four hours, the resulting growth was found to be equally vigorous over the entire surface of the plate. The same experiment was conducted with a living and a dead frog's foot, interposed in the same way as the human skin, and with equally negative results.



Fig. 1.—Experiment with dead frog's foot.

The light passing at the side of the frog's foot produced the effect reproduced in the figure, namely, a destruction of almost all the surface bacilli, while those protected by the semi-transparent webbing of the foot grew normally. The reason why all the colonies on the surface of the agar are not destroyed even where the unobstructed light falls on them is still undetermined. It is perhaps possible that some few of the organisms, during the process of inoculation, have been introduced under the surface, and not being strictly superficial, are protected by an overlying absorbent film of agar. From these experiments we are therefore led to conclue that, the bactericidal rays being non-penetrative, the therapeutic effects of light may possibly be due to the reaction produced in the tissues by the light rather than to the direct bactericidal action of the rays themselves. Our next object was to differentiate, if possible, between the rays which are bactericidal and the rays which excite a reaction in living tissues.

In this we have up to the present been only partially successful. Whilst we have been able to find in the spectrum the exact position of the bactericidal rays, those causing the reactionary effect on tissue are still unlocalized, at least with any certainty. With the object of determining the most actively bactericidal rays among those produced by a continuous current arc, some superficially inoculated plates were exposed to the spectrum as transmitted by a spectroscope with

quartz lenses and prism. The light was obtained from a hand-fed arc lamp, a lamp in which the distance of the electrodes was adjusted by hand, not by clockwork, and ordinary carbons used. The image of the arc was projected on to the slit of the spectroscope by means of a subsidiary quartz lens of 18 in. focus, thus obtaining the arc spectrum of carbon. The spectroscope was adjusted as for photography, but the spectrum was projected on to a superficially inoculated bacterial plate instead of on to a photographic one.

It was found that the bactericidal effect was entirely confined to the ultra-violet portion, as will be seen from Fig. 2. The line shown at V is where the ultimate edge of the visible violet in the spectrum fell, the red in the spectrum falling at the extreme edge of the plate. The bactericidal lines are seen to begin 2.5 cm. from the edge of the visible violet, and to extend from that point for 1.8 cm. into the ultra-violet. The limit of the ultra-violet, as seen in a photograph, was about 1.5 cm. beyond this. With exposures as long as two hours no effect whatever was obtained in any other portion of the spectrum, even when the slit of the spectroscope was opened to an extent that in photography would have been regarded as inadmissible. The active radiations we have been able to determine, and we find that they lie in that portion of the spectrum between wave-length 3,287 and 2,265. In other words, in about the middle-third of the ultra-violet, as seen in a photograph of the spectrum of carbon. It therefore appears that relatively the action of other portions of the spectrum is negligible compared with the activity of this portion, although it is probable that when using white light there is a slight action which extends over the whole spectrum. Neither the extreme ultra-violet rays nor those nearest to the visible violet appear to be active. The affected portion of the bacterial plates corresponded with a photograph taken of this portion of the spectrum, and it was possible to identify the nearly sterile lines on the plates with those known to exist in the ultra-violet spectrum of carbon.

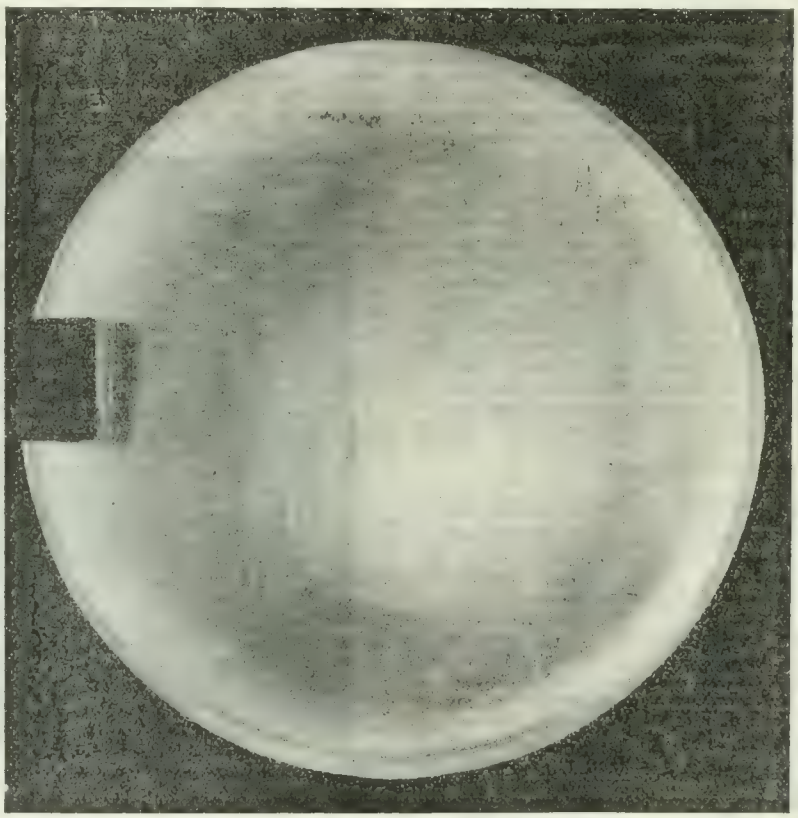


Fig. 2.—Plate showing effect of ultra-violet rays upon growth of bacteria. V, ultimate edge of visible violet rays, to the right of which is the visible spectrum, and to the left the ultra-violet.

Having therefore determined which rays were actively bactericidal, our next object was to discover which rays excite the reaction on the part of the tissues. So far we have not been successful. Making use of the same spectroscopic arrangement as before, we subjected the shaved skin of a rabbit to the spectrum, putting the animal under an anaesthetic to ensure absolute stillness, and placing the shaved skin in the same position as we had formerly placed the bacterial plates. In the same way we made experiments with guinea-pigs, white rats, frogs, and even with the human arm. No effect was produced even after an exposure of two hours and three-quarters, using a current of 25 ampères.

The following experiment seems to show, however, that the rays we are in search of exist somewhere in the ultra-violet region. A rabbit was shaved on both sides of its body, and one side was placed in contact with the quartz disc of the water-circulating apparatus, the light passing through it from an arc lamp to the exposed skin. After five minutes' exposure, using a current of 25 ampères, the other side of the rabbit was exposed, but with the insertion of a sheet of glass between the skin and the water-circulating apparatus. This second exposure lasted an hour, using the same current of 25 ampères. It was found on the following morning (the effects not usually being perceptible until after the lapse of some hours) that on the skin of the rabbit which had been exposed to the light for a whole hour, with the glass interposed, absolutely no effect had been produced, while on the skin subjected for only five minutes to the light without the intervention of glass there was a well-marked redness.

It is a well-known fact that all the rays of the spectrum, with the exception of the greater part of the ultra-violet, readily penetrate glass. The failure, therefore, to affect the skin in the first experiment was due to the fact that the ultra-violet rays had been stopped by the glass, and this appears to point conclusively to the ultra-violet rays as the cause of the reaction that occurs in the tissues. It is thus clearly indicated that these rays, like the bactericidal ones, exist in the ultra-violet region, though, unlike them, their exact position has not yet been located by us.

In view of the results obtained from the experiments with the spectroscope on bacterial culture plates, we were led to experiment with the arc spectra of various metals, such as iron, cadmium, silver, and aluminium. Our results have entirely agreed with those obtained with carbon spectra, except that the action is greater in proportion to the number and intensity of the lines in what we may call the bactericidal origin. It therefore appeared that an electrode composed entirely or partly of iron should be more actively bactericidal than a carbon one, and this we found to be the case. The form of electrode that we found most convenient was that in which, in the case of the positive electrode, the soft carbon core was removed, and in its place was substituted a mixture consisting of the particular metal it was desired to use, with sufficient carbon, in the form of sugar, to prevent the core from dropping out when in use. The negative electrode we left unchanged. The respective electrodes were then fitted into the arc lamp, and the bactericidal power tested on a hanging-drop specimen of bacillus coli communis. The slide on which the hanging drop cover-slip was placed was composed of quartz, so that the ultra-violet rays might be intercepted as little as possible. The hanging drop thus mounted was placed on the water-circulating apparatus, the light from the arc being projected from below upwards on to the hanging drop. It was found that the time required to destroy the bacilli when using these various electrodes in the arc lamp, with in each case a current of 11 ampères, at a distance of 10 cm. from the arc, varied as follows:

Ordinary carbons	30 minutes
Carbons charged with silver	30 ,,
Carbons charged with iron	15 ,,
Carbons charged with cadmium	15 ,,
Carbons charged with aluminium	25 ,,

The method employed to ascertain whether the bacilli were killed or not was to examine the hanging drop from time to time under the microscope, and, on finding that all motility had ceased, to drop the cover-slip, with the hanging-drop on it, into a tube of peptone beef broth. This tube was then incubated at 37° C. for some days to see if any growth

resulted. It will be seen that carbon electrodes charged with iron or cadmium have twice the bactericidal effect of ordinary carbons, and the cadmium electrodes appear to be preferable to the iron ones, as they burn more steadily in the arc lamp. It has been hitherto supposed that the violet and blue rays are of almost equal bactericidal power to the ultra-violet rays, but this does not appear to be the case, as is shown both by the spectroscopic experiments and by the following experiment made on a hanging-drop specimen of bacillus coli communis.

An ordinary glass slide was used, through which the light from the arc was passed after having been cooled by transmission through a water circulating apparatus. The electrodes used were charged with cadmium. It was found that although the motility of the bacilli was stopped after an exposure of forty-five minutes, they were not killed even after an exposure of one hour and twenty minutes, that is, a period five times longer than was necessary to kill the organisms when a quartz slide was used. The violet and blue rays, therefore, which pass readily through glass, are not bactericidal under these conditions, or only slightly so. The ultra-violet rays, on the other hand, having been to a great extent intercepted by the glass, were unable to exert their bactericidal action.

On comparing the results obtained with hanging-drop specimens, as just described, with those obtained by exposing superficially inoculated agar plates under the same conditions, we found that although it requires half an hour to kill the bacillus coli communis, when exposed to the light in the hanging drop, the same result can be obtained on an agar-plate culture in five minutes. In other words, it takes six times as long to destroy the bacilli when they are suspended in a fluid medium. This fact turned our attention to the following question: What proportion of the bactericidal rays are absorbed by the thickness of the water they have to traverse in the water-circulating apparatus employed?

To determine the influence of this factor, the following experiment was made: The water-circulating apparatus, as already described, consisted of a short brass tube with an inlet and outlet for water, the ends being closed with a quartz disc. The distance between the quartz discs was 2.5 cm., and represented the depth of water to be traversed by the light. An extended image of the arc was projected on to an agar plate, which had been superficially inoculated with the colon bacillus. The arc image was obtained by means of a pinhole in a metal plate interposed between the light source and the agar film. A projected image of the positive and negative poles and of the image of the arc resulted. We found, however, that under these conditions the loss of light was so considerable that a very long exposure became necessary. We therefore substituted for the pinhole a metal plate with a slit in it. The slit was less in width than the length of the arc itself, and was placed about 3 cm. from the arc, with the direction of the slit at right angles to the axis of the carbons.

We thus obtained an image which was in reality made up of a number of superimposed images similar to those obtained with the pinhole arrangement. On the agar plate the image was seen as a central broad violet band, above which was the narrow white band of light projected from the negative carbon and below the brighter white band projected from the positive electrode.

As heat might be a posible disturbing factor, the images from the electrodes were eliminated from the experiments, only the effects of the broad violet band from the arc itself being considered.

Although, therefore, we had no absorbing medium other than air between the arc and the agar plate, the light was almost free from heat rays, any possible rise of temperature being quite negligible. Inoculated plates were then exposed in the first instance without any heat-absorbing apparatus, and subsequently with a water-circulating apparatus interposed between the slit and the inoculated agar film.

It was found that an exposure of five minutes without the water-circulating apparatus had a greater bactericidal effect at the point of incidence of the light than a twenty-five minutes' exposure with it. In other words, that the light on passing through 2.5 cm. of water lost four-fifths of its bactericidal power. This result we had hardly anticipated in view of the researches of Hartley and others, in which water was shown to be but slightly absorbent either to visible or ultra-violet radiations.

The loss of bactericidal power may, however, be attributed to general rather than to selective absorption. The quartz may be regarded as negligible, as its transparency is well known, and we subsequently found that it transmits the bactericidal radiations practically without any loss by absorption. It would therefore appear that in phototherapeutics the generally used water-cooling appliance might well be dispensed with if the heat could be eliminated by other means, and assuming that the directly bactericidal rays are the only essential ones, which at present is by no means certain.

The next experiment was to determine whether, when using the electric arc, the effect is in any way a function of any particular current. It is well known that the efficiency of an arc as a source of light increases as the current is increased. The ratio of light production is approximately as follows, the standard in this case being an efficient type of oil lamp:

7 ampères	39	15 ampères	117
10 ,, ...	75	20 ,, ...	160

On exposing bacterial plates in the above inverse ratios we found that the action was exactly proportionate to the light produced, a current of 10 ampères having approximately double the bactericidal effect of a current of 7 amperes and so on. This was tested carefully up to 25 amperes with unvarying results, showing that the action is exactly proportionate to the light efficiency.

To conclude, when reviewing the experiments made with light by ourselves and others, we are bound to confess that at present the scientific treatment of disease by means of light is still in its infancy. Though undoubtedly a promising remedy in certain affections, phototherapy is still an empirical method of treatment, inasmuch as we do not know which rays of light cause the therapeutic effect, nor how this therapeutic effect is brought about. The bactericidal rays we think we have located with exactitude. It remains to locate those rays which excite the reaction in tissue with equal exactitude, in order that a method of producing the required rays in greater intensity may be devised.

The experiments have been carried out principally with the bacillus coli communis, but the following organisms have been also employed with similar results: Bacillus prodigiosus, bacillus subtilis, micrococcus tetragenus, staphylococcus aureus, and bacillus tuberculosis.

We have to thank Dr. Allan Macfadyen for the suggestion that the research should be undertaken, and for much help and advice during the progress of the work.

A CASE OF DOUBLE GANGRENE OF LEGS FOLLOWING A MILD ATTACK OF ENTERIC FEVER.

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The following notes on a case of the above comparatively rare complication of enteric fever may prove of some interest:

Early History.—The patient, A. D., was a Scotchman, aged 22 years, and an engineer on one of the mines here. He was first seen at the mine on May 10th, and was admitted to the Primrose Hospital two days later suffering from enteric fever. He went through a typical mild attack, his temperature never going above 101°.

After-Progress.—On the evening of May 22nd he, for the first time, complained of pain in the right calf, his temperature then being 97.6°. Next morning the calf felt hard to the touch, but was not inflamed, and there was no evidence of phlebitis. There was an area of anaesthesia on the outer surface of the leg. Belladonna was applied locally to relieve the pain. On the same morning the nurse in charge noticed some twitching of the left side of the face and eye, drawing down of the angle of the mouth, and a slight thickness of speech. This passed off in two hours time. On May 24th the dorsum of the right foot commenced to show discoloration, extending as far up as the ankle, and the patient complained of great pain in the right calf. There was now total anaesthesia of foot. At the same time the patient began to complain of a similar pain in left leg, and, coincident with the pain, an area of anaesthesia developed on outer side of the left leg. On May 25th discoloration began to show in the left leg as well. The discoloration in the right leg now extended up to within 1½ in. of the knee-joint, being more marked on the outer than the inner side. With the appearance of the gangrene the application of glycerine of belladonna was stopped and the treatment changed to swathing the affected parts with cotton wool, keeping them warm with hot-water bottles, and administering morphine hypodermically. On the 26th the discoloration of the right leg appeared to have diminished slightly, and there was some return of sensation on the dorsum of the right foot, which did not, however, extend to the toes, and these now began to shrivel. The discoloration of the left leg was now getting more distinct. This dis-

coloration was not universal in both legs, as there were areas which retained their normal colour, though devoid of sensation. From the commencement no pulsation could be made out in either limb from the popliteal space downwards, though the femoral was pulsating freely in the groin. There was no appearance of moisture in either leg and as yet no sign of any line of demarcation. On May 28th the right leg was very painful, but discoloration was still diminishing. On May 29th the right leg began to get worse, and bullae began to appear on its outer side, over the most gangrenous area. The left leg showed no change, but now there was an area of extreme tenderness in both legs above the gangrene, but not extending in either leg above the knee-joint.

On the 30th the outer side of the left leg showed a similar large discoloured patch, without bullae.

The question of amputating both legs through the thigh was now broached, but the patient refused to hear of it and preferred to await results. During the discussion the patient mentioned having a brother at home who had gone into hospital to get a toe amputated. Gangrene of the foot followed on the amputation, and though it remained for some time eventually it cleared up. He also mentioned a sister who suffered at various times from an "internal varicose vein." On June 2nd a line of demarcation began to form on the right leg 1½ in. below head of fibula, extending downwards and inwards. This gradually encircled the leg, but there was still an excessively tender area above. Next day the bullae on the right leg broke, and for the first time an offensive smell was noticed.

On June 6th blisters began to appear on the left leg, and next day a line of demarcation began to form here also, but at a slightly lower level than on the left side. This line was completed on June 8th.

By this time his pulse time was about 120 per minute and the pulse wave was dicrotic in character. On June 11th the patient consented to a double amputation, and, though it was felt he had little chance of pulling through the double operation, it was decided to give him the slight chance there was. Accordingly it was arranged to amputate the right leg on the following day and the left leg on the day after.

Operation.—On June 12th the patient was chloroformed, and an amputation by long anterior and short posterior flaps was carried out at the junction of lower and middle thirds of the right thigh. The patient stood the operation well. There was a thrombus in the artery above the point of division, and during the operation there was very little bleeding from the flaps. An incision in the popliteal space and back of the thigh of the amputated leg revealed it to be full of foul-smelling pus.

Progress.—On June 13th the patient was very bright and was taking his food well. When the stump was dressed there was very little sign of discharge, but the area of skin over the end of the femur showed signs of commencing discoloration. The left leg was now commencing to smell.

June 14th. The patient seemed still to be improving, but he was not considered well enough to risk a second amputation.

June 15th. As the left leg was becoming very offensive, and as the patient's general condition was considerably improved, it was decided to amputate it.

Second Operation—On June 17th the amputation of the left leg was successfully performed, the patient standing the operation very well. As there was a gangrenous area of skin over end of femur in the stump of the right leg it was removed, along with a further piece of end of bone.

Progress.—Temperature, which was 102.6° F. on previous evening, dropped to normal. June 18th. Improvement continued to be marked. Both legs were dressed and found to be doing well. Slight discharge from the right leg and none from left. The patient was rather excited during dressing.

Result.—June 19th. The patient seemed well, but while his leg was being dressed he got very excited, finally lost control of himself and attempted to sit up in bed. He fell back, became very pale in the face, and commenced breathing with great rapidity. Then his breathing became very slow and his pulse began to flutter. Stimulants both hypodermically and by the mouth were freely administered, but without avail, as though he appeared to rally a bit he gradually sank and died.

Necropsy.—A necropsy was held at which the stumps were found to be both doing well, and apparently in the process of healing. The ileum showed typical healed enteric ulcers. The heart was anaemic, while the lungs only showed thrombi in the pulmonary arteries.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

THE DURATION OF MALTA FEVER.

A PATIENT of mine was invalided for "Mediterranean fever," and landed in England on the nineteenth day of the disease, which persisted until the ninety-second day, that is, seventy-three days after arrival.

It was of the intermittent type, which accounted for the supposition that, when the patient was sent away from Malta, the fever had "aborted," the temperature, which had been over 106°, falling practically to normal (98°-99°) on the tenth day.

This fall, however, was really the ending of the first "wave," the second commencing the very day of departure, and culminating with a temperature of over 104° the day after arrival, the journey lasting four days.

This second "wave" lasted twenty-one days, the temperature showing an intermediate rise each seventh day. A "wave" of low range now commenced, the morning temperature being normal, afternoon 100°, with one rise, again on the seventh day, to 101°. This third "wave" lasted eighteen days.

Next day, the fifty-third of the disease, a fourth "wave" of much higher range set in, the temperature rising to 103.5°, but usually registering between 100° and 102°. This lasted thirty-two days, the seventh day intermediate rise being again noticeable.

Three days of morning subnormal and evening normal temperature followed, when, on the eighty-eighth day of disease, the temperature again rose a degree a day, reaching 102°. This fifth "wave" only lasted five days, ending on the ninety-third day of the disease.

The temperature has now been subnormal in the morning, and normal in the evening for eighteen days. The chart—temperatures taken five times in twenty-four hours—shows beautifully the undulant character of the fever, the highest readings being between 2 and 6 p.m., and although it bears some similarity to that of remittent fever there is no question of malaria, the blood having been carefully examined and no plasmodia found. Moreover "the serum test" was applied in Malta, and the diagnosis of Mediterranean fever confirmed. Joint affections were also present.

The question of duration is of importance, as friends naturally cannot understand "why the fever lasts so long." Three to six months may, I think, be expected. Hughes gives the former period for uncomplicated cases.

In China I have seen many similar cases, distinctly not malarial (as proved by the microscope) nor typhoid, of a prolonged, undulant fever, in which so far the micrococcus melitensis has not been found, and which have not reacted to "the serum test." This may have been due to defective cultures or technique.

As to treatment, although we are told no medicines are of any use, I have certainly found salol most beneficial in the so-called typhoid stage. Having had some experience of carbolic acid in typhoid fever and plague (where it certainly seemed useful), and this also being apparently a filth disease, I tried the creolin (medical) palatinoids (Jeyes) when the fifth "wave" began, which promised to be a "high-range wave," the temperature being 101° on the second day. Whether *post hoc vel propter hoc*, it only lasted five days, as against ten, twenty-one, eighteen, and thirty-two days—the previous "wave periods." I have still continued the creolin mxii a day, so many "relapses" having occurred.

London. WILLIAM HARTIGAN, M.D.Brux., D.P.H.

TOXIC EFFECTS OF COLCHICUM.

ON being recently summoned hurriedly to Mr. X., aged 58, I found him with a typically "abdominal facies"—drawn, anxious, and dusky; bluish lips and nails; quick, shallow respirations; small and quick pulse, and clammy, pale skin. I knew him to be ordinarily a healthy, temperate man, though slightly gouty. He complained of intense cutting epigastric pain, of sudden onset one and a-half hour earlier, beginning with vomiting of much yellow fluid "all over the road," and several violent actions of the bowels, the motions being profuse and sanguineous. The abdomen was tender all over, the temperature 96.5°.

The clinical picture was that of a sudden serious abdominal lesion, but local indications were wanting, as was also any proof of the existence of actual involvement of the peritoneum.

Inquiry as to recent ingesta elicited that he had taken on an empty stomach some two and a-half hours before, two "Blair's gout pills," and the diagnosis seemed to lie between (1) pill poisoning, (2) ptomaine poisoning, (3) abdominal lesion, for example, perforation of appendix. The history negatived (2) and (3), but the patient's state inclined one strongly to (3). Could these two pills possibly do all this to a man? In one's painful hesitation between opposite courses of treatment, the point insisted on in an address of Sir William Broadbent's on the importance of respiratory immobility of the abdominal walls in the diagnosis of peritonitis,[1] recurred to the mind, and was of great assistance. This immobility

[1] *Clinical Journal*, October 27th, 1897, p. 3.

was absent, and I therefore diagnosed colchicum poisoning from the Blair's pills, administering appropriate treatment. Recovery followed the use of sedatives and carminatives, but not before muscular twitchings and choleraic symptoms had appeared. A month before he had taken two of these pills, with similar but much less intense symptoms. Murrell notes a case of colchicum poisoning from these pills as being recorded in the *Lancet*, vol. i, 1881, p. 368.[2] The symptoms agree generally with those of colchicum poisoning noted by Murrell and by Ewart,[3] the two chief authors accessible to me.

Intense thirst and partial vesical paralysis were also observed. The yellow vomit described by Murrell was well marked. The patient assured me that only two pills were taken, "and they would be the last two of that sort."

Polsall, Staffordshire. L. G. Davies, M.D.Cantab.

STRANGULATION OF SMALL INTESTINE BY FIBROUS MESENTERIC BAND.

A native labourer, aged 20 years, was brought to the Salina Cruz Hospital on July 21st, with a history of having been ill for three days. He was groaning in agony. The temperature was subnormal, the pulse imperceptible at the wrist. The abdomen was swollen and tense, especially above the level of the umbilicus; it was tympanitic, and very tender to touch. Stercoraceous vomiting was present, and the patient's bowels had not opened for four days.

A hypodermic injection of ⅓ gr. of morph. sulph. was given to relieve his intense pain, and soap and water enemata were used, but with no good result, and the patient died four hours after admission.

The necropsy showed intense inflammation of the peritoneum. The ileum was found to be constricted by a firm fibrous band, which arose from one side of the mesentery, passed over the intestine, and was inserted into the mesentery on the opposite side. The constriction of the bowel was at a distance of about 4 ft. above the ileo-caecal valve, and did not appear to be recent, as the wall of the intestine was thickened and fibrous at this point, and the lumen was narrowed, and would only admit the passage of the forefinger. The small intestine above this point was much inflated, and filled with gas and liquid faeces, but just above the constriction there was a quantity of fibrous-looking material composed apparently of a collection of fragments of maize husks, and this had no doubt been unable to pass through the narrowed lumen, and had so been the cause of the obstruction.

There were also noted in the same case several strong fibrous cords attached by both ends to the mesentery of the ileum, and forming loops in this situation. One of these was about 6 in. in length, and another 4 in. These cords were strong, white, and fibrous, and gave one the impression that they were congenital in origin.

John McPherson, M.B., Ch.B.,
Port Works, Salina Cruz, Mexico.

TECHNIQUE OF VACCINATION.

The application of a thoroughly antiseptic dressing to the vaccination wounds is no new idea. The following method I have found extremely satisfactory for the last two years. I take the opportunity of submitting it to my fellow practitioners on account of its freedom from those local inflammatory reactions and general blood infections which sometimes give considerable trouble, and cause wide felt dread of vaccination in the public mind. I have no doubt others have used a similar dressing to their vaccinations, but to those who have not it may seem worthy of a trial. It also has the advantage of taking only a short time to perform. The skin may be cleansed and dried in the ordinary way, although this may be omitted if the arm is ordinarily clean. The vaccinations are placed in the ordinary position and performed in the ordinary way. A small round piece of green dry protective is immediately placed upon each vaccination. A collodion dressing is now applied. This consists of a thick round or oval pad of about fifty or more layers of Lister's double cyanide gauze, moistened on the under surface with 1 to 40 carbolic lotion, and sufficiently large to cover the three or four vaccinations. Over this is stretched a sheet of two layers of the gauze, the edges of which well overlap the pad. These edges are firmly gummed down with collodion. This dressing will hold on for five days, when it is removed and the vaccinations inspected. The pieces of green protective are removed and not reapplied. If they are left on the vaccinations eat very deeply into the skin. Another collodion dressing is applied, and fortified, if thought necessary, with a bandage. This dressing should be inspected in another five or six days. If any inflammatory areola is evident or discharge has come through, or it has become loosened, it is replaced by another, otherwise it is retained until the healing is complete.

During the late epidemic I performed some 100 vaccinations by this method, and had only 4 or 5 cases which became inflamed, one of which was a middle-aged, alcoholic subject, and 2 were young plethoric women. The method never fails in the susceptible. The lymph I used was Dr. Chaumier's, of which only a small amount is required on account of its potency.

Highbury, N. M. Knox Soutter.

THE TREATMENT OF VESICULAR ECZEMA.

The variety of eczema known as vesicular commences with itching and heat in the affected parts, followed in a short time by the appearance of a crop of vesicles, which are filled with a clear fluid. These sooner or later rupture, either spontaneously or by some act of the patient, and when he comes under notice he presents one of the following appearances. The vesicles may have become confluent, and denudation of the epithelium have taken place, leaving the subjacent skin red, excoriated, and having moisture-oozing areas of greater or less size. In another type the eczematous surface is covered with crusts, which have become fissured and cracked, but exude moisture. In a third variety there are groups of discrete vesicles, with patches of healthy skin between them. These vesicles are about the size of a pin's head, and are weeping, so that although they have different appearances, these three varieties are alike in one thing—there is serous exudation constantly going on.

Various methods of treatment have been recommended, principally in the form of dusting powders or lotions, with the view of drying up the discharge; but the objection to these is that, although they do dry the oozing-up, they form cakes on the inflamed surface, and in a few days these cakes crack and fissure, and the moisture reappears between them. If the cakes are removed the skin beneath them is in a reddened and excoriated state, and the condition is really no better than at first. I have made a large number of cultivations, and in every case have found the oozing fluid swarming with staphylococci. The observations I have made show that if these staphylococci are destroyed, the moisture ceases to exude and the skin becomes at once amenable to treatment. I apply in every case of weeping eczema a solution of biniodide of mercury of the strength of 1 in 2,000 on lint, and invariably in a few days the skin becomes dry. The way is then clear to apply other remedies, as ointments or lotions, to complete the cure. Sometimes after remaining dry for a few days the oozing recommences in patches. The solution is applied by means of small pieces of lint to these patches, only leaving the rest of the inflamed skin under treatment by the other methods. The strength of the solution may be increased to 1 in 1,000, but this often causes a good deal of burning and pain; still in the cases where the 1 in 2,000 seems hardly strong enough, it may be used with advantage. In the comparatively rare cases, where the vesicles have come under notice unbroken, I have not been able always to find staphylococci, but when I have found them they have not been in such numbers as in the ruptured vesicles. The staphylococci are, of course, among the common skin bacteria, and though, in my opinion, not responsible for the outbreak, they speedily find their way into the ruptured vesicles and keep the mischief going. This method of treatment is now used in this hospital as a routine practice in every case of weeping eczema, and so far it has never failed to give a satisfactory result.

H. Lyle, M.R.C.S.Eng.,
Senior Surgeon, Liverpool Hospital for Cancer and Skin Diseases.

CASE OF INTESTINAL INFARCTION.

A Sikh, aged 22, on May 25th, 1903, at 8.15 a.m., whilst on parade was suddenly seized with intense abdominal pain somewhat colicky in character, became faint, fell to the ground, vomited, and passed a motion (normal in appearance). Previous to this he had been in good health. There was no history of syphilis or rheumatism obtainable. He was

[2] *What to do in Poisoning*, ed. viii, p. 119, Colchicum.
[3] *Gout and Gouliness*, p. 348.

found on examination to be in a condition of moderate collapse, complaining of great pain in the abdomen, chiefly referred to the umbilical region. The abdomen was very slightly distended and the abdominal respiratory movements were somewhat diminished. Palpation revealed no rigidity or "tumour"; there was no superficial tenderness, but deep pressure increased the pain. The abdomen was universally resonant. The pulse was rapid and weak.

Opium was given, turpentine fomentations applied to the abdomen, and food interdicted. Within two hours he again vomited, and passed another motion. He seemed better, pulse stronger, and pain less, but he was still collapsed. Later in the day, however, he became worse; the abdomen became distended and tympanitic, accompanied by more marked collapse. The temperature was subnormal. At 8 p.m. his pulse was 132, very weak and irregular. The first cardiac sound at the apex was replaced by a scarcely audible murmur, and the second sound was very weak. The patient was in great pain, lying with his legs drawn up, very restless, with anxious expression and with a cold sweat on his forehead. The tongue was moist and covered with thin white fur. His breathing was entirely thoracic.

The abdomen was generally more distended, but the epigastric and umbilical regions were rather more prominent. There was no respiratory movement whatever, no visible coils of intestine, and no gurgling audible.

The abdomen was now tender on gentle palpation. There was slight dullness in the flanks, but the patient was not turned over to see if this was movable, on account of his great pain. The liver dullness was not obliterated. The patient had passed neither flatus nor faeces since about 10 a.m. Vomiting had not recurred, though he had retched once or twice. Urine had been passed without pain.

Stimulants had been given and liq. strych. hypodermically. A soap-and-water enema, followed by one with turpentine, was given with no result. Small quantities of water only were allowed per os.

It was thought at first to be probably a case of acute intestinal strangulation, though the prolonged collapse, rapidly increasing in severity, and absence of persistent vomiting (in spite of the administration of opium not being in sufficient quantity to relieve his pain), were thought quite unusual.

As the collapse was not passing off, but steadily increasing, preparations for abdominal section were made, as although the surroundings and circumstances were most unfavourable (we were in camp and over the Border at the time), the assistance of a missionary doctor was available in a comparatively short time, and it was considered to be the only chance for the patient. In the meanwhile the patient's condition, in spite of free stimulation, became rapidly worse, and at 10 p.m. he was almost pulseless, very restless, pale with anxious expression, fully conscious, and complaining of less pain. The abdomen was still more distended. In the next hour he became steadily worse, evidently moribund, quite pulseless, with sighing respiration, and died soon after 11 p.m.

A necropsy was done about ten hours after death. On opening the abdomen by the small incision permitted sanguineous serous fluid came out in some quantity. The small intestine which presented was found to be much distended, very congested, and deeply infiltrated with blood. On tracing it towards the caecum it was found within a few inches of the ileo-caecal junction to gradually shade off into the usual colour and consistence of the wall of the small gut. The same was found to take place on tracing the gut upwards, where within 9 in. or 10 in. of the duodeno-jejunal junction it gradually assumed a normal appearance and consistence. No obstruction whatever could be made out, and the small intestine showed no signs of constriction at any part (such as would be apparent if strangulation had produced in such a short period such severe congestion and infiltration with blood); further, the gut was withdrawn throughout with absolute freedom. On puncturing the small intestine gas and highly sanguineous thick liquid contents issued.

The superior mesenteric artery when traced up with the finger was firm and round, and the mesentery felt thickened. There was no peritonitis evident. It was remarkable that there was no diarrhoea or profuse haemorrhage from the bowels, and that the case terminated so rapidly.

H. ROTHERY NUTT, M.B.Lond., F.R.C.S.Eng., I.M.S.
Baluchistan, India.

METROPOLITAN BOROUGH COUNCIL ELECTIONS.—Mr. Bidwell, F.R.C.S., and Drs. Fletcher Little, Rotheroe, and Snape have been returned to the St. Marylebone Borough Council.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

MIDDLESEX HOSPITAL.

CASE OF LYMPHATIC LEUKAEMIA.

(By OLIVER K. WILLIAMSON, M.A., M.D., B.C.Cantab., M.R.C.P.Lond.; Medical Registrar to the Hospital; Physician to Out-patients, City of London Hospital for Diseases of the Chest, Victoria Park.)

THE following case, one of lymphatic leukaemia, presenting some atypical features, is worthy of record.

History.—L. N., a married woman, aged 27, a washerwoman by trade, attended Dr. Voelcker's out-patient department at the Middlesex Hospital, and was admitted as an in-patient, under the care of Dr. Kingston Fowler, on June 12th, 1902, on account of pain in the chest and left lumbar region, cough accompanied by a sense of suffocation, slight expectoration, and wasting. Her illness had commenced gradually about three months before admission, without any assignable cause, she having first noticed loss of flesh, and after this fainting fits on exertion. For three weeks before admission she had suffered from a cough, accompanied by slight sticky, brownish expectoration, occasionally streaked with blood, also breathlessness on exertion. The cough had caused her pain over the sternum, especially its upper part, also in the right infraclavicular region, and she had also noticed tenderness over the sternum. Her appetite had been good until six days before admission; of late the bowels had been constipated. The cough had interfered with her sleep at night, and she had lost weight. She had suffered from measles when 15 months of age, and from chorea at 13 and 17 years of age. Between 1894 and 1896 she had coughed up some blood. In 1896 she had been laid up with influenza. Her father had died aged 42 years, her mother aged 50 years, both of pulmonary tuberculosis. There had been altogether eleven brothers and sisters; two sisters were living and healthy, one suffered from pulmonary tuberculosis, one had died from the same, another of bronchitis and asthma, and four from unknown causes. One brother was in an asylum, and one had died in an asylum of pulmonary tuberculosis. The mother had suffered from rheumatic fever.

State on Admission.—The patient was seen to be a rather thin woman of average height, with a full face and a pale and somewhat muddy complexion. The temperature was normal. The cervical glands on each side were markedly enlarged, there being two or three separate slightly movable portions not attached to the skin; there was also slight enlargement of the axillary glands, but no other external glandular enlargement. The chest was emphysematous in shape, the angle of Ludwig was specially prominent; expansion was greatly diminished, but equal on the two sides, vocal fremitus was diminished on the right side and absent on the left. The right side of the chest was resonant, but there was dullness extending from the right border of the sternum to about 3 in. beyond its left side. The breath sounds were exaggerated at the right apex and diminished at the left apex. Posteriorly, there was dullness at the left base and in the interscapular region, and on auscultation there were occasional crackling *râles* heard at the left base. Laryngoscopic examination revealed no abnormality. The pulse was 114, regular, small and of low tension. The cardiac impulse was in the fifth space in the nipple line, and was feeble. There was well marked systolic pulsation in the second left space, and in this space as well as at the apex a faint systolic murmur was audible. Many suppurating stumps of teeth were present, and the tonsils were enlarged. The spleen was palpable, the urine was of specific gravity 1030, containing a deposit of urates, but neither albumen nor sugar. On examination of the fundi there were found to be neither optic neuritis nor retinal haemorrhages.

Progress.—On June 10th a mixture containing liq. hydrarg. perchlor., 1 drachm, and pot. iod., 7 gr. t.d.s., was prescribed, as it seemed not improbable that the patient was suffering from syphilis, and the signs in the chest were suggestive of aneurysm. For a few days improvement appeared to result from this treatment; she felt better, and the glands in the neck were smaller. On June 20th the iodide was increased to 15 gr. t.d.s., but on July 23rd it was noticed that the glands in the neck were harder and more fused, so that on the following day she was ordered a mixture containing liq. arsen., 3 minims t.d.s. On July 28th the patient had pain on swallowing, and the urine contained a small quantity of albumen. The liquor arsenicalis was increased to 6 minims t.d.s., and this amount was given for practically the whole of the remaining period of her first stay in hospital. On August 5th the patient felt better, and her swallowing was easier, and from this date onwards the glands became smaller and softer. On August 26th there was palpable in the left hypochondrium and left lumbar region, besides the spleen, a tumour with no notch projecting into the loin, and movable with respiration, evidently the kidney. The right kidney could not be felt. She was discharged on September 6th slightly improved.

On September 18th she was readmitted; it was then noticed that clubbing of the fingers was present, the gums were spongy, the pupils, especially the right one, dilated, the voice was weak and there was

deafness. The pulse was feeble. The dullness over the upper part of chest was increased in extent, there were some rhonchi in the left chest above, and tracheal breathing in the second, third, and fourth left intercostal spaces close to the sternum. Posteriorly the breath sounds were exaggerated on the right side and diminished on the left, and there were occasional rhonchi on the left side in the interscapular region. The left kidney and spleen were larger than previously, the right kidney and the liver were now also palpable, and the glands were larger than they had been in August. The patient complained of pain in the left hypochondrium on coughing. From September 23rd onwards she expectorated at intervals blood mixed with phlegm. About this time the eyelids became swollen, and having gradually lost strength she died on October 7th. During the time she was under observation in the hospital the pulse varied between 96 and 126, and the temperature was irregular varying between normal and 101.4.* Blood examination. On June 16th the number of white blood corpuscles per cubic millimetre was found to be 11,900, and differential counts made on June 14th and 17th from films stained with the triacid stain respectively showed:

	Polymorphonuclear Neutrophiles.	Lymphocytes.		Eosinophiles.	Myelocytes.
		Large.	Small.		
	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
June 14th	6.97	8.33	84.11	0.58	0.00
June 17th	23.48	7.09	64.35	1.85	3.20

On June 14th, corresponding to the 516 white corpuscles counted, 5 nucleated red corpuscles were seen, and on the 17th corresponding to the 592 white cells counted 79 nucleated red corpuscles were seen.

On July 29th the number of red corpuscles per c.mm. was found to be 4,120,000.

On September 3rd the number of white corpuscles per c.mm. was 24,800, and a differential count from a stained film taken at the same time showed:

	Polymorphonuclear Neutrophiles.	Lymphocytes.		Eosinophiles.	Myelocytes.
		Large.	Small.		
	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
September 3rd ..	25.43	7.83	62.91	0.95	2.86

and corresponding to the 523 white corpuscles counted 156 nucleated red cells were seen.

Thus it will be seen that the first observations showed the small lymphocytes to be increased to three or four times their normal number, whilst the observation made on September 3rd showed an increase to seven or eight times the normal amount.

On September 5th the white corpuscles numbered 26,250 per c.mm., but a differential count was not made. The haemoglobin was found to be 40 per cent. The various films showed an absence of poikilocytosis. Most of the nucleated red corpuscles seen were normoblasts, but a few of those cells described by Cabot as "unnamed varieties" were present, but no typical megaloblasts.

Necropsy.—There was marked ulceration and swelling of the gums; also haemorrhage into the mucous membrane of the mouth. On opening the thorax a large white mass was found in the anterior mediastinum in front of the pericardium, and great vessels in the situation of the thymus. On section it was cream-coloured, and more or less homogeneous, except that near the surface there were numerous small haemorrhages into it. In some parts an indication of the constituent glands was to be seen. The glands under the ramus of the jaw were greatly enlarged on both sides, also those immediately behind the sterno-clavicular articulation and all the posterior mediastinal glands, which on the left side formed a firm homogeneous mass extending from the sides of the bodies of the vertebrae in front of the the ribs and behind the pleura, which was thickly studded with small haemorrhages. This mass was in places as much as 1 in. in thickness. The abdominal glands were enlarged, but to a less degree, the largest being those just above the pancreas. The mesenteric glands were enlarged to the size of small beans. On section these glands presented much the same appearance, being homogeneous, and whitish-grey in colour, although in some there were extensive haemorrhages, especially under the capsule. The pericardium contained 7 oz. of clear fluid, and a number of small haemorrhages were to be seen underneath the parietal layer. The heart was small, the cavities contained pale clots not unlike those of ordinary leukaemia: there was some thickening and atheroma of the mitral valve, but the aortic valve was healthy. There were numerous subserous haemorrhages under both pleurae, especially the the left. The lungs were normal on section except for some patches of collapse in the right lower lobe. The trachea presented haemorrhages into its mucous membrane. The oesophagus was normal, the thyroid considerably enlarged. The liver weighed seventy-eight and a quarter ounces, was pale and fatty, but contained no lymphoid growths. The spleen weighed nineteen and a-half ounces, was paler in colour than natural, but homogeneous, and contained no lymphoid deposits. The kidneys were both very large—the right weighed ten and a-half ounces, the left eighteen and a-half ounces. They showed very numerous haemorrhages under the capsule, which stripped readily. On section they were both pale in colour and evidently much infiltrated by lymphoid deposits, the general colour of the section being almost white, except for the glomeruli and the patches of haemorrhage. The pancreas was normal, the stomach showed a few submucous haemorrhages. In the intestines Peyer's patches were distinct, but not infiltrated. The suprarenals were normal. The bladder showed some haemorrhages into the mucous membrane, the uterus was enlarged, and the ovaries were enlarged to the size of a hen's egg on each side, were firm but pale on section.

Microscopically the kidney substance was found to be infiltrated with lymphocytes, showing typically the condition characteristic of lymphatic leukaemia. A portion of the bone marrow stained with the triacid stain showed many lymphocytes, but no other variety of white blood corpuscles.

Remarks.—The absolute increase in the number of the lymphocytes in the blood points distinctly to this being a case of lymphatic leukaemia, and this impression is confirmed by the microscopical examination of the kidneys. Although none of the observations showed the increase in number of the lymphocytes to be very great, yet the latest count demonstrated a more marked increase than did the earlier ones, and there can be little doubt that had further observations been made during the last month of the patient's life a still larger number would have been noted. In the films examined the small lymphocytes were seen to preponderate greatly in number over the large lymphocytes, and were easily distinguished from these; further, there was an absence of poikilocytosis. These facts confirmed the impression derived from the clinical course that the case was a chronic one. A remarkable feature of the case—an unusual one in lymphatic leukaemia—was the presence of a large number of nucleated red corpuscles: for these are rarely met with except in acute cases of the disease. The large number of these in the blood would point to the bone marrow being involved as well as the lymphatic glands (the probable source of the small lymphocytes), an involvement which would lead one to expect an increase in the number of those white cells which take their origin from the bone marrow—namely, the myelocytes and polymorphonuclear neutrophiles. The fact that the latter variety was not increased in number may be explained by assuming that an increased destruction of these cells balanced their increased formation.

I have to thank Dr. Kingston Fowler and Dr. Voelcker for permission to publish this case, and Dr. R. A. Young for allowing me to use the notes of the necropsy.

*In writing the above clinical account of the case I have received much assistance from the careful notes of Mr. A. Cameron, the house-physician.

Medical Sickness and Accident Society.—The usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held on October 30th, at 429, Strand, London, W.C. There were present Dr. de Havilland Hall, in the chair; Sir Dyce Duckworth, trustee; Mr. J. Brindley James, Mr. F. S. Edwards, Dr. F. J. Palmer, Dr. A. J. Rice Oxley, Dr. Alfred Gubb, Dr. M. Greenwood, Dr. J. W. Hunt, Dr. Walter Smith, Mr. Edward Bartlett, Dr. W. Knowsley Sibley, Dr. F. J. Allan, and Dr. J. B. Ball. The accounts showed that the Society had made good progress during the summer months, and that both in the number of new members joining and in the amount paid away for sick claims the records of 1903 were better than those of the previous year. The Society has now been in operation for about twenty years, and the age of many of the members who first joined it now approaches the limit of 65 years, after which they cease to be in benefit. There is therefore good reason for supposing that the list of chronic cases will not grow much larger. As the members who are permanently ill draw usually 100 guineas a year, the chronic cases require a large reserve to be kept for them; and if it can be assumed that no great increase of this class of claims need be apprehended, it will have an appreciable effect on the valuation of the business. The books of the Society are now being closed for the quinquennial valuation at the end of the current year, and the amount of the surplus which will be found to be at the disposal of the members in May next is largely dependent on the number and amount of those practically permanent provisions which are found on the books on December 31st next. Prospectuses and all information from Mr. F. Addiscott, Secretary Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

BATH AND BRISTOL BRANCH.

BARCLAY J. BARON, M.D., President, in the Chair.

Bristol, Wednesday, October 28th, 1903.

Specimens.—Dr. G. PARKER showed specimens from a case of bronzed diabetes, and also a vesical calculus weighing 7 oz.

Scurvy Rickets.—Dr. B. M. H. ROGERS read a paper on a case of scurvy rickets. The patient was aged 9 months, and had been fed on sterilized milk and Mellin's food. Haemorrhage occurred into the orbits; the gums were spongy, and the limbs tender to touch. The child made a rapid recovery on fresh milk and orange juice. He remarked on the changes produced in milk by boiling and sterilizing, and said that scurvy was a result of ptomaine poisoning from milk.

Haematuria Due to Scurvy.—Dr. SHINGLETON SMITH related a case of haematuria due to scurvy in an infant, and remarked on the importance of bearing in mind scurvy as a cause of haematuria. He also suggested that the purpura and albuminuria which occured in old people might also be due to the sterilized or boiled milk and prepared foods on which they were fed.—Dr. WALDO reported a case, and Dr. SYMES thought that the term scurvy was inappropriate, and mentioned that in the Jackson-Harmsworth expedition decomposed tinned foods produced scurvy, which had been experimentally shown to be due to tainted foods.—Drs. DUNBAR, ELLIOTT, STEWART, EDGEWORTH, MARKHAM SKERRITT, MICHELL CLARKE, and Mr. WATHEN also discussed the paper.

Family Tremor.—Dr. EDGEWORTH read a paper on family tremor. He mentioned three families in which tremor affected various members, and discussed the differential diagnosis. The tremor affected the upper part of the body. He suggested that isolated cases of tremor in children might belong to this group.—Drs. STEWART, STACK, MARKHAM SKERRITT, and MICHELL CLARKE joined in the discussion which followed.

Other Papers.—Dr. WALDO read a paper on some points in the etiology and treatment of boils. Messrs. WATHEN, PAUL BUSH, MOLE, and Dr. WILLS discussed the best methods of treatment.—Dr. MICHELL CLARKE read a paper on the diagnostic value of pupil changes in cerebro-spinal syphilis. Drs. WALDO, DUNBAR, and EDGEWORTH discussed the subject.

BIRMINGHAM BRANCH.

FRANK MARSH, F.R.C.S., in the Chair.

Birmingham, Friday, October 30th, 1903.

PATHOLOGICAL AND CLINICAL SECTION.

Pneumothorax.—Dr. EMANUEL showed a young man who had recently recovered from a pneumothorax, which had occurred spontaneously, and at a time when the patient was in apparently good health.

One evening about 7.0 p.m., and after his usual day's work, the patient, 18 years of age, and a cabinet-maker by trade, was riding his bicycle slowly down a slight gradient when he suddenly noticed "a tightness in the chest when he breathed." There was no pain at the time, and the patient did not get off his bicycle, but continued a ride of some fourteen miles, returning home about 11.0 p.m. He slept well during the night. He suffered no great inconvenience during the ride, but kept falling behind the two companions with whom he was riding, although he was a better rider than they, and he was obliged to dismount for hills, up which, at other times, he was able to ride. The next day he went to work as usual and continued at work for ten days before he sought medical advice for increasing shortness of breath on such slight exertion as that caused by going upstairs. Four weeks after the onset of shortness of breath, on examination of the patient's chest it was found that he had typical signs of pneumothorax of the left side, with displacement of the heart to the right. The left side of the chest was bulkier than the right, the percussion note was tympanitic throughout, vocal resonance and fremitus were absent, and the breath sounds were very weak. The *bruit d'airain* was obtainable in a typical manner, and there was complete absence of any cardiac dullness. Over the right side of the chest the breath sounds were exaggerated, and here there was visible cardiac pulsation. The maximum impulse was visible in the fifth space, 1 in. inside the right vertical nipple line. The cardiac dullness extended to the fourth right space above to ½ in. within the right vertical nipple line on the right, and to the right edge of the sternum on the left. The heart sounds were clearly heard to the right of the sternum but were only faintly audible to the left. The patient was taken from his work and sent to a convalescent home at Llandudno. Three months after the onset of the attack he returned to his work feeling quite well. Examination of the chest two months later (five months from the onset) showed that all the air had been absorbed, and that the heart had returned to its normal position, the apex beat being in the left fifth space, 3½ in. from the mid-sternal line.

There was nothing in the previous history of the patient or in his family history to suggest tuberculosis. In Dr. Emanuel's opinion the pneumothorax had been caused by the rupture of an emphysematous bulla on the surface of the lung.—Dr. STANLEY did not see any reason for assuming the presence of such a pathological condition as emphysema.—Dr. PERRY thought that some congenital weakness of the lung, not necessarily of an emphysematous nature, was probably present.

Phthisis.—Dr. DOUGLAS STANLEY showed a boy, aged 18, suffering from phthisis. His history was as follows:

When 14 he caught cold and was laid up for some weeks with bronchitis. His cough continued after his return to work. The sputum was "phlegm only." Two years later he had an attack of haemoptysis which lasted two days. He subsequently went to several health resorts on account of his chest symptoms. He recently had a painful swelling in the anus, which he was told was an abscess. For this he attended at Queen's Hospital, subsequently being transferred to the medical side under Dr. Stanley's care. Condition on admission: Small for his age. There were well marked signs of phthisis (especially on the left side) with excavation. Pulse 70 to 90. Expectoration contained tubercle bacilli abundantly. Two months later the patient complained of severe pains in the head, chiefly on the left side at vertex, agonizing at times. The pain extended down to the temple occasionally, and to the opposite side. Several times he had vomiting with much nausea. He had noticed twitching of the left hand, beginning in the thumb, which was "bent into the hand." This jerking reached up the arm to the shoulder and side of the face, which felt numb. On two occasions only he had slight twitching of the same parts on the right side. There had been no ear trouble. On examination, double optic neuritis was found. The pupils were large and non-reactive. The left knee-jerk was slightly weaker than the right. The grip was fairly firm in both hands.

—The case was discussed by Dr. CHARLES, who considered that the diagnosis lay between a tuberculous tumour, abscess, and tuberculous meningitis. The balance of evidence lay in favour of tumour.—Dr. STANLEY, in replying, said he regarded the case as one of tuberculous tumour. He thought that surgical interference might be of advantage, in view of the extreme pain from which the patient suffered at times, although the pulmonary condition was bad. The fact that on two occasions there had been right-sided Jacksonian seizures was a further contraindication, as they might indicate a second nodule.

Cystic Degeneration of Kidneys.—Dr. BERTRAM JORDAN showed two kidneys in advanced stage of cystic degeneration, from a man aged 40 at time of death, also small cysts in liver from the same patient. Patient died from syncope, secondary to acute oedema of lungs, which only set in about sixteen hours previous to death. The patient had always been a nervous and dyspeptic man, but some fifteen years before his death had passed for life assurance, but was rejected for further insurance eight years before death for albuminuria. The characteristic symptoms of (obscure) renal trouble only developed the last four years of his life, namely, slight albuminuria, slight haematuria, excess of uric acid, and, during the last two years, attacks of renal colic accompanied by increased haematuria. Also, during the latter period, marked thirst, increasing weakness and loss of flesh. The heart and arteries were healthy. The cystic kidneys were large, but had never been palpated as large kidneys during life though the patient was under the care of several medical men. The size of the liver probably prevented the right kidney from being felt. The comparative softness of both kidneys may also have served to make their increased size difficult to detect. It may be here stated that the patient's father died suddenly, in the prime of life, from an obscure renal affection.—An interesting discussion, mainly from a pathological point of view, followed. Dr. EMANUEL and Mr. MILWARD favoured the view that some developmental defect was the starting point in this and similar cases of renal cystic degeneration, as opposed to the older view that the cystic formation was an exaggeration only of the smaller cystic development met with in chronic cirrhotic nephritis, and brought about by uric acid blocking of the tubules, etc.—The PRESIDENT (Mr. Frank Marsh) was of opinion that the attacks of renal colic and haematuria were due to the sudden filling of a large cyst with blood. He also pointed out that the presence of small cysts in the liver suggested that a general cirrhotic process was a factor in the

case, not entirely explained by the theory of renal malformation.

Specimens.

Dr. Thomas Wilson showed a specimen of cystic sarcoma of the uterus, and a specimen of a piece of true bone in an ovary.

Metropolitan Counties Branch (Tottenham Division).—A meeting of this Division was held at the Tottenham Hospital on the 30th ult.—Dr. Hooper May was the Chairman.—A paper was read by Dr. Dundas Grant on a few cautions in the diagnosis and treatment of diseases of the throat, nose, and ear, with illustrations.

REPORTS OF SOCIETIES.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Alfred Willett, F.R.C.S., President, in the Chair.

Tuesday, November 10th, 1903.

Anaemias of Infancy.

Dr. Clive Riviere communicated a paper on this subject. Anaemia of slight grade was common in infancy, but cases of more severe anaemia also occurred, and were commonly described as "anaemia splenica infantum." These were characterized by enlarged spleen and liver, and in the blood nucleated red cells, a fairly large percentage of myelocytes, and often leucocytosis. On account of these peculiar features such cases had been generally claimed as a distinct group, but it was probable that they were in no way specific, but that all anaemias of infancy would show such changes if sufficiently severe. This contention was based on the following facts: This type of anaemia was the common, or even the only severe, anaemia of infancy—that was, in the first two years of life; and anaemia of obvious causation, as syphilis, if sufficiently severe, assumed this type. Though severe anaemia of any causation took this type, yet one cause was by far the commonest, namely, chronic gastro-intestinal catarrh. This acted either by poisoning with by-products of digestion or by growth of micro-organisms in the undigested food. The anaemia consequently occurred in hand-fed infants, and the severe rickets which so commonly accompanied it was attributable to the same morbid conditions, and was not in any way causative of the anaemia. The intestinal catarrh, which caused the anaemia, was also kept going by the anaemia it had set up, and so a vicious circle was established, which made these cases of long duration and difficult of cure, and marked them off sharply from the anaemias of a slighter grade. The blood changes were probably due to blood destruction chiefly, though some deficiency in formation might also occur. That the destruction in the intestinal cases was not confined to the portal circulation, as in pernicious anaemia, was shown by the following facts: There was no excess of iron in the liver, and the bone marrow was obviously acted on by the poison which, consequently, must be circulating in the general blood stream. The anaemia splenica pseudo-leukaemica of von Jaksch must be regarded, for many reasons, as a more advanced condition of the so-called anaemia splenica infantum. A few cases of spleno-myelogenic leukaemia had been described in infants under 2 years, and so far as could be decided from the very incomplete blood examinations made these differed in degree only, not in kind, from the cases mentioned above. It was true that an infiltration of the organs with leucocytes was found after death, but this, too, was probably only a difference of degree depending on the heightened leucocytosis, and did not suffice to form a barrier between leukaemia infantum and the severe anaemias. Intermediate cases, moreover, had been described in which this infiltration was just beginning. It seemed that leukaemia infantum also was only a more advanced phase of infantile anaemia, and hence not specific, except in so far as its cause was generally or perhaps always an intestinal toxaemia. Leukaemia of adults showed certain differences to leukaemia of infants, but on the whole the resemblance was fairly close. It probably represented the same disease, and was hence no less than a return to the condition of an infantile anaemia. It was comparatively rare, which suggested that it was more difficult to produce in the adult, its causation being then so narrowed as to be practically specific.

Dr. J. H. Drysdale would rule out of account rickets as a cause, and congenital syphilis as well. Digestive disturbance in infants was very common, and yet anaemia splenica infantum was rare. He thought the condition was due to a chronic infection of the intestinal tract. In his experience gastro-intestinal catarrh was absent in half the cases, and skilled feeding caused no improvement. The blood count from a case of scurvy was quoted, having the chlorotic type with leucocytosis, as an instance of grave anaemia of a different type; also one of osteomyelitis with pseudo-leukaemia infantum and leucocytosis. The red and white cells of the blood varied quite independently of each other. The changes of the blood were symptomatic, and not the primary disease. Doubt was thrown on the enlargement of the liver in anaemia pseudo leukaemica.

Dr. F. A. Bainbridge referred to the comparison between splenic anaemia and pernicious anaemia in regard to the amount of iron in the tissues and its absence in the case quoted, but the destruction of red cells would lead to accumulation of iron in the liver. In myelogenic leukaemia the percentage of lymphocytes was small.

Mr. L. S. Dudgeon said the most important cell in myelogenous leukaemia was the mast cell. In the cases diagnosed as leukaemia in children there was no increase of mast cells. Allusion was made to the enormous numbers of nucleated red cells in the cases of pseudo-leukaemia of children, and the reduction in size of the liver and spleen under arsenic or mercury.

Dr. Vere Pearson stated that in the first four cases he had seen haemorrhage was a marked feature. He thought the condition was a secondary anaemia. Intestinal intoxication was common and this anaemia was rare, rather controverting the suggestion of cause and effect.

Dr. A. E. Russell quoted a case which improved greatly under the inunction of mercury.

Dr. Baumann thought there were a number of cases which showed the characteristic changes of splenic anaemia from the beginning. The condition was probably, therefore, an entity.

Dr. Parkes Weber asked if Dr. Riviere knew of many cases of transition of grave anaemia in adults into leukaemia.

Dr. Riviere, in reply, said he did not.

OBSTETRICAL SOCIETY OF LONDON.

Edward Malins, M.D., President, in the Chair.

Wednesday, November 4th, 1903.

Acute Contagious Pemphigus in the Newly Born.

Dr. George J. Maguire read a paper on this subject. Authorities were quoted to show that infantile pemphigus other than syphilitic, though known to occur, was rare, especially in this country. After stating the constitution of the charity in the practice of which the epidemic dealt with occurred, and after giving data as to the carrying on of the work up to the time of the outbreak of this epidemic, the period over which it extended was recorded, the number of deliveries during that period being 20, the number of infants affected with pemphigus being 18, and the number of deaths 8. Detailed notes of the history and symptoms in each case, with the result, were given, and an abstract in tabular form was appended. It was concluded that the cases arose from a common contagion of septic origin of unknown source, conveyed from case to case by a certain midwife, the probable method of conveyance being given. The contagiousness of the affection was proved, and the number of cases infected from each infant was given. After quoting a paper by Bulloch in the *British Journal of Dermatology* for 1896, which contained an account of the micro-organisms found in previous epidemics of pemphigus neonatorum, there was given the result of the bacteriological examination of serum from two of the cases, the pathogenic germ isolated being the staphylococcus pyogenes aureus. An endeavour was made to fix the time required (*a*) for the development of a bulla, (*b*) for the earliest signs of the skin lesion. This last was described in detail, the method of formation and spread of the bullae being given, with the appearance presented after their rupture and their course (*a*) in the recovering cases, (*b*) in the fatal cases, followed by a short account of the microscopic appearances of sections of an old and a new bulla. The additional symptoms in the fatal cases were detailed, the condition of the umbilicus and abdomen being particularly noticed. It was concluded that these symptoms were those of an acute toxaemia, the infection having gained entrance through the unhealed umbilicus. Notes of the necropsies were given, and the therapeutic measures were discussed, and a suggested line of treatment in future cases was laid down. The conclusions arrived at were that:

(1) The epidemic was one of the comparatively rare disease pemphigus acutus neonatorum; (2) it was due to infection by a pathogenic micro-organism, the staphylococcus pyogenes aureus, conveyed from case to case by a certain midwife; (3) that although it appeared chiefly in the newly-born, and was fatal to these only, it also attacked older children and adults; (4) it was characterized by a bullous eruption on the skin, variable in distribution and extent, the specific micro-organism being found in the contents of the vesicles; (5) in many of the cases no symptoms other than this eruption were manifested, but a certain number of cases showed grave symptoms of a general infection, and invariably ended fatally; (6) the point at which the systemic invasion began in these fatal cases was the unhealed umbilical scar; (7) treatment to all appearances had little or no effect upon the course and duration of the disease, whatever the result.

Dr. Cullingworth said that it was interesting to note that in a considerable number of the cases the disease had been communicated to elder children and to adults. This fact threw some light upon a case of acute pemphigus which he had himself seen in an adult, and which at the time puzzled him extremely. With regard to the special micro-organism that had been discovered in connexion with two of the cases in the epidemic, he could scarcely bring himself to believe that so widely diffused a microbe as the staphylococcus pyogenes aureus ought to be regarded as the specific source of this particular infection. He was not a bacteriologist, but he felt disposed to suggest that on further investigation some infective micro-organism of a more distinctive character would probably be found associated with this disorder.

Dr. Vincent Dickinson said that a similar epidemic occurred at the Foundling Hospital at Parma, in 1901-2, and was described by Dr. Pasini at great length in the *Giornale Italiano delle Malattie Veneree e delle Pelle* of this current year. The clinical histories of 14 cases were given, most of which ended fatally; examination of the blood showed a marked leucocytosis, especially in mononuclear cells, pointing either to altered chemiotaxis or to efforts of defence on the part of the subject against pathogenic agents. The cases pointed indubitably to the conclusion that a specific organism was the exciting cause, and that there was no relation between this disease and syphilis. The speaker thought that the primary mode of infection was not through the umbilical scar, which only became infected later through the discharge from the bullae, general systemic infection with a fatal result then occurring, as shown by Dr. Maguire's cases. The fact that adults became infected also pointed to the same conclusion.

Dr. J. M. H. Macleod remarked on the increasing rarity of the affection at the present time, compared with its prevalence a few years ago. He believed this to be due to the better antiseptic precautions taken in lying-in institutions and elsewhere. He agreed with the speaker that the disease was due to infection by a pathogenic organism, but disputed his conclusion that the specific microbe was the staphylococcus pyogenes aureus, believing it to be a streptococcus infection due to the streptococcus pyogenes or a variant of it. Unless special methods were employed in taking cultivations from the skin, and especially from the contents of vesicles or bullae, cultures of staphylococci would invariably be obtained. He described a method devised by Sabouraud in Paris, in which the contents of the bullae were aspirated into a sterile pipette containing ascitic fluid, after sterilizing the skin and the pipette incubated for forty-eight hours at 37° C. By this means Dr. Macleod had obtained pure culture of streptococci in a fatal case of pemphigus neonatorum. He referred to the relation of this disease to impetigo contagiosa, and reminded the members that the initial lesion of the latter disease was a vesicle, and that the infective agent was now generally believed to be the streptococcus pyogenes and not the staphylococcus, as was once thought. He noted the occasional occurrence of impetigo contagiosa in the same family as pemphigus neonatorum. He referred also to the close relationship of the disease to the acute pemphigus of adults. He believed that in a large number of cases the inoculation did take place at the umbilicus, but that it might occur on any abrasion of the skin, and mentioned a case in which the mucosa of the lip was the site of infection. With reference to differential diagnosis, he believed that there was no great difficulty in distinguishing this affection from the so-called "congenital syphilitic pemphigus," but he considered that it might more readily be confused with the rarer bullous affection known as "epidermolysis bullosa hereditaria," the pathology of which was absolutely different, in that it was not due to a microbe, but was essentially a condition of excessive vulnerability of the skin, in which even slight traumatism resulted in the formation of flaccid bullae, and was probably caused by an instability of the vasomotor system of the skin, analogous to that which is present in factitious urticaria.

Dr. Peter Horrocks thought there could be no doubt that pemphigus, as well as many other skin lesions and illnesses, were commoner in the newly-born in former times than at present, owing to the want of surgical asepsis on the part of the attendants. He did not think the staphylococcus was the culprit, neither did he think with Dr. Macleod that it was the streptococcus, because both these microbes were so prevalent that it was exceedingly difficult to get rid of them from one's hands. After as thorough a sterilization as possible, the staphylococcus albus could be found under the nails. Hence he thought pemphigus neonatorum would be common, instead of rare, if either of these microbes was the cause of it. Probably it was due to some other microbe, or else, if due to one or both of the above-mentioned germs, there must be another factor necessary, which other factor was rarely present. He asked if any of the mothers were ill at all, and if they nursed the infants.

Dr. Maguire, in reply, said that the disease was confined to the skin in the majority of cases, and was without symptoms of systemic invasion; where this took place the umbilical scar was always previously involved, and the cases ended fatally. It seemed fair, therefore, to conclude that this was the channel by which a simple skin disease became a grave general disorder. All the mothers were healthy, with one exception, nor had this woman any grave disease. All the infants were breast-fed.

Ovarian Cyst.

Dr. W. H. B. Brook (Lincoln) showed an ovarian cyst which had made its way between both broad ligaments, separating the peritoneum from the uterus, the caecum, and the sigmoid flexure of the colon. The history of the case was as follows:

E. B., 56, unmarried, was admitted into the Lincoln County Hospital on April 6th, 1903, for an abdominal tumour which she had noticed since the previous December. She presented all the signs of an ovarian cystoma. The uterus was freely movable and appeared normal. On April 11th the abdomen was opened, and the tumour removed; it proved to be an ovarian cystoma, one large cyst containing twenty-three pints of thick ovarian fluid with two small loculi. The base of the cyst, which appeared to have originated in the left ovary, extended between the layers of the broad ligaments from one side of the pelvis to the other, passing behind and above the uterus, which was buried in the cyst. The peritoneum was stripped off the sigmoid and the caecum, so that the cyst wall was in direct relation with these two large layers of vessels spreading over its surface from the meso-sigmoid and meso-caecum. The vermiform appendix lay on the upper part of the cyst. As it was impossible to separate the base of the cyst, its wall was cut through, and the remaining portion sutured to the abdominal wound and drained. The fundus of the uterus and a subperitoneal fibroid projected into the cyst. This fibroid was cut away and caused no trouble. The patient made an uneventful recovery. A section of the cyst wall consisted of ovarian tissue and showed old corpora lutea. A second section showed the tube stretched out in the cyst wall, its lumen containing a few flattened-out rugae, and its walls consisting of unstriped muscle, arranged in bundles cut across and obliquely.

The case was discussed by Dr. Lewers, Mr. Targett, Mr. Malcolm, and the President.

Specimens.

Dr. E. A. Barton, in showing a specimen of fetus compressus, pointed out that the ovum was passed ten hours after the normal delivery of an 8-months living child. The woman had married twice, by her first husband having three single children, by the second three sets of twins, besides a single child and a miscarriage. There was no history of twins on either side or syphilis. The fetus measured 7 cm. by 3 cm. but only 5 cm. thick, and appeared macerated. The cord was 10 cm. long by 1 cm. thick. The placenta was 7.5 cm. by 6.4 cm. but only 1.75 cm. thick. It appeared normal to the naked eye though the ovum had remained *in utero* five months. On section the placenta showed marked degeneration of chorionic villi, and also in a less degree the decidual cells.—Dr. Lewers and Mr. Malcolm showed specimens of cases of extrauterine fetation, and these were discussed by Dr. Horrocks, Dr. Cullingworth, and Dr. Herman.

Bristol Medico-Chirurgical Society.—The annual meeting was held on October 14th in the Medical Library of University College. Mr. Munro Smith, the President for the past session, vacated the chair to his successor, Mr. J. Paul Bush, C.M.G., who then gave the inaugural address. He chose for his subject "Some Surprises I have Met with," and related many unusual occurrences that he had come across in his surgical work and during his experiences in South Africa. He gave interesting details of the working of the Princess Christian Hospital, enumerated many remark-

able cases he had seen, and enlivened his address with amusing anecdotes. Dr. Shingleton Smith proposed and Mr. Dobson seconded "That the best thanks of the Society be given to Mr. Bush for his able address." This was carried by acclamation, and, Mr. Bush having made a suitable reply, the officers for the ensuing session were appointed:—Mr. H. F. Mole was appointed Honorary Secretary in place of Mr. Bush, who had held the office for the past nine years.

Medical Society of London.—At a clinical meeting of this Society held on November 9th, Dr. F. de Havilland Hall, President, in the chair, Dr. W. Essex Wynter showed (1) a case of Addison's disease in a woman, aged 40, with bronzing (of fifteen months' duration), progressive weakness, syncopal attacks, and wasting; (2) a case of spondylitis deformans in a man aged 43.—Dr. H. Lewis Jones and Mr. C. S. Kingston showed three cases of rodent ulcer treated by *x* rays. The effect produced by the rays might continue after suspension of the treatment. It was probable that its efficacy was due to a selective effect on the sebaceous glands in which rodent ulcer commenced.—Mr. L. V. Cargill showed a case of rodent ulcer treated with radium bromide.—Dr. S. E. Dore showed a series of four cases of lupus treated by light. One illustrated the failure of scraping and cauterization and of the Finsen method in affecting deep-seated nodules in the scar and the success of successive applications of the rays without allowing healing to take place. Another showed the advantage of *x* rays when large areas were involved or parts inaccessible to the Finsen rays, the difficulty of extirpating the disease by *x* rays, and the advantage of employing both methods in extensive cases. One case treated by the Finsen light showed freedom of recurrence for fifteen months.—Dr. F. J. Poynton showed a case of bilateral facial paralysis of the peripheral type following a fall; Dr. Bertrand Dawson a case of obscure abdominal tumour and one of carcinoma of the stomach; Mr. W. G. Spencer one of scirrhus of the tongue for the third year of exhibition; Dr. Parkes Weber and Mr. R. Lake a case of epithelioma of the pharynx in a young woman with phthisis; Dr. C. S. de Segundo one of symmetrical suberureal swellings; and Dr. B. E. Potter a case of congenital absence of the right hand.

Glasgow Southern Medical Society.—At a meeting held on October 28th, the President (Dr. Thomas Richmond) delivered an address on Reminiscences of my Student Days and of Thirty-six Years of Practice. He began with a short history of the introduction of Listerism, and paid a high tribute to the protagonist in the great arena of modern surgery. He dwelt, in kindly recollection, on the old Andersonian College when it was situated in George Street, touched reverently on the personalities of the mighty dead, whose voices he had heard within its walls, and pointed proudly to the eminence attained by those teachers who were with us in the flesh. The changes in men and manners were traced from those old-world days up to the present, and several subjects were touched upon as showing the tremendous strides of medical science in the last forty years. Dr. Richmond appealed earnestly for a more thorough treatment of inebriety, and advocated longer terms of institutional treatment than were at present in vogue.

Glasgow Eastern Medical Society.—The first meeting of this Society for the session 1903-4 was held on October 7th. The following gentlemen were appointed office-bearers:—*President:* Dr. Charles R. McLean. *Late President:* Dr. Robert McC. Service. *Secretary:* Dr. P. S. Buchanan. *Treasurer:* Dr. J. Wilson Mathie. *Reporting Secretary:* Dr. H. H. Borland. *Seal Keeper:* Dr. Wm. McFarlane. *Members of Council:* Dr. Robert Wilson, Dr. Thomas Russell, Dr. J. T. Maclachlan, Dr. Joseph Green, Dr. John A. C. Macewen, Dr. A. Laurie Watson. *Auditors:* Dr. John W. Findlay, Dr. John Patrick.—The President gave an address on the topic "Are we Decadent?"

Folkestone Medical Society.—A meeting was held on October 9th. Dr. Eastes, the President, after thanking his medical friends who had persuaded him to join the medical staff of the Folkestone Victoria Hospital, read notes of the cases of: (1) Relapsing appendicitis; (2) division of ulnar nerve and flexor sublimis tendons by a piece of glass; (3) chronic intestinal obstruction two months after peritonitis (cause unknown) becoming acute; (4) ovariotomy; (5) cholecystostomy, with removal of 196 gall stones in a woman aged 40; (6) myomectomy; (7) radical cure for inguinal hernia in a boy aged 15.

West London Medico-Chirurgical Society.—At a meeting on October 2nd Dr. Seymour Taylor delivered his presidential address, choosing as his subject milestones in medicine. He selected as the first milestone, which marked distinct progress since the time of the Greek school, the introduction by Ambroise Paré of ligatures for the arrest of haemorrhage, and reviewed all the benefits which had arisen therefrom. His next stone was vaccinia, a creation the value of which could scarcely be fully comprehended except by those who carefully studied the history of small-pox in the past, and one which, but for the fact that a noisy and ignorant section of society was still, as at the beginning, allowed to influence the Legislature, would long ago have made variola one of those diseases of which modern medical men could know nothing except from casts and pictures. Next came that great milestone the stethoscope, greeted at first with derision, but now regarded as absolutely indispensable, although scarcely if at all improved from the earliest model introduced. As a fourth milestone he chose anaesthesia, the introduction of which had received less opposition than any other of the great discoveries. Last on the road of progress came the milestone erected by our great countryman Lister, who fortunately was still among us, a discovery to which the whole success of modern surgery was directly or indirectly due. The public forgot the great debt it owed to medicine, and medical men themselves were sometimes inclined to forget what they owed in the present to their predecessors in the past. That debt should constantly be borne in mind as a stimulus to further research, so that the debt to the past of those who followed after should be greater, not less, than that which we ourselves owed now.

Midland Medical Society.—At the annual general meeting held on October 21st, Dr. Langley Browne, outgoing President in the chair, the reports of the Council and Treasurer were received, and the following officers elected for the ensuing session:—*President:* Dr. Saundby. *Treasurer:* Mr. Garner. *Members of Council:* Messrs. Barling, Heaton, Martin, Newton, Whitcombe, Haslam, Jordan Lloyd, Taylor, Bennett May, Kauffmann, Wood-White, and Russell.—At the first ordinary meeting which followed, Dr. Stanley showed a specimen of a cardiac aneurysm from a female patient, aged 72, due, he believed, to chronic myocarditis. A discussion followed, in which Drs. Emmanuel and Barnes took part.—Dr. Pietersen read a paper on the medical certification of the insane, emphasizing the importance of asylum treatment in all cases. The points raised were discussed by various members.

Newport Medical Society.—At a meeting on October 28th the following clinical cases and specimens, etc., were shown and discussed: (1) A case of lupus under treatment by Roentgen rays; (2) a case of effusion into the knee joint, the result of gonorrhoea; (3) a calculus removed by suprapubic cystotomy; (4) photographs and Roentgen-ray pictures of a case of carcinoma of the clavicle.—Mr. J. Lynn Thomas, C.B., read a paper on prostatectomy, giving his experience in cases on which he had done the operation by Freyer's method.

Pathological and Clinical Society of Glasgow.—At a meeting on November 11th, Mr. A. E. Maylard, President, in the chair, Dr. Donald Fraser discussed a case in which cerebral haemorrhage occurred in a patient upon whom an operation for appendicitis had recently been performed. Before the operation the patient had shown symptoms of cerebral disturbance amounting almost to mania. Eventually he was sent into a lunatic asylum. The condition was regarded as one of thrombosis followed by haemorrhage, chiefly affecting the frontal lobes, and as due to septic absorption.—Dr. James Hamilton read notes of a case of hydronephrosis, and Dr. W. B. Inglis Pollock read a paper on tuberculous iritis. Both papers were illustrated by specimens.—Dr. Munro Kerr demonstrated a thin-walled retroperitoneal dermoid tumour removed by vaginal coeliotomy. It lay behind the peritoneum, but in front of and quite free from the rectum. The uterus, ovaries, and Fallopian tubes were normal. Microscopic and macroscopic specimens and skiagraphs were on view during the evening.

REVIEWS.

TROPICAL MEDICINE.

OWING to the large number of new mosquitos recently received by the British Museum, Mr. F. V. THEOBALD has found it necessary to add a third volume to his *Monograph of the Culicidae of the World*,[1] which was published in November, 1901. The present volume, in addition to the description of these new mosquitos, is brought up to date in other respects, and its main feature is the large number of new genera which have had to be formed—51 in all, as compared with the 22 of the former volumes. It is clear that the accumulation and classification even now is not by any means finished, as since publication more new specimens have been received, and there is little doubt that many more remain to be discovered. From a medical point of view the chief interest of the new volume lies in the division of the genus *Anopheles* into ten genera; the division seems to be quite justifiable, and is supported by Blanchard, the great French authority. The scale structure is largely used in this differentiation, and this important anatomical feature, which was pointed out and used by Theobald in his first volumes in dividing up the different genera of mosquitos, is sound and has stood the test of time and use. The subject of the classification of the different mosquitos as a whole is much too large now and also too specialized for the practitioner of medicine, but as only the *Anophelina*, the genus *Stegomyia* and the genus *Culex* are at present known to spread disease, the latest work at least on those branches should be thoroughly mastered by all tropical practitioners. The genus *Culex* has been limited still further by taking out several species and raising them to the rank of new genera, but Mr. Theobald still thinks that more will have to be excluded, and this probably means the formation of more new genera. Two new species of *Stegomyia* have been found since the last edition was published, and some interesting notes on *Stegomyia fasciata* are given. Several of the new and rarer genera, namely, *Aedimorphus*, *Goeldia*, etc., are founded on single specimens only, and though this is necessary, perhaps, it might have been safer to put them aside as doubtful until more material was to hand. The genera *Deinocerites* and *Brachiomyia* in the first volumes are a case in point. Originally described from a few specimens two genera were formed; but recent perfect material has shown that the antennae on which the difference was based are similar, and, further, that the males are of the *Aedes* type; this makes it necessary to place the genus in the *Aedeomyina* sub-family instead of that of the *Culicina*, a very important change. A word might be said on the naming of some of the genera, a subject which has always given rise to difficulty. The names of individuals are used in several instances for designating new genera, and this seems rather unfortunate, as such names tell nothing about the genus or its peculiarities. A descriptive name based on some special character would be more useful. The book contains very important and accurate information on all the recent new observations about mosquitos, and is a necessity to every one who wishes to keep in touch with this branch of science. Many excellent diagrams are inserted throughout the text, and photomicrographs of wing scales are given at the end of the volume.

Further researches in malaria form the contents of a new Report to the Malaria Committee of the Royal Society.[2] The report is divided into two parts. Part I contains (*a*) the occurrence of blackwater fevers in India; (*b*) malaria in an Indian cantonment, and experimental application of anti-malarial measures; (*c*) brief summary of the conclusions arrived at in the previous papers by Messrs. STEPHENS and CHRISTOPHERS. Part II consists of a report of the anti-malarial operations at Mian-Mir (1901-1902) by Captain JAMES of the Indian Medical Service. The first part of the report on the occurrence of blackwater fever in India is specially interesting. It has generally been supposed that blackwater fever used to be unknown in India, and is only of recent origin, but the facts that the writers bring forward would seem to show that this is not the case. The Principal Medical Officer of His Majesty's Forces in India informed them that he had had blackwater fever himself, and that it occurred in the army, though there is no separate heading "blackwater fever" in the nomenclature of diseases employed there. The evidence of some of the tea planters and medical officers in Assam, the Terai, and the Duars is more striking. In the Terai the disease has been recognized for at least twenty years, but was known then as jaundice or bilious jaundice. In the same way the oldest medical officer in the Duars, who had resided there for fourteen years, stated that the name of blackwater fever had only recently been applied to these cases, and that he previously used the term jaundice or bilious fever. This latter statement shows pretty clearly that the disease has existed in India for many years under another name, and this is probably how the confusion has arisen. The conclusions the authors arrive at as regards blackwater fever are that it is not due to a special parasite, but is malarial in origin, and that it exists only in regions of intense malarial endemicity. This is the usual opinion of competent judges, and has been held for many years. The two separate reports on malaria and anti-malarial operations at Mian-Mir, by Stephens and Christophers and by James, cover the same ground, and it will be sufficient to consider the latter's report, especially as he describes the operations and some of the results. Mian-Mir was chosen on account of its very malarious nature. The cantonment lies on a more or less arid desert, and irrigation has to be adopted to enable grass, crops, and trees to grow. A branch of the main irrigation canal enters the cantonment, and from this numerous shallow channels convey water to the areas under cultivation. In these watercourses mosquitos breed in large numbers, several species being found, but only two in abundance, namely, *Anopheles culificies* and *Anopheles rossii*. Tanks, ponds, pools, domestic utensils, swimming baths, etc., are also found to furnish favourable breeding grounds. The conditions described are typical of many other tropical towns and areas; *Anopheles* mosquitos, plenty of natives, and much malaria in those and the white people living in the place. Since the operations of Major Ross in Sierra Leone, chiefly directed against the breeding places of the mosquito, many other Colonies have adopted similar or allied methods to reduce malaria. Hong Kong and Mauritius are good examples, and the results are considered to be favourable, though not so striking as had been hoped. There is nothing new in the operations conducted at Mian-Mir; the usual common-sense methods are being employed, and by this time sanitary inspectors should be able to relieve the specialist of this kind of work. One point worthy of note is the statement that the majority of the breeding places in Mian-Mir cannot be permanently done away with, and that without this it seems doubtful whether a marked reduction of *Anopheles* will take place. This is unfortunate, as temporary work has to be renewed, costs more money in the long run, and is apt to be discontinued by those who come after. All works that aim at the destruction of the mosquito by an attack on its larval forms should be permanent wherever possible. Sufficient time has not elapsed to form any definite conclusions as to the effect the operations have had in the reduction of malaria. The figures of the percentages in the two bazaars—namely, the Artillery Bazaar and the British Infantry Bazaar—are not sufficiently striking to justify the writer's deduction as to the decrease in the amount of malaria. The experiment of the movement of the first series of Syce lines out of range of the *Anopheles* is interesting, and there is no doubt about the decrease of malaria following the measure. Renewed operations on as permanent a footing as possible against the breeding grounds and careful statistics covering a series of years are wanted. It is evident that the war against malaria will be expensive wherever it is undertaken, but the experiments of Captain James are in the right direction, and it is to be hoped they will prove successful.

To students of tropical medicine, the *Studies in Laboratory Work*,[3] by Dr. C. W. DANIELS, should prove an inestimable boon. By the practical worker in the tropics the need for a book of this sort has been felt for a considerable time, as the

[1] *A Monograph of the Culicidae or Mosquitos.* Mainly compiled from the collections received at the British Museum from various parts of the world in connexion with the investigation into the cause of malaria conducted by the Colonial Office and the Royal Society. By F. V. Theobald, M.A. Foreign Member of the Association of Economic Entomologists, Washington, U.S.A.; Zoologist to the South-Eastern Agricultural College, etc. Vol. iii. London: Longmans, Green and Co. 1903. (Demy 8vo, pp. 378, 218.)

[2] *Royal Society: Reports to the Malaria Committee.* Eighth Series. Reports by Messrs. Stephens and Christophers, and Report by Captain James, I.M.S. London: Harrison and Sons. 1903. (Demy 8vo, pp. 76. 3s.)

[3] *Studies in Laboratory Work.* By C. W. Daniels, M.B., M.R.C.S., late Medical Superintendent of the London School of Tropical Medicine; Director of the Institute for Medical Research, Federated Malay States. London: John Bale, Sons and Danielsson. 1903. (Demy 8vo, pp. 396. 15s.)

literature dealing with the laboratory side of tropical medicine is extensive and scattered, and can seldom be obtained by men when travelling abroad. The book will meet this want, and will enable students to find with ease and rapidity information which they may require in their wanderings. Chapter I gives some useful hints on what one may expect in the way of laboratory accommodation in the wilder parts of the tropics, the best microscope to choose, how to look after it, and other information about the conservation of glass cover-slips and lenses. The systematic examination of the blood is described in the four following chapters, special stress being laid on malaria, trypanosomiasis, and filariasis, subjects of the greatest importance to the tropical practitioner. A special chapter on biting-mouthed, noxious, and parasitic diptera is supplied by Mr. F. V. Theobald. A perusal of this chapter will give a very excellent idea of the different flies to look for and to study as probable carriers of diseases in the tropics. The next part of the book deals with mosquitos; how to catch them, rear them, infect them, and dissect them. This is a section which will repay careful reading, as many interesting points still require to be elucidated in the spread of malaria by the different species of *Anopheles*. Stress is laid on the examination of the faeces, a subject too often neglected, and following this a description of the parasitic worms is given. An introduction to bacteriology is given, which contains some useful information, and the book closes with particulars as to making measurements, counting blood corpuscles, and dealing with statistics. The book is profusely illustrated, the diagrams throughout the text being very good. Special mention must be made of the four excellent coloured plates at the end of the book; they are of exceptional merit. The work is thorough and accurate throughout, contains a large amount of very useful information, and no practitioner in the tropics should be without it.

An *Introduction to the Study of Malarial Diseases*[4] by Dr. Reinhold Ruge, an English translation of which has just been issued, is intended for the use of physicians practising abroad in malarial areas. There is nothing new in the book, but it gives a fair summary in small bulk of the subject. The personality of Koch is evident throughout the book; and in a short paragraph dealing with the discovery of the part played by mosquitos in the spread of malaria, no mention is made of the Italians, and the former scientist's name is dragged into this important discovery. Blackwater fever again is almost entirely discussed on the basis of Koch's theories, as is also the subject of prophylaxis. The writer is not sanguine on the destruction of mosquitos, nor on protection by netting; and, as one would expect, believes in the universal quinine treatment, a treatment which any one conversant with the tropics knows is impossible.

The rapid advance that has lately taken place in tropical medicine has rendered it necessary for Dr. B. Scheube to bring out a third and enlarged edition of his well-known book on the diseases of warm countries.[5] The second edition was only translated into English by Pauline Faleke last year, and containing as it did addenda on yellow fever by Mr. Cantlie and on malaria by Dr. C. W. Daniels, the book was brought up to date and was placed within the reach of the many English students of tropical medicine. The present edition, a bulky volume of 790 pages, has five geographical tables and many plates and illustrations in the text. The plan is similar to that followed in former editions, but the recent additions to tropical medicine, on malaria, filaria, and yellow fever, are all fully dealt with in their respective places. Even now the book is again slightly out of date, as the recent work on trypanosomiasis and sleeping sickness has appeared too late to be included. The book covers a large amount of ground, and the rarer diseases, many of which are extremely localized, are very fully described, the article on verruga Peruviana, for example, being specially good. The system employed in the description of the different diseases is very clear, and presents to the reader a very distinct picture of the condition under consideration. After the definition, the various synonyms, which in many cases are numerous, are given; then comes the history, geographical distribution, etiology, and symptoms. The pathology, diagnosis, prognosis, and treatment close the chapter. To the advanced student the bibliography will be specially useful. This is appended to each chapter, and is very full and thorough. The author insists on the difference between syphilis and yaws, and his opinion is shared by the vast majority of physicians who have had the opportunity of studying those two diseases. The section on diseases caused by animal parasites might be amplified by a short reference to more of the rarer parasitic worms found in man, several of those which are fairly common in different parts of the world being omitted. The maps on the geographical distribution of disease are the weakest point in the book, some of them being incorrect and misleading. All the West Indian islands and the Guianas are marked for blackwater fever equally with the worst areas of Africa. Many of those islands—Grenada, Barbadoes, for example—have no blackwater fever at all, and only isolated cases are met with in British Guiana. Again, the latter place and Trinidad are marked as beri-beri areas. This is very misleading, as there is no indigenous beri-beri there at all, the only cases ever seen being imported in sailing vessels. With the exception of those minor points the book is very valuable, and should form a useful addition to the libraries of medical men resident in the tropics.

Hygiene in the tropics is an important subject, and the handbook on the hygiene of colonists by Gustave Reynaud[6] will be found useful by them. The question of private dwellings is entered into fully, and some very good photographs are given representing different types of houses as seen in some of the French colonies. No details are spared with reference to the erection of a house, materials for construction, ventilation, and many other interesting points being fully discussed. Much space is rightly given to questions as to food and drink. Attention is directed to the part played by impure water in the spread of endemic and epidemic maladies, and the uses and abuses of alcoholic beverages are dealt with. The necessity for moderation is insisted on, and every one who has had a tropical experience will agree with this. A chapter is devoted to clothing, and the influence of colours in moderating temperature is well shown in a table. The relative advantages of different types of hats and helmets are discussed. Cold baths are rightly condemned and warm ones recommended in their place. The bath pavilion of the civil hospital in Tunis, a diagram of which is given, shows a very perfect system for bathing, and some of our hospitals in the tropics might well follow such a plan. A chapter on first aid to the injured, and the drugs required for a portable pharmacy, close a very interesting though perhaps somewhat wordy book.

Mosquitos and Malaria[7] is the title of a useful little handbook, by Dr. Frederick Pearse, which deals with this subject in a semi-popular manner. For laymen and others who have not specially studied the part played by the mosquito in the dissemination of malaria it will be interesting and instructive. The life-history of the mosquito is entered into fully, many diagrams of the different stages being inserted throughout the text. The passage of the parasite through the mosquito is next explained, and the final chapter deals with the destruction of mosquitos and the prevention of malaria. The book should act as a useful medium for the instruction of the public, who even now still have very hazy ideas as to the danger of the mosquito.

OTOLOGY.

The name of Professor Bezold is familiar in connexion with those branches of otology which call for tireless labour in connexion with the functional examination of patients or the preparation and analysis of enormous masses of statistics bearing on otological questions. Even among his countrymen he stands almost unrivalled for indefatigable industry. His book on deaf-mutism[8] is another monument to his

[4] *Introduction to the Study of Malarial Diseases.* By Dr. Reinhold Ruge, of the Imperial German Navy. Translated by P. Edgar, M.B., C.M.Edin., and M. Eden Paul, M.D.Brux., M.R.C.S., L.R.C.P. London: Rebman, Ltd. 1903. (Demy 8vo, pp. 144. 10s. 6d.)

[5] *Die Krankheiten der warmen Länder: ein Handbuch für Ärzte.* Von Dr. B. Scheube, Fürstl. Physikus und Medizinal-Rat in Greiz, früherem Professor an der Medizinschule in Kioto (Japan). Dritte Auflage. Jena: Gustav Fischer. 1903. (Roy.8vo, pp. 790, 13 plates, 5 maps, 64 illustrations. M.16.)

[6] *Hygiène des Colons.* Par Gustave Reynaud. Médecin en Chef du Corps de Santé des Colonies. Paris: J. Baillière et Fils. 1902. (Demy 8vo, pp. 412. 59 illustrations. Fr. 5.)

[7] *Mosquitos and Malaria.* By Frederick Pearse, F.R.C.S.Eng., M.R.C.P.Lond., D.P.H Camb. Calcutta: W. Newman and Co.; and London: E. Stanford. 1902. (Fcap 8vo, pp. 52. 1s. 6d.)

[8] *Die Taubstummheit auf Grund ohrenärztlicher Beobachtungen* [Deaf-mutism from the Point of View of Otological Observations]. Von Dr. Friedrich Bezold, Professor in the University of Munich. Wiesbaden and Glasgow: F. Bauermeister. 1902. (Demy 8vo, pp. 133. 4s.)

capacity in this respect. Of the numerous and elaborate works in connexion with this subject reviewed from time to time in the BRITISH MEDICAL JOURNAL, this possesses the peculiarity that it is founded on cases studied and treated by the author himself as an aurist, and therefore at a much earlier age than that at which they go to deaf-mute institutions. He has, in a total of 34,000 aural patients who have passed through his hands, found 456 deaf-mutes, and he gives here the result of the investigation of these cases. The congenital numbered 100, the acquired 119, and, as those familiar with the subject will be prepared to hear, the percentage of complete deafness was higher in the latter class than the former—namely, 55 per cent. in the acquired, and 33 in the congenital. It is noted that congenital deaf-mutism is more frequent among females than among males, the opposite being the case in regard to the acquired form. This is interesting in consideration of the alleged greater proclivity of females as compared with males to the manifestations of hereditary syphilis. Bezold traces this affection to a hereditary tendency existing in the fetus, although the ear is not obviously affected at birth, but only several years later. The female sex is, in the same way, peculiarly liable to sclerosis of the middle ear, which, however, Bezold considers to be in no way related to hereditary lues. Among his cases of congenital deaf-mutism not one was an instance of direct hereditary transmission, whereas an indirect tendency was present in several cases. The influence of consanguinity of parents was shown by the fact that 6.6 per cent. presented this factor. The causes in the acquired cases are investigated in great and interesting detail, and important cautions with regard to the method of examination are laid down. Among other points of practical importance we may note the author's conclusion that teaching by means of the ear is likely to be successful in those congenital cases in which there is hearing power for conversation in ordinary tones at a distance of 5 cm., and in those acquired cases in which the whispering voice is heard at 25 cm. His well-known observations as to the residua of hearing power present in a large number of deaf-mutes are also briefly restated. From what has been said it will be realized that it implies a strong argument for the early examination of all cases of suspected deaf-mutism by one who is accustomed to the details of otological examination, as, although anything approaching a cure in well-established cases is not to be looked for, a great deal may be done by suitable treatment to place the life and health, and possibly even the hearing power, of the subject in a more favourable position. Diseases of the ear are very apt to be overlooked by trainers of deaf-mutes of the old school, and Professor Bezold found among those whom he examined a considerable number in whom active surgical treatment was required. The treatment of scarlatinal and other exanthematic affections of the middle ear in early life becomes, in the light of his observations on scarlatina as an etiological factor in deaf-mutism, a matter of vital importance. The book, as a whole, contains many original views, apart from its value as an addition to other works on the same subject.

Statistics derived from Professor Bezold's hospital and private practice from 1869 to 1901 inclusive are the foundation of Dr. DÖLGER'S book on middle-ear suppurations.[9] Dr. Dölger, in compiling and analysing the material illustrating this large and important class of ear diseases, makes us his debtors in a very high degree. He commences with a statement of Bezold's classification of the various inflammatory affections of the middle ear, simple and purulent. Among the latter he includes only the "purulent perforative processes." They are classified as follows: (1) Acute perforative purulent median otitis; (2) chronic perforative purulent median otitis; (3) cholesteatomatous formations in the cavities of the middle ear (*a*) with exposure of the tympanic margin in the membrana flaccida, and (*b*) with exposure of the tympanic margin of the membrana tensor; (4) phthisical purulent median otitis. Another section includes the "residua" of puruient median otitis, (*a*) with persistent perforation, and (*b*) with healed perforation. The otologist will see at once the advantages of this classification as enabling him to pigeon-hole according to their most characteristic features large numbers of cases met with in his practice. Reference is made to Bezold's investigations as to the frequency of purulent otitis and its residua in school children as also the influence of these affections on the mental development of the subjects. The general mortality amounted to 1.4 per cent. in 1,752 cases of suppurative inflammation of the middle ear. The method of examination of the middle ear, especially in relation to suppurative diseases, is treated in considerable detail, the scope of the practical application of the "continuous tone series" receiving judicious consideration. We miss a reference to Dennert's mode of checking observations on the hearing power in cases of severe one-sided deafness when the other ear is functionally active. Etiology affords material for a valuable chapter on which we cannot enlarge. It is interesting, however, to note that in acute suppuration of the middle ear measles accounts for 5.7 per cent. as compared with 2.8 attributable to scarlet fever. The latter disease, however, seems to work greater ravages in the structures, as we find that in chronic cases scarlet fever accounts for 13.8 per cent. and measles for only 1.6. The fact that extreme dullness of hearing is due to other causes rather than perforation of the membrane as such is insisted on and the various factors are enumerated with the singular exception of concomitant involvement of the labyrinth. Perhaps the finest chapter in the work is that on cholesteatoma. The conditions essential for the development of the cholesteatoma are made out to be continuity at the margin of the membrane between the cutis of the external meatus and the lining of the middle ear, either from the perforation extending to the side wall or from the formation of a cicatricial bridge between the edge of a non-marginal perforation and one of the internal walls of the tympanum. The extension inwards of the cuticular epithelium is considered by Bezold to be originally nothing else than the healing process on the surface of the ulcerated and proliferating portions of the mucous membrane. When this takes place in a more or less closed cavity and there is an obstruction of the free exit of the superficial cornified layers, the mass formed by the concentric layers of epithelium constitutes a "cholesteatoma." Bezold's observations on the condition of the opposite ear in cases of unilateral cholesteatoma are peculiarly interesting, as he finds that in 23.6 per cent. of attic cholesteatoma, affections of the Eustachian tube existed on the other side in 23.6 per cent. Tuberculosis of the middle ear is dealt with in a comparatively short chapter. Scheibe found the tubercle bacillus in 13 out of 25 cases of suppuration of the middle ear occurring in the subjects of pulmonary tuberculosis. Bezold was probably the first to draw attention to the painless onset of tuberculosis of the middle-ear. Attention is also drawn to the fact that in these cases the Eustachian tubes are more permeable than in ordinary cases of suppuration of the middle ear. Bezold's strong advocacy of the boric acid treatment of middle-ear suppuration is here repeated and an attidude of moderate conservatism is maintained in regard to operative treatment. Those who desire to "individualize" in their treatment of cases will find much to interest them. Valuable statistical tables are appended, and there is also a bibliography of Bezold's works from 1872 to 1902.

We had the pleasure of reviewing in the BRITISH MEDICAL JOURNAL of April 2nd, 1892, the sixth edition of Professor HARTMANN'S[10] handbook of diseases of the ear, and students of otology have apparently recognized that in it is to be found a clear account of the subject in small compass; for it has gone through such an unprecedented number of editions since the first published in 1881. In the review referred to we indicated the many recent advances in clinical otology to be found in it. The same industry and power of condensation have enabled him to add to his work a concise account of most of the additions of practical value since the last edition. The treatment of chronic suppurative inflammation of the middle ear and its complications is judiciously revised and extended. The practice of syringing through an external fistula in the mastoid region, as recommended in cases of caries and necrosis of the temporal bone, is, however, one with regard to which we should advise greater caution than the author indicates. The possibility of a communication with the cranial cavity should be kept prominently in view. The chapter headed "chronic inflammation of the middle ear, without

[9] *Die Mittelohreiterungen.* Auf Grundlage der statistischen Berichte Bezolds [illegible] incl.), und einer eigenen Fortsetzung derselben [Middle-ear Suppurations. Founded on Bezold's Statistical Reports 1896 inclusive), and of the author's continuation of these up to the year 1901 inclusive.] By Dr. Robert Dölger, Surgeon-Major, attached to Professor Bezold's University Aural Clinic. München: J. F. Lehmann. 1902. (Demy 8vo, pp. 138. M. [illegible])

[10] *Die Krankheiten des Ohres und deren Behandlung.* [The Diseases of the Ear and their Treatment.] By Dr. Arthur Hartmann, Berlin. Seventh Edition. Berlin: H. Kornfeld. 1902. (Demy 8vo, pp. 330, 68 illustrations. M. 7.50.)

secretion, sclerosis of the tympanic cavity," is somewhat amplified. A marked distinction is drawn between the hyperplastic and the sclerotic forms. The latter is considered, with Siebenmann, a rarefying osteitis of the capsule of the labyrinth. In its treatment the prolonged use of phosphorus is, on theoretical grounds, recommended. The author reports good results from the injection of adrenalin in respect of diminution of tinnitus. We may add that the German is exceptionally clear, and to those who wish to familiarize themselves with that language, while making themselves acquainted with the subject of diseases of the ear, we can recommend no better book for the purpose.

NOTES ON BOOKS.

Dr. Weber, Medical Director of the Auguste-Victoria Red Cross Hospital and Nursing Home of the Berlin Branch of the Women's Patriotic Society, has published a volume[1] giving a detailed and somewhat lengthy description of the institution and of the various considerations which must be taken into account in the founding, building, and working of similar institutions. It is a hospital for 175 patients, to which is attached a home for nursing sisters of the Red Cross, and accommodation for the training of voluntary helpers. It is situated at Weissensee, a north-eastern suburb of Berlin, and seems very complete and well designed for the purpose. The book is divided into three parts, which deal respectively with the founding of the institution, a description of the building itself, and the staff. All the desiderata for such an institution, with the reasons why they are required and the difficulties in the way of carrying them out, are discussed, so that one is wearied by the "might have been's" before coming to what actually was decided and acted upon. All these considerations and details may be interesting to those connected with this particular institution, and might be useful to those who may contemplate founding similar Red Cross hospitals, but the usefulness of the book would hardly have suffered if the text had been compressed into a-fourth or less of its present length. We suspect that the Miss Nithingall, the hospital reformer mentioned on page 41 (spelt elsewhere Nithingale), may be intended for Miss Florence Nightingale.

The second quarterly volume for 1903 of *Progressive Medicine*[2] contains sections on the surgery of the abdomen by Dr. W. B. Coley, including valuable references to advances in the surgery of hernia, diseases of the peritoneum, stomach and intestines, the liver and biliary passages, and the genito-urinary organs: on gynaecology, by Dr. John G. Clark; on the diseases of the blood and ductless glands, the haemorrhagic diseases, and the metabolic diseases, particularly diabetes and gout, by Dr. Alfred Stengel; and an ophthalmology, by Dr. Edward Jackson. In regard to the section on diseases of the blood, we feel free to say that we know nothing of the same scope published in this country, and of the work as a whole that it would form a splendid supplement to the standard library of practitioners of even the highest type.

The book which, under the modest title of *A Handbook Compiled for the Congress of the Royal Institute of Public Health*[3], was published last summer at Liverpool, is really an elaborate technical and historical description of all public institutions in Liverpool, as well as of most of its municipal enterprises. It is edited by Dr. E. W. Hope, but in its compilation he has had the advantage of the assistance of some twenty-seven persons, including Mr. Dale, Principal of the University and Professors Sherrington, Boyce, Paterson, and Herdman. Each contributor has dealt with some matter with which he is specially familiar, and between them they have dealt with some 82 institutions or subjects. The work is beautifully printed on thick paper, with broad margins, and its interest is enhanced by a very large number of excellent illustrations in the way of maps, plans, views and reproductions of photographs, beginning with a map of Liverpool in the year 1660, and ending with one in illustration of its trade connexions with the outside world in the year 1903.

Dr. Bentley's *Medical Notes and Hints on Egypt as a Winter Resort*[4] is concisely written, and yet contains most of the information regarding wintering in Egypt desired either by medical men thinking of sending patients there or by persons intending themselves to go there for health or pleasure. Amongst other matters, the main indications for the various Egyptian resorts are shortly given, and a second portion of the little book contains information concerning the mosques and objects of interest at Cairo, cab fares, donkey fares, postal rates, clubs, banks, etc.

The second volume of the 13th series of *International Clinics*[5] is unusually interesting and valuable. Among the more noteworthy of the papers is a group by American authors on the summer diarrhoeas of children; it includes articles on milk bacteria in relation to intestinal disorders, the causation, nature, and prevention of the summer diarrhoeas, on their symptomatology, and their dietetic treatment, and one on the treatment of the so-called cholera infantum. While it is stated that much of the milk consumed daily in cities contains more bacteria than even some sewage, yet the importance of the suckling of infants is not made so much of as it might and should have been. The section on treatment proper contains a useful and practical article on the rest treatment. The last article of the volume, on surgical intervention in paralysis of the ocular muscles, from the pen of Professor Edmund Landolt, of Paris, is worthy of special attention.

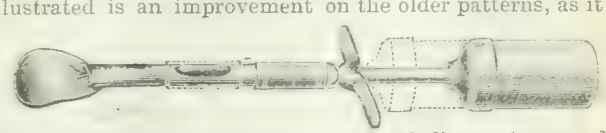
The Apothecaries' Hall Manual[6] is intended for the use of students preparing for the dispenser's certificate of that body. The authoress states in her preface that it is intended as a supplement to, rather than as a substitute for, the various special works on the subjects included within the scope of this examination. Used strictly in this way and merely as a means of crystallizing the information which the student has acquired by other means, it is a book which might be useful, since it is of convenient pocket size.

The Motorists' Diary,[7] compiled by Mr. Charles Heidsieck, of Rheims, is a pocket book in which the motorist is able to keep a record of his daily runs, and also contains information about motoring clubs, hotels, Acts of Parliament, and times for lighting up throughout the year. It is stated that the day-sheet which records the distances travelled, average speed per hour, condition of roads and weather, etc., has been revised and approved by leading motorists. The utility of the volume would probably not have been seriously diminished by the omission of the page containing "Hints on Champagne."

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MEDICAL AND SURGICAL APPLIANCES.

Improved Tongue Depressor and Throat Insufflator.—Dr. Alex. Duke (London, W.) considers that the instrument illustrated is an improvement on the older patterns, as it is



all of metal and has no rubber tubing or bellows. Any powder which may be preferred can be applied with the insufflator. The article has been neatly made by Messrs. Arnold and Sons, West Smithfield.

[1] *Das Augusta-Victoria-Kranken-und Schwester Haus van Rothen Kreuz des Zweigveirens Berlin des vaterländischen Frauen-Vereins.* Von Dr. Hermann Weber. Berlin: A. Hirschwald. 1903. (Demy 8vo. pp. 172. M. 4.60.)

[2] *Progressive Medicine*, a quarterly digest of advances, discoveries, and improvements in the medical and surgical sciences. Edited by Hobart Amory Hare, M.D., assisted by H. R. M. Landis, M.D. Vol. ii. London: Rebman, Limited. 1903. (Demy 8vo. pp. 437. 15s.)

[3] *The City of Liverpool, a Handbook Compiled for the Congress of the Royal Institute of Public Health, 1903.* Edited by E. W. Hope, M.D., D.Sc. Liverpool: Lee and Nightingale. (Demy quarto, pp. 330, fully illustrated.)

[4] *Medical Notes and Hints on Egypt as a Winter Resort*, with a short account of Helouan and its sulphur baths. By A. J. M. Bentley, M.D., etc. London: T. Cook and Sons. (Crown 8vo, pp. 43. Free.)

[5] *International Clinics.* Edited by A. O. J. Kelly, A.M., M.D., of Philadelphia. Vol. ii, Thirteenth Series, 1903. London: J. B. Lippincott Co. 1903. (Demy 8vo. pp. 320. 10s. 6d.)

[6] *The Apothecaries' Hall Manual.* By Mabel Thomson. London: Whittaker and Co. 1903. (Fcp. 8vo, pp. 244. 2s.)

[7] *The Motorist's Diary.* Compiled by Charles Heidsieck. London: C. C. Lewis. (Cr. 8vo, pp. 200. 3s. 6d.)

THE ORGANIZATION OF THE MEDICAL INSPECTION OF SCHOOLS IN BELGIUM AND OTHER CONTINENTAL COUNTRIES.

The proceedings of the Brussels Congress comprised the reading of two papers by Dr. Chauvin of Liége, and Dr. Mosny of Paris, and a subsequent discussion on this subject. From these sources and from a special report of Dr. Ensch, of Schaerbeek, the following particulars are taken. It will be convenient in the first instance to place on record the resolutions passed on this subject by the Brussels Congress:

The Congress, in view of the fact that the school has for its object the increase of the social value of the individual by the best cultivation of the physical, intellectual, and moral faculties of the child, considers that one ought to comprise under the term medical and hygienic inspection of schools whatever concerns the health of the scholars, not merely in the narrow sense of their protection against communicable diseases, but in the larger sense of their complete physiological culture and of the adaptation of their intellectual culture to the physical capacity of each.

The Congress therefore expresses the view that the medical and hygienic inspection of schools, by a competent person, comprises:

1. The surveillance of the salubrity of the school buildings;
2. The prophylaxis of transmissible diseases;
3. The periodic and frequent investigation of the normal functions of the body and of the regular growth of the physical organism and of the intellectual faculties of the child;
4. The rational culture of his physical organism;
5. The adaptation, in conjunction with the teacher, of intellectual culture to the individual physical capacity, and the sanitary instruction of the child.

In immediate application of this general view, the Congress, considering that medicine has shown the necessity of a special school régime for abnormal children, is of opinion that such children should receive special and separate instruction.

School Inspection in Belgium.

In the report[1] issued for members of the Brussels Congress it is stated that twenty-five years ago Brussels began a system of popular education, consisting of institutions logically superimposed from the kindergarten school to the primary school, followed by professional schools and schools of apprenticeship, the "universities of the people," as they have been called.

A pregnant sentence in this report states that "poverty is the most formidable enemy of the school," neutralizing a large share of the efforts at instruction; and stress is laid on the operations of a number of voluntary organizations having for their object the provision of food and clothing, and the sending of weakly children into the country or to the seaside. Thus in 1901-2 La Soupe Scolaire gave 266 745 meals (bread and soup) to needy children; 284 complete outfits and 4,423 articles of apparel were distributed in infant schools; and 2,030 complete outfits and 12,368 articles of apparel in the primary schools. These operations bring one into the debatable ground of parental responsibility. It is obvious that such help, unless most judiciously given, may have pernicious effects like those produced by the supplementing of the family incomes of labourers in the early part of the nineteenth century from Poor-law funds. The latter procedure greatly increased the amount of pauperism; the help given to poor children may similarly, unless most judiciously administered, favour the vicious habits of parents or discourage the operation of the forces working towards an increase of wages and an improved standard of comfort.

In Brussels.

Sixteen doctors have charge of the inspection of schools, each being instructed to visit a certain number of schools once in ten attendance sessions (*une fois par decade*). The Service d Hygiène controls the number of visits by means of the thermometrical school records, which the doctors have to sign each time they visit the classes. These thermometrical records are made six times daily by the school *personnel* at 8.30, 11, 2, 3.30, at 8, and at 9.30 in the evening. Each week these records are put together and sent by the headmaster of the school to the Service du Gaz and afterwards to the Service d'Hygiène.

Each month the headmaster sends a tabular statement, with observations on the hygiene of the school and any cases of illness among the pupils. This table is submitted to the school doctor, who suggests any remedies required.

Preventive Medication.—Sickly children receive each day a dose of cod-liver oil or of *poudre zootrophique* supplied by the Administration de la Bienfaisance. These medicines are distributed by the *concierges* of the school under the supervision of the school staff. Each child possesses a glass which is washed daily. Once a month the school doctor supervises the distribution.

Dental Hygiene.—A dental surgeon makes a weekly visit to all the schools, attending to those pupils who are pointed out to him by the staff or whom he independently examines. He states in a special table everything done by him, and transmits this table to the Service d'Hygiène. (This statement of methods of working is obviously very vague.)

Infectious Diseases.—Special instructions are issued as to these, but the system is evidently imperfect.

Lessons in Hygiene.—The school doctors give monthly lessons in hygiene in the higher classes of the primary schools, the pupils being required subsequently to write out these lessons. The subject to be taught is decided at the monthly reunion of the doctors by the medical chief of the Service d'Hygiène. Each lesson does not exceed ten minutes in length.

Illness of Staff.—The verification of the causes of absence of these from school is in the hands of the school doctors, who also regulate the duration of leave.

In most of the suburbs of Brussels a system similar to the above is in operation.

At Schaerbeek.

A special organization of medical inspection of schools has been inaugurated, of which a detailed account is given by the health officer, Dr. Ensch. This account gives particulars of school inspection in certain German cities, which have been utilized in later paragraphs of this article. In 1896 the communal administration of Schaerbeek ordered an inquiry into the sanitary conditions of its schools, and in 1902 the College instructed the school physician to report specially on the organization of school hygiene. It would appear that the attempts at school supervision preceded the creation of the Bureau d'Hygiène, a fact which must be borne in mind in considering the details of the special report from which we are quoting. With us the start is from the opposite point. Medical inspection of schools needs to be organized, but the public health department of each sanitary authority will be its central motive and controlling power. The following summary is given of the action taken:

1. The school doctor is charged with the duty of making a monthly inspection of schools, and of delivering certificates of illness to those in charge of each school.
2. The Bureau d'Hygiène receives information of cases of communicable disease among school children, and decides what action is to be taken. It also arranges for the carrying out of the instructions given as the result of the visits of the school doctor.
3. The school teachers can bring children suspected of illness to one of the doctors of the Service d'Hygiène at certain hours.
4. A school dispensary is to be created, where once a year the health of the children is tested.
5. This dispensary will be first established at a central address; but it is hoped that ultimately one will be established in each school.
6. Each day one class will be visited, and the observations made recorded on a special card.
7. This dispensary will be directed by the head of the Service d'Hygiène with a medical assistant.
8. A sum of Fr.1,200 is allowed for the medical assistant and of Fr.1,000 for the cost of starting the dispensary.
9. It is suggested that in conjunction with this dispensary shall be inaugurated a dispensary for nursing mothers, as well as the dispensary in connexion with the department of dental hygiene which is about to be organized.

From the above summary we gather that the action taken hitherto in Schaerbeek is limited by financial considerations, although procedure is laid down on lines containing the possibilities of great good.

In France

the principle of medical inspection of schools has been long acknowledged, though it remains up to the present time an unrecognized ideal. In a circular dated November 14th, 1879, the Minister of Education stated to the prefects that in every centre doctors should be engaged to visit the public schools, from the standpoint of the sanitation of the buildings and the health of the scholars. This timid essay at administration was incorporated in the law of October 30th, 1886. This and a subsequent decree in 1887 embodied no administrative organization, and they were both inoperative. Recently it was found that in 36 departments there was no medical inspection of schools, and that in only 8 departments was

[1] *Guide de l'Hygiéniste en Belgique.*

any payment made for medical inspection. In short, as Dr. Mosny puts it, "the medical inspection of schools, even when reduced to its narrow primitive rôle of a means for the prevention of the spread of infectious disease, does not exist in France."

In Germany

much more systematic measures have been adopted in certain towns. Thus at Breslau each child is made the subject of a special inquiry, the results of which are kept for future reference. Two sets of questions are asked respecting each child, the first filled up by the parent, the second by the medical inspector. Appended are the questions:

A.—*Questions for the Parents.*

1. Name of father.
2. Dwelling.
3. Date of birth.
4. From what diseases has the child already suffered, and at what age?
5. What have been the results of these?
6. Has the child been the victim of accidents leaving any durable result?
7. Does he hear well?
8. Is he near-sighted?
9. Does he present any anomalies?
10. At what age did he begin to speak?

From the point of view of the care of the child it is necessary that these questions should be exactly answered.

B.—*Form for the Medical Inspector.*

1. Bodily condition: head, vertebral column, chest, extremities.
2. Appearance of health and bodily force—good, medium, bad.
3. Constitutional anomalies.
4. Vision.
5. Hearing.
6. Teeth.
7. Naso-pharynx.
8. Voice.
9. Skin diseases.
10. Defects of development.
11. Nervous system.
12. Mental condition.

The above scheme is clearly very complete, and if carried out in its entirety must involve great expenditure of time and money. We should prefer a more elementary examination, and particularly the addition of a yearly record of the weight and height of each scholar.

Some Results of Medical Inspection of Schools.

In various cities the hearing of school children has been made the subject of systematic examination. Among the more recent of such inspections may be enumerated the following: In 1888 Lunin examined 280 children in St. Petersburg, of whom 14 per cent. presented considerable defects of hearing. In 1901 Ostmann examined 7,537 children at Kreise, and 28.4 per cent. showed considerable enfeeblement of hearing. In 1902 Cheadle examined a number of children in London of whom 43 per cent. showed defects; and Richter examined 700 children at Grosswartenburg, of whom 15 per cent. were defective.

The enormous variations in the above percentages almost certainly indicate variations in the methods adopted for testing hearing; and it is almost certain that nearly all the percentages overstate the facts, allowance not having been made for nervousness or dullness on the part of children not due to defective hearing. When full allowance is made for these considerations it is, however, manifest that a considerable proportion of scholars are under present conditions being submitted to teaching which is unsuited to their special needs, or are probably not being placed as close to the teacher as their condition requires.

One great cause of deafness in children is the presence of adenoid vegetations in the naso-pharynx. At Bingen Dr. Wilbert (*Deut. med. Woch.*, 1903) found that of 375 children examined 33 per cent. had adenoid vegetations, and that 27 per cent. of these suffered from defective hearing. The importance of being able to direct the attention of parents to these undetected sources of ill-health and defective development is very great, and this can be done without any interference with the province of the family doctor.

At Wiesbaden Dr. Ensch states that the annual report of the school inspections for 1895 gives the following results of the inspections made during the year: From 8 to 9 per cent. of the children had undetected hernias, 7·6 per cent. had spinal curvatures, 10 to 13 per cent. had defective vision. At Zurich the school doctor finds 19 per cent. of abnormal eyesights.

There is much to be said in favour of familiarizin parents with the necessity for medical inspection in schools, and the possibilities of thus detecting unrecognized disease, with a view to its early cure. Thus at Wiesbaden the necessity for some form of medical treatment has been recognized, and the parents have been advised accordingly in 25 per cent. of the pupils whom the doctor has examined. Presumably this percentage is obtained from a systematic examination of all school children, and not from an examination of suspected children; and the significance of such a statement is very great.

LITERARY NOTES.

It has been decided by the Council of the New Sydenham Society to devote almost the whole of its income during the next five years to the production of an *Atlas of Clinical Medicine, Surgery, and Pathology*, selected and arranged with the design of affording, in as complete a manner as possible, pictorial aids to diagnosis in all departments of practice. Of this work eight parts, completing the issue for 1901 and 1902, are now ready. The following subjects are in forward preparation: Ringworm and other forms of tinea; Raynaud's malady; Colles's fracture; radiographs of fractures and dislocations; injuries to epiphyses; morphoea and sclerodermia; drug eruptions; elephantoid hypertrophies; variola, vaccination, and vaccinia; tuberculous diseases of the skin. All communications respecting the literary part of the work, suggestions, offers of drawings, etc., should be addressed to the Honorary Secretary, Mr. Jonathan Hutchinson, at the Polyclinic, 22, Chenies Street, Gower Street, W.C. The chief issues for the next five years will be fasciculi of the *Atlas of Clinical Medicine and Surgery*, but should the funds permit a volume of translated monographs will from time to time be added.

In a recent number of the *Revue Clinique d'Andrologie et de Gynécologie*, Dr. P. Hamonic puts forward a claim to have succeeded in inoculating syphilis in a monkey in 1882. At that time he had arranged a kind of laboratory at the Lourcine (female venereal) Hospital, Paris, in which he studied the contagion of syphilis, and isolated the bacillus before Lustgarten. He obtained possession of a very large macaque monkey, which was appropriately named by the residents of the hospital "Fracastor." This animal he inoculated with syphilis, and he says there was absolute identity in the manifestations of the disease in the monkey and in man. The lesions quickly disappeared and the disease ran a mild course, as is seen in certain human subjects where the soil is unfavourable to the development of the disease. Dr. Hamonic concludes that syphilis is to some extent attenuated in the monkey. He adds that he did his best to prepare a favourable soil by allowing the animal to indulge without control his craving for alcohol. Dr. Hamonic refers to the many professional brethren who knew Fracastor, and were in the habit of fondling him and letting themselves be bitten by "that interesting animal, who was truly the first monkey duly convicted of syphilis." If these brethren allowed themselves to be bitten by Fracastor after the inoculation, it would be interesting to know whether the bites were followed by any results tending to prove the transmissibility of syphilis from the monkey to man.

In the *Bulletin* of the Johns Hopkins Hospital for November Dr. Thomas F. Harrington gives an account of Dr. Samuel Fuller of the *Mayflower*, the pioneer physician of America. Born in the county of Norfolk in 1580 he was, like Cardinal Wolsey, the son of a butcher. At Leyden he was a prominent member of the Puritan congregation, and he played an active and influential part in the preparations for fitting out the *Speedwell* and the *Mayflower* (1617-20). For more than twenty years prior to the emigration of the Pilgrims from Leyden the Puritan clergy were educated to the medical profession in anticipation of their pilgrimage which persecution at home was surely forcing upon them. Oxford, too, foreseeing the difficulties in store for the clergy, incorporated the study of physic in the course for the divinity student. A part of this education consisted in the study of the ancient medical authors, as Hippocrates, Galen, Breteus, Celsus, and others. Thus it was that many clergymen were eminent practitioners of medicine before they crossed the Atlantic, where necessity often forced the two duties into one. Fuller was not a clergyman who had studied medicine, but a regularly-educated physician, and it was in that capacity and not as a minister of religion that he went to America. In the list of the passengers on the *Mayflower* his occupation is given as physician. Before the arrival of

the *Mayflower* Dr. Wotton (1606), Dr. Russell (1607), and Dr. Bagnall (1608) had accompanied expeditions to Virginia. In 1610 Dr. Bohun went to America, and in 1611 he accompanied Lord Delaware to the West Indies. There seems to have been very little illness other than sea-sickness on board the *Mayflower* on its historic voyage. One of the seamen, an able bodied man much given to profanity, was stricken with a "grieveous disease of which he dyed in a desperate manner and was ye first yt was throwne overboard." Two weeks later, on the day before land was sighted Fuller's servant-assistant died. Fuller died in 1633. It is recorded by an early writer that "in his medical character and for his Christian virtues and unfeigned piety Dr. Fuller was held in the highest estimation and was resorted to as a father and wise counsellor during the perils of his day."

Dr. J. Johnston, Honorary Surgeon to the Bolton Infirmary, and author of *Musa Medica* and other poetical works, has kindly sent us a copy of a song sung at the annual dinner of the Bolton and District Medical and Medico-Ethical Society held on October 22nd. It is entitled "Dr. Smithson, G.P." It tells how

> When Dr. Smithson qualified, to Lockton straight came he,
> And settled in a corner house, with side-door surgery.

After the usual time of waiting patients began to seek counsel of him; but he gained from them more experience than money, for

> When his first account was sent, no small chagrin did he express
> When it promptly was returned to him inscribed, "Gone—no address!"

But he works on, doing his duty faithfully, and in time gets his reward:

> He got upon the infirmary staff, by dint of efforts hard.
> Despite the regulation strict that canvassing debarred.
> No sinecure he finds the post—it keeps him on the rack:
> For he knows the slightest lapsus will bring some one on his track.
>
> He's a Member of the Council, too, and one day hopes to be
> A Chairman of Committee and perhaps a real J.P.;
> That honour won, a higher still for him will then remain—
> To occupy the Mayoral chair, adorned with robe and chain.

In the November number of *Temple Bar* Mr. Sydney Denton writes on "Thomas Linacre, a mediaeval master of medicine." Linacre was a central figure among the apostles of the new learning, and virtually the founder of the Royal College of Physicians of London. He survives in history as an influence rather than as a living character. His name is of constant occurrence in the letters of Erasmus and other contemporaries, but Linacre has left no record of his methods as a physician. Fuller said of him that it was questionable "whether he was a better Latinist or Grecian, a better grammarian or physician, a better scholar or man for his moral deportment." Born at Canterbury in 1460, and educated at the public school within the monastery of Christchurch in his native city, where he had the good fortune to be a pupil of Selling, one of the very few Englishmen of that day who had studied Greek, Linacre proceeded to Oxford in 1480, entering most probably at Canterbury Hall. In 1484 he was elected a Fellow of All Souls. In 1485 he went to Italy with Selling on a diplomatic mission to the Pope. At Bologna they met Politian, one of the most distinguished scholars of the time, who was then tutor to the children of Lovenzodi Medici, one of whom became later Pope Leo X. Linacre was allowed to share their lessons. He also studied medicine at Bologna and afterwards at Padua. The thesis which he presented for the Doctor's degree was of exceptional brilliancy, and he was offered a professorship at Padua, which he refused. On returning to England he was admitted M.D. both at Oxford and at Cambridge. He settled at Oxford, where he had among his pupils Thomas More, afterwards Lord Chancellor. In 1501 he was chosen as tutor and medical mentor of Prince Arthur. Later he became physician to Henry VIII, and he had among his private patients the Primate, William Warham, Cardinal Wolsey, and many others of the highest position. When his way of life was declined into the vale of years he took holy orders and held several benefices. Linacre's medical writings consist mainly of Latin translations of the works of Galen, which were highly esteemed by scholars. He founded two medical lectureships at Oxford and one at Cambridge. His greatest and most enduring work is, however, the Royal College of Physicians. Linacre died in 1524.

BRITISH MEDICAL BENEVOLENT FUND.

The following is the second list of donations received in response to Sir William Broadbent's appeal:—

	£ s. d.		£ s. d.
Mr. Patmore Sheehy ...	10 10 0	Dr. S. H. Habershon (annually)	2 2 0
Dr. C. A. Lee	5 5 0		
Dr. F. Parsons	5 0 0	Mr. J. King Lewis	1 1 0
Mr. Watson Eager	3 3 0	Mr. E. B. Ffennell	1 0 0
Mr. E. B. Payne	1 1 0	Dr. J. H. Blight	1 0 0

The Treasurer is grateful for the response already given to Sir William Broadbent's appeal. Unfortunately, the amount of money received still falls far short of the requirements of the Fund at the present time, and unless the resources of the Fund are largely increased, the pressing claims which winter always brings will be very inadequately provided for.

Further subscriptions and donations are urgently needed, and may be sent to the Treasurer, Dr. West, 15, Wimpole Street, W.

PREVENTION OF CONSUMPTION.

Paris Congress of Tuberculosis, 1904.

A preliminary meeting of the General Committee to make arrangements for the Paris Congress of Tuberculosis to be held next year took place at 13, Hanover Square on November 9th. Sir William Broadbent was unanimously elected Chairman of the General Committee, and Dr. J. J. Perkins, Honorary Secretary. An Executive Committee was also formed consisting of twelve persons. It was decided to invite members of the staffs of the various chest hospitals to join the General Committee, as well as several influential laymen who are interested in the subject of consumption. It was also resolved that the medical officers of health of the counties as well as of the chief towns should be invited.

National Association for the Prevention of Consumption.

At a meeting of the Council of this Association held on November 9th, the Secretary read a *précis* of the replies from the medical officers of health of the metropolitan boroughs with regard to spitting in public-houses. It was resolved that the matter should be postponed, as the whole subject was shortly to be considered by the Incorporated Society of Medical Officers of Health. The Secretary reported that Branches of the Association had been formed at University College, Aberystwyth, and at Adelaide, South Australia.

CONTRACT MEDICAL PRACTICE.

South Wales Collieries.

Members of the Association who may be approached with regard to accepting appointments to collieries in South Wales are recommended, before entering into any agreement, to communicate with the Secretary of the Division of the Association in which the colliery may be situated. The names and addresses of Secretaries of Divisions in South Wales are as follows: Cardiff Division—Dr. E. J. Maclean, 12, Park Street. Swansea. Monmouth Division—Dr. W. J. Greer, 2, Chepstow Road, Newport. North Glamorgan and Brecknock Division—Dr. E. N. Davies, Pen-y-graig, Rhondda Valley. Swansea Division—Dr. M. A. Hanson, 10, Cleveland Terrace, Walter Road, Swansea. South-West Wales Division—Dr. S. G. Glanville Morris, Plas Cwmtwrch, Nantgaredig, Carmarthenshire.

The fifth annual dinner of the Medical Graduates' College and Polyclinic will be held at the Trocadero Restaurant, Piccadilly Circus, on Thursday, December 3rd, when Mr. James Cantlie will take the chair. Any gentlemen wishing to be present should communicate with Mr. Hayward Pinch at the College, 22, Chenies Street, W.C.

The Medico-Psychological Association.—An extraordinary general meeting of the Medico-Psychological Association of Great Britain and Ireland will be held at 11, Chandos Street, Cavendish Square, London, W., under the presidency of Dr. Ernest W. White, on Wednesday next, at 3 p.m. Immediately afterwards an ordinary meeting will be held, when a lantern demonstration on fragilitas ossium in the insane will be given by Dr. W. Maule Smith, and papers will be read by Dr. Nathan Raw and Dr. R. S. Stewart. Members wishing to dine at 7 p.m. at the Café Monico should communicate with Dr. Outterson Wood, 40, Margaret Street, Cavendish Square, W.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1903.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, NOVEMBER 14TH, 1903.

THE APPROACHING MEETING OF THE GENERAL MEDICAL COUNCIL.

The minutes of the last two meetings of the General Medical Council contain sundry items of unfinished business, but several of them do not appear to be likely to be so far advanced as to be dealt with at the approaching session. Thus in regard to the differences which have arisen between the Council and the two English Royal Colleges on the subject of the first year of medical education it seems unlikely that any final decision can be reached. It may be remembered that Sir Victor Horsley at the last session moved a resolution to the effect that the Council should represent to the Privy Council that the courses of study and examination to be gone through in order to obtain qualifications for registration from the Examining Board in England of the Royal Colleges of Physicians of London and Surgeons of England, were not such as to secure the possession by persons obtaining such qualification of the requisite knowledge and skill for the efficient practice of their profession. This motion was eventually withdrawn in favour of resolutions moved by Professor Windle requesting the President to forward to the Royal Colleges copies of the reports of the Education and Examination Committees, together with a resolution previously carried on the motion of Sir Victor Horsley to the effect that the courses of study in chemistry, physics, and biology in many of the teaching institutions recognized by the Examining Board in England, but not approved by the General Medical Council, are in the opinion of that Council insufficient; to call the serious attention of the Royal Colleges to the unsatisfactory state of matters in regard to the course of study and examination in these subjects; to urge that in the interests of medical education immediate steps should be taken to remedy the defects; and authorizing the President to appoint a Committee, consisting of two members from each of the three Branch Councils, to join with him in conferring with representatives of the Royal Colleges should it appear that a conference on the question raised is desired. It will be seen from reports published in the British Medical Journal that the Council of the Royal College of Surgeons at its meeting on October 15th appointed a committee to confer with representatives of the Royal College of Physicians relative to the proposed conference with representatives of the General Medical Council. A corresponding committee, it will have been seen, was appointed by the Royal College of Physicians at the comitia on October 29th. As this joint committee of the two Colleges is appointed only, as we understand, to consider the advisability of acceding to the request of the General Medical Council for a conference it appears clear that a final report on the subject is not likely to be before the General Medical Council at the session which commences this month.

In connexion with these subjects—chemistry, physics, and biology—of the first year it is interesting to note that Sir William Ramsay, in his address at Bristol, a report of which was published in our last issue, stated that he would leave them in their present position. Though a chemist of the first rank and a successful investigator of the more abstruse problems of chemistry and physics, he does not regard the training, elementary though, from the force of circumstances, it must necessarily be, as of small account. Nor does he view with approval the suggestion that the teaching of these subjects should be relegated to school life, for the reason that he does not consider that a boy of 14 has a mind sufficiently ripe to grasp the principles involved. But his objection seems to be weakened by the specification of the age, for the relegation of these studies to school life would imply a later entry upon medical study; so that, in fact, if only a year is to be devoted to it, it would not involve the study being taken at any earlier age than is the case under the present system.

A letter from Dr. Lombe Atthill, which we publish at page 1308, takes the opposite view, and advocates that the teaching of these subjects at schools should be encouraged. Dr. Atthill might have emphasized his point by reference to recent returns of the results of the examinations at the Conjoint Board in England, from which it appears that the candidates who had received their education in these subjects elsewhere do not compare badly with those taught at medical schools. He offers the suggestion that in addition to the school teaching and the passing of an examination, a special course of chemistry, with particular reference to its medical applications, might subsequently be attended with advantage and without difficulty.

The consideration of the adverse criticisms by the inspector of the examinations of the Universities of Oxford and of London was also postponed with the object of allowing time for a second inspection to be made, but this can hardly have been carried out as yet.

With regard to the finances of the Council, it may be presumed that the Executive Committee will make the necessary alterations in the standing orders which will give effect to the measures of economy adopted at the May session; and it is possible that the President may be able to give some information as to the results of his application for a grant from public funds in aid particularly of the expenses incurred owing to the increased amount of penal business.

It may be presumed that an effort will be made to push forward the Disciplinary Bill which for so long has failed to get a hearing from Parliament, and we would suggest that the new Lord President of the Council might possibly be induced to take a more active interest in this and similar medical matters than his predecessor. The Pharmacy Bill may require some watching, and we hope that something may be heard of legislation with regard to medical companies.

But, unless the penal cases to be heard should prove numerous and important, a point on which we have no information, the session seems likely to be short and to present less of interest than is usual; still, in the absence of a programme published in advance, this is merely conjecture.

THE ORGANIZATION OF THE MEDICAL INSPECTION OF SCHOOLS.

On another page is given a summary of action taken by sanitary authorities on the Continent in the organization of a system of medical inspection of schools. It is clear from this summary that in some countries like France it takes the form of regulations which are not enforced, of permissive powers which are not used; that in Belgium there are the beginnings of good work; and that in some German cities excellent work of a detailed kind is being done.

In estimating the value of this work and applying the lessons of it to school hygiene in England, it is necessary to remember that in this country the problem is approached from a different standpoint. In France and Belgium general sanitary administration is in a condition which may without undue disparagement be described as almost embryonic. In England, on the other hand, general sanitary administration is elaborate and complex, and in a large proportion of its sanitary districts is efficiently carried out. Hence, although we have in very few towns had special medical inspectors of schools, these schools have not been free from considerable medical and sanitary inspection. The medical officer of health alone, or acting along with two members of his local authority, has extensive powers of exclusion of individual scholars from attendance or of closing entire schools; and he can initiate steps for the removal of nuisances. The Board of Education similarly has ample powers in securing sanitary structural conditions of schools and in preventing overcrowding, though these powers have not been enforced as far as was desirable.

It is probable, therefore, that although in most towns in this country the sanitary control and medical supervision of schools form merely one department of public health administration, this is on the whole more efficiently carried out than in Continental schools, in which such supervision has been inaugurated as special work. It certainly is more efficient so far as the control of infectious diseases is concerned. It is less efficient than the control exercised in certain German schools over such matters of personal hygiene as eyesight, adenoids, deafness, and so on. We must not omit to note in passing the excellent work done by Dr. Kerr as medical officer to the Bradford School Board, and the similar work in relation to the special problems of school hygiene which is now being done by him and his medical assistants under the London School Board.

This work is in fact one of the best instances that could be adduced of the further possibilities of valuable medical work in school hygiene. Each scholar represents a certain social value, capable of being increased by attention to his physical, intellectual, and moral culture. This value will be diminished or lost if, through neglect of early treatment of disease or of hygienic precautions the scholar suffers in health. Hence medical inspection of scholars as well as of schools is imperatively demanded in the interest of the community. It is this personal aspect of school hygiene which, except in a comparatively small number of instances, has been neglected in this country.

A very wide definition of medical inspection is demanded by the circumstances of school life. The public has happily become familiarized with this view by the extensive character of the duties entrusted to the medical officer of health; and in school hygiene similarly it is desirable that medical inspectors should be appointed, who would have a final control not only over details of school ventilation, floor space, cleansing of rooms, and arrangements of desks, etc., which shall not be capable of injuring the children; but should also have a final voice in the programme of physical exercises; and above all should conduct periodical examination of each scholar, and give class instruction to the older scholars in the laws of health These periodical examinations of each child should, if possible, be made at least once a year, a dossier being always kept for each child, so that progress may be noted as to weight, height, eyesight, hearing, etc. Such a record would be of inestimable value, and would speedily lead to further investigation in the case of those children who were being neglected in their homes.

There is little need in theory to urge the importance of teaching the laws of health in our elementary schools. Every one admits its advisability and yet year after year it is in the vast majority of instances excluded from the curriculum. Until hygiene is made a compulsory subject in all schools there is little likelihood of its being generally taught; and until the teachers are taught to teach it, medical men will be needed for this work.

It is obvious that when medical inspectors are appointed they must, if efficiency is to be secured and overlapping to be avoided, act in collaboration with the medical officer of health of each borough or county. The difficulty of securing this collaboration is minimized by the fact that the local sanitary authority now forms a large portion, generally a predominant portion, of the new local education authority. In many smaller boroughs the medical officer of health will doubtless be also the medical officer of the Educational Committee. In other districts the closer the relationship between the two, the more efficient will be the administration which will be secured. In large counties the county medical officer of health will doubtless exercise general supervision over the general sanitary condition of schools in the county, and frame regulations affecting the health of the scholars. In matters of detailed supervision, implying frequent visits, the district medical officer of health will in most instances be the local medical officer to the educational authority.

It is to be hoped that educational authorities throughout the country will commence to organize the work of medical inspection of their schools and scholars, and thus ensure that their important work is carried on under the best possible conditions and without any risk of injury to the health of the scholars.

THE SENSIBILITY OF THE PERITONEUM AND ABDOMINAL ORGANS.

Professor Lennander of Upsala, in a work[1] translated by Mr. A. E. Barker, has made an extremely important contribution to the subject of the sensibility of the peritoneum and of the organs within the abdominal cavity. The observations upon which the work is founded were made during operations carried out wholly or in part under local anaesthesia. During the operations one assistant devoted himself solely to observing the condition of the patient and the extent of his suffering during each separate manipulation. The results are tabulated in a manner which will be understood from the following extract:

Skin incision	No pain.
Ligature of vessels in skin ...	Pain.
Forceps on a vessel and nerve ...	Severe pain.
Puncture of a distended injected bowel ...	No pain.

[1] Lennander, *The Sensibility of the Abdomen*. Translated by A. E. Barker, F.R.C.S. London: Bale, Sons, and Danielsson, Limited. 1903. (Demy 8vo, pp. 76. 3s.)

The observations were considered more reliable during the earlier stages of the operation. For it was found that when patients were operated upon under local anaesthesia their statements could only be relied upon for a short time, varying with the individual. Sooner or later, and in some cases very soon, they became impatient and fatigued, and were unable to say what it was which was producing pain, and they complained of pain during manipulations which, all experience goes to show, are not productive of pain. This condition Lennander calls "pain tetanus." He considers it an indication to resort at once to general anaesthesia, unless the operation is to end in a minute or two.

The experience of various operators does not seem to coincide. Schleich considers the parietal peritoneum to be very sensitive, and points out that it has to be infiltrated in exactly the same manner as the skin before it is cut. He considers that the ovaries, the tubes, the uterus, the gall bladder, the stomach and the sigmoid are possessed of sensation. Bloch states that neither the visceral nor the parietal peritoneum possess any feeling when healthy. Diseased peritoneum on the other hand, especially when acutely inflamed, is very sensitive. Dragging on the peritoneum, he points out, produces severe pain. Bloch quotes Bichat as saying that he "has seen dogs devouring their own intestines and tearing their own peritoneum, when these had prolapsed through an abdominal incision." Körte writes: "While the healthy serosa is hardly sensitive, as may be seen where local anaesthesia is employed, any handling of the inflamed peritoneum is excessively painful, and is also the seat of spontaneous pain." Harvey Cushing, on the other hand, in suturing a perforation of the intestine in typhoid fever, and in infolding two inflamed Peyer's patches, found that the diseased bowel was insensible to manipulation. At the end of the eighteenth century Bichat showed that electrical, chemical, and mechanical irritation of the organs supplied by the sympathetic did not produce pain, and Majendie found that pain could not be provoked in any part of the sympathetic.

Professor Lennander sums up his conclusions as follows: The parietal peritoneum is extremely sensitive to all operative manipulation. On the other hand, the intestinal tract, the mesenteries, the stomach, the anterior border of the liver and the gall bladder, the great omentum, the serous covering of the bladder, as well as the parenchyma of the kidneys, are wholly insensitive to operation, even with the cautery. In regard to the parietal peritoneum he has not been able to obtain evidence as to its special sensitiveness to touch, heat, or cold, but he inclines to the conclusion that it is only sensitive to pain.

Lennander claims, rightly, that he is the first who has endeavoured to show that all pains felt within the abdomen during operations or in disease are to be referred to parts which are innervated by the intercostal, lumbar, and sacral nerves—that is, to the diaphragm and abdominal walls, as well as to those organs of which we know with certainty that they are innervated by the nerves in question or are in near relation to them. These are the capsule of the kidney, the ureters, the pelvis of the kidney, the duodenum, the retroperitoneal portion of the ductus choledochus, etc.

The whole subject is full of interest, and it is to be expected that the attention called by this little book to the importance of further investigations will speedily yield a wealth of observations. But to Professor Lennander will always belong the credit due to a pioneer for work of conspicuous ability, careful observation, and sound judgement.

FORMAL INAUGURATION OF THE UNIVERSITY OF LIVERPOOL.

The University of Liverpool was formally inaugurated on November 7th by a ceremony in St. George's Hall, which was very largely attended, with the dignity and impressiveness befitting the importance of the occasion. The Chancellor of the University received formally from the Lord Mayor the charter of incorporation. Although no members of the medical profession spoke on the occasion, we cannot forget, and it is well that the members of the University and the public of Liverpool should not forget, that it was the Medical School of the Royal Infirmary which formed the nucleus around which the College, now expanded into a University, grew; that it was the inability of Liverpool to supply the candidates for the London M.B. degree with the necessary instruction in experimental physics which made the provision of higher education necessary if the medical school was to continue to exist; that it was the teachers in the old school of medicine who first moved in the matter, and that at the memorable town's meeting referred to by Sir Oliver Lodge, it was the lecturers in the medical school who took the chief part in advocating the claims of higher education and proclaiming the need which existed of establishing a university college. During the quarter of a century that the College has existed, the Medical Faculty has always taken a prominent position, and may safely be pronounced to have established a world-wide reputation. We have every reason to hope that the reputation enjoyed by University College as a medical school will be transferred to the University of Liverpool, and we heartily congratulate the lecturers of the old medical school—most of whom, including Sir William Banks and Dr. Caton, are, happily, still with us—on the splendid development of the scheme they started a quarter of a century ago.

THE GERMAN EMPEROR.

The announcement that the German Emperor has had a growth removed from his larynx has naturally caused a painful sensation, not only in Germany but throughout the civilized world. From the official statements published elsewhere it appears that on November 8th a growth, described by one of the foremost of living authorities as benignant, was removed from the left vocal cord. The operator, Professor Moritz Schmidt, of Frankfort-on-the-Main, is one of the fathers of laryngology, and has long enjoyed the confidence of the Imperial family of Germany. The operation, though in itself trivial, is one that needs special skill for its successful performance. The clinical details given are too meagre to enable us to express a positive opinion as to the nature of the growth, but the report of the microscopic examination seems fully to warrant the belief that the little tumour was of an innocent character. It is particularly important to note that there was no appearance of penetration of the epithelium into the deeper layers. As far, therefore, as can be judged from the facts that have been made public, there seems to be every ground for hope that the august patient will make a complete recovery, and there is nothing in the microscopic characters of the growth to cause any fear of recurrence. It is, of course, inevitable that the case should recall that of the Emperor Frederick, and after that historic example of the limitations of microscopic diagnosis it would be imprudent to accept the histological appearances as conclusive, but it will be noted that Professor Orth, whose judicial temper of mind gives special importance to his utterances, speaks with no uncertain sound as to the significance to be attached to the structural characters of the growth. This may safely be taken as a proof that, as far as the present state of knowledge justifies a positive judgement, the local affection from which the Emperor has been relieved is unlikely to have any serious consequences. The condition is one which laryngologists meet with every day among persons who have to use the voice largely either in speaking or in singing, and they deal with it with perfect success.

We see no reason whatever to fear that the slight operation which has been performed on the Kaiser will not be followed by a complete and permanent cure.

BIRTHDAY HONOURS.

Among those upon whom the King has conferred honours in connexion with his birthday is Dr. Alan Reeve Manby, of East Rudham, Norfolk, Surgeon-Apothecary to the King's Household at Sandringham and to His Royal Highness the Prince of Wales. Sir Alan Manby accompanied the Prince and Princess of Wales during their Colonial tour in 1900. He received his medical education at Guy's Hospital, where he was obstetric resident officer. Captain T. H. M. Clarke, M.B., R.A.M.C., D.S.O., who has been nominated a Companion of the Order of St. Michael and St. George for services in Crete, is a graduate of the University of Dublin, and entered the Army Medical Service in 1897. In the following year he served in the occupation of Crete, being present at the affair of September 6th, when he was slightly wounded. Dr. Robert Bell, F.R.S., who has been appointed a Companion of the Imperial Service Order, is a Doctor in Medicine and Science of McGill University, Montreal, and in Science of Cambridge University. He is the Director of the Geological Survey of Canada, having succeeded to that office in 1901 on the death of Dr. G. M. Dawson. He commenced his career at the age of 15, when, in the year 1857, he joined the geological survey of Canada. He has taken part in surveys of nearly every part of the Dominion. Dr. Bell acted not only as geologist and naturalist, but also as medical officer of the *Neptune* and *Alert* expeditions sent out by the Canadian Government to Hudson's Strait and Bay. In spite of forty-four years of journeyings through unknown districts, and of the many hardships which he necessarily encountered, Dr. Bell has maintained himself in perfect health, which he attributes to the fact that he has always taken care of himself when camping out, endeavouring to have a dry, comfortable bed of brush, or some substitute, every night, trying to be as short a time as possible in wet clothes, and missing as few meals as he could. As he has been in the habit of living off the country and of "going light," he never carried any camp equipment; his food was of the simplest, being the same as that of the voyageur, with fish and game when it was to be had, and with no alcoholic drinks.

THE DUTY OF THE STATE IN THE PREVENTION OF MALARIA.

Major Ronald Ross gave an address at the Royal Colonial Institute, on November 10th, on the subject of malarial fevers. He showed that it was not easy even for those who were close students of the vital statistics of India and of British and other colonies to get a clear conception of the immense prevalence of malaria in tropical and subtropical countries, since such returns took no account of the immense losses through invaliding nor of those cases in which death occurred through intercurrent disease in patients whose strength was reduced by chronic malaria. The most complete returns available were those of the Sanitary Commissioner for India, and, though that country as a whole was by no means intensely malarious, a mortality exceeding 13,000 deaths every day was ascribed to malaria in the return for the year 1900. Apart from statistics a ready means of assessing the prevalence of malaria in any given place was to examine its child population. In over half of the children under five years of age in many localities of Africa the malarial parasite could be discovered, and it was probable that most of the infantile mortality in Africa was due to this cause. It was especially in the richest and most fertile tracts of a country that the disease was liable to be prevalent. Malaria was the special enemy of the pioneer, the traveller, the planter, the engineer, and the soldier, that is to say, of all those whose labours were absolutely essential to the development of any colony. The question therefore of how to contend against the scourge was one of the greatest economic importance to the Empire. Of the various prophylactic measures which could be adopted by individuals, mosquito nets during sleep, punkahs, quinine, and wire-gauze screens to windows and doors, the first was the most commonly employed, and perhaps the most generally effective. Quinine was not a true prophylactic because it did not exclude the parasite from the body, but merely killed it after entry; its use was best confined to those exposed to special danger, since, to be effective, it must be taken in large doses, which were apt to upset digestion and produce other undesirable effects. Wire screens were very useful, and should be used in all hospitals and similar buildings in the tropics. They were, unfortunately, too expensive for all Europeans to introduce themselves in houses of which they were only temporary occupants, but their provision should now be expected in all better-class houses built for hire. Segregation of natives was another measure of great importance, and one which it was sometimes within the power of individuals to secure for themselves. It was well known that mosquitos acquired infection principally from native children, and, consequently, the further Europeans lived from such source of contagion the healthier they were likely to remain. It was futile, however, for the State to depend upon the adoption of precautions by individuals. The vast bulk of the people would never believe in the principles of personal hygiene, however strongly they were urged upon them; and the majority even of white people in Africa probably still disregarded the mosquito theory of malaria and all the precautions which it entailed. State measures must be undertaken which would protect people in spite of themselves. Of the practicability and utility of such measures there could no longer be any question, for the experimental stage of the question had been completed. Drainage and other allied measures suggested by recent discoveries had reduced the amount of malaria in Havana in one season by 80 per cent., in addition to practically extinguishing another mosquito-borne disease, yellow fever. In Lagos, a place built on low swampy ground in the midst of dense forests, the Governor, Sir William MacGregor, reported that malaria had lost its terrors. In Hong Kong, Klang in the Malay Peninsula, and many other places the adoption of similar measures had been followed by equally encouraging results, while from Ismailia Major Penton had supplied figures which showed a reduction of malaria to the extent of 87 per cent. The measures necessary for subduing malaria no doubt gave a good deal of trouble and increased local expenditure, but the time had passed when expenditure upon sanitation should be allowed to remain the Cinderella of local budgets. The sanitation of every colony should be centralized. A medical officer of health should be appointed in every large town and district, and his work supervised by a Commissioner; the public also should be put into a position, by the publication of frequent reports and statistics, to criticize what was being done. As an alternative to the appointment of permanent sanitary commissioners Mr. Chamberlain had suggested that the learned societies should be invited to send out commissions periodically to report upon the sanitary affairs of specified Crown Colonies. Such commissions, being independent of Government, would be able to give entirely unprejudiced opinions. The suggestion was of value, but in any case the agitation with regard to malaria should not cease until it was quite certain that England was thoroughly alive to its responsibility in the matter and appreciated the extent to which its interests were involved. A discussion followed in which Sir Patrick Manson, Sir F. Swetenham, Sir A. Jones, and others took part.

THE PROPHYLAXIS OF ANKYLOSTOMIASIS.

The recent outbreak of ankylostomiasis amongst miners in a Cornwall mine has drawn attention to the fact that this disease may occur in England, and also that having appeared in one mine it may be spread and contaminate others, the subject was discussed at the recent conference of the Miners' Federation during its session at Glasgow, and Dr. Court gave a lecture in which he pointed out the

dangers of its general introduction. In thanking the lecturer, Mr. B. Pickard, M.P., suggested that the Government should deal with the matter by having foreign miners carefully examined for signs of the disease before they are allowed to work in mines in Great Britain. The Home Secretary, as we mentioned a few weeks ago, has promised to summon a conference of representatives of mine owners and miners to discuss the subject. Mr. Pickard's suggestion is a good one, so far as it goes, for it is easy to determine whether or not a person is suffering from this complaint. Tropical experience of ankylostomiasis has taught us that when a soil once becomes infected it is difficult to rid it of those pests, and much more will this be the case when that soil happens to be in a warm, damp mine. It is evident, therefore, that in the case of mines in Great Britain, prevention is better than cure, and will moreover cost infinitely less. According to Dr. Court, the first and only outbreak of the disease so far has been at the Dolcoath mine, and we may presuppose that the other mines throughout the country are at present free from infection. The simplest procedure to adopt to preserve this condition is to subject the stools of the miners to a microscopical examination to see if they have ankylostomes or not, and further to make a similar examination in the case of any foreigners, especially if coming from an infected area. If foreign workers are found to be suffering from the disease they should be rejected. Popular lectures on the subject in districts where the disease exists would be useful, and ought to illustrate the danger of eating food with unwashed hands after working in the earth. As regards the mine itself, a proper system of latrines should be used, the excreta being treated with 10 per cent. solution of crude sulphuric acid or solutions of mercury perchloride. Inspectors should see personally that these latrines are used, and the mine not fouled at other places. Such measures should diminish the risk of infection being introduced, a risk which undoubtedly exists. This risk is well exemplified by the case recorded in our columns last July by Professor Ralph Stockman, of Glasgow. The patient in that instance had probably contracted his disease in India when serving as a soldier; after his discharge from the army he returned to his former employment as a miner. That man was certainly in a condition to distribute the infection through the mine, and no precautions appear to have been taken in that instance to prevent such distribution.

THE PRESERVATION OF HEALTH IN WEST AFRICA.

The medical report by Dr. Andreas Nell, of the Bibiani Gold Fields, Limited, for the seven months ending December 31st, 1902, is an interesting indication of the importance attached by practical commercial men to the necessity of utilizing new knowledge for the prevention of malarial fevers. The report shows that the health of the individuals working on these gold fields was satisfactory. Malaria, apparently, was not very prevalent, and the loss of time consequent on the attacks was small. In the statistics of the number of cases of illness the terms "remittent malarial fever" and "bilious remittent malaria" are used. It is now known that those forms of fever are due to the malignant malarial parasite, and it would be better and simpler to class them as malignant malaria. In the same way intermittent fevers, if associated with benign parasites, are better classified as benign, tertian, or quartan respectively. An interesting account is given of the treatment of the swamp which existed near the camp; in addition to the swamp proper there were a number of stagnant pools left by native gold extractors. The sinuous stream which ran through this place was in fact merely a series of links between the pools. At first an attempt was made to fill the pools with kitchen and camp rubbish and with earth from adjacent mounds; but as this proved to be a slow process it was resolved to dig a straight ditch through the centre of the swamp. The result of this was satisfactory; the swamp began to dry and the water in the pools fell. In addition war was waged against broken bottles and empty tin cans, which might afford breeding places for mosquitos, and the water of the milldam was treated with a surface splashing with a strong solution of potassium permanganate. Dr. Nell sums up the general effect of his report by stating that he has aimed at emphasizing the fact that health in West Africa depends upon good food, water, and dwellings, on temperance and other good personal habits, and on cleanly domestic arrangements, while it is the duty of those in authority to give careful attention to the drainage of swamps and the destruction of the breeding places of mosquitos. Dr. Nell also points out that the traditions of the colony regarding the use of alcohol should be persistently disregarded by newcomers, who ought to receive accurate information as to the precautions they should take against the ill-effects of the climate.

EPIDEMICS RESEMBLING YELLOW FEVER.

Lieutenant James Carroll, Assistant-Surgeon in the United States Army, has published in the *Journal of the Association of Military Surgeons*, a paper on yellow fever, in which he deals with the history, cause, and mode of transmission of the disease, and with the occurrence of similar types of fatal fevers in places where yellow fever is not known to have existed. He thinks that many of the old obscure epidemics which used to be known by the names of putrid or sanguineo-putrid fevers, in London and elsewhere, may really have been yellow fever. More interesting than those old epidemics are the more recent outbreaks in India, where the symptoms certainly resembled yellow fever very closely. According to Hillary, whom he quotes, the French used to have yellow fever in Siam, but called it "*La maladie de Siam.*" Many other histories of peculiar epidemics in the tropics are on record. A remarkable instance was, for example, related by Davidson among marines landed on Edam Island in the Batavian roads about 100 years ago. Out of seventy-six men who landed all were taken ill and sixty-six died with symptoms closely simulating yellow fever. It is quite possible that some of those epidemics were really yellow fever, but the absence of microscopical records renders it difficult to make certain.

SLEEPING SICKNESS.

Lieutenant-Colonel Bruce, R.A.M.C., F.R.S., who returned from Uganda some weeks ago, has, it is stated, established by experiments conducted in conjunction with Dr. Nabarro and Captain Grieg, I.M.S., two important points. The first is that monkeys inoculated with the cerebro-spinal fluid of patients suffering from sleeping sickness, or with blood from natives not yet showing the symptoms of the disease, but containing a similar parasite, subsequently present all the symptoms of the disease; the second is that the disease is limited to districts of South Africa within which the particular tsetse fly, *Glossina palpalis*, occurs, and that where this fly does not occur sleeping sickness is absent. The evidence, therefore, to connect sleeping sickness with the presence of trypanosomes in the cerebro-spinal fluid is now apparently very strong.

SPOTTED FEVER IN THE ROCKY MOUNTAINS.

Mr. John F. Anderson, of the United States Public Health and Marine Hospital Service, has been investigating this disease,[1] and arrives at the conclusion that the infection is conveyed by tick bites. Shepherds, miners, prospectors, lumbermen, and ranchmen are the persons most subject to it, and in every case it is found that there is a history of tick bites about a week previous to the onset of the fever. The fever is characterized by an eruption which appears usually on the third day, and is first seen the wrists and ankles, then on the arms, legs, forehead, back, and chest, and to a slight extent on the abdomen. The spots are macular and disappear on pressure for the first four or five days; afterwards they fail to disappear on pressure and are petechial in character. The disease appears to be of a

[1] *Hygienic Laboratory Bulletin*, No. 14, July, 1903.

very serious nature. Of 121 cases recorded in or near the Bitter Root Valley, 84 died, giving a case mortality of about 70 per cent. Death usually occurs between the sixth and the twelfth days. The disease is thought to be due to a parasite which makes its way into the red blood corpuscles.

MATERNITY CASES IN GENERAL HOSPITALS.

IN the year 1885, having been impressed by the evidence of the terrible mortality entailed upon mothers and infants by the barbarous system of midwifery practised among the Burmese, Sir Charles Bernard, then Chief Commissioner of Burmah, called a meeting at Government House to consider the matter. In the result a lying-in hospital and training home for Burmese midwives was opened in April, 1887, in a rented building under the control of the Burmah Branch of the Countess of Dufferin's Fund. Subsequently the Branch collected enough money for the erection of a new hospital, which had become necessary as the number of patients and pupils had increased. On the completion of the new hospital in 1899 Sir Frederick Fryer, Lieutenant-Governor of Burmah, induced or compelled the Branch to make changes in the management and personnel of the institution, contrary, it is stated, to the wishes of the Committee. More recently the Maternity Hospital has been transformed, as we understand by his orders, into a general hospital. From a table extracted from the annual official returns of the Inspector-General of Civil Hospitals, Burmah, for the years 1901 and 1902 it appears that patients suffering from all kinds of affections, including primary syphilis, gonorrhœa, tuberculous diseases, diseases of the skin, and local and general injuries, were admitted into the Maternity Hospital during those two years. We are further informed that the reports of the maternity department show that in the same building there were in 1901 307 obstetrical cases with 212 births, 24 stillbirths and 15 deaths of women. In 1902 there were 307 obstetrical cases, 223 births, with 22 stillbirths and 22 deaths in childbed. Our opinion is asked as to the desirability of treating in the same hospital maternity cases and cases of general disorder, including examples of septic and other communicable disorders. On the general proposition we would express the opinion that maternity cases ought to be treated in a separate institution. This view, based upon general experience, is confirmed by an examination of the statistics of this particular hospital. We have no hesitation in saying that the mortality among lying-in women admitted into the hospital is far too high. Putting the two years 1901 and 1902 together we have 435 births with 37 maternal deaths—a mortality of 8.5 per cent. This is as high as in the worst-managed lying-in hospitals before the days of antiseptics. The number of stillbirths—46 out of 435, or 10.5 per cent., is also higher than it ought to be, but this is a small matter compared with the maternal mortality. We think there certainly ought to be a public inquiry to find out why the maternal mortality in this hospital is 8.5 per cent.

THE CONDEMNATION OF OYSTERS.

MR. G. TABOR has favoured us with a communication referring to our annotation published on October 10th on the Opening of the Oyster Season. He urges that not only have the oyster merchants issued the manifesto on which we favourably commented, but that also the Fishmongers Company have examined the oyster layings and their environment, submitted samples of oysters and other shellfish to bacterioscopic examination by Dr. Klein, and made every effort to prevent other than pure oysters coming to the market. He further wishes us to note that the Fishmongers Company is not connected in any way with fisheries from a commercial point of view. We have so frequently commended the action of the Fishmongers Company in these columns that we are glad to give the substance of Mr. Tabor's remarks on the above point, although we cannot admit that this action—although most praiseworthy—sufficiently safeguards the public from the risk incurred by eating infected shellfish. Mr. Tabor goes on to say that medical officers of health all over the country have power to protect the public from fish which is unfit for food, but appear to be afraid to exercise these powers. We presume that the powers of seizing fish unfit for human food, and taking it before a magistrate for his condemnation, are here indicated. Although under exceptional circumstances this procedure has been successfully adopted, it still remains the fact that the procedure indicated does not meet the requirements of the case. The magistrate before whom the suspected shellfish is taken—for, after all, it is only suspected and not obviously unfit for food—will require evidence of unfitness for food. To the naked eye the oysters are appetizing luscious morsels. A bacterioscopic examination of the seized oysters is only available after several days—and it might then be urged that on the assumption that the oysters were still alive, they had had sufficient time to rid themselves of any typhoid or other pathogenic bacteria, even though such bacteria had been originally present. Evidence of sewage contamination of the layings from which the oysters were derived is evidently no certain evidence that the particular oysters which have been seized are contaminated. In short, the procedure by seizure and subsequent possible condemnation by a magistrate was never intended to meet such a case as that of sewage-contaminated oysters, and failure would almost certainly be the fate of the majority of local authorities endeavouring to act under the present powers of the Public Health Act. Further powers are required, and it is to be hoped that at an early date the Royal Commission on Sewage Disposal will make recommendations which will be followed by practical and efficient legislation.

PHOTOTHERAPY.

THE paper by Messrs. Barnard and Morgan (p. 1269), describing a research conducted in the Lister Institute of Preventive Medicine is an interesting contribution to the therapeutics of light. They have, apparently, succeeded in locating with great exactness the place in the spectrum of the rays which have a distinctly bactericidal action, and to have proved that they are situated in the central part of the ultra-violet portion of the spectrum. It would appear, however, that bacteria are not killed when covered even by a thin layer of organic matter, such as a film of gelatine, and it would seem, therefore, that the beneficial action of light must be due to the reaction of the tissues, and not to the direct destruction of the bacteria. They have not succeeded in locating precisely the position in the spectrum of the rays which produce this tissue reaction, but they see reason to believe that they also are situated in the ultra-violet region. In this connexion it may be interesting to note the successful results recently reported by Dr. Julius Baer of Strassburg in the treatment of small-pox by red light. The system was tried during an outbreak of small-pox in Strassburg.[1] The method, which was suggested by Finsen in recent times, but which we know was used by the Arabian physicians and their followers in the Middle Ages, including John of Gaddesden in this country, consists in excluding ordinary daylight from the patient by red curtains or by nailing red material over the window. The theory is that the violet, and still more the ultra-violet, rays of the spectrum exert a chemical action upon the skin, promoting inflammation. By shutting off these chemical rays suppuration of the vesicles is avoided, and with it the secondary fever. The temperature curves given by Dr. Baer show the total absence of this fever. There were 18 cases during the outbreak 9 were very slight and were not treated in this way; 3 of the more severe cases were treated in the usual way, and 2 of these had high secondary fever. Seven severe cases were treated by the red-light treatment. Of these two ended fatally owing to implication of the mucous membranes, causing angina and death, while the vesicles still contained clear fluid. In all the rest suppuration was entirely avoided, the vesicles rapidly dried up, and the

[1] *Münch. med. Woch.*, October 20th.

patients recovered without cicatrices of any kind. The effect of the treatment was most remarkable in one severe confluent case with abundant petechiae. It appears that the patients bore the semi-darkness very well on the whole. Surrounding objects are easily visible when the eyes are accustomed to the light; medical examinations were made by the aid of a candle or feeble light of any kind. The treatment once adopted should not be intermitted until the patients are convalescent. Dr. Baer mentions two other points of interest—in one case the incubation stage appeared to be eighteen days, and in another the eruption appeared almost at the same time as the initial fever.

ST. BARTHOLOMEW'S HOSPITAL.

At their meeting last week the Governors of St. Bartholomew's Hospital, to the number of seventy, accepted with one dissentient a series of resolutions by which they appear to be pledged to erect an extensive series of additions to the existing hospital buildings. The only works actually sanctioned were a new building to contain a casualty and out-patient department, dispensary, and ten surgical beds, and, as we understand the resolutions, the erection on the top of the north block—that facing the main gateway—of a series of operating theatres. It will be remembered that when the site of Christ's Hospital, which adjoins on the south that of St. Bartholomew's Hospital, came into the market, St. Bartholomew's purchased rather less than an acre and a-half, raising the total site available for the hospital to six and a-half acres. It will also be remembered that the proposals then put forward for covering the site were severely criticized, and that as a result of these criticisms the Lord Mayor, Sir Marcus Samuel, formed a committee, the report of which was unfavourable to the other alternatives suggested, namely, the purchase of a larger amount of ground from Christ's Hospital, or the complete removal of St. Bartholomew's Hospital to another site. The plan referred to in the resolutions adopted last week differs in material respects from that originally put forward for the utilization of the ground actually purchased from Christ's Hospital. It shows complete demolition of the existing out-patient department, surgery and dispensary, and provides for the erection along the eastern side of the site, that facing Little Britain, of a nurses' home, while it is proposed to erect a building at the south-west corner of the site (Giltspur Street), to contain an out-patient department, dispensary, and ten surgical beds, together with the hospital kitchen; surely a somewhat remarkable combination. Upon the southern part of the site, consisting almost entirely of the newly-purchased ground, it is proposed to erect a pavilion for 68 beds, an isolation pavilion to contain 70 beds, and a house for the resident medical officers. Further, it is intended to seek Parliamentary powers to clear away the old church of St. Bartholomew-the-Less, and to erect upon the grounnd thus obtained a pavilion for 68 beds. When the work is completed the number of beds will be 674. This is equivalent to, in round numbers, 104 beds to the acre. The number of beds to the acre is a rough test of the adequacy of a proposed hospital site for its purpose. Judged by this standard St. Bartholomew's Hospital in the future will, if the plans now proposed are carried out, provide a number of beds to the acre about 25 or 30 per cent. in excess of what has hitherto been considered advisable. We publish in another column a long letter from one of the governors of St. Bartholomew's Hospital, and we still hope that the matter may be reconsidered, as there are many features about the scheme to which serious exception must be taken. The Queen has graciously headed the list of subscriptions to the fund of £300,000 which it is desired to raise from the public by a subscription of £1,000. No doubt Her Majesty has had placed before her evidence which has not been made public, and we venture to think that this further information should be published before the appeal is seriously pressed upon the notice of the public. In particular the public are entitled to ask that the opinions expressed by the medical staff of the hospital should be fully made known. As we observed eight or nine months ago, the wisest course would appear to be, if the hospital is to be maintained on the present site, to consider the site as a whole and to design an entirely new hospital, the general plan of which would be governed by the necessity of disposing of the ward blocks to the best advantage, the position of other buildings being determined by that assigned to the wards.

PHYSICAL CULTURE IN LONDON INDUSTRIAL SCHOOLS.

An interesting display of physical exercises, drill, and gymnastic displays by industrial schools under the London School Board took place at the Holborn Town Hall on November 10th. Fourteen industrial schools took part in the exercises, and there were two displays—afternoon and evening—when a very long programme was gone through. It was by no means tedious, however, for Mr. Thomas Chesterton, the Board's organizing teacher of physical education, so arranged that no two classes should repeat the same movements. On the whole, most excellent work was done, special praise being due to the boys of St. Vincent's Industrial School, who distinguished themselves in dumb-bell exercises, club exercises, marching, gymnastics on parallel bars and vaulting horse. The East London Industrial School ran them very close, while the Highbury Truant School was excellent too. Most noticeable was the physique of the lads, not one of whom looked overworked, while most were well set up and all remarkably disciplined. Mr. Chesterton is to be congratulated on the excellent results of his work, and upon being instrumental in organizing this most interesting public display—the first of its kind—which enabled many interested in the question of national physique to judge what discipline and regular life can do for the dregs of the slums. It seemed a pity that the room was not large enough to allow all the schools taking part to be present during the performances of each class. But we sincerely hope that there may be an annual display, and that emulation of the less good will be encouraged by the example of the better schools.

GARDENING FOR WOMEN.

In our last issue we gave some account of the complete system elaborated by Lady Warwick for giving instruction in farming and gardening for women. It may be useful to note that Lady Wolseley has an excellent scheme of a less ambitious kind which enables ladies, wishing to take up gardening as a profession or a pastime, to go through a course of indefinite duration, according to requirement, at her country house in Sussex. This might prove very useful to students unable to spare the time or money for a complete course at the Lady Warwick College. Each pupil of Lady Wolseley's class pays a nominal fee of £10 for one year or £15 for two, and they are trained in all branches of gardening by a certificated lady gardener, and have the privilege of working in Lady Wolseley's gardens at the Farm House, Glynde. This seems a capital way of helping ladies anxious to learn practical gardening, and the plan might commend itself to other philanthropic owners of country places.

"VACCINATION AND THE RATES."

The Imperial Vaccination League has just republished in pamphlet form Mrs. Garrett Anderson's letter to the *Times* on "Vaccination and the Rates." The letter is based on the report of the Metropolitan Asylums Board on the London epidemic of 1901-2, and the reprint is on sale at the very cheap rate of a shilling per dozen at the offices of the League, 53, Berners Street, W. We strongly advise the immediate purchase of a dozen or two copies by every reader who desires to have beside him a convenient arsenal of recent facts and figures on this important subject, not merely for his own reference, but to be handed to acquaintances whom he thinks interested in the subject, or in whom he would like to see such interest developed. The letter is altogether excellent. There is no exaggeration, no pressing too far of any part of the case, but only a plain and straightforward statement, which has evidently been

carefully checked in every detail so as to assure accuracy and defy quibbling criticism. The facts themselves are most convincing alike of the power of vaccination and revaccination to prevent and mitigate small-pox, and of the costly folly of delaying the preventive measures until small-pox prevails, and of attempting to check its spread without their aid. Some account of the contents of Mrs. Garrett Anderson's letter was given in a recent issue,[1] but we strongly advise every one to read the reprint for himself. In the event of an antivaccination meeting being held in his neighbourhood, a distribution of copies of the letter to the retiring audience would be an excellent corrective of the fallacious rhetoric usually dealt out unsparingly from such platforms. For medical men who have little time to devote to the hunting up of statistics from original sources we can think of no better very brief compendium of convenient information than is to be found in this letter of Mrs. Anderson's, read along with another little pamphlet, *Facts about Small-pox and Vaccination*, published at an equally trifling price by the Council of the British Medical Association. The latter pamphlet states shortly all the main points of the case for vaccination and the former gives the latest illustration of the case as there set forth.

DEATH OF SIR CHARLES NICHOLSON.

We regret to announce the death of Sir Charles Nicholson, Bart., which took place at Totteridge on November 8th, within a few days of the completion of his 95th year. He was born on November 23rd, 1808, took his M.D. degree at Edinburgh in 1833, and in the following year emigrated to Australia. He started in practice in Sydney, where for nearly thirty years he was a leading citizen and a prominent politician. He was elected a member of the first Legislative Council of New South Wales in 1844, and was three times speaker of that body between 1845 and 1856. He was the first Chancellor of the University of Sydney, and held office from 1854 to 1860. To the Sydney Museum he presented a valuable collection of Egyptian antiquities, the catalogue of which covers 150 pages. He was created a Baronet in 1859. Having gained a considerable fortune in New South Wales and Queensland, Sir Charles Nicholson returned to England in the Sixties. He was the author of various official papers and reports connected with Colonial and other affairs, and had also contributed articles to the *Transactions of the Royal Society of Literature*.

SOCIETY OF APOTHECARIES.

The Master of the Society of Apothecaries of London, Dr. C. Cooper, and the Wardens, Messrs. A. B. Day and J. H. Jeffcoat, entertained a numerous company, consisting mostly of medical men, at dinner in their hall at Blackfriars on November 10th. After the usual loyal toasts had been honoured the Senior Warden, Mr. A. B. Day, proposed the toast of "The Visitors" and congratulated the Society on the fact that the Presidents of the Royal Colleges of Physicians and Surgeons of London were present. Sir William Church, in responding, said that there had been a time when there had been a certain amount of friction between the College which he represented and the Society of Apothecaries, but it was a source of unfeigned satisfaction to him that nothing of the sort existed at the present time. He also reminded his audience that for two hundred years there had been a resident apothecary at St. Bartholomew's Hospital, and that that officer had always been a distinguished member of the Society of Apothecaries. Sir William concluded by referring to the debt of gratitude due to the Society for what they had done in the past in the cause of science especially with regard to the study of botany. Mr. John Tweedy, who also replied, said that the Society of Apothecaries had done for some hundreds of years most useful work in the medical profession. Mr. Tweedy later on proposed the toast of "The Society of Apothecaries of London." After a brief historical sketch of the career of the Society he observed that it did not now hold quite the same prominent position that it occupied in the earlier part of the last century, but it had continued to do useful work in medical education, and by licensing practitioners. He believed that there was still most useful work for the Society to perform in medical education. He doubted whether the medical student was not being over-educated, and whether as a result better and more competent men were being turned out. Whatever changes might take place in medical education, whatever might be the outcome of the agitation for a new University of London there would still be left an important function for the Society of Apothecaries to fulfil, and personally he would rejoice to see the share taken by that Society in medical education and qualification still more increased in the future. Whatever the University of London might do in developing higher education in the medical profession there was scope for the Society of Apothecaries to do a large and important work in educating the general practitioner. With the increasing cost of medical education it had become necessary seriously to consider how far it would pay men to undergo the costly and elaborate education required for the University of London, and then to have no further recompense than such as was to be found in poor rural districts. The Master of the Society briefly acknowledged the toast.

A HUXLEY LECTURE FOR THE UNIVERSITY OF BIRMINGHAM.

A lectureship has been endowed in the University of Birmingham by an anonymous friend in memory of the life and work of the late Professor Huxley. The donor has made the following conditions: That the lecture shall be given annually, either in the winter or spring terms, and that it shall be open to all members of the University without payment. It is to be called the Huxley Lecture, and for its endowment a sum of £20 per annum has been given. The lecture will also commemorate the opening of Mason's College, the predecessor of the University, by Professor Huxley. At a meeting of the University Council on November 5th a resolution was passed accepting the offer to endow the lectureship and thanking "the generous donor for initiating an enterprise which will be of perennial interest in the University." As the donor had expressed a wish that the first lecture should be given by some one who knew the late Professor Huxley intimately and who was associated with his work, it was decided by the Council, on the recommendation of the Senate, to invite Sir Michael Foster, K.C.B., F.R.S., to deliver the first lecture.

The next session of the General Medical Council will open on Tuesday, November 24th, when the President, Sir William Turner, K.C.B., will take the chair at 2 p.m.

Sir Hermann Weber's lecture before the Royal College of Physicians of London, on means for the prolongation of life, will be delivered at the College on Thursday, December 3rd, at 5 p.m.

The report for the year 1902 of the inspector under the Inebriates Act has been issued; it includes reports on certified and State inebriate reformatories and on retreats. The report proper contains much interesting matter, and Dr. Branthwaite, as usual, does not hesitate to criticize, and to found suggestions for improvement upon his criticisms.

Ireland.

The Mastership of the Rotunda Hospital.

The close of Dr. R. Dancer Purefoy's term of office as Master of the Rotunda Hospital was last week made the occasion of a presentation of a bronze bust of him, to commemorate his services to the institution during the past seven years. The contributors were the past and present nurses, who desired that the bust should be preserved in the hospital. Mr. R. O'Brien Furlong, C.B., occupied the chair. An address was

[1] British Medical Journal, September 19th, p. 672.

read by Dr. Little, who bore testimony to the Master's excellent services. Dr. Purefoy returned his cordial thanks for the aid he had received from all in the hospital during his tenure of office.

Dr. Ernest Hastings Tweedy was, on November 6th, appointed Master of the Rotunda Lying-in Hospital, Dublin, in succession to Dr. Purefoy. The office is the most important of its kind in the kingdom, and naturally there was much competition. Dr. Tweedy is a Fellow of the College of Physicians of Ireland, and Gynaecologist to Dr. Steevens's Hospital. He qualified in 1885 as Licentiate of the College of Surgeons.

Professor Cunningham, F.R.S.

The old pupils and friends of Professor Cunningham propose to entertain him at dinner in the Shelborne Hotel, Dublin, on November 21st, on the occasion of his leaving Trinity College to fill the Chair of Anatomy in the University of Edinburgh.

Ulster Medical Society.

The first meeting of the winter session was held in the Medical Institute, Belfast. Dr. John Campbell, President, occupied the chair, and there was a large attendance. Seven new members were nominated, and the Council's report dealing with the annual dinner and with the proposed lending library were adopted.

The President then delivered his inaugural address on the Treatment of Some Minor Gynaecological Affections; in the course of which he discussed some of those methods of treatment which give the most reliable results. Pruritus vulvae, he said, when due to pediculi was relieved by douching with 1 in 2,000 perchloride solution and the application of a large compress taken dripping from a 1 in 500 perchloride solution. In diabetic cases douching was often not carefully carried out and the use of a dusting powder containing a little calomel might be advantageously combined with it. For the numerous cases in which an exact cause could not be found careful dieting was most important. The patient should keep a record of her diet and of the degree of pruritus for three or four weeks which would render it possible to eliminate those kinds of food which caused or aggravated the trouble. Each patient must be studied separately in this respect, and local treatment should not be neglected. Inflammations of the female genital organs arose from many causes, the most important being gonorrhoea. Pus in the urethra or in Skene's glands could be demonstrated by stroking the anterior vaginal wall downwards, having previously wiped the meatus. Its recognition was important for diagnostic rather than for therapeutic purposes, as treatment of the urethra and of Skene's glands yielded poor results. In the case of Bartholini's glands, excision when the surrounding tissues were not involved and incision and drainage when they were did most good in those cases in which the inflammation had led to the formation of pus or of a well-marked thickening. For pain about those glands when no tangible change existed not much could be done. In chronic inflammation of the uterus of gonorrhoeal origin the curette did no good, and probably favoured the natural tendency to upward extension.

Intrauterine applications of carbolic acid were to be preferred. If a dressed probe were dipped into carbolic crystals melted by heat, in a few minutes the acid recrystallized on the probe. A strong caustic and germicidal effect could thus be produced throughout the whole uterine cavity. The curette failed to remove the cocci completely; it left weakened or disintegrated tissues in which they could thrive, and it possibly carried them into tissues which had as yet escaped invasion. The carbolic crystals killed wherever they touched, and probably inhibited growth within their sphere of influence. Used after the curette, a caustic was so much diluted by the blood as to be practically inert. In the other forms of uterine inflammation treatment would depend upon the severity of the symptoms. Profuse leucorrhoea or abnormal loss of blood called for the free use of the curette, but had often to be supplemented by a number of intrauterine applications of iodized phenol or other medicament. Milder cases could be adequately treated by carbolic acid or iodized phenol. The most efficient treatment for atrophic uterine inflammation was swabbing with iodine tincture. In all inflammatory cases rest, hot douches, and the familiar glycerine tampon were essential in addition to the above local remedies. Lacerations of the perineum and cervix should be repaired when they occurred or about two months after labour. Lacerations of the perineum affected different women with different degrees of rapidity, according to the development of the muscular and fibrous tissues, so that one patient developed rectocele, cystocele, and prolapse within a few months of being torn, while another did not suffer till the weakening effect of old age began to tell on the tissues. Rectocele was always benefited by operation. Cystocele was never permanently and considerably improved by any plastic operation short of almost total closure of the vagina, and this should be performed only in the old and the unmarried. In other cases pessaries must be used as palliatives. Displacements: Practically only backward displacements and descent of the uterus need be considered. When the uterus was freely movable replacement and the insertion of a pessary was plainly the treatment; but when there was fixation to even a slight degree the less the organ was meddled with the better. Prolapse of the uterus was not much benefited by repair of the perineum, unless the repair were carried so far forward as to almost close the vagina. As this was impracticable in most cases, pessaries, or, when they could not be tolerated, a pneumatic pad and bandage might be used, or resort had to major operations. Pains for which there was no tangible cause were usually the result of old inflammation in the pelvis, though in a few cases they might be purely neurotic or the result of a varicosity of the ovarian veins.

All palpable diseased conditions should be excluded and a course of iron and aloes with open air and exercise prescribed. Should the history point to former inflammation, pelvic massage would produce improvement. Backache was one to the most difficult symptoms to alleviate. Persistent uterine treatment, so long as there was any deviation from the normal, combined with general hygiene, was the only thing that gave hope of relief. Urethral caruncle was a minor ailment which was important from its tendency to recur after removal. It should be excised freely. From time to time the patient should be examined and any red spots at once touched with nitric acid on a pointed stick.

Subsequently the President entertained the members to light refreshment.

Health of Belfast.

Vital Statistics.

The Superintendent Medical Officer of Health, in his monthly report on the health of the city, presented to the Council on November 2nd, stated that there were 88 cases of scarlet fever, 71 of typhoid, and 50 of continued fever; 937 births and 456 deaths were registered. Although only 268 cases of zymotic diseases were notified, yet 68 deaths occurred in this class. The death-rate from all causes was 16.6.

Sewerage.

Several matters of great interest were before the Council, and gave rise to very important discussion at the meeting, and subsequently to lengthy references in the local press. The Works Committee presented a report on a large number of defective sewers, especially in the older part of the city, and recommended that a plan for a new system of drainage be commenced. A joint Improvement and Public Health Committee recommended that the assistant surveyor, the executive sanitary officer, and the superintendent of works should each make separate reports as to the best way of dealing with the question of sewers. The Public Health Committee's minutes contained a minute by the executive sanitary officer on the report by Professor Lorrain Smith, which also dealt with the sewerage of the city and defective house drains. This confusion of authority in public sanitary matters was pointed out, and the impossibility of efficient administration emphasized. The report of the Public Health Committee finally contained the following two resolutions, which were passed after full and exhaustive discussion of the excellent and very practical minute of the executive sanitary officer on Dr. Lorrain Smith's report, which had been before the Committee for over two months.

That, acting upon the recommendations contained in the reports of Professor Lorrain Smith and the executive sanitary officer, the Committee is of opinion that, in the interests of public health, two additional female sanitary sub-officers should be appointed, and that the Council and the Local Government Board be requested to give their sanction to this being done.

That the attention of the councils whose districts abut on the County Borough of Belfast be drawn to the pressing necessity there is for their adopting regulations similar to those in force in Belfast for dairies, cowsheds, and milkshops, as large quantities of the milk consumed in Belfast come from outside the jurisdiction of the Council of the County

Borough, and it is most desirable that the health of the people of a great community like that of Belfast should be safeguarded.

It is sincerely to be hoped that Dr. Lorrain Smith's report, the result of two years' work, will not vanish in these two resolutions. In the discussion on the Public Health Committee's report, Councillor Dr. Williamson vigorously criticized the committee's actions. He pointed out that although the water supply had always been blamed for the typhoid fever, yet that Dunmurry, the asylum, the Falls district, the gaol, and Cliftonville either escaped altogether, or presented no increase, although supplied with the water supposed to cause the disease in the Shankill and Woodvale districts; again the new Mourne supply had been laid on to the Newtownards Road and Ravenhill district, and was said to be above suspicion, and yet there was more typhoid in these districts than elsewhere through the city. He said that Professor Lorrain Smith's report taken altogether was a wholesale condemnation of the sanitary condition of Belfast. The main drainage scheme was completed in 1896, and yet typhoid fever never reached such a height as in 1897. The report of the executive sanitary officer on Dr. Smith's report, he said, simply condemned the whole sewerage system of Belfast; and the recommendation regarding milk in this report ought to have been adopted and carried into effect long ago.

The Forster Green Consumption Hospital.

The Public Health Committee also recommended that an agreement be entered into with the Forster Green Consumption Hospital to take twenty patients from the town on payment of a certain annual sum; but an amendment was proposed that the question be referred back to the Committee. The proposer of the amendment (Sir James Haslett, M.P.) asked who was to select those twenty out of three or four thousand in Belfast. One councillor facetiously suggested the town clerk; however, the Council were informed that the Health Committee itself was to act as the Admission Committee. Finally, the amendment was carried.

The Prevention of Consumption in Cork.

At a meeting of the Executive Committee of the Cork Branch of the National Association for the Prevention of Consumption held on November 3rd, Dr. P. J. Cremen, who was in the chair, gave a full account of the work done by the Branch since the last meeting, and read important correspondence which had taken place between members of Parliament for the City and County of Cork and the Chief Secretary in reference to an application made by the Executive Committee for State assistance for the erection of a sanatorium in County Cork, the site being a free gift. In replying on behalf of the Chief Secretary, Sir Anthony McDonnell wrote: "I am directed by the Chief Secretary to convey the expression of his regret that this is not an application that could be acceded to, and that the erection and support of such hospitals is a matter for the benevolent public and not for the Government." He also pointed out the instance of the National Hospital for Consumptives at Newcastle, co. Wicklow, which was erected by voluntary subscriptions and donations. Dr. Cremen said that they were all aware of the existence of such a hospital, but that a weekly charge of 7s. was made for poor patients, and that even with such a charge there was great difficulty in securing admission for deserving cases. The proposed sanatorium at Cork was intended for the poorest members of the community who could not afford to pay anything for their treatment. It was decided not to take any further steps in the matter till a further reply was received to a second letter sent to the Chief Secretary. In the meantime it was resolved that a scheme for accommodation for 50 patients, including administration block and doctor's residence, should be submitted, and that information should be obtained from the Local Government Board as to the lowest rate of interest on which it would advance money for the erection of such buildings. The following resolution was also passed:

That we request the Local Government Board to hold an inquiry into the causes of the exceptionally high death-rate from consumption in Cork and as to the best means for reducing it.

Granard Union.

The Local Government Board last week appointed a new master by sealed order. When the former master, appointed *locum tenens* by the guardians, went out the new authority turned the key and kept him out. The angry guardians threaten further opposition.

Scotland.

Small-Pox in Glasgow.

During the past fortnight there have been comparatively few new cases of small-pox admitted to the fever hospital, the number of patients under treatment on November 8th being 26. The few patients admitted have been balanced by the fact that some of the earlier cases have been dismissed well, and by one or two deaths. The difficulties the sanitary authorities have to contend with are well illustrated by a case that occurred the other day in the Glasgow Sheriff Court. A lodging-house keeper was charged with failing to send notice to the medical officer of health that one of the inmates of his house was suffering from small-pox. The patient was taken ill on a Wednesday, and was removed to hospital on the following Sunday, by which time his appearance was so bad that another inmate who had herself had the disease characterized the case as the worst she had seen. The accused ought at once to have taken steps to ascertain whether any case of illness among the inmates was one of infectious disease, and especially so at this time as the medical officer of health had issued to lodging-house keepers a letter directing their attention to the existence of small-pox in the city, and warning them to be on the look-out for such cases. The accused pleaded guilty, and Sheriff Davidson characterized the case as a serious one, and imposed the maximum penalty—a fine of £2. Such a penalty is quite inadequate to the offence, for any amount of damage might result from such carelessness.

Antivaccinators in Glasgow.

In connexion with this recurrence of small-pox the antivaccinators are showing renewed activity, and at the end of last week held the annual autumn meetings of the National Antivaccination League in Glasgow. A public meeting was held on the evening of Friday, November 6th, at which the principal speaker was Dr. Hadwen of Gloucester, who indulged in the usual exaggerated talk in favour of the abolition of the Vaccination Acts, or at least the removal of the "unwarrantable slight that had been cast upon Scotland by the omission to grant relief to conscientious objectors in that country." The annual conference was held in the course of Saturday, November 7th. The President, Lieutenant-General Phelps, who was in the chair, ridiculed the position the health department of Glasgow had taken up in regard to recent epidemics of small-pox. The special reason for the Antivaccination League meeting in Glasgow was that it was the chief seat of the miserable idolatry of cow-pox and so on. He protested against the extent to which vaccination and revaccination had been practised, and also against the refusal of the city authorities to let the antivaccinators have access to the registers of the Small-pox Hospital. Many papers were read and discussed, and resolutions of the usual character were passed, and an "At Home" was held in the evening.

Post-Graduate Instruction in Ophthalmology.

The seventh annual course of demonstrations on diseases and injuries of the eye, at the Glasgow Ophthalmic Institution, for post-graduate students began on November 3rd, the subject dealt with by the demonstrator of the evening, Dr. Maitland Ramsay, being the immediate and remote consequences of a blow on the eye. The demonstrations will take place every Tuesday evening until the middle of December, and in addition to the special subject chosen for each evening, cases, photographs, pathological specimens and microscopic slides will be shown at each meeting throughout the session.

At the last meeting of the Zoological Society of London Professor B. C. A. Windle and Mr. F. G. Parsons, F.Z.S., communicated a paper on the muscles, the hind limb, and trunk of Ungulates. The paper was founded on the records of dissections of eighty-six animals, some of which had been carried out by the authors, but a large number were collected from various published or unpublished sources. At the end of the paper a summary was given of the whole of the muscles of the order, and this was accompanied by a tabular statement of all the muscles which were considered important from a classificatory point of view. Special stress was laid on the innervation of the muscles as far as reliable records were available.

THE HEALTH OF THE GERMAN EMPEROR.

On Monday morning the German people were startled by an official announcement published in the *North German Gazette* to the effect that the Emperor William had undergone an operation for the removal of a growth in the larynx. The following is the text of the bulletin:

His Majesty the Emperor to-day underwent an operation for a polypus on the vocal cord (*Stimmlippe*). The operation was performed by Geheimrath Professor Dr. Moritz Schmidt, and passed off quite smoothly. His Majesty has to refrain from using his voice until the wound resulting from the operation is healed.

Potsdam, November 7th, 1903.

VON LEUTHOLD.
MORITZ SCHMIDT.
ILBERG.

The result of a microscopic examination carried out by Professor J. Orth is officially given in the following terms:

The polypus consists of a very soft connective tissue containing only a few cells. This tissue is covered by an epithelium of the pavement variety (*Plattenepithelium*), which is in regular layers, and is everywhere sharply distinct from the connective tissue. Some of the cells in the connective tissue contain fine brown minute grains of pigment, which are evidently the result of previous small haemorrhages. The polypus contains a considerable number of thin-walled blood vessels. It is, therefore, a case of an entirely benign polypus consisting of connective tissue.

Berlin, November 7th, 1903. PROFESSOR J. ORTH.

Later in the day it was announced that the Emperor had slept quietly throughout the night without interruption. The appearance of the little wound was described as satisfactory, and it was stated that there was no pain or discomfort in the throat. The temperature and the condition of the pulse showed that there was no systemic disturbance.

On November 9th the following bulletin was issued:

The inflammatory reaction which as a matter of course sets in after an operation is already subsiding. One may therefore be satisfied with the appearance of the left vocal cord operated upon. Nevertheless, the healing of the small wound will probably still take eight days. The Emperor's general condition is good, Temperature and pulse normal.

(Signed) VON LEUTHOLD.
SCHMIDT.
ILBERG.

The later bulletins state that progress of the Emperor is in every way satisfactory. His physicians think it unlikely that any complications will arise. Though, of course, forbidden to use his voice for the present His Majesty has not been confined to bed and is able to transact business as usual.

According to the Berlin correspondent of the *Times*, Professor Orth has made the following statement to a representative of the Berlin *Lokalanzeiger*:

I authorize you to declare as emphatically as possible that there is no prospect of even the slightest danger of a serious development in any way. It is a case of a thing which every work on laryngology treats as quite an ordinary matter. Among those who, like the Emperor, are compelled in the course of their professional activity to speak frequently those formations which we call "polypi" are of common occurrence. They are, of course, of an obstructive character, and that is, I need hardly say, why the growth has been removed in the Emperor's case. Although I am not acquainted with the clinical aspects of the case, nevertheless, I think I may say that the Emperor will within eight days be once more in full possession of his vocal powers.

Professor Johann Friedrich Moritz Schmidt, who operated on the Emperor, is a specialist of world-wide celebrity. Born at Frankfort-on-the-Main on March 15th, 1838, he studied medicine at Göttingen and afterwards at Vienna, Berlin, Utrecht, London, and Paris. In 1860 he took his Doctor's degree, the title of his inaugural thesis being De Rerum Structura Quaestiones. He began his professional career as a general practitioner, but gradually giving more and more attention to diseases of the nose, throat, and lungs, he finally confined his practice to those affections. He has contributed several valuable works to the literature of his special department of medicine. Among them may be mentioned monographs on laryngeal phthisis and its treatment, on diverticula of the naso-pharynx, and on the treatment of abnormalities of the nasal septum. His best-known work is a treatise on diseases of the upper air passages, a third edition of which has recently been issued. It may be remembered that Professor Schmidt was sent by the Emperor William I to San Remo to report on the condition of the Crown Prince, afterwards the Emperor Frederick III. Professor Schmidt's report was published later in the official report of the German physicians. For many years he has been a *persona grata* with the Imperial Family of Germany, and the Emperor William II has lost no opportunity of honouring him.

Professor Johannes Orth is the successor of Rudolf Virchow in the Chair of Pathology in the University of Berlin. Born at Wallmerod in Nassau on January 14th, 1847, he studied pathology at Bonn under Rindfleisch, whose assistant he was for some time. Later he was assistant to Virchow at Berlin. In 1878 he accepted a call to the Chair of Pathology in the University of Göttingen. On the death of Virchow he accepted an invitation to succeed him at Berlin. He is the author of a compendium of pathologico-anatomical diagnosis, a course of normal histology, and a treatise on morbid anatomy.

CENTRAL MIDWIVES BOARD.

THE Secretary of the Central Midwives Board (6, Suffolk Street, Pall Mall, London, S.W.) informs us that at a meeting of the Central Midwives Board, Dr. F. H. Champneys in the chair, held on October 29th, and by adjournment also on November 5th, the following business was transacted:

1. A letter was read informing the Board that a person representing himself as deputed by the county councils to receive the names and fees of midwives desiring to be certificated by the Central Midwives Board had visited a nursing institution and had endeavoured to collect the fees. The Board desire it to be known that the Secretary alone is authorized to receive the fees, and as they are in possession of a description of the impostor they trust that the publicity of the press may lead to his early detection.

2. A letter was read from the Colonial Nursing Association directing the attention of the Board to the case of the midwives now working abroad, sent out by the Association. As most of them were in distant parts of the world it would not be practically possible for them to forward their certificates to the Secretary for verification. Under the special circumstances of these cases, the Board resolved to adopt the procedure prescribed by the rules in the case of lost certificates, and to accept the voucher of the secretary of the certifying institution that such a certificate has in fact been granted to the applicant, together with a certificate of identity, as a substitute for the production of the original certificate.

3. The Secretary was instructed to add the Rural Midwives' Association, 47, Victoria Street, S.W., to the list of bodies to whom applicants for training in midwifery should be referred.

4. After consideration of applications received in each case, the Board resolved to receive the certificates of the following bodies as approved qualifications under Section 11 of the Midwives Act, 1902:

1. Queen Charlotte's Lying-in Hospital.
2. Manchester Southern and Maternity Hospital.
3. Liverpool Ladies' Charity and Lying-in Hospital.
4. British Lying-in Hospital.
5. Glasgow Maternity Hospital.
6. St. Mary's Hospital, Manchester.

5. The consideration of applications from various bodies for recognition as institutions approved by the Board, under Section C of the rules, and from certain qualified medical practitioners for approval as teachers under the same Section, was deferred until the Board should be in a position to formulate its scheme of examinations.

6. Draft rules of procedure on proposed removal of a midwife's name from the roll, or cancelling of her certificate, were considered, amended, and ordered to be forwarded to the Privy Council for approval.

7. After consideration of applications for certificates the names of 126 women were passed under Section 11 of the Act, and ordered for entry on the roll. Of this total 74 claimed as holding the certificate of the Obstetrical Society of London, 3 that of the Rotunda Hospital, Dublin, and 49 were admitted as having been in bona-fide practice for one year prior to July 31st, 1902.

8. A design of certificate on parchment was approved and ordered to be printed.

9. A form of certificate of identity, as prepared by the Secretary, was approved and ordered to be placed on sale with the other official forms of the Board.

10. After consideration of tenders for printing and binding the Register of Cases [Rule E, 19 (*a*)], that of Messrs. Spottiswoode and Co., Ltd., 54, Gracechurch Street, E.C., and 5, New Street Square, E.C., was accepted. The Register can be obtained from Messrs. Spottiswoode, price 1s., postage extra.

11. The Secretary reported that as the Privy Council had raised no objection to the Board issuing their "Suggestions

to County and County Borough Councils" on their own responsibility; he had sent out copies to all those councils, about fifty in number, who had applied for them.

AN ALLEGED SPECIFIC TREATMENT OF CANCER.

AT a meeting of the Abernethian Society of St. Bartholomew's Hospital, held on November 5th, Dr. Jossé Johnson read a communication on Dr. Otto Schmidt's specific treatment of cancer, which he had recently investigated. The treatment, he said, was based on the parasitic theory of cancer. About the middle of 1892 Dr. Schmidt had succeeded in cultivating from cancer an organism which fulfilled most of the conditions of specificity; injections of the parasite had produced tumours in two white mice. The appearance and character of the parasite were very various; the forms figured by Schuller, the fuchsin bodies of William Russell, those described by Plimmer were all varieties of one and the same parasite, and Dr. Schmidt had succeeded in cultivating all the forms from a single isolated parasitic cell. The principle of treatment was immunization, either active by injecting the killed parasites themselves or passive by injecting the serum derived from animals (horses and sheep) that had been thus treated. The treatment was usually commenced in a very mild form, beginning with a dose of $\frac{1}{100}$ milligram suspended in solution of carbolic acid (0.5 per cent.) gradually raised by small increments to usually a maximum of 1 centigram. Into what part of the body the injection was made was immaterial, except that it should not be made into or near the tumour. The injections were subcutaneous. The most striking result was a specific reaction in the tumour. In a non-cancerous person no effect was produced. After the second or third injections some *malaise* and pyrexia occurred.

Cachetic patients often failed to react, presumably because their blood was charged with antibodies. The local reaction took the form of swelling in the tumour, and deposits which became softer or even elastic, tenderness and redness, and often local rise of temperature. The activity of the reaction diminished as the patient became immune. Closed sarcomata reacted most of all. So far 29 cases had been treated and had given results sufficiently definite to be reported.

In 140 cases injections had been employed for diagnostic purposes; a positive reaction was obtained in all the 140 and in 28 of the 29 first-named cases. In the exceptional case a simple ovarian cyst was found at the subsequent operation, establishing an error in diagnosis. One of the cases was a sarcoma, all the others were carcinomata. Illustrative cases were quoted. Around the growth and deposits a zone of inflammatory oedema was usually seen, due to infiltrated leucocytes. In open growths the drying up of the secretion and the cessation of purulent discharge was a conspicuous feature; a crust formed, including the superficial layers of the growth, which was cast off, and other crusts formed and were cast off until healthy tissue was reached. Where crusts could not form gangrenous pieces were thrown off, and shortly the foul odour disappeared.

The value of the reaction as a further proof of specificity of the parasite was emphasized. The reaction was of an inflammatory nature and lasted, if acute, a few days, but a slower milder process might be obtained if preferred. The emigration of leucocytes was necessary for the removal of the growth. The leucocytes finished what the antibodies had begun. The specific treatment greatly hastened cicatrization, but this occurred at the periphery of the growth not at the centre, as in the natural process. The cancer cells were absorbed and scar tissue was formed in its place. The mechanical effects of scarring were sometimes unpleasant. The relative value of the active and passive immunization was not at present settled. The serum injections gave great relief but it was not certain that the improvement was so permanent. The potency of the immunization could not be estimated, as animals were not killed by the injection of a virulent culture of the parasite.

Reference was made to the use of cytolysin treatment in combination with the specific treatment. Two factors were necessary for the removal of a malignant growth: the removal of the active element—the parasite; and the removal of its effects—the tumour. Such would be a cure of cancer, but it would not necessarily be a cure of the individual case, as there was a third factor—namely, how much the vital organs had suffered. Perhaps the treatment would be most useful as a sequel to operation. In the cases quoted after an interval of five or six months the growths and deposits had not at any rate increased, no new deposits had formed, and an increase of weight and improvement in general condition had occurred. When the method had stood the test of time, it was to be hoped that a cure of cancer by it might confidently be spoken of.

BAYLISS *V.* COLERIDGE.

[SPECIALLY REPORTED FOR THE BRITISH MEDICAL JOURNAL.]

THE trial of this action was commenced on November 11th, before the Lord Chief Justice of England (Lord Alverstone) and a special jury.

Mr. Rufus Isaacs, K.C., Mr. Boxall, K.C., and Mr. Hugh Fraser appeared for the plaintiff, instructed by Messrs. Hempsons. Sir Edward Clarke, K.C., Mr. Abel Thomas, K.C., Mr. William Wills, and Mr. H. M. Sturges, instructed by Mr. W. M. Sturges, appeared for the defendants.

Mr. RUFUS ISAACS, K.C., in opening the plaintiff's case, said that the action was brought to recover damages for libel from the Hon. Stephen Coleridge, who was the defendant. The claim was made by Dr. Bayliss, who was Assistant Professor of Physiology at University College, London, and Doctor of Science of the University of Oxford, and a gentleman of undoubted position in the scientific world, in respect of defamatory matter which had been alleged against him by Mr. Coleridge as to the manner in which he carried on his work as Assistant Professor of Physiology. The defendant, Mr. Coleridge, was the Honorary Secretary of a society known as "The Antivivisection Society," and he had for some years carried on a crusade against the practice of vivisection. Dr. Bayliss and a number of other gentlemen of very great scientific eminence who would be called before the jury had for a number of years carried on a system of operations upon animals under anaesthetics under circumstances which were licensed by the law, and which, if not licensed by the law, rendered them liable to a fine, or even to imprisonment, for a criminal offence. Before dealing in detail with the charges which were made, the point which the jury had to determine was whether or not Dr. Bayliss was guilty of performing operations on an animal which was not anaesthetised, and which was suffering pain because it was not anaesthetised; in other words, to put it in another way—which was perhaps the most significant way—whether Dr. Bayliss had, in fact, as Mr. Coleridge had alleged, committed a criminal offence. The practice with regard to such operations upon animals was regulated by the Cruelty to Animals Act, 1876. An agitation had been carried on, really by Mr. Stephen Coleridge and a number of persons associated with him, protesting against what he called the ruthless torture and torment to which animals had been subjected. The point the jury had to determine was not whether he (the defendant) was right in conducting that crusade or whether the scientists were right in their view that it was absolutely necessary that they should carry on the work subject to the restriction imposed by the law. That part of the matter fortunately was immaterial for the purpose of deciding the present case. That there were a large number of people who were not scientists who took the same view as the scientists was demonstrated by the fact that an Act of Parliament was passed in the year 1876 which legalized the practice under the restrictions imposed by the law. No one could doubt the fact that in the researches that were necessary for the purpose of discovering either the means of preventing or curing disease it was necessary to make a number of experiments for the purpose of scientific research, the point being that what was done was in order that human lives might be saved or prolonged, and that people might be protected from certain diseases and also that their suffering might be alleviated. It did not require words from him to impress upon the jury to what extent they were indebted to scientists for what they had done during the last thirty, forty, or fifty years. Every day people were getting further benefits from their researches, and in the course of these researches it had become necessary to perform operations. These operations clearly could not be performed for the purpose of research on human beings, and therefore they were made upon animals. He wished to direct their attention to what he considered a vital point, and one to which apparently Mr. Coleridge had shut his eyes, namely, that in these operations there was no cutting operation licensed by the Home Secretary, who was the Secretary of State, and the only one who had the powers entrusted to him of allowing these

operations to be performed, unless it was done under an anaesthetic so that the animals did not suffer pain. The words of the statute were precise upon the matter, so were the words of the licence, and so were the words of the certificate. Under the statute, and under the licence granted in accordance with that statute, the plaintiff had certainly since 1890 had the right to perform experiments for the purpose for which a certificate was required. He had had certificates granted him from various Home Secretaries—Mr. Henry Matthews, Mr. Asquith, Sir Matthew White Ridley, Mr. Ritchie, and, up to the present moment, by Mr. Akers-Douglas. During the course of the performance of the experiments and researches which were necessary, which had been performed not only by Dr. Bayliss, but by a large number of men such as Lord Lister, Sir Victor Horsley, and gentleman of that eminence, it was curious that Mr. Stephen Coleridge had made attacks on a number of persons on the ground that what they were doing was ruthless torture and torment, with the allegation, which was a serious part of the case, that they performed these operations, and cut and tortured the animal when it was fully conscious, and without recourse to anaesthetics. That was the charge in the present case. That was what Mr. Stephen Coleridge had taken upon himself to say, in this case not only some time ago, but during the course of the action. He even repeated that now at the trial, notwithstanding that a man of the integrity and repute of Dr. Bayliss had affirmed on oath that the statement that the animal was not anaesthetised when he performed the operation on it was absolutely untrue. As a matter of fact the animal was under an anaesthetic so as to be apparently lost to consciousness from the beginning of the time that Dr. Bayliss used it until the end, when it was taken out and put to death painlessly while still under the anaesthetic. He thought it was a little surprising to find a gentleman in the position of Mr. Stephen Coleridge, a member of the Bar and an official of the Court, who must have some knowledge of evidence and of how mere rumour or statements made by persons required to be sifted in order to ascertain whether they were true, still persisting, after all that had been said, in asserting not only that Dr. Bayliss had committed these criminal offences, but also that Dr. Bayliss was committing perjury; Professor Starling, who was the head of this department at University College, was also committing perjury, and the persons associated with Dr. Bayliss in this matter, when they asserted that it was absolutely untrue to say that the animal was operated on or touched in any way as suggested except when it was utterly lost to consciousness under the anaesthetic. If Mr. Stephen Coleridge was right in his present assertion every one was apparently engaged in a conspiracy to defeat the ends of justice, and to assert statements on oath which were not true. It was difficult to understand how that statement had been persisted in after what had happened. It only showed the lengths to which men would go when they became associated with one idea. When some men acquired a sort of passion for one particular thing they seemed at times altogether lost to reason. In this case it seemed in regard to Mr. Coleridge that when passion stepped in reason flew out, because it would have taken very little inquiry by him to have ascertained the true facts of the case, more particularly so when he allowed three months to elapse before he published the statements complained of. On February 2nd this year Dr. Bayliss was present when Professor Starling made a slight operation upon a dog at the laboratory at University College, London. It appeared that in December, 1902, there had been a slight incision made when the animal was under anaesthetics for the purpose of tying the pancreatic duct. The operation was for the purpose of ascertaining certain facts in connexion with this particular duct, so as to avoid, or as far as possible prevent, the effects of diabetes. Research had been going on for four or five years, so that at the time he referred to scientists had been able, by means of these experiments, to retard the effects of diabetes when it had once set in, to prolong life, to alleviate suffering; and not only that, but they were able to retard the advent of the disease, and in that way were giving to human life the benefit of the research in which they were engaged. That duct having been tied, it became necessary, on February 2nd, 1903, for Professor Starling to examine the secretion which would have been dammed up in consequence of the ligature of the duct. During the time intervening between December and February the dog had been quite well. The operation was an operation of a slight character, from which the dog got well in two or three days; the dog was perfectly well and running about, and there was nothing to complain of, certainly no indication that there was pain. That fact was immaterial to the present case, but he was sure it would be a relief to the jury, as it was to himself, to ascertain that that was the fact. Whenever it was necessary to perform these operations everybody would agree that they should be performed as painlessly as possible, and in the particular case in question every possible device was used for the purpose of ensuring that this animal should be quite unconscious and not suffer any pain at all in what was being done to it in the interests of science. On February 2nd accordingly, Professor Starling wanted to examine the result of what had been done some five or six weeks before, and for that purpose the animal was brought to him, and he administered a dose of morphine of 1 to 1½ gr. This was rather a large dose, but it was done for the purpose of anaesthetising the animal. The jury would be told by the medical gentlemen that they do not really rely on the morphine for fear that at some moment or other its effects may disappear, and therefore they use a mixture, which is known as the A.C.E. mixture, consisting of alcohol, chloroform, and ether in equal parts. After the animal had been half-an-hour under the influence of morphine the A.C.E. mixture was given so as to make perfectly sure that before the operation was performed the dog had been removed altogether from the realms of pain. The mixture was applied through an incision made in the dog's throat when under the anaesthetic, into which a tube was put, and into that tube by an electric motor there was a constant flowing or pumping in of air laden with the A.C.E. mixture. Means were thus adopted to render the animal absolutely unconscious, which state continued right up to the time of death. It was of great importance to all those who were concerned in the matter to state that there was no cutting operation of any shape or description which was licensed by the Home Secretary except a cutting operation which was to take place when the animal was so anaesthetised that it could not feel the pain. It was on February 2nd that the experiment which was the subject matter of the animadversions of the defendant took place and the object of the experiment was to demonstrate to the students that the pressure of the saliva was greater than the blood pressure. As a matter of fact the operation took place, and a dog was used for the purpose of making the demonstration. It was whilst the lecturer was explaining what was taking place in the secretion of the saliva that the events arose which had given occasion to the action. Apparently, according to what Mr. Coleridge had stated, there was an eye-witness present, and Mr. Coleridge had pledged himself again and again that this witness saw sights which, if true, would render Dr. Bayliss liable to a criminal prosecution, and would render him unfit to occupy the position of Assistant Professor at University College. The statements that had been made against the plaintiff amounted in effect to a charge that the animal was not under anaesthetics at all. It was very difficult to understand, in view of the facts which would be laid before the Court, how any unbiassed, impartial, and unprejudiced person could come to the conclusion on seeing what had taken place in the lecture room that the animal was not under anaesthetics. No doubt they would find out in the course of the case how that view had been adopted, and no doubt the eye-witness who was alleged to have seen the occurrences would be produced, but so far Mr. Coleridge, in the public observations which he had made, had taken care not even to disclose the sex of the eye-witness in question though they had reason to believe that the eye witness was a lady who had come from Sweden, apparently as far as they could judge and ascertain in the interests of the Antivivisection Society in Sweden, and who had gone as a student—as she required to be in order to get admission to the lecture-room—of the London School of Medicine, and when there had formed a totally erroneous and absolutely misguided view of everything that was taking place. Every little event which was quite comprehensible, he would not say to an advanced scientific person, but even to persons like advanced students, seemed to have filled this lady with all sorts of visions that now she had found that which she had come over to find and that she had discovered here that cruelty which she came over in order to be able to discover in the English hospitals with the view of reporting upon it. Apparently it was on the basis of what she had said that Mr. Coleridge thought fit to make the grave attack he had made on May 1st, the operation and lecture itself having

taken place on the previous February 7th. What had been happening during these three months one did not quite know. It might have been thought that during these three months Mr. Coleridge—a gentleman connected with a profession in which the sifting of evidence was one of the daily operations—would have taken care to ascertain the fact, and that he would have written to, or communicated with Dr. Bayliss to ascertain if the fact was true that he had committed this offence; but there was not one word from him on the subject. Mr. Coleridge seemed to have been possessed of that secret, as it was to him, for some time, and to have determined to make a showy and dramatic effect with it—an effect that he thought would call the attention of the whole world, or at any rate the attention of the people of London and the whole of England, to the evils of which he was complaining. He seemed to have saved up that secret for three months without giving an opportunity to a professional man of dealing with it one way or another. Mr. Coleridge could have suited himself as to whether he would not believe Mr. Bayliss's statement if he had been once given him the opportunity of explaining himself, and he could have pleased himself whether he would have been satisfied with Mr. Bayliss's explanation. If he had taken the trouble, he could have ascertained the facts in such a manner that even Mr. Coleridge, saturated as his mind had been—and he was afraid was—with prejudice against those persons who were engaged in this scientific research, would have been bound to come to the conclusion, as a fair-minded man, that it was not the kind of statement which he could accept as against statements which were given to him. But Mr. Coleridge did none of those things. He prepared a bomb which he had kept for the meeting of the Antivivisection Society which was held in St. James's Hall on May 1st, and on that occasion he had made a speech. So satisfied was Mr. Coleridge, and so anxious was he that the statement should be spread broadcast, and should not be confined to the four walls of St. James's Hall and the audience which he had there, that he took care to have the *Daily News* reporter there, and to make a statement that the *Daily News* was going to publish a verbatim report of the words that were used at the meeting. Mr. Coleridge, now in court, from the way he looked at him (the learned counsel), seemed to wish to convey that he was not responsible for that, and if that were so he would accept Mr. Coleridge's statement; but what he did say was that the *Daily News* people were there for the purposes of the report; that they had made the report; and that, in fact, the report was published. That Mr. Coleridge was responsible for the publication of the words was to be found in the pleadings in the case, in which Mr. Coleridge admitted that he had made the statement which the plaintiff complained of—and which, indeed, could not be denied—and he admitted also his responsibility for what had appeared in the *Daily News* on May 2nd, 1903. It might be quite possible that what was meant in the pleadings was—because he did not wish to take any undue advantage of the words—that Mr. Coleridge made the statement, and that it was published in the *Daily News*, and that he did not intend to shirk the responsibility for the words used in that paper. The *Daily News* publication of Mr. Coleridge's attack on May 2nd was headed "Against Vivisection—A Great Meeting—Indictment of University College." There was no mistake about how it was intended, and the report went on to say that St. James's Hall was filled by an enthusiastic gathering on the occasion of the annual meeting of the Antivivisection Society, and that Mr. Stephen Coleridge, the Honorary Secretary of the Society, proposed a resolution declaring the practice of vivisection as by law allowed in this country to be cowardly, immoral, and detestable, and calling upon Parliament totally to abolish the legal torture of animals. That was rather a sweeping condemnation of the people of this country, but still he should not be entitled to complain in this case of the view held by Mr. Coleridge and those associated with him, because although they were a minority they were entitled if they liked to call that practice, by law allowed and regulated by law, cowardly, immoral, and detestable. They need not trouble about that resolution, and it was only useful to show the state of mind and the kind of language that was used by a man who got possessed with one idea. Counsel then read a number of passages from Mr. Coleridge's speech at the meeting, and said that the phraseology was no doubt aptly dramatic, but hardly, he thought, what one might expect from a controversialist of the cultured character of Mr. Coleridge. It was language which was hardly fair to those gentlemen who were carrying on what was perfectly legal and what was done under the sanction of the law and with the express permission of the law. Counsel read the text of the statement which had been supplied to Mr. Coleridge by one who, it was alleged, was a witness of the occurrences. This statement set forth that this person had attended many lectures at the physiological laboratory of University College, and while there had constantly heard long-drawn howling and whining like that of dogs in terror and agony. On February 2nd, 1903, an experiment by Dr. W. M. Bayliss on a dog had been witnessed. A big brown dog of the terrier type was brought into the lecture room, stretched on its back on the operation board; its legs were fast to the board, the head held firmly in a head holder, and it was muzzled so tightly that it was deprived of every power to give audible expression to its pain. The dog struggled forcibly through the whole experiment, and seemed to suffer extremely during the stimulation by electricity of a certain gland. No anaesthetic had been administered during the demonstration, and the lecturer had said nothing about any attempt to anaesthetise the animal having been previously made. The purposive struggles of the animal indicated complete consciousness. It was asked with regard to this demonstration, if it was not torture; if not let Dr. Bayliss and his friends Lord Lister and Sir Victor Horsley say, in heaven's name, what torture was. Counsel said these charges were the mere creation of the imagination of the person who had made them, and at all events rested upon the very slenderest foundation of fact. It was amazing to find such a statement made and such language used even on platforms, when no doubt men got somewhat excited when speaking on a subject to which they had devoted considerable time and attention; but even in that case it was difficult to see any justification for the language used by Mr. Coleridge with reference to all those gentlemen, and with reference in particular to Dr. Bayliss and the work that he was doing, and the attack that was made on Lord Lister and Sir Victor Horsley. Apparently, if Mr. Coleridge had his own way the antivivisectionists would not be passive resisters, but would be active resisters, of the law, and they would go to University College and give it over to sack and ruin in the excess of their indignation. When the statement was made, Dr. Bayliss, as they might imagine, was very much concerned at the attack which had been made upon him and upon those whose business it was to do everything they could to avoid torture and torment. After Mr. Coleridge's offensive statement a question was raised on May 7th in the House of Commons with reference to it and as to what had happened, and the Home Secretary made, in reply, a statement which was absolutely true. The question was asked for the purpose of ascertaining under what certificate the operation had been performed, and the reply of Mr. Akers-Douglas, the Home Secretary, was that the operation had been performed under Certificate C. The extraordinary thing about it was that Mr. Coleridge seemed to have taken no notice of that statement by the Home Secretary, but, on the contrary, seemed to have persisted in the statements which he had made before. The consequence was that on May 8th Dr. Bayliss through his solicitor wrote a letter setting forth as a fact that the statements made by Mr. Coleridge were not true. Correspondence then ensued between the parties, with the result that the present litigation was launched. In conclusion, the learned counsel said that if he satisfied them that Dr. Bayliss had been acting within the law and had been doing what the law prescribed to him, and had not been committing a statutory offence, he should ask them to give him such damages as would mark their sense of the persistence with which he had been attacked by Mr. Coleridge.

The plaintiff was then examined by Mr. Boxall, K.C., and gave an account of the way in which the demonstration which had called forth the libel had been conducted. He absolutely denied the statements that during the operation the animal had been conscious. Except for some nervous twitchings due to the fact that it had been suffering previously from distemper it did not struggle; it showed no symptoms whatever of pain or of purposive struggles which would indicate consciousness. If the statements contained in the libel were true he would run a risk of being deprived of his licence.

At the conclusion of the examination in chief the Court adjourned to Friday morning.

THE "SHAFTESBURY" TRAINING SHIP.

The *Shaftesbury* training ship is anchored off Grays, near Gravesend, and was once upon a time the P. and O. ss. *Nubia*. She is now used as a training school for unmanageable boys, and can accommodate some 300. Every boy before being eligible for admission must have been taken before a magistrate and committed to a certain term (the length of which can be extended by the commandant). A sad enough certificate to start life with, but as all the boys are in the "same boat," they do not feel this slur until the time comes for them to get employment when they leave at 16.

A boy is discovered begging late at night or stealing: generally these are the chief offences. He is taken to the police station and detained until next morning, when he appears before a magistrate. The magistrate decides whether he shall be sent to an industrial school, a truant school, or to a training ship. If he be sent to the latter a policeman or one of the Board's inspectors takes him by train and puts him on board. There he is immediately handed over to the petty officer, who looks over his papers, which contain particulars as to the boy's parentage, the neighbourhood he has come from, and the character of his offence. The officer then blows his whistle, and, as if by magic, a couple of the bigger boys appear. It is not necessary to tell them what is required of them. The new boy who is standing cowering, a filthy object in rags and tatters, is hurried away to reappear in half an hour spotless in new raiment. This is what has happened: he finds himself in the bathroom of the ship. Here there are small tubs and a large plunge bath. Before he can count three he is stripped and standing in one of the small tubs, being scrubbed by his two friends from head to foot with hard scrubbing brushes and soap.[1] When they consider that he will do, they in their turn strip, and seizing what really may be called their victim, he is accompanied into the plunge bath by his two friends. Woe to him if he shows the least resistance, for then he is ducked and doused and dipped until he becomes passive. Before donning his brand-new Jack-tar suit his hair is cropped, and as he once more stands before the petty officer it is hardly an exaggeration to say that his own mother would not recognize him. He is then allowed to join the other boys.

At first youths who have lived their lives running wild in the gutters and slums pine very much for their liberty, but once this feeling has worn off they lead comparatively happy lives and become contented. The great secret of this content is that they are kept constantly employed, and that their work and play are under discipline. In fact, the discipline is so perfect that recourse has seldom to be had to the corporal punishment usually associated in the public mind with the name of reformatory.

The commandant, by whose courtesy we were enabled to go over the *Shaftesbury*, told us that he had practically no trouble with his boys. He has wisely adopted the system of allowing its officers to do the punishing, while he tries to encourage them by kindness and good advice. This has a humanizing effect, and many is the boy who writes to him after he is out in the world and remembers gratefully his commandant's kindness.

The training and regular life bring about a remarkable improvement in the physique of these boys after a short time on board. This may be attributed to wholesome and sufficient food, regular hours, and plenty of sleep, combined with physical excercises and fresh air. The boys sleep in hammocks slung from iron bars in the ceiling on all the decks so that they may have plenty of space and air. The hammocks are folded away during the day in bags. We append a table showing the effect of the training on fifty boys picked at random.

No. of Boys measured.	—	Height.	Weight.	Chest.	Average Period on Board.	—
		ft. in.		in.		
50	On entry	4 5½	69½ lb.	28	3 yr. 4 mths.	Only 3 of these passed through Sandow's system.
	On discharge ...	4 10	89½ lb.	30		
	Average increase	0 4½	19.11 oz.	2		

We also give a diet chart, by which it will be seen that the food is varied, which is important, and of good quality.

[1] That scrubbing is necessary may be easily imagined, and a witty Irish officer once remarked that after having been scrubbed for half an hour, one of the boys was found still to have a pair of socks on his feet.

Dietary Table.

	Breakfast.				Dinner									Supper.		
	Cocoa.	Bread.	Porridge.	Butter.	Beef.	Corned Beef.	Meat Pie.	Pea Soup.	Fish.	Suet Pudding.	Plum Pudding.	Rice Pudding.	Potatoes.	Bread.	Cocoa.	Bread.	Jam or Marmalade.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	pt.	oz.	pt.	oz.	oz.	oz	oz	pt.	oz.	oz.	oz	oz.	oz	oz.	pt.	oz.	oz.
Sunday	1	7	...	1	6*	...	...	...	...	...	8	...	8	2	1	7	1
Monday	...	7	...	1	...	...	...	1	...	...	...	4	...	2	1	7	1
Tuesday	1	7	...	1	...	4	...	...	...	6	...	...	8	2	1	7	1
Wednesday	...	7	...	1	...	...	12	...	...	...	...	...	...	2	1	7	1
Thursday	1	7	...	1	6*	...	...	...	...	...	...	...	8	2	1	7	1
Friday	1	7	...	1	...	...	...	12*	...	...	...	...	8	2	1	7	1
Saturday	...	7	...	1	...	4	...	...	...	...	...	...	8	2	1	7	1

INGREDIENTS.

Cocoa—1 oz. cocoa, ½ oz. sugar, and ½ pint of milk per boy. *Porridge*—2 oz. oatmeal, ½ oz. sugar, and ½ pint of milk per boy. *Meat Pie*—6* oz. mutton, 4 oz. flour, 1 oz. suet, 4 oz. potatoes, and 3 oz. various vegetables per boy. *Soup*—1 oz. peas or lentils, 1 oz. rice or barley, with 8 oz. of carrots, turnips, etc., and 3* oz. of mutton per boy. *Fish*—Soup may be substituted when fish is dear or unobtainable. *Suet Pudding*—2½ oz. flour, and 1 oz. of suet per boy. *Plum Pudding*—2⅝ oz. flour, 1½ oz. suet, 1½ oz. plums, and ½ oz. sugar per boy. *Rice Pudding*—1½ oz. raw rice, ½ oz. sugar, and ½ pint of milk per boy. *Butter*—½ oz. for each child at a meal, dripping may be given in addition when obtainable from joints. *Salt and Pepper*—At discretion. *Rhubarb*—Rhubarb, with sugar, may be substituted for vegetables, provided no extra cost is incurred. *Green Vegetables*—When green vegetables can be obtained they are to be substituted for 4 oz. of potatoes, providing no extra weekly cost is incurred. *Vinegar*—When corned beef or fish is given for dinner, vinegar may be served out at the rate of 1½ gallon per meal for the whole of the boys.

Note.—For boys while on the tender *Themis*, the allowance of uncooked beef is to be increased to 12 oz. each per day. Boats' crews may receive, in addition to the ordinary allowance, in cold weather 8 oz. of bread and 3 oz. of marmalade, at the discretion of the captain-superintendent.

* These weights are uncooked.

The physical instruction is given under the general superintendence of Mr. Chesterton, the School Board's organizing teacher of physical education. The excellent result of his system is shown by the fact that every boy is smart and well set up. In addition to the exercises done on board, cricket and football are played in a large playing field belonging to the *Shaftesbury*, and the element of emulation is given by matches played from time to time against other schools. On shore also is a carpenter's shop, and all the ship's boats are turned out there. Some of the best-behaved boys are allowed to land and do messages. Half the day is devoted to lessons, and this is the part least appreciated by youths the majority of whom steadily resisted going to school when they were free. The dislike to lessons is so rooted that the most unpalatable job would be done in preference if they got the chance. The lessons they do are precisely those done by ordinary Board schools. Many useful occupations are taught on board, and the boys are allowed to get up entertainments also; some of them turn out quite talented singers and actors. That they are happy and contented is proved by the rarity with which any mutiny against discipline takes place. Now and again five or six of the boys have conspired and run away, but they are so quickly captured and brought back that they find it does not pay. The discipline must be excellent by which some two or three hundred young hooligans in full training are controlled by half a dozen officers. That the moral training is beneficial is proved by statistics, which show that 98 per cent. of the boys who are drafted into the army and navy and 85 per cent. into general employment from the *Shaftesbury* turn out well. The majority of them are trained to play instruments, and unless their parents oppose it very much they are enlisted as bandsmen. The Royal Navy only accepts the very pick of the bunch, and very few get into it, so that many boys are unfortunately necessarily put into general employment which allows them to go home and be subjected to the bad influences from which they were withdrawn. A very difficult thing, which commandants of training ships have to battle against, is the home influence. The best-conducted lads are made petty officers. These have privileges, one of which is going home periodically to see their friends. This unfortunately keeps up home influence, and we have no hesitation in saying that it is a very grave mistake, and should be stopped absolutely. It would be far kinder to send the incorrigibles home periodically as a

punishment. Then, lads cannot be prevented from receiving letters from their parents, and in these they often unsettle them, and advise them unwisely. "I shouldn't go to sea if I was you," is often quite sufficient to make a promising youth determine not to be a sailor. If the advice was disinterested it would not be so regrettable, but it is a fact that numbers of parents actually drive their children to crime at an age when they are troublesome and an expense at home, only to seek to entice them back when they are old enough to earn wages.

It is a big problem, and the pity of it is the stain on their characters with which youths, having passed through such a training ship, are launched into life. No matter how well they have done, how fully they have redeemed their characters by systematic good behaviour, they are branded with the stain of a crime—into which they have often been forced by the brutal and vicious example in their homes.

Surely a magistrate's finding might be torn up if for three years any boy had redeemed his past. Surely it is the parents who should go to prison as unworthy to have the custody of their children. If this were done, fewer children would be driven into the streets to commit crime. And surely a boy might be allowed to go into employment without the smirch of theft—or whatever he may have done when he was too young to know better—on his character when he is starting in life.

Failing this mercy being shown to worthy ones, they should be drafted into cadet corps, to pass later into the army as men, so that their past could be buried.

ST. BARTHOLOMEW'S HOSPITAL.

AT a General Courtof Governors of St. Bartholomew's Hospital held on November 5th, about seventy governors being present, the following resolutions, which were proposed by Mr. CHARLES ALFRED CRIPPS, K.C., M.P., and seconded by Sir WILLIAM S. CHURCH, Bart., K.C.B., President of the Royal College of Physicians, were carried with only one dissentient, namely:

1. That this Court desires to record its unqualified satisfaction that the Mansion House Committee, after impartial and exhaustive inquiry, has come to the following conclusions, namely:

(*a*) That it is impossible, in the public interest, to remove the hospital from its present site.

(*b*) That the additions to and rearrangement and improvement of the existing buildings, as proposed by the Governors, are absolutely necessary for continued efficiency in the treatment of patients and for bringing the hospital, in all departments, up to the standard of modern sanitary and scientific requirements.

(*c*) That an appeal to the public to supply the cost of the requisite new buildings and improvements is fully justified, it having been shown to be impossible for the hospital to provide the same out of its own resources.

(*d*) That the reputation and character of the hospital have been fully vindicated, and that its administration has been conducted in a wise and enlightened spirit with due regard to economy and to the best interests of the patients.

2. That the Court begs to offer to the gentlemen who served on the Mansion House Committee its cordial thanks for the large amount of time and the great attention bestowed by them on all matters connected with their inquiry.

3. That in the general scheme of rebuilding provision be made for—

(*a*) Additional operating theatres.

(*b*) New casualty and out-patient departments.

(*c*) New nurses' home.

(*d*) New quarters for the resident medical and surgical staff.

(*e*) An isolation block and other new ward blocks to supply the place of those to be demolished.

(*f*) New mortuary, *post-mortem* rooms, and pathological department.

(*g*) Internal structural rearrangement of the east, west, and south wings of the hospital.

4. That the House Committee, with power to add to their number, be requested to determine, after consultation with the medical staff, by which of the several plans submitted by the architects, subject to such modifications as from time to time appear desirable, provision for the foregoing purposes can best be secured; but that it be an instruction to the House Committee to carry out the recommendation of the Mansion House Committee as regards the out-patient department as shown on Plan No. 6 laid before that Committee.

5. That the first block to be built be the new casualty and and out-patient departments, dispensary, etc., and the new operating theatres; that the nurses' home be next built, and that the remaining blocks be built in such order as, having regard to their relative urgency, may be considered most expedient and convenient for the general work of the hospital.

6. That the medical staff be consulted from time to time on all details that affect the sanitary arrangements, the treatment of the patients, or the interests of the medical school.

7. That the Treasurer and Almoners be authorized to make arrangements from time to time for the temporary use of such of the Christ's Hospital buildings as may be necessary for carrying on the work of the hospital. Also that they be given authority to make any provision they may think proper for officers and servants whose present quarters are destroyed or interfered with thereby.

8. That application be made to Parliament in the ensuing session for power to the Governors to use for the purposes of the hospital in connexion with the proposed new buildings and improvements, the site of the Church of St. Bartholomew-the-Less, and the burial ground adjoining within the hospital precincts, and for the union, for ecclesiastical purposes, of the parish of St. Bartholomew-the-Less with the adjacent parish of St. Bartholomew-the-Great.

9. That, after the Lord Mayor-elect has entered upon office, the Treasurer and Almoners do wait upon him with a request from this General Court of Governors that at some convenient date he will convene a meeting of the citizens of the purpose for raising the requisite funds for the new buildings and improvements needed.

ASSOCIATION NOTICES.

ELECTION OF MEMBERS.

ANY candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are fitted up for the accommodation of the Members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 a.m. to 5 p.m. Members can have their letters addressed to them at the office.

GUY ELLISTON, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

BATH AND BRISTOL BRANCH: BRISTOL DIVISION.—A meeting of this Division will be held at the Medical Library, University College, Bristol, on Wednesday, November 18th, at 8.15 p.m., to consider the Draft Medical Acts Amendment Bill, published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of August 22nd, 1903, and other questions referred to the Divisions by the Council of the Association.—J. MICHELL CLARKE, Clifton, Honorary Secretary.

BORDER COUNTIES BRANCH.—A general meeting of this Branch will be held in the Dumfries and Galloway Royal Infirmary, Dumfries, on Friday, December 11th next. Gentlemen desirous of showing cases or reading papers are requested to communicate at their earliest convenience with the Secretary, FRANCIS R. HILL, 62, Warwick Road, Carlisle.

DORSET AND WEST HANTS BRANCH: BOURNEMOUTH DIVISION.—A meeting of the members of this Division will be held at the Medical Society's Rooms, Shattesbury Hall, Bournemouth, on Wednesday, November 25th, at 4 p.m., to consider: (1) Resolutions adopted by the Council for the improvement of the Vaccination Acts (see SUPPLEMENT, October 31st, page cxxii): (2) proposed Medical Acts Amendment Bill (see SUPPLEMENT to the JOURNAL of August 22nd); (3) Direct Representation of the British Medical Association on the General Medical Council; any other business.—C. H. W. PARKINSON, Wimborne, Honorary Secretary of Division.

DUNDEE AND DISTRICT BRANCH.—This Branch will meet in University College, Dundee, on Friday, November 27th, at 4.30 p.m., to consider the matters referred to the Divisions, and printed in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL for August 22nd. The members will dine together at 6.30 p.m. in the Queen's Hotel.—R. COCHRANE BUIST, G. HALLEY, Honorary Secretaries.

LANCASHIRE AND CHESHIRE BRANCH: ALTRINCHAM DIVISION.—The next quarterly meeting will be held at Altrincham on Thursday, November 19th, at 4.45 p.m. The principal business will be the discussion on the Medical Acts Amendment Bill; and Dr. S. Woodcock, of Old Trafford, has promised to attend. It is proposed that the members should dine together after the meeting.—F. W. H. GARSTANG, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: WANDSWORTH DIVISION.—A dinner will be held at the Crichton Restaurant, Clapham Junction, at 7 p.m., on Thursday, November 26th, to meet Dr. W. Hale White, F.R.C.P., who will

read a paper at 9 p.m. on Some Points in the Diagnosis and Treatment of Common Diseases of the Liver. A discussion will follow. Tickets, 6s. each. Non-members as well as any members outside the Division are invited to attend.—E. Rowland Fothergill, Torquay House, Southfields, S.W., Honorary Secretary.

Midland Branch: Derbyshire Division.—There will be a meeting of this Division at the Royal Infirmary, Derby, on Thursday, November 19th, at 3.30 p.m. Agenda: To discuss and express an opinion on the Draft Medical Acts Amendment Bill; to consider the resolutions referred to the Division by the Council and the Representative Meeting at Swansea (the Draft Act and the Resolutions were published in a Supplement to the Journal of Saturday, August 22nd). The Committee and Subcommittee, having regard to the important changes proposed, have arranged with Mr. J. Smith Whitaker, the Organizing Secretary of the Association, that he should come down to the meeting and explain the Act. It is therefore to be hoped that a large number of members will attend and discuss the various clauses.—Winstan St.A. St. John, 16, Duffield Road, Derby, Honorary Secretary.

South-Eastern Branch: Chichester and Worthing Division.—A meeting of this Division will be held at the Norfolk Hotel, Bognor, on Friday, November 20th, at 3.30 p.m. Mr. W. S. Simpson (Chairman of the Division) will preside. Agenda: Minutes of the last meeting. To decide the place of next meeting. To consider: (1) Resolution passed by the Council with regard to improving the existing Vaccination Acts; (2) proposed Medical Amendment Bill; (3) resolution passed by the Representative Meeting, 1903, with regard to representation on the General Medical Council. Papers—(1) Sir Hugh Beevor, Bart.: Some Ancient and Some Recent Therapeutics in Lung Disease. (2) Dr. Going (Littlehampton): A Case of Meningitis, with special reference to the Diagnosis of Tuberculous Meningitis. (3) Mr. Rawlinson (Bognor): A Case of Infantile Scurvy. Dinner at the hotel at 5.45 p.m.: charge 6s., exclusive of wine.—H. C. L. Morris, Gothic Cottage, Bognor, Honorary Secretary.

South Wales and Monmouthshire Branch: Monmouthshire Division.—A special meeting of this Division will be held in the Newport and County Hospital on Friday, November 20th, at 3.45 p.m. An address will be given by Mr. J. Smith Whitaker, Organizing Secretary of the Association.—W. J. Greer, Newport, Honorary Secretary.

South Wales and Monmouthshire Branch: South West Wales Division.—The next meeting of this Division will take place at Llanelly in May. The Honorary Secretary will be pleased to hear from gentlemen who will kindly read papers at that meeting.—Glanville Morris, M.D., Mardy, Glamorgan, Honorary Secretary.

Staffordshire Branch.—A meeting of this Branch will be held at the North Stafford Hotel, Stoke-upon-Trent, on Thursday, November 26th, at 4 p.m. The Secretary would be glad to have a note of papers and cases.—G. Petgrave Johnson, Stoke-on-Trent, Honorary Secretary.

West Somerset Branch.—The autumn meeting of this Branch will be held under the presidency of Dr. David Brown, at the Taunton and Somerset Hospital, on Friday, November 27th, at 4 p.m. Mr. H. Percy Dean, M.S., F.R.C.S., Surgeon to the London Hospital, has kindly undertaken to give an address on Jaundice: its Causes and Treatment from a Surgical Standpoint, followed by a discussion. Any member wishing to bring any communication before the meeting should give the Honorary Secretary early notice. The Annual Dinner for medical men residing in West Somerset will be held at the London Hotel, Taunton, at 6 p.m. for 6.30 p.m. punctually. The chair will be taken by Dr. David Brown. A programme—musical, etc.—will be carried out after dinner. Tickets 6s. each. Members are at liberty to bring guests, for whom tickets may be obtained at the same price. In order to make these dinners as successful as possible, it is hoped that as many as possible will make an effort to be present. Members intending to be present should inform the Honorary Secretary by November 23rd.—W. B. Winckworth, 3, Carlton Terrace, Taunton, Honorary Secretary.

SPECIAL CORRESPONDENCE.

BERLIN.

The Operation on the Emperor.—Meeting of Tuberculosis Practitioners in Berlin: Professor Fraenkel on Open-air Sanatoria: The Importance of Sanatoria for Children: Tuberculous Dispensaries.—Opening of Two Sanatoria for Children.—The Prevention of Venereal Disease.—Society for Cancer Research.

A startling piece of news appeared in the Berlin papers on Monday evening to the effect that a laryngeal operation had been performed on the German Emperor. All who have had occasion to see the Emperor both before and after the operation are unanimous in their admiration of his perfect calm and equanimity. "As though he had no nerves" is the expression used in speaking of his Majesty.[1]

An important meeting of German tuberculosis doctors was held in Berlin last week. The proceedings lasted two days, and almost attained the character of a small congress. In opening the first day's meeting, Professor B. Fraenkel (Berlin) said that an interchange of opinions on many subjects connected with the treatment of tuberculosis was most desirable. The sanatoria movement had recently been attacked in the press and the statistics questioned. It had been said that the good results found their explanation in the fact that the majority of cured cases were not tuberculous at all. But this assertion was totally unfounded. Before admission the patients were subjected to careful examination, and he could only say that if, besides the clinical symptoms, tuberculin injections were responded to by rise of temperature and increase of local phenomena, the diagnosis of tuberculosis was unimpugnable. Again, it was objected that other climates were more favourable than that of North Germany for successful treatment, but experience had shown that this made no essential difference, since more than 30 per cent. of patients, who had undergone a three months' treatment, were so materially bettered that even after an interval of four years no second breakdown was to be expected. Lastly, the newest idea was that sanatoria would soon become useless by reason of the immunizing process. No doubt this was a thing to hope for devoutly, but before it could be realized there were at present in Germany more than a million consumptives and fifty-five millions not immune against the disease. With these figures before them they must rejoice in the good done by and emanating from the sanatoria, which might with justice be called high schools for the antituberculous education of the people. More than spoken or written words could attain was to be attained by daily practice of hygienic living; this produced well-trained, seasoned troops, who kept up the discipline and helped to spread it. The combat against tuberculosis must be fought with all weapons; though sanatoria could not suffice for universal prophylaxis, as regards treatment of individual cases, they were undoubtedly better than anything that modern therapeutics had to offer. Staff Surgeon Niedner gave an account of the newest researches on tuberculosis, and emphasised that Professor v. Behring was by no means—as was generally believed—an opponent of sanatoria, but looked upon them as an educational factor of the highest value. Geheimrath Heubner (Berlin) read a paper on the importance of children's lung-sanatoria. The critical years seemed to him to be from 10 to 15. He went into the question of scrofula, which he said required greater consideration. As regards treatment, he had of late achieved good results with tuberculin, but the greatest care was necessary in its use. The chief benefit, however, was obtained and must be hoped for from sanatoria. The statistics of country sanatoria, as might be expected, were better than those in towns. To him the erection of children's sanatoria on a large scale seemed a necessity. It was difficult to keep children in town hospitals for any length of time, as the expenses were too great, whilst sanatoria required less outlay. Altogether the question of cost was serious as regarded prolonged treatment of children, as the Government as yet stood aloof from the whole matter. The French and Belgian "Dispensaires" formed the subject of a discussion which was carried through both days of the meeting. Some of the speakers maintained that these institutions were in many cases makeshifts for sanatoria, where funds for the latter were not obtainable; others again considered them admirable weapons in the great combat, and recommended their introduction in Germany.

In connexion with this tuberculosis meeting it is interesting to note that two children's sanatoria—both within 40 miles of Berlin—have been opened during the week. The one is in Hohenlychen, a quiet spot in the Mecklenburg forests. It has been built by the Red Cross Society, and will be partially supported by voluntary contributions. There are 60 beds, distributed over a number of one-storied pavilions, the boys and girls having separate quarters. The second sanatorium forms part of the great establishment at Beelitz. It has room for 30 children, and is built and finished in the noble and generous (not to say lavish) style that characterizes the whole huge Beelitz establishment. A festive note was given to the opening of the new children's department by the presence of the German Empress, who examined it in every part, and was also shown through all the other buildings, to the delight of the patients, with many of whom she entered into conversation.

The German Society for combating venereal disease has addressed an urgent petition to the Municipality of Berlin, setting forth that considering that out-patients suffering from venereal diseases form a serious source of contagion, and considering the grave want of available beds in the municipal hospitals, an independent hospital department under the guidance of a specialist should be created with all possible speed. The petitioners are aware (the petition says) that such a department is to form part of the Virchow Hospital in

[1] The bulletins and some further notes are published at p. 1297.

course of erection. But years must elapse before its completion, and till that time comes the city authorities should not neglect to minimize the danger from contagion as much as is in their power.

At the last meeting of the Society for Cancer Research reports of the work done in Germany and other countries were read and discussed. Dr. Bashford, General Superintendent of the Laboratories of the English Cancer Research Fund, was present, and gave an account of the plan of work which has been adopted in England. The paper of the evening was read by Professor v. Hausemann, its subject being the simultaneous occurrence of different kinds of tumours in one and the same individual.

LIVERPOOL.

Presentation of the Charter of Incorporation of the New University: Speech by the Chancellor, Lord Derby: Sir Oliver Lodge on Educational Provinces: International Retaliation.—Presentation to the Treasurer of the Royal Infirmary.—Dr. William Williams.

THE ceremonial inauguration of the University of Liverpool took place on the afternoon of Saturday, November 7th, in St. George's Hall, when the charter of incorporation was formally presented by the Lord Mayor to the Chancellor, Lord Derby. The occasion was one which excited great interest in the community, as was shown by the fact that, though the proceedings were expected to be chiefly formal, and the acoustic properties of the great hall are not good, nearly every one of the more than three thousand seats was occupied. A large gallery was reserved for the male students, who appeared in great force, and made their presence known by songs and repartee. The gathering was intended to be local and municipal, and consequently no official representatives of other universities were asked to be present. Next year a more strictly academic function will be held, to which the older universities will be asked to send representatives, and at which, no doubt, honorary degrees of the University of Liverpool will be conferred. The members of the various faculties and the governing body of the University, wearing full academic dress, marched up the hall and took their places on the platform. The scene was striking and picturesque. Dr. Peace, organist to the Corporation, played the organ, which is one of the finest in the kingdom, and proceedings began by the singing of the National Anthem. The Lord Mayor said he had the honour during the last twelve months of being Chairman of the Committee whose labours had resulted in obtaining the Act of Parliament and the charter of the new University of Liverpool. They had the powerful aid of many friends, of whom Lord Derby had been the most active and powerful, and he thought that the part Lord Derby took in founding that University was one of the most important acts of his life, and that among his many titles to distinction not the least honourable would be that of being the first Chancellor of the University of Liverpool. He had now the honour to hand him the charter of incorporation. The Chancellor (Lord Derby) said that it was a proud day for all of them, and especially for the University of Liverpool, because he was now able to present to them the charter of their existence. It marked a period which, though it was not long to wait for, was anxiously expected by all who had the welfare of Liverpool and its University at heart. They had now to look forward, and he trusted that, concurrently with the more solid part of their work, they would endeavour to infuse into the students a love, a belief, and a faith in the University which would do much to build up the true traditions of a worthy place of teaching. There had always been sympathy between centres of trade and centres of learning. Athens, Alexandria, Genoa, and many other places where commerce had found a home had not been indifferent to the claims of pure art and pure science. He believed that in many directions, and in many sciences, they were on the threshold of great discoveries, and he hoped that Liverpool would take an important part in them. They could already reckon one prominent light of science in Sir Oliver Lodge; in their Medical College they had also achieved honours, and they hoped many more would be gathered. A suggestion had been made by the Lord Mayor that education should be free. Desirable as it might be, it seemed that the time had not yet come for that; but if circumstances permitted it he could conceive of no place more ready to establish a free university and no people more ready to profit by its advantages. Congratulatory speeches were then made by the Mayors of the various municipalities which had joined in the petition for the incorporation of the University. The Lord Mayor then called on Sir Oliver Lodge, formerly Professor of Physics in the Liverpool University College, now Principal of the University of Birmingham, who said that the proceedings that day were an object lesson in the union of civic government and higher education. Liverpool had become the head of an educational province, and he hoped to see the day when England would be divided into educational provinces, each centring round a university in touch with the schools of the district, and standing for unity in the midst of wholesome diversity. He believed that that ideal of provincial self-government as opposed to control of local affairs from the metropolis was an ideal worth working for in other directions than education. Liverpool University had been the outcome of a quarter of a century of hard work on the part of many present. It had been no selfish work, but the result of public spirit, self-sacrifice, brains, and energy. It had been a work undertaken for the benefit of unborn generations. The touch of which the spark was kindled at a town's meeting a quarter of a century ago was now fully alight, ready to be handed on to future generations. The University was born in a happy time as regarded the probability of national and local support. It was essential that the country should realize that it must do something substantial for higher education. Hitherto it had been content to leave it to private munificence, which had done well, but which unaided was unequal to the burden. If the people were not trained—and highly trained—in the facts of Nature, no artificial scheme of salvation would long preserve our industries. There was no end to what could be done if money were available—carefully and wisely available—in touch with the living generation and subject to its criticism. He was not in favour of abolishing fees, but was in favour of providing scholarships for moneyless ability, scholarships awarded not so much on the basis of competitive examination as on that of nomination by schools and institutions. The duty of a university was fourfold: (1) To raise the intellectual standard of the schools; (2) to teach, enlighten, and inspire the average student as well as the brilliant scholar; (3) to exclude no domain of learning: and (4) to pursue knowledge for its own sake and increase the stock of wisdom in the world. Progress was the condition, the essence of living knowledge; it should be the very breath of life of a university. The Vice-Chancellor (Principal Dale), on behalf of the University, in acknowledging the various addresses of congratulation, said that the support received from the surrounding communities had done much to convince the Privy Council of the extent of the desire which existed for a University. He said that they intended that the University should be the university of the poor man as well as of the rich. Since he came to Liverpool he had meddled with no political controversies, and as long as he remained in Liverpool with no political controversies would he meddle; but he ventured to say that there was no system of protective tariffs, however ingenious, that could protect them against brains, that an educated people was an invulnerable people, and that educated commerce and educated industry were invincible in the markets of the world. If they wished to retaliate on their rivals, one way, and perhaps the surest way, was through an army of new workers, alive and alert, with the energy, the knowledge, and the skill that only a sound system of training and education could give. The work of the University was not merely a preparation for the professions or for business. Its true function was to train for life, and its duty was to unseal the springs of life, to quicken the mind, to supply those inspiring forces that built up the moral life, to implant a love of truth and knowledge, and a living faith in lofty ideals; above all, to kindle in the hearts of those whom it taught that generous spirit of devotion which thought lightly of success and thought greatly of service.

Mr. Ralph Brocklebank, Treasurer of the Royal Infirmary since 1879, has been presented by his colleagues on the Committee, the medical staff, and other friends of the institution, with his portrait in oils painted by Mr. Hall Neale. The presentation was made at the infirmary by the President, Mr. Joseph Lister, who, in the course of his remarks, said that Mr. Brocklebank was the most excellent treasurer they had ever had, and that he had never lost an investment. Mr. Brocklebank, in accepting the presentation, recalled the remarkable progress the infirmary had made since the time when he took office, and he acknowledged its indebtedness to the Committee and to the medical staff for their energy and devotion. The portrait was accompanied by a replica by the

artist. One of the pictures will be hung in the Board room.

Dr. William Williams, who has been for many years physician to the Royal Southern Hospital and has established a high reputation for himself as a teacher, has tendered his resignation. Four candidates are spoken of as applying for the vacant post, Dr. A. F. Grünbaum, Dr. Gordon Gullan, Dr. John Hay, and Dr. Lloyd Roberts. The election takes place under the old system; all subscribers of a certain amount have a vote, ladies vote by proxy, and the candidate who gets a bare majority over each of his opponents is declared to be elected.

MANCHESTER.

Manchester Sanatorium for Consumption.—Lectures on Radio-activity.—Gift of Valuable Herbarium.

Mr. W. J. Crossley lately gave £70,000 to found in Delamere Forest the Manchester Hospital for Consumption. The town of Bury is setting a good example in adopting means to raise a sum of £1,500 for the endowment of a cot in this hospital. It appears that one in every ten deaths in Bury is due to phthisis. Mr. W. J. Crossley, in speaking at the bazaar held at Bury for the above object, mentioned that he had seen the plans of the sanatorium which is to be erected at Midhurst, and he found that there was very little difference between them and the institution in Delamere Forest. It was to be constructed on the same general lines, of almost exactly the same size, built at almost the same level above the sea, and would command a view not one bit better than that to be seen from their own sanatorium. Consumption had lessened in this country by no less than 50 per cent. during the last twenty years as a result of sanitary reform, the open-air treatment, better housing, and many other influences marching together. But it was necessary to take a great many other measures to stamp out the disease. We wanted better milk supplies, still better housing and sanitation, and above all plenty of free open-air sanatoria.

Professor Schuster in his third lecture on radio-activity dealt chiefly with radium and its emanations. The term "electron" was, he said, applied to the smallest atom of electricity, and "ion," which really meant "traveller," was the carrier of this electron. The discovery of radio-activity was accidental. Becquerel found that phosphorescent bodies became luminous when exposed to daylight. These bodies M. Curie found all contained uranium. Becquerel was able to get an impression on a photographic plate from such a phosphorescent mineral when it was wrapped up in paper. Accidentally he discovered that the same effect could be obtained without exposing the phosphorescent material to sunlight; in fact he got a stronger effect. The most active minerals in this regard were searched for. Pitchblend was found to be five or six times more active in its effects than the minerals already used. That obtained from Cornwall was almost inactive, while that obtained from Austria was the best. This mineral contained a very large number of metals, including radium, which was associated with barium and polonium which was associated with bismuth. The radium salt had to be separated and crystallized repeatedly from the barium salt. The radio-activity of 5 milligrams of radium bromide would easily, even when enclosed in a lead tube ½ in. thick, discharge a charged electroscope. The radio-activity was not a property of matter, it was due to a continual change in the matter, and was a sign of decay or alteration. Thorium was another of these newly discovered metals. The first change from thorium was to thorium nitrate, which caused a small thorium *x* radio-active effect. When precipitated with ammonia, and the filtrate evaporated, a small very active residue was obtained, which he passed towards an electroscope as if it had taken something from the thorium; this was spoken of as a thorium *x*. After a few weeks the thorium itself would again yield more thorium *x*. The filtrate lost its activity at a definite rate. It would seem, therefore, that thorium changed into thorium *x*, and this again into something else. Thorium was active because it changed into thorium *x*. Uranium underwent similar changes and passed into uranium *x*, but what became of it was not known. The rays which thorium *x* sent out were *x* rays. The second generation of change, that was, from the metal *x* state, was called an emanation, and it appeared to be in a state of a gas. The radium emanation might be employed medically, because the gaseous emanation—the second generation—when it struck against the tissues or other obstacle became solid—the third generation—and formed a deposit which sent out cathode rays. Some emanations were generated quickly and exhausted quickly, for example, those of thorium, while those of radium were the reverse. These emanations had many of the properties of a gas. They were condensed by cold; thorium emanations became solid at −120° C., and those of radium at −150° C. This third generation of solid particles was in the case of radium relatively long-lived and excited activity in living matter, and the rate of change was not affected by anything that could be done to it; neither heat nor cold affected its rate of decay. All these bodies, thorium (240), uranium (232), and radium (225), had a very high atomic weight.

The botanical part of the Museum of Natural History of Owens College has just been enriched by the gift of one of the Governors of the College, Mr. J. Cosmo Melvill, of his General Herbarium of the World. It embraces one-third of all known plants, about 40,000 species, exhibited through half a million specimens, gathered from most parts of the world, arctic, temperate, and tropical. It is one of the three last private herbaria existing in this country, and the only one of the three which extends its area beyond the palaearctic region. Of the 7,500 recognized genera of plants it contains 5,000, and many subgenera.

SYDNEY.

A Compulsory Vaccination Bill.—Preservatives in Foods.—A Leprosy Bill.—The Women's Hospital.—The Friendly Societies in New South Wales.—Water Supply and Sewerage.—The Theatres' Sanitary Accommodation.—The New Benevolent Asylum.

The Premier, Sir John See, has recently laid on the table of the Legislative Assembly a memorandum from the President of the Board of Health, Dr. Ashburton Thompson, in regard to small-pox and vaccination. After pointing out the beneficial effect vaccination has had in other countries, the memorandum proceeds to state that New South Wales is the only State in this Commonwealth where there is no compulsory Vaccination Act. It might be inferred from that the people were opposed to vaccination, but the only available evidence went to show that they held no strong opinion on the subject. They appeared not to oppose it, but merely to neglect it. Whenever there was a small-pox scare the numbers who applied for vaccination for themselves or their children rose remarkably. During the epidemic in Sydney in 1879-80 the vaccinations done voluntarily amounted to nearly 60,000, although before and afterwards the number of people vaccinated in the years when there was no scare was so small in proportion to the total population as to be insignificant. There seemed to be no reason, therefore, for expecting that any great opposition would be offered to the passage of an Act rendering vaccination and revaccination compulsory, and as this State was not merely exposed to disaster itself from the want of such a law, but was consequently a permanent menace to every other State, the Board of Health would once more urge that the introduction of a Vaccination Bill and the establishment of a calf lymph station should be taken into practical consideration without delay.

In consequence of a good deal of opposition on the part of some manufacturing firms to the regulations drawn up by the Board of Health restricting the use of preservatives in foods, the matter has cropped up in Parliament, and a Select Committee has been appointed to inquire into and report upon the use of preservative and colouring matters in the preservation and colouring of foods. The mover of the resolution stated that there was a difference of opinion among medical men in regard to the stringency of the regulations and the use of salicylic acid. It was remarked in the course of the discussion that a committee composed of laymen could not settle this difficulty, and that the appointment of such a committee was a reflection on the ability of the President and members of the Board of Health. The appointment of this Committee would only result in disaster to the public health, if it led to any fresh legislation to legalize in any way the use of preservatives in other amounts than those allowed by the Board of Health.

A Bill known as the Public Health (Leprosy) Bill was passed through the Legislative Assembly almost unanimously, the object of it being to compel the segregation of all persons suffering from leprosy at the lazaret at Little Bay, and to rescind the power granted to the Board of Health to establish any lazaret in connexion with any private dwelling. The Bill was introduced into the Legislative Council, and on

the second reading Sir Normand MacLaurin said that the system as it existed at present was fair and just to every one. Those who had no means of protecting themselves, who had no homes, and were not far removed from pauperism were provided and cared for and treated with the greatest kindness; but in the case of those who were better off, there was no reason why they should be a charge upon the State, and be torn away from their families and sent to Little Bay. The danger of infection was very small, much smaller than in the case of consumption. He moved the reading of this Bill six months hence, and, as this amendment was carried, the Bill was accordingly rejected.

Some time ago the committees of the Women's Hospital and the Benevolent Society of Sydney agreed to an amalgamation of their two hospitals, and to a joint Board of Directors to control the New Hospital for Women to be erected on a good site in Paddington belonging to the Benevolent Society. The plans of this building have been prepared, but owing to a hitch in the arrangements the Committee of the Women's Hospital have decided to dissociate their hospital from the Benevolent Society, and to postpone the discussion of the basis of amalgamation until the new building is completed. In view of this decision, the administration of the Women's Hospital will be carried on as hitherto by the Committee elected at the annual meeting of this institution, and it was decided to make a stirring appeal for further financial support of this hospital. Meantime the Benevolent Society intend to push on with the construction of their new hospital on an excellent central site in Paddington, and as all the preliminaries have been arranged, it is probable that in the course of twelve or eighteen months we shall have a new and well-equipped hospital for women in Sydney.

At a recent function in connexion with the North Sydney Friendly Societies the Minister for Mines and Agriculture, in replying to the toast of "The Ministry," said that there were over 1,000 Friendly Societies and branches in this State, and the expenditure for sick pay and funeral donations was more than £100,000 per annum. The funds of these societies amounted to over £700,000, and there was a membership of 80,000. The great value of these institutions had always been recognized by the Government, and though the existing law made considerable demands upon them, it was necessary in order that their financial soundness might be assured. As the law now stood a registered society could have every confidence in the stability of its position, and in other directions the law conferred advantages upon the registered societies. The accumulated results of thrifty forethought encouraged by Friendly Societies constituted, too, a substantial increase in the national prosperity. The Minister, however, did not mention the fact that this state of prosperity was very largely dependent upon the medical profession, who attend the members of these societies at very low rates of remuneration for the services rendered. It is somewhat humiliating to think of the large accumulated funds of these societies which have been secured at the expense of the medical officers; and it is quite evident that a much higher rate of remuneration could be paid to the medical officers without the societies suffering financially to any appreciable extent.

An amending Bill has been introduced into the State Legislature to give further powers to the Metropolitan Board of Water Supply and Sewerage. During the outbreak of plague it was found that the board had no power to enter on premises and insist on the drainage being put into a sanitary state; power is taken under this Bill to do this. The better control of the sanitation of the catchment area is provided for, and it is hoped that the absolute purity of the water will be thus assured. The free use of water by hospitals and charitable institutions has led to some extravagance, and it is now proposed to establish some restrictions. In hospitals the free supply of water will be limited to 50 gallons a day for each inmate, and in charitable institutions to 30 gallons a day.

At a recent meeting of the Health Committee of the City Municipal Council a report was received from Dr. W. G. Armstrong, the City Health Officer, in regard to the condition of the sanitary accommodation and conveniences provided in connexion with the theatres and public halls of the city, as disclosed during a recent visit of inspection which had been made by him. In some instances the accommodation was totally inadequate.

The foundation stone of the new asylum, which is being built as portion of the Benevolent Society's head quarters, was laid a short time ago by Sir Arthur Renwick, the President of the Society. In the course of his remarks he sketched the history of this, the oldest as well as the largest institution of its kind in Australasia. Ninety years ago a philanthropic society was formed, and named the New South Wales Society for promoting Christian Knowledge and Benevolence in these territories and neighbouring Colonies. In 1818 this Society was remodelled, and the Benevolent Society of New South Wales took its place. In 1901, owing to the resumption of the old asylum site by the Government for the new Central railway station, the directors were compelled to find a new situation in which to carry on their work. They had been able to secure a suitable site in Paddington for the Women's Hospital, where the obstetric and gynaecological work was being carried on. The building the foundation stone of which had been laid, would provide accommodation for destitute mothers with children, infants who had been deserted, the neglected and stray children of the city, together with the children of poor parents who for various reasons were no longer able to support them. The accommodation and careful treatment of these children, some of whom were admitted in a deplorable condition of emaciation and neglect, was a special feature in the Society's work. These buildings, when completed, will form a valuable addition to the existing accommodation for the destitute sick of the city.

CORRESPONDENCE.

ONE FORM OF SPOLIATION TENDING TO THE ULTIMATE EXTINCTION OF THE GENERAL PRACTITIONER.

SIR,—In the BRITISH MEDICAL JOURNAL of November 7th, I see you print in close apposition to one another two letters. I wonder if the irony of the contrast appealed to you? The first letter is a begging letter from a London hospital, which we can conclude being sent to you is addressed to the profession at large asking them to give of their poverty. The second letter, to act as a consolation, is addressed to the profession showing how we need not fret (at least those of us who live within twenty miles of Charing Cross), because for the small sum of forty-two shillings a year we can rest secure that our widows and children will be considered at all events respectable beggars.

Now, Sir, this is our JOURNAL and so one need not hesitate for once to put things plainly; and with your permission I will ask some four questions, and am sure the profession in South London will await the reply through you with keen interest.

1. Are we to expect that King's College Hospital is coming among us to help to pauperize the people within a radius of five to ten miles?

2. Are we to expect this hospital will be the cause of the ruin of many honourable general practitioners who while endeavouring to earn a competence for themselves and family are also trying to do what is right?

If the hospital authorities will answer "No," to the above queries, will they also answer "Yes" to the following two?

3. Are they willing to make the certificate at foot an absolute *sine qua non*?

4. Will they allow the general practitioners in and around their new district to have a majority (elected from this Association) on a committee formed to deal from time to time with points this letter suggests?

If the replies to these queries are satisfactory, then we can be expected to help; but if not, it is certainly time we began, where opportunities arise, to put an end to the idea that we are only a lot of more or less intelligent donkeys, to be used and abused as the public in their misplaced philanthropy, at our expense, see fit.

I may add the certificate will be brought forward at a January meeting of the Wandsworth Division, with a resolution for the Representative Meeting at Oxford.

Some years ago, through your courtesy, I drew attention to the anomaly of the 20 miles radius of the Society for the Relief of the Widows and Orphans of Medical Men, with which you agreed. But they still seem to keep that restriction in force.—I am, etc.,

Southfields, S.W., Nov. 7th. E. ROWLAND FOTHERGILL.

FORM OF CERTIFICATE.

You must bring this form duly signed by a medical man if you apply again at this Hospital.

MEDICAL CERTIFICATE.

I hereby certify that ....., age ....., living at ..... is suffering from .....

and that ...he is a suitable person for treatment at the ... Hospital, and is to my knowledge unable to pay the fees charged in this district for the necessary professional treatment.

.....

..... (Degree)

..... (Address)

....., 19

No charge is made for this certificate.

THE FUTURE OF ST. BARTHOLOMEW'S HOSPITAL.

SIR,—The present position of the controversy regarding the provision of an adequate scheme for the reconstruction of St. Bartholomew's Hospital is well calculated to cause widespread anxiety and disgust. The official proposals include an appeal to the public for a sum of £350,000—an appeal which obviously must fail unless the public judgement is first convinced. At the same time experts who speak with authority denounce the official scheme as seriously defective in respect both to present demands and future development. It is pointed out, for example, that the received plans include such a highly objectionable feature as the retention for the reception and treatment of in-patients of buildings which have been used for this purpose for at least 150 years, and in which it is impossible to obtain a proper supply of sunlight and fresh air. Further, the hygienic condition of the hospital will be made dangerous by adding an additional story to the north wing, and by crowding an already crowded site with many additional buildings. The scheme, in short, instead of representing the highest level of hospital construction and sanitary efficiency will merely put a modern gloss on old faults and will provide a hospital having grave and essential defects. The corollary is inevitable that the future St. Bartholomew's will be promptly recognized as an exhibition of the folly of half measures, and that its decline in public and professional estimation is certain. This in essence is the criticism passed by responsible voices on the Mansion House Committee's plan now before the public for the reconstruction of a hospital, the premier position of which in relation both to historical associations and practical achievement is recognized in all parts of the empire. This fact alone is sufficient to show that the scheme is foredoomed to failure. For efficiency the public sympathy may readily be enlisted. But it has no voice or help for a policy of shreds and patches.

Criticism in the present instance, however, has not merely a destructive aspect. On the contrary, it propounds an alternative scheme which, if adopted, will secure for the hospital everything that modern experts advise, and will at the same time guarantee the opportunity for such developments as are probable in the future, the estimated outlay here being a sum of £600,000.

These, in brief, are the rival policies presented to the public, and it needs no special gift of discernment to anticipate that the more radical proposal is the more likely to attract interest and support. St. Bartholomew's has a wide and well-deserved fame. Its traditions of efficiency and success may be traced through the medical history of 800 years. From its walls have issued for generations countless numbers who in all parts of the world have practised the art of healing. Its physicians and surgeons include many names which are the cherished heritage of the profession. Enthusiasm on behalf of such an institution only waits to be aroused. There now exists an opportunity to add to the noble history of the past the developed efficiency which the modern spirit requires. Is it reasonable to believe that energy will awake on behalf of a proposal to meet this opportunity with half-hearted and temporizing measures? Certainly it may be taken for granted that the controversies of the last twelve months have developed in the public a feeling of hesitation and doubt, and that the more recent criticisms command a degree of confidence which official silence will altogether fail to disturb. Before they offer their support, the public will insist on knowing all the facts.

In this respect one of the most remarkable features in this prolonged controversy has been the absence of any expression of opinion by the medical staff of the hospital. Doubtless the views of the staff were officially submitted to the Mansion House Committee, but they have never reached either the governors of the hospital or the general public. The responsibility of the staff in this matter is a considerable one. They are in a very special sense aware of the existing defects in the hospital. They are also aware of the changes necessary to remedy these defects. Further, it rests with them to estimate the probable future demands both of hospital treatment and medical education. Their judgement and decision on these points must necessarily carry substantial weight, and in the essential interests of the hospital it is imperative that their opinions be publicly pronounced. With them in a large measure rests the decision whether "Bart's" shall continue and enlarge its noble history, or shall dwindle into a second-rate or third-rate position among the medical institutions of the metropolis.

Public opinion will certainly demand that London shall have at least one modern hospital and medical school replete in every respect. The inclination of the City, and indeed of all parts of the country, is to support the position and claim of St. Bartholomew's. But there are other candidates, and their virtues will not be neglected on merely sentimental considerations. It is only an efficient programme which will secure public support. There are rumours afloat that the silence of the hospital staff is due to a fear of offending one or more august patrons of the hospital. Considering that the most distinguished personage in the realm and his Royal son have both identified themselves with a policy of hospital thoroughness and efficiency, these rumours may be neglected. In any event, the claim for a clear statement is imposed by the sanction of duty. It rests with the staff to satisfy public opinion, and in the absence of this the financial success of any scheme is more than doubtful. They have still another opportunity. "Bart.'s" men, proud of their Alma Mater, are to be found in influential positions all over the world. A courageous appeal from the present staff, accompanied by the assurance that the future of the hospital and school is at stake, would go a long way to raise the money necessary for a complete reconstruction. The precedent of Guy's is a full justification for this statement. But so long as the medical staff stands silent so long will there be doubt and mistrust and the public will remain aloof. The opportunity for a large and worthy success now exists. Is it to be lost through a faint-hearted and short-sighted policy backed by the supineness of the medical staff and old "Bart's" men all over the country? I cannot believe it.

I am organizing a definite, purposeful and sustained opposition to the Mansion House Committee's scheme which if persisted in must ultimately ruin St. Bartholomew's Hospital. I am a Governor of St. Bartholomew's Hospital, and although the fight will be earnestly maintained by us laymen, the continued silence of the medical staff must render a difficult task doubly difficult. If it be true that the Medical Council made representations to the treasurer before the meeting of the governors on November 5th, to the effect that the site must be larger, and that the wards for the reception of patients must be entirely modern and up to date, that report has been kept back from the Governors. We ought, however, to know the facts.—I am, etc.,

Banbury, Nov. 10th. ANDREW MOTION.
Chairman of the Cannon Brewery Company, Clerkenwell, E.C.

THE MEDICAL ARRANGEMENTS IN THE SOUTH AFRICAN WAR.

SIR,—I learn from several of my friends amongst the officers of the Royal Army Medical Corps that certain items in my answers before the War Commission (recently reprinted in your pages without the questions which led up to them) have given rise to irritation amongst the officers of the Corps. And I am bound to say that, on reperusing my evidence, I do feel that my opinions were expressed without that degree of qualification which was desirable, and, indeed, requisite, if they were not to convey to the ordinary reader an erroneous impression of my judgement as to the Officers of the R.A.M.C. generally.

May I plead that any one judging my evidence from this point of view will not omit to note my answers No, 11,905, 6 and 7, and my statement there that "any depreciatory remarks I have made are not intended to apply universally"? It has been my pleasure and privilege to know many Medical Officers in the army of the highest professional attainments, and others I have met whose ignorance and incapacity would justify the strongest animadversion. I regret that in my evidence I should have made it possible for anybody to think that I intended to confound the two classes in indiscriminate condemnation, and I regret particularly that my reply to 11,869 is worded in such a way that, if taken without the context (that is, the preceding 11,866, 7 and 8, and the following 11,870 answers), it reads as if I considered the individual R.A.M.C. Officer ignorant of the clinical treatment of a soldier suffering from enteric. What I meant to convey was that those in authority did not seem to know how to provide for the adequate management of

enteric as an epidemic disease. I submit it is clear that throughout my interview with the Commissioners I had in my mind rather the want of initiative and administrative capacity in the higher medical quarters than the criticism of the general body of Officers. Those who know me are aware that I have always held that the Army Medical Officers acquitted themselves, as a corps, second to none engaged in South Africa, and this in spite, as I have publicly urged, of the fact that the strain to which the corps is subjected in war is greater and more continuous than any other arm of the service is called upon to endure.—I am, etc.,

London, W., Nov. 10th. ALFRED D. FRIPP.

*** The following is the full text, extracted from the official *Minutes of Evidence*, vol. i, of the questions and answers to which Sir Alfred Fripp refers:

11,866 [By the Chairman]. You received every encouragement, did you not, from the army authorities when you volunteered to go out in the first instance?—Yes, every encouragement.

11,867. And most of the eminent surgeons, from Sir William MacCormac downwards, all received encouragement?—Yes.

11,868. But how about physicians? Do you know whether many physicians volunteered to go out?—I do not know whether they actually volunteered, but they would have been delighted to go if they had been asked.

11,869. Were they encouraged to go?—Certainly not in the early days. I cannot speak of what happened after the time I left England. All I can say is that I was looked upon as a crank for taking a physician out with me. One comment that I remember was: "Take as many surgeons as you like, but, my dear fellow, the one thing that our officers do understand is the treatment of enteric." Well, they do not; at least, they did not. They do now that they have had an enormous experience, but they did not understand how even to write its name down in the slightest cases, because they called it "simple continued fever," unless it had very marked symptoms; and they allowed that man with simple continued fever to go about and infect other people, and the other people so infected may have the acutest enteric.

11,870. And that was during the earliest stages of the war?—Yes; they threw cold water on physicians, but they allowed me to take one. Dr. Washbourne came with me, and was of the greatest use. He was afterwards appointed consulting physician to the forces by Lord Kitchener, and I am sorry to say he has since died. Another thing they did not understand among modern methods was the enormous practical advantage of having steam disinfectors at each large hospital. An enteric sheet or blanket, or anything used by an enteric patient, especially if he has soiled it with the discharges from either end of the alimentary canal, is most highly infective, and will give the disease to the next patient who uses it, unless it is previously disinfected. The modern and most simple method of disinfecting it is by means of the steam steriliser. I took one out, and was roared at for taking it, but very soon they sent them out to as many of the hospitals as they could get them to. Similarly, all the excreta from typhoid patients ought to be destroyed in some way. At first they did not make any systematic efforts to destroy them, and that is the chief reason why the disease spread so rapidly and so widely.

11,905 [By Sir John Edge]. I suppose there are many men in the Royal Army Medical Corps who keep up their reading?—Yes, certainly. Any depreciatory remarks that I have made were not intended to apply universally.

11,906. I know myself that there were two men—the one I have already spoken of and another—who kept up their reading all their lives.—Yes, and I know one officer of the corps who has recently got a Fellowship of the Royal Society for original research.

11,907 [Sir Frederick Darley]. A certain percentage love their profession?—Undoubtedly, a very large percentage love it.

THE NORTHERN UNIVERSITY TRIAD.

SIR,—I am no disputant—a little adroit shifting of the ground, a few motives imputed, a few astonishing inferences made, and I am disconcerted; but once more I must protest and explain, once more only.

Sir Victor Horsley argues that as I happen to be the Regius Professor of Physic in Cambridge, in anything I may say or do in public I commit this University; that in the Court of Victoria University, or before the Privy Council, my *locus standi* as a graduate and officer of Victoria did not save me and Cambridge from this implication. (Oddly enough, counsel on behalf of Liverpool demurred to the value of my evidence on the very proper ground that it was but the opinion of an individual!) Sir Victor Horsley's argument would debar me from all public part in university policy or in the policy of medicine outside the walls of Cambridge itself. I should be so hampered by the responsibilities of Cambridge that I could not sit again, let us say, on the Council of the British Medical Association, for every now and then with my vote I should throw the University of Cambridge into the urn. This is a crude judgement. To my simple apprehension, it seems that I commit Cambridge only when I am charged by the Senate to appear formally and particularly on its behalf.

Sir Victor Horsley proceeds to impute to me and to Cambridge a motive so base that I feel it a shame even to have to repel it, namely, that I opposed the Liverpool charter on the point that it will compete with Cambridge in the manufacture of a State qualification to practise. I am thankful to say that it has needed the ethical ingenuity of my distinguished surgical critic to introduce such a notion now for the first time into my head. I hope, and I believe, that no other member of this University has as yet even conceived such a notion. Here we are all under the persuasion that competition is good for us.

But, it may be objected, even by a more generous antagonist, that I did oppose the multiplication of bodies qualifying for practice; this, no doubt, I did decisively, and I did so in reliance not on my own judgement only, but also on the common judgement of all those who have given careful thought to medical education, including, I presume, my critic himself. Were I not under the heavy hand of Sir Victor Horsley, who insists on fastening my poor opinions upon Cambridge, I should be driven, somewhat prematurely perhaps, to express my personal opinion that the privilege—or the burden—of Liverpool, of Cambridge, or of any university to qualify for practice, is one not to be desired. In Liverpool, indeed, there are persons of consideration who think, as I think, that this responsibility impairs the proper function of a university—that is, to train the mind; and forces into its scheme a large quantity of technical matter which is truly of great importance, but of importance in another kind. Cambridge graduates in medicine are aware that I encourage them to take the Conjoint examinations, and I am happy to say that a very large majority of them do so. That, if a State qualification were established, Cambridge would agree with me that its powers of qualification might be suspended until such time as the experiment were fully tried. I cannot say; besides our own opinions, much would depend on prevalent opinion in Oxford and in other universities. But surely it argues little knowledge of the cumbrous and intricate workings of an ancient corporation, or, I may add, of its elasticities, to impede its officers in the free expression of opinion until it may have been persuaded to precipitate the course of events by abandoning historical privileges. In Cambridge it is well understood, and it had been well understood, that in so far as I have spoken on these matters hitherto I have spoken for myself only.

Sir Victor Horsley is good enough to feel some sympathy for me "in my present position"—that is, of his disapproval: he knows best the grievousness of this misfortune and the depth of the sympathy I need. To you, sir, some apology is due for the length of this letter; had my concern been with Sir Victor only, perhaps no part of it would have been written; but the substance of the discussion is far-reaching and of pressing moment.—I am, etc.,

Cambridge, Nov. 7th. T. CLIFFORD ALLBUTT.

THE FIRST YEAR OF PROFESSIONAL STUDY.

SIR,—The General Medical Council is about to meet for its autumn session, during which the course adopted by the Royal Colleges of England with reference to the first year of medical education will be again considered. This question has already been discussed at several of the ordinary meetings of the Council and also at two special meetings summoned for the purpose without any practical result having been achieved; and yet the question is ostensibly a simple one—namely, Have the licensing bodies the right to accept the teaching in any school or institution which after due consideration they deem sufficient in the subjects of physics, chemistry, and possibly of biology, or must they submit their judgement to the decision of the General Medical Council, which requires that instruction in these subjects must be given to medical students at a school of medicine or in one of a few non-medical teaching institutions approved by it?

The Royal Colleges have obtained the opinion of eminent counsel to the effect that they are within their rights in accepting such proof of education in the subjects referred to as they think right. The Council has also obtained the opinion of its legal adviser on the subject; but, no matter what may be the rights or legal powers of either of the bodies concerned, I think every member of the profession will agree with me that to bring this dispute before any legal tribunal would be detrimental to the best interest of the profession, and I trust that the good sense of all parties will be exercised to avoid this.

But the question of the bearing of the recognition of the

teaching in ordinary schools of the subjects of the first year's study of professional education, on the whole education of students, is a matter of far greater importance than the question of the legal rights of either the licensing bodies or the Council, and I venture to call the attention of the profession, who are so largely interested in the matter, to this aspect of it. Having resigned my seat on the Council, I feel at liberty to do so.

I was a member of the Council prior to the adoption of the five-year system, and at that time, although I did not oppose it, I expressed grave doubts as to its success in improving the standard of medical education. Not that I considered five years too long a time to be devoted to professional study, but because I feared it would tend to generate idleness on the part of the student, and, further, that the most pressing need was the raising of the standard of preliminary education, and that the Council were beginning at the wrong end. They should first, I thought, have directed their attention to the improvement of preliminary education for some years before enforcing the five-years' system. The result has, I think, proved the correctness of my views. Preliminary education remains in an unsatisfactory state, while the five-years' system has had the effect of inducing parents to send their sons to the profession at an earlier age than they otherwise would have done. Moreover, from personal observation and from inquiries made from competent persons, I am satisfied that the five-years' system, as at present conducted, is a failure.

Boys come direct from school, and enter at an early age as students at one of the medical schools. They are not permitted to dissect or to attend hospital. Consequently they find that all they are required to do is to attend lectures on physics, chemistry and biology; these do not occupy on an average two hours a day. The lectures over they have nothing more to do; no doubt a few occupy their time judiciously, but for the great majority of boys, just emancipated from school, the temptation to idleness with all its dangers, is too great to be resisted, habits of idleness are formed, which tend to the injury of many, and to the ruin of not a few. To this cause may safely be attributed the lamentably high percentage of failures at the examinations. At the time the curriculum was being drawn up, I urged in vain that dissections and hospital attendance should be encouraged during the first year of study, even though such were not to be recognized, but I was told that at least in London such would entail grave difficulties. But the practical result is that the first year is, I fear in the majority of cases, wasted, then the fifth is supposed to be devoted mainly to clinical study, such as a general rule is not the case, students place themselves in the hand of grinders during it, who enable them to pass examinations, but do not make them safe or competent practitioners.

I hold, then, that the five-years' system, as at present conducted, has failed to really improve professional education while specially in the cases of the children of parents with limited incomes, it tends to curtail the period which should be devoted to preliminary education, by forcing them to send their sons at too early an age, to medical schools. The question is how can this be remedied?

After much consideration of the subject in all its bearings, I come to the conclusion that this will be best effected by encouraging the study of both chemistry and physics at ordinary schools; of course, it follows as a necessary corollary that the teaching there received be accepted by the licensing bodies, and that on passing a sufficient examination in these subjects candidates be permitted to proceed to the second year's course of study.

At nearly all our large public schools these subjects are at present taught, and at many well taught, while the system is rapidly extending to other less well-known schools, and were it generally known that such teaching was required, it would ere long become general, while schoolmasters in self-defence would be compelled to make it efficient.

Physics cannot be considered as being specially a medical subject, nor yet is chemistry. I am told that it is essential that students "should be taught chemistry as applied to medicine," but if a boy knows chemistry fairly well the application of it to medicine would be a very easy matter. I, however, see no objection to students being required to take a special course of lectures on chemistry during one of the four years which would be devoted to study at a school of medicine.

The only objection which can be urged on any really valid grounds against the recognition of the teaching given in ordinary schools in chemistry and physics is the question of the sufficiency of such teaching: it can be made efficient, and I ask, is the teaching in our medical schools of these subjects always sufficient? Judging from the very high percentage of failures at examinations in these subjects I should say that it is not. Nor is it possible that a boy quite ignorant of the subject could attain a satisfactory knowledge of chemistry in the short time allotted to its study under the five-years' system; but I hold that in respect to those two subjects it is of very little importance where the candidate is educated provided that the examination he passes is "sufficient," and that it be sufficient can be enforced by the General Medical Council.

I have omitted all reference to biology; it does not in my opinion stand in the same category with chemistry and physics, and I think it a mistake to place it in the first year's curriculum, and I should prefer it to be a subject of study later on.

Of course, the proposal that physics and chemistry be relegated to, or at least be recognized subjects of study during the time devoted to, preliminary education, will be opposed by the managers of the various medical schools, as its adoption as such would be injurious to their interests. I regret that the income of any professor should be lessened, but the good of the profession and of the public must be the first consideration, and if a course of chemistry be taken later on, in its bearings on the practice of medicine the loss to these would be lessened.

The advantages to be gained by the recognition of the teaching of chemistry and physics at ordinary schools are very obvious. A year longer will be devoted to instruction in some at least of the subjects of preliminary education, then a year longer will in most cases be spent under the direct supervision of their schoolmaster by boys destined to the medical profession. Consequently they will be a year older when joining a medical school, and there will be no year in which idleness can be excused as being involuntary.

I trust the importance of the subject I write about will be considered a sufficient excuse for my occupying your space.—I am, etc.,

Dublin, Nov. 9th. LOMBE ATTHILL, M.D.

THE *INDEX MEDICUS*.

SIR,—As a subscriber to the *Index Medicus*, and one who has used it with immense profit for many years, I can fully endorse all you have said in praise of it in your annotation appearing in the BRITISH MEDICAL JOURNAL (p. 1229, November 7th, 1903). It will be a real misfortune if, after the grant from the Carnegie Institution has brought the price of the *Index* to a level within the means of nearly every medical practitioner, the number of subscribers should still be so small as to lead to the belief that the profession does not care to have the *Index* on any terms.

The *Index* is no mere list of the medical literature of the preceding month. It is a carefully classified list, in which, with comparatively little trouble, one can find the references to all the articles and books that have appeared on any given subject within the past month; and then, with the annual index to the whole volume which appears at the end of the twelve months, one can have all the literature for that year at one's fingers' ends. The titles of the papers are given in full, so that the mere reading of these will give the man who consults his *Index Medicus* a very fair idea of the trend of opinion in the theory and practice of any special subject in which he may be interested. The titles of papers published in Russian and Bohemian, and in some other less generally-known tongues, are translated into English. For instance, in the July part of the *Index Medicus* for this year the reader who is interested in the question of leprosy will find the titles of three papers by Mr. Hutchinson on the dermatitis of leprosy, on fish eating and leprosy, and on leprosy in India. He will discover, also, that there have been articles on the contagiousness of leprosy, on leprosy in the newborn and the heredity of leprosy, on mixed leprosy, on nervous leprosy, on cranial periostoses in leprosy, on the public prophylaxis of the disease, on its treatment by chaulmoogra oil, and on native Christians in Indian leper asylums. Perhaps the reader is interested more in the question of anaesthetics? He will in the July number of the *Index* find over thirty article-titles dealing with all that the literature of the month has to say on that subject, including the use of somnoform, of ethyl bromide, of anesthol, of beta-eucain, of epidural injections of cocaine, of yohimbin, the

risk of ignition of ether vapour in presence of a closed electric light, the anaesthetisation of difficult and bad subjects, the use of massage of the heart in chloroform collapse, etc.

Or again, he may want to know what is being achieved by the use of radiotherapy in cancer; he will find the suggestive titles of fourteen articles on that subject. The subject of the surgical treatment of nephritis by decapsulation of the kidney he will also find references to under that heading. On the Bossi dilator in obstetrical emergencies he will discover several articles, including one by Bossi himself and another by Dührssen; he will note that the list of papers dealing with symphysiotomy is comparatively short, while that on the treatment of lupus by the Finsen light method is comparatively long. In a sentence, every worker in medicine will find references to articles which are of interest to him, and without which he cannot pretend to be able to keep abreast with progress.

Surely, Mr. Editor, the profession in Britain and America will see to it that the *Index Medicus* receives sufficient support to demonstrate to the Carnegie Institution that it is not regardless of the scientific and literary and cosmopolitan aspects of the work it is doing.—I am, etc.,

Edinburgh, Nov. 9th. J. W. BALLANTYNE.

THE FINANCES OF THE GENERAL MEDICAL COUNCIL.

SIR,—In view of the straitened finances of the General Medical Council, and its natural tendency to cripple the statutory functions of that body, I am surprised that no serious step has been taken by its members to place its expenditure on a footing commensurate with its income.

It is true that some trivial "retrenchment" has been effected at the expense of the status of the Irish office, but it was doubtful wisdom indeed for the sake of a few pounds to alter a system that was found to answer its purpose so admirably for forty years.

In its preamble the Medical Act (1858) states "it is expedient that persons requiring medical aid should be enabled to distinguish qualified from unqualified practitioners." It is obvious, therefore, that one of the most important duties which the General Medical Council is called upon to discharge is the maintenance of a correct *Medical Register*. I am confident that the profession generally will bear with me when I say that any economy which interferes with the effective discharge of this duty is a danger alike to the public and to the medical practitioner.

It is a matter, therefore, of regret to see that the first "reforms" of the Council tend to economy in this direction. No expense should be spared to render the *Medical Register* as accurate as any medical directory published by private enterprise. Its use otherwise is valueless. Each member of our profession should be entitled to receive an annual form in which to return his address, and not to be subject to the happy-go-lucky methods which an unwise economy dictates at present. The triennial system of communication I know to be responsible for much grave inconvenience to practitioners whose names were removed from the *Medical Register* in accordance with the provisions of Section XIV of the Medical Act (1858). Practitioners, more especially those starting practice, are liable to repeated changes of residence in three years. A letter addressed after such an interval has many chances of being returned to the "Dead" Letter Office. The postal economy of hitherto should find no place in such matters.

It may reasonably be asked to what circumstances the present acute stage of the Council's finances are due. Briefly they be summarized under the following headings: (1) Diminished income from registration fees; (2) augmentation of the number of members composing the Council through (*a*) direct representation and (*b*) representation of new universities; and (3) centralization in London of work previously performed at Branch Council meetings.

Respecting the increased expenditure under Heading 3, it might be worth the consideration of the Council if a return to the system of each Branch managing its own local affairs as far as possible might not be tried, since in this case travelling expenses would be reduced to a minimum, and the fee paid to members be but £2 2s. for each attendance.

During the past year I have had various opportunities of discussing the position of the General Medical Council with practitioners of repute throughout the country. Many of these laboured under the impression that the services of a member of Council were given gratuitously. They were indeed surprised to learn that in addition to his hotel and travelling expenses the member of Council was paid five pounds a day, and that the disbursements from the Council's treasury under this heading amounted annually to over three thousand pounds, or almost one-half of the gross receipts received from the three divisions of the Kingdom for registration throughout the year.

While not going so far as to advocate that the members of the General Medical Council should give their services gratuitously, I do think that the time has come for a readjustment of a fee made in more prosperous days. Indeed Section XII of the Act of 1858 that: "There shall be paid to the members of the Councils such fees for attendance and such reasonable travelling expenses as shall from time to time be allowed by the General Council, and approved by the Commissioners of Her Majesty's Treasury," indicates that the section referred to was framed in view of a financial crisis similar to the present.

At the approaching meeting of the Council a high-minded interpretation with this view would at once put an end to a condition which must militate disastrously against the effective performance of the important functions of that body, and at the same time would assure the medical profession that the governing Council of to-day was prepared to make tangible sacrifices on its behalf.—I am, etc.,

Dublin, Nov. 9th. S. WESLEY WILSON.

ISOLATION HOSPITALS.

SIR,—I think the question of isolation hospital accommodation must be looked at from several standpoints.

First, we must consider the character of the town. When the population is well housed, with not more than five persons per house, I think that scarlet fever can very well be treated in the home. On the other hand, where there are numerous tenement houses containing many families in each, the necessity for isolation hospital accommodation becomes imperative. I feel sure that as far as of the spread of disease is concerned in the great majority of cases, keeping patients in their homes has little or no effect. I have carefully compared the results of the neighbouring towns of Richmond and Wimbledon with their splendid isolation hospitals, and I fail to see the great benefit they obtain over Kingston, which only sends occasional cases to the hospital of a neighbouring authority. The three places are very similar in character, but Kingston is more exclusively working class in population.

The second aspect of the case is social, and on that ground I think well-conducted isolation hospitals are most admirable institutions. Every child who goes to one receives a lesson in hygiene. Cleanliness such as many have never before experienced is taught, and some idea of nursing the sick must be acquired by the older children.

The third aspect is that of expense, and I cannot help thinking that the very great cost of these hospitals (and cheaply-run hospitals are an abomination) might be laid out to better advantage in other ways, such as increased inspection of house property and of school children.

For the exceptional cases from the poorest houses and from houses where occupations are interfered with through the presence of infectious disease, I think suitable hospitals should be provided by the county council.

For enteric fever arrangements can usually be made with the local general hospital, and now that antitoxin can be provided free of charge to those unable to pay, diphtheria should be stopped before it becomes a very serious disease. If there are still fatal cases they are mostly those who die before removal can be effected.—I am, etc.,

Kingston-upon-Thames, Oct. 31st. H BEALE COLLINS.

A MINISTER OF HEALTH.

SIR, As some of your readers may be aware, New Zealand has been the scene of some experimental legislation. Time and again members of the Association have written in your pages urging that Public Health should be elevated in politics to the rank of Agriculture, War, and Peace. It will be pleasant reading, I hope, for Dr. Bushnell to learn the scene of the first old-age pension scheme in the British dominions is also that of a Minister of Public Health.

When the Public Health Act passed in 1900 it provided, among other things, the creation of a Minister of Public Health with Cabinet rank. The fact that so important a branch of the body politic has as its representative head a member of Cabinet, responsible directly to Parliament, is of

undoubted value. The conduct of the scientific adviser of the Government in this way comes in close contact with public opinion as declared by its elected representatives. We are taught to believe in these democratic days that the rule of Demos is the best. While the path of an executive thus placed in direct coaptation with the will of the people is not infrequently thorny, it cannot be gainsaid that after all it is the best position. Undoubtedly now and again history will be repeated, and Pilate will yield to the cry of the populace, but after all the sacrifice makes for good, and, from the pyre of one, another will rise better able to help on the car.

I have no intention to rail at or praise direct appeal to the people but simply to draw attention to the fact that the experiment urged by Dr. Bushnell has been tried and found not only workable but successful in this sunny and energetic portion of Greater Britain. The Minister in charge of this department is the able and popular Postmaster-General Sir Joseph Ward.

Compulsory notification of tuberculosis, prohibition of spitting in streets, and many other of the reforms urged by sanatarians at home have been enforced here for years past. To any one interested in these outpost aspects of Public Health I shall be delighted to forward copies of our Health Acts and regulations.—I am, etc.,

J. M. Mason,
Chief Health Officer for New Zealand.

September 17th.

THE WILLIAM CADGE MEMORIAL.

Sir,—We shall be obliged if you will insert the following final list of subscribers to the above memorial.—I am, etc.,

W. H. Day,
Michael Beverley.

Norwich, Nov. 9th.

Second List.

London.

Sir Henry Thompson, Bart.
Sir Joseph Dalton Hooker, C.B.
Sir Victor Horsley
Mr. John Tweedy (President, College of Surgeons)
Mr. Edgcombe Venning
Mr. Richard Barwell
Mr. C. A. Ballance
Dr. Sidney Ringer
Dr. J. Hughlings Jackson
Mr. Alfred Willett
Dr. Preston Lewis
Mr. H. Lambert Lack
Mr. Douglas Harmer
Dr. F. J. Harvey Bateman

Dr. E. L. Keyes, New York
Dr. H. H. A. Beach, Boston, U.S.A.
Dr. Gibson, Edinburgh
Mr. Palgrave Simpson, Weymouth
Mr. F. S. Goulder, Dudley
Mr. W. Ranson, Ashburton
Dr. Andrews, Norwich
Dr. Crook, Norwich
Dr. Muir Evans, Lowestoft
Mr. A. Marshall, Lowestoft
Dr. John Skrimshire, Holt
Mr. B. Maurice Hughes, Wymondham
Mr. H. Back, Acle
Mr. Hopson, Dereham
Dr. H. Blake, Yarmouth
Dr. John Bately, Gorleston
Dr. Plowright, Lynn
Mr. Prior, Loddon
Mr. Deacon, Hethersett.

THE ASEPTIC PRACTITIONER.

Sir,—Having read with much interest the correspondence on beards and aseptic silence, I venture to point out that the clothes worn by a medical man are an even more serious source of infection. Medical men may shave their faces (? and their heads), but they must wear clothes. Why then should they not, when visiting their patients, clothe themselves in mackintosh? The coat should be not much longer than an Eton jacket, thus obviating the danger to their patients of the contact of the full skirt of the frock coat with the bed and furniture of the apartment. On leaving the sick room the physician could be sponged down with some antiseptic solution from head to foot by the nurse or housemaid. He would then leave the house in a thoroughly aseptic condition and proceed on his rounds without doing further mischief.—I am, etc.,

An Invalid.

November 11th.

THE SOCIETY OF MEDICAL PHONOGRAPHERS.

Sir,—May we be permitted, as President and officers of the Society of Medical Phonographers, to bring the continued existence of the Society and its usefulness under the notice of any practitioners or students of medicine who make use of shorthand? Of late, the Society has not come much under the notice of the profession, but its work continues. Its organ, the *Phonographic Medical Record*, is published monthly, and affords the means of obtaining familiarity with medical shorthand, together with definite information on practical medical subjects. The Society has also issued a series of small original works in lithographed shorthand with the same object, as well as an extensive vocabulary of convenient outlines and guides to the use of shorthand both by the student and the practitioner. It has also held periodical examinations for students in order to encourage their acquisition and use of shorthand.

The invaluable aid which it can give in medical work, practical and theoretical, in case taking and note making, is realized by all who have used it, as it cannot be by others, and the importance of its acquisition before medical studies are commenced is so great that the Society has endeavoured by every means to encourage this. But many practitioners who make constant use of shorthand have acquired it long after being engaged in practice. To all, students and practitioners alike, the Society is open and its members ready to give all possible help to those who are endeavouring to obtain the assistance of this time-saving art. The subscription to the Society is very small, amounting only to 5s. per year for students and 7s. 6d. for practitioners.

The Honorary Secretary, Dr. Fletcher Beach, will be glad to give any further information, and to receive applications for membership.—We are, etc.,

David Ferrier, *President*.
E. B. Gray, W. Thompson, C.B. } *Vice-Presidents*.
W. R. Gowers, G. Sims Woodhead } *Members of Council*.
Norman Porritt, *Treasurer*.
Fletcher Beach, *Secretary*.

Winchester House, Kingston Hill, Surrey, Nov. 6th.

FORENSIC MEDICINE.

Sir,—I have been requested by Messrs. Churchill to edit a new edition of Taylor's large work on the *Principles and Practice of Forensic Medicine*. Might I appeal through the British Medical Journal to the profession to send me accounts of interesting and instructive medico-legal cases that have been recently decided? Dr. Stevenson has with the greatest generosity and kindness placed at my disposal a rich collection of poisoning cases, so that I am more particularly anxious for other criminal reports, such as rape, strangulation, etc. Might I ask that dates and references to the trial should accompany any reports sent to me?—I am, etc.,

Fred. J. Smith.

138, Harley Street, W., Nov. 9th.

OBITUARY.

Surgeon-Major-General J. DAVIS,
Army Medical Staff.

We regret to have to record the death of Surgeon-Major-General J. Davis, Army Medical Staff, retired, which occurred suddenly at his residence, Broxholme, Waverley Road, Southsea, on November 8th, from angina pectoris.

Surgeon-General Davis studied at the College of Surgeons, Dublin, and entered the army on March 10th, 1858. He was posted as assistant surgeon to the 57th Regiment, which he joined in India in the same year. Whilst the transport in which he had arrived was lying in Bombay harbour he jumped into the sea and swam to the relief of a private of the 33rd Regiment, who had fallen overboard, and who, on the ebbing tide, was being rapidly carried out to sea. He succeeded in reaching him and keeping him afloat until both were picked up by a boat from the transport. For this act of gallantry he was awarded the silver medal of the Royal Humane Society. Proceeding with the 57th Regiment from India to New Zealand, he served in the wars of 1861 and 1865, and received the medal. Rising through the various ranks of the Army Medical Service, he was promoted Surgeon-Major-General on January 19th, 1894, and posted as Principal Medical Officer to the Southern District, and finally retired, under the age clause, on April 15th, 1895.

Though not a contributor to medical literature, he was a keen student of his profession, and possessed admirable judgement and resource. Whilst serving in India he introduced a remedy which he designated "camphorodyne," so that a mixture whose constituents were thoroughly known might be available to replace a proprietary preparation. This camphorodyne has for some years been adopted by the Government for use in all the hospitals in India.

Throughout his long service he gained the affection and esteem of all who served with him, and proved himself the firm friend and trusted adviser of all who required his assistance. The news of his death will, we feel sure, be received with much sorrow and regret by many an old comrade.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: EDWARD COOPER, Surgeon, to the *President*, for three months' hospital study, November 11th; PERCY H. BANNISTER, Surgeon, to the *Northampton*, November 11th; WILLIAM R. CENTER, M.B., Surgeon, to the *Pembroke*, November 11th.

ROYAL NAVAL VOLUNTEER RESERVE.

MR. ARTHUR R. BRAILEY, M.R.C.S., L.R.C.P., M.B., B.C., and Mr. FRANK W. SMITH, M.R.C.S., L.R.C.P., have been appointed Surgeons, November 7th.

ARMY MEDICAL STAFF.

COLONEL W. L. GUBBINS, M.B., M.V.O., Royal Army Medical Corps, to be Surgeon-General, *vice* Sir W. D. Wilson, M.B., K.C.M.G., retained on the active list as a supernumerary to the establishment, August 27th. Surgeon-General Gubbins was appointed Surgeon, September 30th, 1873; Surgeon-Major, September 30th, 1885; Surgeon-Lieutenant-Colonel, September 30th, 1893; Brigade-Surgeon-Lieutenant-Colonel, November 30th, 1896; and Colonel, November 29th, 1900. He served in the Afghan war of 1878-80, and took part with the Bazar Valley expedition in medical charge of the 5th Fusiliers, and subsequently of the Head Quarters Staff; in 1879-80 he served with the Khyber Line Force in medical charge of the Head Quarters Staff; was also Divisional Sanitary Officer and Secretary to the Principal Medical Officer, and was present with the expeditions against the Mohmunds and into the Hissarik Valley (medal). He was also with the Egyptian (1882) and Burmese (1886) expeditions. During the South African war in 1899-1901 he was Principal Medical Officer of the Sixth Infantry Division; was at the relief of Kimberley, the actions at Paardeberg, Poplar Grove, Driefontein, the occupation of Bloemfontein, and the operations in Orange River Colony, and was subsequently Principal Medical Officer of Pretoria and Northern Lines of Communication (promoted to be Colonel, medal with five clasps).

ROYAL ARMY MEDICAL CORPS.

CAPTAIN E. BRODRIBB takes precedence next below F. J. C. Heffernan, and not as stated in the *Gazette* of October 9th.

Surgeon-Lieutenant-Colonel VIVIAN WEARNE died at Spitzbergen, Jamaica, on October 15th. He entered the service as Assistant Surgeon, March 31st, 1865; became Surgeon, March 1st, 1873; and Surgeon Major, February 14th, 1878. He retired with the honorary rank of Brigade-Surgeon, April 7th, 1886.

ARMY MEDICAL RESERV .

SURGEON-CAPTAIN C. A. CORKE, 2nd Volunteer Battalion the Worcestershire Regiment, to be Surgeon-Captain, November 7th.

Lieutenant A. E. L. WEAR, M.D., Royal Army Medical Corps (Volunteers), to be Surgeon-Lieutenant, November 7th.

The undermentioned Surgeon-Majors to be Surgeon-Lieutenant-Colonels, dated November 11th: R. R. BROWN, A. D. M'DONALD, M.D., C. ARROL, M.D., W. J. NAISMITH, M.D., F.R.C.S.Edin., D.S.O., E. W. SYMES, M.D., R. DE LA P. BERESFORD, M.D., C. W. THORP, F.R.C.S.I., T. J. AUBIN, M.D., R. B. SMITH, R. T. CÆSAR, E. B. RECKITT, M.D., R. A. S. DALY, A. CHAWNER, E. J. LAWLESS, F. E. FENTON, F. L. STEVENSON, M.B., R. L. SPARROW, F. J. WALKER, M.D., W. C. COWAN, A. T. WEAR, M.D., J. H. MACLEAN, W. FERGUSSON, M.D., W. L. STEWART, M.D., J. W. HODGSON, M.D., A. LINGARD.

The undermentioned Surgeon-Captains to be Surgeon-Majors, dated November 11th: C. N. LEE, M.B., R. T. MEADOWS, M.D., J. G. SAVILLE, G. M. LOWE, M.D., F. V. ADAMS, D. T. KEY, E. H. MOORE, R. J. M. COFFIN, S. S. HOYLAND, J. ADAM, M.D., W. KINNEAR, M.B., H. R. BRAMWELL, M.B., J. A. RIGBY, M.D., J. T. THOMAS, W. L. EDWARDS, H. J. MACKAY, M.B.

The undermentioned Surgeon-Lieutenants to be Surgeon-Captains, dated November 11th: C. BOYD, J. TAYLOR, M.D., E. M. CALLENDER, H. G. O. COLLETT, E. W. LIVESEY, J. P. S. WARD, J. S. MACKAY, M.D., L. W. POCKETT, R. T. FERGUSON, M.B., C. G. MACLAGAN, M.B., J. M. MOIR, M.D., W. A. GRIFFITHS, R. H. LUCE, M.B., A. H. VERNON, J. C. WRIGHT, M.B., G. MELVILLE, M.B., J. M'MULLEN, M.B., D. R. DOBIE, M.D., E. W. F. MACW. BOURKE, A. HENDERSON, M.B., E. E. DYER, M.B., A. Y. PRINGLE, J. S. SWAIN, H. M. BROWNFIELD, H. N. A. TAYLOR, M.D., T. F. DEVANE, A. EHRMANN, H. FOX, M.B., L. L. HANHAM, A. HILTON.

Surgeon-Lieutenant-Colonel C. M. MACKNIBBAN, M.D., having attained the prescribed limit of age, is removed from the Army Medical Reserve of Officers.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

SURGEON-LIEUTENANT E. A. SNAPE, 2nd Middlesex, to be Surgeon-Captain, November 7th.

ROYAL ENGINEERS (VOLUNTEERS).

MR. ALAN C. TURNER to be Surgeon-Lieutenant in the 1st West Riding of Yorkshire (Sheffield), November 7th.

VOLUNTEER RIFLES.

SURGEON-CAPTAIN J. M'MULLEN, M.B., 3rd Volunteer Battalion the King's (Liverpool Regiment), is retired under Paragraph 118, Volunteer Regulations, November 7th.

Surgeon-Captain W. B. COCKILL, 2nd (Westmorland) Volunteer Battalion the Border Regiment, is borne as supernumerary while commanding the Lancaster and Border Volunteer Infantry Brigade Bearer Company, November 7th.

Surgeon-Lieutenant-Colonel J. W. MARTIN, M.D., 1st (Hallamshire) Volunteer Battalion the York and Lancaster Regiment, resigns his commission, retaining his rank and uniform, November 7th.

Mr. WILLIAM S. KERR, M.B., F.R.C.S.Edin., to be Surgeon-Lieutenant in the 1st (Hallamshire) Volunteer Battalion York and Lancaster Regiment, November 7th.

MEDICO-LEGAL AND MEDICO-ETHICAL.

INQUEST ON MISS HICKMAN, M.D

THE adjourned inquest as to the death of Miss Hickman, M.D., took place at Richmond on Thursday, November 5th, before Dr. Taylor, J.P., the District Coroner.

Various members of the junior medical staff of the Royal Free Hospital gave evidence that they had seen Miss Hickman carrying on her duties at the hospital during the week before her disappearance, and that she was cheerful in her manner and appearance and showed no signs of any distress of mind. They one and all absolutely denied that any friction had arisen between her and any other of the resident medical officers, or that there were any duties entrusted to her imposing serious personal responsibilities.

Sisters and nurses were also called to confirm the statement that nothing was noticed in Miss Hickman's conduct or manner to lead anyone to suppose that she was distressed or harassed by the duties involving upon her.

Miss Boileau, a hospital student, stated in her evidence that on Saturday—the day Miss Hickman disappeared—she took certain letters to the ward addressed to Miss Hickman, which had been left in the common room of the students by mistake; that she found Miss Hickman dressing a case and handed her the letters, which she just glanced at and put down on the bed and thanked her. She was then quite cheerful.

Miss King, another hospital student, deposed to seeing Miss Hickman in Gray's Inn Road, a few yards from the hospital, on the Saturday about 1.15 p.m. She was walking alone in a direction from the hospital, and showed nothing peculiar in her manner.

The Station Police-Sergeant stated that he had discovered in and around the spot where the body had been found several teeth, phalanges, piece of sponge, scalpel, a 6 oz. medicine bottle, 1 oz. glass divided measure, hypodermic syringe and ease, and one needle, two pieces of stained paper, a piece of dress sleeve, some hypodermic tabloids, and an 8 oz. medicine bottle.

Dr. Stevenson, Lecturer on Forensic Medicine at Guy's Hospital and Public Analyst to the Home Office, deposed that the various articles detailed had been forwarded to him by the police together with three sealed jars containing a portion of the stomach, intestines and left kidney, and that he had made a careful inspection and analysis. From the portions of the stomach, intestines and kidney, which weighed about 11 oz. to 12 oz., and were much decomposed, he had obtained an alkaloid, morphine, in quantity about $\frac{1}{10}$ gr. In his opinion a much larger quantity of morphine must have been taken judging from the proportionate amount obtained from such a small portion of the viscera. He thought several grains must have been administered. One grain of morphine had been known to be a fatal dose for an adult. In the 6 oz. bottle there was neither poison nor medicine discovered. The scalpel was rusty but showed no traces of blood. The medicine glass showed no poison. The hypodermic syringe was of an ordinary kind; it was inaccurate and had only one needle. The case was in pieces. The syringe would hold about 20 minims and the piston was not driven home but up to about 1 or 2 minims. It had not been cleaned after use and showed traces of morphine sulphate in the barrel but none in the hollow needle; about $\frac{1}{10}$ gr. morphine was found. The sponge was free from poison. In the 8 oz. medicine bottle nothing but a little clear fluid and some sandy grains were found: the fluid was nearly pure water. There were twenty tablets in number each representing about $\frac{1}{4}$ gr. morphine sulphate; three tablets would be dissolved in the syringe full of water making $\frac{3}{4}$ gr. which would be a large dose; four would mean a minimum fatal dose for an adult. Morphine sulphate was not now an official pharmacopoeial preparation but it was largely used. By the amount of morphine discovered it was clear that a large dose had been taken: morphine was an unstable compound unlike arsenic and he was surprised to find such distinct evidence of it so long after death had taken place. He had known a case where death followed the administration of morphine in half-an-hour, but usually it would take some hours to kill. By hypodermic injection the fatal action would be quicker. It was quite possible that Miss Hickman drank some dissolved morphine first and then used the hypodermic injection afterwards as there would be time to do this before the morphine swallowed acted. He thought that probably more than one syringeful was used, two more certainly. The injection would begin to act in about three or four minutes.

Dr. Gardiner deposed to having the articles found by the police brought to him, and that they were submitted for analysis to Dr. Stevenson after examination. The teeth found were all natural, one or two stopped with gold and two built up with an amalgam made of oxyphosphate; no false tooth was found. The bones found were digital phalanges, cervical vertebrae, and the hyoid bone. The knife found was a common scalpel, had no maker's name upon it, and was not similar to those which were possessed by Miss Hickman. There was rust upon the knife, partly old and partly new.

Miss Woodhall, of Putney, deposed that she was an intimate friend of Miss Hickman, who dined at witness's home on the Thursday previous to her disappearance. She spoke about her work at the hospital, and seemed rather afraid that she was not wise in taking up the post; she thought she was not so good at surgery as in medicine; she also said that she feared the responsibility, or words to that effect; she was evidently afraid of the new duties. She also said she wished she were a man, as then she would go and get drunk. This was taken as a joke by those hearing her at the time. Miss Hickman was otherwise quite cheerful, but she undoubtedly did fear the work. She was very nervous when she first went to a previous appointment at the Clapham Maternity Home, as she dreaded it; but later, when accustomed to it, she enjoyed it.

The inquest was then adjourned, the Coroner stating that more inquiries would be made.

ALLEGED FAILURE TO NOTIFY SMALL-POX.

At the South-Western Police-court on November 3rd, before Mr. Garrett, Dr. Mordaunt Wheler, M.R.C.S., L.R.C.P., L.S.A., who practises at 435, Battersea Park Road, was summoned by the Borough Council of Battersea for failing to notify a case of small-pox, in accordance with the Public Health (London) Act, 1891, Section LV.

Mr. Caudwell, Solicitor to the Council, prosecuted; Mr. Frampton, instructed on behalf of the London and Counties Medical Protection Society, was for the defendant.

Mr. Caudwell, in his opening statement, said that a letter had been addressed by the Borough Council to all the doctors in the neighbourhood, in which it was stated that the medical officer of health would give

assistance to any doctor who was in doubt about a case. As to the section of the Act under which the proceedings were taken, it was clear that a medical practitioner ought to notify every infectious disease.

Mr. Garrett: That is not what the Act says. Notification might lead to very serious consequences. I cannot take that view.

Counsel, in continuation, said that on July 29th the defendant was visited by a patient named Kingston, who complained of pains in his head. The defendant prescribed, and told Kingston to call again. On a subsequent occasion the patient informed defendant that he had been working at a house where there was chicken-pox. The defendant diagnosed the case to be chicken-pox. Subsequently Kingston changed his address, and after this he was found to be suffering from small-pox. A number of persons had caught the disease from him.

It was submitted that the defendant had not exercised sufficient care in making his diagnosis. Evidence was called in support of the opening statement.

The defendant, in the course of his evidence, said that he had been in practice for twenty-seven years. He explained how he had attended Kingston, and that all the symptoms pointed to chicken-pox. Thus the patient's temperature was normal, he had no pain, and no sickness which might have suggested small-pox. He warned him not to go out, and strongly advised him not to change his residence. There was never any depression in the pustules. He had frequently seen cases of small-pox, and had sufficient confidence in his own opinion. He never knew that the medical officer of health had had special experience of small-pox cases.

Cross-examined: In his judgement it was chicken-pox, and he only had small-pox in his mind as doctors always have in cases of chicken-pox. He never knew until recently that it was possible for doctors to have doubtful cases sent to observation wards.

Counsel was not called upon to address the court.

In giving judgement, Mr. Garrett said that the case was most important, having regard to the construction which the Council sought to put upon the section. In view of the consequences which might follow an erroneous diagnosis, no responsible medical man would sign a certificate unless he was clear in his own mind that he was dealing with a case of small-pox. This was a penal section and ought to be construed in favour of the defendant. The point for him to decide was whether the defendant had taken every precaution, and he thought he had. He had elected, as he was entitled to do, to take the responsibility of deciding whether the case was one of small-pox without consultation with the medical officer of health. As to the facts of the case, it appeared that the patient had changed his residence at a critical time contrary to the defendant's advice. The defendant therefore could not be held responsible for the spread of infection. He dismissed the charge.

Mr. Frampton applied for costs, but his Worship, after hearing the other side, refused the application.

A MEDICAL QUACK ALSO.

In a note published in the British Medical Journal of November 7th, p. 1231, headed "An Antivaccination Quack," reference was made to W. D. Stokes, of Brighton, describing himself as a medical botanist, who had advertised an offer to pay £1,000 to any one who could prove that his statements as to vaccination, etc., were false. Our attention is again called to Mr. Stokes by his appearance in the coroner's court at Brighton. An inquest was held last week respecting the death of a child he had attended and prescribed for, and visited, assuming by his manner and actions, according to the mother's statement, to be a qualified medical practitioner. When the death occurred he wrote a "certificate," which was not accepted by the registrar but referred to the coroner, who very properly decided to hold an inquest.

According to the report before us, William D. Stokes, on entering the witness box to give evidence, made a long statement from which the jury gathered that he was "a professor of medical botany," who had practised for about forty-six years, and had always prepared his own medicine. He went on to give the compounds composing the medicine he prescribed for the child's cough. It was a whooping-cough mixture—"a mixture which contained different harmless herbs." When the child was brought to him he noticed no symptom of bronchitis. He prescribed a different medicine three days ago. That was entirely harmless, and he could "drink a pint of it to show that it was so." He changed the medicine to give the child a little more appetite. He was sent for on the day of death, when he examined the body, found no action of the heart, and no beating of the pulse. Witness was repeatedly asked what was the object of giving "the certificate," the jurors pressing for an answer. Witness's answer was: "Just to show the coroner that the child died from whooping-cough, and that she died in a very weak state." To further questions, witness said he was not in the habit of giving certificates. It was not often that he got any one who died. That (the paper referred to) was not a qualified certificate. It was simply written to show from what the child died. He did not remember examining the child when she was brought to him, and he did not think he then used a stethoscope. He knew the "certificate" was totally valueless, and he never expected the coroner to accept it as a certificate. He was not in the habit of visiting patients unless asked to. He had visited very few. He took the unused medicine away with him because he wished no one to tamper with it. It was harmless, and he would give it up willingly to the proper persons. He had added nothing to it.

Mr. E. Burchell, surgeon, stated that death was due to failure of the heart's action. The lungs were riddled with bronchitis, and pneumonia was developing. The bronchitis might have been there three or four days, or probably a week, though perhaps not a fortnight. It was a case in which medical advice should have been called in.

The jury returned a verdict in accordance with the medical evidence, and stated that the parents had shown much indiscretion in not seeking qualified medical advice, as, if they had done so, the child's life might have been saved.

Mr. W. D. Stokes would appear to have acted in this case as if he were a duly qualified medical man, and to have contravened the Apothecaries' Act as well.

Presentations.—Dr. S. Hamilton, of Newport (Mon.), recently, on the occasion of his marriage, received the following public presentations: An illuminated address from the Independent Order of Rechabites; pieces of silver plate from the Newport Branch of the Boilermakers' Society; and a silver vase from the members of his ambulance class.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

THE QUARTERLY RETURN OF THE REGISTRAR-GENERAL FOR IRELAND.

The return of the Registrar-General for Ireland for the third quarter of the year shows an annual birth-rate of 22.6 per 1,000 on a population estimated to the middle of the year as 4,413,665. This is 0.1 less than during the corresponding period of the last ten years, and may usefully be compared with the birth-rate, 28.7 of England and Wales during the same period. The death-rate was equal to 14.4 per 1,000, which is 0.6 below the average number for the same quarter during the preceding ten years, and 0.5 above that in England during the same quarter. The marriage-rate for the second quarter of the year was equal to 4.7 per 1,000, being 0.1 over the average rate for the same quarter in the preceding ten years, and 12.8 less than that of England and Wales. The general zymotic death-rate was 0.8 per 1,000, or 0.3 below the average, the diminution being general throughout all classes of these diseases. From typhus 15 deaths in all occurred, which number is 18 less than the average during the preceding five years. Seven of the deaths occurred in Connaught, 5 in Ulster, 2 in Munster, and 1 in Leinster. The deaths of infants under the age of 1 year equalled only 87.8 per 1,000 registered births. The mean temperature of the air during the quarter was 54.9, the maximum being 78.6 and the minimum being 28.9. Rain fell on sixty-five days, the total being 11.757. The lowness of the birth-rate and marriage-rate as compared with those of England and Wales are noticeable features of this return, as also that of the figure which represents the infant mortality. In the latter respect, of course, the comparison is very much in favour of Ireland

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,743 births and 4,691 deaths were registered during the week ending Saturday last, November 7th. The annual rate of mortality in these towns, which had been 15.8, 15.9, and 16.3 per 1,000 in the three preceding weeks, declined again last week to 16.2 per 1,000. The rates in the several towns ranged from 5.7 in King's Norton, 6.4 in Walthamstow, 7.4 in Newport (Mon.), 8.0 in Hornsey and in Smethwick, 8.3 in Bournemouth, 8.7 in Hastings, and 8.8 in Leyton and in Portsmouth to 20.8 in Gateshead and in Tynemouth, 21.0 in Oldham, 22.0 in Burnley, 22.3 in Salford, 22.4 in Swansea, 22.6 in Wigan, 22.8 in Warrington, and 23.4 in Stockport. In London the rate of mortality was 16.1 per 1,000, while it averaged 16.3 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.4 per 1,000 in the seventy-six large towns, and corresponded with the death-rate in London from the same diseases; in the seventy-five large provincial towns the rates ranged upwards to 3.3 in York, 3.5 in Sunderland, 3.6 in Rotherham, 3.8 in Ipswich, 4.1 in Hanley, 4.4 in Merthyr Tydfil, and 7.1 in Warrington. Measles caused a death-rate of 2.1 in Sunderland, 2.7 in Rotherham, 3.0 in Ipswich, and 6.3 in Warrington; scarlet fever of 1.2 in Northampton and 2.2 in Merthyr Tydfil; diphtheria of 1.6 in Hanley; whooping-cough of 1.2 in Rochdale and 1.5 in Hanley; and diarrhoea of 1.2 in Newcastle-on-Tyne, 1.6 in King's Norton, 1.8 in Gateshead, and 2.5 in Hanley. The mortality from "fever" showed no marked excess in any of the large towns. No fatal case of small-pox was registered last week either in London or in any of the large provincial towns. The number of small-pox cases under treatment in the Metropolitan Asylums Hospitals, which had been 11, 34, and 42 on the three preceding Saturdays, had further risen to 43 on Saturday last, November 7th; 5 new cases were admitted during the week, against 1, 26, and 12 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital at the end of last week was 1,854, against 1,861, 1,858, and 1,828 at the end of the three preceding weeks; 224 new cases were admitted during the week, against 208, 209, and 199 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, November 7th, 898 births and 516 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 16.1, 16.7, and 17.0 per 1,000 in the three preceding weeks, declined again last week to 15.8 per 1,000, and was 0.4 per 1,000 below the mean rate during the same period in the seventy-six large English towns. The rates in the eight Scotch towns ranged from 12.8 in Dundee and in Greenock and 13.8 in Paisley to 16.9 in Glasgow and 23.2 in Perth. The death-rate from the principal infectious diseases in these towns averaged 1.6 per 1,000, the highest rates being recorded in Glasgow and Greenock. The 255 deaths registered in Glasgow included 1 from small-pox, 18 from measles, 2 from scarlet fever, 4 from diphtheria, 2 from whooping-cough, and 6 from diarrhoea. Two fatal cases of scarlet fever, 2 of diphtheria, and 2 of whooping-cough were recorded in Edinburgh; 4 of diarrhoea in Dundee and 3 in Aberdeen.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, November 7th, 533 births and 341 deaths were registered in six of the principal Irish towns, against 482 births and 324 deaths in the preceding period. The mean annual death-rate of these towns, which had been 17.3, 19.7, and 17.5 per 1,000 in the three preceding weeks, rose to 19.8 per 1,000 in the week under notice, this figure being 4.6 above the mean annual death-rate in the seventy-six English towns during the corresponding period. The death-rates in these six Irish towns ranged from 15.1 in Cork, and 16.4 in Londonderry, to 23.2 in Limerick and 23.3 in Waterford. The death-rates from the principal zymotic diseases in the same towns averaged during the week 0.7 per 1,000 or 0.1 less than during the preceding period. The highest point, 2.3, was reached in Belfast, while Londonderry, Limerick and Waterford registered no deaths from zymotic disease at all. In none of the six towns was any death registered from small-pox, measles, scarlet fever, typhus, diphtheria, or simple continued fever. Dublin registered 1 case each from enteric fever and diarrhoeal diseases, and Belfast 7 cases from whooping-cough, 6 from enteric, and 3 from diarrhoeal diseases. One death from typhus occurred in the small town of Dundalk, but otherwise the death-rate from zymotic disease last week throughout all Ireland was singularly light.

THE GOXHILL ISOLATION HOSPITAL.

DR. THOMAS M. WATT (Goxhill) writes: Will you allow me to supply the most telling point in my letter, unfortunately omitted in your *précis*, namely, that the persistent refusal of the District Council to open the hospital promptly changed to an offer of admission upon the intervention of the Local Government Board brought about by my telegraphed appeal? This single fact practically made my case, which is incomplete without it; therefore, I ask that in fairness you will find room for it now.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

Appointments.—Dr. J. N. Langley, F.R.S., has been elected Professor of Physiology in the place of Sir Michael Foster, K.C.B. Dr. A. Hill, Master of Downing, has been reappointed University Lecturer in Advanced Anatomy. Dr. A. C. Ingle has been appointed University Lecturer in Midwifery in succession to Mr. A. F. Stabb.

Research Studentship.—An Allen Studentship of £250 for one year for research in Medicine or other department of Natural Science or Moral Science will be vacant next term. It is open to graduates who are under 28 years of age. Application is to be made to the Vice Chancellor by February 1st, 1904.

State Medicine.—The Syndicate reports that during the present year 88 candidates have presented themselves for the examination in State Medicine; 41 were successful in obtaining the diploma in Public Health.

University Studies.—A Syndicate is to be appointed to consider what changes, if any, are desirable in the studies, teaching, and examinations in the University. Among the members are Sir R. C. Jebb, Dr. D. MacAlister, Dr. Forsyth, Dr. Keynes, Professor J. J. Thomson, and Dr. W. Bateson.

UNIVERSITY OF GLASGOW.

AUTUMN GRADUATION CEREMONY.

THE autumn graduation ceremony at this University was held in the Bute Hall on November 5th. There was a crowded attendance of the public for whom the galleries and the seats in the side aisles were reserved. The area was occupied by the students, who took their usual somewhat lively share in the interesting proceedings. Principal Story presided and performed the capping ceremony. Amongst the degrees conferred were the following:

Doctors of Medicine (M.D.).—*G. M. Crawford, M.B., Ch.B. (Thesis: Nitrogen Excretion in Diphtheria); *R. N. Dunlop, M.B., Ch.B (Thesis: An Analysis of Fifty Cases of Eclampsia); *A. Robin, M.B., Ch.B. (Thesis: A Contribution to the Haematology of Puerperal Fever, with some Observations on the Influence of the Intravenous Injection of Antistreptococcic Serum); *D. S. Sutherland, M.B., Ch.B. Thesis: An Investigation into the Specific Etiology of Scarlet Fever); *M. Watson, M.B., C.M. (Thesis: The Effect of Drainage and other Measures on the Malaria of Klang, Federated Malay States); J. Cullen, M.B., Ch.B. (Thesis: Post-scarlatinal Measles); H. C. Ferguson, M.B., Ch.B. (Thesis: On the Urinary Elimination of Chlorine in Acute Pulmonary Affections—Acute Lobar Pneumonia, Pleurisy with Effusion, and Acute Phthisis); A. Gow, M.B., Ch.B. (Thesis: A Monograph on Locomotor Ataxy, with special reference to the Disturbances of Sensation); A. W. Harrington, M.B., Ch.B. (Thesis: Broncho-pneumonia in Pertussis and Morbilli: A Study of 91 Cases); A. Mair, M.B., Ch.B. (Thesis: An Analysis of 477 Cases of Scarlet Fever); J. G. Tomkinson, M.B., Ch.B. (Thesis: Leucocytosis in Scarlatina, with a Note on Tracheotomy in this Fever); J. C. Turnbull, M.B., Ch.B. (Thesis: Infantile Hemiplegia, with Illustrative Cases).

Doctor of Science (D.Sc.).—J. Knight, M.A., B.Sc. (Thesis: Infant Foods and Infant Feeding).

Bachelors of Medicine (M.B.) and Masters in Surgery (C.M.).—J. A. Paton, W. Shedden.

Bachelors of Medicine (M.B.) and Bachelors of Surgery (Ch.B.).—W. T. Bolton, J. Craig, H. C. Davies, W. Dow, L. C. B. Head, Alice W. Maclean, J. Maclean, A. S. M'Millan, Margaret H. Smart, N. B. Stewart, Edith C. Wallace, G. H. Wildish.

* With commendation.

VICTORIA UNIVERSITY OF MANCHESTER.

Examination for D.P.H.—The Council of the University has decided that the examination for the Diploma in Public Health shall be held twice in each year, in January and in July, the next examination taking place on January 25th to 29th, 1904. Formerly the examination was held only once a year. The steady increase in the number of candidates has made this change imperative.

Representative Council.—A series of keen contests took place on November 3rd, when the undergradutes elected their representatives on the Students' Representative Council. The medical students are represented by 18 members on a total Council of 56 members.

CONJOINT BOARD IN ENGLAND.

THE following have passed the Second Examination of the Board in Anatomy and Physiology:

C. E. Anderson, King's College Hospital; B. R. Billings, London Hospital; P. Black, B.A.Camb., Cambridge University; J. Butterworth, L.D.S.Eng., Owens College, Manchester; S. E. Cathcart, Middlesex Hospital; W. H. Chesters, University College, Cardiff; S. W. Daw, Guy's Hospital; J. McD. Eckstein, St. Bartholomew's Hospital; H. R. Edwards, King's College Hospital; A. E. Evans, University College Hospital; S. H. Gandhi, Bombay and Owens College, Manchester; P. C. Garrett, Owens College, Manchester; F. W. W. Griffin, B.A.Camb., and R. A. P. Hill, B.A.Camb., Cambridge University and St. Bartholomew's Hospital; E. T. Glenny, R. L. Haines, and W. J. Jago, St. Bartholomew's Hospital; R. Jackson, University College, Liverpool; R. B. Low, University College Hospital; P. D. F. Magowan, Guy's Hospital; J. L. Meynell, London Hospital; P. Moxey, University College, Bristol; H. W. Nicholls and S. J. Rowneree, Middlesex Hospital; A. M. Pollard, King's College Hospital; J. Pugh, St. Mary's Hospital; G. A. Russell, Birmingham University; H. K. Salisbury, University College, Bristol; E. A. Saunders, King's College Hospital; E. A. Shirvell, London Hospital; G. A. Simmons, St. Thomas's Hospital; H. McL. Staley, Owens College, Manchester; J. Tate and A. C. Watkin, University College Hospital; C. Tylor, B.A.Camb., H. C. Waldo, A. C. Wilson, and W. H. Woodburn, B.A.Camb., St. Bartholomew's Hospital: I. Valerio and E. Wragg, B.A.Camb., Guy's Hospital.

MEDICAL NEWS.

DR. CHARLES J. MARTIN, F.R.S., formerly Professor of Physiology at the University of Melbourne, who was appointed Director of the Lister Institute of Preventive Medicine some months ago, has now taken up his duties. The administrative work of the Institute will in future be under his control.

LONDON SCHOOL OF TROPICAL MEDICINE.—The Craggs research prize for the best piece of original work done during the current year by present or past students of the school has been awarded to Dr. Aldo Castellani for his researches into the etiology of sleeping sickness. Dr. Travers, who also competed for the prize, has been awarded honourable mention for his paper on beri-beri.

ST. ANDREWS GRADUATES' ASSOCIATION.—At a general meeting of the Association held on November 5th it was unanimously agreed that the Association, having fulfilled the objects for which it was instituted, be dissolved, and that the balance standing to its credit be equally divided between the British Medical Benevolent Fund and the Royal Medical Benevolent College, Epsom.

PROFESSOR ARTHUR ROBINSON, Hunterian Professor, will give three lectures in the Theatre of the Royal College of Surgeons of England on November 16th, 18th, and 20th, at 5 p.m. The subject of the course will be the early stages in the development of mammalian ova and the formation of the placenta in different groups of mammals. During the present week Professor Andrew Melville Paterson has delivered a course of three lectures on the development and morphology of the sternum.

MEDICAL MAYORS.—In the list of mayors who have come into office at the commencement of the municipal year we notice the following members of the medical profession: Dr. S. J. Allden (Bridport), Dr. E. C. Andrews (Hampstead), Dr. W. Banks (Falmouth—re-elected); Dr. Frank O. Bell (Wareham), Mr. E. A. Bevers (Oxford), Dr. J. H. C. Dalton (Cambridge), Dr. E. W. Kerr (Dorchester), Dr. David Lloyd (Denbigh), Mr. J. Campbell Macaulay (Honiton)—re-elected; Mr. R. B. Searle (Dartmouth), Mr. Henry Stear (Saffron Walden—re-elected).

MEDICAL VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BIRMINGHAM GENERAL HOSPITAL.—Two House-Surgeons, resident. Appointments for six months. Salary at the rate of £50 per annum.

BIRMINGHAM AND MIDLAND FREE HOSPITAL FOR SICK CHILDREN.—Two Acting Physicians.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES.—Surgical Assistant. Honorarium at the rate of 52 guineas per annum.

CAMBERWELL PROVIDENT DISPENSARY.—Vacancy on the Medical Staff.

EAST LONDON HOSPITAL FOR SICK CHILDREN, Shadwell, E.—House-Physician, resident. Honorarium of £25 at the end of six months.

HEREFORD COUNTY AND CITY ASYLUM.—Senior Assistant Medical Officer, resident. Salary, £150 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—(1) House-Physician, resident. Salary, £20 for six months. (2) Clinical Pathologist and Bacteriologist. Honorarium 50 guineas.

LISCARD: WALLASEY DISPENSARY AND VICTORIA CENTRAL HOSPITAL—House-Surgeon, resident. Salary, £100 per annum.

LIVERPOOL: STANLEY HOSPITAL.—Senior House-Surgeon, resident. Salary, £100 per annum.

NEWCASTLE-ON-TYNE DISPENSARY.—Visiting Medical Assistant. Salary, £100, rising to £150, per annum.

PADDINGTON GREEN CHILDREN'S HOSPITAL, W.—(1) Surgeon to Out-patients. (2) Pathologist and Registrar. Salary, £50.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William Street, W.C.—Clinical Assistants.

ST. BARTHOLOMEW'S HOSPITAL, E.C.—Surgeon.

ST MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, W.—Lecturer on Physiology. Salary, £300 per annum.

VICTORIA HOSPITAL FOR CHILDREN, Chelsea.—House-Physician, resident. Honorarium, £25 for six months.

WOLVERHAMPTON UNION.—Assistant Resident Medical Officer for the Workhouse. Salary, £130 per annum.

WREXHAM INFIRMARY.—Resident House-Surgeon. Salary, £80 per annum.

MEDICAL APPOINTMENTS.

BACQUE, W. J., M.R.C.S.Eng., L.R.C.P.Lond., District Medical Officer of the Bath Union.

BAILEY, Robert Cozens, M.S.Lond., F.R.C.S., Assistant Surgeon to St. Bartholomew's Hospital.

BENT, Sidney C. H., M.D.Brux., M.R.C.S., L.R.C.P.Lond., Senior House-Surgeon to the Evelina Hospital for Sick Children, Southwark.

BLACKHAM, Robert J., L.R.C.P.E., Captain R.A.M.C., Clinical Assistant in the London School of Gynaecology, the Hospital for Women, Soho Square, W.

BOURKE, Eleanor E., M.B., Ch.M.Syd., Resident Medical Officer to the Brisbane General Hospital, *vice* Dr. Fearnley, resigned.

BROWNE, J. J., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Wigton District, Cumberland.

DE LISLE, Frederick Irving, L.R.C.P.Edin., L.S.A., D.P.H., District Medical Officer, Wellington, New Zealand.

DUNCAN, William Henry, L.R.C.P. & L.R.C.S.Edin., House-Surgeon to Nottingham Children's Hospital.

EDE, A. G., M.B.Lond., District Medical Officer of the Ongar Union.

FAIRFAX, E. W., M.B., Ch.M.S.d. M.R.C.S.Eng., Honorary Anaesthetist to the University Dental Hospital, Sydney, N.S.W.

FARNCOMBE, W. T., M.D.Brux., M.R.C.S., L.R.C.P.Lond., Certifying Factory Surgeon for the Selly Oak District, Worcestershire.

GREENWOOD, Alfred, M.D., D.P.H., Medical Officer to the Blackburn Education Authority.

HESLOP, A. H., M.B., B.S.Durh., Second Assistant Medical Officer of the City Asylum, Gosforth.

LYONS, Alexander, M.R.C.P., L.R.C.S.Edin., House-Surgeon to the Royal Eye Hospital, Southwark, *vice* Thos. E. Frazer-Toovey, F.R.C.S.Edin., resigned.

PARSONS, E. D., M.R.C.S., L.R.C.P.Lond., House-Physician to the Evelina Hospital for Sick Children, Southwark.

PENBERTHY, W., M.R.C.S., L.R.C.P.Lond., Certifying Factory Surgeon for the Wivelscombe District, Somerset.

STUART-LOW, William, F.R.C.S.Eng., Assistant-Surgeon to the Central Throat and Ear Hospital, Gray's Inn Road.

SYMES, W. J., M.B., B.S.Durh., Medical Officer and Public Vaccinator for the Chesterfield District of the Chesterfield Union, *vice* F. Edmunds, M.R.C.S., L.R.C.P., resigned.

THOMAS, Charles E., M.R.C.S.Eng., L.S.A., Port Health Officer for the Port of Timaru, New Zealand, *vice* Dr. Reid, resigned.

WHEELER, E. R., M.R.C.S., L.R.C.P.Lond., Assistant House-Surgeon to the Evelina Hospital for Sick Children, Southwark.

WHITELOCKE, R. H. Anglin, M.D., M.Ch.Edin., F.R.C.S.Eng., Lichfield Lecturer in Clinical Surgery in the University of Oxford.

DIARY FOR NEXT WEEK.

TUESDAY.

Pathological Society of London, King's College, W.C., 8.30 p.m.—Mr. G. L. Cheatle: The Behaviour of Cancer in Nerve or Trophic Areas. Professor R. T. Hewlett: The Agglutination Reaction in Tropical and Asylums Dysentery; and other communications.

Chelsea Clinical Society, Chelsea Dispensary, Manor Street, Chelsea, S.W., 8.30 p.m.—Dr. G. Eric Pritchard: The Inheritance of Acquired Characteristics. Dr. T. B. Hyslop: The Examination of a Person Alleged to be Insane. Dr. C. C. Gibbes: Cases.

THURSDAY.

Harveian Society of London, Stafford Rooms, Titchborne Street, Edgware Road, W., 8.30 p.m.—D. B. Lees: The Treatment of Some Acute Visceral Inflammation. (Third Harveian Lecture.)

Ophthalmological Society of the United Kingdom, 11, Chandos Street, Cavendish Square, W., 8 p.m.—Cases. 8.30 p.m.—Papers: Mr. E. Nettleship, Indirect Gunshot Injury of the Eye. Major Maynard and Dr. Leonard Rogers: Pulsating Exophthalmos accompanying Internal Hydrocephalus. Dr. Freeland Fergus: (1) An Easy Operation for Ectropion; (2) Average Visual Acuteness. Mr. N. B. Harman: The Judgement of the Size and Distance of Objects. Dr. Gordon Byers: Catarrhal Inflammation of the Lachrymal Apparatus.

FRIDAY.

Society for the Study of Disease in Children, 11, Chandos Street, Cavendish Square, W., 5.30 p.m.—Cases and specimens by various members. Papers: Mr. A. Carless, Lymphangiomata; Mr. T. Clinton Dent, Pyloroplasty for Hypertrophic Stenosis; Dr. E. Cautley, Hypertrophic Stenosis of the Pylorus.

Epidemiological Society, 11, Chandos Street, Cavendish Square, W., 8.30 p.m.—Professor W. J. Simpson: Some Remarks on the Epidemiology of Plague.

POST-GRADUATE COURSES AND LECTURES.

Charing Cross Hospital, Thursday, 4 p.m.—Demonstration of Medical Cases.

Hospital for Consumption and Diseases of the Chest, Brompton, Wednesday, 4 p.m.—Lecture on Thoracic Aneurysm.

Hospital for Sick Children, Great Ormond Street, W.C., Thursday, 4 p.m.—Lecture on Diabetes in Children.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—Demonstrations will be given at 4 p.m. as follows: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Throat. Lectures will also be given at 5.15 p.m. as follows: Monday The Present Position of Experimental Inquiry in Relation to Cancer: Tuesday, How to Treat a Case of Insanity; Wednesday, On the Operative Treatment of Piles and Kindred Affections; Thursday, Intestinal Obstruction Friday, Some Points in Climatic and Balneary Therapeutics.

Mount Vernon Hospital for Consumption and Diseases of the Chest, 7, Fitzroy Square, W., Thursday, 5 p.m.—Arrested Pulmonary Tuberculosis, especially in regard to Treatment.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C.—Lectures will be delivered at 3.30 p.m. as follows: Tuesday, Diseases of the Cerebellum; Friday, Optic Neuritis.

North East London Post-Graduate College, Tottenham Hospital, N., Thursday, 4.30 p.m.—Surgical Diseases of Children.

Post-Graduate College, West London Hospital, Hammersmith Road, W.—Lectures will be delivered at 5 p.m. as follows: Monday, Malignant Disease of the Uterus; Tuesday, Practical Medicine; Wednesday, Pelvic Pain; Thursday, Urinary Cases; Friday, Slaughterhouses.

Samaritan Free Hospital for Women, Marylebone Road, N.W., Thursday, 3 p.m.—Lecture on Uterine Tumours.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

DYSON.—On November 5th, at 25, Aldersgate Street, E.C., the wife of Malcolm G. Dyson, F.R.C.S., of a son.

GAIRDNER.—At Cairo, on the 8th inst., the wife of the Rev. William Henry Temple Gairdner, B.A., a son.

MARRIAGE.

MULLER—MCKEAND.—On November 5th, at Airlies, Whanthill, Wigtownshire, by the Rev. Campbell-Taylor, M.A., Charles Herold Muller, M.B.Edin., second son of Rev. Professor Muller, of Stellenbosch, Cape Colony, to Isabel Nivison McKeand, M.B.Edin., eldest daughter of Peter McKeand, J.P., of Airlies.

DEATHS.

CRADOCK.—On Sunday, November 1st, at her residence, 52, Huskisson Street, Liverpool, Lucy Elizabeth Cradock, L.R.C.P.I.

JONES.—On November 4th, at the residence of his father, Talbot Road, Wrexham, George Kimball Jones, of Derngate, Northampton, M.R.C.S. & L.R.C.P.Lond.

LAWTON.—On October 31st, at Poole, aged 52 years, Herbert Alfred Lawton, M.D.Durh., L.R.C.P.Lond., M.R.C.S.Eng., L.S.A., M., and D.P.H., late Medical Officer of Health.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

PRURITUS VULVAE.

SCOTUS asks for suggestions in the treatment of a case of pruritus vulvae in a married woman, aged 38. Beyond a slight varicosity of the veins there is no morbid condition visible, but there is some mucoid discharge. Neither hot douche nor any external application seems to have much effect on the condition, but the trouble disappears entirely during the menstrual flow, only to come back when it is over. The urine is rather acid.

OPERATIVE TREATMENT OF ASCITES IN CIRRHOSIS.

DR. G. A. LEON (Sidmouth) writes: Referring to the letter of Dr. Hale White and Dr. H. C. Thomson under the above heading in the BRITISH MEDICAL JOURNAL of October 31st, it would be useful to know what are the signs of early chronic peritonitis to which they allude. The references which they give to the *Guy's Hospital Reports* and the *Transactions* of the Royal Medical and Chirurgical Society are not of easy access to all of us. Take for instance the following case in my practice: "Mrs. C., aged 38, first complained of pain in the right side September, 1896. Seen by me in July, 1897, in consultation with Dr. Davy, of Exeter. Hypertrophic cirrhosis and ascites then diagnosed; no thickening of omentum then noticed. No history of syphilis, but has taken alcohol in moderate quantities. Gave antisyphilitic treatment for two months without benefit. Tapped her many times between August, 1897, and December, 1901. Altogether 710 pints of fluid drawn off between those dates. In November, 1898, I note that the liver has shrunk, that the omentum is much thickened and enlarged vessels can be clearly felt through the abdominal wall. Since December, 1901, she has not been tapped. All through her illness, with few exceptions, she has been getting about and doing her housework as a tradesman's wife. She is still in fair health, at work all day, and has not needed a doctor for over eighteen months." Now, Sir, my question is, how could the clinical diagnosis of chronic peritonitis be formed at the commencement of such a case as the above? I was recommended, certainly by two consulting surgeons, to submit Mrs. C. to an operation, but as she was doing well I did not think it advisable. In November, 1898, there was no doubt chronic peritonitis, possibly set up, and probably accelerated by the frequent perforations with a trocar; and most likely it was owing to the consequent adhesions that a collateral circulation was established. Theoretically cases which evidence chronic peritonitis are precisely those cases which should improve without operation. I think an important part of the treatment of these cases is to allow the patient to get about whenever possible.

ANSWERS.

W. R. P. would do well to recommend to his lay friend a good textbook on hygiene. Perhaps for non-medical readers Newsholme's *Hygiene*, 4s. 6d. (Gill and Sons) would best meet the requirements. If general information on legal matters is required, the special chapters on Law in Reid's *Practical Sanitation* or in Parkes's or Whitelegge's *Hygiene* should be consulted. It is very useful for the members of a local authority to take in a journal dealing with sanitation—for example, *Public Health*.

MILITARY OFFICER'S DEBTS.

A CORRESPONDENT wants to know how to enforce a claim for professional services against an officer on the active list who may be serving abroad or at home. This is a very comprehensive question, involving complicated details. We would first presume that the debts of a commissioned officer on the active list cannot be treated differently from those of a civilian, and are recoverable similarly. If so, the first element is locality and jurisdiction; in England or Ireland the county court, in Scotland the sheriff court, in debts under £50. The next is, if the debt be disputed it must go to trial. The courts have means of enforcing their decision by arrestment, attachment, or execution. As to recovery from officers serving abroad, we presume the debtor should be sued civilly and locally where serving—a difficult business. We have often heard of appeals to the Commander-in-Chief or Secretary of State for War regarding absent officer's debts; but we much doubt if these officials could or would take action. Under any circumstance our correspondent should consult a solicitor.

NOTES, LETTERS, Etc.

INTRODUCTORY LECTURES.

A. G. P. writes: Dr. William Osler, in his address to the students of Toronto University, expresses a doubt as to the value of the introductory lecture. I think there are few members of the medical profession

who will read Dr. Osler's scholarly, thoughtful, and altogether delightful discourse without feeling within them a revival of that enthusiasm felt when they themselves, on the threshold of their student lives, listened to their "introductory."

This letter is not, however, written by way of being a literary appreciation of Dr. Osler's lecture. I have a suggestion to make. It is the custom to select as lecturer on these occasions some honoured, learned, and highly successful man. Frequently he is a baronet; invariably he is a consultant, and lives in that Mecca of medicine, Harley Street. Who can wonder if his views on the subject of our profession as a carcer are roscate? At the risk of being considered blasphemous, I may say that these estimable gentlemen often inflict upon "their young friends assembled here to-day" a set of sentiments and phrases which may be described (if you will pardon a slang term) as the very "chestnuts" of platitude. What can these men know of the struggles and hardships of which they talk so glibly? This is my suggestion: Let the authorities of our medical schools next year select some unsuccessful practitioners to deliver their introductory lectures. Believe me they would have no difficulty in finding them. Let them select the man who has a small colliery appointment, or send deputations to the agents' offices, and request some of the many *locums* patiently waiting there for work (a married *locum* with a young family for choice) to address the students. I know this suggestion is revolutionary and against all precedent—in fact, preposterous—but it is high time the hundreds of young men who are flocking to the schools were shown the other side of the picture. I venture to predict that if this suggestion were adopted for a few seasons, the entries at the medical schools would show a marked decline. This is where "the value of the introductory lecture" would come in.

MEDICAL OFFICERS IN THE HIGHLANDS AND ISLANDS.

A CORRESPONDENT calls our attention to the fact that an advertisement has appeared in a Scottish paper for a medical officer and public vaccinator for the parish of Duirinish in Skye. The salary offered is £100 a year, with an allowance to cover the rent of a house which the medical officer will be expected to occupy. We would recommend any intending candidate to make careful inquiries first of all as to the terms of engagement and as to the tenure of office, with regard especially to security against dismissal for frivolous reasons. He should also ascertain the exact terms upon which the house is held, since notice to leave the house might be equivalent to compulsory vacation of the appointment. We are informed that the Edinbane Hospital is in the parish of Duirinish, and that the medical officer of that hospital does some of the practice of the parish, which is stated to contain 3,367 inhabitants.

"THE ENGLISH DISEASE."

DR. A. R. HENCKLEY (Canterbury) writes: With reference to your notice of my pamphlet on the M.D.Brux. examination in the BRITISH MEDICAL JOURNAL of November 7th (p. 1157), on p. 7 I have said that "Syphilis is not looked upon as a cause for so many diseases there as in Great Britain, for obvious reasons." You state that "It is not quite clear what these obvious reasons are, and the reader might have been interested had they been given." This may be according to the construction put on the word "there." I meant to imply that they assert that syphilis was less likely to be a cause for so many diseases in people who have always lived in Belgium or other countries where preventive measures are adopted than in Great Britain; in fact, I have heard two or three of the professors call syphilis "the English disease."

PHTHISIS AND FORMIC ALDEHYDE.

MESSRS. SQUIRE AND SONS (London, W.), write: In connexion with your report (October 24th, p. 1050) of Dr. Chowry-Muthu's paper read in the Section of Medicine at the annual meeting of the British Medical Association, we might add to the notes already given by him that for some time all the apparatus and bottles have been treated with formic aldehyde solution, in addition to the precautions indicated by Dr. Chowry-Muthu, and although this may appear to be an unimportant addition since this method has been adopted it has yielded more satisfactory results.

EXAMINATION FOR LIFE INSURANCE.

CRYPTO writes: I recently had a case to examine for insurance in which the applicant was one of sixteen children, fifteen being now alive, the one having died lately of Addison's disease, aged 37. The parents both died of cancer (of the bowels it was stated). The applicant being in excellent health, and not living in the same district as the parents lived—which was a district where cancer is said to be very prevalent—and the parents being beyond the child-bearing period (between 63 and 70), I reported that under the circumstances of the case, and considering the fact that there is no proof that cancer is hereditary, I considered the life a good one. The company loaded him with two years. Another company then accepted him on a twenty years' payment on a similar report from me, and the first company on hearing of this have now done the same. I should like to know the view the profession would take of a similar case, especially examiners for insurance companies.

SOMNOFORM.

DR. J. W. NOBLE (Nottingham) writes: As information concerning the safety of any comparatively new anaesthetic is always useful, it may interest some of your readers to know that I administered somnoform to-day to an old gentleman of 79 years of age. He had a markedly irregular heart, intermitting every fourth beat, and had experienced several "seizures" while at his meals previously. Owing to the extremely quiet way in which he took the anaesthetic, and the fact that the hand which I had told him to hold up remained up all the time, he had one stertorous breath before I removed the mask, though I had intended to stop short of this. Four teeth were removed, and there would have been time for several more to have been extracted if necessary. It was a question for us to decide between gas and somnoform, and I am quite satisfied that in this case the right anaesthetic was used, as there were absolutely no after-effects at all.

LETTERS, COMMUNICATIONS, ETC., have been received from

A Mr. H. E. Allen, London; Mr. F. Addiscott, London; Dr. L. Atthill, Monkstown; Dr. A. G. Auld, London; Dr. R. H. Ashwin, Market Weighton; Professor J. Clifford Allbutt, Cambridge; D. Armour, M.B., London; W. B. Armstrong, M.B., Kirkintilloch.

B Dr. J. Beddoe, Bradford-on-Avon; Sir W. H. Broadbent, Bart., K.V.C.O., London; Mr. O. S. Buck, Edinburgh; Dr. M. Beverley, Norwich; Dr. C. L. Birmingham, West port; Dr. C. Buttar, London; Mr. L. A. Bidwell, London; Mr. A. G. Bennett, Cork; Mr. A. H. Birds, London; Dr. H. T. Bulstrode, London.

C Dr. W. H. Calvert, Melrose; Mr. F. W. Collingwood, London; Dr. A. K. Chalmers, Glasgow; Messrs. J. Colby and Co., Brighton; Dr. J. M. Clarke, Clifton; Messrs. Cassell and Co., London; B. J. Courtney, M.B., Leeds; Dr. G. Crichton, London; Mr. Cross, London; Dr. J. Campbell, Belfast; Mr. A. F. Cole London; Mr. A. A. Cooper, London, J. H. Clayton, M.B., Birmingham; Dr. J. E. G. Calverley, O.M.G., Folkestone; Dr. G. Carpenter, London; Miss L. B. Clapham, M.B., London; Mr. J. Cockram, Richmond, Surrey.

D Mr. J. W. B. Darnell, Edinburgh; Disgusted; Dr. B. W. Diver, Shotley Bridge; Mr. G. W. Duncan, London; J. W. Duncan, M.B., Birmingham; Docked Locum.

E Mr. W. J. Edwards, London; Enquirer.

F Mr. E. L. Freer, Birmingham; Fair Play; E. R. Fothergill, M.B., London; Mr. W. J. L. Ffrench, Barnetby; Fontanelle; Sir A. D. Fripp, K.C.V.O., C.B., London.

G Messrs. R. W. Greeff and Co., London; Mr. J. E. Gordon, Salisbury; Mr. W. J. Greer, Newport, Mon.; Dr. Mcl. Glen, M.B., Glasgow; Mr. F. Gravely, Newick; G. P.; Dr. A. E. Giles, London.

H Mr. T. H. B. Hammond, Shanklin, Isle of Wight; Dr. H. Hart, London; Dr. E. Harrison, Hull; Mr. E. F. Hickman, London; Mr. F. W. Howell, London; Dr. R. G. Hebb, London; H. T. Herring, M.B., London; S. Hamilton, M.B., Newport, Mon.; G. Halley, M.B., Dundee; F. R. Hill, M.B., Carlisle; Dr. A. R. Henckley, Canterbury; Mr. A. A. Humphrys, Coupar Angus.

J Dr. R. Jones, Woodford Bridge; Dr. A. C. Jordan, London; Just and Generous.

L Dr. G. A. Leon, Sidmouth; A. Lingard, M.B., Muktesar; Lieutenant-Colonel E. Lawrie, London; Liverpool Medical Institution, Secretary of, Liverpool; Dr. D. B. Lees, London; Lex; Dr. G. H. Lancashire, Manchester.

M J. A. C. Macewen, M.B., Glasgow; B. G. A. Moynihan, M.B., Leeds; Mr. J. R. Morison, Newcastle-on-Tyne; Dr. J. A. Menzies, Rochdale; Mr. G. Morgan, Brighton; M.O.H.; M.R.C.S.; Mr. T. H. Mitchell, Ambleside, W. J. McCardie, M.B., Birmingham; Medicus; Dr. C. J. Macalister, Liverpool; A. Murchison, M.B., Uig; Medical Patent; Member; Mr. J. H. Mummery, London.

N N. J. K.; Nine Years' Service and Still Officiating; Navy; Dr. O. Neustatter, Munich.

O Sir L. Ormsby, Dublin; Obstetrical Society, Secretary of, London; Owner.

P Mr. E. J. Pritchard, London; Dr. C. B. Plowright, King's Lynn; Mr. J. J. Pickles, Leeds; T. C. Penfold, M.B., Stocksfield-on-Tyne; J. Penny, M.B., Great Broughton; Captain A. E. H. Pinch, London; Mr. C. B. Pasley, Cabir; Dr. T. D. Poole, Wolverhampton; Dr. J. A. Parsons, Market Overton.

Q Querist.

R Messrs. Reynell and Son, London; Mr. D. Renton, Eyemouth; Mr. H. M. Raven, Broadstairs; Mr. C. E. Russell, London; Mr. J. Rooth, Brighton; Mr. C. M. Row, Wardleton.

S Mr. J. E. R. Stephens, London; Scotus; St. Bartholomew's Hospital, Clerk of, London; S. I. M.; Sardam, Dr. E. A. Snape, London; Mr. W. St. A. St. John, Derby; Dr. F. J. Smith, London; Dr. S. Sunderland, London; Dr. J. E. Stratton, London; S. Stephenson, M.B., London; Dr. D. Stanley, Birmingham; A. Shillitoe, M.B., London.

T Dr. F. J. Tresilian, Enfield; Mr. H. W. Thomas, Liverpool; Theory; J. H. Teacher, M.B., Glasgow.

U Dr. A. R. Urquhart, Perth; U. V. W.

V Variola.

W J. Weir, M.B., Glasgow; H. Walker, M.B., Glasgow; W. McD. E.; Dr. Walker, Oxford; Dr. F. Willcocks, London; Mr. S. W. Wilson, London; Dr. H. Woods, London; Dr. F. H. Worswick, Manchester; Mr. P. J. Williams, Manchester.

BOOKS, ETC., RECEIVED.

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A Lecture
ON
THE DIAGNOSIS OF PULMONARY TUBERCULOSIS.

Delivered at the Medical Graduates' College and Polyclinic.

By C. THEODORE WILLIAMS, M.D., F.R.C.P.,
Consulting Physician to Brompton Hospital.

Lecture II.

My first lecture * on the diagnosis of pulmonary tuberculosis was devoted to the conditions of tuberculous consolidations, discrete and in masses. I now propose to discuss the diagnosis of excavation in its various aspects, to point out what is the true significance of certain well-known physical signs, and to note how far they are to be depended on when we attempt to track out the course of the disease. Excavation sometimes takes place in a lung on a small scale without giving rise to any signs or symptoms. Small tubercules may caseate, soften, and, coming into connexion with a minute bronchus, be removed by expectoration. But softening, if it involve any considerable-sized tuberculous mass, or, if the mass be superficial, gives rise to unmistakable physical signs.

The process of softening in its simplest form appears to be a necrobiosis of the alveolar wall from the results of the epithelial proliferation caused by the irritation of the tubercle bacillus, and possibly, as Mr. Watson Cheyne thinks, owing to a chemical change in the cells themselves produced by the tubercle bacilli; where the process is on a larger scale there is more or less ulceration and masses of tubercle undergo caseation, soften, and are expectorated. Therefore caseation may be partly the result of mechanical pressure, and partly of the chemical process of the cells, and the liquefaction of the caseous mass, which is true softening, is only a further step of disorganization.

The process of softening is often, but not always, accompanied by pyrexia, by increased cough, and by a change in the character of the expectoration, which becomes more abundant and purulent, and is occasionally blood-streaked. It often contains the brownish specks which are held to be characteristic of lung tissue.

Microscopically, large quantities of lung tissue are found either in the form of hooklets or even of entire transverse sections of alveoli. Tubercle bacilli are generally very abundant, and sundry other organisms, such as streptococci and staphylococci, and the micrococcus tetragenus, are found.

The physical signs of softening generally consist in the replacement of smaller and scattered crepitation by coarser and larger crepitation, as *râles*, and then comes the ominous click sound on cough so characteristic of softening, followed by the croak and the loud tubular sound, which soon passes into the various modifications of the cavernous sound, and these become very distinct after coughing.

Where catarrhal sounds are present, as in some forms of lung tuberculosis, the sounds distinctive of softening are often masked, and cavernous breathing becomes apparent almost as a surprise, generally after a severe fit of coughing. The sonorous rhonchus disappears, and a loud croak is audible. Where the area of softening is small, the percussion sound is unchanged, but, if a large cavity is forming, dullness often gives rise to limited resonance, probably owing to the large masses of tissue being removed and replaced by air. The percussion sounds which a recently-formed cavity gives rise to depend partly on its distance from the chest wall. The well-known cracked-pot sound is not an index of the size of the cavity, but indicates that it is superficial, and generally immediately underlying the spot struck, and to evoke it properly the mouth must be kept open. In many cases, where the cavity lies deep and there is much infiltration around it, or the pleura is greatly thickened, the percussion sound over the region of the cavity is dull. Inspection of the chest wall often discovers retraction where a cavity has formed, and this is to be best seen in the first or second intercostal spaces. Sometimes considerable flattening of the chest wall takes place, which generally indicates that a cavity of some size has formed and is beginning to contract.

With regard to the relations between the size of the cavity and the percussion note, undoubtedly large amphoric cavities, when superficial, give a hyper-resonant note and have been mistaken for a pneumothorax.

But to return to the subject of softening. Generally speaking, lung tubercle softens in the order of its formation, and therefore excavation is commonest and earliest in the upper portion of the upper lobes, but the auscultatory sounds of softening are best heard in the first and second interspaces and not in the suprascapular regions, where the sounds are often not very clear. Another region of search should be the interscapular, if the march of tuberculosis has advanced beyond the interlobular sulcus.

As I have stated, softening need not necessarily be accompanied by many constitutional symptoms, but it is invariably attended by some increase of cough and expectoration. The prospects of the patient when a cavity has formed cannot be considered so favourable as if there be only tuberculous consolidation, as a suppurating surface suitable for the breeding of the tubercle bacilli is at once established, and the chance of reinfection and spread of the disease is largely increased. The physical signs of a cavity being so familiar need not detain us long, but the caution as to not coming to any conclusion as to the absence or presence of a cavity without making the patient cough, is as important as in the first stage of phthisis. Often over large tracts of the thorax where resonance and absence of breath sound are all that can be detected, a good cough will discover dry or moist cavernous sounds, the reason of the former silence being that the bronchus leading to the cavity was blocked by a plug of mucus which a sharp cough displaced, and this may account for the cavities which are from time to time discovered in the *post-mortem* room and have escaped detection during life. The loudness of cavernous sounds is not always an index of the size of the cavity, as superficial caverns, even of a comparatively small size, if surrounded by much consolidation, give rise to louder cavernous sounds than deeper cavities of large size which are not so surrounded.

Tuberculous cavities vary not only in size and situation, but also in kind; there are secreting cavities with smooth surfaces which look like lining membranes and are not so, but from whose interiors a large amount of matter exudes; there are dry cavities whose walls are principally composed of fibroid material and contain little or no secretion, and are probably the forerunners of the caseous masses embedded in fibroid tissue and unconnected with bronchi, which are so often found at necropsies. There are the primary cavities of the ordinary type, and the secondary cavities of which more presently. Basic cavities are also a division, and these may either be primary or secondary; and there are the contracting cavities which we always are on the look-out for by reason of their happy augury; and, lastly, there are the amphoric cavities, arising from such extensive lung excavation that the organ is often converted into a mere bag of pleura. Let us now consider them *seriatim*.

Dry and Secreting Cavities.

The secreting cavity is generally found in connexion with acute forms of the disease, as in acute tuberculo-pneumonic phthisis, and often extends rapidly. The secretion consists of the detritus of the softening process, broken-down lung tissue, abundant pus cells, and tubercle bacilli. The walls of these cavities are often the seat of much inflammatory and ulcerative process, and the rapid laying bare of the blood vessels and their perforation by erosion often gives rise to large haemoptysis.

The dry cavity is generally the result of chronic disease and remains in a stationary condition for months, and often for years, giving rise to no symptoms beyond morning cough and expectoration. The presence of a large amount of fibrosis will often convert the dry cavity into the contracting cavity, but in many cases, owing to pleuritic adhesions or the absence of the fibroid element, the dry cavity will remain patent for long periods, in fact for years. In many of these patients the disease is unilateral and limited to one lobe, and the discharging cavity resembles a sinus from a tuberculous lesion of the bone. On the walls of these dry cavities are often to be noted aneurysms of the pulmonary artery branches, the rupture of which often causes death in cases which have appeared promising.

Secondary Cavities.

These are a class which Dr. William Ewart was the first to describe and explain, and my experience amply confirms his conclusions. Secondary cavities are formed through the reinhalation of the secretion or sputum of primary cavities.

* British Medical Journal, March 14th, 1903.

This is partly the result of the prone position of the patient in bed and of weakness of expectorating power, and partly owing to the suction power of the middle portions of the lung being stronger than that of the apex. Hence the secretion from an apex cavity, instead of being discharged through the windpipe and mouth, descends into an adjoining bronchus, reaches the terminal bronchioles and alveoli, and sets up fresh tuberculous disease in the neighbourhood. A cuboidal mass of tubercle is formed as the result of the infection, which again breaks down and is expectorated, and thus another cavity is formed. These secondary cavities follow the lines of certain bronchi, principally where the suction power on coughing is greatest, and the principal secondary cavities are formed in the dorso-axillary region, the mammary regions, and at the base of the lung, and are remarkable for being devoid of lining membrane. The dorso-axillary region is the commonest spot for a secondary cavity to commence in and should be carefully examined in chronic cases, but a large number of secondary cavities are also detected in the mammary region. The basic cavities are not so common. Secondary cavities are unfavourable to a good prognosis, as they seldom contract.

Amphoric Cavities.

In some patients tuberculization is followed by so extensive an amount of excavation that the presence of air in the cavity gives rise to the phenomena of amphoric breathing and metallic tinkle, which latter is the echo of drops of fluid falling into the cavity from its walls and bronchi.

These cavities are diagnosed from pneumothorax by the absence of the fluid in the pleura and its characteristic signs, and by the different position of the auscultation sounds, though there are cases of localized pneumothorax where the diagnosis is very difficult and often impossible.

Contracting Cavities.

The phenomena these give rise to may be traced step by step by physical signs. Cavities contract sometimes rapidly, and I have known considerable sized cavities contract in three months, but as a rule the process is a slow and gradual one, depending on the amount of fibrosis in the lung and the reacting power of the patient against the ravages of the tubercle bacillus. The chief signs of a contracting cavity are:

1. Flattening of the chest walls overlying the cavity, and often contraction of the chest circumference of the side.
2. Displacement of neighbouring organs.

When the contracting cavity is on the left side, the left lung is retracted towards its root, and the right lung becomes hypertrophied, and is drawn across the median line of the sternum, and may be traced through percussion by a line of resonance reaching half-way across the clavicle. The heart is raised, its apex being tilted towards the axilla, and sometimes it describes an arc of a considerable sized circle, of which the centre is the fixed portion of the heart and arteries. The heart's impulse may be felt first in the fourth space to the left of the nipple, and even traced into the third space, always tilted towards the axilla. The stomach is drawn up, and the note is to be distinguished quite high up in the thorax.

When the cavity is in the right lung, the heart is generally drawn to the right and under the sternum, the liver is raised, and the left lung is drawn across the median line, and reaches half-way across the clavicle, or even further. The lung on either side contracts towards a fixed point, sometimes towards a spot where the pleura is adherent, but more commonly towards the root of the lung; and the cavernous sounds, at first becoming less distinct in the first and second interspaces, become more so in the suprascapular and interscapular regions, where they linger some time, and gradually disappear. Cough and expectoration may cease, or the latter sometimes becomes fetid from retention through narrowing of the bronchus. Occasionally the contraction of cavities causes even greater changes, and the shoulder of that side is depressed, the spine being curved towards the contracting side. The worst of it is that contraction of the cavity in one lung does not prevent the formation of fresh tubercle in the opposite lung.

Diagnosis of Cavities.

The diagnosis of tuberculous cavities from bronchiectasis is based on several points of distinction.

First, on the age of the patient and on his different appearance in the two diseases. Children and middle-aged people are liable to bronchiectasis, but as a rule not young adults, which is the class most frequently attached by tuberculosis. Patients with bronchiectasis, except when suffering from septicaemia, show no sign of wasting or anaemia, but generally have a healthy exterior and are commonly gaining flesh.

Secondly, on the appearance and examination of the sputum, which in the case of bronchiectasis is frothy and mixed with pus and more or less offensive, and, though containing numerous septic organisms, is free from the tubercle bacillus.

Thirdly, on the character of the cavernous sounds and their locality. The majority of bronchiectatic cavities are basic, whereas tuberculous cavities are generally at the apex. Bronchiectatic cavities may, however, be detected in the first and second interspaces, where they are always nearer the median line than tuberculous cavities, and though they give rise to noisy, jarring, cavernous sounds, they are never audible over such extensive surfaces of the thorax as in tuberculous cavities. The percussion sound is not as a rule dull, but resonant from the accompanying emphysema.

The Harveian Lectures

ON

THE TREATMENT OF SOME ACUTE VISCERAL INFLAMMATIONS.

Delivered before the Harveian Society of London, November 5th, 12th, and 19th, 1903.

By D. B. LEES, M.A., M.D., F.R.C.P.,
Senior Physician, Hospital for Sick Children, Great Ormond Street; Physician, St. Mary's Hospital.

Lecture I.

ACUTE RHEUMATIC CARDITIS AND PERICARDITIS.

The treatment of acute cardiac inflammation is, in the great majority of cases, the treatment of an infection with the organism of acute rheumatism, and we have to consider what therapeutic agents, general and local, are available to assist us.

First and foremost, we must determine the value of sodium salicylate as an internal remedy in acute rheumatism. It is believed by some that the value of salicylate in the treatment of rheumatism is limited to the reduction of temperature, the relief of pain, and the diminution of arthritis. But a very short experience in the wards of a hospital for children suffices to show that this view is quite inadequate. For in the rheumatism of childhood arthritis is often absent altogether, and pain may be slight, while cardiac disease is severe. Yet the good effects of salicylate in children are quite as well marked as in adults. The temperature falls, the general condition improves, torpidity gives place to a bright expression, and the cardiac state is ameliorated, the area of dullness tending to diminish, and the strength of the ventricular contraction to increase.

Observation of the effects of salicylate in the treatment of acute rheumatism both in children and in adults has led me to the conviction that it is as truly antirheumatic as quinine is antimalarial or mercury antisyphilitic. But it must, of course, be given in adequate doses and its use must not be too soon relinquished. For an adult 20 gr. of sodium salicylate with 40 gr. of sodium bicarbonate should be given every two hours during the day and every four hours during the night. For a child of 6 to 10 years old 10 gr. of salicylate and 20 gr. of bicarbonate at the same intervals; this amounts to a daily dose of 100 gr. of salicylate. After a day or two 15 gr. of the salicylate with 30 gr. of bicarbonate may be given, and if necessary this may be increased to 20 and 40 gr. respectively, the total daily amount of salicylate being 150 or 200 gr. Children require proportionally larger doses than adults, for in them the rheumatic infection is much more intense. It is rare for an adult to die from his first rheumatic attack, but this disaster is by no means uncommon in childhood. Fortunately children usually bear salicylate well; in them it seldom causes much vomiting, often none at all, and they hardly ever complain of the deafness, tinnitus, and headache which are troublesome in adults, nor do they often manifest the mental symptoms and the tendency to delirium which are sometimes caused by the drug in later life.

There is, however, one effect occasionally produced by salicylate which demands special mention, for it is a sym-

ptom of danger, and its occurrence should lead to an immediate discontinuance of the drug. It is a marked deepening of the inspirations (apart from pericarditis), and resembles the "air hunger" of diabetic coma. In diabetes an incipient air hunger may sometimes be arrested by the administration of large doses of alkalies, and in the only fatal case of salicylic air hunger which has come under my own observation the salicylate had been taken without any added alkali. It seems probable that the symptom is due to an action on the respiratory centre caused by an excess of acid. An addition of sodium bicarbonate in quantity equal to twice that of the salicylate in each dose seems to be usually sufficient to prevent the occurrence of this symptom.

If for any reason in child or adult it seems necessary to discontinue the salicylate, it should only be suspended for a few hours; then it should be again given in a smaller amount, and the dose gradually increased. It is almost always possible in this way to accustom the patient to the drug, and to get him to tolerate much larger doses than at first produced disturbance.

Case I.—A woman, aged 25, suffering from mitral stenosis, with high temperature and fresh endocarditis so severe as to suggest a diagnosis of malignant endocarditis, vomited and became delirious on 20-gr. doses of salicylate. By omitting the medicine for a few hours, and then giving smaller doses at first, she tolerated the remedy well, and it was soon possible to increase the amount as far as 30 gr. every two hours. The threatening signs and symptoms disappeared, and when she was discharged only a tranquil stenosis remained.

[In severe cases large doses may be necessary, as much as 30 gr. every two hours for an adult, occasionally 25 or even 30 gr. for a child. It is very desirable to continue the use of the drug for a considerable time after the subsidence of the rheumatic symptoms. Too early discontinuance of the remedy, or a too great reduction of the dose, is often in adults, and still more frequently in children, quickly followed by a relapse. Too great timidity in the employment of salicylate may cause an adult patient additional pain which might have been avoided; in a child it may be the cause of a cardiac disaster.]

Case II.—A boy, aged 5, with a greatly dilated rheumatic heart, was treated with 8 gr. of sodium salicylate and 16 gr. of bicarbonate every two hours for sixteen days, and manifested decided improvement. The frequency of the dose was then reduced to every four hours, that is, the daily dose of salicylate was reduced from 80 gr. to 48 gr. Five days later, while the smaller dose was still being taken, a relapse occurred, with increased cardiac dilatation, and this led to his death three weeks later.

Case III.—A woman, aged 52, suffering from rheumatic arthritis in many joints, and with loud pericardial friction, was treated on July 10th, 1903, with 200 gr. of sodium salicylate daily, with 400 gr. of sodium bicarbonate, and an icebag was applied over the heart. Four days later the arthritis had disappeared, and the rub was much less loud, though the temperature had fallen only from 103·5° to 102°. But she complained so much of headache, deafness, and tinnitus that the medicine was discontinued altogether for two days. On July 16th it was again given, but in smaller amount—120 gr. of the salicylate and 240 gr. of bicarbonate. The temperature continued to fall for two days longer, and on the 18th was only 99°; but on the 19th, five days after the temporary suspension of the remedy, it rose again to 100.2°, and continued at this height on the 20th, with a further rise on the 21st to 101.8°. It seemed evident that a relapse of rheumatism was coming on, which the amount of salicylate and bicarbonate then being taken was insufficient to prevent. With a view of testing the question whether it was the salicylate that was really necessary, or whether an increased dose of the alkali would suffice, the daily dose of this was raised to 360 gr., the amount of salicylate being still only 120. The temperature rose on that day to 103.4°, and the next day (23rd) to 103.9°, and fresh rheumatic pain was then felt in the right hand. On the 24th the metacarpophalangeal joints of this hand were red and swollen. It was clear that the increase in the amount of alkali had failed to meet the need. The dose of salicylate at first given was therefore resumed, 200 gr. daily with 400 of bicarbonate. Next day (25th) the redness and swelling of the fingers had subsided, but on the 26th a fresh pericardial rub was heard, which was louder and harsher on the 27th. On the 28th it was very much less, and the temperature had fallen to the normal. From July 26th to August 8th she took 160 gr. of salicylate and 320 of bicarbonate; but as the temperature again rose to 99.5° on the 8th the doses were again increased to 200 gr. and 400 gr. There was no further recurrence of rheumatism, and she now took without difficulty the same doses as had at first caused disturbance. The temporary omission of the medicine and the smaller subsequent dose were clearly responsible for this fresh rheumatic outburst in joints and pericardium.

The employment of salicylate in sufficient doses for a sufficiently long period is much hindered by a tradition current amongst us that this drug is a "cardiac depressant." This doctrine has been maintained by some physicians of great authority as clinical observers, and especially they have taught that when pericarditis occurs in a patient suffering from rheumatic fever the salicylate ought to be stopped lest it should depress the heart still more. Now it is clear that a belief of this kind must have been founded on experience of a tendency to failure of the pulse and weakness of the first sound of the heart observed in rheumatic patients while taking salicylate. But one may fairly ask whether it is quite certain that such occurrences are really the effect of the drug, whether they may not be due to some other cause? In the first place they may conceivably be due to impurities of the drug as administered. Especially in the early years of its use, when a sudden demand arose for large quantities of the new remedy, it is quite likely that adulterations due to imperfect methods of preparation may have caused toxic symptoms, the memory of which remained in the minds of those who witnessed them and gave to the drug an evil reputation which has clung to it ever since. The sodium salicylate now obtainable is carefully prepared and purified and is free from impurities of cresols, etc. That obtained from oil of wintergreen is more than ten times as costly, so that its employment in large doses is impracticable.

But there is another and a more important fact which has been the main cause of the belief in the depressing effect of salicylate. It is unquestionable that rapid extension of the dullness of the left ventricle with enfeeblement of the first sound and of the pulse may occur in rheumatic patients who are taking salicylate. But is this due to the drug or in spite of it? Has it caused these symptoms or merely failed to prevent them? Can they be due to the disease itself?

Acute rheumatism produces, apparently in all cases of the disease, more or less dilatation of the left ventricle, with a tendency to diffusion and weakening of the impulse and enfeeblement of the first sound. I drew attention to this fact in a paper on acute dilatation of the heart in rheumatic fever, followed by a joint paper with Dr. Poynton on the same phenomenon as observed in the rheumatism and chorea of childhood, both published in the *Transactions* of the Royal Medical and Chirurgical Society for 1898. These observations have not, so far as I am aware, been controverted, and they have been confirmed by subsequent experience.

In the mildest case of subacute rheumatism the dullness of the left ventricle hardly ever fails to reach the nipple line; usually it extends a finger-breadth beyond it. It may attain to two finger-breadths to the left of the nipple line, without any murmur, and it may return to the normal as the attack subsides. This dilatation is due, no doubt, to the toxic action on the cardiac muscle of the toxin produced by the rheumatic organisms, frequently also to the actual presence in the heart wall of the organisms themselves. We can better appreciate the probable effect of the toxin by remembering Dr. Gaskell's experiments recorded in the third volume of the *Journal of Physiology*. Dr. Gaskell found that a dilute solution of lactic acid caused relaxation and "extreme dilatation" of the frog's ventricle, and finally diastolic standstill; it caused relaxation also of the vessels. On the other hand, a dilute solution of sodium hydrate caused gradual progressive contraction of the ventricle until it remained persistently fully contracted, and a similar contraction of the arterioles. He investigated also the action of various drugs, and found that some of them acted upon the ventricle like soda, others like lactic acid.

It seems almost certain that the toxin produced by the rheumatic cocci acts upon the ventricle in a manner similar to that of lactic acid; and it is of interest to remember that cultures of these organisms, even in an alkaline medium, always become acid; also to remember the belief of many former clinical observers that the poison of acute rheumatism is lactic acid itself. Important evidence on this question has recently been brought forward by Dr. Ainley Walker and Mr. Ryffel in a report to the Scientific Grants Committee of the British Medical Association.[1] They state that the "micrococcus rheumaticus" produces *formic* acid in very considerable quantity, and that this acid is not only present in the filtered cultures of the organism, but it can also be extracted from the bodies of the micro-organisms themselves. From these, after repeated washings to remove adherent traces of the culture fluids, they have obtained appreciable amounts of formic acid. It follows that the processes concerned in its production proceed within the body of the micro-organisms themselves. From a litre of culture fluid they were able to obtain about half a gram of formic acid. In addition to formic acid, the cultures and also the washed micrococci contain at least one other acid of the fatty acid series, probably acetic.

They also succeeded in obtaining formic acid from the tissues of a rabbit suffering from acute arthritis due to the inoculation of this micro-organism.

They state, also, that while from normal urine formic acid is absent or occurs in traces only, formic and probably another fatty acid are present in appreciable amounts in the urine

during the course of acute rheumatism, and they have some evidence that under the salicylic treatment of rheumatism the amount of formic acid in the urine is reduced.

With regard to the origin of the formic acid, they believe it to be formed by the micro-organism by the oxidation of sarcolactic acid into acetic and formic acids according to the equation:

$$CH_3\,CHOH\,COOH + O = CH_3COOH + H.COOH.$$

They add two facts of much importance. They have observed that the micrococcus rheumaticus has a haemolytic action upon red blood corpuscles greater and more rapid than that of any other streptococcus which they have yet examined, which explains the rapid and considerable anaemia of acute rheumatism. They have also succeeded in isolating an albumose from cultures of the organism grown in albuminous fluids free from albumoses, which on injection into animals (guinea-pigs and rabbits) rapidly produces marked pyrexia, and leads to an increase of temperature of three or more degrees Fahrenheit, reaching on one occasion 105°.

These observations of Dr. Ainley Walker and Mr. Ryffel are a justification of the ancient practice of treating acute rheumatism with alkalies. Before the specific action of the salicylate was discovered the alkaline treatment of rheumatism was the most successful, though at that time potassium salts were chiefly used and in comparatively small quantities. But sodium salts can be given much more freely, and Dr. Gaskell's observations on the frog's heart seem to indicate that they also tend to cause contraction of the ventricle. I think that there is some clinical evidence that this is really the case when they are freely employed in rheuamatism.

If, then, the rheumatic toxin always tends, more or less, to dilate and enfeeble the left ventricle, it is not surprising to find that in some cases a "cardiac depression" may manifest itself somewhat suddenly, after the disease has lasted for some days, or even a week or two. If the patient is taking salicylate when this occurs, the drug is almost certain to receive the discredit of symptoms really due to the disease itself. But strong evidence as to their actual cause can be adduced from analogy, for a similar acute dilatation and enfeeblement, but of a much more dangerous kind, is met with in some other diseases, notably influenza and diphtheria.

I pointed out, in an address on Acute Dilatation of the Heart in Diphtheria, Influenza, and Rheumatism, delivered before the Manchester Medical Society in 1900, and published in the British Medical Journal for January 5th, 1901, that in all these diseases an acute cardiac dilatation is not uncommon, and that it may cause fatal syncope in diphtheria and in influenza.

The symptoms before death are pallor, sometimes vomiting, and feeble (perhaps irregular) pulse. The physical signs are a rapid increase in the heart's dullness to the left, which may amount to an additional fingerbreadth in a few hours, diffusion and weakening of the impulse, with weakening of the first sound and of the pulse wave. After death extensive fatty degeneration of the cardiac muscle is found. The symptoms of an acute dilatation in rheumatism are less serious than those of a similar condition in diphtheria and in influenza, probably because there is less destruction of the cardiac muscular fibre. The acute dilatation of rheumatism rarely, if ever, produces a fatal syncope, but it may give rise to marked pallor and to obvious changes in the pulse. In diphtheria an acute dilatation may occur at any time during the six weeks following the onset of the disease. In rheumatism it may occur as late as two or three weeks after the onset, perhaps later.

Case iv.—A woman, aged 29, was suffering from her first attack of rheumatism. It was of a subacute type, with but little arthritis; the cardiac dullness extended to the nipple line but not beyond it, and there was no murmur. She was treated with sodium salicylate. After she had taken this for a fortnight with benefit the house-physician one day observed that the pulse was unusually weak. He percussed the heart at once, and found that the dullness of the left ventricle now extended one fingerbreadth beyond the nipple line, and a short systolic murmur could be heard. I confirmed these facts on the following day. Here was a case in which it might have been suggested that the salicylate had caused cardiac failure. But instead of omitting the drug I ordered it to be given more frequently, and placed an icebag over the heart. Immediate improvement followed, and in a few days the cardiac dullness was again normal, and the faint murmur had disappeared.

In diphtheria it cannot be doubted that an acute cardiac dilatation is due to the disease itself, and not to any drug that has been administered. I am convinced that in rheumatism also it is the disease itself which is responsible for cardiac failures, and that they are not due to the salicylate Indeed, they are probably in many cases an indication that an insufficient amount of the drug has been given.

If more care were taken to determine the exact size of the left ventricle by careful light percussion at the commencement of treatment and daily afterwards, an acute dilatation would be at once detected. There is little difficulty in this determination if the fingers only and not any "pleximeter" are used for percussion, if the part of the finger percussed is the terminal phalanx, and the other phalanges are not allowed to rest on the thoracic wall, and if the percussion stroke is always light. It is a primary duty to determine this matter with care whenever a practitioner is called on to attend a case of diphtheria, of influenza, or of rheumatism. It is, I believe, the neglect of this which has caused salicylate to be considered a cardiac depressant, and thus has done much mischief to rheumatic patients, for it has deprived them of a necessary drug. If, then, salicylate is not a cardiac depressant, and if it is genuinely antirheumatic, it is surely specially necessary in order to counteract the most deleterious action of rheumatism—its tendency to cause cardiac inflammation. The worst type of rheumatic carditis is associated with pericarditis, and it is here that the drug is most urgently needed. To withhold salicylate from a rheumatic patient, child, or adult, unless some equally efficacious medicine can be substituted for it, is, in my judgement, to do the patient a grievous injury. In medicine, as in ordinary life, sins of omission are more lightly regarded than sins of commission, but they may be quite as disastrous.

In support of my plea for the employment of larger doses of salicylate in the treatment of rheumatic conditions I may mention that I have lately found great advantage in the administration of large doses of salicylate and bicarbonate in many cases of chorea. The small doses of these remedies usually given in this disease (50 to 60 gr. a day) are far too small. If 100 gr. of salicylate as daily dose are given at once, and the amount rapidly increased to 150 gr., and if necessary to 200, very remarkable improvement often occurs, as I showed at the discussion on chorea at the Swansea meeting of the British Medical Association. After this discussion, a fact of interest was mentioned to me by Dr. McVittie, of Dublin, and he kindly allows me to relate it now. Through the mistake of a chemist, 2-drachm doses of sodium salicylate were taken by a patient three times daily for a week, with much benefit, and without the occurrence of any unpleasant symptoms.

Encouraged by this observation, Dr. McVittie prescribed for another patient suffering from chronic rheumatism, powders containing 2-drachm doses of salicylate, to be taken three times a day. The chemist to whom the prescription was taken thought that a mistake had been made, and distributed two drachms of the salicylate, as a total amount, among the twelve powders. The patient took these powders and was no better. Then he had the prescription made up by another chemist, who put into the powders the full dose ordered. In a week the man was well. In two subsequent cases of chronic muscular rheumatism Dr. McVittie observed complete relief of all pain follow the use of these powders, and no unpleasant symptoms were produced.

My conclusion is that sodium salicylate has certainly a marked antirheumatic action, that a considerable daily dose of the drug is essential to success, that each dose should be accompanied by twice as large a dose of sodium bicarbonate, and that the joint action of the two drugs should be maintained for some time after the subsidence of the rheumatic symptoms.

We have, therefore, in the free administration of sodium salicylate and bicarbonate an adequate method of meeting the causal indication in the treatment of rheumatic inflammation of the heart and pericardium. It remains to inquire whether we have also any means of directly diminishing the inflammatory action by local applications. The use of blisters over the precordial region was at one time a favourite method of treatment, and it is at least conceivable that the counter irritation of the overlying skin may tend to diminish the fullness of the vessels in an inflamed pericardium. But it is not desirable if it can be avoided to add to the sufferings of a patient who is seriously ill, and the local effect of a blister greatly impedes the necessary examination of the heart. Leeches applied to the cardiac area have a distinctly beneficial effect. They probably have some direct influence in draining the pericardial vessels, and they certainly cause a diminution of pressure in the right auricle, which is often of the greatest service. But this latter

effect can be equally well obtained by applying them to any other part of the thoracic wall, thus lessening the supply of blood through the azygos vein to the right auricle, and the subsequent examination of the heart will then not be impeded. The most convenient place for their application is over the lower anterior part of the right chest below the nipple level; it is always possible to arrest the flow of blood by pressure against the firm resistance of the ribs. But if the leeches are applied over the soft parts at the epigastrium there may be very considerable difficulty in arresting the flow.

The persistent application of cold to the precordial region by means of an icebag is a powerful means of repressing cardiac inflammation. In rheumatic pericarditis its effect is unmistakeable, and often very striking. I have employed it in nearly every case under my care during the last eleven years, and have found it extremely useful. At first I was very cautious in using it, only applying it for a short time, lest the cold should further depress a heart already hampered by the pericardial inflammation. What led me to employ it was the observation that, where an icebag had been applied for some hours to a pneumonic lung, it was usually found that the dullness at that spot was less intense, and that there was a better air entry, indicating that the vascular congestion of the lung beneath the icebag had been lessened. I found also that the symptoms and physical signs of subacute inflammation of the appendix vermiformis were rapidly relieved by an icebag, and that the same was true of sciatic neuritis of recent origin.

In all these three cases the direct local influence of the icebag in repressing subjacent visceral inflammation seemed undeniable, and it occurred to me that possibly it might have the same beneficial influence in pericarditis. I soon found that the inference was correct, and that there was no danger of collapse if two precautions were kept in mind.

One of these precautions is that the patient be made quite warm, if necessary by hot-water bottles, before the icebag is applied to the heart, and that the warmth be maintained during the whole period of its application. The second precaution is that the right auricle shall not be allowed to be overdistended. A few leeches, applied as already recommended, are sufficient to fulfil this condition, and it is generally advisable to apply them before the ice is used.

If these two conditions are secured, the icebag may be used without fear in a case, however severe, of rheumatic pericarditis. With these precautions the local use of ice, so far from depressing the heart, has actually a tonic action. The feeble and diffused impulse of the left ventricle becomes localized and stronger; this effect is often very noticeable after the icebag has been used continuously for some days. The friction sound soon becomes less harsh, and is heard over a smaller area of the precordium. This is not due to increased exudation, for the area of precordial dullness tends to diminish if at the same time large doses of sodium salicylate and bicarbonate are being administered, the improvement may be very rapid, and the diminution of the dullness remarkable. It must be remembered that in rheumatic pericarditis the effusion of fluid into the pericardial sac is only a minor factor in the increase of the dullness; this is mainly caused by dilatation of the heart.

It is necessary to insist on this fact, for it is not yet generally recognized. Rheumatic dilatation of the heart without any pericarditis may give rise to an outline of precordial dullness, which is practically a triangle with curved sides, and with its apex upwards. When pericarditis is present also, a moderate amount of pericardial effusion tends to accumulate behind the dilated heart in the recumbent position, and does not much influence the shape of the dullness. The greatest effect of a moderate pericardial effusion on the dullness is produced in the second left intercostal space, in which a definite lateral increase of the dullness suggests strongly the existence of fluid in the pericardial sac. A large pericardial effusion will no doubt extend the cardiac dullness further in all directions, but it remains true that in rheumatic pericarditis the chief factor in the enlargement of the dullness is dilatation of the heart.

The outline of the precordial dullness on the right side is mainly indicative of the state of distension of the right auricle. This statement also needs to be specially insisted on, both on account of its value as a suggestion for treatment and because it is as yet by no means universally acknowledged that the condition of the right auricle can be determined by careful percussion, its enlargement in disease of the lungs or left heart watched and recorded, and its diminution after leeches or venesection easily appreciated. In the normal heart the dullness of the right auricle always extends about one fingerbreadth (rather less in a child) to the right of the sternum in the fourth intercostal space. This can easily be verified by any one who avoids all artificial plexímeters and percusses with a light hammerstroke, with the flexed terminal phalanx of a finger of his right hand, on the terminal phalanx of a finger of his left hand, firmly applied, taking special care to keep the other phalanges of the percussed finger and the whole of the rest of the left hand away from contact with the thoracic wall. Unless this precaution be adopted, pulmonary or gastric resonance is brought out at the same time as the truly cardiac and confuses the result. Lightness of percussion stroke also assists in obtaining the true cardiac note, for though the right auricle is overlapped by lung, the auricle with its contained blood gives a dull note which the thin overlying lung does not alter much, and at the border of the auricle there is a definite alteration in the note which careful percussion easily elicits.

In the normal heart it is usually difficult to detect any dullness in the third right space, but it is always definite and considerable in the fourth. In the fifth space the partial liver dullness complicates the result. It is of the greatest practical importance that the extent of the dullness in the fourth right space should be carefully determined in every examination of the heart, and no such examination is anything but fallacious unless this point has been carefully investigated.

In chronic disease of the lungs or left heart, as in emphysema, and in mitral stenosis, the right auricle is always dilated, and its dullness may extend to two fingerbreadths in the fourth right space: it is then easily detected in the third space also, and may there amount to a half or one fingerbreadth. In extreme cases it may reach even three fingerbreadths in the fourth space, one and a-half in the third and half a fingerbreadth in the second.

In acute pulmonary disease, as in pneumonia, and in severe bronchitis, an enlargement of the right auricle may be detected, often on the third day of the illness, sometimes even on the second. Acute rheumatic carditis affects at first and chiefly the ventricular muscle, and causes distinct enlargement of the cardiac dullness to the left, but in a first attack it is difficult to detect any affection of the auricle. But where pericarditis is present there may be marked increase of the auricular dullness. And this observation is of great importance from the point of view of treatment. For whenever the right auricle is acutely distended there is hurried breathing. This is usually the explanation of the dyspnoea which is acknowledged to be one of the symptoms of pericarditis; and this dyspnoea is a sign that the right heart is overstrained. In pericarditis, then, if there are rapid and deep inspirations and the dullness of the right auricle in the fourth space is found to amount to two fingerbreadths, the need for some removal of blood is evident. Sometimes leeches applied over the lower ribs on the right side will suffice, but in a severe attack in a robust subject venesection may be highly advisable. I have seen it give very great relief. The same is true in the acute distension of the right auricle in pneumonia, in acute exacerbations of chronic bronchitis, and often in the later stages of mitral stenosis. Dyspnoea and the physical evidence of dilated right auricle are the indications for bleeding, which in these circumstances is a remedy of priceless value, capable of giving immediate relief impossible by any other means.

The first step, then, in the local treatment of rheumatic pericarditis is the accurate determination of the amount of dullness in the fourth right interspace, and the relief of a distended right auricle by leeches, or in an adult by a venesection removing from 4 to 8 oz. of blood. It may be well to follow this by cardiac stimulation by means of a hypodermic injection of strychnine. Two minims of the official solution may be used for an adult, ½ or 1 minim for a child. The injection may be repeated after three hours. Meanwhile, at least two hot-water bottles should be placed in the bed so as to make the patient's lower limbs thoroughly warm. When this has been accomplished (and not before) an icebag large enough to cover the whole precordial region and about half filled with small lumps and fragments of ice should be gently laid over the heart as the patient lies on his back. If there is much tenderness the icebag may be at first suspended so as only just to touch the skin, but the anodyne effect of the cold will soon allow of its more thorough application. The icebag will not by its weight increase the difficulty of breathing if the right auricle has been first relieved.

The patient soon recognizes the beneficial influence of the ice. Even young children, after the first few minutes, become easily accustomed to the cold, and will not consent to its removal. When it has been removed for an interval they will sometimes ask that it may be reapplied. A boy of 7 under my care at St. Mary's refused to allow his icebag to be taken away. To the inquiry, "Why not?" he answered, "Because I like it." To the further inquiry, "Why do you like it?" he replied, emphatically, "Because I *do*."

The chief difficulty about the application of the icebag is to secure it from shifting its position when the patient turns in bed. This may be accomplished by passing the screw top of the icebag through a hole in a binder which is loosely passed round the chest and secured by safety pins. Sometimes it may be desirable to prevent its slipping downwards by securing it by a light bandage from behind the patient's neck. An excellent method used at the Hospital for Sick Children is by a vest with armholes, and a third hole over the cardiac region, made of domett, and fastened round the neck with a tape, and below the icebag by a safety pin.

The outline of the precordial dullness should be marked on the skin in blue for the guidance of the nurse. The icebag will require to be refilled about every hour and a-half, the hot-water bottles every three hours.

It is well to have a second icebag in use, so that it can be filled and applied as soon as the first is removed. In filling the icebag, be careful to press out the air as much as possible before screwing on the top. The hot-water bottles should not all be removed from the bed at the same time, unless others are at once substituted. The patient's temperature should be taken every two hours, also his pulse-rate and respiration-rate, and the result recorded on a chart. The nurse must see that the icebag does not leak, that its top is firmly screwed down to the "washer," and that it is surrounded by cotton wool or a soft towel to absorb the moisture from the air which tends to condense on its surface. But nothing should intervene between the icebag and the patient's skin.

When the nursing can be thoroughly trusted, as in a hospital, the icebag may often, with great benefit to the patient, be applied continuously for many days, provided that the condition of the right auricle be carefully watched, and the lower limbs be kept thoroughly warm. Occasionally it may be wise to remove it for a few hours during the night, especially between midnight and six o'clock in the morning. If the nurse has had little experience of children, or is not accustomed to the use of the icebag as here recommended, it will be safer to apply it only during the daytime. If no skilled nursing is available, the treatment may still be used during the daytime if the mother is intelligent and careful, and the practitioner explains to her the use of the clinical thermometer, and tells her precisely what to do. If the practitioner is in doubt whether the icebag ought to be continued, let him order its removal for one hour, and thereafter its application for two hours, and so on.

It is sometimes possible to continue the application of ice to the precordial region even though the temperature have fallen below the normal. A child under my care at St. Mary's some years ago, whose pericarditis had improved under this treatment, was found one evening to have signs of pneumonia at the base of one lung. Twice before I had met with this in young children suffering from pericarditis and treated with ice; in each case when the pneumonia appeared I removed the icebag from the heart, fearing that it might be doing harm. Both patients died. When in this third case I again found pneumonia appearing in a case of pericarditis treated with ice, I determined to persevere in my plan of treatment and to push it further. Two more leeches were applied, and a second icebag was placed over the inflamed lung, that over the heart being retained. I should hardly have ventured on this but for the kind willingness of my house-physician, Dr. Gordon (now medical superintendent of the City Fever Hospital, Manchester), who remained by the child's bedside and was able to keep the two icebags in position during the whole night, though the temperature was at times subnormal. When I saw the child next morning the signs of commencing pneumonia had disappeared and recovery was uninterrupted. This case proved to me that with adequate care it is possible to use the ice in pericarditis when the temperature is low. But in the later stages of a pneumonia this is not the case.

The treatment of rheumatic pericarditis by large and frequent doses of sodium salicylate and sodium bicarbonate, with the local application of ice over the heart, is amply justified by its results. Cases treated without ice, and with inefficient medication, are very apt to linger in recovery, and to result in a permanently dilated and crippled heart. Relapse of rheumatism frequently occurs and ends the case in a year or two. Even apart from a probable relapse, the heart is often so severely injured that symptoms of failure of the circulation develop early. Treatment of the kind here advocated greatly diminishes the tendency to rheumatic relapse; it checks the inflammation, increases the vigour of the muscular fibre, and diminishes the dilatation, thus enormously assisting the forces that make for repair. The practical difference to the patient is often a difference of many years of life.

In the milder cases of rheumatic carditis, those in which there is no evidence of pericarditis, similar treatment (without the bleeding) may be used with great advantage, though the effect is less striking. Since in every case of rheumatism, acute or subacute, there is dilatation of the left ventricle, as may easily be proved by careful percussion, it is clear that there is always some affection of the cardiac wall, either toxic or inflammatory. The cardiac muscle is weakened, as is proved by the altered first sound, the diffused impulse, and the enfeebled pulse-wave. A murmur indicative of endocarditis may or may not be present. Here, then, as really though not so forcibly as in pericarditis, there is a call for antirheumatic medication and for means of repressing local inflammation. I believe that if this method of treatment were universally adopted in the slighter attacks of rheumatism it would very greatly diminish the number of cases of mitral regurgitation and stenosis in adults, and would prevent an enormous amount of cardiac misery.

REFERENCE.
1 BRITISH MEDICAL JOURNAL, September 19th, 1903, p. 659.

THE MECHANISM OF RESPIRATION IN PNEUMOTHORAX.

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PNEUMOTHORAX with an external opening is far from an uncommon condition, either as the result of an injury or of surgical interference, such as, for example, in cases of empyema, or tumours of the thoracic wall. If an opening communicates between the pleural cavity and the external air, the respiratory mechanism lacks an all-important factor—the difference of pressure in the lung and pleura is abolished, so that the elastic tension of the lung has free play to cause collapse of that organ. It is, however, a matter of common experience that one pleura may be opened with comparative impunity, and that in these cases the lung does not collapse, but in the majority of cases is forced into contact with the chest wall, and, if not injured itself, will rapidly take on its function once more. The means whereby this is accomplished has been a matter of discussion, and the present state of our knowledge on this point is summarized by West.[1] This author states that there is a pressure in the tubes of the lungs during expiration, amounting to from $1\frac{1}{2}$ to 2 mm. of mercury, while during inspiration there is a negative pressure of about $\frac{1}{2}$ mm. of mercury. He is of opinion that this pressure during expiration has some effect in expanding the lung on the affected side, but is uncertain as to the amount of expansion which is possible under the influence of a pressure of this magnitude. He further notes that although the expansion of the lung may at first be to a considerable extent due to the violent respiratory movements and to the cough which frequently follows the operation, yet that there must be some other explanation, inasmuch as this expansion may take place without any of these violent respiratory movements, and without any cough.

As far as I have been able to ascertain, no satisfactory explanation has been put forward to explain this phenomenon, and it was to attempt to throw some light on this problem that the present series of experiments were undertaken.

There is one factor in respiration which cannot have escaped notice, but which so far has escaped emphasis, and this is the very important resistance to the outflow of the air which can be offered by the vocal cords and fauces generally.

The following are brief notes of an illustrative case, for permission to publish which I am indebted to Mr. Burghard, Surgeon to the Paddington Green Hospital for Children, and to Dr. Alexander Morison, Physician to the hospital.

A child was admitted to the hospital suffering from a large pneumococcus empyema. This was opened, and a rib resected. The wound contracted to a sinus, but did not heal. It was therefore decided to send the child to the convalescent home, and then to perform an Estlander's operation.

An incision was made along the chest wall, and portions of the second to the ninth ribs were removed from the anterior axillary line to the epiphysial line. The lung was then seen to be bound down by a dense inflammatory membrane. This was readily stripped off (decortication of the lung), and the visceral pleura was found to be practically normal. It was noticed when the membrane was removed that the patient's respiration took on a distinctly altered character; it became triphasic; the first phase was an inspiratory effort; this filled the lung on the sound side with air, the lung on the affected side collapsed. The second phase was an expiratory effort, and during this time the affected lung was seen to fill with air, and to struggle in its effort to expand against the remaining bands of adhesions. The air which filled this lung was forced over from the healthy lung, as it was unable to escape to the exterior, owing to the closure of the glottis. In the third phase the glottis opened, the expiratory effort continued, and air passed to the exterior from both lungs. The passage from the second to the third phase was marked by a distinct grunt. The three phases may be briefly termed inspiration, distribution, expiration.

This condition of affairs persisted as long as the child lived. Death was due to the spread of infection from the pleura to the pulmonary tissue, setting up multiple abscesses in the substance of the lung. Decortication of the lung in such cases has the advantage of allowing the affected lung to play its part in respiration, but is attended with the risk of infecting the lung tissue anew.

It is the conditions of this case which I have attempted to reproduce in animals, in order to study the mechanism with greater precision. My experiments have been made mainly on cats, but I have used the rabbit and monkey as well. The animals were anaesthetised with either A.C.E. mixture or ether, and were killed before they recovered from the anaesthetic. The trachea was exposed and the recurrent laryngeal nerves isolated on ligatures, so that they could be cut when required. A cannula was placed in the carotid artery and connected to a mercury manometer in those experiments in which it was desired to record the blood pressure. A lateral tube was connected to the trachea either by inserting the crosspiece of a short T made of glass or by tying the ends of the crosspiece of the T to the two segments of the divided trachea. The stem of the T was connected to a Marey's tambour which was calibrated and served as a delicate manometer. The movements of the lever of the tambour were traced upon a revolving drum.

In my later experiments I succeeded in keeping the vocal cords under observation by the aid of an endoscope. The following was the device adopted: The trachea was exposed and cut across, care being taken not to injure the recurrent laryngeal nerves. A glass tube (Fig. 1 A) about 4 in. long was inserted into the laryngeal end of the divided trachea. Near the end of this tube a side tube (B) was tied into the pulmonary end of the trachea.

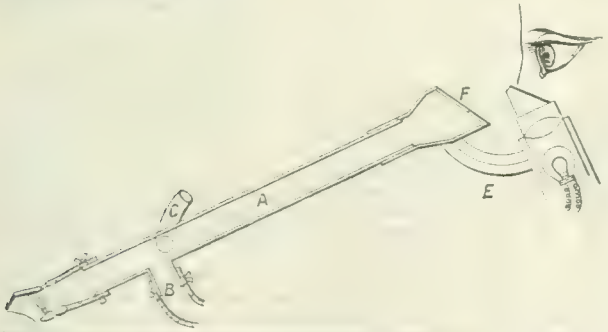


Fig. 1.—Diagrammatic section of endoscope adapted for observation of the vocal cords.

Another lateral tube (C) a little higher up was connected as before to a recording tambour. The free end of the tube (A) was closed with an air-tight joint with a Schall's electric endoscope, which illuminated (A) and the vocal cords at its far end. The endoscope consists of an electric lamp surrounded by a cooling jacket. It is so fixed that the light is reflected by a right-angled prism through a glass plate (F) placed obliquely as shown in the diagram. Respiration by this means is not interfered with, and the vocal cords can be inspected from below during the whole experiment.

Having placed this apparatus in position, the skin over the chest wall was incised in order to allow of the chest being subsequently opened with a minimum of interference with the animal. In some of the experiments a brass tube 1 in. in diameter and ¾ in. length was tied into the muscular and fascial tissues of the chest wall. This tube had two side branches and could be closed by a glass plate. Thus, if an opening was made into the thorax at the bottom of the brass tube, it was possible to close the pleural cavity at will, to connect it with the tambour, or to inflate it with air or fluid.

I have not made a long series of observations on arterial blood pressure, but in the cases where I have recorded it I have found that there was a slight fall on opening the chest which was followed by a rise.

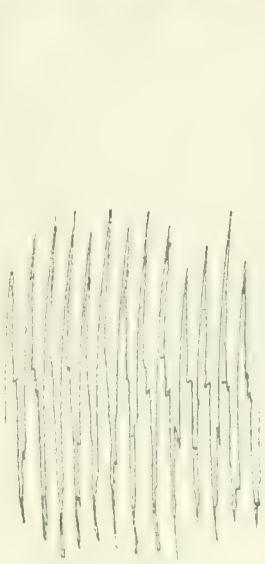


Fig. 2.—Tracing of intratracheal pressure in a cat. Normal tracing; cardio-pneumatic waves are superposed on the tracing. In this and all subsequent tracings the time is indicated in seconds and the reading is from left to right.



Fig. 3.—Tracing from the same animal after the establishment of a pneumothorax on one side. Note the sustained condition of positive pressure and the greater prominence of the cardio-pneumatic curve.

The normal intratracheal pressure recorded in the manner described (see Figs. 2 4, 10) shows variations in both positive and negative directions; the positive change which accompanies expiration is represented by the upstroke and the negative which culminates in inspiration by the downstroke; the zero position of the tambour lever is shown in some of the tracings by a horizontal line which divides the record into approximately equal parts, but, as a rule, the change in the positive direction is the greater. The absolute measurement on Fig. 10 amounted to about 6 in. of water in both directions.

It will be noticed that in these tracings each curve has an acutely pointed top—that is, after the positive change has reached its height, no appreciable interval occurs before the pressure begins to diminish. In some cases cardio-pneumatic curves are seen superposed on the respiratory tracing (Figs. 2 and 3). In a few exceptional cases there was a slight pause when the rise of pressure was at its maximum. If the vocal cords are watched during such an experiment they are seen to be moving freely; the cat is a specially favourable animal for such observations. The cords never actually touch each other nor are they abducted out of sight.

When, however, the chest wall is perforated a totally different sequence of events is observed. The cords take on a more vigorous movement; at one stage they are approximated until they actually touch each other and at the opposite stage they are separated until they become invisible; at the same time the respiration is usually markedly slower. Corresponding to this a change takes place in the tracing of intratracheal pressure (Figs. 3. 5, and 6).

The top of the curves is no longer sharp, but distinctly flattened. This indicates that the increased pressure in the trachea is being maintained for a considerable time. In this condition the cardio-pneumatic curves are better seen (Fig. 3). During this period there may be an actual plateau,



Fig. 4.—Normal intratracheal pressure—cat. A peculiar rhythm is shown in this part of the tracing. The larger movements occurred when the cords were brought more closely towards each other.

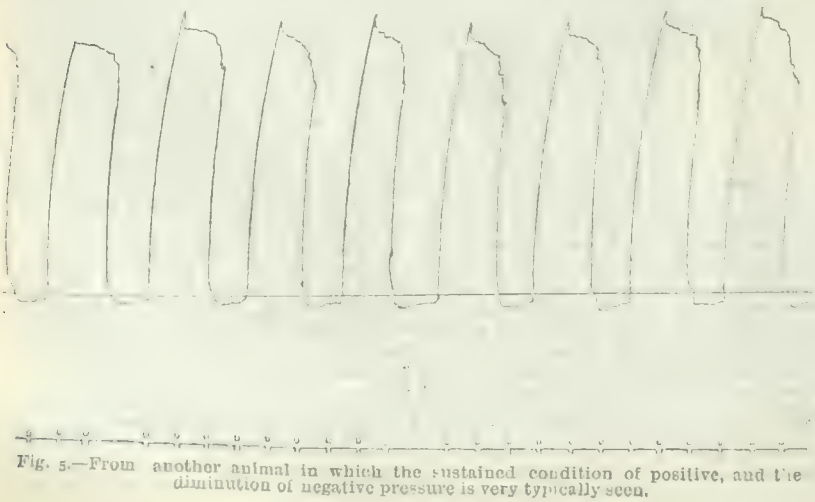


Fig. 5.—From another animal in which the sustained condition of positive, and the diminution of negative pressure is very typically seen.

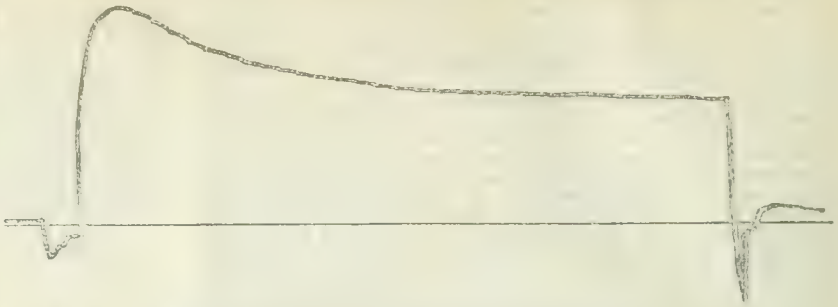


Fig. 6.—A still more marked example of the same condition in another animal in which the respiration was convulsive and extremely slow.



Fig. 7.—Normal intratracheal pressure—cat.

or the sudden rise of pressure may be succeeded by a fall for a short distance, the pressure then remaining high and constant for some time.

The amount of negative pressure is markedly lessened, and often almost abolished. During the time that the intratracheal pressure is thus maintained the glottis is seen to be rigidly closed, and the lung of the affected side is seen to become inflated with air, and in a successful experiment will be brought right up to the chest wall.

This result has been constant in all the experiments that I have performed—15 in number—with one exception. In this one case (Figs. 7 and 8) the form of the tracing was practically the same after the establishment of the pneumothorax as before this operation was performed. This exceptional case proved on further examination to be an instructive one, for it was found that in this cat the whole of the pleurae were adherent, and there was also a patch of fibrinous deposit on the heart and pericardium.

Another slight modification of the usual course of events which I have occasionally observed consists of the abduction of the cords taking place in two successive steps; the cords after approximation are abducted to about midway between abduction and adduction, and then, after a short pause, are fully abducted.

Division of the recurrent laryngeal nerves produced an effect which is shown in Figs. 10 to 14. Under these circumstances the paralysis of the larynx prevents the adduction of the cords being brought about, and so the intratracheal pressure cannot be sustained; in other words, the shape of the pressure curve once more approximates to the normal; this is naturally more marked when both nerves are divided. After a time, however, respiration becomes extremely embarrassed, extrinsic laryngeal and neck muscles are brought into play forcibly, and in a thin animal this suffices to force the cords together by actually bending the thyroid cartilages. The result is that the intratracheal pressure is once more sustained (Fig. 14), and with the endoscope the cords are seen to be in apposition

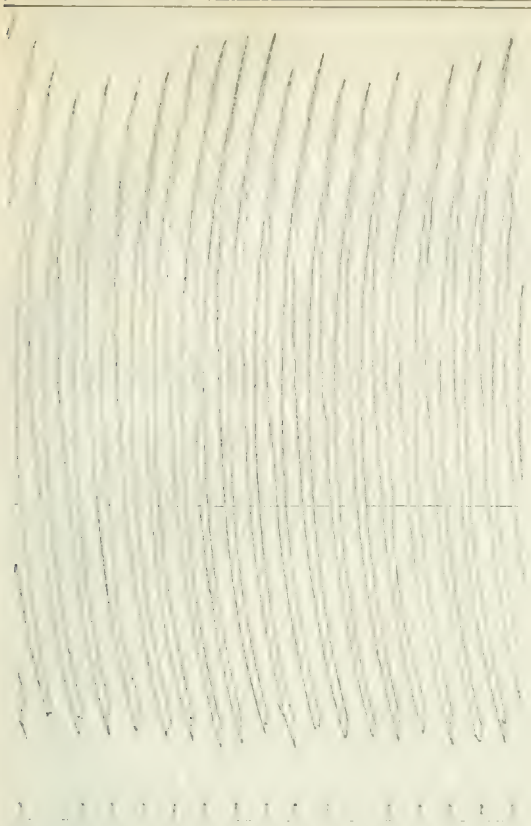


Fig. 8.—Tracing from same animal after opening one pleura. No alteration in the character of the curve is seen; pleura found to be adherent on both sides.

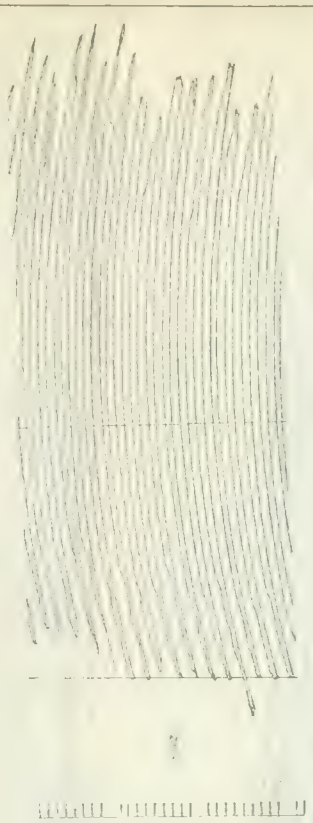


Fig. 10.—Normal intratracheal pressure —cat.

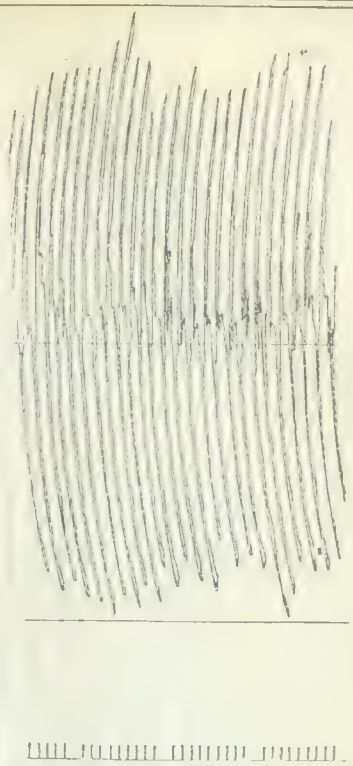


Fig. 13.—The same after division of the other nerve. The tracing now approximates to the normal.

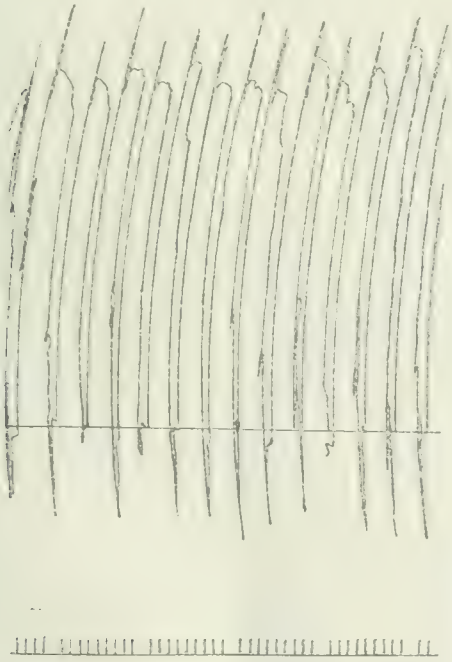


Fig. 9.—Intratracheal pressure in a cat with a pneumothorax. In this instance the glottis was seen first to absolutely close; then the cords were separated about half way, and finally they were absolutely abducted.

once more during this time. The intrapleural pressure, which of course exhibits no variation when the chest is freely open, can be recorded in the manner already described when the chest is partially filled with air. If under these circumstances the chest cavity

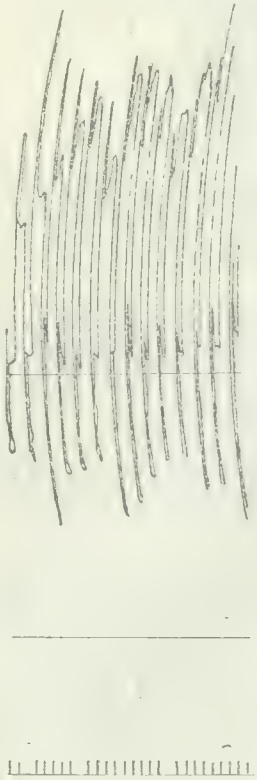


Fig. 11.—Pneumothorax has now been established on the right side. Negative pressure much lessened, positive pressure sustained, respiration slowed.

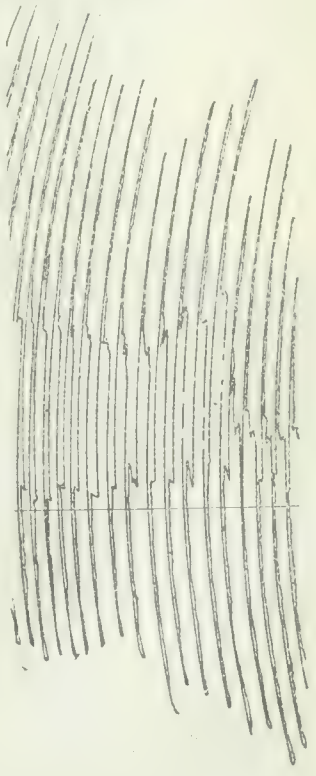


Fig. 12.—The same after division of right recurrent laryngeal nerve.

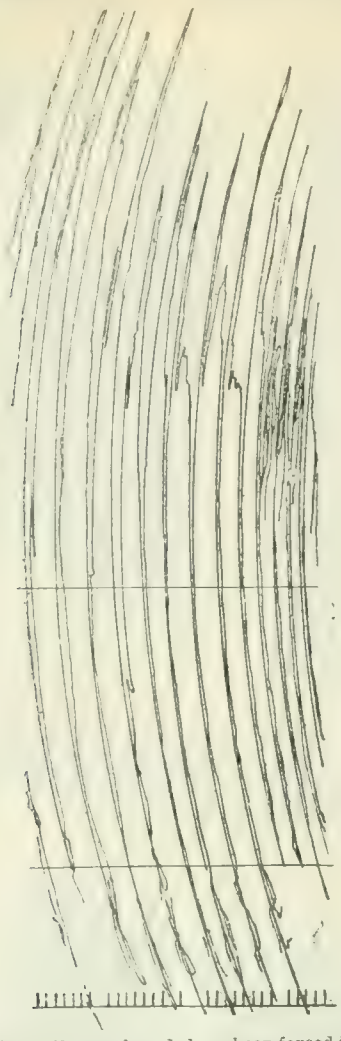


Fig. 14.—Later stage; the vocal cords have been forced into apposition by the extrinsic muscles of the larynx and of the neck.

was again closed, I noticed that the respiratory waves on the blood-pressure tracing completely disappeared, although they were as well marked when the chest was freely open on one side, as in the normal condition.

My method of opening the pleural cavity allowed of fluid being easily injected into it, and I found that it was easy to kill the animal by injecting fluid under the pressure of a few inches of water. Moreover, the injection of a few cubic centimetres of 1 in 20 carbolic acid was rapidly fatal. These two points are of considerable practical importance. It has long been known that forcible injection of the pleura in cases of empyema has often resulted in the death of the patient. The ease with which death is produced by reflex respiratory stoppage by an irritant like carbolic acid injected into a normal pleura shows the necessity of employing only non-irritating solutions for this purpose.

I have also been able to confirm in my experiments what is commonly noted in operations on the chest, that an anaesthetic is usually more potent when only one lung is acting; and if in my experiments the anaesthetic was pushed dangerously far, I failed to produce the reflex mechanism of the glottis, which I regard as so all-important in these cases.

After the establishment of the conditions described with intact recurrent laryngeals, though the respiration is slowed, the animals breathed quite quietly, and though the air which was forced into the affected lung had been already once breathed, or at any rate had occupied the upper respiratory passages of the sound lung, there was never cyanosis or any other sign that aëration was insufficient.

If, in conclusion, we compare the typical case that I have described at the outset, and which suggested to me the present investigation, with the animals with which I sought to establish similar conditions, we see that in the main the mechanism by which the affected lung is inflated by overflow from that on the sound side, owing to expiratory efforts taking place with the glottis closed, is the same in both cases.

REFERENCE.
1 Article in Clifford Allbutt's *System of Medicine*, vol. v, p. 340.

TWO CASES ILLUSTRATING THE FALLACY OF CERTAIN PHYSICAL SIGNS IN DIAGNOSING ACUTE PERFORATED GASTRIC ULCER.

By W. HARLAND PEAKE, M.D., B.S.,
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THE two following cases may prove of especial interest to medical men in general practice whose lot it is to see cases of perforated gastric ulcer in the early stage, upon whose correct diagnosis so much depends.

CASE I.

History.—I was called to see Mary H., aged 23 (formerly in domestic service) at 10.15 p.m. on July 22nd, 1899. For the previous four months she had been living at home working at chicken stubbing, a form of employment which entails sitting nearly all day. There was a history of dyspepsia of some months' duration, but there had never been any haematemesis or melaena as far as the patient knew. She had done her work as usual that day, and had taken a meal at 6 p.m., consisting of tea with bread and butter. At 9.30 p.m. she was seized with severe abdominal pain, and she vomited twice but there was no blood in the vomit.

State on Examination.—The patient, who was not collapsed and was quite able to describe her symptoms, looked somewhat anaemic, and complained of severe pain in the upper part of the abdomen, which extended round both sides, and became worse every now and then. The abdomen was resonant, the liver dullness present, and there was tenderness on pressure in the epigastric region, with some resistance. The tongue was clean and moist, and the bowels had acted the day before, the motion being somewhat relaxed. The temperature was normal, the pulse 72, regular and of good volume. The diagnosis seemed to be between some form of colic and gastralgia, due probably to a gastric ulcer; the absence of collapse, especially the good condition of the pulse combined with the presence of liver dullness seemed to negative perforation. Morphine having been procured one-sixth of a grain was injected into the skin of the abdomen at 11 p.m., when the pulse had not altered. Hot fomentations were ordered to the abdomen, and it was arranged that word should be sent at 6 a.m. the following morning if the patient was no better. At that hour she was a little easier, so that, unfortunately, no message was sent until 9 a.m., when the pain was returning as severely as before. The condition then found was as follows: Abdomen somewhat distended and tender to touch, liver dullness abolished, tongue furred, pulse 100, temperature 100°. There had been no more vomiting, but some retching. As it was clear that the condition of peritonitis, then present, was due to a perforation which took place at 9.30 the previous evening, when the first very acute pain was felt, operation at home was suggested but declined; the patient, who assisted to dress herself, was therefore removed to the Maidstone Hospital, a distance of eight miles.

(For the further notes or this case I am indebted to Mr. Frederick Travers, Surgeon—at that time House-Surgeon—to the West Kent General Hospital, who performed the operation.)

Operation.—Upon arrival, at 11.45 a.m., patient was very blue, cold, and collapsed, with hardly perceptible pulse. Hot bottles were applied, and the operation commenced at 12.45, fifteen and a-quarter hours after perforation, the abdomen being considerably distended and tympanitic up to the fifth costal interspace on either side. Very little chloroform was required. On opening the abdomen a quantity of gas escaped, followed by opalescent fluid, sour smelling, and containing flocculi of lymph. The perforation was about ¼ in. in diameter, cleanly punched out, and situated on the anterior surface of the stomach near the lesser curvature at the junction of the pyloric and middle thirds of the viscus; around it were several layers of thick lymph. Thick flakes of lymph were adherent loosely to the upper and lower surfaces of the liver, the under surface of the diaphragm and peritoneal surface generally. The lymph round the ulcer was cleared off, and the wall of the stomach folded and secured by a row of Lembert's sutures, a flap of the great omentum was turned up, and fastened over this by interrupted sutures. About two pints of fluid were removed from the peritoneal cavity, which was washed out with a solution of chinosol, 1 in 2,000, and afterwards with sterilized water. A glass drainage tube was left in the lower angle of the wound. The patient had no more pain or vomiting after the operation. Enemata of hot water and brandy and hypodermic injections of strychnine were given, but she died at 3 a.m. the following morning.

CASE II.

History.—On July 26th, 1901, I was called to see Miss T., aged 23. She had suffered from dyspepsia for two or three years, characterized by pain and distension after meals, and often had to unfasten her clothes to obtain relief. Some time previously I had treated her for this at my surgery, and as she had improved so quickly and markedly with dieting and bismuth I did not consider her case one of gastric ulcer. Five days before she had sustained a great shock and since then had eaten very little. At 8 a.m. on the morning of July 26th,

when going downstairs, she was suddenly seized with violent epigastric pain above and to the left of the umbilicus, which obliged her to sit down and afterwards return to bed; the pain was continuous, but from time to time increased in severity and was described as like knives going through to the back. She stated that it was similar to the dyspeptic pain from which she had formerly suffered, but was worse than it had ever been before. There had been no vomiting.

State on Examination.—I saw her at 2 p.m., when she was complaining of great pain although she was not collapsed, and her lips were red but dry. Her temperature was 102.4°, pulse 104, and respirations 32; tongue clean. The abdomen moved a little with respiration, and was resonant and supple except from the umbilicus upwards, when there was resistance and tenderness to pressure and percussion, especially 3½ in. above and to the left of the umbilicus. The liver dullness was absent and replaced by a tympanitic note. The chest was normal. Hot fomentations were ordered but no morphine or opium were given.

Progress.—At 5 p.m. patient was in the same condition, but just about this time there was a forcible eructation of gas, and succussion splash was obtained. A diagnosis of dilated stomach was made. Milk was allowed by the mouth and a bismuth mixture given. At 12 p.m. the temperature was 100.4°, pulse 100, respirations 36, and the other physical signs as before.

July 27th. Patient had not had much pain since the last visit. Tongue clean, temperature 99°, pulse 96, respirations 36. The abdomen moved with respiration, and the tenderness was the same as the day before; liver dullness absent; her period had come on; the bowels had not been moved so an enema was ordered.

July 28th. Had had a good night. Temperature 96.8°, pulse 72, respirations 22. There was a tender spot over the abdominal aorta 3½ in. above the umbilicus, and also up under the ribs opposite the tip of the ninth left costal cartilage; still no liver dullness.

July 29th. Temperature 97.2°, pulse 80, respirations 24. Tenderness as yesterday; liver dullness ends 1 in. above edge of ribs. To try and clear up the diagnosis as to whether there was a gastric ulcer or not, a dose of salt and water was given with no subsequent smarting.

August 1st. Liver dullness normal; the tenderness up under the edge of the left ribs still remains. The patient continued to improve until the morning of August 5th, when she was dreaming and awoke in a fright. At 4 p.m., when I saw her, the temperature was 103° and pulse 120, but there was no pain or tenderness in the abdomen, and the liver dullness and chest were normal. At 10 p.m. that night the temperature was 103.2°, pulse 124. She had vomited once some milk and a green fluid, and complained of pain running up the spine to the back of the head. Her tongue was clean and moist, and there were no abnormal physical signs.

August 6th. The temperature and pulse were the same, and she had vomited some milk once, but from that time onwards the temperature and pulse gradually came down, and by the 11th were normal and the patient well. She has since taken up hospital nursing.

My first case might be classed under the heading of latent or masked peritonitis, but from the pulse condition an hour and a half after perforation, combined with the presence of liver dullness, the escape of gastric contents and gas into the peritoneal cavity must have been very limited at first, and therefore there could have been very little peritonitis.

Absence of Shock and Collapse with Regular Pulse and Normal Temperature.—When first seen it was not an example of the "period of repose," a term introduced by Mr. Charters Symonds before the Hunterian Society in 1899[1] to describe the fallacious calm which supervenes soon after a perforation and in which the patient feels better, the pulse falls, and the pain ceases, for in this case the pain had not ceased from the onset, and probably the pulse had not altered from the normal; in fact, the stage of shock and collapse had not been reached in which the textbooks describe the condition, for Osler[2] says "pulse is rapid, 110-150," Fagge and Pye-Smith[3] say "pulse is frequent, 110-150," Clifford Allbutt[4] says "pulse small, quick, thready," and Sidney Martin[5] "the pulse is extremely rapid."

When later on the patient felt a little easier this was no doubt an example of the "period of repose." The temperature in these cases comes on as part of the peritonitis, and if collapse is great it is often subnormal.

Mr. John Campbell reported a case before the Royal Academy of Medicine of Ireland,[6] in which the temperature was normal, pulse 80, and liver dullness present two hours and a half after perforation.

Mr. Rhys Griffiths[7] records another case in which the pulse was about normal, and there was no pyrexia four hours and a-half after perforation. The presence or absence of liver dullness is not mentioned.

Mr. Lachlan Fraser reports[8] another in which the pulse was 80, temperature normal, and liver dullness was present six hours after perforation, and believes that the abdominal muscles held the ulcer (which was on the anterior surface, as were also those recorded above) so firmly against the immovable diaphragm that no escape of gas or stomach contents had taken place.

In all these cases there was severe pain, so that there was no question of the "period of repose."

Mr. Mitchell, in a paper read before the Ulster Medical Society in 1900,[9] stated that he considered shock, when present in these cases, was due to (1) the presence of gas in the peritoneal cavity, pressing up the diaphragm and irritating the heart; and (2) to the disturbance of the great sympathetic ganglia and peritoneum by stomach contents, and quoted in support some of his cases, in one of which a pulse of 140 and weak dropped to 96 and became fairly strong when the abdomen was opened and gas allowed to escape; in another there was little free gas, and opening the peritoneum made little difference to the pulse; and a third in which the pulse fell from 108 to 88, and distinctly improved in tone.

Mr. Maunsell, in a paper read before the Royal Academy of Medicine in Ireland in 1901,[10] reports two cases. In one the pulse was 78, and temperature normal half an hour after perforation, and the liver dullness was decreased but not lost, and in the other nine and a-half hours after perforation the pulse was 84 and temperature 98°, but in this one the liver dullness was absent and the upper part of the abdomen very rigid.

Liver Dullness.—The presence or absence of liver dullness, which would seem from my first and most of the above-mentioned cases to have some causal connexion with the pulse-rate, is now generally looked upon as an uncertain sign, and absence of the dullness is considered to be often caused by colon resonance, but in my second case would seem to have been due to a dilated stomach, and Sir William Bennett, in a clinical lecture delivered at St. George's Hospital in 1900,[11] mentioned three cases of dilated stomach upon which he had operated; two of these he considered due to pyloric spasm; in one the liver dullness was greatly modified, and in the other two was entirely absent. In one of these latter, however, there were adhesions tying the stomach to the left lobe of the liver and under-surface of the diaphragm.

Pain of a Paroxysmal Character.—This occurred in both my cases, and the fact that the pain may be of this character in perforated gastric ulcer seems by no means universally recognized, although Clifford Allbutt[12] says, "Pain may be continuous, or may have the character of a severe colic," and Mr. Rhys Griffiths mentions[13] two cases upon which he operated. In both of these the pain was paroxysmal in character; one of these is the case quoted above, in which the pulse was of about normal character four and a-half hours after perforation.

Early Vomiting.—About this symptom, which occurred in my first case there is a diversity of opinion. Osler says,[14] "Vomiting is an early and prominent feature." Fagge and Pye-Smith say,[15] "Vomiting is sometimes the earliest symptom of acute peritonitis."

Robson and Moynihan[16] say "Vomiting, with or without bleeding, is an inconstant symptom," Finny finds it recorded in 40 per cent., Fenwick in 29 per cent." Clifford Allbutt says[17] "Vomiting is generally absent or soon ceases if it occurs at first," and Sidney Martin says[18] "Sometimes there is nausea and vomiting."

My second case, when first seen, seemed very like a perforated gastric ulcer with resulting peritonitis; but had the absence of liver dullness and succussion splash been due to gas and gastric contents free in the peritoneal cavity and the temperature and pulse condition due to subsequent peritonitis, one cannot imagine the case having such a favourable termination without operation. I consider the case was an example of dilated stomach, due probably to a gastric ulcer, causing reflex spasm of the pylorus, but not necessarily at or near that orifice, the presence of spots tender to deep pressure was suggestive of that condition, in spite of the fact that salt and water caused no smarting. The dilated stomach by itself was not enough to account for the very acute pain at the onset, and Hemmeter says[19] "The pain of dilatation is not marked. If cancer or ulcer coexists pain is a prominent symptom." I think the acute pain was gastralgia, due to ulcer and was accentuated by a hyper-sensitive condition of the nervous system caused by insufficient food, coupled with the shock from which the patient was suffering, and which was of a severe character due to her missing a nephew, a small boy, and finding him drowned in a pond. As the second rise of pulse and temperature seemed clearly to have a nervous origin, I can only ascribe the first to the same condition. The proximity of the menstrual period may have accentuated the nervous symptoms. The forcible eructation of gas in a condition of perforated gastric ulcer must be rare, except when the perforation has become closed by adhesions.

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[1] BRITISH MEDICAL JOURNAL, March 4th, 1889. [2] 4th Edition, 1901. [3] 4th Edition. [4] *System of Medicine*, 1897. [5] Quain's *Dictionary of Medicine*, 2nd Edition, 1902. [6] BRITISH MEDICAL JOURNAL, July 16th, 1898. [7] Ibid., March 10th, 1900. [8] Ibid., February 21st, 1903. [9] Ibid., March 10th, 1900. [10] Ibid., March 23rd, 1901. [11] Ibid., February 2nd, 1900. [12] Loc. cit. [13] Loc. cit. [14] Loc. cit. [15] Loc. cit. [16] *Diseases of the Stomach and their Surgical Treatment*, 1901. [17] Loc. cit. [18] Loc. cit. [19] *Diseases of the Stomach*, 2nd Edition, 1901.

A PRELIMINARY REPORT ON THE TREATMENT OF ADVANCED PULMONARY TUBERCULOSIS BY INTRAVENOUS INJECTIONS OF IODOFORM.

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IN submitting this short preliminary report of an incompleted research on which I have been engaged for some time I shall confine myself chiefly to a description of the method. The results obtained have been so striking that several of my medical friends who have examined patients before treatment was begun and after are of opinion that it warrants publication.

All the patients treated have had tubercle bacilli, cocci and elastic tissue in the sputum, and in all both lungs were affected. In every instance there has been a great and sometimes rapid improvement in the physical signs, temperatures have become normal, weight and vigour increased, and expectoration and organisms diminished. This has been achieved in patients with cavitation, whose condition was regarded as practically hopeless by independent physicians of the highest repute. It was my original desire to publish completed accounts of a number of cases with charts and diagrams in which the arrest had stood the test of time, and to which the term "cure" could have been applied with some justice, to record others where it had only stayed the advance of the disease, and to admit the residuum in which it had exercised no beneficial effect whatever. Such a report, accompanied by the independent certification of other medical men will alone now carry conviction to the profession should a claim be put forward that a cure has been found. This is necessary when we consider the pathology of the disease, its varied modes of disseminatton (after implantation), the extreme range of age in which it is found, the frequent complexity of the infection, its latency and power of insidious advance. An analysis of even a hundred cases would be an imperfect gauge of any therapeutic measure. Here in a country district the number of phthisical patients is small, and as most of those who are in a position to leave the towns for treatment gravitate to the various sanatoria, it would be a work of years before I was in a position to tabulate even such a small number. The impossibility, therefore, of getting material on which to work will, I trust, extenuate the imperfections and shortcomings of premature publication. While fresh air is a desirable adjunct, I have recently treated one of my worst cases without it. In fact the nurse had difficulty in getting even imperfect ventilation.

It has been my lot, as it is the lot of most general practitioners, to have had to attend a good many patients suffering from advanced tuberculous disease of the lungs. Some of these had wintered abroad, some being in sanatoria; others had had neither of those advantages. All, however, had been under treatment of some kind or other, in the face of which the mischief had advanced with greater or less rapidity. The partial success which of late years has attended efforts at combating the mischief by direct attack in situ by way of the veins led me to make some experiments in that direction. In this search the much-discussed iodoform seemed to possess distinct qualifications. Despite the difference of opinion which exists as to its antiseptic qualities and how these are effected, and that it has a sickly penetrating odour most offensive to many, it is still one of the most trusted antiseptics with the operating surgeon. In selecting it as the bactericidal agent in an active attack on tubercle in the lung there were many points in its favour.

1. Its purity and known safety as an antiseptic agent.
2. Its ready elimination.
3. Its slow volatility and therefore sustained action.
4. It seems to have an affinity for dead or dying tissues, that is, the situations where the trouble is most active.

Could it be conveyed to the lung capillaries and chiefly deposited there, it seemed reasonable to expect amelioration in the condition and possibly such an emphatic arrest that auto-immunization, increased tissue resistance, or whatever other forces ensure the occasional unaided recovery in advanced cases of this disease, might have their opportunity to act. To effect this it required to be in solution, and its great solubility in ether was taken advantage of. At first this seemed an ideal solvent. The ethereal solution would be rapidly conveyed to the lung capillaries. There the ether might be expected to volatilize and leave some solid iodoform in situ. Having satisfied myself by injection that this solution was safe, the remedy was applied to several patients.

The breath and mouth at once smell and taste of the solution. Soon the ether is dissipated, but for several hours after (depending on the dose) the breath smells of iodoform and the patient is conscious of the smell and taste. This stability of iodoform after injection is very interesting and desirable. The liberation of free iodine to even a small extent would rapidly irritate the coating of the veins, and assist in the production of thrombosis, besides causing severe coughing. Further, this persistence seems to point to the iodoform itself as iodoform exerting the beneficial influence rather than to the decomposition of the compound, freeing pure iodine. I have repeatedly examined the urine with the starch test at varying intervals after injecting, but have failed to get the iodine reaction. On this point, however, I do not desire to be dogmatic. This slow sustained action of the drug may be counted upon, while at the same time it diminishes the risk of cumulative action. Patients soon become tolerant of the taste, and unless the injections are pressed I have met with no bad effects whatever while employing small doses. Pushing the drug in large daily doses positively seems to saturate the system. I have, after discontinuing it for several days, detected the smell in the palms of the hands and the skin of the body. The patients are then so constantly conscious of it that the appetite is affected. It is undesirable and necessary to push the injections to this extent. In the course of this work I have observed that soon after the injections are begun evidence of disease is revealed, sometimes where none was suspected at first. This diagnostic quality of the injections is valuable. The productions of fine crepitations or *râles* at an apex formerly dry, resonant, and apparently healthy is important. It proves how subtle the malady is, and how untrustworthy the most careful physical examinations occasionally may be.

Briefly, then, these are the good points, but it has important drawbacks, referable both to the ether and the iodoform. The chilling effects of the ether on the vein walls, diminishing their calibre and temporarily stiffening, if not partially freezing, them, has to be guarded against as much as possible. In a case (five years' duration) with extensive cavitation in the upper lobes of both lungs and consolidation at both bases anteriorly, with absence of breath sounds and little or no chest action, it occasioned such sudden persistent breathlessness and palpitation that I had to discontinue the treatment. As the patient could take the ether alone without any discomfort, the natural conclusion is that the iodoform was the offending cause. This did not occur once but several times, and even with such small injections as 5 minims. It is possible that this embarrassment may be found a constant characteristic and contraindication in very advanced disease where the margin of available lung tissue is only equal to continuing life under the most passive conditions and no more. To save such cases is of course the dream of the physician, but we might reasonably expect that the paralysing influence which iodoform exerts on the motor ganglia of the heart would be intensified when it has been debilitated by unduly rapid action and the wasting effects of toxins.

Before beginning the treatment of any case, we must first examine carefully the available superficial venous system both in the arms and legs. The more extensive this is, the greater is the probability that we shall arrest the progress of the disease. Therefore men are more favourable subjects for treatment than women, and women than children. I have never had occasion to use it in children, and I fear from their natural timidity it would not be possible to carry it out. Nothing can be more disconcerting than a request to undertake the treatment of a plump or even fat young woman of 18 or 20 with extensively diseased lungs, whose total available venous system is represented by two dim blue areas ⅛ in. long at the bends of the elbows. It will demand the most scrupulous care and dexterity to administer injections regularly for six months or a year. While nothing is simpler than to give an intravenous injection once in a large vessel, it is a matter of some difficulty to give a hundred through a small restricted venous supply to avoid thrombosis and have

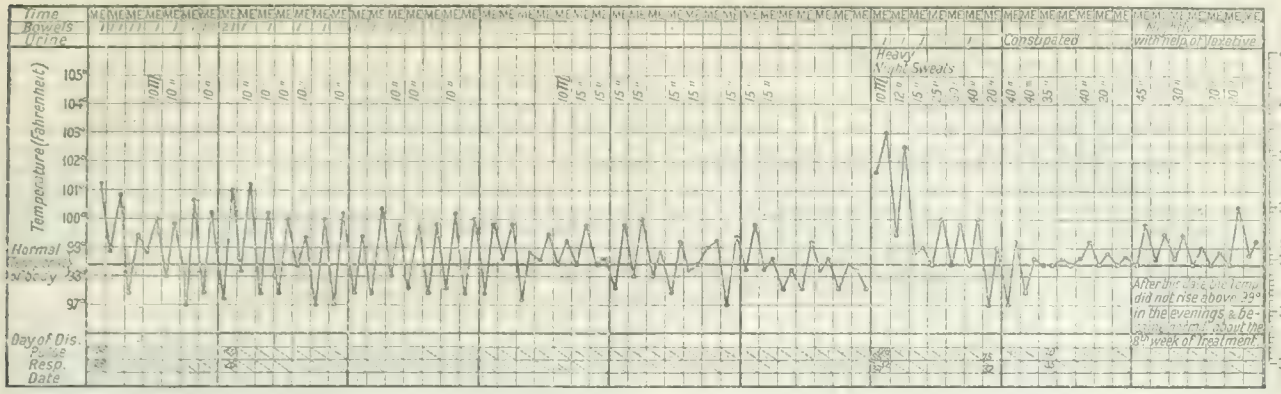


Chart 1.—A. B., aged 40.

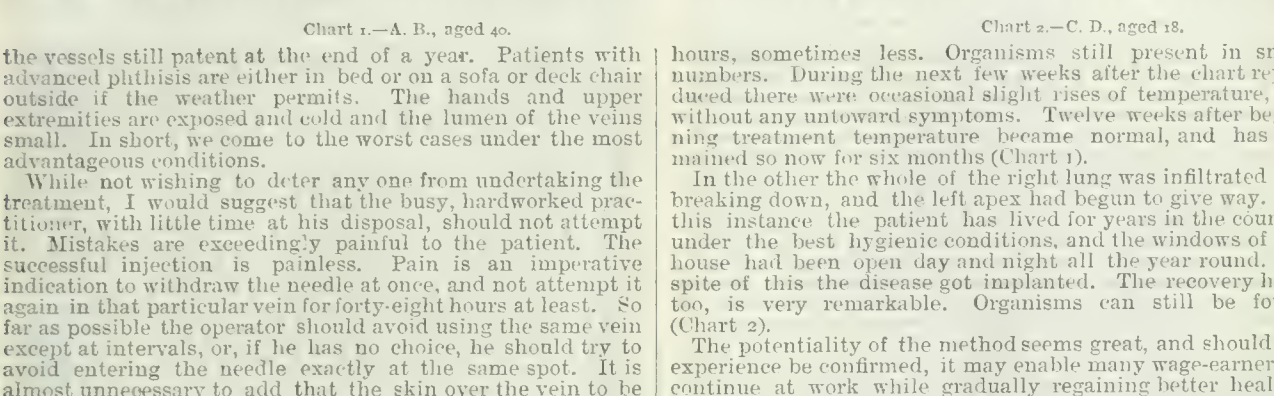


Chart 2.—C. D., aged 18.

the vessels still patent at the end of a year. Patients with advanced phthisis are either in bed or on a sofa or deck chair outside if the weather permits. The hands and upper extremities are exposed and cold and the lumen of the veins small. In short, we come to the worst cases under the most advantageous conditions.

While not wishing to deter any one from undertaking the treatment, I would suggest that the busy, hardworked practitioner, with little time at his disposal, should not attempt it. Mistakes are exceedingly painful to the patient. The successful injection is painless. Pain is an imperative indication to withdraw the needle at once, and not attempt it again in that particular vein for forty-eight hours at least. So far as possible the operator should avoid using the same vein except at intervals, or, if he has no choice, he should try to avoid entering the needle exactly at the same spot. It is almost unnecessary to add that the skin over the vein to be used is treated antiseptically. It is impossible to be too careful in cleaning and rendering aseptic the syringes and needles.

The solubility of iodoform in ether is 1 in 7. The solution I use is not quite saturated. If a saturated solution is employed before the operator can get the needle into the vein some of the ether has volatilized. The needle will be found blocked with iodoform, and the plunger of the syringe probably jammed, rendering injection impossible. I begin generally with daily injections of from ♏v to ♏vii. The solution must be introduced very slowly. With large full veins, and lungs not too much disorganized, it is possible to give very large doses. To two patients I have given at one time as much as ♏xlv, representing at least 6 gr. of pure iodoform. I do not think such large doses are necessary, and the long chilling of the vein with such a big injection is apt to prove permanently injurious to it. Every vessel that becomes occluded diminishes the patient's chance of recovery. I employ the finest precipitated iodoform that can be obtained and the purest ether of specific gravity 720. Inferior forms of iodoform and ether make a solution which rapidly decomposes and liberates iodine. The solution should be made fresh if possible for each patient, and immediately before the injection, and exposed to light as little as possible. As would be expected with a large dose (♏xxiii to ♏xxv) there is frequently momentary unconsciousness, but if the earlier injections have been successful neither patient nor friends will object when told that this may possibly occur. Space does not permit of my giving drawings of the apparatus which I have devised to assist me, nor of enumerating the little details of technique which I have found necessary. These can be better shown than described.

It has been my experience that the continuous successful injection of an ethereal solution of iodoform is followed *pari passu* by an improvement in the patient's condition in every way, and that except in very advanced disease it appears to be innocuous in moderate doses. Subjoined by way of illustration are the charts of two patients. In one the whole of the upper lobe of the right lung was affected, and a cavity existed. The left apex was also the seat of disease. He has had a hundred injections at least, and is now well in every way. The left apex is now clear, and the right exhibits the physical signs of a cicatrized cavity, the remainder of the upper lobe having cleared up. He coughs very little in the morning, sputum about half a drachm in twenty-four hours, sometimes less. Organisms still present in small numbers. During the next few weeks after the chart reproduced there were occasional slight rises of temperature, but without any untoward symptoms. Twelve weeks after beginning treatment temperature became normal, and has remained so now for six months (Chart 1).

In the other the whole of the right lung was infiltrated and breaking down, and the left apex had begun to give way. In this instance the patient has lived for years in the country under the best hygienic conditions, and the windows of the house had been open day and night all the year round. In spite of this the disease got implanted. The recovery here, too, is very remarkable. Organisms can still be found (Chart 2).

The potentiality of the method seems great, and should my experience be confirmed, it may enable many wage-earners to continue at work while gradually regaining better health.[1] That it is powerful to arrest I have now no doubt, and therefore an agent of some importance in mitigating the terrible mass of human suffering which is primarily the lot of the afflicted, and in its wake leaves too often privation and destitution the only heritage to their dependents.

Note.

[1] I have two patients at present so doing.

CASE OF AORTIC DISEASE WITH UNUSUAL COURSE.

By H. E. BRUCE-PORTER, M.R.C.S., L.R.C.P.,
Windsor.

Major ——, aged 43, married, was invalided from India with "valvular disease of heart," as his Medical Board found that he had double aortic and double mitral murmurs, and there was albumen present in the urine. In their opinion his condition was so grave that it was necessary to send a medical officer down country in charge of him. He was brought by easy stages from Marseilles, and on arrival in London I met him and took him to his brother's house, where he was to remain for a couple of days; several times during that drive of twenty minutes' duration I feared the end was coming. Breathlessness was intense and speaking was almost an impossibility, but after he had been put to bed I gave him ⅓ gr. morph. sulph. with $\frac{1}{150}$ gr. atrop. sulph. which steadied his heart and, considering his condition, he had a fairly quiet night.

Next day on my advice he was seen by Dr. Pye-Smith who, after he had pointed out the great risks of a journey, consented to the patient being taken by road to Windsor. I now went into the previous history of the patient; he had always led an active life and was generally considered very healthy. About two and a-half years ago he suffered from indigestion and had palpitation. He was examined as to fitness for active service some twelve months ago and passed fit. This, however, must not be taken to mean that he was free from cardiac trouble; as I know in examining officers for foreign service army medical officers are very kind and one of the first questions put is, "Do you feel all right? and I suppose you want to go." So long, therefore, as the heart seems to be doing its work, it would be passed though the subject of a murmur, the reason being that if rejected for active service

an officer must be invalided and this is serious to a man near the time when he may receive command of his battalion. The result of inquiries as to specific trouble was negative. His condition was as bad as could be, the breathlessness was very great and attended by anginal attacks.

When tested by Hill and Barnard's sphygmometer the maximum swing of the needle was at 200 Hg, the effects of back pressure being seen in the oedema of the legs and the size of the liver. The heart was failing, and the constant pain and the breathlessness were very trying. I gave morphine sulph., guarded by a dose of atrop. sulph., to check the restlessness, and regular doses of nitro-glycerine to lessen the resistance ahead, and so let the blood get away; hypodermics of strychnine to brace the heart muscle, an occasional blue pill and seidlitz. By the time Sir William Broadbent saw him the dose of morphine was gr. $\frac{1}{8}$ a day.

The condition of his heart is described in the note following, written for me by Sir William Broadbent, who saw him on October 21st, a month after his arrival in Windsor:

Sir William writes: "While tranquil there was no respiratory distress, but the breath was short on very slight exertion. There was considerable oedema of the legs. The pulse was large, sudden, short, and collapsing, indicative of extreme aortic incompetence; when the hand was raised the beats scarcely reached the wrist; the carotid throb was very conspicuous. The abdomen was tumid and the liver large. The apex beat was diffuse, and could be felt in the sixth space, and could be felt as far out as the anterior axillary line; the cardiac impulse generally weak. The area of dullness was very extensive. Dullness was present from the right of the sternum from the second space downwards; the upper limit followed the third space, and curved downwards outside the nipple. At and to the left of the nipple a systolic murmur was heard, and over the heart generally a loud diastolic murmur, evidently aortic. In the right second space there was also a systolic murmur audible along the aorta and in the carotids. No aortic second sound could be heard in the neck or in the aortic area. My prognosis was extremely grave, and it did not seem to me possible that life could be prolonged till the end of the year."

The accumulation of fluid in the abdomen was so great that on October 28th I was obliged to tap him. This I did by Southey's tube, and drew off over 7 pints, when the fluid would not run freely and he was feeling the restraint of one position so much I had to remove the needle. The shock of tapping was very great, so that I felt it advisable to drain off the fluid which was, as it were, on the wrong side of the circulation, by needles in the legs.

The dose of nitro-glycerine was gradually increased till he had two tablets of $\frac{1}{100}$ gr. each every hour, and at times an extra tablet. The dose of morphine was increased till he had as much as $1\frac{1}{2}$ gr. in the twenty-four hours. The pain in the aorta was kept at bay, and he was able to take an interest in life and would not realize that his condition could be really serious. In December he had a very bad time for about a week; it did not seem possible that he could rally, and he was only kept going with inhalations of oxygen ten minutes to every hour, strychnine frequently, and brandy at times for several days.

He was drained through the legs by having two needles in each leg, and each time these needles were put in they drained over 8 pints. At the middle of December the fluid had increased so much in the abdomen, in spite of the draining through the legs, that I felt bound to take the risk of tapping the abdomen again. He was given a dose of morphine half an hour before, and a dose of brandy immediately before, I inserted the needle, and I gave a hypodermic injection of strychnine as soon as I had withdrawn the trocar. In spite of all this the patient almost died from shock and I had to rest content from that on with draining the legs.

From the start he was kept free of digestive trouble by the simple plan of separating his proteid from his carbohydrate meals. The blood pressure was steadily lowered to meet the failing heart, and at a fortnight before the end the maximum swing was at 100, and the small amount of 120 mm. Hg. pressure compressed the pulse.

The condition of the legs was one calling for anxious care, and though they were tapped over twenty-five times, and four needles used at each tapping, so well did his nurses care for the legs that they never became inflamed from the needles. The legs were washed twice in the twenty-four hours with a solution of perchloride, dried with new cotton wool, and dusted with a dusting powder containing some calomel, etc. When they showed signs of acute inflammation towards the end from the continual congestion they were dressed with thermifuge on lint.

The reason for increasing the morphine so much was that when he came quite from under its soothing influence he was very anxious to stand up as the breathlessness came on so badly, and I knew that standing in his state meant collapse and death.

When he had been taking the chocolate tablets of nitroglycerine for some weeks they had a tendency to make him sick, so I gave nitrite of soda as a change. By the aid of the nitrites it was possible to lower the work so much that instead of dying suddenly from the usual cause in aortic disease—failure of vis-a-tergo in the arteries, he died of the combined effect of venous stasis and failure of vis-a-tergo in the arteries. Gangrene set in in both legs on February 20th, and he had a great deal of fever as a result, the temperature going to 104°, and his pulse to 130. He was conscious up to two hours before the end, and died quite easily, 36 hours from the onset of the gangrene, without the legs becoming septic.

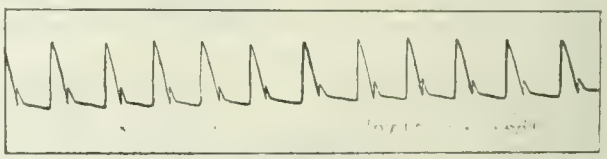
For months his breathing during sleep was of the Cheyne-Stokes variety. The pulse was irregular, and at times intermittent, and there was a general dilatation of the arch of the aorta. The amount of albumen in the urine never increased beyond one-eighth. The lungs were remarkably free of congestion, and at times he suffered from slight pleurisy.

The case may be put briefly as follows:

An acute aortitis caused puckering of the orifice and a regurgitant murmur, the heart for a couple of years compensated by enlargement of the left ventricle, under the strain of service in India the compensation failed somewhat rapidly, and dilatation set in; this caused leakage at the mitral orifice and the usual back pressure began to tell.

According to the textbooks and most observers the advent of a mitral lesion in aortic disease is looked on as a sign that the end is near at hand, especially when albumen is present in the urine, yet in this case he lived on in a state of comparative comfort for over six months, and during the last five months he had not more than three attacks of angina.

The amount of morphine that was given without a single untoward symptom was I think worthy of note; towards the end it was possible to reduce the morphine to $\frac{1}{2}$ gr. a day for days at a time. He was unable to sleep, except in a sitting position.



The pulse tracing was taken early in October, and shows a sudden fall to almost the base line.

CASE OF ACROMEGALY.

By W. B. HUNTER, M.D.,
Londonderry.

SINCE but few cases of this disease appear to have been reported as occurring in Ireland, notes of the following case may be of interest:

History.—Early in April, 1903, the patient presented herself at the Londonderry Eye, Ear, and Throat Hospital, complaining of defective sight. She was found to be suffering from old iritis in both eyes, and, though I observed at her first visit the unpleasing condition of her face, the thought of the true nature of that did not occur to me until I observed her hands at a subsequent visit when she had no gloves on. Having examined the hands, it was easy to see the nature of the case, and then, of course, the old iritis lost much of its interest and consideration. Of the two photographs of the patient, one was taken before the disease was supposed to have started, and the other quite recently. The case is thought to date from twelve or fourteen years ago. On looking back, the patient and her friends think they noticed some change about that time in the facial expression, and that the usual sizes of her gloves and boots were found in some way to be too tight and too small. They are able to assign the time by reference also to other collateral events and associations. The patient can ascribe no cause for what has so slowly eventuated in her present condition—no fright, or mental or bodily strain, no emotional disturbance or accident. Her family history gives no clue, unless that there be some connexion between her disease, and her father dying suddenly from heart disease and her mother of "dropsy." The patient, has never been married, and is now in her 65th year. She says menstruation stopped before she was 50, but that three years after this event she was affected with a sudden and copious recurrence, almost like "a flooding," which lasted three days, and since then there has never been any return. Whether there is any connexion between this condition and the commencement of the disease cannot well be affirmed, and perhaps not emphatically denied. She complains that her general health at present is very poor and

frail, that she is very easily upset and exhausted on any exertion; that though she has always had, and has still, a good appetite, she suffers much from "waterbrash," that is, acidity and stomach disturbance. It may be noted that, when asked, she denies ever having had attacks of vomiting, though sometimes she has a tendency that way. She says also that at first, and for a good many years, she suffered much from headaches, but recently these have stopped. Much complaint is made, too, of pains in her ankles and all the small joints of her feet, a burning kind of pain in one small spot in the right thigh, though there is no discoloration, and of a pain in her other leg which she calls sciatica. Other complaints are much sweating, distressing dryness of the mouth with thirst, some tinnitus and palpitation, besides, of course, the bad sight with pain in the eyes.

State on Examination.—On examining her heart a murmur can be heard at both base and apex, and there is much irregularity in its action, some beats being very feeble, so that at the wrist they are not felt at all. The extremities are often cold and clammy, and the nails blue. There is much vasomotor disturbance, the face changing in colour very frequently. During a short examination or conversation this can be observed. The usual pallid or dirty-white colour changes



Early photograph.

visibly, though slowly, into a dark-red or purple colour, with some heat and sweating, then soon returns again to original state. The slightest emotion does this, and sometimes any bodily exertion. When this occurs she feels more exhausted. About her respiratory system there is nothing in particular to notice. With regard to her sight, her eyes are prominent, eyelids oedematous, with smarting and pain, which latter may be due to the iritis. The whole uveal tract or region in the left eye has suffered so much from chronic inflammatory action that no knowledge of the fundus can be got. In the right eye things are not so bad. The pupil can be irregularly dilated with atropine, and a sight of the disc got, and some of the periphery of the fundus. The disc looks healthy, unless, perhaps, for a too congested condition and some blurring. These might be the beginning of a neuritis. She can still see to read with this eye with plus glasses and to do some needlework. On using the perimeter there did not seem to be any contraction of the field of vision; there was no temporal hemianopsia. Although the eyes are prominent there is neither Graefe's nor Stellwag's signs, the lids can easily cover the globes and there is no oculo-motor paralysis. The urine showed no indications of either sugar or albumen.

On looking at the recently-taken photograph and comparing it with the earlier, it will be seen that there is much enlargement of the nose, lips, upper and lower jaws, with projection of jaws so as to give the face a somewhat oval form. The tongue, which is not seen, is very large, flat, and broad, and fills the whole mouth. The teeth in the lower jaw are long and loose and covered with a dirty, thick, grey coating of sordes. Those of the upper jaw are very defective, and when the mouth is closed are overlapped by those of the lower jaw. The manubrium is broadened out and there is considerable enlargement of the bones at the sterno-clavicular joints. The clavicle itself is enlarged as well as the sternal ends of the ribs, which appear as large knobs. The hands are broadened and the several joints are large and flattened out; the ends of the fingers are much flattened and square; the palms are thick and have a cushiony feel when pressed. The lower ends of the fibulae are greatly enlarged and the ankle-joints massive; all the smaller joints are



Recent Photograph.

thickened and big. The soles look puffed up, being raised by a thickened development, which feels when pressed by fingers like a soft dough covered by a velvety envelope.

The woman being an out-patient, no closer examination of the body was made, but she says there are some small growths on different parts of the skin of the trunk, that there is no extra growth of hair on the pubes nor any enlargement there, and that there are no mammary glands now. Her mental condition is good, and she is not uncheerful, sometimes joking about her peculiar conditions.

The most observable subjective symptom, I think, is the great vasomotor disturbance. As regards life, I think the prognosis is bad, chiefly on account of the state of her heart.

Bequests.—The late Mr. R. G. Trimmer has left the sum of £3,000, free of duty, to the Trimmer's Cottage Hospital, which was founded by his father, the late Mr. George Trimmer.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

VENOUS TRANSFUSION OF NORMAL SALINE IN ECLAMPSIA.

The question may fairly be asked whether it is the teaching of obstetricians that the uterus should be immediately emptied when eclampsia appears, whether labour has commenced or not? As a contribution towards the answer of this question the following case may be of some interest:

Mrs. F., primipara, eight and a-half months' pregnant, was seen at 7 a.m. on October 8th, 1902, when I found her in an eclamptic fit. She had complained of headache for the previous two days; her ankles and feet had been considerably swollen, particularly at night, and her eyelids puffy in the mornings. She had been up all day on October 7th, but had gone to bed early with the headache, and some time about 1 a.m. her husband discovered her in a fit. The fits recurred at intervals of about fifteen minutes, but she did not regain consciousness between them. On palpation of the uterus I could not find any uterine contractions, and per vaginam found the os soft, but not open enough to admit a finger, while the cervix had not been drawn up, but was still quite thick. I therefore determined not to interfere with labour, but gave a purge and a diuretic and ordered a hot pack. At 10 a.m. there was no improvement, and she was given a high rectal injection of a couple of pints of normal saline solution. At 2 o'clock she was still unconscious, with fits recurring about every twelve minutes. I now opened a vein in the arm, and transfused, using two pints of normal saline. To do this I had to use chloroform, as she was throwing herself from side to side on the bed and throwing her arms about. There was no reflex in the conjunctiva, and the pupils were contracted. Half an hour later the fits ceased and did not return. At 7 p.m. labour commenced, and she was delivered normally at 10.45. She was then conscious, but quite blind and suffering from her head. It was two days later before the sight had fully recovered and the headache disappeared. The urine was suppressed all day on the 8th until about 6 p.m., when some passed in the bed, but the quantity could not be estimated. No analysis was made.

If the theory commonly held, that eclamptic symptoms are due to some form of autointoxication is correct, and if the toxin is circulating in the blood because of deficient excretion, then it behoves us to aid this excretion in the most expeditious manner. For this there is no doubt that to introduce the saline into the blood will be most satisfactory, as being more rapid and certain than under the skin. If the dose of toxin in the blood is not too great the dilution thus effected and the elimination thus stimulated may be sufficient to bring the case to a satisfactory termination, as in the case above reported.

Nutting S. Fraser, M.B.Edin., M.R.C.S.Eng.
St. John's, Newfoundland.

CASE OF PUERPERAL ECLAMPSIA.

Mrs. L., whose confinement was calculated for the beginning of April, noticed on February 6th that her urine was exceedingly thick. On examination I found a quantity of urates, and on adding nitric acid, so heavy a deposit of albumen was thrown down as densely to fill the whole column of fluid. At this time the patient declared that she felt perfectly well. The tongue was slightly furred and her pulse of high tension. There was no oedema. A full dose of compound jalap powder was given that night. Diarrhoea and vomiting set in during the night, followed at 8 a.m. by convulsions. At 9.30 a.m. she was found in a condition of albuminuric coma, but semi-consciousness returned about noon, when 2 gr. of calomel were given. Convulsions recurred about 1 p.m., and continued until 3 p.m., when 15 oz. of blood were withdrawn from the median basilic veins. This distinctly revived the patient and lessened the severity of the convulsions, rendering her removal to the Cottage Hospital possible.

On admission she was put at once into a hot bath and afterwards wrapped in hot blankets. No perspiration occurred, however, until $\frac{1}{5}$ gr. of pilocarpin had been given. On vaginal examination I found that during a convulsion the tip of the first finger could just enter the os, so having forced it into the uterus and swept it round the lower segment as far as I could reach, the os was gradually dilated with the fingers. Labour pains then set in with good force, the patient being still unconscious, and so continuing for about four hours after delivery, which was rapid. There was practically no haemorrhage, and the placenta quickly followed the stillborn child. Profuse perspiration broke out directly after delivery, and the breathing, as well as the cyanosis, which had been marked, were much improved. Consciousness returned about four hours after delivery, but she shortly after fell asleep and slept almost continuously for twenty-four hours, only taking small quantities of very milky tea and Valentine's meat-juice. There were no convulsions after labour was completed. With the aid of magnesium sulphate the albuminuria was reduced to a trace within four days, and with the exception of a slight attack of cystitis recovery was uninterrupted.

Iver, Bucks. E. Howard Barrett, M.B., B.S.Durh.

EXTREME HYPERPYREXIA.

I read in the British Medical Journal dated August 1st, 1903, and in a previous number, certain notes on hyperpyrexia. I have to submit a case which came under my treatment only the other day. The patient was a fairly nourished Jewish lady, aged about 35 years, and the mother of three children. She was suddenly taken ill one morning, and I was called to see her on the same evening, when I found her with a temperature of 107.2°, and a slight swelling over the left cervical region. Her people were very anxious, and I was not without my own doubts, as plague was raging badly in the vicinity. I examined her and could not detect any other typical signs of plague. For the safety of the people I isolated her in the same building, and kept her under careful observation. I administered some antipyretics and found the temperature came down to 105° after two hours. I kept her on milk diet, and treated with ordinary diaphoretics, with cardiac tonics, as I treat most of my plague cases. I visited her early next morning, and found her temperature only 101°. I kept on the same diet and treatment, and to my agreeable surprise I found her on the third morning free from fever and the swelling. She was otherwise almost all right, and began to attend to her household duties. I have seen several cases of hyperpyrexia among my plague patients, but never one which terminated so favourably and so suddenly as this.

P. M. Matthai, M.D., L.R.C.P.&S., L.M.&S.
Bombay.

CASE OF HAEMORRHAGIC ENDOMETRITIS.

Three years ago I was called to attend a lady who was suffering from influenza, with some bronchitis. I also found her unwell at the same time, with rather severe menorrhagia. She said that she had had a fall off her bicycle three days before. After five days she recovered from the influenza and bronchitis, but the menorrhagia continued. On minute examination I ascertained that the menses invariably lasted three days, and were slight in quantity. The lady was a nullipara, and married 15 years. The uterus was retroflexed and enlarged to $3\frac{1}{2}$ in., and exquisitely tender to the sound. As I could not replace the uterus, I determined to curette it as soon as she became a little stronger. I ordered ergot and hydrastis by the mouth, washed out the vagina with hot creolin solution 2 per cent., and packed the uterine cavity with antiseptic gauze steeped in hazeline, the foot of the bed was elevated and absolute quiet enjoined. The haemorrhage went on for four weeks despite all astringent local applications and hot douching. The lady absolutely refused to allow herself to be operated on. At last, after five weeks' treatment, she submitted to curettement. The result was immediate recovery, the uterus being kept in position with a Hodge's pessary.

The same case again came under my notice four months ago under, strange to say, identical conditions namely, retroflexion and menorrhagia subsequent to influenza. This time I prescribed ergotin in pill, and 10-minim doses of adrenalin in mixture, four times a day, with hot douches 115° F. of alum, hazeline, and boracic acid twice daily, without result, the haemorrhage increasing. After it had lasted sixteen days I washed out the vagina with creolin 2 per cent., and packed the uterus with gauze steeped in sol. adrenalin chloride 1 in 1,000 (Parke, Davis, and Co.).

From the moment of packing she lost no more blood. This lady is now in perfect health, and bimanually the uterus is normal, there is no sign of fibroid disease, and she can cycle twenty miles with the utmost ease. The effect of adrenalin when applied locally for capillary oozing is most remarkable. Personally I think it sometimes fails in checking arterial or venous haemorrhage. As to its internal administration, there is now no doubt that adrenalin causes an

energetic rise of blood pressure, and is useful in conditions of syncope, so that its administration for haemoptysis or haematemesis is a mistake. I should be very glad to hear if any other surgeon has had any experience of adrenalin under similar circumstances.

Bandon. JOHN REID, B.A., M.D.

REPORTS

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

LIVERPOOL ROYAL INFIRMARY.

A CASE OF CONGENITAL ABSENCE OF ONE KIDNEY ASSOCIATED WITH URAEMIA.

(Reported by PHILIP NELSON, M.D., late Holt Fellow of Pathology, University College, Liverpool).

FOLLOWING the notice of Unilateral Renal Aplasia recorded by Dr. Craven Moore in the *Journal of Anatomy and Physiology*, vol. xxxiii. I should like to call attention to the following example which I have had the opportunity of examining. Congenital absence of one kidney is a somewhat rare condition, and is, as a general rule, found associated with some pathological condition in the existing organ. The following case is remarkable not only for the occurrence of renal disease in so young a patient, but also for the absence of any diseased condition or congenital defect outside the renal system.

History.—M. M., female, aged 20, a domestic servant, was admitted to the Liverpool Royal Infirmary under the care of Dr. Barr, complaining of swelling of the legs. She had always enjoyed good health until two years previous to admission, when she was under treatment for "renal disease," from which she apparently recovered. She had never had syphilis or rheumatism. During the three weeks previous to admission she had suffered from drowsiness, vomiting, constipation, and dyspnoea.

State on Examination.—She was found to be markedly anaemic and very drowsy; a systolic murmur was audible at the apex, which was displaced downwards and outwards; the aortic second sound was accentuated; pulse 88, regular, with increased tension. During the previous twenty-four hours, she had passed 22 oz. of pale urine, specific gravity 1010, containing a small quantity of albumen and granular casts, with 0.4 per cent. of urea. During the next two days, she developed marked uraemic symptoms, having five successive convulsions, in the last of which she died.

Necropsy.—Each pleural cavity and the pericardium were found to contain a small amount of clear fluid. The lungs were slightly congested and oedematous, the liver and spleen normal.

The Kidney.—On the left side the kidney measured 2½ in. in length by 1⅝ in. in breadth, and weighed 2¼ oz.; its capsule was thickened, laminated, and adherent, the cortex contracted, whilst the renal tissue was very fibroid. The ureter was normal in diameter, and had at its upper end a diverticulum which terminated blindly. This was situated ⅜ in. from the entrance of the ureter into the kidney. The ureter beyond this point was of the same diameter as below the pouch, and had evidently failed to expand so as to form a true infundibulum, and on entering the kidney it formed a slit-like cavity, projecting into which were three papillar-like masses of renal tissue. The relation of the vessels at the hilum was normal, the renal artery being above the vein. The suprarenal capsule was slightly larger than normal, and was supplied by a branch from the renal artery. On the right side there was total absence of the kidney; the suprarenal capsule was present, however, and greatly enlarged, being 2½ in. long by 1⅝ in. wide, oval in shape, and supplied by two branches from the abdominal aorta. There was no trace of a renal artery; the ureter could be traced upwards from the bladder for 3¼ in., being patent throughout its length, but with its upper end closed, which was, however, not branched nor pouched. The uterus and adnexa were normal. The microscope showed in the existing kidney that there were most marked fibrotic changes in and around the glomeruli and tubules, associated with a catarrhal condition of the tubules.

REMARKS.—Unilateral kidney is a condition met with in 1 in 4,000 necropsies; it is more frequently observed in males than in females, in the proportion of 4 to 1 (Roberts's *Urinary Diseases*, 1885), the left kidney being more commonly absent than the right. The remaining organ, if not the seat of disease, is very frequently hypertrophied, and may reach twice the normal size and weigh as much as 10 oz. In the Pathological Museum of Liverpool University College there are several examples of unilateral kidney in all of which the left kidney is missing, whilst the suprarenal body is in every case oval in shape. In one case from a male the left kidney, ureter, vas deferens, vesicula seminalis, and epididymis, except the vasa efferentia and coni vasculosi, are absent, and the left lobe of the prostate is also undeveloped. In the same museum is a kidney nearly twice the normal size and very markedly lobulated, possessing two ureters, which appears to be formed by the fusion of two organs. Congenital absence of a kidney has been noticed in the horse, sheep, rabbit, hen, and pigeon, and doubtless in other lower animals.

For permission to publish the above I am indebted to Dr. Barr.

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REPORTS OF SOCIETIES.

CLINICAL SOCIETY OF LONDON.

FREDERICK TAYLOR, M.D., F.R.C.P., President, in the Chair.

Friday, November 13th, 1903.

MYOSITIS FIBROSA.

DR. FREDERICK E. BATTEN related this case.

A boy, aged 6, the second of five children, was healthy at birth, but when 9 months old the mother noticed that his back was becoming rounded, and that the legs could not be straightened. The contractions gradually increased, so that when he was aged 6 he was in a rigidly flexed position, and any attempt to extend the legs brought the trunk into a sitting posture. The head was drawn to the right side by extreme contraction of the right sterno-mastoid, and the recti abdominis muscles were greatly contracted and of cartilaginous hardness. The upper and lower extremities were also contracted in a flexed position. There was no evidence of any disease of the nervous system. All the muscles in which the contraction was not extreme reacted to a weak faradic current. No relaxation of the contracted muscles occurred when the boy was placed under chloroform. The pathological examination of the nervous system revealed nothing abnormal. With regard to the muscles, the right sterno-mastoid was almost completely converted into tendon, fully one-half of the whole bulk of the recti abdominis were tendinous. In the muscular portions of these muscles and in the other muscles of the body examined, there was a very considerable amount of fibrous tissue between the individual muscle fibres, many of which were atrophied and showed considerable fatty degeneration. No factor could be found to account for the disease.

The author dealt with the relation of the malady to myositis ossificans, suggesting that there was a relative increase in tendinous structure owing to the contraction of the fibrous portion of the muscle. The paper was illustrated by lantern slides and drawings.

MEASLES IN AN ADULT: COMA: RECOVERY.

Dr. NEWTON PITT described this case:

W. L., aged 19, strong and in good health stood about on March 10th, 1899, in a cold east wind at the onset of an attack of measles, the eruption developing the next day; his temperature reached on one occasion 105° F., but he was not seriously ill until the 15th, when he became violent and noisy. On the 16th his urine required to be drawn off with a catheter, and on the 17th he became collapsed and comatose, with incontinence of urine and faeces. His tongue was moist and the rash was well developed—pulse 110, temperature 103.4° F., but he would not respond to questions, and there was considerable difficulty in feeding him. On the 18th the temperature fell. His pulse was 68, small and irregular, and he was slightly less unconscious. On the 19th the temperature ran up again, and he became extremely cold and collapsed, but during the day he became more conscious and gradually made a good recovery. There was, therefore, more or less coma for four days. He had no recollection of anything between the 13th and 21st, although during the first two or three days he was conscious. During convalescence he had great insomnia with uncomfortable sensations about the face; for many months his memory remained very defective, and the slightest mental effort brought on headache.

Dr. Pitt said that coma in measles was a very rare event, and hardly ever occurred except in fatal cases. It might be due to: (1) Toxaemia; (2) meningitis, when the cause would

be found to be ear trouble or tubercle; (3) thrombosis, often leading to hemiplegia; (4) disseminated encephalitis; (5) anterior poliomyelitis or disseminated myelitis, which was often associated with delirium and coma at the onset. Of the toxic forms of coma in measles ending fatally Dr. D. Drummond, of Newcastle, and Meigs and Pepper had reported cases. Out of 200 cases of hemiplegia in children, 11 were associated with measles; some of these were thrombotic in origin. Cases that recovered had been reported by Dr. Goodhart, Mr. Kingsford of Brondesbury, Dr. Dawson Williams, and Schepers; whilst Sir T. Barlow had seen a young man who died with acute paraplegia, the lesion being shown to be limited to the spinal cord. The present case did not appear to be of a toxic origin, but rather due to a local encephalitis, which finally cleared up.

Dr. A. Morison related the case of a girl, aged 10, who was comatose with sluggish pupils, and had meningitis. She then suddenly developed in June acute bronchitis, and the coma subsided. As the bronchitis lessened a scanty rash of measles appeared. The coma was a preliminary incident. The child died. Such a case justified the popular belief that cases with early full development of the rash did best.

Dr. S. Phillips had seen several cases of coma during measles in children, but never in an adult. The cases resembled those of encephalitis in influenza.

Dr. F. E. Batten doubted the possibility of making an absolute diagnosis between encephalitis and thrombosis, seeing that with thrombosis there was always some encephalitis.

Dr. W. Hunter described a case of encephalitis occurring in scarlatina. There was incomplete coma; followed, on recovery, by blindness of one eye and squint for 10 days.

Dr. Pitt, in reply, said that no systematic writer had yet ventured to include all cases of encephalitis under thrombosis. He asked was there any case of meningitis in measles or mumps not associated with ear trouble?

Pernicious Anaemia with Unusual Features.

Dr. Pasteur read notes of this case:

The patient was a well-built man, aged 24. He had always enjoyed good health until three weeks before his admission into hospital. He was profoundly anaemic, with sallow complexion, and some blood was oozing from the gums. His teeth and mouth were in good condition. There was slight enlargement of the heart with haemic *bruits*. He had also double haemorrhagic neuro-retinitis, and he had some vomiting. The evening temperature was only slightly increased. The blood exhibited marked oligocythaemia with a relatively high colour-index with well-marked leucopenia and a relative lymphocytosis. The leucocytes numbered only 2,600 ten days before death, which occurred exactly seven weeks after the onset of the first symptoms of faintness. No nucleated red blood corpuscles were seen nor was poikilocytosis observed at any time. The urine was 1020 specific gravity, and was free from albumen or sugar. Sections of the liver after death gave a marked Prussian-blue reaction. The spleen gave a slight reaction, and the testes a very marked one. Chemical analysis showed that the amount of iron yielded by the liver was more than six times the average, and that it exceeded that obtained from the spleen.

The chief features which rendered the case unusual were the absence of nearly all the characteristic blood changes, the short duration of the illness, the marked changes in the fundus, and the presence of iron-containing pigment in the testes.

The case was discussed by Drs. W. Hunter and N. Dalton, the former of whom was inclined to regard it as one of septic anaemia; the latter narrated a case of his own which seemed to him to resemble that detailed by Dr. Pasteur.

Dr. Pasteur, in his reply, referred to the pigmental changes in his case, and said that he had seen no evidence of sepsis either before or after death.

LIVERPOOL MEDICAL INSTITUTION.

Rushton Parker, B.S., F.R.C.S., President, in the Chair.

Thursday, November 5th, 1903.

Pleural Effusion.

Dr. James Barr described his method of treating pleural effusions. After removal of the fluid, 40 to 60 minims of adrenalin chloride, 1 in 1,000, were injected. He had used it in many cases with invariable success. In ascites the method was not so successful. He also described an apparatus for the introduction of aseptic air into the pleural cavity.

Pylorectomy.

Mr. F. T. Paul reported several cases of pylorectomy. Two, operated upon *in extremis*, died. The other three recovered: (1) a woman, aged 56, with extensive cancer of the pyloric end of the stomach, who died 16 months later from recurrence; (2) a man, aged 46, with an early cancer; and (3) a woman, aged 56, in which the tumour proved to be an inflammatory mass. The two latter cases were so far in excellent health. Mr. Paul also showed a man with carcinoma of the pylorus, who had improved so much after gastro-enterostomy that he proposed to excise the growth.

Sir William Banks said that his experience of removing the pylorus for cancer was but slight, as he never had any great opinion of the operation, owing to the impossibility of removing completely affected lymphatic glands lying in the curve of the duodenum, and embedded in the head of the pancreas. He had operated in about half a dozen cases. They all recovered, and for a while appetite returned, weight increased, and so on, only to be followed by death in every case. He was not sure whether patients did not live as long and as comfortably with a successful gastro-enterostomy as with excision of the cancer.

Mr. R. W. Murray said that if a radical cure was to be hoped for in cases of carcinoma of the pylorus, the growth must be more freely excised than pylorectomy, with union of duodenum and stomach, permits of. In such cases he advocated gastro-enterostomy with removal of about one-half of the stomach.

The President remarked that cases suitable for pylorectomy were quite exceptional among cases of malignant disease. When he had performed a pylorectomy the narrow duodenal tube had been sewn to the upper part of the wider opening in the stomach, and then the redundant remainder of the latter closed.

Mr. Paul replied.

Prostatectomy.

Mr. G. P. Newbolt read notes of two cases of enlarged protsate treated by suprapubic prostatectomy. One patient, aged 70, from whom a prostate weighing $5\frac{3}{4}$ oz. was removed in May, 1903, was shown in good health, being troubled only by frequency of micturition. The other patient, aged 62, died from uraemia four days after operation. His bladder was shown, the space from which the prostate, weighing $1\frac{1}{4}$ oz., was removed being demonstrated; its base was formed by a well-marked layer of recto-vesical fascia. In both cases the prostatic urethra was torn away together with the ejaculatory ducts.

The President said he had devoted what attention he could to the perineal method described by American colleagues, Professor Alexander and Dr. Parker Sims, of New York, at the Manchester meeting, 1902. The operation had proved satisfactory to him and to his patients.

Mr. Douglas Crawford recognized Freyer's operation as the ideal one. Although easy in adenomatous cases, it was difficult in the fibroid form, and he preferred to punch out portions of the prostate in the latter cases.

Rheumatoid Arthritis.

Dr. Macalister read a paper on rheumatoid arthritis and its relation to other diseases. As usually seen in institutions the stage of deformity had been reached, and active processes were at an end. To be effective treatment must be commenced in the earliest stage. Frequently the disease resulted from infections of the nasal, alimentary, and other mucous membranes. In others it was associated with perversion of the thyroid functions, and had been greatly ameliorated by the administration of thyroid gland. In early cases Raynaud-like vascular spasms of the extremities often precede the joint affections, and muscular cramps were of frequent occurrence. He suggested that the poison was very like ergot in its general effects, and considered that there was a close association between Raynaud's disease and some cases of rheumatoid arthritis; and there was possibly also a relationship between rheumatoid arthritis and Graves's disease. Iodine occasionally produced beneficial effects, possibly by acting through the thyroid gland, which normally contained that metal. The toxin of rheumatoid arthritis was, perhaps, not eliminated from the body owing to its either paralysing the organs of elimination or failing to stimulate them, with the effect that however freely the skin or kidneys might be acting this particular poison could not be removed from the blood unless its constitution were changed. In support of this idea he related a case in which a patient with intensely swollen and painful joints remained unrelieved, in spite of the fact that the kidneys and skin were acting profusely until (all other drugs having failed) large doses of quinine were given; this caused the poison to be poured out through the skin in the form of a horrible-smelling volatile matter

which was so offensive that the patient could not be kept in the ward. After this there was immediate subsidence of the pains and swellings, and convalescence set in.

Dr. Llewellyn Jones (Bath) regarded rheumatoid arthritis as a symptom; given any source of auto-intoxication, the resulting toxaemia might through its action on the cord segments produce what was called rheumatoid arthritis. The gastro-intestinal tract was specially likely to be a source for such poisons. The occurrence of recurrent attacks of local syncope and asphyxia, and muscular cramps affecting mainly the extremities, might suggest a common point of origin, a cerebro-spinal toxaemia, for Raynaud's disease, tetany, and early rheumatoid arthritis.

The President said he knew from the practice of a friend that feeding was a most important factor in the treatment of these cases. His friend advised the consumption of 3 pints of milk in addition to the ordinary meals, and the President had seen benefit accrue even in some well advanced cases.

Drs. Barr, Stopford Taylor, Gill, and Warrington spoke; and Dr. Macalister replied.

MANCHESTER MEDICAL SOCIETY.

A. Matthewson Edge, M.D., B.Sc., President, in the Chair.

Wednesday, November 4th, 1903.

Rheumatic Hyperpyrexia.

The President related a fatal case of rheumatic hyperpyrexia treated by cold baths.

The highest temperature reached was 110°. Quinine in large doses, cold sponging, continuous applications of ice, and even rubbing with ice, had failed to reduce the temperature, but immersion in the cold bath was always successful in bringing it down temporarily to a normal or subnormal point. Eight baths were used during the hyperpyrexial period, which lasted seven days, death being preceded by the signs of hypostatic pneumonia. Although the patient was always removed from the bath before the temperature had fallen to 102°, collapse frequently ensued, requiring the use of stimulants and hot applications. There were very well marked nervous symptoms, including pain and stiffness in the neck, delirium, clonic convulsions, internal strabismus of the right eye, spasm of the left facial muscles and spasm of the masseters, interfering with the opening of the mouth and protrusion of the tongue. Many of these spasms were tetaniform in character.

The necropsy proved the case to have been one of pure hyperpyrexia without complications except the terminal pulmonary congestion.

Acid Auto-intoxication "sui Generis."

Dr. F. Craven Moore read a communication on this subject. After referring to the clinical and experimental basis of the modern conception of acid intoxication, the prototype of which obtained in connexion with diabetes mellitus, the occurrence of such intoxication apart from diabetes was dealt with and a division of such cases into two groups adopted, namely: (1) Those in which manifestations of acid intoxication occurred in association with and probably secondary to some general morbid state; and (2) those in which they occurred apart from any general disease and apart from any lesions *post mortem* which would afford adequate explanation of their obtaining, to this group the term acid intoxication *sui generis* was properly applicable. As illustrative of this condition the following three cases from the hospital practice of Professor J. Dreschfeld were described.

Case I.—A female, aged 30, had for about two months suffered from attacks of vomiting, gastralgia, constipation, pallor, and weakness. Four days before death she suffered from drowsiness, prostration, air hunger, and exhibited a strong odour of acetone. The urine gave no reaction for glucose. On admission to hospital the vomiting ceased, the patient became rather excitable, and then lapsed into a comatose condition which terminated fatally in about twenty hours. The urine was highly acid, contained a trace of albumen, no sugar, gave well-marked reactions for acetone, aceto-acetic acid, and also for β oxybutyric acid, a filtered specimen gave a rotation of -3° (2 a. m. tube), an ethereal extract exhibited negative rotation, and crotonic acid was obtained on distillation with H_2SO_4.

Case II.—A female, aged 14, had suffered from recurrent attacks of vomiting and constipation without indications of gastro-intestinal lesion, the condition being apparently "hysterical" vomiting. The breath and urine contained acetone; the latter also contained aceto-acetic acid and β oxybutyric acid ($\alpha = -0.46^{\circ}$, 2 a. m. tube). With suitable dieting, evacuant enemata and alkalies internally these manifestations disappeared.

Case III.—A female suffering from mitral disease with broken compensation exhibited for a few days acetone, aceto-acetic acid, and β oxybutyric acid ($\alpha = -0.2^{\circ}$) in the urine.

Of those cases, the first represented the severe form of acid intoxication *sui generis*: the second to some extent simulated the condition of cyclical vomiting which Edsall regards as depending on acid intoxication; and the last was apparently acid intoxication of slight degree and secondary in character.

Post-operative Haematemesis.

Mr. Charles Roberts read a paper on post-operative haematemesis, with illustrative cases. He described 12 cases, dividing them into two groups. In the first the condition was associated with profound toxaemia, and was satisfactorily explained on the theory that it was due to sepsis, the operation acting only as a possible predisposing factor. In the second group the condition occurred apart from sepsis. Three cases were described in detail. The various theories as to the cause of post-operative haematemesis were discussed.

Hunterian Society.—At a meeting on November 11th, Dr. F. J. Smith, in the chair, Mr. Harold L. Barnard opened a discussion on appendicectomy, emphasizing the dangers of ventral hernia and sepsis. To avoid them he advocated the splitting operation and crushing of the root of the appendix and its invaginating into the caecum by a purse-string suture; he preferred catgut to silk. He also discussed what was the best moment to seize for operation.—Messrs. Lenthal Cheatle, James Berry, W. H. D. Brook, of Lincoln, H. Rigby, Michels, and Best joined in the discussion which followed; the effect of an abscess wall, the result of the division of trophic muscular nerves, and the mortality in true first attacks of appendicitis being points which received consideration.—Mr. Barnard replied.

British Gynaecological Society.—At a meeting of this Society, held on November 12th, Dr. F. A. Purcell showed a multilocular ovarian cyst which with its viscid content weighed 22.5 lb. The patient, a married but childless woman of 33, had only noticed the tumour for four months, and till one year before the operation had been in good health; then after amenorrhoea for 14 weeks she had a profuse thin sanguineous and offensive discharge, which, ceasing abruptly, was succeeded by menorrhagia. She made an uneventful recovery.—Dr. Bedford Fenwick read notes of a case of ovarian pain which, in spite of all kinds of treatment, had persisted for ten years. She was completely relieved by oöphorectomy. The ovaries to the naked eye appeared almost normal, but sections showed that they were riddled with cysts and that the remaining stroma and capsules were sclerotic.—Dr. G. R. Hodgson read notes of a successful operation upon an incarcerated and irreducible femoral hernia in a woman: the hernia had existed for 12 years, but had been kept up by a truss, and, though it was asserted that it had only descended a few days before the operation, was extensively adherent.—Dr. Inglis Parsons reported a radical operation for recurrent ventral hernia.

Glasgow Obstetrical and Gynaecological Society.—At a meeting on October 28th, Dr. J. Nigel Stark, President, in the chair, Dr. Parry demonstrated a tumour of the ovary composed of myomatous tissue and exceptionally large. He also showed a tuberculous salpingitis, removal of which necessitated resection of two pieces of intestine and part of the caecum. The patient did well. Sections of the diseased tube were exhibited.—Dr. Russell showed (for Dr. Edgar) a myoma of the ovary and a tumour of the upper part of the rectum and sigmoid flexure; also a fibroid uterus complicated by carcinoma of the cervix.—Dr. Teacher showed (for Dr. Christie) a simple papilloma of the nipple from a patient of 34. Attention was drawn to the rarity of such growths.—Dr. Russell showed (for Dr. Kelly) a fetus from an extra-uterine pregnancy, the history of which was as follows: After ordinary symptoms of pregnancy, at the end of the third month the patient had an attack of severe pain and sickness, which recurred after two weeks and again after two months; fetal movements then ceased. The fetus was partly macerated and the placenta was degenerated.—Dr. Teacher gave a lantern demonstration of chorion epithelioma and allied conditions.—The following exhibits were shown: (1) An unruptured tubal pregnancy of four weeks showing a minute embryo; (2) sections of a primary carcinoma of the ovary with secondary growths in the tube and peritoneum; (3) a series of instruments, including modifications of the Bossi dilator.

REVIEWS.

TUBERCULOSIS.

Dr. Arthur Ransome's most recent book on the treatment of consumption[1] is in the form of four essays and is entitled *The Principles of "Open-Air" Treatment of Phthisis and of Sanatorium Construction.* In the first essay these principles are formally set forth and discussed; the second deals with the subject of resistance; in the third the principles of sanatorium construction are propounded; the fourth is devoted to the open-air treatment of phthisis at home. It may be said in general that the views of the author are entirely favourable to the employment of the open-air method and the subject is treated in a complete, although necessarily limited, manner. In writing of the necessity for an abundant supply of pure air and sunlight, Dr. Ransome says:

> There must be no stagnant areas in corners or ceiling, and the ventilation currents must sweep away all impurity. No dusts of any kind should be allowed to float about in the air to serve as vehicles for microbic germs or for organic refuse on which these germs may feed. . . . . Aërial sewage must, in fact, be entirely got rid of.

Again, in reference to what the author calls "full feeding" he writes:

> We must beware of a mere mechanical adherence to fixed rules; our aim, on the contrary, should be true physiological feeding. We must take into account individual peculiarities.

The second essay on certain bodily conditions resisting phthisis contains perhaps more controversial matter than the whole of the rest of the book, particularly in regard to the assumed benefit of a supervenosity of the blood in preventing phthisis—a proposition which, although probably containing a modicum of truth, is not without danger—and in regard to the apparently good effect of an excess of red blood corpuscles in helping to cure it. The essay on the principles of sanatorium construction calls for no special comment, as its chief interest is with the specialist. Although a strong advocacy of strict sanatorium methods runs through the book, yet the last essay on the pure-air treatment of phthisis at home is certainly not the least valuable. There are many persons, the author says, who cannot or will not be treated in sanatoria, those who, as it appears to them, cannot conveniently be separated from their families, delicate persons who shrink from the attendant publicity, those who have been greatly improved by a course of three or six months in a sanatorium, but are susceptible to reinfection, and those who cannot obtain admission; all these need efficient open-air treatment, and most of them greatly desire that it should be carried out at home. Dr. Ransome thinks that under certain stringent conditions it is quite possible to do this, and the way in which it may be accomplished is described in the last essay. He argues for the supervision of a medical man and the services of a well-trained nurse or attendant, but he maintains that none of the necessary conditions are unattainable except in the homes of the very poor, for whom he thinks suitable asylums should be provided at the public expense. The book is one well adapted both for medical practitioners who desire to have laid before them the whole scheme of the system, and for those members of the intelligent laity who for one reason or another wish for sound and detailed information on the subject.

As to who the author or authoress of the small book *How to Take Care of a Consumptive*[2] is the volume itself gives no explicit information beyond a name, but this is perhaps of comparatively little consequence, because its subject matter is unexceptionable.

> We cannot all spare the time and money necessary for a prolonged stay at one of the numerous sanatoria *(absit omen)* either abroad or at home, but most invalids have some friends or relatives who would be willing to devote time and energy to the bettering of their condition if they only knew how to do so.

This sentence contains the motive of the book, and its development on the subjects of air and ventilation, clothing, dust, rest, and exercise, baths, and feeding, is quite sound. The book is quite elementary, and may safely be put into the hands of any one of ordinary intelligence, wise or simple.

Any one wishing to look up the salient points on tuberculosis is confronted with so formidable a number of books on the subject that selection is difficult. A volume entitled *Tuberculosis*, by Dr. Bridge,[3] is founded on lectures delivered at the Rush Medical College of the University of Chicago. The earlier chapters are devoted to a consideration of the bacillus and the pathological results of its activity within the lungs. Then the etiology, symptoms, physical signs, diagnosis and prognosis of tuberculosis, followed by the prophylactic, medicinal, and general treatment of the disease are discussed. Though there is, of course, no pretension to an exhaustive survey, a clear and practical sketch is presented in a form eminently suitable for lectures to a class of students. The remarks on physical examination of the chest, for example, are excellent in explaining to the student the objects and methods of such examination. There is much that it is necessary to tell the student, which requires less emphasis when writing for the practitioner, and in recasting these lectures this fact might, perhaps, with advantage have received more attention.

The publication of the essay *A Model Sanatorium for Tuberculosis*,[4] which was submitted in the competition for the erection of the King's Sanatorium by Mr. A. G. R. Foulerton, F.R.C.S., D.P.H., and Mr. R. Langton Cole, F.R.I.B.A., is to be heartily welcomed, for although it was not successful in gaining a place among the first three yet it is of great value and might well prove of more service in the way of suggestions to medical officers of health and others consulted as to details in the construction of sanatoria under special circumstances than the essays awarded a higher place in this competition. The scheme described includes a series of small pavilions connected by corridors with each other and with a central administration block, the two wings running east and west from the central block. This system the authors prefer to that of the long, low building with all the sleeping rooms facing south, an essential part of the designs in the three successful essays. They admit that the initial cost of construction and subsequent cost of maintenance are greater than in the case of the single building, and they accordingly pay special attention to the reduction of the cost of administration to the lowest possible level. The essay is short, but filled with well-thought-out recommendations extended to quite small detail.

The keynote of Miss Mears's pamphlet on *Open-air Treatment*[5] appears to be that, though its principles are broad and simple, and the factors—rest, food, fresh air—are within the reach of every one, the working out of the treatment is beset with difficulties, due in great measure to the shortcomings of the patient. The writer has therefore set herself to lay before the general public a few considerations on the subject in such simple form that little or no previous acquaintance with the subject is required from the reader. Some common-sense elementary remarks on overwork, under-nourishment, and deficient air as causes of ill-health lead up to a consideration of some practical difficulties in the working out of the open-air treatment. The pamphlet might with advantage be placed in the hands of patients who are contemplating entering a sanatorium, and be also read with profit by their friends.

The regulations which must be followed out by a patient undergoing the open-air treatment for tuberculosis are given in a simple and exceedingly clear manner in a pamphlet of twenty pages by Dr. Savignac.[6] The directions are precise and definite. The arrangement in short sentences makes it easy to pick out the various details, and the employment of thick type for headings and essential points facilitates reference. Though there may be differences of opinion on the subjects of overfeeding and absolute rest for all cases, which are here treated as essentials, there can be no question as to the value of such a clear and concise guide to patients as this pamphlet provides.

Dr. Dulberg, impressed by the exaggerated view taken by some of the public of the infectious character of consumption and the unnecessary misery and hardship inflicted on some

[1] *The Principles of "Open-Air" Treatment of Phthisis and of Sanatorium Construction.* By Arthur Ransome, M.D., M.A., F.R.C.P., F.R.S. London: Smith, Elder and Co. 1903. (Demy 8vo, pp. 104. 5s.)

[2] *How to Take Care of a Consumptive.* By M. Forrest Williams. London: John Long. 1903. (Fcap. 8vo, pp. 47. 1s.)

[3] *Tuberculosis.* By N. Bridge, A.M., M.D. London: W. B. Saunders and Co. 1903. (Demy 8vo, pp. 302. 6s.)

[4] *A Model Sanatorium for the Treatment of Pulmonary Tuberculosis.* An essay submitted in the competition for the erection of a sanatorium for tuberculosis. By A. G. R. Foulerton, F.R.C.S., D.P.H., with whom is associated as architect, R. Langton Cole, F.R.I.B.A. London: Rebman, Limited. 1903. (Demy 8vo, pp. 32.)

[5] *Open-air Treatment.* By Isabella Mears, L.R.C.P.I. Edinburgh: W. Blackwood and Sons. 1903. (Crown 8vo. pp. 32. 6d.)

[6] *L'Ordonnance du Tuberculeux.* By Dr. Savignac. Paris: C. Naud. 1903. (Crown 8vo, pp. 20. Fr. 0.30.)

consumptives by their being cut off from employment or from the society of their neighbours, has written a pamphlet[7] expressing in simple but forcible language the fallacy of such fear of infection when proper precautions are taken. These precautions he also describes. Judging by certain examples which he quotes of hardship inflicted by the excessive dread of infection, the facts he sets forth require to be more generally known, and his pamphlet is well calculated to reassure the timid and to allay unnecessary fears.

That the *Mémoire* of Dr. R. Ballota Taylor, entitled *Nosographie et Pathogénie de la Tuberculose*,[8] which was presented to the Fourteenth International Medical Congress at Madrid should not be taken too seriously will appear from the following considerations. He holds, and vigorously expounds the tenet, that the infection of the human lung with tubercle cannot, or at least does not, occur by aërial channels. He considers that an ordinary method of infection in the human subject, leading to the development of acute miliary tuberculosis, is inoculation of the bacilli by the stings of flies and mosquitos. He maintains that the bacilli in their mature condition gain entrance into the system solely by inoculation, and in their embryonic state (whatever that may be) by the act of procreation. No wonder, then, is it that, holding these views, he considers the campaign *contre les crachats* idle, and therefore futile. The one and only method of fighting tuberculosis is, he insists, the method of general hygiene. To achieve this he sketches a fiscal policy of his own, which is that all duties on indispensable articles of food should be abolished, those on articles of luxury raised, and those on strongly alcoholic beverages made but little short of prohibitive.

PHYSIOLOGY.

A work on *Practical Physiology*,[9] the joint production of three lecturers and two demonstrators of physiology in three hospitals in London (Bartholomew's, Guy's, and the London Hospital) is sure to be worthy of careful examination. In the volume before us it is assumed that further advance in physiology and medicine will depend mainly upon the "experimental method," and that therefore the medical student should undergo a training in practical physiology—a fact long ago accepted in those schools of medicine that were the first to introduce the teaching of this subject as an integral part of the medical curriculum. The volume is illustrated by numerous diagrams and tracings, and is divided into an elementary and an advanced portion. Part I deals with elementary experimental physiology, Part II with elementary physiological chemistry, Part III with advanced experimental, and Part IV with advanced chemical physiology. Part I—where the word "kymograph" is used as equivalent to a recording drum—deals with the usual experiments in elementary physiology. Many of the tracings throughout the work are excellent. Some of those borrowed are given as taken from Dubois—that is, we take it Raphael Dubois's work for example, Fig. 62, Stannius ligature 65, inter-auricular septum, 213 effect of tension on apex beat, 123 and 124 respiratory tracings. The first two were in use (they occur in Hedon's book), and so was the third, before Dubois's work was published. The third is really the figure of Pitres. The respiratory tracings are those of Fredericq. That of the ergograph (182) is from Porter. Other illustrations are labelled with the name of a firm of instrument makers. The original sources of some of these might well have been stated. In the experimental part there seem to be omissions of fundamental yet simple experiments or methods—for example, ciliary motion, the use of the rheonom, and the beating of lymph hearts in the frog. We have asphyxia, but not apnoea, the ophthalmoscope, but not the laryngoscope. In the experiments on the sense organs we miss those on flicker. We take it that all these have been left out intentionally. If so, some of them might with advantage have been included. In the eyeball of the sheep the ciliary muscle is indicated by more than a number of pale fibres; in reality it is a very bold and striking object in the animal. Is myopia usually congenital? It seems rather odd to include Pawlow's permanent pancreatic fistula amongst "elementary demonstrations." Probably a goodly number of teachers of physiology have never seen a Pawlow's fistula, far less made one. The chemical part occupies considerable space, and is illustrated by a number of plates of crystals. We still have the old view of Kühne as to hemipeptone and antipeptone set forth. Is the method of Külz really the best for obtaining all the glycogen from a liver or other organ containing it? Oliver's methods for the blood are omitted. There is no list of works of reference. In the chemical part, and also in the experimental part, a good deal of systematic description is interspersed with the more practical matter. The work is well got up, and will, no doubt, prove useful to those students for whom it is specially intended.

Hoppe-Seyler's Handbuch is a constant companion of the worker in physiological and pathological chemistry in all countries, and we welcome the appearance of the seventh edition which has been issued under the able editorship of Dr. Thierfelder.[10] The general plan of the work remains the same as in previous issues, and it has now been brought up to date. This has necessitated a considerable increase in the thickness of the volume. It is unnecessary at this stage in the life-history of such a book to trouble our readers with any details of its construction. It is essentially a practical work; but we notice a tendency to give more space to theory and discussion of results than is usual in practical guides. We should not grumble at this if practical directions were also given in full; but we confess to a distinct feeling of disappointment in finding these in parts, especially in newly-added parts, exceedingly scanty. For instance, we find no description of the methods for demonstrating the absorption bands of haemoglobin and its allies in the ultra-violet region of the spectrum; the coloured table of absorption spectra given still remains in its previously unsatisfactory condition. In connexion with fats, the directions given for ascertaining the iodine number, and other numbers so frequently employed in fat analysis at present, are so meagre that they might just as well have been omitted. An investigator of fat chemistry might fairly expect to find in such a book as this full and explicit instructions on these points, and not only a reference to another book where he can obtain them. Among minor points, we note with satisfaction that a description of the hypobromite process for estimating urea is still retained. This method has fallen into undeserved disrepute because other more accurate but more elaborate methods have taken its place. For this reason it has dropped out of most German textbooks. Professor Fredericq has protested against this, and it cannot be doubted that, though the process has its limitations, it still remains the most easily applied of quantitative methods, and is for most clinical purposes sufficiently accurate.

NOTES ON BOOKS.

Massage and Vibration.

Dr. Erik Ekgren has written a practical handbook of massage[11] for use by doctors or students. The theory of the subject is only briefly dealt with, but the directions for carrying out massage of the different parts of the body are full and clear. The gymnasium exercises which appropriately accompany any given form of massage are noted, and the less complicated are described. The description of the treatment as applied to the limbs after fractures or dislocations is of general interest, as is the more detailed account of abdominal massage in chronic constipation. The author recommends a special massage for prolapse of the rectum, either as a palliative measure or to prevent relapse after operation. This consists of "tapotement," applied either with the finger or with a glass rod to the perineum in the neighbourhood of the anus, and to the sphincter ani itself, the effect being more speedily gained when a heated rod is used. Special abdominal massage is recommended for movable kidney, but only if no albumen be present in the urine.

[7] *The Infectiousness of Consumption and how to Nullify it.* By J. Dulberg, M.D. Manchester: William Peel. (32mo, pp. 8, 2d.)

[8] *Nosographie et Pathogénie de la Tuberculose.* Mémoire présenté au XIV Congrès International de Médecine tenu à Madrid en 1903. Par le Dr. R. Ballota Taylor. Santander: Blanchard et Arce. 1903. (Demy 8vo, pp. 90.)

[9] *Practical Physiology.* By A. P. Beddard, M.A., M.D., Leonard Hill, M.B., F.R.S., J. L. Edkins, M.A., M.B., J. J. R. Macleod, M.B., and M. S. Pembrey, M.A., M.D. London: Edward Arnold. 1902. (Demy 8vo, pp. 510. 15s.)

[10] *Hoppe-Seyler's Handbuch der physiologisch und pathologisch-chemischen Analyse, für Aerzte und Studirende* [Hoppe-Seyler's Handbook of Physiological and Pathological Chemical Analysis, for Practitioners and Students]. Edited by Dr. H. Thierfelder, University of Berlin. Seventh edition. Berlin: A. Hirschwald. 1903. (Royal 8vo, pp. 618, 16 illustrations. M. 16.)

[11] *Taschenbuch der Massage für Studirende und Aerzte.* Von Dr. Erik Ekgren. Berlin: S. Karger; and London: Williams and Norgate. 1903. (Cr. 8vo, pp. 90. 1s. 6d.)

Dr. Pilgrim's book[12] is a somewhat curious juxtaposition of two kinds of material. His aim is to establish the principles of his particular method of treatment on a physiological basis. A large portion of the work consists of matter copied from well-known textbooks of physiology, and illustrated by really excellent coloured plates; the remainder is devoted to a not wholly successful attempt to explain the therapeutics of vibratory stimulation by means of these data. Thus, for instance, on page 32, he recommends the application of his instrument to the vasomotor region in the spinal column (*sic*) which controls the circulation of the affected area or organ. He goes on to add that no concern need be felt as to whether a vaso-constrictor or a vaso-dilator nerve is stimulated in a given case, for, as he naïvely remarks, "It will be entirely safe and wise to apply the stimulation to the vasomotor area and trust to Nature, who understands her business so much better than we do, to determine which quality in a nerve, or which group of its fibres, shall respond to it." The author's object is thus to aid Nature, and it is not to be wondered at that his treatment—although he explicitly denies that it is a panacea—is calculated to cure haemorrhoids and exophthalmic goitre, to say nothing of scoliosis and dipsomania. Dr. Pilgrim lays great stress on the value of his method as applied to the stimulation of lymphatic glands, though no evidence is offered that the process which he employs has the slightest effect upon them. He hopes, moreover, to cure a large proportion of what are now supposed to be intractable mental diseases by means of his apparatus. No technical details as to its working are given; but the author believes that it may yet be efficacious in other hands than his.

Reports and Transactions.

The eighth volume of the *King's College Hospital Reports*[13] for 1901 is on the same lines as that of the preceding year, but, owing to the lamented death of Dr. Curnow, the History of the College and Hospital no longer appears. There are sympathetic obituary notices of John Curnow, Arthur Robert Wyatt Sedgefield, and George Ramsay. In addition to the registrarial reports from the various departments there are four original papers on abstract questions.

The *Reports of the Medical, Surgical, Obstetric, and Pathological Registrars*[14] of the Middlesex Hospital for 1901, which have recently been issued, differ in some suggestive particulars from previous reports, for example, in the omission of a summary of cases of appendicitis from the report of the medical registrar as the majority were transferred to surgical wards for treatment, and the inclusion in the report of the surgical registrar of a table of operations on the stomach. The volume contains an abstract of results of the *post-mortem* examination of cases dying in the special cancer wards of the hospital.

The third annual volume of the *Transactions of the Otological Society of the United Kingdom*,[15] for 1901-2, chiefly consists of records of interesting or illustrative cases, among which are no less than six cases of intracranial abscess, principally of the temporo-sphenoidal lobe. Considering the small size of the volume, it is unusually rich in illustrations. It contains 10 plates to 126 pages.

The eighteenth volume of the *Transactions of the American Climatological Association* for 1902[16] contains material of more than passing interest. The information it gives in regard to the potential health resorts in the northern part of the New World, including such districts as the different parts of California, Colorado, Arizona, and various places in the Dominion of Canada, is not only of present significance in practical therapeutics, but is also a presage of the increasing importance of America, in this relation, in the future. The volume contains in addition interesting papers on the physiological effects of residence in high altitudes.

[12] *Mechanical Vibratory Stimulation: Its Theory and Application in the Treatment of Disease.* By Maurice F. Pilgrim, M.D., First Vice-President of the American Electrotherapeutic Association, etc. New York City: Metropolitan Publishing Co. (Cr. 8vo, pp. 152, 8 plates.)

[13] London: Adlard and Son. 1903. (Demy 8vo, pp. 478. 7s. 6d.)

[14] London: H. K. Lewis. 1903. (Demy 8vo, pp. 243. 2s. 6d.)

[15] London: J. and A. Churchill. 1902. (Demy 8vo, pp. 126. 10s.)

[16] Philadelphia: Published by the Association. 1902. (Demy 8vo, pp. 374).

Successful Vaccination.—Mr. Edward Wright, Public Vaccinator for the Ollerton and Kneesall Districts of the Southwell Union, has received for the thirteenth time the extra grant for efficient vaccination.

PHYSICAL DEGENERATION.

THE CASE FOR INQUIRY.

I.—Origin of the Belief in the Existence of Degeneration in the National Physique.

The origin of the widespread belief in the existence of a degeneration in the national physique may be traced especially to the writings of Major-General Sir Frederick Maurice, who has brought to public notice observations pointing to the fact that an alarming proportion of the young men in Great Britain are physically unfit for military service.

In an article on the National Health which appeared some time ago in the *Contemporary Review*, Sir Frederick Maurice stated that out of every five men who wish to enlist and primarily offer themselves for enlistment only two prove physically fit to render effective service.

For many years it was Sir Frederick Maurice's duty to visit the Herbert Hospital at Woolwich, which takes in the sick of the Woolwich Garrison, and to which men belonging to the artillery invalided from abroad are sent. His duty consisted in sanctioning the discharge from the army of men brought forward by a medical board as no longer fit for service. Sir Frederick Maurice found that an alarming proportion of the men broke down in health as soon as they were given an average amount of work. If they were patched up in hospital the chances were that they again broke down when they went back to work. Thus the State was involved in considerable expenses and received no return. The statement that only two effective soldiers were obtained from every five refers only to men up to two years' service, and very few men found unfit within that period can be men who have served abroad. Thus it appears that 60 per cent. of men wishing to be soldiers prove unfit for military service.

Sir Frederick Maurice divides the rejections into three classes:

I. Men not considered worth taking before the examining medical officer.

II. Men rejected as the result of the medical examination.

III. Men who break down in the service itself within two years of enlistment,

Class III may be divided into:

(*a*) Men found unfit within three months of enlistment.

(*b*) Men invalided after the first three months' and up to two years' service.

The recruiting statistics only deal with Classes II and III, the bulk of the men rejected being from Class II, a very small proportion from Class III (*a*) and a much smaller proportion from Class III (*b*). Sir Frederick Maurice says:

> To me it seems a vital matter for us to inquire what is the meaning between the five and the two. Does it mean that the class which necessarily supplies the bulk of the ranks of our army consists in this large proportion of men physically unfit? If so, what are the causes of this fatal condition of things and are they remediable?

He goes on to trace the physical breakdown to heart weakness, pulmonary troubles, and rheumatism, connected with the low anaemic condition of the whole body. Then come flat feet, tending to make marching impossible, and bad teeth, causing indigestion.

Sir Frederick Maurice proceeds to analyse the cause of these diseases. Bad teeth he attributes to improper feeding during infancy and early life, ignorance of the mothers and scarcity of milk, and to early marriages of unfit parents resulting in weakly children. Does the figure of five to two imply, he asks, that the class from which the nation has drawn the bulk of its soldiers is ceasing to supply the same number of healthy men that it used to supply? And if so, why? He points to the continuous rush of the people from rural districts to towns owing to agricultural depression, and their failure to earn adequate wages when they get there because only skilled labour commands good pay, and to the presumption that neither the unskilled labourer who has been tempted into towns nor the hereditary townsman who, after two or three generations has physically deteriorated, is able to rear a healthy family. From whatever cause the physical unfitness of three out of every five would-be soldiers arises, Sir Frederick Maurice rightly says that to fold our hands and treat the question as insoluble is to commit the greatest of civic crimes, that of despairing of the State.

> It is to the condition, mental, moral, and physical, of the women and children that we must look if we have regard to the future of our land. .....If we could, in a generation or two, either by better education of the mothers, or by the creation of more favourable conditions, make all of the five as virile as the two, I think that were the better way. Those are such splendid fellows that I wish we could get more like them.

Causes of Rejection of Recruits on Inspection, with Ratio per 1,000, 1891-1902.

Cause of Rejection.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Under chest measurement	93.03	95.90	108.55	110.27	126.38	139.64	89.44	73.88	65.84	52.84	49.88	56.72
Defective vision	40.35	42.35	41.51	42.90	39.88	40.72	41.15	42.64	41.99	36.42	35.84	39.23
Under weight	32.47	27.62	39.99	39.61	36.58	35.95	45.58	34.82	33.84	28.52	25.15	21.72
Under height	26.76	32.71	33.24	28.67	28.72	28.77	24.86	21.79	20.21	15.18	13.56	11.59
Imperfect constitution and debility	18.40	9.87	9.47	5.00	3.57	4.44	4.45	5.49	5.82	4.94	3.36	3.91
Disease of veins	16.39	16.24	17.11	15.84	15.85	15.72	15.42	15.74	14.22	11.69	13.98	12.30
Disease of heart	16.06	13.87	17.74	19.62	20.71	18.76	17.67	17.26	15.69	13.15	16.74	17.33
Defects of lower extremities	15.57	17.09	14.40	17.44	18.16	18.14	18.12	17.72	13.98	10.53	10.35	12.27
Varicocele	12.93	11.85	12.85	14.25	12.28	13.07	13.07	12.29	12.16	11.21	13.89	12.59
Flat feet	11.04	9.83	12.45	14.71	13.16	17.81	16.79	12.24	12.31	9.02	11.66	12.44
Loss or decay of teeth	12.83	14.56	15.33	16.26	17.95	19.75	24.16	26.34	25.29	20.02	26.70	49.26

In a Memorandum by the Director-General Army Medical Service on the physical unfitness of men offering themselves for enlistment in the army, it is asked whether the impeachment of the national health by Sir Frederick Maurice and others has a solid foundation in fact, and whether it is true of the population as a whole, or only of a certain section of it. It is argued that in spite of the large proportion of men found physically unfit for service in the army, the public health statistics appear to show progressive improvement in the national health, while the feats of strength, agility, and endurance now so common would point at any rate to the particular improvement in the physique of the well-to-do classes.

The bad physique of the lower classes is doubly alarming, because if men are unfit for military service, what are they good for? According to the last census, 77 per cent. of the population was urban; namely, 25 millions out of 32½ millions, the town population having increased 15 per cent. during the last decade. The bulk of our soldiers are drawn from the unskilled labour class, and the highest number of rejections are among men employed in indoor occupations.

The deterioration of the physique of the urban poor is attributed to insufficient and poor quality of food, defective housing, overcrowding, and insanitary surroundings. Add to this want of thrift, illness, or death of the breadwinner, alcoholic excess, and acquired disease, such as tubercle and syphilis.

The Memorandum states that an examination of the statistics dealing with the causes of rejection by examining medical officers of men seeking enlistment, brings into prominence the fact that the majority are rejected on account of causes indicating poor physical development, namely, under measurement of the chest, height, and weight. Defective vision may also be regarded in many cases as resulting from developmental defect. The table printed above gives the statistics relating to the principal causes of rejection for the 12 years 1891-1902.

It is pointed out that all the above rejections arise from causes likely to check healthy physical development. In addition a large number of men are rejected by recruiting sergeants and recruiting officers; these men do not come up before the medical officer, and do not therefore appear in any returns.

Of the 77 per cent. of the population who it is estimated live in towns, about 25 per cent. (probably at least 6,000,000) appear, from trustworthy investigations, to be not only poor, but to live in actual poverty, so that they are not able to rear their children under conditions favourable to health and physical fitness. The bulk of men offering themselves for enlistment belong to this section of the population, and prove unfit for military service. The Director-General sums up as follows:

> The question at issue constitutes a problem by no means easy to solve. Were all the classes of the community able to provide their offspring with food and air space, a healthy race would be produced, and the proper material to fill the ranks of the army would probably be soon obtained. Information is wanted as to the causes of physical deficiency and as to the best available methods of remedying defects and improving the national health. Such an inquiry might fitly be undertaken by a commission as to the composition of which the advice of the Colleges of Physicians and Surgeons might be asked.

Accordingly on July 2nd a committee was appointed by the Royal College of Physicians of London "to consider a communication from the Home Secretary, asking for observations on a proposed inquiry into the causes which have led to the rejection in recent years of so many recruits for the army on the ground of physical disability, and the possible measures by which this state of affairs may be remedied."

The report of the College Committee pointed out that, while the Memorandum seemed to suggest that the physique in the classes of the population from whom military recruits are chiefly drawn was deteriorating, the examination of the figures given in the tables of the Memorandum itself showed that the rejections of those offering themselves as recruits had fallen from 42 per cent. in 1891 to 34 per cent. in 1902. In examining the causes of rejection it would appear that chest measurements, weight, and height have all improved in recent years; whilst the rejections from other causes, with the exception of decayed teeth, have decreased. Application was made by the College to the Home Office for information which might explain the apparent contradiction between the Memorandum and the figures given such as alterations in standard, if any, and more detailed statements as to the occupations of the heterogeneous class No. 1 ("labourers, servants, husbandmen, etc."), from whom nearly two-thirds of the number inspected were drawn, and who therefore furnish by far the largest number of rejections.

In reply to this application, the College was informed, through Mr. Cunynghame, C.B., that the College was not asked to enter into an investigation of any alleged deterioration. What was wanted of the College at this stage was the expression of an opinion whether from this point of view an inquiry was necessary or not; and that they should confine themselves to answering the questions (*a*), (*b*), and (*c*) at the end of the Director-General's Report:

(*a*) The necessity for such an inquiry.
(*b*) The ground to be covered by a Commission if appointed.
(*c*) Composition of Commission.

The College was therefore placed in the position of expressing an opinion as to the necessity of an inquiry without any adequate data upon which an opinion could be founded. The report finally sent, which was published in full in the British Medical Journal of August 8th, p. 345, pointed out that

> The College is in possession of no means for comparing the condition of the population from whom recruits are drawn at the present time with that which obtained in former years. The figures given in the Director-General's statement show that there has been no increase in the proportion of rejections, and although the numbers of those discharged from the service in 1901-2 are proportionately larger than those in former years, no details are given as to the circumstances under which the increase has taken place; and, indeed, the figures may not be strictly comparable.
>
> Any investigation which does not take into account the condition of the labouring classes in the great industries of the country must necessarily give a very erroneous impression of the physique of these classes. The increase in the rate of wages in all forms of labour to that extent diminishes the attractions of a military career for those engaged in regular labour, and leads to a proportionally larger number of the "unemployed" offering themselves for service in the army. It is obvious that the casual labourers of the large towns represent the poorest portion of the population, amongst whom the lowest standard of physique would be found; but the College is not in possession of any evidence which satisfies it that there is any physical degeneration of the urban population generally: moreover, the fact that the death-rate has declined between 5 and 6 per 1,000, and now more closely approximates that of the rural population, makes it unlikely that such deterioration is taking place.
>
> The question of what means are available for remedying existing defects in and improving the national health may, perhaps, be briefly summed up as those which tend to diminish property. At the same time, the College desires to point out that very great changes in the conditions of life have taken place during the last 50 years, the effects of some of which are not yet determined. Among these should be considered the alterations in character of the food, the compulsory education and confinement in schools of young children, and the altered conditions of female labour in towns. Could an inquiry be made into the present physical condition of the nation, it is self-evident that it would be of great value; but one dealing with a portion only of the population would be likely to lead to error. Such an inquiry would naturally include the above subjects, the experiences of the Royal Navy, and other services of the State.

The College declined to make any suggestion with regard to the composition of the Commission, but offered, if the Government decided to appoint members of the medical profession to serve on such a Commission, to suggest names in conjunction with the Royal College of Surgeons.

The reply of the Council of the Royal College of Surgeons to the Home Secretary, a carefully reasoned document, was adopted on October 15th. It was published in full in the BRITISH MEDICAL JOURNAL of October 24th, p. 1101, and for our present purpose its conclusions may be summarized as follows:—

The report pointed out that the statistics in the Memorandum of the Director-General did not support the view that the proportion of men offering themselves for enlistment who are found to be physically unfit is increasing; but the Council expressed the opinion that there are reasons for believing that, as compared with former times, most of the would-be recruits are drawn from a class physically inferior.

The report then points out that social and economic changes during recent years have raised the comparative standard of efficiency of the workmen, the standard of living and the rate of wages, and that while the better educated, the more intelligent, and the more active and industrious are attracted to the better-paid occupations, there is a large and probably growing residue more or less unfit who fail to obtain regular employment, and that it is from this residue that the army has to obtain the larger proportion of its recruits. It is added that though this reflection may be disquieting, there is no evidence that the physical disabilities of this class have increased or are increasing, while the data supplied by the Memorandum itself seemed to show rather that they may tend to diminish.

The report points out that the proportion of rejections among boys under 17 years of age, 11.2 per cent., is not a high rate, while this class of recruits affords a fair criterion of the average physique of the lower stratum of society, the very class which should manifest most improvement after enlistment under the favouring conditions of better food, better housing, and better surroundings.

The report points out, further, that while the statistics show a steady decline in the rate of primary rejections, they disclose an increase in secondary rejections, that is to say, rejections within three months of enlistment or after two years' service. Though the causes of such rejections are not given, it is considered reasonable to presume that many were due to preventable causes, physical or moral. The Director-General's table giving the grounds assigned for rejection of recruits shows a diminishing proportion of rejections for every cause except loss or decay of teeth, and it is not stated whether there has been increased stringency of late in the matter of teeth, or relaxation with respect to other physical and vital requirements.

The Council expresses the opinion that many of the causes of disability will tend to grow less, and it points (1) to the greater attention now paid in schools to the general health of children, to physical training, to the care of the sight, the hearing, and the cleanliness of the mouth and teeth; (2) to the spreading influence of various social, municipal, and philanthropic agencies for the promotion of the public health, and the strengthening of the character of the individual. It is also pointed out that many of the grounds of physical disqualification for the English army, such as defects in vision, weight, height, and teeth would in countries where conscription obtains be much less important factors in judging of the fitness of men for military service.

The general conclusion of the report is that, while there is no need for a large inquiry into the national health, much might be done in a less formal manner by emphasizing the necessity of still stricter attention to the health, feeding, and training of school children, and more especially to the care of the teeth and the arrest of threatened or early decay. Finally, the Council lays great stress upon the recommendation that as much as possible should be done to promote the health, growth, and general physical development of the young soldier by improving his environment and by the exercise of special care in the selection of the kind and quality of his food and in its preparation and preservation.

As to the composition of the proposed commission, whether it should embark into the larger inquiry into the national health or the more limited investigation of the condition of the class supplying the majority of recruits, the Council of the College of Surgeons suggested that in addition to military men the commission should contain employers of labour, representatives of the working classes, persons who have specially studied matters relating to public health, and members of the medical profession. With regard to the last-named class, the Council expressed its readiness to nominate in conjunction with the Royal College of Physicians representatives specially acquainted with the subject matter of the inquiry.

We now turn attention to the very interesting evidence given by Deputy Surgeon-General W. G. Don, M.D., A.M.S., before the Royal Commission on Physical Training (Scotland). As senior medical officer, London recruiting district, Surgeon-General Don claimed that during his 17 years in office he had a much larger experience in recruiting than any man living or dead, having personally examined over 100,000 applicants, and having therefore had endless opportunity for observing the physique of boys, recruits, and reservists.

Surgeon-General Don began his evidence by calling attention to the fact that his experience was not such as would fall to those who might conduct medical and anthropometrical examinations indiscriminately among the youthful population at large, inasmuch as would-be recruits brought before the medical officer had already undergone a rough primary selection by the recruiters, whereby those obviously undersized, or who presented visible physical defects, were largely eliminated. He laid great stress on the fact that the physical development of boys of the same age varies to a very marked extent. He had found that boys of the declared and verified age of 14 or 15 looked not more than 11 or 12, while others presented the development of lads of 18 or 19 years. He thinks that this cannot be wholly ascribed to or determined by variation in food, environment, or physical training in childhood, but rather to inherent elements of growths in individuals, whether through heredity or otherwise. For instance, in the Gordon Boys' Home the boys passed in as healthy and likely to grow to average-sized men, presented extraordinary variations in development which could only be ascribed to individual peculiarity. But it was also noteworthy that boys reared in healthy environment, with good food and judicious physical training, presented a superior development, especially in chest and weight, to those less favourably reared. Surgeon-General Don gave the following table for the average normal development of boys between 14 and 16:

Between 14 and 15 Years.

Height—Minimum, 54 in.; maximum, 60 in.; mean, 57 in.
Weight—Minimum, 70 lb.; maximum, 85 lb.; mean, 78 lb.
Chest—Minimum (quiescent), 27 in.; maximum (expansion), 30 in.

Between 15 and 16 Years.

Height—Minimum, 57 in.; maximum, 63 in.; mean, 60 in.
Weight—Minimum, 75 lb.; maximum, 100 lb.; mean, 90 lb.
Chest—Minimum (quiescent), 28 in.; maximum (expansion), 32 in.

He pointed out that among boys, weight and height, the latter chiefly from growth of the lower limbs, increased more rapidly than chest girth. Tall youths had often defective chests, short lads better ones; it would almost seem as if perpendicular and horizontal growth were carried out at the expense the one of the other. Youths of 17 were enlisted for the militia, and between 17 and 18 should be 62 in. and upwards in height, 105 lb. in weight, and should have a chest measurement of 31 in. (minimum) and upwards. Surgeon-General Don said:

> I am convinced that judicious physical and military drill, if combined with sufficient food and healthy environment, will signally contribute to the moral as well as to the better physical development of boyhood and early manhood. . . . Militia recruits often gain from 5 lb. to 10 lb. in weight and 1 in. in chest girth during a seven weeks' training.

He then wisely remarks that physical defects seen in recruits might largely be prevented or modified during the period of boyhood growth. The defects and deformities of the feet are very largely due to ill-fitting foot gear; while if skilful dentistry were employed, and the evils of oral sepsis and uncleanliness pointed out, much might be done to remedy the evil of decayed teeth, another case of rejection. Many a boy and girl, he asserted, could be saved from unsightly deformity by simply raising the boot heel of the short limb sufficiently to bring the hips into a horizontal level in walking, for it was a fact that perhaps one person in forty has one leg more or less shorter than the other. He recommended special shoes to be worn for drilling.

Surgeon-General Don laid special stress on the fact that physical training should be combined with sufficient food if good results were to be obtained. Great care should be exercised in giving physical training to underfed children, and steps should be taken, as far as possible, to see that the underfed were better fed. Training was bad unless the muscular system received sufficient food.

Surgeon-General Don, in looking back at the farce of passing recruits in 1858, when he first entered the service—no measurements, no vision tests, no stethoscoping—could not help thinking that the army was now a very much better selected body than it had ever been. The class of men offering was better than twenty or thirty years ago, and he was of opinion that there was no deterioration in the race generally, even in the urban young men. They were better fed, and the population as a whole was on a somewhat higher plane than it was forty or fifty years ago. He was absolutely certain that through education and military training, less drunkenness, and fewer petty offences, the moral tone and intelligence of the men had materially increased.

(To be continued.)

ST. BARTHOLOMEW'S HOSPITAL.

The accompanying plan is a reproduction of that to which reference was made in the annotation on the subject of St. Bartholomew's Hospital in the British Medical Journal of November 14th. It is one of the several plans which the Mansion House Committee had laid before it at its meetings in the spring, and it is also that which the Committee recommended for adoption to the governors of the hospital.



Plan of St. Bartholomew's Hospital, with proposed additions (new buildings are shaded).

From an examination of it, it is possible to gather a general idea of the alterations which it is proposed to effect, and of the way in which the acre and a-half which has so far been acquired from the Commissioners of Christ's Hospital is to be utilized. We pointed out some of its main features last week, and it will be noted that while it entails the sacrifice of the ancient church and the residential quarters, it provides a new out-patient department, a new nurses' home, new provision for isolation, and in addition five new theatres, to be obtained by adding a story to the north block. Superficially these advantages may appear considerable and the plan satisfactory, but to any one who considers the plan as a whole the question cannot but arise, "Is this to be the sole outcome of all the controversy which has taken place, and will this plan really result in a hospital which will thoroughly meet not only all the recognized requirements of the present day, but also anticipate those demands which can be foreseen as likely to be made by science in the near future?" In short, will this new hospital be not only one at which no one can throw a ready stone, but one which Londoners in the early future like their predecessors of the past can safely point out to foreigners as a building and institution thoroughly representative of British knowledge of the sciences of medicine and surgery?

We are afraid that the answer to this question must be unhesitatingly in the negative, and for sufficiently obvious reasons. The new out-patient department is undoubtedly good, but the general plan leaves, as we said last week, about 104 beds crowded on to each acre of the site, and two-thirds of these beds will be located in what now are, and have already long been, old-fashioned buildings. These main wards will, moreover, now have the added and great disadvantage of being surrounded by new buildings of greater or less elevation.

In fact, the faults of the plan are so obvious that we are entitled to inquire more particularly how it ever came to be propounded and upon what grounds the Mansion House Committee recommended it to the governors of the hospital. Turning to the report of its proceedings issued by the former body we find that it definitely committed itself to two main conclusions, and somewhat less finitely to a third. The first of these was that in the public interest the hospital ought to be rebuilt where it is, and not, as had been suggested, moved elsewhere; the second, that the hospital had managed its affairs with economy and skill in the past, and was fully justified in making a great and exceptional appeal for assistance at the present crisis; thirdly, that rebuilding of the hospital was urgently needed, and there was ample room on the present site for the provision of a hospital with every modern appliance. A *précis* of the evidence upon which the first two conclusions were founded was supplied in the report, and they are not open to dispute; but no grounds for the latter conclusion were given, and, though the opinions of the medical and surgical staff on the alternative plans are quoted, nothing whatever is said as to any evidence having been given in support of the view that "there is ample room on the present site" for a perfect modern hospital.

We should be sorry to conclude, after what has been stated, that the plan of rebuilding suggested really represents what the united wisdom of the Medical Committee of this great hospital regards as a perfect hospital, and we shall refuse to believe it until we have a definite and authoritative statement to that effect. What we can believe, however, is that the staff has simply given the plan a qualified approval, and that the plan represents, in short, a *pis aller* to which the staff has assented merely by way of making the best of a bad job when and because it was found that appeals to the governors to buy more ground were useless. Fragmentary statements which

confirm this view have crept into the press, and some distinct evidence in support of it is supplied in our own columns to-day by a letter from Dr. Henley, one of the consulting physicians.

Such evidence, however, is insufficient, and matters have reached such a pass that the medical staff of the hospital is bound in defence of its own reputation not less than for the sake of the general hospital interests of all London to state definitely, authoritatively, and collectively whether it is thoroughly satisfied with the plan put forward, or whether it considers more ground essential for the building of a proper hospital. If the answer to the former question is in the negative, the governors are not justified in appealing to the public for support, and if they do do so they are not likely to receive it. If, on the other hand, they enlarge their scheme, and put forward one which they can show has the full and unqualified approval of the Medical Committee, they ought to, and we believe will be enabled by the public to put that plan into execution even if the expenditure entailed be a very much larger one than any that has yet been authoritatively suggested. We put this issue to the Medical Committee and to the governors as one upon which the public has an absolute right to expect a definite reply, and we appeal to our contemporaries not to allow consideration of this important subject to be obscured any longer by the echo of past controversies and the discussion of by-issues.

MEDICAL MEN AND THE MIDWIVES ACT OF 1902.

[From a Correspondent.]

The new Midwives Act came into operation on April 1st of the present year; the first roll of midwives is now in preparation under the direction of the Central Midwives Board, and many women who are qualified under Section II of the Act by holding certificates in midwifery or by being in bona-fide practice one year before the passing of the Act, are seeking legal recognition and are applying for their certificates.

By reference to the rules framed by the Central Board and sanctioned by the Privy Council,[1] it will be evident that the duties and responsibilities of this new order of midwives are well defined. They are authorized only to attend normal labour,[2] and in all cases of abnormality or illness of the mother or child they are bound to decline to attend alone, and must at once advise that a registered medical practitioner be sent for.

Now, the full benefit of these regulations, which are intended to modify the evils of unskilled attendance, cannot be realized at once, and we must anticipate a long period of transition. Many midwives, however, possessing the certificates of the Central Midwives Board, will soon be practising in all parts of England and Wales, and they will often require professional assistance. In every emergency occurring during pregnancy, labour, or lying-in, the midwife must obtain the help of a practitioner, and the summons must be written on a special form stating clearly the condition of the patient and her reason for requiring medical advice.

We are now approaching a very difficult question. It will surely be generally very easy in these cases of danger and difficulty to call in the doctor; but who will be expected to pay the doctor's fee? Up to the present time no suggestions on this important matter have arisen out of the deliberations of the Central Midwives Board, and probably the Board considers that the pecuniary arrangements for medical assistance are quite beyond their official responsibilities. On the other hand, the duties of the local supervising authorities are well defined in the Act, and in some localities at least the payment of all necessary expenses has no doubt already received some consideration; but I have not yet heard of any definite proposals. Very soon the new order of midwives will be in practice, and emergencies will arise calling for medical assistance, and in many remote villages and country districts the doctor will have to travel many miles to render help.

In order to carry out efficiently the provisions of the Act, the local supervising authorities appear morally bound to make the essential arrangements for securing prompt professional assistance for the midwives practising within their areas. Section xv of the Act provides for the payment by the council of the county or county borough of any expense incurred under the Act out of the county or borough fund or borough rate, and these expenses ought to include the fees of the medical practitioners called upon to advise and assist the women practising midwifery under their special supervision. It would be a good plan if the councils would undertake to ascertain the medical men residing within their areas who may be willing to attend when summoned by the midwives, and also to learn from them what fee they would be ready to accept per case. In many places, no doubt, several medical men would be willing to undertake these duties for an annual retaining fee, but in country districts special arrangements will be necessary, including travelling expenses.

It is clear that the Midwives Act cannot be brought into successful operation without the aid of many medical practitioners, and a just and satisfactory arrangement with the profession will greatly assist the progress of this new legislation, which aims at delivering the poor parturient women of our country out of the hands of the ignorant and untrained.

[1] Supplement to the British Medical Journal, August 23rd, 1903.
[2] Regulations of Central Midwives Board, Section E, Rule 17.

PREVENTION OF CONSUMPTION.

Ireland.

The Medical Officer for Westport, county Mayo (Dr. C. L. Birmingham) has drawn up a circular pointing out the causes of consumption and the precautions necessary to prevent its spread. As registrar of births, etc., and as dispensary medical officer, Dr. Birmingham is able to distribute these circulars widely. Every person registering a birth has one of these sent with the vaccination notice, and one is also given to each person registering a death. The circular itself is very similar to others in use in various parts of this country, but it is notable for the extremely clear and plain wording. Dr. Birmingham keeps a register of all consumptives in his district, and for the past two years has succeeded in having nearly every house disinfected in which a person has died of pulmonary tuberculosis. It is to be hoped that these measures may cause a diminution in the prevalence of consumption, for according to the figures given at the end of the circular referred to, five-eighths of the deaths in the district between the ages of 15 and 50 years are due to consumption.

CONTRACT MEDICAL PRACTICE.

South Wales Collieries.

Members of the Association who may be approached with regard to accepting appointments to collieries in South Wales are recommended, before entering into any agreement, to communicate with the Secretary of the Division of the Association in which the colliery may be situated. The names and addresses of Secretaries of Divisions in South Wales are as follows: Cardiff Division—Dr. E. J. Maclean, 12, Park Place, Cardiff. Monmouth Division—Dr. W. J. Greer, 2, Chepstow Road, Newport. North Glamorgan and Brecknock Division—Dr. E. N. Davies, Pen-y-graig, Rhondda Valley. Swansea Division—Dr. M. A. Hanson, 10, Cleveland Terrace, Walter Road, Swansea. South-West Wales Division—Dr. S. G. Glanville Morris, Plas Cwmtwrch, Nantgaredig, Carmarthenshire.

BRITISH MEDICAL BENEVOLENT FUND.

The following is the third list of donations received in response to Sir William Broadbent's appeal:—

	£ s. d.		£ s. d.
Dr. P. H. Pye-Smith, F.R.S.	10 10 0	Mr. S. Evans	2 2 0
Dr. W. S. A. Griffith	10 0 0	Mr. C. J. Denny	1 1 0
Mr. B. G. A. Moynihan ...	2 2 0		

The Treasurer is grateful for the response already given to Sir William Broadbent's appeal. Unfortunately, the amount of money received still falls far short of the requirements of the Fund at the present time, and unless the resources of the Fund are largely increased, the pressing claims which winter always brings will be very inadequately provided for.

Further subscriptions and donations are urgently needed, and may be sent to the Treasurer, Dr. S. West, 15, Wimpole Street, W.

The annual dinner of the past and present students of the National Dental Hospital and College will be held at the Trocadero Restaurant on November 27th, when the chair will be taken by Mr. John Tweedy, President of the Royal College of Surgeons.

THE ETIOLOGY OF SLEEPING SICKNESS.

(With Special Plate).

THE TRYPANOSOME AND ITS INSECT CARRIER.

THE *Further Report on Sleeping Sickness in Uganda* presented by Lieutenant-Colonel David Bruce, R.A.M.C., F.R.S., Dr. A. Nabarro, and Captain Greig, I.M.S., to the Sleeping Sickness Commission of the Royal Society places the subject of the etiology of the disease on so firm a basis that it appears desirable not only to give a full account of the observations and conclusions of the report itself, but also a short summary of previous work with regard to trypanosomes—microscopic parasites—to one species of which the disease is now shown to be due. Some account of the fly by which the parasite is carried is also given.

The study of the parasite and of the fly began rather far apart, for a trypanosome was first observed in the blood of a mammal by the late Dr. Timothy Lewis, I. M. S., F.R.S., a man highly esteemed by all who knew him, whose premature death was a loss to science and especially to tropical medicine, while the "fly disease" of horses and cattle in Central Africa first became familiar through the books in which Mr. Gordon Cumming and Dr. David Livingstone described their adventurous journeys of exploration.



Fig. A.—*Glossina pallicera*, liable to be confused with *G. palpalis*. (See p. 1344.)

Four stages in the development of knowledge with regard to the relation of trypanosomes to disease may be distinguished: (1) The recognition of a trypanosome in the blood of a mammal (rat) by Lewis in 1877[1]; (2) the discovery in 1880 by Griffith Evans in the Punjab of a trypanosome in the blood of horses, mules, and camels suffering from a disease well-known under the name of surra in India, and the demonstration by Bruce in 1896 that the nagana or fly disease of horses, cattle, and some wild animals in South-East Africa (Zululand) was in truth carried by a biting fly (*Glossina*), and that the infective agent carried was a trypanosome, since appropriately named T. brucei; (3) the discovery by Forde in the blood of man of a trypanosome fully described by Dutton, and the recognition by Manson and others that the presence of the trypanosome in the blood in man caused fever and certain other more or less characteristic symptoms; (4) the proof afforded by the present report that the trypanosome when it finds its way into the cerebro-spinal fluid produces sleeping sickness, and that the parasite is carried to man by a biting fly which is a species of the same genus, *Glossina*, as that which carries the trypanosome of nagana to cattle. The fly which carries sleeping sickness is *Glossina palpalis*, that which carries nagana, *Glossina morsitans*. They are so much alike that without care the one may easily be mistaken for the other, yet the limitation of sleeping sickness to the area in which *Glossina palpalis* occurs appears to prove conclusively that its congener does not harbour the trypansome of sleeping sickness. A drawing enlarged six times of *Glossina palpalis* is reproduced from Austen's *Monograph* in the special plate in this issue (Fig. 6).

SPECIES OF GLOSSINA.

Mr. Ernest E. Austen, in his *Monograph of the Tsetse Flies (Genus Glossina, Westwood) based on the Collection in the British Museum*,[2] recognizes seven species of *Glossina*. The general description which he gives of the species is as follows:

Narrow-bodied, elongate, dark greyish-brown or yellowish-brown, dull-coloured flies, ranging in size from 7½ mm.[3] (3⅜ lin.) in the case of a small specimen of *Glossina morsitans*, Westwood, to 12 mm. (5⅜ lin.) in that of a large female of *G. fusca*, Walk.; recognizable when alive and at rest by the wings being closed flat one over the other above the abdomen beyond which they project considerably, instead of divaricate (as in the case of stomoxys) or tectiform (as in haematopota),[4] and by the proboscis (that is, proboscis ensheathed in the palpi), which in length is equal to the thorax without the scutellum, projecting horizontally in front of the head; palpi, as seen in the natural position, extending slightly beyond the proboscis, their inner sides grooved so as to form a sheath for the latter, to which in life they are applied so closely as entirely to conceal it; base of proboscis suddenly expanded beneath into a large onion shaped bulb.

The species which he distinguishes are as follows:

Glossina palpalis, the carrier of trypanosome of sleeping sickness, dark brown; thorax usually paler, with dark-brown marking on a greyish ground; abdomen generally with at least an indication of a pale longitudinal median stripe, with pale lateral triangular markings, and usually

[1] Appendix to the Fourteenth Annual Report of the Sanitary Commissioner with the Government of India, 1878. Reprinted in *Physiological and Pathological Researches*, London, 1888.

[2] Printed by order of the Trustees of the British Museum. Sold by Longmans and Co. and others. London, 1903.—15s

[3] Length measured from the face to the end of the abdomen, excluding the proboscis and wings.

[4] In a footnote Mr. Austen states that in the genus haematopota (family Tabanidae), the species of which (in England often known as "cleggs") are greedy bloodsuckers, and, though readily distinguishable by the prominent antennae, are not unlike those of *Glossina* in shape, size, and general coloration.

the hind margins of the the segments narrowly pale. Legs (except the hind tarsi and last two joints of the front and middle pairs) sometimes entirely buff-coloured (var. Tachinoides, Westw.); usually the femora for the most part or entirely dark brown, in well preserved specimens clothed with greyish dust and the tibiae yellowish. (See special plate—Fig 6—reproduced from the coloured drawing by Mr. Terzi in Austen's monograph.)

Glossina pallicera, liable to be confused with *G. palpalis*, but to be at once distinguished by the colour of the antennae, which is orange-buff. Its distribution is unknown. (See Fig. A, p. 1343, reproduced from Austen's monograph).

Glossina morsitans, the carrier of the nagana, or tsetse disease of horses, cattle, and wild animals, thorax mouse-grey, often somewhat paler in front, with more or less distinct brownish longitudinal markings; abdomen varying from drab-grey to ochraceous buff, the segments from the third to the sixth inclusive, with very conspicuous dark-brown bands, interrupted in the median line, not reaching the lateral margins, and not extending beyond the basal three-fourths of each segment, if so far; tips of the last two joints of the front and middle tarsi dark brown or black, sharply contrasting with the rest of the leg. (See special plate, Figs. 7, 8, 9, reproduced from the coloured drawing in Bruce's Further Report on Tsetse Fly Disease or Nagana. London. 1897.)

Glossina pallidipes, similar to *G. morsitans* in coloration and general appearance, but distinguishable at once by the front and middle tarsi being entirely yellow. Further, it is often distinctly larger, and appears not to avoid towns and villages, as does *G. morsitans*.

Glossina longipalpis, closely resembling *G. pallidipes*, but distinguished at once by the black tips to the last two joints of the front and middle tarsi.

Glossina fusca, found both in West and East Africa, especially in certain deadly "fly districts."

Glossina longipennis, the tsetse fly of Somaliland.

Species of Pathogenic Trypanosomes and the Diseases Associated with Them.

Laveran recognizes four diseases of animals produced by, as he believes, four different species of pathogenic trypanosome.

Nagana.—The tsetse-fly disease in South Africa, produced by T. brucei (see below p. 1350).

Surra.—A very similar disease observed in the horse, ass, mule, and camel in India, due to T. evansi, which is also capable of infecting the same species of animals as nagana, and is carried, according to Leonard Rogers, by a biting fly. The disease is met with in the North West Provinces, the Punjab, the Bombay Presidency, Assam, Burmah, the Shan States, and Tonkin, and probably in Annam and Corea. Koch, Nocard, and Rogers believe the disease to be identical with nagana. If so, it would appear to be an attenuated form.

Dourine.—This disease observed in horses in Hungary, Spain, Turkey, Syria, Morocco, Tripoli, Algeria, and in Chili and probably in the United States, is due to a trypanosome (T. rougete) which closely resembles, but is not identical with, T. brucei. The infection is conveyed only during the act of coitus. The dog, rabbit, rat, and mouse can be infected, but not bovine species.

Caderas.—A disease which attacks horses in certain parts of South America is due to a trypanosome (T. equinum), which can infect also the mule, goat, dog, cat, monkey, rabbit, rat, etc., but not bovine animals.

To these must be added a disease of cattle in which Theiler observed in Pretoria a trypanosome (T. theileri) about twice the size of T. brucei, and capable of infecting bovine species only.

The Sleeping Sickness Commission to Uganda.

The report of Lieutenant-Colonel Bruce, R.A.M.C., Dr. David Nabarro, and Captain Greig, I.M.S., now issued by the Sleeping Sickness Commission of the Royal Society, states that Colonel Bruce and Dr. Nabarro arrived at Entebbe, Uganda, on March 16th. On May 29th they forwarded a progress report to the Royal Society, which was issued some months later, and was noticed in the BRITISH MEDICAL JOURNAL of October 17th, page 1008. They were joined on May 25th by Captain Greig, I.M.S., who had been sent out to Uganda to study sleeping sickness on behalf of the Indian Government. Colonel Bruce left Entebbe for England on August 28th, leaving Greig and Nabarro to continue the investigation, and the report now issued brings the account of the work done by the Commission down to the date of Colonel Bruce's departure. The report, which is drawn up by Colonel Bruce, opens with the following summary of the conclusions which the evidence contained in the report is held to justify:

Conclusions of the New Report.

1. That sleeping sickness is caused by the entrance into the blood and cerebro-spinal fluid of a species of trypanosome.

2. That this species is probably that discovered by Forde and described by Dutton from the West Coast of Africa, and called by him trypanosoma gambiense.

3. That the so-called cases of trypanosoma fever described from the West Coast may be, and probably are, cases of sleeping sickness in the earliest stages.

4. That monkeys are susceptible to sleeping sickness, and show the same symptoms and run the same course, whether the trypanosomes injected are derived from cases of so-called trypanosoma fever, or from the cerebro-spinal fluid of cases of sleeping sickness.

5. That dogs and rats are partially susceptible, but that guinea-pigs, donkeys, oxen, goats, and sheep up to the present have shown themselves absolutely refractory.

6. That the trypanosomes are transmitted from the sick to the healthy by a species of tsetse fly, *Glossina palpalis*, and by it alone.

7. That the distribution of sleeping sickness and *Glossina palpalis* correspond.

8. That sleeping sickness is, in short, a human tsetse-fly disease.

Historical.

The report then continues as follows:

"For the sake of the future historian it may be well to point out the exact state of affairs as regards our knowledge of sleeping sickness in relation to trypanosomes when Colonel Bruce and Dr. Nabarro arrived in Entebbe on March 16th, 1903. Dr. Castellani had observed these haematozoa in the cerebro-spinal fluid of five cases of sleeping sickness, and in one of these he had also seen them in the blood.

"At the time of the arrival of the Commission he did not consider that this trypanosoma had any causal relationship to the disease, but thought that it was an accidental concomitant like filaria perstans. When he reported his observation to Lieutenant-Colonel Bruce, the latter was much struck by the discovery, and urged Dr. Castellani to pursue this point during his remaining days in Entebbe.

"Dr. Moffat, the Principal Medical Officer of Uganda, Dr. Baker, the Resident Medical Officer at Entebbe, as well as Colonel and Mrs. Bruce, worked from morning to night in co-operation with Dr. Castellani, in order to confirm his observation, with the result that, before he left England on April 6th, thirty-four cases of sleeping sickness and twelve controls had been examined, with a positive result in 70 per cent. of the former and a negative result in the latter.

"As Dr. Castellani has not entered into any detail respecting these matters in his reports, it is thought advisable to supplement his account with the above, as the true history of the discovery of the cause of any important disease must always be of interest.

"This most interesting discovery of Dr. Castellani's, which was due to his introduction of the method of centrifuging the cerebro-spinal fluid in his search for his streptococcus, has been of the utmost possible value to the present Commission. It put them at once on the right track, and led to the rapid and easy elucidation of the etiology of this hitherto mysterious disease. Without a knowledge of his observation they might have worked for months in the dark, and in truth they might even have returned to England still ignorant as to the true cause of the disease.

"After Dr. Castellani's departure for England the commission continued this line of work, with the result that the cerebro-spinal fluid of every case of sleeping sickness examined was found to contain trypanosomes."

The Commissioners express their thanks to Colonel Hayes-Sadler, C.B., Commissioner and Consul-General; Dr. Moffat, C.M.G., P.M.O.; and Dr. Hodges, acting P.M.O., Uganda; to Dr. Baker, Resident Colonial Surgeon, Entebbe; Dr. Wiggins, of Kisumu, and to the subcommissioners, collectors and other officials of the Protectorate, to the bishops and their missionaries, and to the Prime Minister and regents of Uganda.

Sleeping Sickness due to Infection of the Cerebro-spinal Fluid by Trypanosomes.

The remainder of the report is divided as indicated in the italic headings below.

1. *The Cerebro-spinal Fluid of Every Case of Sleeping Sickness taken by Lumbar Puncture during Life contains Trypanosomes.*

As was noted in our columns of October 17th, page 1008, (*a*) Castellani in 34 cases of sleeping sickness found trypanosomes in the cerebro-spinal fluid in 20 or 70 per cent., and (*b*) Bruce and Nabarro found it in every one of 40 cases. It was also pointed out that the trypanosomes existed as a rule

in small numbers. The fact that only a few parasites were found cannot be considered to militate against the theory that the disease is due to trypanosomes, since in nagana in the native goat or sheep parasites in the blood are scarce, although the disease invariably pursues its chronic course to a fatal termination. Dr. Wiggins, who examined 53 cases at Kisumu in Kavirondo, formed the opinion that the trypanosomes are much more numerous in the cases in Kavirondo than in Entebbe.

2. *Trypanosomes occur in the Cerebro-spinal Fluid of Cases of Sleeping Sickness in other Districts than Uganda.*

It will be remembered that almost all cases of sleeping sickness examined in Entebbe show the presence in the blood of filaria perstans, whereas blood examinations of cases of the same disease in Kavirondo, British East Africa, practically show no filaria.

In the same way it must have been that every case of sleeping sickness admitted to the Entebbe Hospital, from the surrounding district might harbour trypanosomes, while cases occurring in Kavirondo might be free from them.

Dr. Wiggins, who had become familiar with the methods used in demonstrating the parasites during a fortnight's visit to Entebbe, examined a series of cases for the Commission on his return to duty as medical officer of a sleeping sickness hospital at Kisumu in Kavirondo. The results he obtained were as follows:

First stage, 31 cases—trypanosomes present in 31.
Second stage, 15 cases—trypanosomes present in 15.
Third stage, 7 cases—trypanosomes present in 7.

It thus appears that the trypanosome was present in the cerebro-spinal fluid in all these cases of sleeping sickness in Kavirondo as well as in Uganda.

3. *The Cerebro-spinal Fluid taken by Lumbar Puncture from Cases of Disease other than Sleeping Sickness does not contain Trypanosomes.*

From the fact mentioned in the previous report,[5] that the trypanosomes were not found in the cerebro-spinal fluid of 15 cases admitted to hospital for various diseases other than sleeping sickness, and from the similar observation made by Dr. Wiggins on 7 cases at Kisumu, it appears that the cerebro-spinal fluid taken by lumbar puncture during life from cases other than sleeping sickness does not contain trypanosomes.

4. *The Peripheral Blood of all Cases of Sleeping Sickness also Contains the Trypanosomes.*

This point was also dealt with in the former report, and it was shown that practically all cases of sleeping sickness harbour trypanosomes in the blood as well as in the cerebro-spinal fluid.

5. *Has the so-called Trypanosoma Fever any Connexion with Sleeping Sickness?*

On the West Coast of Africa during the past few years trypanosomes have been found in the blood of several persons, and the name trypanosoma fever has been given to that disease. The parasites have not been confined to the blood of natives, but at least three white people have harboured them. No suspicion of these being cases of sleeping sickness has been entertained by those in medical charge of them. The symptoms are different. Trypanosoma fever appears to cause little or no inconvenience to those harbouring the parasite, whereas in sleeping sickness the disease is a well-marked one, and is invariably fatal. Can there be any connexion between the two?

In March last Dr. Baker, of the Colonial Service, who is stationed at Entebbe, discovered trypanosomes in the blood of five natives, and Dr. Moffat, the Principal Medical Officer, has also found them in the blood of a European.

The Commissioners believe that there is probably a close connexion between the two diseases, and give the following case in illustration:

Case xxxi.—*Karali Barigi. Male. District, Singo. Occupation, Policeman. Tribe, Mundu, Nubian.*

April 24th, 1903. Patient states that he has been six months in Entebbe. His illness began on March 10th. He asserts that at present he feels quite well, and has no headache or other symptom. There are no enlarged glands in the neck, but in the axilla they are as large as peas, and they are also enlarged in the groin. His tongue is moist and furred. His speech is fluent. Pulse 120, fair. His heart sounds are normal.

The temperature chart shows that the patient on March 12th had a temperature of 103.8° F.; it remained high on the 13th and 14th, but fell to 97° F. on the morning of March 16th; thereafter it fluctuated at or about the normal until May 15th, when the fluctuations became more marked, although there was no rise above 99.4° F. On July 27th there was a sudden rise to 101.8° F., followed by a rapid fall. On August 5th the temperature reached 102° F., and thereafter down to August 13th, when the observations ceased, fluctuated, but was almost constantly above the normal. The following table shows the presence and absence of trypanosomes in the blood and cerebro-spinal fluid:

Date.	Parasites in Blood.			Parasites in Cerebro-spinal Fuid.	
	Filaria.	Malaria.	Trypanosoma.	Filaria.	Trypanosoma.
1903.					
March 12 ...			+		
,, 13 ...			–		
,, 14 ...			+		
,, 15 ...			+		
,, 27 ...				–	–
April 17 ...				–	–
May 6	–			–	–
,, 16	+		–		
,, 19			+		
,, 26				–	–
June 24	+		+		+
July 24			+		+

Remarks.—This is an important and suggestive case. Karali Barigi was admitted to hospital March 12th, and his disease was diagnosed trypanosoma fever. After a few days his temperature becomes normal, and he remains apparently in good health, and does his duty as a policeman until the end of July, when his temperature again becomes unsettled, and he is again admitted into hospital. During all this time the trypanosomes have been found in his blood, but it is only towards the end of June that they are found in the cerebro-spinal fluid, and this corresponds fairly well with the rise in temperature. The temperature curve is also very suggestive of sleeping sickness, and it is suggested that this case of trypanosoma fever is now passing on to sleeping sickness. At the same time it must be admitted that up to the present date he shows no marked symptoms of sleeping sickness.

Another very similar case is recorded. The patient was an old Soudanese mutineer, and was admitted from gaol to hospital on March 31st with an access of fever. The temperature subsided on the fourth day; trypanosomes were found in the blood on admission and at various dates subsequently. There were no trypanosomes in the cerebro-spinal fluid at the time of admission, but they were found on July 22nd, and again on August 18th; it is suggested that this case also was going on to sleeping sickness.

In three other cases, some particulars of which were given in the previous report, trypanosomes were found regularly in the blood, but never in the cerebro-spinal fluid; the temperature of these men was constantly normal; they felt strong and well and were on duty. Upon these cases the Commissioners make the following observations:

"It will be seen that the trypanosomes, when confined to the blood, do not visibly affect the health of their native hosts. The question seems to resolve itself into either the trypanosomes found in the blood and in the cerebro-spinal fluid belong to different species, and give rise to different diseases, or they are one and the same, and if confined to the blood give rise to slight feverish symptoms, whereas if they gain entrance to the cerebro-spinal fluid they give rise to sleeping sickness. The evidence is not strong enough at present to justify a dogmatic answer to the question, but what there is points to the trypanosomes being one and the same, and trypanosoma fever the first stage of sleeping sickness."

6. *Does the Blood of the General Population contain Trypanosomes?*

"On May 18th the Commission received a telegram from the Royal Society, asking for statistics regarding the prevalence of trypanosomes in the general population (*a*) inside, and (*b*) outside the sleeping sickness area. On a little consideration the importance of such an inquiry is seen. If the trypanosoma found in the blood of Karali Barigi and the others belongs to the same species as that found in sleeping sickness, then a larger percentage of the general population inside the sleeping sickness area should be found to harbour trypanosomes than those living in the non-sleeping sickness area. In fact, if the supposition be true, there ought not to be a single trypanosoma found in the blood of persons living in a clean area. Because, if the theory that trypanosomes in the blood is merely the first stage of sleeping sickness be true, then you cannot have all the cases in the non-sleeping sickness area in the initial stage, but scattered among them you would naturally expect to find some in the more advanced stage.

[5] British Medical Journal, October 17th, p. 1008.

"In Entebbe, the hut-tax labourers supply ample material for such an investigation. There are some 1,500 employed there at present, and they come from all parts of the Protectorate. They remain at work in Entebbe for one month, and then return to their homes. During this time they are liable to contract sleeping sickness, but for the purpose of this inquiry natives from non-sleeping sickness areas, who had only been a few days in Entebbe, were chosen. Captain Greig also went over to Nairobi, in British East Africa, and examined 50 cases in an undoubted non-sleeping sickness area.

"Altogether 80 natives from the sleeping sickness area were examined, with the result that 23 were found to have trypanosomes in their blood, giving a percentage of 28.7. One hundred and seventeen were examined from non-sleeping sickness areas, but not a single trypanosoma was found."

The Commissioners submit that these results suggest that the trypanosomes found in the blood of seemingly healthy persons, and in the cerebro-spinal fluid of sleeping sickness cases are identical, and further, that these trypanosomes are in truth the cause of the disease.

7. No Difference can be made out Microscopically between the Trypanosoma of Sleeping Sickness and that of Trypanosoma Fever.

"In the previous report it was stated that it would appear that the trypanosomes found in sleeping sickness are shorter, have chromatic dots more frequently, and the micro-nucleus is situated nearer the end than in the other.

"Since the above was written, an observation has been made which would seem to do away with any significance the above differences in size and shape may seem to have. It is that trypanosomes from the cerebro-spinal fluid injected into the blood of monkeys become quite as long as the trypanosomes found in the blood of man, and the other differences also disappear. This would go to show that the trypanosomes merely find the cerebro-spinal fluid not as favourable for their growth as the blood, and on this account are stunted."

8. Are these Trypanosomes Pathogenic to Animals and can any Specific Difference be made out between them by Animal Experiment?

On this subject the Commissioners state that the only notice they have seen of the result of the inoculation of animals with the West African trypanosoma gambiense (Dutton) is that recorded by Annett in the BRITISH MEDICAL JOURNAL of February 7th, 1903. He states that:

The disease is very chronic in white rats; some appear to be refractory, others died in two or three months. Similarly also in monkeys the infection only proves fatal in about two months. Dogs seem to be entirely refractory.

The report then gives an account of the experimental inoculation of various animals with trypanosomes from the cerebro-spinal fluid of sleeping sickness cases, and from the blood of persons showing no symptoms of sleeping sickness. The animals available for inoculation were monkeys, dogs, guinea-pigs, rats, donkeys, oxen, sheep, and goats. No animal was found which showed any marked susceptibility to the disease or in which it ran as acute a course as nagana. The experiments fell into series.

(a) Injection of Cerebro-spinal Fluid from Sleeping Sickness Cases into Monkeys.

The first set of experiments was made to ascertain the effect on monkeys of the injection of cerebro-spinal fluid containing trypanosomes taken by lumbar puncture from cases of sleeping sickness.

1. Monkey, pale-faced (Macacus).—This experiment was made to note the effect of subcutaneous injection. An injection of 10 c.cm. of cerebro-spinal fluid taken *post mortem* from a case of sleeping sickness was made on March 23rd, and as no positive results were obtained a second injection of 21 c.cm. of cerebro-spinal fluid from another case was made on May 11th. Trypanosomes were found in the blood for the first time on May 28th, and the opinion is expressed that they were evidently due to the second injection seventeen days earlier. The monkey became ill and gradually grew thinner and weaker, and on June 3rd had a convulsive seizure affecting the right side chiefly—clonic spasms of the right arm and leg, with twitching of the face and eyes. On the following day it was found that the trypanosomes were numerous in the blood, but his condition was considerably improved; there was no paralysis, though the right knee-jerk was diminished. On June 5th the animal was quite lively, on June 11th the trypanosomes were still more numerous, but on June 18th they were scanty. On June 23rd it was noted that during the last ten days this monkey had shown symptoms of sleeping sickness, he sat all day long with his head sunk on his chest evidently asleep. The photograph in the special plate (Fig. 4), though representing a different monkey, shows a similar attitude. On July 10th it was noted that the appearance of sleeping sickness had become more marked, the animal sat still all day with eyes closed and head sunk on chest. Though extremely emaciated he presented no marked signs of paresis and would still climb into his box. As he sat in the lethargic condition the muscles of the arm and trunk frequently showed marked twitching, a symptom often seen in the last stages of sleeping sickness; the animal died on July 12th. With regard to the temperature, it is stated that down to May 23rd it remained normal, no observations were then made until June 3rd, but on June 5th there was a rise, and thereafter the temperature showed marked daily fluctuations, the thermometer falling in the morning in one case as low as 94.6° F. and rising at night as high as 105.4° F. The normal temperature in this monkey is 102.4° F.

Necropsy immediately after death: The body is extremely emaciated. There is an ulcer in the right groin about the size of a shilling. The inguinal and axillary glands are enlarged; the mucous membranes are pale. The right pupil is dilated, the left is normal. On opening the body the omentum is seen to be studded thickly with hard tuberculous nodules, and the surface of the liver and lungs are also seen to be tuberculous. On removing the calvarium the dura mater is found to be healthy. On the surface of the left cerebral hemisphere there is seen a caseous mass about the size a bean, which is adherent to the dura mater and evidently tuberculous in origin. The surface of the brain is pale in colour, and the vessels are only slightly injected. Unfortunately, owing to an accident, the brain was not preserved for more minute examination. Microscopical examination of blood from the heart showed numerous trypanosomes.

Upon this experiment the followings remarks are made:

"During life this animal presented the appearance of a typical sleeping sickness case. Even when in the act of eating, his eyes would close, his head fall forward on his chest, and he would sit apparently sound asleep. It was disappointing to find on necropsy that the animal was tuberculous.

"It is to be regretted that the brain was not preserved, also that no examination of cerebro-spinal fluid was made for trypanosomes. Nevertheless, when this case is placed beside Experiment 60, and the two are compared, it will be agreed that this monkey owed its symptoms to the trypanosomes and not to the tubercle.

"This pale-faced variety was brought by us from England, and none of them harbour malarial parasites, as most of the local black-faced variety do. They seem to be more susceptible to the trypanosomes than the local species."

To note the effect of injecting cerebro-spinal fluid from a case of sleeping sickness into the vertebral canal or brain cavity of a monkey experiments were made in four monkeys, one white-faced (Macacus) and three black-faced (Cercopithecus). The amount of fluid injected was in each case 1 c.cm. The following table has been compiled from the detailed reports:

		Injected.	Trypanosomes in Blood.	Sleeping Sickness.
Canal ..	Macacus	April 8th	April 30th	August 25th
,, ..	Cercopithecus	May 14th	June 4th	—
,, ..	,,	{ May 14th	—	—
		{ June 24th	July 31st	—
Brain ..	,,	April 9th	April 30th	—

B.—Experiments on the Effect of the Injection into Monkeys of Blood containing Trypanosomes from Cases Showing no Symptoms of Sleeping Sickness.

I.

The next set of experiments gave results of the highest interest.

An experiment was made on a monkey (Macacus) to note the effect of the subcutaneous injection of blood from a case of trypanosoma fever.

On April 15th 2 c.cm. of blood containing trypanosomes from a man suffering from trypanosoma fever, who down to the date of the report (August) has shown no sign of sleeping sickness, were injected. Trypanosomes appeared in the blood for the first time on May 7th, twenty-two days after injection, and were noted to be very numerous on May 14th. The animal showed no sign of being ill until July 2nd, when he appeared listless and less energetic.

On July 15th the following note was made: "For the last fortnight this monkey has presented the same picture of sleeping sickness as noted in the case of Experiment 1, monkey. He sits about all day with his head sunk on his chest, evidently asleep. He has become emaciated and to some extent puffy and cyanosed about the face." The appearance of the animal at this time is shown in the photograph reproduced in the special plate Fig. 3. From April 15th to May 6th the temperature remained normal. No observations were made from May 6th to July 2nd, when the temperature still fluctuated about normal. It began to rise on July 5th and reached 104.2 on July 7th. Thereafter the temperature fluctuated between 95.5 and 104. The animal died on July 16th. The following are the notes of the *post-mortem* examination made immediately after death:

The body is much emaciated. The pupils are equal and normal. The axillary, inguinal, and lymphatic glands are enlarged.

On opening the body there is no fluid found in the peritoneal, peri-

cardial, or pleural cavities. There are no signs of tubercle in the mesentery, spleen, liver, or lungs.

On removing the calvarium the dura mater is found to be normal. On reflecting this membrane the surface of the brain presents a striking resemblance to that found in man in cases of sleeping sickness. The convolutions are flattened; there is some injection of the superficial vessels: the subarachnoid fluid is in excess, filling up the sulci and giving them the ground-glass appearance so often described in cases of sleeping sickness. Fluid taken from the lateral ventricle and examined microscopically shows trypanosomes The brain was removed entire and preserved for future minute examination.

The heart is normal in appearance. Blood taken from it and examined microscopically shows many living trypanosomes, many of which present peculiar forms rarely met with (Fig. B.).

The lungs show no signs of tuberculosis. They are somewhat congested, otherwise normal.

The liver is congested and presents a nutmeg appearance.

The spleen is large, dark in colour, and firm in consistence.

The kidneys are normal.

The intestines appear healthy, and present nothing noteworthy macroscopically.

Upon this experiment the following remarks are made in the report:

"This is a noteworthy case and should be compared with monkey, Experiment No. 1. As far as one can judge, this animal presented the typical appearance of sleeping sickness during life, and the brain after death looked like the usual sleeping sickness brain in miniature. The organs showed no disease, so that one is bound to look upon the injected trypanosomes as the cause of death.

"But the trypanosomes which were injected simultaneously into this monkey were taken from the blood of a case of trypanosoma fever, from case 66, Tabula, who, up to the present (August), has shown no signs of sleeping sickness. The trypanosomes, although injected subcutaneously, have found their way into the cerebro-spinal fluid and given rise to symptoms which closely resemble sleeping sickness in man.

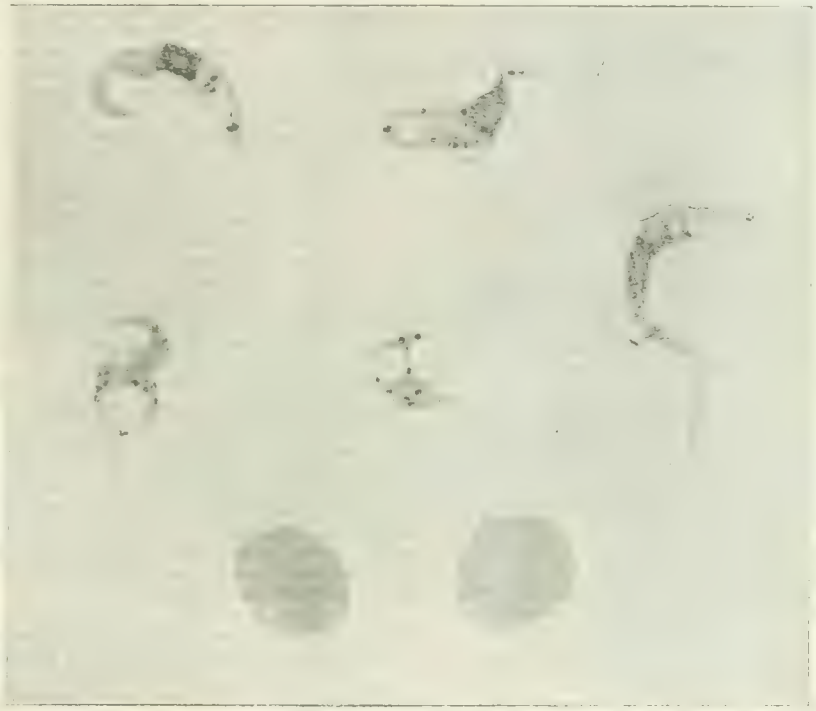


Fig. B.—Trypanosomes from heart blood of monkey dead of sleeping sickness, showing some unusual forms.

"This result is certainly suggestive, and, in our opinion, goes far to prove that we are dealing with one species of trypanosoma, and that Tabula and the others are in the incipient stage of sleeping sickness."

II.

In another monkey (Cercopithecus) 2 c.cm. of blood drawn from the same human being was injected by lumbar puncture into the vertebral canal on April 28th. The trypanosomes were found in the peripheral blood on May 7th, and in the lateral ventricles after death on July 10th. This animal did not present the marked symptoms of sleeping sickness.

III.

In another monkey (Macacus) 2 c cm. of blood from the same human patient was injected into the vertebral canal on April 28th: trypanosomes were seen on May 7th and on subsequent occasions, but not after July 1st.

IV., V.

In two experimenis blood containing trypanosomes from the human patient mentioned above was injected into the brain of a monkey through the foramen magnum; trypanosomes appeared in the blood in one case on the twelfth day and in the other on the fourteenth.

The Commissioners, in commenting upon these experiments, observe that they show that the trypanosomes derived from the cerebro-spinal fluid of a case of sleeping sickness, and those derived from the blood of persons showing no symptoms of sleeping sickness, can both give rise to a chronic and fatal disease in the monkey, which bears a striking resemblance in its last stages to sleeping sickness in man. They therefore tend to strengthen the evidence that the trypanosomes derived from the two sources are identical, and that trypanosoma fever and sleeping sickness are stages of the same disease. The symptoms of sleeping sickness were not observed in all the monkeys so treated, although trypanosomes were discovered in the blood.

Dogs.—Some experiments were made on dogs, but did not yield satisfactory results, as ankylostomiasis is very common and fatal in these animals in Uganda. The conclusion drawn from the few cases under observation is that the trypanosomes of sleeping sickness and trypanosoma fever can live for some time in the blood of the dog, and show no difference in their action, but tend to disappear sooner or later. Further, it would seem that the pup is less susceptible than the adult, just as the calf is less susceptible to piroplasma.

Guinea-pigs.—The subcutaneous injection of cerebro-spinal fluid or blood containing trypanosomes from a case of sleeping sickness was not followed by the appearance of the parasites in the blood of guinea pigs.

Other Animals.—Like experiments with the donkey, ox, goat, and sheep were not followed by the appearance of trypanosomes in the blood.

9. *Are We Dealing with One or More than One Species of Trypanosoma?*

Upon this point the report continues as follows:

"As has been shown, no morphological difference can be made out between the trypanosomes found in the cerebro-spinal fluid of cases of sleeping sickness and those found in the blood of persons evidently in good health. Neither can any difference be detected in their behaviour when inoculated into various animals. More experiments are required and more results obtained before this question can be answered unhesitatingly, but at present the evidence distinctly tends to show that we are dealing with one species of trypanosoma, and that species is probably trypanosoma gambiense discovered by Forde and described and named by Dutton."

10. *History and Distribution of Sleeping Sickness in Uganda.*

According to Dr. Moffat, C.M.G., P.M.O., British East Africa and Uganda Protectorates, the first cases of sleeping sickness in Uganda were reported by the Drs. Cook, C.M.S., Medical Mission, Mengo, in April, 1901. The cases came from Busoga, where the disease has become epidemic, having been introduced probably by Emin Pasha's Soudanese, who were accompanied by a multitude of slaves from the Congo; the disease is now widely spread around the northern shores of the Victoria Nyanza. Mr. Cubitt, assistant collector, Busoga, in a report dated June 14th, 1902, states:

It would seem to be a fairly accurate statement to make that sleeping sickness confines itself to the territories adjoining the lake, roughly speaking from a ten to twenty-mile radius of the coast, and that the people living further inland suffer in proportion to the greater or less trading transactions they have with the people living within that radius, while in those who have no trading transactions with the people of the lake there are found no traces of the disease.

The report continues as follows:

"In the opinion of the Uganda Prime Minister, Apolo, a strip ten to fifteen miles wide would cover the affected area, and any cases found further inland are imported.

"The numerous islands which lie near the northern shores of the lake are also the seat of the disease. Between these islands and the mainland, and for several miles inland, a constant interchange of commodities and intercourse between the natives takes place.

"There must be some reason for this peculiar distribution. It cannot be due to a food poison, as the natives outside this narrow strip have the same habits. Then, again, if the trypanosomes are the cause of the disease, which there is every reason to suspect, the infection cannot be conveyed in food or clothes, or directly from man to man, but most probably must be carried by some blood-sucking insect.

"This led the Commission to ask themselves the following question:

"11. *Does the Distribution of Sleeping Sickness Coincide with the Distribution of any Biting Insect*

"On the analogy of nagana a tsetse fly was suspected. But the tsetse was not supposed to be present at altitudes of 3,000 ft. and upwards, nor was it known to be found in Uganda. A short search in the Botanical Gardens, Entebbe, disposed of these objections. A tsetse fly very similar to the one met with in the fly country—Zululand—was found in numbers. For three months we have had on an average 400 tsetse flies brought into the laboratory every day by a few native children. These flies were caught on the lake shore in the immediate vicinity of Entebbe. This gave a lead. The Prime Minister and Regents were asked to meet the Commission and have the matter explained to them. They at once recognized the fly as one known to the Muganda as kivu, and said that it was found along the shores of the lake. They were supplied with several dozen nets, killing bottles and boxes, and on their part promised to have the distribution of the fly worked out. A letter was also addressed to the Bishops of Uganda, who kindly promised to obtain information from their missionaries. Every official and missionary in the country was then sent a specimen of the tsetse fly, and informed by letter as follows:

Sleeping sickness in many ways is very similar to the fly disease of South Africa. It is caused by the same kind of parasite, and is possibly carried from man to man by some insect, as the fly disease is carried by the tsetse fly (*Glossina pallidipes*). A species of tsetse fly (*Glossina palpalis*) is also found in Uganda, especially along the shores of the lake and in the islands. It is possible that this fly acts as the carrier of the infective agent of sleeping sickness. If this is so, the disease can only occur in places where the fly is found. In other words—no tsetse fly, no sleeping sickness.

In order to settle this question the distribution of this fly must be carefully worked out. To assist in this would you kindly send collections of biting flies from your district and answer the following questions:

1. Is the tsetse fly (*Glossina palpalis*) found in your district?
2. In what kind of place is the fly found—marsh, banana plantation, bank of river, shore of lake, forest, bush or open places?
3. When does it bite, during the morning, mid-day, or at night?
4. Is it numerous?
5. What animals does it bite?
6. Does sleeping sickness occur in the same place, distinguishing of course between imported cases and those which have been infected on the spot?

The best way to catch the flies is by means of a small butterfly net. They can then easily be killed by a squeeze and placed in a small envelope, with the name of the place and date of capture written on it. I may add that the natives call the fly kivu, plural bevu.

It is important that the position of the place in which these tsetse flies are found should be exactly laid down. This can be done by giving the latitude and longitude in degrees and minutes, or by saying how many miles it is from a known place in a westerly or S.S.W., etc., direction. Still better would it be to make a tracing of the district, and on this to map out the distribution of the fly and of the sickness.

It is no use trusting to report. The flies themselves must be caught and sent here for identification. The natives use the word kivu for several varieties of biting flies.

If no tsetse flies are found in the district, please send specimen of any of the various biting flies or insects known to the natives.

"During June, July, and August some 460 collections of biting flies were sent in from all parts of Uganda. As each packet came in the contents were sorted into tsetse flies and other biting flies. If the parcel contained one or more tsetse flies, a round red disc was stuck on a map over the locality from which the flies had been sent. If, on the other hand, no tsetse were found a blue disc was fixed over the spot. In the same way, and at the same time, a second map was prepared to show the distribution of sleeping sickness. That is to say, if the note on the parcel of flies stated that sleeping sickness is prevalent, then a red disc was placed over the locality, and if on the contrary no cases of sleeping sickness were reported a blue disc was affixed. Where cases were reported to have been introduced from some other locality, and to have died out without any spread of the disease in the neighbourhood, then a yellow disc was used. It is evident that two maps so prepared should show at a glance whether the distribution of sleeping sickness and *Glossina palpalis* corresponds or not. The report is illustrated by reproductions of the original maps, and these have again been reproduced to illustrate this article (p. 1349), the red discs used to mark the presence in the one case of sleeping sickness, and in the other of *Glossina palpalis* being replaced by a cross (+).

"On comparing these two maps the similarity of the distribution of sleeping sickness and *Glossina palpalis* is self-evident. The disease and the fly are limited to the shores of the lake and to the islands, excepting Busoga, where some of the crosses are seen in the centre of the district. The fly is also seen to pass up the Nile. This is probably due to the fact that the Nile is a great broad waterway, where it issues from the lake at the Ripon Falls, and may be looked upon in its physical character as an arm of the lake. The other Uganda rivers are mere swamps, full of papyrus."

As it appeared important personally to examine these so-called rivers to discover how far the tsetse fly could be traced up their valleys, Dr. Nabarro proceeded on July 4th to explore the Katonga River. He found that the fly does not proceed up the swampy river valleys, and that even on the coasts behind papyrus swamps it is absent.

A search of the peninsula on which Entebbe stands shows that the habitat of *Glossina palpalis* in the neighbourhood of Entebbe is the shore of the lake where there is forest.

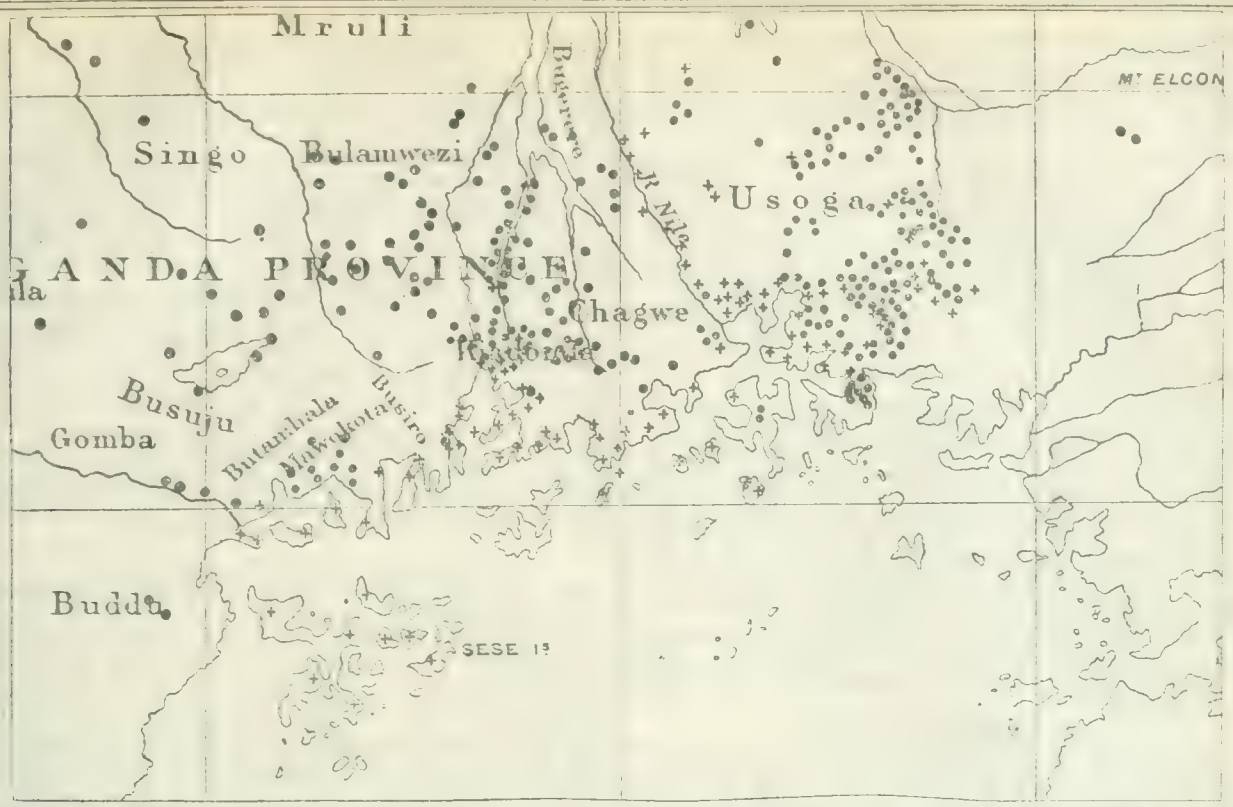
"In Uganda generally the same seems to hold good. In Busoga, on the other hand, it appears to be found inland, but what the physical characters of this province are which would account for this I have not learnt. The fly also passes down the Nile as far as Kakoge Ferry, some fifty miles north of the Ripon Falls, and it has even been received from Fajao on the Somerset Nile, and from Tengri and the Achwa River, still further north and near Wadelai.

"It is important that the distribution of this fly should be fully worked up, but enough has been done to show that the distribution of this species of tsetse fly is, like sleeping sickness, confined to the shores of the lake and the islands. It is on the densely wooded shore of the lake that the half-naked natives of the mainland and islands meet in thousands to trade in fish, bananas, earthenware, etc. If the *Glossina palpalis* can act as a carrier of the trypanosoma of sleeping sickness, the circumstances could not be made more favourable than they are for the spread of the disease.

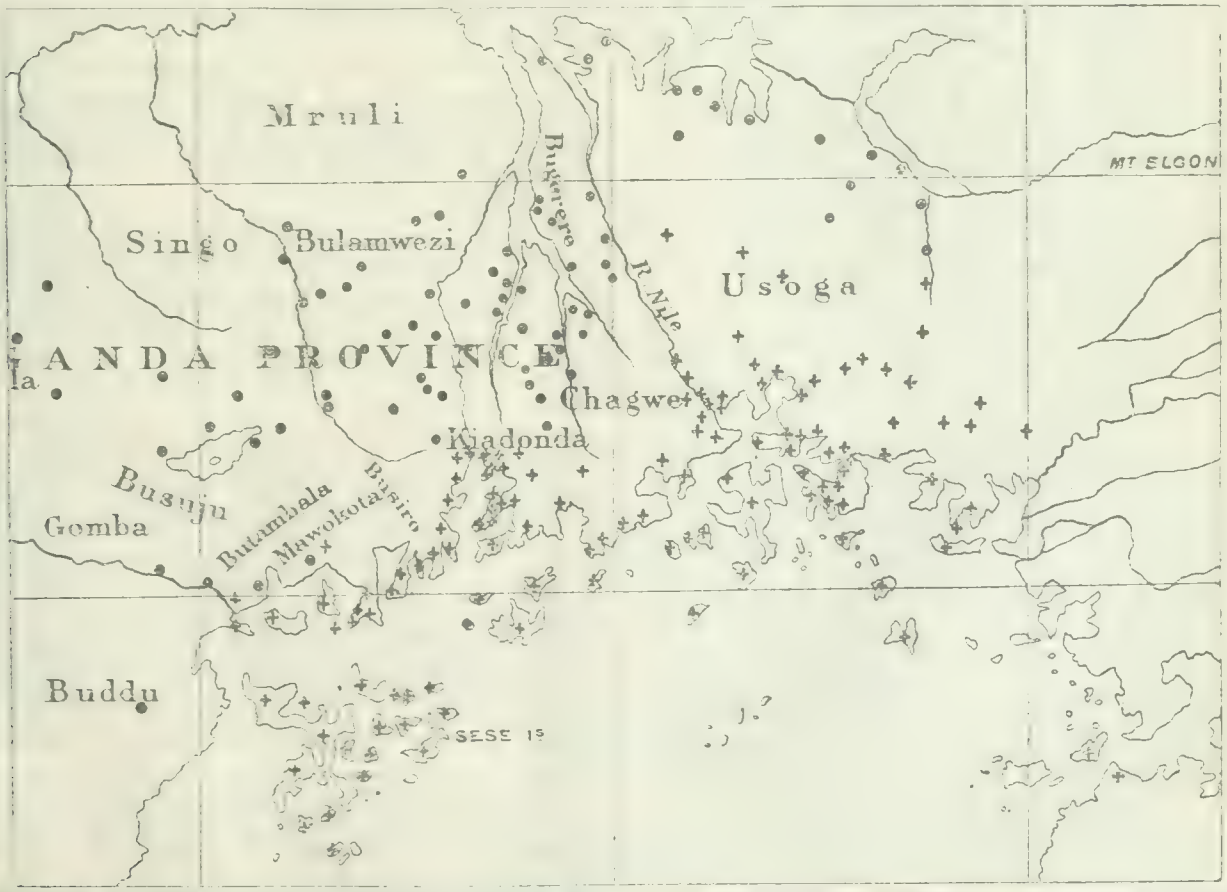
"12. *Can the Uganda Tsetse Fly (Glossina palpalis) Carry the Trypanosoma Found in Sleeping Sickness Cases to Healthy Animals?*

"The animal chosen to carry out these experiments was the monkey. These are by far the most suitable animals to work with here. They are easily procured, easily fed, and keep their health perfectly in captivity. The method used was simply to feed tsetse flies on a sleeping-sickness case, and at varying intervals of time to place the same cage of flies on the monkey. The sleeping-sickness patients did not seem to feel the bites of the flies, as they made no complaint or other signs of inconvenience. There were, as a rule, about thirty flies in each cage, but only those which filled themselves were reckoned as having fed.

"Tsetse flies in a cage were allowed to feed on a patient suffering from sleeping sickness, who did not seem to feel their bites, and made no complaint; after varying intervals of time the cage was placed on a monkey. Five experiments were made, all the monkeys being cercopithecus. The experiments are held to warrant the conclusion that *Glossina palpalis* can convey trypanosomes from sleeping-sickness cases to healthy monkeys up to at least forty-eight hours after feeding. We have seen that every third or fourth native in the sleeping-sickness area carries trypanosomes in his blood, so that the fly has plenty of material to draw from. It may be objected that the parasites are so scarce in the blood that it is unlikely the fly will get hold of them. The same objection might be urged in regard to nagana, whose trypanosoma is probably scarcer in the blood of the wild animals than is the case in sleeping sickness. No doubt cases do occur among sleeping sickness patients, though



Map showing the distribution of *Glossina palpalis* in Uganda. The crosses show places where the fly was obtained, the discs where other biting flies were obtained but not the tsetse.



Map showing the distribution of sleeping sickness in Uganda. The crosses show the localities where sleeping sickness is prevalent, the discs where it is absent.

rarely, in which the trypanosomes are fairly numerous. It is thought that they may be more numerous in the early stages when still confined to the blood than in the later stage of sleeping sickness. The observations on this point are as yet neither numerous or exact enough to warrant any dogmatic statement.

"The flies were caught in the vicinity of the hut-tax labourers' camp. These men, to the number of thousands, come to Entebbe and work for Government for one month in lieu of paying hut-tax. They live in rudely-built grass huts near the shores of the lake, about a mile from Entebbe, along the Kampala Road. Tsetse flies caught at this place and brought in cages to the laboratory have conveyed trypanosomes to three monkeys. What could be more suggestive? It is true that the trypanosoma conveyed to these monkeys may be a different species from that found in sleeping sickness, but, taking everything into consideration, the probabilities are that it is the same.

"If this is so it would be interesting and instructive to know what percentage of the hut-tax labourers develop this disease on their return to their homes. It may possibly be an extremely small figure, as these men are only exposed to the risk for a month, and as a rule their work lies in the town where tsetse flies are never found. This is very different to the case of the natives, who live all their lives on the edge of the lake, and are exposed all the year round to the infection. In our opinion if these hut-tax labourers were camped on suitable ground, there would be little or no danger in their coming into Entebbe to do a month's work.

"Up to the present we have received very few notices of the occurrence of cases of sleeping sickness in non-sleeping sickness areas supposed to have been contracted in Entebbe or on the lake shore."

The Analogy of Nagana.

We have already referred to the analogy of the etiology of sleeping sickness as now presented to that of nagana, the fly disease of the horse, mule, donkey, ox, dog, cat, and many other animals found in certain districts in South Africa. The disease is especially fatal to the horse, donkey, and dog. The opinion of Europeans has long been that this disease was produced by the bite of the tsetse fly. Bruce states that the disease is limited to certain tracts, the physical conditions of which imply heat and moisture. In spite of some contradictory evidence Austen arrives at the conclusion that tsetse flies are usually found on river banks and in the neighbourhood of water—damp, hot, low-lying localities, where more or less thick bush or forest affords cover. In these places, that is to say in fly belts, the insects are not always numerous; sometimes, however, they occur in swarms. Austen states that it is a characteristic of the order diptera (two-winged flies), to which *Glossina* belongs, for individuals of the same species to show a marked tendency to assemble in more or less close proximity to one another, although they do not exhibit anything in the shape of mutual aid. Austen concludes that the habitual food of the tsetse fly (*Glossina morsitans*) is the blood of big game, although the connexion appears to be less strongly marked in East Africa than in other parts of the regions frequented by it. The flies are not equally abundant at all seasons of the year, though the evidence upon this point is conflicting. Like other day-flying insects tsetse flies are most active during the hottest parts of the day, and appear to pass the night resting either on the ground or on the smaller branches of bushes and trees, so that a fly-belt may sometimes be crossed with impunity during the night. The flight is described as rapid and straight; the insect flops suddenly on the animal attacked and is very pertinacious. On the completion of its meal, when its abdomen is full of blood (see special plate, Fig. 9, *c, d*), its flight becomes heavy, and, according to Bruce, it at once hides itself in order to digest its meal in peace. It is probable that these flies cannot reproduce their kind until and unless they obtain a meal of blood. The native name "tse-tse" is derived from the loud buzzing sound which the insect produces when flying. When at rest after its feed it emits a peculiar sharp shrill note, probably caused by an action of the wings. According to Bruce[a] the fly does not lay eggs, but extrudes yellow-coloured larvae nearly as large as the abdomen of the mother. It has a black hood at one pole and two minute spikes at the other (see special plate, Fig. 8, *a*). The larva creeps about with a good deal of activity until it finds some cover or hole in which to hide; it then immediately begins to change colour, and after a few hours has turned into a jet black, hard, pupa (see special plate, Fig. 8, *b*). If kept in a perfectly dry place the perfect insect hatches out from the pupal case in about six weeks. Bruce's experiments showed that the tsetse fly itself could not give rise to any local or general disease in susceptible animals, but that it could convey nagana from an affected to a healthy animal by means of the blood and that the blood of animals affected by nagana might retain the power of transmitting the disease for twenty-four hours but not for forty-eight hours when dried, and for four days but not for seven when moist."

The infective agent carried by the tsetse fly of nagana (*Glossina morsitans*) was shown by Bruce to be a trypanosome which is to be found in the blood of every animal suffering from the disease, but is not present in the blood of healthy horses, cattle, or dogs. The onset of the disease is, he states, marked by a rise in temperature corresponding with the first appearance of the parasite in the blood, and a similar rise appears to occur in trypanosomiasis in man. Bruce also states that as nagana progresses there is a destruction of red blood corpuscles and a corresponding increase in the number of parasites, until they sometimes reach the enormous number of 5, 10, or 15 millions in every drop of blood.

Further Reports on Sleeping Sickness.

The Sleeping Sickness Commission of the Royal Society has also issued another volume of reports containing papers by Dr. Castellani on adult and developmental forms of the trypanosome found in sleeping sickness, by Drs. G. C. Low and Castellani on the clinical aspects of the disease, by Dr. Cuthbert Christy on the distribution of sleeping sickness, filaria perstans, etc., in East Equatorial Africa, and by Dr. Low on filaria perstans and its relationship to sleeping sickness, in which, from a study of the distribution and pathological anatomy of the disease he arrives at the conclusion that filaria perstans has nothing to do with sleeping sickness, and that the fact that it is present in many cases of the disease is merely a coincidence.

We shall hope to refer to these reports more at length on a future occasion.

THE Edmonton District Council has appointed as its medical officer of health Dr. A. W. James, a non-resident medical man, formerly assistant medical officer at Brighton, who was the only one of three selected candidates who held a Diploma of Public Health.

IT is with regret that we have to announce the resignation of Mr. F. C. Abbott of his post of Assistant Surgeon at St. Thomas's Hospital, which is due to the rare pathological condition of night blindness. This has been present to a minor degree for some time but latterly has become more marked. Our sympathy is with him at having to abandon a career which showed such promise, and we wish him success in that new branch of professional work which he intends to take up in surroundings more congenial to his welfare.

A MEMORIAL service was recently held at the parish church of Torpoint, Cornwall, on the occasion of the unveiling of a very beautiful five-light window which has been erected in memory of the late Dr. C. W. Chubb. The service was largely attended, and in the course of a short address at its conclusion the Venerable Archdeacon of Bodmin recalled the interest which Dr. Chubb had always shown in that particular church, of which he had been churchwarden for some twenty years. Many of those present could testify to the unselfish and genuine character of the devotion he had shown in the course of his medical career to the cause of suffering humanity, and the guiding point of his life had ever been the scene depicted in the central light of the window erected—the Crucifixion. The window bears at its base the following inscription: "To the Glory of God and in loving memory of Chas. William Chubb. Born iv December, 1820. Died xvii November, 1902."

A BEHRING INSTITUTE.—We gather from the German press that a project for the establishment of a Behring Institute, after the model of the Pasteur Institute in Paris, is under consideration by the German Government. The primary objects of the new institute are to be the furtherance of research in the domain of serumtherapy and the accurate preparation of serums of all kinds.

[a] *Further Report on the Tsetse Fly Disease of Nagana, in Zululand.* By Surgeon-Major David Bruce, A.M.S., Ubombo, Zululand, May 29th, 1896.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1903.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, NOVEMBER 21ST, 1903.

SLEEPING SICKNESS.

We publish elsewhere in this issue a full account of the report of Lieutenant-Colonel Bruce, R.A.M.C., F.R.S., Dr. Nabarro, and Captain Greig, I.M.S., presented to the Sleeping Sickness Commission of the Royal Society, and issued by the Society on November 20th. The article is illustrated by photographs of patients and experimental animals, and by drawings of the parasitic trypanosome, for the use of which we are indebted to the courtesy of Colonel Bruce.

The report will doubtless become a classic, for it is the record of an admirable piece of work which throws a flood of light upon a disease the etiology and pathology of which have been among the mysteries of medicine. It affords an illustration also of the way in which observations made upon a disease of animals may help to give a clue to the etiology and pathology of disease in man. As is pointed out more fully elsewhere, the first discovery that this particular variety of protozoon might be a parasite was due to the late Dr. Timothy Lewis, of the Indian Medical Service, who observed a trypanosome in rats in India in 1877. This parasite, which was subsequently studied with great care by Crookshank and by Bradford and Plimmer, does not appear to produce any symptoms in the rat or other animals into which it has been inoculated; but in 1880 Dr. Griffith Evans, chief of the veterinary department in Madras, discovered a trypanosome in the blood of horses suffering from surra, a disease which prevails extensively in India; in the following year similar organisms were found by Wittich in the blood of hamsters—a genus of mice—in Germany, an observation immediately confirmed by Robert Koch. In 1896 Bruce proved that the fatal nagana or fly disease of South Africa, which owing to its deadly effect upon horses, interfered, and is still interfering, with the development of certain regions of that continent, was due to the presence in the blood of a trypanosome, subsequently appropriately named *T. brucei*. He showed further that the disease was carried by a species of biting fly (*Glossina morsitans*) known locally as the tsetse fly, and long suspected to be in some way associated with the prevalence of nagana. When, therefore, on his arrival at Entebbe in Uganda on March 16th, Colonel Bruce was informed by Dr. Castellani that he had observed trypanosomes in the cerebro-spinal fluid in five cases of sleeping sickness, and also in the blood of one of these cases the analogy of nagana at once suggested and enforced the importance of following up this clue. Dr. Castellani very wisely did not at that time venture to assert the existence of any causal connexion between trypanosomes and sleeping sickness; indeed he appears to have thought it more probable that the disease was due to a streptococcus. Accordingly the remaining days during which Dr. Castellani remained in Entebbe were devoted by the Commission to the examination of the cerebro-spinal fluid of cases of sleeping sickness, and advantage was taken of Castellani's suggestion to use the process of centrifugalization for the purpose of collecting the parasites from the blood. In this way, before the departure of Castellani, it had been possible to examine the cerebro-spinal fluid from 34 cases of sleeping sickness, and from twelve cases not suffering from the disease, with the result that the parasites were found in 70 per cent. of the former and not in any of the latter.

After Castellani's departure the Commission, which was reinforced by the arrival of Captain Greig, I.M.S., sent by the Indian Government to study the disease, was able to establish the fact that a trypanosome was to be found in the cerebro-spinal fluid of all cases of sleeping sickness, and that it was not to be found in that fluid from patients not suffering from sleeping sickness. Though the Commission did not find the parasite in the cerebro-spinal fluid of patients not suffering from sleeping sickness, they did find it in the blood in a certain number of persons residing within the sleeping-sickness area of Uganda. It remains to be seen whether any or all of these persons will eventually suffer from sleeping sickness. It is known that other forms of trypanosomiasis in animals may run a very chronic course. The species of trypanosome which is the cause of sleeping sickness is apparently the same (*T. gambiense*) as that observed by Forde, and afterwards described by Dutton. It is known that the presence of this trypanosome in the blood may produce fever, but that this may be slight and transient. The onset of the characteristic symptoms of sleeping sickness appears to follow the entry of the parasite into the cerebro-spinal fluid after a period as yet undetermined, but undoubtedly, in many cases at least, prolonged. In monkeys, judging from the experiments reported by the Commission, the disease runs a more rapid course.

The existence of this most fatal disease in certain parts of Central and South Africa has been a source of much anxiety to those engaged in opening up these countries, and the demonstration now afforded that the disease is due to a parasite which is carried by a biting fly will be of enormous assistance to those responsible for framing measures for its prevention. If it should turn out that *Glossina palpalis* is the only fly which can carry the disease, the task of prevention will be very materially simplified; but it would be rash at the present time to assume that this is the case, although analogy would suggest that the assumption is true. There are, of course, many other points, with regard especially to the pathology of sleeping sickness, which remain to be worked out; one question to which we have already referred is whether the infection of the blood by this trypanosome always leads on to sleeping sickness. It is already known that the trypanosome may exist in the blood for long periods without producing sleeping sickness. The question arises whether the parasite may not be eventually destroyed, as apparently happens in the dog. On the other hand, it is not yet proved that the infection may not persist indefinitely in the blood, although this question, having regard to the possibility of reinfection of persons residing within sleeping-sickness areas, can only be established by observations made upon persons having the trypanosomes in the blood after their removal

from such areas. An associated question is that of the nature of the changes produced in the blood by the parasite, and information is also urgently needed as to the conditions which determine the entry of the trypanosome into the cerebro-spinal fluid. Again, the question whether the trypanosome has any extra-corporeal existence needs elucidation for it would seem that the conditions in *Glossina* are not favourable to it, and that it does not survive long in that insect.

OUT-PATIENT DEPARTMENTS AND THE REARING OF CHILDREN.

Dr. Edmund Cautley has had the courage to utter in public some criticisms on the out-patient departments for children which a good many people are repeating in private and a good many more are beginning to believe to be well founded. We do not now refer to the abuse of such departments by parents able to pay for medical advice, but rather to the ineffectiveness, in one respect, of the treatment meted out to those children who are accepted as out-patients. The respect in which the treatment is ineffective is in reality the most important factor in the successful prevention and treatment of disease in infancy, that is to say at a period of life when the whole future of the individual may be made or marred by the wisdom or folly with which it is fed.

Dr. Cautley read recently before the council of the Charity Organization Society a paper in which he pointed out in the first place how limited was the effect of the valuable work done in the out-patient departments of hospitals for the diseases of children, and in the second place offered suggestions for supplementing the purely medical work so that it should be of more than merely temporary benefit. He urged also that steps should be taken to co-ordinate the efforts of various charitable bodies with a view of assisting mothers in looking after their children by a series of home visits. He referred to the enormous mortality among children under the age of one year. In London in the years 1891-1900 out of every 1,000 born 160 died before reaching the age of one year. More than two-thirds of these deaths were due to diarrhoea caused by errors of diet, or in the mode of preparation of the food. Many died from malnutrition, while a number suffered from secondary affections, notably rickets, with its tendency to fatal lung affections, deformities, and imperfect development likely to affect the transmission of the species. "There is not," he said, "the shadow of a doubt that on the methods of feeding and rearing infants during the early stages of existence depend the health and strength of the children, and, in fact, the strength and physique of the nation. One is almost justified in asserting that the physique of the nation varies directly as its food supply during infancy and early childhood."

Much of the medical advice given to mothers is wasted owing to their ignorance, carelessness, or criminal neglect, for it is unfortunately true that one of the things the physician has to keep in mind is the question whether an emaciated infant is being deliberately starved to death from lack of food, or from food known to be unsuitable, or is dying as the result of mere ignorance on the part of the mother or nurse. Dr. Cautley recommended that printed instructions should be handed to parents when the birth of the child was registered, containing advice as to simple methods of rearing infants, great stress being placed upon breast feeding. Such a pamphlet has, he stated, been in use at the Belgrave Hospital for Children for the last two years, and has been of the utmost benefit to all concerned. He might have added that similar papers are issued at other children's hospitals.

He touched upon the duty of the State to protect infant life, and urged that a mother should be prohibited from undertaking any work which interfered with the performance of her maternal functions until the child was 3 months old. Where hand feeding becomes necessary, he admitted that the mother usually encountered much difficulty in getting clean milk, and therefore very often had recourse to some proprietary article.

With this view we most heartily agree, and believe that few who possess experience on the subject will be disposed to differ, but some will hesitate to subscribe to the suggestion that the municipal authorities should provide a suitable milk supply for the use of infants. Dr. Cautley has, however, thought out a scheme which is worthy of study. He proposes that every seller of milk should be under the direct control of the municipal body of his district, that his premises should be frequently visited, that the sources of his milk supply should be ascertained, and that the milk should be frequently analysed. In compensation for this supervision and for the benefit of the public he should receive monthly certificates as to the quality of the milk, and if the milk is up to the required standard, the name of the seller should be placed on a list of municipal dairies at which milk can be obtained, guaranteed up to the proper standard of quality, purity, cleanliness, freshness, and freedom from chemical preservatives. To bring such establishments into a working connexion with the out-patient departments of the hospitals, Dr. Cautley proposes that the authorities should provide printed forms of orders for milk on any one of these establishments, and the physicians might make use of these for cases they thought deserving of such assistance. Free orders would not be very largely required, while the advantage of being able to recommend to the mothers where to obtain this guaranteed milk would be enormous. At present it is only possible to obtain milk and other foods for the necessitous poor during illness through some of the local charitable bodies, because the assistance given by the Poor-law authorities is slow, cumbrous, unsatisfactory, and often unavailing, even in cases where food is needed rather than medicine.

To get the full effect from such a scheme he sees that the various charitable bodies which work for and among the poor, but whose efforts often at present overlap, should have to undertake to work in association with and under the general direction of the medical profession. He suggests that a system of home visitation would be instituted, and trained women appointed to visit the homes of cases selected by physicians, and there preach cleanliness, show how the foods should be prepared, and how the child should be washed and clothed. He points out also that school teachers could assist considerably by taking careful note of the health of the pupils and by dismissing for medical advice those who seemed ailing or inattentive. He argues that medical supervision should be part of the school system, and that it affords the only remedy to the spread of disease by the aggregation of children in schools, and the only true solution of the medical aspects of education.

We venture to hope that Dr. Cautley's paper may be studied by the lay members of hospital Boards. The evils

attending the methods at present followed by the milk trade were fully set out in a series of articles on the milk supply of large towns published in this JOURNAL last spring.[1] They will, we do not hesitate to say, well repay careful study, and we venture to trust that this most important subject will shortly receive from the authorities of children's hospitals the attention which its importance merits. At present we do not hesitate to say that few of these institutions are doing their duty in this respect.

BAYLISS *v.* COLERIDGE.

THIS trial has been so fully and so carefully reported in our columns that every reader will be able to follow the whole case, but it may be well to note at once some of the many lessons to be learned from it.

In the first place, let it not be assumed that the Antivivisectionist societies will henceforth be less active. The same sort of letters will be sent to any newspaper that will print them; the flood of leaflets will not abate; the itinerant lecturer with his magic lantern, the "eminent medical man" who prefers to be anonymous, and all the rest of the army, will march on as before. The societies will pursue their old tactics, asking for money, divided one against another, with their mouths full of promises and their hands empty of results.

The trial that ended last Wednesday may seem to outsiders a mere episode in a long controversy, just one more sensation in the law courts and in the papers—a passing excitement to be felt to-day and forgotten to-morrow. But this is not so; this libel was the one great event of the annual meeting of the National Antivivisection Society. It was proclaimed, with much solemnity, as a final, absolute, irresistible proof of the righteousness of their cause and the truth of their creed. Never, in twenty long years, had they found a better instrument for their work. Here at last were the eye-witnesses of the torture of a dog. That word *torture* is the catch-word of all these societies. Now, after all these years, they had got hold of hard fact—things seen and to be sworn to, clinching evidence; there was to be, after all the wearisome waiting, a decisive battle and a glorious victory all along the line. That was the meaning of the meeting at St. James's Hall. Then comes Dr. Bayliss's action, and not victory, but the shock of defeat.

If any man will read carefully, word by word, the report of the evidence in this number of the JOURNAL, he will see clearly what brought about the ruin of Mr. Coleridge's case. It was due in large measure to his own witnesses. Take, first, the evidence of his two "eye-witnesses"—if those can be called eye-witnesses who apparently did not see what was there, and saw what was not there. They were officials of a foreign antivivisection society. They had never seen such an experiment in their lives. They stood close to the dog, almost touching it, for some minutes, and never saw a tracheotomy tube standing an inch out of the trachea; or they saw it, and did not know what it was. They wrote a book called *The Shambles of Science*; it is about 200 pages long, and apparently they wrote it in half that number of days. This book no doubt did harm to Mr. Coleridge's cause, yet his case might have survived the evidence of these two ladies. But, after Dr. Bowie had said his say, it was easy to guess what the verdict would be, for witness after witness was gently led by Mr. Rufus Isaacs to help to destroy the case they had been called to support. Drifting this way and that, they wrecked the hope that had been put in them, and did more harm than good to their cause. Mr. Coleridge himself gave it the *coup de grace*.

We commend to the special attention of our readers the summing-up of the case by the Lord Chief Justice. In every word that he said were the majesty of the law, and the wisdom of it, visible to the dullest observer in court. Profoundly shrewd, absolutely fair, powerful and dominant in logic, courteous to everybody, gently humorous now and again, but mostly grave and watchful—such was the picture of Lord Alverstone throughout the case.

Here was a test case of the utmost gravity. Eye-witnesses, sworn statements, masses of evidences, and a great array of witnesses, to end in absolute defeat, for this one and only reason, that the other side told the truth. We offer to Dr. Bayliss, Professor Starling, Sir Victor Horsley, and all the witnesses on that side, not only our congratulations, but also our heartiest thanks. *Bene meruerunt de republicâ.* They have done their duty by their profession, and have done it well. For their reward, they know that they have taught everybody to doubt the argument and the literature that are the stock-in-trade of these antivivisection societies. The arguments, alas, will go on, and so will the literature. But, henceforth, the sting is gone out of the angry abusive language, and the catchword "torture" will be taken for what it is worth. The recent trial has shown once more that these societies are not to be trusted. The chief of them the society that held its head highest and had the proudest list of titled supporters, has been put to the test in the person of its chief representative, and the result of that test can hardly be misunderstood.

[1] The articles have been reprinted in pamphlet form, and can be obtained, price 6d., through any bookseller.

MEDICAL REFEREES UNDER THE WORKMEN'S COMPENSATION ACT.

By the passing of the Workmen's Compensation Act in 1897 compensation to workmen injured by any accident arising out of certain employments became compulsory. The Act limits the compensation and provides a summary method of assessing the amount. The latter object is effected by substituting arbitration for litigation. There are five possible kinds of arbitrator: a representative committee, an agreed arbitrator, the County Court judge, an arbitrator appointed by the County Court judge, and lastly, an arbitrator appointed by a judge of the High Court when an arbitrator has died or has refused to or become unable to act.[1] It is the County court judge who generally acts failing any previous settlement between the employer and workmen, and in assessing the amount of compensation he has to hear evidence bearing upon the amount the injured person was able to earn, and also upon the nature and extent of the injuries received. The medical evidence given in these cases is of the greatest importance, and the Act recognizes this, and provides for the appointment of medical referees, so that if the medical evidence is conflicting or insufficient the judge, acting as arbitrator may ask a medical referee for a report, and in case of special difficulty may require the attendance of a medical referee at any proceedings in the arbitration subsequent to the receipt of the report, but the judge is not authorized to call the medical referee as a witness.

[1] Willis's Workmen's Compensation Act.

In the appointment of medical referees great care was taken that they should not be liable to any bias in giving a report, and any medical man applying had to undertake to resign any other appointment entailing duties which might prove not to be compatible with those of a medical referee. These were defined by the Secretary of State to be: (1) Medical officer or surgeon to any factory, mine, or other industrial undertaking coming under the Act, whether appointed by the employer or by the workmen; (2) medical officer to any workmen's club or Friendly Society; (3) any regular employment by or on behalf of an insurance society which insures employers against risks under the Workmen's Compensation Act.

Medical men complying with the above conditions were appointed for every county court district, and they took office with the full belief that the Act would be carried out and that their services would frequently be required. How far this belief was justified will be shown by the following figures, which have been procured after a careful inquiry made by the Medico-Political Committee of the British Medical Association.

Three hundred medical practitioners of high standing were appointed under the Act. The Committee received replies from 230. Of these no fewer than 144 state that they have never acted. Of the remainder the large majority have only acted in a few instances. Only 26 medical referees report having given certificates under Schedule I, sec. II; 51 have furnished reports under Schedule II, sec. XIII; and 7 have served as assessors with the judge.

The cause of the non-employment of the referees under Schedule 2, Section XIII, appears to be the disinclination of the majority of county court judges to avail themselves of the services of the medical referee, and this disinclination arises probably from two causes. As a first cause may be put unwillingness on the part of the judges to admit that they are unable to assess the value of medical evidence; and second, the fact that judges cannot make any reference without having first heard all the medical evidence on both sides and being satisfied that it is either conflicting or insufficient on some matter which seems material to the question arising in the arbitration. The latter cause means an adjournment of the case and a tedious form of procedure before the report of the referee is completed. The workman injured can approach a medical referee directly and obtain from him a medical certificate which cannot be questioned, but the workman then has to pay the fee himself, and is generally unwilling or unable to do so. If the fees were paid by the State, probably many cases would be settled which now take up the time of the judge.

There is general dissatisfaction among the medical referees in regard to their position under the Act, and decided need of amendment, and it is to be hoped that the information obtained by the Medico-Political Committee, when laid before the Home Secretary, may, induce him to intervene.

ROYAL MEDICAL BENEVOLENT COLLEGE.

A MEETING of the Governors of the Royal Medical Benevolent College, Epsom, will be held at the London offices, 37, Soho Square, W., on Thursday next, November 26th, at 4 p.m. The meeting has been summoned to receive from the Council a recommendation that the institution shall in future be called simply "Epsom College" in all matters relating to the school, but that in business relating to the charitable side of the institution's work, it shall have the title "Epsom College, established in 1855 as a public school with a Royal medical foundation." The Council of the College feels that this change has become necessary owing to the widespread and continued misconception entertained not only by the public but by the profession to the effect that the College is a class and charity school. This was in no wise the intention of the founder, and the school has never been conducted on those lines. The charitable side of the institution's work will be continued, and not only will the same scale of relief be forthcoming for fifty pensioners and fifty foundation scholars, but strenuous efforts will be made to obtain and capitalize such a sum of money as will make the position of these two classes of beneficiaries safe for all time. Moreover, it is possible that in no long time a greater measure of relief may become available for a larger number of members of the medical profession who have fallen into necessitous circumstances.

THE BRITISH MEDICAL BENEVOLENT FUND.

THE appeal from Sir William Broadbent on behalf of the British Medical Benevolent Fund published in the BRITISH MEDICAL JOURNAL of October 31st has not, we regret to observe, met with as much support as the merits of the charity and the pitiable position of the unfortunate persons whom it relieves would appear to justify. The object of the fund is to give relief to medical men in temporary difficulty or distress, and to assist the widows and orphans of medical men. Appeals come to it from all parts of the kingdom, since, with the exception of the *Lancet* Fund, it is the only charity of the kind which is not local. The amount of assistance which the Fund is enabled to give by way of donations must depend entirely upon the amount of money it receives, and we are assured that the support given by the profession is lamentably small and inadequate, and that this is particularly the case in the metropolitan district. Each application for relief is dealt with by the committee on its own merits as promptly as possible, the applicants being thus saved the expense and publicity incidental to canvassing for votes. In the long list of cases in which immediate relief was given in 1902, the majority of recipients are widows or daughters of men who have, in the struggle for existence, failed to find opportunity to make provision for those they leave behind. In the majority of cases the dead man has been a general practitioner, and general practitioners know how hardly circumstances may press all his life upon a man who fails to make a good start. We also notice that some of the persons relieved have been dependent upon men who have endeavoured to make a competence by consulting practice, so that the fund should appeal to all ranks of the profession. In every profession and calling of life there must be these failures, and we would venture to support Sir William Broadbent's appeal for many more donations to a fund which we believe is well administered and meets a real want.

THE STUDY OF SLEEPING SICKNESS IN PARIS.

DR. ÉMILE BRUMPT has just brought to Paris from the Congo three cases of sleeping sickness for the purpose of study and research. The cases have been placed in the Hôpital des Dames Françaises at Auteuil, under the care of Dr. Wurtz, the use of this hospital having been temporarily assigned to the School of Tropical Medicine in Paris for clinical instruction. Dr. Brumpt, who was in Africa when Castellani's discovery of trypanosomes in the cerebro-spinal fluid of sleeping-sickness patients was announced, in imitation of Castellani, at once performed lumbar puncture, and had no difficulty in finding the trypanosomes. He then, we are told, published his belief that a tsetse fly must be the spreader of the trypanosome, basing this on the fact that this was the only biting fly found in the district under his observation. The three cases are examples of the chronic type of the disease. They present several of the usual features, and trypanosomes have been found in the cerebro-spinal fluid. A series of carefully thought-out investigations are being conducted to ascertain the relation of the trypanosome to the disease, the species of trypanosome, and the clinical symptoms and pathological lesions produced by the introduction of the parasites into different animals.

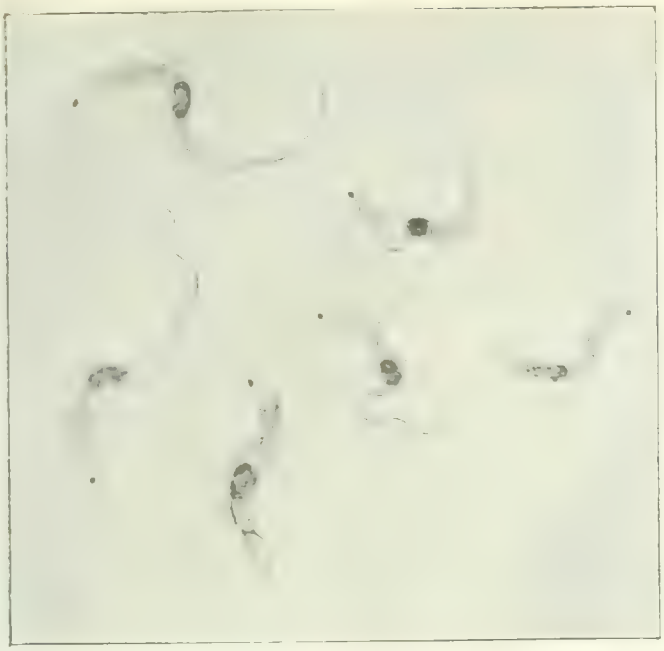


Fig. 5.—Trypanosomes of sleeping sickness (cerebro-spinal fluid).



Fig. 7.—*Glossina morsitans* (natural size), the carrier of nagana, the fly disease of horses.



a *b*

Fig. 8.—(*a*) larva, and (*b*) pupa of *Glossina morsitans* (natural size).



Fig. 6. *Glossina palpalis*, male (× 6) carrier of the trypanosome of sleeping sickness.



Fig. 9.—*Glossina morsitans* (× 3): (*c*) before feeding; (*d*) after feeding, showing distended abdomen at *a*.



Fig. 1. Boy, aged 16, from a photograph taken two days before death.



Fig. 3.—Monkey suffering from sleeping sickness produced experimentally (day before death).



Fig. 2.—Boy, aged 10, from a photograph taken fourteen days before death.



Fig. 4.—Monkey in last stage of sleeping sickness experimentally produced.

A DIPLOMA IN TROPICAL MEDICINE.

IBRIDGE is, we believe, the first University, at any rate this country, to seek to meet the needs of medical ctitioners who may intend to practise, or may be called n to practise in tropical Colonies or in India by pro- ing to establish a diploma in tropical medicine. The posal was approved by Mr. Chamberlain on behalf of Colonial Office, and by Mr. Brodrick on behalf of the r Office, before those Ministers retired from these ointments. As will be seen by the report of the cial Board for Medicine published at p. 1379, that y has recommended the Senate of the University nstitute an examination in tropical medicine and iene relating to the nature, incidence, prevention treatment of epidemic and other diseases prevalent in ical countries, and to grant a special diploma to suc- sful candidates. We observe that the regulations lay n a curriculum which would comprise a course of labora- instruction in pathology, including parasitology and teriology in relation to tropical diseases, a course of ical instruction at a hospital in which cases of tropical ases are received, and a course of instruction in hygiene in methods of sanitation applicable to tropical ntries. We believe that this is a move in the right ction, and the circular recently issued by the Colonial e proposing that all medical men employed by onial Governments shall, before proceeding to their ointment, be required to pass an examination or to obtain rtificate of proficiency in tropical medicine appears to icate that the Colonial Office will be prepared in time nsist upon a diploma, such as that which Cambridge proposes to institute. The report has not yet been ussed or voted upon by the Senate, but it is thought able that the principle will be adopted.

SEEING AND PHOTOGRAPHING WITH THE MICROSCOPE.

APER entitled The Helmholtz Theory of the Microscope, d recently before the Royal Microscopical Society by J. W. Gordon, deals for the most part with optical blems too abstruse to admit of being set forth intelli- y in a summary. But the outcome of the con- rations therein advanced are matters of practical ort to those who, without concerning themselves with optical improvement of the instrument, wish to use apparatus furnished to them intelligently and to the purpose. It is pointed out that, when using an ective of very wide angle or high numerical aperture, by no means always, or even generally, are getting the le practical advantage we imagine; for the iris of the acts as a diaphragm, and, if an ocular of low power be loyed, cuts off a material amount of the outer part of beam of parallel—or approximately parallel—rays, so those entering the objective at the widest angles wasted altogether. From this it follows that we may ease the power of the eyepiece without any apparent of light until we reach such a power that the beam ansmits is no larger than the aperture of the pupil. in, without entering into details as to the cause, n very high magnification and bright light is employed, get the conditions under which every tiny speck of t on the eyepiece, and every trivial opacity in or on the casts a strong shadow on the retina, and the result is speckly, dotted field obscuring fine structure. If ead of viewing the aërial image we catch it on fly-ground glass the dispersion which takes e removes these shadows; but, on the other d, introduces the texture of the ground glass. I if we set the ground glass, which may a very finely ground cover slip, oscillating, its texture ppears and the field is cleared up. For visual pur- s the oscillation, which is preferably motion in a circle n oval, must be very rapid, but for photographic pur- s it need only be slow, about ten oscillations a minute. he apparatus shown it was worked electrically, but of se a clockwork motion would do as well. The photo- hs exhibited showed great improvement by the inter- vention of this ground glass. It is also pointed out that some of the optical difficulties which interfere with definition may be got rid of, or at least reduced to a minimum, by placing a screen perforated by only a small hole in front of the sources of light. By this means the whole field will not be illuminated, but the definition will be improved; it can be so arranged that the spot of light may be made to travel over the different parts of the field. Another interesting suggestion has relation to photography only. Instead of using a projection eyepiece, which involves a total length of apparatus often amounting to 3 ft. or more, the image formed by the principal objective may be taken up by a second objective of lower power, an arrangement tantamount to using two microscopes in tandem. But if this is done, both objectives can be fitted into the same tube, which need only be some 5 in. longer than the usual body. Thus the whole thing is solid, and the difficulty of vibration, so troublesome in high-power photography, is done away with; the author is sanguine enough to think that with such an apparatus photomicrography could be carried on on board ship.

APPENDICITIS.

A VALUABLE tabulated monograph on appendicitis in pregnancy and childbed has been prepared by Dr. Boije, of Helsingfors,[1] based on all cases which he could find recorded in literature. He divides them into (1) cases in which the existence of appendicitis was proved by operation or necropsy, (2) cases in which it was diagnosed on clinical evidence alone, and (3) a series in which acute appendicitis set in during the puerperium. The first two classes are important to distinguish, for diagnosis of inflammation of the vermiform appendix in pregnancy is often very difficult, and, where symptoms are mild, often impossible. There is no evidence that pregnancy is a predisposing cause of this complication, and pains in the right iliac fossa, especially in early pregnancy, are very often caused by inflammation or congestion of the right appendages. Dr. Boije gives full clinical histories of cases under the care of Professor Engström, including many in which pregnancy occurred in patients after removal of the appendix. Pregnancy, according to these observations, did not prejudice appendicitis unfavourably, in many of the proved cases the local pains were mild. On the other hand, the complication in question gravely affects the pregnancy, abortion and premature birth being relatively frequent, though by no means invariable. An operation was performed in 31 cases, and in no less than 14 death ensued. Abortion occurred after operation in 18 instances; these cases were mostly severe. The conclusion is that inflammation of the appendix should be treated during pregnancy on the same principles as in men and in non-gravid women. It may be worth while to add that M. Albert Martin [2] reports an undoubted case of appendicitis due to the presence of segments of taenia in the appendix. A girl, aged 23, had several characteristic attacks, for which he operated. The appendix was not adherent; as it was being divided in the usual way two segments of taenia fell on to the dressings; they were clearly living. A small cyst of the left ovary was removed. Recovery was speedy. The presence of the taenia had caused inflammatory thickening of the walls of the appendix. A few days after the operation a large dose of Tarnet's peletierine was given and a long tapeworm was expelled; it was a taenia saginata, better known by the now discarded name T. mediocanellata. This seems to be the first time that a taenia has been discovered in the diseased appendix. M. Martin observes that nematodes have long been known as a cause of appendicitis. M. Metchnikoff published a valuable series of observations on this subject in 1901, and last year M. Lannelongue published statistical tables showing that out of twenty-one patients with appendicitis three were infested with trichocephalus dispar, one with trichocephalus and ascaris lumbricoides, one with oxyuris vermi-

[1] Ueber Appendicitis in Schwangerschaft, Geburt und Wochenbett. *Mitteilungen aus der gynäk. Klinik des Prof. Engström*, vol. v, Pt. I–III: vol. vi, Pt. I and II. (Berlin: Karger. 1903.)

[2] *Bull. et Mem. de la Soc. de Chirurg. de Paris*, 1903.

cularis and ascaris, and one with oxyuris alone. In the other cases the nematode lay in the appendix, whilst the intestinal tract appeared to be free from it. Thus intestinal worms are not so innocent as they are widely supposed to be, for besides the cases detected and tabulated by authorities, in a large number, especially where no operation was performed, the parasite must have escaped detection.

THE ALLEGED DESECRATION OF THE DEAD IN SOUTH AUSTRALIA.

The Ramsay Smith inquiry at Adelaide is now completed. A few details respecting it filtered over in the form of telegrams some time ago, but they gave no conception of the intensity of the interest which the matter and all its surroundings excited in Australia. The papers in that quarter of the globe were full of it, and it was even stated that the stability of the Government to some extent depended upon the issue of the case, since the person around whom interest centred was believed to be the protégé of an active politician who had recently fallen out with his colleagues and resigned. It was by this gentleman, then at the head of the Government, that Dr. Ramsay Smith was brought out from England to Australia under circumstances fully detailed in our columns at the time. Since his arrival in South Australia Dr. Ramsay Smith seems to have had office after office thrust upon his willing or unwilling shoulders. Thus he appears to have held, and to be now holding again, the offices of city coroner, chairman of the Central Board of Health, inspector of anatomy, vaccination officer, and physician to the isolation wards of Adelaide Hospital, and to enjoy at the same time the right to practise as a consulting physician, and to be frequently employed by the Government as a medico-legal expert. It is this curious accumulation of duties that was apparently the primary cause of the unpleasant position in which Dr. Ramsay Smith recently found himself, and from which he has emerged after a long inquiry, held not to test the legality of his actions, but to determine whether his conduct had been such as to unfit him for continued employment in the Civil Service. The circumstance which immediately led to the inquiry, so far as can be gathered, was that it became publicly known that Dr. Ramsay Smith was an active collector of museum and anthropological specimens and that he was obtaining some specimens at least from bodies to which he had access in one or other of his various official functions. He had shipped home to Sir W. Turner a skeleton etc., obtained in this way and the suggestion was made that certain of his actions were improper in themselves and doubly improper in view of his position as coroner, inspector under the Anatomy Act, etc. In the event the Board appointed to inquire into the matter completely exonerated him, but in doing so was, if we may judge by its published report, moved by a somewhat remarkable conception of the ordinary practices of medical men in their treatment of the dead and to have put a very generous interpretation upon what a medical man may do in the real or supposed interests of science. At the same time they put an interpretation upon the local Anatomy Act which it can scarcely be supposed it was ever intended to bear by those who framed it, and a distinction more remarkable for philosophic subtlety than for practical common sense was drawn between—so to speak—the responsibilities of Dr. Jekyll at one moment and his actions as Mr. Hyde five minutes afterwards. Thus it was practically ruled that all the machinery and provisions of the Anatomy Act for the protection of the dead applied only to the prosecution of dissections and the treatment of bodies inside recognized institutions for anatomical study and research, and that outside such a place a medical man was at liberty to treat a body, openly or secretly, in any way he pleased so long as no one raised any authoritative objection. At the same time it was ruled that although it might be the duty of Dr. Ramsay Smith as coroner to protect the bodies of the persons on whom he held inquests, his responsibility ceased as soon as he had signed a burial order, and thereafter, in another capacity, he was entitled to treat a body in any way he pleased. While, therefore, Dr. Ramsay Smith is very much to be congratulated upon the result of the inquiry as regards his official position, we are afraid it cannot be doubted that the progress of scientific study in Australia will be seriously damaged by the whole affair and the unpleasant disclosures made. Nor will many people be found to differ from a statement made by the Attorney-General in an interview to the effect that if the view taken by the Board of Inquiry as to the meaning of the Anatomy Act is correct, an immediate amendment of its clauses is required, or dissent from the view expressed by the Board itself that the aggregation of so many conflicting duties on the shoulders of one official is undesirable in the public interest.

THE LATE MISS HICKMAN, M.D.

No one who has followed and fully understood the admirable scientific medical evidence given by Mr. Pepper and Dr. Gardiner at the inquest in the case of Miss Hickman can do otherwise than concur with the verdict of the jury, which fully set out was as follows: "We find that on October 18th, 1903, Sophia Frances Hickman was found dead in the Sidmouth Plantation, and that she died from morphine sulphate, self-administered at a time when she was temporarily insane. "Whatever may have been the shortcomings of the police in respect to the non-discovery of the remains during the two months' interval which elapsed from the date of the disappearance from the hospital of Miss Hickman, it must be acknowledged that the evidence which they presented at the inquest both as to the cause of death and the surrounding circumstances was clear and precise; the facts were mastered and marshalled in the most excellent and judicial manner, and neither pains nor cost were spared to bring the exact issues before the jury. It has now been made quite clear that Miss Hickman, though apparently in good physical health, was not mentally in a fit condition to assume even the slight responsibilities which were thrown upon her in her capacity of junior resident at the Royal Free Hospital, and that the strain was too much for her. It has been assumed by one of our lay contemporaries that there is a moral to be drawn from this sad case, and that this moral is that women should not be exposed to the strain to which Miss Hickman succumbed. We fail to see that this contention is justified, as unfortunately we have too many recorded cases in the history of legal medicine in which male practitioners have taken their own lives owing to being unable to endure the responsibilities which had been thrown upon them in the course of their professional work. Women have for a long period now been members of the medical profession with great credit to themselves, and to suggest that all women are unfit to practise medicine because one of their weaker sisters has fallen by the way and failed in her self-appointed task is to draw a false conclusion from the particular to the general. It is too well known that many a brilliant student in arts, science, and medicine has failed in after-life to do justice to his earlier reputation. It may be that his student days have been absorbed in theoretical studies, and that nothing is left to lighten the practical work which succeeds graduation, and thus a state of over-training induced which makes for non-success in the hard race for life. Whether this was the cause of Miss Hickman's failure to bear the strain of her medical career we cannot of course assert; but the facts as deduced from the evidence given at the inquest are not incompatible with this view. The sympathy of the public and of the medical profession will be with the sorrowing family left to mourn the loss of daughter and sister whose affectionate disposition all unite in praising. There is one small measure of consolation in this case, and that is that the mystery which engaged the attention of the world for so long has now been cleared up, and that the suggestion of foul play which was made repeatedly, even by members of the medical profession, is now proved to have had no foundation.

MEDICAL COURTESIES.

A correspondent writes to complain that our medical schools do little or nothing to instruct senior students in the practice of medical ethics and those courtesies which as he says are so invaluable in the relations between members of our profession. He relates two instances of discourtesy he has recently experienced, both from comparatively young men. One of these was a gentleman who asked him for a testimonial for a public appointment which was duly sent, but although three weeks have since elapsed it has not been acknowledged in any way. The other instance he describes in the following way: "A., a physician who practises in England, visited during his summer holiday a near relative living in a Scotch town, who was said to be suffering from an obscure hepatic disease. The medical man in attendance, B., was away on his holiday, and A., although his opinion was asked by the patient, declined without the knowledge of B. to make an examination or state any opinion. What he did was to try and cheer the patient by mentioning certain contingencies which, if they happened in her case, would be of favourable omen. On returning home A. wrote a friendly letter to B., in which he alluded to certain lines of treatment he had found very useful in non-malignant liver disease of a certain kind, and saying how anxious he was to know B.'s opinion regarding the case. This letter never received the slightest acknowledgement. About five weeks later A., learning that his relative was much worse, wrote a polite note to B., asking him if he would kindly spare a few minutes to let him know how the patient was, and what his own view was of the case and its progress. This note, like the other, was never acknowledged. The patient is now dead, but B. has never written, and A. is still in ignorance of what his relative, to whom he was much attached, died. A. would ask what the verdict of the higher medical opinion is regarding the conduct of B." We admit that there is too much ground for our correspondent's complaint, but we do not think it would be possible in a medical school to teach effectively respect for what some people may regard as business habits and others as the ordinary courtesies of life. We know that many practitioners who are remiss in such matters excuse themselves on the ground of the pressure of daily work and the difficulties of finding time for correspondence, and there are probably very few who would not acknowledge and feel regret for such omissions as those of which our correspondent complains. While undoubtedly many practitioners are very much occupied, we believe, these oversights are more frequently due to want of business habits than to either want of time or wilful discourtesy. It is a good rule to answer all letters on the day they are received, for correspondence has a terrible way of accumulating, and is much less easy to grapple with when it takes the shape of a formidable pile of three or four days' standing.

RESPONSIBILITY FOR ACCIDENT.

A case which was heard in the Court of Appeal last week shows that howsoever a jury may sympathize with and award damages to a person who has been the victim of an accident, the Court can always set aside the verdict if it is against the weight of evidence. In the case in question an action was brought by a schoolboy against the chairman and the Committee of Management of the South Marylebone Central Day Schools, and the headmaster, to recover damages for an accident alleged to have been caused by their negligence. It appeared that the plaintiff, while playing in a cloister which was sometimes used by the boys as a playground, stumbled against another boy, who, under the direction of the science master, was carrying a flask of vitriol in order to throw it down the sink. The negligence alleged on the part of the defendants was that they allowed the vitriol to be carried in an unprotected glass flask held in the hand through the cloister at a time when it might be reasonably supposed that other boys would be playing there. The jury awarded damages £50, although evidence was called to show that the vitriol was in charge of a monitor of the science class who was well acquainted with its dangerous properties, and although it was shown that at the time of the accident the plaintiff had no right to be in the cloister. The Court of Appeal came to the conclusion that there was no evidence of want of reasonable care on the part of the headmaster fit to be left to the jury. If a verdict of this kind were allowed to stand the difficulties in the way of technical education would be very greatly increased.

THE ACCIDENT TO LORD KITCHENER.

The news recently received from Simla that Lord Kitchener had been the subject of an accident naturally created much concern, but since it has become known that the injury which he received consists of a broken leg the circumstance has been treated as of much less eventual importance than the facts, as at present known, appear altogether to warrant. The telegrams contained a great deal of information as to the circumstances under which the accident occurred, and from these we know that Lord Kitchener was riding alone through a dark tunnel on the road between Simla and a country bungalow, that he was thrown from his horse either immediately before or immediately after the occurrence, which actually caused the fracture, that he lay unattended for some time, and that he was subsequently moved into Simla by some coolies in a native vehicle. None of these facts are in any way a favourable prelude to the successful treatment of a fracture of the lower limb, and as to the exact nature of the injury we have so far very little information indeed. While the telegrams state that both bones were fractured and that the fracture was "clean" and above the ankle, we do not know whether the injury was due to direct or indirect violence, nor can we conclude whether the fracture is transverse of both bones, as is likely to be the case on the first supposition, or an oblique fracture of both bones but at different levels such as commonly results from indirect violence. A knowledge of all these facts is essential before any attempt can be made to assess the extent to which this unfortunate occurrence is likely to interfere with the performance by Lord Kitchener of the duties which lie immediately before him, such as supervision of the approaching operations in Thibet, and the inconvenience which it is likely to occasion him at a later period, both of which matters are of very decided importance to the public. Oblique fractures, it may be noted, commonly give rise to a good deal of difficulty in treatment, and not rarely result in some degree of permanent lameness, while transverse fractures from direct violence have an unpleasant tendency to become compound, especially if a patient is moved about by unskilled persons, as unfortunately was the case in this instance. In a man of Lord Kitchener's age and physique, and especially in view of the fact that he has recently returned in what must be hard training from his long expedition along the frontier, no danger to life need fortunately be anticipated; but nevertheless, in view of the points to which we have referred already, reception of further news cannot be awaited without a certain amount of anxiety. In connexion with the matter, a paper which was read at the last annual meeting of the British Medical Association at Swansea is not without interest. In this paper, which was published in the British Medical Journal of October 10th, page 902, Mr. R. W. Murray attempted to estimate the average length of time for which a simple fracture of both bones of the leg incapacitates a man of the wage-earning class from earning his living, by analysing a very large number of cases in which he had kept full notes. He found that in cases of transverse fracture the utility of the limb was completely restored, and the men in every way capable of doing their work after the lapse of from three and a-half to four months. In oblique fracture, on the other hand, the duration of incapacity for work averaged seven months, and many of the men then still complained of weakness and pain in the limb. Lord Kitchener is, fortunately, a man of a very different physique to that of the majority of the men from whose cases these observations were drawn,

but he not rarely does work which is as physically exhausting as that of any labourer, and we should like to have more assurance than we at present possess that he will continue to be able to do it without inconvenience to himself.

THE EPIDEMIC OF SMALL-POX.

The recent course of the small-pox epidemic in the North of England and the Northern Midlands has been of a varying, but on the whole of so uneventful, a character that we have seen no occasion to publish any notice respecting it for a good many weeks past. None of the affected places can be said to be entitled at present to close its small-pox hospital doors and relax its vigilance, for in most places of importance as soon as a paean of praise has been sung a fresh case crops up or a new infected tramp arrives in the workhouse or at a common lodging-house. The whole problem of small-pox epidemics is becoming more and more a question of how to deal with vagrants and how to prevent the conscientious objector selfishly providing fuel for the vagrant tramp to light. If the whole population were properly vaccinated and revaccinated the infective tramp might wend his uncleanly way at will. As things are, however, the tramp is a constant and apparently never-ending source of danger to those who have not availed themselves of all the protection which effective vaccination provides them, as well as a cause of immense expense and worry to local authorities who have been slack in past times in enforcing compliance with the law or who are cursed with an unusual proportion of conscientious persons in their midst. The worst feature perhaps of the epidemic in its latest phase is that it has at length obtained a certain amount of hold upon some Scottish towns. Some 25 cases have been reported from Scotland during the past fortnight. In Scotland, therefore, vaccination is the order of the day and antivaccination lectures the amusement of the night. The leaders of the campaign, judging from the newspaper reports, appear to have reserved some of their very tallest and most blood-curdling stories for Scottish consumption; and but for the disgust which blatant suppression of the truth and unblushing suggestion of its reverse must ever create in any ordinary person's mind, some of the reports of lectures would be very amusing reading. Fortunately there are still many very level-headed and clear-minded persons in Scotland, so that the antivaccination campaign, actively as it is being conducted, is not likely to produce much result.

ST. BARTHOLOMEW'S HOSPITAL.

The plan upon which it is at present proposed to rebuild St. Bartholomew's Hospital is reproduced elsewhere in this issue, and is well worthy of the attention of those who take an interest in the great City hospital. The issue is now for all practical purposes narrowed down to that of upon what plan should the hospital be rebuilt. It is perfectly certain that, whether well rebuilt or badly rebuilt, the hospital will be rebuilt where it is; and that for that purpose assistance from the public will be required, and to a greater or less extent will be afforded. The donation of £1,000 made by H.M. the Queen and her gracious acceptance of the position of first Lady Governor has given the rebuilding fund a good start; if the governors rise to the occasion and put forward a plan which is comprehensive and satisfactory there is little doubt but that the public will respond. If the scheme of rebuilding finally adopted by the governors proves satisfactory a Mansion House appeal will be fully justified, for the occasion is altogether exceptional. By economical and skilful administration of its endowment, this hospital has managed to live within its income for 150 years and thus stand altogether out of the way of all other charitable institutions, but a time has come when its plant is worn out. This will inevitably now have to be replaced, and it is to the interest of every hospital in London alike that it should be speedily replaced as the result of a special and exceptional appeal, and that the hospital should not be forced by the expenditure of its income-yielding capital to join the ranks of the chronic beggers. There is therefore no true clashing between the interests of this hospital and those of any other. The future of a great hospital and medical school such as St. Bartholomew's has been for the past two centuries and more is not a question of mere local interest or confined even to London. Its work is not limited to the curing of individual patients, and it exercises through its old students widespread influence on medicine and medical education throughout England. Of this influence St. Bartholomew's cannot be deprived for a great many years to come whether the place be well rebuilt or badly rebuilt, and while it is in the interest of the hospital itself that this eminence should be finally retained it is in the interest of all alike that meantime it should be thoroughly deserved. The final issue now depends upon what statement as to plans the Governing body will be in a position to make to the Meeting of Citizens which the Lord Mayor, in response to a deputation, has promised to assemble at the Mansion House on January 26th, 1904, at 3 p.m.

MEDICINE AND YOUNG TURKEY.

The new medical school which has been erected in Constantinople under the direction of Professor Rieder Pacha was formally opened on November 6th, the birthday of the Sultan. It appears, however, that after this ceremony nothing further is to be done, as the Sultan fears that the school may become a nest for the fostering of young Turkish ideas. Professor Rieder will return to Germany, and the buildings, which have been erected at a cost of £120,000, will stand empty and useless. We give this information with all reserve on the authority of the *Allgemeine medicinische Zeitung*. There is nothing, however, intrinsically improbable in the statement, as in many other matters the Sultan has shown himself unfriendly to modern ideas. The situation is akin to that created by another monarch, of whom it is recorded that he

> With fifty thousand men
> Went up a hill—and then came down again

Abdul Hamid II might, with advantage to his people, take a hint from one of his predecessors, Mustafa III. That potentate who reigned from 1757 to 1773 held the art of healing in the highest esteem, and took a keen interest in its study. One of his great officers of State having, in the words of Lord Byron, died of his physician, the Sultan ordered an inquiry which disclosed the fact that the practitioner had no diploma. Mustafa thereupon issued an edict making unqualified practice an offence punishable with death. As a medical reformer he was perhaps rather too strenuous for these days of free trade in irregular physic, but the enactment at any rate proves that Mustafa III held more enlightened views as to the importance of rational medicine than the present Sultan.

ESSEX COUNTY LABORATORIES.

New county buildings at Chelmsford containing laboratories for Essex were formally opened recently by the Earl of Onslow, President of the Board of Agriculture. The new buildings, which are conveniently situated near the centre of the town, have cost about £12,000. They comprise chemical, physical, and biological laboratories and class rooms, together with agricultural and horticultural museums and libraries, and provide facilities for systematic instruction in agriculture and horticulture, as well as in pure science. They are under the control of the Essex Education Committee, and were built by the Essex County Council. As the Chairman of this Committee, Mr. E. N. Buxton pointed out at the inaugural proceedings that Essex was an agricultural county and the laboratories were intended to be a centre for agricultural or horticultural information for the whole county: they included rooms for the analysis of soils, manures, foods, seeds, etc., and for other scientific work carried on in the interests of these industries. There is also a large dairy, in the basement, for instruction in butter and cheese making and the treatment of milk, and within three-quarters of a mile is the school garden, three acres in

extent, provided with potting-shed and hothouses. In addition to the more purely agricultural and horticultural courses of lectures and practical work, classes are held in chemistry, physics, and biology, largely for the training of teachers. Several scholarships are offered by the county council, while several of the classes are free to selected candidates resident in Essex. The laboratories are large, well arranged, and well fitted up, and should prove, with the agricultural departments, of great service to the cause of agriculture and technical education in Essex. In the prospectus of the dairy school it is stated that "it is also proposed to give a one-week's course of instruction in milking and the treatment of milk for selling." Such a course, if properly given and attended, should be of value in promoting a more satisfactory and hygienic treatment of milk, and will be welcomed by all interested in a pure milk supply.

CHILDREN OF THE STATE.

The President of the Local Government Board, after opening a new workhouse infirmary at Axbridge, Somerset, last week, delivered a speech in which he laid special stress on the importance of removing children from workhouse influences. Children who through no fault of their own came under the care of the guardians should be brought up in such a manner as to make them independent, self-respecting citizens, and should therefore be placed as far as possible under conditions which would enable them to lead the lives they would have led in their own home. On the grounds of common humanity the lives of pauper children should be made as bright as possible, and on grounds of economy also he urged that suitable homes should be provided, for though they would cost a little more to begin with they would certainly diminish the number of paupers in the future.

THE INSURANCE OF MEDICAL STUDENTS AGAINST ACCIDENTS.

It is, perhaps, because medical men are so familiar with the dangers necessarily incurred in the practice of their calling that they in too many instances show a disposition to ignore the risks which they are compelled to take. It is true that there is evidence that when responsibilities begin to accumulate medical men are fortunately becoming more inclined to insure against accidents; but this is not so with the ordinary medical student, who is, from the very nature of the case, even more liable to run risks and to contract disease inadvertently. All of us must be able to recall cases in which a more or less ignorant beginner has exposed himself to serious infection, either in the *post-mortem* room, the out-patient department, or the bacteriological laboratory. In Prussia it has now been made compulsory that undergraduates who are liable to be exposed to such dangers shall insure themselves against their consequences, and the University of Vienna strongly recommends students of medicine, chemistry and physics, as well as those who take part in gymnastics, to adopt a similar precaution. It would, we think, be well if some sort of a warning in this sense were issued by hospital authorities to all those who are commencing the study of medicine. A pecuniary solatium cannot fully compensate injury to health or danger to life, but it can at least mitigate some of the consequences of such calamities from the possibility of which no practitioner or student is free.

THE ENNO SANDER PRIZE.

The subject of the Enno Sander Essay Prize offered by the Association of Military Surgeons of the United States in 1904 is the Relation of the Medical Department to the Health of Armies. The author of the best essay will receive a gold medal of the value of £20. A second prize, consisting in a life membership of the Association, of the value of £10, will also be awarded. The competition is open to military and naval medical officers of the British services. In deciding as to the merit of essays, the Board of Award, consisting of Lieutenant-Colonel John Shaw Billings, Brevet Brigadier-General George Ryerson Fowler, and Surgeon Henry Gustav Beyer, U.S. Navy, will primarily take into consideration originality, comprehensiveness, and the practicability and utility of the opinions advanced, and secondarily, literary character. The essays must consist of not less than 10,000, nor more than 12,000 words, exclusive of tables. Each competitor must send three typewritten copies of his essay in a sealed envelope to the Secretary of the Association, Major James Evelyn Pilcher, Carlisle, Pennsylvania, so as to reach that officer on or before September 10th, 1904. Essays must be authenticated by a *non de plume*, a copy of which must, at the same time as the essay, be transmitted to the Secretary in a sealed envelope together with the author's name, rank, and address. The successful essay becomes the property of the Association of Military Surgeons of the United States, and will appear in its publications. Any further information that may be required may be obtained from Major Pilcher. It is the aim of the Association of Military Surgeons of the United States, by encouraging research and investigation along medico-military lines, to obviate in future to the greatest possible extent the misfortunes which have heretofore attended the collection of large bodies of troops for active service.

The Bradshaw Lecture before the Royal College of Surgeons of England will be delivered on Wednesday, December 9th, at 5 p.m., by Mr. Henry Morris, who has chosen for his subject Cancer and its Origin.

Dr. Allan Macfadyen will deliver a lecture on Intracellular Bacterial Toxins and their Practical Application at the Lister Institute of Preventive Medicine on Thursday, December 3rd, at 9 p.m. The Institute is at the corner of Chelsea Bridge Road and close by Chelsea Barracks.

In connexion with the communication from M. Laveran to the Académie de Médecine of Paris on November 3rd, in which he described a parasite on the strength of specimens sent to him by Captain Donovan, we desire to state that the paper by Major Ronald Ross dealing with this subject, published in the British Medical Journal of November 14th, p. 1261, was received by us on October 24th. M. Laveran believes that the parasite is the piroplasma, and proposes to give it the name *P. donovani*. Another pyroplasma, *P. bigeminum*, is the cause of Texas fever of cattle, and other species occur in the sheep, horse, and dog.

We learn that the Lancashire County Council has accepted the report of the Special Committee appointed to consider the steps to be taken under the Midwives Act, 1902. Consequently the County Council will retain all the administrative duties assigned to it under the Act, and will appoint a new committee, to be composed of all the medical members of the council (nine in number), and four lay members, with power to co-opt lady members if thought to be desirable. The county medical officer of health will be medical adviser to the Committee.

If some one with leisure to explore the by-ways of the history of science would compile a sympathetic account of those women who have been content to give the work of brain and hands with the sole desire to help on the scientific investigations of husband, brother, or father, he might make a very interesting book. If it is ever written, not one of the least striking chapters will describe the share of Mrs. Bruce in the work which Lieutenant-Colonel David Bruce has done to elucidate the part played by the trypanosomes in the production of disease in animals and man. In his concluding report on nagana, Colonel Bruce writes: "My wife also has my best thanks. In her capacity of sole laboratory assistant she worked throughout the inquiry." Mrs. Bruce again accompanied her husband to Uganda to study sleeping sickness, and again gave invaluable assistance in the laboratory work, which has resulted in the important report analysed elsewhere.

Ireland.

A LUNACY CASE.

AN important lunacy case came on for trial in Dublin last week, before the Lord Chief Baron and a special jury. The plaintiff was John Hutchinson, and the defendants were Dr. Walsh, his brother-in-law, and Dr. Meehan. Damages were laid at £5,000 against the defendants jointly, and further sums of £4,000 against Dr. Walsh and £1,000 against Dr. Meehan were also claimed. It was alleged that the plaintiff was bound with straps and ropes and wrongfully imprisoned in plaintiff's father's house, and subsequently in the House of St. John of God, by falsely and maliciously representing and certifying that he was insane; that the father was induced by representations of the defendants to believe that his son was insane, and to make a will in favour of Dr. Walsh and his wife and child, and to send the plaintiff to Australia and to oust him from partnership in his father's business. The plaintiff was left £7,000 in trust under the will. The defence was a denial of the charges. Dr. Meehan pleaded that if he did sign the certificate he did so without malice, believing the contents to be true.

The judge, after evidence, ruled that the portion of the action dealing with the procuring of a will by Dr. Walsh in his own favour by a false representation could not be maintained.

Dr. O'Connell, Medical Officer of the "House," said that plaintiff was admitted on March 1st, 1901, on a certificate, signed by Dr. Meehan, which declared that he was suffering from temporary mental derangement. The letters written about the plaintiff while in the asylum were burned. Plaintiff did not get his discharge until April 1st. He certainly was not insane from about March 4th onwards. He was insane on March 2nd. Dr. Meehan wrote on a piece of paper that the plaintiff was suffering from temporary derangement. The certificate sent to the Castle was not in Dr. Meehan's handwriting and was not signed by him. The certificate was in the handwriting of one of the community. He had seen that done a few times. He was positive the plaintiff was sane on March 15th, but he detained him to be positive that he was sane.

Dr. Walsh swore that he examined the plaintiff, but never sent him to an asylum; but he was of opinion that he should be restrained.

Dr. Meehan said he never knew the plaintiff was going to an asylum. He thought he was a fit case to be under supervision. He acted bona fide.

The Chief Baron said as the imprisonment could not be legally connected with the act of either of the defendants, it was not their act, and that itself would be an answer to the count for conspiracy. The certificate of Dr. Meehan was a most improper one for a medical gentleman to give under the circumstances, and the result of it no doubt was that the plaintiff was wrongfully imprisoned. There was no evidence to go to the jury on the two causes of action, conspiracy and false imprisonment, and the case must now proceed in relation to the acts that occurred on February 28th, 1901.

After counsel had addressed the jury,

The Chief Baron said there was no doubt the plaintiff was illegally imprisoned; that he was kept in the House of St. John of God when he was sane; and that he was so kept without the course being pursued by law which would have authorized his detention. This wrongful imprisonment was the act of those who represented the House, and was not the act of any other person in point of law. If the plaintiff was to get damages for this imprisonment he must look to some other person. There was no legal connexion between this wrongful imprisonment and the certificate, because the certificate was not one that would authorize imprisonment.

The jury at the close of several days' hearing disagreed on the counts submitted, and found by direction for both the defendants on the counts for conspiracy and false representation.

BELFAST SEWAGE AND THE FORESHORE NUISANCE.

At the last meeting of the Castlereagh Rural District Council the following resolution was passed:

That the Local Government Board be requested to order a local inquiry to be held into the cause or causes of the nuisance on the foreshore of this district, so that it may be ascertained by whose act or default the nuisance is created, and the steps which should be taken for dealing therewith.

Typhoid fever was said to be endemic in the district. Further inquiry was necessary as to the alleged default of the Belfast Corporation in failing to provide bacteria beds for the purification of the sewage of the city; the nuisance of the foreshore was alleged to be directly attributable to the sewage of Belfast being discharged in an unpurified condition into the lough.

COUNTY CORK BRANCH OF IRISH MEDICAL ASSOCIATION.

A council meeting of the County Cork Branch of the Irish Medical Association was held on November 7th. Dr. Cotter, President, occupied the chair. Dr. Moriarty referred to the proposed affiliation of the Irish with the British Medical Association, and stated that there was a growing feeling that such amalgamation would be desirable from every point of view. It was decided that this question should be brought forward at the next general meeting of the Branch.

PIGS AND TYPHOID FEVER IN DWELLING-HOUSES.

At the last meeting of the Mishowen Rural Council, Dr. Brendon McCarthy, Local Government Board Medical Inspector made a report concerning an epidemic of typhoid fever. The inspector has discovered that it was a common custom at Culoort, near Malin Head, where the epidemic occurred, to keep pigs in the dwelling-house. A resolution was proposed to compel all those who kept pigs to erect pigstyes; this was opposed by one of the members of the Council, who said that farmers had to make money through keeping pigs. Finally, however, the resolution was adopted.

STRABANE WATER SUPPLY.

At the monthly meeting of the Strabane Urban Council held on November 9th, Dr. Trimble, medical officer of health, reported that he had inspected the waterworks, and ascertained that the filter beds had not been cleansed for the past six years; there were deposits on the gravel, and he recommended that it should be cleaned; the water must be polluted in passing through the filter beds. It was decided to carry out Dr. Trimble's recommendations.

Scotland.

INSPECTION OF MEAT AND CATTLE IN GLASGOW.

THE annual report of Mr. Trotter, the veterinary surgeon to the Glasgow Corporation, for the year 1902 has been published recently, and gives a good idea of the large amount of work that is done in the supervision of the people's food supply. The slaughterhouses are very carefully supervised, and in the past year there has been a large increase in the number of home animals slaughtered and a corresponding decrease in the number of the foreign animals. It is also noted that there is a much greater prevalence of disease amongst home cattle than in those landed from the United States and from Canada, and that the most important disease met with is tuberculosis. Moreover in the affected animals it is found that the respiratory organs are principally involved, and the statistics given demonstrate conclusively that in the lower animal as in man by far the most frequent source of infection is the inhalation of tubercle bacilli. Several outbreaks of anthrax had been discovered during the year, and attention is again drawn to the frequency of carcinoma in Irish cows. Large amounts of meat arrive in the city almost daily in addition to what is killed at the slaughterhouses, and great difficulty is experienced in properly examining it, but as much supervision as possible is given at the railway stations, at the wharves, and in the butchers' shops. The milk supply of the city is also carefully guarded, the various cowsheds in the city being systematically examined, while special attention is given to the farms which supply milk to the city's fever hospitals. The services of the city bacteriologist, Dr. R. M. Buchanan, are specially important in affording confirmation of the diagnoses of tuberculous disease of the udder of the cow, many samples of milk being submitted to him for biological examination—presumably by inoculation into guinea-pigs. Altogether the care taken in this department of the city's administration must have a most excellent effect on the people's health.

PROFESSOR RAY LANKESTER, Director of the Natural History Department of the British Museum, will begin a course of Christmas lectures at the Royal Institution on Extinct Animals on Tuesday, December 29th, at 3 p.m.

BAYLISS V. COLERIDGE.

(Continued from p. 1800.)

[Specially Reported for the British Medical Journal.]

The hearing of this case was resumed before the Lord Chief Justice and a special jury on Friday, November 13th. Sir Edward Clarke, having returned his brief, Mr. Lawson Walton, K.C., appeared as leading counsel for the defendant.

Dr. Bayliss, continuing his evidence-in-chief, stated that on February 2nd no remark was made by any person in the room as to the state of the dog. No one drew his attention to the condition of the dog or made any suggestion that the dog was not under anaesthetics.

In cross examination by Mr. Lawson Walton, the witness said that he was one of the demonstrators or teachers of physiology at the University College. He had been connected with the College since 1900 in an official position. Previously he was a student there. He had no medical degree; he had never practised medicine. Until 1890 he had not taught students physiology, but since then he had lectured regularly; usually he gave one course of advanced lectures during the year. The operation in question was performed under Certificate "E," which was a special certificate applicable to the case of performing experiments with a view to demonstrating natural processes. That certificate enabled students to be instructed by means of experiments on living animals, but that was safeguarded by the fact that the experiments must be done under an anaesthetic. There was also a provision that no such demonstration to students was to take place unless it was absolutely necessary for the due instruction of persons to whom such lectures were to be given with the view of their acquiring physiological knowledge, or knowledge which would be useful to them in saving or prolonging life, or alleviating suffering.

Q. It is a fact, is it not, that where you can impart the knowledge without the experiment it is your duty not to perform the experiment?—A. Yes, if it can be done.

Q. That is a statutory duty and a duty of humanity—both?—A. Yes.

Q. In this case you acknowledge your obligation in that regard?—A. Yes. Certificate E was a certificate for protecting from vivisectional experiments certain highly-organized animals. That certificate applied to cases in which operations were performed on animals in which the animals were allowed to recover, whilst Certificate B relieved the experimenter from destroying the animal immediately after operation.

Q. Should you not recognize, apart from the certificate, that so highly organized an animal, and one so intimately associated with humanity as a dog, should not be the subject of experiment unless a no less highly-organized animal were available?—A. Yes, I recognize that.

Q. In other words, you would never take a dog to operate upon it in such a way if an animal of lower organization were available?—A. It is necessary for it to be of sufficient size. During the years he had been at the University giving these demonstrations he had frequently been visited by the inspectors—at least once a week. The inspector came at various times. He came without the least notice. It was quite possible that the inspector was present at one of his demonstrations, but he could not say. Whenever he was there the inspector took considerable care to see that the animal was under an anaesthetic.

Q. Will you tell me in popular language what was the demonstration which you say required the sacrifice of this dog's life?—A. To show that the pressure at which the saliva is secreted is greater than the pressure on the blood passing through the arteries of the gland. That is an extremely important point with regard to the physiology of the whole of the secretion.

Q. Do you consider that in order to teach to students the functions of the nerve acting upon the gland it was necessary that there should be a demonstration on a live animal?—A. Yes. The same knowledge could be conveyed to him in no other way.

Q. Is not that a well-known and long established physiological law?—A. Yes.

Q. Is not this very experiment described in physiological books as early as the year 1837?—A. I do not remember the date, probably that is the date.

Q. And the relation between the degree of secretion and blood pressure has long been ascertained.—A. Yes, and the secretion pressure is higher than the blood pressure.

Q. Then will you kindly explain to the jury, if that is so, why that could not have been taught the students in some other way than by vivisection on animals.—A. It could not, because the knowledge conveyed to the student by seeing the actual experiment is totally different from what he would gather if he read it in a textbook or heard it. The student would remember it, and it would be impressed on his general knowledge better than if it was conveyed to him or if he read it.

Q. Why was it absolutely necessary to perform it on a dog during life?—A. Because the experiment could not be shown after the animal was dead.

Q. You could show the relations between the glands and the nerve in a dead subject, could you not?—A. Simply the fact that the nerve led to the gland—a mere anatomical fact.

Q. And you could have shown then the position at which the point of the battery was applied to the nerve.—A. Yes.

Q. And you could have told them that it had been established by many experiments that the result of the application of the stimulus was to cause a discharge of secretion from the gland into the duct.—A. Yes.

Q. In the same way you could have opened the carotid artery and told them that it had long been established that that corresponded with the pressure of blood in the carotid artery.—A. Yes.

Q. Why was not that method sufficient for the due instruction of persons for whom such lectures were given?—A. There would be no more advantage in doing that with a dead animal than showing it them in a book. The knowledge conveyed to students by actually seeing the experiments in progress is very different to their reading it.

Q. Then do I understand you to say that no function of Nature can be properly taught to students without the actual operation on live animals?—A. It would be much better taught. There are many things that cannot be shown in the short space of time at the disposal of a lecturer and the conditions are too complicated.

Q. When you say it could be much better taught, do you mean more impressively taught?—A. Certainly.

Q. But the Act says you are only to do it where it is "absolutely necessary to the due instruction of the student"?—A. That is a fact; it is necessary for the due instruction.

Q. Is it your view, as a scientific man, that no natural function of Nature can be duly taught in physiology without the student witnessing its operations in some living animal?—A. Yes; so far as it is possible.

Q. And if, to render it possible, it is necessary to open the body of the animal while it is alive and to inspect the action of the organs, that vivisection must take place?—A. Yes, under an anaesthetic, when it would be absolutely painless.

Q. Do I understand that the knowledge of physiology cannot be duly imparted without resorting to these experiments by way of demonstrating all the natural functions?—A. Yes.

Q. How long has it been the view of science that these experiments are necessary to the due instruction of physiology?—A. I should say ever since physiology has been a science at all.

Q. That is going a long way back. Do I understand you to say that where any such physiology has been taught, these experiments by way of vivisection have been practised?—A. That I cannot say. I am not aware that there are details published of experiments.

Q. Is it not quite a new view that a student cannot be taught the physiological operation of natural laws by being shown them by diagrams, in books, on blackboards, and on models, but that it is necessary to open live animals in order that they may see the effect?—A. No, certainly not; because physiology is the science of living animals. Mechanism can be taught by means of models, but physiology can only be taught by living organisms.

Q. Since when has that been the practice or the opinion?—A. I am sorry I cannot give you the date.

Q. If you had an ordinary intelligent student, with a blackboard, a diagram, and a dead dog, do you mean to tell the jury he could not be taught this long established law without resorting to the cutting up of a live animal?—A. Yes, but he would not be duly instructed, because it is necessary that he should see the actual laws at work.

Q. Then you attach no meaning to the words in the Act "absolutely necessary;" you say that where any demonstration of physiological action is essential it is necessary that it should be done by vivisection.—A. If it is necessary to show the demonstration by vivisection.

Janet Lane Clayton, in answer to Mr. Boxall, said she was a gold medallist and scholar of physiology of the London University, a research student of physiology at University College, and a student of the London School of Medicine for Women. She heard the lecture by Dr. Bayliss, and had a full opportunity of seeing the animal while the experiment was going on. She saw no purposive movement on the part of the animal. There was nothing that could be described as a struggle, and there was no indication that the animal was suffering pain. She had not seen any experiment on any animal in a state of consciousness at any one of the lectures she had attended. There was no remonstrance raised in the course of the lecture as far as she knew.

Cross-examined by Mr. Abel Thomas as to the position she occupied during the course of the lecture, she could not say whether the mercury in the tube rose or fell because the room was darkened to enable the lantern to be used.

Re-examination by Mr. Boxall: The witness said the practice was to turn down the lights just when it was required to see what was thrown on the screen; it was done temporarily. She had an opportunity of seeing the animal and judging whether it was conscious or not before the lights were turned down. When the lights were turned down attention was directed practically and entirely to the screen. The practice was to turn up the lights immediately after the actual experiment.

In answer to the Lord Chief Justice, the witness said her recollection was that the dog was in the room under half an hour, and she thought that the lights would be turned down for ten to twelve minutes.

Ella Mabel Parker, in answer to Mr. Hugh Fraser, said she was a student in the London School of Medicine for Women. She was present at Dr. Bayliss's lecture on February 2nd, and was there the whole time. In her opinion the dog was unconscious.

In answer to Mr. Abel Thomas, the witness said she had not seen operations on living animals before the time in question. She saw the dog brought in. She saw it carried out; she was sure she heard no bark when it was carried out. She had attended many lectures since the one in question in the same room, and she had never noticed the smell of ether or chloroform there. She saw no signs of consciousness or purposeful movement, or anything to indicate that the dog was not under the influence of anaesthetics.

Eleanor Lowry, in answer to Mr. Boxall, said she was a student of the London School of Medicine of Women. She also was present on February 2nd at the lecture given by Dr. Bayliss and had a full opportunity of seeing the animal. During the time of the lecture she saw no sign whatever of the animal being conscious or suffering pain; there was no struggling, and nothing in what she saw to justify the suggestion that there was a movement of fear or fright on the part of the animal when the operator came near it. In answer to Mr. Abel Thomas, the witness said she saw no twitching other than the movement of respiration.

In answer to Mr. Boxall in re-examination, the witness stated that looking at the screen she saw no indication that the animal was moving; it was quite quiet.

Mr. Douglas Hume, a student of St. Bartholomew's Hospital, stated that he had been a student of physiology for about a year and a-half at the time the experiment took place, and was acquainted with the system of pumping in of the anaesthetics which had been adopted by Dr. Bayliss. So far as he could see the dog was absolutely unconscious during the time the lecture was being delivered.

Sir Victor Horsley, F.R.C.S., F.R.S., examined by Mr. Rufus Isaacs, stated that in his opinion the experiment which had been conducted by Dr. Bayliss was a proper one. He had himself shown a large number of experiments to students under the same certificate as that under which Dr. Bayliss conducted his demonstration. In the particular instance in question the experiment was for the purpose of illustrating the fundamental law of secretion, and his experience from showing experiments to students was that they did not understand the laws and principles of physiology unless they saw the experiments. It was one thing to see an experiment and it was another and quite a different thing to hear it spoken about in a lecture or to read about it in books.

In reply to the Lord Chief Justice, he said that in his opinion the experiment was an absolutely necessary one for the due instruction of the students.

In reply to further questions by Mr. Rufus Isaacs, Sir Victor Horsley said that, contrary to what had been suggested, from his knowledge and experience, and from what he had read, experiments of the kind that Dr. Bayliss had made had always been used for the purpose of demonstrating to the students, and were not of quite recent date, or, at any rate, of a date since 1876. Galen had pointed out the absolute necessity of showing experiments to his own students, and in the Middle Ages it was done precisely for the same purpose, and it was only when the antivivisection agitation arose between 1870 and 1875 that that question attracted public attention. Then undoubtedly some old physicians and old surgeons gave evidence to the Royal Commission on Vivisection to the effect that in their opinion the showing of experiments to students would have a bad effect upon them. That was no doubt in a measure due to the fact that the experiments which they had witnessed themselves were experiments without anaesthetics, and he quite agreed that to show such experiments to students would be a bad thing.

In reply to the Lord Chief Justice, the witness said that as a matter of history these experiments had always gone on, but it was only since 1874 or 1875 that those protective restrictions had been imposed which necessitated the licences and the certificates. The experiments which he himself saw in 1874, before the Act was passed, were all done under anaesthetics.

In reply to Mr. Rufus Isaacs, he would say, having heard the evidence which had been given by the plaintiff and the nature of the anaesthetics which had been administered to the animal, that it was absolutely unconscious during the whole of the lecture. There were no other means known to science of any kind or description which would assist in a matter of that kind other than those which had been used by Dr. Bayliss for the purpose of anaesthetising an animal. There were various other substances, like chloroform and ether, but they had all the same effect. There was a disadvantage in using morphine alone without the employment of the A.C.E. mixture, as it was impossible to be sure how far the morphine, when administered alone, was going to paralyse the respiration. It was perfectly well known that it would paralyse it. People who died from, or killed themselves by taking, morphine died from paralysis of the breathing, and an animal under the influence of morphine was liable to be absolutely crushed by its effects. Therefore, if they wanted to keep it alive, they had to use artificial respiration. Under the circumstances, the administration of the A.C.E. mixture with the morphine had been the right and proper thing to do. With regard to the twitching which had been noticed on the part of the animal while undergoing the operation, it might be due to its suffering from hemichorea following distemper, which was a very common affection. The nerve centres which caused the twitching in that disease were the lowest centres of all, and were not affected by an anaesthetic until that anaesthetic was pushed practically to a fatal issue. That was discovered a long time ago in France, and he himself had made a number of experiments which he published about fifteen years ago on canine chorea, all showing the same thing—that the twitching was not abolished by anaesthetics until just before death. It was quite a characteristic movement, and a thing that no one could mistake. There was no way of curing it, he was sorry to say. In fact, he had himself shown that it was impossible to cure it because he found that the nerve centres were permanently destroyed. An animal was unconscious under anaesthetics exactly in the same way as a human being was who was subjected to it in an ordinary operation. They could see whether the animal was conscious or unconscious under anaesthetics by the presence or absence of purposive movements, just in the same way as they could in the case of a human subject. If a patient began to move during the operation it was the custom to give him a little more anaesthetic. It would have been absolutely impossible to perform the demonstration which the plaintiff had performed if the dog had been conscious unless the animal had been fixed up in a different kind of apparatus, which it was not possible to have done. He had heard how the animal had been fixed, and he had seen animals fixed in a similar way. They could see by its beginning to move about on the board on which it was tied down whether the animal was coming to itself, just in the same way as with a human being on an operating table. Supposing that the animal had been fixed in the way which had been described and had been making purposive movements the operation could not have continued. With such a use of the glass tubes as had been actually made its struggles would have broken up the whole arrangement. The value of ascertaining the pressure

of the saliva as compared with that of the blood in the matter of secretion was one of the most important physiological points which could be determined.

In cross-examination, Sir Victor Horsley said the object of giving such a demonstration in point of view of its educational value was that the attention of the students was more apt to be aroused by it than it would be by the employment simply of diagrams and explanations. He admitted that the Act of Parliament which regulated demonstrations in physiology, such as were carried out by Dr. Bayliss, contemplated cases apparently in which anaesthetics were not used, but not only were they hedged round with certain restrictions, but as a matter of fact, the Home Secretary never allowed any cutting experiment to be made under the Act without anaesthetics and no one had applied for permission to make them. He had read the report of the Royal Commission, which had been issued before the passing of the Act, on the subject of vivisection, and it might be that Professor Huxley and other scientific men at that time had said that it was not to be doubted that inhumanity might be found in persons occupying high positions as physiologists and that, therefore, the law had to be rendered more strong. Asked as to whether the effect of the provision of the Act of Parliament requiring the demonstrator to satisfy himself in each case that the demonstration was absolutely necessary was not intended as a humane provision, Sir Victor said there could not be any question of humanity involved when the animal was effectually anaesthetised. The only condition that he would impose upon the use of experiments for the purpose of physiological teaching apart from the statute would be that in every case the animal should be effectually anaesthetised. He was in favour of such a mode of teaching. He thought it was absolutely essential to teach physiology by experiment in the same way as they had to teach chemistry by experiment. Chemistry used to be taught out of books, and it had been almost within his own lifetime that it had begun to be taught through the laboratory to students. As to teaching surgery without experiment and out of the books, it would be absolutely impossible and the idea was quite ridiculous. When he was a student in 1874 physiology was really not properly taught at all. He did not consider that there was a great difference between a man learning physiology and learning surgery. The education of medical students at the present time was directed to the point of view of teaching them to observe, and they could not cultivate their habits of observation except by practical work and by practical demonstration, and that was running through all the teaching thoughout the kingdom. Practical demonstration was actually necessary for surgery. No one could learn surgery without practical demonstration by means of operations, and without being compelled to perform them on the dead body and afterwards performing them on the living body. In physiology, unless students had a demonstration on the living animal, they did not learn physiology. They simply learnt what they were told and what they read in books. It was quite true that what was read in the books was what had been discovered by the investigations of other people. In that case, however, they got it second hand. They felt, however, and the students told them, that when they got their knowledge second hand it was not the same as if they got it first hand: he supposed it was because their attention was not excited in the same degree. He undoubtedly held that the sacrifice of animal life was justified by the view that the attention of students was more excited by actual experiments on the living body than in cases where no animal life was sacrificed. By "attention" he meant their intellectual observation, and he did not mean any sentimental or passing attention. If there was a justification for killing animals for food, which was not always done humanely, he considered that if they anaesthetised an animal and used it for educational purposes, it was a humane thing to do in the highest sense of the word, because they were promoting human education.

Professor Langley, M.A., D.Sc., F.R.S., Fellow of Trinity College, Cambridge, Professor of Physiology in the University of Cambridge, said that the demonstration given by the plaintiff was absolutely necessary with the view to students acquiring physiological knowledge or knowledge which would be useful to them in saving or prolonging life or alleviating suffering, and the experiment which had been given on the occasion in question was one of the most important which could be imparted in the whole range of physiology.

Mr. Frederick Hobday, Lecturer on Therapeutics at the Royal Veterinary College, stated that a dog under the influence of the anaesthetics employed by the plaintiff would be absolutely incapable of feeling pain.

After further evidence on behalf of the plaintiff the Court adjourned till Tuesday.

Tuesday, November 17th.

The hearing was resumed on Tuesday, November 17th, before the Lord Chief Justice and a special jury. On his lordship taking his seat, he inquired from the jury whether they had received any anonymous communications in regard to this action. He himself had received a good many, but of course he had put them on one side, and he hoped the jury, if they had received any, would do so too. The case was to be tried on the evidence called before them.

Professor Francis Gotch was the first witness. He was Bachelor of Arts of the University of Oxford, Doctor of Medicine, Fellow of the Royal Society, Member of the Royal College of Surgeons, Professor of Physiology to the University of Oxford for the last eight years, and before that he was Professor of Physiology at the University of Liverpool for four years, and he had been a teacher of physiology for twenty years. Taking the circumstances that had been described by the previous witnesses under which the dog in question had been anaesthetised, and the way in which that had been done, he should say that the dog would be unconscious. A grain and a-half of morphine for a dog that weighed 14 lb. was an exceedingly heavy dose. He had had experience of the administration of the A.C.E. mixture. It was easily possible to anaesthetise an animal like a dog and render it unconscious with that mixture. He had known the use of the A.C.E. mixture for the last ten or twelve years. When he was Professor at Liverpool he anaesthetised a celebrated greyhound which had won the Waterloo Cup, where an operation for the removal of the eye was necessary. In reply to his Lordship he said he had been licensed under the Act. In cross-examination by Mr. Lawson Walton, the witness said he did not recognize that experiments under anaesthetics should be as rare as possible. He did not agree with what Sir James Paget was reported to have said in his evidence before a Royal Commission that generally speaking classes could be as well taught without experiments as with them.

Mr. John Archibald Dollar was the next witness. He was Vice-President of the Royal College of Veterinary Surgeons, Fellow of the Royal Society of Edinburgh, and author of a considerable number of textbooks. He had heard the account given by Dr. Bayliss as to his experiment and his lecture, and accepting that to be true, he should consider that before the dog came into Professor Starling's hands, that was to say within half-an-hour of the dog receiving 1⅓ gr., it was already very deeply under the influence of the morphine. That was proved to him by the condition of the respiration which was already so far impeded that it became necessary to start artificial respiration. Morphine caused death by arrest of respiration, and it was evident that the morphine had pushed its effects so far that the animal was in some danger of its life. It therefore must have been very deeply anaesthetised with morphine. Having regard to the quantity of morphine administered and the A.C.E. mixture, in his opinion he should consider the dog was unconscious within half-an-hour of receiving the dose of morphine.

Mr. George Woodford, a medical student at St. Bartholomew's Hospital, deposed that he was present at Dr. Bayliss's lecture on February 2nd. During the whole time, as far as he could tell, the dog was unconscious. He saw no signs of purposeful movement on the part of the animal, and no indication that it was conscious. In answer to Mr. Lawson Walton, he said he was able to see the dog as he was only 6 ft. or 8 ft. away from it. There was no remark made during the lecture. In answer to Mr. Boxall, in re-examination, the witness said that the lights were up when he went into the room, so he could see the animal plainly. In answer to the Lord Chief Justice, the witness said that if the dog had struggled he should certainly have seen it.

Dr. Clarke was the next witness. He was a registered practitioner, Bachelor of Medicine, and Fellow of the Royal College of Surgeons. He stated that he was present at the annual meeting of the Antivivisection Society which was held in St. James's Hall in May last. He heard the entire speech delivered by the defendant, which appeared in the *Daily News*. The report was substantially accurate.

This closed the case on behalf of the plaintiff, and Mr. Lawson Walton proceeded to address his Lordship and the

jury on behalf of the defendant. He said the issue raised in the case was one in which a large body of persons in this country took a profound interest. There was on the one side the enthusiasts of science, who regarded animal life as subordinate to the aims which they had in view, and there were other people who looked upon the emotions and sensations of animals as affording a natural barrier to the efforts of men to penetrate the secrets of Nature. The defendant's case was that he had exercised the public right, which the jury as well as he himself possessed, of criticizing the system, pointing out its abuses, indicating the remedies that were necessary, and denouncing that system because in his (the defendant's) view, the evils which resulted from it entirely outweighed the good it did. He hoped to satisfy the jury that in what the defendant had done he had not exceeded the fair bounds of criticizing what was a fair subject for public comment. Dr. Bayliss was a gentleman occupying a public position. He taught in a public university, and he taught classes which consisted of members of the public who complied with the conditions which were imposed upon their entrance to the lecture hall. He was, therefore, like every other public man, exposed to public criticism. His influence was a public influence, the system with which he was associated was a system which profoundly affected public feeling and public opinion, and therefore he could not complain if a member of the public came forward and criticized what he taught. On the other hand, Mr. Coleridge was the Honorary Secretary of the Antivivisection Society. He had devoted some years of his life in the service of a cause with which he was not only individually associated, but his family, and his ancestry. From the time when the *Ancient Mariner* was added to the poetry of this nation down to the present day those who had borne the name of Coleridge had been conspicuous in their advocacy of the claims of animal life to considerate treatment on the part of man, and they had been strong in their protest against the sacrifice of animal life. The grandfather of Mr. Coleridge, who was an eminent judge, was the first person to found the Society. Mr. Coleridge's father, who was a predecessor of his Lordship now sitting on the Bench, had been prominently connected with the Society, and Mr. Coleridge himself had given up some years of his life to the advocacy of the same cause, and, although there were those who violently attacked or denounced this party in the country, yet the Society was entitled to make itself heard and to have its views treated with respect. All that Mr. Coleridge said with regard to this matter was that he would have been untrue to the trust which was reposed in him by those whom he served if he had not brought to the public notice the facts which he (Mr. Lawson Walton) would draw their attention to. The jury would hear what those facts were from the witnesses he would call before them, two ladies of most exceptional qualifications, of great refinement, and of good education. They approached Mr. Coleridge and placed before him an account of what they had seen with their own eyes, and they assured Mr. Coleridge that that account was true, and they were prepared to depose to it in a public court, and to face public examination. If those witnesses were witnesses whom they could not thrust aside as being careless observers or as not being reliable, what was Mr. Coleridge's duty? Could he suppress the statements they had made to him? Was he to throw their statement in the waste-paper basket? Could he, without betraying the interests of all those who looked upon him to defend their cause, discredit a narrative which was complete in all its details, and which was deposed to by women of the highest character? His learned friend, Mr. Rufus Isaacs, had suggested that Mr. Coleridge ought to have appealed to Dr. Bayliss, but the criticisms which had been passed reflected on Dr. Bayliss as a lecturer, and although the ladies made the statement they did to him, he (Mr. Coleridge) was entitled to assume that Dr. Bayliss would traverse it; and even supposing Dr. Bayliss had traversed it the issue would still remain, and that was what was the truth. Under these circumstances Mr. Coleridge thought that the world should decide the issue. It was not for him (Mr. Coleridge) to say that the statement was true: it was for him to say "These are the statements of witnesses who are ready to depose to them on oath." It was open to Dr. Bayliss to deny it and to invite inquiry from a body in his own University. It was open for him to satisfy the world that the story of these two ladies was untrue, and that he was entitled to be believed rather than they; but Mr. Coleridge felt that the issue was one for public opinion to decide, and one in which the facts should be elicited in order that the question might be set at rest. Therefore it was that he gave to the world the information which he had obtained. That was all that he had done, and it was for the jury to say whether the statements which had been made to them were true. He would call the young ladies before them, and the jury would judge for themselves.

The LORD CHIEF JUSTICE, in the course of Mr. Walton's opening, said that Dr. Bayliss was not attacked for making an experiment which was not necessary, but for cruelty in that experiment. He should tell the jury, the question of whether the experiment was one in which an animal ought to be used was not the question before them. There was no suggestion by the libel that the experiment was not necessary but that it was done in an improper way.

Miss EMILY AUGUSTA LIND AF HAGEBY was the first witness called on behalf of the defendant. In answer to Mr. ABEL THOMAS, she said that she was the youngest daughter of the late Chief Justice of Sweden. She started her education in Stockholm; she there passed through the house classes for ladies in the State schools in general education; she then returned to this country, and went to Cheltenham to the Ladies' School there and studied for a year. She then went back to Sweden and studied the sciences of languages. She was connected at that time with a considerable number of bodies relating to the relief of all kinds of people who were in difficulties. In the year 1900 she and a lady friend, Miss Schartan, went to Paris for the purpose of studying. They attended the results of M. Pasteur's operations. After that she and her friend returned to Sweden, and she became interested in the subject of vivisection. When she returned to Sweden and had ascertained more upon the matter they joined the Antivivisection Society in Sweden. That was in December, 1900, and they became honorary secretaries in April, 1901. They did not feel justified then in carrying out their work without having more knowledge on the subject of physiology and subjects relating to those sciences which had anything to do with experiments on living animals. They then came to England for the purpose of attending laboratory lectures and studying physiology. They had to a certain extent made up their minds as to the rights and wrongs of vivisection, but they wanted to investigate the matter further. They joined the London School of Medicine as partial students. "Partial students" meant that if the individual did not intend to pursue her studies and become a medical lady she was allowed in on less pay. She attended the lectures there. She also attended the lectures on advanced physiology at the Imperial Institute. These lectures had been given by some of the most famous physiologists in England, including Professor Starling. She had attended about a hundred lectures, in fifty of which there had been experiments on living animals, and about twenty of real vivisection. She attended some lectures at King's College. She attended the lecture given by Dr. Bayliss on February 2nd. She got there about 4.50. She first saw the dog in the passage leading into the lecture room. The dog was taken through the passage. She and Miss Schartan were in the passage as the dog passed them. They noticed the scars in the abdomen of the dog and the struggles of the animal. She would describe the struggles as voluntary and purposeful. When they saw the dog in the passage they did not notice it sufficiently to say in what part of the body the dog was struggling. The dog was taken into the lecture room, passed her friend and herself, and Dr. Bayliss went in immediately after the dog; the laboratory attendant carried the dog into the lecture room. She and her friend passed on into the lecture room immediately.

In answer to his LORDSHIP, she said that the lecture in question was the first one she had attended at the University College.

In answer to Mr. ABEL THOMAS, she said that when they got into the lecture room the dog had been put on the table. Dr. Bayliss left the room immediately after putting the dog on the table. She and her friend were left in the room alone. During the time that she was alone with her friend in the lecture room she did not notice the hissing noise that was usual when there was respiration forced into an animal. Asked to describe the struggles of the animal which she witnessed, she said they were all of a purposive character. She observed that the dog was arching its back, and was jerking its legs, and that there were upheavals of the abdomen. She and her companion occupied the third row of seats in the theatre when Dr. Bayliss entered, and she had a clear view of the dog during the demonstration. During the whole of the lecture she saw movements on the part of the dog, and they

were the movements described—the arching of the back, the jerking of the legs, and the upheaval of the abdomen. She also noticed what could be described as fear. That happened when Dr. Bayliss approached the dog. They noticed a kind of convulsive trembling on the part of the animal. They noticed that only once. She had no doubt whatever in her own mind as to whether the motions were purposive, nor that the dog actually felt during the experiment. She had noticed that glass tubes had been put into the cannula by Dr. Bayliss, but the movements of the dog were not such as to disturb the glass tubes. The dog was not able to move its neck. So far as she could see, no pipe had been inserted in the trachea of the animal. In the lecture rooms that she was in the habit of attending other than those at University College she thought that the anaesthetic could be generally smelt when it was applied, but she had not perceived it while attending the lectures at University College, and she had not smelt it on the occasion in question. After the experiment (which had been unsuccessful) the dog was taken out by the laboratory boy, who, in taking it out, banged the board upon which the dog was against the door, and after he had shut the door outside in a more or less careless way which caused another bang. She had first communicated with Mr. Coleridge in the middle of April as to what she had seen on February 2nd, and she had then given him the statement that was contained in the statement of claim, and which formed part of the subject of the libel. It was on February 2nd that she first attended Dr. Bayliss's lecture at University College, but she had since attended the entire series of lectures given by the plaintiff except the last one.

The various allegations set forth in the statement of the witness made to Mr. Coleridge were gone into by the witness, who described what she had seen and heard—the animal's howlings and whinings when the lecture-room door was open, and in a fainter degree when the door was closed; the opening of the neck for stimulation by electricity of certain glands, and the forcible struggles of the dog during the whole of the experiment. She had seen dogs suffering from hemichorea, and she was able to say that the motions she saw with respect to this particular dog in no way corresponded with the twitchings which characterized that disease.

Cross examined by Mr. Rufus Isaacs: She admitted that she did not know anything about the disease called chorea before attending the lecture, but had only known the movement attendant upon distemper in dogs. The movements of the dog experimented upon by Dr. Bayliss were unlike the irregular spasmodic motions due to a dog suffering from distemper. The witness stated that she was the joint author with her friend of a book called *The Shambles of Science*, in which she had narrated her experiences in attending vivisection lectures, including those given by Dr. Bayliss, without mentioning names. One of the chapters of the book had been devoted to the relation of the incident forming the subject of the libel. An alteration had been made in the manuscript with regard to this particular experiment by reason of the fact that the libel action had been commenced. She had omitted a reference to the scars upon the dog, but otherwise the book had been but slightly altered. This alteration she had carried out at the suggestion of the solicitors for the defendant, but she had published her book notwithstanding that those gentlemen had advised her not to do so.

In re-examination by Mr. Lawson Walton, the witness said that though in her book she had referred to the laughing and joking which went on in the course of the lectures, there was no connexion intended to be made between such manifestations of mirth on the part of the students and the sufferings of the dogs as sufferings.

The Lord Chief Justice then put to the witness three passages in her book, in which she said that the animal exhibited signs of intense suffering, and again and again lifted up its body from the board, and made powerful attempts to get free; and that it was so ridiculous to see him trying to tear off the strings and get loose as he looked as if he wanted to fly, working, as he did, his shoulders as if they were wings; and that the dog was shaking the board in his efforts to escape. Those passages represented what she believed she saw, and she thought that any person of intelligence in the room, sitting at any rate as near as she was to the animal, would have been able to see what she saw.

Miss Schartan, examined by Mr. Lawson Walton, said that she was the daughter of Captain Schartan, of Stockholm, who was on the general staff of the Swedish army, that she was born and educated at Stockholm and had also pursued her studies in Paris. She had devoted her time to literary work, had contributed articles to magazines, had composed short poems, and had pursued a line of scientific study, giving a great deal of attention to physiology, and she, with the last witness, was an honorary secretary of the Antivivisection Society in Sweden, and she had taken steps to spread her views throughout that country. She had been a companion with Miss Af Hageby during her visit to Paris and the Pasteur Institute, and had come with her to this country with a view of observing the mode in which physiology was being taught in the English schools. She had attended the course of lectures at the Imperial Institute, King's College, University College, and elsewhere, and she was joint author with Miss Af Hageby of the book entitled *The Shambles of Science*. Up till February 2nd, the date of Dr. Bayliss's lecture, the only experimental lectures she had attended were those unattended with cutting operations. As to the incidents that had occurred on that date she generally corroborated the evidence of her friend, stating that after Dr. Bayliss had brought in the dog he had left the room and she was left alone with Miss Af Hageby for about a couple of minutes. They had gone up to the dog and examined it. There was a big wound on one side of the head or neck and a smaller one on the other side. There were two openings in the neck and a cannula in each side. She saw several scars on the abdomen and the forceps clamp attached in one of the newer wounds. She did not see any trachea nor any pipe projecting from the trachea, and, so far as she observed, there was not any attachment between any pipe in the trachea by means of an indiarubber pipe with any other pipe. She had seen artificial respiration administered to an animal several times before this occasion and she did not see any indication that that was taking place while she was alone in the laboratory with her friend examining the dog. She knew the smell of ether and chloroform very well, and there was not the faintest trace of it in the room. After the lecture commenced the light was sometimes up and sometimes down, and she saw movements on the part of the dog. She saw struggles; the dog arched its back, jerked its legs, and made purposive struggles. The character of the struggles led her to the conclusion that they were purposive because the animal seemed to try to get loose. It could not move any part of its body, having regard to the way it was tied, except by arching the back and moving the legs, but the neck was held rigidly. She noticed in the course of the lecture an apparent movement of the dog in consequence of the approach of Dr. Bayliss, but the conclusive tremblings that she witnessed were not at all like those which were seen in human beings who were affected with St. Vitus's dance, or in dogs who were suffering from chorea.

Cross-examined by Mr. Rufus Isaacs: She had said that the sufferings of the dog were intense, but it uttered no sound of any description; but she attributed this to the fact that it was muzzled very tightly. One reason why the animal had not uttered any cries might have been that his vocal cords had been cut, as that was done very often during vivisectional experiments, though she did not say it was actually done in this case.

Dr. Bowie, M.D., of the University of St. Andrews, Master of Surgery at the London Royal College of Surgeons, and Licentiate of the Royal College of Physicians, Edinburgh, was examined, and said that he had practised his profession for the last twenty-four years, and had had a large experience in the administration of anaesthetics. He was familiar with the physiological laws which the experiment made by Dr. Bayliss on February 2nd was intended to demonstrate, and he did not think that it was necessary for the purposes of instructing the students, nor could he see how it could have any effect in prolonging life or alleviating suffering. He thought that the amount of morphine which was said to have been given to the dog in question would have been sufficient to kill it, and that six ounces of A.C.E. mixture in a room the size of the lecture room would have been perfectly easily discerned by ordinary people with a sense of smell.

Lieutenant-Colonel Lawrie, retired from the Indian Medical Service, and now practising in London at Harley Street, B.M. of the University of Edinburgh and M.R.C.S., said that he was the President of the Chloroform Commission in Hyderabad in 1889, and he was acquainted with the operation of the A.C.E. mixture. As the results of the inquiry made at the Commission by him on the effect of chloroform upon the pressure of blood, he said that there could be no effective demonstration of the law if the animal were completely anaesthetised, and he did not think that it was necessary for

the due instruction of the persons to whom such lectures as Dr. Bayliss's were given that experiments upon living animals were necessary.

In cross-examination by Mr. RUFUS ISAACS, he would not say that the use of morphine in conjunction with the A.C.E. mixture had been improper in the experiment which had been made by Dr. Bayliss.

The case was then adjourned till the following morning.

Wednesday, November 18th.

The hearing of this case was proceeded with on Wednesday, November 18th, before the Lord Chief Justice and a special jury.

Mr. ARTHUR ARNOLD BEALE, in reply to Mr. ABEL THOMAS, said he was a Bachelor of Medicine and had been practising in London for thirteen years. He had very large experience in anaesthetising; he did not consider morphine a true anaesthetic on human beings. He had used the A.C.E. mixture very often. The effect of A.C.E. mixture was similar, but not exactly the same as ether; it was slightly stimulating at first, but the effect afterwards would be depressing. It would tend to kill the dog, and therefore would not tend to restore consciousness. The witness had had no experience in the anaesthetising of animals. In his opinion, the operation which had been described was not absolutely necessary for the purpose of teaching.

In cross-examination by Mr. RUFUS ISAACS, the witness said that he had had nothing to do with anaesthetising animals; what he had been saying was with regard to human beings to which no doubt different considerations applied. He did not lecture on the subject of physiology.

Mr. A. J. SEWELL, examined by Mr. LAWSON WALTON, said he was a veterinary surgeon and had been a member of the Veterinary College since 1877. He was familiar with the administering of anaesthetics to dogs. In his opinion morphine was not a reliable anaesthetic in the case of a dog. The anaesthetic that he used for dogs was chloroform alone, ether alone, or the A.C.E. mixture. In his opinion if the dog had had the large dose of morphine which had been described, and shortly afterwards the A.C.E. mixture, that would not have tended to restore consciousness but would hasten the death of the dog.

In cross-examination by Mr. RUFUS ISAACS he said that if there was a glimmering of consciousness in the dog administering the A.C.E. mixture would tend to destroy it and keeping up the administration of the A.C.E. mixture would destroy any consciousness there was in the dog.

Mr. STEPHEN WILLIAM BUCHANAN COLERIDGE was then called, and, in answer to Mr. LAWSON WALTON, he stated that he was a member of the Bar, and held the office of Associate and Clerk of Assize on the South Wales Circuit. He had taken a very great interest in animals. He was now and had been ever since 1896 or 1897 Honorary Secretary of the Antivivisection Society. He had devoted a good deal of time and labour to that office and the cause which it represented.

Q. You believe sincerely in the objects which it is seeking to obtain?—Absolutely.

Continuing, the witness said the two ladies first came to him last autumn. He believed they called at the office in 1901, and in the autumn of 1902 they again called. They came again in the middle of April. That was the next time he saw them.

Q. You had better tell us in your own words what happened at the interview of April?—A. They told me they had attended a complete course of lectures through the winter at various physiological laboratories, and they gave me an account of their experiences of what they had seen; and they read out passages from a book, or a series of articles for the newspaper, that they had prepared in respect of some of those experiences.

The LORD CHIEF JUSTICE: Did they read from a manuscript?—A. Yes, I was immensely struck with what they read, and as in a few days there was going to be a general meeting of my society at St. James's Hall I asked them to allow me to use some of the materials they had got in that manuscript, and I asked them if they would write a very short statement of one of the experiences that seemed to me a very graphic and striking one. They did so there and then; they wrote it on a piece of paper. I went through it very carefully, as I wished to have nothing but bare facts in this statement, and it did contain only bare facts of what they saw. I asked them if they were prepared to substantiate everything if necessary in the witness-box because I said it might come to that. They said they were. I then sent it up to the typewriting room, where it was in the ordinary way typewritten in press-copying ink. It came back again. I read it over to them from the typewritten copy once more, and then it was press-copied in the book. As regards the disappearance of the original writing it is the practice in my office for my secretaries to dictate their letters to the shorthand writer and the shorthand writer extends it on machine in press-copying ink. The letters then come back and are signed and are press copied in that form in a book, and the original shorthand note is not preserved. In my own case I do not dictate the letters, but I write my own letters. I did propose to them that an alteration should be made in the first copy: the alteration was of two kinds. First, I had ascertained from various evidences that I had received from students at the Slade School that the sound of the cries of dogs was frequently heard in the school. I wished to add that to the statement to make it more complete, so I asked them whether they could confirm that themselves, and whether they had also heard the cries of dogs. They said they could quite substantiate that. Then I said, "You had better put that in the statement as well, and it will be all one statement." They then added that, and they also added the word "electric" or "electricity" to the word "stimulation," because I thought, reading it out, people would not understand what "stimulation" meant unless that word was added, and in that final complete form I took the statement to St. James's Hall and read it out. The witness, continuing, said that he saw the ladies after the meeting, after the writ had been issued in the present action. He then ascertained that they proposed to publish a book. He asked them not to publish the book till the present trial was over. He consulted his legal advisers, and they agreed with him that it would be an unfortunate thing if the book was published before the action was tried, because it was difficult for him to dissociate himself entirely from it.

Q. Were you or your advisers able to influence the ladies?—A. Well—we failed. He had no part or share in the publication of the work, and his Society in no way participated in the distribution of it. They had not sent out a single copy from the office. He ascertained the position and qualifications of the two ladies in question at previous interviews. He knew they belonged to good Swedish families, and were persons of high character and large cultivation. He had no reason whatever to doubt the credibility of their statements. He absolutely believed what they said to be true after he had his interview with them. He was under that conviction at the time he published the statement complained of. The witness was then asked whether in his honest opinion the ventilation of this matter and the publication of the statement was conducive to the due discussion of the subject in which he was interested. Mr. RUFUS ISAACS objected to the question, whereupon the LORD CHIEF JUSTICE said the question was not a proper one. The question they had to decide was not one of honest belief. Mr. Walton was entitled to say that Mr. Coleridge had acted bona fide, but the question he had put to the witness went further than that. Mr. Coleridge was not the judge of whether the statement he made was honestly necessary. His LORDSHIP said that he should tell the jury that this was a matter of public importance and that public discussion upon it was legitimate.

The witness, in answer to Mr. LAWSON WALTON, said that the topics which he wished to draw attention to were, first, the absolute inadequacy of the present law to protect animals from extreme suffering; and secondly, the absolute inadequacy of the present law as regards the inspection under the Act. Under the present Act, under Certificate B, which Dr. Bayliss possessed, any amount of torture was permitted, that was to say, as issued since 1892. After 1892 the words were put in, "During the initial operation of such experiments the anaesthetisation shall be complete." Before that it was "during such experiment," which covered the whole experiment. He had no wish to travel outside what fairly fell within those limits he had described. He had never seen Dr. Bayliss before this case, although he had read his works.

Cross-examined by Mr. RUFUS ISAACS:

Q. You were anxious to do what was right and fair before you published this statement?—A. In what sense?

Q. I should have thought in every sense.—A. Certainly.

Q. And having a statement brought to you by those two ladies before you published it to the world, as you did, I ask you as an honourable gentleman and member of the Bar whether you did not think it right to give every opportunity to the person against whom you were going to make the

charge of explaining it before it was published?—A. In what way? I wished to do what was fair.

Q. I suggest that the proper thing to have done would have been to have communicated with Dr. Bayliss, or spoken to him about it.—A. I did not do that, certainly.

Q. That would have been a fair thing to do.—A. I have read Dr. Bayliss's works.

Q. I have put the question to you as plainly as I can.—A. I did not think that what I was told was the least unlikely.

Q. Did you think that Dr. Bayliss would tell you a lie?—A. I thought that what I was told by the ladies they had seen was not in the least inconsistent with what Dr. Bayliss had written.

Q. I put it to you that before you published this statement to the world as you did that you should have asked Dr. Bayliss whether the statement was true.—A. I did not write to him.

Q. Did not you write to him because you were not going to believe his denial if he had made one: or would you have believed him if he had made one?—A. I do not think I should.

The Lord Chief Justice: Did you make any inquiry except from these two ladies?—A. No, I did not. I believed them absolutely, and I do now.

Mr. Rufus Isaacs: You do now?—Yes, I do.

Q. In spite of what Dr. Bayliss has said?—A. Yes.

Q. In spite of what Professor Starling has said?—A. Yes.

Q. And in spite of what has been said by Dr. Dale and Mr. Scuffle?—A. I believe the ladies to be witnesses of truth.

Q. Then do you believe it is a lie that tracheotomy was performed?—A. Every statement of fact made by the ladies I believe.

Q. Will you answer the question?—A. The ladies, as far as they saw the demonstration, were of opinion that tracheotomy was not performed. They were nearer the board than anybody except Dr. Bayliss, and therefore I believe them.

Q. You have heard Professor Starling swear that it was performed?—A. Tracheotomy may have been performed in the other room, but I believe there was no pipe attached to the trachea.

Q. That is a different question?—A. Then I misunderstood you. The ladies were not in the other room with Professor Starling.

Q. Do you know Professor Starling?—A. No.

Q. Do you know anything against him except that he performs these operations which you do not approve of?—A. No.

Q. Or do you know anything against Dr. Bayliss?—A. No.

Q. Have you any reason to doubt that they are gentlemen of honour?—A. I do not know anything about them.

The Lord Chief Justice: You must answer that question. Apart from vivisection, have you any reason to doubt that they are gentlemen of honour?—A. Not the least.

Mr. Rufus Isaacs: Except that they perform these operations.

In answer to further questions by Mr. Rufus Isaacs, the witness said he did not think he knew very early in the matter that Professor Starling denied the statements which were made by the ladies. The ladies were known to him as Honorary Secretaries of the Swedish Antivivisection Society. When they came to him they read portions of the article from the manuscript. He did not think he knew that the article was headed "Fun" at that time. The statement about holiday amusements and jocularity which was referred to was read to him before he made his statement in St. James's Hall.

The learned counsel then put to the witness whether certain passages which appeared in the article written by the two ladies were read to him before he made his statement in May, the suggestion being on the part of the learned counsel that throughout it was meant for the reader to understand that the operation in the room during the lecture was treated as an amusing joke from beginning to end whilst the animal was suffering intense pain. The witness said that passage was read to him, but he did not think it was read to him in the form in which it now appeared, but he so understood the drift of the article. In spite of that statement, he saw no reason to doubt the accuracy of the statement of the two ladies. He did not think the article said that a number of students and the doctor were amused at the pain the animal was suffering. He did not think that was a fair interpretation of the article. Thereupon Mr. Rufus Isaacs read the article to the witness, and the witness in reply said that the article suggested to the reader that the persons attending the lecture at University College did not regard the suffering of the animal as part of the thing they need consider. He thought that the article would suggest to the reader of the passage that the audience was amused, or would be amused, at the attempts of the animal to get loose. In answer to further questions, he said that he took the greatest care to verify every statement that he made in St. James's Hall. The passages which had just been referred to were not read out by him in St. James's Hall. He asked the ladies before he published their statement if they were prepared to stand to it on oath; he expected there might be an action for libel arising out of it. He asked them if they knew of any other student who was present or if they could get another witness. The learned counsel then read the latter part of the speech of Mr. Coleridge at St. James's Hall. "As to the question whether the torture of animals actually took place or not, the fact that terrible suffering was inflicted on animals had recently been brought home to him personally in a manner that he should imagine ought to convince the most callous and the most indifferent." This was not contained in the written statement which the ladies gave him, but it was made upon the statements of these ladies. He was then asked whether there was anything in the ladies' statements that was anything like the words he used, and he replied that the statement of what was done to the dog, if it was true, in his opinion amply justified every word of what he said. It therefore rested on the statement with regard to the dog. In regard to the passage "Within the walls of that University there was a laboratory licensed for vivisection, and into its dark portals there passed a never-ending procession of helpless dumb creatures," the witness replied that the yearly reports supplied that to him. As to the next passage, "Within the precincts of that University, and separated from this pit of Tophet by but a slight wall, there was a school dedicated to one of the purest and loftiest of human studies—that of the Fine Arts. But between that place of peace and this place of torment the dividing wall was slight and into the serene and silent school of the beautiful"—by which the witness said he meant the Slade School—"there rose distinct from the vivisectors' den the shrieks and piteous cries of the dogs in their agony." That he got from many Slade students. Being asked if he had been to the Slade School himself, the witness replied that he was a painter, but did not study at the Slade School. He had never been to the Slade School himself to verify the truth of the statement. The learned counsel then read a further portion of the article, and suggested to the witness that it meant that they were told lies about what was happening. The witness replied that scientists denied that they tortured animals, and he said that their publications proved that they did.

Q. That is to say, that what they were saying was not true?—A. Certainly, when they say they do not torture animals I do not believe them, because I have read their publications.

The witness was then cross-examined as to what had become of the original statement made to him by the ladies. He said a search had been made for it, but it could not be found, and the typewritten copy was all that he had. Subsequently to his interview with the two ladies at which they made their statement to him he returned their statement with one or two suggested alterations. He knew directly after he had made the speech that proceedings were going to be instituted.

Q. Their original statement was your sheet anchor in the case?—A. It was very important. I had fathered it and I regarded myself as responsible for it.

The Lord Chief Justice: You adopted it.—A. Yes. I adopted it. He could not say exactly whether there was any alteration made by himself in the original statement submitted to him. He remembered seeing an article in the *Daily Express* headed "Scientists Angry—Anti-vivisection Statements Warmly Denied." That alleged that the statements which had been made by him at the meeting at St. James's Hall were absolutely contradicted by Professor Starling. On May 6th an answer appeared headed "Every word on oath." And in that it was alleged that Mr. Coleridge was prepared to prove that the original statement was true. Subsequently, questions were asked in the House of Commons about the matter, and the Home Secretary replied that the operation was performed under Certificate C, and said he could take no action in the matter. From the very first he knew that the statements he had made at St. James's Hall were strenuously denied by all concerned. On May 8th he wrote to the *Daily News*. He

believed what the ladies said, that the animal was undoubtedly conscious, and that the violent and purposive struggles of the animal indicated complete consciousness.

Q. If that were so there was an actual liability, not under the licence, but a liability to pay a penalty of £50 under Section 11 of the Act for operating in that way.—A. Yes, I suppose technically he would be liable. There has been no prosecution under that section of the Act. Nobody can prosecute without the leave of the Home Secretary, and no prosecution could take place unless it was within six months.

Q. Was there not a prosecution of a professor under the Act?—A. Not in my time.

Q. You could have applied to the Home Secretary of course?—A. Yes, I could have applied.

Q. And you did not?—A. No.

In answer to further questions as to whether he had taken a very prominent part for some time in this agitation, the witness said he had done his best. He did not send a letter to all the incumbents of London churches, but he did send letters to certain of them to be distributed at the church doors before the services with reference to this matter. That was for the purpose of preventing persons subscribing to the Hospital Sunday Fund without due knowledge that a portion of their subscriptions would inevitably go to schools that published no accounts, and which were places licensed for vivisection. The learned counsel then put to the witness that Dr. Bayliss had answered on oath as to what had taken place in February, and that this was done before coming into court by an affidavit.

Q. You do not accept that statement?—A. In any case where Dr. Bayliss's statement traverses the statement of the two ladies on any question of fact, I have believed the two ladies, notwithstanding that his statement had been made on oath.

Q. You know you were attacking him in a very serious manner?—A. How do you mean?

Q. Supposing the assistant lecturer had been prosecuted and convicted, it was a serious matter enough, was it not?—A. It is a large hypothesis I think; I do not think it is likely that the Home Secretary would prosecute.

Q. You may be right, because you know it requires evidence to commit a man?—A. Yes.

The witness was then re-examined by Mr. WALTON. He said that he believed the ladies when they made the statement to him, and he believed them now as being the witnesses of truth. There was nothing in the book to which reference had been made to discredit the truth of their observations. It was after he had heard the reading from the book that he suggested a bare statement of fact should be made. That he adopted and nothing else. In regard to what he had been asked as to the notices which had been sent to the various incumbents, he said it had come to his knowledge, by studying the accounts of the London Hospital, that after the date of the foundation of the Prince of Wales's Hospital Fund some of the donations of funds from the general funds of the hospital to the medical school went up very largely. He thought that was wrong, and he publicly exposed it, and he would continue to do so. The subscriptions were received for the benefit of the sick poor and not for the support of medical students, or for the procuration of animals to be vivisected. He thought the accounts should be separately kept. He had never attended any vivisection lectures himself, or any surgical operations. He did not know that this particular lecture was the first vivisection lecture the ladies had attended.

Miss HORSLEY then gave evidence as to having typewritten the original statement.

Mr. LAWSON WALTON announced that that was the close of the case for the defendant.

Professor STARLING was then recalled, and in answer to his LORDSHIP he said he was able to say from personal recollection that the tube through which the anaesthetic went was in the dog's throat when the dog was on the board and when it was taken by Dr. Bayliss into the adjoining room. At the request of Mr. LAWSON WALTON he described the kind of tube that was used. The tube was tied into the windpipe, and would not be taken out until the animal was killed. If any gentleman wished to administer an anaesthetic after the dog had been taken to the other room he must administer it through the pipe such as he had described, and which was of a zig-zag nature.

Dr. DALE was recalled, and in answer to his LORDSHIP, said he saw the tube put in, and it was in during the whole time he was there. When he took the dog out to kill it the tube was still in it. He had not the least doubt that the tube was in the dog from the time Professor Starling put it in until he carried it out. The dog was on its back, and if people were within a few feet or a few inches he did not know how they could escape seeing the tube.

Mr. SCUFFELL was recalled, and in answer to his LORDSHIP said he knew a tracheotomy tube when he saw one, and one like that produced was in the dog. The tube was in the dog's neck all the time. He was quite sure of that, and it was in the dog when it was carried out.

Dr. BAYLISS was recalled, and in answer to his LORDSHIP said the tube in question was put in by Professor Starling in the previous room, and was tied in. When he took the dog into the lecture room it was still in the throat, and the tube remained in all the time. He had no doubt whatever about it. It was possible that students were allowed to be alone in the room and that two ladies might have come in.

This concluded the evidence, and Mr. LAWSON WALTON then addressed his Lordship and the jury on behalf of the defendant.

Mr. RUFUS ISAACS replied on the whole case on behalf of the plaintiff.

The LORD CHIEF JUSTICE then proceeded to sum up the case, and in doing so said that as it was one of very great importance, he would ask for the same degree of attention from the jury as they had given throughout to the case while he endeavoured to remind them of what were the main parts of the evidence, and to put clearly before them the real question they had to deal with. It would be for them to deal with the matter in a judicial spirit, and to disabuse their minds of any topics of prejudice that learned counsel on one side or the other might have introduced in the interests of their respective clients. In the first place, he thought that anybody must approach the question which arose in that case with very considerable sympathy with the people who were advocating a cause in which they believed—namely, the people who called themselves antivivisectionists. He did not know whether the jury felt as strongly on the matter as he did himself, and he only spoke to them as one man to another, but all he could say was that if any man, scientific or otherwise, unnecessarily or wantonly ill-treated a dumb animal, no punishment in his estimation could be too severe for him. [Applause in court, which his Lordship immediately suppressed.] Therefore they had to deal with a case in which an honourable gentleman, a member of the Bar, felt very strongly in a cause in which both humanity and Christian feeling were closely bound up, and undoubtedly the defendant was entitled, from that point of view, to receive every consideration. On the other hand, there were men, many of them of great personal attainments and ability, who were working, and working honourably, in the cause of science, who honestly and conscientiously believed, and could probably point to many facts to show, that a great amount of suffering, disease, and possibly death, had either been alleviated or prevented by the researches which came from vivisection. That was their belief, and there were some people who thought that great good could be done, and a great amount of knowledge derived from that method of research. Under these circumstances there ought to be great care in dealing with the matter which was submitted to their decision and if any member of the jury had any sort of prejudice on one side or the other he ought to dismiss it from his mind. The action ought to be dealt with as an ordinary action for libel in which they had to concern themselves with allegations against the plaintiff, and they had not to decide in favour of the plaintiff because they had any sympathy with the cause of science, nor were they to decide in favour of the defendant because they had any sympathy with the cause of humanity. They had to look at the case as fairly and impartially as they could, and to see on which side the truth lay. They had nothing whatever in the world to do with whether the question of vivisection was right or wrong. It would be his duty to point out to them that vivisection was not only considered by the law of the country to be right, but to be so right that it had been safeguarded by very important restrictions in the interests of humanity. Therefore, whether the Act of Parliament that controlled the practice of vivisection ought to be repealed or not was not a matter for their consideration, and upon that point neither he nor the jury had any right to express an opinion nor allow the opinion which they entertained on the subject one way or

the other to warp their judgement. It was an Act of Parliament which had now been in force for something like thirty years, and they had to consider whether, applying the law of that Act, the plaintiff had been guilty of the acts with which he had been charged, or whether the defendant had said anything in respect of which he ought or ought not to be held liable in damages. In the same way he directed them to disregard any question that had been addressed to them as to the way that Mr. Coleridge, the defendant, conducted his Antivivisection Society campaign. Questions had been put by plaintiff's counsel as to the way in which the subscriptions of the public had been sought to be affected on Hospital Sunday by the defendant with a view to preventing a portion of the subscriptions intended for the relief of the sick poor being applied to the maintenance of laboratories where vivisection was practised. Such matters he directed them to disregard entirely, and he had only allowed the questions on that branch of the subject to be put by reason of the fact that it was not a very easy matter at all times to stop counsel in the course of cross-examination, though at the time he had indicated that it had really nothing to do with the question. One word more he must say before coming to the law of the case and directing their attention to the real question at issue, and that was that in the hearing, trying, and determination of that action it must be dealt with according to the ordinary rules of evidence which made it necessary that the person who had taken upon himself to launch his libel was bound to prove it according to the accepted rules of evidence in that court. He was bound to tell them that in the witness-box Mr. Coleridge had stated that in the matter of the conflict of testimony between Dr. Bayliss and the two ladies who had made the statement which was the foundation of the libel he believed the ladies and did not believe Dr. Bayliss. A man was not entitled to put before the jury such a standard of truth, and they had no right to disregard a man's oath and evidence because he was doing something that they did not approve of unless his conduct in that direction had biassed his mind with respect to what he was stating as a witness. If they came to the conclusion that Mr. Coleridge had practically indicated that he had made no further inquiry into the statement which had been made to him by the ladies, because he believed that there would be a denial of it, and that he did not believe the denial of a person who practised vivisection, they would have to take that into consideration when they came to balance the evidence.

Mr. Lawson Walton at this point interposed, and said that Mr. Coleridge assured him that he did not mean to say that he would not believe a vivisector.

The Lord Chief Justice said he was very glad to have that made clear.

Mr. Lawson Walton added that all his client meant to say was that he did not believe Dr. Bayliss with regard to the facts of this case.

The Lord Chief Justice again expressed pleasure at hearing the explanation, because he certainly had been impressed by what Mr. Coleridge had said in the box on that point, and he was under the impression that the defendant did not believe the testimony of those gentlemen who were vivisectors, while he did believe the testimony of the ladies who had made to him the statement which they had made. Coming to the question of how the law stood in regard to that matter, the statute had recognized the very dangers which Mr. Lawson Walton had called attention to, and the Legislature had thought it expedient to amend the law relating to cruelty to animals by extending it to cases of animals which were for medical, physiological, or scientific purposes suitable subjects for vivisection. The Act laid down the conditions and restrictions under which experiments upon the living animal should be conducted so that they should not be calculated to give pain, and it imposed a penalty for the first offence on those who were licensed to practise vivisection of £50, and in the second instance of £100, with the liability to imprisonment. Therefore medical gentlemen, whoever they were, who intentionally subjected animals to pain in the course of experiments upon them without complying with the provisions of the Act were committing a criminal offence, and it did not require him to tell them that when people had been charged with such a criminal offence such as had been brought against Dr. Bayliss no question of fair comment arose, and the only question in relation to such a charge of libel was whether the libel was true and whether the offence had been committed. Among the material safeguards imposed by the Act, and which any medical gentleman who had taken out a licence under the Act must observe, was, first, that the animal during the whole of the experiment must be under the influence of some anaesthetic of sufficient power to prevent it feeling pain; and the second was that the animal, having been subjected to experiment for an absolutely necessary purpose, must be killed before it recovered from the influence of the anaesthetic. That being so, could it be denied that Dr. Bayliss was bound to take proper precautions, and not only to take them, but to see that they were taken, that the law should be observed. If it was true, as the libel charged against Dr. Bayliss asserted, that he had been experimenting on an animal not under the influence of such an anaesthetic, that was an allegation of a criminal offence, and his Lordship told them—and they must take the law from him—that in order to justify that statement the defendant must prove that the offence had been committed. The defendant was not entitled to leave the matter in doubt. He had made the charge and had undertaken to justify it. He said that the allegations of fact were true in substance and in fact, and therefore the first material point they would have to consider with reference to the libel was whether it was borne out by the evidence. If they came to the conclusion that the animal was not under the influence of anaesthetics so strong or so administered that the animal could not feel pain, that would amount to a criminal offence, and having come to that conclusion there was no question of fair comment or it being a matter of public interest, and unless the defendant made out that part of the case there must be a verdict for the plaintiff. If, however, they came to the conclusion that the libel did not go so far as to charge the plaintiff with having experimented on an animal not under the influence of anaesthetics, they might have to consider the question of fair comment on what the plaintiff had done. It was clearly also to be borne in mind that as between comments and criticism on the one hand and allegations of fact on the other, it was one thing to comment upon or criticize with severity, and another to assert of a man that he had been guilty of particular acts of misconduct. They might, however, have to say whether or not, if there was no actual charge in their opinion of committing an offence, there was such an imputation of fact as to an offence having been committed as went beyond fair comment. His Lordship then proceeded to review the evidence in some detail, and to point out the statements forming the subject matter of the libel. In conclusion his Lordship, in submitting the case to the jury, said that it was impossible to regard the case as a light one. That Mr. Coleridge was entitled to comment in the strongest possible way was self-evident, but a person who undertook to advocate a cause was not entitled to do so by charging other people with criminal offences unless he was able to substantiate such charges. If they thought that the defendant had made out a justification they would give him their verdict at once. If, on the other hand, they thought the defendant had not made out his justification and that the plaintiff had been libelled by the statement that he had been guilty of the conduct attributed to him, then they ought to award him such damages as they thought proper, because no man had any right to import into the public discussion of public questions slanderous defamations of any other man unless he was prepared to prove those charges in a court of justice.

The jury then retired (at twenty minutes to five o'clock), and after an absence of twenty-five minutes returned into court with a unanimous verdict for the plaintiff, assessing the damages at £2,000, his Lordship certifying for the costs of a special jury.

The result was received with a considerable amount of applause amongst the public in court.

Bequests to Hospitals.—Under the will of the late Mr. Joseph Gillott, of Solihull, Warwick, £500 each has been left to the Birmingham General Hospital, the Queen's Hospital, Birmingham; the Birmingham General Dispensary, and the Birmingham Royal Orthopaedic and Spinal Hospital. Mr. Frederick William Schlusser, of 21, Bedford Court Mansions, W.C., has bequeated £1,000 each to the London Fever Hospital and the German Hospital. Miss Elizabeth Crowther of Leeds has left £400 to the Leeds General Infirmary, and £200 each to the Ilkley Hospital, the Harrogate Royal Bath Hospital, the Cookridge Semi-Convalescent Hospital, and the Leeds Hospital for Women and Children.

MEDICAL UNIONS AND THE BRITISH MEDICAL ASSOCIATION.

WE have received the following letter from Dr. Jepson, of Durham:

SIR,—In different parts of the country medical men have banded themselves together for the purpose of improving their position professionally and financially. In some places these Unions have been carried on with much success and benefit to medical men.

The British Medical Association has undergone some change in its constitution. The immediate effect of this has not yet had time to make us say whether it is for better or worse. As one of those who assisted in the agitation for this change, I look patiently for a great improvement, which cannot come at once.

In the North a movement is started for the purpose of putting an end to some of these Unions which have done good work, urging them to be absorbed into the British Medical Association.

A common complaint amongst many members of the Association has been that the British Medical Association has done so little for the profession. Does it not seem rather premature to try and destroy these useful Unions before you know for certain that the British Medical Association can do anything to take their place?

At the last general meeting of the County of Durham Medical Union last June, we had a very able and clear address from Mr. Whitaker, the Organizing Secretary of the British Medical Association. He approved of our Union in all its aspects, and his advice to us was that we should continue as a Union until such times as we thought the British Medical Association could carry out the same work in the same way.

If this is the advice and policy of Mr. Whitaker, how is it that others in the British Medical Association would adopt an opposite policy—namely, that of destruction as opposed to construction?

As far as I can see, there is not at present any sort of organization ready at hand to take the place of these Unions, and if these Unions collapse then we shall become a laughing-stock to the miners and others who were beginning to believe that there was some combination amongst the doctors. And with this decadence the doctors will lose all they have gained in their dealings with the working classes.—I am, etc.,

EDWARD JEPSON,
President, County of Durham Medical Union; Member of the Council, North of England Branch, British Medical Association.

Durham, Sept. 14th.

In a covering letter dated November 11th, Dr. Jepson states that "there is no intention on the part of the Unions to oppose the Association."

As Dr. Jepson makes personal reference to the Organizing Secretary of the Association, we considered it proper to furnish a proof of the letter to Mr. Whitaker, who has favoured us with the following observations:

SIR,—While appreciating the kind terms in which Dr. Jepson has referred to my address at the last annual meeting of the County Durham Medical Union I fear that some misconception, which I am sure Dr. Jepson would not desire, might arise on account of the connexion in which a remark of mine on that occasion is quoted by him. May I, therefore, briefly explain under what circumstances I ventured to suggest that the Durham Medical Union should be maintained to continue the work that it is now doing until the British Medical Association is in a position to take that work over?

The object of my attendance on the occasion in question was to explain to the members of the Durham Medical Union:

(*a*) How, under the present constitution of the Association, the Divisions could, singly or in combination, do that work for the profession which has been undertaken by the Durham Medical Union and similar societies, and could hope for even greater success on account of their affiliation to a powerful national organization.

(*b*) That it now rested solely with the members of the Association, and of the profession generally, in Durham to say whether this work should in future be done by the Association—that is, by the local Divisions and Branch.

(*c*) That, therefore, all that remained to be done to effect the proposed transfer of work was that the North of England Branch and the Divisions of that Branch in Durham should declare their willingness for the task, and should take the necessary measures, including the adoption of suitable rules for the purpose, and the enrolment of all members of the Union in the Association.

(*d*) Because the Divisions and Branch would require a little time for taking the steps described, and for this reason only I suggested that meantime the Union should continue its present work; but I also pointed out that if they were satisfied by my explanations, there was no reasons for delaying the commencement of the necessary procedure.

Further I must disclaim having suggested that the North of England Branch and its Divisions should continue the work of the Union "in the same way." That would appear to me to be a question to be decided by the Divisions when they meet to consider the matter.—I am, etc.,

November 18th. J. SMITH WHITAKER.

ASSOCIATION NOTICES.

ELECTION OF MEMBERS.

ANY candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are fitted up for the accommodation of the Members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 a.m. to 5 p.m. Members can have their letters addressed to them at the office.

GUY ELLISTON, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

BORDER COUNTIES BRANCH.—The next general meeting of this Branch will be held in the Dumfries and Galloway Royal Infirmary, Dumfries, on Friday, December 11th. It is hoped, through the kindness of the honorary staff, that the meeting may be a clinical one. Drs. Clarke, Kerr, and Grieve will show cases; Dr. Donald (Carlisle) will read a short paper upon the Electrolytic Treatment of Naevi; and it is proposed to have a short discussion upon the Medical Acts Amendment Bill. Any other gentleman desirous of making communications to the meeting should acquaint the Secretary at once of their intentions.—FRANCIS R. HILL, 12, Bolton Place, Carlisle, Honorary Secretary.

DORSET AND WEST HANTS BRANCH: BOURNEMOUTH DIVISION.—A meeting of the members of this Division will be held at the Medical Society's Rooms, Shaftesbury Hall, Bournemouth, on Wednesday, November 25th, at 4 p.m., to consider: (1) Resolutions adopted by the Council for the improvement of the Vaccination Acts (see SUPPLEMENT, October 31st, page ccxii); (2) proposed Medical Acts Amendment Bill (see SUPPLEMENT to the JOURNAL of August 22nd); (3) Direct Representation of the British Medical Association on the General Medical Council; any other business.—C. H. W. PARKINSON, Wimborne, Honorary Secretary of Division.

DUNDEE AND DISTRICT BRANCH.—This Branch will meet in University College, Dundee, on Friday, November 27th, at 4.30 p.m., to consider the matters referred to the Divisions, and printed in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL for August 22nd. The members will dine together at 6.30 p.m. in the Queen's Hotel.—R. COCHRANE BUIST, G. HALLEY, Honorary Secretaries.

METROPOLITAN COUNTIES BRANCH: WANDSWORTH DIVISION.—A dinner will be held at the Crichton Restaurant, Clapham Junction, at 7 p.m., on Thursday, November 26th, to meet Dr. W. Hale White, F.R.C.P., who will read a paper at 9 p.m. on Some Points in the Diagnosis and Treatment of Common Diseases of the Liver. A discussion will follow. Tickets, 6s. each. Non-members as well as any members outside the Division are invited to attend.—E. ROWLAND FOTHERGILL, Torquay House, Southfields, S.W., Honorary Secretary.

SOUTH-EASTERN BRANCH: ISLE OF THANET DIVISION.—The next meeting of this Division will be held at the Granville Hotel, Ramsgate, on Thursday, November 26th, at 4.30 p.m.; Dr. R. T. Bowden in the chair. Agenda:—Matters referred to the Division for consideration by the Council of the Association: (1) Medical Acts Amendment Bill; (2) Improvement of Vaccination Acts; (3) representation of British Medical Association on General Medical Council (see SUPPLEMENT to the BRITISH MEDICAL JOURNAL, August 22nd, 1903). Mr. Treves will start a discussion on the Value of Overfeeding. Dr. Halstead: The Diagnosis between Functional and Organic Diseases of the Nervous System. Dr. B. A. Nicol: The Treatment of Adenoid Growths in the Naso-pharynx. Dinner will be served at 7 p.m. in a private room of the hotel, 5s. each, exclusive of wine. Members wishing to dine are required to inform the Secretary at the meeting. All members of the South-Eastern Branch are invited to attend these meetings and to introduce professional friends.—HUGH M. RAVEN, Barfield House, Broadstairs, Honorary Divisional Secretary.

South Wales and Monmouthshire Branch: South West Wales Division.—The next meeting of this Division will take place at Llanelly in May. The Honorary Secretary will be pleased to hear from gentlemen who will kindly read papers at that meeting.—Glanville Morris, M.D., Mardy, Glamorgan, Honorary Secretary.

Staffordshire Branch.—A meeting of this Branch will be held at the North Stafford Hotel, Stoke-upon-Trent, on Thursday, November 26th, at 4 p.m. The Secretary would be glad to have a note of papers and cases.—G. Petgrave Johnson, Stoke-on-Trent, Honorary Secretary.

West Somerset Branch.—The autumn meeting of this Branch will be held under the presidency of Dr. David Brown, at the Taunton and Somerset Hospital, on Friday, November 27th, at 4 p.m. Mr. H. Percy Dean, M.S., F.R.C.S., Surgeon to the London Hospital, has kindly undertaken to give an address on Jaundice: its Causes and Treatment from a Surgical Standpoint, followed by a discussion. Any member wishing to bring any communication before the meeting should give the Honorary Secretary early notice. The Annual Dinner for medical men residing in West Somerset will be held at the London Hotel, Taunton, at 6 p.m. for 6.30 p.m. punctually. The chair will be taken by Dr. David Brown. A programme—musical, etc.—will be carried out after dinner. Tickets 6s. each. Members are at liberty to bring guests, for whom tickets may be obtained at the same price. In order to make these dinners as successful as possible, it is hoped that as many as possible will make an effort to be present. Members intending to be present should inform the Honorary Secretary by November 23rd.—W. B. Winckworth, 3, Carlton Terrace, Taunton, Honorary Secretary.

SPECIAL CORRESPONDENCE.

PARIS.

Académie de Médecine: Report of Commission on the Supply of Drinking Water to Garrisons; M. Chauvel on Appendicitis in the French Army during Recent Years.—Death of Dr. Brun, Surgeon to the Sick Children's Hospital.—Complimentary Dinner to Dr. Rivière.—Vital Statistics of France for 1902.

In July last the Minister of War, General André, addressed to the Académie de Médecine a letter referring to the too frequent epidemics of typhoid fever in the army and which had been proved to have been waterborne. For many years now garrisons have been provided with Chamberland filters and when a garrison has been threatened or infected with typhoid fever, the water has immediately been boiled in spite of the existence of filters: moreover, when the water supply has been suspected General André has ordered the use of water sterilized by heat with very encouraging results. The Minister of War appealed to the Académie for information on the following points:

1. Is not the first and best prophylactic measure against waterborne disease to provide all garrisons with a water supply free from all contamination from its source to its distribution; and, given these conditions, does it not become useless to have recourse to any measures for sterilizing water? 2. In cases when troops seem threatened with a suspicious water for consumption is it not advisable to provide all garrisons with apparatus for sterilization of water by heat rather than to employ filters of which the working has seemed rather illusory and even dangerous from the false sense of security which it gives, as experience has shown during recent years?

The special commission, which was appointed in July to consider the question, has just handed in its report. During the fifteen years for which the filters have been in use in barracks and military hospitals they have been of invaluable service, and time and again they have quickly stopped epidemics, while the frequency of typhoid fever in the army has fallen 50 per cent. during this period. The weekly cleaning and remounting of 150 bougies and of the receptacles for the filtered water requires experience, and any relaxation of care soon makes the filters useless or even dangerous. Sterilizers by means of heat are new in the army: there are only about twenty in use as yet, each sterilizing from 2,500 to 10,000 litres of water in the twenty-four hours. These have given excellent and immediate results. They destroy absolutely all waterborne pathogenic germs, and their sterilizing power is more durable and less limited than that of a filter which becomes blocked, cracks, or breaks. They work automatically day and night, almost without inspection; they are strong, and only require cleaning every two or three months, and this can be done in a few hours by the armourer of the corps. The report of the special commission presented by M. Vallin has been voted by the Académie, and the following conclusions have been sent in reply to the Minister of War:

1. The first and best prophylactic measure against invasion by waterborne disease is most certainly to provide all garrisons with pure spring water of good quality protected from all contamination from source to distribution.

2. When these conditions are fulfilled, it becomes useless to have recourse to any means of sterilization of the water, except temporarily in case of accident.

3. Without giving up the use of filters, which render great service when they are well kept and inspected, there are grounds for experimentally increasing the number of sterilizers by heat, taking the greatest care to restore and keep all its freshness in the sterilized water, not less than in filtered water, during the hot months.

—M. Chauvel recently made an interesting communication to the Académie de Médecine on appendicitis in the army during recent years. The number of operations has been steadily increasing. In 1897 there were 49 cases: in 1899, 106: in 1900, 142; and in 1901, 166 cases. The mortality has varied between 11.5 per cent. in 1898 and 20.7 per cent. in 1899; during 1901-2, for nearly 200 operations, the mortality was about 12.5 per cent. As to the number of cases of this disease, during 1901 493 patients were admitted into military hospitals suffering from appendicitis. Of these, 327 were treated medically, while 166, or 35.7 per cent., required surgical intervention. There were only 5 deaths (1.5 per cent.) following the expectant or exclusively medical treatment. During 1902 668 cases were admitted; of these 188, or 26.6 per cent., required surgical intervention, with 23 deaths: there were only 5 deaths—that is, scarcely 1 per cent.—among the 470 cases treated medically. M. Chauvel then drew attention to the distribution of the disease. In 1901 the army corps in France showed 491 cases, that is, 0.95 per 1.000 of the force, while the XIXth Corps in Algeria and the division in Tunis only showed 32 cases, or 0.44 per 1.000 of the force. In 1902 the same ratio was observed. Looking further into the data it was found that among the troops of French or European origin in Algeria and Tunis the morbidity was about half of what it is in garrisons in France—that is, 0.64 cases per 1,000 of the force compared with 1.26 per 1,000. The native soldiers are much less liable to appendicitis than French soldiers in Algeria—0.14 cases per 1.000 of the force as against 0.64 per 1.000. The most rational explanation of the rarity of appendicitis among the natives of Algeria and Tunis seems to be the action of an almost exclusively vegetarian diet, helped by a highly-developed natural resistance to infective agents which attack lymphoid tissue, and a warm, dry climate. Europeans placed under these conditions, and with a relatively small amount of meat in their diet, participate in this immunity.

French surgery has just suffered a great loss by the early death of Dr. Brun, *professeur-agrégé* in the Faculty of Medicine of Paris and surgeon to the Sick Children's Hospital. Born at Angoulême in 1854, Felix Brun was appointed *chirurgien des hôpitaux* in 1885, and the following year at the age of 32 was appointed *professeur-agrégé*.

A complimentary dinner was recently offered to Dr. J. A. Rivière at the Hotel de Palais d'Orsay on the occasion of his nomination to the Legion of Honour. The banquet was presided over by Dr. Lancereaux, President of the Académie de Médecine, and the 150 guests included many senators and deputies as well as some distinguished members of the medical profession and of the Anglo-American colony in Paris. At dessert several speakers testified to the esteem in which Dr. Rivière is held, and to the many innovations he had introduced in the treatment of disease by physico-therapeutic measures.

The vital statistics of France for the year 1902 are now officially published. Births exceeded deaths by 83,944 an excess of 11,546 over the figures for 1901. This result is due exclusively to a marked fall in the death-rate: in 1902 there were 11,896 births and 23,442 deaths less than in 1901, so the birth-rate has fallen still further. In 1902 the increase in the population reached 22 per 10,000 inhabitants: the scale of this increase is far above the co-efficient calculated for the decennial period 1891-1900, which was only 6 per 10,000. The number of marriages was less by 8,683, and divorces increased by 690, which does not augur well for the birth-rate in the near future.

MANCHESTER.

Lectures on Radio-activity.—Liability of Nursing Associations.—The Pauper Taint.

The last lecture by Professor Schuster on radio-activity dealt chiefly with the remarkable thermal phenomena of radium. Curie discovered that a salt of radium was slightly warmer—1° or 2° C.—than its surroundings; that is, radium was permanently giving off heat, and of such amount that in one hour the amount was equal to the heat produced in burning 2 grams of hydrogen to produce water. It did so hour after hour so far as was known. It appeared, however, that

it was not the radium itself which gave off the heat, but rather, according to Professor Rutherford, it was the unweighable emanation which gave off the heat. Professor Schuster found that more probably it was the state called "excited activity" which was the source of the heat. A well-marked thermo-electric effect was obtained in the "excited activity" stage. It was, as it were, in the last stage of life of excited activity that heat was given off. Reference was made to the problem raised by Sir William Ramsay whether the gas helium was obtained by the conversion of the emanations from radium. In any case the spectrum of helium was obtained, but it disappeared again in two or three days. Was there an actual transformation of one element into another? Radio-activity was not confined to these rarer metals. It was manifested by air drawn from the soil, and from air collected during the ascent of balloons, and from water from deep wells.

A case of very considerable interest both to the profession and the public was heard at the recent Manchester winter assizes. The plaintiffs were a Mr. and Mrs. Hall of Oldham, and their claim was against the Oldham Nursing Association, the defendants being the Committee of Management thereof. This association, it was stated, is a voluntary and philanthropic body, and the association differs from a nurses' home in that it is not carried on for profit. It appears that in January last Mrs. Hall underwent an operation, and whilst under the anaesthetic, either during the operation or immediately after its completion, hot bottles were used (as the plaintiff alleged) insufficiently protected, with the result that the patient's legs were seriously burned. The nurses were suppled by the Association. For the Nursing Association it was contended that when a nurse went out to a case, she passed from under the control of the Committee, and was at the disposal of the person engaging her. The jury returned a verdict for the plaintiffs, and they found in answer to questions left to them by the judge, first that the injury to the female plaintiff was caused by negligence on the part of the nurses; and secondly, that the Association undertook to nurse her, through the agency of the two nurses as their servant. The damages asked were £190, but the jury awarded £300. The judge—Mr. Justice Jelf—expressed his entire agreement with the jury on the facts which they found. The judge refused to grant a "stay" in the case, but it may be carried further.

It is now beginning to be recognized that the complete isolation of pauper children from their elders in workhouses is the only means of bringing up these children without what has been called the pauper taint. Manchester spent a large sum in erecting homes at Styal, and now Salford has founded a settlement near Warrington with accommodation for 300 children. The scheme has cost about £70,000. The settlement contains thirteen semi-detached houses, a swimming bath, school, administration buildings, and agricultural land, and covers an area of 45 acres. Each house will accommodate twelve children, with whom will be a foster mother to see to the baking, washing, mending, and other household duties.

SOUTH WALES.

The University of Wales; University Court; Graduation Ceremonial.

NOVEMBER 13th was a memorable day in the history of this University. The University Court was in session morning and evening, but public interest centred round the visit of Lord and Lady Kelvin, the laying of a memorial stone of the University offices in Cathays Park by Sir Isambard Owen and the congregation proceedings in the afternoon when 140 graduates—the largest number yet recorded—were admitted to their degrees. These functions attracted to Cardiff eminent educational leaders from all parts of Wales, and to these the Mayor extended hearty hospitality at a luncheon given at the Town Hall Assembly Rooms. It was here that Lord Kelvin delivered his only public utterance of the day, and his references to Welsh students at the Scottish universities were keenly appreciated. The acceptance by the eminent scientist of the degree of D.Sc. *honoris causâ* at the hands of the University of Wales is a matter of great satisfaction to Welshmen the world over.

On the same day the annual collegiate meeting of the University Court was held. Sir Isambard Owen, the Senior Deputy Chancellor, who presided at the commencement of the proceedings, extended a hearty welcome to the new members, especially to Sir John Williams, Bart., M.D. The Registrar, in a report on the results of the examinations, stated that they had been forwarded to the Chancellor, the Prince of Wales, through Sir A. Bigge, who had written as follows: "I have submitted to His Royal Highness the Chancellor, the enclosed list of candidates for degrees and honours, and His Royal Highness states that the University may congratulate itself on the result of its year's work." The Gilchrist Studentship was given to Miss Margaret Howard Jones, M.A., senior assistant mistress in the Cardigan County School, who proposes to study "The teaching of patriotism and civil duty in France." General Sir James Hills-Johnes, V.C., was appointed treasurer to the University. It was reported that the executors of the late Mr. Price Davies, of Leeds, had completed the administration of the testator's estate, and had handed over to the University property to the amount of £6,940 13s. 9d. Of this sum £5,835 9s. 6d. had been invested in 2½ per cent. Consols. The executors were thanked for the trouble they had taken in realizing the property to such advantage, and the Senate was asked to prepare a draft scheme for the Price Davies Scholarships. Mr. W. Ellis Williams, B.Sc., of the University College, North Wales, was appointed Fellow. Mr. Williams proposes as his subject of investigation, to be carried out at Glasgow University, the Effect of Magnetization on the Electrical Properties of Nickel Steel. The memorial of the Swansea Corporation "that the Swansea Technical College be declared a college for the degrees of the university in science and applied science" was deferred for consideration until a special meeting to be held at Shrewsbury in January. At the graduation ceremonial, the entrance of the Mayor and Corporation and of the officers of the University was heralded by "Hen Walia Fendigaid" (translated from the Welsh of Dyfed by Principal Edwards), Professor Evans conducting. Then came Mr. Ivor James's (Registrar) proclamation, followed by the declaration of the resolution of the Court admitting candidates to their degrees and honours. Students from Aberystwith were presented by Principal Roberts, from Bangor by Professor Gibson, and from Cardiff by Professor Mackenzie. The jests of the students added a touch of life to proceedings that tended towards the tedious and monotonous.

Professor Claude Thompson, as Dean of the Faculty of Science of the University College of South Wales, presented Lord Kelvin, who was preceded to the place of honour by the Marshal, Professor Burrows. The Dean read an oration in English, in the course of which he said:

> We to-day welcome among us Lord Kelvin, who, in coming here to receive a degree, has honoured us far more than we can honour him. At the same time it may be claimed that contemporary praise, the recognition accorded to a great man during his lifetime, must be more gratifying to him than even the most promising prospect of posthumous celebrity. ....It is difficult to imagine an electric laboratory or workshop without his quadrant electrometer, and there seems a special fitness in welcoming to a great shipowning port like Cardiff the man who has invented a machine for recording and predicting the height of the tides, and who has given steamships a standard compass and a sounding machine, which enables a continuous record to be obtained at full speed.....Our University has on previous occasions granted honorary degrees, but this is the first occasion on which the degree of Doctor of Science has been given *honoris causâ*. We are fortunate in being able to head our list of such degrees with so distinguished a name as that of Lord Kelvin.

Lord Kelvin then shook hands with Vice-Chancellor Griffiths, whose voice was scarcely audible as he admitted his master for the Hon. D.Sc. Sir Isambard Owen, Deputy Senior Chancellor, admitted the new graduate, and Lord Kelvin took his seat amid a scene of great enthusiasm, the audience singing the Welsh National Anthem. The proceedings ended with the National Anthem, and as the audience left the hall "Molawd Cymru" was sung.

MR. THOMAS W. CUTLER, F.R.I.B.A., has been elected Treasurer to the Sanitary Institute, to succeed the late Professor W. H. Corfield, M.A., M.D.Oxon., F.R.C.P.

BEQUESTS TO HOSPITALS.—Under the will of the late Mr. Richard Thomas, of Ealing, and formerly of Macclesfield and Burnley, the following bequests have been made subject to a life interest: £1,000 each to the Victoria Hospital for Burnley and district, and the Macclesfield Infirmary to endow beds in perpetuity bearing the name of the testator's son, William Brindley Thomas; also £200 to the Ealing Cottage Hospital Endowment Fund, also in memory of his son. Mr. Carr Wigg, of the Hove, has left £250 each to King's College, London, the Sussex County Hospital at Brighton, and the Royal Alexandra Hospital at Brighton.

CORRESPONDENCE.

THE FUTURE OF ST. BARTHOLOMEW'S HOSPITAL.

SIR,—I should be obliged if you would allow me to supply corrections to certain statements contained in a letter published under this heading in the BRITISH MEDICAL JOURNAL of November 14th (p. 1307) by Mr. Motion, a governor of the hospital.

I may say, to begin with, that I sympathize most heartily with what I understand to be Mr. Motion's ultimate aim, so much so that at the meeting of the governors on Thursday, November 5th, I was strongly minded, though it was the first occasion on which I had sat as a governor, to second and support his resolution. I refrained from doing so because it seemed to me that he had not succeeded in presenting matters in that happy manner which might lead to a good result, and that the only effect might be to postpone the beginning of movement towards the desired end.

According to Mr. Motion, there are two rival policies—one which he speaks of as the official scheme, or the Mansion House plan, which he says will merely put a modern gloss on old faults and provide a hospital with grave and essential defects;.....another, or alternative scheme, apparently the child of "criticism," which he says, if adopted, will secure everything that modern experts advise, and will at the same time guarantee the opportunity for such developments as are probable in the future.

This does not, in my opinion, in the least represent the actual position, which, as I understand it, is simply this: Plans for new casualty and out-patient departments have been approved, and it has been decided that buildings according to these plans, subject to any modifications as from time to time may appear desirable, shall at once be commenced.

This it would seem is all that is really settled; it is a good beginning, which provides for what, after careful consideration, has been recognized to be most urgently needed. There does not seem in it anything which need prevent future development, or hamper further plans for the rest of the hospital, or any reason to fear that this need be unsatisfactory, provided adequate space be allowed and ample funds be forthcoming.

It is, I believe, a fact that the late Lord Mayor set his face altogether against the acquirement of more ground, and by taking that attitude no doubt modified the potentiality of a Mansion House appeal at any rate in his time: but there is now a new Lord Mayor, and even all Lord Mayors are not cut according to the same pattern, made of the same stuff, or moved by the same feelings.

Thus, while we may estimate Mr. Motion's picture of the present as misleading, we may hope also that he may not be justified in his doubts as to the future. It is of minor importance to point out his inaccuracy as to the past. He speaks of the "silence of the staff." All I can say as to this is that if there has been the appearance of silence, it is wholly and solely to be attributed to the deafness of those whose business it should have been to have heard. For years past has the staff been sending in to those in authority reports pointing out the requirements of the hospital, and indicating desiderata towards its future development.

To what extent these reports have reached the general body of governors I do not know; but I do know that on August 22nd, 1901, a copy of a certain most important report was forwarded by the staff to every governor, and if Mr. Motion was a governor at that time I cannot understand his writing as he does in the letter you published last week.

Personally, I feel particularly aggrieved by this accusation of dumbness, having been less dumb than it is my nature to be, inasmuch as on one occasion I took the unusual course of sending in a special paper supplementary to what was sent by my colleagues. The aim of this was mainly to give my views as to position of new ward blocks, and it pretty clearly indicated how very desirable it was that there should be extension of space to the south.

While it seems hard thus to be accounted dumb in the past, I have also lately received from the hospital a hint, in the shape of a long green wand, that I must consider myself lame and no longer fit for its service; and now, having become a governor, I shall no doubt for the future among my late colleagues have the credit of being *ex-officio* deaf.—I am, etc.,

PHILIP J. HENSLEY,
Consulting Physician to St. Bartholomew's Hospital.

November 15th.

SIR,—Mr. Andrew Motion, who tells us in a letter in the BRITISH MEDICAL JOURNAL of November 14th that he is a governor of St. Bartholomew's Hospital, is evidently in the happy position of a man who has made a great discovery; for he, a governor of the hospital, has at last realized that if St. Bartholomew's had more land it could more easily erect more and better buildings than it can on its present site! And, like other similar discoverers, he is not satisfied with announcing his discovery, but proceeds to comment on the "supineness" of others who might have been expected to guide him in his search. Thus: "One of the most remarkable features in this prolonged controversy has been the absence of any expression of opinion by the medical staff of the hospital." Again: "So long as the medical staff stands silent so long will there be doubt and mistrust." And once more: "Doubtless the views of the staff were officially submitted to the Mansion House Committee, *but they have never reached either the governors* or the general public." (The italics are my own.)

Now, in view of the real facts, which I will proceed to enumerate, it is quite evident that Mr. Motion has been quietly asleep for some years, and now that he has awakened he is quite oblivious of what has passed during his long slumbers. Sir H. Burdett's proposal to raise £600,000 and purchase additional land evidently appeals to him as a completely new idea. Did he never hear of Sir Henry Knight's proposal to raise an almost similar sum for the very same purpose in 1901? It was fully placed before him as a governor. Did he support it or not?

Here, Sir, are some facts as to what the staff have actually done. They are beyond dispute, and, as they are known, or should be known, to every governor, they are in no way secret, and have also been fully placed before the Lord Mayor and his Committee:

1. Four years ago, on November 2nd, 1899, a deputation of the Medical Council urged the Treasurer and Almoners to purchase the whole of the site of Christ's Hospital. They had previously sent in a full report of the seriously defective state of the casualty, out-patient, and special departments.

2. On August 22nd, 1901, when the purchase of a portion of Christ's Hospital was more imminent, the staff sent a printed circular letter *to every governor*, signed unanimously by every member of the Medical Council, summarizing their previous actions alluded to above, and detailing at great length the needs for more land and new buildings. In this letter they said: "In our opinion the whole site of Christ's Hospital ought to be obtained, and we desire to impress the importance of the statements we have made on every governor. To lose this present opportunity of obtaining the whole site is to prevent the growth and limit the sphere of action of a noble charity." Has Mr. Motion quite forgotten this letter?

3. On October 22nd, 1901, the Medical Council wrote another letter to every governor offering to give further details of what they considered to be the needs of the hospital.

4. In response to these letters a meeting was called and the whole body of governors appointed a special committee of inquiry. On November 14th, 1901, the staff sent to this committee a full and detailed account of the buildings required and of the space they would occupy.

5. A majority of this committee reported on financial grounds adversely to the suggestions of the staff as to the purchase of more land, but approved of the proposed buildings, and their report was adopted at a special meeting of the governors, who decided that no more land could be purchased considering its great cost.

6. Since that time the Medical Council have reported on six different plans for buildings, and have sent to the Mansion House Committee a full account both of the actions they have taken and the opinions they have expressed to the governors on this matter during the past four years.

And now, sir, I will ask any impartial man whether Mr. Andrew Motion's letter represents or misrepresents the action of the medical staff. There can be only one answer.

But, since Mr. Motion has raised this question, and now at the eleventh hour advocates the purchase of more land, one may be permitted to ask what action he has himself taken in the past. What steps did he take when he received the circular letter of the staff urging the purchase of additional land more than two years ago? Did he attend the special meetings of governors and strenuously urge that which he now advocates? Did he support the majority or the minority of the special committee? Did he approve or disapprove the decision of the governors to purchase no more land? Did he

do anything at all? Was it the medical staff that was supine, or was it Mr. Andrew Motion?

I shall leave Mr. Motion to answer these questions or not as he likes. In the meantime, I will assert that neither Mr. Motion or any one else can truthfully say that the staff did not inform every one of the governors most fully of the opinions unanimously held by them and of the action they advised. And it may be further noted that this information was supplied before a yard of Christ's Hospital had been purchased, and before any public appeal had been decided upon. I will not now discuss whether the governors or the Lord Mayor's Committee decided rightly or wrongly, wisely or unwisely—that is largely a financial matter—but I will say that no single governor can truthfully allege that he was not fully informed of the views of the staff, and no one can now lay the blame on the Treasurer and Almoners or House Committee if he has changed his mind and considers that the governors' decision is now to be regretted. Everyone who was a governor in 1901 had his own individual responsibility in the decision arrived at, and amongst these Mr. Motion is included. Mr. Motion's letter necessarily suggests the question whether it is yet too late to obtain an increased area, as well as other questions, but until he has substantiated or withdrawn the statements he has made as to the action of the staff I will not further criticize his position. Will he still contend that "the views of the staff have never reached the governors"? He includes in his general charge of "supineness" "old 'Bart's' men all over the country," and as he has not specially accused any one of them, or myself in particular, I will conclude a letter written to vindicate St. Bartholomew's men as a whole by signing myself—

November 16th. A ST. BARTHOLOMEW'S MAN.

THE MEDICAL ARRANGEMENTS IN THE SOUTH AFRICAN WAR.

SIR,—If we examine the evidence given before the Royal Commission by Sir Alfred D. Fripp, placing ourselves for a moment in the position of the outside public, I think it will be easy to show that the only possible conclusion is one derogatory to the medical profession as a whole, supposing the statements made by him to be correct.

The first thing to be noticed in this evidence is the "black and white" style adopted, which is scarcely compatible with historical accuracy. Taking the specific statements, we find "that all the senior medical officers of the R.A.M.C., from the Surgeon-General downwards, suffered from shakiness at the knees, and were afraid to ask for anything." Now, we can only judge our fellow-creatures by ordinary human standards, and the question naturally suggests itself: "Did the combatant officers, from the Commander-in-Chief downwards, suffer from any similar phenomenon?" If so, then we can see nothing but the operation of some law of nature and the R.A.M.C. must be absolved. If not, the want of *morale* shown by the officers of the R.A.M.C. must either be a characteristic of the medical profession as a body, or of the very lowest representatives of it, who had somehow managed to get into the army. To clear up this point, we turn to the evidence given by other distinguished civil surgeons, and find the opinion expressed that the officers of the R.A.M.C. were distinctly above the average of the profession in education and intelligence, and we further find it stated by Sir A. Fripp himself that the class of men whom he now represents as of a superior order were formerly deterred from competing because of the danger of finding themselves below those that were able to display an elementary knowledge of modern languages or natural science.

This brings us to the next interesting point in the evidence. We know that outside the medical profession it is the busiest men as a rule that can spare most time for general intellectual culture, while the lazy and ignorant find the little that they must do quite sufficient for them. It seems to us, therefore, that the statement made by Sir Alfred that a good medical man cannot spare time to learn even one modern language, apart from the curious psychological theory of memory implied, is not complimentary to the general intelligence of the profession. Finally, it appears from the fact that several candidates have been recently prevented from competing for the R.A.M.C. owing to their extreme illiteracy and generally uncouth manner, that the standard for admission to the medical profession must be very low indeed. As the respectability of the R.A.M.C. must depend to a great extent on the standard of general education possessed by their colleagues in civil life, it is evident that Sir Alfred Fripp's method of exalting his new protégés is not likely to prove an unmixed blessing to them.

However, a corps that could survive such a torrent of flattery and abuse as was poured upon it during the war may be trusted to follow the natural course of evolution, even when those that would criticize it from the summit of a lofty peak, where ordinary mortals here below can only be dimly discernible, have passed a little further away, beyond the range of terrestrial vision.—I am, etc.,

M. KELLY,
Major R.A.M.C. (retired).

Ealing, W., Nov. 17th.

ON THE POSSIBILITY OF THE OCCURRENCE OF TRYPANOSOMIASIS IN INDIA.

SIR,—With reference to the communication published by Major Ross, in the last number of the BRITISH MEDICAL JOURNAL, on the nature of the bodies recently described by me,[1] and subsequently found in India by Captain Donovan,[2] I should like to make a few comments.

Thanks to the courtesy of Major Ross, I have had the opportunity of examining the films made from Captain Donovan's three cases, one prepared from a spleen after death, the others by spleno-puncture *intra vitam*, and I was much interested to find that one of them showed the presence of bodies identical with those which I described. This identity was in the case of the *post-mortem* film, and it was complete—indeed, our films might almost have been prepared and stained from the same case. The other films, made by spleno-puncture during life, contained forms which were present neither in my own films nor in Donovan's *post-mortem* film. To Major Ross's description of these forms I need add little, but will only state that they appear to me to be undoubtedly of the same nature as those met with in the *post-mortem* films. The chief differences consist in the larger size of the *intra-vitam* bodies and in their being, in most instances, surrounded by a red staining ring. These differences may, I think, be sufficiently accounted for by the changes due to commencing *post-mortem* decomposition of the spleen.

With regard to Major Ross's criticisms on my suggestion that these bodies might possibly be of the nature of degeneration or involution forms of trypanosomata, I may say that, while I found in Captain Donovan's specimens no further evidence in support of this theory, yet, with all deference to Major Ross's great authority on such questions, the points which he urged against it do not lessen my own impression that a connexion between these bodies and trypanosomata may yet be established by further experience. To take Major Ross's points in detail:

1. As to the persistance of the flagella of trypanosomata after the death of their host, I can only repeat that the gradual shedding of these flagella and their final complete disappearance are clearly shown in a series of "smears" from the blood and organs of a white rat dead of Trypanosoma brucei, taken immediately after death, and at various intervals thereafter up to forty-eight hours; the body of the rat being left meanwhile at room temperature (winter). Colonel D. Bruce and Dr. H. G. Plimmer were good enough recently to examine some of these films, and would, I think, bear me out in this point, as well as in the close resemblance in shape and arrangement of the chromatin masses in the two conditions.

2. As regards the suggestion that the depth of Romanowsky staining was insufficient to demonstrate the presence of the flagella. The method employed was my own modification of this stain, and it was used in the manner and for the length of time which suffices, in films of malignant tertian malaria, to stain the dots in the infected red corpuscles which were recently described by Maurer, and which, according to him, are only rendered visible by what he terms the fifth or highest grade of Romanowsky staining.[3]

3. As to the resemblance between these new bodies and the degenerated or involuted macro-nuclei and micro-nuclei of trypanosomata, it was chiefly owing to the extremely close resemblance presented in my specimens that I imagined a possible connexion between the two conditions, and I do not think that the points in which they differed are any further apart than are those between the *intra vitam* and *post-mortem* specimens of Captain Donovan's cases, to which I have already referred.

4. Both Major Ross and Captain Donovan lay special stress on the finding of these bodies by spleen puncture *intra vitam* as absolutely negativing my supposition that they were due to *post-mortem* changes. I confess I fail to see why this is necessarily the case. The changes I described were certainly attributed by me to death, but, chiefly, to the death of the parasite and not to that of its host, and I see no reason why trypanosomata should not be destroyed, or at least undergo involution, in the spleen or other organs during the life of the host, as we know to be the case in other parasitic diseases.

[1] BRITISH MEDICAL JOURNAL, May 30th, 1903.
[2] Ibid., July 11th, 1903.
[3] *Centralbl. f. Bakt.*, XXXII, p. 695.

On the other hand, and against my view as to the nature of these bodies, I noticed, in common with Major Ross, in Captain Donovan's *intra-vitam* specimens that some of the bodies appeared to be intracorpuscular, and, in several cases, this seemed to me to be a true incorporation in the substance of the red cell, and not merely an accidental superposition.

With regard to the red staining ring surrounding the chromatin bodies in the *intra-vitam* specimens, I would hazard the conjecture that this might be of the nature of a cyst or capsule, and that it is perhaps possible that the life-history of some trypanosomata may include a stage of encystment, such a condition being known to occur in other members of the flagellata.[4]

From the nature of the case and the paucity of observations it is at present impossible to decide whether these little bodies are new parasites or, as I have suggested, altered trypanosomata, and all that can, I think, be safely affirmed is that they are undoubtedly parasitic in origin, and that they occur in the spleen in a form which has not previously been encountered. Captain Donovan will, I trust, publish details of his cases, and the researches of others, more favourably situated as regards material than myself, should soon settle the questions as to their nature and pathological significance.

In conclusion, I may perhaps be excused for referring to a small but personal matter in connexion with Major Ross's article. Owing to the form in which it is put it would, I think, be concluded that Captain Donovan had observed these bodies before myself—namely, on April 9th, 1903. As stated in my previous communication, they were observed by me in November, 1900, at the Royal Victoria Hospital, Netley.—I am, etc.,

W. B. Leishman, M.B., Major R.A.M.C.,
Professor of Pathology, Royal Army Medical College.

Twickenham, Nov. 15th.

THE NORTHERN UNIVERSITY TRIAD.

Sir,—The letter of Professor Allbutt in the British Medical Journal of November 14th should be of more than passing interest. He shadows forth a principle which I feel ought in time to command the earnest attention of those who guide medical education, especially in its more advanced forms. He says:

> Were I not . . . . . I should be driven, somewhat prematurely, perhaps, to express my personal opinion that the privilege—or the burden—of Liverpool, of Cambridge, or of any university to qualify for practice is one not to be desired. In Liverpool, indeed, there are persons of consideration who think, as I think, that this responsibility impairs the proper function of a university—that is, to train the mind—and forces into its scheme a large quantity of technical matter which is truly of great importance, but of importance of another kind.

Such a pronouncement by a man engaged, as Professor Allbutt has been, for many years in higher professional education is both encouraging and gratifying. It is, I believe, some fifteen or more years since the late Sir Henry Acland, aided by several of us who were senior medical graduates, endeavoured to persuade the University of Oxford to virtually abandon its privilege as a medical licensing body by requiring all candidates for the medical degree to pass the examinations of the Conjoint Board in London before they could receive the degree of M.B. At that time I had been an examiner in medicine for about ten years, and I was a Crown nominee on the General Medical Council: and I observed that a majority of the candidates who came up for examination were already either Members or Fellows of the Royal College of Surgeons of England. The attempt to persuade Convocation to take such a radical step was premature and was defeated.

Let us consider what the university would have gained. In the first place it would have emancipated itself from the rule of the General Medical Council. There was no doubt a chafing of the university authorities against the obligation laid upon the university to subject any of its examinations to the rules, inspection, criticism, and correction of an outside body, a position which I suspect was unprecedented, and I venture to pronounce to be undignified in such universities as Oxford and Cambridge. Had our venture succeeded all this would have been remedied at one stroke.

What farther would Oxford have gained? It would have been able to unload itself of "a large quantity of technical matter which is truly of great importance, but of importance of another kind." It would have lifted its M.B. out of the ruck of qualifying examinations and have placed it on a distinctly higher platform.

It would have enabled the university to confer its degree for practically post-graduate study, carried to a higher level, in perhaps some one of the great divisions of professional knowledge, leaving the choice of subjects to the candidate, either medicine, surgery, obstetrics and gynaecology, or public health. Think what freedom to the university, what freedom of study to medical graduates, what a relief from the drudgery of trotting every mortal candidate through an examination in every subject required by the General Medical Council, even candidates who had already passed through the mill of the Conjoint Board.

And now comes the pressing additional question of the new universities already made, or about to be made, and many others in prospect. Think of the General Medical Council labouring with its financial difficulties, and about to be plunged into greater, if every new university is to have its representative on the Council. Think of the additional cost of inspection of examinations as university after university is added, Victoria becoming three, and then in the future, near or remote, Sheffield, Bristol, Nottingham, and what not.—I am, etc.,

Leeds, Nov. 16th. T. Pridgin Teale.

THE FINANCES OF THE GENERAL MEDICAL COUNCIL.

Sir,—With reference to the letter of your correspondent, Dr. S. Wesley Wilson, I should like to point out that at the General Medical Council meeting held in May, 1902, during a discussion on the financial position of the Council, I moved an amendment, which was seconded by Mr. (now Sir Victor) Horsley, to this effect:

> That in the opinion of this Council it is desirable that an annual licensing fee of 10s. be substituted for the present registration fee of £5, the annual fee not to be paid for ten years after registration by those who have already paid the registration fee at present prescribed by the Standing Orders.

This amendment was lost, being supported only by the three direct representatives for England.

In moving the amendment I pointed out that the income which would be raised would be ample for all the purposes of the Council. That, as every one in practice would have to pay the annual licensing fee, he would be brought into direct touch with the Council, and his address would be known.

The number of medical men on the *Register* in 1902 was 37,232. The average number added to the *Register* for the last ten years is about 1,300. So that, deducting 13,000 it would still leave 24,232 liable to pay the licensing fee. Of course, from this number there would be a deduction to be made for those who had retired from practice. After making an allowance for them, there would be an available income of at least £11,000 per annum.

The total income of the Council in 1902 was £8,591 8s. 7d., of which £6,375 was from registration fees, the balance,—namely, £1,216 8s. 7d., being made up by other payments, such as interest received from English Branch Council, sale of *Registers* and other publications and *Pharmacopoeias*. A sum of £408 16s. was also received as the surrender value of a policy. This latter source of income would not occur again. Excluding that, there is a reliable income of £8,000. This may probably be increased in the future by readjustments of the rents receivable for those parts of the building not required for the purposes of the business of the Council.

The total expenditure for 1902 was £9,924 6s. 8d., showing a deficiency of £1,332 18s. 1d. This shows that it is desirable that something should be done to put the finances of the Council on a firm basis.

Again, with regard to the question of the increase in the number of the members of the Council. At the meeting of the Council held in May of this year I moved a resolution, which was seconded by Mr. George Brown: "That the Council petition the Privy Council that, in the event of the Victoria University being divided into two or more separate universities, a single representative should continue to represent the whole collectively."

This resolution was lost, as was an amendment moved by Dr. Pye-Smith, seconded by Dr. Payne, namely, that the President be requested at the first opportunity to urge upon the Government the importance of reducing the number of the members of the Council.

If the Medical Acts were reformed, and more power given to the Council to deal with persons making colourable pretences of acting as medical men, it would be well worth the while of the members of the profession to pay not 10s., but £2 or £3 a year licensing fee, as then they could have proper protection from the different forms of injury to which they are now subject.—I am, etc.,

Plymouth, Nov. 17th. Geo. Jackson.

[4] *Protozoa and Disease*, Jackson Clarke, p. 118.

THE ARMY MEDICAL RESERVE.

SIR,—I have read that portion of the Report of the Royal Commission relating to the medical arrangements in the South African war, with much interest.

I may claim to have studied the evolution of the army medical services for as long, or even longer, than the late Secretary of State for War, especially as regards the Volunteer branches of the service. I had also, in my two years' active work in the field, extensive opportunities of noting the working of the different units and their heterogeneous adjuncts, from the border of Bechuanaland on one side, to Natal on the other.

There are many points in the evidence as to *personnel* and *matériel* on which I may have some remarks to make at a future time, when leisure permits. The only matter which I would refer to just now is that of a civilian medical reserve, which has been frequently referred to, and emphasized by Mr. Brodrick at the recent dinner of the R.A.M.C.

To the man-in-the-street this would imply that an Army Medical Reserve does not at present exist. I cannot for a moment imagine that Mr. Brodrick is unaware of the existence of the Army Medical Reserve, the Royal Warrant for which was issued by Mr. Stanhope (I believe in 1890 or 1891). That being so, what does the new departure mean? Does it mean that the present Army Medical Reserve is a dead letter? This would not surprise me, for from the errors that have occurred in my own experience for the past ten years (of which I may have to speak more fully later), I have long held the impression that this Reserve was looked upon by the War Office as a purely "paper" one, so much so that I have frequently had to be very guarded in replying to Volunteer medical officers who have asked my advice as to joining it.

That a really satisfactory Army Medical Reserve of officers, non-commissioned officers, and men on workable lines could be organized I have not the least doubt, but unlike the present one it would cost money. Doctors and intelligent laymen may be full of enthusiasm for their military work, and sufficiently patriotic to devote their energies and their money (and in the case of both those occupied in teaching and learning army medical duties this means money) to the service, but when their services are called upon and rendered all ranks expect due recognition for those services. Whether this has been given in the past emergency the evidence of those who gave them, with a record of which they may feel justly proud (I speak especially for those in the provinces with whom I am most in touch), will testify.

That the civil surgeons as a whole did their work admirably I should be the first to admit. Of course, as in all other spheres of life, civil and military, regulars and irregulars, there were good, bad, and indifferent (I had the pleasure of working with many of the former, and had some experience of the two latter), but if a new departure is to be made it must include some military training and above all a definite military status, to ensure that discipline without which as simply "doctors" (even when the present circumlocution and red tape has been reduced to a minimum—a consummation devoutly to be wished), it is impossible, whatever their professional capabilities may be, to carry on the work which they would be called upon to perform, especially in field units, with any amount of satisfaction to themselves and the public.—I am, etc.,

E. LUKE FREER, V.D.,
Surgeon-Lieutenant-Colonel A.M.R.

Head Quarters, 1st V. R. War. Regt.,
Birmingham, Nov. 9th.

INDEX MEDICUS.

SIR,—It is so obviously to the interest of the medical profession generally, as well as of the individual worker, that the continued life of the *Index Medicus* should be secured, that I venture to send you a suggestion by way of supplement to Dr. Ballantyne's letter in the BRITISH MEDICAL JOURNAL for November 14th. In spite of the greatly reduced price at which the *Index* can now be obtained, there must be many medical men who may not feel inclined to add another twenty-five shillings to their list of annual subscriptions. To all such, who realize the value of the *Index* to their profession, I would suggest that they might form little circles with a few friends to secure between them a copy for mutual reference. From the statements made in the JOURNAL I gather that it is of importance that the number of subscribers should be considerably increased, and that as soon as possible; and I would therefore appeal especially to medical practitioners who hold hospital appointments to consider whether it would not be worth while to unite with their colleagues to procure a copy for their hospital. There must be few medical men holding hospital posts who do not occasionally, in the course of their work, feel the need of ready access to such a publication as the *Index*, and if the present suggestion should be generally adopted the number of subscriptions would be greatly increased at very small individual cost, and the medical profession would show in a practical way their appreciation of the generosity of the Carnegie Institution.—I am, etc.,

Edinburgh, Nov. 17th. W. B. DRUMMOND.

SALINE INFUSIONS IN THE TREATMENT OF PUERPERAL ECLAMPSIA.

SIR,—In the BRITISH MEDICAL JOURNAL of November 7th, page 1211, Dr. Lithgow states that he "injected underneath the skin of the abdomen about 2 pints of a saline solution (common salt ʒj, potassium carbonate ʒj), as recommended by Jardine." Allow me to point out that I have never recommended such a solution. The solution I first used was one of ½ drachm each of bicarbonate of potash and common salt to the pint, but I soon gave it up, and now use a drachm each of acetate of soda and common salt to the pint. Potash salts when injected directly into the blood are powerful cardiac poisons. When used subcutaneously they do not seem to act in this way, at least I never found it so with the doses I used, but to obviate any risk of this I substituted the soda salt. The soda salts are non-poisonous and the solution can be injected directly into a vein, a proceeding which I adopt in cases which allow of bloodletting.—I am, etc.,

Glasgow, Nov. 14th. ROBERT JARDINE.

OBITUARY.

SIR ROBERT MARTIN CRAVEN, J.P., F.R.C.S.ENG., ETC.

WE record with great regret the death of Sir Robert Craven, at the age of 79, which occurred at his residence in Hull on Sunday, November 15th. The members of this family for three generations have been famous as medical practitioners in the East Riding of Yorkshire, and have been closely associated with the Hull Royal Infirmary for many years.

Sir Robert was born in Hull in 1824, and was the eldest son of the late Robert Craven, F.R.C.S., of Hull. His early education was received in Hull, at Kingston College. His professional studies were commenced at the Hull Royal Infirmary and at the Hull Medical School, which was closed over twenty years ago. He then went to St. Bartholomew's Hospital, London, where he was associated with Sir William Lawrence and Sir James Paget. He studied also in Paris, and worked at several of the hospitals there. In 1846 he became a M.R.C.S.Eng., and in the following year L.S.A. Two years later he went into partnership with his father in Hull, and in 1852 he was elected Honorary Surgeon to the Royal Infirmary there. He became F.R.C.S.Edin. in 1879, and was elected F.R.C.S.Eng. in 1889. On more than one occasion he was President of the East Riding and the North Lincolnshire Branch of the British Medical Association and of the Hull Medico-Ethical Society. As a Lecturer on Anatomy and Physiology at the Hull Medical School, which office he held for nearly twenty years, he was greatly appreciated, and his services were publicly recognized on several occasions. He retained this lectureship until the dissolution of the Medical School in 1870. After being forty years Honorary Surgeon to the infirmary he was elected Consulting Surgeon, and retained this position until the time of his death. In memory of the continuous and generous work and of the close associations for three generations of his family with the Hull Royal Infirmary, and in honour of Sir Robert's own personal qualities, a ward was set aside in the institution and called "The Craven Ward."

Sir Robert Craven did not confine himself to his medical duties, but took a considerable part in the social and political life of his native city. He was Chairman of the Hull Hospital Sunday Fund, of the Hull Subscription Library, and President of the Literary and Philosophical Society. He was a Justice of the Peace, and in 1878 was Sheriff of Hull. In politics he was a Conservative, and threw himself vigorously into the local work of that party. He was very genial and much liked by all who knew him, so that when he was knighted by the late Queen Victoria in 1896 the honour was very popular.

Sir Robert married twice, first in 1853, Jane, daughter of Mr. William Ward, a shipowner of Hull, by which union he had issue one son. After her death he married again in 1859 Mary, daughter of Mr. Robert Welsh, Writer to the Signet, Edinburgh, by whom he had five daughters. His second wife, who died in 1885, was a first cousin of Jane Welsh, the wife of Thomas Carlyle.

THE LATE SURGEON-MAJOR-GENERAL J. DAVIS.—DR. J. WARD COUSINS writes: The report of the sudden death of Surgeon-Major-General J. Davis on November 8th was received with great regret and sympathy by the medical men of Portsmouth and the surrounding neighbourhood. Since his retirement in 1895 he had been an active member of the Southern Branch of the Association and a constant attendant at the meetings of the Portsmouth Division. He took a great interest in the progress of surgical science, the work of the British Medical Association, and especially in the recent efforts of our organization to improve the status of the medical officers of the army. He was also an enthusiastic worker in the local arrangements for the annual meeting of the Association at Portsmouth in 1899; he acted as Chairman of the Entertainment Committee, and in this position he rendered invaluable services. Surgeon-Major-General Davis was a warm and generous friend, and his memory will ever be associated with the kindest recollections, and his manly and genial presence will be greatly missed at the medical meetings at Portsmouth.

WE regret to announce the death of Miss LUCY ELIZABETH CRADOCK, L.R.C.P.I., L.M., which took place with painful suddenness at her residence, 52, Huskisson Street, Liverpool, on November 1st. Born on April 18th, 1850, at the village of Widdrington Castle, Northumberland, her father, Rev. L. Cradock, shortly after her birth took an appointment in the Madras Presidency. On the return of the family a few years afterwards he entered the medical profession, taking the M.D.Edin. Very shortly after he died, leaving his widow and daughter to fight the battle of life. Miss Cradock was educated at Queen's College, London, and began her professional studies by being apprenticed to Dr. Plowright, of King's Lynn. After the usual course of study at the London School of Medicine for Women, she obtained the diploma of L.R.C.P.I. in 1883. She held the post of house physician to the New Hospital for Women, London, and in 1885 was appointed by the late Mr. Fawcett, then Postmaster-General, medical officer to the female staff of the Liverpool Post Office. At that time the position of women as practitioners of medicine was not so well assured as it is now, and Miss Cradock was in a sense a pioneer and as is always the case with those who make a new departure she had a certain amount of opposition to encounter and prejudice to overcome. However, her sterling worth soon came to be generally recognized, and her good sense, her true womanliness and her tactfulness, gained her many influential friends and patients, and won for her the confidence and esteem of her professional brethren, and she was elected a Member of the Medical Institution in 1888. Her district as medical officer of the post office included Birkenhead and Bootle as well as Liverpool, and her official duties involved the expenditure of a great amount of time and energy. Not content, however, with the bare performance of her professional obligations to her official patients, many of whom were young women strangers to the neighbourhood and unacquainted with the life of a great city, she was always ready with kindly advice and encouragement, and she gained their confidence and regard. A few years ago, owing to her increasing practice, and acting on medical advice, she relinquished this post. Her health had been failing for some time, and she had the advantage of the advice of Dr. Carter. The end, though not unforeseen, came quite suddenly, a few hours after she had been paying a professional visit at some distance. By her own desire her remains were cremated. Part of the funeral service was held in the Chapel of the School for the Blind, where she had been a regular attendant for many years, and there was a large gathering of members of the medical profession and others. The Rev. T. W. M. Lund, who had known her intimately, delivered a short and impressive address. Many wreaths were sent, one being from the Lord Mayor and the Lady Mayoress.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF OXFORD.

Examinations.

THE following dates are announced for the Medical and Preliminary Examinations:

	Names to be sent in by	Examination Begins.
Preliminary Examination in Physics, Chemistry, and Botany	...	December 7th (Physics and Chemistry). December 14th (Botany).
Further Examination in Mathematics	December 2nd	... December 14th.
First M.B. Examination (Anatomy, Physiology, Materia Medica, Organic Chemistry) ...	November 25th	... December 9th.
Second M.B. Examination	... November 25th	... December 9th.
Preventive Medicine		... November 24th.

The examination in Pathology in the Second M.B. may be taken separately at any time after passing the First M.B. Examination, and before the remainder of the Second M.B. Examination.

Forms of entry, certificate forms, etc., can be had on application to the Secretary to the Board of Faculties, Clarendon Building.

Names entered late are admitted up to certain dates, which vary for the different examinations, on payment of an additional fee of two guineas.

Degree Days.

The degree days for this term are November 19th, December 10th, and December 17th.

UNIVERSITY OF CAMBRIDGE.

The Professor of Surgery.

THE Public Orator, Dr. Sandys, spoke as follows in presenting for the complete degree of Master of Arts *honoris causâ* Mr. Howard Marsh, the recently-elected Professor of Surgery, on November 12th, 1903:

"Haud ita pridem, ut meministis omnes, plenus annis, plenus honoribus, e vita excessit vir insignis, per annos plurimos primum anatomiam, deinde chirurgiam, inter nosmet ipsos praeclare professus. Qui qualis quantusque vir fuerit, quanto scientiae amore, quanta animi alacritate, quanta sermonis facundia praeditus, non est quod longius exsequar: vosmet ipsi vobiscum recordamini. Chirurgiae vero professoris nostri primi in locum, annorum septem intervallo interposito, nuper electus est vir egregius, quem, tot aliis ministrum salutis, Academiae nomine hodie ipsum jubemus salvere. Viri talis autem inter laudes, non nostrum erit hodie scientiae tam reconditae penetralia perscrutari, non artis intimae mysteria occulta et abstrusa in lucem proferre; ne corporis quidem mala illa dura verbis duris expressa, ut ἀρθρῖτις, ut ἀγκύλωσις, totiens ab hoc viro feliciter levata, coram vobis hodie commemorabuntur. Mentis potius ad bona praeclara transibimus, et professorem nobis nuper datum propterea praesertim animo lacto accipiemus, quod ingenio tam vivido, judicio tam subacto est praeditus, in rebus minutissimis observandis tam subtilis, in rebus obscurissimis explicandis tam lucidus. Viro in ea parte medicinae quae manu curat insigni manus libenter tendimus, dextraeque tam sollerti dextram libenter jungimus. Duco ad vos baronetti quidem illustris, Jacobi Paget, quondam adjutorem, equitis autem insignis, Georgii Humphry, nunc demum successorem, virum nobis omnibus acceptissimum, Professorem Marsh."

Professor Howard Marsh has been elected a professorial Fellow of King's College. Professor Marsh has also been elected a Fellow of the Cambridge Philosophical Society. He was entertained to a dinner of welcome by resident St. Bartholomew's men on Thursday, November 17th, in the University Arms Hotel.

Appointment.

Mr. W. Morley Fletcher, Trinity, has been appointed Demonstrator of Physiology.

Degrees.

On November 12th the following degrees were conferred: *M.D.*: N. J. McCaskie, Caius. *M.B.*: G. F. Barham, Caius. *M.B. and B.C.*: J. Stirling-Hamilton, Jesus; J. C. Matthews, Downing.

REPORT OF THE SPECIAL BOARD FOR MEDICINE ON A DIPLOMA IN TROPICAL MEDICINE.

The Special Board for Medicine has presented the following report, dated November 4th, 1903, to the Vice-Chancellor for publication to the Senate.

The Board have for some months had under consideration a proposal to establish in the University an Examination and Diploma in Tropical Medicine and Hygiene.

The need of greater facilities for the study of tropical diseases and their prevention, and the desirability of encouraging practitioners who propose to practise abroad to give special attention to the study, have already been recognized in this and other countries. In England, schools of tropical medicine have been established in London and Liverpool, in France at Bordeaux and Paris, in Germany at Hamburg. Information has been collected from official sources with regard to the course of studies pursued at these schools, and it is apparent that the ordinary medical curriculum is no longer regarded as by itself sufficient to fit graduates in medicine for the special conditions attending practice in the tropics.

The study of these diseases is of special importance to countries which have possessions in the tropics. In Germany and France, military, naval, and colonial physicians are now required to attend courses in tropical medicine before taking up the duties to which they are assigned. There are also indications that similar requirements may ere long be enforced as regards medical men desiring to enter the British service abroad. At the present time candidates possessing the Diploma in Public Health are preferred for appointments under the Colonial Office, and efforts are being made by the army authorities to ensure that military medical officers may be able to acquire the special knowledge and skill implied by the possession of this diploma. Similar considerations apply also to the case of duly-qualified medical men who desire to engage in missionary work or to accompany exploring expeditions abroad. The course of study, however, which is appropriate for medical officers of health is far from including all that is necessary for a practitioner in the tropics, while it naturally includes much that has no special rele-

vance to the duties and needs of the latter. In a recent Colonial Office circular it is accordingly proposed that all medical men whose fees are paid by colonial Governments shall, before proceeding to their appointments, be required to pass an examination or to obtain a certificate of proficiency in Tropical Medicine. It therefore seems likely that an examination specially designed to meet the new requirements would not only obtain speedy recognition, but would also prove of service to students of the subject by establishing a satisfactory standard of attainments and by marking out the proper lines of study. The University already provides facilities for the study of various branches of the subject, and these facilities could without much difficulty be extended.

A communication was addressed on behalf of the Special Board to Mr. Chamberlain, the late Secretary of State for the Colonies, with a view to ascertaining the opinion of his department regarding the proposal under consideration. The reply states "that the Secretary of State gladly concurs in the suggestion of the Special Board for Medicine of Cambridge University that a special examination in Tropical Medicine and Hygiene, open to all duly-qualified medical practitioners, should be instituted by the board with a view to granting a diploma to those candidates who passed the examination satisfactorily."

The late Secretary of State for War, in reply to a similar communication, stated that his advisers believed that the recently revised regulations for promotion in the Royal Army Medical Corps would result in a high standard of proficiency being generally attained in the subjects of the proposed examination. Mr. Brodrick added the assurance that "due regard being had to the exigencies of the service, no obstacle will be placed in the way of officers desirous of obtaining the new diploma; and it may be expected that there will be some to seek such recognition." He further expressed his thanks to the University for the special facilities, recently sanctioned, to officers presenting themselves for examination for the Diploma in Public Health, and believed that these facilities would be much appreciated throughout the medical service of the army.

The Board are therefore of opinion that the University would be performing a public service by adopting the proposal under consideration. They have conferred with the State Medicine Syndicate, and have ascertained that that body approves the proposal, and is prepared to undertake the management of the scheme and the conduct of the examination.

The Special Board, with the concurrence of the State Medicine Syndicate, accordingly recommend:

That the following be added to the Ordinances relating to the Examination in State Medicine (Ordinances, pp. 374-380).

Examination in Tropical Medicine and Hygiene.
d. Regulations.

1. That an examination in tropical medicine and hygiene be held once in the year, or, if the syndicate should think it expedient, more than once.

2. That any person whose name is on the *Medical Register* be admissible as a candidate under such conditions as the syndicate may prescribe, provided always that a period of not less than twelve months shall have elapsed between the attainment by the candidate of a registrable qualification and his admission to the examination.

3. That it be the duty of the syndicate to publish from time to time, for the information of members of the University and others, a statement of the conditions under which candidates may be admitted to the examination.

4. That the subjects of the examination be the nature, incidence, prevention, and treatment of epidemic and other diseases prevalent in tropical countries.

5. That a candidate who passes the examination to the satisfaction of the examiners be entitled to a diploma testifying to his competent knowledge of tropical medicine and hygiene.

6. That candidates who present themselves for examination be required to pay fees to be fixed at the discretion of the Syndicate.

7. That it be the duty of the Syndicate to fix the number of examiners in each year; to nominate them for election by the Senate; to fix the time of the examinations, the fees to be paid by candidates, and the payment of examiners; to draw up and publish from time to time schedules defining the range and details of the subjects of examination; and generally to determine all other matters connected with the examinations.

8. That the Syndicate be required to include in their annual report to the Senate a report on the examinations in tropical medicine and hygiene.

That the following be the form of the diploma to be granted to those who pass the examination to the satisfaction of the examiners:

"KNOW ALL MEN by these presents that
hath been duly examined by
the examiners in that behalf appointed by the Chancellor Masters and Scholars of the UNIVERSITY OF CAMBRIDGE and hath approved himself to the examiners by his KNOWLEDGE AND SKILL IN TROPICAL MEDICINE AND HYGIENE to wit in the nature causes prevention and treatment of epidemic and other diseases peculiar to tropical countries and in the means of remedying or ameliorating those circumstances and conditions of life therein which are known to be injurious to health In testimony whereof the Vice-Chancellor of the said University by the authority of the said Chancellor Masters and Scholars hath hereto set his hand and seal the
day of one thousand nine hundred and

L S *A.B.* Vice-Chancellor.

T. CLIFFORD ALLBUTT (*Chairman*). HOWARD MARSH.
J. B. BRADBURY. C. T. DENT.
ALEX. MACALISTER. A. E. SHIPLEY.
DONALD MACALISTER. C. T. R. WILSON.
LAURENCE HUMPHRY. W. M. FLETCHER.
H. K. ANDERSON. A. BIRMINGHAM.
G. SIMS WOODHEAD. M. HANDFIELD-JONES.

Appendix.

It is suggested that, if the foregoing scheme is approved by the Senate, the following supplementary Regulations might be prescribed by the Syndicate under the authority given by Regulations 2 and 3:

"I. Candidates shall present evidence, approved by the Syndicate, that they have diligently attended, at home or abroad,

(*a*) A course of laboratory instruction in pathology, including parasitology and bacteriology, in relation to tropical diseases;

(*b*) A course of clinical instruction at a hospital in which cases of tropical disease are received;

(*c*) A course of instruction in hygiene and in methods of sanitation applicable to tropical climates."

"II. Candidates may present dissertations, memoirs, or other records of work carried out by themselves on subjects connected with the nature, incidence, prevention, or treatment of tropical diseases; and such records will be taken into account by the examiners in determining the result of the examination."

"III. The examination will be partly in writing, partly oral, practical, and clinical."

UNIVERSITY OF GLASGOW.

Meeting of University Court.

Athletic Ground.—Amongst the matters discussed at the last meeting of the Court was the vexed subject of the athletic ground, which is threatened with extinction by the extension of the University buildings. At a recent meeting of the University General Council, it had been decided to represent to the Court that a new recreation and athletic ground ought now to be provided for the students and other members of the University, and that adequate pecuniary assistance should be given for that purpose from the General University Fund. The subject was, after discussion, remitted to a Committee of the Court with power to confer with the Senate, the General Council, and the students, and report.

Advanced Chemistry.—The subject of the teaching of advanced chemistry was also considered, and it was agreed to advertise for a special lecturer to conduct courses in organic and physical chemistry at a salary of £400 per annum. A large addition to the chemical laboratories has been under construction for the last few months, and, though of a somewhat temporary character, it will give the chemical department one of the best laboratories in the country. This will shortly be ready for occupation, and, with the proposed increase of the staff, should add much to the credit of the University.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

A QUARTERLY meeting of the Royal College of Physicians of Edinburgh was held on November 3rd, Dr. Clouston, President, in the chair.

The late Dr. G. W. Balfour.

The President referred in feeling terms to the lamented death of Dr. G. W. Balfour, the fourth Fellow on the Roll of Attendance, President in 1882-4, Librarian and Trustee for many years, and one who took the keenest interest in all the affairs of the College. His death was a grievous loss to the College and the profession of medicine. It was resolved unanimously that the College should place on record the high appreciation in which Dr. Balfour was held by the Fellows and the sense of loss occasioned by his removal. The Secretary was directed to forward a copy of the minute to Mrs. Balfour.

Introduction of New Fellows.

John Cumming, F.R.C.P.E., F.R.C.S.E., Percy Theodore Herring, M.D., F.R.C.P.E., and John William Simpson, M.B., C.M., F.R.C.P.E., were introduced, and took their seats as Fellows of the College.

Admission to the Fellowship.

The following Members were admitted by ballot to the Fellowship of the College: James Taylor Grant, M.B., C.M.Edin., M.R.C.P.E., Edinburgh; Charles Cromhall Easterbrook, M.D.Edin., M.R.C.P.E., Glengall by Ayr; and Edwin Bramwell, M.B., C.M.Edin., M.R.C.P.E., Edinburgh.

Admission to the Membership.

On a ballot the following candidates were admitted to the Membership of the College after examination: George Lyon, M.B., Ch.B.Edin., Edinburgh; Frederick Norton Menzies, M.B., Ch.B.Edin., London; and Alexander Lyons, L.R.C.P.E., L.R.C.S.E., L.F.P.S.G., Torquay.

Admission to the Licence.

The Registrar reported that since the last quarterly meeting forty persons had obtained the licence of the College by examination.

Trustee of the College.

It was announced that Dr. A. R. Simpson had been nominated as Trustee of the College, in room of the late Dr. George Balfour.

Election of Representative on Conjoint Committee of Triple Qualification.

The Secretary announced that Dr. Playfair had been elected as representative on the Conjoint Committee of the Triple Qualification.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary Council was held on November 12th, 1903, Mr. John Tweedy, President, in the chair.

Diploma of Member.

Diplomas were issued to 102 candidates who had presented themselves at the recent examination.

Report from the Committee of Management.

A report from this Committee was referred to the Court of Examiners to consider and to report upon remarks made by the Visitor and Inspector of the General Medical Council with respect to the Final Examination in Surgery of the Conjoint Board.

The Study of Chemistry, Physics, and Biology.

A report was adopted by the College of Surgeons, dated November 6th, from the two Colleges regarding the proposed conference with the General Medical Council in reference to the requirements of the Conjoint Examining Board in England respecting study and examination in Chemistry, Physics, and Biology.

First Examination and First Year of Study.

A report, dated July 22nd, 1903, of the Conjoint Committee on the regulations relating to the First Examination and the first year of study was received and, entered on the minutes; and the recommendations contained in it were adopted subject to modifications desirable after consultation with the authorities of the medical schools and examiners. The report is as follows:

In considering the study to be required of candidates in the first year of the curriculum and the examination to be passed on the completion of that study, the Committee have had in view three main objects: first, to secure that whatever subjects are studied shall be treated as an introduction to the purely professional subjects; secondly, to prevent the overloading of the first year of study, whilst securing that the student shall have sufficient work to occupy his time; thirdly to endeavour to so adjust the curriculum as to attain the original object of the fifth year of study, that is the extension of the time devoted to clinical work.

The Committee are agreed that as a general principle it is desirable to encourage students to pass the First Examination before commencing the study of anatomy and physiology, and with this object in view they would advocate the recognition of the study of preliminary science before as well as after passing the Preliminary Examination in general education. The Committee see no reason why a student should not study chemistry, physics, and biology whilst at school, and they consider that no obstacle should be put in the way of his passing the First Professional Examination as soon as possible after passing the Preliminary Examination, provided that a certain minimum number of hours' work has been completed (in chemistry 180, in physics 120, and in biology 120). In this way it would be possible to require that the study of anatomy and physiology should be commenced only after the First Professional Examination is completed

The Committee therefore recommend:

1. That Part I chemistry, Part II physics, Part III biology, and, at the option of the candidate, Part IV practical pharmacy, be the subjects of the First Examination.

2. That a minimum length of course be required in chemistry, physics, and biology before candidates are admitted to examination in these subjects.

3. That the minimum course in the several subjects be:

In chemistry	180	hours'	instruction	and laboratory work.
In physics	120	"	"	"
In biology	120	"	"	"

4. That these courses need not run concurrently, nor be completed within one year.

5. That these courses may be commenced or attended before the required Preliminary Examination in general education is passed.

6. That study at an institution other than a recognized medical school be counted for not more than six months of the curriculum.

7. That the study of anatomy and physiology be not recognized until after the First Examination in chemistry, physics, and biology has been passed.

8. That no student be admitted to examination in medicine and surgery until he has completed five years of professional study after passing the Preliminary Examination in general education, towards which six months' study at a recognized institution may be counted if taken subsequently to passing such Preliminary Examination.

In the event of the foregoing recommendations being approved, the Committee suggest that they should be authorized to ascertain the opinion of the teachers in the medical schools and of the present and past examiners on the alterations necessary in the synopses of chemistry, physics, and biology, and in the mode of conducting the examination, and to present a further report to the Royal Colleges on these questions.

The Committee are of opinion that the difficulty of the First Examination should not be materially increased, but that the form of examination should be altered, so as to encourage a more thorough and practical course of instruction.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

At the monthly business meeting of the College held on Friday, November 6th, the President (Sir Arthur V. Macan) admitted to the Licences in Medicine and Midwifery the following candidates who had been successful at the Final Examination held in October under the Conjoint Scheme with the Royal College of Surgeons in Ireland: E. B. Bird, J. Casey, A. H. R. Duncan, G. H. Enright, J. Hayes, D. F. Hegarty, P. J. Irwin, L. C. E. Murphy, J. J. M'Connell, P. J. O'Farrell, C. F. P. Plunkett, J. J. Ryan, M. J. Ryan, P. Sampson, G. G. Tabuteau.

At a stated business meeting of the College held on Friday, November 13th, the President admitted as Licentiates in Medicine the following registered medical practitioners: T. G. Moorhead, M.B., B.Ch., B.A.O., Univ. Dubl., 1901; M.D. 1902. Agnes Forbes Savill (*née* Blackadder), M.B., B.Ch., Glasgow, 1898; M.D., 1901.

CONJOINT BOARD IN IRELAND.

The undermentioned candidates have passed the examination for the Diploma in Public Health: Major W. E. Jennings (Honours), M.B. Univ. Edin., H. G. Critchley, M.D. Univ. Edin., O. Hall, L.R.C.P. & S. Edin., H. Powell, L.R.C.P. & S. Edin., A. D'Souza, L.R.C.P. & S. Edin., G. Whyte, F.R.C.S.I.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

Dental Examination.—The following candidates have passed the Final Examination for the Licence in Dental Surgery: W. Hopton, H. J. Anderson, B. D. Black, E. C. Pelissier, W. V. Pericho, and J. Smith.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Surgeon M. J. Smith, B.A., M.D., F.R.C.S., is allowed to withdraw from the service with a gratuity, November 11th. He was appointed Surgeon, November 12th, 1895.

Deputy-Inspector-General E. E. Mahon, C.B., has been promoted to be Inspector-General, October 10th. He entered the service as Surgeon, June 4th, 1878; became Staff-Surgeon, July 18th, 1881; Fleet-Surgeon, June 16th, 1890; and Deputy-Inspector-General, April 4th, 1898. He was Surgeon of *Boadicea* at Durban during Zulu war, 1879 (medal); Surgeon of *Flora* during the Boer war in 1881, and was present at the actions of Laing's Nek and Majuba Mountain (mentioned in dispatches), and specially promoted to Staff-Surgeon for gallant conduct at the mountain. He served in the war in Egypt, 1882: P.M.O. of the R.M.L.I. Battalion during the first portion of the campaign, P.M.O. of the R.M. Artillery Battalion for the latter portion of campaign; present at the actions of Mallaha Junction, Tel-el-Mahuta, Mahsameh, Kassassin (August 28th and September 9th), and Tel-el-Kebir (medal with clasp, Khedive's bronze star, Osmanieh 4th Class); Staff-Surgeon of *Bacchante* during the Burma Annexation war 1885-7 (medal with clasp). Made C.B. on Her Majesty's birthday, May 24th, 1902.

The following appointments have been made at the Admiralty: Hugh W. Macnamara, Fleet Surgeon, to the *Resolution*, undated; George F. Collingwood, Staff Surgeon, and August J. Wernet, M.B., Surgeon, to the *Berwick*, December 9th; Herbert A. Julius, Surgeon, to the *Cambridge*, November 17th.

Civil Practitioner P. J. Hamilton, M.B., has been appointed Surgeon and Agent at Arklow, Mizenhead, and Kilmichael, November 13th.

ARMY MEDICAL STAFF.

Surgeon-General G. J. H. Evatt, M.D., C.B., Principal Medical Officer 2nd Army Corps, was placed on retired pay, November 11th. He was appointed Assistant Surgeon, March 31st, 1865; Surgeon, March 1st, 1873; Surgeon-Major, March 31st, 1877; was granted the rank of Lieutenant-Colonel, March 31st, 1885; and made Brigade-Surgeon-Lieutenant-Colonel, November 30th, 1891; Surgeon-Colonel, March 30th, 1896; and Surgeon-General, November 20th, 1899. He served in the Perak expedition in 1876 (medal with clasp). He was also in the Afghan war of 1878-80, and was at the capture of Ali Musjid; was Senior Medical Officer in the expedition to the Bazar Valley (mentioned in Lieutenant-General Maude's dispatch); was in charge of a Section Field Hospital on the return march to India in June, 1879 (thanked by the Governor-General and by the Commander-in-Chief in India in General Orders); afterwards in charge of a Field Hospital during the advance to Gundamuck and Cabul (medal with two clasps). During the expedition to the Soudan in 1885 he commanded the 2nd Bearer Company of the Medical Staff Corps, and was present in the engagement at Hasheen and at the destruction of Temai (mentioned in dispatches, medal with clasp, and Khedive's star). In the Zhob Valley Expedition in 1890 he commanded the British Field Hospital (mentioned in dispatches).

ARMY MEDICAL RESERVE.

Surgeon-Lieutenant A. L. Jones to be Surgeon-Captain, with precedence next below J. P. S. Ward, November 11th.

Surgeon-Majors G. D. P. Thomas and H. Wright, having resigned their Volunteer appointments, cease to be officers in the Army Medical Reserve.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel D. Wilkie, M.B., Bengal Establishment, Statistical Officer to the Government of India in the Sanitary and Medical Departments, is granted the temporary rank of Colonel from August 3rd, while officiating as Principal Medical Officer and Sanitary Commissioner, Assam District.

Lieutenant George Frederick Humphreys died at Poona on September 26th. He joined the department September 1st, 1902.

Lieutenant William Douglas Pringle died at Tientsin, China, on September 3rd. His commission dated from January 29th, 1901.

Lieutenant Francis Peter Vieyra died at Fort Sandeman on September 26th. He was appointed Lieutenant, September 1st, 1902.

MEDICO-LEGAL AND MEDICO-ETHICAL.

INQUEST ON MISS HICKMAN, M.D.

The adjourned inquiry took place at Richmond on Thursday, November 12th, before the district coroner, Dr. Taylor, J.P.

Evidence was brought by the police to prove that the medicine bottle found near the remains was similar to those in use by a local chemist, and proof of the sale of 8 oz. of distilled water to a lady in August was given. It was proved also that Miss Hickman had purchased morphine sulphate in tablets, and had left a hypodermic syringe to be mended, and had called for it on August 12th.

Mr. Hickman gave evidence that one of his remaining daughters was at present under restraint in the care of a medical practitioner, but she was not certified, and that a cousin of his had committed suicide, but denied that the daughter named had ever in his presence shown any suicidal tendencies.

The Coroner—we quote from the report in the *Daily Telegraph*—dwelt at length upon the evidence given from the *post-mortem* examination, because, he said, of statements made by unauthorized persons, some of whom, he regretted to say, were qualified medical men and women, who after the most casual examination of the body, came to the conclusion that death was due to crime. He pointed out the morphine sulphate tablets were not bought by Miss Hickman for hospital use, because such a preparation was not in use there. Mr. Hickman had assumed that he had been obstructed in his investigations at the hospital by the authorities, but he (the Coroner) had found that the authorities there were most anxious to afford him all the information in their power. Miss Chamberlain, one of the resident medical staff, had stated that so far from friction having arisen between her and the deceased, the fact was that their mutual relations were most pleasant, and Miss Hickman could have called for her assistance at any time she required it. After further reviewing the evidence, Dr. Taylor pointed out that Dr. Stevenson had told them plainly that the cause of death was morphine poisoning.

The jury retired, and shortly after returned the following verdict: We find that on October 18th, 1903, Sophia Francis Hickman was found dead in the Sidmouth Plantation, and that she died from poison from morphine sulphate, self-administered at a time when she was temporarily insane.

PROSECUTIONS FOR THE SALE OF POISONS BY UNQUALIFIED ASSISTANTS IN GLASGOW.

The Pharmaceutical Society is again showing activity in its endeavour to put down the sale of poisons by unqualified assistants to chemists and doctors. Last week no fewer than twelve cases of this kind were dealt with by Sheriff Boyd in the Glasgow Sheriff Court, the charge being in each case found proven, and penalties in the shape of a fine of £2 12s. 6d. were imposed. Unfortunately, notwithstanding the warning notice of the General Medical Council two years ago, at least two of these cases involved medical practitioners.

CONTRACT NOT TO PRACTISE.

FAIR PLAY writes: A., an assistant has given a bond to his principal, P., not to practise within a certain radius of his house on leaving him. After the termination of the assistantship A. has an opportunity of becoming house physician to a local hospital within the prescribed area. Would the acceptance of this office be an infringement of A.'s agreement with P.?

*** Strictly speaking it would be an infringement of the agreement, but as the latter was only entered into to protect P.'s interests, it is difficult to see how they would be jeopardized by A. accepting this office. If the hospital is a local charity and the house-physician only attends to patients inside the hospital, P. might very well waive his right in this respect, and give his consent to A. accepting the office.

ALLOCATION OF FEES.

E. E. G. asks for an opinion on the following: A., B. and C. are in partnership, and are all public vaccinators. On November 1st A. retires from the partnership, and his place is taken by D. Children vaccinated during the week ending October 31st will be inspected during the week ending November 7th. Do the fees for these vaccinations belong to the firm A., B., and C., or to the firm A., B., and D.?

*** Under the circumstances half the fees should go to one firm and half to the other.

DUTY OF ASSISTANT AT OPERATION.

J.—It seems to us quite clear that a house surgeon engaged in assisting at an operation would not be justified in leaving that duty for any purpose whatever without the permission of the operating surgeon.

ILLNESS OF *LOCUM TENENS*.

A DOCKED LOCUM.—(1) If taken ill during his employment it might be the duty of a *locum tenens* to find a substitute, if able to do so, if he had agreed to do the work for a definite time. (2) A principal could not legally deduct payment for certain days after the arrival of the *locum tenens* on the ground that he (the principal) had postponed his holiday. (3) A *locum tenens* would be legally entitled to make use both of his principal's drugs and horse under the circumstances described, and very few principals would object to his so doing.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,301 births and 5,169 deaths were registered during the week ending Saturday last, November 14th. The annual rate of mortality in these towns, which had been 15.1, 15.8, and 16.1 per 1,000 in the three preceding weeks, further rose last week to 17.9 per 1,000. The rates in the several towns ranged from 6.0 in Hornsey, 7.4 in King's Norton, 7.9 in Aston Manor, 10.2 in Hastings, 10.3 in Grimsby, 10.7 in Croydon and in Willesden, and 10.8 in Walthamstow and in Brighton, to 22.9 in Nottingham, 23.5 in Wigan, 23.9 in Leeds, 25.3 in Salford, 25.8 in Rochdale, 26.8 in Sunderland and in Tynemouth, 26.9 in Middlesbrough, and 32.2 in Warrington. In London the rate of mortality was 16.7 per 1,000, while it averaged 18.4 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.5 per 1,000 in the seventy-six towns; in London also this death-rate was equal to 1.5, while in the seventy-five large provincial towns the rates ranged upwards to 2.7 in Preston, in Rotherham, and in Gateshead, 2.9 in Merthyr Tydfil, 3.3 in Hanley, 3.5 in Sunderland, 4.2 in Wigan, 5.2 in York, and 11.8 in Warrington. Measles caused a death-rate of 1.2 in Blackburn, 1.8 in Rotherham, 2.6 in York, 2.8 in Sunderland, and 9.4 in Warrington; scarlet fever of 2.5 in Wigan; diphtheria of 3.3 in Hanley; whooping-cough of 1.3 in York, 1.6 in Warrington, and 2.2 in Newport (Mon.); "fever" of 1.5 in Bolton and in Merthyr Tydfil; and diarrhœa of 1.4 in Preston and in Gateshead, and 1.7 in Northampton. One fatal case of small-pox was registered last week in London, but not one in any other of the seventy-six large towns. The number of small-pox patients under treatment in the Metropolitan Asylums Hospitals, which had been 34, 42, and 43 at the end of the three preceding weeks, had further risen to 51 at the end of last week; 16 new cases were admitted during the week against 26, 12, and 5 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital on Saturday last, November 14th, was 1,824, against 1,858, 1,828, and 1,854 on the three preceding Saturdays; 185 new cases were admitted during last week, against 209, 199, and 224 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, November 14th, 897 births and 571 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 16.7, 17.0, and 15.8 per 1,000 in the three preceding weeks, rose again last week to 17.4 per 1,000, but was 0.5 per 1,000 below the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 12.0 in Greenock and 13.9 in Perth, to 18.4 in Glasgow and 18.5 in Dundee. The death-rate from the principal infectious diseases in these towns averaged 2.1 per 1,000, the highest rates being recorded in Dundee, Aberdeen, and Paisley. The 339 deaths registered in Glasgow included 1 which was referred to small-pox, 9 to measles, 2 to diphtheria, 2 to whooping-cough, 1 to "fever," and 7 to diarrhœa. Two fatal cases of measles, 2 of "fever," and 1 of diarrhœa were recorded in Edinburgh; 1 of measles, 1 of "fever," and 1 of diarrhœa in Leith; 2 of measles, 1 of whooping-cough, and 1 of diarrhœa occurred in Dundee; 4 from diarrhœa in Aberdeen, and 2 from diarrhœa in Paisley.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, November 14th, 554 births and 357 deaths were registered in each of the principal Irish towns, against 533 births and 341 deaths in the preceding period. The mean annual death-rate of these towns, which had been 19.7, 17.5, and 19.8 per 1,000 in the three preceding weeks, fell to 19.1 per 1,000 in the week under notice this figure being 1.2 above the mean annual death-rate in the seventy-six English towns during the corresponding period. The death-rates in these six Irish towns ranged from 13.7 in Limerick and 15.6 in Waterford to 22.7 in Londonderry and 24.7 in Cork. The death-rates from the principal zymotic diseases in the same towns averaged during the week 0.66 per 1,000 or 0.04 less than during the preceding period. The highest point, 2.1, was reached in Cork, while Londonderry, Limerick and Waterford again registered no deaths from zymotic disease at all. In Dublin 1 death occurred from scarlet fever and 3 each from whooping-cough and enteric fever. Belfast had 1 death from measles, 2 each from whooping-cough and diarrhœal diseases, and 1 from enteric, while Cork had 2 from whooping-cough and 1 from diarrhœal disease. No death from small-pox or typhus was registered in any part of Ireland.

FEES FOR CERTIFICATION OF PAUPER LUNATICS.

WE received some time ago a copy of a form of certificate issued by the guardians of the Yeovil Union. We have made careful inquiries, and as we believe that the course adopted by this Board of Guardians to be unwarranted and detrimental to the public interests, it would appear desirable to call attention to the matter.

It appears to be the custom in the Yeovil Union for a form, specially printed for that Board of Guardians, to be supplied to any justice of the peace for the county who has occasion to order a pauper lunatic to be examined by a medical practitioner. This form is to be used by the justice when he orders the guardians to pay the fee for the medical examination of the alleged lunatic. The amount of this fee is evidently intended by the Legislature to be fixed by the justice himself, without any reference to the guardians, as it is expressly provided by Clause 285 of Lunacy Act, 1890, that the justice is to order such reasonable remuneration to be paid for the duty as he "thinks proper." Notwithstanding this express provision, the Yeovil guardians have printed on their special form of order for payment of medical fees a copy of one of their own resolutions, to which it is evident they wish to draw the attention of the justice before signing the document. This resolution is as follows:

"That, in the opinion of this board, the fee formerly paid—namely, 10s. 6d.—for certifying as to the lunacy of a pauper is sufficient for ordinary cases, and the fee of 21s. should only be paid in extraordinary cases where difficulty or distance demands it."

It is evident that, instead of the acting justice being left to decide the amount of the fee he considers proper to be paid to the certifying medical practitioner, the guardians wish to influence his decision. If this be so, we do not hesitate to describe such action as being highly inadvisable, and even presumptuous, as well as an unworthy attempt to shirk their own pecuniary responsibility. The duty of a Board of Guardians in reference to pauper lunatics is to be ready to pay all expenses which have been legally incurred towards providing for their proper care and safety, but not to interfere in any way with the method adopted by their officers and others upon whom the serious responsibility is cast by statute in this connexion.

MEDICAL CERTIFICATES FOR CLOSING SCHOOLS IN SCOTLAND.

MEMBER asks what fee a medical practitioner should charge a School Board for giving a medical certificate to close a school during an epidemic of infectious disease, and when the Board closes the school on the strength of that certificate in Scotland?

*** The usual fee charged by a medical practitioner for closing a school is a guinea. The Education Code contains the following reference to the question of the closure of a school by a School Board: "Where the managers have complied with any notice of the sanitary authority of the district in which the school is situated, or any two members thereof, acting on the advice of the medical officer of health, requiring them for a specified time, with a view to preventing the spread of disease or any other danger to health likely to arise from the condition of the school, either to close the school or to exclude any scholars from attendance, they may appeal to the department if they consider the notice to be unreasonable." Graham, in his *Manual of the Education Acts*, published in 1902, states: "There is no statute conferring upon the sanitary authority power to order the closing of a school, but the Department could make it a condition of participating in the Parliamentary grant that the managers of a school should comply with any such order by the sanitary authority pending an appeal to themselves, and that seems to be the intention of this article."

MEDICAL NEWS.

HOSPITAL SHOPPING DAY.—It is announced that, so far, the Hospital Shopping Day movement has resulted in an addition to the King Edward's Hospital Fund of a sum of £1,027. It is understood, however, that this does not represent the total outcome of the movement, but only the total of the contributions received from a minority of the firms which joined, and that in some cases the payments actually made are only on account.

THE autumn dinner of the Irish Medical Schools' and Graduates' Association will take place at the Trocadero Restaurant, Piccadilly Circus, London, W., on Wednesday next, when the President, Dr. P. S. Abraham, will take the chair at 7.30 p.m. Members desiring to be present can obtain tickets from Mr. Charles Ryall, 51, Queen Anne Street, London, W.

Society of Members of the Royal College of Surgeons of England.—The annual general meeting and dinner of this Society was held at the Frascati Restaurant on November 10th. Mr. Joseph Smith, J.P., M.R.C.S., was re-elected President; Dr. Danford Thomas, Dr. Thomas Morton, and Dr. Herbert Snow, Vice-Presidents; Dr. Brindley James, Honorary Treasurer; and Dr. W. G. Dickinson, Honorary Secretary. The finances of the Society were reported to be in a satisfactory condition, and a substantial balance was in hand. The membership of the Society had much increased of late years, and through its agency the report of the College Council was now circulated annually to over 3 000 Members. At the subsequent dinner the toast of "The Society" was proposed by Dr. Gibson Bott, J.P., and responded to by the President. Mr. Nelson Hardy proposed the "Officers of the Society," and urged the importance of bringing pressure to bear on members of Parliament and others, in order to promote the just claims of the College members. Dr. Danford Thomas, Dr. Thomas Morton, and the Secretary replied. During the evening Mr. Sidney Gandy gave an entertainment, and the President and others contributed music.

MEDICAL VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BETHLEM HOSPITAL.—Two Resident House-Physicians. Appointment for six months. Honorarium, £25 each per quarter.

BRIGHTON GREEN INFIRMARY. Assistant Medical Officer, resident. Salary, £100 per annum.

BOSCOMBE: ROYAL ROSCOMBE AND WEST HANTS HOSPITAL.—(1) Physician. (2) Surgeon. (3) Assistant Physician. (4) Assistant Surgeon.

BRIGHTON ROYAL ANDSUSSEX THROAT AND EAR HOSPITAL.—House-Surgeon. Salary at the rate of £75 per annum.

CANTERBURY: BOROUGH ASYLUM.—Assistant Medical Officer, resident. Salary, £140 per annum.

DUBLIN: DR. STEVENS'S HOSPITAL. (1) Visiting Physician. (2) Gynaecologist. (3) House-Surgeon, resident. Salary, £100 per annum.

DUBLIN: ROYAL HOSPITAL FOR INCURABLES, Donnybrook.—Resident Medical Officer. Salary, £120 per annum.

DURHAM COUNTY HOSPITAL. House-Surgeon, resident. Salary, £120 per annum.

EAST LONDON HOSPITAL FOR SICK CHILDREN, Shadwell, E.—House-Physician, resident. Honorarium of £25 at the end of six months.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge Road.—(1) Pathologist. Salary, 100 guineas per annum. (2) Surgeon to Out-patients.

HEREFORD COUNTY AND CITY ASYLUM.—Senior Assistant Medical Officer, resident. Salary, £150 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—(1) House-Physician, resident. Salary, £20 for six months. (2) Clinical Pathologist and Bacteriologist. Honorarium 50 guineas.

HOSPITAL FOR WOMEN, Soho Square, W.—House-Physician. Salary, £30 per annum, for six months.

JERSEY GENERAL DISPENSARY AND INFIRMARY.—Resident Medical Officer. Salary, £120 per annum.

LAMBETH PARISH.—Medical Officer of the Norwood Schools. Salary, £200 per annum.

LIVERPOOL: STANLEY HOSPITAL.—Senior House-Surgeon, resident. Salary, £100 per annum.

LONDON COUNTY ASYLUM, Claybury.—Junior Assistant Medical Officer, resident. Salary, £150 per annum.

LYNN: WEST NORFOLK AND LYNN HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

MARGARET STREET HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Pathologist.

NEW HOSPITAL FOR WOMEN, Euston Road.—Resident Medical Officer for Maternity Department (female).

NORTH-WEST LONDON HOSPITAL, Kentish Town Road, N.W.—(1) Resident Medical Officer. (2) Assistant Resident Medical Officer. Salary at the rate of £50 per annum each.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Assistant House-Surgeon, resident. Salary at the rate of £50 per annum.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, Waterloo Bridge Road. Surgeon to Out-patients.

ST MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, W.—Lecturer on Physiology. Salary, £400 per annum.

ST THOMAS'S HOSPITAL, S.E.—Assistant Surgeon.

SAMARITAN FREE HOSPITAL, Marylebone Road, N.W.—Anaesthetist. Honorarium £20 per annum.

SOUTHWARK UNION.—District Medical Officer. Salary, £130 per annum and fees.

TEIGNMOUTH HOSPITAL.—House-Surgeon, resident. Salary, £70 per annum.

UNIVERSITY COLLEGE, Gower Street, W.C.—Chair of Hygiene and Public Health.

VICTORIA HOSPITAL FOR CHILDREN, Chelsea.—House-Physician, resident. Honorarium, £25 for six months.

MEDICAL APPOINTMENTS.

ABERCROMBIE, Peter H., M.D., Surgeon to the Central London Throat and Ear Hospital.

ANDERSON, Wm., M.B., Ch.B.Aberd., Senior House-Surgeon, Moorfield Eye Hospital, City Road, E.C.

BATES, G. A., L.R.C.P., M.R.C.S., L.D.S., Dental Surgeon to the Hospital for Consumption and Diseases of the Chest, Brompton.

BLACK, A. C., M.R.C.S., L.R.C.P.Lond., District Medical Officer of the Malling Union.

COWEN, William P., L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glas., Assistant Resident Medical Officer to the St. Mary's Hospital for Sick Children, Glasgow, *vice* John S. Burton, L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glas., resigned.

EVANS, D. R. Powell, L.R.C.P., M.R.C.S., L.S.A., Clinical Assistant to the London Throat Hospital, Great Portland Street, W.

FRAZER-FOWLER, Thos. E., F.R.C.S.Edin., Resident Medical Officer to the St. Mary's Hospital for Sick Children, Glasgow, *vice* W. P. Small, M.B., Ch.B.Edin., resigned.

HELME, F. Arthur, M.D., M.R.C.P., F.R.S.E., Honorary Surgeon for Women to the Northern Hospital for Women and Children, Manchester.

LAMBERT, Ethel Frances, M.D.Brux., L.S.A., Public Vaccinator for the Isle of Dogs District of the Poplar Union.

LESLIE, R. Murray, M.B.Edin., M.R.C.P., Physician to the Royal Hospital for Diseases of the Chest, *vice* Philip Heslop, M.D., F.R.C.P.Lond., resigned.

MILLER, Jas. Webster, M.B.Aberd., Medical Officer to the Warneford Asylum, Oxford.

MYERS, A. A., M.B.C.S., L.R.C.P. Assistant Physician at the Mendip Hills Sanatorium, Wells.

NORRIS, W. J. Chichele, F.R.C.S.E., Surgeon to the Central London Throat and Ear Hospital.

RENNEY, H., M.D.Durh., Medical Officer of Health for Sunderland, *vice* H. Scurfield, M.D.Edin., resigned.

RIDLEY, J. B., M.D.Edin., Clinical Assistant, St. John's Hospital for Skin Diseases, London, and Medical Officer, St. Olave's (London) Union Schools, Shirley, near Croydon.

SIMON, David Ap, M.B., Ch.B.Glasg., Certifying Factory Surgeon for the Nantgaredig District, Carmarthenshire.

SLOAN, A. Baxter, M.D.Glasg., Honorary Extra-Physician to the Dispensary, Royal Hospital for Sick Children, Glasgow.

SMITH, D., M.B., C.M.Glasg., Certifying Factory Surgeon for the Creetown District, Kirkcudbrightshire.

STANLEY, C. J., M.B., Visiting Medical Attendant at Rochester House of the Metropolitan Asylum District.

STUART-LOW, William, F.R.C.S., Assistant-Surgeon to the Central London Throat and Ear Hospital.

TALBOT, Eustace, M.B., B.C.Cantab., M.R.C.P.London, Assistant Physician to the Royal Hospital for Diseases of the Chest.

THOMAS, R. Ross, M.R.C.S., L.R.C.P., Clinical Assistant in the Ophthalmic Department, Cardiff Infirmary.

WALKER, Hugh, M.A., M.B., C.M.Edin., Ophthalmic Surgeon to the Victoria Infirmary and Belvidere Dispensary, Glasgow.

WARDLEWORTH, D., L.R.C.P.&S.Edin., L.F.P.S.Glasg., District Medical Officer of the Bourne Union.

WYLIE, Andrew, M.D., Assistant Surgeon to the Central London Throat and Ear Hospital.

DIARY FOR NEXT WEEK.

MONDAY.

Anatomical Society of Great Britain and Ireland, St. Mary's Hospital, Paddington, W., 4 p.m.—Annual Dinner at Mertle's. Business: Election of officers, and papers by Mr. F. G. Parsons, Dr. Walter Kidd, Dr. Arthur Keith, Dr. Wilfred Harris, and Dr. John Cameron.

Odontological Society of Great Britain, 20, Hanover Square, W., 8 p.m.—Mr. W. S. Nowell: Necrosis of the Mandible. Dr. Herbert Tilley: Antral Empyema.

Medical Society of London, 11 Chandos Street, Cavendish Square, W., 8.30 p.m.—Sir R. Douglas Powell, Bart.: The Action of Medicinal and other Remedies in Cardiac Failure.

TUESDAY.

Royal Medical and Chirurgical Society, 20, Hanover Square, W., 8.30 p.m.—Mr. T. Bishop Harman: Remarks on Fifty Consecutive Cases of Perforated Gastric and Duodenal Ulcer Treated by Laparotomy.

Therapeutical Society, Apothecaries' Hall, Blackfriars, 4 p.m.—Professor Wyndham Dunstan: On the Indian Aconites and their Alkaloids. Dr. R. B. Wild (Manchester): Pharmacology of the Saponins.

FRIDAY.

Clinical Society of London, 20, Hanover Square, W., 8.30 p.m.—Mr. F. C. Wallis: A Case of Chronic Intussusception Treated by Intestinal Resections (to be illustrated by the Epidiascope). Dr. Frederick Taylor: Two Cases of Lymphocythaemia (Lymphatic Leukaemia). Mr. Dawbarn McGavin: A Case of Post-operative Hernia Treated by the Introduction of Silver Wire Filigree. Dr. Norman Dalton: A Case of Malignant Anasemia.

POST-GRADUATE COURSES AND LECTURES.

Charing Cross Hospital, Thursday, 4 p.m.—Demonstration of Surgical Cases.

Hospital for Consumption and Diseases of the Chest, Brompton, Wednesday, 4 p.m.—Lecture on the Commoner Causes of Haemoptysis and their Treatment.

Hospital for Sick Children, Great Ormond Street, W.C., Thursday, 4 p.m.—Lecture on Some Cases of Hydrocephalus.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—Demonstrations will be given at 4 p.m. as follows: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Ear. Lectures will also be given at 5.15 p.m. as follows: Monday and Tuesday, Eczema; Wednesday, On the Operative Treatment of Piles and Kindred Affections; Thursday, Intestinal Obstruction; Friday, Lumbar Puncture and its Clinical Importance.

Mount Vernon Hospital for Consumption and Diseases of the Chest, 7, Fitzroy Square, W., Thursday, 5 p.m.—Sanatorium Treatment of Consumption.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C.—Lectures will be delivered at 8.30 p.m. as follows: Tuesday and Friday, Degenerative Diseases of the Spinal Cord.

North East London Post-Graduate College, Tottenham Hospital, N., Thursday, 4.30 p.m.—Surgical Diseases of Children.

Post-Graduate College, West London Hospital, Hammersmith Road, W.—Lectures will be delivered at 5 p.m. as follows: Monday and Tuesday, Practical Points on the Anatomy of the Ear, with Lantern Slides; Wednesday, Pelvic Pain; Thursday, Diagnosis in Heart Disease; Friday, Enterotoxaemia.

Samaritan Free Hospital for Women, Marylebone Road, N.W., Thursday, 3 p.m.—Lecture on Cases from the Wards.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 8s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

ABRAHAM.—On the 14th inst., in London, the wife of Dr. P. S. Abraham, of 3 Henrietta Street, W., and "Oakhurst," Orpington, of a daughter.

HELM.—On November 11th, at Munslow, Craven Arms, the wife of William A. Helm, M.B., Ch.B. (Victoria), of a daughter.

PEARSON.—On the 6th inst., at Durban, South Africa, to Dr. and Mrs. M. G. Pearson, a son, stillborn.

WIGLESWORTH.—On November 16th, at 3, Catharine Terrace, Broadgreen Road, Liverpool, the wife of John Wigglesworth, L.R.C.S.Edin., L.R.C.P.Edin., of a son.

MARRIAGES.

CHAPPEL—GADDUM.—On the 12th November, at the Parish Church, Bowdon, by the Ven. Archdeacon Gore, D.D., assisted by the Rev. W. H. Chappel, brother of the bridegroom, George Perth Chappel, M.D., of Tottenham, son of the late Canon Chappel, Tamworth, Cornwall, to Mary Emily, eldest daughter of Harry T. Gaddum, J.P., Rowdon, Cheshire.

FLOYD—CREED.—On the 12th inst., at St. Philip's and St. James's, Oxford, by the Rev. Algernon S. Grant, brother-in-law of the bride, assisted by the Rev. Dr. Riggs, Vicar, Ernest William Floyd, M.R.C.S., of Sherwood, Nottingham, to Dorothy Creed, younger daughter of the late William H. Floyd, of Parkfield, Derbyshire, and Alexandra Park, Manchester, and widow of the late Alexander Creed, younger son of the late Rev. Henry Heyworth Creed, Rector of Chedburgh, Suffolk. At home December 9th and 10th.

DEATHS.

CRAVEN.—On the 15th inst., at his residence, 14, Albion Street, Hull, Sir Robert Martin Craven, J.P., F.R.C.S., aged 79.

DODD.—On the 10th inst., at Deppard, Oxon., George Herbert Dodd, M.R.C.S., aged 76.

HARRISON.—On November 14th, at 14, Birch Grove, West Acton, George Harrison, M.R.C.S., L.S.A., late of Streatham Hill, in his 64th year.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to prevent delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor, at the Office of the JOURNAL, and not to his private residence.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aetiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

F. B. asks for information as to the effect of *x* rays in epilepsy. As to methods of application, and as to results obtained in this country.

M.B. asks for information as to the results of treatment of pulmonary tuberculosis by ozone inhalations. Is the method anywhere in use here or on the Continent?

PRACTITIONER will be glad of suggestions as to treatment of an inveterate attack of ringworm on the scalp in three children. The attack has lasted fourteen months, despite treatment with a variety of remedies.

M.R.C.S. suffers from sclerous infiltration of the corpora cavernosa, and would be grateful for any suggested treatment for relief. Age 49. General health excellent. No specific cause or previous gouty tendency.

BACILLURIA.

APENTA has a patient in whose urine on bacteriological examination a great many B. coli communis have been found—probably through the kidney: the bladder has never been washed out. The temperature and pulse normal. The inquirer wishes to know whether he can look forward to a permanent cure under appropriate treatment—say, urotropine.

A "CURE" FOR INEBRIETY.

S. writes: At the present time a Rev. Mr. J. G. Price is in England trying to get a so-called cure for inebriety investigated. He comes with a large number of names, chiefly of American clergymen, who vouch for the success of this Oppenheimer treatment. Can any reader give any information as to this secret cure?

*** A good many cures for inebriety have been imported from America during the last ten years or so. They are all asserted to be infallible, and the proprietors of most of them state that the others are useless. If any member of the Association knows anything about the Oppenheimer Institute (Executive Offices, 170, Broadway, New York City) we shall be glad of information about its methods.

ANSWERS.

PRURITUS VULVAE.

DR. HENRY WALDO (In charge of the Department for Skin Diseases at the Bristol Royal Infirmary) advises "Scotus" to paint on methylene blue four grains to an ounce at frequent intervals, and give a pill containing one grain of the same drug night and morning. The urine becomes stained blue. If there is no sugar in the urine the above is often successful. This failing, he recommends Crocker's plan of putting a piece of mustard leaf over the last dorsal and first lumbar vertebrae, and so counter-irritate the vasomotor centre.

NOTES, LETTERS, Etc.

CORROSIVE SUBLIMATE POISONING.

J. R. C. writes: In reference to the case of corrosive sublimate poisoning recorded in the BRITISH MEDICAL JOURNAL of November 7th, the following passage from Poore's *Medical Jurisprudence* (second edition, page 115), is of interest:

"One day a man was admitted into my ward who had been poisoned by the application of corrosive sublimate externally to a raw eczematous surface, and he had acute dysenteric diarrhoea, and was very bad. The then house-physician, who was a very able and highly-educated man, for whom I have great respect medically, had given this patient white of an egg with a view of its acting as an antidote to the mercury. It could not possibly do anything of the kind, because the mercury was not in the man's stomach, where it could meet the white of egg; the poison was in his blood, and, being in his blood, it had albumen enough there. I mention this to you because it was a revelation to me as to what a sensible man could do."

MOTOR CARS FOR MEDICAL MEN.

DR. BURTON ROBINSON (Waterloo, near Liverpool) writes: As a medical practitioner who has driven a motor for professional visiting during [illegible] I would respectfully call the new numbering regulations to the notice of [illegible]. My car is well known in my district, to patients [illegible] and I seldom drive out of my district as touring cars do. I [illegible] who uses a car for professional purposes within a residential area of three or four miles should be spared the indignity of having his car disfigured and labelled like a public cab? As a matter of fact the cabs in my district are not labelled. Surely some saving clause might be allowed, such as the condition that a doctor's car used for visiting his patients within a regular and defined area shall be exempt from labelling except when going out of this customary area. I would suggest that the local borough or urban district council be empowered to meet such cases. If other medical men feel as I do in this matter, "motor cars for medical men" would receive scant consideration, for certainly the present regulations would in my case have decided me against a motor car for professional purposes.

LETTERS, COMMUNICATIONS, ETC., have been received from

A Miss N. Adler, London; A. N; Messrs Allen and Hanburys, London; Mrs. Allin, Landour; Mr A. Atkinson, London; E Archer-Brown, M B, Johannesburg; Austral: Dr. A. G. Auld, London. B Mr J. A. W. Bleakhorn, London; Dr. T. E. Brown, C I E., London; Mr A. H. Bird London; Mr. A. C. Bird, Sidmouth; Dr. W. B Bell, Liverpool. C Dr. R. Credé, Dresden; Cantabrigiensis; Mr. C. P. Childe, Southsea; Coonoor A. Cox, M.B., Gateshead; Dr. F. E. Carey, Guernsey; Mr. T. W. Cutler, London. D Mr. F Dawkins, London; Mr. F. Davidson, London; Dr. R. de Boissiere, Boa; Dental Manufacturing Co., Manager of, London; Dr. E. W. Diver, Shotley Bridge; Dr. W. G Dickinson, London. F Mr. G. Fleming, Droitwich; F. B., E. R. Fothergill, M.B., London; F. P.; Fair Play; Mr. W. G. Fee, London. G G. P.; Mr. C Gane, London; G. S. H.; General Practitioner; Major A. E. Grant, I.M.S., Bournemouth; Messrs R. W. Greeff and Co., London. H Mr. T. G. Horder, Cardiff; Mr. E. F. Hickman, London; Dr. G. E. Hall, Chiswick; Mr H. E Hooper, London; Hunterian Society, Secretary of, London; Mr. F. W. Howell, London; Dr. W. Hartigan, Stansted; Mr J. Houston, London; Mr. P. J Hensley, London; Dr. G. S Hovenden, London Dr. J. Holmes, Southport; Mr A. F Harvey, London I Ignoramus; I M.S. J Mr. G Jackson, Plymouth; J. R C. Dr E Jepson, Durham; J.; Mr J O. N. Jefferson, Perth, W.A.; Dr. R. Jardine, Glasgow; Miss S. C. Johnstone, London. L Mr. A. D. H. Leadman, Pocklington; Mr. L. T Lavan, London; Dr. D. B. Lees, London; Dr. L. Lyttle, Southport. M Mr. A. Motion, London; M B; Dr. A. Macfadyen, London M B. Lond, M.R.C.S; Dr. W. H Maidlow, Ilmins er: Mr E. A. May, London; Mr. W. Meaby, London; Dr. J. J. Macan, Cheam; K. Monsa rat, M.B., Liverpool; Mr. H. F. Mole, Clifton; Microscope; Mr. J. O McCreery, Burnopfield Mr. E. Merck, London; Dr. S. G. Morris, Mardy. N J. H Nicoll, M.B, Glasgow. O Messrs. Oliver and Boyd, Edinburgh. P Mr. A. Pain, Peterborough; Captain A. E. H. Pinch, London Practitioner; Messrs. A. and F. Pears, London. R Mr. R. Roxburgh, M.B, Weston-super-Mare: Refero Relata, J. D Russell, M.B., London; Mr. H. M. Raven, Broadstairs; B. Robinson, M B., Liverpool; Mr J G. Ramsay, London. S Dr. J. E. H. Sawyer, Birmingham; G. C. Still, M.B., East Twickenham: Dr. Sandys, Cambridge Sir J. Sawyer, M.D., Birmingham; Mr. P S. Spokes, London; Sardam; Dr. J H. Swanton, London; Sywel H. J. Skae, M.B, Westray; Dr. D Stanley, Birmingham Dr. W. M. Stevens, Cardiff: St. Bart's Man; Dr A. Sellers, Manchester; Sigma. T Dr. D. Turner, Edinburgh; Dr. P. Thomson, London; T. P. Teale, M.B., Leeds Dr E F. Trevelyan, Leeds W Mr T. M. Watt, Goxhill; Messrs S. Wilson and Co., Belfast; Dr. A Whitfield, London; Mr. A. Watts, London; Dr. J. H. Williams, Flint; Dr F. Willcocks, London; Mr. T. P. Whittaker, M P., London; Mr E. Wright, Newark; Dr. H. Woods, London. Y Dr. M. Young, Stockport, Y. Z Messrs. C. Zimmermann and Co, London; Z. D.

BOOKS, ETC., RECEIVED.

Drink and Compensation: An Essay on Licensing Reform By James Samuelson London: George Routledge and Sons, Limited. 1903 6d.

Transactions of the Twenty-fifth Annual Meeting of the merican Laryngological Association, held at Washington, D.C., May 12th, 13th, and 14th, 1903. New York: American Laryngological Association. 1903

A Manual of Medicine Edited by W. H. Allchin, M D Lond., F R.C.P., F.R.S.Ed. Vol v. London: Macmillan and Co., Limited. 1903. 10s.

Gloria By the Hon. Stephen Coleridge. London: George Bell and Sons 1903.

The Diseases of the Mouth and Teeth By Lloyd T. Lavan, L D S., R C S Part I. The Diseases of the Antrum (Maxillary Sinus). London: Adams Bros 1903

Aromatici e Nervini nell'Alimentazione. Per Dott. Adriano Valenti. Milano: Ulrico Hoepli. 1904 L 3.

La Nevrastenia Per Dott. Luigi Cappelletti Con proemio del Prof. Clodomiro Bonfigli. Milano: Ulrico Hoepli. 1904. L 4

Mrs. Piper and the Society for Psychical Research Translated and slightly abridged from the French of M. Sage by Noralie Robertson, with a Preface by Sir Oliver Lodge London: R. Brimley Johnson. 1903. 3s 6d.

A Narrative of Medicine in America By James Gregory Mumford, M D Philadelphia and London: J. B. Lippincott Company. 1903

The Elements of Kellgren's Manual Treatment. By Edgar F. Cyriax. London: John Bale Sons and Danielsson, Limited. 1903. 15s

Zur Pathologie der Mucosa Corporis Uteri. Von Reguel Lofqvist. Berlin: S. Karger. 1903.

Natural Physical Remedies. Light, Heat, Electricity and Exercise in the Treatment of Disease. By H H. Hulbert, B.A.Oxon., M R.C.S, L.R.C.P, etc. London: Simpkin, Marshall, Hamilton, Kent, and Co, Limited. 2s 6d

Anaesthesia in Dental Surgery. By Thomas D. Luke, M B, F R C.S.E. London: Rebman, Limited. 1903 5s.

The Practice of Obstetrics By J. Clifton Edgar. London: Rebman, Limited. 1903. £1 10s

Lehrbuch der Kinderheilkunde. Von O. Heubner I Band Leipzig: Johann Ambrosius Barth. 1903 M 17.

Om Levern Såsom Blodbildande ock Blodrenande Organ Inbjudningsskrift till den fest med kvilken Kongl. Universitetet i Upsala kommer att fira minnet af Olof Rudbeck pa Tvahundrade arsdagen af hans död. Upsala: Olof Hammarsten

Bidrag till kännedomen om gallans kemiska beståndsdelar. Inbjudningsskrift till aförande af den offentliga förelasning med kvilken professorn i praktisk medicin medicine doktorn Karl Anders Petrén tillträder sitt embete. Upsala: Olof Hammarsten.

Om Mätning af pupillens vidd. Af Ragnar Friberger. Upsala: Almqvist and Wiksells 1903

Bidrag till kännedomen om magsaftafsondringen hos manniskan. Af A. F. Hornborg. Helsingfors: Helsingfors Centraltryckeri. 1903

De inflammatoriska Tubaraffektionernas patologiska Anatomi. Af Wilhelm Rosenlew Helsingfors: Tidnings and Tryckeri-aktiebolagets tryckeri. 1903.

Inbjudningsskrift till Aförande af den offentliga forelasning. Af Taavetti Laitinen Helsingfors: Osakeyhtio Weilin and Goo. 1902.

*** In forwarding books the publishers are requested to state the selling price.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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An average line contains six words.

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Post-Office Orders should be made payable to the British Medical Association at the General Post-Office, London. Small amounts may be paid in postage-stamps.

N B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.

The Harveian Lectures
ON
THE TREATMENT OF SOME ACUTE VISCERAL INFLAMMATIONS.

Delivered before the Harveian Society of London, November 5th, 12th, and 19th, 1903.

By D. B. LEES, M.A., M.D., F.R.C.P.,
Senior Physician, Hospital for Sick Children, Great Ormond Street; Physician, St. Mary's Hospital.

Lecture II.

PNEUMONIA.

The disease which we call "pneumonia" consists in an invasion of the lungs and air passages by the micrococcus lanceolatus or pneumococcus, its rapid multiplication in this warm culture chamber, together with the efforts, more or less successful, which the human organism puts forth to resist the advance of the invading foe and to destroy it. The invader often lies in wait in the mouth of its unsuspecting host, for it can be isolated from the saliva of many healthy persons, as was first proved by Sternberg. Life to such persons is, as it were, a feast of Damocles, with a sword hanging by a hair over their heads. Too often the sword falls and the feast of life is over. A chill depresses the vital power of resistance, and the microbe runs riot in the pulmonary alveoli. Or the way is prepared by other infections, notably by the influenza bacillus, and as the influenzal infection subsides the pneumococcal infection develops, and is then of unusual virulence.

The conflict between the invaders and the tissues may begin at one definite spot, as is usual in adults, or it may begin at the same time in several places, as is more frequent in early life. It tends to spread rapidly over a large area of pulmonary territory, and soon becomes a pitched battle, in which all the powers of the defenders are sorely taxed to provide an adequate resistance. The blood supplies necessary for the very life of the defenders are interrupted by the stagnation in the lungs. The fight grows so intense that sleep becomes impossible, for all the vital energies are engaged. The invaders do not scruple to use poisoned weapons, and their poisons, and even some of the enemy themselves, make their way into the blood and poison the brain.

When the invaders are comparatively few or feeble, and when the resistance is powerful, the battle, after lasting from three to seven days or even longer, ends in favour of the defence, often with dramatic suddenness. The precise explanation of this remarkable phenomenon is still unknown, but the fact is familiar. For some reason or other the attack has failed, and all that remains for the exhausted defenders is to dispose of their dead foes, to clear away the débris of the battle, to cleanse the battle ground, and to restore the *status quo*. We have been taught to expect this happy issue of the struggle in children of more than 2 years of age, and in young adults with healthy hearts, normal livers, and sound kidneys, and it is certainly in such patients that the outlook is most hopeful. But the advent of the influenza bacillus has considerably reduced the confidence which formerly we felt with regard to the issue of a pneumonic attack in the earlier half of life, and most of us have sorrowful reminiscences of friends, strong and healthy, cut off by influenza-pneumonia in the very prime of early manhood.

Often, alas! the invaders are too powerful for the resistance, and the patient succumbs. In the first and second year of life, and again after 35, the death-rate from pneumonia is very considerable. Dr. Hector Mackenzie says[1] that pneumonia "causes very nearly as many deaths as enteric fever, diphtheria, small-pox, measles, and scarlet fever put together," and he quotes from the reports of the Registrar-General the following figures showing the annual rate of mortality from pneumonia per million living at different ages:

All ages	1,066
From birth to 5 years	3,568
,, 5 to 10 years	299
,, 10 to 15 ,, ...	119
,, 15 to 20 ,, ...	201
,, 20 to 25 ,, ...	301
,, 25 to 35 ,, ...	494
,, 35 to 45 ,, ...	833
,, 45 to 55 ,, ...	1,157
,, 55 to 65 ,, ...	1,702
,, 65 to 75 ,, ...	2,556
Over 75 ,, ...	3,187

He calculates that in a population of 30 millions more than 220,000 persons in each year are affected with pneumonia, and nearly 32,000 annually die from this disease. When the vitality is feeble, when the heart, liver, or kidneys are damaged by previous disease, when there are old pleural adhesions, when the lungs are fibroid or emphysematous, when the patient is chronically poisoned with alcohol or tobacco, and when septic influences are at work, there is but a poor chance of recovery. In many morbid states pneumonia ends the scene. Thus it becomes almost impossible to construct statistics which could give us accurate information as to the ordinary mortality of pneumonia, or as to the results, good or bad, of any proposed method of treatment. But the outstanding fact is this—that every pneumonia is a fight for life. If we realize this, we shall never neglect its earliest stages; we shall not fold our arms in careless or unobservant "expectation," letting slip our opportunities of helping the patient in his struggle until we are confronted with a disaster which we have done nothing to avert. Can we not do something to prevent the loss—how frequent to-day!—of the most important and valued lives, of fathers and mothers of families, of men and women in responsible and influential positions, whose continued life and activity may be of tremendous importance to their relatives and friends, to the community in which they live, perhaps even to the whole nation?

If we are to succeed in this, it must be by the most unremitting attention, the most minute and careful observation, and by the exercise of a sound judgement founded upon previous experience. There is no disease which makes more demands upon the practitioner than pneumonia, there is none in which his action or his inaction, his wise interference or his inertia, may more affect the issue. Some cases will no doubt defy his best efforts, some would struggle through without his aid, but in a large number he can afford very great relief, and in many he may have the intense satisfaction of having certainly saved a life. But to accomplish this he must be willing to spare neither time nor trouble. He must visit his patient at least twice daily, at the most critical times he must, if possible, see him thrice in the twenty-four hours. The struggle is short and sharp. Every fresh move of the enemy must be at once detected and counteracted. The entire position of the attack and the defence must be estimated at every visit, and coming dangers must be anticipated and provided for.

In the treatment of pneumonia one thing is, unfortunately, still lacking to us. We have no specific medication. No drug is yet known to us which has an action on the pneumococcus such as that which the salicylates manifest in rheumatic infections, or that which quinine exhibits in overcoming the malarial haematozoa. Yet our reminiscence of the days when rheumatism had to be treated without salicylates should encourage us in the hope that some day we may possess a specific remedy. Neither from serumtherapy is there any present prospect of assistance. Yet here also it would be rash to predict what the future may have in store for us.

But we have to consider the position as it exists to-day. If we cannot overwhelm the foe by ordinary medication or by the subtle influence of an antitoxin, we may at least help the patient to fight his battle, and in more ways than one intervene actively for his relief. The problem is essentially how to keep him alive until the battle is over. A prolongation of life for forty-eight hours will often turn a threatening defeat into a glorious victory.

1. *The Right Heart.*

How, then, does pneumonia tend to kill? Usually by cardiac failure. But this is a failure, not of the left side of the heart, but of the right; not by syncope, but by asphyxia; not through enfeeblement of the left ventricle, but through paralysing overdistension of the right.

It is remarkable how little dilatation of the left ventricle can be detected in pneumonia. Of course the pulmonary stagnation tends to diminish the tension in the left ventricle; but if the pneumococcal toxin were as injurious to the ventricle as the rheumatic, an increase of the cardiac dullness to the left would be unmistakable. In influenza such a toxic dilatation may be often observed, and it sometimes leads to fatal syncope. This action on the left ventricle by the influenzal toxin is probably the main cause of the greater fatality of pneumonia when following an attack of influenza, as well as of influenzal broncho-pneumonia itself. In influenza the cardiac dullness may extend one and a-half or two finger-breadths to the left of the nipple line; in a pneumococcal

pneumonia it does not often extend much beyond the nipple line, and even this moderate increase seems often to be caused by the distension of the right side of the heart, for it may subside at once after a bleeding. Thus it seems that the pneumococcus and its toxin do not attack the ventricular wall so actively as the influenza bacillus or the rheumatic diplococcus.

It must of course be remembered that the left ventricle may be found enlarged as the result of previous disease, rheumatic or otherwise, as the effect of strain or of arterio-sclerosis or granular kidney. In any case it adds gravity to the prognosis.

But the right side of the heart is in pneumonia very soon overburdened by the pulmonary stagnation, and it quickly shows signs of distress. Within forty-eight hours from the onset evidence of dilatation of the right auricle can often be detected by percussion in the fourth right space. Unless means be adopted to relieve it, the right side becomes increasingly embarrassed as the days of the terrible pneumonia week pass by. The normal fingerbreadth of dullness in the fourth right space becomes doubled, perhaps more than doubled, and dullness may be found in the third space as well. The first symptom caused by the distension of the auricle is an increase in the rate of the respiration. At a later stage this is accompanied by lividity of the lips and cheeks, with pallor, increasing to a general cyanosis, due largely to the interference with oxygenation in the lungs. As the tension in the right heart increases, the patient feels much oppression and distress, and often becomes very restless, seeking ease in change of position and not finding it. This right-heart misery may be quickly relieved by a little loss of blood. In an early stage from three to six leeches will at once remove the distress, and the dullness of the right auricle rapidly diminishes to the normal fingerbreadth. The relief will usually last for forty-eight hours, after which time renewed distension of the right side may again demand relief. In a severe case it may be advisable to use leeches three times during the week, but in many cases two applications of leeches will suffice to keep the right auricle from paralysing overdistension until the crisis.

An old lady of 73, the mother of a Fellow of the Royal College of Surgeons, was seized with pneumonia of moderate severity. At first all went fairly well, but on the fifth day her pulse began to show intermissions, the lips became blue, the respiration-rate rose to 40, and she became very restless. The next morning (sixth day) she told me that she was very ill and was going to die. I found that the right auricle extended two fingerbreadths in the fourth right space. Her son at once saw the necessity for some removal of blood, in spite of her advanced age, and eight leeches were applied over the lower right ribs. In the evening she was again quite cheerful, and I found that the dullness of the right auricle had nearly returned to the normal fingerbreadth. Three days later she again had a very restless night and said that she was going to die. Again I found the right auricle dilated. Three leeches only were enough to give relief on this occasion. Next day she was out of danger, and recovery followed. Some weeks later I chanced to meet her in the street, when she volunteered the remark, "You know, doctor, *those blackies* did me good!"

By way of contrast let me mention the case of a much younger lady whom I saw in consultation and found to be suffering from pneumonia. No attention had been paid to the right heart; it was much dilated, and the condition of the patient critical. Feeling sure that it would be useless to propose a venesection, I requested the practitioner in charge to apply leeches. His reply was that he would "see if any could be obtained in the neighbourhood." The patient died.

If the early leeching be omitted the right auricle may become, as in this case, much distended, and right-heart misery may be marked. In this condition it is better to have recourse to venesection and to remove 6 oz. or 8 oz. of blood. A larger quantity should be taken when the dilatation of the right heart is great, the pulmonary consolidation extensive, and moist *râles* heard over the rest of the lungs. In such circumstances 12 oz. or 20 oz. of blood must be taken if the patient is to have a chance of life. I have seen life saved even at this stage by a venesection to 18 oz. The blood obtained by venesection is often very dark in colour, and it sometimes spurts out as if from an artery when a vein is opened, showing the increased intravenous tension, and proving the need for relief of the intra-auricular tension.

In using the amount of dullness in the fourth right space as a guide when considering whether or not to bleed it is necessary to be careful not to overestimate the size of the auricle, owing to pulmonary consolidation in its immediate neighbourhood or to pleural effusion, and, on the other hand, not to underestimate it through a local hyper-resonance of lung caused by compensatory hyperdistension of parts of lung not yet implicated in the inflammatory process. Of the two errors, probably the latter is the more serious, for it may tend to postpone a needed relief to the heart. In case of doubt the practitioner will be wise to decide for the leeches; they can hardly do any harm and they may do much good.

The total amount of blood removed by even three applications of leeches or by a moderate venesection is really quite small. The plan here recommended is something very different from the excessive bleedings of former days and the purpose is different. It is not with the idea of controlling an inflammatory process, but with the intention of giving relief to an overstrained right heart.

The repeated bleeding of cases of pneumonia advocated and practised sixty years ago was based on theoretical considerations. But it would hardly have been continued so persistently if some benefit had not been observed to follow its first employment in most cases. Doubtless this benefit was the relief of the right heart unintentionally produced and the consequent diminution of dyspnoea and restlessness.

The most important part, then, of the treatment of pneumonia is to keep a constant watch on the condition of the right heart, and to prevent its overdistension by the timely removal of a small quantity of blood. This indication is, unfortunately, too generally neglected. The omission is probably responsible for a large part of the mortality from pneumonia. If a patient suffering from distension of the urinary bladder came under the care of a medical man he would be at once relieved. But if it be the patient's right heart that is distended, a condition causing equal misery, equally dangerous, equally capable of being diagnosed, and equally easy of relief, the patient will probably be left to take his chance, because the practitioner's percussion is inadequate and bleeding is out of fashion. No improvement in the physical examination of patients is more needed than an improved percussion of the heart; no reform in therapeutics is more urgent than a general adoption of the practice of moderate blood letting in some diseases of the heart and of the lungs.

2. *Diet.*

It is obvious that the diet during an attack of pneumonia must be such as can be taken without effort, such as can be easily digested, and such as shall readily be assimilated. Milk fulfils all these indications; it has also somewhat of a diuretic influence, and thereby will assist the elimination of toxin.

But there is one point which needs consideration. The introduction of a fluid nutriment in large quantities will tend to increase the quantity of fluid passing through the right heart, and this is a matter of importance when that organ is already overstrained. For the first two or three days of the disease milk alone, in quantities of three or four pints daily for an adult, should be given. But when the right auricle is becoming dilated it is wise to administer small quantities of a highly concentrated and predigested nutriment. A useful resource at this time may be found in malted milk, a dry powder one half of which consists of desiccated milk, the other half of malted wheat and malted barley, with a little sodium and potassium bicarbonate. Half an ounce of this dissolved in 2 oz. of milk may be given every hour while the patient is awake; for a child the amount may be two teaspoonfuls in 1 oz. of milk. Thirst will probably not be felt for a day or two, and it may then be satisfied in another way, for as soon as the first leeches have relieved the right heart, it is possible to administer without harm considerable quantities of water. As much as 4 pints of water may be given in divided doses of half a pint every three hours during the day following the relief by leeches or venesection. This not only satisfies thirst but it helps to wash out the pneumococcal toxin, and thus is of great value. I have seen this measure produce a most marked effect in removing the delirium in a severe case of typhoid, and it has a similar influence in pneumonia.

3. *Sleep.*

In pneumonia sleep may be disturbed from the first by pain in the side, afterwards by continued pain, by dyspnoea and restlessness, by fever and rapid pulse, finally by cerebral congestion, and even by pneumococcal invasion of the meninges. Yet the refreshment of sleep is most important if the patient is to fight a winning battle, and the lack of it sadly diminishes his energy and power of resistance. Every

night's sleep is of importance. Restless and disturbed nights in the early part of the attack are apt to be too little regarded by the practitioner in attendance. When the fourth or fifth comes, and the need for sleep is urgent and distressing, he dares not administer hypnotics because of the danger of inducing a fatal coma. Whenever a medical man is called in at the onset of an attack of pneumonia, let him never forget to make sure that the patient sleeps during the first three nights of his illness. Whatever other treatment he may adopt, or refrain from adopting, let him take measures to diminish pain and to secure sleep. If there is pain which cannot be otherwise relieved, morphine by injection under the skin is necessary, and at this early stage is perfectly safe. If pain is slight or has been relieved, a dose of bromide and chloralamide, or of trional, given in hot brandy and water, will suffice. But pain must be relieved and sleep secured.

When the right heart is overstrained the procuring of sleep is a difficult and anxious question. When dyspnoea becomes distressing it is almost impossible for the patient to sleep; all his energies are needed for the maintenance of the respiratory function. Morphine given at this time diminishes the activity of the respiratory centre, on the energy of which his life depends, and may induce a coma which will end in death. The way out of this dilemma is found in a relief of the right heart.

After leeches or venesection the urgency of the dyspnoea subsides, the cyanosis diminishes, comfort is restored, and the wearied patient may fall asleep without any narcotics. This effect is often most marked and most encouraging. But, if necessary, a small dose even of morphine may now be given with safety, or other hypnotics if pain be absent. The double effect of the relief to the heart and the rest to the nervous system gives the patient an enormous advantage in the struggle which still lies before him. Even at a late stage of a severe case morphine may sometimes be safely given, provided that the right heart has been relieved and the air passages cleared by a venesection an hour or two previously. But where a careful watch has been kept on the right heart, and it has been duly relieved by leeches, and at the same time a vigorous attack has been made on the inflamed areas in the lungs by the free use of ice externally, morphine is hardly ever necessary, unless the pleura is severely involved and an empyema is forming.

4. *Cardiac Tonics.*

Medicines which assist the heart to maintain the circulation are often of much service in the later days of a pneumonia. It is generally advisable to begin the use of these about the third or fourth day of the disease, and they ought to be given, if at all, somewhat freely.

Of these drugs, strychnine is probably the most useful, It should be given by subcutaneous injection. Half to one minim of the official solution twice daily should be the initial dose for a child; for an adult 2 minims morning and evening at first, increasing to 5 minims if necessary. Even larger or more frequent doses may be given with advantage in influenza with dilatation of the left ventricle.

Atropine by subcutaneous injection is also very serviceable in children, but not so useful for adults because they suffer much more than children from the dryness of throat and other unpleasant effects of belladonna. In children large doses of this drug will cause chiefly flushing of skin, which is of no importance. If the dose be further increased there may be dilatation of pupil, some mental excitement and restlessness, in some cases diarrhoea. The subcutaneous injection of 1 minim of the liquor atropinae twice daily, increased to every four hours, is often of the greatest possible service in the cardiac failure of diphtherial paralysis. I have used it for many years and am convinced that it has often saved life. But it must be given freely and one must not be afraid of a little delirium. Small doses are useless in a condition like this. Strychnine may be given with advantage at the same time, but I am sure that the atropine is the more useful. In the paroxysmal dyspnoea of mitral stenosis, with rapidly-increasing breathlessness, pallor, and sometimes evidence of dilatation of the right auricle, a subcutaneous injection of 4 minims of liquor atropinae will often cut short the attack in a few minutes, and in children and adolescents will cause, as a rule, no unpleasant consequences. The same treatment is sometimes effectual in older patients, but in them the after-results of belladonna are much more troublesome.

In the pneumonia of children belladonna has been strongly recommended by Dr. Coutts, and Dr. Eustace Smith has told me of an apparently hopeless case of pneumonia in a child in which recovery followed the free use of belladonna, the child being delirious for three days. The tendency of the drug to cause delirium is a great disadvantage in using it for pneumonia, which itself is very prone to cause delirium. On the whole it is a remedy much more useful for children than for adults.

Oxygen by inhalation assists the aëration of blood in the lungs, and thus improves the quality of the blood supplied to the cardiac muscle. It is therefore truly a cardiac tonic. Its use should be begun as soon as cyanosis is definite, and should be continued for five minutes every hour, whether the patient is awake or asleep. It can be given without disturbing him in the least. Oxygen is certainly a most valuable remedy, and ranks with strychnine in the treatment of pneumonia. But neither strychnine nor oxygen, nor both together, will often save life if the right auricle be not relieved. After a bleeding they are powerful remedies; without removal of blood they often fail, and almost necessarily. It is good to maintain the strength of the cardiac muscle; it is still better to diminish its labour. It is best to do both.

Digitalis will not always reduce the frequency of the pulse in pneumonia, especially when the temperature is high. It is most likely to be of service after relief of the right heart, when the fever is moderate and the pulse still remains weak and frequent.

Ammonium carbonate may be given when there is evidence of much secretion in the bronchial tubes.

Alcohol, though called a "stimulant," has not much title to be considered a cardiac tonic. It is essentially a vasomotor depressant, and as such may help the heart indirectly when the tension is high. There is also sometimes a temporary increase in the strength of the pulse after the administration of a moderate dose, probably due to increased blood supply to the cardiac muscle, through relaxation of coronary arterioles. It is therefore possible that repeated small doses may be of service in pneumonia, but the large doses sometimes advised are likely to do more harm than good. To imagine that brandy can "support" the heart when the right side is becoming paralysed from overdistension is absurd. In such a case the only satisfactory cardiac tonic is a venesection.

5. *Ice.*

In pneumonia the application of ice to the wall of the chest is as helpful as it is in pericarditis, but it must be used much more freely. A single icebag will cover the whole anterior surface of the heart, but the lung is a much larger organ, and for the efficient treatment of an inflamed lung at least two icebags, often three, are required. If both lungs are attacked four icebags may be necessary in the case of an adult. It is, therefore, all the more important to keep in mind the two precautions which I have already mentioned: the feet and lower limbs must be kept continuously warm by means of hot-water bottles and the right heart must not be permitted to be overdistended. The temperature should be taken and recorded every two hours; in the case of a young child this should be done every hour. Of course the most efficient nursing is required and should be provided from the first.

The parts of the lung which are inflamed must be determined by careful percussion and outlined on the chest with a blue pencil. The icebags must be carefully kept in contact with the skin over the areas thus determined by passing their screwtops through holes in a binder loosely fastened round the chest, or a vest may be cut out of domett as above advised in pericarditis. Special care must be taken that there is no leaking, also that they are surrounded by cotton-wool or a soft towel, and a pretty thick padding of such material is needed when the patient has to lie on the icebags applied to his back. This is really the greatest difficulty in the use of icebags in pneumonia; the patient hardly ever dislikes the cold, but the pressure of the small lumps of ice on the back as the patient lies upon the bags sometimes taxes the skill of the nurse to arrange matters comfortably.

At least once daily, preferably twice, the practitioner must percuss the whole of both lungs as well as the heart. This must be done systematically and with care. Begin with the heart and determine the limit of its dullness to the left, and especially its limit to the right in the fourth and third intercostal spaces. Notice the strength of the impulse of the left ventricle and the force of the epigastric pulsation of the right ventricle. Listen to the quality of the first sound and observe the strength, rate, size, rhythm, and length of the pulse wave. Notice whether the aortic second sound, and especially the pulmonary second sound, is too loud or too feeble. Then percuss carefully the front of the lung and the upper axilla of

each side from above downwards quite down to the anterior base, carefully noting and marking the limits of any areas of dullness. Listen for crepitant sounds, especially inspiratory crepitation, and for bronchial or tubular breathing, but do not fatigue the patient by attempting to elicit bronchophony. All this can be done in a few minutes. Then turn the patient over on his right side and carefully examine the back of the left lung from above downwards and the axillary region, marking out all dull areas as before. Let the patient rest for a minute or two on his back, and then turn him over on his left side and examine in a similar manner his right lung and right axilla. You have now a fairly accurate idea of the extent and distribution of the areas of inflammation. In children these are almost always multiple and scattered over both lungs, some of the dull areas being partly due to collapse. But even in children the inflammation may tend to spread chiefly at one spot, and to involve a large part or even the whole of one lung, while the other is comparatively little affected. Yet, even in such so-called "lobar" cases careful percussion almost always yields areas of dullness in the opposite lung. And this is of great importance, for if such areas are allowed to spread, they may develop into such extensive areas of inflammation that the most careless percussor cannot fail to notice that he now has to deal with a "double pneumonia."

In adults the inflammation is usually more localized than in children, but there is the same tendency to spread. This extension of dullness can be easily watched by careful percussion practised daily, and a very good idea of the intensity and virulence of the inflammation may thus be obtained. This is requisite for the efficient use of the icebags. It is impossible to surround the whole of both lungs with ice; it is therefore necessary to determine where the lung is inflamed, and in which direction the inflammation is spreading, and to apply the ice over precisely those areas. Place the first icebag on the largest dull portion of lung, and apply a second bag behind or in front, so as to enclose the inflamed area. These ice applications are generally very pleasant to the patient. An old lady of 62, after a few hours' trial of an icebag, declared it to be "delicious." A young lady of 19 said that it was "lovely," and when asked whether she wished it continued, replied with emphasis, "Oh, rather! yes!" Nor is there usually any difficulty in persuading the patients to try this method, for they have generally already tried hot applications and have found little or no relief. With a temperature of 104° it is easy to understand that cooling means comfort. The difficulty is not with the patients, but in overcoming the prejudices of the patients' friends.

At the next visit of the practitioner after the application of the icebags let him remove them, and carefully percuss again the areas to which they have been applied. He will generally find that they are less dull than on the previous occasion, and that the air enters them in inspiration better than before. He may even find that the dull area is somewhat smaller. Encouraged by this observation he will replace the icebags, and will proceed to attack any other dull area that he can find by means of a third icebag. At the next visit he may find that the areas attacked show signs of further improvement, or at all events have not extended. But the inflammation may at the same time be spreading elsewhere; new spots of dullness may have appeared, or dull areas formerly small may be rapidly extending. This should be suspected especially when the temperature continues high in spite of the application of the ice, or when after falling it again rises. Then let the practitioner make diligent search for fresh and extending patches of dullness; he will often find them, perhaps in the lung he had thought unaffected. Care in this matter is of the greatest importance to the patient, for if such patches be detected in their earliest stage it is remarkable how quickly they will yield to the local influence of the ice, but if they are overlooked or neglected they often increase rapidly, and may become extremely serious. It is specially desirable to have the ice over the spreading edges of the inflamed areas as far as this can be managed. It is often necessary to shift their position, more or less, at least twice daily, sometimes more frequently. It may be needful at every visit to give fresh directions to the nurse as to the exact areas to which the ice is to be applied. This is one reason why in pneumonia two visits daily are essential, three sometimes desirable. The progress of the conflict must be watched over the whole battlefield, during the whole struggle, by the general in command, if he is to secure the victory. The right heart and both lungs must be most carefully examined in detail at least once daily, a second time if the strength of the patient will allow it. It may sometimes be better to omit a minute examination at the evening visit, but at the morning visit the whole ground should be carefully gone over.

Thus far I have advocated the use of the icebag in pneumonia solely on the ground of my own experience of its practical utility. But something may be said in its favour from the standpoint of bacteriological science. For bacteriologists find that the pneumococcus is remarkably susceptible to changes in its environment, and in particular to changes of temperature. Slight alterations in the composition of the culture media will affect its growth, so that it is very difficult to cultivate. Dr. Eyre, who with the late Dr. Washbourn has specially studied this organism, tells us[2] that it is "extremely susceptible to variations of temperature." He adds that "the range of temperature enjoyed by the pneumococcus is limited to about 14°, and is bounded by 28° C. on the one hand, below which no growth takes place, and by 42° C. on the other. The optimum temperature is undoubtedly 37.5° C." It is therefore not unlikely that persistent local reduction of temperature of a pneumonic lung, even though of moderate amount, may exercise a definite inhibitory influence on the rate of multiplication of the developing pneumococci. Fortunately this is specially likely to be true in the worst cases of the disease, for Dr. Washbourn[3] showed from his experiments that the greater the virulence the pneumococcus is found to possess the more marked is its susceptibility to surrounding influences, and the more difficult it is to cultivate. Less virulent "strains" of this organism were able to grow at lower temperatures. He found that a pneumococcus which was slightly virulent, and which would grow on artificial media at a temperature as low as 20° C., could by passages through animals be converted into a highly virulent type, which would not grow on artificial media at temperatures below 37° C. If this is so it suggests that the ice treatment may have a special utility in the worst types of pneumonia.

It is difficult to estimate the amount of local reduction of temperature caused by the persistent application of ice over an inflamed lung, and there seem to be no available observations on the comparative rate of growth of the pneumococcus at temperatures differing from each other by 5° or 10°. I therefore requested Mr. Neave, Bacteriologist to the Hospital for Sick Children, to make some investigations with regard to this. Mr. Neave has kindly taken much interest in this research, and his report is as follows:

"Some months ago I undertook at your request to do what I could to test the cultivation of the pneumococcus at the temperature of the blood, and compare the growth with that at slightly lower temperatures. I confess the undertaking was made with a lighter heart than the exigencies of the matter really warranted, and that the results arrived at, to say the least, are far from complete. It would appear that each strain of the organism varies enormously in its idiosyncrasies of growth, and that a change is effected after each cultivation on a medium which has been differently prepared in some minute particular. The great variety of statements as to the nature and behaviour of the pneumococcus, I feel sure, is due to these inherent differences. It is open to question what exact value can be put upon the planting of a number of organisms, and counting those that grow and make colonies. The late Dr. Washbourn, in his Croonian Lectures, has shown that in cultivations that appear defunct, if a very large quantity is planted, one or two of surpassing vitality may yet be found to grow. I have, however, not been able to think of any better method of testing the effect of temperature on the growth of this organism.

"In the first place, I found that the isolation in pure culture of this organism was only occasionally possible, and that pleural effusion strains, which were the most easily obtainable by me, had hardly ever sufficient vigour of growth on artificial media to enable a second or subculture to be made on a solid medium. This was necessary for the purpose of inoculating a plate with a definite quantity of liquid medium containing a growth of the organism. These difficulties I find well described in the *Baumgarten Jahresbericht*, 1900. However, by the kindness of Drs. Klein and Gordon, an opportunity was given for the following:—A colony isolated from sputum was injected into mice, and the peritoneal and subcutaneous fluids resulting proved to be of exceptionally vigorous growth. In the first plating the peritoneal fluid was diluted by sterile saline solution, and an equal measured quantity was spread by a sterile glass rod on two agar plates.

One was incubated at 39.4° C. the other at 32° C., resulting in 285 colonies at the higher temperature and 15 colonies at the lower. It would have been far more satisfactory to have used the same liquid at the other temperatures required at the same time, but there were only two incubators at my disposal. In consequence of this, a fresh cultivation had to be made every two days and used anew for each subsequent comparison. Thus no comparison between one pair of groups and another can be made. In the second comparison one plate was incubated at 37.5° C. and produced 1,568 colonies, while the second at 27.5° C. produced 690 colonies. In the third, 38.5° C. produced 153 colonies, and 32° C. produced 42 colonies.

"The above, although consisting only of one set of experiments, conclusively proves in respect of that particular strain of the organism that a temperature of a few degrees less than that of the body prevents so active a growth.

"It may be that the comparatively more vigorous growth at the lower temperature in the later experiments was due to the organism having been brought up on artificial media, and so had become less virulent. It may be noted that Dr. Washbourn points out that the avirulent varieties have a stronger growth at lower temperatures than those of a virulent character."

These observations appear to indicate that a moderate reduction of temperature does exercise a marked inhibitory influence on the rate of growth of the pneumococcus. If they are confirmed by subsequent and more extended investigations they will furnish a scientific justification of the employment of the icebag in the treatment of pneumonia.

Whether or not this scientific basis can be claimed for the treatment any one who will thoroughly and carefully employ it in the manner already detailed, and with the precautions above mentioned will soon be convinced of its practical usefulness. Any estimate of its value, founded on the use of one icebag only, in cases seen only two or three times in the week, and without any careful percussion of the right heart and any attempt to relieve it, is worthless.

One striking fact which ought not to escape notice is the great improvement which an efficient ice treatment often produces in the physical signs before the crisis. This may be very distinct even two or three days before the crisis, and already very great indeed when it occurs. Another striking fact is the more rapid convalescence. This is natural enough, for if the microbic growth is inhibited there is less poisoning of the tissues, less dead material to be absorbed and eliminated, and less diminution of the patient's strength.

One point remains to be noticed. Some physicians look upon pneumonia as a blood disease with local lesions, and would, therefore, consider the icebag treatment as irrelevant and useless. Now it is true that occasionally pneumococci have been detected in the blood of pneumonic patients, but Dr. Washbourn held that it is only in a few severe cases that this can be done. This difficulty in detection indicates that the number in the blood is comparatively small. In whatever way the organisms may have reached the pulmonary alveoli in a case of pneumonia, whether by inhalation or by the blood current, it is certain that their chief, probably in most cases their only, seat of multiplication is the lungs. From the lungs they no doubt often pass into the pleura, sometimes into the pericardium, occasionally into the blood current, especially in the worst cases.

Dr. Washbourn has proved experimentally that it is possible for pneumococci introduced into the air passages to pass through the lungs and produce pleurisy and pericarditis without any implication of the lung tissue itself. Clinically such cases are met with, but they are much rarer than pneumonia. Yet it remains true that the chief site of pneumococcal growth is in the air cells of the lungs, and that the congestion and the production of fibrin are the local results of this growth and of the toxins thereby produced. On these points there is some valuable information in Dr. Auld's *Selected Researches in Pathology*, published in 1901. He says: "If a pure, moderately virulent culture of the pneumococcus be inoculated, either subcutaneously or into the internal cavities of a susceptible animal, it produces around the site of inoculation intense congestion, exudation of sanguineous serum, and fibrin. That is its characteristic and invariable lesion, and it produces directly no other. Should resolution not occur soon, we have, of course, after a variable time, an exudation of leucocytes, the gradual collection of which may give rise ultimately to what has the appearance of a mass of pus."

By inoculating beneath the skin of a rabbit rusty sputum from a case of pneumonia, and killing the animal within thirty-six hours, Dr. Auld found that its heart blood contained a pure culture of the pneumococcus. He grew these on solid and liquid media, and made injections into the pleural cavity of rabbits, causing always a severe pleurisy, frequently severe congestion of the lungs, often more or less consolidation, in two cases pneumonic consolidation of an entire lobe, usually also pericarditis. The local lesions, lungs, and spleen of these rabbits were subjected to a chemical analysis, and from them were obtained an albumose and an organic acid. The latter gave the reactions for lactic acid; it was not toxic on injection into animals. Dr. Auld suggests that the production of this acid may have an inhibitory effect on the further growth of the pneumococcus.

But the albumose acted very differently. When injected beneath the skin of the rabbit's ear, local inflammation of the ear was produced and a rise of temperature; recovery followed. Intravenous injection produced initial shock, followed by a marked rise in temperature, but no other pathological effect. Injection into the pleural cavity produced no initial depression, but marked dyspnoea soon set in, followed by rise of temperature. The animal was killed on the third day, and found to have right-sided pleurisy, with complete consolidation of the lower lobe of the right lung. No other lesions were found. Inoculations were made from the blood, and also from the serum in the pleural cavities in solid and liquid media, with a negative result. A larger quantity of the albumose was also intrapleurally injected in another rabbit. Next day the temperature was 104.6°. On the following day the animal was killed, and severe right lateral and also diaphragmatic pleurisy was found, with pericarditis and hard consolidation of the upper part of the lower lobe of the right lung, very typical of ordinary lobar hepatization.

Thus it seems that the consolidation of lung in pneumonia is largely due to the local effects of an albumose produced by the growth of the pneumococcus, and that the pyrexia is due to the same cause.

A similar albumose was obtained, in smaller quantity, by growing the pneumococcus in albuminous media free from albumoses, and it was found to produce similar results on injection into rabbits, thus proving that the pneumococcus has the power of forming a highly toxic albumose from proteid material. Much larger doses, however, were required, showing that the production of toxin is much more active in the living body than in artificial media.

Another interesting observation of Dr. Auld's may also be mentioned. He found by injection of pneumonic toxins obtained by filtration of cultures of the pneumococcus that the effect of such injections was to make the animals subjected to them more susceptible to subsequent infection with the pneumococcus than normal animals. This susceptibility appeared to last for a long period. The clinical importance of this fact is obvious.

References.

[1] *Practitioner*, 1900, p. 36. [2] Ibid, 1900, p. 285. [3] Croonian Lectures, *Lancet*, 1900.

SYPHILITIC JOINT DISEASE.

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Though syphilitic disease of the joints is not of very frequent occurrence it is not improbable that it is somewhat more so than is generally supposed, as it is not difficult to see how it may be either overlooked or mistaken for some other affection, such as osteo-arthritis, and it is probably still true, as Professor Howard Marsh [1] says in his work on the *Diseases of Joints*, that this trouble has hardly received the attention from English surgeons that it deserves.

A number of these cases having come under my notice, and as I have also looked somewhat closely into the literature of the subject and examined the few specimens that are to be found in the museums in London illustrating the morbid anatomy of the disease, I have thought it might be of service to put the results on record.

That syphilis—or, at any rate, venereal disease—might affect the joints seems to have been known to Petrus Martyr in 1488; the disease is also referred to by Alphonsus Ferrus in 1537; and by Morgagni and Fabre in the seventeenth century. Hunter, however, thought that syphilitic disease did not occur: in this view he was opposed by others of his time, but the earliest clear account of the disease seems to have been given by Richet [2] in 1853.

It is very difficult to arrive at the frequency with which the disease may be expected to occur, as I have found practically no statistics on which a satisfactory estimate can be made, though Zeissl [3] states that of 1,000 cases of syphilis seen at a hospital for venereal disorders, only one was found to have any joint disease; as he, however, remarks, it is not improbable that patients affected with joint disease only would go to a general hospital, and thus these figures are not to be very much relied upon.

Varieties.

Various classifications of the varieties of the disease occurring as the result of acquired syphilis have been given; the following seems to include all the varieties that I have seen or that I have been able to find a clear account of in the numerous articles mainly written on the Continent, which I have consulted.

During the secondary stage of the disease the following may occur: (1) Arthralgia; it may be doubted if this really is a joint trouble, properly speaking, or if the pain may not be in the parts around; (2) synovitis, acute or subacute; (3) hydrarthrosis.

During the tertiary period the following types may be seen: (1) Synovitis subacute or chronic, so chronic in some cases as to be examples of hydrarthrosis; (2) gummatous, the gummata being in the synovial or subsynovial tissue; (3) cases in which the bone or cartilage is primarily diseased; (4) cases in which the disease has spread to the joint from the parts around; (5) ankylosis, which is rather a termination of one of the other varieties of the affection than a variety by itself.

1. In *arthralgia*, due to secondary syphilis, the pain may be very intense in and around the joint. It is often, like other syphilitic pains, worse at night; it is not increased by movement, and the range of motion is not at all impaired as a rule, though there may be a little stiffness of the joints affected in the morning, after they have been at rest all night; indeed, the pain may be relieved by movement; there may be a little local tenderness. This trouble usually occurs in the early stages of the disease, even sometimes before the eruption has appeared. It is doubtful if any changes would be found in the joints if they were examined, as there are no physical signs save those named. Several joints are often attacked at the same time. Fournier [4] speaks of these cases as common, though in the case which he recounts there was not a purely painful condition but also some effusion. The condition is also described by Voisin [5] and many others.

2. *Synovitis* is, however, the common trouble during the secondary stage. It may come on without any warning as an effusion, usually associated with some pain and tenderness, which is not increased by movement, and it may be quite unattended with any other sign or symptom, there being no constitutional disturbance, but in other cases there is an antecedent *malaise*, with some rise of temperature and a good deal of local pain, in addition to the effusion, and the patient may be generally ill; in fact, in some respects the resemblance may be very close to rheumatic fever, and the condition has been described by Vaffier as "syphilitic rheumatism," though some of the typical features of that disease are absent, such as cardiac troubles, or the acid sweats which are usually seen in rheumatism. Usually in this type many, or, at any rate several, joints are attacked at the same time, so that in this respect rheumatism may be very closely simulated. Vaffier [6] gives notes of several cases, of which the following is a characteristic example:

A sailor who had never had rheumatic fever first noticed a chancre on May 28th. He was treated with mercury for a time; this was then intermitted. On July 22nd he began to complain of general weakness and pain in various parts of the body on movement; there was a little swelling over the left knee-joint, and also of the finger-joint and toe-joint. There was no heart trouble. On August 8th he had some rise of temperature, and the right knee and left shoulder became affected. He now developed a rash. The mercury, which had before this attack been given up, was again returned to, and also some potassium iodide administered. Under this treatment he very rapidly got well.

Descriptions are given of the secondary symptoms by Pielicke,[7] Finger,[8] Fournier,[9] Lancereaux,[10] Sherren,[11] and many others.

3. *Hydrarthrosis*, when present, nearly always attacks the knee; it usually only occurs late in the secondary stage, when it begins as a primary affection, but it may succeed the more acute synovial effusion above described. It is usually quite unattended by any other trouble than the effusion, which comes on gradually without any pain. The diagnosis depends on the detection of the primary disease, and also in doubtful cases on the effect of treatment by mercury and iodides.

A typical example is one given by Voisin[12] in a patient who had contracted syphilis six months previously. He slowly developed a simple effusion into the knee-joint, which gave him no pain or other trouble; it cleared up entirely with antisyphilitic treatment.

As to the morbid anatomy of the conditions described above, only views founded on what has been noted clinically can be put forward; for as far as I am aware there has been no opportunity for making a necropsy on any such cases; there is no likelihood, however, that anything would be found beyond a little redness, due to increased vascularity of the synovial membrane and other parts entering into the formation of the joint, in addition to the presence of an excess of synovial fluid.

The diagnosis will generally have to be made from rheumatism, which is usually easily done by the presence of the signs of syphilis, the absence of sweating, the want of rapid migration of the pain from one joint to another, the comparative mildness of the constitutional disturbance, and the results of treatment. Gonorrhoeal joint trouble may present greater difficulties of diagnosis; but here there is usually more pain and fixation of the joint, and also the presence of a urethral discharge may be observed or a history of it obtained, but the effects of mercury and iodides are the final resort to determine the nature of a doubtful case.

1. In cases of tertiary synovitis the knee-joint is most usually affected—as, indeed, is the case with all the varieties of tertiary syphilitic joint disease. The trouble is one which is usually associated with very little pain or interference with motion, so much so that this may be one indication of the nature of the case, though of course painless effusions occur from other causes. Usually a little thickening of the synovial membrane is also present and a little creaking on movement; the amount of fluid present varies a good deal from time to time. Occasionally there may be a little rise of temperature, but this is unusual; two cases, however, are described by Duffin[13] in which the temperature was subject to the most marked diurnal oscillations, a peculiarity which has been also sometimes noticed in connexion with other tertiary lesions.

These cases are most likely to be mistaken for osteo-arthritis, and if there are no other signs of syphilis it is hard to see how this can be avoided, and in view of the fact that iodides are frequently given for osteo-arthritic disease it is not unlikely, as has been pointed out by Professor Howard Marsh,[14] that this mistake may be made without its being discovered more frequently than is supposed. So far as I am aware no opportunity has occurred for examining the condition of such a joint after death, but it does not seem very likely that any very marked change would be found if this were done.

2. Gummatous disease may begin in a manner very like the last variety, that is to say, with an effusion of fluid, and subsequently the gummatous mass may be felt; but in some examples there is never any fluid present to any large amount, or, indeed, there may be none at all throughout; and, under these circumstances, the most noticeable feature is the lumpy thickening of the synovial membrane which occurs in a very irregular manner. The pain which is present is very variable in amount, and is frequently worse at night though there is no starting pain. Even with very extensive disease there may be very little limitation of movement, and motion may cause very little pain, though this is not always so. Remission, and indeed an almost apparently complete cure of a case, is often followed by a recrudescence, and this is very characteristic of the disease.

Sometimes the gummatous condition so completely involves the joint that its cavity is almost filled up by it, and in such a case the resemblance to tuberculous disease is very close, though usually not quite so close as in the cases next to be referred to in which the bones are involved. The following is an example of this condition:

A man, aged 50, who had suffered from syphilis some years before he was seen, had for some time before he came for treatment been complaining of pain and some difficulty in moving his left knee-joint. On examination this was found to be a little hotter than the other one, and there was some limitation of movement, but motion gave very little pain; the synovial membrane was to be felt thickened in a lumpy manner in several places; there was no grating nor any creaking on moving the joint. The man was put on potassium iodide in increasing doses, and very soon had practically lost his pain, and was able to use his joint more freely though not to the full extent; the thickening also became less. He then absented himself for a time, only to return again in the same condition as before, to be treated in the same way with the same result.

Another case was that of a man of about 40. He had an injury to his right elbow a month or so before he came under observation. When first seen there was a good deal of soft swelling on each side of his olecranon, and some limitation of movement with a little pain. There was no evidence of fluid in the joint. He was thought to have some sort of traumatic inflammation of the joint, and was treated by rest on a splint. But a week or two of this did not cause any improvement, and the case now assumed much more the characters of tuberculous disease, and the rest treatment was continued on this assumption; but the posterior swelling increased and appeared to soften, so that it was thought that fluid (probably pus) was present. A small incision was made, this only revealed some granulation-like tissue but apparently not of a tuberculous nature. It was therefore thought the case might be one of syphilitic disease, and iodides were given with the result that he speedily began to improve, and the joint ultimately recovered with only a little impairment of its mobility. No history could be obtained of the disease, and there were no other definite signs elsewhere with the exception of one or two doubtful cutaneous scars.

Brochin,[15] Richet,[16] Lancereaux,[17] and others recount very similar cases. A specimen of a joint with a gummatous deposit is to be seen in the College of Surgeons Museum, No. 1,756A, but in this case the disease is not confined to the soft parts, but affects the cartilages as well. Gummatous disease seems, as a rule, to begin in the subsynovial tissue, and to pass from there to the joint itself, but it sometimes also attacks the ligaments. This form of disease is eminently curable, though it shows a very considerable tendency to relapse, and if it is allowed to advance too far before the proper treatment is started a good deal of damage may be left to the mobility of the joint from adhesions which form within it.

A similar invasion of the synovial membrane is to be seen in a specimen in the St. Bartholomew's Museum, No. 567A. In this specimen the gummatous deposit has involved the upper and anterior part of the membrane, and in some places it has ulcerated, and projects into the joint in irregular lumps and fringes; there were several ounces of dark grumous material in the interior of the joint.

3. Much more serious damage, as a rule, accrues to the joint when the primary disease is in the bones or cartilages; it is curious, however, even in these cases how very little may be the pain which the patient may suffer as compared with that caused by a tuberculous joint damaged to the same extent, though sometimes it may be severe enough, but it is usually not of the starting nature which, when the cartilages have been destroyed, is so characteristic of tubercle.

Some thickening of the synovial membrane is always to be felt, and there is usually much limitation of movement, and often some deformity of the joint, either the consequence of the destructive process, or due, in addition, to the contraction of the fibrous tissue, which has invaded the other parts of the joint besides the bones, as well as the action of the surrounding muscles.

Thickening of the bone ends may be a very marked feature, and sometimes lipping of their edges may be detected; but although specimens show indubitably that this lipping does occur it is never a very marked feature, and when it is noticed it is more likely to increase the difficulty of diagnosing the nature of the condition than to diminish it, by causing a confusion with osteo-arthritis, to which in any case there is a very great similarity, and from which the trouble can often only be separated by the knowledge of a history of syphilis or the results of treatment. If, however, there is a good deal of thickening of the soft parts the appearances approximate more to those to be found in tuberculous disease.

From what has been said above it will be seen that no very definite points can be given for the diagnosis of such cases. But should syphilis be suspected the presence of other signs of the disease, and the speedy results obtained by appropriate treatment, will make the case clear.

Several specimens of this type of the disease are to be found in the museums. A case of Davies-Colley's[18] in Guy's Museum, No. 1,334[79], shows the bones of a knee-joint with much-pitted erosion, complete loss of cartilage, some grooving, and in one or two places definite eburnation, and a little increase of bone at the margins of the articular surfaces in one or two places. The parts were removed from a syphilitic male aged 34.

Another specimen in the same museum, No. 1,334[80], shows the left femur with deep erosion of one of the condyles extending into the bone, the edges of the erosion are clean cut, and the cavity did not contain any granulation masses such as would be found in a similar case if tuberculous, the patella and tibia in the same joint were superficially eroded, there was no pus in the cavity, and the articulation was otherwise normal. The right femur in the same case showed erosion of the femoral cartilage, and some wearing in the centre of the cartilage.

A similar condition is to be seen in the head of the humerus in the College Museum in a syphilitic child (No. 1,856 B.). Specimen 1,856 C. in the same museum shows very much more destruction of bone in such a manner that the parts fit accurately into one another, the elevation left in one bone fitting into an erosion in the opposing bone, the articular cartilage has all disappeared. Davies-Colley thought this also to be a case of syphilis but there seems to be some doubt as to its being so. There are also several very interesting specimens in the St. Bartholomew's Museum which are almost certainly syphilitic: they were all taken from a boy, aged 16, and have been carefully described by Bowlby[19] as syphilitic though Morrant Baker, under whose care the patient was, had some doubt as to their true nature, several joints as well as other parts are affected. Both shoulders, one elbow and one knee are shown (Nos. 312 B. C. D., etc.) the chief character of the changes is the gouge-like ulceration of the bones and cartilages, the ulcers thus formed being covered by only a thin membrane-like tissue, there is also some nodulation of the cartilages which has also undergone fibroid changes in places, the amount of thickening of the synovial membrane is not in most of the specimens very marked and it is not at all like that which one is accustomed to see in tubercle; microscopically there were no gummata to be found in this case.

In this type of case the affection may begin in the bones or cartilages. In the former it takes the form of a gummatous deposit which is accompanied by a syphilitic osteitis causing enlargement of the bone; as the deposit gradually increases it ultimately reaches the joint and opens through the cartilage into it; this may set up a good deal of reaction in the joint or it may not cause very much disturbance though it is most likely that a chronic synovitis will result. When the disease begins in the cartilages the process is one which has been described by Virchow[20] as "chondritis syphilitica." The condition is one in which loss, at the same time accompanied by a fibrous scarring, of the cartilage occurs in places, the loss does not appear as it does for the most part in osteo-arthritis at the points of greatest pressure but not infrequently is to be seen as circular pit-like excavations: but if fibrous change has occurred the fibroid infiltration does not result in a fibrillation of the cartilage but stellate scars occur which are very characteristic. Virchow says that there is never any increase in the cartilage to form ecchondroses and ultimately osteophytes, but although this is to a large extent true it is not absolutely so as increase of the cartilage does occur to some extent in some cases as is seen in some of the specimens described above.

It is clear that the changes which have been described if allowed to advance will practically destroy the joint and cause its fixation so that unless the disease is arrested at an early date, ankylosis, very likely in a faulty position, is all that can be expected; at the same time there is a very great liability for the trouble to recur when treatment is intermitted.

4. An affection of a joint in consequence of syphilitic disease in the neighbouring structures may take place as the result of the close proximity of a gummatous deposit causing some effusion, the joint itself not being really affected with any truly syphilitic affection. But much more serious trouble may arise when a gumma opens on to a skin surface near to a joint, and then subsequently the joint capsule becomes perforated, and the joint is infected with septic organisms from without; the result is a septic arthritis with its attendant dangers, and examples of both these conditions have come under my observation. Both cases occurred in women; in the example of the first-named variety it cleared up very rapidly under antisyphilitic treatment, but in the latter the joint became ankylosed and useless.

5. Ankylosis has been referred to as a result of syphilitic arthritis, and it is very important to bear in mind that this is likely to be the termination of any case of the gummatous disease of the synovial membrane or where the bones are diseased unless the affection is recognized early and treated actively, as if this is not done adhesions form which remain to permanently embarrass the joint, even if the gummatous thickening and bone changes to a large extent settle down. That ankylosis may occur in this way has an important bearing on the question of keeping such joints at rest for any length of time, as if this be done the fixation is likely to very much aggravate the ultimate limitation of movement; there is the less difficulty in allowing a certain amount of movement in these cases, as usually there is not as great an amount of pain attached to motion as there may be in other forms of joint disease, nor does it seem to interfere with the process of cure.

In hereditary syphilis the joints are not exempt from attack, and there is some reason for thinking that they are more often affected by this form of the disease than by the acquired variety; the various ways in which the joints are attacked have been described by Parrot,[21] Fournier,[22] Imbert,[23] Kimmisson and Jacobson,[24] Clutton,[25] Robinson,[26] Morestin,[27]

Hutchinson,[23] and others. Some of the varieties bear a very close likeness to the forms which occur in acquired syphilis, but there are some which may be considered distinct.

They may be grouped as follows: (1) Simple synovial effusion; (2) joint disease associated with syphilitic epiphysitis; (3) primary gummatous affection of the synovial membrane; (4) osteitis associated with effusion only; (5) osteitis associated with gummatous disease of the synovial membrane (this is the variety which has been called pseudo-white swelling); (6) deforming arthritis.

(1) The first account of this condition was given, I believe, by Clutton,[25] and it is now very well known and appears to be not uncommon. It occurs in children usually between the ages of 8 and 15, and takes the form of symmetrical effusion into the joints, the knee being far the most commonly affected; there is practically no pain and very little interference with function, and although the amount of fluid may be considerable, there is no other change in the joint. It is very commonly associated with some other syphilitic trouble, particularly interstitial keratitis, and it is not unlikely that it occurs not infrequently without being recognized, and clears up with the treatment which is given for the other trouble present.

The following is a typical example of the condition:

A boy, aged 10, was first seen for characteristic interstitial keratitis. He happened to mention that he had been suffering from a little pain and some swelling of his knees, and both of them were found on examination to be full of fluid; there were no changes in the bones, no redness, tenderness, or heat, and practically no pain on movement. The whole condition completely cleared up under the anti-syphilitic treatment which was being given on account of the eye trouble.

(2) There may be some doubt whether, at any rate in some of these cases, the joint itself is really the seat of the disease, as so far as I have been able to discover there are no specimens or descriptions of them which show the condition when a joint has been affected, but, as far as can be judged from a clinical examination, the joint is invaded with the soft fungating inflammatory formation which is associated with the disease at the epiphysial line. The trouble occurs in infants usually between the ages of 1 month and 2 years, but cases are rare before the age of 3 months. The joint itself and the parts around have a soft, boggy feel, and the limb lies quite helpless; generally the swelling clears up very rapidly under mercury and with surprisingly little damage to the joint; occasionally suppuration occurs, and has been described as not uncommon by Parrot, but it is probable that when this happens there has been some form of secondary infection to account for it.

I recently had under my care a child about a year old with much boggy swelling around the left elbow-joint, the movements of which were very limited, but there was apparently very little pain in connexion with the trouble, though the child did not itself use the arm. There were no very definite signs of hereditary disease, but the condition rapidly cleared up under mercurial inunction.

Varieties (3) and (5) do not differ in any essential respect from the similar condition which occurs in acquired syphilis and which has been described above.

The typical condition in the variety numbered (4) is well described by Robinson[26] as very considerable enlargement of the end of a long bone such as the femur, with a greater or less effusion into the neighbouring joint, but with no other evidence of disease of the joint; it is not uncommonly seen in cases of syphilitic osteitis near a joint; any interference with the movements of the joint is due to the alteration in size of the bone and not to any change in the joint itself; the effusion usually clears up rapidly under appropriate treatment, but has a tendency to return when this is intermitted.

(6) Under the name of *arthropathie déformante* Fournier[27] has described a rare and very peculiar condition of the joints which occasionally occurs in connexion with hereditary disease. The main changes occur in the epiphyses, which become deformed in a most irregular manner by the production of osteophytic outgrowths which cause it to take a most irregular shape; the result on the joint is very marked deformity, much limitation of movement, and perhaps even partial ankylosis, though as there does not seem to be any very active change in the articulation itself this fixation is mainly due to the altered shape of the bone ends, which alteration may be so great that the cases have been mistaken for old dislocation of the joint rather than disease.

It is clear that in this condition very little improvement can be expected from treatment, though the progress of the disease may be stopped, and if the condition is recognized early any great damage may be prevented.

Diagnosis.

The diagnosis of syphilitic disease of the joints is often very difficult. During the secondary stage the presence of other signs of the disease is generally the main element in settling the point, and in the cases of arthralgia there is really nothing else on which a diagnosis can be founded. The synovitis cases and those which resemble rheumatism are the ones which are most likely to lead to error. In the latter, which are by no means common, there are several points in which the features differ from true acute rheumatism, for example, the absence of sweating, the mildness as a rule of the constitutional disturbance, the absence of heat and redness in the joints affected, and the fact that the heart never suffers.

From the gonorrhoeal synovitis the syphilitic usually differs in that the stress of the trouble does not fall so much on the fibrous elements of the joints, and there is usually more effusion in the syphilitic cases; in addition, it may be possible to exclude a recent attack of gonorrhoea, and the influence of treatment by mercury and iodides is practically *nil* in gonorrheal cases, while, on the other hand, it acts usually very rapidly in the direction of ameliorating the condition if this be syphilitic.

The joint affections that arise during the tertiary period are most likely to be taken for either osteo-arthritis or tubercle, though it may also resemble gout and gonorrhoeal disease or some form of traumatic synovitis or arthritis. From osteo-arthritis the most noticeable distinctive points are the much greater tendency in this disease for the development of new bone as osteophytes, the more marked deformity that is therefore produced in the joints, while there is likely to be more marked creaking and grating and limitation of motion; but most important also is the absence of any direct evidence of syphilis and the effects of treatment.

The cases which resemble tuberculous disease usually greatly differ from it in the comparatively slight pain on attempted movement; there is also generally but little rigidity of the muscles and surprisingly little limitation of motion in proportion to the apparently advanced condition of disease in the joint: but here again collateral evidence of specific disease and the effect of iodides are often the most important points in the diagnosis.

Syphilis attacks certain joints much more often than others, and of these the knee seems to suffer almost more often than all the other joints put together; next in frequency is either the ankle or elbow-joint; then follow the shoulder, wrist, and some of the small joints; the hip seems to be very rarely affected.

Treatment.

With regard to the treatment, very little need be said, as it is merely that which is suitable to the particular stage of the primary disease at which the joint affection may occur. Usually, it is also best in the later secondary stages to give iodides in combination with mercury. It is also well, in a tertiary case which does not rapidly improve under iodides only, to give mercury in addition, but this is only what would naturally be done with any syphilitic lesion under similar conditions.

Absolute rest, as has been suggested above, is not only in many cases not absolutely necessary, but, if carried on for any length of time, is likely to do harm from the assistance that it gives to fixation of the joint. It may, however, be necessary for a time, in a case which is accompanied with a good deal of pain, and where the inflammatory process is very active until this active inflammation has passed off.

Counter-irritation is often very useful, especially if there should be much effusion. It may be applied in the milder form of painting with liquor iodi, or Scott's dressing, or more actively, as in the form of blistering, or if the pain seems deeply seated in the bones in the form of the actual cautery, while in the severest cases which are otherwise intractable trephining the bone in the vicinity of the joint may be resorted to.

In cases in which the disease in itself is quiescent the stiffness and limitation of movement may be much reduced by massage, and gradually increased passive movement with hot douching, and perhaps the use of hot-air baths, while actual deformity may be overcome by the usual means that are suitable in any particular joint affected.

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THE SPREAD OF ANKYLOSTOMIASIS.

By T. H. HENDLEY, C.I.E.,
Colonel I.M.S. (retired).

Your notes in the British Medical Journal of November 14th on the subject of ankylostomiasis are most opportune in drawing attention to the gravity of this pest. Few realize how enormous is the number of persons who are infested with this and other intestinal parasites, and in consequence how many soldiers and other persons who have resided in the tropics are likely to be infected and therefore become the means of spreading such disorders in Europe. When I became Inspector-General of Civil Hospitals in Bengal the subject soon attracted my serious attention. I found that in 1898, of all patients treated in the Bengal dispensaries 5.34 per cent. suffered from intestinal worms, and no fewer than 61.52 per cent. of these were in the Patna Division alone. In my report for 1902 on the Charitable Dispensaries of Bengal I find there were 274,595 such cases out of a total attendance of 4,452,628 individuals, or 6.16 per cent. In the Noakhali District the percentage was 21.88 and in the Durbhanga District it was 29.85. In Durbhanga town it was no less than 41.86, while in the fashionable hill station of Darjeeling it was 41.28 per cent.

Great as was the relief afforded by treatment of known cases of these affections it was clear that a large number escaped diagnosis, which could only be ensured in doubtful cases by microscopic examination of the faeces. I consulted Major Ronald Ross, who happened to be in Calcutta at the time, and in consultation with him Messrs. Baker and Company drew up a paper of instructions for issue with their plantation microscopes, which, at my instance have been or are being procured for most of the dispensaries in the province, and are used with excellent results. They are also supplied at the cost of Government, with the co-operation of the Inspector-General of Gaols, to all gaol hospitals in Bengal, and in these institutions much valuable information has been obtained by their use.

Recognizing that prevention was better than cure I requested Major Calvert, I.M.S., who, as Civil Surgeon of Durbhanga, had shown much zeal in the inquiry, to prepare a small pamphlet on intestinal worms for the use and guidance of hospital assistants, with the result that an excellent little work has been produced by him, and has been published by the Bengal Government. He states that in some districts in Bengal in 83 per cent. of the stools of the population the ova of the ankylostoma duodenale have been found. Twelve per cent. of the prisoners at Durbhanga had the ova of the trichocephalus dispar or whip worm and 9 per cent. the eggs of oxyuris vermicularis. In some districts 49 per cent. of adults and 75 per cent. of children suffer from ascaris lumbricoides. Major Calvert observes that "it might possibly be thought that the presence of a few intestinal worms, giving rise, as they sometimes do, to little inconvenience to their host, was not a matter of importance. As a matter of fact, this is not so. The people who harbour these parasites are the best judges of the inconvenience they cause; and from the numbers who now flock to the Bengal dispensaries to seek treatment which experience has taught them is effective and brings relief, it is evident that the presence of these worms is usually attended with considerable discomfort, if nothing worse." He does, however, point out that ankylostoma duodenale "do directly when in large numbers, and possibly indirectly when in smaller numbers, lead to the death of the host harbouring them." Moreover, we do not yet know whether the presence of such parasites is not a far more serious factor in the causation of inability to resist successfully the attacks of other diseases. Major Calvert goes on to show that there is very little difficulty, or even unpleasantness, in detecting the ova by the microscope. In Bengal those very useful persons the sweepers can easily be taught to carry out all the preliminary stages in the investigation. Most authorities recognize that success in abating the scourge can only be obtained by systematic and long-sustained efforts. It is easy to give immediate relief, but prevention in this case is much more important and difficult, and resolves itself into (1) treatment of infected persons so long as to ensure a complete cure; (2) destruction of faeces which contain the ova; (3) pure water supply; (4) conservancy; and (5), lastly, in my opinion, giving simple lessons in important sanitary matters in all schools, and even in colleges, because without the intelligent co-operation of all classes no effective sanatory reforms can ever be successfully carried out.

All of us are aware of the obstinacy of these affections, thus, for example, Dr. Ralph Stockman, in his paper which appeared in the Journal of July 25th, remarked that the original worms in the case of ankylostoma die in about six years, and a natural cure then results. Fortunately, however, this period can be much shortened by appropriate treatment, and, in suggesting in Bengal, as I always did, that the stools of all prisoners should be examined on admission into gaol for ova, and treatment carried out until they were completely cured, I considered that not only would the individual be relieved but a large number of possible disseminants of the affection would, for at least a time, be rendered harmless. Moreover a man who is freed from this scourge is less likely to increase the gaol sick-rates and death-rates, because he is more likely to resist the usual gaol disorders. There can be no doubt that essential points in prevention are a pure water supply, improved conservancy (including destruction or disinfection of stools, which in public institutions is an easy matter), and habits of personal cleanliness, but, although it will be long before diseases of this kind are stamped out and the general population greatly influenced, a beginning can be made by educating the children and especially the people in right views on these subjects. In order to carry out these ideas I co-operated with the Director of Public Instruction in Bengal in inducing the Senate of the University of Calcutta to encourage training in elementary sanitary science and in hygiene by introducing the subject into examinations. Further effect was given to this decision by preference being accorded, all other things being equal, in appointing teachers under the Education Department and in accepting youths as engineering and medical students to those who had obtained the sanitary certificate of the University.

Moreover Major Bedford, I.M.S., has written a suitable manual on the subject for the use of students, in which special prominence has been given to native habits and modes of thought, points of much importance in order to remove many prejudices—religious, caste, superstitious, and otherwise. While all must be convinced of the extreme necessity of teaching the young why we should be clean, why spitting and other bad habits spread disease, or mosquito nets are desirable, and other simple matters of this kind, it is equally necessary to insist on such training being carried on into the higher branches of education so that teachers may be taught what to teach, and so that those who obtain high university degrees may be impressed with the importance of sanitary expenditure and legislation when they come to sit on municipal councils, and thus be led to aid, and not to oppose, such projects as they now sometimes do. My proposals to include in some way these important questions in the higher university training and tests met with some ridicule amongst the less informed native graduates, but they could hardly have realized the fact that, owing to the sanitary lapses, indifference, and ignorance of their poorer neighbours, even cultured citizens may run the risk of being eaten up of worms, as Herod of old was said to have been. The early environment of many rich and distinguished Orientals sometimes tends to make them indifferent to these serious matters, hence the necessity of so often calling attention to them. I believe that even in the case of plague many of the difficulties experienced in managing it would have been diminished by a more widely-spread knowledge of its causes and treatment, and that it is to a general spread of education in hygiene that the best hope lies for the future of mitigating such terrible diseases.

I have referred to the investigation of problems of this kind in gaols. No other places in India and in the tropics afford such excellent facilities for the study of many obscure problems in medicine and in hygiene. This is fully recognized by our best gaol medical officers, but unfortunately at present

economic and other reasons stand in the way of relieving them from the non-professional work of prisons, which leaves them very little time to devote to such important inquiries.

In these days of rapid communication between all parts of the world, it is, perhaps, unnecessary to emphasize the risks that are run of the introduction of tropical affections into temperate climates, and to the desirability of studying and preventing them.

A CASE OF ABDOMINAL HYSTERECTOMY FOR RETROPERITONEAL CERVICAL FIBROID

(WEIGHING 13½ POUNDS).

BY ARTHUR H. N. LEWERS, M.D.LOND., F.R.C.P.,
Obstetric Physician, London Hospital.

THE case recorded in the following paper is the sixth case of fibroid of the cervix that I had operated on within the last three years. I cannot remember having met with a case before October, 1899; at all events, I have never operated on a case of retroperitoneal fibroid of the cervix before that time. In all six cases the patients made good recoveries.

M. H., a single woman, aged 42, a Board School teacher, was admitted into the London Hospital under my care on June 3rd, 1902.

Present Illness.—She had first noticed a swelling in the abdomen about three or four years ago, and from that time it had gradually increased in size. Twelve months ago she began to have a feeling of weight in the abdomen, and a dragging pain, chiefly on the right side. The pain had been worse just before menstruation, and had been less severe immediately after the period; the pain had also been relieved by lying down. It had not been sufficiently severe to actually prevent her going on with her work. She had, however, suffered from a feeling of increasing weakness and prostration, and from slight attacks of faintness when the pain had been severe. Of late the legs had swelled after standing. The bowels had been regular and the appetite poor. There had been no trouble as regards micturition.

Menstrual History.—The catamenia appeared at the age of 14. Menstruation had never been regular; there had been intervals of five, six, or eight weeks between the periods. The period had generally lasted about four days; the amount lost had been normal. During the twelve months before admission menstruation had occurred more regularly. The periods about twelve months ago had lasted five or six days. During the three months preceding admission to the hospital, however, less and less had been lost at each period.

Previous Illnesses.—She had had typhoid fever, complicated with pneumonia and haemorrhage, eight years ago. She had always been subject to "colds" and "sore throats."

State on Admission.—The abdomen was markedly prominent from the epigastric region downwards. On palpation an irregular swelling was felt reaching in the middle line 4 in. above the umbilicus. In the right nipple line the tumour extended to the ribs, and reached far back into the right flank. In the left nipple line the highest point of the tumour was 2 in. from the costal margin. A loud uterine souffle was heard at various places over the surface of the tumour. The circumference of the body at the umbilicus was 36 in. A little fluid was pressed out of the right nipple, but none could be pressed out of the left.

On vaginal examination it was found that the hymen admitted the finger without tearing. The posterior vaginal wall was bulged downwards and forwards by a fixed elastic swelling, having, it was judged, a transverse measurement of between 3 and 4 in. The vaginal portion of the cervix could not be reached. I came to the conclusion that the tumour was probably a large uterine fibroid. The presence of the fixed portion bulging down the posterior vaginal wall led me to expect that an operation to remove the tumour would be more than usually difficult.

Operation (June 5th, 1902).—The abdomen was opened by the usual incision in the middle line and the incision was subsequently extended upwards so as to measure ultimately about 9 in. The body of the uterus was readily seen. It was uniformly enlarged so as to be about the size of the uterus immediately after delivery, but as regards its shape it was not in any way deformed. It became evident at once that the greater part of the mass forming the tumour lay behind and below the posterior layer of the peritoneum. The fibroid had evidently grown from the supravaginal cervix, burrowing below the peritoneum which formed Douglas's pouch and raising this completely from the pelvis. It was impossible at this stage to move the tumour appreciably, and it was clear that the only way to remove it would be to incise the peritoneum forming the covering of the mass and to enucleate it gradually from the extensive retroperitoneal "bed" where it lay. I began by tying the left ovarian vessels and then opening up the left broad ligament. Incisions were carried somewhat transversely across the peritoneum over the tumour, one in front of and below the body of the uterus and one behind. All the usual relations were so much altered by the manner in which the tumour had grown that it was impossible to follow the usual steps of an abdominal hysterectomy, making the peritoneal flaps at one stage, finding and tying the uterine arteries at another stage, and so on. The large vessels were tied as they came into view or after they were divided. Working first on one side and then on the other, the mass was gradually enucleated from its attachments. I was, of course, well aware of the probability that the pelvic part of the tumour would be in close proximity to one or both ureters, and on the left side of the pelvic off-shoot of the tumour I found, and fortunately recognized, some 3 in. of the left ureter, tightly stretched, like a piece of narrow white tape, over the left convex surface of this part of the tumour. It looked white, and not unlike a piece of thickened fibrous tissue. It was carefully freed from the tumour, and the enucleation continued. I did not see the right ureter.

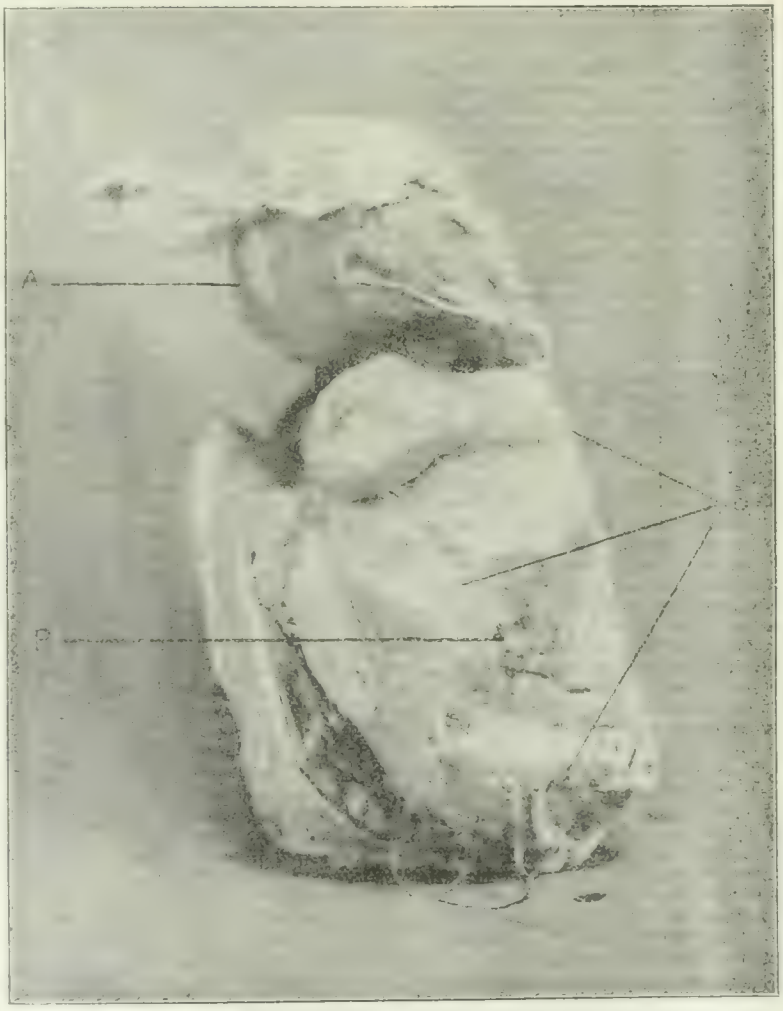


Fig. 1.—Retroperitoneal cervical fibroid removed by abdominal hysterectomy. A, body of uterus enlarged but not deformed; B, tumour; P, cut edge of peritoneum.

Ultimately the whole tumour was freed from its attachments behind the peritoneum, and it was then found to be continuous with the uterus at the level of the supravaginal cervix—that is to say, the tumour was a retroperitoneal cervical fibroid. Several portions of the tumour had become cystic, and some of these cysts were opened in the course of the operation in order to make the mass smaller. They contained thin bloody fluid. The whole mass, consisting of the body of the uterus and tumour, was then cut away, leaving little more than the vaginal portion of the cervix. The remaining portion of the cervical canal and external os uteri was opened sufficiently to admit the finger. A few silk ligatures were required to control bleeding from the cervical stump. These were passed so as not to occlude the lumen of the

cervical canal. A large number of ligatures were required to secure bleeding points at various parts of the "bed" from which the tumour had been dissected. A sterilized gauze drain was passed through the cervix into the vagina, and the peritoneal flaps were sutured together over the stump and the end of the gauze drain projecting from it. A second gauze drain was also left in the lower angle of the abdominal wound, the rest of which was closed in the usual way.

The patient ultimately made a good recovery, and left the hospital on July 22nd, 1902. There was moderate fever during the first three weeks after the operation, no doubt due to imperfect drainage.

She came up to see me at the hospital some months after, and I examined her. The scar was quite sound, and the sinus at the lower end of it had healed completely. She had resumed her regular work.

Note on the Specimen.—It was examined immediately after the operation was over. It consisted of the body of the uterus and part of the cervix, both sets of uterine appendages, and of a mass of very irregular form attached to the lowest part of the uterus (see Fig. 1). The body of the uterus was uniformly enlarged. Its extreme length was about 8 in., its greatest width about 7 in., and greatest thickness from before backwards about 3½ in. On section a small fibroid was found in the anterior uterine wall. The left ovary was enlarged to about three times the normal size.

The irregular mass which formed the tumour was attached to the back of the cervix, and perhaps partly also to the lowest part of the body of the uterus. Its greatest diameter was about 13 in.; its greatest thickness from before back was about 8 in. From the surface several cysts were seen projecting, varying in size from that of an orange downwards (see Fig. 2). The lowest part of the mass was cone-shaped, and was the part of the tumour pressing down the posterior vaginal wall. The tumour weighed 13½ lb.

Two years ago I read a paper before the Medical Society of London on fibroids of the cervix uteri,[1] in which four cases of this condition on which I had operated were recorded in detail. In two of those cases the tumour was interstitial. As regards the other two, in one the tumour was retroperitoneal, and in the other chiefly retroperitoneal. In the case recorded in the present paper the tumour was entirely retroperitoneal, and considerably larger than the largest met with in the four cases previously referred to, the largest among which only weighed 9½ lb. These large fibroids originating in the cervix form a class the characters of which differentiate it very distinctly from the class of fibroids growing in the body of the uterus. For instance, they are frequently solitary, and the symptoms to which they give rise are mainly such as depend on the size and position of the tumour. Fibroids of the cervix do not seem to give rise to menorrhagia. In the case recorded in this paper it will have been noticed that the menstrual losses had diminished in quantity for some months before the patient came to the hospital. On the other hand, disturbances as regards micturition are not uncommon, though no symptoms of the kind were met with in the case dealt with in this paper. An important feature, common to most of these cases, is that the body of the uterus is not deformed. It may often be recognized clinically as perched on the top of the underlying tumour. In the present case the body of the uterus was not deformed, but uniformly hypertrophied, probably on account of the presence of a small interstitial fibroid in the body of the uterus itself.

Whether the body of the uterus has been recognized previous to operation or not, it comes into view directly the abdomen has been opened. The fact that it is not deformed is a valuable indication of the true nature of the underlying tumour—namely, that it is probably a fibroid growing from the cervix.

As regards the technique of the operation for removing large fibroids of the cervix, the first difficulty encountered is the absolute fixation of the tumour. No matter what the size of the abdominal incision may be, the mass cannot be brought out of, or even up to, the wound till the peritoneum over it has been incised and the deep attachments of the tumour separated. The risk of injuring a ureter is certainly a very real one. In the present instance some 3 in. of the left ureter were tightly stretched over the convex left side of the deepest part of the tumour, and might easily have been cut away. The only way to avoid such an accident is, in dealing with the deeply-lying part of the tumour, to cut nothing until the nature of it has been examined as well as possible under the circumstances.

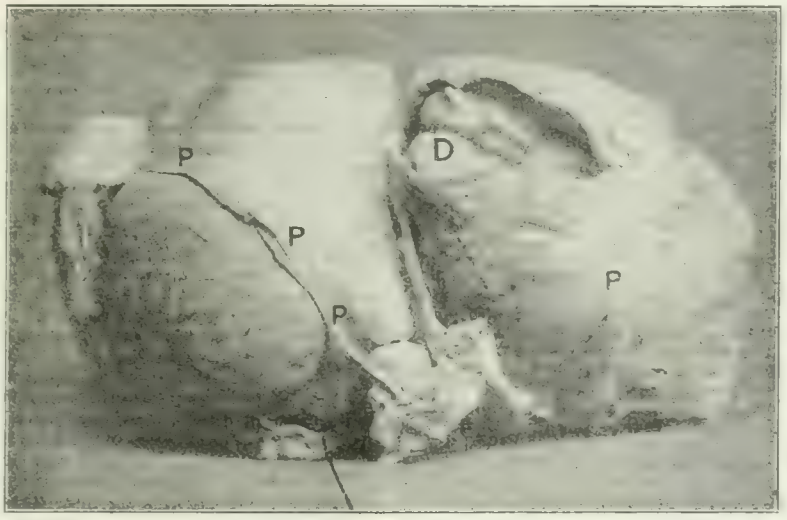


Fig. 2.—Retroperitoneal cervical fibroid; another aspect of the tumour showing P, where peritoneum was incised to allow of enucleation of the mass, and D, one of the cavities due to cystic degeneration of the fibroid.

Another important point is the question of drainage. The enucleation of such a tumour necessarily leaves a large oozing surface, on which are many ligatures. I thought it better in this case to drain through the cervical canal, as well as with a separate gauze drain in the lower angle of the wound, passing down to the region in which the peritoneal flaps had been sutured, so as to cover the cervical stump. I am inclined to think that this drain might well have been dispensed with, but I still think that some drain should be provided for the serous oozing coming from the "bed" of the tumour behind and beneath the peritoneum. The patient had moderate fever during the first three weeks after the operation, and this I think was probably due to the drainage through the cervical canal not being sufficiently free. Though the ultimate result was satisfactory, I think it would have been better to have provided freer drainage—for instance, by making a good-sized opening through the posterior vaginal wall.

(The tumour was shown at the meeting of the Medical Society at which the paper was read.)

REFERENCE.
1 *Trans. Med. Soc. Lond.*, vol. xxiv, p. 106.

TWO CASES OF RETROPERITONEAL CYSTS:

ONE CAUSING OBSTRUCTIVE JAUNDICE AND THE OTHER SIMULATING AN OVARIAN CYST.

By CHARLES A. MORTON, F.R.C.S.,
Professor of Surgery, University College, Bristol; Surgeon, Bristol General Hospital and the Hospital for Children and Women.

THE following cases of retroperitoneal cyst appear to me to be worthy of record:

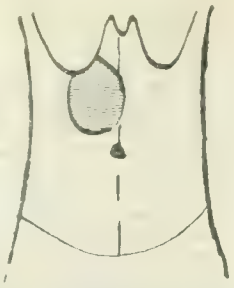
CASE I.

Large Cyst connected with the Head of the Pancreas, which caused Obstructive Jaundice by Pressure on the Common Bile Duct.

A. T., aged 34, was sent to me by Dr. Collinson, and admitted to the Bristol General Hospital on December 13th, 1901, with marked jaundice. He had been jaundiced for six weeks and had had two previous attacks of jaundice, the first in November, 1900, and the second in September, 1901. There was no history of severe pain or vomiting preceding any attack; there had been, however, one attack of severe pain in the back below the angles of the scapulae, and extending into the umbilical region during this last attack of jaundice. He had for twelve months been subject to pain at times in the same part of his back, but not of a very severe character.

There was a very hard swelling in the position shown in the chart. It will be noticed that this swelling was nearer the middle line than a distended gall bladder at its upper part. It was noticed that the swelling hardly descended with inspiration to the extent which a liver or gall bladder swelling usually does

During the six days he was in the hospital before operation he was up and about the ward and had very little pain. The jaundice did not alter at all. There was no pyrexia. The swelling remained as on admission.



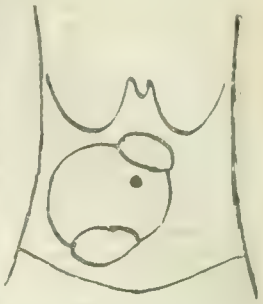
December 19th. Operation. When under the anaesthetic the swelling could be felt to extend further to the right. I made an incision over it through the outer border of the right rectus. The liver and gall bladder were found to be normal, and the mass had no connexion with them. It lay under the pylorus and the first part of the duodenum and the transverse colon. The pylorus and duodenum were carried considerably to the right, and the former passed downwards around its outer aspect. The mass was continuous with the pancreas, that is, the body of the pancreas could be traced into it, and it occupied the position of the head of the pancreas. Its upper part was hard and nodular, but the portion beneath the mesocolon was elastic. I tore through the peritoneum, stretched over the cyst between the first part of the duodenum and the transverse colon, and packed off the area of the cyst wall from the general peritoneal cavity with sterilized gauze, withdrew some pale straw-coloured fluid from the cyst with an exploring syringe, and then aspirated off half a pint. This fluid was neutral, highly albuminous, and under the microscope showed numerous red blood corpuscles and a few granular cells, but it did not convert starch into sugar. The cyst was then opened: the inside felt smooth. It quickly filled with clot from intracystic bleeding. I stitched the edges of the opening in the cyst to the skin and closed the rest of the abdominal wall. The exact relation of the cyst to the common bile duct was not seen at the operation, but there can be no doubt the cyst was in just the position to compress it.

On the third day after the operation, during the changing of the rubber drainage tubes without any violence to the interior of the cyst, very free bleeding occurred from it, necessitating plugging of the cyst with gauze. The gauze plug was removed next day, and there was no recurrence of the bleeding. The cyst fluid continued to discharge for a month. The jaundice slowly disappeared. He left the hospital on February 4th, and the drainage opening had then healed. When seen in March he was very well, but he came to see me in September with a recurrence of the jaundice, which had then been present for a month. I could not then feel any recurrence of the cyst. The jaundice diminished for a time, but again increased. I took him into hospital on October 6th, and then it almost disappeared and he returned home. But he had to be readmitted on November 1st with a recurrence of the jaundice, which had been accompanied by considerable abdominal pain and frequent vomiting. Only some thickening could be made out in the position of the old cyst, though the fingers could be readily pushed into the abdomen by invaginating the loose scar tissue of the abdominal wall, which, in spite of his wearing a belt, had become considerably stretched and thinned. There was, therefore, no evidence of refilling of the old cyst, and I thought the jaundice might be due to the common duct being involved in the contracted tissue of the old cyst wall, though this did not explain the pain and vomiting. However, it was clear that further operation must be undertaken even though a cholecyst-enterostomy might be all that could be done. So on November 11th I again opened the abdomen by an incision in the same place as the former one. When under ether, and the abdominal wall was relaxed, there was very evident bulging in the epigastrium. After opening the abdomen and separating the adhesions due to the old operation, I found a fluctuating mass under the stomach, and another beneath the right side of the transverse colon. The latter could, I found, best be reached through the transverse mesocolon, where it presented as a fluctuating swelling. Several ounces of slightly viscid, straw-coloured fluid were evacuated from it here, after packing off the peritoneal cavity with gauze, and a rubber drainage tube with gauze packing around inserted. The evacuation of the contents of this cyst had made very little difference to the prominence of the other cyst. A finger introduced into it detected its extension into the loin and over to the left side of the spine. It had no connexion with the right kidney. In order to gain better access to the epigastric cyst I made another incision in the linea alba, and evacuated the contents of the cyst after packing off the peritoneal cavity. It contained a considerable quantity of very dark brown viscid fluid under considerable tension. The finger introduced into the cyst detected an extension of the cavity far under the left costal margin. This cyst was also drained. Neither cyst was just where the previous cyst had been. I believe both were new cysts. The fluid from both cysts was found to convert starch into sugar. The discharge from the cysts was considerable for a time, but a month after the operation both drainage openings had healed. The jaundice slowly disappeared, with the exception of a very slight conjunctival tint. He left the hospital early in December. I saw him in October of this year and he remains very well.

CASE II.

A Large Mesenteric Cyst Simulating an Ovarian Cyst.

T. W., aged 23, was sent to me in November, 1901, by Dr. J. Young with a large abdominal tumour of three months' duration. The swelling had been first noticed in the right lower abdomen. Its size and position are shown in the chart. There was one large mass with two large bosses on it, like the secondary cysts of an ovarian cystoma. Both the central mass and the bosses were elastic, but there was no fluctuant wave in the tumour. It was dull on percussion. Lateral movement was possible, but limited. Nothing of the tumour could be felt per vaginam even when it was pressed down from the abdomen. It did not extend into the right loin. We had no doubt that it was an ovarian cyst, but when under the anaesthetic it was noticed that it could be pushed upwards away from the pelvis to a surprising degree.



I operated on November 16th, and the cyst when exposed looked like an ordinary ovarian cyst, and I withdrew two pints of its contents with the ovariotomy trocar and cannula. This resembled clay-coloured, liquid faeces, but had not an offensive smell. The cyst was then found to have no connexion with the pelvic organs, but to lie within the mesentery, and a portion of the colon was intimately connected with it on the right side. It extended upwards towards the pancreas, and I had to carry my incision in the abdominal wall above the umbilicus to reach it. The wall of the cyst was of considerable thickness, but so friable that it was very difficult to get forceps which were applied to close the opening in the cyst to hold. I began the enucleation by separating off the colon on the right side. There were no adhesions from plastic peritonitis, but the colon was intimately connected with the growth by a common peritoneal covering, and after the division of this I was able to separate the colon and some glands from the cyst. On the left side I had to dissect off the mesentery with the mesenteric vessels, and some of the veins were of considerable size. I now had the superficial portion of the cyst free, but the deeper part lay buried in the root of the mesentery, and I had to drag the cyst downwards in order to get at it. I attempted to remove this part, but it was so closely united to a portion of the bowel (I think the duodenum) that I tore into the latter. The rent, which was small and very oblique, was closed with fine silk sutures, and I gave up the a attempt to enucleate the cyst, and contented myself with removing the more superficial two-thirds of the cyst and draining the deeper third. The cyst was unilocular, and the wall white and fibrous, and ¼ in. thick in places. A microscopic section did not show any lining resembling the structure of the mucous membrane of the intestine as has been found in a few of these mesenteric cysts, though the contents of the cyst suggested such a possibility.

She suffered from some shock after the operation, but made a good recovery, though the drainage of the cyst was a tedious matter, and she did not leave the hospital until February 7th, 1902, and then there was a slight line of granulation tissue. I have seen her this year—that is, more than a year after the operation—and she has been well since her discharge, and there is no sign of any refilling of the cyst.

The first case is an example of a very rare cause of obstructive jaundice. Whereas malignant growths of the head of the pancreas and chronic enlargement of the head of an inflammatory nature, are common causes, cysts of the pancreas are very rarely so. Pancreatic cysts are not common, and out of 121 cases Körte found jaundice present in only 9.[1] But it seems to me doubtful whether these cysts were pancreatic in origin, although one was intimately connected with the head of the pancreas, and in the other two a ferment which converted starch into sugar was found. Their position was certainly not the usual one for pancreatic cysts, for in the greater number of cases they lie in the middle line, between the stomach and transverse colon, and incline rather to the left than the right side. However, pancreatic cysts have been known to present above the stomach, and also into the layers of the transverse mesocolon, as two of these cysts did, and they are even occasionally found on the right side of the abdomen, as two of these cysts were. A ferment which converted starch into sugar has been absent from the fluid of undoubted pancreatic cysts,[2] and has been found in abdominal cysts not connected with the pancreas. The presence of such ferment, then, in two of the cysts, and its absence in the other does not absolutely prove the pancreatic origin of the former, or that the latter could not have arisen in connexion with the pancreas. Any cyst arising in a neighbouring structure may become intimately connected with the head of the pancreas. Cysts of the adrenal are very difficult to distinguish from pancreatic cysts, and a case diagnosed as pancreatic at operation, has been proved on necropsy to be adrenal.[3]

I think, then, all we can say with regard to the origin of these cysts is that from the way in which the first cyst seemed to occupy the position of the head of the pancreas, and from the presence of a starch-reducing ferment in the other two, they were very likely pancreatic in origin.

Before operation the cause of the jaundice and the nature of the swelling was uncertain. The history was not a typical one of gall stones, for there had been no attacks like biliary

colic preceding the jaundice, and with gall-stone obstruction of the common duct we do not usually find an enlarged gall bladder. However, the swelling in this case was very hard, and not in the usual position of a distended gall bladder, nor did it move with respiration as freely as one would expect a gall bladder to do.

The patient was young for malignant disease of the head of the pancreas, pressing on the common duct, and the repeated attacks of jaundice were unlike obstruction of the duct from new growths, and were indeed suggestive rather of gall-stone obstruction. Gall-stone obstruction seemed the more likely cause, but it did not seem a straightforward case of this kind.

It is a very interesting question why the jaundice varied from time to time. It seems to me that the probable explanation must be that for days or weeks the amount of fluid in the cyst, and therefore the tension, varied, and as this varied so the pressure on the bile duct was diminished or increased. It was also very remarkable that before the patient was under the anaesthetic at the time of the second operation, neither cyst should have caused sufficient bulging to lead to its discovery, and that even with the abdominal wall relaxed under the anaesthetic the lower cyst could not be felt until the abdomen was opened. They both lay under the viscera and at considerable depth, and this was no doubt the explanation of the difficulty in their detection. It shows how retroperitoneal tumours of considerable size may escape detection, even when one is looking for them. The case also illustrates the difficulty which may be encountered in attempting to remove such cysts.

In the second case the fact that the cyst was not ovarian might have been suggested by the undue mobility upwards under the anaesthetic. I had not observed this before the anaesthetic was given, though I had noticed the possibility of lateral mobility.[4] The inability to feel anything of the tumour on a vaginal examination was of no particular value as an indication that the tumour was not ovarian. The largest ovarian cyst I ever operated on I could feel nothing of either per vaginam or per rectum. I do not know how the two large bosses present on the tumour are to be accounted for, for the cyst was unilocular; possibly it bulged more at these parts.

I have recorded[5] another case of cyst of the mesentery, and in that case the tumour grew in the mesentery in a hernial sac and caused the irreducibility of the hernia. It was a small cyst with dense white wall of fibrous tissue, and on laying it open some soft partitions of what looked like fibrin were seen stretching across it. The fluid from it was slightly blood-stained and a little viscid, and on standing spontaneously coagulated into a jelly. Microscopic examination of the wall showed only fibrous tissue.

Other cases in which mesenteric cysts have been diagnosed as ovarian tumours are on record.[6] An exhaustive account of mesenteric cysts, with references to many recorded cases, will be found in the papers of Moynihan and Dowd in the *Annals of Surgery*.[7]

NOTES AND REFERENCES.

[1] Quoted by Mayo Robson and Moynihan in *Diseases of the Pancreas*, 1903. [2] Loc. cit. [3] Loc. cit. [4] The lateral mobility has been considered a diagnostic feature of mesenteric cysts; also in some cases a band of resonance across the cyst has been observed. [5] *Lancet*, 1896, ii, p. 1678. [6] Carter, BRITISH MEDICAL JOURNAL, 1883, i, p. 7; and Knowsley Thornton, ibid., 1882, ii, p. 1242. [7] Vol. xxi, p. 1, and vol. xxxii, p. 515.

"RETROPERITONEAL MANIPULATION":

A METHOD OF SEPARATING DEEP-SEATED, PLASTIC, PERICAECAL OR OTHER PERITONEAL ADHESIONS.

By G. GORE-GILLON, M.D., F.R.C.S.E.,
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Now and again the surgeon meets with cases of appendicitis in which the adhesions in the neighbourhood of the appendix are so extensive, solid, and deep seated that there seems to be no way out of the *impasse*. In the following case all the parts in the right iliac and pelvic region seemed to be massed together in one piece:

History.—G. E., male, aged 27, single, took ill with appendicitis for the first time in February, 1902, in a distant part of New Zealand. He had another attack in August and again in October of the same year. That month he was operated on by a medical man who had three others with him. The operator, after long and tedious work in tying omental adhesions, was unable to find any trace of appendix, and so the abdomen was closed up again. He suspected that the appendix was curled up behind the caecum somewhere, but was unable to get at the caecum owing to dense adhesions in the right pelvic and iliac regions. The patient subsequently went to Melbourne and Sydney, and was in a private hospital in Melbourne, January, 1903, with an acute attack. On returning to New Zealand in February, 1903, he had another attack, and again in March and April. He had been taking hypodermic injections of morphine for the last seven months to relieve the almost constant pain.

State on Examination.—When he arrived in Auckland on April 23rd, 1903, he looked very ill, and his weight was only 7 st. 8 lb. He had some trouble in emptying his bladder, and there was deep-seated tenderness in the right iliac region with some ill-defined thickening there. His temperature was normal. The blood count was normal.

Operation.—On April 26th I opened his abdomen, four other surgeons being present, and, having decided to get at the hidden appendix by the back way, I made an incision 3 cm. internal to the anterior superior spine of the ileum (and to the outside of the former incision), and extended it for 9 cm. above that point and 6 cm. below it (somewhat similar to Crampton's incision for ligaturing the common iliac artery). The condition found was just what I expected from the account given by the former operator—no sign of appendix, but just a close mass of adhesions, like a blank wall, lining the whole of that part of the abdominal cavity. The ileum disappeared into this mass low down, and below it again; the end of the caecum was attached by broad sessile adhesions to the right side of the bladder, which was pulled up somewhat. After a long and patient endeavour to separate the parts from the front I put into practice my plan of "retroperitoneal manipulation," and had it not been for this method of attack I should have had to abandon the attempt as the former operators had done. I first divided the posterior peritoneum over the iliac fascia for about 6 cm. just below the anterior superior spine, in the line of the skin incision, and then inserted my right little finger downwards (while the peritoneum with the intestines was held well forwards) till I felt it cross the external iliac artery, and then with my left little finger in the abdominal cavity in front, and as low down as the other finger, I worked one against another, and soon felt a lump which was the appendix. By gentle manipulation I could feel the adhesions giving way behind like broken cheese, and within ten minutes the front part of the adhesions to the bladder gave way, and up came caecum and appendix out of the wound. The appendix was removed, and after touching the mucous membrane with pure carbolic acid it was sutured and a patch of peritoneum fixed over it. The appendix was inflamed, and about the size of a small orange. The posterior peritoneal wound was united by chromicized catgut sutures soaked for four days in alcohol, and the same kind of sutures were used for the layers of the wound. Owing to the under surface of the caecum (which had been attached to the bladder) being denuded of peritoneum, the caecum was fixed higher up so as not to contract deep adhesions again, and a drainage tube was left in the lower end of the wound, reaching down to that part. The tube was removed in twenty-four hours.

The patient recovered with no bad symptoms and a normal temperature, and was discharged on June 13th, 1903. At the present date, July 26th, 1903, he is 2 st. heavier, has no pain at all, and is back at work managing a sheep station.

When long adhesions form in the abdomen, they are apt to be tense and fibrous if they are so placed as to be subject to constant movement, and they can be tied off as they have pedicles; but a sessile adhesion, although on its inner abdominal aspect it may be pretty firm, yet will be found to be quite friable if attacked from behind. Bleeding from sessile adhesions, especially when approached from behind, is rarely noticeable, or, if present, can be stopped by sponge pressure, as was done in this case. The procedure described above would, of course, not apply when suppuration is present.

SUBPERITONEAL LIPOMATA.

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TUMOURS of fatty appearance which have their seat in the subperitoneal tissue are comparatively rare, but are nevertheless interesting and important from the clinical as well as from the pathological point of view. They mimic tumours of every kind known to abdominal surgeons, and hence are liable to cause errors in diagnosis in the practice of even the most careful observers. When removed they are deceptive in appearance, so that they may belie the prognosis and cause great disappointment to both surgeon and patient. This latter tendency makes them specially interesting to the pathologist, for it has of late been observed that certain tumours in this situation, which in appearance are simple lipomata, prove to be really sarcomatous in character, and after removal, recur with a fatal result.

It has been my luck to meet with two cases of subperitoneal lipoma in my operative practice, and I take this opportunity of placing them on record:

CASE I.—E. L., aged 55, single, was sent to me by Dr. J. Campbell Hall, of Monaghan, on May 18th, 1900. She complained of increase in the size of the abdomen for four years, and of emaciation for two years. She had a slight cough, and, in connexion with this, Dr. Hall called my

attention to the rapid wasting and to pleuritic friction at the base of the left lung anteriorly. Menstruation had ceased for several years. Leucorrhoea was slight. Micturition and defaecation were attended with no difficulty, and the bowels were regular. Her nutrition was very poor. She was anaemic. There was oedema of both lungs. The heart sounds were very weak. The abdomen was greatly distended by an apparently fluctuating tumour, dull in front, but clear above and at the sides. With the view of relieving the lungs as a preliminary to operation, I inserted an aspirator needle into the tumour. Needless to say no fluid was got. On May 29th Dr. M'Kinney gave her chloroform, and I opened the abdomen over the resonant area in the epigastrium, and found I had to deal with a growth in the anterior abdominal wall. It was shelled out with difficulty, owing to the vascularity of its surroundings and the multiplicity of its marginal lobules. When it had been removed it was recognized that it had occupied the subperitoneal layer, there being peritoneum alone behind it and the other structures of the abdominal wall in front of it. The tumour weighed 21¼ lb., and filled a large toilet basin. The patient made a slow but fairly good recovery, the chief difficulty being the securing of adequate drainage of the enormous cavity. When she went home healing was not complete, there being a protrusion along the line of the wound, which was covered by sluggish granulations. About eleven months after operation I again saw her on April 17th, 1901. The wound was still unhealed and the abdomen was much distended by a hard dull swelling around the site of the original tumour and by a second one in the splenic region. On August 8th, 1901, Dr. Hall wrote to me that she was gradually sinking, and soon afterwards she died, having lived about sixteen months after the operation.

CASE II.—M. A. M., Ballintoy, aged 50, married 27 years, having had eight children and one abortion, was sent to the Samaritan Hospital on August 29th, 1902, by Dr. McIlroy, of Ballycastle. She complained of a growth in the right iliac region, which she had noticed for nine months. Menstruation had ceased eight years previously. Leucorrhoea was absent. Micturition and defaecation gave no trouble. The nutrition was good and there was no anaemia. The heart and lungs were normal. The abdomen was distended on the right by an elastic rounded fixed tumour reaching to the level of the navel and dull on percussion. Per vaginam the uterus was found to be displaced to the left by a tumour in the right broad ligament. On November 9th the operation was performed in Ballycastle Union Infirmary. The tumour was found to be a lipoma of the right broad ligament and iliac fossa. It was enucleated with comparative ease and the cavity drained. Under Dr. McIlroy's care she made an excellent recovery, and on March 24th, 1903, she was keeping quite well.

Subperitoneal lipomata are more frequent in women than in men in the proportion of 25 to 16.[1] They occur most frequently on the right side, the neighbourhood of the kidney and the iliac fossa being their favourite sites. Clinically there are two important varieties,[2] both of which are exemplified by the cases above recorded—namely, the malignant and the benign. The former include the retroperitoneal tumours, especially those which originate on the posterior aspect of the abdomen. They are difficult or impossible to remove. They are microscopically sarcomata in whole or in part. Patients afflicted with them are at first in good health, but ultimately waste markedly, while the tumour rapidly increases in size. My first case is an example of this variety. When I operated upon her I was unaware of the tendency to malignity which these seeming lipomata possess, and gave a good prognosis; consequently I was much disappointed at the result. Since then their malignant tendencies have been widely recognized, and in any future case I shall be more cautious in holding out a hope of permanent cure. The benign variety is exemplified by the second case. It includes lipomata of the broad ligament, omentum, and appendices epiploicae. These can be safely removed. They do not cause much deterioration in health and justify a good prognosis when they have been removed. The broad ligament appears to be a somewhat rare situation.[3] In my case the tumour got its chief blood supply from vessels at the base of the broad ligament. It appeared to have originated there, and by its upward growth to have separated the layers of the broad ligament and extended into the iliac fossa.

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THE TREATMENT OF VESICAL PAPILLOMA BY INJECTIONS.

By HERBERT T. HERRING, M.B., B.S.

THE difficulty of removing diffuse papilloma of the bladder and the frequency with which these simple tumours recur, even after the most severe operations, led Sir Henry Thompson and myself to seek some other means of dealing with the disease. Four years ago I published in this JOURNAL (July 29th, 1899) the details of a new treatment by daily injections of solutions of silver nitrate and gave the results obtained in a series of cases which had been under our joint observation for a considerable number of years. Before relating other cases it may be useful perhaps to repeat briefly the method adopted.

The patient uses (1) a No. 7 soft slightly *coudée* catheter with the eye situated near the point, which will withstand the action of boiling water without material damage, (2) a 4 oz. indiarubber syringe fitted with a silver taper nozzle and stopcock, (3) a standard solution of nitrate of silver of 1 gr. to the drachm of distilled water, acidulated with a small quantity of nitric acid. Before the patient can be trusted to carry out the treatment for himself it is necessary to give him a systematic course of lessons to ensure sterility during the operation, absence of injury to the organs, and the desired effect on the papilloma. The injections are commenced by adding half a grain of silver, that is, half a drachm of the standard solution to the four ounces of water contained in the syringe. The strength is gradually increased by five drops on successive days until a drachm and a-half or two drachms are used. This very gradual addition ultimately enables the patient to use stronger solutions without pain than he could do otherwise; for pain, straining, or frequency of micturition are indications that the treatment is too severe. The patient should only experience a slight feeling of after-warmth in the region of the bladder which should subside in the course of half an hour. The injection should be at the temperature of 100° F., and thrown into the bladder in two parts from the syringe, each being retained a few seconds and then allowed to run out through the catheter, and as it is always advisable to rest after the application, the best time for the injection appears to be before going to bed. The treatment should be continued daily for six months or more, and then, if the conditions are favourable, it should be stopped and not resumed until blood begins to reappear, when another course of injections should be commenced.

Among the cases previously reported two have died, and the remainder, from recent reports, appear to be in good health. More than one I know considers himself entirely rid of his disease. Of the deaths one case, No. 12 in the series, died quite suddenly from cardiac failure. He had never had any return of vesical trouble from the time he first came to me, weak and blanched from excessive haemorrhage, in June, 1898, until the day of his death in May, 1900.

The second case, No. 6, died in May, 1902, aged 73. In the year previous to his death he had had frequent slight attacks of haemoptysis, much pain in the right groin and leg, which prevented his walking; he had lost weight rapidly. The prostate was hard and irregular, though the haematuria for some time had been insignificant. At the necropsy a primary malignant growth was found in the prostate, with secondary deposits in the lymphatic glands, lungs, liver, and the ascending ramus of the pubes. The surface of the mucous membrane of the bladder was rough in the region of the trigone, but no papillomatous tissue was found, and the malignant growth appeared to be an independent disease. This case had been under my observation for ten years, and had been treated with the solution at regular intervals. During the early stages good specimens of papilloma were frequently found, but none recently. He was under the care of Dr. Howard Carter.

Since 1899 similar cases have come under my care, and the three following from among them go to confirm the statement that injections of nitrate of silver exercise a most important influence both in checking the haemorrhage and in retarding, if not in destroying, papillomatous growths in the bladder. They are also of special interest as giving the result of a method of treatment I then suggested—namely, of employing injections after cutting operations, or when portions of the growth have been removed through the urethra by instruments.

CASE I.—L. L., aged 51, was sent to me by Dr. Gosse, of Sittingbourne. He first saw blood in the urine in December, 1891, but had been previously treated for cystitis. In April, 1892, haemorrhage reappeared and did so occasionally until September, 1893, when he had an attack lasting a fortnight. Blood was seen at intervals during the following year, and in addition he complained of pain and some irritability of the bladder. In April, 1894, papilloma was diagnosed. All the symptoms increased in severity until June, 1896, when he was operated on by Mr. Watson Cheyne by the suprapubic method for the removal of the tumour. The patient made a rapid recovery and returned home without any symptoms, but haemorrhage recurred six months later at Christmas of the same year. It increased in frequency and severity and was accompanied by

pain and irritability of the bladder, and in August, 1899, he was laid aside by a severe and persistent attack lasting thirteen days. I first saw him on October 10th, 1899. He usually saw blood every day or so, sometimes every time he made water, and was unable on this account, as well as from the pain, frequency of micturition, and straining, to satisfactorily carry on his usual occupation. I examined his bladder and removed many fine specimens of papilloma. The urine contained pus. He questioned me as to the advisability under the circumstances of another operation, and I suggested as an alternative that he should try the effect of nitrate of silver injections. I therefore taught him the method, commencing with ½ gr. to 4 oz. of warm water, and increased the strength daily. He returned home in the course of a week carrying out the treatment.

January 25th, 1900. He reports "the best month since December 1896." He has injected regularly, using 1¼ gr. of the silver nitrate. The blood has steadily decreased in frequency and amount, a period of a week often elapsing without any symptom, and then only a drop or two of pure blood coming at the end of micturition. The other bladder troubles had also become much less pronounced. During the early part of the treatment he had voided many fragments of tumour, exhibiting the usual changes.

September 29th. Two gr. of silver nitrate have been injected daily. No blood has been seen for a month and the other symptoms have quite subsided. The urine is not quite clear for it contains pus.

May 24th, 1901. The patient writes "I am surprisingly well." He has made no injection since the last report.

May 8th, 1902. He writes, "I think I should like you to know how well I am, certainly better than since 1892." He commenced to inject in February and intends continuing until June 1st.

October 29th, 1903. In February of this year he again resorted to the treatment, and has continued it with fair regularity until July 4th. He has "not noticed the slightest trace of blood or discoloration in the urine since June 13th," and he carries out all his engagements without trouble, walking three or four miles a day and is in good health.

Case II.—C. J. B., aged 42. At the commencement of 1900 he first saw blood in considerable quantity. Again during the year in April, July, August, October, and November, and on two occasions the haemorrhage was so severe that it necessitated his lying up. He likewise complained of difficulty in commencing to micturate. I removed some fine specimens of papilloma.

On December 2nd, 1900, Dr. Dudley Buxton administered an anaesthetic, and I examined the bladder with the cystoscope, finding a diffuse papilloma covering a considerable area in the region of the trigone. The position and character of the growth being determined I decided, as I always intended when a suitable case presented itself, to pinch off as much as I could by means of a flat-bladed lithotrite introduced in the ordinary way through the urethra. This I did, while the bladder was distended with 8 oz. of fluid, and I afterwards washed it out thoroughly with an evacuating tube and bottle filled with a solution of silver nitrate 3 gr. to the ounce. Much tumour débris was removed, sufficient, I should say, to form a growth the size of a small walnut. There was not much haemorrhage, but sufficient to obscure the view of the cystoscope and prevent its advantageous use during the operation. In future I intend to apply a solution of adrenalin, which, I think, will enable me to see exactly what is or has been done by the lithotrite. There was little or no haemorrhage after, and what there was ceased in forty-eight hours. He had retention, and had to be catheterized two or three times, but otherwise made a satisfactory recovery, and was in his usual health in less than ten days' time. Three days after the operation I commenced to teach him to inject himself with silver nitrate.

June 24th, 1901. He has continued to make daily injections, using 1 gr. to the 4 oz., and has never seen any blood since he left the nursing home on December 17th. The difficulty of micturition has entirely subsided, and the urine is clear. He will make no more injections for the present. He is under the care of Dr. Duguid of Sheffield.

February, 1902. The first appearance of blood since the operation, more than a year ago, occurred to-day, but he has had no treatment since last June. His health has been good. I advised a course of injections.

October 5th, 1903. He writes that he continued the injecting till the end of June, 1902, and since then, now sixteen months ago, he has done nothing, nor has he seen any blood. He is able to work hard, and has no urinary inconvenience whatever.

Case III.—J. A., aged 43, was sent to me by Dr. Smyth, of Brockley. The first symptoms of papilloma were noted in 1896, when he was taught to inject with silver nitrate. The treatment was carried out at first fairly regularly, but it was afterwards neglected. In June, 1902, he came to me complaining of frequency of micturition, constant haematuria, and a feeling of great distension in the lower part of the abdomen. He strained a good deal to void his urine and could only pass a very small quantity at a time. A catheter introduced immediately after he had passed water withdrew 10 to 15 oz. of blood-stained urine. I endeavoured by regular catheterization and by injections to restore the natural function of the organ, but without avail, for not only was the bladder exceedingly difficult to empty with the instrument, but the manipulation certainly caused considerable increase in the haemorrhage. I therefore decided to perform a suprapubic cystotomy with the view of removing the obstruction and of thoroughly draining the bladder.

October 1st, 1902. Dr. Dudley Buxton administered the anaesthetic, and I opened the bladder in the usual manner. On examination with the finger and with an electric lamp I found, as I had anticipated, a sessile growth springing from the base of the bladder, which, coming forward when an endeavour was made to pass urine, effectually blocked the outlet. I removed as much of the growth as I was able with safety, but was perfectly aware that I had not removed the whole on account of the extended area from which it sprang. The papillomatous débris I judged would have been sufficient to form a mass the size of a small egg, one or two of the larger tufts having a distinct, well-formed, fibrous base. Afterwards I drained the bladder, both by a tube in the suprapubic wound and by a catheter tied in the urethra. A good deal of haemorrhage followed, and I commenced to flush the bladder—a proceeding greatly facilitated by the two tubes—with a solution of silver nitrate, 1 gr. to 4 oz. I continued the flushings twice a day, rather increasing the strength, and on the seventh day after the operation, as the bladder commenced to hold urine and the latter was clearing, I removed the suprapubic tube. The wound healed rather slowly but quite satisfactorily, and had entirely closed by the end of a month. The ordinary injections were resumed after the flushings ceased, and were continued throughout. At the end of the time mentioned he could hold his water three to four hours during the day, and would rise once or perhaps twice at night. The bladder had entirely regained its power, as I frequently proved by introducing a catheter directly after micturition, the urine itself being clear and bright and quite free from blood.

March 31st, 1903. He has continued the injections daily since he left the nursing home on November 5th. He empties his bladder by his own effort, frequently passes the night without rising, and holds his urine three and a-half hours during the day. He has seen slight traces of blood twice in December and once in February.

October 31st, 1903. He reports he has seen blood on ten occasions; the "haemorrhage has only been in the nature of more or less pinkish drops after a stream of urine." He holds his water four or five hours by day, and does not rise at night. He ceased to inject in April, but will commence again directly.

These cases, I think, demonstrate:

1. That recurrence of papilloma after removal by suprapubic cystotomy, which unfortunately very frequently occurs, may be effectually held in check by injections of silver nitrate.

2. That if injections are made, when it has been found impossible to remove the growth entirely by operation, the recurrence of the symptoms is retarded longer than could be expected without the treatment.

3. That much of a tumour may be removed by the urethra without serious haemorrhage, and a result gained equal in some cases to that of a suprapubic operation.

4. That there is reason to hope that papillomatous growths may be entirely destroyed by long-continued applications of silver nitrate.

The conclusions, therefore, which may be drawn, although confirmatory evidence is needed, are:

(*a*) That injections should be made after operations for the removal of the growth, whether the operator is satisfied that he has done so efficiently or not.

(*b*) That the urethral route should be tried, when removal of the papilloma is contemplated, before a more serious operation is undertaken.

The question whether most cases of papilloma should be operated on through the urethra before the injections are commenced, even when the diagnosis is made early and the tumour is small, or whether injections alone should be relied upon, requires further investigation. I should be inclined under favourable circumstances to give the former plan another trial; for, in the first place, the operation need not be severe nor attended with serious consequences, if strict attention is paid to sterility in instrumentation. In the second, the improved instruments recently made by Leiter and the advantages derived from adrenalin in stopping haemorrhage, render manipulation more certain; and thirdly, the size of the tumour to be attacked by the injection afterwards will be less even if only small portions are removed, and consequently the time required to check the disease shortened. In the female I have no doubt that this is the proper proceeding. Suprapubic cystotomy can hardly ever be wanted when access to the bladder is more easily gained through the urethra by the means of Kelly's tubes.

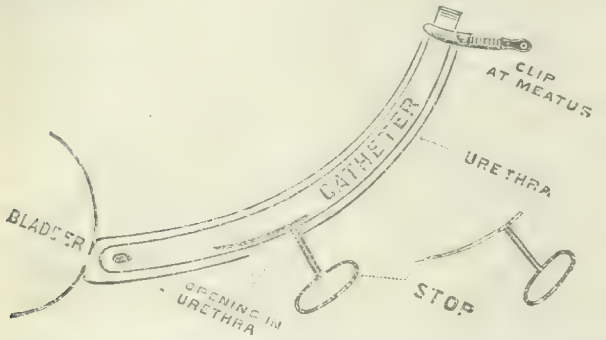
CASE OF EXTERNAL URETHROTOMY TREATED BY CONTINUOUS RETENTION OF A RUBBER CATHETER HELD IN POSITION BY A "PERINEAL STOP."

By C. HAMILTON WHITEFORD, M.R.C.S., L.R.C.P.,
Plymouth.

A patient, aged 38, had a bad stricture of twelve years' standing, causing retention of urine. No catheter could be passed. I performed external urethrotomy, and kept a No. 12

Jaques rubber catheter in the urethra continuously for three weeks, by the end of which time the perineal incision had considerably closed. The occasional passage of a No. 20-24 Clutton steel sound completed the treatment. After operation recovery was uneventful. Rigors were entirely absent, and the presence of the catheter did not even cause discomfort. At the present time—that is, 2¾ years after operation—the patient is well, and, as a precautionary measure, easily passes on himself a 20-24 steel sound once a month.

The accompanying diagram shows a Jaques rubber catheter fixed in the urethra from the perineum after Wheelhouse's external urethrotomy by what I have termed a "perineal



stop." (In the diagram the eye of the catheter should be in the bladder, and not, as represented, in the prostatic urethra.) It is used as follows: After external urethrotomy has been performed, and the urethra dilated to the size of a No. 12 or 14 silver catheter, a No. 12 Jaques rubber catheter is passed along the whole length of the urethra, if necessary by means of a stillette, the eye lying half an inch inside the bladder. The portion of catheter lying in the angle of the urethral incision nearest the pubes is drawn out by forceps through the perineal wound, and an incision one-twelfth of an inch made in the long axis of the catheter. Into this minute opening the "stop" is inserted, the long arm first and towards the bladder. The catheter is then drawn towards the meatus as far as the "stop" will allow, and a clip on the catheter close to the meatus completes the fixation.

If the presence of the point of the catheter in the bladder should cause irritation (although this has not occurred in my experience), the catheter may be fixed so that the point stops just short of the bladder, into which the catheter may be pushed by means of the "perineal stop" when it is desired to draw off the urine. When the perineal wound has partly closed, I use a "stop" with two short arms, which can be placed in position without drawing the loop of catheter through the perineal opening, and can therefore be employed until the urethral wound has nearly closed. To ensure that the eye of the catheter points away from the base of the bladder, it is convenient to cut a notch in the outer end of the catheter on the same side as the eye to act as an indicator. During the retention of the rubber catheter a certain amount of mucoid secretion appears between the catheter and the mucous membrane. This secretion is of no importance; it is not due to urethritis but is simply the secretion of the glands which normally open into the urethra. A metal catheter, tied in after external urethrotomy, frequently causes so much pain that it has to be withdrawn after a day or two. Urine then passes over the raw surface, and rigors not infrequently result. Later, an attempt is made to pass a metal instrument; this often causes bleeding and pain, which sometimes necessitates an anaesthetic for the successful introduction of the catheter, and when this has to be removed a day or two later rigors are again liable to occur.

The advantages of a rubber catheter securely fixed are:

1. The patient is free from pain, and can turn freely in bed without risk of the catheter slipping out.

2. The catheter can be retained continuously for several weeks, being removed every few days for cleansing; in fact until the perineal wound is nearly closed.

3. Retention of the catheter being continuous instead of intermittent, as is the case with a metal instrument, the wound heals round the catheter, and consequently the lumen of the strictured urethra is larger and requires less subsequent dilatation.

4. Rigors are avoided, since the urine does not come in contact with the raw surface.

5. The catheter, "stop," and clip are easily sterilized by boiling.

6. Tapes, plaster, rings, etc., are dispensed with.

The "stop" is made by Messrs. Reynolds and Branson of Leeds.

THE PATHOLOGY OF HALLUX RIGIDUS.

By J. M. COTTERILL, M.B., C.M., F.R.C.S.Edin.,
Surgeon, Edinburgh Royal Infirmary.

Two communications have appeared in recent issues of the BRITISH MEDICAL JOURNAL on the above subject. In discussing the etiology of hallux rigidus Mr. Tubby says that he has come to the conclusion that "there is one cause underlying all the conditions—namely, an osteo-arthritic condition of the first metatarso-phalangeal joint." With regard to this opinion Mr. Ellis makes the pertinent remark that Mr. Tubby does not explain why this particular joint should be so affected.

It is of course abundantly evident to those of us who frequently operate on such cases that the joint is in a condition of chronic irritation, in which lipping of the bony edges, erosion of cartilage, and alterations in the synovial membrane are indicative of osteo-arthritis. But this statement of fact does not seem to take us in the least degree nearer to the solution of the question at issue—namely, why does this condition so frequently attack the metatarso-phalangeal joint of the great toe. Mr. Ellis comes to the rescue with the suggestion that all such cases (if I do not misunderstand him) are due to the hallux being packed under the second toe, as is found in a certain proportion of cases of hallux valgus.

Now, while this state of matters does occasionally account for stiffness about this joint, may I suggest that it by no means explains more than a comparatively small percentage of cases? and while many such patients are troubled by bunion, they do not in my experience consult the surgeon on account of stiffness and pain in walking due to ineffective efforts to dorsiflex the hallux on its metatarsal bone.

The condition of stiff great toe in adolescents, for which I suggested the name "hallux rigidus" in 1886, was discussed in a paper read before the Edinburgh Medico-Chirurgical Society in that year, and a short excerpt of the paper may be found in vol. vi of that Society's *Transactions*.

I then pointed out that while stiffness in this joint may doubtless sometimes arise from such causes as trauma, rheumatism, gout, ill-fitting boots, etc., in the large majority of cases it was primarily due to flat foot. In order for the condition of "hallux rigidus" to be produced, the flat-footed person must be in the habit of wearing boots which, as ordinary strong British boots are capable of doing, prevent the great toe rising to its normal angle of relation to its metatarsal bone, when the base of that bone falls into its abnormal position in flat foot.

Unless boots are worn hallux rigidus will not be caused. The big toe, instead of being extended straight out parallel to the ground, will turn up and thus retain its normal angle of about 150 degrees with its metatarsal bone. This is well seen in such negroes or children who are flat-footed, but who have never worn boots.

The stiffness is in many cases (as Mr. Tubby remarks) reflex in character, and is due to muscular spasm the result of joint irritation; in more advanced cases the ligamentous and other structures of the joint are altered in such a way as to cause permanent stiffness, which will not disappear under an anaesthetic.

This condition of hallux rigidus is in my experience very common in the out-patient department of a large hospital and in schoolboys. In early cases perfect cure can be attained by attention to the flat foot, and by passive movements and massage. In later cases excision of the head of the metatarsal bone is the best treatment. If, however, the patient object to operation, entire relief from pain can be obtained by following the suggestion made years ago by Professor Chiene to provide a stiff metal sole for the boot, which prevents any strain in the direction of extension being put on the painful joint in the act of walking; but this method, while quite successful as a palliative, perpetuates the stiffness and ungainly manner of walking.

THE new Belgrave Hospital for Children, Clapham Road, will be formally opened for the reception of patients by the Bishop of Rochester on Tuesday next.

FURTHER NOTES ON LEISHMAN'S BODIES.

By Major RONALD ROSS, F.R.S., F.R.C.S., C.B.,
Professor of Tropical Medicine, University of Liverpool.

I hope that the interest which must always attach to the discovery of new parasites of man will suffice to excuse me for adding yet another paper on this subject to those already contributed by Leishman,[1] Donovan,[2] Laveran,[3] and myself,[4] I have continued making a very close study of the three preparations so kindly lent to me by Donovan and referred to in my last paper, and now send, at the suggestion of the editor, some pen and ink drawings, and some additional remarks. It will be understood that the deep red of the Romanowsky-stained chromatin of the bodies is represented by black in the drawings, and that Fig. 1 denotes a red corpuscle introduced for comparison. Water-colour drawings by Donovan and by myself will shortly appear in the Thompson Yates *Reports*.



Fig. 1.—*Leishmania donovani*, Laveran: 1, red corpuscle; 2-6, free forms; 7-17, embedded forms; *a*, contour line; *b*, macronucleus; *c*, micronucleus; *d*, matrix.

It seems to me very important to note that in the preparations made *intra vitam* Leishman's bodies appear under two distinct conditions, namely, (*a*) free, and (*b*) embedded, to the number of one up to twelve, in a matrix. Figs. 2 to 6 illustrate the free forms. In the majority the contour is elliptic, but it is occasionally nearly circular. It is necessary to recognize that the contour line is a strong one, suggestive of a well-marked cell wall (that is, in the *intra-vitam* specimens, which are, of course, the most suitable for study). The two chromatin masses are generally situated at the extremities of the minor diameter of the elliptic cell (Figs. 2 to 5). The larger mass often seems to bulge beyond the cell wall (Figs. 2 to 4). I think that both masses are always present, but that the smaller one may be occasionally hidden by the larger. In my specimens the protoplasm of the cell is a faint red (without tinge of blue), and becomes fainter from the contour inwards, so that there is the characteristic clear area round the macronucleus. In short, all the free forms have a most definite size and structure.

Much interest, however, attaches to those bodies which are embedded in a matrix (Figs. 7 to 17). These are found only in the preparations made *intra vitam*, and are much less numerous than the free forms. Moreover the contour of the little cell is generally much less distinct in the embedded organisms than in the free ones; although the chromatin is stained just as deeply and the two chromatin masses bear just the same relations to each other as regards position and distance. What I call (until a more definite term can be employed) the matrix is always stained very faintly in these specimens—much more faintly than the red or white corpuscles. The tint is violet, or more rarely mauve. The structure appears cloudy, or perhaps granular, or even stromatic; but is too delicate for expression in the drawings. The form is generally a more or less regular oval (Figs. 8 to 16); but sometimes the mass appears to be shapeless or torn (Figs. 7 to 17). The outline is sharp; but it is important to note that there is never any contour line suggestive of a cell-wall, as with the Leishman bodies themselves. There is never, also, any suggestion of the haemoglobin of the red corpuscles, or the nucleus of the white corpuscles, to be seen in this matrix. Its size varies in my specimens from about 3 μ to 8 μ in the long diameter; and there is a rough, but only a rough, correspondence between the size of the matrix and the number of Leishman bodies it contains. Sometimes, as in Fig. 13, a considerable part of the matrix is empty; and sometimes, a rather large matrix holds only one of the bodies. Fig. 17 shows eight bodies in one matrix: but I have seen as many as twelve. Occasionally we find clusters of the bodies touching each other, without lying in any visible matrix; but in such cases their oval contours are well marked. One or more of the micronuclei are sometimes not to be seen. I should add that Donovan clearly shows, in his letter and drawings sent to me, that he has well observed all these forms.

In his recent paper[5] Leishmann still inclines to the view that these bodies are "altered trypanosomes." In that case it is singular that in two whole specimens made during life and containing large numbers of them, we should not find a single unaltered trypanosome, or even the flagellum of one. I may be wrong, but I can see little in these objects to recall the involution forms of trypanosomes.

Since my previous paper[4] was dispatched (October 23rd, see British Medical Journal, p. 1359) Dr. Laveran, to whom also Captain Donovan has sent specimens, read an interesting paper on the subject.[3] He admits that the bodies are parasites; but thinks they are neither trypanosomes nor haematozoa (malaria group), and judges that they belong to the Texas cattle-fever group, *Piroplasma*. According to him the bodies are often contained in the red corpuscles, and are sometimes piriform. There is little evidence of this in the preparations sent to me; I have examined some thousands of the bodies, and have seen only two or three lying in contact with the red corpuscles (which are well preserved in two of the specimens). I am therefore inclined to attribute the contact only to accidental superposition. Nor have I observed any distinctly piriform bodies in my preparations. The matrix of the embedded forms does not present to me any of the characters of a red corpuscle altered by parasitic infection.

On the whole then, I think these bodies belong to a new genus of *Sporozoa*; and it seems to me, so far as I can judge from my specimens, that the individual bodies are spores produced in the matrices, which would appear to be relics of the parent organism.

Laveran has given the name *Piroplasma donovani* to these organisms; and the specific name must therefore be permanently adopted. But if, as I suppose, they are found to belong to a new genus, it would be only fair to give the name *Leishmania* to that genus. In that event the full name would be *Leishmania donovani*, Laveran.

I must present my profound apologies to Major Leishman for having overlooked the fact, clearly indicated in his first paper, that he had found these bodies as long ago as 1900.

References.
[1] Leishman, British Medical Journal, 1903, vol i, p. 1252, and p. 1376. [2] Donovan, ibid, vol. ii, p. 70. [3] Laveran, *Bull. Acad. de Méd.*, November 3rd, 1903. [4] Ross, British Medical Journal, 1903, vol. ii, p. 1261.

THE ETIOLOGY OF ONE OF THE HETEROGENEOUS FEVERS OF INDIA.

By C. DONOVAN, Major I.M.S.,
Second Physician, Government General Hospital, Madras.

With reference to my previous contribution to the British Medical Journal (July 11th, 1903), under the heading "On the Possibility of the Occurrence of Trypanosomiasis in India," I have to add that the bodies found by me on June 17th last in the blood from the spleen of a native boy have been determined by Laveran and Mesnil as belonging to the genus *Piroplasma*, species new.

I have up to date (November 5th) found these parasites in 16 cases among patients admitted to my wards only, average 50 beds; all from punctures of the spleen and liver during life. I intend to contribute a full account of this fever in a couple of months. Briefly the symptoms are enlarged spleen and liver, irregular pyrexia, paroxysmal oedema of the feet, congestion of the lungs, occasional subcutaneous haemorrhages and cancrum oris. Medication—quinine, arsenic, sodium salicylate—has proved ineffectual.

I may state that Captain Cornwall, I.M.S., and I have found *Piroplasma*, species most probable *bigeminum*, in the blood of two calves on November 1st and 3rd.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

THE VALUE OF UTERINE DRAINAGE IN CASES OF CHRONIC METRITIS.

The long-continued retention in the uterine cavity of any abnormal secretion—owing to acute flexion, stenosis of cervical canal, invading carcinoma, etc.—often gives rise to chronic metritis, pyosalpinx, hydrosalpinx, etc. It will be generally admitted that when the early symptoms of the first-named complaint are recognized there should be no time lost in an endeavour to secure thorough uterine cleanliness by means of an open canal, curetting if necessary, and subsequent drainage.

Narrow strips of antiseptic or sterilized gauze are introduced into the uterus and capillary drainage expected. This as a rule does take place so long as the gauze remains *in situ* and when the secretions are liquid, but when viscid and thick I fail to see how any effective drainage can take place or sufficiently so as to leave a lasting result. The gauze has another disadvantage: requiring frequent change, and instead of carrying out septic material may carry it in (during introduction) or retard its exit altogether.

In recent cases of endometritis I have found good results from rapid dilatation and the introduction of boric acid powder after cleansing the cavity with my blunt wire curette—the original form of "dredger" so called—combined with insufflation of vaginal walls with the powdered acid.

I believe I was one of the first—if not the first—to adopt this dry treatment in cases of endometritis, for the carrying out of which I designed two useful instruments made for me now several years ago, by the Messrs. Arnold (Smithfield). The boric acid having an affinity for fluid establishes a form of uterine drainage which in mild cases acts well without any necessity for the gauze drain.

The more thorough the dilatation before curetting the less likely is subsequent contraction to take place, which would early neutralize the value of the gauze drain (if chosen) by its expulsion from the uterus altogether.

For the reasons given I prefer to use the spiral wire drainage tubes of various sizes designed by me for the cure of stenosis, and obstructive dysmenorrhoea, and which, by affording much more room for exit of the secretions, and being, in addition, self-retaining, combined with flushing of the vagina, I have found give me excellent results (in chronic cases more especially), and which I venture to recommend a trial of, in preference to the gauze drain.

I cannot help thinking that if cases of chronic endometritis were oftener treated directly on being recognized by thorough dilatation, curetting (if necessary), and subsequent continued drainage, instead of the palliative treatment usually adopted by liquid escharotics, which so often ends in failure, there would be fewer cases found in future of ovarian and tubal disease.

Regeneration of disorganized endometrium, lymphatics, nerves, and glands do not always occur immediately after treatment. Time is an important factor, and a more extended period should be given to thorough drainage of the uterine cavity by the wearing of the spiral wire flexible tube.

The assistance given to the exit of the secretions is much favoured by the patient not being confined to the recumbent position, for the gravitation alone materially aids in the result looked for. Of course, when endometritis is complicated with extensive chronic metritis or pelvic infection the disease will continue in spite of all local treatment, and hysterectomy may eventually prove the only plan of relief.

London, W. ALEXANDER DUKE.

PUNCTURED INJURY OF THE EYEBALL.

A farmer, aged 35, when mending a flail with a large-sized bradawl held close to his face, slipped, and the point struck him in the right eye. He described the feeling as that of a severe blow in the face, but there was not very much pain in the eye itself. The eye could only be opened with great difficulty and pain, as "the light hurt him very much."

Four days after the accident I saw him, and found the eyelids slightly swollen and red, spasmodically closed, but uninjured. The bulbar conjunctiva was very hyperaemic, with marked circumcorneal injection. In the cornea was a straight wound, 4 mm. long, situated in the lower and outer quadrant, parallel to the sclero-corneal margin, and about 3 mm. distant from it. From the wound came a small shred of whitish tissue frayed and torn, and projecting above the surface of the cornea. Otherwise the cornea was unharmed. The iris was torn, and there was a clean piece cut out of it—the bradawl had done an iridectomy, in fact—but the piece of iris corresponding to the defect was adherent to the wound in the cornea, and it also retained connexion with the rest of the iris by a slender bridge of tissue above and at the pupillary margin. The defect of the iris was about 4 mm. long, corresponding to the corneal wound, and about 2 mm. broad. The torn fragment of iris came completely through the corneal wound, and presented itself externally as the shred of tissue above mentioned. Through the hole in the iris the uninjured ciliary body could be seen, as well as the sharp edge of the perfectly transparent lens, these two being separated by a clear interval, in which the red fundus reflex was uninterrupted. A faint and floating opacity could be seen in the vitreous, evidently the track which the awl had made in passing inwards. The fundus appeared normal. The bradawl, which was a large flat one, in passing in, had just managed to hit the interval between the lens and ciliary body, and its long diameter exactly corresponded to the direction of this interval. Thus both the lens and ciliary completely escaped injury; in fact, the only injury the interior of the eye had received, besides the tear in the iris, was the cut in the zonule of Zinn, and this was not extensive enough to bring about a partial dislocation of the lens. When the patient came first the wound in the cornea, with the incarcerated iris, was healed, so that nothing directly could be done except to cut off the shred of iris flush with the cornea, which I did. Also patient was given subconjunctival injections of corrosive sublimate, atropine (1 per cent. in corrosive 1 in 5,000), rest in bed, with both eyes bandaged. Two days later I made an opening with a broad keratome in the cornea, below and outside opposite the wound; then by very careful movement of the point, and without the least drawing back of the instrument, which would have caused escape of the aqueous, I cut the prolapsed piece of iris close up to the posterior surface of the cornea; then having withdrawn the keratome, I introduced a fine iris forceps, drew out the torn piece of iris, and cut it off in the usual way.

The healing was protracted, extending over three weeks, but the recovery was ultimately good, only a line remaining in the cornea where the wound had been, and a visual acuity of nearly $\frac{6}{12}$ being obtained.

Robert D. Joyce, F.R.C.S.I.,
Ophthalmic Surgeon, Richmond Hospital, Dublin.

DIABETES MELLITUS WITH RAPIDLY FATAL TERMINATION FOLLOWING TYPHOID FEVER.

On November 6th, 1902, I was called to see R. A. W., aged 24, in whom I diagnosed typhoid. He was admitted to the Adelaide Hospital on October 9th, under the care of Dr. Wallace Beatty, to whom I am indebted for particulars of the case while in hospital. Without going into detail the case was one of severe enteric, with recrudescences, and during the course of the fever jaundice developed, but passed off. Constipation was the rule throughout, and even before he became ill his bowels were a source of great trouble to him. Sugar was absent from the urine during the entire time he was in hospital, and albumen only present in small amount during the last three or four weeks. He was discharged on January 31st, 1903, and sent to the convalescent home, where he remained a fortnight, when he returned home, and came to see me on February 20th, complaining of intense thirst, passing large quantities of urine, and great weakness for a week back. In order to observe his condition, I did not then place him on any special diet, or order any medicine, and, having given him explicit directions as to measuring his urine, found that he had passed 320 oz. in twenty-four hours of specific gravity 1030, and containing 756 grams of sugar, but no albumen or acetone. He told me his weight was 7 st.; he also complained of the difficulty he had in reading, and I found he had some paralysis of the muscles of accommodation. I prescribed codeine and aperients, and placed him on restricted diet, and from this date (February 22nd) his condition was more or less unchanged up to February 27th, when the urine fell to 200 oz., with specific gravity 1027, and containing 414 grams of sugar; diacetic acid and acetone were present now for the first time. Up to this he had been able to take mild walking exercise out of doors when the weather permitted, but now began to complain of fatigue

and loss of appetite. The total quantity of urine fell during the next few days, and on March 2nd was 140 oz., containing 280 grams of sugar. During the following week the patient remained mostly in bed, being extremely weak and his stomach very irritable. I prescribed large doses of sodium bicarbonate and relaxed the dietary, allowing him now a liberal supply of milk.

On March 12th he was seized with vomiting early in the morning, which continued for more than one hour, when I saw him and ordered ice to suck, which checked it. The quantity of urine in twenty-four hours had now fallen to 100 oz., containing 150 grams of sugar, and he was greatly distressed by air-hunger which had now set in. The breath had a sweetish odour.

On March 13th and following days he continued in a state of dullness, apathetic, and inclined to sleep but for the great distress he was in and pain in the muscles of the neck and chest. His tongue was persistently dry, and it was very hard to understand him when speaking; his skin was also very dry and branny. Pulse 96, respirations 24. For this condition I used subcutaneous injections of saline fluid, half a pint slowly injected into the thoracic region with benefit daily. From the 15th onwards he could with difficulty be persuaded to take his food and medicine; his bowels required constant enemata. The urine for the last week of his illness averaged from 100 to 140 oz., with a sugar excretion of from 150 to 280 grams. Pulse averaged 96 to 100, feeble; respirations 22 to 26. On March 18th coma set in about 10 p.m., and he remained in this condition, with a few intervals of semi-consciousness (during which I was told he recognized relatives and was able to swallow some nourishment), after which he again relapsed into coma, and died at 11.30 a.m. on April 19th.

This case is peculiar, as following typhoid and in running an extremely rapid course—thirty-five days. There was no family history, I should add, to suggest diabetes.

Dublin. J. F. C. Meyler, L.R.C.P.I.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ROYAL INFIRMARY, NEWCASTLE-ON-TYNE.

CASE OF TORSION OF THE SPERMATIC CORD.

(By G. Grey Turner, M.S.Durh., M.R.C.S., Surgical Registrar to the Infirmary.)

History.—In August, 1902, a child, aged 13 months, was brought to the Newcastle Royal Infirmary about 8 p.m. in the evening. On the morning of that day the mother had noticed a hard lump in its left groin. All day it was cross, and often cried out, especially when the lump was touched. The child had taken the breast as usual, it had not vomited, and the bowels had been once moved.

State on Examination.—When first seen its general condition was very good. In the left inguinal region there was a rounded hard lump, about the size of the testicle at puberty. It was evidently very tender, and was irreducible. The left testicle was absent from the scrotum, the right was normal in size and position. A diagnosis of strangulated hernia with undescended testis had been made.

Operation.—I operated at once. On making an incision over the testicle the subcutaneous and other tissues were found oedematous. The testicle lay just outside the external ring. There was a little fluid in the tunica vaginalis, and the body of the organ was dark purple in colour. The cord was found twisted one whole turn from right to left; the torsion was very tight, but could be easily undone. After it was freed the cord was too short to allow the testicle to be placed in the scrotum, and even had this been possible the vascular supply seemed to be too much interfered with to allow of its recovery; the testicle was therefore removed. The structures of the cord, were spread out in the mesorchium, which was as broad as the length of the testicle. No hernia was found. The external ring was closed with catgut sutures.

Owing to the crowded state of the wards it was necessary to send the child home the same night. A week later it was brought back to be dressed. It had made a good recovery, and the incision was perfectly healed. The substance of the testicle was oedematous, congested, and there was blood effusion into the epididymis. Unfortunately I mislaid the specimen, and no further examination was made. As cases of torsion of the cord are very rare (writing in the *Annals of Surgery*, August, 1901, Charles L. Scudder was only able to collect the records of 32 undoubted examples) this case seems worthy of record.

VICTORIA HOSPITAL, GERALDTON, WESTERN AUSTRALIA.

A CASE OF RAPID RECOVERY AFTER OVARIOTOMY.

(By A. P. Thom, M.B., C.M.Aberd.)

It is held by many that the aboriginal of Australia is not a good subject for operation. The following case may help to dispel this belief:

In a "gin" about three weeks after a natural confinement pain and a swelling was noticed in the region of the right ovary which grew so rapidly that six weeks after the confinement a large fluctuating tumour was found occupying the whole of the abdomen up to the level of the umbilicus, with evident peritonitis. On opening the abdomen a cyst of the right ovary was discovered adhering to the parietes, pelvic organs, omentum, and bowels. After separation and tapping the cyst was removed. It contained a thin serous blood-stained fluid. Oozing from the large adherent surface was arrested by hot sponges.

On the ninth day the abdominal wound stitches were removed. The same day she got wind of a "corraboree" to take place at night about ten miles out of town, which her wild nature could not resist. She was observed leaving by one of the nurses, who got hold of her, but the native wriggled out of her hands like a snake. The nurse then gave chase, followed by the matron, both smart tennis players, but they only saw her heels and she was soon lost in the darkness. Three days after I got notice of her whereabouts, and found everything as could have been wished. She treated the whole affair as a big joke. Her only complaint was slight stiffness in the muscles of the legs, due to running and possibly to dancing.

In contrast with the above case, I removed at the same time a small fibroid ovary without any complications or adhesions in a young healthy Englishwoman. Everything went on well, but it was four weeks before she left the hospital and it took a week or two more before she felt herself again.

BANGOR COTTAGE HOSPITAL, COUNTY DOWN.

COMPLETE PERFORATION OF THE ABDOMINAL CAVITY: RECOVERY.

(Under the care of C. K. Darnell, L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glasg.)

J. H., aged 40, a mechanic, was riding a bicycle, when he came into collision with a spring cart, the shaft of which penetrated the abdomen immediately below the stomach. He was brought three miles to the hospital. The rent was found to be 3 in. below the ensiform cartilage and 3½ in. long, running transversely. Its edges were irregular and bruised, and a mass of abdominal contents the size of a fetal head was protruding from the opening. The mass consisted of some transverse colon, small intestine and mesentery. The torn mesentery was bleeding freely. The patient was much collapsed. Under chloroform no perforation of the stomach or bowel could be found, and after wiping out the peritoneal cavity as far as possible and cleansing the bowel the mass was reduced and the abdominal wound sutured. A gauze drain was put in from the left angle of the wound.

For two days there was a good deal of pain, rapid pulse and abdominal distension, and the temperature reached 102°, but under morphine and rectal feeding the condition improved, and remained wonderfully good all through. On the third day, what looked like a bruise 3 in. in diameter was found on the patient's left side, ½ in. above the highest point of the iliac crest, and as this in the course of the next day gradually swelled and became tympanitic and dark in colour, an incision was made into it. About 3 oz. of foul pus and some gas escaped, and at the bottom of the cavity appeared a foreign body, which on being taken out and examined was found to be pieces of the patient's flannel shirt, woollen jersey, and tweed coat. These had been pushed through the abdominal cavity on the end of the shaft and deposited in the lumbar muscles, where they were evidently shut off from the cavity, and in due time sloughed downwards and towards the outside.

Recovery was uneventful, except for a severe haematemesis of about 3 pints of altered blood, which occurred three weeks after the accident, due probably to some bruising of the stomach wall by the shaft and subsequent ulceration. There was, however, no return and the patient left hospital on August 18th, 1902 (eight weeks after the accident), convalescent. He has been doing regular work since January, 1903, and feels no ill effects whatever from his accident.

REMARKS.—Recovery after complete perforation of the abdominal cavity, as by sword thrusts, etc., though very rare, is not altogether unknown. Fatal visceral lesion is however the rule in these cases. In this case perforation was no doubt complete, and taking into consideration the size of the instrument the visceral damage was wonderfully slight. Probably the presence of the cloth on the end of the shaft helped towards this, but, even so, recovery after such an accident must be very unusual.

REPORTS OF SOCIETIES.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

ALFRED WILLETT, F.R.C.S., President, in the Chair.

Tuesday, November 24th, 1903.

FIFTY CONSECUTIVE CASES OF PERFORATED GASTRIC AND DUODENAL ULCER TREATED BY LAPAROTOMY.

MR. T. CRISP ENGLISH communicated this paper, which was based on a series of cases operated upon at St. George's Hospital, acute perforations being alone dealt with, of which 42 were in gastric ulcer, with 22 recoveries, and 8 in duodenal ulcer with 2 recoveries. Premonitory symptoms occurred in 20 per cent. of the cases, chiefly in association with chronic and severe ulceration. A quiescent period after the primary collapse was met with in a large number of the cases. Vomiting occurred in 75 per cent. The liver dullness was normal in 11, absent in 12, and diminished in 20 cases. Perforation was most common close to the lesser curvature and rather less frequent towards the pylorus. Complications after operation occurred in 13 of the 24 successful and in 8 of the fatal cases which survived 24 hours; among other complications referred to were parotitis, pleurisy, venous thrombosis, and haematemesis. Seven cases were quoted presenting the symptoms and signs of perforation which was proved by laparotomy not to have occurred; in 3 nothing abnormal was found, in 1 blood-stained oedema of the gastric omentum, in 1 evidence of a ruptured small ovarian cyst, and in 1 appendicitis. In 13 of the 21 cases that came to necropsy other gastric ulcers were found, their most common situation being exactly opposite the perforated ulcer. Details in the operation were referred to, especially the tendency to dispense with drainage. Of the 24 successful cases 17 had been followed up; in 12 there had been no return of gastric symptoms; in 4 there had been slight dyspepsia, and in 1 symptoms attributable to peritoneal adhesions.

MR. GEORGE TURNER thought that drainage was in some cases essential, and of benefit in nearly all. In 2 out of the 5 cases that recovered there was thrombosis in the left leg, which was not uncommon in appendicitis. A perforated ulcer he stitched up carefully and rapidly to prevent further extravasation, and only then did he invaginate it and use Lembert sutures. A condition closely simulating the symptoms of perforated gastric ulcer was ruptured oesophagus.

MR. WARRINGTON HAWARD said that the symptoms in the acute cases were often abrupt, coming on after food, but not after exertion. The latter occurred in the chronic cases. Before perforation the distribution of the pain and the superficial tenderness had some localizing value. The pleurisy, he thought, was due to the direct passage of irritative material through the lymphatics of the diaphragm; hence care should be exercised in cleansing its under surface in preference to irrigation. Drainage or not depended on the amount of escape of stomach contents and the duration. If much and long, there should be irrigation; and, in any case, if an error, it was one on the safe side.

DR. JOHN BROADBENT referred to two cases of traumatic rupture of the duodenum which had come to necropsy. In one there was pain in the loin and in the right iliac fossa, suggesting appendicitis. In many cases of duodenal ulcer rupture occurred without immediate signs after the pain; there might be several hours of a latent period.

DR. H. S. FRENCH asked what the pathology of the parotitis was. He alluded to the differential diagnosis from the gastric crises of tabes, the rupture of the tunica intima of the aorta, and thrombosis of the inferior vena cava.

MR. C. B. KEETLEY stated that since 1899 he had had 12 cases and had operated on 9; of these 6 recovered and 3 died; the 3 not operated on all died. The fatal cases were late cases, the others were recent. In one of the 3 fatal cases a second perforation complicated the after-progress of the first operation; in another severe haemorrhage occurred. Gastro-enterostomy might be of much value in some cases. Many patients did afterwards suffer from gastric troubles—in half his own; and in one gastro-enterostomy was required and in another separation of adhesions, both of which were cured. The question of gastro-enterostomy should not be dismissed too summarily.

DR. G. NEWTON PITT from his own experience was in favour of mopping out the abdomen as against irrigation, except when extravasation was very extensive. An important point was whether the material that had escaped was very virulent. The latent period probably depended on the diaphragm being quiescent, and not, by its pumping, accelerating the toxaemia and leading to increase in the pulse-rate.

DR. VERE PEARSON referred to the question of liver dullness. Some diminution occurred without perforation in a third of 160 general cases.

MR. H. J. PATTERSON also opposed irrigation of the peritoneum, and thought even mopping might often well be dispensed with. Both were a source of shock, and simple drainage seemed to give better eventual results. He favoured the performance of gastro-enterostomy.

MR. T. CLINTON DENT, in reference to drainage, said he had done many cases in which it seemed that the less that was done the better. Gastro-enterostomy was by no means an unqualified advantage; it was not without risk, and if unnecessary, as it was in most of his cases, was contraindicated. Even if not done, early feeding should be had recourse to after all operations for perforation.

MR. CRISP ENGLISH replied.

MEDICAL SOCIETY OF LONDON.

F. DE HAVILLAND HALL, M.D., F.R.C.P., President, in the Chair.

Monday, November 23rd, 1903.

TREATMENT OF HEART FAILURE.

SIR R. DOUGLAS POWELL read a paper on this subject, in which he limited his remarks to the more important kinds of acute heart failure. He gave instances of sudden death in aortic regurgitant disease, from syncopal failure of circulation in the brain, and vasomotor angina. In the former case preventive measures were alone of any avail; in the latter the peripheral vessels were contracted so that the blood was retained in the capillaries and nerve centres, and the syncopal failure of the heart might be delayed until remedies could be applied. These remedies were the nitrites to relieve arterial spasm, with strychnine and perhaps morphine to support the heart and lessen pain. Further attacks were to be prevented by removing the visceral causes of vasomotor storms. Acute and fatal failure of the right heart from mitral stenosis occurred when plethora had been induced by rest and treatment and feeding. In such case prompt bleeding might save the patient, but the disaster might be avoided by spare dietary and laxatives. In severe pneumonia the conditions were somewhat similar. It was of the first importance to guard carefully against overfeeding such patients. The chief preventives were careful feeding and occasional laxatives to diminish the weight of venous blood. The remedies were strychnine and oxygen, both acting as heart stimulants. Digitalis was chiefly valuable in cases in which the heart rhythm became disordered. Digitalin was of doubtless efficacy. Caffeine might supplement or replace strychnine in some cases. In heart failure in Addison's disease, haemorrhage, and collapse after abdominal injury or operation, the blood pressure became very low and there was a tendency towards emptying of the arterial blood into the veins. To combat this tendency ergot, suprarenal extract, and saline injections were of value, but strychnine would still be necessary. The merits of rectal, subcutaneous, and intravenous injections were discussed. Opium was a valuable adjunct in cardiac shock or cardiac pain, in painful as apart from syncopal angina, in irregular, tumultuous or inhibited action of the heart attendant upon the initial shock of extensive pleurisy or acute pericarditis.

In that period of cardiac agitation, restless dyspnoea, and air hunger which often preceded dropsy, morphine subcutaneously was often the only remedy that afforded relief.

Sir William Broadbent alluded to cardiac failure from dilatation of the heart and heart muscle degeneration, and that associated with disease of the aorta. Sudden death in mitral stenosis might also occur from a distended stomach pressing on the right heart. Bleeding in pneumonia was sometimes very satisfactory. The value of strychnine in cardiac failure was indisputable. A very weak pulse might be due not only to a weak left ventricle, but to a defective supply of blood to it, and often more could be done by relieving the heart of impediments than by stimulating it.

Sir Lauder Brunton thought that sudden death in mitral stenosis was probably due in part to the increased influx of blood during digestion, but more to mechanical causes. Hence it was important to give the fluids of the diet apart from the solids. The danger from flatulent distension of the stomach was emphasized. In distension of the right side of the heart bleeding might often save life. His own experiments had shown that strychnine caused recovery of the frog's heart after its arrest by ligature between the auricle and ventricle; indicating that it was a powerful cardiac stimulant. The importance of the horizontal posture in cardiac failure was pointed out.

Dr. Mitchell Bruce said that for heart failure in mitral stenosis (especially if haemoptysis were present) venesection or leeching was the best treatment. The vast majority of cases occurring during the night were due to an undigested meal. In acute pneumonia it was important to examine the abdomen and not to overfeed: oxygen should be given early and continuously. Strychnine without doubt acted directly on the heart. Digitalis in heart failure from chronic valvular disease or in renal disease should be given in large doses, 10 or 15 minims every four hours. Its use should be gauged by the amount of urine passed.

Mr. A. E. Barker alluded to cardiac failure, immediate and remote, in abdominal operations. Some of the remote cases were probably toxaemic. Inhibition of the heart by surgical violence might be obviated. For that following haemorrhage infusion of normal saline solution was of great value; the fluid might well be injected into the axilla. Adrenalin, he had used always hypodermically, without producing any observable rise in blood pressure.

Mr. Mayo Robson thought much could be done to prevent shock during operations by warmth, saline injections, and strychnine subcutaneously. He had never seen any harm even from heroic doses of strychnine. After operation oxygen and saline injections were useful. Heart failure from acute dilatation of the stomach was referred to.

Sir R. Douglas Powell replied.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

C. Richardson, M.R.C.S.Eng., President, in the Chair.

Friday, October 23rd, 1903.

President's Address.

In his address at the opening meeting of the session the President referred to the importance of encouraging cheerfulness in many forms of illness, and said that the medical attendant could not do this effectually if his own nerves were below par. In restoring jaded nerves nothing was so effectual as exercise. Walking alone was not sufficient. It lacked the needful zest, and was apt to grow monotonous. He considered that golf was the pastime best adapted to the needs of the medical man, and he instanced the opinion of a leading American surgeon, who said, "it was his duty to his patient that when operating he should be at his best, and that his nerves could not be at their best unless he had regular doses of golf." Whatever the form of exercise, it should be taken regularly, and the pastime must be sufficiently entrancing to lure the thoughts for the time being entirely from the groove of the daily task. Whilst alcohol was not needed by the young and vigorous, it might be useful to the weakly and to those in the decline of life, if taken with care and discretion. He was strongly of opinion that, as a rule, it should be taken only with food, and he gave a striking instance of the effect of a small quantity of alcohol on the brain when taken on a perfectly empty stomach. Alcohol taken before exertion was detrimental, but afterwards in the stage of exhaustion, by restoring equilibrium to the jaded nerves, it tended to give comfort, cheerfulness, and health.

Imitation of Hip Disease.

Mr. Pridgin Teale read a paper on Suppuration of the Trochanteric Bursa and its Imitation of Hip Disease. Having referred to his essay on the same subject published in the *Lancet* of October 8th, 1870, he described a case recently under his care, in which an exceptional point was found. After tracing a discharging sinus to the large bursa, and opening the bursa by direct incision over the trochanter he came upon a rough area of bone which at first seemed to be a carious spot on the trochanter. This bony roughness, however, was loose, and proved to be an osseous plate about the size of a shilling in the septum between the great bursa and a small subsidiary bursa in contact with the trochanter. There was no other trace of diseased bone. Mr. Teale considered that bursal affections of this nature were inadequately appreciated by surgeons and writers of textbooks, and he laid stress upon five points: (1) The disease had been in several instances mistaken for hip disease, with the result that treatment, which might have ended in a few weeks, has been prolonged for months or years; (2) there was either no marked muscular rigidity and fixity of the hip-joint, or, where such existed, it disappeared under an anaesthetic; (3) tenderness on pressure of the head of the femur against the acetabulum was absent; (4) a history of a fall on the trochanter was frequent; (5) the flat tendon of the gluteus was a factor in keeping up the diseased condition of the bursa, and its division in the surgical treatment of the disease was important.

The President, Dr. McNab, Mr. Ward, and Mr. E. Trotter joined in the discussion; and Mr. Teale replied.

Ruptured Ovarian Cyst.

Dr. Alcock (Goole) read a paper on a case of ruptured ovarian cyst, followed ten months later by intraabdominal sarcoma.

H. T., aged 34, received a blow from the handle of a washing machine last December, after which she was seized with pain and the abdomen increased rapidly in size to its utmost capacity. Laparotomy was performed in the Goole Cottage Hospital on December 21st. The abdomen was found distended with thick slimy fluid like the contents of an ovarian cyst. A multiloculated ovarian cystoma was removed, 12 in. long by 6 or 8 in. wide. Recovery from the operation was uneventful. Death took place from cachexia and vomiting on October 3rd last.

A partial necropsy revealed the existence of a round-celled sarcoma of the peritoneum. There was also a sarcoma of the other ovary of the size of a small orange. The appearance suggested that the peritoneum had become generally infected by the cystic fluid which escaped into the abdominal cavity in December.

Mr. E. Ward, Mr. B. G. A. Moynihan, and Dr. Kilner Clarke discussed the paper; and Dr. Alcock replied.

Personal Histories.

Dr. Mantle (Halifax) read a paper on the importance of a thorough investigation of the patient's personal and family history in disease, illustrating his views by examples.

Exhibition of Cases, Pathological Specimens, etc.

Dr. Barrs: (1) A case of primary muscular dystrophy of the face and legs; (2) primary malignant disease of the liver, with pyrexia (specimen). Mr. G. Constable Hayes: (1) Cases to illustrate the action of radium; (2) radiographs to show the advantages of the x rays for the purpose of diagnosis. Mr. Ward: (1) Liver with absence of gall bladder; (2) recurrent tumours of the sciatic nerve; (3) tuberculous testis and cord; (4) skiagraphs illustrating renal calculus. Dr. Hellier: Some specimens of carcinoma and myoma uteri. Dr. T. Wardrop Griffith: (1) Aneurysm of the aorta opening into the left auricle; (2) dissections of specimens of the sternalis muscle. Mr. Littlewood: (1) Case of gall stone protruding from cystic duct and producing complete obstruction of the common duct; (2) (with Dr. Gordon Sharpe) case of ileo-colostomy for malignant disease of hepatic flexure. Mr. Walter Thompson: Photographs before and after subcutaneous injection of paraffin for sunken nose, Dr. Trevelyan: A case of xerostomia. Mr. Lawford Knaggs: Growth of colon; ileo-colostomy.

Midland Medical Society.—At a meeting on November 4th, Dr. Saundby, President, in the chair, Dr. Charles showed a case of Huntingdon's chorea in a woman. A peculiar feature of the case was that of all the cases occurring in the patient's family—three generations—the majority were females. The patient presented the usual features of the disease, the movements especially being characteristic. Dr. Douglas Stanley stated that the patient had formerly been under his care at

Queen's Hospital, and that this was the third instance occurring in Birmingham within the last nine years of a family affected with Huntingdon's chorea. He considered that no clinical difference could be drawn between Huntingdon's chorea and senile chorea, except that of a family history in the former. The PRESIDENT referred to cases of senile chorea formerly under his observation and considered that they were quite distinct in character from Huntingdon's disease. Dr. CHARLES, in reply, stated that he regarded senile chorea as a sporadic instance of Huntingdon's disease.—Dr. PURSLOW reported that at the March meeting of the Society he showed a specimen of uterine appendages, with a small body situated in the broad ligament close to the ovary which he had ventured to call an accessory ovary. A microscopical examination since made showed that the nodule was a small fibroma and did not contain any ovarian tissue.—Mr. JORDAN LLOYD read a paper on the pathology and treatment of diseases of the natural cavities and their ducts, taking as examples the bladder, the appendix, obstructed bronchi, and the stomach in cases of pyloric obstruction. In the discussion which followed, Mr. Lloyd's views on gastric dilatation received attention from Drs. JORDAN and DOUGLAS and the PRESIDENT, the opinion being expressed that primary gastric dilatation without obstruction was of frequent occurrence. The President laid stress on the value in diagnosis of modern methods of gastric-content investigation. In reply, Mr. JORDAN LLOYD stated that, while medical treatment should have a fair trial, he was of opinion that many cases of gastric dilatation could only be relieved by surgical means. Other points in the paper referring to bronchial obstruction were discussed by Messrs. THOMAS and NELSON.—An enucleated prostate was shown by Mr. JORDAN LLOYD. The latter gentleman showed an appendix with a typical annular stricture at the junction of the proximal and middle thirds; the part beyond was dilated, and in reference to the specimen Mr. Lloyd expressed the opinion that narrowing of the lumen was essential to dangerous inflammation of the appendix. He also showed a prostate removed after Freyer's method entire in its capsule, to which about 1 in. of the prostatic urethra was attached. An easy recovery fallowed.

BRISTOL MEDICO-CHIRURGICAL SOCIETY.—At an ordinary meeting of this Society held on November 11th, Mr. J. PAUL BUSH, C.M.G., in the chair, Mr. CARWARDINE showed specimens of mammae in ovarian dermoid, and a prostate removed by the suprapubic method.—Dr. G. O. SYMES showed microscopic specimens of trypanosomes in human blood.—Mr. PRICHARD read a paper on the subsequent history of a case of pylorectomy and showed specimens.—Dr. MICHELL CLARKE read an account of a case of hereditary syphilis, and showed microscopic specimens from the spinal cord which was affected with meningo-myelitis and consecutive degeneration of ascending and descending tracts; also of a case of glioma of the cerebellum in a child, in the cord of which was found a cavity (hydromyelia) in the lower cervical region.—Dr. WALTER SWAYNE read a paper on a case of Caesarean section.—Mr. ROGER WILLIAMS read a short paper on subungual exostosis.

LARYNGOLOGICAL SOCIETY OF LONDON.—At a meeting held on November 6th, Dr. P. MCBRIDE (President) in the chair, Sir FELIX SEMON, C.V.O., M.D., in opening a discussion on the after-treatment of intranasal operations, said that he should limit his remarks strictly to intranasal operations, particularly those undertaken for the relief of nasal stenosis, and entirely exclude those performed for disease of the accessory and naso-pharyngeal cavities. Although impossible to proceed so strictly aseptically as in most other regions of the body, yet it would be the duty of every operator to take all possible precautions, such as sterilizing instruments, dressings, etc. Local anaesthesia (that is, cocaine) would be preferred in the great majority of operations, as it was essential for the patient to be sitting upright, so that the operator might see clearly at every moment. This outweighed all claims in favour of general anaesthesia. With regard to the use of adrenalin, he was under the impression that since he had used adrenalin in these cases he had heard more frequently from patients of the occurrence and persistence of hæmorrhage than in previous times. For the prevention of adhesions the advantages and disadvantages of plugging were referred to, the opinion being expressed that plugging was apt to produce considerable irritation, to cause local anaemia of the injured parts, and thereby to prevent healing. With the view of diminishing (though it did not actually prevent) inflammatory reaction, the use of a spray consisting of 3 gr. of cocaine and ½ drachm of boric acid in 6 oz. of water was recommended to be used three times daily. For prevention of secondary haemorrhage, firm plugging should be avoided, as it did not with certainty prevent it, as such haemorrhages might, and did often occur when the tampon was removed on the day after operation. If there were no reason to expect considerable haemorrhage, he used no plugging, but ordered the boric acid and cocaine spray previously indicated. If the wound should be at all extensive, a strip of cyanide gauze soaked in a solution of hydrogen peroxide was introduced with the view of preventing subsequent haemorrhage. If bleeding occurred, the patient should be directed to apply cold water compresses over the nose. The advice that the patient should inspire deeply with closed mouth, and slightly expire with open mouth, would also be found very useful. In some cases of course powerful styptics and energetic plugging by means of Belloc's cannula might be found to be indispensible. Meddlesome interference, such as washing out, cauterizing of granulations, insufflations, etc., was deprecated as being usually superfluous, and sometimes even prejudicial to healing. If there were risk of the formation of adhesions, more active treatment would be required: the nasal cavity should be rendered patent *pro tem.* by means of cocaine or adrenalin, the cicatricial bands should be divided by cutting instruments (not with a probe), and a piece of guttapercha paper introduced into the nose. The following members joined in the discussion: Dr. SCANES SPICER, Dr. STCLAIR THOMSON, Mr. CRESWELL BABER, Dr. WILLIAM HILL, Dr. A. BRONNER, Mr. E. B. WAGGETT, Mr. F. HUNTER TOD, Dr. H. TILLEY, Dr. P. WATSON WILLIAMS, Dr. J. DUNDAS GRANT, Dr. JAMES DONELAN, Dr. E. FURNISS POTTER, and Dr. L. HEMINGTON PEGLER.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—At a meeting held on October 28th, Dr. J. H. STOWERS, President, in the chair, Dr. P. S. ABRAHAM showed: (1) A case of xanthoma diabeticorum; and (2) a case of sclerodermia.—Dr. GRAHAM LITTLE showed: (1) a case of epithelioma which had developed on the site of a naevus; (2) a case of symmetrical gangrene of the auricles; (3) a case of elephantiasis.—Dr. NORMAN MEACHEN showed a case of persistent purpura.—Mr. GEORGE PERNET showed: (1) a case of secondary hirsuties on the site of a cleared-up lichen patch; and (2) lupus erythematosus disseminatus.—The PRESIDENT showed: (1) Two cases of tertiary syphilis; (2) a case of recently-operated-upon rodent ulcer: (3) a case of lupus erythematosus; and (4) a water-colour drawing of a case of peliosis rheumatica.—Dr. V. H. RUTHERFORD showed a case of lichen planus.—Dr. T. D. SAVILL showed a case of hypertrophic scarring after variola.—Mr. ARTHUR SHILLITOE showed: (1) A case for diagnosis; and (2) two cases of dermato-syphilis.—Dr. WILFRID B. WARDE showed a case of extensive hypertrophic scarring after typhoid fever.—Dr. ALFRED EDDOWES showed photograph and microscopical sections of a case of cyst adenoma of the sebaceous glands.

THERAPEUTICAL SOCIETY.—At a meeting on October 27th, Sir WILLIAM THISELTON-DYER, President, in the chair, the following officers were elected for the ensuing year:—*President:* Sir William Thiselton-Dyer. *Vice-President:* Dr. J. Rose Bradford. *Treasurer:* Dr. S. C. Griffith. *Secretary:* Dr. J. E. B. Brown. *Members of Council:* Dr. J. H. Bryant and Messrs. Peyton Beale, E. Dennis Vinrace, and W. Chattaway.—Dr. HARRINGTON SAINSBURY read a paper on the action of bodies in the particulate state, with special reference to the action of carbon. He said that the physical state of aggregation was an important factor in the action of medicines on the tissues. Given an affinity between a substance and the tissues, the action depended upon (1) the vibration rate of the particles, (2) the density or molecular crowding, and (3) the extent of surface presented by the substance. The three states of matter—solid, liquid, and gaseous—contrasted in respect of these qualities. The liquid state was the most active state, and the solid (in proportion to the insolubility of the substance) the least. The action of solid bodies on the tissues might be analysed according to whether the substance was (A) soluble but not decomposable; or (B) insoluble but partly decomposable into a soluble substance; (C) wholly insoluble and wholly unchangeable. Carbon was quoted as a type of class C, and its mode of action by virtue of its mechanical power was considered, as

well as the qualities it possessed as an absorbent, but neither of these, however, fully explained the effects produced by carbon. Details of experiments were given, which showed the small part played by absorption, and the conclusion was drawn that the power of carbon must depend principally upon a peculiar surface action as yet unexplained. A vote of thanks was passed to the author of the paper, the President remarking that the molecular action of carbon appeared to resemble that of chlorophyle.—Mr. Chattaway showed some experiments with radium, Mr. Sowerby some Chinese medicinal plants, and the Guildhall Library some of their library books relating to the Apothecaries Society.

British Balneological and Climatological Society.—A general meeting of this Society was held on October 30th, Dr. E. Symes Thompson, President, in the chair.—The balance sheet having been passed, Dr. Symes Thompson introduced the new President, Dr. Alfred F. Street (Westgate-on-Sea).—At the ordinary meeting which followed, the new President delivered an address on Some Questions in Seaside Climatology. He suggested that there were physical differences between the atmospheres of different places beyond those comprised in the factors ordinarily considered as constituting climate, and it was contended that this view was borne out by more or less generally admitted facts regarding the local rarity of certain diseases such as scrofula, and the curability of cases imported into certain localities. Evidence was adduced that ozone had been credited with too great a share in the stimulating properties of sea air, that its prevalence had not been completely demonstrated, and that the salts diffused by spray cannot have had a notable therapeutic effect. The questions of a percentage of oxygen, and of the possible influence of the rarer atmospheric gases, of atmospheric electricity, and of any physiological effects of radioactivity, and its presence in sea air and sea water were raised. Reference was made to the principles governing the selection of climates for invalids, and to the public duty of avoiding pollution of the atmosphere.

Society of Anaesthetists.—At a meeting on November 6th, C. Carter Braine, F.R.C.S. (President) in the chair, the Senior Secretary read (for Mr. Norman Bennett, M.B., L.D.S., who was unable to be present) notes of a case of death under nitrous oxide. The patient, a youth aged 17, suffering from enlarged cervical glands, had twice before had "gas," once being seriously troubled in respiration. Upon the last occasion gas and air were administered for extraction of teeth. The facepiece was removed before stertor occurred, but the patient became more cyanosed, and ceased to breathe. The necropsy showed that there were enlarged lymphomatous glands in various parts of the body, and that the diameter of the trachea was reduced by one half, while the heart muscle was degenerated.—Dr. Arnold Moritz read a paper on the combined administration of nitrous oxide and ethyl chloride. He used Hewitt's method, and had had experience of 350 cases. He said that the anaesthesia resulting was deeper, longer, and better than that of any other anaesthetic given in one administration for short or dental operations. The average duration of anaesthesia was about 60 seconds. Struggling, cyanosis, and rigidity were absent. Recovery was not so quick as after gas, but more rapid than after somnoform and ethyl chloride. After-vomiting occurred in about one case in seven. Headache was fairly common, but it did not last long. Vertigo, hysterical outbursts, and in men violent hitting out, were occasionally seen. Different samples of ethyl chloride gave the same results. The severity of the after-effects depended on absence of dieting and quick resumption of the erect posture. The paper was discussed by the President, Drs. Bakewell, Chaldecott, Scharlieb, Noble, Blumfeld, Probyn-Williams, Silk, Flux, Hilliard, McCardie, and Mr. Wallis, the last-named speaking from the point of view of the dental surgeon. Dr. Moritz replied.

Colchester Medical Society.—The autumn meeting of this Society was held on November 11th at the Cups Hotel. The formal meeting was preceded by a dinner at which Dr. Herman, Obstetric Physician to the London Hospital, was the guest of the Society. During the evening Dr. Herman read an interesting and lucid paper on the treatment of ectopic pregnancy, operative and expectant.—Several clinical cases were shown by Dr. Percival, while microscopic specimens were exhibited by other members.—The President (Dr. Brown) presided, and the meeting was well attended.

REVIEWS.

LARYNGOLOGY.

In the preface to his *Diseases of the Nose, Pharynx, and Ear*[1] Dr. Gradle tells us it has been his aim to answer in detail those questions regarding the cause and outcome of diseases which cause the less experienced observer the most anxiety in an individual case—questions to which an answer is not easily obtained from textbooks. The book is therefore intended to give the author's own experience, which extends over a period of nearly twenty-five years. It consists of two parts: the first, containing 342 pages, devoted to diseases of the nasal passages and pharynx, the remainder of the book describing less fully the diseases of the ear. The work is written in short disjointed sentences, and contains a good many peculiarities in the way of spelling, such as "goiter," "chlorid," "anatomic," "curet," etc.; and for the "internal ear" we find "interior ear." The author's remarks are generally clear and to the point, although we occasionally come across statements with which we are unable to agree—for example, p. 54: "The light from bright white clouds is perhaps the best of any" (for anterior rhinoscopy); and p. 130: "Decided absence of translucency is a positive indication of maxillary disease." The book is illustrated by 146 woodcuts of varying quality and by two chromo-lithographs, the one depicting anterior and posterior rhinoscopic views somewhat diagrammatically, and the other more successfully giving twelve representations of the membrana tympani. The work has a certain individuality which amongst textbooks is a refreshing characteristic. When he does not agree with a generally accepted view, the author has no hesitation in saying so. On that account, as well as for the amount of information which the book presents in a handy form, it will be of value to the surgeon practising in these specialities.

Dr. Kayser, in the second edition of his post-graduate lectures on diseases of the throat, nose, and ear,[2] has endeavoured to follow the progress of science in these departments. The work pretends to be an introduction only to the study of these diseases, and to give a general view of the subject, emphasizing the points which are most important in general practice. Regarded from this point of view we may say that it is a very practical work, and likely to lead the reader on to the study of more elaborate manuals on the subject. Further details might, however, in some respects be given with advantage, such as in the operation of ossiculectomy and the radical mastoid operation. Many authors' names are mentioned in the text, but the value of the work would be increased if a list of bibliographical references were supplied. This might be done at the end of the volume, without interfering in any way with the easy flow of the text. The book contains numerous illustrations, the majority apparently original. They are often very helpful and explanatory, but those representing the membrana tympani in health and disease have the drawback of being somewhat roughly executed.

Dr. Holger Mygind's[3] little textbook on diseases of the upper respiratory tract is written in German, and intended for general practitioners and students. It is dedicated to the memory of his old teacher Wilhelm Meyer of Copenhagen, the discoverer of adenoid vegetations. This leads us [illegible] naturally to turn to this subject, and we find that Dr. Mygind usually operates on adenoids without an anaesthetic and with a single sweep of a Beckmann's curette. He remarks, however, that it is occasionally necessary to remove hanging vegetations with scissors and forceps afterwards. The fact that this book is one of the smallest on such an extensive subject—it contains only 252 pages of large print—no doubt accounts for some omissions. There is, for example, no description of the parts seen in anterior rhinoscopy, no reference to enucleation of the tonsils, to enlarged glands as a cause for removing

[1] *Diseases of the Nose, Pharynx, and Ear.* By Henry Gradle, M.D., Professor of Ophthalmology and Otology in the North-Western University Medical School, Chicago. Philadelphia and London: W. B. Saunders and Co. 1902. (Demy 8vo, pp. 547. 15s.)

[2] *Anleitung zur Diagnose und Therapie der Kehlkopf, Nasen und Ohrenkrankheiten.* [Guide to the Diagnosis and Treatment of Diseases of the Larynx, Nose, and Ear.] By Dr. Richard Kayser, of Breslau. Second Edition. Berlin: S. Karger; and London: Williams and Norgate. 1903. (Demy 8vo, pp. 178; 130 illustrations. 5s.)

[3] *Kurzes Lehrbuch der Krankheiten des oberen Luftwege.* [Short Handbook of Diseases of the Upper Respiratory Passages.] By Professor Dr. Holger Mygind of Copenhagen. Berlin: Oscar Coblentz. 1902. (Demy 8vo, pp. 252. 62 illustrations. M. 6.)

adenoids, to Luc's operation on the maxillary sinus, etc. As far as it goes, however, the book gives a clear and succinct account of the anatomy and physiology of these organs, the general etiology, symptomatology, diagnosis, and therapeutics of these diseases, and a description of the diseases themselves. It contains numerous well-executed illustrations, mostly original, and prominent amongst them are reproductions of photographs of the different forms assumed by the external nose. There are also some good illustrations of diseases of the larynx.

ELECTRICITY AND LIGHT.

THE new edition of Dr. A. D. ROCKWELL'S *Medical and Surgical Uses of Electricity*,[4] has been brought fully up to date, and maintains the high position which previous editions have established. The work, as originally written by Beard and Rockwell, passed through no fewer than eight editions before 1896. In that year Dr. Rockwell undertook a thorough revision, rewrote many of the chapters, and provided an almost complete series of new illustrations. He now brings forward a tenth edition, on which again much careful thought has been bestowed. The scope of the original book is increased by the addition of chapters on *x*-ray diagnosis, Finsen light, vibratory therapeutics, and high-frequency currents, whilst fifty new illustrations are included. The central idea of the work, upon which its utility in medicine must be chiefly based, is, the author tells us in the preface, the nutritional influence of electricity on the tissues. When the first edition of the book was issued, general faradism and galvanism were the only methods of electrization at the physician's command, but though nowadays many modifications of the original simple forms have been developed and become popular, the value of all of them may still be measured in terms of the influence they are capable of exerting upon metabolism and general nutrition. The plan of Dr. Rockwell's book is excellent throughout; it is well balanced, so that the physics, physiology, and therapeutics of electricity are each considered in proper proportion and in due relationship to one another. The illustrations are practical and free from the suggestion of trade advertisement which pertains to the plates and pictures adorning many books dealing with this subject. In the introduction to the therapeutic section a succinct and interesting account is given of the history of electro-therapeutics, which is described as having passed through three eras of development: (1) the era of franklinic electricity, which included the early and crude experiments with leyden jars and frictional machines; (2) the era of galvanization, dating from Galvani's discovery in 1791: and (3) the era of faradization, dating from the discovery of induction in 1831, and including all that has since been accomplished in electrical methods as applied to therapeutics. It is claimed for electricity, viewed in its general aspect, that its effects on the tissues are stimulating, sedative, and tonic, and that as much is known of the rationale of its influence as of most of our internal remedies. The various forms of apparatus for its application are well described: the differential indications for its use are fully discussed, and many useful suggestions are given dealing with the details of its administration, the dosage to be employed, and the immediate and remote effects to be looked for. The various diseases for which it is has been found useful are considered seriatim, and there is a commendable absence of extravagance in the claims which are advanced on its behalf, and in the results which are recorded. The following statement concerning its value in tic douloureux may be taken as a fair example of the judicial tone of the whole book:

> By a judicious and varied use of peripheral faradization or galvanization, or by the electric moxa, or by galvanization of the brain or cervical sympathetic, a certain portion of these terrible cases can be relieved or cured. Our experience does not enable us to say what proportion the failures will bear to the successes: but if one case out of ten can be relieved or cured it is justifiable to try electricity in all, since most other methods of treatment offer no hope.

The work may be frankly commended as a safe guide to the applicability of electricity to the treatment of disease. In emphasizing the extent of its possibilities the author is careful at the same time to give timely warning of its limitations, and, in extolling its virtues, the dangers of its wholesale and vicious recommendation are strongly discouraged. We congratulate Dr. Rockwell on the result of his labours, and regard his book as a complete and at the same time temperate exposition of electro-therapeutics.

The subject of light treatment is one of great interest at the present moment, when so much nonsense is being written about it in the columns of the lay press. Drs. LEREDDE and PAUTRIER[5] have done a service in writing a clear and readable survey of the matter, and every one will agree with the opinion expressed by Professor Finsen in his preface. The founder of the Copenhagen Light Institute thinks so highly of the volume that he considers it should be in the hands of all who are interested in the subject of light therapeutics. He also emphasizes the authors' criticisms of the exaggerations and fantastic applications—which, by the way, have caused him much pain, for his name has been mixed up with the unsavoury methods of brazen-faced quacks. The authors have handled the subject in that logical manner which distinguishes French scientific writers. Starting from light itself, the book opens with a preliminary chapter on the spectrum. This is followed by an examination of the effects of light on the lowest forms of life, with a special reference to bacteria. This leads up to details of its influence on the higher plants and animals, and finally on the human organism. These chapters contain numerous interesting experimental data, with bibliographical references. The author made experiments with tadpoles reared in red and bluish-violet aquaria exposed to bright sunlight. The tadpoles subjected to red light were found after a month to have developed to a less extent than those in the bluish-violet aquarium. This is well brought out by the accompanying photographs. They also confirmed the results of Jakimovitch as to the greater activity of karyokinesis under the influence of violet radiations. The facts as to the action of sunlight on the normal skin are well summarized, but the interesting papers of Dr. Robert Bowles on sunburn on the Alps and so forth are apparently unknown to Drs. Leredde and Pautrier. This chapter also contains histological data and a review of such conditions as eczema solare, summer prurigo, vernal (or aestival) hydroa, xeroderma pigmentosum, pellagra, and variola. The second part is devoted to the practical applications of light in the treatment of disease. The authors review the various methods other than light employed for lupus vulgaris, and compare them with the light treatment, touching on *x* rays also. The concluding chapter deals with the incandescent light bath about which there is much misconception, for the light of the ordinary electric lamp contains next to no chemical rays. Several points have not been restated here, for they have already been mentioned in the columns of the BRITISH MEDICAL JOURNAL in the review of Finsen's book on *Light Therapeutics* and in special articles. In conclusion, Drs. Leredde and Pautrier's presentation of the subject is to be commended.

The treatment of various forms of disease by electrical currents of high frequency, to which the name d'Arsonvalization is often given out of compliment to the distinguished French savant who first applied this form of electricity to therapeutic purposes, is becoming more forced upon professional attention by the experience and established records of those who, since d'Arsonval's earlier investigations, have been devoting time and attention to the subject. Those who are accustomed to travel along the lines of healthy scepticism until greater knowledge of its possibilities and stricter recognition of its limitations establishes any new method of treatment on a basis of ascertained fact, have looked askance at d'Arsonvalization because of the extravagant powers as a remedial agent which have been attributed to it by some of its zealous but unwise advocates. The sensational psychical effects, moreover, which may be produced in the using of it have laid it more open than any previous electrical method to the stigma of quackery. The book just published by Dr. CHISHOLM WILLIAMSON *High Frequency Currents in the Treatment of Some Diseases*[6] aims at bringing to a focus the increasing literature on the subject which is mostly scattered through a diversity of journals and monographs, while at the same time giving a record of the results derived from the author's personal experience. The first part of the volume is devoted to

[4] *Medical and Surgical Uses of Electricity, including the X Ray, Finsen Light, Vibratory Therapeutics, and High-Frequency Currents.* By A. D. Rockwell, A.M., M.D., formerly Professor of Electro-therapeutics in the New York Post-Graduate Medical School and Hospital. New edition. New York: E. B. Treat and Co. 1903. (Demy 8vo, pp. 656; 252 illustrations. Dols. 5.)

[5] *Photothérapie et Photobiologie* [Light Therapeutics and Light Biology]. Par les Docteurs Leredde et Pautrier. Paris: C. Naud. 1903. (Demy 8vo, pp. 267, 17 figs. Fr. 4.)

[6] *High-frequency Currents in the Treatment of Some Diseases.* By Chisholm Williams, F.R.C.S.Edin., Electro-therapeutist to the West London Hospital. London: Rebman Limited. 1903. (Demy 8vo, pp. 222, 74 illustrations. 10s. 6d.)

an exposition of such elementary facts in electricity as must be known before there can be any intelligent appreciation of its applicability to the human tissues, and to a short account of the physiological properties which are claimed for currents of high-frequency and great potential. The remainder of the book deals with the methods by which these currents can be applied therapeutically and gives an enumeration of disorders, both general and local, in which they have been found serviceable. In this last, which is the practical section of the book, the reader will meet with considerable disappointment. Generalizations are dealt in, but there is a regrettable absence of such scientific detail as would enable the author's statements to be critically considered or his results verified by the experience of those who are prepared to adopt, even experimentally, his methods. Referring to diabetes, he says:

> Personally, only a few cases have been under my care, but the results have been most satisfactory in each one; the sugar and accompanying symptoms disappeared in an average of six weeks' treatment.

Such a loose statement is of no value, and others of a similar character might be quoted from almost every page in the book. The loose statements, moreover, are here and there couched in equally loose language. This is how the effect of the high-frequency current treatment of obesity is ambiguously described:

> I have frequently noticed a loss whilst treating patients for other conditions; probably the general increase of the digestive functions is mainly responsible for the improvement. In one patient the girth was reduced 4 in. in nine weeks, with no marked diminution of the patient's weight but with marked personal comfort.

The book is well printed and freely illustrated, but there is evidence that it was written in a hurry. Considerable revision and elaboration are necessary before it can be looked upon as a reliable guide to the treatment of disease by this most recent form of electricity.

At a time when so much attention is directed to the effect on morbid conditions of electrical and allied forms of energy, a concise handbook like that prepared by Dr. Toby Cohn[7] will be of value to many. It contains in the first part a careful and detailed description of the apparatus required for electro-diagnosis and a thorough elucidation of technical methods and their *rationale*. Muscular contraction, its forms and laws, are examined, and the points for stimulation of nerve and muscle are carefully described and beautifully illustrated by tables. In the second part a very temperate account is given of the therapeutical value of electrical treatment. Dr. Cohn freely grants the psychical effect of electrical treatment, and also our ignorance of the underlying changes in electrotherapy, but is of opinion that the therapeutic effect is not wholly psychical—that, for instance, in radial palsy, shortening of the healing period has been proved beyond doubt, and also in experiments on animals, where the psychical element may be regarded as absent, the same acceleration of healing has been observed by Remak. The application of the most modern appliances is explained and their development traced back to the elementary types of instruments. In consequence of the great improvements introduced of late years into medico-electrical instruments, Dr. Cohn has been compelled to add largely to his first edition, and also to introduce an account of certain modifications of electrical treatment, as the sinusoidal current, high-frequency current, etc. This latter task Dr. Cohn has, he confesses, taken up somewhat unwillingly, as he regards the results claimed from their use—leaving out of count the value of suggestion—from a position of almost absolute scepticism.

BOOKS BY THE BLIND.

The Story of My Life,[8] by Helen Keller, is the autobiography of an extraordinary woman, who in spite of total blindness and deafness has accomplished her education in the most brilliant manner, side by side with women who had all their senses intact. The medium through which she was able to break down the terrible barrier between herself and the outer world was Miss Sullivan, her companion and teacher, who came to her when she was 7 years old. The few words in which Miss Keller describes Miss Sullivan's arrival throw a vivid light upon the sort of woman she was and the influence she was likely to have upon this afflicted child's life: "I felt approaching footsteps. I stretched out my hand as I supposed to my mother. Someone took it, and I was caught up and held close in the arms of her who had come to reveal all things to me, and more than all things else, to love me." Here we see the impulsive, loving, affectionate woman who gradually guided her young charge through the darkness and hopelessness of blindness into the most beautiful world of light and learning. Her constant companion, she joined in her games, read to her, talked with her, and gradually taught her to communicate with friends, to read all the most delightful books, to realize the beauty of statues by feeling, to typewrite, and to speak French and German, as well as English. Then when the time came Helen Keller passed through Radcliffe College with young women, neither deaf nor blind. Her studies in the first year were French, German, history, English composition, and English literature. "I am frequently asked," writes Miss Keller, "how I overcome the peculiar conditions under which I work in college. In the classroom I am, of course, practically alone. The professor is as remote as if he were speaking through a telephone. The lectures are spelled into my hand as rapidly as possible, and much of the individuality of the lecturer is lost to me in the effort to keep in the race. The words rush through my hand like hounds in pursuit of a hare, which they often miss. But in this respect I do not think I am much worse off than the girls who take notes. If the mind is occupied with the mechanical part of hearing and putting words on paper at pell-mell speed, I should not think one could pay much attention to the subject under consideration, or the manner in which it was presented. I cannot make notes during the lectures, because my hands are busy listening. Usually I jot down what I can remember of them when I get home. I write the exercises, daily themes, criticisms, and hour tests, the mid-year and final examinations, on my typewriter, so that the professors have no difficulty in finding out how little I know..... I use the Hammond typewriter..... One can have several shuttles, each with a different set of characters—Greek, French, or mathematical—according to the kind of writing one wishes to do on the typewriter. Without it I doubt if I could go to college." Again she writes: "Last year, my second year at Radcliffe, I studied English composition, the Bible as English literature, the Governments of America and Europe, the Odes of Horace, and Latin comedy." And later: "This year is the happiest, because I am studying subjects that especially interest me, economics, Elizabethan literature, Shakespeare....., and the history of philosophy....." The work is full of wonder and interest from beginning to end, and this overcoming of physical affliction by human will power and patient endeavour is a most marvellous achievement. Miss Keller was an exceptional woman with an exceptional teacher, but surely her story should stimulate her similarly-afflicted fellow creatures to follow her example and emerge from darkness into a beautiful world where the blind shall see and the deaf shall understand.

This pathetic little book, *Entre Aveugles*,[9] was written by Dr. Emile Javal after he had joined the ranks of those for whom it is intended. It is particularly sad that one whose life-work has been concerned in alleviating defective sight and blindness in others should fall a victim to such a terrible loss himself; no one, however, could be more fitted to write such a volume. In the introduction he describes his own feelings when he realized that he was about to become blind, and he gives advice to those attending patients who are in a similar condition. He implores his medical brethen not to do anything which may make these people lose hope, and he urges them to make it appear that something is being done for them, such as the use of electricity or the giving of strychnine injections or any other harmless method of treatment. He advises that those about to become blind should be taught, by aid of the little vision they still possess, to do things that they will be able to still carry out when this is lost. He then describes the many occupations that may be pursued by the blind—Braille reading, music, cycling, travelling, and such like. The book cannot fail to be of use to these unfortunate people, while the profession must recognize the painfully pathetic side of the picture of one of its own members becoming afflicted by the very disease in the study of which he has spent his life.

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[7] *Leitfaden der Elektrodiagnostik und Elektrotherapie für Praktiker und Studierende.* [A Guide to Electrical Diagnosis and Therapeutics for Practitioners and Students.] Von Dr. Toby Cohn. Second Edition. Berlin: S. Karger; and London: Williams and Norgate. 1902. (Demy 8vo, p. 166, 6 tables, 39 illustrations. 4s.)

[8] *The Story of My Life.* By Helen Keller. (Hodder and Stoughton.)

[9] *Entre Aveugles. Conseils à l'Usage des Personnes qui viennent de Perdre la Vue* Among the Blind: Advice for the Benefit of those Persons who are about to Lose their Sight]. Par Dr. Emile Javal. Paris: Masson et Cie. 1903. (Crown 8vo, pp. 208. Fr.2.50.)

REPORTS AND ANALYSES

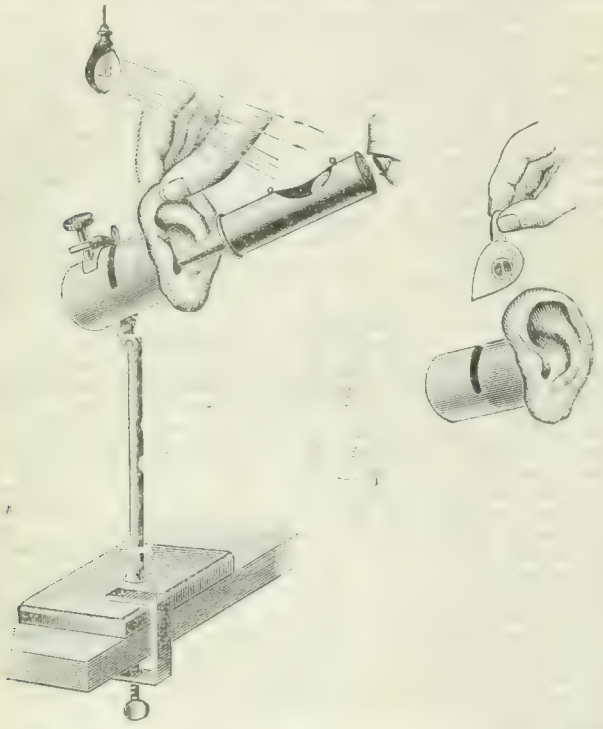
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DESCRIPTIONS OF NEW INVENTIONS

IN MEDICINE, SURGERY, DIETETICS, AND THE ALLIED SCIENCES.

MEDICAL AND SURGICAL APPLIANCES.

A Model Ear for the Practice of Otoscopy.—Dr. J. B. Ball (Physician to the Throat and Ear Department of the West London Hospital) writes: The accompanying illustration clearly shows the form of a model ear which has been constructed by Mr. Davidson, of 140, Great Portland Street, aided by some suggestions from me. It is made of a composition which lends itself to the necessary manipulation. A slit is cut in the wall of the meatus, so that the discs containing lithographic reproductions of various conditions of the membrane and the middle ear can be readily inserted. Two model



ears, a right and a left, are supplied. The series of illustrations comprises 25 for the right ear and 25 for the left. Among the conditions illustrated are the normal drum membrane, inflamed conditions, retraction, opacities, perforations, etc. The drawings have all been done by Mrs. Davidson from material which I placed at her disposal. A brass stand, which is jointed to allow of the ear being tilted to the desired angle, is fixed by a clamp to a table. The auricle is drawn upwards and backwards, and the inspection is made with the aid of the frontal mirror or the otoscope.

A Health Tent.—Messrs. S. Wilson and Co., Bedford Street, Belfast, make a tent which is especially useful where it is desirable to employ tents for invalids. It is double, with 6 in. between the outer and inner tent, thus making it warm in winter and cool in summer, and allowing of ventilation without draught. The special point about the tent, however, is an invention whereby the canvas is kept taut and a centre pole obviated by the employment of stretchers and cross stays. It thus, we are assured, remains firm without the necessity of constant attention to tightening and slacking ropes which the ordinary tent demands.

Pathological Society of London.—At the laboratory meeting of this Society, held at King's College, on Tuesday, November 17th, Professor R. T. Hewlett in the chair, the following communications were made:—Mr. L. Cheatle: Cancer and trophic areas.—Dr. O. Grünbaum: The estimation of bile salts in urine.—Professor R. T. Hewlett: Agglutination reaction in asylum dysentery.

IRISH POOR-LAW REFORM, WITH SUGGESTIONS FOR THE CONSIDERATION OF THE VICEREGAL COMMISSION.

By Edward Thompson, M.D., F.R.C.S.I., M.P., Omagh.

The present Poor-law Commission, which was appointed at my instance by the Chief Secretary after two years' questioning and suggesting in the House of Commons, as well as by speeches on the Irish Estimates, should be capable of useful work. It is a pity the Commission is not composed of independent men, entirely unconnected with the Local Government Board; but as the Government could not be prevailed upon either to enlarge its numbers or extend the scope of its inquiries, and insisted that it should be departmental and viceregal, I do not see how they could have made a better selection than the two able and experienced officials of the Local Government Board who have been appointed, namely, Mr. Micks and Dr. Biggar, with Mr. Murnaghan, M.P., as an outsider entirely independent of the Board, and an experienced and valued member of the House of Commons. If the Commission approaches its important work in the right spirit, as I am sure it has, and will faithfully record the opinions placed before it, basing its recommendations on the disinterested evidence of the numerous witnesses who will be examined, sifting carefully the wheat from the chaff, it will doubtless effect many useful reforms in Irish workhouse management. There can, however, be no doubt that the Chief Secretary made a great mistake in refusing to appoint a Royal Commission to inquire into the whole question of the Irish Poor-law service, which would have embraced the number, structure, management, and nursing arrangements of the Irish workhouses and district and fever hospitals, their sanitary arrangements, ventilation, etc., as well as the whole of the Poor-law civil and medical service, including pay and pension, the mode of appointment of doctors, rearrangement of dispensary districts, district and county sanitation, county infirmaries, and the asylums, so far as the disposal of the necessitous lunatics and the insane confined in workhouses is concerned, and all such other questions as might be considered necessary to effect a thorough reform in the whole scheme of relief for the sick and destitute poor, which I hold is entirely antiquated and out of touch with the enlightened spirit of progress characterizing the opening of the twentieth century. Not being myself a Poor-law official, I labour under some disability in approaching a discussion of this important subject. I have, however, thought long and deeply over the questions involved within the term "Poor-law service," and to simplify discussion shall divide my subject into two parts:

1. Questions referred to the Viceregal Commission.
2. Questions, outside its scope, but of importance to the public and to the Irish Poor-law medical service.

Workhouses.

In the first category I place the Irish workhouses, their number, administration, etc. I believe every one will admit (except the councillors of the various districts in which they are situated, who are of course interested parties) that there are three times as many workhouses in Ireland as the condition of the country requires. These institutions were established when the population was double what it is now, and when there was much poverty and sickness. Most of the workhouses are nearly empty, and they employ a regular army of highly paid and unnecessary officials. In Tyrone, for instance, we have 6 workhouses, housing about 700 poor. In the same county we have 1 asylum holding the same number of lunatics. Let any unbiassed man visit the asylum and then visit the workhouses and compare the treatment and comfort of the one institution with the others, and he will be bound to admit that there is no comparison possible. The asylum is a palace, the workhouse a hovel and yet the former houses patients 50 per cent. of whom are unconscious of their surroundings, while the latter takes a sort of care of the destitute poor—the broken-down remnants of the unfortunate and neglected army of labour. In the asylum there are nurses and male attendants. There is order and discipline, good plain food, occupation and amusement, splendid sanitary arrangements, baths, laboratories, laundry, heating, all up to date, comfortable beds and bedding, everything clean, homelike, and tidy. In the workhouse there is faulty construction, most inefficient sanitary arrangements, no

nurses or attendants of any sort—except pauper helps. No discipline, no occupation, old-world ideas as to cooking and laundry, bad ventilation, insufficient light, bad comfortless beds (in the Omagh workhouse many of the inmates sleep on straw mattresses on the floor), no system of classification, no amusement or occupation, and no place where the inmates can sit except in the wards or in a dark, cheerless flagged room, with little or no furniture and nothing to brighten or enliven the sad lives of the unhappy inhabitants. It is no wonder the Irish people, except tramps, look upon the Irish workhouse with horror and shun its portals. They should, therefore, rejoice that a Commission is now sitting which may make useful recommendations, and which will, I trust, effect very necessary reforms.

Without pursuing the question further, I have said enough to demonstrate that there are far too many workhouses, that the latter bear no comparison in comfort, etc., with the asylums, and that in too many instances they are merely comfortless and cheerless resting-houses, where the poor pass their time in filth and idleness when waiting their call to the grave. What changes can be made in the system that will effect an improvement? Fortunately the reply is simple. A sweeping reform is possible, which, instead of adding to the cost, will by degrees greatly diminish the expenditure. I shall again classify my recommendations.

1. Diminish the workhouses by one-half.
2. Turn one of the disused workhouses in each county into a consumption sanatorium.
3. Establish a proper system of heating, lighting, ventilation, and cooking in those which are retained.
4. Enlarge the windows of the dormitories so as to admit plenty of light and air.
5. Erect proper closets and bath rooms.
6. Place the poor in charge of proper nurses.
7. Classify the patients.
8. Board out as many of the inmates as is expedient.
9. Board out as many of the children as possible, and remove those remaining from the body of the workhouse.
10. Establish day rooms.
11. Make every one able occupy themselves with some light useful work.
12. Copy, in fact, as far as possible in workhouses the example of the asylums.
13. Change the name of workhouse, which is an anachronism, and which is hateful to the Irish people, to that of almshouse or homes of the poor.
14. Establish a proper system of inspection. At present the inspection of workhouses is a farce. These institutions are very similar to hospitals, and they should be subject to the inspection of medical men. It is absurd to have the body of the workhouse inspected by, say, an ex-militia officer, a distressed landlord or agent, or an ex-bank official. What can such officials know about what a home for the poor should be, and if asylums are subject to close inspections by experts, why not workhouses?
15. There is hardly a workhouse in Ireland where there is a night nurse. Surely this is wrong. I know a workhouse in the invalid ward of which there are twenty-five bedridden patients. They have no one to look after them except an occasional visit from one of the hospital nurses, no one to give them their food except the workhouse master and a few of the able-bodied paupers, and they are locked in at nights. What a catastrophe there is the making of here if a fire occurred. The sanitary arrangement in many workhouses consists of a bucket, which is passed round in the morning or when wanted from one patient to another, producing a stench which stifles the ward.
16. The tramp nuisance is becoming a very serious one. These men look upon workhouses as their hotels, and they journey from one to the other of them, varying the monotony by an occasional month or so in gaol. There was recently a race meeting in Omagh, and at night the workhouse was filled with these people, and the reception room was one of the most extraordinary sights I have seen for some time. I have been told that in the Strabane workhouse seventy-five tramps took shelter in one week. When a tramp comes to a workhouse he should be carefully disinfected and bathed and placed in a part of the institution reserved for him, where he should be detained for a week and made to do a reasonable amount of work to pay for his keep. These people are a standing danger to the community. They often take shelter for a night in some farmer's house, thus they may possibly carry infection. It is impossible, of course, to refuse to house them, or allow them to suffer from want or exposure, but most assuredly they should not be allowed to abuse the country's hospitality, or remain in a workhouse in a state of idleness, which encourages vice, and which would be tolerated in no other country in the world.
17. The poor in workhouses should be classified. We all know how foul is the language and conduct of many of the inmates, and how much those who have seen better days feel their new associations. Every effort should be made to separate the sheep from the goats, and to prevent the separation of the aged husband and wife.
18. If then it is admitted that 50 per cent. of the workhouses could be closed, and if it is also admitted that to check the spread of phthisis a sanatorium is necessary in each county, we are provided in a vacant workhouse with a building which at a comparatively trifling expense could be turned into a consumption sanatorium. The remaining workhouses could be either abolished or utilized as technical schools.
19. The idiots and harmless lunatics should be removed from the workhouse, and concentrated in an auxiliary asylum. Most of the Irish counties contain disused gaols and bridewells. Why not utilize these vacant buildings, or use an abolished workhouse, to house these unfortunates, and thus save the taxpayers a large expenditure in further additions to the asylums? For instance, in Tyrone and Donegal and other counties there are vacant gaols which could be easily transformed, and placed under the direct care of an assistant medical superintendent, subject to the frequent inspection of the resident medical superintendent of the county asylums, the whole responsibility of inspection, etc., being transferred from the guardians and Local Government Board to the Asylums Committee of the County Council and the inspectors of lunatic asylums.

Workhouse Hospitals and County Infirmaries.

The next branch of the Poor-law service which comes within the purview of the Commission is a very important one—the workhouse hospitals. Every one must have remarked the tumble-down and inferior construction and arrangement of the hospitals in workhouses compared with what is called the fever hospital. The latter are generally well built and well arranged, and with little expense could be made admirable hospitals for ordinary purposes. They are also placed at a distance from the workhouses, which is a great advantage. There is very little infectious disease now in the country, and many of these buildings, capable of holding 50 patients, are either empty half the time, or else have within their walls only four or five patients. If, then, the workhouse hospitals were abolished, and the fever hospitals took their place, they could be christened district hospitals more easily, and the sentimental objection which is now urged against them would be removed, and they would be more largely used. The accommodation in workhouses retained would be considerably enlarged by the addition of the present workhouse hospitals to the general body of the institution, and they could be utilized for the care of the more infirm inmates. This change would be made even more popular if, instead of being administered as at present by the Board of Guardians, they were transferred to the care of the asylums and hospital committees nominated by the County Council. An infectious hospital would of course be necessary, but this could be built at little expense of some non-inflammable material, such as iron lined with one of the numerous descriptions of patent cement, and with accommodation for ten patients instead of fifty. In case of an epidemic, it would be easy to supplement this building by tents, in which, as we all know, such cases can be admirably treated with a greatly lessened mortality.

Some of the county infirmaries are little better than many of the workhouse hospitals, while some of the latter are very efficient, especially in the north of Ireland, although their standard of comfort is of course far below what a modern well-equipped hospital should provide, especially in these days of rapid improvement in the treatment of both medical and surgical cases. The county hospitals (I dislike the work infirmary) should be model institutions, well up to date in every particular, and fitted with the most modern appliances for the successful treatment especially of surgical cases and they should be under the care of a surgeon of standing and proved ability. It is a sad thing to know that the poor of many Irish counties, when afflicted with unusual and dangerous surgical ailments, must either die or go to some city hospital far away from home and friends. No medical officer should be eligible for appointment to one of these hospitals who had not spent at least five years as either

senior or junior medical officer in a recognized clinical hospital, or been seven years in private practice. A qualification required for the position of resident medical superintendent of an asylum is seven years' experience as an assistant in an asylum. If, then, previous experience of the treatment of the insane is necessary to qualify for superintendent of an asylum, how much more necessary is it, in the interests of the poor and the community, that the surgeon of a county hospital should have similar and at least as extensive an apprenticeship in surgery. In all the large city hospitals experience and service in one of the junior positions is always required before promotion to a senior office, and the same rule should apply to the office of surgeon of a county hospital, especially in these days of extraordinary progress in surgical science. Some extra qualification is more required in Ireland than elsewhere, because most of our appointments are allocated, not from merit or in the interests of the poor, but on account of religion or politics, a system which is as absurd and contemptible as it is injurious to the afflicted, and trifle with the grave issues of life and death and the relief of suffering. It is fortunate that such ideas are so absolutely repugnant to the members of our profession.

I advocate the removal of all these hospitals, both district and county hospitals, from the control of the Boards of Guardians to that of an asylums and hospitals committee, nominated by the County Council and controlled, as regards inspection, etc., by the inspectors of an asylums and hospitals Board in Dublin. This would be the best arrangement, but, failing its adoption, I see no alternative except to continue the plan as it exists at present, allowing each hospital to be governed by its own committee. The surgeon of a county hospital should be paid such salary as would attract a highly qualified man, and his practice should be restricted to consultations at his own house, or with his professional brethren. If this was done he would be available for consultations in the district hospitals either to perform, assist at, or give advice in difficult surgical operations and other cases.

The county hospital should also be the training school for nurses for the district hospitals. Thus, each county would be self contained both as regards the doctors and nurses, and we should not be flooded with city nurses who are not half as well trained as those in some of the county hospitals, neither do they possess the same amount of sympathy with the county hospital and workhouse patients as would nurses who had been trained in their own county hospital and who possess a good deal of knowledge of the various localities from which the patients come. Thus, a Londonderry nurse feels more at home nursing Londonderry patients. I know this is the feeling in Tyrone, and I am confident it exists in all the other Irish counties.

In thus attempting very shortly and imperfectly to detail a scheme of workhouse and hospital reform, I am far from asserting that the ideas are likely to be popular with some of our representative bodies, but they would work well and effect not only a large decrease in the existing expenditure, but would add enormously to the comfort of the suffering poor and ensure their humane and efficient treatment. I am convinced the whole system of workhouse and hospital management as it exists at present in a large proportion of the Irish counties is scandalous, and a disgrace to our boasted humanity and civilization. They are a hundred years and more behind similar institutions in England, and urgently need instant attention and thorough reform.

In common with most thinking men, I look forward to the time when every well-conducted working man will be entitled to a pension provided for him in old age by his own county out of State-aided funds. The working man adds every year enormously to the wealth of the country and to the comfort of each one of us. The civil and other servants of the Crown receive pensions, why should they be refused to the poor? Pending, however, this desired solution, which may be some distance off, the Government are bound to insist that every care, attention, and reasonable comfort shall be given to the poor in the Irish workhouses and hospitals, and they should in this poor country contribute a portion at any rate of the expense as is done in the asylums.

REARRANGEMENT OF DISPENSARY DISTRICTS.

The only other matter that will come under the notice of the present Commission is the rearrangement of dispensary districts. Every one of any experience knows how very inconveniently [illegible] they are at present. If unions are amalgamated, as seems a necessity, notwithstanding the opposition of interested district councils, it must follow that the dispensary areas will be rearranged, and in effecting this object it should always be remembered that districts near large towns should be smaller than in the country. The old dispensary committees, nominated by the Board of Guardians or district councils, should also be re-established. This will be a necessity if the other changes referred to are carried out.

THE REORGANIZATION OF THE IRISH POOR-LAW SYSTEM.

This, although the most important question of all, has been omitted from the purview of the Commission, for what reason it is difficult to understand. Time does not permit me to enter into a full discussion on this subject. I shall content myself, therefore, with a brief summary of suggestions which I believe would effect a much-needed improvement in the existing arrangements.

1. Entrance to the Poor-law medical service should be by examination. I do not mean that the examination should be competitive, but I do mean that, in the interests of the poor, candidates desiring to serve in the Irish Poor-law service should have qualified for the position by having passed an examination, without which they should be ineligible for a Poor-law appointment. They should also show credentials that they had spent at least twelve months in the position of house-surgeon in a recognized hospital or as assistant in general practice. We often see for political, religious, or other reasons, a young doctor foisted on the poor of a dispensary district just after he has qualified, without any practical experience, and with sometimes a very inferior medical qualification.

2. To make the service popular. The salary on entrance should be uniform and reasonable, with gradations to higher pay after satisfying an Examining Board that the candidate has kept himself in touch with medical and surgical progress. All the higher positions in the medical service should be open to the Poor-law doctors, from whom as far as possible such positions as medical inspectors, hospital surgeons, medical superintendents of asylums, and other important administrative appointments should be made. It is the hopelessness of promotion, the dead weight of no possible improvement in the position of the doctor, which makes the Irish Poor-law service so unpopular; indeed the only wonder to me is that candidates can be found to fill such positions. The pay and prospects are so miserable, especially with the public medical services open to them, and practice in England and the Colonies. Irishmen, however, are so attached to their country and their home that they would be found in pretty large numbers anxious for Poor-law appointments, and I have no doubt if the service was thoroughly reorganized, as the Army Medical Service has been, if the pay was progressive, and promotion sure, as the reward of good work and scientific attainments, coupled with the certainty of a pension on attaining the age of 60, that such a service would attract good men.

3. The Government pay half the salaries of the doctors, yet they have no power of choice in the selection of the candidate. This surely is wrong. The doctor should be selected by those who pay him, and as the Government pay half they should have the right of nominating half the members of the dispensary committees, with whom should lie the selection of the doctor. An ideal system would be an Irish Poor-law Service thoroughly reorganized, and paid wholly by the State but I am afraid this is Utopian, although demanded in the interests of the poor. It is absurd to say that the present plan, which takes no thought of the real qualifications of a candidate for a dispensary appointment, but merely considers the religion or politics or personal interest of the candidate or his friends, is at all satisfactory either to the medical profession or to the poor, who are the persons chiefly interested, although generally entirely overlooked.

4. There are innumerable other questions touching the health of the people which require the most careful consideration, for instance, a health officer in each county, with whose office should be associated all the medical officers and whose mandate, backed up in counties by the authority of the resident magistrate, should at once redress dangers to the health of the community. In each county there is a county surveyor to take charge of the health of the roads, but there are no health officers, except miserably paid dispensary doctors who cannot be expected to attend to such important duties on such minute salaries, and no supreme health official to attend to the general health of the community—all these

and many more matters of serious public importance are opened up when the Irish Poor-law system is considered.

Pending, however, a final solution, which should be agitated for, it is to be hoped the Poor-law medical officers will stick to their guns and carry on their agitation for redress, in which they should be helped by every medical man inside and outside the ranks of the service.

REPORT OF THE LOCAL GOVERNMENT BOARD, 1902-3.*

[First Notice.]

This bulky volume of 957 pages is the official record of the year's work of the Local Government Board. The report itself, which is signed by the President (the Right Hon. W. H. Long, M.P.), consists of a summary of 225 pages, and the remainder of the volume is a compilation of official circulars, copies of by-laws, statistics, and the reports of the Poor-law inspectors throughout the country. The summary consists of statements and observations dealing with: (1) The Local Government Act, 1888, and the work of the county councils; (2) the Local Government Act, 1894; (3) the relief of the poor and the poor rate: (4) the public health and local administration; and (5) local taxation and valuation. We can refer only to a few of the more outstanding facts and those particularly related to the public health and local medical administration. Nor shall we discuss matters coming within the usual medical supplement.

Contributions under the Public Health Act.

Under the Local Government Act, 1888, the council of every county and borough is required to charge to its exchequer contribution-account one-half of the salary of every medical officer of health or inspector of nuisances paid by the local authority of any area within its jurisdiction wherever the terms of the appointment, etc., are in accordance with the regulations made by the Board under the Public Health Act, 1875. On March 31st, 1903, the number of such districts (exclusive of the metropolis) was 1,662, with a corresponding number of medical officers of health, and 1,608 inspectors of nuisances. In London there were 30 medical officers of health coming under the Act, and 298 inspectors.

Small-Pox and Vaccination.

The report this year naturally deals somewhat fully with the provision of small-pox hospitals. In only one county, however, was a small-pox hospital district of wide area established, and this was in Leicestershire, where a hospital district was constituted, comprising the whole county, with the exception of the county borough of Leicester and the borough of Loughborough. The report summarizes the Board's action, much of which has already received comment in the British Medical Journal, in respect of small-pox in relation to workhouses and infirmaries, its spread among vagrants and hop-pickers (on which the Board has now issued an important memorandum), returns of cases, vaccination, and the precautions to be taken by local sanitary authorities. The final returns of the vaccination officers relating to children whose births were registered in 1900 have now been received by the Board and collated. A digest is included in the report, from which it appears that of 927,222 children whose births were returned as registered in 1900, 636,940 (or 68.7 per cent.) are recorded as successfully vaccinated; 103,538 (or 11.2 per cent.) as having died unvaccinated; 2 cases as remaining unvaccinated on account of having had small-pox; whilst 2,261 cases (or 0.2 per cent.) were certified as "insusceptible" to vaccination; and in respect of 39,699 (or 4.3 per cent. of the whole) certificates of conscientious objection were received, or the operation temporarily postponed.

It thus appears that of the entire number of children whose births were registered in 1900 15.6 per cent. were not finally accounted for as regards vaccination at the time the returns were made. This percentage is less than that for any period since 1892, in which year it stood at 14.9; but in comparing the figures for the two years it must be remembered that since 1898 children in respect of whom certificates of conscientious objection have been obtained have been dealt with as finally accounted for. In a sentence it may be said that 77.3 per cent. of the children were successfully vaccinated. The total number of certificates of successful primary vaccination at all ages received in 1901 was 21,316 in excess of the number in 1900 and 12,607 in excess of that in 1899, a year of renewed activity. With regard to London, the returns for 1900 show that the cases not finally accounted for amounted to 25.8 per cent. of the births, whereas in the previous year the percentage was 27.7, and in 1898 it was as high as 33.0. Nevertheless, in Mile End Old Town it was in 1900 67.7, in Shoreditch 52.8, in Bethnal Green 48.8, in Poplar 48.5, and in Stepney 44.4, whereas in Woolwich it was as low as 5.1, in St. George, Hanover Square, 5.9, in Hammersmith 7.9, in Kensington 8.1, and in Hampstead 8.7. The report mentions the decision given in the High Court of Justice during the year as to the position of the vaccination officer, which was raised in the Leicester case. This decision was that the vaccination officer may act without directions from the guardians and indeed against their wishes.

Open-air Sanatoria.

The report mentions that several county councils have under consideration the question of contributing out of county funds towards the expense of providing hospitals specially adapted for the treatment of persons suffering from pulmonary tuberculosis. The Board points out that phthisis is not specified in the Isolation Hospitals Acts, but a county council may, under Section xxvi of the Act of 1893, with the Board's approval, apply the provisions of that Act to phthisis. A county council cannot itself provide a hospital under the Act of 1893, but they may, by order, constitute one or more hospital districts for the provision of such accommodation. When a hospital district has been formed, the county council must constitute for it a hospital committee, which may consist wholly of representatives of the county council or wholly of those of areas included in the district, or partly of representatives of the council and partly of representatives of the local areas. A hospital may be built, or an existing hospital, or part of a hospital, may be used. In passing, it may be noted that the first hospital for tuberculosis provided by Boards of Guardians was that belonging to the three Liverpool Poor-law authorities, and opened in 1902.

Loans to Local Authorities.

It appears that in 1902 £11,466,647 were sanctioned as loans to local authorities, which is the largest amount on record with the exception of 1901, when it was £13,291,828. By far the greater portion of this sum has been sanctioned for the purposes of sanitary improvements in urban districts—£10,414,051—such as sewerage and sewage disposal, waterworks, cemeteries, hospitals, etc. For the purpose of improved house accommodation loans amounting to £3,027,300 have been sanctioned. A comparison between the figures is suggestive. An explanation of the enormous sum of eleven millions for sanitary works other than housing is in part afforded by a comment in the President's report. It appears that the Board has observed an increase in the number of cases in which local authorities proposing to carry out works of sewerage, sewage treatment, and water supply adopt the plan of advertising for the best scheme and offering a premium for the one which meets the requirements. The Board makes a timely criticism on this method of procedure, which possesses considerable disadvantages, of which the President emphasizes two in particular. In the first place, it appears that the engineers who have the largest experience in works of this nature will not enter these competitions, and thus the most reliable and experienced advice is not obtained. In the second place, as the acceptance or rejection of a particular scheme by a local authority depends to a large extent upon its estimated cost, there is a noticeable tendency to cut down the estimates in connexion with these competitive schemes. The consequence of this underestimating of the expense is seen in the number of cases in which supplemental loans are required to meet excess of expenditure. Such excess, indeed, amounts in many cases to 50 per cent. of the whole cost of the works originally estimated. Thus the method leads, not as anticipated, to inexpensive operations following a low estimate, but to very expensive operations and additional outlay. Nor is the blame for this pernicious system to be laid wholly at the door of the competing engineers. A reliable estimate can only be made after a very careful examination of the locality and some expenditure of money as well as time in examining subsoil, etc. But the engineers have no security that they will be reimbursed the preliminary expenses incurred by them in this way, and hence such expenses are kept down, a low estimate is sent in, and the works ultimately prove very expensive. It is not, therefore, surprising to learn that there has been a

* The Thirty-second Annual Report of the Local Government Board, 1902-3. Pp. ccxxv, with Appendix, pp. 1-732, and charts.

great increase referable to this cause in the rates. Between 1874-75 and 1900-1 the amount of rates imposed to meet the expenditure of extra-metropolitan local authorities increased from £4,652,179 to £14,993,807, that is, by £10,341,628. It is, of course, necessary to take into consideration the large extent to which rural districts, or parts of them, have been formed into urban districts as a result of the growth of the towns. There have, of course, also been great gains in improved sanitation, and so forth. But such figures lend substantial support to the President's concern as to the increased expenditure of local authorities.

The Sale of Food and Drugs Act.

Under the Sale of the Food and Drugs Acts there are now 231 public analysts, who during 1902 analysed 72,321 samples, an increase of 4,480 over the previous year. This gives an average of one sample to 450 of the population (in London 1 to every 252 of the population) and where the Board has considered the number insufficient, representations have been made to the local authority concerned. Of the 72,321 samples, 6,281 (or 8.6 per cent.) were found adulterated. Penalties were imposed in 2,928 cases, and fines (excluding costs) amounted to £7,064 5s. 4d. This seems a considerable sum and some of the fines were high (1 of £90, 3 of £50, 1 of £40, 1 of £30, 1 of £25, 29 of £20, 19 of between £10 and £20.) But in 164 cases the fine did not exceed 2s. 6d. and in 77 it was 1s. or under. During the year the Board communicated with the Home Secretary on the smallness of many of the fines and the Home Secretary addressed a circular letter to the magistrates asking that special attention might be given to the question whether the penalties imposed in the cases coming before them were such as would be likely to deter the offenders from repeating, and other persons from committing, this class of offences. As in the past, the chief food adulterated (that is, apart from spirits and drugs) was milk, of which 29,452 samples were examined and 3,427 (or 11.6 per cent.) were adulterated. In 1901 11.2 per cent. was adulterated, so that the adulteration has slightly increased, and forms the highest rate of milk adulteration recorded in any year since 1893. In particular there appears to be a growing practice of reducing the quality of good milk so that it may just reach the standard fixed by the Board of Agriculture. Upon this point the analyst for Kent draws attention to an important point. He states that "this reduction nowadays is done very accurately, and my experience shows that the old and grosser form of milk adulteration by the addition of water to milk is largely giving place to more refined methods of mixing separated milk with whole milk, so as just to escape the Board of Agriculture limit for fat." Fat is the most variable and valuable constituent of milk, and consequently the low standard set by the Board of Agriculture gives great scope for what may be regarded as scientifically-adjusted adulteration. When to this is added the leniency of some magistrates, it will be seen that the Act is robbed of much of the advantages rightly expected from it. London again shows a comparatively high rate of milk adulteration, namely, 15.6 per cent., as against 10.3 in the twenty next largest towns, and 10.0 in the rest of the country. In six of the metropolitan boroughs the percentage of adulteration exceeded 20.

Watered butter has also received the attention of the Board, and the report quotes the view in respect of four samples of margarine containing water to the extent of 16.1, 18.1, 20.8, and 21.4 per cent. as "unmistakable and indefensible frauds."

In a subsequent notice we shall deal with pauperism and vagrancy, the records of which take up a large part of the report.

ON SENSITIZING ANIMAL TISSUES TO THE ACTION OF LIGHT.

At a meeting of the Royal Danish Academy of Sciences held on April 3rd, 1903, a paper by Dr. Georges Dreyer on the sensitizing of bacteria and animal tissues to the action of light was communicated, in which the author proved that, just as silver-bromide photographic plates can be made sensitive to the action of yellow and green light by the help of erythrosine (Vogel, 1873), so can bacteria, upon which such light has practically no influence under normal circumstances, be made very susceptible to its action by the addition of minute quantities of erythrosine to their nutrient medium. The experiments were made as follows:

The light of a 30-ampere arc lamp was concentrated by a train of quartz lenses, similar to those used in Finsen's apparatus, upon the infusoria (Nassula) or bacteria (B. prodigiosus), which were contained in a small quartz cell, over the outer walls of which flowed a constant stream of cold water. The infusoria were in hanging-drop preparations, the bacteria in a thin (0.2 mm.) layer spread on the inner wall of the quartz cell, both being used for experiment either with or without the addition of a 1 in 4,000 sensitizing solution of erythrosine.

The uniform and very considerable difference in sensitiveness to the action of light rays of various lengths shown by the sensitized and by the normal organisms is clearly exhibited in the following table, in which are given the nature of the colour filter through which the light was first made to pass, and the duration of the exposure to the light necessary to kill them:

Filter Used.	Infusoria.		Bacteria.	
	Sensitized.	Normal.	Sensitized.	Normal.
Quartz	10 sec.	100 sec.	80 sec.	80 sec.
Glass	10 ,,	9 min.	10 min.	10 min.
$NiSO_4$ solution ...	10 ,,	13 ,,	10 ,,	10 ,,
Blue glass	25 ,,	14 ,,	10 ,,	35 ,,
$CuSO_4$ solution ...	50 ,,	20 ,,	12 ,,	20 ,,
K_2CrO_4 solution ...	10 ,,	70 ,,	15 ,,	Over 4 hours
$K_2Cr_3O_{10}$ solution ...	10 ,,	110 ,,	25 ,,	,, 9 ,,

That it is the yellow-green rays to which the organisms are rendered sensitive is clear from the above table; it can be further demonstrated by exposing two plate cultures of B. prodigiosus, one sensitized and the other not, to the action of the spectrum cast by a quartz prism. Forty-eight hours later it is seen that while both plates are sterile in the parts where the ultra-violet spectral rays fell, the sensitized plate shows an additional sterilized band where it was exposed to the yellow-green rays.

But the possibility of sensitizing animal tissues in this way is not merely a fact of scientific interest; it may very possibly find extensive application to the therapeutical employment of light rays. The chief obstacle to the further development of Finsen's light treatment has hitherto been the lack of power to penetrate into the animal tissues shown by the therapeutically active ultra-violet rays; on the other hand, those rays that can and do penetrate far into the tissues are unfortunately practically devoid of therapeutical action upon them. Dreyer has now shown that a layer of human skin 1.25 mm. thick and fixed in formalin solution, placed between sensitized infusoria and the cone of light from the arc lamp, does not enable them to survive an exposure of 22 seconds, while normal infusoria placed under identical conditions are only killed at the end of an hour's exposure; sensitized bacteria were destroyed in 20 minutes, unsensitized bacteria being still alive after the light had acted upon them for 11 hours. Other experiments made upon frogs anaesthetised with urethane and sensitized by the injection of erythrosine—0.3 c.cm. of a 1 per cent. solution—into their dorsal lymph sac showed that a very acute inflammation can be set up throughout the whole thickness of their tongues by an 8-minutes' exposure to the rays that have passed through a K_2CrO_4 solution colour filter, rays that have no action at all in 20 minutes upon the tongue of a frog that has not been previously sensitized.

Finally, the action of erythrosine in localizing the effect of the light rays to its own immediate vicinity has been demonstrated by Dreyer in the following way:

The cone of rays from the arc lamp, after passing through a K_2CrO_4 solution colour filter, was made to travel through the one ear of a rabbit into the other ear, which had been previously sensitized by an erythrosine injection. The first (unsensitized) ear showed no pathological changes after an hour's illumination; while the second (the sensitized) ear had become markedly hyperaemic and oedematous.

The erythrosine employed appears to have no demonstrable toxic action upon either bacteria, infusoria, the frog, or the rabbit. Dreyer's work also casts a new light upon the so-called toxic action on the tissues of various fluorescent bodies under varying conditions of illumination described by Raab, Ledoux-Lebard, and others.

The few experiments that have been made hitherto in the therapeutical treatment of the human subject after sensitizing injections of erythrosine show that human tissues react in much the same way as those of the rabbit and frog. It is to be hoped that further observations made upon patients undergoing this modified form of treatment by light rays will show that a real advance has been made in the light treatment of disease.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1903.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, NOVEMBER 28TH, 1903.

THE PROTOMARTYR OF ANTIVIVISECTION.

The verdict in the case Bayliss *v.* Coleridge has been received by the leading organs of public opinion with an emphatic approval which shows that the finding of the jury was in conformity with the general sentiment of the community. This is highly satisfactory, inasmuch as it proves that the malignant falsehoods so persistently spread by antivivisectionist societies have made no impression on the robust common sense of the nation. For years these associations have denounced research by experiment on living animals, and all who pursue it, with a rancour, intolerance, and mendacity for which a parallel could hardly be found in theological or political controversy. The most conspicuous result of their labours is that their own dark and crooked ways have been laid bare by the searchlight of the High Court of Justice, and their most aggressive champion stands before the whole world crestfallen, and clothed with shame as with a garment. The Honourable Stephen Coleridge is always ready to drop the tear of sensibility over the imagined tortures of a dog, but he would seem to think nothing of torturing an honourable man by branding him in public as a monster of cruelty, as well as a lawbreaker and, by implication, a perjurer. Consequently we have the curious, and not altogether edifying, spectacle of the eloquent advocate of the rights of dogs convicted of one of the foulest wrongs that one man can do another.

As he stands in the pillory of public scorn his admirers are striving to persuade the world that he is a martyr. And, indeed, he may appropriately be regarded as the Protomartyr of the cult of the dog; for it is the dog that is the holy of holies in the religion of philozoism. A donkey may be overworked in the service of a high priestess of the cult, and we gather from Mr. Lawson Walton's cross-examination of the plaintiff in the recent action that Dr. Bayliss might have used a rabbit or some other animal in his demonstration without exciting the wrath of Mr. Coleridge. His crime was that he used a dog. That animal has been chosen with great judgement as the object of special devotion, for nearly all Englishmen are lovers of dogs, and an appeal to that feeling will touch the sympathies of many who have no particular sentiment about most other animals.

There is another sense in which Mr. Coleridge may be looked upon as the Protomartyr of Antivivisectionism. A martyr is primarily a witness, and Mr. Coleridge is the chief witness to the world of the iniquities of vivisectors. Has he not in that capacity received a kind of consecration at the hands of Lord Llangattock, who has declared that he never made an inaccurate statement? We accept this certificate of character all the more readily since as a witness in the recent trial Mr. Coleridge's evidence was mainly against himself. No testimony from the strongest opponent could have been more damaging. It may be recalled that in the first instance Mr. Coleridge by no means showed the alacrity in meeting the enemy that might have been expected from his defiant challenge. He tried to throw the responsibility for his false statements on his then unknown informants; he wrote a blustering letter evidently intended to intimidate Dr. Bayliss, and when the date of the trial was fixed he made repeated applications for its postponement. It was manifestly against his will that he entered the witness-box, and it may reasonably be inferred that he entered it only as a means of avoiding what was presumably regarded by his advisers as the greater evil of producing the original statement of the Swedish ladies which Mr. Coleridge admitted he had to some extent altered. That document had, we understand, been asked for by the plaintiff's solicitor, Mr. W. E. Hempson (to whose well directed exertions the successful issue of the trial is largely due) a considerable time before the trial, but was refused on the ground that it was privileged. When that plea was put forward in court the Lord Chief Justice refused to entertain it, and ordered that the document should be produced. When the time came for its production, however, it was not forthcoming, and counsel for Mr. Coleridge stated that he had not got it. As an alternative, apparently, they offered to put Mr. Coleridge in the box, but it was clear that if the martyr could have seen any way to escape that particular portion of his sacrifice he would have taken it gladly. If he still has any public reputation to lose, he would be well advised in future to avoid the witness-box and confine himself to the platform.

In Court, to use an expressive Americanism, he simply gave himself away with both hands. It turned out that the terrible charge which he had publicly made against Dr. Bayliss rested wholly and solely on the authority of a statement supplied to him by two Swedish ladies, whom he must have known to be biassed witnesses, as they were the secretaries of a Swedish Antivivisection Society, and whom he should have known to be untrustworthy witnesses, as they had never before seen a vivisection. He should have known too that they were not students of medicine or physiology in any real sense, and that they were nothing more than detectives trying to get what the police call "information." Mr. Coleridge, as a lawyer, must have known that the evidence of such witnesses was worthless. But he eagerly accepted whatever they told him, without testing their statements, or making any effort whatever at verification. Then he dressed the silly story into a tale of horror, on the strength of which he appealed to his ignorant and excitable audience to wreck and lay waste the physiological laboratory of University College. Dr. Bayliss's denial of the charge was put aside as of no account, and a statement to the same effect made by the Home Secretary was treated with the like contempt. At the trial no other witnesses of the experiment but the Swedish ladies were produced in support of the charge of torture; yet surely had there been the slightest foundation for their statement some one of the sixty or seventy students attending the course could have been induced to give testimony. As regards the long-drawn howls of agonized dogs, which Mr. Coleridge said harrowed the souls of the students in the Slade School of Art, it is noteworthy that not one of these students was called as a witness. University College is within easy distance

of Victoria Street, where are the head quarters of the National Antivivisection Society, and of the Law Courts, where Mr. Coleridge discharges the duties of his important legal office; yet he does not seem to have taken the trouble to go there to see for himself what is done, or to hear what there is to be heard. And this is characteristic of his method.

His temper of mind unfits him for seeing things as they really are. This intellectual defect is an advantage to an agitator, for the plain truth about vivisection would supply no materials for inflammatory rhetoric. Some of his sympathizers have suggested that his case was wrecked by his Swedish witnesses. They certainly did him no good; they were the avowed authors of a book which the Lord Chief Justice described as "hysterical," and every page of which proves their utter incompetence as observers and their remarkable talent for misrepresentation. But on Mr. Coleridge's shoulders must rest the responsibility of putting them forward as witnesses of the truth. It speaks better for his heart than for his head that he still professes to believe them to be such. On Mr. Coleridge, too, lies the responsibility of having quoted the testimony of these ladies at St. James's Hall as that of independent witnesses, whereas he knew them to be, like himself, officials of an Antivivisection Society. If this be not *suppressio veri* and *suggestio falsi*, will Mr. Coleridge tell us what is?

These phrases opportunely recall the fact that Mr. Coleridge has had a previous experience of martyrdom, though in a small way. With characteristic chivalry he brought an action for libel against the Rev. David Macdonald, who accused him of suppressing the truth, and suggesting the false. We ourselves had already more than once said precisely the same thing without moving Mr. Coleridge from his attitude of masterly inactivity. But the moment he saw what he took to be a safe chance of vindicating his character, he donned his panoply and rode forth into the lists—only to be carried out beaten and sorely bruised.

In Mr. Coleridge antivivisectionism has the champion it deserves. He typifies the fanaticism which prefers that human beings should suffer rather than that animals should be inconvenienced—with its insane hatred of biological research, its readiness to believe all evil of those who cultivate that branch of science, and its unscrupulousness in the choice of weapons in the warfare against them. It is meet therefore that he should be the Protomartyr of the cause. He will doubtless find that martyrdom has compensations in the literary incense wafted from the censers of the *Daily News* and the *Star*, and in the subscriptions of some sympathetic poets and parsons. That his glory may be complete, he will have the doubtless unexpected honour thrust upon him of being—in a somewhat indirect way—a "pious founder" in the cause of physiological research, for Dr. Bayliss has announced that he will devote to that purpose the substantial sum awarded as damages.

The result of the trial may be taken as a proof that Mr. Coleridge's methods of combating vivisection are strongly condemned by his countrymen. All must agree in condemning cruelty, and the medical profession heartily concurs in the view expressed by the Lord Chief Justice in his summing up that if any man, scientific or other, unnecessarily or wantonly ill-treats a dumb animal, no punishment can be too severe for him.

Doubtless vivisection, like everything else, may be abused, and it is right that there should be some restrictions on its use. If carelessness in regard to these or distinct violations of the law occur, it is most desirable that public attention should be called to them. If a man feels strongly on the subject of vivisection he has a right to give strong expression to his feelings. But he has no right to make sweeping charges of wanton cruelty against a class of men distinguished above all others by their unselfish zeal in the search for knowledge; and his offence is infinitely worse if his charges are based, consciously and deliberately, on tainted evidence. One guilty of such conduct forfeits the title, which Mr. Coleridge was reluctantly compelled in the witness-box to concede to Dr. Bayliss and Professor Starling, of a man of honour.

THE TREATMENT OF NEPHRITIS.

During the past few years Professor von Noorden, of Frankfürt, has published several papers in which he advocates a system of therapeutics in renal disease which is widely different from that in common use. A translation of a small book by him on this subject has now been rendered accessible to the English reader,[1] and gives a very fair idea of Professor von Noorden's views, although it lacks the vigorous and direct style of the original. Fortunately the general sense is clear enough, but we do not remember to have met for some time past with a more inelegant rendering of a foreign work.

Professor von Noorden's criteria in the treatment of renal disease are three. First, there is the general condition of the patient as shown by the clinical course of the malady. Secondly, there is the amount of albumen, which is a valuable sign in acute nephritis, but extremely variable in the subacute and chronic forms. It has, indeed, been shown that the amount of albumen often increases when the diet is suddenly altered in the direction of either latitude or greater stringency. The third test is the amount of metabolic products excreted, which is not to be gauged by tests made with potassium iodide or other similar methods. The fundamental method of treatment must be to protect the kidney while avoiding injury to other organs. It is essential, therefore, not to give substances which are excreted with great difficulty by a diseased kidney. Among these, Professor von Noorden refers particularly to urea, kreatinin, pigments, hippuric acid, phosphates, inorganic sulphates, and water. With regard to the pigments, his account is hardly in accordance with modern physiological views; thus he believes that the chief of these bodies found in the urine are urobilin and haematoporphyrin. In order to avoid the ill-effects of phosphoric acid he recommends that calcium carbonate be added to substances containing it. One of his strongest and most original points is his attack upon the milk diet which is so commonly prescribed in renal disease. He holds that milk contains on the whole too much proteid, and he recommends that it should be restricted to three pints a day, to which a pint of sterilized cream should be added. At the same time, too much fat must not be given, as it simply loads the system; later on he allows the amount of milk to be increased as the excretory power becomes greater. In order to avoid the production and accumulation of hippuric acid, he recommends that substances containing benzoic acid and its derivatives should be avoided; contrary however to popular opinion, he regards vinegar as being harmless, and states that the

[1] *Nephritis.* By Professor Dr. Carl von Noorden, Director of the City Hospital, Frankfürt, a-M. 1903 Bristol: Wright, pp. 112.

same applies to uric acid and its bases since they are not retained in cases of nephritis. With regard to water, he is for giving as little as possible in acute nephritis with oedema, for fear of overloading the circulation; at the same time he considers that diaphoresis is only indicated when diuresis is deficient.

Coming to the special treatment of the varieties of nephritis, Professor von Noorden recommends that in the acute form, when there is oliguria and oedema with threatened uraemia, the amount of fluid administered should be restricted to a minimum, such as pint of milk a day; in this stage he holds that a little alcohol may be desirable to whip up a failing heart. In our opinion this view is hardly warranted, as the introduction of so intense a renal irritant into the circulation cannot fail to increase the damage which is being done to the kidney epithelium. It is as a rule far better to substitute other methods, to which no reference is made in the book, such as venesection and the use of preparations containing ammonia, particularly the carbonate. In less acute cases Professor von Noorden recommends a simple menu consisting of 3 pints of milk, ¾ of a pint of cream, 1½ oz. each of rice, rusk, and butter, and ⅔ oz. of sugar per day; such a dietary gives 2,900 calories when consumed. The amount of water to be permitted in addition to the milk is to be regulated entirely by the capacity of the kidney for excreting it; if this is great, an abundance of liquids may be allowed, if it is deficient, they must be restricted. In the granular contracted kidney attention is first called to the importance of distracting the patient's attention from the condition of his urine, particularly with regard to that variable factor the amount of albumen. It is pointed out that, as has long been known, pronounced retention of urea and such-like products, especially late in the disease, is a very bad sign. With regard to the administration of alcohol, Professor von Noorden is inclined to be more restrictive here than in acute nephritis, seeing that the patient is not, as in the latter disease, under continuous medical control. He holds that alcohol should only be permitted as a drug, the indications being loss of appetite and cardiac disturbance. As the results of various investigations, he condemns radishes, but permits asparagus, while he finds that celery is sometimes harmful and sometimes innocuous. Whether conclusions on these points, based upon the examination of the urine as regards albumen and casts, are of final clinical value is, however, we think, a point which has yet to be decided. Coffee, tea, and tobacco are condemned as being injurious to the heart.

With regard to the question of red and white meats, Professor von Noorden is distinctly inclined to remove the embargo upon the former, holding that it has not been shown that they really contain more extractives than the latter, though he hardly seems to realize the fact that on his own showing they ought to be condemned as containing more pigment. In one respect he is undoubtedly quite correct, and that is that the comfort of the patient is greatly enhanced by permission to vary his diet by an occasional meal of dark meat. The extreme lower limit of proteid which should be allowed is 3 oz.; if less than this is taken, the patient becomes weak and fat, and is liable to cardiac degeneration. The author enforces restriction of the amount of water taken to two and a-half pints a day as a maximum, asserting that greater quantities throw an increased strain upon the heart and circulation; and he holds to this rule even in cases complicated by gout. One serious complication which must be strenuously avoided is obesity; but, at the same time, it is of great importance not to reduce the weight violently. In moderately severe cases baths containing carbonic acid are recommended, and steady muscular exercise is allowed until the last stage is reached.

The above is the gist of Professor von Noorden's teaching on this important subject. He gives a certain number of cases illustrative of its beneficial effects. It is upon these, and not upon the theoretical considerations wherefrom the plan was educed, that its future must depend. In this country certainly too little attention is as a rule paid to the systematic estimation of the urea excreted by renal patients; but at the same time there is a danger abroad of allowing chemical circumstances too greatly to influence therapeutics. Between these opposite errors lies the course of safety, and it may well be hoped that Professor von Noorden's method, modified and matured as may be found necessary by experience and cautious observations, will assist materially in the alleviation of forms of disease which are among the most insidious known to our profession.

THE NEW SITE FOR KING'S COLLEGE HOSPITAL.

The Committee of the King's College Hospital Removal Fund announces that the site which has been presented for the new hospital is at the foot of Denmark Hill, close to Camberwell Green. The site comprises twelve acres, and has a frontage of 600 ft. to Denmark Hill; to the south it is bounded by the wide cutting of the railway, so that it will always be open to the sun. It is some 30 ft. or 40 ft. higher than Camberwell Green, though within a few minutes' walk of that centre of traffic. Owing to the large area—four acres in excess of that upon which St. Thomas's stands—it will be possible to place the building a good way back from the street, and to surround the hospital with wide green gardens for recreation and for convalescence. Denmark Hill Station is close at hand, as are also Loughborough Junction and Camberwell Road Stations. An electric tram line, which is now being laid down past the site, will run into the poorest quarters of East Dulwich, where it is stated a poor population of 80,000 resides. The poorest districts of Brixton are also close to the site, while it is believed that the railway facilities will draw patients from the poorer part of Battersea. It is therefore maintained that the hospital in its new situation will serve the needs of the population of all these districts in addition to Camberwell, Peckham, New Cross, and parts of Kennington and Walworth. Reference is also made to Penge, Forest Hill, Tulse Hill, Herne Hill, Streatham, and Norwood, although we should not have supposed that these districts contained many persons who could be proper claimants for treatment at a voluntary hospital. The Committee makes an appeal for £300,000 to erect the new hospital and carry out the scheme generally.

ST. BARTHOLOMEW'S HOSPITAL.

The Medical Council of St. Bartholomew's Hospital has not yet made any public statement as to the views which it holds with regard to the proper future of the hospital, but it is understood to be considering the propriety of so doing. As we indicated last week, there seems to be really no room for doubt. What the staff has in the past thought of the plan of retaining the old buildings, and limiting the site to the present six and a-quarter acres or thereabouts, our readers must have already gathered fairly clearly from the article published in our columns last February, and from the well-informed if unauthoritative letters addressed to us by Mr. Motion, Dr. Hensley, and others during the past few weeks. Sir Henry Burdett has now published in the *Hospital* the memorandum from the staff, which we had in view when writing last February. It was laid before the Mansion House Committee practically in full,

and the general public now has a still clearer view of matters. The memorandum condemned limitation of the site to its existing dimensions if the same number of beds was to be kept up. What, however, should now be known is what the staff thinks at the present moment of whatever plans the governors may now have in view. It is necessary to put things in this vague fashion, for no one at present appears to know what the present plan really is. We have been informed by Mr. Cross, the clerk of the hospital, that the only thing at present settled is to build an out-patient department at the spot shown upon the plan which we published last week. Nevertheless those who were present at the meeting of governors a fortnight ago came away with the undoubted impression that the whole plan had been accepted in principle, and it is difficult to read the report of the meeting which was issued to the press in any other sense. This view, moreover, is confirmed by the fact that the building of the new theatres was in the concluding resolution coupled with that of the out-patient department as the first work to be taken in hand. That a new out-patient department is urgently needed is undoubtedly true, but to build four operating rooms on the top of the north block would seem definitely to commit the hospital to the retention of the existing square for the present, and will probably eventually lead to a waste of public money if, as may be safely anticipated, the block has subsequently to be pulled down to accord with a different general plan. As was pointed out in our earlier article these central blocks if retained cannot be transformed into ward-blocks really in accord with modern views. In the same article we expressed the view that the staff ought to take the public into its confidence. It is generally understood that it is practically due to the constant efforts of the staff that any forward movement has been made at all, and we believe that they would now be well advised to take steps to induce the governing body to prepare in outline a really satisfactory scheme. The public is entitled, after all that has passed, to be informed authoritatively how matters stand at the present moment. Circumstances have somewhat altered since the idea of a public appeal was first mooted, and it may be that the governors now have in their mind some idea of stating at the meeting that if they can get the money they are prepared to go further than they have at present indicated. Such a declaration, however, would merely be another compromise, and for compromises of any sort the money-giving public has no liking. A bold scheme with elements of finality about it would be just as likely to result in a collection of £600,000 as a weak one in half that sum.

GUY'S HOSPITAL.

THE authorities have issued a fully illustrated description of the hospital, by which they hope "to make better known the peculiar virtue and charm, the vastness and importance of the work, and the present grave wants of the hospital founded by Thomas Guy in his lifetime." They add, "Perchance it may discover a Thomas Guy of the twentieth century."[1] The growth of the hospital in every direction, especially during the last fifty years, is well described in some fifty pages; and the illustrations of the component parts of the building and of scenes therein, will appeal with peculiar force to Guy's men. It is sad to note that this old institution, which for 160 years after its foundation in 1724 ministered to the wants of the public without asking or receiving help, has, in consequence of the agricultural depression, been in financial difficulties during the last twenty years. At first, certain wards were closed, and attempts were made, by the practice of severe economy, to make both ends meet. Then came a time of appeals for sustentation and renovation funds; and the munificence of several rich persons and the generosity of the public have enabled the governors to open all the wards. But this consummation necessitates an annual outlay of £60,000, and leaves a deficiency of £14,000, as the ordinary income from all sources does not exceed £46,000 a year. The treasurer and governors consequently appeal for further public support to meet the pressing needs of the institution.

[1] *Guy's Hospital: 1725–1903. A Tribute to Its Founder, and a Record of Its Work.* London: A. and C. Black, Limited. 2s. 6d. net.

THE LATE SIR J. BLUNDELL MAPLE.

THE late Sir J. Blundell Maple was probably best known to the world in connexion with the great business of which he was chief and as a very popular owner and breeder of racehorses. But his noble benefaction to University College Hospital probably constitutes his most enduring claim upon the recollection of posterity. Sir Blundell Maple and his father and brother before him always took interest in the hospital, the buildings of which were very close to those of their own firm. They were large contributors to its funds and it was at a hospital dinner at the Langham Hotel over which the King, then Prince of Wales, presided, some thirty years ago, that Sir Blundell Maple first suggested the hospital boxes which the firm afterwards made and distributed amongst their business connexions in the neighbourhood of Tottenham Court Road. The boxes were known as "Maple's boxes" and are said to have been the first of those collecting boxes which are now so common in connexion with many charities. Later on after the death of two of his daughters from diphtheria in 1893 he caused a small hospital for infections diseases known as The Sisters Hospital to be erected near his residence at St. Albans. It was almost by a happy accident that Sir Blundell Maple was led to undertake the great and almost unexampled work which it is good to know he lived to see fully accomplished. In 1896 upon a visit to the Royal Academy his attention was attracted by an architectural sketch exhibited by Mr. A. Waterhouse. It was a plan of a hospital in the form of a Maltese cross which this architect desired to see adopted if the authorities of University College ever saw their way to rebuilding the hospital. After seeing the sketch Sir Blundell Maple got into communication with the architect, and having ascertained approximately what it would cost, wrote to the hospital authorities offering to turn the whole plan into actual bricks and mortar entirely at his own expense. This offer, it is needless to say, was gladly accepted, and when the foundation-stone was eventually laid by the Prince of Wales, His Royal Highness aptly drew attention to the fact that for an act of corresponding generosity and magnitude it was practically necessary to go back as far as the time of Thomas Guy. In order to carry out the architect's plan and obtain a site which was a complete square it was necessary to buy all the houses on the east side of Hunter Street at the back of the old hospital. These occupied about half the site of the present building. It was originally believed that the new hospital would not cost more than £100,000, but, owing to the introduction of systems of ventilation not at first anticipated to be necessary and other causes, the sum spent up to date is about £130,000. Although the greater part of the hospital is now fully at work, some parts of the north-east wing yet remain to be be completed, and a sum of another £20,000 is still required to round things off. It is understood, however, that the executors have power to pay this or any other sum which may be necessary. One marked point in Sir Blundell Maple's character was that he would devote no time to matters which he was not certain he could thoroughly master for himself, and he restricted his co-operation in the work of the hospital to putting his purse freely at its disposal.

WAGE-EARNING CHILDREN.

THE recent circular of the Local Government Board on wage-earning children (Employment of Children Act, 1903) contains a statement of "the chief provisions of the measure, with suggestions as to the form of by-laws to secure the effective protection of juvenile workers." It will be remembered that evidence given before the Inter-departmental Committee on the Employment of School Children in 1901 brought to light the fact

that at least 200,000 children were being employed for profit at industries not under Home Office inspection while at the same time attending school full time. Probably some 50,000 of these children were being worked more than 20 hours a week, in addition to their 27½ hours at school; a considerable proportion were employed for 30, 40, and in some cases for 50 hours a week, with, in many instances, detrimental effect upon their health, morals, and education, besides depriving them of reasonable recreation. To remedy these evils the Commission made a series of recommendations to the Home Secretary, the majority of which have been embodied in the Employment of Children Act, which will come into operation on January 1st, 1904. It will enable local authorities to regulate every form of juvenile labour, street trading, domestic and shop work, home industries, and agricultural employment. The general restrictions, which will operate in every locality, provide that no child may be employed after 9 at night or before 6 in the morning, unless the hours are varied by by-law by the local authority. No child under 11 may be employed in street trading, and no child must be employed in any occupation likely to cause injury to its health or mental capacity. The police will be empowered by the local authority to take action in case of infringement of these provisions. It is to be hoped that local authorities will use their powers to the uttermost to prevent street trading by girls, which has been proved by so many witnesses to have a disastrous effect on character, and it is desirable that no person under 16 should be allowed to engage in street trading after 8 p.m. No system which does not note the nature of the employment of each individual child can be wholly effective; it therefore appears that the licensing of all children employed for wages is necessary as a check to contravention of by-laws. It will be within the power of local authorities to prohibit children between 11 and 14, when advisable, from employment in theatres and music halls, or with touring theatrical companies. Before the age of 10 no child may be so employed. Some of the worst cases of hardship have been those of children employed for no wages by their own parents for forty or fifty hours weekly, in industries carried on within their homes. Unfortunately, these are exempted from Home Office inspection, but an officer of the local authority may now obtain an order from a justice of the peace to visit any place at which there is reason to believe a child is employed. It will doubtless be found necessary to register all such places where children are thus employed. The parent is liable to be fined and a child under 14 or a boy or girl who contravenes the law is liable to a fine of twenty shillings for the first offence, or, in the case of the second, may be sent to an industrial school. The street trader over 14 may be fined £5 for the same offence, while a parent making false representations as to the age of his child, in order to enable it to be employed, is liable to a fine of 40s. In England and Wales the local authorities to administer the Act are the councils of municipal boroughs with a population of over 10,000, the councils of urban districts where the population is over 20,000, and elsewhere the county councils. Special stress is laid upon the undesirability of employing children in certain occupations, such as in public-houses, in small laundries, and in the lowest class of barbers' shops. It is also stated that the employment of children should never exceed twenty hours weekly, of which not more than eight hours should be on Saturdays, while local authorities are urged to instruct teachers and attendance officers to bring to the notice of the authority any cases in which the physical or mental well-being of the child is being endangered by excessive strain. If necessary, inspectors should be appointed. A return should be obtained from every school in the district, giving particulars of all children employed for wages. The authority will then be enabled to deal with all employments by licence, or only to restrict those which are undesirable. With each boy and girl duly licensed, and the name, address, school, occupation, and hours of labour noted in the books of the local authority, any infringement of the Act could be discovered without difficulty.

THE LIVERPOOL EXPEDITION TO THE CONGO.

The work of the expedition, which by request the Liverpool School of Tropical Medicine has sent out to the Congo Free State, is already well under way, and the first report received from Drs. Dutton and Todd gives reason to suppose that the results will be interesting. The Governor-General sent on board Dr. Heiberg, a recent student at the Liverpool School of Tropical Medicine, to welcome the members of the expedition on their arrival, and at his first personal interview with Drs. Dutton and Todd asked them to carry on their work upon their own lines. They therefore resolved to devote the earlier part of their time to inspecting and reporting upon the sanitation of the larger stations of Boma Matadi and Leopoldville from the point of view of mosquito prophylaxis. Later on they propose to proceed to any locality which seems specially suitable for research work. On October 6th, the date of their letter, they had already examined 51 cases of various types in the native hospitals. In the finger blood of 5 of these patients they had found trypanosomes; 2 of these were cases of sleeping sickness, the others were not. They had also performed two necropsies upon cases of sleeping sickness, and amongst other points had noted changes in the lymphatic glands which were specially interesting because they very closely resembled the lesions observed in animals experimentally inoculated with the Gambian trypanosomes. So far as their inquiries had gone at the date of their letter they were led to believe that it was in certain districts of the Free State that sleeping sickness was specially prevalent. In the district of Wathen, for instance, 4,000 people died from this cause last year according to the statement of a Baptist missionary. Near Bundundu, again, at the confluence of the Kwango and Kassai rivers, a Government official informed them that actual depopulation of the country was feared. In other districts isolation camps had been established by Government orders, and cases of sleeping sickness were interned therein under the care of soldiers. This evidence of approximate circumscription of the disease to definite localities may well be compared with the observations made in the account published last week of the work done on the opposite side of Africa. They had also heard that the natives—in some places at least—had acquired a lively dread of contagion. It was said that they refused to touch the effects of any one who had died from sleeping sickness, or to eat with him while alive; more than one village had been mentioned to them which had been deserted by the inhabitants on the appearance of the complaint. It is the intention of the expedition, as soon as it has completed its general sanitary work in the larger towns, to move into some thickly-populated district in which sleeping sickness has long been endemic, and in which it has since become epidemic, and therein conduct a special research.

THE PREVENTION OF TRACHOMA IN SCHOOL CHILDREN.

Public attention in the United States has recently been directed to the spread of trachoma among children. An interesting account of the energetic measures taken in New York has been given by Frances W. Carruth in the last number of the *North American Review*. Trachoma at first seems to have attacked only the alien population in seafaring quarters; and when a few years ago the United States Government ordered that imigrants suffering from it should not be allowed to land, it was supposed that it would soon be stamped out. But all the while the disease was rampant though unsuspected, for trachoma is, as is well known, extremely contagious: it is asssociated with dirty conditions, flies can convey it, and in the early stages the diagnosis is not always easy. It is therefore not surprising that it developed with terrible rapidity among children in the poorer quarters of New York. The Board of Health had to face the possibility of nearly 600,000 children attending the schools getting a disease which, if neglected, might eventually end in blindness. Face it they did, with true American energy and

courage, and just before the schools were closed for the summer holidays Dr. Ernst Lederle, Health Commissioner, ordered that sixteen ophthalmic surgeons should examine the eyes of the children attending. Six thousand cases of trachoma were thus at once found in twenty-six schools, chiefly among Italian and Yiddish boys. Negro children alone were exempt. The city authority was ordered to control persons affected by it, and, as soon as the schools reopened, medical inspectors, oculists, teachers, and trained nurses watched the children in the schools, while parents and "little mothers" saw that the children attended the hospitals, where some hundreds a day were treated. The Gouverneur Hospital was secured by the Board of Health, and was opened under Dr. Herbert Wootton for school children suffering from trachoma. Here 14,000 out of the 17,000 discovered in 1902 were treated, and 3,500 were cured. This was in the Lower East side, and another hospital was opened in the Upper East side. All inspectors—160 in number—have been carefully taught to recognize the disease. Once a week the medical inspector visits classrooms, when every child is examined. Those suffering from trachoma are called out, and told that they have inflamed eyelids, and must see an oculist, and an order is given to be taken to their parents. No child is readmitted to school unless upon examination after treatment he is found to be free from contagion. The success of the campaign is due in great measure to a card system, by which from day to day the condition of the eyes of every registered pupil is known to all those interested. Many parents and children add to the difficulties. The children like the excuse of a holiday, and the parents are too accustomed to see sore eyes to be alarmed, and take the opportunity of keeping the children at home to work; so that nurses and "little mothers" have to see that orders are carried out, and point out the dangers of blindness to those who ignorantly neglect the treatment provided.

THE DEATH SENTENCE.

AT the recent Chester assizes Mr. Justice Bruce passed sentence of death on a girl of 21 for the murder of her illegitimate child. The prisoner had been strongly recommended to mercy by the jury on account of her youth. In passing sentence the learned judge was only fulfilling his statutory duty. He must have known at the time that the sentence would never be carried out, and any one acquainted with his lordship can easily realize how painful it must have been for him to inflict unnecessary suffering on the unfortunate girl. An occurrence of this kind strongly supports the plea of Sir Fitzjames Stephen that in a proper case the judge should have the power of mitigating the sentence for murder. This change is urged with special reference to cases of infanticide, where the distress of mind and fear caused by childbirth is often responsible for the crime. It appears that no one has been executed for such an offence for about sixty years, yet in every case the judge has been compelled to pronounce the extreme penalty of the law; the severity of the ceremony is only modified in some slight degree by the non-assumption of the black cap. So much is left to the discretion of the Bench that it would be no very violent measure of reform to allow the judge to postpone judgement until the following assizes. In the meantime all the facts might be laid before the Home Secretary, whose fiat might issue to prevent the prisoner having to undergo a trying and unnecessary ordeal. The fact that the judge had a discretion of this kind would not in any degree mitigate the consequences of the crime to one who was properly convicted of murder.

THE NATIVES OF RHODESIA.

A RECENT issue of the *Revue Générale des Sciences* contains an interesting article on the natives of Rhodesia, by Dr. A. Loir, who, during a visit of several months to equip an antirabies laboratory at Bulawayo, was invited by the Rhodesian Government to study certain questions bearing upon the health of the natives. These races have remained in their primitive state of civilization, and are therefore very interesting as a study. The population of Southern Africa consists of Bushmen, Hottentots, and Kaffirs. The Bushmen are a race of pigmies. They are called "bushmen" because they never come into towns. These men only measure 1.4 metre (about 4 ft. 7 in.), but the head and members are in perfect proportion. They have yellow skin, spread noses, and negro hair. Their habits take one back to the Stone Age, and they submit to no civilization, living in holes in rocks, in caverns, hollow trunks of trees, or in abandoned huts. They do not work, and live on uncooked game, fruits, and roots. Their language is limited, and they are incapable of counting four, everything above three being defined as "much." They worship their ancestors, they are polygamists, and although they do not recognize a general chief, each father has unlimited power over his family. Yet these primitive people show artistic tendencies; they paint hunting and fishing scenes on wood or stones, with wonderful blending of colours which they compose themselves, and their drawing is in very good perspective. The Hottentots resemble the Bushmen, but are a bigger people. Many of these have become Europeanized, but those of pure Hottentot blood have thick lips and crisp hair, the cranium being very small. They live in kraals made of branches of trees bound together by clay; each kraal obeys its chief, while there is a supreme chief over the whole encampment. They have a belief in a Supreme Being and worship the shades of their ancestors, and they are polygamists. Those in towns often become Protestants, but civilization develops in them a taste for alcoholic drinks. The Bantu Kaffirs are by far the best race in South Africa. Shrewd and intelligent, they are of the true negro types with flat noses, thick lips, and high cheekbones, though in the higher grades aquiline noses are sometimes seen. This is no doubt due to the fact that the chiefs frequently buy wives from the caravans coming from the north. Of the three tribes of Bantus, those from the interior are most amenable to civilization; the mountainous tribes are wild and timid while those from the sea-coast are physically the finest—born warriors, quick and intelligent. The Bantus live in kraals; their pottery kitchen utensils are kept spotlessly clean, and in one of the largest pottery vessels their war kit is carefully kept. Some tribes eat white ants, which infest the country. The women are the housekeepers, excelling in the brewing of beer made from maize-flour and water. This is allowed to stand uncovered, and fermentation appears to be started by the insects which drown themselves in it; malt is added, and after three days the beer is ready to drink. The Kaffirs are iron forgers and work in copper, do tailoring, hairdressing, and basket-work. They possess "doctors" well versed in simples, and fortune-tellers are in great request, while manufacturers of arms, turned out with the most primitive implements, are held in high consideration. Though the Kaffirs use iron and copper from the mines in their country, the gold industry has never been touched by them. Their kraals are often situated upon the sites occupied by Phoenician temples and fortresses built to guard underground treasures, but no attempt has been made by the Kaffirs to get at the treasure said to be contained in the earth. Various implements formerly used in gold refining have been found hidden away in caverns, proving that the ground has been unexplored since the country was abandoned by the ancients.

MENTAL AND MORAL EFFECTS OF THE SOUTH AFRICAN WAR.

AT the last meeting of the Medico-Psychological Association Dr. R. S. Stewart, Deputy Medical Superintendent of Glamorgan County Asylum, read a paper on "The Mental and Moral Effects of the South African War, 1899-1902, on the British People." He argued that there was evidence to show that the war produced a profound though temporary modification in national character and conduct. During the first three months of the war—the period associated with the siege of Kimberley, Mafeking, and Ladysmith, and with the disasters sustained by the British at Nicholson's Nek, Stormberg, Magersfontein, Colenso, and Spion Kop—the feelings engendered at home were in-

tensely painful, though a note of determination gradually made itself felt later on. The second period was characterized by a gradual equalizing of the forces and a comparative absence of losses, coupled with some degree of ascendency of the British arms. The emotions roused in the nation by the events of this period included those of intense joy, carried to the verge of abandonment, and a greater disposition to impose and exact terms of subjugation upon the enemy, whose conquest was regarded only as a matter of time. This period ended with the arrival of Lord Roberts from the seat of war. During the first of these two periods there was, Dr. Stewart said, a steady and marked diminution of crime (serious or indictable offences) most pronounced in December. This referred to England and Wales, for in Scotland, "judging by the number of apprehensions and citations in connexion with all forms of serious crime, the tendency was in an opposite direction." The result in Ireland was somewhat similar to that in England. As regards offences against property, Dr. Stewart stated that "in England and Ireland, but not in Scotland, facts point to an elevation of the moral sense of *meum* and *tuum* . . . offences against property diminished in England." The lunacy population has increased with marked rapidity in the years 1901 and 1902. Homicidal crime also showed a marked diminution during the first period of the war. The year 1900, however, witnessed a steady weakening of the (good) influence exerted by the events of the preceding quarter, until in the closing months of 1900 crimes of murder showed a distinct increase above the corresponding months of previous years. The murders of newly-born children, a peculiarly female crime, showed in 1900 an increase of 6.1 per cent. "Combining homicidal, suicidal, and sexual offences under one heading as crimes of an impulsive or passional kind," says Dr. Stewart, the temporary decrease of these in the winter of 1889 was followed by their increase to a normal level in 1900, and in December, 1900, there was an increase of 12.5 per cent., and in the following year the increase was 9 per cent. During the first period of the war, concludes Dr. Stewart, there was an improvement of the nation's *morale*, but this slowly vanished by the end of a year, and there was a return to something even worse than previously-prevailing conditions, a reaction that is likely to produce still more grave results.

OUR NEGLECT OF FRUIT.

The Worshipful Company of Fruiterers, anxious to assist small cultivators in improving their methods of dealing with garden produce, offered some time ago a gold medal and twenty-five guineas for the best essay on Gathering, Packing, and Profitably Disposing of Home-grown Fruit and Vegetables. Some 125 essays were received in competition and the prize was awarded to that by Mr. Castle, who has had the advantage of a practical experience in cultivation and sale of garden produce extending over many years. His essay has now been published, and is well worthy of study.[1] He is of opinion that it will be possible for many thousands of cottagers and cultivators of small holdings greatly to improve their present condition in rural districts by "the most thorough cultivation, a closely studied economy of production, a practical utilization of waste material, and an unfailing industry." These are essential to advancement, and with them astonishing results have been obtained. Mr. Castle writes: "Any advance must be of a gradual character, because every man should prove his ability in a small plot before proceeding to a larger occupation. It is, however, a great help where landowners recognize this, and provide the means for advance in the shape of small holdings with cottages attached. No greater encouragement can be given to a strenuous worker than to be conscious that by his own efforts it is possible to raise himself to a higher level, and to leave his family at a better starting point. This desire for advancement is much more widely spread than formerly, and extended education is steadily increasing it, while the obstacles encountered in some districts are largely responsible for the rural discontent that leads to depopulation of counties." The essay deals separately with cottage, allotment, and market gardeners. It touches upon fruit growing for sale, vegetable growing for the market, gathering, preparing, and selecting fruit and vegetables for sale, as well as preserving and drying them, while special instructions are given for making cheap boxes, baskets, and bags for packing. Any labourer, Mr. Castle assures us, can make these at home during the long winter evenings or very wet days, and thus effect a considerable saving. Mr. Castle points out that each kind of fruit must be picked and manipulated in a different manner, and his hints will prove most valuable to many who at present ignore the simplest methods of fruit gathering and packing in Great Britain. Continental and American and Colonial fruit growers are far ahead of us in this respect, and fruit often arrives in better preservation from these distant lands than that picked only a few hours in this country. It is a very noticeable fact that in every European country but England, fruit is seen in abundance at each meal, and is eaten too. In the home, at restaurants and hotels, in dining cars of trains, on steamers, tempting dishes of fruit appear at the most simple as well as the most sumptuous banquets: every foreigner takes his couple of apples and perhaps an orange, or maybe a pear or a peach. But in England at middle-class tables fruit is seldom seen. If oranges be excepted, the lower classes buy very little fruit except in the height of summer, when it is hawked on barrows at very low prices. At first-class restaurants and good hotels the prices charged for fruit fit to eat are generally prohibitive. This is all the more regrettable, as fruit is agreeable and nutritious, and infinitely more wholesome than many of the things eaten in lieu of it. Some interesting experiments have recently been made by Professor Jaffa, of the California University and the United States Department of Agriculture, in order to determine the value of fruits and nuts as a diet. Fruits are rich in sugars and other carbohydrates, while nuts contain fat and proteid. In one of Professor Jaffa's experiments a student passed from ordinary fare to a diet of fruits and nuts without any loss of health and strength. An objection to a diet of this kind has been that though nuts contain fat and proteids, they are, from their structure, difficult of digestion; but Professor Jaffa brings forward evidence to show that nuts are thoroughly digested, and he contends that to use fruits and nuts as, so to say, medicine, or merely as dessert after a large meal is a mistake. He maintains also that such diet is not more expensive than the ordinary meals, and calculates that from 18 to 46 cents a head would be the average sum expended. Mr. Castle's admirable essay, if read attentively, must be instrumental in improving our British fruit trade. But much graver issues are concerned than the fruit trade—the depopulation of the rural districts. If he succeeds in instilling into that class of agriculturist for whom his advice is intended an interest deep enough to keep him from seeking town life, those having at heart the welfare of their country will owe him a debt of gratitude.

[1] *Packing and Selling Fruit and Vegetables for Cottagers and Small Holders of Land.* By R. Lewis Castle, F.R.H.S. (London: W. H. and L. Collingridge. 1s.)

THE RESTRICTION COVENANT.

The effective sale and purchase of a medical practice often depends upon the validity of the restricting covenant, which generally takes the form of an undertaking by the vendor not to practise within a certain radius. Inasmuch as a covenant of this kind involves a restraint of trade, it is not viewed with any marked degree of favour by the courts, and in some cases it may be declared to be too wide, and therefore void as against the practitioner who undertook to be bound by it. In a recent case heard by the Court of Appeal it was argued that, if the case has been brought before a judge and jury, the question whether the covenant is or is not too wide for the protection of the party interested is for the jury to decide. The Court of Appeal, however, has declared that it is for the judge to say whether the covenant is reasonable or not. In the course of the argument a few cases were referred to in which

medical practitioners figured as plaintiff and defendant. In one case it was decided that a covenant not to practise as a surgeon-dentist within 200 miles of York was unreasonable and bad. The judge there laid down that "the restraint must be such only as to afford a fair protection to the interests of the party in favour of whom it is given, and not so large as to interfere with the interests of the public." This rule is sufficiently elastic to allow any judge who is called upon to interpret a restrictive covenant to have regard not only to the nature of the practice sought to be protected, but to the area covered by the practice. In former days a limit of a few miles might have been sufficient; now, however, by means of the bicycle and the motor car it is possible for the practitioner to embrace a much wider area in his daily rounds. In the case under notice, it is declared that the function of defining that area in accordance with the evidence before him is left to the judge. Were it left to the jury in each case to say what is reasonable, there could be no unanimity of principle for the guidance of lawyers who are called upon from time to time to draw up these agreements.

IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.

THE autumn dinner of the Irish Medical Schools' and Graduates' Association was held on November 25th at the Trocadero with the President, Dr. P. S. Abraham, in the chair. After the loyal toasts had been received with more than the usual Irish fervour and enthusiasm, Sir John William Moore, the new representative of the Royal College of Physicians of Ireland on the General Medical Council, proposed the toast of "Our Defenders." He observed that Ireland possessed some of the most important roadsteads in the empire, and the detailed list he gave of these was the occasion for much cheering. His proud assurance that Irishmen had borne a full share in the establishment of the world-wide British empire evoked loud applause, as did also the claim that Ireland was the very heart of the empire. He thought that the refusal to permit the enrolment of volunteers in Ireland was a reflection on that country unworthy of British statesmanship. Fleet Surgeon Edward B. Townsend, responding for the navy, remarked that wherever the naval medical men went in the colonies, in Australia, in Canada, and in America they were always received by the medical profession as brothers, and always had extended to them the greatest hospitality and courtesy. He admitted that the naval service was not perfect, but there were hopes that it would become perfect in the future. Surgeon-Major Moyle O'Connor, second in command of the Royal Army Medical Corps Militia, also replied to this toast, and told the audience that that force was now being raised to 2,000 men. He pointed out that more officers would be required, and urged that his branch of the service should be permanently employed in home billets, because in that way the Royal Army Medical Corps officers would be available for service abroad in their full strength. That, he considered, was the only means by which officers could be encouraged to join the Militia. Dr. William Douglas proposed "Our Guests," in the course of which he referred to the BRITISH MEDICAL JOURNAL as the organ of the greatest medical association the world had ever seen. The toast was notified on the programme to be responded to by "Colonel" Whitaker, and, after a short interval, "Colonel" Whitaker rose to address the company in the person of Mr. Whitaker, the Organizing Secretary of the British Medical Association. He observed that the toast would no doubt have been better answered by a military gentleman with herculean frame instead of by the most slender and civil of civilians. He explained that it was his duty to visit many parts of the United Kingdom, and he found many Irish graduates who were not by any means all Poor-law dispensary doctors. The British Medical Association recognized its duty to the Irish Poor-law dispensary doctors in their fight against tyranny, and it had been decided that the Association should afford them every assistance. Mr. Swinford Edwards also replied to the toast, and was followed by Professor William Graham, of Dublin, who proposed the toast of "The Association." In responding to this the President said that the Association had done good work in England by raising the position of Irish medical men throughout the country. It had helped to show that the attempt to exclude Irish diplomates from public appointments in England was a failure, and now happily little of that prejudice prevailed. As usual in these Irish festivities many songs of a national character were interspersed in the programme.

THE SALARIES OF IRISH DISPENSARY MEDICAL OFFICERS.

THE Ballinasloe Guardians have sent out a circular inviting delegates from the various unions and the Irish Medical Association to meet in the Mansion House, Dublin, on Thursday, December 10th, to discuss the question of dispensary medical officers' salaries. They have also asked the Local Government Board to send a representative. The meeting is desirable so far as it may lead to the better informing of the guardians on the subject, and to the smoothing away of opposition which is largely based upon ignorance of facts. But we think that the medical profession would be badly advised to modify its position in any way. We are able to state that the question has occupied the attention of the Irish Government for some time, and that even now a scheme of reform is under consideration. That of course means, as we know, considerable delay, and we recommend the medical officers to hold out against any inducement to accept things as they are, and await things as they are to be in the hope that they will be better. It is persistent agitation which has at last forced some consideration from the authorities, and promises, however attractive they may look, are not always fulfilled. All this is, however, a note of encouragement.

THE PROFESSOR OF SURGERY IN CAMBRIDGE.

A COMPLIMENTARY dinner was given last week at the University Arms Hotel, Cambridge, to Mr. Howard Marsh, on his appointment as Professor of Surgery at Cambridge University, by old students of St. Bartholomew's Hospital residing in Cambridge and the vicinity. Dr. P. W. Latham, of Cambridge, occupied the chair, and those present included Sir W. Church, Bart., M.D.; Mr. A. Willett; Dr. A. Hill, Master of Downing College; Dr. D. MacAlister, Dr. L. Humphry, Dr. Lloyd Jones, Dr. H. K. Anderson of Great Shelford; Mr. T. W. Burn, Dr. Malden, Dr. Giles of Caxton, Dr. Bindloss of Swavesey, Dr. Michell, Dr. Skelding of Bedford, and Mr. F. E. Apthorpe Webb. After the usual loyal toasts, the Chairman in well chosen words proposed the health of "Our Guest." Alluding to the brilliant career of Professor Marsh, he said that the appointment was an honour no less to the hospital than to Mr. Marsh. He thought it very gratifying that among the colleagues and pupils of Mr. Marsh who had met to do him honour, they had the presence of the Presidents of the Royal College of Physicians and the Royal Medical and Chirurgical Society, together with the Master of Downing College. Mr. Marsh, on rising to reply, was accorded a very hearty reception. He expressed his gratitude to those present for the compliment they had paid him, and said that he would endeavour to keep up the traditions both of his school and the University. Dr. Hill then proposed "Success to our School." It was gratifying to all that the connexion between St. Bartholomew's and Cambridge University still continued. Sir W. Church, in responding, said that it afforded him great pleasure to be present to show the regard and esteem in which Mr. Marsh was held by all Bartholomew's men. Mr. Willett also replied, and alluded to the changes which had taken place with regard to the work of the hospital during Mr. Marsh's connexion with the school. Dr. Bindloss proposed "The Chairman," and Dr. Latham, in reply, reminded those present that when the late Sir G. Humphry was a candidate for the post of House-Surgeon to Addenbrooke's Hospital, two other Bartholomew's men also applied—Luther Holden and Holmes

Coote, both of whom afterwards became Surgeons to St. Bartholomew's. A vote of thanks to the Honorary Secretary terminated a successful and enjoyable evening.

PHYSICAL DETERIORATION COMMITTEE.

The Committee appointed by the Lord President of the Privy Council last September to make a preliminary inquiry into statements as to the physical deterioration of certain classes of the population of the United Kingdom and as to the need for a more extended inquiry met last week, when the consideration of evidence as to the existing state of facts bearing upon the subject of the inquiry, and of the course which the investigation should follow in relation to the witnesses to be called was discussed. The Secretary is Mr. E. H. Pooley, Privy Council Office, Whitehall, to whom communications may be addressed.

Revised rules and regulations for the entry of candidates for commissions in the Royal Navy bearing date October 31st, 1903, have just been issued, and can be obtained by intending candidates on application to the Director-General, Medical Department, Admiralty, 18, Victoria Street, S.W.

Scotland.

Small-pox in Glasgow.

The efforts of the Medical Officer of Health and the Sanitary Department have not been successful in arresting the present outbreak of small-pox in Glasgow. The disease was discovered some weeks ago in a model lodging-house, and the earlier cases were all referred to one or other of such places: but the outbreak has latterly been assuming epidemic proportions, cases being admitted to the Fever Hospital from many parts of the city, though mainly from the east-end. Moreover, there has been some spread to the surroundings of the city, four cases having turned up in Govan, while cases have occurred in neighbouring towns like Paisley and even in Belfast, which has close business relations with Glasgow. During the past week some 30 fresh cases were admitted to Belvidere Fever Hospital, while there were 9 patients dismissed well, and 3 deaths occurred. In all 7 patients have now succumbed during the present epidemic. On November 22nd there remained 56 patients under treatment. In a recent report Dr. Chalmers states that "close observation is being continued of the condition as to vaccination presented by each patient admitted, and in none of them is there evidence of recent successful performance of that operation." He again impresses upon the community generally the necessity of those who are imperfectly protected taking means to avail themselves of the protection of vaccination.

Glasgow Samaritan Hospital for Women.

Of the hospital projects in Glasgow that are at present seeking money for their fulfilment, the most fortunate from the financial point of view would seem to be that of the Samaritan Hospital for Women. This hospital is situated on the south side of the city, and is devoted to the free medical and surgical treatment of the diseases peculiar to women. From small beginnings in 1886 it has grown to its present proportions, having now thirty beds for indoor cases, and a large outdoor department in a separate building. The work has grown so much that an increase of fifty-three beds is aimed at, in addition to a nursing home, and a very successful bazaar has just been concluded by which the necessary funds for this addition and for a considerable endowment have been raised: close upon £25,000 has been realized in this way. A very energetic ladies' committee has had the matter in hand for many months, and have gone about their work with such enthusiasm that to them this success is largely due. It is several years since there has been a hospital bazaar in the city, and the interest of a large and influential section of the public was aroused. The Committee were also fortunate in receiving the patronage of Royalty, and in securing the services of the Princess Henry of Battenberg for the opening proceedings. The Princess showed a very practical interest in the object of her visit to the city, and not only joined in the work of the bazaar, but visited the Samaritan Hospital itself. Amongst other visits which Her Royal Highness paid in the city was one to the old Royal Infirmary, when the proposed reconstruction was explained to her, a work which will ultimately be to some extent a memorial of the long reign of the late Queen.

Ireland.

Presentation and Dinner to Professor D. J. Cunningham, F.R.S.

On November 21st, the former pupils and colleagues of Professor Cunningham in the Medical School of Trinity College, Dublin, entertained him at dinner in the Shelbourne Hotel, and presented him with a magnificent loving cup of old Irish pattern. The chair was occupied by the recently appointed Professor of Anatomy, Dr. A. F. Dixon, and there was a considerable attendance, amongst whom were: Right Hon. J. Hogg, Judge Boyd, Sir C. Ball, Sir William Thomson, C.B., Sir Howard Grubb, F.R.S., Sir Christopher Nixon, Professor W. H. Thompson, Professor O'Sullivan, Dr. J. M. Purser, Mr. H. R. Swanzy, Mr. Jameson Johnston, Dr. W. Haughton, Mr. E. Gwynne, F.T.C.D., Professor Mettem, Mr. A. W. W. Baker, Dr. W. Watson, Dr. W. de C. Wheeler, Dr. Percy Kirkpatrick, Dr. Moorhead, Dr. Stoney, etc. The toast of the evening was proposed by Sir Charles Ball, and supported by Professor Thompson. The beautiful cup was then presented and utilized, and Professor Cunningham made an excellent speech in acknowledgement. The toast of the Universities of Edinburgh and Dublin was proposed by Sir Christopher Nixon, and responded to by Professor Mettem and Mr. E. Gwynne. Several part songs and solos were sung by Dr. Haughton, Mr. A. W. W. Baker, Mr. Rogers, and Mr. Cantrell.

Appointments at Dublin Hospitals.

Dr. T. Gilman Moorhead, M.D.Univ.Dub., and Assistant Physician to Sir Patrick Dun's Hospital, has been appointed Physician to the Royal City of Dublin Hospital, in succession to the late Sir George Duffey; and Mr. R. A. Stoney has been appointed Surgeon to the same institution to fill the vacancy caused by the death of the late Mr. H. G. Croly. Mr. H. Pringle, M.D.Univ.Dub., F.R.C.S.I., has been appointed Surgeon to Mercer's Hospital, in succession to Mr. Henry Croly, resigned.

The Irish Poor-Law Reform Inquiry.

At a recent sitting of the Viceregal Commission on Poor-Law Reform in Ireland, Dr. Thompson, M.P., attended and gave some important evidence. The verbal report of his evidence was striking as in delivering his opinions he did not mince matters but called things by what he considered their proper names. The greater part of the views which he expressed is contained in a paper by him which is published in another part of the British Medical Journal this week (p. 1410) and the following summary contains such parts of the rest of his evidence as are of general application.

He urged that arrangements should be made by which old people could if they desired end their married lives together even though paupers and desired to see all accommodation for the sick poor removed to buildings at as great a distance as possible from workhouses.

He suggested that the fever hospitals—many of which were much too large for their express purpose—should be converted into workhouse infirmaries, and that a system of ambulances for transport should be introduced to meet the increased distances caused by the abolition which he advocated of many existing workhouse sick wards and infirmaries. He desired to see all district hospitals removed from the control of guardians, and placed in charge of an asylum and hospital committee nominated by the county council. These hospitals should be up-to-date in every particular, especially from the surgical point of view. In default of this under present circumstances the poor had no practical alternative between going to a far distant city hospital or stopping at home and dying. While under the direct charge of county councils these district hospitals should be subjected to the control of a central authority at Dublin, and be constantly inspected. In smaller places, where there were no medical men specially devoted to surgery, major operations should be transferred or the hospital visited for the purposes of operation by the surgeon of the chief county hospital. The small district hospitals should be officered by nurses from the large county hospitals, as the poor of each county were better nursed by their own fellow-countrywomen. He did not see why the State in Ireland should not support

such hospital just as much as asylums, for people in Ireland were not rich enough to support hospitals as they did in England. Patients who could pay should be expected to do so, and he did not think it impossible to secure this. There was only one way to make medical attendance on the poor efficient, and that was to make the Irish Poor-law service an imperial one like the army or navy. Under present circumstances religious and political views counted for more than scientific knowledge or personal character in securing appointments. Such a service he considered would offer a real career to a man and secure the best medical material in Ireland. Post-graduate study leave should be granted, and the men appointed as surgeons of the county hospital before appointment be obliged to supply proof of special expert experience. By such a system alone could the interests of the poor be secured, and though it might be a little more costly, nothing was so costly as inefficiency. It was a mistake to suppose that any student directly he was qualified was fit to hold any kind of appointment or undertake any and every kind of professional work. He required experience, and he should be further examined before admission into the Poor-law service. The arrangements made to secure good attendance for the poor of Ireland should be just as exacting as those made to secure good attendance on British soldiers and sailors.

Ulster Medical Society.

The annual dinner of the Ulster Medical Society was held in the Medical Institute, Belfast, on November 19th.

The chair was occupied by the President of the Society, Dr. John Campbell, on whose right sat the Rev. Dr. Hamilton, President of the Queen's College, and Dr. Thos. M'Laughlin, Derry, President of the Ulster Branch of the British Medical Association; on the left sat Sir William Whitla, ex-President of the Society, and Dr. Kidd, Enniskillen, President of the Irish Medical Association. Seventy-seven members sat down to dinner.

After dinner the President proposed the loyal toast of "The King," and subsequently "The Lord Lieutenant" and "Prosperity to Ireland," which was responded to by Dr. J. R. Davison, Belfast, in an eloquent speech.

Professor Lindsay proposed "The Irish Medical Association,' and advocated the reforms proposed by that Association with regard to the Poor-law service; he supported the idea that this service should come upon the Civil Service list, and be treated accordingly. Dr. Kidd, President of the Association, responded; there were, he said, now some 900 members and 33 Branches. Monaghan and Leitrim were still without Branches, but Leitrim had been joined to the Sligo Branch. The increasing strength of the Association was shown by the fact that the Council had for the first time exercised disciplinary powers by expelling a member for disregarding the obligations of membership. He drew attention to the fact that only one-fourth of medical officers' salaries came out of the poor-rates, owing to the contribution from the agricultural grant.

Dr. McLaughlin proposed "The Queen's College and the Belfast Medical School." He referred to many of the former lecturers and expressed every wish for future prosperity.

The President of the Queen's College, in replying, said that arts students had doubled in the last couple of years and that the medical students showed a substantial increase this year; the new students entering for medicine this year numbered 60 as compared with about 40 for last year.

The toast was also responded to by Dr. J. Walton Browne, who advocated closer clinical instruction, and by Professor Milroy.

Sir William Whitla proposed "The President of the Ulster Medical Society," and Dr. Campbell responded.

Mr. Cowan, C.E., Local Government Board Inspector, proposed "Our Poorer Brethren," and the annual dinner subscription to the Medical Benevolent Fund was taken up, amounting to £6 8s.

The following members kindly added to the enjoyment of the evening by songs or recitations: Drs. Mackenzie, McHarry, MacIlwaine, Leslie, McKisack, and Morrow. A special song on medical golfing, written by a member, was sung by Dr. McHarry and elicited great applause.

Medical and Dental Companies.

An important case, in which unfortunately the inability of the law to deal with companies under the Dentists Act was demonstrated (and the decision equally applies to the Medical Acts), was decided on October 30th. Proceedings had been taken against "Jaffe Surgeon Dentists, Limited," and also against S. Jaffe and M. L. Jaffe individually for wrongful assumption of title, they being unregistered, before Mr. Hickson, R.M., at Limerick, and also for the use of the title or description "London and New York Dental Institute," thereby implying that they were specially qualified to practise dentistry. The court below had dismissed the summons, and an appeal was heard in the King's Bench Division before the Lord Chief Justice of Ireland, Mr. Justice Gibson, and Mr. Justice Madden. The appeal was dismissed with costs, and judgement given that a person in the Act meant a natural person exclusively, and could not be extended to embrace a company. The Act did not provide for the registration of a company or corporation, and a person who could not be registered could not be prosecuted. One of the concurring judges remarked that the state of things complained of did not exist when the Act was passed. This decision emphasizes the necessity for legislation. In some sense it is nothing new, as it was anticipated that such would be the result of any attempt to bring a company to book. But now the decision of a Court of Appeal has definitely laid it down that an action for the assumption of title by unauthorized persons will not hold, whether directed against the company or against the individuals, this latter point having been previously in somewhat more doubt than the former.

Irish Workhouse Association.

A conference of delegates representing the South Leinster section of the Irish Workhouse Association was held in Kilkenny under the presidency of Mr. J. Walsh, Chairman of the County Council. Several subjects were discussed, amongst these being: The abolition of workhouses, Poor-law children, the tramp nuisance, and treatment of pauper idiots. Dr. J. B. Hackett dealt with this subject, and urged that workhouses were not proper homes for these poor creatures; they should be separately treated. Lord Monteagle, President of the Association, gave an address on workhouse hospitals. He spoke as follows:

> He wished to raise the question whether it was the best, or even the most economical, arrangement to attach the nursing of the sick poor to the workhouse, and, if not, what alternatives were possible. Hospital treatment, including nursing, had now come to be recognized as an essential element of civilized life, not only for paupers, but for the ratepayers, and a strong feeling had arisen that such treatment should be absolutely free from pauperism, and that the hospital should be dissociated from the workhouse. The practical means of effecting this change were not clear. If the workhouses were amalgamated, and the hospitals attached at present to each workhouse left, very little of that saving would be realized which the ratepayers had been led to expect from the reduction of establishment charges. But if the hospitals attached to each workhouse were also closed great hardship might be inflicted on the poor. Nothing would completely remove the stigma of pauperism from the hospitals short of absolute severance of the hospital and nursing arrangements, not only from the workhouse, but from the Poor-Law side of Local Government administration, and their transference from the district to the county council. To carry out that suggestion he would concentrate the serious cases in one or more county hospitals—the existing county infirmaries constituting the bulk of such hospitals, and make their cost a county charge. He would treat the less serious cases in cottage hospitals, one for each dispensary district, and under the care of the dispensary doctor. Half the cost of them should be on the county council, that body to be represented on the local committee of management, which should also include a proportion of ladies. Then he would include the district midwife system, so as to include all cases that could properly be treated in their own homes. Paying wards should be established in all these institutions, and the same principle applied to the district nurses, so as to bring the benefits of that system within the reach of all ratepayers. He did not contemplate including the aged and infirm, with whom the existing workhouse hospitals were largely filled, and who should be dealt with, as now, under the Poor Law, though, of course, with better classification. Epidemics could be dealt with better and more cheaply by temporary movable hospitals on the spot, instead of the present stationary hospitals, which were sometimes empty, sometimes insufficient for the demand, and almost always in the wrong place. These were his own personal views on the matter, and he put them forward with all reserve as to their practical feasibility.

Diphtheria in Enniskillen.

At the meeting of the Enniskillen Board of Guardians, held on November 17th, the medical officer, Dr. John Wilson, reported that twelve new cases of diphtheria had been admitted during the previous fortnight, and as the hospital was old, the accommodation was severely taxed. He referred the guardians to his repeated reports regarding disinfection and expressed the view that the disease would not be stamped out under existing conditions. There was no accommodation for extra nurses. When visiting the hospital at night he had to take a lamp with him.

GENERAL COUNCIL
OF
MEDICAL EDUCATION AND REGISTRATION.

The autumn session of the General Medical Council commenced on Tuesday, November 24th, 1903, the President, Sir William Turner, K.C.B., in the Chair.

PRESIDENT'S ADDRESS.

The Representative of the Royal College of Physicians of Ireland.

Gentlemen,—During the autumn recess I received from Dr. Lombe Atthill intimation that, owing to the increasing weight of years, he had decided to resign his seat on the General Medical Council. In doing so, he expressed his thanks to us all for the invariable kindness and consideration which he had received at our hands, and the pleasure which he had derived from the friendships that he had formed. The Council will, I am sure, reciprocate the kindly sentiments which Dr. Atthill has expressed, and will join me in wishing him ease and tranquillity of mind in his retirement from the active life of our profession.

The Royal College of Physicians of Ireland, whose faithful and efficient representative Dr. Atthill has been since 1889, have appointed as his successor Sir John William Moore, M.D., whose presence at our Council table we welcome to-day.

The late Sir George Duffey

I also received during the recess from Sir George Duffey a letter of resignation of his office as Inspector of the Final Qualifying Examinations of the Licensing Authorities, the duties of which he had discharged with conspicuous ability and judgement during six years. Not many days afterwards intimation of his death reached me. The Council will, I have no doubt, authorize me to express, on their behalf, sympathy with Lady Duffey and her children on the bereavement which they have sustained.

Inspection of Examinations.

I may remind the Council that the inspection of the final examinations of the Scottish Universities, which in the customary course should have been undertaken during this year, was, owing to Sir George Duffey's illness, deferred until 1904. In order that this duty may be discharged at the respective periods of examination it will be necessary either to appoint an Inspector before the Council separates, or perhaps preferably to authorize the Executive Committee to do so at their meeting in February.

In connexion with the series of inspections I should state that the Report on the Inspection of the Final Examination of the Apothecaries' Society of London held in January last, at which Dr. Bruce was associated as Visitor with our Inspector, has been completed by Dr. Bruce with the aid of the memoranda prepared by Sir George Duffey.

I have also to intimate that Dr. W. P. Herringham, who has acted for three years as the Council's Inspector specially appointed to report on the examinations held at the Apothecaries' Hall, Dublin, has resigned his office. The Council will no doubt wish to recognize that his duties have been discharged with judgement and discretion. In view of the character of recent Reports and the improvements which have been effected in the Examinations, the Council may perhaps think it no longer to be required that each Examination should continue to be inspected, and as the Council has power under the Act to prescribe the duties to be discharged by the Assistant Examiners appointed by the Council, that a visitation and Report from time to time by a special Inspector may be all that is now necessary.

I have received a communication from the Secretary of the Dublin Apothecaries' Society, in which the request is made that they should be relieved of the burden entailed by the travelling expenses of the Assistant Examiners in Surgery appointed by the General Medical Council. As the presence of these Examiners is necessary in order to enable the Dublin Apothecaries to conduct a qualifying examination for the diploma, and as the statute requires that such remuneration as the General Medical Council determines is to be paid by the medical corporation at whose examinations they take part, it seems clear that the Apothecaries' Hall should continue to bear the charges attendant on the presence of the examiners.

Since my address was in print the Society of Apothecaries of Dublin have intimated their intention to resume, on January 1st, 1904, their Preliminary Examination in Arts, to be conducted by qualified University non-medical graduates. I have remitted this communication to the Education Committee for report.

Liverpool and Victoria Universities.

It will be in the recollection of the Council that, at our meeting in May, the question of a probable division of the Victoria University into two or more separate Universities, was a subject of discussion. On July 9th His Majesty the King, on the advice of His Privy Council, approved of the grant of a Charter incorporating a University in Liverpool, and on August 14th an Act of Parliament was passed which came into operation on October 1st. By this Act the University College, Liverpool, ceased to be a College of the Victoria University, and all its rights and privileges were transferred to, and vested in, the University of Liverpool, which was empowered to hold Qualifying Examinations in Medicine, Surgery, and Midwifery for the purpose of registration under the Medical Acts, as if the University had been a University in the United Kingdom legally qualified at the passing of the Medical Act, 1886, to grant Diplomas in Medicine and Surgery. Further, the Council of the University of Liverpool became entitled to choose one Representative to be a member of the General Medical Council, and Section VII of the Medical Act, 1886, is to be read and have effect as if the University of Liverpool had been expressly included therein. No intimation of the election of a representative has yet been received from the University.

Also on July 9th the King, by the advice of His Privy Council, approved of a charter which ordained that the Victoria University shall hereafter be called and known as the Victoria University of Manchester, under which name and style it shall remain and continue one body politic and corporate with perpetual succession and a Common Seal, and free from liability to admit or remain in association with any college other than the Owens College and the Yorkshire College. The appointment of Mr. Young, the present representative of the Victoria University, I am advised, remains unaffected by the change which has taken place in the original Charter of incorporation, and he will continue as the representative of the University until resignation, or the expiration of the term for which he was originally appointed.

No Charter has yet been granted to establish a University in Yorkshire, although it is not unlikely that one may be granted in the immediate future.

The Royal Colleges in England.

At the July meeting of the Council (Minutes, July 16th, 1903) I was requested to forward to the Royal Colleges of Physicians and Surgeons in London the reports of the Council's Education and Examination Committees, together with the Council's resolutions thereupon, to call the attention of the Colleges to the unsatisfactory condition of the courses of study and examination in chemistry, physics, and biology disclosed in these reports, and to urge that in the interests of medical education immediate steps should be taken to remedy the defects referred to. I was further authorized to appoint a committee to join with me in conferring with representatives of the Royal Colleges, should it appear that a conference on the questions raised was desired. Accordingly I communicated with the two Colleges, and was informed in due time that the Council of the Royal College of Surgeons had had under consideration my letter and the accompanying documents, and had appointed delegates to confer with delegates of the Royal College of Physicians respecting the proposed conference. In the early part of this month a special Committee consisting of the two groups of delegates met and considered the questions raised in my letter. This Committee has now reported to the Colleges, and it recommends that the General Medical Council be thanked for the expression of their opinions respecting the courses of study and the examinations in chemistry, physics, and biology, and that these opinions should receive the respectful attention of the two Royal Colleges. Further, the Committee recommends that the Royal Colleges should express regret that they are unable to accept the invitation of the President of the General Medical Council to appoint representatives to meet the Committee of the Council in regard to the question of medical education and examination in chemistry, physics and biology which has been raised in the Reports of the Council's Education and Examination Committees. An official communica-

tion has now been received from each of the two Colleges reporting the adoption of the recommendations of the committee of delegates as the reply of the Colleges to my communication.

Reciprocity with Canada.

In my address from the Chair in May last I referred to the question of reciprocity between the United Kingdom and Canada in regard to the registration of their respective medical qualifications, and I made a suggestion which, in the event of one of the Provincial Legislatures declining to avail itself of the Canadian Medical Act, 1902, would, if adopted, enable the other Provinces to establish reciprocal relations with the United Kingdom under Part II of the Medical Act, 1886. The Provincial Medical Board of Nova Scotia have sent me a resolution passed at the annual meeting in which they endorsed that suggestion. As requested by the Council I communicated with both the Privy Council and the Colonial Office to ascertain if the suggestion was likely to be favourably regarded by the Government of the Dominion of Canada, or by the medical authorities who have supported the Canada Medical Act, 1902. In reply, I have been informed that the Canada Medical Act was introduced and carried through the Dominion Parliament by a private member, no legislation having been initiated by the Government of Canada, and that the Canadian Ministers are not aware if an amendment of the Act is in contemplation during the present session.

Friendly Societies and the Disciplinary Bill.

A communication has been received from the Secretary of the Friendly Societies' Medical Alliance on one of the clauses in the Penal and Disciplinary Bill, promoted by the Council, which has during several sessions been before Parliament, but has never reached a second reading. I shall take the opportunity during the session of asking the Council's attention *in camerâ* to this communication.

Pharmacy Bill.

In accordance with the request of the Council (Minutes, May 23rd, 1903) I asked the attention of the Lord President of the Privy Council to a Pharmacy Bill then before Parliament, in which the rights of the medical profession as safeguarded by existing Pharmacy Acts appeared to be encroached upon. In reply I am assured that the Council of the Pharmaceutical Society has no intention of interfering with medical practice, and that it has prepared a clause for insertion in a future Bill to ensure that it shall not interfere with or abrogate any of the rights reserved in the Pharmacy Acts, 1858 and 1869. A communication to the same effect has been received directly from the Secretary to the Pharmaceutical Society.

Proposed Leaving-School Examinations in England.

A letter has been addressed to us by the Consultative Committee of the Board of Education with regard to the institution of a general system of leaving examinations for secondary schools in England, which could be accepted in lieu of the preliminary examinations now required for admission to the various professional bodies. The Council is invited to send one or two representatives to a conference with the Consultative Committee to be held on Friday, December 4th. Those of us who live in Scotland are familiar with the beneficial effect which the introduction some years ago of a national system of leaving examinations and certificates has had in raising the standard of education in the secondary schools in that division of the United Kingdom. It is very satisfactory to hear that it is proposed to introduce into England a similar system, and it must be gratifying to this Council to be asked to take a part in so important a conference. It is to be hoped that the conclusions arrived at and the subsequent action of the Board of Education thereupon will result in the establishment in England of a system of leaving examinations which, so far as this Council is concerned, will simplify the much-discussed question of the preliminary education of students of medicine. For in questions which do not directly fall within its own competency the Council cannot stand outside a well-considered national scheme of education and examination intended to qualify for admission to the various professions.

Reports of Committees.

The Examination Committee will have under consideration the Reports by the Council's Inspectors on the examinations in chemistry, physics, and biology conducted by the Conjoint Boards in Scotland and in Ireland. As Professors Windle and Campbell Brown have now completed the inspection of the first Professional Examinations of the licensing corporations, I thought it might be useful if the Council had at the conclusion of their labours a general statement and review of the opinions which these gentlemen had been led to form of the character and standard of this examination as conducted by the three Conjoint Boards and by the Society of Apothecaries of London. They have kindly acceded to my request to draw up a general Report, and in summarizing the opinions which they had formed they have made certain practical suggestions which deserve the consideration of the Council and of the licensing authorities. Their joint Report was circulated amongst members of Council some weeks ago. The Examination Committee will also have to report on the Visitation of the Final Examination of the Conjoint Board in England, the Apothecaries' Society of London, the completed Visitation of the Conjoint Board in Ireland, and the July Examination of the Apothecaries' Hall, Dublin.

The Education Committee will, I understand, also report on questions which have been entrusted to them.

Finance.

The Council having adopted at our meeting in May a Memorandum which I then submitted to it on our financial position and on the inadequacy of our income, I have communicated the Memorandum officially to the Lord President of the Privy Council and have requested that consideration would be given to the subject, with a view to the financial difficulties being removed, either in the manner suggested in the Memorandum or in some other way. I have reason to know that the question is now being carefully considered.

Unqualified Practice.

A communication has been received from the Home Secretary enclosing copy of a letter which he had received from the Coroner of the Pickering Division of the North Riding of Yorkshire with regard to inquests in cases where the deceased has been attended by a person who is not a registered medical practitioner. The attention of the Council has on various occasions been called by coroners and other official persons to this matter, and it has been made the subject of repeated representations by us to the various Government authorities, but up to this time no remedial legislation has been provided. Subject to the approval of the Council, I propose to make a further representation to the Local Government Board on this question.

Sale of Poisons by Unqualified Assistants.

A number of registered medical practitioners in Glasgow have presented to the Lord President of the Privy Council a petition respecting the action of the Pharmaceutical Society of Great Britain and of the General Medical Council with reference to the sale of scheduled poisons by unqualified assistants. This petition has been transmitted by the Lord President for our information.

Disciplinary Cases.

Several cases of discipline will be submitted by the Penal Cases and Dental Committees for your careful consideration.

Conclusion.

Although the volume of business before us is considerable, I hope that we may be able to complete our work at the beginning of next week.

NOTES.

The Apothecaries Hall of Dublin is off upon a new, or rather upon the revival of an old, venture, for they announce their intention of instituting a preliminary examination in Arts of their own. They also suggest that they should be let off the cost of travelling expenses, etc., of the assistant examiners in surgery appointed by the General Medical Council, a request which does not seem likely to be granted. But the President threw out the suggestion that it might now be sufficient to inspect these examinations occasionally instead of as heretofore, constantly. It is a little difficult to see why a body which gets such a very small number of candidates for its diploma should think it worth while to start an Arts examination of its own, unless indeed this be the beginning of a partial revolt against the Council and its requirements. We shall be curious to see if they follow the lead of the English Royal Colleges and dispense with students' registration.

The Attitude of the Canadian Government towards the Canada Medical Act and the reciprocity question does not

seem to have been much elucidated by the replies of the Privy Council and the Colonial Office to the President's inquiries. The official replies amount in effect to no more than this—that the Act was brought in by a private member, and therefore they know nothing about it and cannot tell if any amendment rendering it operative in those provinces which have adopted it is contemplated.

The English Royal Colleges, it was announced, had appointed a joint committee to consider the proposition made to them that they should meet and confer with representatives of the Council on the subject of the unsatisfactory reports upon the education and examinations in chemistry, physics, and biology. The reply is courteously worded, and promises that the observations of the Council will meet with respectful consideration, but the proposal to appoint representatives to meet and confer with representatives of the Council is firmly declined. Thus the hoped-for reconciliation of the divergent views is at an end, and it remains to be seen what step the Council will take next. But we cannot help feeling that in rejecting the proposition of a conference the Colleges have shown a spirit not altogether to be commended, for it is tantamount to a declaration that they intend to go their own way absolutely.

The subject of Preliminary Examinations came up in a new form. The Consultative Committee of the Board of Education invited the Council to send two representatives to a conference to consider a scheme for the institution of "leaving examinations" at secondary schools, which, it is thought, might take the place of the preliminary examinations accepted for entrance upon various forms of professional study. The President eulogized the influence exerted in Scotland by these leaving examinations, and Sir John Tuke and Dr. MacAlister were appointed to represent the Council at the proposed conference.

The Certification of Deaths by Unqualified Persons was the subject of a communication addressed to the President by the Home Secretary. The attitude of the Home Office towards this question has sometimes, as our readers may recollect, been by no means such as we could desire. We trust that we may interpret any communication from this source as an indication that the importance of reform in this direction is becoming apparent to the authorities of that department. The President proposed to make this an opportunity for a further representation to the Local Government Board urging the importance of greater stringency in this respect.

The Friendly Societies' Medical Alliance has addressed to the Council a communication to which the President made a somewhat cryptic allusion. The Alliance would appear to threaten opposition to one of the clauses in the Disciplinary Bill promoted by the Council, a Bill which has several times got as far as a first reading in Parliament, but never any farther. It is difficult to see what the Friendly Societies have to do with this Bill, and we prefer not to speculate as to their motives.

The Resignation of Dr. Lombe Atthill, whose place upon the Council has been filled by the appointment of Sir John Moore, well known to our members as one of the Council of our Association, and the resignation and subsequent death of Sir George Duffey, who had long and most efficiently acted as the Council's Inspector of Examinations, formed the theme of a few words of graceful comment from the chair.

The whole of Wednesday's sitting was occupied by the adjourned hearing of a charge against a medical practitioner of attempted improper relations with female patients when attending them professionally. The Council resolved that the facts alleged had not been proved to its satisfaction.

BRITISH MEDICAL BENEVOLENT FUND.

The following is a further list of donations received in response to Sir William Broadbent's appeal:—

	£	s.	d.		£	s.	d.
Mr. J. B. Rudduck	5	5	0	Dr. R. Petch	1	1	0
Mr. Jas. Taylor, J.P. ...	5	0	0	"In Memoriam"	1	1	0
Dr. W. Travers	2	2	0	"Anonymous"	1	1	0
Dr. E. Deanesly	1	1	0	Mrs. A. Gray	1	0	0

The Treasurer (Dr. Samuel West, 15, Wimpole Street, W.) desires to call attention to the offer made by Dr. Satchell of a donation of £10 on condition that a further sum of £80 were raised in £5 or £10 special donations before the end of the year. This condition is, as yet, far from having been fulfilled.

THE ETIOLOGY, PATHOLOGY, AND SYMPTOMS OF SLEEPING SICKNESS.

The second fasciculus of the reports of the Sleeping Sickness Commission of the Royal Society consists, as we stated last week, of three papers and an appendix, received at intervals from December 5th, 1902, to August 4th, 1903.

Sleeping Sickness and Filaria Perstans in East Equatorial Africa.

The first paper is by Dr. Cuthbert Christy, and relates to the distribution of sleeping sickness and filaria perstans in East Equatorial Africa. This is also the subject of the appendix by Mr. G. C. Low. Dr. Christy finds that sleeping sickness centres round Lake Victoria Nyanza and its waters, and is very seldom found more than ten to fifteen miles from its shores. In the Island of Buvuma, for instance, fully two-thirds of the population had died off at the time of his visit, and at least half of the remainder were suffering from the disease. In Usoga and Eastern Uganda the disease appears to date from about 1900, and seems, if the native accounts are to be trusted, to be spreading steadily eastwards. The distribution of filaria perstans does not at all correspond to that of the disease; this point is illustrated by two excellent maps. There is also no evidence that the filaria, like the sickness, is of recent introduction; the areas which do coincide with that of the filaria are those of the cultivation of the banana and of the wearing of clothes. The people who grow bananas and do not go about naked are liable to be infected with the filaria, but the incidence of sleeping sickness is not affected by these circumstances. Dr. Low entirely confirms Dr. Christy's conclusions; he shows that there are areas where sleeping sickness exists and from which filaria perstans is absent; that, moreover, there are areas, such as, for instance, the whole of British Guiana, in which filaria perstans is very common, and yet there is no sleeping sickness; and, finally, that there are areas where both are found, the parasite existing in the blood both of the healthy and the sick. The presence of the two together is therefore shown to be but a coincidence.

Morphology of the Trypanosome.

The second paper, which was received on July 21st, 1903, is by Dr. Castellani, and treats of the adult and developmental forms of the trypanosome found in sleeping sickness; it is illustrated by two coloured plates. Dr. Castellani commences by referring to the previous publication,[1] in which he stated that he had found, in 20 out of 34 sleeping sickness patients, a trypanosome which he considered to be the cause of the disease. The adult parasite has the ordinary general outline of the species, the protoplasm being somewhat alveolar in structure, though not so markedly as in trypanosome brucei, as described by Plimmer and Bradford. The organism can be seen occasionally to be engulfed by leucocytes; in other cases it appears suddenly to stop moving and to vanish without coming into contact with a white corpuscle. It moves always with the blunted (so-called posterior) extremity to the front, in which respect it differs from all other trypanosomes hitherto described. In preparations of the blood, which are kept from drying, the parasite retains its vitality for from four to six hours; in the cerebro-spinal fluid it remains alive outside the body for as long as 18 to 20 hours. The temperature of the room does not appear to have much effect upon its extracorporeal vitality. For staining the parasite, Dr. Castellani recommends Leishman's modification of the Romanowsky method; this stains the micronucleus and flagellum red, the protoplasm blue, while the undulant membrane remains almost unstained.

The nucleus is generally large and of variable shape. It is as a rule situated in the posterior half of the parasite.

The micro-nucleus (Plimmer and Bradford), or centrosoma (Laveran and Mesnil), does not show apparently any structure. It stains red, but of a much more vivid colour than the nucleus. It is situated very near the posterior end of the parasite, and generally outside the vacuole.

The vacuole is oval and of rather large dimensions. It is situated anterior to the micronucleus.

The flagellum takes origin apparently from the micronucleus, then, following the external edge of the undulating membrane, reaches the anterior extremity, where it becomes free. The free portion of the flagellum is usually longer than in other trypanosomes.

The protoplasm does not stain evenly and not very deeply; it does show some chromatic granules.

The total length of the parasite is from 16 to 24 μ. The width is from 2 to 2.5 μ.

[1] British Medical Journal, October 17th, p. 1008.

Atypical adult forms are also seen both in the blood and the cerebro-spinal fluid; they are thickened and almost sausage-shaped, with a much more rounded posterior end. The protoplasm stains less well, and there may be several points round the nucleus where the chromatin collects; Dr. Castellani believes that these forms are assumed when the organism is about to divide. The actual division, he states, probably begins from the micronucleus, and extends longitudinally. Of the types of developmental forms, at least two were found. The first was a small circular or oval body, with very fine flagella; these have been previously described by Rabinovitch and Kempner in trypanosoma lewisii, and are believed to be developmental forms. The second group consists of amoeboid forms, such as were discovered by Plimmer and Bradford in trypanosoma brucei; these Dr. Castellani has only seen in the cerebro-spinal fluid of sleeping-sickness patients. Sometimes a number of these forms aggregate together to form a sort of plasmodium; Dr. Castellani has not yet succeeded in finding the trypanosome of sleeping sickness in the organs or tissues.

Clinical Study of Sleeping Sickness.

The third paper is the joint work of Mr. Low and Dr. Castellani, and treats of the clinical aspects of sleeping sickness.

Etiology.—After some preliminary remarks on the history and geographical distribution of the disease, the authors proceed to discuss its etiology.

Passing over the older theories, they mention first that of Portuguese observers recently revived by Ziemann, which regards sleeping sickness as due to a food intoxication comparable to pellagra, the peccant article of diet being manioc. Against this theory is the fact that sleeping sickness has only appeared in Uganda during the last three years and that there has been no concomitant change in diet. Another view has been that the disease is due to certain of the larger animal parasites. Manson's suggestion that it might be caused by filaria perstans is negatived by the geographical researches which have already been quoted. Forbes considers that the embryo of *rhabdonema strongyloides* might cause the disease by penetrating the mucous membrane of the intestines, reaching the general circulation, and being retained in the cerebral vessels. Ferguson, on the other hand, attributes the disease to ankylostoma duodenale; this is certainly often present in sleeping sickness, but when it is cleared out of the intestine the improvement which results is most transient. Various bacteria have also from time to time been accused of causing the affection; with regard to these the most important researches were those of Marchoux upon Fraenkel's diplococcus, of the Portuguese Commission, which claimed to have discovered a specific streptodiplococcus, and of Dr. Broden, who attributed the disease to a slightly motile bacillus which was not agglutinated by the blood of the patients.

In non-complicated cases Castellani has found frequently a streptococcus. Out of 39 cases he has grown streptococci from the blood of the heart in 32, and from the liquid of the lateral ventricles in 30. The germ does not seem to be present frequently in the organs. He has found it a few times in microscopical sections of the brain and spleen. During life he found the germ very rarely, and only in the last stages of the disease. From the blood taken from a vein he grew it once only, although he examined bacteriologically the blood of 37 patients, repeating the investigation several times, and with different methods. He examined the cerebro-spinal fluid obtained by lumbar puncture in 28 patients; in 5 he had positive results, but only a few hours before death, with the exception of one case, in which he found the streptococcus several days before death. In 6 bacteriological examinations of the urine he grew the germ once; this was in the same case in which it was found in the blood. In 3 patients he punctured the spleen during life; the bacteriological examination of the spleen juice obtained in this way always gave negative results. The bacteriological examinations of enlarged lymphatic glands, removed during life, was negative.

Finally, from November, 1902 onwards, Castellani began to observe the presence of a trypanosome first in the cerebro-spinal fluid, and afterwards in the blood of patients suffering from sleeping sickness.

With regard to predisposing causes the authors state that the disease has so far been observed in negroes only; sex and age have no influence; but disorders of circulation, mental depression, bad and insufficient food, and the presence of intestinal and blood parasites may act as important predispondence.

Symptoms and Clinical Features.—The symptoms of sleeping sickness begin insidiously; it has not yet been possible to determine the incubation period, though the authors have reason to suppose that this is of shorter duration than is generally supposed. The average length of the illness is four to eight months; much more acute cases than these are not infrequent, but very chronic cases running a course longer than a year are rare. The first thing noticed by the patient's friends is usually some slight change in his mental attitude; this is followed by a disinclination to work, and a tendency to sit about and rest more than usual. At this time headache and other transient pains may be complained of, especially pains in the upper part of the chest. The aspect becomes dull, heavy, and apathetic; there is slowness in answering questions, and speech is often mumbling, slow, and thick; the gait is shuffling, and a characteristic fine tremor has by this time very often appeared in the tongue, and may also be noticeable in the hands. Glandular enlargements, which are very common among all natives, may be prominent or very slight; there is an evening rise of temperature to 101° or 102° F., with a morning fall sometimes of as much as 4 degrees; the pulse is of very low tension and accelerated, varying from 90 to 130. When a patient in this condition is taken into the hospital he at first improves, and remains slightly better for a few days; he soon, however, relapses again, stays in bed more, becomes more drowsy and lethargic, has greater difficulty in walking, and eventually takes entirely to his bed. Fine tremors are now usually marked, especially in the tongue and arms; the skin may become rough, but eruptions are not common. Emaciation and general weakness become pronounced; the knee-jerks, at first exaggerated, diminish, the motions are passed involuntarily in bed, and saliva often dribbles from the mouth. Drowsiness, which has gradually been increasing, now passes on to coma, from which the patient can only be roused with difficulty; the temperature falls to subnormal. In rare cases convulsive fits appear and the patient dies in a complete state of coma. Three clinical stages may thus be distinguished. The first stage is represented by somewhat indefinite symptoms, vague pains, feelings of indisposition and sometimes a slight degree of drowsiness; fever is always present (an important point). The second may be designated "the stage of tremor;" the former symptoms increase and tremors and other nervous manifestations appear. The third stage is characterized by intense weakness; the patients now become bedridden, they lose control of the sphincters, progressive coma appears, the temperature falls to subnormal, and the patient dies.

Temperature, Pulse and Respiration.—The typical temperature with its evening exacerbation and morning fall to or below normal, usually continues for three to four weeks; it then becomes distinctly irregular, perhaps almost keeping normal, with the exception of a slight evening rise now and then. One or two weeks before death the temperature becomes subnormal and remains so during the whole day; this is a warning that the end is near. The rise of temperature is unaccompanied by subjective symptoms, by rigors, or by sweating; a pyrexia of 103° F. does not prevent the patient from getting about. In very acute cases the temperature may be virtually subnormal throughout. Intercurrent diseases, especially malaria, are liable to alter the temperature chart. The study of the pulse in the early stages of the disease is of great importance; it is always accelerated and of very low tension; but these phenomena bear no definite relation to the temperature. When the terminal subnormal temperature appears the pulse usually becomes infrequent. There are no subjective cardiac symptoms, nor is the disease complicated by valvular affections or endocarditis. The respirations are also increased in number, being usually between 20 and 30 per minute. In the last stages of the disease Cheyne-Stokes breathing is common. In the early stages nothing abnormal is to be detected by physical examination of the lungs; towards the end hypostatic congestion, oedema, and pneumonia may appear.

Digestive System.—There is little affection of the alimentary system, but constipation is a constant feature. The appetite often remains good up till the last. The tongue is flabby and covered with a dirty fur, and there is sometimes a slight degree of ulcerative stomatitis. The liver and especially the spleen are always enlarged, hard, and not tender; this is in all probability due to malaria.

Skin and Glands.—The skin affections described are not characteristic of the disease; the most common is a papulopustular form, which is frequently seen among healthy natives. In chronic cases, of course, the skin is liable to become rough and scaly and to lose its lustre. Enlarged glands are also constantly seen both in the healthy and diseased natives, and cannot be considered a special symptom of sleeping sickness.

Nervous System.—The nervous system is, of course, profoundly affected. The dull, apathetic, unemotional aspect is characteristic, though not constant; there is a slight loss of intelligence, but the memory is not impaired. There is a marked delay in answering questions, but speech itself is not conspicuously affected. True sleep is not really a symptom of the disease; there is great lethargy, indifference, and

drowsiness, but the slightest touch or noise will cause the patient to open his eyes at once. Maniacal attacks sometimes usher in the onset of the disease, and headache, chiefly occipital, indefinite pains in the chest, and sometimes in the ankles and knees, are not infrequently complained of. Generally the sensory functions are at first normal, though even early there may be some hyperaesthesia at the trigeminal points. Touching or moving the patient, especially in cases where rigidity of the neck muscles is marked, causes pain; no anaesthesia has been observed. Especially towards the end of the disease the muscles frequently become wasted and flabby, and in such cases the motor power, which was at first good, diminishes towards the end. There is sometimes a certain amount of inco-ordination, and in a few cases Romberg's symptom may be present. Tremor is very rarely absent; it is most constantly present as a fine tremor in the tongue, but a coarser movement having something of the intention character is frequently observed in the hands and arms, and now and then there was violent tremulousness of the legs; in the last stages rigidity is common in the muscles of the neck, together with flexor contractions at the knees and hips. Epileptiform fits, local or general, sometimes occur. The superficial reflexes are usually normal, the deep are increased at first and afterwards lost, the visceral are unaffected. The pupils are dilated, and sometimes show sluggish reactions, but sight and other special senses are normal. Nothing abnormal is detected in the urinary system except some weakness of the sphincter vesicae in the last stages of the disease.

Anaemia of varying amount is constant with a relative increase of the large uninuclear leucocytes. If cyanosis is present there may be an abnormal increase in the number of red blood corpuscles before death, but it is more common for this to fall to 2,000,000 or under.

Complications.—Malarial parasites and pigmented blood corpuscles indicating malarial complications are frequently met with. Among the principal complications are bedsores, different forms of laryngitis, bronchitis, oedema, basal congestion, and lobar or broncho-pneumonia.

Morbid Anatomy.—The pathological changes are as described by Mott of the nature of a chronic meningo-encephalitis and meningo-myelitis, the macroscopical appearances being very much slighter than the microscopical. Very few changes are to be seen in other organs, but various forms of parasites are invariably seen in the course of the alimentary tract. Enlarged glands are a general feature of all cases, but this is also seen in patients not suffering from sleeping sickness. The microscopic appearance as regards the nervous system is that of a uninuclear leucocytic infiltration on the meningeal surface of the brain, spreading down into the sulci and affecting in varying degrees the perivascular spaces around the blood vessels in the substance of the cerebrum, pons, medulla, and spinal cord. The leucocytic formula of the cerebro-spinal fluid both before and after death is also uninuclear. No constant micro-organisms were detected; all the cases showed chronic malarial changes in the liver and spleen.

Diagnosis.—The most important points in diagnosis are the early fever, tremor, and tachycardia. The only disease with which the authors consider that confusion might arise is general paralysis of the insane. The prognosis is grave, no case having been known to recover. Pills containing iron, arsenic, and quinine produced temporary improvement, as also did free clearing out of the bowels; alleviations for a few days also resulted from the use of the thermo-cautery, and from blistering the head and spine with iodine. All the patients, however, speedily relapsed, and though their lives could be prolonged by care, cleanliness, good feeding, and proper attention, the end was inevitable. A very complete and systematic clinical report on 17 cases concludes the paper.

Epidemiology and Etiology.

In the third fasciculus of the Reports of the Committee of the Royal Society, which has also just appeared, Dr. Christy completes his account of the epidemiology and etiology of sleeping sickness. He gives a brief summary of the history of the disease up to the time of its outbreak in Uganda at the beginning of 1901, when it was recognized by Drs. A. R. and J. H. Cook of the Church Missionary Society's Hospital at Mengo. He also describes his own route during the nine months which he spent in investigating the origin of the disease. The source of the outbreak remains uncertain, though it is not improbable that it may have been introduced by Soudanese or their followers, who were brought into Uganda and Busoga by the British East Africa Company during the years 1892 to 1895.

With regard to the geographical distribution Dr. Christy has somewhat modified his previous map; he finds that the disease has extended considerably further to the east and south-east than he at first believed. He now divides its area into two parts, a narrow strip not more than 10 miles wide, chiefly along the shores of the Victoria Nyanza, which he calls the infective area, because the disease appears to be contracted there; and a hinterland in which it is prevalent, but is apparently not contracted.

The disease is most prevalent amongst the inhabitants of low-lying shambas (banana and potato plantations), in places along the shores of the lake or in wooded districts not far from the water. The inhabitants of villages, particularly of those built upon the Soudanese plan, tend to be exempt. Dr. Christy now considers that the epidemic started in Busoga in 1896, and has thence spread both eastwards and westwards. He illustrates this by a map based upon extremely laborious investigations. The disease attacks chiefly the people of the poorer class, and especially the agriculturists; the chiefs and the better-class natives are not exempt, but suffer very much less.

With regard to the virulence of the epidemic, Dr. Christy found this to be greatest at the time of his visit in Kavirondo. Here the cases were more virulent as to symptoms and shorter in duration than in Busoga and Uganda, where it appeared to be on the decrease. He was not able to ascertain any definite facts as to race immunity.

With regard to mortality, Dr. Christy was able to discover two or three apparently well-authenticated cases, including that of a well-known chief, of patients who had recovered. His own belief is that such recovery is merely transient, and invariably followed by a fatal relapse.

THE PLAGUE.

Prevalence of the Disease.

India.

During the weeks ending October 15th, 22nd, and 29th, the deaths from plague in India numbered 16,204, 16,300, and 18,177. The mortality from plague is again rising steadily in India with the advent of the cold weather, and it would appear as though a repetition of the heavy mortality of 1902-3 was about to be repeated. In the city of Bombay itself the plague mortality is lessening, but in the Bombay Presidency the increase is considerable. The most marked of the local increases during the week ending October 29th were: Bombay Presidency, where 11,758 persons died of plague; Central Provinces, 1,522; Mysore State, 931; the Punjab, 593; North-West Provinces and Oudh, 569; Bengal, 219; Kashmir State, 33; Karachi, 12. Material decreases are reported during the same period from: Central India, where comparing the weeks ending October 22nd and 29th the number of deaths from plague were 1,273 and 1,585 respectively; and in Hyderabad State from 1,145 to 923. In the city of Cawnpore 238 deaths occurred during the week ending October 29th, and 107 in the Azamgarh District.

Cape Colony.

During the weeks ending October 17th, 24th, and 31st the plague report in Cape Colony was as follows:

Port Elizabeth.—Fresh cases were 0, 2, and 0; deaths, 0, 2, and 0; remaining in hospital, 1, 1 and 1.

Knysna.—One case of plague in hospital on October 31st.

No fresh cases of plague have occurred at Queenstown, East London, or in any other town in the Colony during the three weeks in question. Plague-infected rats continue to be found in Port Elizabeth, East London, Queenstown, and Knysna. At Capetown, of 748 rats examined none were found affected with plague.

Hong Kong.

Since a clean bill of health was issued from Hong Kong on October 27th only 1 case of plague and 1 death from the disease was reported up to November 14th.

Mauritius.

During the weeks ending November 5th, 12th, and 19th the fresh cases of plague in Mauritius numbered 72, 81, and 71 respectively, and the deaths from the disease 36, 48, and 32 respectively.

The dinner of the British Gynaecological Society, announced to take place this day, Friday, November 27th, has been unavoidably postponed.

Sleeping Sickness.—At the last meeting of the Zoological Society of London, the Duke of Bedford, K.G., President, in the chair, Mr. E. E. Austen exhibited and made remarks on specimens of *Glossina palpalis*, the species of tsetse fly which is concerned in the transmission of "sleeping sickness" in the Uganda Protectorate. He also exhibited, for the sake of comparison, specimens of four other species of tsetse flies, including *Glossina longipennis*, which occur in Somaliland, and may possibly prove destructive to the transport animals of the Somaliland Field Force.

PHYSICAL DEGENERATION.

[By our Commissioner.]

(Continued from p. 1341.)

II.—Conditions tending to Cause Degeneration.

Town Life and Overcrowding.

Among the many causes assigned as leading to the deterioration of national physique among the labouring classes, overcrowding is ranked as one of the principal. It has been brought about chiefly by the movement of the rural classes to towns. Year by year the steady stream of agriculturists flows towards manufacturing towns, so that whereas in 1851, out of a total population in England and Wales of 17,927,609 souls, 8,990,809 were urban, in the present day the urban population numbers 25,000,000 out of a total of 32,527,843.

Thus in fifty-two years 27 per cent. of the rural population have migrated to towns, so that the urban now constitutes 77 per cent. of the entire population. In Scotland much the same thing has happened, 75.3 per cent. of the population being urban.

The definition of overcrowding given in the Registrar-General's reports is an average number of more than two persons to a room. Another test of overcrowding is the density of population to the acre. The late Sir Benjamin Ward Richardson asserted that no city could really be healthy which contained more than 25 persons to the acre. Mr. Rowntree, in his valuable book, *Poverty: a Study of Town Life*, states that there are 349 persons per acre in Skeldergate, York.

According to the census of 1891, the Bethnal Green district of London had a population of 365 to the acre, and Glasgow had a percentage of 59.0 persons living more than two in a room. It is estimated that some 3,250,000 persons in the British Isles live in overcrowded dwellings, with an average of three persons in each room. Without embarking on a discussion of the data for the determination of the amount of cubic space necessary in dwelling houses per head, which would take us too far, we may meet our present purpose by quoting the estimate of Notter and Firth[1] of the amount of fresh air which should be supplied in health during repose:

For adult males	3,600 c. ft.	per head	per hour	=	102 c.cm.
For adult females ...	3,000	,,	,,	=	85 c.cm.
For children	2,000	,,	,,	=	57 c.cm.
For a mixed community	3,000	,,	,,	=	85 c.cm.

A change equal to three times per hour is generally all that can be borne under the conditions of warming in this country or that is practically attainable with natural ventilation, and if this be correct, from 1,000 to 1,200 c. ft. should be the minimum allowance for initial air space. . . . . The amount of cubic space thus assigned for healthy persons is far more than most people are able to have; in the crowded rooms of the artisan class, the average entire space would probably be more often 200 to 250 c. ft. per head than 1,000.

It would appear that in average rooms of ordinary size the cubic air space for two people is insufficient; yet as in most houses only half the rooms are bedrooms, during the night the actual number in each room probably exceeds four. Mr. Rowntree caused an examination to be made of 2,480 houses in York on the night of September 12th, 1900, between 11 p.m. and 2 a.m., with a view to seeing in what measure ventilation counteracted the evil effects of overcrowding. The following was the result of the investigation:

Character of Houses.	Number of Houses Examined.	Number with Open Windows.	Percentage with Open Windows.
Class 1 (highest) ...	486	48	10
Class 2 (middle) ...	704	37	5
Class 3 (poorest)...	1,290	39	3
Total... ...	2,480	124	5

It will be seen that in the lowest classes, with the smallest rooms and probably the dirtiest and most overcrowded conditions, the percentage with open windows is by far the smallest. As Mr. Rowntree justly remarks, this points to the great necessity of instruction regarding the value of fresh air among those living in the poorest districts.

Houses, back to back with no possibility of through ventilation, are a source of danger. Mr. Rowntree tells us that in York, where only 6.4 per cent. of the inhabitants are overcrowded, 20 per cent. of the houses have not separate closets, and among 228 houses there are only 33 closets. Four hundred and forty-two houses have between them 30 water taps, while 19 per cent. of the houses have no separate water supply. We read:

In some cases the tap which supplies the drinking water is fixed in the wall of the watercloset. Pantries and watercloscts are sometimes separated by a wall only one brick in thickness. Many of the ashpits are overflowing, and heaps of all kinds of rubbish are distributed promiscuously over the yard or court. . . . A number of slaughter-houses situated in the midst of the slum districts form another unsatisfactory feature. . . . They have dirty windows, broken panes are frequently stuffed with rags or pasted over with brown paper, and a general appearance of dilapidation and carelessness reveals the condition and character of the tenants.

This vivid picture of squalor and insanitation is unfortunately not peculiar to York, and we may take it as being typical of existing conditions in the slums of every large town in Great Britain, since crowded conditions have been produced or aggravated by the migration of the country population towards towns. The sanitary authorities are greatly to be blamed for allowing this filthy state of things to exist, and no amount of instruction of individuals in hygiene will impress the people when they see tins of decaying refuse allowed (with the knowledge of the sanitary inspectors) to stand for hours in the broiling sun, sowing the seeds of disease and fouling the small amount of air which enters the dwellings. Every dustbin should be cleared by 8 o'clock every morning, and the scavengers should sprinkle each one with disinfectant. Decaying rubbish attracts flies, and as a carrier of disease it is well known that the fly plays a considerable part.

Can anything be more gloomy and wretched-looking than our English system of laying out towns with rows of small, badly-built houses, separated only by narrow streets, devoid of trees, and perhaps miles from any open space or park? If full advantage were taken of the facilities now afforded by well-planned systems of railways and tramways, it should be easy to spread out this mass of humanity and give it, at any rate, breathing space. The curse of overcrowding alone will account for much of the physical and moral ill-health of the nation. The verdict of the Housing Commission some years ago was that

the general deterioration in the health of the people is a worse feature of overcrowding even than the encouragement by it of infectious disease. It has the effect of reducing their stamina, and thus producing consumption and diseases arising from general debility of the system, whereby life is shortened.

It is unfortunately a fact that overcrowding and poverty go hand in hand. In York 94 per cent. of the overcrowded families were found to be in either "primary" or "secondary" poverty.

The dire effects of overcrowding and poverty begin to affect the child before it is born, for the health of the mother must react on that of her child. Constantly living in vitiated air, probably working up to the last day before her confinement, or, if not, cooped up in an insanitary house with an alternative of going out and wandering about for exercise in narrow treeless streets, so closely lined with houses that the air there is not very much better than indoors, and the effect on the spirits depressing; insufficient, and possibly un-nourishing food, with nights of unrefreshing sleep—such are, under ordinary conditions, the life led by the workman's wife while she is bearing children. Before the children arrive, and after they are old enough to earn money to support themselves, or contribute some of their earnings, the parents are not pinched; but, as Mr. Rowntree points out, the time during which labouring couples are rearing children is just the time when they are poorest. A couple marry. They are comparatively comfortably off; children are born: they require food, clothes, education; then it is that the mothers suffer, just at the time when they themselves require extra food and comfort, in order that they should bear healthy infants and be robust enough to suckle them.

In this country it is now illegal for a mother to return to work within one month of her confinement; but, as Dr. George Reid has pointed out, "it is hardly likely that she will commence suckling her child if she intends to engage in work again after so short a period." He suggests that the time should be extended to three months, as he thinks it probable that

the mother in most cases would then suckle her child until she returned to work, and thus the most precarious period in the life of the child would be tided over, and the chances of subsequent survival would be considerably increased.

More than this, however, is desirable, although it is not so easily accomplished. Mothers who, at the end of the three-months' period, select to return to work should be required to show that satisfactory provision has been made for the care of their infants. Under existing

[1] *The Theory and Practice of Hygiene.*

circumstances, this, I think, can only be effected by the establishment of crèches by local authorities, and to allow of this an enabling (adoptive, if need be) Act should be passed. Such institutions might be made almost self-supporting, for a sufficient charge to cover all expenses would be made in the case of those parents whose joint earnings allowed of its payment.[2]

It can hardly be necessary to insist upon the reasons why it is harmful for mothers to leave home to work during the infancy and helpless period of childhood of their offspring. The chief is that mothers who would otherwise suckle their infants are prevented from doing so. Many are glad of the excuse, and those who are willing are prevented from doing so. In some parts of France mothers go home once a day to suckle their infants, and in Spain the law exacts that every employer allow an hour (which can be divided into two absences) to nursing mothers. The drawbacks to this plan are, first, that the women are probably tired and hurried, so that the milk may disagree; and, secondly, that it would probably be necessary to supplement the natural supply by artificial feeding.

It is noteworthy that those married women who have to go out to work very often have spendthrift unsteady husbands, who take advantage of the earnings of the wife to spend upon themselves in drink or gambling the money they ought to contribute to the support of the household. Most civilized countries have provisions forbidding women to work for a period after childbirth. In Belgium, Holland, Germany, and Austria the period is four weeks, and in Germany, it is extended to six weeks unless a medical certificate can be produced approving employment at the end of four weeks. In Spain the period is three weeks. In Denmark the period is four weeks but a woman may return to work at an earlier period if she can produce a medical certificate to the effect that the employment will not be injurious to herself or the child.

But regard should also be had to the circumstances of the mother before her confinement. In Switzerland this is recognized and by a federal law of 1877 "a total absence from employment in factories of women during eight weeks before and after childbirth must be observed, and on their return to work proof must be tendered of an absence since birth of the child of at least six weeks." An order of the Federal Council prescribes a further absence from employment before confinement for an unstated period in respect to certain dangerous occupations. It seems to us that a provision similar to that in force in Switzerland should be introduced in this country, and that women should not be allowed to engage in such work as is done in laundries and factories, or to work as charwomen for some two or three months before the time the child is expected to be born.

Mrs. Greenwood, chief lady inspector of the Medical Officer's Department, Sheffield, stated recently at a public conference on infantile death-rate, that statistics for 1901 showed that where 25 women suckled their children 200 fed them artificially with the bottle, and gave them very often any and every kind of food. The remedy suggested by Mrs. Greenwood was to teach sanitary science to children. Of the children under two years who had died of diarrhoea during the summer of the previous year, death in 21 per cent resulted from the inexperience or ignorance of the mothers. The working class women were steeped in ignorance and superstition and required teaching. Great aid might be given by the authorities. If public authorities, magistrates, and officials generally expected the people to be clean she thought they would be.

We have seen that overcrowding and its accompanying evils causes physical weakness and debility. Its moral effect is equally bad. How can conditions of morality and modesty be kept up in homes where men, women, and growing up boys and girls are herded together in perhaps one or two rooms? The unhealthy body tends to produce the unhealthy mind, and overcrowding is responsible for many a man or woman who turns out badly. In London alone 400,000 people live in single-room tenements, 40,000 live 5 in a room, and 8,000 7 in a room, and a case was mentioned by a high authority where 5 families inhabited a single room—one in each corner and one in the centre.

If we desire to prevent deterioration, and still more, if we are to seek to raise the standard of national physique, it will be necessary to produce boys and girls possessed of sound bodies and minds, and until the children of the poor are raised out of the gutters and slums their mental and physical health will continue to fail. The work of the Garden City Association, and of any other agency which seeks to encourage the people to move to healthier surroundings, is therefore on general principles worthy of recommendation. Sir John Gorst, when speaking at Halifax, referred to the village built by Messrs. Cadbury near Birmingham, and said that he was struck with the healthy appearance of the children, and observed that their condition would have been very different had they been brought up in the Birmingham gutters. Mr. T. C. Horsfall, J.P., in the course of an interesting address at the Jubilee Conference of the Manchester and Salford Sanitary Association on the housing question, argued that the only way to put an end to existing overcrowding of areas by too many houses and too narrow streets is to empower the local authority in each area to prepare plans and building regulations for the whole town and for a wide band of country around; plans which must be complied with by all who build on new sites or alter buildings on sites already occupied, and giving streets, all wide, and some very wide, and planted with trees and abundance of open spaces; building regulations, to be observed in all new structures and in the alteration of all old ones, which provide for an adequate supply of air and light to every inhabited part of every building. Mr. Horsfall gave as an example of the successful working of this plan, Frankfurt-am-Main in Germany. Ten years ago, the mayor, seeing that manufactories in the town were greatly increasing, induced the Town Council and the hospitals connected with the towns to buy up a large amount of land. In the last few years there had been an enormous demand for workmen's dwellings in Frankfurt. The Town Council leased land for terms of eighty years, and undertook at the expiration of the term to pay one quarter of the value of the buildings placed on the land; and was willing to lend those who complied with their regulations, nine-tenths of the cost of the building. The regulations required that every block of houses should have gardens. Mr. Horsfall contended that if a competent mayor were allowed to stay in office for a number of years, and the German system adopted here, we should have an authority which could safely be entrusted by the Legislature with power to incorporate suburban districts, with power to buy large quantities of land round the town at reasonable prices, with power to make plans for a zone of land round the town, several miles wide, and with the power to provide tramways. He could also enter into arrangements with all railway companies for cheap train services, and the construction of additional short lines.

The Garden City, Limited, has plans for building a garden city near Hitchin, the object of which will be to combat the twin evils of agricultural depression and urban crowding. Any effort at emptying the slums and giving the people a chance of leading a healthy life must meet with the warmest approval of all those interested in the welfare of the nation, and we trust that the Garden City scheme may be worked out on practical lines.

The housing difficulty is a vast one, and at best must take generations to overcome. If the people can only be moved out of overcrowded tenements gradually as better houses are prepared for them, the deterioration of the coming generation might be checked by removing elementary schools into country districts, and transplanting the children now attending town schools as day scholars into these schools as boarders. Their parents, it is suggested, should be required to pay according to their means for their keep. This would solve the question of healthy surroundings, fresh air, wholesome food, and would remove them from the example and influence of their parents, unfortunately too frequently bad. They could have fields to play and exercise in during the vitally important years of their life, and might get so attached to country life that they would be unwilling to drift back to towns. They could be taught gardening, dairy farming, dressmaking, poultry keeping—in short, any occupations by which they could earn their living when they left school in the country. At any rate, if they did want to return to towns, they would commence their working life under stronger and healthier conditions, morally and physically.*

[2] British Medical Journal, 1901, vol. ii, page 412.

* Since this article was placed in our hands a statement has appeared in the newspapers to the effect that the Earl of Meath has a very similar scheme under consideration, and will bring it before the London Educational authority. It is, of course, a very much more drastic proposal than that brought before the London School Board last week by Mr. Gautrey That proposal was for a suburban day school, to which children in South London could be taken by train or tram daily.

(To be continued.)

PRESENTATION TO SIR ANDERSON CRITCHETT AND MR. MALCOLM MORRIS.

A numerous company assembled in the Board room of St. Mary's Hospital on November 20th, under the chairmanship of Sir William Broadbent, to witness the presentation of testimonials to Sir Anderson Critchett and Mr. Malcolm Morris on the retirement of these two gentlemen from the hospital staff after twenty years of service. The testimonial to Sir Anderson Critchett took the form of a pair of silver candelabra, and that to Mr. Malcolm Morris consisted of 145 volumes of the *Annual Register* handsomely bound.

Sir William Broadbent, in opening the proceedings, pointed out that the occasion marked the severance of the active connexion of Sir Anderson Critchett and Mr. Malcolm Morris with St. Mary's Hospital, which meant a great loss to the hospital and to these two gentlemen. The twenty-years rule which limited the active work of members of the staff in the wards secured the best twenty years of a man's life for the service of the hospital and it opened the way for the advancement of junior men. The plan, however, had its drawbacks, for men made their names in connexion with a hospital, and the character of the hospital was judged by the reputation of the members of its staff, so that the retirement of such distinguished teachers as Sir Anderson Critchett and Mr. Malcolm Morris was a distinct loss to the hospital. Turning to Sir Anderson Critchett, who sat beside him on his right hand, Sir William Broadbent said that that was the first opportunity he had had of offering public congratulation to him on his appointment as Surgeon-Oculist to the King, and on his having had bestowed upon him the further honour to which his services to the Royal house had so well entitled him. In thus gaining distinction Sir Anderson Critchett reflected credit on St. Mary's Hospital. He had held every post of honour that was open to him in the particular department to which he had devoted himself. In the course of his career he had carried out work of great practical importance, and was still engaged in perfecting the details of the treatment of some of the more intractable diseases of the eye. When Sir Anderson Critchett was first called upon to do an operation in public he chose the most difficult operations he could, in order to prove his confidence and to show what he was prepared to do for the patients in the hospital. Sir William Broadbent then turned to his friend Mr. Malcolm Morris sitting on his left and told the audience how the great characteristic of Mr. Malcolm Morris was his enthusiastic energy. He had shown that quality in the practice of dermatology, for whenever there had been a new method of treatment, especially one of scientific value, Mr. Malcolm Morris had when necessary gone abroad to study the new methods and had brought back for the advantage of all the results of his observations. Sir William Broadbent continuing said that he thought Mr. Malcolm Morris was the very first to establish in this country the Finsen light treatment. He had been honoured by having been chosen to deliver the Lane Lectures in America, among his predecessors being Sir Michael Foster and Professor Clifford Allbutt. Mr. Malcolm Morris had not confined his energies to his own speciality but had engaged in many important movements for the benefit of the public. He had not only organized the Congress on Hygiene, but had also initiated the National Association for the Prevention of Consumption and other Forms of Tuberculosis.

Sir William Broadbent then formally presented the testimonials to the two recipients.

Sir Anderson Critchett, in acknowledging the testimonial, said that though he could not claim to be the father of the Ophthalmological Department of St. Mary's Hospital, still he could consider himself, at any rate, to be its foster-father. At that time he had youth, keenness, and energy; and though his youth had departed he hoped that a certain measure of the keenness and energy still remained. When he commenced, the average attendance at the department was about 10 to 14, but within two years the number had risen to over 90, and he had felt justified in appealing to the Committee for the appointment of an assistant ophthalmic surgeon. Since that time the work of his department had gone on increasing till the present day. Within the walls of St. Mary's Hospital Sir Anderson Critchett said he had passed his happiest days, and had done the best work of his professional life. He was proud of having had a large share in the ophthalmological education of about 40 house-surgeons. He considered that the gift to him of candelabra symbolized the work of his life, for it had ever been his humble endeavour to bring a little more light into the lives of those who needed it most. Sir Anderson Critchett concluded his remarks by saying he had been egotistical, because it would have been strange for an ophthalmic surgeon to make a speech without mentioning the word eye.

Mr. Malcolm Morris eloquently expressed his appreciation of the testimonial that was presented to him and also acknowledged the gift of a diamond ring to Mrs. Malcolm Morris and a brooch to Miss Malcolm Morris. He observed that it was an extraordinarily difficult thing to say good-bye to friends under ordinary circumstances, but it was a still harder ordeal to say good-bye to valued colleagues after years of close companionship. He did not receive the testimonial for any merits of his own, but simply because he had done his duty by the institution which had given him his professional status. He considered that the real motive of giving a testimonial to a man leaving a hospital was to offer him a tribute of sympathy on giving up work when his faculties were reasonably clear. It was an ordeal that every member of the staff had to undergo, but the necessity for submitting to it did not render the experience in any way pleasant. After describing the many ways in which he felt the loss he had sustained, Mr. Malcolm Morris concluded by observing that the greater the amount of work a man had done at his hospital so much the more did he experience a feeling of blankness when his time came to leave.

The proceedings terminated with a hearty vote of thanks to Sir William Broadbent, proposed in a felicitous manner by Mr. Edmund Owen.

THE MOTOR CAR REGULATIONS.

In view of the fact that a large number of medical practitioners make use of the motor car, it seems desirable to give some account of the rules and regulations which have recently been issued by the Local Government Board.

It will be remembered that by the Motor Car Act of 1903 it was provided that all motors should be registered, and that no person shall be allowed to drive a car unless he is licensed to do so. The regulations now issued have been drafted with a view to bringing these changes in the law into operation. They are divided into three parts, of which Part I relates to the registration of motor cars, Part II to the issue of licences, while Part III deals with certain supplemental matters.

Registration.

The owner of a motor car (which term includes a motor bicycle), must have it registered by the Council of some county or county borough, not necessarily that of the district in which he resides, although in view of the fact that he must obtain a driving licence from his own council it will be more convenient to register with them.

A fee of 20s. is payable for the registration of a car, while 5s. must be paid for a motor cycle. The motor cycle is not defined in the regulations, but the Local Government Board is of opinion that the term applies to machines with not more than three wheels, and which does not weigh more than 3 cwt. Some difficult questions are sure to arise with regard to this definition. In making an application for registration, the owner must supply a number of particulars, including (*a*) the description or type of car, (*b*) the type and colour of the body of the car, and (*c*) whether it is intended for private use, trade purposes, or for use as a public conveyance. It is presumed that the medical practitioner will have to state that his car is for use in connexion with his practice if that is the fact. After the application for registration the council must assign to the owner of the car a distinctive number, prefixed by one or two letters which serve to identify the council upon whose register the car is entered. This number, printed in letters $3\frac{1}{2}$ in. high, must be affixed to the front and rear of the car in an upright position, in such a position as to be easily read. The rear number must be illuminated in such a way as to be capable of being read between the hours of one hour after sunset and one hour before sunrise. In the case of a motor cycle the numbers may be placed on either side of the vehicle, for example, on the sides of the petrol reservoir. The Board suggests that the number on a cycle may be placed on both sides of a plate in the centre of and at right angles to the lens of the lamp which is carried in front. In that position it will be lit up at night, and will be a sufficient compliance with the Act in the day time. If any change is made in the appearance of the car—as, for instance, by painting it a different colour—particulars must be forwarded to the council upon whose register it has been entered.

Licences.

It has been mentioned that the new Act provides that persons driving motor cars shall be licensed. The licence is obtained from the county or borough council of the district of the United Kingdom in which the applicant resides. If he is a foreigner, however, he can obtain a licence from any council. A fee of 5s. is payable for the licence, which lasts for one year. It can then be renewed on payment of another fee of 5s. Should the holder of a licence be convicted of certain offences, his licence may be endorsed, or he may be declared incapable of holding a licence. It is to be noted, however, that an applicant for a licence undergoes no test of proficiency. Any person over 17 years of age can hold a motor car driver's licence; any person over 14 may be licensed to drive a motor bicycle.

Offences under the Act.

The regulations contain much more of great interest to the owners and drivers of motor cars. The portions which we have considered are sufficient to show the nature of the restrictions with which the law-abiding motorist is to be hedged round, owing to breaches of the law committed by less careful members of the fraternity. A list of some of the offences punishable under the Act will serve better than anything else to show the effect of this new piece of legislation.

1. Reckless driving.
2. Refusal of driver to give name and address, or the giving of a false name and address.
3. Failure on the part of a car owner to give information leading to the identification and apprehension of the driver.
4. Driving on the highway without being registered or without an identification mark properly fixed (subject to certain exceptions).
5. Driving a car without licence or employing an unlicensed person to drive.
6. Failure to produce licence for the purpose of endorsement.
7. Applying for or obtaining a licence while disqualified.
8. Forging or altering a licence, or allowing it to be used by any other person.
9. Failure to produce licence when demanded by a constable.

In addition to the offences above mentioned, the motor-car owner is still exposed to actions for negligence at the hands of persons using the highway.

LITERARY NOTES.

The *Index Medicus* is now published by the Carnegie Institution at Washington. The subscription, which is payable in advance, is for this country 25s. a year. In the United States and Canada the annual subscription is 5 dols., in Germany M.25, in France Fr.30, and in Italy L.30. Orders and subscriptions may be sent to the Carnegie Institution of Washington, Washington, D.C., U.S.A. Messrs. Williams and Norgate, 14, Henrietta Street, Covent Garden, London, W.C., also will receive subscriptions from intending subscribers in this country.

The British Journal of Children's Diseases is the title of a new journal, the first number of which will appear on December 21st, 1903, for January 1st, 1904. The editor will be Dr. George Carpenter, of London. The journal, which is to be published by Messrs. Adlard and Son, will appear monthly. Each number will, it is stated, consist of about 50 pages, containing original articles, classified abstracts from current medical literature at home and abroad, reviews of works on children's diseases, therapeutics, children's hospital practice, notes on children's nursing, convalescent homes for children, children's hospital management, and infant dietetics with analytical reports. The journal will also contain short reports of the proceedings of the Society for the Study of Disease in Children.

To the *Caledonian Medical Journal* for October Mrs. R. Moodie contributes an interesting article on Highland Therapy. She says that the Celts possessed leech craft knowledge of a very high order. "Being a rational and observant people, they had an intimate knowledge of the therapeutic values of herbs and plants." She thinks it likely that they acquired a great deal of their therapeutic knowledge from the monks, who in the past played so prominent a part in the lives and well-being of the people. Monasteries were everywhere as plentiful as blackberries.

The monks were skilled in horticulture and went in greatly for the cultivation of fruit and medicinal plants. They brewed ales and wines: they distilled essences from herbs; they compounded healing salves and ointments. They nursed the sick and poor, sometimes in their own dwellings, sometimes in the monastery hospital fashion: and to all the needs, spiritual and physical, of the people they ministered skilfully. It is not surprising, then, that centuries of monastic influence should leave traces on the lives and habits of the people, and in nothing is this influence more apparent than in their knowledge of the virtues of medicinal plants, which down to the present day are considerably used in domestic medicine.

Mrs. Moodie believes that out of this traditional association of medical knowledge with ecclesiastics arose the custom, almost universal in the Highlands, of consulting the parish ministers on matters medical. "In the Gaelic nomenclature of plants a very large proportion of them bear the prefix "lus," meaning herb, and probably allied to the Gaelic word *leighis*, "to heal." Thus *lus-an-ros*, the herb or cure for erysipelas, and so on. In Cameron's *Gaelic Names of Plants*, some seventy-five plants and herbs are so named, showing to what an extent these were used medicinally. Besides the herbs and plants which entered so largely into their pharmacopœia, the Gaelic people used medicinally fat of various animals, hog's lard, goat's and deer's fat being specially esteemed. Cod-liver oil was the great specific for wasting diseases. Seal oil was used for consumption. Neat's foot oil was held in high repute for all rheumatic affections, sprains, and aches. So also were oil of seafowls, such as skart and fulmar, in the islands. A favourite oil was *olla-na-corra-sgriach* (heron), which was much sought after for acute pains. A saying concerning it is, "*Olla-na-corra-sgriach, bheir e car as greim a' bhais*" (oil of heron will turn back the pang of death). As oil extracted from boiled snails was a common remedy in consumption was in much repute formerly as a means of cure. In every district was to be found an *Eolas* man who was skilled in the art. Besides the various items above mentioned, the Highland pharmacopœia included the universal panacea, whisky: under all circumstances and for all manner of complaints, whether for colds, wounds, or sprains, it never came amiss. The old people had a profound faith in cold water as a curative agent both internally and externally. It was often recommended for "cleaning out the inside" and removing all impurities.

ASSOCIATION NOTICES.

COUNCIL.

NOTICE OF MEETING.

A Meeting of the Council will be held in the Council Room of the Association, at 429, Strand (corner of Agar Street), London, on Wednesday, the 20th day of January next, at 2 o'clock in the afternoon.

November, 1903. Guy Elliston, *General Secretary.*

ELECTION OF MEMBERS.

Any candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

Members are reminded that the Library and Writing Rooms of the Association are fitted up for the accommodation of the Members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 a.m. to 5 p.m. Members can have their letters addressed to them at the office.

Guy Elliston, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

Bath and Bristol Branch: Trowbridge Division.—The inaugural meeting of this Division will be held in the Council Room, Town Hall Trowbridge, at 3 p.m. on Tuesday, December 8th, when an address on Some Dangers and Difficulties in the Surgical Treatment of Appendicitis will be given by Mr. Albert Carless, M.B., M.S., Surgeon to King's College Hospital. The members of the Division will be pleased to welcome any practitioners from the county of Wilts or neighbouring Divisions, whether members of the Association or not. At the close of the meeting tea and light refreshments will be provided by the ladies of the Trowbridge Division.—John Tubb Thomas, County Offices, Trowbridge, Honorary Secretary.

Border Counties Branch.—The next meeting of this Branch will be held on Friday, December 11th, in the Dumfries and Galloway Royal Infirmary, Dumfries. The meeting will be a clinical one. Drs. Clarke, Kerr, Grieve, and Livingston have promised to show cases; Dr. Donald (Carlisle) will read a short paper on the Electrolytic Treatment of Naevi. There will also be an opportunity of discussing the Medical Acts Amendment Bill, and it is intended that members shall dine together at the Station Hotel after the meeting. A notice will be sent to every member of

the Branch giving the hour of meeting and allowing him an opportunity of notifying his intention of dining or not.—FRANCIS R. HILL, 62, Warwick Road, Carlisle, Honorary Secretary.

DORSET AND WEST HANTS BRANCH: WEST DORSET DIVISION.—A meeting of this Division will be held on Thursday, December 3rd, at 3 p.m., at the County Hospital, Dorchester. Business: To elect five members to serve on the Council of the Branch. To elect five members to serve on the Executive Committee of the Division. To consider the Draft Medical Acts Amendment Bill referred by the Council of the Association to the Divisions for consideration. (This was published in the SUPPLEMENT to the JOURNAL of August 22nd, 1903. It is hoped that members will give it careful consideration beforehand, in order that a definite opinion may be expressed upon it at this meeting.) To consider the resolutions of the Council with regard to the improvement of the existing Vaccination Acts referred to the Divisions for report, and published in the above-mentioned SUPPLEMENT to the JOURNAL. To consider a resolution passed at the Representative Meeting at Swansea with regard to direct representation of the Association on the General Medical Council.—T. HENRY JONES, Weymouth, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: CITY DIVISION.—A general meeting of this Division will be held on Thursday, December 17th, at 4 p.m., in the Lincolnshire Room of the Great Eastern Hotel, Liverpool Street, E.C. Agenda: Minutes of last meeting and correspondence, Medical Acts Amendment Bill. Vaccination Acts: Resolutions relative to future legislation. Resolution respecting the representation of the British Medical Association upon the General Medical Council. (N.B.—The full text of the Medical Acts Amendment Bill and the various resolutions will be found in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL, August 22nd, 1903.) The Organizing Secretary of the Association, Mr. J. Smith Whitaker, M.R.C.S., L.R.C.P., will be present, and will speak on the work which it is hoped the Division will undertake to promote the welfare of the profession. Any such business as may arise.—E. W. GOODALL, Eastern Hospital, Homerton, N.E., Honorary Secretary.

SOUTHERN BRANCH: PORTSMOUTH DIVISION.—The next meeting of this Division will take place at 5, Pembroke Road, Portsmouth, on Tuesday, December 1st, at 4 p.m. The agenda of the adjourned meeting of October 6th will be completed, and will include matters referred to Divisions (BRITISH MEDICAL JOURNAL SUPPLEMENT, August 22nd, 1903), namely: (1) Medical Acts Amendment Bill; (2) Vaccination Acts; (3) representation on the General Medical Council.—J. G. BLACKMAN, Poplar House, Kingston Crescent, Portsmouth, Honorary Secretary.

SPECIAL CORRESPONDENCE.

PARIS.

Dr. Marmorek's New Tuberculosis Antitoxin.—Postponement of the International Congress on Tuberculosis till 1905.—The Laïcisation of Naval and Military Hospitals: Schools for the Training of Nurses in France.—Proposed Suppression of the Ancient Hospice of Quinze-Vingts.

AT the Académie de Médecine on November 17th Dr. Marmorek made a communication on his experimental research for a tuberculosis antitoxin and the clinical results of the use of his serum. Dr. Marmorek stated that true tuberculin has hitherto escaped detection because the bacillus was not cultivated under conditions sufficiently resembling those found in Nature. He obtains the toxin *in vitro* as follows: The young bacilli were grown in a medium consisting of leucotoxic calf serum and glycerine liver bouillon. After a certain number of consecutive cultures in this medium the investigator was struck by the absence of tuberculin, but a new toxic substance was present which killed small animals, and to which animals affected with tubercle were not more sensitive than healthy ones. Rabbits and guinea-pigs were by means of this toxin rendered immune against infection by the tubercle bacillus. This filtered culture free of bacilli but containing the toxin was injected into horses, and the antitoxin was thus obtained. Experiments on animals showed that the serum had an action which was both preventive and curative; 15 c.cm. to 20 c.cm., injected three days before an intravenous injection of tubercle, preserved rabbits from infection. It was found that for curative treatment the doses must be raised in proportion to the length of time the infection had existed. The experiments on animals were carried out in the Pasteur Institute, of which Dr. Marmorek was till lately one of the "chefs de laboratoire," but as the work had not been verified by the "chefs de service" they opposed any publication before the experiments had been controlled. Dr. Marmorek, however, wishing to have freedom of action, has left the Pasteur Institute. Clinically, Dr. Marmorek has already made 2,000 injections, each patient having received 7 to 50 inoculations, 10 to 15 c.cm. of the serum being injected every two or three days. In tuberculous meningitis these injections gave no result. In pulmonary tuberculosis Dr. Marmorek claims to have produced amelioration and even definite cures: the quantity of sputum and the number of bacilli diminished. In pleurisy there was a rapid diminution of the effusion. In Pott's disease, complicated with abscesses and fistulae, Dr. Marmorek states that he has obtained complete cure.

The International Congress on Tuberculosis, which was to have been held in Paris in October, 1904, has been definitely postponed till 1905, at a date which will be fixed later. The reason for this change is that the International Exhibition at St. Louis opens later than originally planned, and, in connexion with the Hygiene Section, a tuberculosis congress is to be held, to which the leading workers on the subject in Europe will be especially invited.

Following a report addressed to the President of the Republic by M. Camille Pelletan, Minister of the Navy, in which he called attention to numerous irregularities and abuses in naval hospitals under the supervision of sisters of mercy, the President has just issued a decree by which all naval hospitals cease to be managed by sisters of mercy, the Minister being charged with the execution of the decree. In the *Journal Officiel* M. Camille Pelletan has since published regulations for the wards, workshops and stores in naval hospitals. The sisters of mercy are replaced by male nurses who are under the supervision of "infirmiers-majors" for the care of the sick and the distribution of medicines and food. The "infirmiers-majors" make a report to the physician on duty each morning, and are responsible for the cleanliness, heating, ventilation, etc., of the wards under their care. M. Bouveri, in the Chamber of Deputies, has since asked General André, the Minister of War, to follow the example of his colleague at the Admiralty, and order the laïcisation of all military hospitals. General André, in reply, stated that this being the existing condition in all civil hospitals in the Republic, it is his intention to make the same rule in military hospitals. A year ago, the infirmary of the School of Artillery and Engineering at Fontainbleau was placed under male nurses instead of sisters of mercy, but before proceeding further, the Minister wishes to assure himself of the means of replacing the sisters by properly trained male or female nurses. At present there are about twenty schools in France for the training of nurses, and new ones are being created at Nancy and Bordeaux, so it is anticipated that there will soon be an adequate supply of trained nurses.

M. Clementel, deputy for the Puy-de-Dôme, in his report on the Budget at the Ministry of the Interior, proposes the suppression of the Hôpital of the Quinze-Vingts. This hospital was founded by St. Louis in 1260, to receive 300 gentlemen (fifteen times twenty) whose eyes had been put out by the Saracens, and whom the King brought home from the Holy Land. The building actually occupied by the Hôpital is the ancient house of the Mousquetaires noires, whither it was transferred after the demolition of the original establishment in the Rue St. Honoré, near the Palais Royal. Cardinal Rohan sold the original hospice for 6,312,000 livres, and bought the actual building for 450,000; it is said he did not hesitate to spend the balance of five and a-half millions to suppress the romantic affair of the Queen's necklace, in which he and Marie Antoinette were implicated, and which, said Mirabeau, was the prelude to the French Revolution. The old hospice actually harbours 428 persons, of whom only 255 are blind. M. Clementel says that by giving an annuity to each of the blind inmates, an immediate economy of nearly 95,000 francs would be realized on the general expenses of the establishment. The sale of the existing hospice, and the income from the various lands which have been left to the work of the Quinze-Vingts, among which is the site of the Folies Bergères music hall, would allow of the multiplication of ophthalmological cliniques in Paris, and of the Braille schools, in which the youthful blind will be taught a trade to earn a living, whereas the aged blind would receive annuities, and be thus spared the shame of begging.

BERLIN.

Post-Graduate Course.—Virchow's Library.—Quacks and Venereal Disease.—First Aid Ambulance Organization.

THE German Central Committee for Medical Post-Graduate Courses has published a pamphlet containing the list of official post-graduate courses for doctors and dentists in Germany. Many of these courses are gratuitous and these are open to German graduates only (probably on the principle

that "crowds come where nothing is to pay"), but the courses for which a charge is made can be attended by foreigners as well. No less than forty towns have joined in the movement, the subjects of the courses varying with the resources of the place. Thus, at Baden-Baden, balneology and hydropathy can be studied in their most modern development; whilst in Hamburg the huge Eppendorf establishment furnishes an opportunity of seeing all that is newest and most practical in hospital treatment of almost every species of disease. Berlin announces no less than six courses: (*a*) A gratuitous course of six weeks, given twice, on pandemic diseases, arranged by the German Central Committee for medical post-graduate instruction; (*b*) four weeks' clinical courses with practical demonstrations, arranged by the Professorial Society for holiday courses; (*c*) another four weeks' clinical course with practical demonstrations, arranged by the Society for post-graduate courses; (*d*) another four weeks' clinical course, arranged by the Union for the holding of courses for medical men; (*e*) a three-monthly practical course of bacteriology and tropical medicine, etc., arranged by the Institute for infectious diseases; and (*f*) a four weeks' dental course in histology, surgery, bacteriology, etc., with reference to the teeth, and demonstrations of modern dental improvements, arranged by the Committee for dental post-graduate courses. These different efforts will, it is hoped, be centralized—in Berlin at least—before very long, where a special institute is to be erected bearing the name of the lamented royal lady who was one of the chief originators of the plan: Empress Frederick House for Post-graduate Medical Instruction. The site has already been selected, the building plans prepared, and the Committee only now awaits the Emperor's approval before beginning work.

Virchow's library is not to be sold. His widow has generously determined to give away the whole magnificent collection, dividing it between the Pathological Institute and the two scientific societies that Virchow had most at heart. Six or seven thousand volumes are to go to the Berlin Medical Society.

At the last meeting of the Berlin Society for combating venereal disease, Professor Kuttner read a paper on Quacks and Venereal Diseases. Enlarging on the well-known fact that it is for the syphilitic patient above all others that quacks spread their nets, he quoted official statistics to prove that of Berlin female quacks 14.4 per cent., and of Berlin male quacks no less than 29 per cent. are individuals previously convicted of crime. The subject was ventilated in free discussion; among the speakers being several "nature doctors," who did their best to intercede for and recommend to notice their different "systems."

The Prussian State Department for medical matters has published an important rescript on the subject of first aid and ambulance organization throughout the kingdom. The enormous increase in modern traffic, says the rescript, together with the dangers anticipated from the approach of dangerous infectious diseases, has brought home to the Government the importance of this matter, and the necessity for centralized action. Before taking any steps, however, the Government wishes to make sure, by means of a general inquiry, what organizations for first aid in cases of accidents and for ambulance transport already exist in Prussians towns and country places. A set of questions has been prepared, and is to be sent out to the proper authorities all over the monarchy. It is subdivided under the following headings: (1) General information, (2) hospitals, (3) accident and first-aid stations, (4) accident stations along the watercourses, (5) ambulances, (6) first aid and bandaging classes, (7) organization of notification.

CORRESPONDENCE.

BAYLISS v. COLERIDGE.

SIR,—The morning paper brings good news, and it may be permitted all rationalists and labourers for humanity and for truth to exult at a notable sign of the times. The verdict in the case of Dr. Bayliss *v.* the Honorary Secretary of the Antivivisection Society must rejoice every thinking man: and it will reach far. This meddlesome and mendacious organization is likely to suffer severely before the world, and its powers of ill-doing and misrepresentation should be much curtailed henceforth.

I know not if there are those who would like to present Dr. Bayliss and Professor Starling with some little memento of this interesting incident. If so, acquaint me; for I should be proud to contribute to it.—I am, etc.,

Torquay, Nov. 19th. EDEN PHILLPOTTS.

THE FUTURE OF ST. BARTHOLOMEW'S HOSPITAL.

SIR,—First let me, as one of the governors of St. Bartholomew's Hospital, thank you for the able article and also for the plan which you published in the BRITISH MEDICAL JOURNAL of November 21st, p. 1341.

I also desire to thank Dr. Hensley for his courteous letter, and, as far as I am able to judge, there is little difference between his views and my own; but I must decline to wade through the letter signed "A St. Bartholomew's Man," as I never attach any value to anonymous letters, and in this particular one most of the assumptions are incorrect, and do not bear upon my point, from which I do not intend to be drawn, namely:

1. Shall St. Bartholomew's Hospital be rebuilt upon Sir Henry Burdett's plan or upon a plan advocated by the Medical Council, whichever may be the better of the two, at a cost of, roughly, £600,000; or shall it be altered and tinkered at a cost of £350,000?

2. Is the most richly endowed hospital in the world, possessing an income of about £100,000 per annum (representing at 2½ per cent. a capital of £4,000,000) justified in asking the public for money, if the money is not to be well spent and the effects permanent?

3. If the public find the money asked for, are "they" to decide whether the hospital is (1) to be rebuilt or (2) to be altered, or is the Treasurer, who is over 70, and the Secretary, who has already exceeded his age limit, and who practically control and manage the hospital, to do as they may think fit?

4. I desire to obtain if possible from the medical staff or council a public and almost unanimous expression of opinion stating whether they are satisfied with the plan put forward or whether they consider more ground essential for the building of a proper hospital.

I earnestly hope the medical staff may promptly respond to the appeal you have made to them in the JOURNAL of November 21st. In any case the governors of St. Bartholomew's Hospital and the public at large owe you a deep debt of gratitude for the position you have taken up at the present crisis in the history of our great institution.—I am, etc.,

ANDREW MOTION,

Banbury, Nov. 21st. Chairman of the Cannon Brewery Company.

THE FIRST YEAR OF PROFESSIONAL STUDY.

SIR,—Dr. Atthill's letter[1] has only just been brought to my notice; late as I am in doing so, I should very much like to endorse some of the sentiments therein expressed from the point of view of a public school science master. For many years we have been endeavouring to progress in the matter of the teaching of natural science, and we are, I firmly believe, succeeding in making our authorities awaken to the fact that more must be done to recognize the importance of it. Many of our big schools are now well equipped in the way of teaching staff and laboratories; those which are not are finding out that they will be left out of the running in a very short time if they do not at once begin to set their house in order.

Internal persistence can do a great deal, but we rely greatly on external help; I mean in the way of the insisting on a certain standard being reached by the school boy in certain subjects before they can enter for examinations, and it is this point that I wish to bring forward. The General Medical Council, if they will but insist on this, will benefit all concerned, the teaching of science in our big schools and the boys intending to enter the medical profession.

Let them settle to allow the chemistry and physics to be done by the boy at school, thus keeping him under good supervision until he can enter on his medical course. Most of the schools are ready to undertake this, and we are quite able to bring the boy up to the required standard. The General Medical Council have only to ask for this, and it will be done; and they will be doing a great deal of good to science teaching in general at schools by so asking.

Given a thorough grounding in general elementary physics and inorganic chemistry, and, if necessary, a little organic work, a boy, if he can pass the required examination, ought to be able to apply his knowledge to medicine in a very short time, and this could be done after he has left school. The

[1] BRITISH MEDICAL JOURNAL, November 14th.

biology, as Dr. Atthill points out, might be left for study later on.

Once more may I point out that the General Medical Council have it in their hands greatly to promote the science teaching of our big schools by making the physics and chemistry required for medical students part of the preliminary education, and to promote the interests of future medical students by allowing them to stay an extra year at school instead of wasting their time elsewhere with no supervision?—I am, etc.,

H. Purefoy FitzGerald.

Wellington College, Berks, Nov. 24th.

THE PRODUCTION OF MILK FOR INFANTS.

Sir,—I read your article in reference to Dr. Edmund Cautley's paper with great pleasure. The facts in regard to the out-patient department at the children's hospitals are, of course, well known to a good many, and it is fortunate that attention should be drawn to the present conditions. But when Dr. Cautley comes to propose a solution of the problem with regard to the milk trade and infant feeding, I fear his confidence in a certificate, and especially a monthly certificate. For some time I have controlled, quite voluntarily, a farm which is almost certainly the finest in the country in regard to the arrangements for cleanliness, etc. I have given no certificate at any time but I should regard a monthly visit as altogether inadequate; a weekly inspection is the mimimum. This should not be at any stated day, and if I had not occasionally some practice to attend to my visit would be a daily one. To take only one practical point—the diet of the cows. How can this possibly be controlled by a monthly visit—for I disregard inspections unaccompanied by a certificate—on the present terms? This means that the farm bailiff can do as he likes for three out of the four weeks. Oil cake, brewers' and distillery refuse may be administered *ad libitum*. I have made it a rule that the fodder must be mixed each day at a stated time so that it is open for inspection. This provides some sort of check, otherwise the oil cake intended for the cow that is "drying off" may be administered—of course, by "accident"—to the cows producing milk for infants.

Who is to sign the certificate? A veterinary surgeon? I have been associated with an honourable and skilful member of the veterinary profession. He will certify as to the health of the cows, etc., but he declines to have anything, officially, to do with a specific diet for cows intended for infant feeding. As a matter of fact, the men really competent to inspect a farm producing milk for infants are few in number. The competent person must know a good deal about cows and a good deal about infants, and this combination of knowledge is not a very usual one. How can a monthly inspection deal with such things as "vesicular disease," "sore bag," etc.?

In the articles on the milk supply published in the British Medical Journal I was much struck by the fact that the writer was obviously speaking from actual experience and observation. What does your correspondent think as to the value of a monthly certificate?

Now I come to the question as to the food that is to be provided for the infants under the new régime. How can it be contended that milk and water mixed in certain proportions meets the requirements? Certain municipalities have, as is well known, undertaken the supply of "sterilized humanized milk." The milk is not humanized, and sterilization irretrievably injures milk as a food for infants.

It is a very serious thing when municipalities undertake the recommendation of food that is inadequate, however excellent their intentions may be.

The fact is that in the whole matter the medical profession is not doing justice either to itself or to the public. Only this week I received a letter from a mother saying that her doctor had ordered a certain dried preparation, to be mixed with water, as the entire diet for her young infant. She was satisfied that this was "quite wrong." Who can pretend that she was not right? How many medical men when asked for their instructions in reference to infant feeding tell the nurse "to do as she usually does," or give advice of a similar character? There is a great deal that is "quite wrong," and unless we decide to mend our ways we shall find the disillusionment somewhat disturbing.—I am, etc.,

London, W., Nov. 21st. Ralph Vincent.

THE FINANCES OF THE GENERAL MEDICAL COUNCIL.

Sir,—Dr. Wesley Wilson's letter on the above subject in the British Medical Journal of November 14th merits serious attention. Unhappily the mass of the profession may bestow on it serious attention, but we are utterly without power to draw the least practical gain from any such attention. Our chief function—I might more correctly say our sole function—is to pay the piper and let some thirty unrepresentative gentlemen command the tune. Why do not those people pay their own expenses? Outside our few direct representatives the mass of the profession should pay no one. Corporations are said to have no souls, and certainly our colleges and universities have no shame. Half a dozen representatives should suffice for all their colleges and universities while the Crown should most certainly pay its own men. For very shame sake the Council ought in the meantime to give effect to Dr. Wilson's suggestions. I shall not repeat them here, as they should be perused by such of the profession as have not already read them. If public medical opinion does not, pending the more sweeping reforms I have limned out, force the Council to economize on the lines laid down by Dr. Wilson, the profession may make up its mind to see their sons and pupils mulcted in a double tax.—I am, etc.,

Cashel, Nov. 17th. Thomas Laffan.

Sir,—In reading your leading article of November 14th, and, in its connexion, the letters of Drs. Atthill and Wesley Wilson, I could not help being struck with a system of business that lends itself to indefinite and protracted discussion on the one hand, and unlimited expense on the other. Every one will acknowledge that a controlling authority, such as the General Medical Council, which postpones its business from meeting to meeting at the expensive rate of £190 a day, stands in need of a desirable change to businesslike dispatch and economy. Surely the simple question, whether chemistry and physics should or should not be taught in other than medical schools is capable of more rapid solution than it has met at the hands of a General Council of "Medical Education," as the Act of 1858 terms it. Yet "at several ordinary meetings of the Council and also at two special meetings summoned for the purpose," according to the authority of Dr. Atthill—who has only just resigned his membership—has the time of the Council been spent "without any practical effect." While on this subject it would be instructive to know how many thousands of the practitioners' registration fees went to support the fruitless discussions.

I am sure it is not too much to say that if the work done in respect to the "first year of professional study" be a sample of the Council's business habits, it is small wonder that its finances undergo rapid depletion with the present rate of £5 a day, exclusive of expenses, to its thirty-one members.—I am, etc.,

November 17th. M.R.C.P.Ed.

Sir,—On reading Dr. Atthill's letter on the First Year of Professional Study, and that of Mr. Wesley Wilson on the Finances of the General Medical Council in the British Medical Journal of November 14th, it was impossible not to couple the protracted discussions of the Council with its straitened condition; indeed, as cause and effect.

Dr. Atthill, as we know, has served on the Council upwards of fifteen years, and when he acknowledges "that at several ordinary meetings of the Council, and also at two special meetings summoned for the purpose," the General Medical Council was unable to form an opinion on a matter peculiarly in its province to treat, the question must occur if there be not something radically wrong in the administration of a body for it to be so lacking in decision.

If the Council gave its services gratuitously such waste of time would not be so deplorable, but we have Mr. Wesley Wilson's statement that these discussions cost over £3,000 a year of funds contributed by the medical profession; such outlay is of professional concern.

Not only do I therefore think that the time has come for the reduction of the fees paid to each member of the Council, but I also think that the revision of the said Council's methods of business would be by no means superfluous.

To me it is a matter of much surprise that the General Medical Council did not long ago minimize its financial difficulties in the manner suggested by Mr. Wilson.—I am, etc.,

November 20th. Spectator.

DOCTORS IN PARLIAMENT.

Sir,—It is quite true—as my friend Dr. E. Jepson says—that, generally speaking, medical men are elected as members of Parliament for other reasons than that they are doctors. For all that, as far as my experience of them goes, they are quite willing and do all they can to represent the medical aspect of affairs and support our claims. Nevertheless, it would be of considerable advantage to the profession as a whole if we were directly represented, and by men who could give their time up entirely to the work. This is done by the National Union of Teachers, who certainly cannot afford to do it better than the British Medical Association. If, as Dr. Jepson suggests, immediate action is to be taken, in the view of an election shortly, there is no time to be lost.

I presume that a special meeting of the representatives of the Association would be necessary to sanction such a departure. This is a question which has been mooted on previous occasions, but has not been brought to any decided conclusion, principally, I believe, because many members hold that the British Medical Association should be mainly a scientific Association only. This is not the view I take. I cannot see why it should not be used to advance the interests of the profession in any way which is honourable and upright. Medical questions are largely questions concerning the public health of the community, therefore it would be advantageous to the public as well as to ourselves to have representatives in the House of Commons. I think a hint might also be taken from other bodies. It would be desirable to have a member or members on both sides of the House.—I am, etc.,

Plymouth, Nov. 11th. G. Jackson.

Sir,—Dr. Jepson has hit the nail on the head. If we as a profession want our views and our opinions expressed in the House of Commons we must send men expressly for that purpose. We may not be lovers of what is called class legislation, but we have to go with the times. That the medical profession is rich enough, and therefore strong enough, to support men who will be prepared to advocate our views must be allowed. We shall have, no doubt, to make a levy, but that will not be a serious matter. The difficulty will be to select the proper men and the constituencies which they shall represent.—I am, etc.,

Cardiff, Nov. 10th. T. Garrett Horder.

OXFORD MEDICAL DEGREES.

Sir,—In the British Medical Journal of November 21st Mr. Pridgin Teale reverts to what is now somewhat ancient history—namely, the opposition of certain Oxford graduates to Sir Henry Acland's proposal to require all candidates for the Medical Degree to pass the examinations of the Conjoint Board in London before they could receive the degree of M.B. No one was more opposed to such a proviso than I was. Had there been a Government State examination in England as there is in Germany, which all candidates must pass before they can obtain a licence to practise, I should have heartily supported Mr. Pridgin Teale's views; but there is a wide difference between accepting the imprimatur of Government and that of a corporation. As it is, the inspection of the Oxford M.B. examination certainly does not injure the University, and affords a little harmless amusement to some members of the Medical Council.—I am, etc.,

London, W., Nov. 25th. W. Bruce Clarke.

LEPROSY AND PUTRID FISH.

Sir,—Mr. Jonathan Hutchinson is reported, in the British Medical Journal of September 26th, 1903, pages 702-3-4, as saying: (1) That certain communities, including Orkney and Shetland, engaged in fishing formerly suffered greatly from leprosy; (2) that in Orkney and Shetland the disease underwent gradual extinction without the assistance of segregation laws; (3) that the methods of curing fish have greatly improved; (4) that no tainted or decomposing fish is now eaten in any part of the British Isles; and he gives the last two points as sufficient reason for the second.

So far as Orkney and Shetland are concerned, I venture to entirely dispute the accuracy of the statements 3 and 4, and more particularly the latter.

In Orkney and Shetland fish still forms the staple article of food. At the present day it bulks more largely in the diet than it did generations ago, when large quantities of wild fowl were consumed. And of this fish a very large proportion can only be described as tainted or decomposing.

"Skate" are usually simply cleaned and then hung in the open air, exposed to all kinds of weather, and never properly dried. They commonly hang for weeks—sometimes longer—until phosphorescent, sour, and almost unapproachable, a slice being cut off from time to time as required, and boiled for a period rarely exceeding twenty minutes. Until recently it was not uncommon to see people eating the fish in this condition without any cooking whatever.

Sillocks and "kenithes" are soaked for days in plain water, or with a mere trace of salt, until perfectly soft and rotten. They are then cleaned and pressed or hung in the open air—never properly dried. Vast quantities of them—known locally as "sour sillocks"—are eaten, as often as not without any cooking, in a state which would grievously alarm Mr. Hutchinson.

Cod and haddock, caught locally or landed from passing trawlers, are left for days lying uncleaned in plain or slightly salted water, until the smell is disgusting, and the fish so soft that the finger might be pushed through them. They are then cleaned and split, salted and dried—very rarely thoroughly—in the open air. The salting, however, is a mere disguise, in no way preventing or curing the putrid condition, which makes itself very evident if the fish be soaked or boiled. These fish are generally eaten after being boiled for a period varying from ten to twenty minutes.

Large quantities of cod and haddock are simply cleaned and then hung in the open air to be used as required. After a few days they become quite unmistakably putrid. They are then known as "sour cod," etc., and in this condition are greatly liked.

I have repeatedly had "fresh" herring brought to me in a state of decomposition—perfectly soft and putrid, but nevertheless readily eaten and much relished by the peasantry here.

These are not exceptional cases. There are actually enormous quantities of fish in this condition eaten in Orkney and Shetland every year. I find the older inhabitants almost unanimous in the opinion that fish is not in any way better cured here now than it was fifty years ago. It is difficult to believe that it could have been much worse. Of course there is a lot of properly cured fish prepared in Orkney and Shetland, but the greater part of this goes South, while the uncured and decomposing and the sour or badly cured fish is eaten locally.

I am not aware of any case of leprosy having occurred in Orkney or Shetland within living memory.—I am, etc.,

Westray, Orkney, Nov. 11th. H. Traill Skae, M.B.

MALIGNANT DISEASE OF THE LARYNX: A CORRECTION.

Sir,—Kindly permit me to correct a slight inaccuracy of which I have been inadvertently guilty, and which, although not in the least affecting my argument, ought not in the interest of truth to be allowed to stand.

When speaking of the results of thyrotomy in introducing the discussion on the operative treatment of malignant disease of the larynx in the Laryngological Section of the meeting of the British Medical Association at Swansea this year, I said:[1]

> I can now summarize my results to the effect that out of 18 cases of undoubted malignant disease of the larynx, which I have operated upon by thyrotomy between June 2nd, 1891, and July 29th, 1902, 15—that is, 85 per cent.—are now alive and well, whilst the vocal results, with the exception of a few cases in which it was necessary to remove both vocal cords, are surprisingly good.

When penning these lines I forgot that three of these patients had, years after their respective operations, in the course of nature joined the majority. The paragraph in question, therefore, ought, more correctly expressed, to run as follows:

"I can now summarize my results to the effect that out of 18 cases of undoubted malignant disease of the larynx which I have operated upon by thyrotomy between June 2nd, 1891, and July 29th, 1902, 15—that is, 85 per cent.—were permanently cured. Three of these patients died several years after the operation from affections altogether unconnected with the original disease—one, six years after the operation, from an acute abdominal affection; the second, three years and a-quarter after the operation, from embolism of the heart or the lungs; the third, four years after the operation, from

[1] British Medical Journal, October 31st, 1903, p. 1116, column 2.

pneumonia. The remaining 12 are now alive and well; whilst the vocal results, with the exception of a few cases in which it was necessary to remove both vocal cords, are surprisingly good."—I am, etc.,

London, W., Nov. 21st. FELIX SEMON.

ISOLATION HOSPITALS.

SIR,—I should like to add a very few words to what has been said on this question by Dr. Dean Marriott, Dr. Casey, and others. In February of this year, in a paper read at the sessional meeting of the Sanitary Institute held at Manchester, I urged that some such body as the Sanitary Institute should draw up a list of suggestions as to the best lines of inquiry to be pursued in ascertaining the truth or otherwise of Dr. Millard's assertions on this subject, and that when adequate time had elapsed for such inquiries to be made an expert Committee should collate and publish the results. The matter would be in the best hands possible if the Incorporated Society of Medical Officers of Health would take it up, either by themselves or in conjunction with the Sanitary Institute and the Epidemiological Society. If some such thing as this is not done, and done shortly, the spirit of disquiet which has now got abroad will undoubtedly spread and will lead to many administrative deadlocks. There are many objections to the course suggested by some that each medical officer of health should conduct his own inquiry on his own lines and in his own district, the chief of these being that this would result in the accumulation of a mass of incomplete and incomparable particulars of no earthly use to anybody.

Dr. Niven, of Manchester, is the only one to my knowledge who has published the results of a thorough local inquiry into the question,[1] and his conclusions are in the main opposed to those enunciated by Dr. C. K. Millard. But we require a greater weight of evidence than this, and the only satisfactory manner in which to get it is, I submit, to proceed on some such lines as those I have just indicated.

Parenthetically I may remark that Dr. H. Biss, in an excellent and practical paper on the Borderlands of Diphtheria and Scarlet Fever, published in the *Lancet* of November 7th, has contributed materially to our knowledge of the associated conditions of scarlet fever, and has thrown light on many of the troublesome problems connected with fever hospital administration.

It is more than probable that an inquiry such as that advocated by Dr. Millard and others would result in many similar valuable additions to our knowledge of the etiology of scarlet fever, diphtheria, and kindred diseases.—I am, etc.,

Stockport, Nov. 11th. MEREDITH YOUNG, M.D., D.P.H.

THE PHYSICAL EXAMINATION OF THE UPPER CHEST.

SIR,—Dr. Colbeck's remarks in the BRITISH MEDICAL JOURNAL of November 7th are of a rather extraordinary character. Dr. Woods Hutchinson publishes a statement to the effect that "the upper aspect of the pleural sac plunged up and down with the respiratory rhythm." The plain and natural sense of these words is to the effect that the sac plunged up with inspiration and down with expiration. But Dr. Colbeck affirms that it is "perfectly clear" that this order ought to be read in the reverse way, though how he arrives at this conclusion is a psychological puzzle which I leave others to solve. Dr. Colbeck says he has received a letter from Dr. Hutchinson—no doubt very politely worded—regarding a paper which he (Dr. Colbeck) wrote in the *Lancet*. Referring to the paper in question I find Dr. Colbeck misquoting Dr. Woods Hutchinson by substituting the words "plunged about" for "plunged up and down," as possibly the former expression best suited his fancy, which is there reiterated, that the movements were intended to be read in the inverse sense.

Dr. Arthur Keith is also cited by Dr. Colbeck in support of his hypothesis. But in referring to Dr. Keith's paper in the *Journal of Anatomy and Physiology*, May, 1903, a diagram is given in which a line shows the upward expansion of the anterior apex in inspiration, and the position of this line corresponds exactly to the position at the side of the neck, where the same phenomenon is revealed by percussion, Dr. Keith remarking that this anterior part is "lifted up on inspiration." I am not aware of any subsequent modification of his views made by Dr. Keith, and yet Dr. Colbeck asserts that Dr. Keith is at one with himself as regards the apical movement. As regards clinical observers, their methods are "inappropriate." Perhaps Dr. Colbeck might kindly enlighten us as to the appropriate method of percussing or otherwise examining this region of the chest.—I am, etc.,

London, W., Nov. 9th. A. G. AULD.

[1] Annual Report on the Health of the City of Manchester, 1901.

OBITUARY.

GILBERT KIRKER, M.D., M.Ch., R.U.I.,

Fleet Surgeon, Royal Navy.

THE news of the almost sudden death of Fleet Surgeon Gilbert Kirker, which occurred on November 24th, will be heard with very great regret by many members of the profession, and with something more than regret by those who belong to his own service.

At the time of his death he occupied the dual posts of Instructional Fleet Surgeon and Principal Medical Officer of a surgical section at Haslar Hospital, and, as was ever the case with him, was throwing his whole heart and soul into his work. Only four days before his death he was performing an operation, at which he pricked his finger. Symptoms of blood poisoning and acute nephritis immediately followed, and he died—as we have stated—after barely three days' illness.

Fleet Surgeon Kirker pursued his medical education chiefly in Ireland, where in 1876 he took the degree of M.D. at the Royal University of Ireland. The year following he came to England, and received the membership of the Royal College of Surgeons, and thereafter went out to the Russia-Turkish war, where he worked as a surgeon attached to the Turkish cause. In 1878, at the end of the war, he returned to England, and after taking the degree of M.Ch. presented himself as a candidate for the Naval Medical Service. At the examination he obtained the first place, and at the end of the Netley course added to this early distinction by carrying off the Parkes Prize in Hygiene against competitors from all the three services combined. Upon the completion of his probationary service Dr. Kirker was appointed to H.M.S. *Iris* on the Mediterranean Station, under Captain Seymour, now Admiral Sir Edward Seymour, Commander-in-Chief at Devonport. This ship took part in the war operations of 1882, and Dr. Kirker was awarded the Egyptian Medal and the Khedive's Bronze Star.

At the end of this period of sea service he was appointed Assistant Professor in what was then the new medical School of Haslar, and worked hard there until his promotion to the rank of Staff Surgeon. Upon this, he went to sea again in H.M.S. *Phaeton*, and during this commission gained the Gilbert Blane Gold Medal for the excellence of his professional journals. He was next appointed to take charge of the Royal Hospital, Esquimalt, Vancouver, where he had opportunities for surgical work, of which he availed himself to the full. His next and last appointment was that which he held at the time of his death, one of great importance, since the holder of it can exercise much influence on all the young men who join the service. Although nearly the whole of his life was devoted to the navy, Fleet Surgeon Kirker was by no means unknown to the profession at large, and in particular he is likely to be remembered by those who were present at the annual meeting of the British Medical Association at Manchester last year. He was Vice-President of the Section of Navy, Army and Ambulance, and by his presence and energy contributed much to its success. He was a cultured man, and took an ardent interest in all professional matters, and the Royal Navy Medical Service, of which he was certainly one of the most distinguished officers, has suffered a severe loss by his death. At the recent distribution of prizes at the school of instruction at Haslar, Admiral Durnford, then Junior Lord of the Admiralty, paid a special tribute to his capacity and teaching ability, and there is reason to suppose that his name had been noted for promotion to much higher rank and also that if promotion by selection had been in force at an earlier period of his career he would long before have been raised to the highest rank. Writing about him, one who knew him well says: "Always unsparing of himself and full of devotion to the service, it is probable that these very virtues contributed to bring about the sad and sudden calamity which we all have to deplore to-day." One of the last things which his busy brain devised was an ambulance sleigh calculated to be of immense value on board our modern warships. His failure to reach the highest ranks may be regretted by his friends, but it has not been without benefit to the service at large, for his was one of those cases which served to bring home to the

authorities the injustice of the system of promotion, which depended practically upon seniority alone, though occasionally tempered by the haphazard of war service. Fleet Surgeon Kirker left behind him a widow, two sons, and two daughters, who will have the deep sympathy of members of the service, as well as of the profession at large, in their loss.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF OXFORD.

Approval of Examiners in the Faculty of Medicine.

At a Convocation held on Tuesday, November 17th, the names of the following persons, who had been duly nominated to serve as Examiners at the examinations for the degree of B.M., were submitted to the House and approved (*nemine contradicente*):—First Examination: Francis Gotch, M.A., D.Sc., F.R.S., Fellow of Magdalen College, Waynflete Professor of Physiology, in human physiology. Second Examination: Gustave Schorstein, M.A., B.M., B.Ch. Christ Church, F.R.C.P.Lond., in medicine.

Scholarships in Natural Science.

The following are the dates announced for the examinations: December 8th, Balliol College, Christ Church, and Trinity College; January 12th, 1904, Jesus College; January 19th, Lincoln College; March 15th, Keble College; March 22nd, Magdalen College; April 19th, Merton College, New College, Corpus Christi College.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

An extraordinary comitia was held at the College on Thursday, November 19th, the President, Sir William Church, K.C.B., in the chair.

Portrait of the King.

His Majesty the King having consented that a portrait of himself should be placed in the College, a Committee composed of the President, the Treasurer, and Dr Blandford was appointed to approach Mr. Fildes with a view of endeavouring to make arrangements for him to paint a replica of the portrait of His Majesty painted two years ago.

The Parkes-Weber Prize.

The President announced that the subject of the essay for the Parkes-Weber Prize was "The Degree of Infectivity of Pulmonary Tuberculosis and the Administrative Measures desirable for the Control and Treatment of the Disease."

Horace Dobell Research Lectureship.

The President announced that a letter had been received from Dr. Dobell offering the sum of £500 from his wife and self for the purpose of founding a lectureship at the College, to be termed "The Horace Dobell Research Lectureship." The proposed lectures were to be given every second year, and were to deal with the evolution and life-history of the micro-organisms associated with tuberculosis, leprosy, malaria, and plague. A sum of £50 was to be paid to each lecturer, and Dr. Dobell expressed the hope that when the amount of his gift should have been expended, about the year 1924, other means would be forthcoming for continuing the work of the lectureship. Dr. Dobell's gift was accepted with acclamation, and a Committee consisting of the President, the Registrar, and the Treasurer was appointed to make arrangements with the donor.

ANNUAL MEETING OF FELLOWS AND MEMBERS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

The annual meeting of the Fellows and Members of the Royal College of Surgeons of England took place in the large hall of the College at Lincoln's Inn Fields on November 19th, the attendance being about forty, and the chair being taken by Mr. Tweedy, President of the College.

The Annual Report.

The President discussed the annual report of the Council, which was analyzed in our columns on October 31st, page 1187, and mentioned that it had been decided not at present to make any move in the proposed combination with the University of London for granting a degree in connexion with the Membership of the Royal College of Surgeons of England and the Licentiateship of the Royal College of Physicians of London. In regard to *post-mortem* examinations in inquest cases, the Council considered that much could be said in favour of handing over ordinary *post-mortem* examinations to the medical practitioner who had been in attendance on the patient; but much to be urged in favour of the plan of entrusting the special cases to a pathological expert. The Council had come to the conclusion that their answer to the London County Council on this matter must of necessity be couched in guarded terms.

The Claims of Members.

Dr. Thomas Morton said that the time had arrived for the extension of the franchise of the College to its Members. Some of the Fellows of the College were favourably disposed to the granting of this franchise to the Members which had been withdrawn from the Members by the Charter of 1800. He concluded by proposing the following resolution:

That this meeting once more affirms the claim of the Members to representation on the Council on the grounds of historical right, justice, and expediency.

Mr. E. D. Vinrace seconded this motion, and warned the Council that until the Members had had their rights restored there would be no peace for those who opposed this act of justice.

Mr. F. W. Collingwood supported the motion on the ground that the Council would know the wishes of medical men in general practice if Members of the College were granted the representation that was due to them.

This motion was carried unanimously.

Mr. Joseph Smith then proposed that the Council should be asked to confer with a deputation of Members on the resolution just passed, and he was seconded by Dr. G. Danford Thomas, who in a well-balanced speech urged that it was not an impossibility to meet the agitation satisfacterily. This motion was also carried without a dissentient voice.

Minutes of Council.

Dr. W. G. Dickinson then brought forward a motion regretting the inadequate information afforded concerning the proceedings of the Council, and asked that complete minutes of the Council meeting should be available. Mr. J. B. James seconded the proposition, but, after the President had explained that the omissions were necessary, the motion was withdrawn.

The College and the General Medical Council.

Mr. Nelson Hardy then proposed:

That this meeting considers it unfortunate that the Council should have placed before it their reply to a report from the Inspectors of the General Medical Council without publishing at the same time the report itself, and further trusts that the Council will take immediate steps to bring the dispute with the General Medical Council to an amicable settlement.

Mr. John C. Smith seconded the motion, and Mr. Tweedy explained in detail the circumstances of the case. He was followed by Mr. Collingwood and Dr. Dickinson; and after Sir H. G. Howse had given further confirmation of the views expressed by the President, the motion was submitted to the meeting, when it was declared to have been lost by nine votes to eight.

The meeting terminated with a vote of thanks to Mr. Tweedy for presiding.

ADMISSION OF MEMBERS.

The following gentlemen, having passed the necessary examination, have been admitted Members of the College:

G. B. D. Adams, B.A.Oxford, Oxford University and St. Bartholomew's Hospital; R. G. Anderson, Guy's Hospital; E. G. Anthonisz, St. Mary's Hospital; J. G. Atkinson, St. Bartholomew's Hospital; S. G. Barling, Birmingham University; C. Barlow, L.R.C.P.Lond., and T. E. Blunt, London Hospital; G. E. Bellamy and B. R. Bickford, Charing Cross Hospital; P. C. V. Bent and S. C. Bowle, L.D.S.Eng., Guy's Hospital; H. W. Bethell, B.A.Camb., Cambridge University and Guy's Hospital; A. C. Birt, St. Thomas's Hospital; H. J. Cardew, B.A.Camb., Cambridge University and St. George's Hospital; F. F. Carr-Harris, M.D.Canada, Kingston, Queen's University, Canada, and University College Hospital; C. T. Cheatle, King's College Hospital; D. B. Chiles-Evans, University College, Cardiff, and University College Hospital; H. Clapham, St. Mary's Hospital; F. Cock, Charing Cross Hospital; J. D. Cooke, Melbourne University and London Hospital; W. L. Cripps, Cambridge University and St. Bartholomew's Hospital; W. A. Cumming, M.D., C.M.McGill, McGill University, Montreal, and St. Mary's Hospital; E. D. Davies, University College, Cardiff, and Charing Cross Hospital; M. Eager, King's College Hospital; L. E. Ellis, L.S.A.Lond., St. George's Hospital; H. Falk, B.A.Camb., Cambridge University and St. Thomas's Hospital; G. E. O. Fenwick, University of New Zealand and University College Hospital; A. E. Fiddian, University College, Cardiff, and St. Mary's Hospital; W. T. Finlayson, St. Mary's Hospital; H. R. Fisher, B.A.Camb., Cambridge University and London Hospital; L. W. Forsyth, M.A.Camb., L.D.S.Eng., Cambridge University and Middlesex Hospital; F. M. Gardner-Medwin, B.A.Camb., Cambridge University and St. Bartholomew's Hospital; W. Garton, St. George's and Westminster Hospitals; O. B. Gauntlett and H. M. Gilmour, St. Thomas's Hospital; F. W. Goyder, B.A., B.C.Camb., Cambridge University and St. Mary's Hospital; W. P. Graut, Owens College and Royal Infirmary, Manchester; J. N. Gunn, M.B.Toronto, Toronto University; A. Hallowes, St. Bartholomew's Hospital; W. T. Hamilton, M.B.Toronto, Toronto University; S. L. Harke, B.A.Camb., Cambridge University and St. Bartholomew's Hospital; B. Higham, St. Thomas's Hospital; R. B. D. Hird, Birmingham University; G. G. Hirst, B.A.Camb., Cambridge University and Middlesex Hospital; B. Hood, Charing Cross Hospital; W. S. Hughes, St. Mary's Hospital; J. James, King's College Hospital; W. Johnston and H. S. Jones, Guy's Hospital; J. D. Judson, Owens College and Royal Infirmary, Manchester; J. N. Kilner, St. Mary's Hospital; S. M. Lawrence, St. Bartholomew's Hospital; W. C. Lewis, Guy's Hospital; T. C. Lucas, B.A.Camb., Cambridge University and Guy's Hospital; E. J. H. Luxmoor, St. Mary's Hospital; W. C. Macaulay, B.A.Lond., Middlesex Hospital; C. Markus, M.D Germany, Frieburg and University College Hospital; J. E. Martin and R. C. Merryweather, University College Hospital; A. Martineau, B.A.Camb., Cambridge University and London Hospital; C. F. Nicholas, St. Bartholomew's Hospital; W. W. Nock, Birmingham University; W. B. Norcott, Queen's College, Cork; R. G. Northwanger, M.A.Camb., Cambridge University and St. George's Hospital; F. P. Nunnerley, B.A.Oxon., Oxford University and St. George's Hospital; B. H. Pain, B.A.Camb., Cambridge University and St. Bartholomew's Hospital; R. E. Palmer, G. E. Peachell, and E. A. Price, St. Mary's Hospital; L. G. Parsons, Birmingham University; P. C. Peace, University College and General Infirmary, Sheffield; C. T. MacL. Plowright, B.A.Camb., and C. A. W. Pope, B.A.Camb., Cambridge University and St. Bartholomew's Hospital; R. Raby, St. Thomas's Hospital; T. E. Regan, Owens College and Royal Infirmary, Manchester; D. M. Ross, Durham University and St. Thomas's Hospital; J. B. Rous, St. Mary's Hospital; J. L. Rushton, King's College Hospital; H. T. Samuel, University College, Cardiff, and St. Bartholomew's Hospital; H. H. E. Scatliffe, M.A.Oxon., Oxford University and St. George's Hospital; W. H. Scott, A. J. L. Speechly, and F. E. Taylor, St. Bartholomew's Hospital; H. C. Sidgwick, B.A.Camb., Cambridge University and St. Bartholomew's Hospital; C. J. Singer, B.A.Oxon., St. Mary's Hospital; W. G. Taylor, M.A.Aberd., Middlesex Hospital; J. H. Timothy, University College, Cardiff, and University College Hospital; J. E. Turle, University College Hospital; J. C. F. D. Vaughan, St. Thomas's Hospital; F. H. Wallace, A. M. Webber, and R. Willan, Guy's Hospital; G. D. Walsh, London Hospital; S. J. Weinberg, Owens College and Royal Infirmary, Manchester; H. Wheelwright, St. Thomas's Hospital; E. H. White, B.A.Oxon., Oxford University, and St. Bartholomew's Hospital; R. G. Wills, B.A.Camb., Cambridge University, and University College and Royal Infirmary, Liverpool; O. C. Withrow, M.B., Toronto, Toronto University and Middlesex Hospital; A. F. R. Wollaston, B.A.Camb., Cambridge University and London Hospital; H. W. Wilson, L. L. Winterbotham, and W. P. Yetts, St. Bartholomew's Hospital.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

The following candidates have passed the primary part of the Fellowship Examination:—P. F. Foran, Miss C. E. O'Meara, H. J. Perry, and H. Stevenson.

TRINITY COLLEGE, DUBLIN.

THE following candidates have passed the previous medical examination in the subjects undermented:

Anatomy and Institutes of Medicine.—A. C. Elliott, F. J. Usher, D. M. Corbett, H. J. Knox, M. P. Leahy, E. C. Phelan.

Physics and Chemistry.—E. H. Sherman, J. A. L. Hahn, T. P. Dowley, J. G. M. Moloney, F. R. Sayers, W. H. Sutcliffe, G. A. Jackson, J. W. Lane, C. H. O'Rorke, H. de C. Dillon.

Botany and Zoology.—*T. H. Gibbon, F. C. Anderson, H. F. Blood, S. F. A. Charles, H. D. Woodroffe, T. J. T. Wilmot.

* High marks.

SOCIETY OF APOTHECARIES OF LONDON.

PASS LIST, November, 1903.—The following candidates passed in:

Surgery.—G. Nunn (Sections I and II), Guy's Hospital; P. J. Pagonis, Athens; P. A. Pettavel, Lausanne; C. H. Pring (Section II), Westminster Hospital; L. S. Shoosmith (Sections I and II), St. Mary's Hospital.

Medicine.—S. Bentley (Section II), Sheffield; C. C. Bernard (Section I), Royal Free Hospital; P. Elias (Sections I and II), Amsterdam; F. Hansen (Section II), Copenhagen; W. B. Harris (Sections I and II), St. Mary's Hospital; P. S. Klots, Leyden; W. S. Lewis (Section II), Birmingham; C. H. Pring (Section II), Westminster Hospital.

Forensic Medicine.—C. C. Bernard, Royal Free Hospital; F. M. Boclet, Charing Cross Hospital; G. C. M. Davies, Charing Cross Hospital; P. Elias, Amsterdam; J. H. Harrison, Sheffield; H. M. Jones, Royal Free Hospital; P. S. Klots, Leyden; T. R. Waltenberg, Manchester.

Midwifery.—L. F. Cope, St. George's Hospital; G. C. M. Davies, Charing Cross Hospital; P. Elias, Amsterdam; A. T. Greenhill, St. Bartholomew's Hospital; R. J. S. Verity, Charing Cross Hospital; A. Whitby, Dublin.

The Diploma of the Society was granted to S. Bentley, F. M. Boclet, F. Hansen, W. B. Harris, P. S. Klots, P. J. Pagonis, P. A. Pettavel, C. H. Pring, L. S. Shoosmith.

ROYAL DENTAL HOSPITAL OF LONDON.

THE annual dinner of the staff and past and present students of the Royal Dental Hospital of London was held on November 21st at the Hotel Metropole with Mr. F. J. Bennett in the chair. After the usual loyal toasts had been honoured, the Chairman proposed the toast of "The Past and Present Students." He discussed the importance of bacteriological study in dentistry and hoped to see a professorship in dental bacteriology established. He concluded by describing the evil effects noted among the troops in the South African War from neglect of dental treatment. Mr. G. W. Bateman, who responded, urged the necessity for closer attention to the mechanical details of dentistry. Mr. F. Buder, who also replied, thanked the School Committee for providing the students so successfully with the means of studying dental practice and theory. Mr. Bland-Sutton, in giving the toast of "The Hospital and School," eulogized its equipment and management. Mr. Walter Hills replied, and sketched the history of the institution during his 17 years' service on the Committee of Management. He particularly referred to the great benefits the school had derived from the advice of Mr. Stoubham. Mr Morton Smale (Dean) also acknowledged the toast and remarked on the money subscribed by the old students which he said was a gratifying characteristic in those who had left the school. Mr. J. Murray responded to the toast of "The Visitors," and Mr. A. Hopewell-Smith proposed the health of the Chairman.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: JEROME BARRY, Staff Surgeon, and WALTER G. EDWARDS, Surgeon, to the *Furious*, December 3rd; THEODORE MARLES-THOMAS, Surgeon, to the *Robin*, November 18th; REGINALD L. JONES, Surgeon, to the *Venus*, November 18th; SAMUEL H. WOODS, Surgeon, to the *Jason*, on commissioning; JOSEPH H. WHELAN, M.D., Fleet Surgeon, to the *President*, for three months study at a civil hospital, December 1st; JAMES BRADLEY, M.D., Staff Surgeon, to the *Edgar*, December 1st.

Inspector-General ROBERT POTTINGER died at Moffat on November 16th, in his 86th year. He was appointed Surgeon, May 3rd, 1839; Staff Surgeon, December 21st, 1847; Fleet Surgeon, November 18th, 1862; Deputy Inspector-General, December 8th, 1868; and Inspector-General, March 5th, 1876. He retired from the services, March 8th, 1878. From the *Royal Navy List* we learn that he was Assistant Surgeon of the *Druid* at the bombardment and capture of Ty-kok-tau and the forts of the Bocca Tigris in 1841, and was afterwards frequently employed in boat service in Canton river; was present in the same ship at the capture of Amoy, and in medical charge of a detachment of Marines, who were engaged in taking possession of the Island of Koo-long-soo (China medal). He was Surgeon of the *Hecla* and *Blenheim* during the Russian war (1854-55); in the *Hecla* was in a cutting out expedition at Lekness, in the Gulf of Finland, when one man was killed and the first lieutenant and two men severely wounded, the ship being twice hulled; was present at the bombardment of Bomarsund, when the *Hecla* was again hulled in towing the *Penelope* off the rocks, and one man wounded (Baltic medal).

SURGEONS AND AGENTS.

J. writes: Concerning the appointment of surgeons and agents, may I suggest that it would be advisable for the Admiralty to allow some retaining fee, varying of course according to the importance of the appointment? Some acknowledgement of their services would be a recognition of their status, and would maintain a reserve of medical officers on shore in cases of emergency.

ERRATUM.—In the list of appointments made by the Admiralty published last week, the initials of Staff-Surgeon G. T. Collingwood were incorrectly printed.

ROYAL NAVAL VOLUNTEER RESERVE.

WILLIAM D. ANDERSON and ALEXANDER MACLELLAN are appointed Surgeons, November 20th.

ARMY MEDICAL STAFF.

SURGEON-GENERAL W. L. GUBBINS, recently Principal Medical Officer in the Home District, has, on promotion, been appointed to a similar post on the staff of General Sir A. Hunter, commanding the Bombay Army, and has left England to take up the appointment. He will be succeeded in the Home District by Colonel A. T. Sloggett.

ROYAL ARMY MEDICAL CORPS.

THE undermentioned Lieutenants are promoted to be Captains, dated November 14th: W. J. WATERS, H. F. SHEA, M.B., C. E. FLEMING, M.B., P. J. BODINGTON, M.B., J. F. WHELAN, M.B., P. S. LELEAN, W. H. ODLUM, F. A. STEPHENS, M. G. STERLING, W. M. POWER, J. T. JOHNSON, M.D., E. F. O. L'ESTRANGE, R. B. BLACK, M.B., T. B. UNWIN, M.B. The last-named officer served in the recent war in South Africa with the Imperial Yeomanry, and has the Queen's medal with three clasps. All the others served in the war as Civil Surgeons, and received commissions as Lieutenants, from November 14th, 1900. Captain Odlum was slightly wounded during the campaign.

Lieutenant-Colonel J. J. MORRIS, who is serving in the Bengal Command, is appointed to officiate as Principal Medical Officer, Bombay and Nagpore Districts.

CHANGES OF STATION.

THE following changes of station amongst the officers of the Royal Army Medical Corps have been officially reported to have taken place during the last month:

	From.	To.
Surgeon-General W. J. Charlton ...	... Bermuda... ...	4th Army Crps
Colonel G. D. Bourke	... Peshawar Dist.	Western Dist.
,, W. L. Chester, M.B.... ...	... Bengal... ...	Peshawar Dist.
Lt.-Col. A. T. Sloggett, C.M.G. ...	... —	Home District.
,, W. J. Macnamara, M.D. ...	... South Africa...	Jersey.
,, E. L. Maunsell	... Bengal... ...	Gosport.
,, D. Bruce, M.B.	... Uganda ...	Home District.
,, C. G. D. Mosse...	—	Portsmouth.
,, R. Porter, M.B.	... Woolwich ...	South Africa.
,, G. J. Coates, M.D.	... Buttevant ...	Templemore.
,, A. S. Rose, M.D.	... Stobs Castle ...	Maryhill
,, T. J. O'Donnell, D.S.O.	... Chester ...	Preston.
,, R. E. R. Morse	... Madras ...	York.
,, C. W. Thiele, M.B.	... South Africa...	Chester.
,, F. H. Treherne	... Netley	Punjab.
,, S. Westcott, C.M.G.	... —	Shoeburyness.
,, H. J. Wyatt	... —	Dublin.
Major J. M. Reid, M.D.	... Punjab... ...	Dover.
,, R. H. Clement	... Bulford ...	Portsmouth.
,, A. E. C. Spence, M.B.	... Pinner Camp..	Belfast.
,, M. W. Russell	... Home District	War Office.
,, E. Davis	... Beverley ...	Punjab.
,, S. G. Allen	... Malta	Woolwich.
,, T. Daly	... South Africa...	Madras.
,, A. Hosie, M.B.	... —	Portsmouth.
,, G. F. H. Marks, M.D.	... Dover	Bengal.
,, C. H. Hale, D.S.O.	... Devonport ...	Cardiff.
,, G. Raymond, M.B.	... Delamere ...	Madras.
,, G. A. Wade, M.D.	... South Africa...	Dorchester.
,, A. P. Blenkinsop	... Salisbury Pln.	Brighton.
,, J. Paterson, M.B.	... Preston ...	Bermuda.
,, W. T. Mould	... Southampton..	Bengal.
,, J. W. Jennings, D.S.O.	... Manchester ...	Abyssinia.
,, J. E. Brogden	... Bombay ...	Netley.
,, F. McDowell	... Scots Guards...	Madras.
Captain H. N. Dunn, M.B.	... Woolwich ...	Abyssinia.
,, T. McDermott, M.B.	... Kildare ...	Dublin.
,, W. D. Erskine, M.B.	... Glencorse ...	Egypt.
,, E. H. Condon, M.B.	... Dorchester ...	Punjab.
,, H. W. K. Read	... South Africa...	Dublin
,, St. J. B. Killery	... Dover	Scots Guards.
,, J. R. McMunn	... Dublin	Curragh.
,, C. M. Fleury	... Salisbury Plain	Bulford.
,, S. F. St. D. Green	... Dublin	Fermoy.
,, W. Tibbits, M.B.	... R.A.M. College	Bengal
,, A. E. Milner	... Madras... ...	R.A.M. Coll.
,, C. W. Profeit, M.B. ...	... R.A.M. College	Punjab.
,, J. Grech	... ,,	Cork.
,, J. C. B. Statham	... Bengal ...	Woolwich.
,, R. M. Le H. Cooper, M.D.	... R.A.M. College	Aldershot.
,, A. W. Hooper, D.S.O. ...	... ,,	Bombay.
,, A. C. Lupton, M.B.	... Half-pay ...	Home District.
,, A. O. B. Wroughton ...	... Aldershot ...	Madras.
,, J. F. Martin, M.B.	... ,,	Punjab.
,, W. C. Croly	... Cork	Madras.
,, T. G. Ford, M.B.	... South Africa...	Malta.
,, L. M. Purser, M.B.	... ,,	Ceylon.
,, D. O. Hyde, M.B.	... Chester ...	Bombay
,, R. T. Brown, M.B.	... Half-pay ...	Bulford[1]
Lieutenant H. G. Pinches	... Salisbury Plain	Bengal.
,, S. B. Smith, M.D.	... Kinsale... ...	Dublin.
,, J. L. Jones	... Jamaica ...	Woolwich[1]
,, H. A. Bransbury	... South Africa...	Malta.
,, A. H. Hayes	... Netley	Punjab.
,, F. A. H. Clarke	... Woolwich ...	Bengal.
,, J. W. S. Seccombe	... ,,	West Africa.
,, J. M. H. Conway	... ,,	Punjab.
,, H. G. S. Webb	... Aldershot ...	,,
,, W. W. Browne	... ,,	Madras.
,, R. Rutherford, M.B. ...	... Cork	Bombay.
,, W. D. C. Kelly, M.B. ...	... ,,	Punjab.
,, R. J. Franklin	... Aldershot ...	Bengal.

Lieutenant-Colonel A. Baird, M.B., retired pay, has assumed the medical charge of troops at Worcester.

Major J. H. Nicholas, retired pay, has relinquished his medical charge of troops at Derby.

Lieutenant-Colonels H. W. Murray, M.B., M. W. Kerin, and A. Peterkin, M.B., have been selected for increased pay under Article 362 of the Royal Warrant.

MEDICO-LEGAL AND MEDICO-ETHICAL.

PROFESSIONAL SECRECY.

THE following circular has been sent out to the medical profession in Birmingham:

"BIRMINGHAM CITY POLICE.
"Detective Department.
"Corporation Street,
"Nov. 19th, 1903.

"*Child Murder.*

"Sir,—I beg to inform you that at 9.20 a.m. on November 17th, 1903, the dead body of a newly-born female child was found in an opening in Aston Brook Street in this city, wrapped in an *Evening Despatch*, dated November 16th, 1903, and having a piece of lace (probably torn from underclothing) tied tightly around the neck. The body was warm when found.

"A verdict of 'wilful murder' has been returned at the inquest, and should you be called upon to professionally attend any woman who appears to have been recently confined under circumstances of this nature, I should be obliged if you would immediately communicate with me by telephone or otherwise.

"I am, sir, your obedient servant,
(Signed) CHARLES HAUGHTON RAFTER,
"Chief Constable."

We draw attention to this circular in order to warn practitioners that the information asked for by the Birmingham Chief of Police could only be given by violating the rule of professional secrecy, which enjoins all medical practitioners to keep silent upon matters which have come to their knowledge in the course of their professional duties. Some despotic Governments have at different times called upon the medical profession to notify all cases of wounded persons coming under their care in order to facilitate the detection of crime, but such claims have always been successfully resisted. We must testify in court to facts which have come under our knowledge if the judge directs us to do so, but we are not bound and should refuse to be informers for the police.

THE SOCIETY OF APOTHECARIES *v.* TCHERTKOFF.

THIS case was heard at the Bow County Court on November 18th. The proceedings were instituted by the Society against the defendant under the Apothecaries Act, 1815, for illegally acting as a medical practitioner. It appeared from the evidence that defendant, who resides at 327, Hoe Street, Walthamstow, had in the month of August last attended, prescribed, and made up medicines for one John Pocock, a working man, telling the patient that he was suffering from jaundice and gall stones. The patient eventually died, and it appeared from a necropsy that the cause of death was cancer of the liver, there being no trace of gall stones. Judgement was given for the Society for the penalty of £20, with costs on the higher scale.

PARTNERSHIP INTRODUCTIONS.

Z. D. asks what constitutes a proper introduction of a new partner to a practice.

*** (1) The partners' names should appear together on any plate put up to public view where the practice is carried on: (2) the partner should be introduced to all private patients, so far as necessary, for the welfare of the firm: (3) in the case of public appointments the senior partner should endeavour to get his colleague appointed his deputy.

ENGAGEMENT OF MONTHLY NURSE.

P. A.—If, in the case of a monthly nurse engaged for a confinement whose services were subsequently dispensed with the letter of dismissal afforded corroborative evidence of a contract, the nurse might have a good case for an action for breach of contract; but she would have to prove that she suffered loss from the said breach. The fact that she refused another engagement would not be sufficient; she must also show that she was out of employment at the time when the said engagement would have fallen due. She should consult a solicitor. We do not know of any association that would take up such a case.

PROFESSIONAL COMPETITION.

FAIR PLAY writes as follows: I have recently purchased an unopposed country practice, and within a few months of my starting, an opponent, who knows exactly my position and circumstances, has set up in my village in opposition to me, and is endeavouring to take away my patients by charging fees lower than my own, for example, 1s. 6d. for visits which have always been 2s. 6d., and 10s. for confinements which have always been 1 guinea. What is the best course I can adopt to thwart his success in so unprofessional and discreditable an act? I propose issuing a letter to my patients stating that whatever charges he makes I am prepared to lower them. I also propose to point out to them the underhand and unprofessional nature of the method he is adopting to damage my practice. In any case there is not room for another practitioner; but what is so annoying is the trick to which he is resorting to secure my patients. Surely a gentleman practising his profession ought to have some means of prohibiting an interloper of such a character.

*** It is impossible to say that competition is unprofessional or ungentlemanly, although it is much to be desired that there should be a recognized minimum scale of fees in each district which the local professional opinion should enforce. We can sympathize with our correspondent's annoyance after buying a practice which he believed to be unopposed to find that he has a rival; but he has really no right to claim a monopoly, and he must trust to the introductions he obtained and to his own merits to hold his ground. We should, however, strongly advise him to charge reasonable and proper fees, and not to attempt to undersell his opponent, for if he thus succeeds in driving his rival out of the field he will be compelled to continue the same scale of fees or give offence which may facilitate the introduction of another and perhaps more successful opponent.

FEES FROM HOSPITAL PATIENTS.

REFERO RELATA writes: I am informed that a custom has grown up in some of our provincial hospitals and infirmaries for the honorary staff to admit their own cases for surgical and other treatment, and to charge them fees for their operation and attendance. I should like to ascertain through the medium of your widely-read paper to what extent this practice obtains, and whether it is one that meets with the approval of the profession?

*** We are sorry to learn from our correspondent that such a practice exists anywhere, and should be very glad to know the evidence upon which he bases his statements. We have always understood that such conduct was contrary to the rules of all hospitals as well as to professional ethics. In the only case of the kind of which we have heard, as soon as the facts came to the knowledge of the Hospital Board the offender was compelled to resign, and although the matter was hushed up, there was no difference of opinion as to the gravity of the offence.

DEATH CERTIFICATE FORMS.

T. C. P.—There is no statutory obligation upon a registered practitioner giving a medical certificate of the cause of death to use the form officially furnished to registered medical practitioners, but he must in the certificate which he gives supply the information required by the Births and Deaths Registration Act, 1874.

CORONERS AT *POST-MORTEM* EXAMINATIONS.

"AUSTRAL" (Adelaide) writes us as follows: May I ask for your opinion whether it is usual for a coroner to attend at and watch the conduct of a *post-mortem* examination, which has been directed to be made for the purposes of an inquest, and whether such practice on the coroner's part is legal or generally advisable?

*** We believe the laws regulating the proceedings of coroners in the Colonies are almost identical with those which prevail in England and Wales, modified only as to the number of jurors required in isolate places where the usual number is not available. Although it is the duty of the coroner by law to view the body prior to the inquest, but not necessarily at the same time as the jury, yet there is no statutory obligation upon him to be present at the *post-mortem* examination. As far as the practice in England is concerned it is not usual for the coroner to be present at the *post-mortem* examination, and, as the larger number of coroners belong to the legal profession, they have little inclination to attend necropsies. Even amongst the medical coroners we know of no such practice. Should he happen to be present, there would be nothing illegal in the act, but he should take no part in the proceedings, or comment, or extract opinions from those who would afterwards appear before him as witnesses in the court. Our correspondent in a postcript to his letter says that he can perceive more than one objection to the coroner making a point of attending the necropsies he orders. We agree with him, and except for some very special reason we consider that the practice is undesirable and inadvisable.

MEDICAL ADVERTISING.

X.Y.Z.—We agree with our correspondent in his objection to the handbill, but we understand that it was sent out without the author's knowledge, and that as soon as his attention was drawn to it he ordered it to be withdrawn.

THE PLAGUE OF AMERICAN PAMPHLETS.

W. S. writes to complain of a pamphlet issued by the Od Chemical Company. Whatever opinion we may entertain of the undesirability of circulating such pamphlets, it is useless to make further appeals, for as they are addressed to members of the medical profession and come in closed envelopes, the postal authorities in England and America decline to interfere; indeed, it is difficult to see what could be done unless the sanctity of the closed envelope is violated, which is contrary to the best traditions of free Governments. Our correspondent takes a serious view of the risk to public morality incurred during the passage of this pamphlet from his waste-paper basket to the furnace; but might he not put the offending publication directly into the fire?

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8,020 births and 5,037 deaths were registered during the week ending Saturday last, November 21st. The annual rate of mortality in these towns, which had been 16.3, 16.2, and 17.9 per 1,000 in the three preceding weeks, declined again last week to 17.4 per 1,000. The rates in the several towns ranged from 7.1 in East Ham, 9.3 in Hornsey, 9.5 in Southampton, 9.6 in Brighton, 9.7 in Leyton, 10.6 in King's Norton, 10.7 in Bournemouth, and 10.8 in Coventry, to 24.7 in Plymouth, in Devonport, and in Hanley, 25.1 in St. Helens, 25.5 in Preston, 25.9 in Oldham, 27.1 in Stockton-on-Tees, 27.4 in Middlesbrough, and 29.3 in York. In London the rate of mortality was 16.6 per 1,000, while it averaged 17.8 in the seventy-five large provincial towns. The death-rate from the principal infectious diseases averaged 1.5 per 1,000 in the seventy-six large towns; in London this death-rate was equal to 1.3 per 1,000, while among the seventy-five other large towns the rates ranged upwards to 2.9 in Leyton, 3.2 in Preston, 3.3 in Willesden and in Hanley, 3.5 in Devonport, 3.8 in Oldham, 5.8 in Merthyr Tydfil, 7.1 in Warrington, and 9.8 in York. Measles caused a death-rate of 1.4 in Salford, 1.6 in Willesden, 2.3 in Oldham, 2.4 in Sunderland, 2.7 in Bury, 3.9 in Warrington, and 5.2 in York; scarlet fever of 1.2 in Northampton, 1.3 in York, and 1.5 in Merthyr Tydfil; diphtheria of 1.0 in Birmingham and

1.6 in Grimsby; whooping-cough of 1.4 in Devonport, 1.5 in Merthyr Tydfil, 2.0 in York, and 2.4 in Warrington; "fever" of 1.8 in Wallasey and in Preston; and diarrhoea of 1.2 in Cardiff, 1.3 in York, 1.6 in Hanley and in West Bromwich, and 2.2 in Merthyr Tydfil. One fatal case of small-pox was registered in Nottingham and 1 in Tynemouth, but not one in any other of the seventy-six large towns. The Metropolitan Asylums Hospitals contained 47 small-pox patients on Saturday last, November 21st, against 42, 43, and 51 on the three preceding Saturdays; 5 new cases were admitted during last week, against 12, 5, and 16 in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 1,828, 1,854, and 1,824 at the end of the three preceding weeks, had risen again to 1,833 at the end of last week; 192 new cases were admitted during the week, against 199, 224, and 185 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, November 21st, 859 births and 569 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 17.0, 15.8, and 17.4 per 1,000 in the three preceding weeks, was again 17.4 per 1,000 last week, and corresponded with the mean rate during the same period in the seventy-six large English towns. The rates in the eight Scotch towns ranged from 10.7 in Paisley and 12.3 in Aberdeen to 17.0 in Perth and 20.4 in Glasgow. The death-rate from the principal infectious diseases averaged 1.9 per 1,000, the highest rates being recorded in Glasgow and Perth. The 309 deaths registered in Glasgow included 4 which were referred to small-pox, 13 to measles, 2 to scarlet fever, 3 to diphtheria, 2 to whooping-cough, 5 to "fever," and 11 to diarrhoea. Two deaths from whooping-cough and 3 from diarrhoea were recorded in Edinburgh; 4 from diarrhoea in Aberdeen; and 2 from diphtheria in Perth.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, November 21st, 469 births and 367 deaths were registered in six of the principal Irish towns against 554 births and 337 deaths in the preceding period. The mean annual death-rate of these towns, which had been 17.5, 19.8, and 19.1 per 1,000 in the three preceding weeks, fell to 17.6 per 1,000 in the week under notice, this figure being 0.2 above the mean annual rate in the seventy-six English towns during the corresponding period. The death-rates in these six Irish towns ranged from 6.3 in Londonderry and 15.1 in Cork to 21.4 in Waterford and 25.0 in Dublin. The death-rates from the principal zymotic diseases in the same towns averaged during the week 1.2 per 1,000, or 0.54 more than during the preceding period. The highest point—2.7—was reached in Limerick, while Waterford again registered no deaths from zymotic disease at all. In Dublin 2 deaths each were registered from whooping-cough and diphtheria, 1 from enteric fever, and 4 from diarrhoeal diseases. In Belfast 3 deaths were ascribed to measles, and 1 each to scarlet fever, diphtheria, and enteric, while 5 were due to diarrhoeal diseases. With the exception of the cases in Belfast and the 2 of diphtheria in Dublin, no deaths from small-pox, measles, scarlet fever, or diphtheria were registered in any part of Ireland.

ATTEMPTED BLACKMAILING BY A SANITARY INSPECTOR.

At the Central Criminal Court, on November 23rd, one of the assistant sanitary inspectors of the City of Westminster was charged with having demanded £20 from the keeper of a restaurant in Soho with menaces. The evidence showed that the prisoner called at the prosecutor's restaurant stating that he was a sanitary inspector, and directed certain structural work to be done. A few days later he called again, inspected the work, and said it was badly done. Then he looked into the larder, and picking up five cutlets and two chops, said they were rotten, and would cost the prosecutor £50 each. He also made corresponding statements about some tins of spinach. Afterwards he drank some whisky and soda with the prosecutor, and impressed upon him that the discoveries made would cost him £700 or eighteen months' imprisonment. On the prosecutor asking what he should do, the prisoner took out a pocket book and wrote on a leaf £20. Later on, in the same conversation, he told the prosecutor he was a big man and could raise the money. The prisoner then left, but not before repeating his remark about the money being raised. Subsequently the prisoner called again with the chief sanitary inspector, who condemned the food pointed out, and had it removed, the prisoner remaining behind to impress upon the prosecutor that he must try and raise £20 before the following Monday, in which case no steps would be taken against him. As a consequence of the prisoner's first statement, the prosecutor told a member of the City Council what had passed, and by arrangement a detective inspector hid upon the premises in anticipation of the prisoner's visit on the following Monday. The prisoner duly arrived, bringing with him what he pretended was a summons to the prosecutor to attend at Marlborough Street Police Court unless he paid him the sum of £20. The prosecutor then handed him this sum in gold, which had been previously marked by the detective. The result of the trial was the conviction of the accused and a sentence of twelve months' imprisonment with hard labour.

In some foreign towns we have heard authorities excuse the existence of sanitary defects on the ground that it was impossible to prevent sanitary officials from accepting bribes. In this country we have no reason to suppose that bribes are either commonly sought, offered, or accepted. Nevertheless it is obvious that there must be considerable risk at all times of attempts being made to avoid the results of breaches of sanitary laws by bribing those who are responsible for seeing that they are observed. It is satisfactory, therefore, that in this case a conviction was obtained, although the jury accompanied their verdict by a recommendation to mercy. Into this they were possibly led by an admission of the prosecutor that if the blackmail demanded had been only three or four pounds he would probably have paid it. The jury, indeed, when they first returned to court, expressed an opinion that it was a case of bribery, and not of menace. Being sent back to consider the issues actually laid before them they returned the verdict which has been mentioned.

FACTORY AND WORKSHOPS ACT, 1901.

M. O. H. writes: The local authority, apparently wishing the Factory and Workshops Act, 1901, to become a dead letter, what is the duty of the medical officer of health between the Council and the Home Secretary?

*** The duty of the medical officer of health is to carry out those portions of the Act pertaining to him. He has no option. Of course the strictness with which he carries out the Act is a question of degree, and differs in various districts. The Act is not permissive or adoptive. It is compulsory; and it is outside the purview of the local authority to appoint a medical officer of health, and then limit his duties only to such Acts as they deem compatible or convenient unless such Acts are permissive, which the Factory Act is not. In a rural district obviously the Act is of less importance than in a large industrial district, and discretion must of course be used.

MEDICAL NEWS.

The annual dinner of the Otological Society of the United Kingdom will be held at the Trocadero Restaurant, Piccadilly, on Monday, December 7th, at 7.30 p.m.

Dr. J. Rose Bradford will deliver the Purvis Oration before the West Kent Medico-Chirurgical Society at the Royal Kent Dispensary, Greenwich Road, on Friday next, at 8.45 p.m.; he has taken for his subject the value of symptoms in diagnosis. After the oration a *conversazione* will be held.

The autumnal dinner of the Durham University Medical Graduates' Association will take place on Thursday, December 3rd, at the Café Monico, at 7.30, under the presidency of Dr. Frederick Spicer. Full particulars may be obtained from the Honorary Secretary for the South, Dr. T. Outterson Wood, 40, Margaret Street, Cavendish Square, W.

The Society of Women Journalists, of which Mrs. Timbrell Bulstrode is Honorary Secretary, gave an "at home" at the Suffolk Street Galleries last week. The attendance was large, and Lady Sarah Wilson, the President, gave an address, in which she commended the efforts of the Society to establish a friendly feeling among ladies working as journalists.

Sir Henry Burdett, K.C.B., will open a discussion on London Hospitals and Medical Schools and their Sites at a meeting of the Hospitals' Association, on Thursday next, at 4.30 p.m., in the Board-room of Charing Cross Hospital. Mr. Thomas Bryant, Consulting Surgeon of Guy's Hospital, will take the chair, and tickets may be had on application to Mr. Sydney Phillips at St. Thomas's Hospital.

The Sanitary Institute.—A provincial sessional meeting of the Sanitary Institute will be held at Leicester on Saturday, December 5th, when Mr. William Whitaker, F.R.S., will take the chair at 11 a.m. A discussion on the collection, disposal, and utilization of town refuse in Leicester will be opened by Mr. Frank W. Allen, A.M.Inst.C.E. In the afternoon a visit will be paid to the destructors of the Leicester Corporation. An ordinary sessional meeting of the Institute will be held at the Parkes Museum, Margaret Street, London, W., on Wednesday, December 9th, at 8 p.m. The chair will be taken by Sir Benjamin Baker, K.C.M.G., and a discussion on flooding of basements in London by sewage will be opened by Mr. Maurice Fitzmaurice, C.M.G., M.Inst.C.E., and Dr. H. R. Kenwood.

MEDICAL VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—House-Surgeon, resident. Salary, £75 per annum.

BOURNEMOUTH: ROYAL BOSCOMBE AND WEST HANTS HOSPITAL.—House-Surgeon, resident. Salary, £80 per annum.

BRIDGWATER INFIRMARY.—House-Surgeon, resident. Salary, £80 per annum.

BRIGHTON HOVE AND SUSSEX THROAT AND EAR HOSPITAL.—Non-resident House-Surgeon. Salary at the rate of £75 per annum.

CARLISLE DISPENSARY.—Resident Surgeon. Salary, £150 per annum.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn Road, W.C.—(1) Non-resident House-Surgeon for In-patient Department. Honorarium, 40 guineas. (2) Three Registrars (Honorary) for Out-patient Department.

DURHAM COUNTY HOSPITAL.—House-Surgeon, resident. Salary, £120 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge Road.—Pathologist. Salary, 100 guineas per annum.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—Assistant House-Surgeon, resident. Salary £75 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—(1) House-Physician, resident. Salary, £20 for six months. (2) Clinical Pathologist and Bacteriologist. Honorarium 50 guineas.

HOSPITAL FOR WOMEN, Soho Square, W.—(1) House-Physician. Salary, £30 per annum, for six months. (2) Clinical Assistants.

HUDDERSFIELD INFIRMARY.—Junior House-Surgeon, resident. Salary, £40 per annum.

JERSEY GENERAL DISPENSARY AND INFIRMARY.—Resident Medical Officer. Salary, £120 per annum.

LYNN: WEST NORFOLK AND LYNN HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

METROPOLITAN HOSPITAL, Kingsland Road.—Assistant Surgeon.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Gynæcologist.

NOTTINGHAM GENERAL HOSPITAL.—House-Physician, resident. Salary, £100 rising to £120 per annum.

NOTTINGHAM POOR-LAW INFIRMARY.—Second Resident Medical Officer. Salary £120 per annum.

OLDHAM INFIRMARY.—Junior House-Surgeon, resident. Salary, £100 per annum.

PLYMOUTH PUBLIC DISPENSARY.—Honorary Gynaecologist.
PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Assistant House-Surgeon resident. Salary at the rate of £50 per annum.
ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, Waterloo Bridge Road.—Surgeon to Out-patients.
ST. MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, W.—Lecturer on Physiology. Salary, £400 per annum.
SOUTH SHIELDS UNION.—Assistant Resident Medical Officer at the Workhouse. Salary, £80 per annum.
TEIGNMOUTH HOSPITAL.—House-Surgeon, resident. Salary, £70 per annum.
UNIVERSITY COLLEGE, Gower Street, W.C.—Chair of Hygiene and Public Health.
WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) House-Physician. (2) House-Surgeon. Both resident.
WINCHESTER: ROYAL HANTS COUNTY HOSPITAL.—House-Physician, resident. Salary, £65, rising to £75 per annum.

MEDICAL APPOINTMENTS.

CROWLEY, J., L.R.C.P. & S.Edin., L.F.P.S.Glasg., Certifying Factory Surgeon for the Ballycastle District, Mayo.
GAULT David, M.D. F.R.C.S., Medical Superintendent to the Orokonui Home for Inebriates, Waitati, Otago, New Zealand.
POLLOCK, J. Donald, M.D., C.M.Edin., Radiographer and Superintendent of the Electrical Department at the Cancer Hospital, Fulham Road, S.W.
PROVIS, F. Lionel, M.R.C.P., F.R.C.S.Edin., M.R.C.S.Eng., Physician to Out-patients at the Chelsea Hospital for Women.
PURCHAS, F. U., M.D., C.M.Edin., Certifying Factory Surgeon for the Newtown District, Montgomeryshire.
ROGER, R. R., M.D.Canada, Clinical Assistant, Chelsea Hospital for Women.
ROY, J. Allan C., M.B., Ch.B.Vict., Junior House-Surgeon to the Manchester Royal Eye Hospital.
RUBRA, H. H., M.D.Brux., M.R.C.S.Eng., L.R.C.P.Lond., Postal Medical Officer to the Hornsey Division.
YOUNG, A. G., M.D., Certifying Factory Surgeon for the Castle Bytham District, Lincolnshire.

DIARY FOR NEXT WEEK.

TUESDAY.

Pathological Society of London, 20, Hanover Square, W., 8.30 p.m.—Dr. L. S. Dudgeon: A Contribution to the Pathology of the Thymus Gland. Mr. C. S. Wallace: On Enlargement of the Prostate. Dr. H. A. Lediard: Unusual Tumour of the Skull. Mr. C. A. Morton: (1) Calcifying Chondrosarcoma of Breast; (2) An Unusual form of Obstruction of the Colon. Messrs. Barnard and Rigby: Pulsating Exophthalmos with Carotid Aneurysms. Dr. J. H. Drysdale: Racemose Aneurysm of the Brain.

WEDNESDAY.

Obstetrical Society of London, 20, Hanover Square, W., 8 p.m.—Specimens will be shown by Mrs. Scharlieb, Dr. Russell Andrews, Dr. Victor Bonney, and others. Dr. F. G. Stevens: Lantern Demonstration on the Fate of the Ovum and Graafian Follicle in Premenstrual Ages. Paper: Mr. John O. Malcolm, Dr. R. Hamilton Bell and Dr. Cuthbert Lockyer: A Case of Hydatidiform Mole with Bilateral Cystic Disease of the Ovaries and Malignant Invasion of the Muscular Wall of the Uterus, the patient being quite well two years after removal of the parts.

THURSDAY.

Harveian Society of London, Stafford Rooms, Titchborne Street, Edgware Road, W., 8.30 p.m.—Discussion on the Present Treatment of Enlarged Prostate, to be opened by Mr. C. W. Mansell Moullin.
Neurological Society of the United Kingdom, 11, Chandos Street, Chandos Square, W., 8.30 p.m.—Pathological Meeting. Specimen and Lantern Slides by Dr. Mitchell Clarke, Dr. Harris, Dr. Farquhar Buzzard, Dr. Purvis Stewart, Dr. Collier, Dr. Fletcher, and Dr. Batten.
North-East London Clinical Society, Tottenham Hospital, 4 p.m.—Discussion on the Use and Abuse of Pessaries, to be opened by Dr. Arthur E. Giles.

FRIDAY.

Society of Anaesthetists, 20, Hanover Square, W., 8.30 p.m.—Clinical Evening. Communications by Drs. Shapham and McCardie.
West Kent Medico-Chirurgical Society, Royal Kent Dispensary, Greenwich Road, S.E., 8.45 p.m.—Dr. J. Rose Bradford: The Purvis Oration on the Value of Symptoms in Diagnosis. Conversazione, etc., will follow.
West London Medico-Chirurgical Society, West London Hospital, Hammersmith, W., 8.30 p.m.—Mr. F. G. Lloyd: On Appendicitis. Dr. Alex. Morison: On Boldness in the Treatment of Heart Disease.

POST-GRADUATE COURSES AND LECTURES.

Charing Cross Hospital, Thursday, 4 p.m.—Demonstration of Medical Cases.
Hospital for Consumption and Diseases of the Chest, Brompton, Wednesday, 3 p.m.—Lecture on the Early Diagnosis of Pulmonary Tuberculosis.
Hospital for Sick Children, Great Ormond Street, W.C., Thursday, 4 p.m.—Lecture on Some Common Skin Diseases in Childhood.
Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—Demonstrations will be given at 4 p.m. as follows: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Eye. Lectures will also be given at 5.15 p.m. as follows: Monday, Treatment of Tuberculosis by the Therapeutic Use of the New Tuberculin; Tuesday, Life Insurance; Wednesday, Ulceration of the Cornea; Thursday, Tuberculous Diseases of the Skin; Friday, Optic Neuritis.
Mount Vernon Hospital for Consumption and Diseases of the Chest, 7, Fitzroy Square, W., Thursday, 5 p.m.—The Treatment of Phthisis at Home.
National Hospital for the Paralysed and Epileptic, Queen Square, W.C.—Lectures will be delivered at 3.30 p.m. as follows: Tuesday, Surgery of the Nervous System; Friday, Prognosis in Epilepsy.
Post-Graduate College, West London Hospital, Hammersmith Road, W.—Lectures will be delivered at 5 p.m. as follows: Monday, Treatment of Heart Disease; Tuesday, the Prevention of General Paralysis; Wednesday, Fibroid Tumours of the Uterus; Thursday, Some Ophthalmic Cases; Friday, Entozoa.
Samaritan Free Hospital for Women, Marylebone Road, N.W., Thursday, 3 p.m.—Lecture on the Methods of Examinations Employed in Gynaecological Diagnosis (Demonstration of Instruments).

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 2s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

BOWEN DAVIES.—On the 21st November, at Pendinas, St. Asaph, N. Wales, the wife of W. L. Bowen Davies, M.R.C.S.Eng., L.R.C.P.Lond., of a daughter.
COLBY.—On November 20th, at Hill View, Woking, Surrey, the wife of Frank Colby, M.B., F.R.C.S., of a son.

MARRIAGES.

GILLIES—WILSON.—At Carnview, Kirkintilloch, on the 17th inst., by the Rev. Alex. Taylor, M.A., Ayr, assisted by Rev. Geo. Lamb, B.D., Kirkintilloch, and Rev. W. T. Baker, Rocndale, Dr. James Gillies, of Selby, to Agnes Brown Wilson, seventh daughter of the late Gordon Wilson, of Lennoxtown.
MATHEW—SAUNDERS.—On the 29th October, at St. James's, Sea Point, by the Very Rev. the Dean of Capetown, assisted by the Rev. J. Deacon, Mabel, younger daughter of John Saunders, Esq., of Sea Cliffe, Sea Point, to G. Porter Mathew, M.A., M.D. Cantab., of Port Elizabeth, Cape Colony.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.
ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*
AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.
CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.
CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.
MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.
IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.
TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aetiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

MIDWIVES IN SCOTLAND AND IRELAND.

IGNORAMUS asks for information concerning the laws relating to midwives in Scotland and Ireland, and what are the Acts bearing on the subject?

*** We are not aware of any special Act relating to the duties of midwives applicable to Scotland and Ireland. The Act of 1902 is confined to England. It evidently was not considered necessary to extend its provisions to Scotland and Ireland, probably because there was no desire either for it on the part of medical men or of their patients. In Scotland midwives fulfil a useful function. Their duties are simple. If they interfere in any way with the duties of the medical profession they come under the provisions of common law, and in the event of a death due in any way to their interference they might be tried on a charge of culpable homicide.

MR. VERNON HARCOURT'S ANAESTHETIC APPARATUS.

DR. K. H. HEKINUGAN (Sivas, Turkey) asks the following questions: Is Mr. Vernon Harcourt's apparatus employed (for general narcosis) in England? If so where can it be got, and what does it cost? Is it possible to use it in private practice? Any literature about the same and where?

*** It has been extensively tried in some London hospitals and by various specialists. Mr. Tyrrell of St. Thomas's, and Dr. Dudley Buxton of University College Hospitals, have published their experience of its use, and commend it. It will be issued by Messrs. Griffin, of Sardinia Street, Lincoln's Inn Fields, London, W.C., but at present we believe it is not supplied owing to the necessity of getting an adequate number made. Messrs. Griffin will, however, take orders, and supply inhalers as soon as ready. It is especially adapted for private practice, and has been used by the anaesthetists named above. The only description published appeared in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL, July 18th, 1903, p. cxliii, Report of Special Chloroform Committee.

THE TREATMENT OF OXALIC ACID POISONING.

ANTIDOTE asks with reference to a case of acute pancreatitis at Guy's Hospital, narrated at the Clinical Society of London by Dr. Frederick Taylor, and published in the BRITISH MEDICAL JOURNAL of October 17th, 1903, p. 988, whether the use of emetics, and especially of the stomach pump, are not contraindicated in poisoning by oxalic acid; and whether it is not possible that the acute haemorrhagic pancreatitis was the result of the administration at the hospital of emetics in this case.

*** We do not read the note in the same way as "Antidote," but infer that the emetics were given before admission to the hospital, and that the nature of the poison taken was not at first known. Vomiting is almost always an immediate consequence of oxalic acid poisoning, and abstention from emetics and stomach pump seems reasonable, but authorities differ on the point. Luff prescribes chemical antidotes only, but Wynter Blyth says: "Unless the patient has vomited freely, empty the stomach at once by emetics of zinc sulphate or mustard: or the stomach pump or tube may in most cases be used" (*Poisons: their Effects and Detection.* By Wynter Blyth. Third edition. (London Griffin and Co. 1895.)

ANSWERS.

COONOOR.—The prescription forwarded by our correspondent should be read: R Liq. picis carbonis, 500 grams; cresol, 29 grams. For cresol No. 4 carbolic acid might be used, as 50 per cent. of it consists of the three cresols, the remainder being phenol.

INVETERATE RINGWORM.

IN answer to a request from "Practitioner," in the BRITISH MEDICAL JOURNAL of November 21st, for suggestions as to the treatment of three cases of inveterate ringworm, Dr. G. Steele Perkins refers to a letter of his published December 7th, 1895, in which he advocated the use of common salt. The method of using it which he then suggested is as follows: Shave the part affected and rub in a mixture of equal parts of pure vaseline and finely powdered salt until the place becomes sore. This occurs after a few applications, and the resulting sores may be allowed to heal by themselves or under some simple healing ointment.

The same treatment was advocated in an earlier memorandum by Mr. F. J. Reilley, November 23rd, 1805, the effect of sodium chloride on weeds being mentioned as an analogous result.

DR. GEO. H GRAHAM (medical officer, Electrical Department, East London Hospital for Children, Shadwell) writes: In reply to "Practitioner," who asks in the JOURNAL of November 21st for suggestions as to the treatment of ringworm of the scalp in three children, I would propose a course of treatment either by x-rays or Finsen light, if these methods have not already been tried.

IN reference to the same query, "R." writes that after considerable experience of ringworm of the scalp and after trying diligently a great variety of remedies, he is inclined to give preference to the following treatment in the case of a dark haired child: Apply an ointment of chrysophanic acid and lard (10 to 20 gr. to the ounce) mixed after heating. If this fails he suggests an application of glycerine to which 25 per cent. of formalin has been added. This should be continued for about a week, and carbolic glycerine then applied until the scales have dropped. After this the glycero-formalin should be recommenced. Epilation before, throughout, and for some time after the treatment must be carefully practised. When the spots are localized the application of croton oil with a brush is, he says, sometimes speedily effective, but in all cases patience is required.

PRURITUS VULVAE.

DR. HENRY W. SPAIGHT (North Leverton, Lincoln) writes: I had a few months ago a somewhat similar case of pruritus vulvae to the one described by "Scotus," and found, as he did, that extended applications had no effect on the itching. After I had given the bromides and cannabis indica a fair trial with no improvement, I put my patient on 5 gr. ichthyol and 10 gr. potassium bicarbonate three times daily, with in a few days complete relief, which has proved permanent.

TREATMENT OF PULMONARY TUBERCULOSIS BY OZONE INHALATIONS.

DR. A. C. BARRON (Dailly, N.B.) writes, in reply to "M.B.": In the Hôpital Boucicault, Paris, there is a male ward for pulmonary tuberculosis where patients were specially treated by ozone. I say "were" because on the day (June 4th this year) on which I visited the Hôpital Boucicault the machine which generated ozone in the ward was not in working order, and those in charge appeared indifferent as to whether it should work again. To my question as to their experience of the effect of ozone treatment on the patients, I got the reply: "They all go to what you in England call, I think, the autopsy!" A glance round the sufferers in the ward, and a visit to the mortuary, was only too confirmatory. Should "M.B." visit the Hôpital Boucicault he will, I am sure, be given opportunity to make full inquiry into the past working of ozone treatment there.

NOTES, LETTERS, Etc.

THE LATE TIMOTHY LEWIS, A.M.D.

R.A.M.C. writes: As one who had the pleasure of knowing the late Surgeon-Major T. Lewis, permit me to correct a small inaccuracy appearing both in the excellent article on the etiology of sleeping sickness and in your editorial comments on the subject, in the BRITISH MEDICAL JOURNAL of November 21st. In both places Lewis is mentioned as having belonged to the Indian Medical Service. It was not so. Surgeon-Major Lewis belonged to the Army Medical Department, of which the Royal Army Medical Corps is the evolutionary product and descendant. The mistake has probably arisen from the fact that Lewis's main work was done in India and published in the Reports of the Sanitary Commission of that country. Proud as we are of knowing Bruce to be of our number, we are not yet unmindful of the fact that, in years gone by, the medical service of the army produced a de Chaumont, a Timothy Lewis, and a Dobson. We are not without hope that future years may see worthy successors to these exact observers spring from the ranks of the R.A.M.C.

*** Another correspondent has drawn our attention to the inaccurac which was due to the cause suggested above.

PROPOSED DURHAM UNIVERSITY LODGE.

DR. BEDFORD FENWICK (20, Upper Wimpole Street, London, W.) writes: Will you permit me, through your widely-read columns, to inform Durham graduates who are Freemasons, that the question of forming a Durham University Lodge, which would hold its meetings in London, is under consideration. There is a "Universities Lodge" which meets at Durham, but so many graduates live in the South of England that it is felt a London lodge would be, in many ways, valuable to them and to their Alma Mater. I should be glad if any Durham men who are interested in the matter, and who would desire to be founders or members of the proposed lodge, would communicate with me as soon as possible.

A CENTENARIAN FAMILY.

DR. HERBERT GROVE LEE (Thame) has kindly sent us a copy of the following documents, which he recently saw hanging in the house of a clerical patient:

"The Inscription upon the Tomb Stone of Mr. Richard Bennett, Father of Mr. Luke Bennett of the Admiralty Office, in Borslam Churchyard, in Staffordshire, 1729:

"Here lyes the body of Richard Bennett of this Parish, who departed this life the 22 of August, 1729, in the 109th year of his age.

"Also near this places lyes the body of Mary Bennett, his late wife, who died in the 103 year of her age . . . and the body of Richard and Elisabeth Robinson, her Father and Mother . . . he died in his 114th year of his age, and She in her 108th.

"In the year of our Lord 1731½, the 25 of March. This was Drawn, and Written by Matthew Buchinger born without hands, legs, or feet, the 3rd June, 1674, in Germany in the Marquisate Brandenburg near Nuremburg. The same little man has been four times married, and has had issue Fourteen Children, viz. one by his first; three by his second, six by his third, and four by his present wife, of whom eight are still alive."

LETTERS, COMMUNICATIONS, ETC., have been received from

A Dr. A. G. Auld, London; Apenta; Dr. P. H. Abercrombie, London; Mr. G. F. Aldous, Plymouth; Mr. B. Ali, Aligarh; Antidote; Dr. T. C. Askin, Woodbridge; Arduus ad Solem; Miss L. B. Aldrich-Blake, M.D., London. B Dr. T. R. Bradshaw, Liverpool; J. P. Boyd, M.B., Cashel; Dr. F. Bushnell, Plymouth; Mr. C. Beesley, Exmouth; Sir T. Barlow, Bart., K.C.V.O., London; Dr. E. C. Bridges, London; Miss A. Body, London; Dr. A. McG. Buchanan, Glasgow; Miss M. F. Billington, London; E. Barnes, M.B., Manchester; Dr. J. G. Blackman, Portsmouth; Dr. S. S. Burt, New York; Dr. C. Buttar, London; Dr. A. C. Barron, Dailly; Mr. L. A. Bidwell, London; Dr. F. Beaton, Morpeth. C Mr. A. R. Cavalier, London; Mr. E. C. Cripps, Cirencester; Curious; Mr. W. F. Cholmeley, Wolverhampton; Messrs. J. and A. Churchill, London; E. M. Corner, M.B., London; Dr. N. H. Choksy, Bombay; Crux. D W. B. Drummond, M.B., Edinburgh; Dr. A. Duke, London; Dr. W. R. Dawson, Firglas; Mr. Q. B. De Freitas, Georgetown; Dr. L. G. Davies, Pelsall; D. B. E Enquirer. F Dr. E. Fraser, London; Messrs. Fannin and Co., Dublin; F. B. Feast, M.B., Birmingham; Mr. T. S. Fitchett, Melbourne; E. R. Fothergill, M.B., London; Dr. D. Fenwick, London. G Dr. E. Goodall, Carmarthen; A. Gray, M.B., Meikle Wartle; Dr. D. Gault, Waitati, N.Z.; Dr. G. H. Graham, London; M. W. Gairdner, M.B., Naples; Mr. P. G. Glenton, London; Mr. W. J. Greer, Newport, Mon.; J. H. R Garson, M.B., Sacriston. H Dr. T. J. Horder, London; Dr. J. W. Hamill, Manchester; Dr. W. Hartigan, Stansted; Mr. F. Haydon, London; Dr. J. P. Henry, London; Mr. J. Houston, London; Dr. K. H. Hekinugan, Sivas; Messrs. Howell Bros. and Co., London. I I.M.S. J Mr. G. Jackson, Plymouth; Jennerite; Mr. J. R. Johnson, Richmond, Surrey; J. B. C.; Jones; Mr. A. C. Jarvis, London. K Dr. T. N. Kelynack, London; Mr. V. Knowles, Reading. L Dr. T. Laffan, Cashel; Mr. R. T. Lang, London; Dr. H. C. Lawrence, Cheltenham; Dr. D. B. Lees, London; Dr. T. G. Lyon, London; Mr. E. Lewys-Lloyd, Towyn; Liverpool Medical Institution, Secretary of, Liverpool; Dr. J. Lithgow, Cleland. M Dr. J. Mackenzie, Burnley; M.R.C.P.Ed.; Mr. E. F. Meyer, London; Mr. G. Murray, London; Mr. A. H. Milne, Liverpool; M.O.H.; W. J. McCardie, M.B., London; Dr. C. J. Macalister, Liverpool; Metol; Dr. E. J. Maclean, Cardiff; Mr. A. R. Motion, London; Dr. C. M. Moullin, London. N Dr. J. Niven, Manchester; J. H. Nicoll, M.B., Glasgow; Nescio. O One of the Crushed Doctors; Mr. E. O'Conor, London. P Peter; Dr. C. B. Plowright, King's Lynn; Perspiration; Mrs. Plews, Brighton; Dr. S. Phillips, London; P. A.; Mr. E. Philpotts, Torquay; Dr. T. A. Palm, Wigtown; W. H. Pollard, M.B., Birmingham; Mr. S. Paget, London; Captain A. E. H. Pinch, London. R Dr. G. L. Roberts, Carnarvon; Dr. B. Robinson, New York; Dr. J. J. Ridge, Enfield; R.A.M.C.; Dr. S. Rideal, London; Dr. H. Reyner, Marseilles; Mr. H. Roberts, Farnborough; Mr. C. Ryall, London; Dr. A. Rivers-Willson, Oxford. S Miss M. B. Sowerby, London; "Shaftesbury" Officer; Spectator; Dr. G. F. Still, London; Mr. W. Soper, London; Dr. G. C. Steele-Perkins, London; Selkirk-Minus Company, Manager of, London; Dr. J. H. Swanton, London; Mr. H. W. Spaight, North Leverton; Dr. D. Stanley, Birmingham; Mr. R. E. Sieman, London. T Mr. M. R. Taylor, Helston; Mr. J. Tabb Thomas, Liverpool; Dr. E. Thompson, M.P., Omagh; Dr. H. H. Tooth, C.M.G., London. U Mr. A. M. Upton, London. V Dr. R. H. Vincent, London. W Dr. E. F. Willoughby, London; Dr. H. Waldo, Clifton; West London Medico-Chirurgical Society, Secretary of, London; Mr. T. P. Whittaker, M.P., London; Mr. C. H. Wells, London; Dr. A. Watson, Leamington; Winter Holiday; Dr. J. A. H. White, Birmingham; J. Wallace, M.B., Weston-super-Mare; Dr. F. Willcocks, London; W.; Mr. P. E. A. Webb, Cambridge; Mr. C. J. Wright, Leeds; Dr. T. Outterson Wood, London. Y Mr. P. M. Yearsley, London.

BOOKS, ETC., RECEIVED.

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The Purin Bodies of Food Stuffs; and the Rôle of Uric Acid in Health and Disease. By L. Walker Hall, M.D. Second Edition. Manchester: Sherratt and Hughes. 1903. 4s. 6d.

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*** In forwarding books the publishers are requested to state the selling price.

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A Lecture
ON
MEANS FOR THE PROLONGATION OF LIFE.

Delivered before the Royal College of Physicians of London.

By Sir HERMANN WEBER, M.D., F.R.C.P.,
Consulting Physician, German Hospital, and National Hospital for Consumption, Ventnor, and Mount Vernon Hospital, Hampstead.

The subject of the prolongation of life is a very large one, especially if considered with regard to the whole population from infancy onward.

The diminution of infant mortality and the improvement of the hygienic conditions of towns and houses have raised, and will continue to raise, the average duration of life. Here is a wide field of usefulness, and one of the most important sections of it will be the combat with the various forms of pathogenic microbes (Pflueger) in which men like E. Jenner, Pasteur, Lister, Koch, and others, have rendered immortal services to humanity. And, besides, the physical education of the entire population, which ought to commence in the nursery, and ought to be insisted on at all schools, public and private, will not only contribute to the prolongation of life, but improve the whole race, so that our grandchildren ought not to hear any more of the deterioration of the physique of recruits and other candidates for the army and the professions and trades.

This very promising subject will, as far as possible, not be touched in the present discourse, which will relate principally to the prolongation of the life of adults, by the arrangement of the manner of living. It is a purely empirical contribution, and does not enter into the pathological anatomy, so ably described by Dr. Savill[1] in his interesting paper before the Medical Society of London in March, 1897, into the clinical symptoms sketched by Dr. Clifford Allbutt,[2] by Dr. Savill and others, nor into treatment,[3] which is purely preventive.

Much has been written on this subject from remote antiquity up to the present time. When I think, for instance, of Galen's *De Sanitate tuenda*, Cicero's *De Senectute*, Bacon's *Historia Vitae et Mortis*, and Hufeland's *Makrobiotik*, Sir John Sinclair's *Code of Health*, Pflueger's,[4] Ebstein's,[5] and many other good essays on this subject, it may look presumptuous that I address on it so learned a body; but the facts that I have occupied myself with it for half a century, and with a certain measure of success as well in others as myself, and that I may perhaps open up some fresh aspects, embolden me to place before you in a condensed form some of my experiences and views.

Mr. T. E. Young[6] cites from the records of life assurance and annuity societies in England 7 cases of male and 15 cases of female lives having lived to between 100 years and 105 years and 8 months. This statement we may receive as perfectly trustworthy, but considering the very large number of lives among which these 22 cases of the duration of life beyond 100 years have occurred we see that such a duration of life is excessively rare. Dr. Tatham, Superintendent of Statistics, General Register Office, has kindly informed me that according to the census of 1903 there were in the whole population of England and Wales living above 90 years 3,056 males and 6,482 females, in all 9,538; and above 100 years 47 males and 99 females, in all 146.

The results of the inquiries of the Collective Investigation Committee of the British Medical Association are most judiciously analysed and interpreted by Professor Humphry in his delightful little book, *Old Age*, and give similar proof. We are therefore justified in assuming that, although life is usually limited to 80 years, it may occasionally be prolonged to 100 and even more through the operation of particular internal and external agencies. By carefully studying these agencies we may sometimes succeed in prolonging life to the limit natural to the human species.

In examining the circumstances under which man is likely to reach the natural term of life, and especially the manner of living by which this end can be promoted, we must not allow ourselves to be deterred by the experience that some of the most long-lived persons have led injudicious lives, and that great longevity occurs occasionally under the most different circumstances. After having carefully entered into the records of more than 100 cases of very long-lived persons, I have reason to say that by far the majority of them were temperate; were small meat eaters: lived much in the open air; led an active life; many a life of toil with great restrictions as to food and comforts; that most of them were early risers; that a great number of them had a joyful disposition, and performed their work cheerfully; and that only few were intemperate or idle and lazy persons.

Heredity.

I have endeavoured to ascertain what is the principal factor of inherited longevity. There were differences in the different long-lived families; but all of them were endowed, as far as I could learn, with a good heart and good blood vessels, and I am inclined to ascribe to the circulatory system the greatest share, which, however, cannot be separated from the respiratory system and from the vasomotor part of the nervous system.

The chances of a person belonging to a long-lived family are, *caeteris paribus*, much better than those belonging to ordinary families, but it is dangerous to rely too much on such a privilege. In a family, for instance, of 11 children, whose parents (both) died above 90, 5 men and 4 women, leading satisfactory lives, lived to 88 and more, while two addicted to alcohol, died between 60 and 70. The tendency to early death is likewise hereditary in some families, to such a degree that careful assurance offices refuse members of such families: but by judicious management, if commenced early enough, the life can be considerably prolonged in spite of the inherited tendency to early death, which seems to be mostly associated with a weak vasomotor system.

It seems to me a matter of importance to keep the idea of our power of influencing heredity constantly before our mind. In the same way as different hereditary varieties can be produced in animals and plants, hereditary tendencies can, I think, be produced in man to long life and early death. If this view were to be taken up, not only by medical men but also by the public, we might have in the course of time many long-lived and few short lived families. Much, no doubt, can be done by physical education, great moderation, and suitable occupation; but the most powerful influence would be exerted by well-selected marriages, and this, I fear, will never be quite in our power, and it would not be quite natural.

In advising persons with a hereditary tendency to rather early death it is most important to become acquainted with the causes of death of their parents and blood relatives, since by combating the tendency to these causes of death from as early a period as possible we often succeed in prolonging life. This is conceded by the majority of medical men with regard to tuberculosis: but numerous deaths between 50 and 70, which are caused by the weakness of the fibres of the heart and of the coats of the arteries and capillaries, can be avoided, or at all events greatly retarded, by regular exercises, including walking and breathing exercises, and great moderation in food and alcohol: the tendency to atheromatous and allied changes by similar means: and not less so that to stone in the urinary organs; the tendency to senile bronchitis and pneumonia, which form so frequent causes of death in advanced life,[7] by much air in and out of doors, by respiratory and other exercises tending to strengthen the heart and the lungs: dipsomania by total abstinence from youth onwards; and almost all other hereditary causes of death can mostly be warded off by judicious arrangement of the manner of living.

I could give a great many instances of persons who escaped the diseases of their parents and near relatives by well-adapted management. I will, however, confine myself to my own case, because you know me and see me before you. My mother died before she was 60 from inherited weakness of the heart, which led to frequent attacks of bronchitis and general dropsy. My father died in his 60th year from cerebral apoplexy: he had not been an abstainer himself, and his forefathers during four generations had taken largely the strongest kinds of hock, and port besides, and died from affections of gouty nature. By moderation and abundant exercise of mind and body I have escaped death from these causes and have prolonged my life, although I must confess that I have not quite effaced the gouty tendency inherited from five generations.

Death from old age is caused by a kind of atrophy of the tissues and organs connected with the changes in the blood vessels and the atrophy of the haematogenic glands. For the more accurate description of these senile changes I again refer to Dr. Savill's paper already mentioned. We must counteract this tendency to senile atrophy by supplying the

tissues and organs with healthy blood: and to do so we must endeavour to produce a healthy state of the blood and to maintain the blood vessels and lymphatics in a sound and vigorous condition. Life, we may say, depends to a great extent on the state of the organs of circulation.

The physiological processes connected with this all-important question have been studied by Ludwig and his pupils, including in this country especially Sir Lauder Brunton, and independently by Dr. George Oliver, of Harrogate. During the action of an organ its arterioles become widened, more blood flows into the capillaries and the lymph spaces, more food and more oxygen are carried to the tissues, and at the same time the waste products are removed. This has often been demonstrated on the muscle whose regular contraction causes increase in size and strength; it is, however, not only the muscular fibre which gains, but the nutritive vessels and absorbents gain equally much. The increased flow of blood which is caused by the action of the muscle forces the small vessels to work to bring more blood to the organs and tissues, and to remove the used up material, and thus their coats are kept in a sound condition. Similar is the case with the brain and nerve centres; the acts of thinking and of movements in the voluntary muscles lead to afflux of blood to the nerve centres, to increased nutrition of the ganglion cells and nerve fibres, and of the minute vessels efferent as well as afferent. The afflux of blood to the brain by the act of thinking has been shown by the ingenious experiment of Mosso, one of Ludwig's pupils, who has constructed a finely balanced table on which he placed a man in the horizontal position, and demonstrated that during the act of thinking the head becomes heavier, so that the head portion of the table goes down. My attention has been directed to this experiment by Sir Lauder Brunton.

If we review the different means in our power to prevent early decay and to keep the circulatory system in a healthy condition, we find that the most efficacious are given by the different forms of exercise.

The mode of action of muscular exercise Dr. George Oliver explains ingeniously in his address delivered before the British Balneological and Climatological Society in May, 1903, to which I must refer you. He has lately made a large number of observations on the effects of respiratory and muscular exercises on the blood pressure and on the tissue lymph circulation, and he informs me "that all these exercises (respiratory and muscular) produce the same effects—namely, (*a*) a rise of blood pressure and an increase of tissue fluid during the continuance of the exercise; and (*b*) a rapid decrease and immediate fall in pressure, and a diminution of the tissue fluid on the cessation of them;" and he has found "that the rise and subsequent fall in pressure and in tissue lymph are greater when these two forms of exercise are combined than when one or the other is practised alone." He concludes that exercise (whether respiratory or solely muscular, or both combined) stimulates the fluid exchange between the blood and the tissue spaces, and he hopes to have the opportunity of demonstrating these and other conclusions furnished by these observations before this College.

Walking.

In this, the most natural form of exercise, the action of the heart and the breathing are accelerated; more blood is passed into the blood vessels, which are obliged to contract more frequently and carry it with greater energy to the different organs and tissues, nourish the latter, and become themselves nourished. At the same time the number and depth of inspirations are increased, more oxygen is taken up and more carbonic acid is given out. Walking, however, does not only act directly on the heart, but, by the action of the muscles of the legs, more blood is attracted to them and all afferent vessels of the lower extremities carry away more blood from the heart and the efferent vessels, the veins and lymphatics, carry more blood back to the heart, and force it to contract more energetically. The circulation of the blood and lymph in the abdominal cavity is likewise powerfully accelerated by the act of walking, as well through the direct pumping action of the heart, as also by increased contractions of the diaphragm and abdominal walls. All the organs of the abdominal cavity share the improved state of the circulation. The act of walking causes, through increased action of the heart, an increased afflux of blood to all the organs of the body, and thus improves the state of the organs and their blood vessels. In addition to these effects we must take into consideration the fluid exchange between the blood and the tissues explained by Dr. Oliver's observations. Another effect of walking and of all muscular exercises is the nutrition of the muscles themselves; and this is a most important means of counteracting the natural tendency to decay, for the atrophy of the muscles is one of the first manifestations of senility, and is one of the main causes of the loss of weight in aged people.

The amount of walking necessary to maintain health varies widely in different persons and under different circumstances, we may say from half and hour to two or three hours a day, part to be taken in the morning, part in the afternoon. People in advanced age mostly are unable to take as much as those in middle age. Those who possess fairly healthy organs of circulation derive more benefit from gentle uphill exercise than from walking downhill or on level ground. Also in weakness of the muscular fibre of the heart and moderate degrees of dilatation, graduated uphill exercise, as suggested by Oertel, has a most beneficial effect. It is, however, scarcely necessary to say that these suggestions as to walking are intended for fairly healthy persons, including valvular affections with perfect compensation.

This regular walking exercise, provided the health is fairly good, ought not to be interrupted by so-called bad weather; it ought to be taken in all kinds of weather—rain or sunshine, cold or warm. Almost every one becomes easily accustomed to every state of the weather, and the tendency to rheumatism and catarrh from chills is either totally overcome by it, or, at all events, very much diminished. When a friend of mine asked Moltke, the great general, by what means he had maintained his health and activity, he answered, "By great moderation in all things; by regular outdoor exercise in all weathers, good and bad; never a whole day at home." He was in his 90th year at that time.

The Week-end Holiday.

It is of great use for those who are still in fair vigour to take regularly, once a week, a day of more prolonged exercise up to four and six hours; and those who live in town ought to spend this day of extra exercise in the country, if possible, on account of the purer air and the change of scene. The benefit of such a long walk is increased if only a very small quantity of food and fluid is taken during the walk, for instance, a sandwich or a few biscuits and an apple or an orange. One of the visible effects of such a walk, combined with a very restricted taking in, is that the body loses mostly between two and seven pounds during the walk.[8] This loss consists almost entirely of water through the skin, the lungs and the kidneys, but with the water some salts and other excretory substances are removed. By the simultaneously increased removal of fluid and diminution of supply, more used up material is withdrawn, and the somewhat starved tissues are enabled to take up more new material. The weight lost on the long walk is usually regained within two or three days.

Many persons, including some medical men, are of opinion that it is injurious to take much active exercise, especially in advancing years, that the body is sooner worn out by it. A friend of mine, who was known by many of you, the late Mr. George Pollock, often told me this and tried to dissuade me from my long walks, as he believed that they would wear me out sooner than rest. He did not succeed in dissuading me, as I am sure that the "wearing out" theory of the organs is wrong.

The animal body is not a machine, made of dead substance like wood or leather, but is made of living organs and tissues, which by action are not worn out, but nourished and maintained in working order, provided always that the exercise is not over-exercise. It is true that work causes wear of tissue, but the wear is compensated by increased supply and increased power to assimilate this supply. Dr. Martin Luther's motto, "*Rast ich so rost ich*" (If I rest, I rust), is perfectly true. Old persons accustomed to much exercise may go on walking as long and as much as agrees with them; but they must keep up the habit if they wish to keep up their power, for if they leave off walking for some months, or even weeks, it frequently happens that they cannot resume it without injuring themselves. In this respect there is a great difference between the old and the young. One of the great advantages of several hours' exercise in the country is the exposure to the open air, which is scarcely to be overrated; it strengthens the skin and the nervous system, and, through this, the digestive system and the whole organism; it cheers the mind; it increases the resisting power to meteorological influences, and diminishes the tendency to chills and other morbid affections; and this resisting power is one of the great factors of longevity. Life in the open air, by itself, without exercise, increases the resisting power. It is not for tuberculosis alone

that open-air treatment is useful, but also for almost all other chronic affections.

The Summer Holiday.

Still more beneficial than the once-a-week extra exercise is the plan of taking once or twice a year a walking or climbing tour of three to four weeks or longer in mountainous districts, especially on glaciers, with three to six, or occasionally even eight, hours' active walking or climbing on most days of the week; provided that the organs of the body are free from disease, and that they be gradually accustomed to the increased work. The amount of benefit to be obtained from such tours, if judiciously arranged, can scarcely be exaggerated. They exercise an actually rejuvenescing influence, in which every organ of the body shares more or less, from the brain to the skin and hair. The power for mental work is increased, the view of life's duties, and its worries and hardships, is corrected; and often I have observed that the hair of the head and beard, when commencing to turn grey, has resumed after good courses of climbing more or less of the original colour. The action of the heart is likewise in all persons tangibly improved, in some to an astonishing degree. Again and again I have witnessed in many others and in myself that before the climbing tour a slight exertion in walking rather quickly caused the pulse to rise from 60 or 65 to 110 and 130, while after the climbing tour the same or even much greater exertion produced only a rise to 80 or 85. The pulse tracings by the sphygmograph are equally significant.

Respiratory Exercises.

The remarkable improvement in the heart's nutrition and action is, I think, to a great degree caused by the deep inspirations which are necessitated by the act of climbing, especially steady and prolonged climbing. This consideration has led me to pay particular attention to respiratory exercises, which since then have been very useful to myself and many others, especially persons with weak heart muscles. I make no claim of originality for these exercises; they are only a modification of several older systems of gymnastics. As in walking and other bodily exercises, the amount and modus of respiratory movements which are useful greatly vary with the individual condition, and must be adapted to the latter. It is often injurious in cases of weakness of the heart or lungs, or the sequelae of pneumonia or pleurisy or other acute disease, especially influenza, to begin at once with forced respiratory movements. I have mostly commenced with moderately deep inspirations and expirations continued during three to five minutes, once or twice a day, and have gradually increased the exercises to ten minutes or a quarter of an hour. The depth of each inspiration and expiration, is likewise to be only gradually increased. At the beginning a sixth or a quarter or half a minute, for every inspiration and every expiration ought to be sufficient: if this is well borne, each act may be gradually be prolonged in duration, so that in the majority of cases each inspiration and each expiration may be brought up to a minute. All the movements are to be made slowly, not rapidly. I usually advise to inspire in the erect position with raised arms and closed mouth, and to bend down the body during expiration so that the fingers touch the ground or the toes. By degrees one can learn to make several up-and-down movements during every inspiration, and bend and raise the body several times during the expiration. By this alternate bending and raising of the body we gain the additional advantage of strengthening the lumbar muscles and through this successfully combating the tendency to lumbago. Another useful combination with the respiratory exercises is the turning of the body round the axis of the spinal column, alternately with deep inspiration from left to right, and with expiration from right to left with half raised arms. By this movement we bring into action some of the muscles of the spine which are apt to be only imperfectly used by most persons in advanced years: and the stiffness of the neck and spine, and the tendency to stoop, so common in old people, can be to some degree corrected by this kind of movement, if commenced early enough and practised regularly and thoroughly. The swinging of the arms round the shoulder-joint is likewise a useful combination. Other combinations with muscle and joint movements will occur to those who have accustomed themselves to these respiratory movements: but the latter ought always to have our principal attention, since to them the beneficial effect on the heart and lungs is mainly due. In addition to the influence on the circulation the respiratory movements keep up the nutrition and efficiency of the lungs themselves, which undergo in old age a kind of atrophy; the walls of the smallest divisions and air cells become thinner, and a kind of senile emphysema is developed, which by these exercises is to some degree prevented. Another important influence consists in maintaining the elasticity of the chest walls, which are apt to become stiff in old age, and thus to interfere with free movements of the lungs and the pleura.

If for some reason the erect position should be inconvenient, the mere respiratory movements can be made also in the horizontal and sitting positions. I have already alluded to the additional advantage of the compression of the abdomen and the blood vessels and organs contained in the abdominal cavity, and we may further point out that the action of the serous membranes, of the pleura, the pericardium, and the peritoneum are also beneficially influenced by the deep respiratory movements; they constitute a kind of massage to the lungs, the thoracic walls, pericardium, and heart (Sir Lauder Brunton). In trying to explain the effects of these respiratory movements we must not forget the important item of the fluid exchange produced by them between blood and tissues (Oliver).

We must, however, not be satisfied with the few minutes of respiratory exercises, but we must make a habit of taking at several other times of each day deep inspirations and expirations, especially while walking. Breathing exercises are especially useful to literary workers, statesmen, professional men, and others who are unable to take one of the usual modes of exercise. The most convenient time for practising them is in the morning before or after the bath, when the body is loosely covered with flannel. I ought to add that they are not suitable for very delicate persons; they are, for instance, injurious in great dilatation of the heart with or without valvular disease; such affections require much milder movements, like those practised by Professor Schott at Nauheim; nor are they suitable in active tuberculosis and in tendency to pulmonary haemorrhage, and in the early stage of convalescence from severe acute diseases. On the other hand, their judicious use may be regarded as one of the preventives of diseases of the lungs, and can also be rendered beneficial in the later stages of convalescence from acute disease, and under medical guidance in some apyretic forms of chronic tuberculosis.

These respiratory exercises are different from P. H. Ling's so-called "Swedish gymnastics," but the latter are likewise most useful for the maintenance of health, and they can be adapted with many modifications, according to individual conditions, to many persons who are unable or disinclined to take ordinary walking or riding exercise, or who have local defects of movement from disease or want of use. The so-called Danish exercises and Streber's gymnastics (Streber's *Zimmergymnastik*) too, have many similar advantages, and also ordinary gymnastics as they are practised, especially in Germany, under the name of *Turnen*, although these are less suitable to old age than to the earlier periods of life.

Tension Exercises.

Another convenient form of exercise, especially useful in gouty people, recommended by Dr. Oliver, is what he calls the static or tension exercises, which consist in the static contraction of all the muscles of the body, while standing, from one to two minutes several times a day. In goutiness the arterial pressure is increased, and the tissue fluid is prevented from returning to the blood, and lodges in the tissue vacuoles. Tension of the muscles diminishes the arterial pressure and allows the tissue fluid to return. Dr. Oliver finds that one minute's tension clears up as much as 20 per cent. of lymph. These tension exercises may be practised best an hour before all meals, when Nature itself produces a normal fall in the arterial pressure; but other times may be substituted if more convenient.

While recommending walking and climbing tours and respiratory exercises and various forms of gymnastics, I must guard myself against the indictment that I disregard the value of riding on horseback and different kinds of sport. I, on the contrary, regard them as most useful to a very large number of persons, but I am unable to enter upon them here.

Food.

Attention to the digestive system and food is almost as necessary for the promotion of longevity as that to the circulatory and respiratory systems. It is impossible to lay down strict rules. One rule, however, we can lay down on

fear of harm—namely, that great moderation in the amount of food, and especially of the most nourishing articles (flesh food and pulses)—ought to be practised by everybody, particularly by old people, and is a great aid to longevity; but here, again, the term "moderation" must have a different meaning for different persons, and is to be judged individually. Many people think that if they only abstain from alcoholic stimulants they may eat large quantities of meat and eggs and other highly nutritive substances, and thus they, or, at all events, many of them, gradually develop changes in their blood vessels and other organs, which may not come to their perception at once, but for all that take place, and may later on show themselves as gout, arterial hypermyotrophy, atheroma of arteries, glycosuria, disease of the liver, the kidneys, etc. If you tell them that they must reduce the amount of food, must take only little meat and flesh food and alcoholic stimulants, they, or their relatives, especially ladies, think that you starve them—that it is impossible for them to do their work on reduced allowances. Few people know how little food is required to maintain health, especially in advanced age. Amongst the results arrived at by the Collective Investigation Committee of the British Medical Association we find that only few (5 per cent.) of the persons above 80 years had been large eaters of animal food, and that the majority had eaten only little meat, and this is the result of my own experience. Sir Henry Thompson has given excellent advice in *Diet in Relation to Age and Activity* (edition of 1901), and not less so Dr. George Keith in *Plea for a Simpler Life* (1896) and *Fads of an Old Physician* (1897), and also Dr. Burney Yeo in *Food in Health and Disease*. As long ago as 1568 and 1620, L. Cornaro of Venice has shown by the description of his own manner of living, when he was more than 90, in his *Discourses on a Sober and Temperate Life*, how, on a very small amount of food and wine, one can maintain perfect health and happiness and reach a very old age. He lived to over 100, and died without suffering. Addison gave a paragraph on this book in the *Spectator*, vol. iii, No. 195, and Abernethy recognized the practical correctness of Cornaro's precepts, if we may judge from an amusing sketch in the possession of the Royal Medical and Chirurgical Society to which Dr. Parkes Weber has directed my attention, and which those of you who do not know it ought to see. It represents Abernethy lying on the floor near a table covered with food and wine, at which two ladies and a gentleman sit; to them Abernethy delivers a very short lecture, from which I will only quote a few words:

> You should take my blue pill now and then, fasting. Read Cornaro on temperance; he lived to nearly the age of Methuselah! Practise his rules and regimen (if you *can*); get up before sunrise and get to bed after sunset. Sluice yourselves every morning, winter and summer, with cold water. Lie on your back, as you see I do, every day after dinner.

Sir William Temple says in the chapter Of Health and Long Life: "Essentials amongst primitive people are—great temperance, open air, easy labour, little care, simplicity of diet, rather fruits and plants than flesh."

Vegetarians, strict as well as modified, can attain long life; but I have not been able to convince myself that in fairly healthy people a moderate amount of meat, fish, poultry, and game causes any bad effects. At the same time, we must state our conviction, based on ample experience, that most people enjoy better health and live longer with only little meat and flesh food and a larger quantity of vegetables, to which milk and its derivants may be added. It is especially in advanced age and in gouty persons that meat ought to be taken very sparingly.

Almost all authorities are agreed on the subject that in old age the amount of food ought to be very limited. Dr. George Cheyne, for instance, says in one of his rules, "The aged should... ...lessen the quantity and lower the quality of their food *gradually* as they grow older, even before a manifest decay of appetite force them to it." Sir Henry Thompson says, "Less nutriment must be taken in proportion as age advances, or rather, as activity diminishes, or the individual will suffer." Many old persons are alarmed by their becoming thinner, and to avoid this think they must eat more; but this is mostly quite wrong. In the majority of cases increase of weight after 70 or 75 is not good, and corpulence is to be counteracted by the quantity and quality of the food and other means, while a slow decrease is mostly observed in those who reach a very advanced age. *Corpora sicca durant* was a true saying already in antiquity.

Dy [illegible] important subject, constantly preached, but almost as [illegible]tly neglected, is thorough mastication. Many forms [illegible]gestion, many states of imperfect nutrition of the whole body, are caused by what is called bolting the food. Nothing ought to be swallowed until it has been perfectly comminuted by mastication and by the admixture of saliva transformed into a kind of pap. Quite lately Dr. van Sommering of Venice has again directed attention to this point. Combined with the fault of bolting is often that of washing down the food before it is properly masticated. This is likewise a grave mistake, committed frequently by great eaters and by those who take much fluid during meals, which is in itself a bad habit.

ALCOHOL.

Alcohol is not necessary to healthy persons, and most men would be better without it. Many diseases are no doubt produced by the abuse of alcohol; many promising lives are destroyed by it; it is the most frequent cause of crimes and of the ruin of many families. The great mortality amongst public-house keepers is well known and is so general amongst all those who are engaged in the liquor traffic that insurance offices either decline their lives or take them only exceptionally at very high premiums. Yet a small quantity of wine or whisky, or cognac, or beer, according to the individual conditions, is to most persons not injurious, to some even useful.

A very prevalent idea with regard to alcohol is that it is most useful to aged people, in fact that "wine is the milk of old people," that it does for them what milk does for children. This doctrine I regard as rather fallacious, in so far as it induces some old people to take it in large quantities with injurious effect, although moderate and exactly regulated quantities are often beneficial, as for instance, Dr. Savill found in the aged inmates of the workhouse infirmary. Alcohol taken in any large quantity diminishes the resisting power of the organism against chills, microbes, and other causes of disease, and this resisting power is one of the great agents in the prolongation of life, and ought to be strengthened in every possible way, not weakened. For a careful consideration of the question of alcohol I refer to the chapter on stimulants in Sir Lauder Brunton's volume on *Disorders of Assimilation, etc.*[9]

Persons with small amounts of albumen in the urine, combined with signs of arterio-sclerosis can with great restriction in alcohol and meat, prolong their lives considerably. The majority of them, however, are disinclined to do so, and are inclined to interpret the advice of their doctors in favour of their own inclinations. It has repeatedly occurred to me that when I told such persons that great restriction was necessary, they answered that Doctor X considered restriction quite unnecessary, that he said they were perfectly safe with only several glasses of wine at lunch and dinner. They felt perfect security, but in spite of it they died within three years, while they might have lived much longer with restrictions as to alcohol and meat food. Sir Isambard Owen has given a careful analysis of the results of the collective investigation returns comprising 4,284 persons, and shows that the average duration of life was greatest in the total abstainers and very moderate drinkers, and that only few hard drinkers were amongst the long lived.[10]

TEA, COFFEE, AND COCOA.

Amongst the food accessories, tea is regarded by the majority of people as an agreeable, useful, and harmless stimulant, and is consumed by some classes in very large quantities, which can scarcely be regarded as wholesome; although when taken in moderate quantity and strength, it exercises a pleasant effect on the nervous system, especially in physical or mental fatigue, and is not injurious to the majority; but in some persons, particularly amongst those affected with dyspepsia and heart weakness, it produces sometimes disturbance of the heart, the stomach, and the nervous system. When, however, some authorities condemn tea entirely as a poison, and class it together with meat as a most potent producer of gout, we cannot quite accept their view. We have not seen much real gout amongst great tea drinkers, if they were at the same time moderate with regard to meat and alcohol. Tea, Sir William Roberts says, is an inhibitor of salivary digestion, probably through the tannin contained in it.[11]

Coffee contains in addition to caffeine, which has the same properties of theine, a volatile oil, developed by the process of roasting, some cellulose and extractive material (Parkes and Koenig). The infusion acts on most people in the same way as tea; but in some it causes indigestion and tendency to piles when they take it habitually, while they can take tea without harm. Parkes had a high opinion of the value of coffee specially for soldiers undergoing fatigue. Many of

those in whom tea produces flatulence and faintness, bear coffee quite well. Coffee likewise has an inhibitory effect on stomach digestion, and black coffee after meals ought, therefore, to be avoided by dyspeptics with slow digestion.

Cocoa is different in composition and action from either tea or coffee, although theobromine is chemically almost identical with theine and caffeine. The beans contain a large proportion of fat, in addition to other non-nitrogenous and nitrogenous substances. The cocoa prepared from cocoa nibs is well borne by most persons, but that prepared from the finely powdered kernel disagrees with some on account of the fat. The ordinary chocolate is mixed with much sugar, which makes it disagree with some dyspeptics. Cocoa and chocolate are much more articles of food than tea and coffee, and have much sustaining power in fatiguing climbs and other exertions.

Tobacco and Snuff.

Tobacco is to many persons a means of enjoyment, and is well borne by them, if they take it with moderation; it soothes nervous irritability and makes men often look more contentedly on their troubles. On the other hand excessive smoking is decidedly injurious to the majority of people by affecting the heart, the digestion, the nerves, and the throat. In many cases diminution of the amount of smoking, or taking a milder kind of tobacco, remedies the bad effects; in some, however, the use of tobacco has to be given up entirely.

Snuff is out of fashion at present; but to some people with stuffiness of the nose a pinch taken once or twice a day is useful by rendering the breathing through the nose more easy, and also by maintaining to a certain degree the sense of smell, since it acts by its stimulation as a species of gymnastics on the capillaries of the Schneiderian membrane. Many old doctors maintained that snuff taking was a good practice against some forms of frontal headache and blear eyes, and not without some reason.

Constipation.

An important matter with regard to the digestive system is the action of the bowels. There are great differences in this respect with different persons; many only feel well if they have one or two evacuations daily, and even more, without being obliged to pay any attention to the nature of their food; others only every second or even third day, with perfect health. On the other side there are many persons who have great difficulty in this function of the bowels; they go for three and four days, and longer; some do so without feeling inconvenience, but in the majority in course of time the health is disturbed by this habitual constipation, especially by interfering with the portal circulation, by piles, by the absorption of ptomaines. Constipation is also not rarely the cause of anaemia.

The amount and quality of food are of great importance to persons with sluggish bowels. With many people the intestines are so torpid that the stimulus of ordinary food is not sufficient to make them act. They require substances which cause a certain amount of local, mechanical stimulation, such as is produced by the bran of brown or wholemeal bread, and they also cannot do without a larger bulk of less nutritive food. The best brown bread in my experience is the wholemeal bread recommended by Sir Henry Thompson, which is a modification of the ordinary brown bread or Graham bread, and for travelling, Hill's or Spiking's wholemeal biscuits. The best qualities of Smyrna figs are likewise useful, partly, no doubt, by the seeds they contain, but partly also by the other portion of the pulp. A large part of the food of such people ought to consist of green vegetables, and some fruit such as prunes, and especially apples either baked or, if they are tender and can be easily and completely masticated, raw, in which state they have with many persons a greater influence on the action of the bowels than cooked. Some are perfectly regular when they take two or three fair-sized soft apples at breakfast or lunch, while others prefer bedtime. The quantity of meat food ought to be small.

There are many people who think that it is better to take only the nourishing parts of food, which are, in their opinion, more easily digestible, and save their digestive organs the labour of extracting them; they prefer meat extracts to meat, fruit jellies to the whole fruit, the finest flour to the entire wheat meal; but this is for most persons a great mistake; the stomach and intestines ought to be kept at work, like all other organs of the body, provided there is no ulceration or catarrhal affection of the gastro-enteric canal.

If the arrangement of food is not sufficient to produce regular action of the bowels, massage of the abdominal organs is in many people a satisfactory measure, and almost every individual can learn to practise this on himself. Another help, and a very useful one, not only with regard to the motion of the bowels, is the voluntary and systematic contraction of the muscles of the abdominal wall, the abdominal pressure ("*Bauchpresse*" of the Germans). By slowly and thoroughly contracting the abdominal muscles from above downward fifty or sixty times not only the intestines, but also the liver, the bowels, and the blood vessels in the abdominal cavity are compressed, the blood squeezed out and moved on towards the heart, which is strengthened by the extra work, as well as the abdominal muscles themselves. This abdominal pressure can most conveniently be practised at the closet after a motion. A glass of hot or cold water, or of some aërated table water like seltzer, or Apollinaris, or Giessbübler, or a cup of weak tea, taken about one to two hours before breakfast, has often the desired effect; in others, a ride on horseback before breakfast or a brisk walk. A wet bandage round the stomach and loins worn during the night is often a successful measure. If by all these helps the regular action of the bowels cannot be obtained, and if the health of the individual suffers in consequence, mild aperients become a necessity in many, and especially in gouty old people, as the tendency to imperfect removal of excretory matters is often part of their constitution, and may lead to various deviations from health, and ultimately shorten the life.

The Nervous System.

Equally important with the organs of circulation and digestion is the nervous system, which, we may say, governs all the other systems and is inseparable from them. We must therefore prevent its degeneration as long as possible; we must nourish it and keep it in action. The state of the blood vessels and the circulation is, again, all-important. Degeneration of the blood vessels of the brain, and the impairment of the brain structure and functions consequent on it, is a frequent cause of premature death, and the tendency to this degeneration is in many families hereditary; but it is to some degree preventable by great moderation in food and stimulants, by regular physical exercise, and by judiciously arranged mental work and occupation. I have often witnessed this, and in a very striking way in a family whose male members had for generations died between 56 and 64 from apoplexy or paralysis or mental decay. Of five brothers in this family two led an active life, mentally and physically, coupled with moderation, and lived to beyond 70 and 73 years, and died from heart affection and pneumonia, while the three others, with less active and less temperate habits, died between 60 and 64 from apoplexy.

The brain often decays from want of physical exercise or mental work. Many men retire rather too early from business; others, especially officers in the army or navy and civil servants, are obliged to do so by the regulations. Amongst these men we see not rarely weariness, dejection, and an inclination to give up occupation and active habits; to remain longer in bed and sit longer over their meals; and, in consequence, sickness of different kinds and also premature decay of the brain functions. Such men ought to find occupation for their brains and take regular bodily exercise. They ought to seek some objects of interest in art or in literature, in studying the habits of insects or birds, in history, geography, geology, zoology, botany, in gardening or agriculture, in the beauties of Nature, in travelling, or in adopting and educating a child, and in other philanthropic matters, etc.; they ought to cultivate a hobby, and this ought to be commenced already while people are still at active work, since the inclination and the aptitude to begin something new disappears not rarely long before 60, when they have to retire from their work. Many old people derive great benefit from chess and other intellectual games, but also from games at cards, especially when the eyesight fails, provided overexcitement or passion is avoided. The families or companions of old people ought therefore to play with them, instead of allowing them to go to sleep during the day or the long evenings. A great point is to keep up variety in mental occupations, and to keep awake the interest in many things so as to prevent mental torpor, which is akin to ossification of cartilages or arteries. All mental occupation leads to increase of flow of blood to the brain, activity of the small blood vessels, and nutrition of the nerve cells. I have already mentioned Mosso's experiment. I could produce the most remarkable proofs of the influence of mental activity on

the condition of the heart, the digestion, and the whole body. I cannot resist mentioning a very striking case which I had the opportunity of watching from day to day, as the subject was an intimate friend of mine. A man of great energy and intelligence, who was the leading spirit in a well-known hospital, began to become languid and to lose his interest in his work at the age of 78. The action of his heart became weak and very irregular, he lost the expression of intelligence, the saliva ran constantly from his mouth, and a viscid and acrid fluid from his swollen eyes; oedema of the legs and at last effusion into the pleural cavities developed themselves in his 82nd year, when suddenly the arrangements which he had created at the hospital were in danger of being overturned. This caused violent excitement in him, he began at first to dictate and soon to write letters; he held meetings, and succeeded in saving his arrangements and his influence. Marvellous was the improvement manifesting itself from day to day. The pleural effusion and oedema disappeared, the heart became almost regular, the eyes and mouth returned to their natural condition, the puffiness of the face subsided, and the intelligent expression came back. He remained in this improved condition about a year, when he died of pneumonia from a deleterious meteorological change. It was the work of the brain which improved the circulation, and especially the joy at his success, which caused this astonishing improvement. Wonderful is the effect of success, and especially of joy, and shows the immense power of the mental condition over the whole organism. But we see also in our professional intercourse the influence of the opposite mental conditions. Grief and loss of hope cause in some people the greatest mental depression, total indifference for their surroundings, combined with at first functional, afterwards organic, changes in the heart, and thus they may die of what may truly be called a "broken heart." Diminished respiration and imperfect supply of blood to the brain probably have a great share in these conditions of depression. Sometimes, but not always, we are able to produce a favourable turning in such cases by awakening an interest in near relatives or friends, or by some other powerful mental influence, which is followed by arousing the depressed functions of the brain, the heart, and the rest of the body.

We must endeavour to cultivate cheerfulness and a happy and placid mind. "A merry heart does good like a medicine, but a broken spirit drieth the bones." (Prov. xvii, verse 22).

In order to promote cheerfulness and avoid mental depression, it is of great importance to educate the sense of duty. The feeling of dissatisfaction or satisfaction with oneself exercises a powerful influence on the mind and, through this, the whole organism, and the thoughts ought to be turned to this from early life. The head of a family, for instance, who neglects the happiness of his wife and the training of his children for his personal enjoyment; the woman who shirks her duty in bearing children and in nursing them for frivolous motives, prepare for themselves, in most instances, worry and often disease and premature death; while those who bring sacrifices for home and family, for the improvement of the condition of the poor with whom they come in contact, earn mental satisfaction and happiness, which act like sunshine on the whole body, and thus become means of prolongation of life and a happy old age. A further point of self-education is the restraint of our passions; not only that we must not allow ourselves to become furious, if anything displeases us; but we must also conquer our ambition, our avarice, our jealousy, our sexual desires, which often become the sources not only of unhappiness, but, as you know, of bodily and mental disease, premature death or "miserable" old age.

A powerful agent in health matters is the will. We must develop it from youth and cultivate it throughout life. A large proportion of those whose lives I have been able to prolong exercised their strong will in carrying out the precepts which I gave them, although they appeared to them at first tedious and difficult. "I will not decay early," they said, "I will maintain my powers and faculties as long as possible." And not only is a strong will a great aid in attaining longevity by maintaining health, but it is also a powerful agent in overcoming disease. This is generally acknowledged with regard to pulmonary tuberculosis; but I have also seen many, and amongst them some almost marvellous cases, in other diseases.

Sleep.

Under the head of the nervous system we must pay some attention to sleep, that most wonderful function of our organism. The amount of sleep required differs very much in different people. Children require much more than adults. Most adults do not require more than five and a half to seven hours, but some take nine hours and over. Much depends on the nature of occupation and on habit, and there are in this matter, too, good and bad habits. The habit of sleeping too little is less frequent than that of sleeping too much. There are some hard brain workers who never sleep more than five hours, and even less, and enjoy good health with this small amount up to old age if they live otherwise correctly. Some people fly to sleeping draughts if they wake during the night. This is a very bad habit and ought never to be resorted to, excepting under the well considered advice of the doctor. The frequent use of anodynes and sleeping remedies weakens the heart, the nervous system, often also the digestion and the resisting power. Much sleep, namely, over eight hours—I speak here of adults—is often as injurious as too little, and perhaps more so, especially in persons of full habits, by causing diminution of nervous energy, or degeneration of the small arteries or capillaries of the brain, and in consequence apoplexy or premature decay of mental faculties. Immanuel Kant, who was not only a great philosopher but had also very judicious views about most matters of life, says that much sleep exhausts the energy and shortens life.[12]

With few exceptions, the long-lived reported on and analysed by the Collective Investigation Committee[13] rose early and went to bed early, and my own observations are entirely in accordance with this. Sir John Sinclair,[14] in his excellent and most diligently compiled work, says: "It is proper to add, that nothing is more pernicious than too much sleep. It brings on sluggishness and dullness of all the animal functions, and materially tends to weaken the body. It blunts and destroys the senses, and renders both the body and the mind unfit for action. From the slowness of the circulation which it occasions there necessarily follows great corpulency, a bloated habit of body, and a tendency to dropsy, lethargy, apoplexy, and other disorders."

At the risk of being blamed by those who maintain that a certain number of hours of sleep, say six to eight, is absolutely necessary, and that it must be taken by day if it cannot be taken at night, I may say that I have always recommended working men, physical or mental, to rise at the same early hour, even if they had gone to bed later than usual, or had not slept well. There are, I need not say, a few necessary exceptions to this rule. It is, at present, the habit of most men doing literary work, to do it during the late evening hours; they say that they cannot collect their thoughts and bring them into proper shape in the morning, but can do so in the late hours of the evening, and better and better the nearer they are to midnight. John Wesley, the well-known divine, it is stated, rose for sixty years every morning at 4 o'clock, and never slept more than six hours.

Before leaving the mental condition and the influence of mental work I must again express my conviction against the doctrine that under ordinary conditions work wears out the organs sooner than idleness or great restriction in work. It certainly is wrong with regard to well-organized brains, if the work is well-arranged and is not "overwork." Judiciously-arranged mental work in itself, with fair intervals of rest, does not wear out the brain. We have fortunately many instances of great brain-workers attaining considerable ages and maintaining their faculties to the end in science, in arts, in politics, in the law and divinity, and also in medicine. Hufeland himself, although he supports the wearing-out theory, was a hard worker and lived to 74. Cicero says: "The intellectual powers remain in the old, provided study and application are kept up, and old age need not be inactive, indolent, and drowsy." We have striking instances in painters, in Titian and in Sidney Cooper; we have amongst other brain-workers Sophocles, who is said to have written tragedies at 90 and more; Plato, Galen, Cato (Censorius), Cicero, Michael Angelo, Heberden, Wesley, Samuel Rogers, Chevreul, Sir Henry Holland the physician, William I of Germany, Moltke, Bismarck, Dr. Holyoke an American physician (died 100 years old), Leopold von Ranke, Mommser, Gladstone, and many others who exercised their brains to the end of their long lives, and probably contributed through this to their longevity.

The Skin.

An important organ, by which the health and the duration of life are influenced, is the skin, one of the functions of which is the removal of excretory matters. This function

which it performs jointly with other organs is apt to become defective in old people, especially the gouty. The skin of old people is mostly drier than in earlier life, partly, no doubt, from the obliteration of some of the capillaries. All active exercises help in keeping the skin more active, but one of the most powerful means is the bath. Many persons with an active circulation can use cold baths from early life to very old age, others with poor reaction do better with a hot bath. Again, others begin best with a warm bath, and then let in cold water and sluice themselves, head included, rapidly with cold water at the end of the bath. The active rubbing and drying with a rough towel after the bath does not only dry and massage the skin, but obliges the bather to make many movements with the arms, which he would not do otherwise. Thus the bath acts as a kind of gymnastics to the skin itself but induces also gymnastics of the arms. One of the great advantages of the bath, especially the cold bath, is that it hardens us against chills by increasing our resisting power, in a similar way as the constant stay in the open air does. It is most useful to combine with the bath the sponging or sluicing the whole head with cold water and thoroughly rubbing and drying it arterwards. Many people can keep themselves free from "colds" by this process. This hardening is further helped by keeping the head uncovered whenever possible not only indoors, but also in walking and driving. If a full bath cannot be managed it is advisable to take a hip bath, and to sluice the head with cold water; and if this, too, is impossible, the whole body may be rubbed with a wet towel.

Before I leave the attention to the different organs of the body I may mention that I have repeatedly seen in elderly persons some advantage from massage of the eyes, ears, and nose in retarding the decay of the corresponding senses. Massage of the thyroid gland is possibly useful in maintaining general energy. Massage of the scalp not only retards the loss of hair, but also prevent some forms of headache.

Amongst the important matters into which I am unable to enter are the clothing, the house to live in, and the climate. A regular change for six to eight weeks every year from one part of the country to another, or to the seaside, or to the Continent, to different elevations above the sea, is a great help to mind and body, and, through this, a powerful agent in the prolongation of life. The exact choice depends on individual points. To some people travel from one place of interest to another is preferable to a long stay at the same place. Travelling is, in fact, a great promoter of longevity. Old people whose mental activity begins to be stagnant ought to go to localities where their attention is stimulated by art, by history, by scenery, by the manners of the people, such as Egypt, Rome, Naples, Palermo, Florence, Venice, Athens, Constantinople, Vienna, Munich, Berlin, Paris, etc.

With increasing years the resisting power of the organism decreases, in some more and in others less; in some earlier, in others later. While in youth and in the prime of life the cold, the dampness, the high winds, the fogs, and mists are fairly well borne, they cause in many old people, especially those who neglect regular open-air exercise, catarrh, rheumatism, inflammation of the lungs, mental depression, and other ailments, and through these lead to disease, premature senile decay, and death. Warmer clothing is useful, but often not sufficient to counteract the inclemencies; it is therefore prudent for many of those who have lost much of their resisting power to spend the winter and early spring in milder climates, where their mind is cheered by sun and flowers, where their accommodating powers are less tried, such as the South and South-west of England, the Riviera, Corsica, the Canaries, Sicily, Algiers, or Egypt. In addition, the larger amount of sun in these localities and the flowers cheer the mind and render it more hopeful, and hope and cheerfulness exercise a most beneficial influence on the whole body. The first Lord Brougham showed his wisdom in this matter by spending the winters of his later life at Cannes, where he enjoyed much better health and prolonged his life considerably.

Conclusions.

The main points of my advice may be comprised in a few sentences:

Moderation in eating, drinking and physical indulgence.

Pure air out of the house and within.

The keeping of every organ of the body as far as possible in constant working order.

Regular exercise every day in all weathers; supplemented in many cases by breathing movements, and by walking and climbing tours.

Going to bed early and rising early, and restricting the hours of sleep to six or seven hours.

Daily baths or ablutions according to individual conditions, cold or warm, or warm followed by cold.

Regular work and mental occupation.

Cultivation of placidity, cheerfulness and hopefulness of mind.

Employment of the great power of the mind in controlling passions and nervous fear.

Strengthening the will in carrying out whatever is useful, and in checking the craving for stimulants, anodynes, and other injurious agencies.

In laying down these precepts I wish not to create a life of privation, but to promote a long life and a useful and happy one to the end without suffering, and I can assure you that it has been my good fortune to succeed in a great many cases.

Notes and References.

[1] Old Age in Health and Disease, *Med. Soc. Trans.*, vol. xx, 1897; Arterial Hypermyotrophy, *Med. Chir. Trans*, 1897-8; I may also refer to Charcot's lectures on senile diseases. [2] On Senile Plethora, Hunterian Society's *Transactions*, session 1895-6, p. 38; Rise of Blood Pressure in Later Life, *Med. Chir. Trans.*, vol. lxxxvi, 1903. [3] *Die Kunst der Verlaengerung des menschlichen Lebens*, Bonn, 1890. [4] *Die Kunst das menschliche Leben zu Verlaengern*, Wiesbaden, 1891. [5] I may refer amongst many other works to Dr. G. W. Balfour's *The Senile Heart*, London, 1894. [6] *On Centenarians*, 1899. [7] See the statistics in Dr. Savill's paper already quoted. [8] The loss of weight varies according to circumstances, such as the size and weight of the walker, the amount of fluid taken before starting, the duration of the walk and whether combined with much climbing, the temperature and humidity of the air, the stillness or agitation of the air. [9] Macmillan, 1901, pp. 71 to 148. [10] British Medical Journal, June 23rd, 1888, p. 1312. [11] *Lectures on Dietetics and Dyspepsia*, by William Roberts, M.D., Smith Elder and Co., 1885, p. 20. [12] *Journal der practischen Arzneykunde und Wundarzneykunst*, vol. v, Stück, 4, Jena, 1798. [13] Humphry, *Old Age*, p. 53. [14] *The Code of Health and Longevity*, 5th edition, London, 1833, p. 249.

The Harveian Lectures

ON

THE TREATMENT OF SOME ACUTE VISCERAL INFLAMMATIONS.

Delivered before the Harveian Society of London, November 5th, 12th, and 19th, 1903.

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Lecture III.

PNEUMONIA.

It may be well to combine the suggestions of the preceding lecture into an outline plan of treatment for pneumonia, though it may involve some repetition.

Every case in which a rigor occurs and the temperature rises should be sent to bed at once in a well-ventilated room without draughts, the warmth of the room being maintained at 60° F. If pneumonia is apparently developing, a trained nurse should be obtained from the first. The temperature, pulse-rate, and respiration-rate should be observed and recorded on a chart, and this should be repeated every four hours. If the patient, when first seen, is cold and at all collapsed, it is desirable to give him a "hot pack," by swathing him in a sheet wrung out of hot water of temperature of 110° F. (the head being kept cool), and covering him with blankets. Some hot brandy and water may be given to him to drink. He should be kept in the pack for about twenty minutes, then the sheet should be removed, the patient dried quickly, and placed in a warmed bed.

When he has thus been rendered warm, let the practitioner make a careful examination of (1) the tongue, mouth, throat, glands, (2) the left heart, (3) the right heart, (4) anterior pulmonary regions, (5) posterior and lateral pulmonary regions, (6) liver, spleen, abdomen. If pneumonia is developing, it is usually possible, by a very careful percussion, to detect some slight indication of the coming trouble, and it is extremely important to make sure of the diagnosis as soon as possible, for before the expiration of twenty-four hours from the onset there is a chance of arresting the disease by vigorous treatment. There will probably be pain on one side of the chest, with somewhat limited expansion of that side in inspiration, and some slight local impairment of resonance at base or apex. Over this area there may be a very little subcrepitant *râle*, but the chief auscultatory indication will be local feebleness of breath sounds. This comparative absence of breathing

in the earliest stage of pneumonia is mentioned by Professor Osler, but is not generally recognized: it is certainly a fact.

Put two hot-water bottles to the patient's feet, and, as soon as possible (every hour is of importance), fill two icebags with small fragments of ice, and apply them as already directed over the suspected part of the lung, one in front and one behind. If the mouth and fauces are foul, a sanitas mouth wash should be employed, and the throat sprayed with 1 in 2,000 perchloride of mercury lotion. This should be repeated every three hours for the first two days. It is probably desirable in every case, for the infection of the air passages doubtless often starts from the mouth, and the spraying can be easily effected during the early days of the attack, when there is little dyspnoea. The diet should consist of milk, or milk and barley water, given every two hours, and water if desired.

The patient should be seen again the same evening and again carefully examined. Any other area of dullness that can be detected should be covered by a third icebag. If pain in the side has not been already relieved by the ice, a subcutaneous injection of $\frac{1}{8}$ gr. to $\frac{1}{4}$ gr. of morphine should be administered, and a night draught of bromide and chloralamide should be ready if the patient does not sleep. This must on no account be overlooked.

If the attempt at arrest is successful, on the second day the dullness will be found not to have increased—possibly it may already have diminished; the air will enter the suspected area more freely, the temperature will be lower, and the pulse-rate less frequent. It will in this case be necessary simply to persevere steadily with the treatment, but the greatest care must be employed to detect any fresh inflammatory foci, and to attack them immediately. Carelessness in percussion will lose the possible chance of saving the patient from a dangerous illness.

In proof of the assertion that if a case of pneumonia comes under observation within twenty-four hours after the initial rigor it is sometimes possible to arrest it by vigorous treatment, I give the two following cases:

CASE I.—W. B., 18, carman, was seized on the evening of October 31st, 1895, sixteen hours before his admission into St. Mary's Hospital, with a rigor which lasted an hour. Next morning he had fever and pain in the right side. On admission his skin was hot and dry, and there was some labial herpes. Temperature 103.6°, pulse 120, respirations 40. When I first saw him on the evening of November 1st, twenty-four hours after the rigor, I found dullness at the base of the right lung in front below the fourth rib, extending into the lower axilla, with some tenderness. The breath sounds were feeble over the dull area. No bronchial breathing, but a little crepitation at the end of inspiration. Behind, at the right base, breathing weak, and some impairment of resonance. Three icebags were at once applied.

November 2nd. Temperature, 101.8°; pulse, 100; respirations 34. Feels better. Dullness decidedly less extensive.

November 3rd. Temperature 100°, rising to 101.8°, falling to 99°; pulse, 100; respirations, 30. Dullness still diminishing. Says he is "a lot better."

November 4th. Temperature, 98°; pulse, 72; respirations, 26. Now only a small dull area in lower axilla. Ice removed (after sixty hours).

November 5th. Temperature rose to 99.8°, but fell to 98°.

November 6th. Temperature rose to 100.2°, but fell to 98°.

November 7th. Temperature, normal; pulse, 64; respirations, 20. Very slight impairment of resonance could now be detected.

CASE II.—E. N., 14, admitted May 22nd, 1896, twenty-four hours after immersion in a canal and twelve hours after a rigor. He had a headache and dyspnoea. On admission dullness was found in the right axillary region, and an icebag at once applied. Temperature, 103°; pulse, 120; respirations, 40.

May 23rd (10 a.m.). Both cheeks very flushed. Obvious dyspnoea. Temperature, 103°; pulse, 120; respirations, 40. Dull in the right lower axilla, not behind scapular line nor to inner side of nipple. Just below angle of right scapula there was distinct fine crepitation, with inspiration only: this was so typical that I made all my clinical clerks listen to it. Breath sounds diminished over the dull area; no bronchial breathing. Dullness and diminished breathing in right suprascapular fossa also. Some pain on left side of abdomen on taking a deep breath, but no rub could be heard and there was no dullness. Heart normal. Three more icebags were ordered, making four in all; two to the right base, a third over the right apex behind, and the fourth over the left axilla. After one hour the temperature fell to 100°, and the ice was removed. It then rose to 102°, but at once fell again.

May 24th (forty-eight hours after the rigor). Temperature, normal; pulse, 74; respirations, 34. He had slept well, was now not flushed, and the right axilla was less dull. The temperature remained subnormal for thirty-six hours. There was a short rise to 100° on the 25th, and to 99.8° on the 26th. After this it was normal, and the boy was quite well, and the right axillary region was of normal resonance.

It will be observed that in each of these cases there was no crisis, but an immediate and rapid subsidence of temperature, physical signs, and symptoms. In such cases as these it is reasonable to claim that the disease has been arrested. But it is not always possible to arrest a pneumonia even when it is treated very early, and after twenty-four hours there is little hope of success. This is not surprising when we remember how rapidly micro-organisms increase in number under favourable circumstances. Washbourn and Eyre found, on cultivating the pneumococcus in nutrient broth, making plate cultivations from the broth culture and counting the living cocci present at different periods, that 140 colonies increased in three hours to 6,149, and in six hours more to 13,680; twelve hours later they were "innumerable."

As the normal temperature of the human body is only 1° F. below the optimum temperature for the growth of the pneumococcus, it is clear that if an attempt to arrest the development of a pneumonia is to have any chance of success, it must be made very early and very vigorously.

But it is always possible to influence the course of a pneumonia, to diminish its intensity, and often to shorten its duration. This of course is difficult to prove, because of the uncertainty of the time of occurrence of the crisis in the disease when untreated. But there is nothing really improbable in the assertion that there is reason to believe that the ice treatment sometimes brings about an earlier crisis. For however the crisis may be caused, whether by the manufacture of an antitoxin or by a failure of further growth of the pneumococcus, it seems clear that any treatment which can to any extent inhibit the growth of the microbe and thus check the amount of toxin which it produces, will to that extent facilitate the earlier termination of the struggle between the attacking and the defending forces, in other words, it will hasten the crisis.

If the attempt to arrest the disease is unsuccessful, on the second day the area of dullness will be larger, and over it may be heard inspiratory crepitation, or sharp *râles* of double rhythm in children, or some prolonged expiration, or distinctly bronchial breathing. A third or a fourth icebag should now be applied, the sites for their application being outlined in blue.

It is desirable at this period to administer two or three grains of calomel, followed after three hours by a seidlitz powder. When a sufficient evacuation has been obtained the purgative should not be repeated, for in the later days of a pneumonia there is a tendency to diarrhoea.

On the second evening the hypnotic must be again given if necessary, and morphine if pain is present, for the patient must have sleep. It may, perhaps, be desirable to remove one or two of the icebags during the night, leaving two only in position. It might be thought that the necessity for disturbance would be fatal to sleep, but the relief of pain and dyspnoea is so great that the patient easily falls asleep again, provided that his right heart is not over-full. In the case of young children the temperature should now be taken every two hours (hourly for babies), and it can be done without disturbing them. If any icebags have been removed at night, they should be replaced early next morning.

On the third morning the physical signs in the lungs must again be most carefully determined, and directions given for the alterations of position of the icebags necessitated by the changes found. But now special attention must be given to the right heart. If the dullness of the right auricle is found to extend two finger-breadths in the fourth right space, and there is distinct dyspnoea and some slight lividity of lips, or cheeks, or finger tips, leeches should be applied over the lower ribs on the right side below the nipple level. One should be used for a baby under six months, two for a child under two years, four for a child of ten years, six for an adult, eight for a robust man. If not used at once the leeches should be held in readiness, for they may possibly be required in the evening if the patient is to sleep. Some tins of malted milk, and one or two cylinders of compressed oxygen should be procured.

On the third evening it will in most cases, unless the ice has already caused a marked improvement in the physical signs, be advisable to apply leeches—if they have not been already used an hour or two before the time for sleep. The relief thus given to the right heart will often induce sleep without any hypnotic, but one must be given if needful. Even morphine may be used safely under these circumstances.

On the fourth morning, if the leeches have been applied, the patient will feel more comfortable, though the physical signs may have increased in extent. The same minute care in determining the physical signs in both lungs must be

practised. Watch carefully for fresh areas of dullness, especially if there has been any fresh rise of temperature, and attack them at once.

The right auricle having now been relieved it will be desirable to give considerable quantities of water, both to satisfy thirst, and to promote diuresis and the elimination of toxin. During the twenty-four hours following the use of the leeches, 3 or 4 pints of water may be given, in quantities of 8 to 10 oz. every three hours; for a child 4 to 6 oz.

If the patient has not come under treatment until the fourth day of a severe attack, he will probably be in considerable distress. Dyspnoea and discomfort will be marked, cyanosis distinct, and the dullness of the right auricle may measure from two to two and a-half fingerbreadths in the fourth space, one or one and a half in the third, and half a fingerbreadth or more in the second. This should be ascertained at once, before any attempt is made to discover the amount of disease in the lungs. The call for bleeding is urgent and imperative. A larger number of leeches must now be used than would have sufficed on the previous day. Two must be employed for a baby, three for a young child, four to six for an older child, eight to twelve for an adult. A venesection is often preferable: 4 oz. for a young adult, 8 oz. for a strong man.

An hour after the bleeding both lungs should be carefully examined and the outlines of the dull areas marked on the chest. Two icebags must be applied at once to the worst inflammatory foci, an hour or two later a third, and before long a fourth. We are now in the thick of the fight, and it is necessary to call up the reserves and have all our forces in readiness for the struggle of the next three or four days. The subcutaneous injection of strychnine should be begun and maintained systematically in increasing amount or frequency. Now is the time also to begin the administration of oxygen: this, too, should be regularly continued throughout. Milk and also water may be given in considerable quantities after the venesection. At night sleep will probably come naturally, the right heart having been relieved and the pulmonary congestion diminished by the ice, but if not a hypnotic must be given, and even morphine if necessary; the patient must have sleep.

On the fifth day, if the patient has been vigorously treated with leeches and ice, there is often a marked improvement in the physical signs, and much less tendency to extension. But a severe case may be not yet controlled. It will now be desirable to limit the amount of fluid given to the patient, so as to lessen the strain on the right heart. The diet for the next two or three days should be simply malted milk powder dissolved in milk, a tablespoonful in two ounces every two hours for an adult, two teaspoonfuls in one ounce for a child. The icebags must be continuously applied, and their position altered as may be necessary, special care being taken to discover and attack fresh or spreading areas of inflammation. If leeches have been used on the third day, it is desirable to examine the right heart again very carefully on the evening of the fifth day. The relief will almost always last for forty-eight hours, but by the fifth evening some more leeches may be required. In determining this point, especially when the left lung is mainly involved, it is very necessary to guard against being misled by overdistension of the right lung into an underestimate of the size of the right auricle. In case of doubt, let the decision be for the leeches. The amount of sleep which the patient has hitherto obtained is also of importance in deciding this question. If he has slept well, and the right auricle does not measure more than two fingerbreadths, the leeches may be postponed. But if sleep has been defective, it will be wiser to apply them, and afterwards to give a hypnotic. For sleep is of great importance for the maintaining of vigour for the days which may remain.

If the patient has reached the fifth or sixth day of his illness, and neither bloodletting nor ice has been employed, the symptoms are often very severe, the distress great, and the outlook gloomy. Probably he has been sleepless for several nights, and his strength is rapidly diminishing. The call for active treatment is urgent. The prognosis depends on three factors: the age and previous health of the patient, the intensity of the infection, and the action of the medical attendant. At such a time the responsibility of the latter is great indeed. Life is trembling in the balance. His action or his inaction may decide whether or not the patient shall be deprived of many years of life, and his wife and children suffer an irreparable loss.

The first necessity is a venesection. Eight ounces of blood should be taken at once, twice as much or more if the lung be full of *râles*. If permission for venesection cannot be obtained, place a dozen leeches over the liver and encourage the bleeding. Hypodermic injections of strychnine in 3-minim doses every four hours should follow immediately, and the systematic inhalation of oxygen for ten minutes or more every hour. Two icebags should be at once applied, soon followed by a third, and before long by a fourth. It is very probable that after this treatment the patient will fall asleep. If so, he should be undisturbed for four hours. But after this nourishment must be given and the icebags refilled every two hours. Malted milk in milk with a little brandy should be given every hour when he awakes, and all medicine by the mouth avoided. After sleep has been obtained a small enema may be given if necessary. If diarrhoea is present the rectum should be washed out with warm saline solution, and 2 oz. of starch decoction with a few drops of tincture of opium inserted.

Some improvement—often much—will certainly follow this treatment unless the patient is already very far on the downward road, or his heart be previously dilated, his lungs emphysematous, his liver cirrhosed, or his kidneys granular. Many cases are no doubt hopeless from the first; but not very rarely an apparently hopeless case recovers; and, at all events, whatever can be done to give a chance of recovery ought to be done. Here let me put in a plea for earlier consultations. Too often a "second opinion" is sought for only when death is imminent. The surgeon is right in asking that he may be allowed to see a case of perforated gastric ulcer as soon as the diagnosis is made; if twenty-four hours are allowed to elapse, the patient's chance of recovery is small indeed. It is estimated by Mr. Mayo Robson that if operated on within twelve hours after the perforation the mortality is only 16.6 per cent.; if within twenty-four hours, it is 63.0 per cent.; if within thirty-six hours, it is 87.5 per cent.; and if delayed for forty-eight hours, the operation will only rarely succeed. So may the physician plead that in pneumonia the final issue largely depends on the treatment, or want of treatment, of the first few days. In the case of an infant, or of an adult older than 30 years, the danger to life is great, and judicious treatment is required from the very first. This is not so obvious to the patient as when an operation is required, but it ought to be equally obvious to the practitioner. To delay the consultation in such a case to the fourth or fifth day is to imperil the patient's life.

Pneumonia in adults usually ends by a very rapid fall of temperature, with slowing of pulse. This "crisis" often occurs in children also, even in cases which would be designated as "broncho-pneumonia," but in children the subsidence is apt to be more gradual, and to occupy several days. Pneumonia in children sometimes lasts for three or even four weeks. It is necessary to keep a careful watch for the first indications of this quick diminution of temperature, especially in children. The icebags should be gradually removed as the temperature falls, and the last should be taken off when the thermometer marks 100° F. There is a natural tendency to collapse at the time of the crisis which must be kept in mind. Icebags over the chest at this stage would probably be injurious, though in pericarditis, as I have already mentioned, they may sometimes be used with advantage, even when the temperature is subnormal. If, in spite of care, or for want of it, the reduction of temperature is so great as to cause some collapse, it is desirable to apply warmth over the heart and abdomen, also to the feet, and to give the patient some hot water with brandy, and a draught containing ether and ammonia. By these means is is usually easy to remove any tendency to collapse.

But the crisis is often preceded by a remission of temperature which lasts only a few hours. Hence, when the ice has been removed, the temperature should still be taken every hour. If it rises to 101° F. a single icebag should be again applied, if to 103° F. at least two. Much careful observation on the part of the nurse is required at this period. If the temperature shows a persistent tendency to keep above normal after the crisis has occurred, the existence of empyema should be suspected, and an exploring needle should be passed into the dullest area. Occasionally it may be due to tuberculosis.

Empyema.

The frequent occurrence of empyema as a chronic condition following an attack of pneumonia is well recognized, but I wish to call attention to what may be termed acute empyema, in which the pneumococcal invasion mainly or exclusively involves the pleura, the lung being little affected, perhaps not at all. This seems to be more common in children, but it may

occur in adults. In a young child in the Hospital for Sick Children, who had a temperature of 106° F. and dullness over one base and who was thought to be suffering from pneumonia, the necropsy revealed a considerable amount of turbid fluid in the pleural cavity, but no consolidation of lung. In a girl recently under my care at St. Mary's Hospital, 3 oz. of pus were obtained from the left pleura as early as the eighth day of an attack, which was at first thought to be merely pneumonia, but in which the extensive dullness, feeble breath sounds, and cardiac displacement soon suggested pleural effusion. I think that in this case some pneumonia was present also for cyanosis was well marked, and the dullness of the right auricle in the fourth right space measured two and a-half finger-breadths on the third day of the illness.

When the amount of pus in the pleura is small and localized by adhesions, it is often extremely difficult of diagnosis. Probably few physicians have escaped the mortifying experience of the *post-mortem* discovery of an empyema which had been overlooked, or diagnosed as some other condition. The difficulty of diagnosis is similar to, though not quite so great as, the difficulty in suppurative pericarditis, and the two conditions are sometimes associated. There may be a small amount of pus in both pleurae as well as in the pericardium: it is rare to find any in the peritoneum.

A localized empyema may be diagnosed as a pneumonia, as a serous pleural effusion, as a bronchiectasis, as tuberculous consolidation of lung, as collapse of lung, or as a subphrenic abscess, and the diagnosis may be impossible without the exploring needle. The signs of distinction between a consolidated lung and a pleural effusion may be neatly stated and tabulated in textbooks, but there is not one of them which may not prove fallacious in practice. The temperature may be high in an acute empyema; it may be low in pneumonia. The breath sounds are sometimes audible in children over a pleural effusion, and they may be quite inaudible in an influenzal broncho-pneumonia, or in the later stages of a lobar pneumonia. Even displacement of the heart is not certain proof of a pleural effusion, at all events in children; it may sometimes be caused in them by a solid lung. This is especially true of a form of tuberculous disease of the lung in which the lower and middle lobes on the right side are attacked by tubercle spreading from the bronchial glands. This occurrence is not very rare in children, and my colleague, Dr. Batten, has shown from *post-mortem* observations that it is much more frequent on the right side than on the left. Clinically this condition may cause all the physical signs of a pleural effusion, including some displacement of the heart, as I have seen in a case in which an incision revealed a healthy pleura, with solid lung beneath.

In some cases a small localized empyema between the lobes of the lung may coexist, as in a girl under my care at Great Ormond Street. In this case Mr. Collier succeeded in draining the small, deep-seated cavity, and the patient gradually recovered.

The danger of overlooking an empyema which is small, or even of moderate size, is so great that it should be always kept in mind, and an exploring needle should be passed if there is any room for doubt. If the first puncture does not yield pus, an anaesthetic should be given, and punctures made in other sites of dullness. If pus is found an incision should at once be made, a piece of rib removed, and a drainage tube inserted.

PLEURISY.

Acute pleurisy in its earliest stages may be very successfully treated with ice to the chest. One icebag is often sufficient: it should be applied over the spot were friction is audible. It quickly relieves pain and often renders morphine unnecessary, though it might be wise to give a small amount of this drug hypodermically if the pain were very severe. Two icebags may be used if necessary. The friction often rapidly disappears after the ice has been applied for some hours, and the tendency to effusion is very decidedly checked. As an illustration of this beneficial effect, I may mention a recent case of dermoid cyst of the right thorax, under my care at St. Mary's Hospital:

A large cyst displaced the heart into the left axilla and compressed the right lung. By four distinct operations, at considerable intervals, Mr. Silcock succeeded in removing the whole of the wall of the cyst, dissecting it off the diaphragm, the left pleura, and the pericardium. On the day following the last of these operations the patient complained of pain in the left side, and the temperature rose. Over the cardiac region and to the left of it a fine crepitant friction could be heard, with the respiration only. An icebag was applied. Next day there was a definite pleural rub in the left axilla, and pain continued, though less intense.

On the day following the pain was much relieved and the rub less marked, but there was much inspiratory dyspnoea, both sterno-mastoids acting strongly with each inspiration. It was impossible to determine accurately the extent of the dullness of the right auricle, owing to the previous condition and to the operation, but it was clear that it was greatly overstrained through the occurrence of pleurisy and probably acute pulmonary congestion in the single lung that was able to perform the respiratory process. We were very reluctant to submit the patient to any further loss of blood, and fortunately we succeeded by a subcutaneous injection of morphine and atropine in escaping this necessity. Next day the danger was past, and the patient steadily recovered.

I think it is practically certain that but for the icebag this patient would have died.

In the treatment of a large serous effusion ice externally is very useful, but it should be preceded by paracentesis. As soon as it is evident that there is a considerable amount of fluid in the pleura, it is best to aspirate at once, under low pressure, and draw off as much fluid as comes easily. Then fix this side of the chest with broad bands of strapping firmly applied, and over the strapping apply two, or three, icebags. This treatment rapidly relieves the discomfort and dyspnoea, and any pain that may be present. If the ice is maintained in position for about two days there is usually little tendency to reaccumulation of fluid. But if a relapse does occur, it may be treated in the same way, and the ice applied for a longer period. The serous fluid obtained by paracentesis in such cases is usually sterile; it is probably often due to tuberculosis affecting the pleura. It is frequently possible to obtain physical evidence of this by a careful examination of the *opposite* lung, for there is in many such cases more or less dullness and feebleness of breath sounds at the inner end of the first space and over the posterior part of the upper apex also below the apex of the lower lobe. This is the more striking because the rest of this lung is often hyperresonant.

In an acute local pulmonary tuberculosis icebags applied over the dull apices often give much comfort and appear sometimes to be of distinct service in checking the rapid progress of the disease. This is especially the case when the temperature is high.

In acute laryngitis an icebag placed over the larynx gives rapid relief to the symptoms, and in a catarrhal laryngitis is curative.

In local peritonitis over gastric ulcer, with threatening perforation, ice over the epigastrium brings much comfort to the patient, and greatly aids the subsidence of symptoms.

APPENDICITIS.

In the treatment of inflammations of the appendix vermiformis the persistent application of an icebag is far more effective than fomentations or poultices; it rapidly relieves pain, and obviously diminishes the local inflammation. Clinically, cases of appendix-inflammation may be divided into three groups. The first and most important group consists of cases of perforation of the appendix, with escape of concretions or of pus into the peritoneal cavity, or of a gangrenous condition of the appendix itself. Such cases are usually of sudden onset, and the symptoms often severe. Pain, vomiting, tenderness, flexion of the thigh, and absence of descent of diaphragm during inspiration, perhaps with rapidly-increasing evidence of septic absorption, but an absence of any local swelling, are the chief indications. Such cases demand immediate operative interference; every hour is of importance. They are similar to cases of perforated gastric ulcer, or to a strangulated hernia. No question of palliative treatment must be entertained for a moment. The absorption of septic material from the peritoneum is often very rapid, and a delay of a few hours may make all the difference between life and death. No such case ought to be allowed to die without operation; not seldom, apparently desperate cases have been rescued. The operation ought never to be delayed because of the collapsed condition of the patient; it is the most effectual means of removing the collapse—often the only chance.

The cases of the second group are much more common. They are often due to a subacute inflammation of the appendix, which may be chronically thickened. The symptoms are comparatively slight, but there is usually some definite local tenderness, and often a tender local swelling can be detected, with dullness on percussion over it. This swelling may sometimes be due to a local muscular contraction in the abdominal wall, as suggested by Dr. Mackenzie, but it certainly appears in some cases to be the thickened appendix itself which is felt.

These cases will usually recover in time under any or under no treatment, but they are prone to relapse. Fomentations or poultices give some relief to discomfort, but they do not cause rapid subsidence of the swelling and of the symptoms. This, however, is often promptly effected by an icebag, the results produced by which are sometimes very striking.

Intermediate between these two groups of cases, clinically speaking, is a third group, in which the symptoms are very definite, but not so acute as to make it clear that immediate operation is required. There is usually a distinct local fullness and tenderness. The practitioner is in doubt whether pus has already formed, and whether an incision ought to be made at once or delayed. In this difficulty, which is by no means rare, and in which a correct decision is of the greatest importance, I have found that the application of an icebag for three or four hours will often give the necessary guidance. If after four hours the ice has not given distinct relief, an operation should be performed without further delay. But if there be definite, even though slight, alleviation of symptoms, the operation may be postponed for a short time and further trial made of the icebag. In many cases after twenty-four hours the relief is so definite that no further question of immediate operation need be entertained. If the improvement continue, the icebag should be kept in place persistently for two or three weeks, with absolute rest in bed. Such cases must be very carefully watched, for a small local abscess may remain and may require incision at a later period. But the condition will then be much more favourable for operation than at first, the pus will be well localized, and the surrounding inflammation quietened down. On the other hand, if the early relief is not maintained, although the icebag has been applied persistently, it will usually be wise to delay the operation no longer. Thus the icebag becomes a useful test by which we may decide the often difficult and anxious question as to whether or not an operation ought to be performed.

If recovery has occurred without operation it must be decided whether or not the appendix should be removed. If this is the first occasion on which it has offended, and the symptoms have been slight, it may surely be allowed another chance, though this is not the opinion of the most "advanced" surgeons. But if the symptoms have been severe, or if it be a second offence, probably removal after a short period of convalescence is desirable.

Acute Nephritis.

The last form of acute visceral inflammation of which I desire to speak is acute nephritis. The method of treatment usually advised for this serious malady is often very unsatisfactory in its results. Recovery is slow, and in a large number of cases imperfect. In the worst cases, if death from acute suppression or rapid uraemia does not supervene, the patient passes into a condition of chronic albuminuria and dropsy, becoming, as my former teacher the late Dr. Moxon expressed it, "a large white man with a large white kidney." In the majority of cases more or less albuminuria remains after apparent recovery, and in many there is relapse of inflammation in the damaged organs, leading directly or indirectly to a fatal issue.

Even the etiology of acute nephritis is very imperfectly understood. Scarlet fever is, of course, responsible for a very severe form of nephritis. Diphtheria often causes transitory albuminuria, more rarely a real nephritis. The same may be said of influenza, typhoid fever, and pneumonia. The rheumatic diplococcus has been found in the urine of rheumatic patients, and it must in the future be a subject for inquiry whether an attack of acute rheumatism may possibly be responsible for slow insidious changes in the kidney, whether, for instance, it may be one of the causes of granular kidney. The "cold and wet," to which some cases of acute nephritis are ascribed, probably act, as they do in the production of pneumonia, by permitting the internal cultivation of parasitic micro-organisms, and the elimination of their toxins. Many cases of subacute nephritis in children and young adults are difficult of explanation; in many of them there has been no ascertainable exposure to cold and wet or to infection from scarlet fever. Perhapssome may be due to the injury done to the kidneys by microbes or microbic toxins from the alimentary canal eliminated by the urine. In the worst case of nephritis that I have seen in a very young child (aged 2½ years), the only fact that could be ascertained which seemed to offer any explanation was that he had suffered from an attack of vomiting and diarrhoea, which lasted about a fortnight. Soon after his recovery from this, about three weeks from its onset, he was noticed to be "growing fat." But this "fat" was the dropsy of an acute nephritis, and his urine was solid with albumen. He was treated in the manner usually advised, and after a long and trying illness gradually made a very imperfect recovery. Considerable albuminuria remained when he was discharged from the hospital. This result is certainly not a therapeutic victory. Can we do nothing better for such patients? I think we can. The external application of icebags over the inflamed kidneys in nephritis has in several cases given me excellent results. I have less experience of the use of ice in nephritis than in pericarditis or in pneumonia, partly because the cases are less common, but mainly because of the apprehension, only gradually overcome, that the attempt might result in a fatal suppression of urine. But in this case also time has proved to me the wisdom of the old adage, "Don't think; try." For it has turned out that when used with proper precautions ice over inflamed kidneys, far from causing suppression of urine, is an excellent diuretic, rapidly increasing the amount of urine passed. No doubt there might be danger of inducing suppression if the ice were applied while the skin was dry and cold and the patient more or less collapsed. For indeed suppression may be caused by the disease itself, as I found recently in the case of a woman aged 36 whom I saw in consultation a few hours before her death on the sixth day of an acute suppression. A catheter passed into the bladder removed about an ounce of turbid urine full of albumen. No treatment had been attempted. But if a patient with nephritis is first made thoroughly warm and his skin somewhat moist by a hot-air bath, and he be kept warm by hot-water bottles, it is quite safe to apply icebags over his kidneys. Not only is it, with such precautions, quite safe, but the result is often most satisfactory.

S. S., a boy of 15, was admitted into St. Mary's Hospital under my care on May 9th, 1903, for subacute nephritis. The dropsy was slight, but the urine was reddish in colour, contained blood and epithelial and fatty casts. It was of specific gravity 1012, acid in reaction, contained albumen to the amount of one-fifth, and 1.5 per cent. of urea. The quantity passed in the twenty-four hours before treatment was begun was 34 oz. A single icebag was applied over the right kidney only, without any previous hot-air bath, as the boy's skin was warm and not dry. Directions were given that the quantity of urine passed in every successive period of eight hours should be separately measured and tested. The amount of urine on the first day of the application of the icebag was 34 oz., the same amount as on the previous day. On the second day of the ice it increased to 52 oz., on the third day it was 40 oz., on the fourth day again 52 oz. Thus the average amount of urine for the four days during which a single icebag had been applied was 44 oz., an increase of nearly 30 per cent. Two icebags were now applied, one over each kidney. A further marked increase in the quantity of urine followed immediately. On the first day of the application of two icebags the amount passed was 78 oz., on the second day 70 oz., on the third 58 oz. Thus the average amount for these three days was 68 oz., an increase of 100 per cent. This diuresis was due solely to the ice, for no medicine was given. The two bags were retained in position for ten days, with the exception of one period of eight hours, the amounts passed during these ten days being respectively 78, 70, 58, 56, 60, 53, 59, 60, 71, 70 oz., giving an average of 63.5 oz. Thus the diuresis was steadily maintained. The quality of the urine also progressively improved. It soon lost its red colour and became yellow, though some blood corpuscles could still be seen when the ice was removed after the total period of fourteen days; the casts rapidly diminished, and entirely disappeared, and the amount of albumin fell from about one-fifth to about one-tenth. The amount of urea rose to 2 per cent. After the fortnight's treatment by ice the boy was still kept in bed for five weeks, but no other treatment was used. The amount of albumen progressively diminished, and finally became only a "very faint trace."

Similar results have followed in other cases, and it is now clear that, when used with proper care, ice over inflamed kidneys has a well-marked diuretic influence by diminishing the local congestion in the inflamed organ as it lessens the congestion in an inflamed appendix or in an inflamed lung. It appears to be directly curative.

Another illustration of the diuretic effect of ice over the kidneys in nephritis may be given.

A girl aged 6, in my ward at the Hospital for Sick Children, was treated for nephritis with daily hot-air baths and diuretics. During eight days of this treatment the amount of urine averaged 16 oz. She slowly improved, and when she was sent to a convalescent home the albumen was estimated at one-third. Two weeks later she was readmitted for fresh general oedema. The amount of urine passed on the first day after her readmission was only 2 oz.; on the second day 4 oz. A single hot-air bath was given, and then icebags were applied over the kidneys. The amount passed on the third day was 7½ oz., on the fourth day 27 oz., on the fifth 37 oz., on the sixth 36 oz., on the seventh 37 oz., on the eighth 36 oz. The effect on the albuminuria was quite as remarkable. When sent to the convalescent home the amount of albumen was estimated at one-third. When she returned it was one-fourth.

After four days of the icebag it was only one-sixth, and two days later there was only a trace of albumen present.

One more case may be related which will show how useful the application of ice may be in a very severe case of nephritis:

H. V., aged 3 years and 10 months, was admitted into the Hospital for Sick Children on November 9th, 1901, having suffered from headache, shivering, repeated vomiting for seven days, swollen face for six days, and bloody urine for two days. On admission he was pale and very restless, with a furred tongue, and temperature of 102.8°. No urine at all was passed that afternoon and evening. He vomited once.

November 10th.—Urine 2 oz., very smoky, contains blood, albumen = ½. No casts. Vomited three times.

November 11th.—Hot-air bath, followed by two leeches over each kidney. Hot-water bottles were placed in the bed, and two icebags were applied over the kidneys. Urine about 4 oz. (not all saved). Vomited five times. In the evening the icebags were removed for four hours. Another hot-air bath was given. The icebags were afterwards replaced and kept in position all the night.

November 12th.—Temperature 101° to 102.2°. Urine about 5 oz. Vomiting troublesome. Rectal feeding adopted.

November 13th.—Child has been very drowsy since admission and restless. Very restless in the evening. Restlessness was increased by the hot-air bath. Temperature rose in the afternoon to 104°, and a patch of dullness was found at the right base, with slight pleural friction. An icebag was placed over the right base as well as over the kidneys. Four hours later the temperature had fallen from 104° to 102°, the pulse from 128 to 100, and the respirations from 50 to 40. The child had been sleeping a good deal. It was observed that he was much less restless while the icebags were in position, and became more restless when they were removed. Urine now contains a few hyaline and corpuscular casts and abundant red cells.

November 14th.—Total urine yesterday 5⅔ oz., albumen ½. Still vomits anything but barley water; retains nutrients. Temperature 100.3°, pulse 100, respirations 36.

November 15th.—More than 10 oz. of urine yesterday. Friction at right base now not audible, but slight dullness remains. He is now taking malted milk by the mouth and does not vomit.

November 16th.—Better. Takes more interest in his surroundings. More than 13 oz. of urine yesterday.

November 17th.—Last evening the temperature rose to 105.4°, and the amount of urine fell to 8 oz.

November 18th.—Urine yesterday only 5 oz. Temperature 102.8°.

November 19th.—Urine yesterday more than 6 oz.

November 20th.—More urine, 9 oz. and some wet beds. The temperature fell last evening to 97.6°, and the icebags were removed for eight hours; when they were reapplied it was 100.2°; at 6 p.m. it was normal. Urine contains less blood and shows few red blood cells, but many leucocytes with abundant epithelial and granular casts.

November 21st.—Good amount of urine. Icebags left off at night, but replaced during the daytime.

November 25th.—Urine in fair amount; albumen much less. Icebags discontinued altogether, after fourteen days' use.

November 28th.—Urine in fair amount; cannot all be saved. It still contains leucocytes and granular and epithelial casts, but no blood, and only a trace of albumen.

December 5th.—Urine contains one or two granular casts, but no leucocytes, no blood, and only a trace of albumen.

December 10th.—One or two casts. Only a trace of albumen.

In conclusion, I desire to express my thanks to the Council of the Harveian Society for the honour of delivering the Harveian Lectures for 1903.

ON A DYSENTERY ANTITOXIN.

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[Preliminary Communication.]

Since the discovery of the dysentery bacillus in 1898 by Shiga as the cause of an epidemic of dysentery in Japan, a great deal of attention has been directed to this disease, and the work of Shiga in Japan, Kruse in Germany, Flexner and Strong in America, and others, has established the widespread distribution of the bacillus and its claim to be regarded as the causal agent. Further, the work of Duval and Bassett has shown that in the United States of America this bacillus is in all probability the cause of the summer diarrhoea of infants.

A striking point in the pathology of dysentery is that while the bacilli are found regularly in the mesenteric glands, they are not found in the spleen or other organs, and do not occur in the blood, urine, or milk. In this respect Lentz[1] points out that the disease differs markedly from the septicaemic diseases, such as typhoid, and that it must be regarded as a local infection of the intestinal mucous membrane and corresponding lymphatic glands by the bacillus, the toxin alone passing into the circulation and giving rise to the typical clinical picture, which, as in the case of cholera, gives the impression of a severe poisoning or toxaemia.

The results of animal experiments bear out this view, as the pathological changes which result from the injection of the living bacillus may be equally produced by the use of dead cultures, showing that these changes are brought about by some toxic body, and not by any vital action of the bacillus.

The Toxin of Dysentery.

The following experiments were commenced at the end of last year with a view to investigating the character of this toxic body, and the possibility of obtaining an antibody.

The filtrates from ordinary peptone broth cultures of the bacillus are only slightly toxic for animals, but it was found that by employing a more alkaline medium much more toxic filtrates could be obtained. The ordinary alkaline broth, as used for the production of diphtheria toxin (that is, alkaline broth to which normal caustic soda has been added in the proportion of 7 c.cm. per litre), was planted with the bacillus. This was grown at 37° C. for about ten days, filtered through a Pasteur-Chamberland filter, and the filtrate tested on rabbits by intravenous injection. Both Shiga's and Kruse's bacilli were tried, and it was found that the results were approximately the same. The following show some of the results:

Toxins obtained by Growing the Bacillus for Ten Days in Alkaline Broth.

No. of Toxin.	Bacillus.	M. L. D. for Large Rabbits.
No. 1	Kruse	1 c.cm.
,, 2	,,	,,
,, 3	,,	,,
,, 4	,,	,,
,, 5	,,	,,
,, 6	Shiga	,,

In these tests the minimal lethal dose (M. L. D.) was only approximately determined, that is, the toxin killed at 1 c.cm. and not at 0.5 c.cm.

In the subsequent experiments the bacillus of Kruse (obtained from Kral) was employed exclusively. The effect of growing the bacillus for a longer time was then tried, and it was found that by growing it for a month much more toxic filtrates were obtained—killing a rabbit at from a seventh to a tenth of a cubic centremetre (Tables I and III.)

The susceptibility of various animals to this toxin varies enormously; the rabbit, as shown above, being highly susceptible, but the guinea-pig highly resistant—5 c.cm. of the same filtrate not killing a small guinea-pig, either subcutaneously or intraperitoneally. The horse, as will be seen later, is very highly susceptible. The mouse and monkey are not highly susceptible.

The toxin is fairly stable and is not destroyed by heating at 70° C., for an hour, though 80° C., for an hour destroys it. It is not haemolytic for the corpuscles of the rabbit. The results of the intravenous injection of a lethal dose of the toxin in a rabbit are practically the same as those obtained when the living bacillus is used; after a latent period, varying with the amount of toxin used, severe diarrhoea sets in with paralysis of the limbs, beginning sometimes in the fore and sometimes in the hind limbs, but ultimately affecting both. The animal rapidly loses weight and dies usually in from one to three days. *Post mortem* there is marked congestion of the gut, which contains a slimy mucoid fluid, the lungs shows patches of congestion and often small haemorrhages, the other viscera, as a rule, show no marked naked-eye changes.

At the time these experiments were made the only reference to a soluble dysentery toxin which could be found in the literature was the statement by Lentz[2] in the article on Dysentery in Kolle and Wasserman's *Handbuch der Pathogenen-microorganismen*, "that the filtrates of dysentery cultures are toxic." More recently, however, in a paper published early this year, Conradi[3] states that he was able by a process of "aseptic autolysis," to extract from the dysentery bacillus a soluble toxin, and shortly after this Neisser and Shiga[4] were able to obtain a similar toxin by suspending the bacilli in saline, killing them by exposure to heat, keeping the suspension for two days at 37° C., and then filtering. Recently Rosenthal[5] has found that by growing the bacillus in Martin's alkaline broth highly toxic filtrates are obtained. This agrees with the results given above.

Immunization of Animals.

Immunization experiments were tried with the rabbit, goat, and horse. In the case of the rabbit the results were negative, the serum of the immunized animal showing no antitoxic action, although it agglutinated the bacillus at 1 in 100.

A goat was immunized with increasing doses of the toxin, beginning with a tenth of a cubic centimetre, and rising to 200 c.cm. The serum of the animal, taken on the thirteenth day after the last injection, was found to agglutinate the bacillus at 1 in 50.

This serum, as tested against the toxin on rabbits, showed distinct though slight antitoxic power compared with normal goat serum. The animal was bled again on the thirty-third day after the last injection, and the serum from this bleeding was tested. This was found to be much more powerfully antitoxic.

These results in the goat being encouraging it was decided to immunize a horse. The details of the immunization are interesting, as showing the very high susceptibility of the horse to even a weak dysentery toxin. The toxin used in this case was one of which 1 c.cm. was required to kill a rabbit intravenously.

The immunization was begun in December, 1902, by giving 0.5 c.cm. of this toxin subcutaneously, and injections of increasing quantities were made every third day for a period of six weeks, when a dose of 150 c.cm. was reached. After a dose of 2 c.cm. of the toxin the horse had a rise of temperature (102.2°) the same evening, and the next day had very pronounced diarrhoea, and was off his feed. Later on, after a dose of 8 c.cm, diarrhoea again appeared, but with these exceptions the animal appeared to stand the immunization well. On the fifth day, after the last injection of 150 c.cm., however, complete paralysis of the hind legs occurred, and the horse had to be killed.

The immunization of another horse was commenced in April, 1903, and was carried out with great caution, beginning with 0.1 c.cm. subcutaneously, and giving gradually-increasing doses at intervals of not less than a week. The toxin used in this case was one of the same strength—that is, killing a rabbit at 1 c.cm. intravenously. The immunization was well borne, and no symptoms were shown by the animal, and at the end of four months a dose of 250 c.cm. had been reached. The injections were then stopped, and after a rest of a month the horse was bled and the serum tested.

The testing of the antitoxic power of the serum is shown in in Tables II and IV. The tests were carried out by mixing the toxin and serum, keeping the mixture for half an hour to an hour in the incubator at 37° C., and then injecting intravenously in rabbits.

It will be seen from the tables that while normal horse serum shows only a very slight antitoxic action, the immune serum (as shown in Table II) is capable of neutralizing at least 80 minimal lethal doses of toxin. Again, in the test shown in Table IV, 0.02 c.cm. of the immune serum is sufficient to protect a small rabbit against about 4 minimal lethal doses of the toxin.

The prophylactic action of the serum is particularly interesting. This is shown in Tables V and VI. It will be seen that if the serum be given intravenously it protects absolutely against large doses of the toxin given half an hour later. If, however, the serum be given twenty-four hours before the toxin it does not protect, or shows only very slight protection. This may possibly be due to the destruction or excretion of the antitoxin during the intervening twenty-four hours.

As the horse at the time of furnishing the serum had only received a very poor toxin these results must be regarded as showing that the animal is capable of forming a very powerful antitoxin. The immunization is now being continued with a much stronger toxin, and should result in the production of a much more powerful antitoxic serum.

On first testing the serum certain irregularities in the results were observed, a given amount of the serum sometimes protecting the animal completely, and at other times, though saving the animal, failing to completely avert the paralysis and diarrhoea. After several experiments it was found that if the serum and toxin are mixed and immediately injected intravenously into a rabbit paralysis and diarrhoea may occur, but that if the mixture be kept at 37° C., for five minutes or longer, the animals are completely protected, showing that a certain time is necessary for the combination of the toxin and antitoxin. Moreover, if the toxin and antitoxin are cooled to 0° C. this combination takes place more slowly than at 37° C., if at all. (These results are shown in Table VII and VIII.) This is in accordance with the fact noted by Ehrlich[6] that the rate of combination of certain toxins and antitoxins varies with the temperature.

The serum of the immunized horse gave complete agglutination with B. dysenteriae (Kruse) at 1 in 100 in twenty-four hours. There was no precipitate when the serum was mixed with the toxin, as is observed in the case of animals immunized with typhoid filtrates.

Table I.—*Test of Minimal Lethal Dose of Toxin (K8) on Adult Rabbits.* (The toxin was made up to 3 c.cm. in each case, and injected intravenously.)

No. of Rabbit.	Weight.	Dose.	Result.
	grams.		
No. 1	1,545	0.10 c.cm. toxin (K8)	Dead (4 days).
,, 2	1,525	0.15 ,, ,, ,,	Dead (4 days).
,, 3	1,515	0.20 ,, ,, ,,	Dead (3 days).
,, 4	1,480	0.25 ,, ,, ,,	Dead (4 days).

The minimal lethal dose was, therefore, under 0.10 c.cm.

Table II.—*Test of Antitoxic Action of Serum of Immunized Horse on Adult Rabbits.* (The serum and toxin were mixed and kept at 37° C. for one hour, and then injected intravenously.)

No. of Rabbit.	Weight.	Dose.	Result.
	grams.		
No. 1 ...	1,300	0.50 c.cm. toxin (K8) +1 c.cm. immune serum	Lived; no symptoms.
,, 2	1,485	1.00 ,, ,, ,, +1 ,, ,, ,,	Lived; no symptoms.
,, 3	1,530	2.00 ,, ,, ,, +1 ,, ,, ,,	Lived; no symptoms.
,, 4	1,980	8.00 ,, ,, ,, +1 ,, ,, ,,	Lived; no symptoms.
		Controls.	
,, 5	1,180	0.25 c.cm. toxin (K8) +1 c.cm. normal serum	Lived; no symptoms.
,, 6	1,305	0.50 ,, ,, ,, +1 ,, ,, ,,	Dead (4 days).
,, 7	1,500	0.50 ,, ,, ,, +1 ,, ,, ,,	Dead (3 days).
,, 8	1,700	1.00 ,, ,, ,, +1 ,, ,, ,,	Dead (3 days).
,, 9	1,775	1.00 ,, ,, ,, +1 ,, ,, ,,	Dead (24 hours).

Table III.—*Test of Minimal Lethal Dose of Toxin (K8) for Small Rabbits.* (The toxin was made up to 3 c.cm. in each case and injected intravenously.)

No. of Rabbit.	Weight.	Dose.	Result.
	grams.		
No. 1	600	0.05 c.cm. toxin (K8)	Lived; some diarrhoea.
,, 2	620	0.10 ,, ,, ,,	Lived; some diarrhoea.
,, 3	695	0.15 ,, ,, ,,	Dead (2 days).
,, 4	655	0.20 ,, ,, ,,	Dead (3 days).

The minimal lethal dose was therefore 0.15 c.cm.

Table IV.—*Test of Antitoxic Action of Serum of Immunized Horse on Small Rabbits.* The serum and toxin (K8) were mixed, made up to 3 c.cm. with normal saline, kept for half an hour at 37° C., and then injected intravenously.

No. of Rabbit.	Weight.	Dose.	Result.
	grams.		
No. 1 ...	560	0.50 c.cm. toxin (K8) +0.20 c.cm. immune serum	Lived; no symptoms.
,, 2 ...	550	0.50 ,, ,, ,, +0.10 ,, ,, ,,	Lived; no symptoms.
,, 3 ...	535	0.50 ,, ,, ,, +0.05 ,, ,, ,,	Lived; no symptoms.
,, 4 ...	460	0.50 ,, ,, ,, +0.02 ,, ,, ,,	Lived; no symptoms.
,, 5 ...	425	0.50 ,, ,, ,, +0.01 ,, ,, ,,	Dead (40 hours).
		Controls.	
,, 6 ...	715	0.50 c.cm. toxin (K8) +0.20 c.cm. normal serum	Dead (48 hours).
,, 7 ...	575	0.25 ,, ,, ,, +0.20 ,, ,, ,,	Dead (30 hours).

TABLE V.—*Prophylactic Action of Immune Serum.* (Serum given intravenously in right ear; toxin (K8) given intravenously in left ear half an hour later.)

No. of Rabbit.	Weight.	Serum.	Toxin (K8).	Result.
	grams.			
No. 1	1,345	4.0 c.cm. immune	0.5 c.cm.	Lived; no symptoms.
,, 2	1,655	,, ,,	1.0 ,,	Lived; no symptoms.
,, 3	1,705	,, ,,	2.0 ,,	Lived; no symptoms.
,, 4	1,710	,, ,,	2.0 ,,	Lived; no symptoms.
,, 5	1,705	,, ,,	2.0 ,,	Lived; no symptoms.
,, 6	1,715	,, ,,	4.0 ,,	Lived; no symptoms.
		Control.		
,, 7	1,670	4.0 c.cm. normal	0.5	Dead (20 hours).

TABLE VI.—*Prophylactic Action of Immune Serum.* (Serum given intravenously in right ear; toxin (K8) given intravenously in left ear 24 hours later.)

No. of Rabbit.	Weight.	Serum.	Toxin.	Result.
	grams.			
No. 1 ...	1,635	4.0 c.cm.; immune	2.0 c.cm.	Lived; transient paralysis in forelegs.
,, 2 ...	1,370	,, ,,	2.0 ,,	Dead (4 days) after paralysis and diarrhoea.
,, 3 ...	1,555	,, ,,	2.0 ,,	Lived; transient paralysis in forelegs.
,, 4 ...	1,650	,, ,,	4.0 ,,	Dead (2 days).
		Controls.		
,, 5 ...	1,970	4.0 c.cm.; normal	0.5 c.cm.	Dead (40 hours).
,, 6 ...	1,695	,, ,,	0.5 ,,	Dead (20 hours).
,, 7 ...	1,470	,, ,,	0.5 ,,	Dead (20 hours).
,, 8 ...	1,740	,, ,,	1.0 ,,	Dead (40 hours).

TABLE VII.—*Table showing that Toxin and Antitoxin do not Combine at Once.* (Injections intravenous in rabbits.)

No. of Rabbit.	Weight in Grams.	Serum.	Toxin (K8).	Serum and Toxin Mixed and Injected.	Result.
1	1,570	1 c.cm. immune	3.0 c.cm.	Immediately	Dead (4 days) after paralysis and diarrhoea.
2	1,425	1 c.cm. immune	3.0 c.cm.	After 1 hour at 37° C.	Lived; no symptoms.

TABLE VIII.—*Table showing Effect of Temperature on the Combination of the Toxin and Antitoxin.* (Injections intravenous in rabbits.)

No. of Rabbit.	Weight in Grams.	Immune Serum.	Toxin (K8).	Serum and Toxin Mixed and Injected After.	Result.
1	1,725	0.5 c.cm.	3.0 c.cm.	5 min. at 37° C.	Lived; no symptoms.
2	1,550	0.5 c.cm.	3.0 c.cm.	4 min. at 0° C.	Dead (32 hours).
	1,675	0.5 c.cm.	3.0 c.cm.	30 min. at 0° C.	Dead (42 hours).

The antitoxin appears to be stable, and shows no marked change after exposure to a temperature of 65° C. for an hour. Tested both on rabbits and guinea-pigs, the immune serum showed no more protection, either against living or dead cultures of the dysentery bacillus, than did normal serum.

The question naturally arises as to whether the toxin described must be regarded as an intrabacillary toxin which has been extracted from the bodies of the bacilli by the prolonged action of the alkaline broth, or whether it is a true extrabacillary toxin secreted as such by the bacillus. This point is not easily decided, but the fact that the antitoxin does not protect against either the living or dead bacilli would appear to favour the latter view.

From the above results we are forced to the conclusion that by immunization with the toxin it is possible to obtain a purely antitoxic serum which is quite distinct from the antibacterial sera which have been described by Shiga[7] and Kruse,[8] and with which excellent clinical results are said to have been obtained.

Conclusions.

1. By growing the dysentery bacillus in a somewhat highly alkaline broth a soluble toxin is obtained.
2. Certain animals, notably the horse and rabbit, are highly suceptible to this toxin.
3. The toxin is fairly stable, and though destroyed by an exposure to a temperature of 80° C. for an hour, is not destroyed by exposure to a temperature of 70° C. for the same period.
4. When injected into suitable animals, for example, the horse, the toxin gives rise to a powerful antitoxin.
5. The combination of the toxin and antitoxin *in vitro* does not take place immediately, but requires a certain time, and the rate of combination varies with the temperature.

References.

[1] Lentz, *Handbuch der path. Mikroorganismen*, Lieferung 7, p. 320. [2] Lentz, ibid., Lieferung 7, p. 328. [3] Conradi, *Deut. med. Woch.*, 1903, p. 26. [4] Neisser and Shiga, ibid., 1903, p. 61. [5] Rosenthal, *Ref. Centralbl. f. Bakter.*, Bd xxxiii, No. 15, June, 1903. [6] Ehrlich, *Die Werthbemessung des Diphtherieheilserums*, p. 13. [7] Shiga, *Deut. med. Woch.*, 1901, No. 43-45. [8] Kruse, ibid., 1902, Nos. 1-3.

ON TOTAL EXTIRPATION OF THE STOMACH; WITH A RECORD OF AN UNSUCCESSFUL CASE.

By B. G. A. MOYNIHAN, M.S., F.R.C.S.,
Assistant Surgeon, Leeds General Infirmary.

Since the publication of Schlatter's case there have been many reported as examples of complete gastrectomy. On reading carefully through the description of the operation it is found that in the majority of these some portion of the stomach—generally at the cardiac end—has been left. Thus, in one report it is said that "the stomach was excised at about 2 in. anteriorly and 3 in. posteriorly from the cardiac end"; and similar statements can be found in many other reports.

Historical.

The first complete extirpation of the stomach was performed in 1883 by Connor. The patient died on the table. Cases of "extirpation of the stomach" were recorded by Schuchardt (1884), Maydl (1902), and Langenbuch (1894), but in all these a portion of the stomach was not removed. The next "total extirpation"—the first to be successful—was the memorable case of Schlatter's. In this the whole stomach was removed; the microscopical examination of the specimen showed duodenum at the one end and oesophagus at the other. The cut end of the duodenum was closed by suture, and the oesophagus united to the jejunum. The patient, a woman of 56, lived fourteen months, and died of local recurrence. Her health after the operation improved greatly. She was able to take food in good quantity, and she gained in weight. The third operation was performed by Brooks-Brigham in 1898.[1] The patient was a woman aged 66. The duodenum was united to the oesophagus by means of a Murphy button. Recovery ensued, and the patient was alive and well two years after the operation.

The fourth operation was by Maurice Richardson of Boston.[2] The patient recovered, but died eleven months later of recurrence.

The next case is recorded by Macdonald. The patient was a man aged 38. The duodenum and oesophagus were united by a Murphy button. The patient was alive and well eighteen months after the operation. Kocher removed the whole stomach and a portion of the transverse colon from a woman aged 44. The duodenum and oesophagus were united by suture. The patient died of peritonitis.

Bernays removed the stomach and a portion of the pancreas from a man aged 42. Death occurred in thirty-six hours.

Chavasse operated upon a man aged 64. As it was impossible to unite the oesophagus to the intestine its end was closed by suture and duodenostomy performed. The patient died in a few hours.

Bardeleben removed the entire stomach from a woman

aged 52. The cut ends of the oesophagus and duodenum were closed by suture, and a lateral anastomosis made between the oesophagus and a loop of small intestine. The patient was alive nine months later. [This case is, perhaps, open to question. A lateral anastomosis with a normal oesophagus would be difficult or impossible.]

Harvie removed the stomach and 3 cm. of the duodenum from a woman aged 46. The oesophagus was united directly to the duodenum. Recovery followed.

Dollinger.—The whole stomach was removed from a man aged 37. A loop of small intestine was sutured to the oesophagus. The patient recovered, but a few days after the operation a biliary fistula formed, owing, it was presumed, to imperfect closure of the duodenum.

Herczel.—Complete removal of the stomach from a woman aged 42. The oesophagus and duodenum were closed, and a lateral anastomosis made between the former and a loop of small intestine. Sutures were passed between the diaphragm and the anastomosing loop to avoid traction on the sutured line. The patient a year and ten months after the operation had gained 18½ kilo. in weight.

Rivera removed the whole stomach from a woman aged 36. The patient recovered and remained under observation for fifteen months.

Gurreà y Hurtado removed the stomach from a woman aged 41. The oesophagus and duodenum were united by suture. Recovery followed.

Fedoroff performed total extirpation upon a man aged 35. The oesophagus was united to the duodenum by suture. The patient died on the fifth day of peritonitis.

Vander Veer removed the whole stomach from a woman aged 42. The duodenum and oesophagus were united by a Murphy button. The patient died the following day, and at the necropsy it was found that the attachment between the oesophagus and the duodenum had given way.

There are thus 16 cases in all. The ages range between 35 and 66. There were 6 deaths; 10 recoveries.

On reading through the records it will be seen that the junction between the oesophagus and intestine has been made in the following ways:

Oesophagus to duodenum	By simple suture.
	By the Murphy button
Oesophagus to jejunum	By simple suture.
	By the Murphy button.

Oesophagus and duodenum both closed by suture and a later anastomosis made.

Oesophagus closed by suture, the open end of the duodenum stitched to the skin = duodenostomy.

Case.

The case upon which I operated was the following:

Mrs. R., aged 49, seen with Dr. Oldfield, had been ailing for four to five months. Pain after food was the symptom first noticed, this quickly became so severe that solid foods were abandoned. Gradually it was found that liquid foods began to cause distress, and eventually these could be taken in only very small quantities. If a teacupful of milk were taken a portion of it was rejected almost at once. There had gradually been a loss of weight, but altogether only about 1 st. had been lost. On examining the abdomen a hard ovoid mass was found lying transversely across the lower part of the epigastrium. When an attempt was made to inflate the stomach by administering portions of the two halves of a seidlitz powder separately, a considerable part of the fluid swallowed was almost instantly ejected as foam from the mouth. There was no perceptible stomach resonance either before or after inflation, and a diagnosis of carcinoma giving rise to a "leather-bottle stomach" was made. The condition and the risks of operation were fully explained to the patient, who elected to submit to operation, and hoped that an attempt would be made to remove the whole growth. Her condition was poor, but no evidence of other disease could be found.

On June 26th, 1902, the abdomen was opened. The whole stomach was seen to be invaded by growth, and the glands along both curvatures were enlarged. The stomach was free from any but the lightest adhesions, and no secondary nodules could be seen in the liver. The whole stomach was therefore removed. The steps of the operation in the early stages were similar to those I described in the British Medical Journal on April 25th, 1903. The cut end of the duodenum was closed by suture. On the lower end of the oesophagus a small clamp was temporarily applied. An anastomosis was now made between the oesophagus and a loop of the jejunum pulled upwards through a rent in the transverse mesocolon. After the posterior layer of a continuous suture of fine Pagenstecher thread had been passed the jejunum was opened. A rubber stomach tube was now passed down the oesophagus and onwards into the distal portion of the jejunum, and kept in this position while the anterior suture was applied. After the completion of the circular suture a second line of continuous suture was passed. At intervals this was interrupted, and at each interruption a stitch was taken through the diaphragm, so as to fix the jejunum up to its under surface. The suturing was not so difficult as I had anticipated. The oesophageal tube certainly made the hold on the parts more secure. At the completion of the stitching half a pint of peptonized milk was passed through the tube and "milked" downwards in the jejunum. The patient was very much collapsed after the operation, and despite all our endeavours died of shock in six hours.

Commentary.

In addition to the cases recorded above, numbering 17, including my own, there are 3 cases operated upon by Professor von Mikulicz, the details of which have not yet been published.

It was at one time considered doubtful whether a complete extirpation of the stomach, even if possible, could be a legitimate procedure. It was argued that by the time so much of the stomach was involved as to make desirable its complete removal, other growths in the liver or elsewhere would be found which would effectively preclude any possibility of a radical operation. But an examination of many records, specimens, and cases has shown me that in some cases, very exceptional it is true, the whole stomach may be infiltrated when, even on minute *post-mortem* examination, no secondary deposits could be seen. Two cases of my own have satisfied me of this fact, in one I had performed jejunostomy, in the other no operation had been done. In both so much of the stomach was involved as to make a complete removal necessary if extirpation of the growth were attempted. In neither case were there complex adhesions, distant lymphatic enlargements, or secondary growths of such a character as to forbid resection, to be found after the most careful examination. In a certain very small proportion of cases, therefore, a complete removal of the whole stomach may be demanded if resection of the growth is considered desirable. So far as the difficulties in the operation are concerned, it may safely be said that they are less than would be anticipated. The stump of the oesophagus and its peritoneal investment might certainly be planned upon a more generous scale, but there is nevertheless enough for the purpose. The oesophagus can be freed from its opening in the diaphragm by stripping with the finger, though this is probably not desirable. There is the risk of pleural infection. In my case it seemed that the oesophagus was looser when the patient's neck was fully flexed, the chin being pressed down on to the sternum. The use of the oesophageal tube was certainly a great help, and I would urge its employment upon any who may be called upon to do the operation. Complete extirpation of the stomach is, therefore, not merely a piece of brilliant surgical gymnastics. The operation has its place in surgery.

It may not be inadvisable to enter a protest against the description of any operation as a "complete" or "total gastrectomy," when a larger or small portion of the dome of the stomach is left. It is inaccurate and untruthful.

References.

1 *Boston Medical and Surgical Journal*, May, 1898. 2 Ibid.

A CASE OF DOUBLE PERFORATING GASTRIC ULCER.*

By L. LOVELL KEAYS, M.R.C.S., L.R.C.P.Lond.,

Late Assistant Surgeon, Royal Herbert and Auxiliary Hospital, Woolwich, and House-Physician, Middlesex Hospital.

On being summoned to see a girl taken suddenly ill I found the patient was quite dead. The following facts were elicited from her parents and friends.

Previous History.—E. M., female, aged 16, single, a general servant at a country inn. The family history was remarkably good; her mother and father were both alive and well, and of nine other children all were healthy except one sister who was slightly anaemic. She had had no previous illnesses of any importance apart from what will be described below. The patient had always enjoyed good health until about twelve months before when she complained of "indigestion," evidenced by pain after food and heartburn. This increased to actual vomiting immediately after food, followed by immediate relief from the pain. The vomit was described as being frothy, abundant, fairly clear and containing particles of food more or less unchanged. It tasted "nasty and acid." There had never been an attack of haematemesis nor had any signs of melaena been noticed. There was a definite history of acute epigastric pain in January, 1902, which in view of the subsequent necropsy it is interesting to note. The patient took nothing but liquids for some days and rapidly recovered from this attack. Again in September, 1902, she was ill and

* Extracts from a paper read before the East Sussex Branch of the British Medical Association.

sought medical advice, but no evidence of perforation was obtained and recovery was once again very rapid. Symptoms of chlorosis such as scanty menstruation, shortness of breath and constipation had been noticed for two years. Other details could not be obtained from the friends and so we come to the history of the fatal illness.

History of Fatal Illness.—Up to April 13th, 1903, the girl had been in very good health and free from all digestive troubles. On this day she performed her ordinary duties as usual up to 1 p.m., these being laundry work, and were somewhat heavy. She then complained of a severe pain in her left side over the hypochondriac area. She had dinner, however, but felt much worse after it, and was given hot gin and water to allay the pain as it was so severe. It was most acute in the stomach—in fact, right over the epigastrium; and she had to take to her bed. The pain as time went on extended to the whole chest and back of the shoulders. It continued to be very severe up to 4.45 p.m., when it became distinctly easier. All night there was intense thirst, and the pain continued, although to a less degree. Drinking made the pain worse during the afternoon only; at night it had but little effect on it one way or the other. During this time there had been no signs of collapse, as far as one could gather from the friends. The next morning, the patient seeming to be no better, a medical man was sent for, although she herself was quite against it, saying she felt better. But she looked very white, and her abdomen was noticed to be somewhat tumid. The pain was then quite localized and in the epigastrium. Suddenly there was an attack of acute pain, and death followed almost immediately at 9.45 a.m. on Tuesday morning—that is, less than twenty-two hours after she was first taken ill.

Post-mortem Phenomena.—On my arrival the patient was quite dead—very pallid, and to all appearances dead as a result of haemorrhage. The abdomen was distended, tympanitic in the upper parts, and dull in the flanks. Liver dullness could not be obtained. The legs were not drawn up. Rigor mortis set in very rapidly. A perforated gastric ulcer was of course inferred, probably with haemorrhage. The necropsy was done the following day. Weather mild. Rigor mortis still present. Some *post-mortem* staining. The body was well nourished. On opening the abdominal cavity it was found to be full of slightly turbid fluid, smelling somewhat acid, and containing currants, milk, and other food material. The quantity was prodigious, amounting to between a gallon and a gallon and a-half. This is comparable to the enormous quantities of fluid expelled in acute gastric dilatation. The peritoneum was slightly injected generally, and especially near the stomach. In the neighbourhood of the pylorus there was a mass of loose flimsy adhesions between the stomach, great omentum, liver, and duodenum. Without in any way disturbing the organs, a large circular perforated ulcer could be detected on the anterior surface of the stomach near the cardiac end, and nearer the lesser curvature than the greater. The perforation freely admitted the index finger, being about five-eighths of an inch in diameter. It had injected slightly uneven edges, although of the typical punched-out appearance. The stomach being carefully turned over, it was found that the cardiac end was fairly free, but that the posterior surface of the stomach was adherent to the peritoneum immediately behind, although the adhesions were not at all firm. On carefully removing the stomach a second perforation was discovered on the posterior surface and immediately opposite the anterior perforation. In size it was about three-eighths of an inch in diameter, and admitted the little finger. It presented the typical appearance, but the edges were more even, and gave the impression of being in the process of healing, and the adhesions posteriorly were firmer than those in front.

The observations, therefore, seem to point to the anterior perforation being subsequent to the posterior. The stomach itself was somewhat enlarged, but the walls were of about the normal thickness, if anything slightly hypertrophied. On careful examination of the interior of the posterior wall a distinct scarring or puckering could be found, indicating a previous ulcer, if not an actual perforation. It showed the radiating puckerings very clearly. The other organs do not call for much description. The liver, kidneys, and spleen were pale and flabby, as a consequence, no doubt, of the chlorosis. The heart was apparently normal. The layers of the right pleura were firmly adherent, especially over the right cupola of the diaphragm. The oesophagus was of abnormally small calibre. In fact, great difficulty was experienced in finding it, although the organs were all systematically removed and examined. Nothing beyond narrowness was found however. The brain and membranes were apparently normal.

REMARKS.

The above notes give the essential features of the case, and I think one is justified in making the following comments on the case:

1. The very sudden and tragic nature of the case. The girl apparently was in the best of health, and died within twenty-four hours of being taken ill of double perforation of the stomach.

2. The absence of any very clear and tangible symptoms of perforation. In reading these notes it must not be forgotten that they were written after a necropsy, and that the girl herself was unwilling to call in a medical man less than two hours before her death.

3. The extremely rare occurrence of a double and practically simultaneous perforating gastric ulcer.

4. Finally, what is to be learnt from a case of this nature? Granted for a moment that a diagnosis of gastric perforation had been made and the anterior perforation been sutured, we should still have had the posterior perforation to consider. True, there were a certain number of adhesions, but in manipulating the organ during the operation these might easily have been torn through and thus leave an untreated perforation. Working, as is usually done, with a limited incision in the abdominal wall, it might easily have been overlooked, and so the operation would probably have failed. Hence it seems that in cases like these the operator should always make sure that there is only one perforation before closing the abdomen.

In this case, however, it seems improbable from the symptoms that so serious a condition as perforation would have been diagnosed. It was unfortunate that the patient was not seen before death, as it is well known how the symptoms get exaggerated after death, and I must admit that I have in no way made less of them in these notes. Does this not suggest that exploratory operations should be done more frequently in doubtful cases? A simple laparotomy carries with it very little risk, and may save a patient's life.

Since writing the above I have done a necropsy for a fellow-practitioner on another case of perforating gastric ulcer. In this case the girl was upon a holiday, and died in less than eighteen hours from the time she was taken ill, without the exhibition of any symptom pointing to perforation.

EXCISION OF A PERFORATED GASTRIC ULCER: RECOVERY.

BY E. OLIVER ASHE, M.D.LOND., F.R.C.S.ENG.,
Surgeon, Kimberley Hospital, South Africa.

THE following case may be of interest from its bearing upon the vexed question whether a perforated ulcer should be excised or simply stitched up:

Mrs. S., aged 32, a very thin, slight woman, was first seen on July 7th, 1902, at 6.15 p.m.

Previous History.—She had been fairly well for some months, but for the last few weeks had suffered from indigestion, with a good deal of pain after food. She had had the same kind of pain for several years on and off, and I had treated her for it some two years previously, but it soon got well and I had not seen her since. On this day she had moved into a new house, and had worked much harder than usual getting things straight. About 4 p.m., having had no food since breakfast, she made some cocoa and sat down to rest, but before drinking any of the cocoa she was suddenly seized with most acute pain "in the stomach," but not definitely localized. As this pain continued in spite of hot applications, I was sent for.

State on Examination.—On my arrival she was lying on her right side, curled up with shoulders bent forward and knees drawn up, moaning with pain. The abdomen was tender all over and the abdominal muscles were excessively rigid, but I thought I could detect a little fluid in the peritoneal cavity. The pain was most intense in the right iliac and left hypochondriac regions, but equally severe in both these situations. She had not vomited, but did so whilst I was examining her, the matter brought up being a little mucous brownish fluid (? cocoa), not at all suggestive of blood. She was cold and collapsed, with a quick and very feeble pulse. The bowels had acted that day, menstruation had been quite regular, and there was no hernia. The diagnosis of perforation of a gastric ulcer seemed fairly obvious, though there was a faint possibility of rupture of an early tubal pregnancy, but it was very evident that operation was necessary.

Operation.—The patient was removed to hospital and the operation was begun at 9 p.m. In deference to the opinion of two of my colleagues, who rather inclined to the tubal diagnosis, a small opening was first made below the umbilicus. When the peritoneum was opened

a small quantity of turbid whitish fluid, acid in reaction, escaped, but no blood. A large flat sponge was put into this wound, and two fingers were passed through it up above the umbilicus and cut down upon in the middle line as upon a director, the object being to save every minute possible, and this second opening was enlarged upwards with scissors. The stomach was found to be congested, and flakes of lymph were beginning to form on its anterior surface. Towards the cardiac end the lymph seemed to be thicker, so the stomach was pulled over towards the right and carefully examined, when the perforation was found quite easily. It was high up on the anterior surface, well to the left of the middle line. It was quite circular, three-sixteenth of an inch in diameter very cleanly cut, with sharp edges which were slightly blackened, reminding one very forcibly of the entrance wound of a Mauser bullet. Round the perforation there was great induration and thickening of the stomach wall, but there was no haemorrage. An oval piece of the stomach wall was excised with a scalpel. It included all the coats, and was about an inch long and half an inch wide, with the perforation in its centre. The haemorrhage was trivial. The resulting wound was closed with a single row of fine silk Lembert sutures, particular care being taken to pass sutures well beyond each end of the wound. The whole peritoneal cavity was then most carefully washed out with warm boracic lotion, great care being taken to flush out the pelvis and the fossae near both kidneys. A small amount of food was thus washed out of the peritoneum. The upper wound was completely closed with silkworm gut sutures, and the greater part of the lower one, but a Keith tube was put down into Douglas's pouch at its lower angle, a provisional suture being put in at that spot, to be tied when the tube was removed. The wounds were dressed with cyanide gauze and iodoform. Before leaving the operating table an enema of one pint of hot saline solution with an ounce of brandy was given. The operation lasted 75 minutes, and the pulse was better at the end than at the beginning. The excised piece showed a deep indurated conical ulcer with the perforation a little to one side of its apex.

Progress.—The patient was put to bed surrounded with hot bottles, and was ordered six-hourly enemata of half a pint of beef-tea with 1 oz. of brandy, and nothing by the mouth except tiny sips of water. A ¼ gr. of morphine hypodermically was ordered if restless or in pain. She soon rallied, and only complained of thirst, which was relieved by an enema of a pint of warm water. The lower wound was dressed every six hours at first, and at each dressing any fluid in the Keith tube was sucked up with a syringe. At the first dressing the quantity was 2 oz., but this rapidly diminished, and the frequency of dressing was reduced accordingly. The Keith tube was removed on the fourth day (July 11th) and a smaller rubber tube substituted for it, which was finally removed on the seventh day (July 14th). On this date the stitches of the upper wound were irritating and were all removed, the lower ones being left a few days longer. The bowels were opened by a soap and water enema on July 10th, and after that acted of themselves. Food was first given by the mouth on July 11th, 3 oz. of Benger's food weak and cool being given, and as it caused no pain or discomfort whatever it was continued every four hours alternately with 2 oz. of somatose solution. On July 12th some peptonized milk with barley water was allowed, and food was given at three-hour intervals. On July 13th Brand's essence was added. On July 14th she was advanced to jelly and custard, and on July 18th to plain biscuits and lightly-cooked eggs. On July 21st, the fourteenth day from the operation, she was allowed boiled sole, on the 28th chicken, on August 1st a chop, and on August 6th anything she fancied in reason. After the operation her temperature was erratic, never very high, but always above normal for quite a month. Usually it was 100° or 100.5° at 8 p.m., but on several occasions it was up to 101.5°. There was nothing in the condition of the wounds to account for this, and there was no pain, and repeated examination of the chest and abdomen failed for a long time to find any cause for it, though I suspected empyaema or subdiaphragmatic abscess. At last about August 9th she began to cough and brought up a little thick purulent expectoration, and on August 15th a small patch of dullness with scattered coarse crepitations was discovered low down in the left mid-axillary line. By this time the temperature had dropped, and in a few days the dullness and crepitations entirely disappeared. She got up for the first time on August 19th and left the hospital on September 2nd. At no time after the operation did she have pain or even discomfort after food.

Result.

At the date of writing (July 4th, 1903) she can eat and digest any ordinary food without trouble, she has put on weight, and is in better health than she has been for many years, and greatly appreciates the fact that she has no longer to study her diet in any way.

Remarks.

The interesting point of this case is the entire disappearance of all gastric symptoms after operation. This I believe to be due to the complete excision of the ulcer. Jacobson[1] rather discourages excision on the grounds that "much extra time will be consumed, there may be a good deal of haemorrhage, and the perforation converted into a large gap requiring numerous sutures to close it." These objections may often be sound, but in a case like the present, where the patient was seen soon after perforation took place, where the perforation was easily found, where the stomach was empty, and the ulcer was small, excision certainly seemed to be the right thing. Simple suture of the perforation cannot have any curative effect upon the ulcer, and though the patient might recover more rapidly from the operation itself the gastric pain and discomfort would probably remain unrelieved, and the risk of haemorrhage would be as great as before.

Reference.

[1] *Operations of Surgery*, 4th edition, vol. ii, p. 205.

SLEEPING SICKNESS AND TRYPANOSOMIASIS IN A EUROPEAN: DEATH: PRELIMINARY NOTE.

By Sir PATRICK MANSON, K.C.M.G., M.D., F.R.S.,
Lecturer, London School of Tropical Medicine, etc.

Dr. Daniels, late Superintendent of the London School of Tropical Medicine, and I recorded a case of trypanosoma fever in the British Medical Journal of May 30th of this year. At that date the patient had left hospital for some time, but I occasionally heard of her progress. About two months ago suspicious drowsiness was reported. This gradually became more pronounced and she died with marked symptoms of sleeping sickness on November 26th, two years and three months after the presumed date of infection. At the necropsy and subsequent histological examination of the brain unequivocal evidence of sleeping sickness was obtained.

Considering that this is the first well-authenticated case of sleeping sickness in a European, that it affords almost conclusive evidence that the trypanosoma is, to say the least, an important factor in the etiology of this terrible disease, and that the subject is deservedly exciting much interest, I feel justified in offering this preliminary note for publication. In due course further clinical particulars, together with a detailed histological examination of the brain and other tissues by Dr. Mott, F.R.S., and by Dr. Low, of the London School of Tropical Medicine, will be forthcoming.

The leading facts are briefly as follows:

About August 14th, 1901, the patient, the wife of a missionary stationed at Monsembe, Upper Congo, was bitten on the left leg by some animal, presumably a tsetse fly (? *Glossina palpalis*). The bite inflamed, and a fortnight later she had the first of a long series of recurring attacks of fever. About the same time a peculiar patchy and ringed erythematous eruption appeared on the skin; and the spleen and liver enlarged. She returned to England in December, 1901. In May, 1902, she had an attack of phlebitis in the left leg. On October 3rd, 1902, I saw her for the first time and diagnosed trypanosomiasis, a diagnosis subsequently confirmed by Dr. Daniels, who after long search found trypanosomes in her blood. She was in the tropical wards of the London School of Tropical Medicine for about five months. A number of futile attempts were made by arsenic, methylene blue, horse serum, and other means to destroy the trypanosomes. She left the hospital on March 27th.

On leaving hospital she went to the seaside and improved considerably. When again I saw her on May 5th, 1903, she seemed to be in fairly good health, bright, and able to walk about, taking an active part in conversation, free from fever, and apparently much improved, although the erythema and parasites persisted. She then went to Cromer; the weather there was cold and raw, and, she thought, had a prejudicial effect on her health. The attacks of fever became more frequent and severe, and her general condition rapidly deteriorated. She returned to her home at Bristol feeling weak and ill. About the middle of October, although able to get out of bed and walk from one room to another, her friends noticed for the first time a tendency to drowsiness. On this being reported, Dr. Low and I went to Bristol to see her. She was in bed, extremely weak, very much wasted, with a rapid pulse, which she had had all along, and some fever; the ringed erythema was still distinct. The trypanosomes were somewhat more numerous in the blood. She was emotional, but could converse for a short time intelligently, only when conversation stopped she would close her eyes and appeared to sleep. Her husband informed us that this soporose condition was somewhat less marked at the time of our visit than a few days before. The knee-jerks and superficial reflexes were present, the sphincters were under control, the pupils reacted normally; there was no tremor, but there was a distinct twitching at the left angle of the mouth. Dr. Low, who had seen a great deal of sleeping sickness in Uganda, would not commit himself to a diagnosis, though we both regarded the case as exceedingly suspicious.

From that time the patient's condition gradually got worse: drowsiness increased, conversation became confined to monosyllables, occasionally food was retained in the mouth for a considerable time before it was swallowed, the sphincters were no longer controlled, spasm of one arm occurred, bedsores formed, and she died comatose on November 26th.

Dr. Neild, University College, Bristol, kindly made a necropsy the same day. Macroscopic signs of chronic meningo-encephalitis—injection of vessels, and milkiness of the pia arachnoid—were found. Subsequently microscopical examination of brain sections by Drs. Mott and Low (whose preparations I have examined) revealed the extensive perivascular small mononuclear infiltration so characteristic of sleeping sickness.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

RED LIGHT TREATMENT OF SMALL-POX.

[Communicated by the Director-General of the Medical Department of the Royal Navy.]

I read with interest in the British Medical Journal of June 6th the communication of Professor Niels R. Finsen on the red light treatment of small-pox. In July, 1897, I had an opportunity of trying this treatment—or, as Professor Finsen prefers to call it, "preventive measure"—and the results surpassed one's highest expectations. A bluejacket was received on board a gunboat I was then serving in from the flagship on the China station at a port in Korea for passage to hospital at Nagasaki. His temperature was 103°, rapid pulse, furred tongue, headache, and the patient very ill. He was in the second week of the disease, but suppuration was slight. There was an abundant eruption over the face, scalp, backs of the hands, and a less abundant eruption over the trunk and limbs. He was placed under the forecastle in a swing cot, and enclosed with a canvas screen. The only light was supplied by two scuttles, which were covered with thick "red bunting" (used for making flags). He was treated in the usual way with liquid diet and tepid sponging. In two days the temperature had fallen to 99°, and there was a very marked effect on the eruption, and his general condition much improved. He made a rapid and uninterrupted recovery, although the light preventive measure was not carried out after he was placed in hospital at Nagasaki. There is nothing new in this communication, but is one more positive proof of the efficacy of this light treatment, and it may help others in a similar position to try it.

Montague L. B. Rodd,
Surgeon, R.N.

HYPERPYREXIA IN MEASLES.

I have in a recent epidemic of measles in this district (Failsworth) had about 50 cases, of which 4 died, and these all 4 died of hyperpyrexia. They all had lung complications. Two had moderately severe bronchitis, 1 very severe bronchitis, and 1 moderate broncho-pneumonia. The latter was seen by Dr. Ernest S. Reynolds, who verified the diagnoses and temperature. The cases and ages were:

M. J. D.	...	...	...	19 months	...	...	F.
J. N.	...	...	...	3 years	...	...	M.
E. A. M.	...	...	...	10 months	...	...	F.
J. H. W.	...	...	...	3½ years	...	...	M.

The history of the first three cases was similar. In them I was called in to a case of apparently normal measles, with varying degrees of bronchitis, the two female children having commenced convulsions, and J. N. having "fainted." The rash in all three was just beginning to fade, and the temperature in them when I first saw them was in all the cases about 106° F. Cold sponging, ice to the head, etc., and, in the cases where a bath could be got, a cold bath with added ice was used, but the temperature (taken in the rectum) rose in the bath, and death ensued in all three, in periods ranging from four to seven hours.

The last case, J. H. W., I had attended through a preceding bronchitis, and when the rash came out diarrhoea and broncho-pneumonia commenced. I saw him on the evening of October 28th (the evening before death), when he was delirious, with a temperature of 104° F. The rash was beginning to fade. A bath was given. He fell asleep, and slept quietly until 4 a.m., awaking talkative, and much better; the temperature was then 101° F. I was again sent for at 7.30 a.m., as he had "fainted." I found him pale, with moist skin and stertorous breathing, and complete insensibility, with a temperature of 106° F. I telephoned for Dr. E. S. Reynolds, and meanwhile repeated the bath. Dr. Reynolds, at 9.30 a.m., October 29th, found the temperature up to 110° F. This was confirmed by three thermometers. The child died at 10 a.m., with a temperature of 111° F.

I understand from Dr. Reynolds that hyperpyrexia in measles is unknown, and in no authorities he and I have consulted do we find any mention of it.

I have since casually heard of three other cases of sudden deaths during measles, with apparently similar symptoms. Convulsions accompanied the hyperpyrexia in the two female babies. The treatment adopted was cold to the body, tepid baths with ice added, and ice to the head. No effect was seen on the temperature.

Dr. Reynolds considers these four cases unique, and that in the case he saw the hyperpyrexia was doubtless the cause of death. It is by his request and advice I put them on record.

Failsworth, Manchester. E. Barnes, M.B.Aberd.

CASE OF ACTINOMYCOSIS OF THE LOWER JAW.

In the beginning of March, 1901, a delicate, anaemic girl suffered from a hard swelling on the lower jaw, connected with a decayed, hollow right molar tooth. The swelling had gradually become larger, and at intervals shooting pain occurred in it. This was different to the continuous active pain associated with the usual development of an alveolar abscess. External application had no appreciable effect, and eventually, as pus was forming, the molar tooth was extracted, and matter escaped. In spite of this, the abscess continued to advance to the surface, and opened in two places. A granulomatous condition speedily developed round the openings, and granules of actinomycosis were discovered in the discharge. They were small in size, yellowish, and did not exhibit many of the "clubbed" elements. Potassium iodide in increasing doses was given till the amount taken per diem soon reached 90 gr. Similar effects in the discharge and granules were observed as detailed in a case reported in the British Medical Journal in June, 1896. Several days after the potassium iodide was administered, the granulomatous condition entirely disappeared, the wounds becoming quite flat. On April 19th Mr. Godlee, who had seen the patient and corroborated the diagnosis, operated by incising the abscess and scraping away as much deposit as possible, and also thoroughly cleaning the bone, about three-quarters of an inch of which was denuded of periosteum. Pure carbolic acid was poured into the wound, and allowed to remain for a few minutes, and finally the bone and abscess cavity were well rubbed with a swab soaked in pure carbolic acid. The wound was packed with iodoform gauze, which was removed in three days. Healing gradually took place by granulation, leaving a scar of a keloid type about an eighth of an inch wide; but a certain amount of induration remained about the margin of the abscess cavity. The opening of the abscess into the mouth had closed, although this was the channel of least resistance.

Another abscess a little behind and inferior to the first one, formed, and on May 16th was treated by Dr. Dickson and myself in the same manner and with a similar result. Induration round the margin again remained.

A third abscess still lower in the neck, in close contiguity to the previous one, speedily followed, and was opened on May 24th; but as we proposed to try the effect of spirit of wine we adopted the following plan which, we think, deserves further trial and investigation.

The needle of an antitoxin syringe was plunged into the abscess cavity, and some pus was squeezed out. Then spirits of wine was injected under pressure and allowed to remain for about ten minutes. The abscess was then opened and thoroughly scraped out and packed. It cleaned out much more thoroughly than the previous ones and healed quickly, leaving a narrow linear scar without any induration at the margin. There was no further spread of the disease in this direction.

On July 4th a final smaller abscess communicating with the jaw-bone was opened over the site of the first abscess. It had worked its way straight through the middle of the keloid scar. It was treated with spirits of wine and thoroughly scraped. It healed well, and there has been no further sign of the disease.

The potassium iodide was continued in large doses for about three months as a precautionary measure, and

especially as the patient gained flesh considerably under its administration, and also lost her anaemic condition.

As in syphilitic deposits so in actinomycosis, large doses of the drug are well borne, and the remedy in both cases has a very definite influence for good. This is especially the case when the disease is not in connexion with the gastro-intestinal tract.

The granules in the final abscess were very soft, pale in colour, had lost their consistence, and their "mantle" was not defined. This condition was also observed shortly before death in the case described in the British Medical Journal in 1896, and in it, although death occurred, accompanied by extreme emaciation and exhaustion, Dr. James Galloway, who made the necropsy, reported: "There remain only the softened wall of what had been an abscess cavity. Nothing can be found to demonstrate the ray fungus." For some time previous, it may be added, spirits of wine and water (about 1 in 3) had been injected under pressure by means of a douche. As the result of this there was first a profuse serous discharge, followed in a few days by pus and masses of deposit coming away. The spirit application then we think deserves further trial on account of the great efficiency it possesses, by reason of its tenuity, in cleaning out the burrows, and especially under pressure penetrating the inflammatory deposit. It is also a very strong germicide.

The potassium iodide sustained its reputation by its disintegrating effect on the granules and by its resolution of the inflammatory deposit, thus robbing the fungus of its food.

D. Fairweather, M.A., M.D.,
London, N. Robinson S. Dickson, M.D.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, VENTNOR.

A CASE OF TUBERCULOSIS OF THE TONGUE.

(Reported by J. F. Halls Dally, M.A., M.B., B.C.Cantab., M.R.C.S.Eng., L.R.C.P.Lond., Assistant Resident Medical Officer.)

The patient, a married woman, aged 35, was admitted on March 13th, 1903. Her mother died, at the age of 57, of "decline," and one brother of "consumption," at the age of 31. There was no further family history of consumption. Her husband is healthy. She had had no children. Her past illnesses were "typhoid fever" at the age of 9, and "influenza" in the spring of 1902. With the exception of these she has been quite healthy.

History of the Present Condition.—Since the attack of "influenza" in 1902 the patient has never felt well, and has had a cough with expectoration. Haemoptysis in small quantity occurred in April, 1902, and the sputum has been slightly tinged on several occasions since. In December, 1902, about half a pint of bright blood came up on coughing.

History of Tongue Condition.—In October, 1902, a small red spot appeared at the tip of the tongue. After a few days this became raised, and in November developed into a whitish patch. Previously the tongue had been long and pointed, but the tip now began gradually to disappear, the ulcerated surface being covered with a whitish slough. In December, 1902, a reddish elevation was noticed at the right margin of the tongue, which increased in size, and then ulcerated, leaving a shallow depression covered by a whitish slough. Both patches have always been tender, and have felt sore, the sensitiveness of the one at the tip of the tongue being increased by the patient involuntarily biting it at night. The tongue was excessively tender whenever food was taken, and at night used to throb and burn, so that the patient's rest has been much disturbed since the beginning of the year.

Condition on Admission.—The patient has lost weight, sweats at night, does not sleep well, and is short of breath. The appetite is fair; she is not troubled with indigestion, but constipation is present. She is not anaemic. The heart's apex beat is in the sixth left intercostal space, three-quarters of an inch inside the mid-clavicular line. The area of cardiac dullness is much diminished, and the heart sounds are faint, but there are no added sounds. The chest is well covered, and in shape somewhat emphysematous. Over the left front the percussion note is impaired down to the level of the second rib, and crepitations are audible down to the sixth rib on the left side and to the second rib on the right. Posteriorly there is impaired percussion on the left as low as the fourth thoracic spine, the note, except over the upper two-thirds of the left lung, being elsewhere hyper-resonant. Crepitations extend on the left side down to the eighth thoracic spine and on the right to the fourth thoracic spine. On the day following the patient's admission tubercle bacilli were found in the sputum, also on April 16th and June 29th.

Condition of Tongue.—On the dorsum is a coating of brownish fur, and at the tip an ulcerated surface, transversely oval, as if the end of the tongue had been cut off. The surface is made up of pale, flattened granulations, the lower portion being covered by yellowish-grey mucus; the edges are slightly undermined on the right side, and sharply cut elsewhere, the margin being a little thickened and redder than the rest of the tongue. There is no surrounding oedema or infiltration. The ulcer measures 18 mm. in length by 6 mm. in breadth. Situated on the right margin of the tongue, at a distance of 8 mm. from the above, is another small ulcer, pale, with an excavated centre, surrounded by a hyperaemic margin. This measures 4 mm. in a vertical direction and 5 mm. transversely. Both ulcers are exquisitely painful when food is taken or when their surface is touched, and salivation is present to a slight degree. The lymphatic glands beneath the jaw are enlarged on both sides, but are not tender. The patient remained in hospital sixteen weeks. During the first fortnight her temperature varied from 98.0° to 99.8° F., and during the rest of the time from 97.8° to 99.0° F.

Treatment and Progress.—The treatment at first adopted consisted in the local application of a powder composed of morphine, iodoform, and boric acid, together with a boric acid mouth-wash. The ulcers during this time became more painful, and slowly but steadily increased in size. On April 3rd the following treatment was instituted: the ulcers were painted with a 10 per cent. solution of cocaine five minutes before each meal, and once daily a 10 per cent. solution of lactic acid was rubbed into the ulcerated surfaces after previous cocainization. The strength of the solution was rapidly increased, till on April 13th pure lactic was reached, and this application was daily continued till May 8th. The note at this time in the casebook runs as follows: "The base of the ulcer at the tip of the tongue is now almost level with the edges, and looks healthy, the edges being no longer undermined. It is smaller in size. The ulcer at the right margin slightly enlarged till May 3rd, since when it has been stationary in size." Since the ulcer at the side was not healing, pure carbolic acid was applied twice, then pure lactic, and pure carbolic acid again on May 11th. A week later the ulcer at the side was scraped, and pure carbolic acid applied, the ulcer at the tip being treated similarly on the 26th. The scrapings were carefully examined on each occasion for tubercle bacilli, but, as not infrequently happens in this class of case, without positive result. At this time the ulcer at the side of the tongue had nearly healed. For the ulcer at the end of the tongue pure nitric acid was now applied daily. The note on June 15th is, "Ulcer slowly and steadily diminishing in size. General condition good." By the 29th the ulcer had lost its hypersensitiveness, and was very small. The nitric acid was then discontinued, and patient left the hospital on July 2nd. Since her departure she has been kept under observation, and up to the time of writing both ulcers remain completely healed, and there is no tenderness, infiltration, or other evidence of recrudescence of the disease.

Remarks.—The above case is of interest not only on account of the rarity of the disease, but also on account of the unusually favourable nature of the result. In support of the fact that this condition is usually regarded as hopeless I may quote Mr. Butlin, who states[1] that

> the prognosis of tuberculous ulcer of the tongue is almost as unhappy as that of carcinoma. Not only is the disease fatal, but it is usually fatal within a few months, or from one to two years.

The reason for this bad prognosis probably depends on the difficulty which these patients experience in taking food. Since it is usually agreed that dysphagia is the factor of most importance as regards the rapid downhill course which is taken by cases of tuberculous laryngitis, the probability is that the same symptom is the cause of the bad prognosis in cases of tuberculous ulceration of the tongue in which the dysphagia is an equally prominent symptom. Now, in the present case inability to take food persisted to such a degree that, if we are correct in assuming dysphagia to be the cause of the bad prognosis, this patient had an equally short time to live. The patient being unwilling to accept surgical treatment, it became necessary to decide upon some form of local application. For many years past treatment by means of the local application of lactic acid has been almost universally adopted for tuberculous ulcers of the larynx, and it has been thought to exercise a specific action upon them. Latterly, however, some doubt has arisen as to its specificity, and now it seems more probable that its beneficial effect entirely depends upon the germicidal property which it possesses in common with other acids. Having started treatment with lactic acid, and —wishing to gain further knowledge as to the truth or otherwise of this more recent hypothesis—finding after a short time that the ulcer at the side of the tongue was enlarging instead of healing, I abandoned the use of lactic acid for the smaller marginal ulcer and tried the effect of pure carbolic. The very marked improvement subsequently manifested encouraged me to adopt the same treatment, followed by nitric acid for the larger ulcer at the tip of the tongue, and although this had been steadily healing under the influence of lactic acid, yet under the newer conditions it healed with much greater rapidity. Carbolic acid, not being a true acid, perhaps hardly comes under the same category as the others, but

[1] *Diseases of the Tongue*, 1900, p. 180.

nevertheless acts similarly on account of its germicidal properties. I am indebted to Dr. Robertson for permission to publish this case.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

NORTH OF ENGLAND BRANCH.

E. H. DAVIS, M.R.C.S., in the Chair.

West Hartlepool, Wednesday, October 28th, 1903.

The Climatic Treatment of Phthisis.—Dr. T. BEATTIE delivered an address, entitled, Climate *versus* Sanatoria in the Treatment of Pulmonary Tuberculosis. The address was based largely on the speaker's own experiences at Davos and at home. Dr. Beattie laid special stress on the fact that climate was of secondary importance to fresh air and rest, but certain climates were a great luxury in the open-air treatment, and enabled those who had the means to pursue the treatment under general conditions. He mentioned several points which had struck him as a patient, a hospital physician, and a pathologist, such as the importance of careful treatment of all pleurisies, and the need for watchfulness in regard to all light-weight patients. He condemned the practice of wintering, which was frequently a means of lulling the patient into a false security; gave many indications as to suitable climates in certain classes of cases, and emphasized the fact that in the last resort much could be done at home by people of moderate means who were carefully instructed by their medical adviser.—The address was very cordially received, and Dr. ROBINSON voiced the feelings of pleasure experienced by the members at seeing their late Honorary Secretary back again in such robust health. He endorsed nearly everything said by Dr. Beattie, and dwelt particularly on the comparative insignificance of climate judging from his experiences of the good work done at the Stanhope Sanatorium.—Dr. E. W. DIVER said his experience of four years in sanatorium work enabled him to corroborate what had been said by the previous speakers. He particularly endorsed Dr. Beattie's remarks on wintering, and said he had seen several examples of its dangers in inducing consumptives to trust to it rather than to rigorous and long-continued fresh-air treatment under proper supervision. He also emphasized the absurdity of the idea held by many people that climate, or even weather, was of supreme importance. This frequently induced cases to refrain from putting themselves under treatment in the autumn or winter, thus wasting valuable time.—Dr. SMURTHWAITE (Newcastle) mentioned briefly some striking practical experiences he had had in Vienna, showing the great value of absolute functional rest in cases of laryngeal tuberculosis.—Dr. BEATTIE replied.

Operation for Malignant Disease.—Dr. A. E. MORISON showed a number of patients operated upon some years previously for malignant disease. In all the patients shown the diagnosis of malignant disease had been verified by microscopical examination of the growths after removal. (1) Mrs. W., aged 85, breast and axillary glands removed twelve years ago; (2) Mrs. O., aged 53, breast and axillary glands removed nine years and a-half ago; (3) Mrs. M., aged 36, breast and axillary glands removed seven years ago; this patient at the time of the operation was two months' pregnant, and since the operation had had four children; (4) Mrs. B., aged 42, amputation through upper one-third of thigh for myeloid sarcoma of femur fourteen years ago: a spontaneous fracture of the femur occurred immediately above the knee prior to the amputation; the medullary cavity of the portion of femur left was scraped out with a sharp spoon; (5) Mr. P., aged 48, whole of lower lip, angles of the mouth and cervical glands on both sides removed for epithelioma eight years ago; a new lip was formed from skin flaps from the neck; (6) Mr. E., aged 51, similar operation to last performed six weeks ago; (7) Mrs. S., aged 65, excision of breast and axillary glands for scirrhus fifteen months ago by Halsted's method; this patient was shown to illustrate the amount of movement of the arm a few months after so radical an operation.

Wiring of Patella for Fracture.—Dr. A. E. MORISON also showed four cases in whom he had wired the patella for fracture: (1) J. E., who suffered a compound comminuted fracture from the kick of a horse; thirty hours after the injury he was admitted into the hospital, the patella wired, and the knee-joint washed out; a drainage tube was inserted into the joint for twenty-four hours; passive movement was commenced in ten days; subsequent movement and usefulness of limb perfect; (2) M. L., fracture through indirect violence: operation eighteen hours after accident; (3) W. W., fracture through indirect violence; operation twenty-four hours after accident; in both cases complete use of the limb resulted; (4) M. J., fractured her patella in April, 1901, and was treated by prolonged rest and elevation of the limb for six weeks; about 2 in. of fibrous tissue separated the two fragments, and her leg was weak and gave way under her on going up or downstairs. In April, 1902, she slipped on the ice, and ruptured the fibrous band uniting the two fragments of patella. Four days after the two ends of the patella were refreshed, and wired. The knee-joint was full of blood clot, and was washed out with 1 in 10 000 corrosive sublimate lotion; passive movement was commenced on the eighth day, and a useful limb resulted.

Specimens.—Dr. A. E. MORISON also showed a series of fibroid tumours of the uterus, removed by abdominal hysterectomy.

Electro-therapeutic Apparatus.—Dr. H. E. GAMLEN had in the hall a most extensive array of electro-therapeutic apparatus, the whole of which could not be demonstrated owing to lack of time. He showed some excellent *x*-ray photographs, and showed and explained the apparatus for high-frequency work. Much interest was shown by members present, and regret was expressed that time did not permit the whole of the exhibit to be thoroughly explained.

SOUTH WALES AND MONMOUTHSHIRE BRANCH: CARDIFF DIVISION.

Dr. W. T. EDWARDS, President, in the Chair.

Cardiff, Thursday, October 22nd, 1903.

Diagnosis of Aortic Aneurysm.—Dr. W. MITCHELL STEVENS read a paper on the difficulties in the diagnosis of aortic aneurysm when situated near the crura of the diaphragm. Two illustrative cases were cited. In Case I the chief points to be noted were (*a*) the latency of symptoms; (*b*) the sudden unconsciousness; (*c*) the continuous vomiting, with abdominal pain, tenderness, and distension; (*d*) the preliminary rupture followed by the fatal bursting. In Case II the symptoms were somewhat similar. The quickly fatal rupture was preceded by pain and tenderness about the hepatic region. Dr. Stevens emphasized the noteworthiness of one symptom, namely, the fainting or unconsciousness which pointed to loss of blood, and which should suggest the differential diagnosis from sudden abdominal lesions such as perforation or obstruction. The *x* rays might prove to be of differential value in some of these cases.

Prostatectomy by Freyer's Method.—Mr. WILLIAM SHEEN recorded two cases of prostatectomy by Freyer's method. The patient in the first case was a man, aged 62, who had had prostatic symptoms for four years. At the time of the operation severe haemorrhagic cystitis had supervened. Suprapubic prostatectomy was effected, the prostate being easily enucleated by Freyer's method. The patient made a very satisfactory recovery. The specimen was shown at the meeting. In the second case there was considerable difficulty in the removal of the gland owing to the presence of several adenomatous outgrowths.

Ulcer of Stomach.—Mr. P. RHYS GRIFFITHS read notes on a successful case of operation for perforating ulcer of the stomach.

At a meeting held at Cardiff on November 4th, Dr. M. G. EVANS in the chair, Mr. CORNELIUS A. GRIFFITHS read a paper on Some Fatal Types of Appendicitis. These were illustrated by three recent cases in which Mr. Griffiths had been asked to operate for (1) intestinal obstruction, (2) severe abdominal pain of obscure origin, and (3) tumour supposed by medical attendant to be intussusception—all cases of peritonitis from gangrenous appendix. Reference was made to the frequency with which supposed mechanical obstruction was really due to a paralytic obstruction from peritonitis of perforative origin. Several faecal concretions from cases of appendicitis were shown.

BRITISH GUIANA BRANCH.—At the annual meeting of this Branch, held on October 24th, Dr. J. H. CONYERS, President, in the chair, Dr. Q. B. DE FREITAS read notes on a case of suppurating ovarian cyst and on one of extrauterine pregnancy, which were both operated on in the Public Hospital,

Georgetown.—The President exhibited a recent specimen of a ruptured tubal pregnancy showing a complete sac in the outer third of the left broad ligament, which contained a fetus between the second and third month of gestation, and a rudimentary placenta and cord. The uterus contained a complete decidua. The patient died of internal haemorrhage and peritonitis. During life all the symptoms pointed to intestinal obstruction and peritonitis; there had been no external haemorrhage of any sort.

Bath and Bristol Branch.—A meeting of this Branch was held at Bath on November 25th, Dr. Barclay Baron, President, in the chair. There were thirty-five members present.—Dr. E. J. Cave showed a patient suffering from ulcerative endocarditis, and Dr. Waldo discussed it.—Dr. Llewellyn Jones read a paper on gastro-intestinal diseases in relation to joint swellings, and Dr. Shingleton Smith remarked upon it.—Dr. Wilson Smith related some cases of multiple vascular obstruction; and in the discussion which ensued Drs. Waldo, Fisher and Michell Clarke, and Messrs. Benson and Beaumont joined.—Mr. J. R. Benson suggested a scheme for hospital treatment for the middle classes, which was criticized by Dr. Preston King, Mr. Paul Bush, and Mr. H. H. Williams.—Dr. J. Wigmore read notes of a case of puerperal eclampsia.

Ulster Branch: Belfast Division.—At a meeting held on November 25th, Dr. Stanley B. Coates, President, in the chair, Dr. Donnan (Holywood) showed a patient with a large sarcoma of the superior maxilla, and read notes of a most interesting case of acute transverse myelitis. Drs. MacCormac and McKisack offered comments in the case.—Dr. A. B. Mitchell showed a number of pathological specimens, and read notes of four cases of Jacksonian epilepsy. Drs. McKisack, Lindsay, and Calwell took part in the discussion which followed.—Dr. John Campbell read a paper on the treatment of inoperable cancer of the uterus, in which he pointed out how much could be done to relieve the patient's sufferings and retard the progress of the disease by the intelligent use of caustics, especially the chloride of zinc. The paper was continued by Drs. Dempsey and Johnstone.—Dr. Dempsey gave an account of the work done in the gynaecological department of the Mater Infirmorum Hospital during the past year.—The following contributions were also furnished: A paper by Dr. Calwell on the relationship of gastric ulcer to chlorosis. Notes of three cases of duodenal ulcer, and of a case of successful resection of 5 ft. of gangrenous intestine, by Dr. Robert Campbell; notes of a case of Friedreich's ataxia (patient exhibited) by Dr. McKisack.

South-Eastern Branch: Isle of Thanet Division.—At a meeting held at Ramsgate on November 26th, Dr. Bowden in the chair, Dr. Halstead read a paper entitled "The Difficulties of Diagnosis between Functional and Organic Diseases of the Nervous System." Stress was laid upon the importance of ascertaining the absence of every single sign of organic nervous disease before labelling the disease as only functional, and until that precaution had been taken it was urged that neither sex, nor age, nor transitoriness, nor variability, nor hysterical stigmata, nor neurotic manifestation, nor suddenness of onset, nor even ultimate recovery, should influence much the estimate of the case. Mention was also made of the help which might be derived from a thorough examination of the other organs of the patient, so that any of those diseases might be detected which are known often to produce organic diseases of the nervous system, and, if any such disease be found present, its capability of producing the nervous symptoms present in the case should be considered.

Licentiates of Societies of Apothecaries.—As will be seen by an advertisement in this issue, a meeting of licentiates of the Society of Apothecaries will be held on Tuesday next at 4 p.m., at the Apothecaries' Hall, Blackfriars, London, E.C., under the auspices of the Association of Physicians and Surgeons of the Society of Apothecaries. The meeting will be addressed by Mr. George Brown and Mr. George Jackson, direct representatives on the General Medical Council, and by Mr. A. Mowbray Upton, Clerk to the Society of Apothecaries. A dinner will take place on the same day at 8 p.m. at the Restaurant Frascati, Oxford Street, tickets for which can be obtained from Dr. Gerald Dalton, Cranbourn Mansions, Cranbourn Street, W.C.

REPORTS OF SOCIETIES.

CLINICAL SOCIETY OF LONDON.

Frederick Taylor, M.D., F.R.C.P., President, in the Chair.

Friday, November 27th, 1903.

Chronic Intussusception treated by Intestinal Resection.

Mr. F. C. Wallis described a case which was illustrated by the epidiascope.

The patient was a healthy married woman, aged 32, who had been subject to attacks of pain in the abdomen on and off for two years. She was admitted into Charing Cross Hospital in one of these attacks, which was very acute, being accompanied by vomiting. There was no melaena nor could any tumour be felt. Laparotomy was performed on April 25th, 1903. When anaesthetised the patient was found to have a considerable tumour in the abdomen, and on opening the abdomen this was seen to consist of a large amount of intussuscepted small intestine which it was impossible to reduce. The entire portion of bowel affected —42 in. in length—was removed, and the two ends were joined by a Murphy button. Everything went well until about three weeks after the operation, when the attacks of colic recommenced. These attacks were due to the Murphy button, which was seen by means of the *x* rays to be somewhere in the region of the ileo-caecal valve. The button was removed by a second incision, and the patient made an uninterrupted recovery, and had been in the best of health since. At the apex of the intussuscepted portion was a perforation evidently due in the first instance to some thrombosis.

The main points of interest in the case were the length of time during which the patient suffered, her previous good health, the large amount of small intestine removed, the fact that no tumour could be felt in the abdomen until she was anaesthetized, and that no exciting cause, such as a growth, could be found.

The case was discussed by Mr. A. E. Barker and Mr. Bruce Clarke; and Mr. Wallis, in reply, said he preferred simple apparatus; but, in this case, as time was a great object, he employed the Murphy button.

Lymphocythaemia (Lymphatic Leukaemia).

The President narrated two cases.

1. A boy, aged 10, first complained of pains in the legs, thirst, and yawning. Six weeks later he was found to have enlargement of the left parotid gland, dullness over the upper part of the sternum, a deep-seated tumour in the left flank, but no obvious enlargement of the lymphatic glands. Two weeks later he was admitted into Guy's Hospital, with enlargement of both parotid and submaxillary glands, of the liver, and of the left kidney. A blood-count showed 15,000 leucocytes per c.mm., of which 46 per cent. were small lymphocytes. A few days later the parotid swellings had increased, and some lymphatic glands close by had enlarged. The leucocytes increased to 50,000, and a differential blood-count gave small lymphocytes 94, large lymphocytes 3, polymorphonuclears 2.5, eosinophile 0.5. Hæmorrhages from the mucous membranes appeared, and he died a month after admission. The necropsy showed enlargement of the above-mentioned glands, also of the thymus, spleen, and kidneys. Microscopically the enlarged organs were densely packed with lymphocytes. (2) A girl, aged 14, was seen on January 14th. Six weeks previously she had had pains in the limbs with *malaise*. Her eyes became prominent and the feet swelled. The salivary glands were enlarged; the mammæ were enlarged, hard, and nodulated. The liver reached one inch below the umbilicus. The edge of the spleen could just be felt. A blood film showed an extraordinary excess of leucocytes of which 95.8 per cent. were small lymphocytes. She died on February 21st, after the onset of ascites, epistaxis, and uterine hæmorrhage.

The President pointed out the rapid course of both these cases, and said that the enlargement of the mammæ and the thymus were unusual features. The relatively small size of the lymphatic glands suggested to him that these organs were not primarily at fault.

Dr. Batty Shaw inquired as to the condition of the bone marrow in these cases, and mentioned the case of a child in which it was of a bright crimson colour.

Dr. Parkes Weber said that probably the bone marrow was the site of the formation of the large lymphocytes. Two cases had been recorded by German observers in which the bone marrow was the only leucocyte-forming tissue affected. He regarded the large leucocytes as the fetal variety of myelocytes in which the granules had not time to be formed.

Dr. Phear made some remarks, and the President replied.

Post-operative Hernia treated by the Introduction of a Silver-wire Filigree.

Mr. Lawrie H. McGavin read notes of this case.

The patient (who was also exhibited), a woman aged 47, had undergone an operation fifteen years previously for the removal of a uterine fibroid, and had developed a ventral hernia at the site of the operation

of such dimensions that the chances of obtaining a permanent cure by the usual surgical procedure were of the slightest. A silver-wire filigree was therefore introduced between the muscles and the peritoneum, after the method suggested and practised by Willard Bartlett, measuring 5 in. by 2½ in. The skin incision was closed by interrupted silkworm-gut sutures, and a firm abdominal binder applied. Both superficial and deep sutures were removed on the tenth day, and the patient left the hospital at the end of three weeks.

Since the operation the patient had been well and comfortable in every respect, and was performing her duties without the aid of an abdominal support of any kind. The site of the operation was also sound, a firm and somewhat depressed area marking the position of the filigree. The wire employed was of No. 27 gauge.

Remarks were made by Mr. Bruce Clarke and Mr. A. E. Barker; and Mr. McGavin, in reply, described his method of making the filigree, and said that its success depended upon the growth of living tissue within the metal meshwork.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

Pathological Section.

H. C. Earl, M.D., President, in the Chair.

Friday, November 6th, 1903.

Cytology of Serous and Serofibinous Effusions.

The President delivered an address on this subject, describing the methods in use, and the results which had been obtained. He considered that the diagnostic value of cytology was of decided diagnostic aid in examining tuberculous pleuritic effusion, but its value was not yet proved as regarded pericardiac and peritoneal effusion. In examining fluid from joints and cases of cerebro-spinal meningitis cytology was of value and pointed to tubercle when lymphocytes predominated.

Orbital Tumour.

Mr. Arthur Benson and Dr. Langford Symes showed a tumour removed from the apex of the orbit of a woman aged 48.

Three and a half years previously she had received a blow in the eye from the head of a calf, which she was feeding. Two months after the injury the sight began to fail, and at the time of the operation vision was wholly gone from atrophy of the optic nerve. The eye was proptosed and very defective in motion. The growth, which entirely surrounded the nerve, occupied the entire apex of the orbit, and the globe sat in a depression on its anterior surface, but was quite free from attachment to it in any place.

The very slow growth of the tumour and its very slight malignancy were remarkable, but the point of greatest clinical interest was the loud respiratory *bruit*, which could be heard with a stethoscope placed over the globe, both inspiration and expiration being easily heard. The *bruit* was also to be heard, though to a much less degree, over the sound eye. There was no vascular *bruit* to be heard. Four months had passed since the operation, and there was no recurrence. Dr. Symes examined the specimen, and found the tumour to belong apparently to the sarcomata, but with a peculiar locular or alveolar arrangement.

Mr. Story considered the curious respiratory murmur heard over the affected orbit and its walls the most interesting and obscure part of the case.

Drs. Travers Smith and Professor O'Sullivan also spoke. Drs. Benson and Symes replied.

Exhibit.

The President showed a brain with small aneurysms on various cerebral arteries.

EDINBURGH OBSTETRICAL SOCIETY.

James Ritchie, M.D., F.R.C.P.E., President, in the Chair.

Wednesday, November 11th, 1903.

Election of Office-bearers for Session LXV, 1903-4.

The following were elected office-bearers for the year:—*President:* Dr. N. T. Brewis. *Vice-Presidents:* Senior, Professor Simpson; Junior, Professor Kynoch (Dundee). *Treasurer:* Dr. William Craig. *Secretaries:* Dr. William Fordyce, Dr. Lamond Lackie. *Librarian:* Dr. Haultain. *Editor of Transactions:* Dr. Lamond Lackie.

President's Valedictory Address.

After conveying thanks to the various officials of the Society the outgoing President (Dr. James Ritchie) said that during the past two years this Society had lost 5 honorary and 7 ordinary Fellows, in addition to 9 corresponding Fellows whom they had lost by death, and the total number of Fellows on the roll was now 567. During the past two years 6 honorary Fellows and 43 ordinary Fellows had been added to the roll. The President next referred briefly to the Society's work during the past two years, and to the prolonged illness of Dr. Milne Murray, his immediate predecessor as President of the Society. He concluded by thanking the Fellows for electing him President, for their courteous consideration during his term of office, and congratulated the Society on having elected Dr. N. T. Brewis as his successor.

Professor A. R. Simpson moved, and Sir John Halliday Croom seconded, a vote of thanks to the retiring President for his address.

Leucocytosis in Abdomino-pelvic Disease.

Dr. E. Scott Carmichael read a paper in which he gave a very complete review of the bearings of this subject, based on observations made on a series of 180 gynaecological cases. As regarded the value of leucocytosis as an indication for operation, no hard-and-fast rule, Dr. Carmichael said, could be laid down, and it was only by practical experience, and by considering other signs and symptoms, and not relying on the leucocyte change alone that the greatest help was derived from it. One leucocyte count alone was valueless. Systematic examinations should always be made every twenty-four hours. If in acute cases when three consecutive examinations made at such an interval, with all possible fallacies excluded, a leucocyte count remained on each occasion about or above 20,000, or if there was a steady increase towards that number, one was justified in suspecting the presence of pus. The leucocytes should continue to be counted after operation in order to gauge the completeness of the drainage. In the more chronic conditions leucocytosis was of great value, though it must not be looked upon as infallible, nor must the degree of leucocytosis be expected to reach that of an acute case. How constantly one saw chronic cellulitic and tubal conditions where pus was present when the tumours had given no evidence in it. In tubal conditions the leucocytosis was a most valuable guide, first, as to the presence of pus; secondly, as to the virulence of the organism, and, thirdly, as to the nature of the operation to be performed. In most cases of cancer of the cervix, where there was much ulceration, there was often considerable leucocytosis, and here one was not justified in performing, for instance, a tubal extirpation and exposing the patient to the risk of septic peritonitis without first having steadily reduced the leucocyte count by cauterization, the application of antiseptics, and douches of the ulcerated surface. Lastly, after severe haemorrhage, as for instance in uterine fibroids, there was often considerable leucocytosis, and such leucocytosis should rather be a contraindication to operation. Thirdly, as regarded an aid to prognosis, Dr. Carmichael did not think that leucocytosis had much importance in gynaecology; in appendicitis, however, especially in the rapid fatal variety, there was often no leucocyte rise. It might probably be stated that where the patient was markedly overwhelmed with toxins as in severe puerperal fever there was no leucocytosis. The result was inevitably fatal. Dütz-mann considered that a marked leucocytosis was a favourable sign in eclampsia when associated with diminution in the convulsions, whereas a leucocyte decrease associated with increased severity of the attack often presaged a fatal issue. In the case of extirpation of the uterus in puerperal septicaemia leucocytosis gave valuable help as to when there ought to be operation, or whether one ought to refrain from operating. Fallacies could only be learned by experience. No leucocyte count was infallible. Purgative medicines caused temporary leucocytosis, while anaesthetics, especially ether, would appear to cause marked leucocytosis. Severe haemorrhage caused an increase of leucocytes.

Professor Simpson, Drs. G. Lovell Gulland, D. Berry Hart, J. W. Ballantyne, and W. Fordyce commented on the points raised; and Dr. Carmichael replied.

LIVERPOOL MEDICAL INSTITUTION.

Rushton Parker, B.S., F.R.C.S., President, in the Chair.

Thursday, November 12th, 1903.

Pathological and Microscopical Section.

Mr. F. T. Paul showed the following: (1) A large tumour of the parotid gland removed from a woman, aged 62.

The tumour had been present for 25 years; on microscopical examination it was found to have become carcinomatous.

(2) Sections of a rare variety of carcinoma of the breast.

It was characterized by rapid necrosis and ulceration; it was of a very malignant type.

(3) Two specimens of the pylorus were also shown; the one was a fibrous stricture, the other a malignant growth.

Mr. G. P. Newbolt showed a specimen of malignant disease of the prostate from a man, aged 63; a polypoid excrescence projected into and blocked the neck of the bladder.

Dr. Grossmann showed (1) specimens of taenia solium obtained from a dog, and demonstrated its structure by means of lantern slides; he showed that it differed in several respects from the human parasite; (2) microscopic specimens of a pigmented excrescence from the pupillary region of the calf.

Mr. R. W. Murray exhibited a section obtained from the breast of a female patient, aged 55.

The clinical signs and naked-eye appearance pointed to a carcinomatous condition, but microscopical examination revealed a large number of giant cells and no definitely carcinomatous structure, so that a diagnosis of tuberculosis had been made.

Mr. Murray also exhibited a portion of intestine which in the course of an operation for short-circuiting the gut he had occluded at either end and retained within the abdominal cavity.

Two years after this operation the portion of intestine so occluded was enormously distended with offensive muco-purulent fluid and caused the death of the patient.

Mr. Douglas Crawford showed a specimen of a large cystic goître removed from the thyroid isthmus; also two small lateral lobes of a prostate enucleated for urinary obstruction.

Dr. W. Allen showed a specimen of ulcerative endocarditis associated with tuberculous meningitis and pulmonary tuberculosis.

Dr. E. E. Glynn exhibited a specimen of pontine haemorrhage; also specimens illustrating fat necrosis in the omentum.

Sir William Banks showed an enchondroma removed by operation along with a portion of the scapula from which it had originated.

Mr. F. T. Paul read a note upon a case of intestinal obstruction due to a large gall stone; this was successfully removed from the upper part of the ileum.

The patient was a lady, aged 62, who was suddenly attacked with vomiting and complete intestinal obstruction. Three days later she had copious faecal vomiting and a flat abdomen; a diagnosis of obstruction high in the intestine was made, which was thought to be probably due to a gall stone because of the history of previous symptoms. She had never had typical attacks of gall-stone colic, but had complained for a consideraole time of a dull pain in the right hypochondrium. She made a rapid and complete recovery.

Mr. Thelwall Thomas mentioned two cases of similar nature:

In neither of them had there been previous jaundice; he stated that in the published cases the obstruction had been found most commonly in the ileum indicating ulceration primarily into the duodenum; ulceration into the colon was rare.

Specimens, etc.

Mr. G. P. Newbolt showed a large biliary calculus removed from the ileum, in which it caused obstruction.—Dr. E. E. Glynn described two specimens of secondary diffuse carcinoma of the spleen and discussed the microscopic appearances. The following card specimens were exhibited:—Mr. Thelwall Thomas: (1) A piece of cedar wood pencil 1¼ in. long removed by suprapubic cystotomy; (2) a specimen of cystic mastitis.—Dr. E. E. Glynn: A specimen showing rupture of a caseous bronchial gland into the trachea, causing asphyxia.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

John Tweedy, P.R.C.S., President, in the Chair.

Thursday, November 19th, 1903.

Case of Indirect Gunshot Injury of Eye; Microscopical Examination.

This case was read by Mr. Nettleship. The patient was a man, aged 19, who in July, 1897, held a pistol to each temple and fired. He was brought to the hospital bleeding from a wound in the right temple. The skin was singed and the bullet wound passed through the orbit into the ethmoid. In the left temple was a bullet wound into which a probe could be passed 2 or 3 in. There was perception of light in the right eye, but not in the left. Nine days later the right fundus showed haemorrhages in various parts of the fundus. In the left no details were visible. Twenty-nine days later the right disc was very pale, and there were several ruptures of the choroid. The left was not so well seen. Thirty-one days after the accident he was *x*-rayed, this being in very early days of that work. It was thought that two bullets were seen in the skull, but this was found afterwards to be an error. On the 36th day after the injury convulsions developed and patient died comatose. *Post-mortem* examination showed that there was no bullet in the skull. There was meningitis of the base and vertex. Only the pistol fired on the left side took effect, the right probably having had a blank charge in it. The back part of the eyes were removed for examination, and Mr. Nettleship gave a lantern demonstration and showed photographs on the condition found on microscopical examination. The point of interest was that although the bullet had caused so much injury to the choroid, yet this was only indirect, as it had not passed near enough to the eye to touch it, and there was no rupture or perforating injury of the sclerotic.

The President mentioned a somewhat similar case that had come under his own observation.

An Easy Operation for Ectropion.

Dr. Freeland Fergus described the operation he had found very useful for ectropion following certain cases of blepharitis. He considered the usual methods with caustics unsatisfactory. The operation he described consisted of dissecting the conjunctiva well away from the underlying tissue and removing the hypertrophied tissue thoroughly; on this latter point depended the success of the operation. He considered that Snellen's sutures produced but little effect if they were kept aseptic.

Average Visual Acuteness.

Dr. Freeland Fergus also read a paper on this subject. He seriously called in question whether the $\frac{6}{6}$ of Snellen's types was the average vision of the majority of people. He thought that the average was nothing like so high if patients were taken without the correction of their refractive error, and that for medico-legal questions the average without correction should be taken. He suggested that a committee should be formed to investigate this. They might at the same time investigate the question of colour vision, as he considered that colour blindness was not in any way dangerous to navigators or seamen if their light sense were normal.

Mr. Devereux Marshall said that he was surprised that colour blindness should be considered of so little importance to those engaged in navigation, and if there were any who doubted the extreme inadvisability of allowing colour-blind men to take responsible positions on board ship a committee should certainly be formed to settle the matter.

The President said that although he quite agreed as to the importance of the light sense being perfect, yet he by no means thought that colour-blind people should be allowed to take charge of ships.

Messrs. Secker Walker and Roll discussed the operation for ptosis, and Dr. Freeland Fergus in reply said that he considered colour blindness of no disadvantage to seamen, for, if their light sense was perfect, they would never confuse the side lights. He thought it entailed much hardship on men who were perhaps rejected from the extra master certificate for colour blindness when they had perhaps served many years at sea without any accident having occurred in consequence of their defect or any evidence that they confused the navigation lights.

The Judgement of the Size of Distant Objects.

Mr. N. Bishop Harman in his paper on this subject referred to a note in the British Medical Journal of September 12th, 1903, wherein a writer drew attention to an experiment in which, by an illusion, the experimenter was led to believe objects seen were smaller and more distant than they were known to be; this had been attributed to the influence of accommodation. Mr. Harman pointed out that these facts were true and well known. He showed by several simple experiments with prisms and stereoscopic views that objects could be made to appear either small or large at will, and that this illusion was due to the state of balance of the extraocular muscles. The unconscious cerebration led one to suppose that objects of a given size appeared, when seen under unnatural conditions of convergence, smaller and more distant, but that when seen under unnatural divergence they seemed larger and nearer than they were known to be. Mr. Harman showed that in the progression of the vertebrates, increase of visual acuity was coincident with the moving of the eyes from a primitive lateral position of the head to a forward position, in which the visual axes could approximate a normal parallelism; the change was complete in man and with him perception of space was probably most perfect. Coincident with these changes was a specialization of the superior oblique muscle. Mr. Harman pointed out that in the plaice almost the whole of this slow progression had been anticipated at a bound. They

elected to live a life resting on one side, and they appeared to depend above all other fish on the acuity of their eyes, both of which were turned upwards on the exposed uppermost side, and were, he thought, capable of some degree of parallelism of visual axes. In these fish he had found the same special features of the superior oblique muscles which characterized the higher vertebrates; it was not found in any other fish. He believed that the steady progression of the vertebrates towards binocular vision indicated the pre-eminent importance of extraocular muscle balance in the factors which went to form our judgement of size and space.

CARD SPECIMENS.

Mr. G. W. ROLL: A case presenting a raised area of choroidal degeneration.—Mr. DOYNE: A case of ill-developed cornea.—Mr. POOLEY: Thrombosis of a retinal vein. (?)—Mr. G. E. HENDERSON: Sections showing subconjunctival dislocation of the lens.—Mr. JESSOP: A case of sarcoma of the limbus.—Mr. DOYNE: Sclerosis of the retinal artery.

CLINICAL SOCIETY OF MANCHESTER.—The opening meeting of the session was held on October 20th when Dr. MILLIGAN gave an address on recent progress in oto-rhino-laryngology and its relation to general medicine. After thanking the Society for the honour of being elected President for the year, Dr. Milligan gove an interesting and instructive paper on the diseases of the upper respiratory tract, with its many and important adhexa, the nasal accessory sinuses, tympanum and mastoid cavities, the larynx proper, epipharynx, and pharyngeal cavity. He emphasized the rôle played by obstructive nasal lesions in the production of middle-ear disease, Eustachian obstruction, and suppurative and non-suppurative catarrhal conditions. He pointed out also the part played by suppurative disease of the nasal accessory sinases in the production of intracranial and pulmonary diseases. The proximity of such sinuses as the frontal, ethmoidal, and sphenoidal to the base of the brain furnished an explanation of the reason why intracranial suppuration tended to follow in the wake of such morbid conditions, especially when bone lesions were present, a direct path being thus opened up along which pathogenic organisms might travel to contiguous areas of brain tissue. The recent epidemics of influenza had been responsible for the production of large numbers of accessory sinus suppuration and pneumonia. He also dwelt on the connexion between enlarged tonsils, and in a lesser degree naso-pharyngeal adenoids and the dissemination of tubercle, and drew attention to the frequency with which enlarged cervical glands in children were associated with enlarged tonsils, and that the tract of infection in the first place was through the tonsils. In 34 such cases examined *post mortem* by Dr. Hugh Walsham, 20 cases of tuberculous tonsils were found, and in this connexion it was pointed out that the tubercle bacillus might penetrate through an intact epithelium. Dr. Milligan emphasized the importance of examining the naso-pharynx in all patients suffering from middle-ear disease, adverted to the relations of the tonsils with rheumatism, and the occurrence of appendicitis as a consequence of inflammatory conditions of the pharynx and tonsil, and expressed a growing personal belief in the infectious nature of malignant diseases.—The followihg were elected office-bearers of the Society for 1903-04:—*President:* William Milligan, M.D. *Vice-Presidents:* A. Donald, M.D.; H. R. Hutton, M.B. *Honorary Treasurer:* C. F. H. Kitchen. *Honorary Librarian:* J. Wilson Hamill, M.D. *Honorary Auditors:* W. B. Bell, M.B.; F. C. Scotson, M.B. *Honorary Secretaries:* C. Christopher Heywood, M.B., in addition to a committee of sixteen persons.

ANATOMICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—At the annual general meeting held on Monday, November 23rd, at St. Mary's Hospital, Mr. C. B. Lockwood, President, in the Chair, the following officers were elected for the ensuing year: *President:* J. Symington, M.D., F.R.S. *Vice-Presidents:* A. Thomson, M.B., A. M. Paterson, M.D., and J. Jule Mackay, M.D. *Treasurer:* F. G. Parsons. *Secretaries:* Peter Thompson, M.D. (England), R. J. A. Berry, M.D., F.R.S.E. (Scotland), and R. A. Stoney, M.B. (Ireland). *Council:* C. Addison, M.D., A. Birmingham, M.D., T. H. Bryce, M.D., D. J. Cunningham, M.D., F.R.S., A. F. Dixon, M.B., E. Fawcett, M.B., R. J. Gladstone, M.D., J. Wardrop Griffith, M.D., G. B. Howes, LL.D., F.R.S., A. Keith, M.D., C. B. Lockwood, A. Macalister, M.D., F.R.S., J. Musgrove, M.D., C. J. Patten, M.D., W. G. Ridewood, D.Sc., A. Robinson, M.D., G. D. Thane, H. J. Waring, M.S., B. C. A. Windle, M.D., F.R.S., and A. H. Young, M.B. Dr. A. Keith (in the absence of Professor G. B. Howes) presented the Treasurer's report for the year. The accounts showed a balance of £55 14s. 2d., which in view of the increased expenditure in illustrations and printing for the Society's *Proceedings* during the last session, must be considered as very satisfactory. The PRESIDENT in moving the adoption of the report referred to the long years of service which Professor G. B. Howes had devoted to the Society as its Treasurer, and he proposed: "That the best thanks of the Society be accorded to Professor G. B. Howes for the long and valued services which he had rendered in the capacity of Honorary Treasurer." This was seconded by Mr. C. B. LOCKWOOD, and carried unanimously. The following gentlemen were then elected members of the Society:—Dr. Waterston, Mr. W. Thorburn, Mr. F. H. Westmacott, Mr. C. Saberton, Dr. W. Harris, Mr. Clogg, Mr. E. J. Evatt, and Mr. Scott. The following papers were brought before the meeting:—Mr. F. G. PARSONS: (1) On the nature of certain epiphyses; (2) on the fascial expansions of the gracilis and semitendinosus. Dr. W. KIDD: Notes on the eyebrows of man. Dr. A. KEITH: A note on the nature and functional meaning of the ileo-caecal valve. Dr. W. HARRIS: The true form of the brachial plexus. Dr. J. CAMERON (communicated by Dr. PETER THOMPSON): On the presence and significance of the superior commissure throughout the vertebrate series.

REVIEWS.

THE TREATMENT OF DIABETES.

PROFESSOR MOSSÉ has published a small volume[1] which contains a reprint and explanation of those views respecting the utility of potatoes as an article of diet in the treatment of diabetes, to which attention has already been drawn in the BRITISH MEDICAL JOURNAL (January 18th, 1902, p. 160). Without accepting all Professor Mossé's theories, or agreeing with his conclusion that potatoes constitute a veritable cure for diabetes, we think that he has shown that they are often tolerated by diabetics in larger quantities than the profession generally is in the habit of allowing, and that they are a cheap and palatable substitute for bread in the treatment of milder cases of diabetes, of especial value among the poor, who are unable to pay for expensive dietetic specialities. In a useful chapter on the comparative chemical composition of potatoes and bread Professor Mossé shows that the amount of starch contained in potatoes varies with the season of the year; that is to say, new potatoes contain less than old—the average being 22.72 per cent. This compares favourably with the gluten bread formerly in general use, which always contained 25 per cent., and often 35 or 40 per cent. of starch, and is about a third of the quantity present in ordinary white bread. If we allow half a pound of potatoes with each of three meals we shall give approximately about 2,000 gr. of starch, whereas half a pound of bread three times a day would amount to 6,600 gr. It is by no means an uncommon thing for diabetics when questioned to say that they are not allowed to take potatoes, but that they are taking toast in practically unlimited quantities, there being an impression which is not confined to the public, that toasting bread in some way deprives it of its detrimental qualities as an article of diet for diabetics. It is extremely difficult to diet diabetic patients, except for a short time, without allowing a small quantity of bread, and in suitable cases, where the disease has been controlled, it is usual to allow two or three ounces of toast, while the prohibition of potatoes is maintained. We think that Professor Mossé has shown that it is more rational to begin with potatoes, and we urge a trial of them in limited quantities. The writer of this notice has had sufficient experience to be able to say that there are many diabetics who can take from half a pound to a pound and a-half of potatoes daily with benefit, but are unable to eat either bread or toast in equivalent quantities without a return of distressing symptoms.

In a pamphlet on the rational treatment of diabetes[2] Dr. A. LORAND, a physician practising at Carlsbad, discusses briefly the present state of knowledge of the pathogenesis of diabetes, and concludes that at present it is insufficient to form a basis for treatment. He then considers the indica-

[1] *Le Diabète et l'Alimentation aux Pommes de Terre.* Par A. Mossé. Professeur de Clinique Médicale à l'Université de Toulouse. Paris: Félix Alcan. 1903. (Demy 8vo. pp 180. Fr. 5.)

[2] *Le Traitement Rationnel du Diabètes.* Par M. le Dr. A. Lorand. Paris: C. Naud. 1903. (Demy 8vo. pp. 53. Fr. 2.) Also a German edition, published by Hirschwald (Berlin). M.1.

tions afforded by the disease, and founds his therapeutic measures upon these. We are glad to find that he lays down the principle that the diet of each diabetic patient should be determined by the total amount of sugar excreted by him upon a definitely-ordered diet, and that the amount of carbohydrate allowed to each patient should depend upon the tolerance shown by actual experiment; but our satisfaction is considerably diminished by the very loose way in which he gives the actual details. He speaks as if the average patient tolerated 100 grams of carbohydrates, yet there are many patients who cannot take a third of this quantity; that is to say, if the evidence of this toleration is that the urine is free from sugar; yet he insists upon allowing every patient a certain amount of bread, which is the form of carbohydrate generally least easily assimilated; and, in addition, he talks of giving potatoes, laevulose, and fruit. While we quite agree with Dr. Lorand that diabetic patients should be allowed as much carbohydrates as they can utilize, we are, unfortunately, obliged to recognize that there are many patients who can stand only small quantities, and that the addition of a few ounces of bread is frequently followed by a great increase of sugar and a return of symptoms. If this is not Dr. Lorand's experience, we can only suppose that the cases which come under his notice at Carlsbad belong exclusively to the milder type of elderly diabetic in whom the sugar is readily kept in check by diminishing the amount of carbohydrate food, but an essay on the treatment of diabetes ought to take account not only of those, but of the more severe cases which physicians away from health resorts are called upon commonly to treat. In another place he says that children must not be given strict diet: "Why should we add a useless discipline to the misfortune of these poor little beings?" Undoubtedly if the restrictions are useless they should not be employed, but in that case any attempt to regulate the diet of diabetic patients ceases to be rational. Yet the diatetic treatment of diabetes is in our opinion the only treatment to which the word "rational" can be fittingly applied. The pamphlet goes on to enumerate many drugs; the first place is with justice given to opium, yet its use is recommended with a freedom which savours of rashness; for example, he speaks of giving 1½ gr. three or four times a day, as a preventive to persons who show from time to time traces of glycosuria. Finally the "rational treatment" turns out to be treatment by mineral waters: "Taking into consideration all the enumerated advantages of hydrological treatment, I incline to believe that it is the most rational treatment of diabetes, considering that at present we do not know the true cause of this disease." The result is disappointing, but perhaps might have been foreseen.

ORTHOPAEDIC SURGERY.

Messrs. Tubby and Jones have published in *Modern Methods of the Surgery of Paralysis*[3] their practice in dealing with these affections. The work has special reference to muscle grafting, tendon transplantation, and arthrodesis, and much of it has already largely appeared in medical periodicals as separate communications from the authors. It is divided into three sections; the first and second deal with infantile paralysis and spastic paraplegia, while the third is devoted to the paralyses and deformities of nerve origin and some degenerations of the spinal cord. Modern views of the etiology and pathology of infantile paralysis are tersely given. The authors are of opinion that the medical treatment should be limited to the first few days of the attack with the view to reduce the severity of the fever, and that surgical treatment should then be adopted without delay. The cardinal principle of treatment advocated at this stage is massage and mechanical prevention of overstretching of paralysed muscles. Paralytic deformities are rarely met with if treated on these principles, as evidenced by the rare occasions on which paralysis is met without deformity. With regard to massage, they say that the mother, nurse, or maid can in a few minutes be taught all that is necessary to be learnt. After an extensive trial massage and voluntary movement has been found more effective than electricity, of which they cannot speak highly in the early or late stages of the disease. But we notice (from the records of their cases) that they have not altogether abandoned electrical treatment. As soon as the patient is anxious to walk he should be allowed to do so; but care must be taken that body weight does not produce or increase deformity. As an aid to locomotion mechanism has an important part to play. They say—"Despite such operative triumphs as tendon transplantation and arthrodesis, we are, except in the rarest cases, quite unable to undertake treatment without the aid of apparatus." We note that screws and ratchets, which require daily revision, do not find favour, and we endorse this opinion most cordially. In dealing with the operative treatment of deformity, they describe a procedure for obtaining permanent flexion of the elbow-joint, when all the surrounding muscles are paralysed, and power in the hand remains; a large diamond-shaped area of skin and subcutaneous tissue is removed from the front of the joint, and the upper angle sutured to the lower. Although sufficient time has not elapsed to test the permanency of the flexion, a promising result has followed in one case, in which the angle of flexion remained constant two years after operation. In paralytic scoliosis, a form of spinal support is held to be essential, and sometimes it is necessary to continue this from the lower extremity right up into the axilla. In the treatment of deformity by tenotomy, the subcutaneous method is advocated in all tendons round the ankle, whilst an open parallel incision is used in dividing the tendons round the knee and hip-joints. In obstinate cases of contraction of the sole of the foot, which have resisted free division of the plantar fascia and repeated wrenching with Thomas's wrench, a most satisfactory measure has been found in excision of the head of the first metacarpal bone. An historical account of tendon transplantation is given, dating from 1882, when Nicoladoni attached the peronei to the Achilles tendon with a good result. The various methods that can be employed are fully described, and are illustrated by a scheme after Vulpius. Individual deformities, with suggested transplantations for their correction, are next dealt with, and cases are quoted. Talipes valgus is treated by transplanting the peroneus brevis into the tibialis anticus in front of the ankle joint, dividing the peroneus longus, and removing a wedge from the outer side of the astragalus. Despite the muscle grafting, there is in these cases a strong tendency for the foot to assume its old and bad position, owing to the alteration of the shape of the joint surfaces, which necessitates the removal of the wedge. Daily massage of the reinforcing muscle or muscles should be assiduously practised, and the application of the interrupted current appears to the authors to be of value. The indications for arthrodesis are given. They think that this operation does not markedly increase the shortening which is inseparable from the paralysis. The arrangement of the subject entails some repetition, and several of the cases, as cited, fail to illustrate clearly the points intended. The illustrations are clear. We endorse the author's trust that this volume may serve as a complement to the work of the neurologist.

Mme. Nageotte Wilbouchewitch's hand atlas illustrating the application of gymnastics in the treatment of spinal curvatures[4] is written with the object of placing before the general practitioner the numerous preventable causes that lead to the production of kyphosis and scoliosis, and of pointing out to the general public the necessity of introducing orthopaedic gymnastics as an educational complement to hygiene in order to prevent their occurrence. There is no doubt that the greater number of cases of severe scoliosis are due in the first instance to neglect and parental ignorance, and to the unwarranted optimism of many practitioners when consulted in the early stages that the child will grow out of it. The author holds that every persistent lateral curvature should be considered pathological, and that the erroneous idea of a physiological right curve is responsible for much of the prejudicial delay in correcting the deformity. The author does not claim to procure a complete cure in advanced cases, but only an aesthetic improvement. Various exercises with and without special apparatus are given, and stress is laid upon the necessity of the majority of these being directed to develop the general muscular tone and to render all the articulations of the body supple. Asymmetrical exercises should be a minority only, directed to correct the deformity as it appears in each individual case. The illustrations in the text are clear and answer their purpose well; the photographs in the plates, however, are often indistinct and fail to convey the appearance of the deformity they are supposed to represent, while others represent very slight deformities. The book is founded on observations made in the clinic of Dr. Felix Brun.

[3] *Modern Methods in the Surgery of Paralysis.* By A. H. Tubby, M.S.Lond., F.R.C.S.Eng., and R. Jones, F.R.C.S.Edin. London: Macmillan and Co. 1903. (Crown 8vo, pp. 311; 93 figures. 10s.)

[4] *Atlas Manuel de Gymnastique Orthopédique: Traitement des Déviations de la Taille.* Par Mme. Nageotte Wilbouchewitch. Paris: C. Naud. 1903. (Demy 8vo, pp. 329, 51 plates, 53 figures. Fr.8.)

NURSING AND THE CARE OF THE SICK.

NOTICES of the early parts of the encyclopaedic *Manual of Provision for the Sick and of Sick-Nursing*, by LIEBE, JACOBSOHN, and MEYER,[5] have already appeared in the BRITISH MEDICAL JOURNAL of May 13th, 1899, p. 1,165, and December 30th, 1899, p. 1797. The second volume consists of two parts. The first treats of comforts for the sick, of nursing, of the training of nurses, of means of transporting the sick, of life-saving organizations, and of legislation for the care of the sick. Each subject is treated in a comprehensive manner, with details (except in the last section) of what has been done not only in Germany, but in all the civilized countries of the world. Historical particulars are given of the development of hospital arrangements for the sick, and it is stated that as early as the sixth century before Christ State-supported hospitals were called into being in India by the introduction of the Buddhist religion. Woodcuts, illustrating the progressive stages of hospital wards from the seventeenth century onwards, brighten the text, and there are also numerous cuts showing the most approved forms of ward furniture and appliances in use at the present day. This section is by Dr. Paul Jacobsohn, who also writes on nursing arrangements and the training of nurses. The transport of the sick is treated by Dr. George Meyer, who quotes ordinances made in 1611 for the conveyance to hospital of plague patients, and goes on to trace the history of the ambulance arrangements of modern times. The same author writes the section on life-saving arrangements, starting with those of the monks of St. Bernard, and coming down to the St. John Ambulance and "Samaritan" organizations of to-day. Dr. Dietvich deals with legislative enactments bearing upon the care of the sick. His essay, which occupies over 300 pages, includes an account of the duties of the school medical officer in Germany, from which many valuable hints may be gathered for adoption in this country when our educational authorities become alive to the desirability of the medical inspection of schools. The regulations for private hospitals are also worthy of attention; and there are many other matters legislatively treated in Germany which may well furnish suggestions in relation to the care of the sick in this country. In the second and concluding part we find no less than 876 pages devoted to a comprehensive bibliography, compiled by Dr. Ernst Roth, of publications dealing with the subjects treated of in the *Handbuch*. There are copious references to books in German, French, and English, with a few also to Italian and Spanish authors. In addition there are articles by Drs. Nocht and Kleffel upon special arrangements necessary for the care of sick soldiers and sailors afloat in transports and warships, as well as those employed in the mercantile marine. The advantage of special hospital ships in time of war is pointed out, and the suitable equipment of these is discussed in detail, reference being made to the U.S.A. ship *Solace* thus employed in the Cuban war. In the chapter on the mercantile marine, Dr. Nocht gives sanitary statistics as to the ships frequenting the port of Hamburg, and concludes that the rate of mortality of mariners is relatively somewhat higher than that of the ordinary male population of corresponding ages. The regulations of various nations as to the carrying of a medical officer on merchant and passenger ships are set forth at some length, and it would seem that in Italy and France the ship surgeon has to pass a special examination. A section on workmen's accidents (by Dr. Thiem), and an appendix on hospital ships (by Dr. Kleffel) in which we find references to the *Maine*, *Princess of Wales*, and other hospital ships employed in the South African war, concludes this encyclopaedic work, which does much credit to the thoroughness of its editors, and contains much that will be useful for reference by English as well as German readers.

The Nursing Profession,[6] by Sir HENRY BURDETT, has reached the fourth year of publication, and the compilers claim for it that it has met a want and furnished information which cannot be obtained in the same condensed manner elsewhere. In the review of a former edition we suggested that, as the compilation was intended primarily to guide the inquirer as to her training, it would have been well to draw attention to the lavish granting of certificates by institutions which are not in a position to offer a satisfactory training. On looking through the pages of this edition we cannot see that any improvement has been made in that particular. We are also struck by the omission of any reference to the Midwives Act, which should have been noticed, and its provisions explained.

It would seem that the machinery at the disposal of the editor of the *Nursing Directory*[7] is not adequate. On looking through the list we see that to most of the names an asterisk is attached, implying "no recent information." On three pages taken at random, of 39 entries 29 are starred; 40 entries, 31 starred; 20 entries, 14 starred. We also note the names of three nurses who have died—two in 1901, and one early in 1902—the names of some who have retired for many years, and we do not find the names of others who have obtained their certificate in recent years. Probably, in the present imperfect state of the organization of nurses, the compilation of a complete and accurate directory is an impossible task.

DENTAL SURGERY.

CLEARLY written, excellently got up, and illustrated with a large number of original figures, the first impression produced upon the reader's mind by Broomell's *Anatomy of the Mouth and Teeth*[8] is distinctly favourable. But on closer perusal some disappointment is felt, for insufficient care to bring the book up to date is too often evident. Recent researches, even of first-rate importance, are sometimes ignored; others are quoted at second-hand, and wrongly attributed to the intermediary writer, though the originals are easily accessible; the latest editions even of textbooks have not been consulted, so that views abandoned by their writers are attributed to them as though still held. These criticisms apply principally, though not exclusively, to the sections on histology and development, and are made with regret, for the author has endeavoured—so far as may be—to provide his own material. The illustrations alone confer considerable value upon the book, and we by no means intend to convey the impression that it is without much merit; but we notice in this, as in so many American dental textbooks, a tendency to neglect the literature of countries other than their own, and especially that of France and Germany; a little more care in this direction would improve this volume so much that we have devoted the small space at our disposal mainly to pointing out its defects rather than its excellences in the hope that the writer may remedy them in succeeding editions.

We have nothing but praise for Mr. GOADBY's textbook *The Mycology of the Mouth*,[9] primarily intended for students, and especially for dental students. The first eighty pages are devoted to the elucidation of general principles and of ordinary laboratory methods; but the account of the organisms found in the mouth is so complete, and the description of their morphological and biological characters so precise, that it is not too much to say that it will be indispensable to every bacteriologist. Apart from the ordinary pathogenic and non-pathogenic organisms which occur with varying frequency in the mouth, there is a group of some six or eight forms which have not been recognized as occurring elsewhere. All of these have in common the peculiarity of being extremely difficult to cultivate, so that our knowledge of them is almost confined to morphological characters and is therefore incomplete. The author has, however, after years of failure, succeeded in obtaining two of them in pure culture, potato gelatine and saliva set with agar having proved useful media. He hopes to succeed with some at least of the others, but one of the difficulties is that a streptococcus, of universal occurrence even in the healthiest mouths, outgrows and exterminates the others, so that a medium has to be employed which is unfavourable to it; this streptococcus, as found, is not pathogenic, but whether it is a distinct form or is an

[5] *Handbuch der Krankenversorgung und Krankenpflege*. Herausgegeben von Dr. Georg Liebe, Dr. Paul Jacobsohn, Professor Dr. George Meyer. Band II. Abt. 2. Berlin: A. Hirschwald. 1902-3. (Royal 8vo, pp. 1,078 and 1,840. M. 24.)

[6] *The Nursing Profession: How and Where to Train*. By Sir Henry Burdett, K.C.B. Fourth Year. London: Scientific Press, Limited. (Crown 8vo, pp. 408. 2s.)

[7] *Burdett's Official Nursing Directory*. 1903. Fifth year. London: Scientific Press (Limited). (Crown 8vo, pp. 446. 3s.)

[8] *Anatomy and Physiology of the Mouth and Teeth*. By I. Norman Broomell, D.D.S., Professor of Dental Anatomy in the Pennsylvania College of Dental Surgery. Second Edition. London: Kebman, Limited. 1903. (Demy 8vo, pp. 500, 337 illustrations. 21s.)

[9] *The Mycology of the Mouth*: A Textbook of Oral Bacteria. By Kenneth W. Goadby, D.P.H., M.R.C.S., L.R.C.P., L.D.S.. London: Longmans, Green, and Co. 1903. (Demy 8vo, pp. 256, Figs. 82. 8s. 6d.

ordinary pathogenic streptococcus lowered in virulence by the circumstances of its growth, is unsettled.

Professor Horace Grant's *Textbook of Surgical Principles and Surgical Diseases of the Face, Mouth, and Jaws*[10] is really an elementary work on the principles of surgery, and on such surgical affections as may be met with in the head and neck. Though specially intended for dentists, and written with the somewhat hazy object "of presenting to the students of dentistry a textbook that will succinctly explain the principles of dental surgery applicable to all operative procedures," it does not, so far as we can make out, deal with any subject beyond the limits of ordinary surgical practice. From the point of view held by surgeons on this side of the Atlantic it would be difficult to find in this book a reference to any surgical lesion, except, perhaps, fracture of the lower jaw, likely to require diagnosis or treatment by the dentist.

PHYSICAL DEGENERATION.

[By our Commissioner.]

(Continued from p. 1481.)

III.—The Food Factor in Deterioration.

In view of the heavy infantile mortality from gastro-intestinal disorders caused by artificial and improper feeding, and of the undermined constitutions of those children who survive, a time must come when those interested in the national physique will recognize that money laid out on the care of mothers bearing children among the labouring classes would be money wisely spent.

The Health of Mothers.

These women should be enabled to have a period of rest before and after their confinements. They ought to be encouraged and helped to stay at home during the time their children are dependent upon them. They should be strongly urged to suckle their infants, and when this is proved impossible they should be taught how to feed them artificially under medical supervision. Clear and stringent instructions should be given to them how to take care of themselves during pregnancy and lactation, and the danger of improper feeding of their babies should be impressed upon them. Thus will they turn out useful members of the nation. Were this done, is it rash to maintain that much of what is now spent on the maintenance of hospitals, infirmaries, and lunatic asylums would be saved? As a rule, the infants of mothers having to go out to work are handed over to the care of some woman who is not compelled to leave home. A weekly sum is paid, so that if the woman is unscrupulous, she tries to make the most she can out of the transaction, and oftener than not the infant is neglected and half starved. Another alternative is to put babies for the day in a *crèche*. There they are properly looked after, but there is the risk of infection from the other children, the exposure in carrying them backwards and forwards morning and evening in all weathers, and there is the different feeding they get at night in their homes. What mother can get attached to a child she only sees on Sundays, and that she knows during the week only because it disturbs her sleep at night? All this tends to loosen and not to strengthen the ties between mothers and children of the working poor. The children suffer through the loss of home influence, while the mothers often have to endure want because they have a numerous family, and yet have not the strong link of affection which makes personal sacrifice a happiness.

There are many mothers of the poorer classes who do not go out to work, and thus have a better chance of leading a natural life and of bringing up healthy children. The characters of the women vary in a marked degree. It comes as natural to one to be a good housekeeper, with a neat tidy home, and to be a good mother, as it does to another to squander her money on drink and neglect her children. Many women begin to drink as a relief from worry and trouble until it becomes a habit. It was stated recently that children of women who drank were neurotic, hasty, impulsive without any self-control, having to suffer through life for the sins of their mothers. It was said that drunken parents produced children with all sorts of deformities, mental and physical; 56 per cent. of the offspring of inebriate women die at birth or under the age of 2 years, while in the case of sober women only 26 per cent. die. Statistics for drunkenness in London reveal the fact that it is increasing rapidly. The number of drunken women apprehended in 1901 was nearly double the number for 1892. The recent report of the Inebriates Acts Committee of the London County Council calls inebriety a form of insanity. Inebriate women have already cost ratepayers £39,000. The Commissioners of Lunacy, in their report issued in July, assigned alcoholic excess as the cause of 9.6 per cent. of women lunatics.

Overlaying.

Dr. Wynn Westcott, Coroner for North-East London, has stated recently[1] that England excels all other countries in Europe in the proportion of deaths of infants under 1 year of age from suffocation in bed with their parents or nurses. During ten recent years there were 15,009 overlain infants in England and Wales, and in the year 1900 there were 1,774. In Liverpool during one year there were 143 cases out of 960 inquests—more than 1 in 7 cases. The death-rate from this cause in London is, he says, shamefully high. In the year 1900 there were 615 such cases, in 1901 there were 511, and in 1902 588.

The inquests for London were about 8,000 in number in each of these three years, so that 1 inquest out of every 14 was upon a case of overlaying. The proportion in the districts of the nine London coroners varies considerably, being high in proportion to the poverty of the inhabitants of the district. He goes on to state that "it cannot be doubted that a considerable number of infants are overlain by parents who, habitually sleeping with a baby in bed with them, yet follow the same practice when they go to bed, well knowing that they are intoxicated with alcoholic drink, and reckless of the consequences. It is likely also that if a drunken mother give her infant the breast milk before going to sleep the baby may become more or less stupefied by the alcohol in the milk, and so fall on easy prey to gradual suffocation."

The practice so common among nursing mothers of taking stimulants "to keep up their strength" must be condemned for other reasons. It is not good for them, and is bad for the child. It is said that the infant death-rate among the Jewish community is lower than among Christians because Jewesses do not drink. It is also known that many women take their babies to public-houses and give them gin to keep them quiet.

The First Two Years.

It would be difficult to overrate the importance of the feeding of an infant for the first two years. It is, perhaps, a most vitally important period of a human being's life. A healthy infant properly fed, whether at the breast or artificially, will double its weight in four or five months and treble it in a year or fifteen months. Born healthy, a baby can generally be kept in health by clean, sensible feeding. The mother's breast is its natural food, and a child will thrive best on that, provided the woman is in fairly good health; this should be impressed upon mothers. When, for any cause, suckling is impossible and artificial feeding has to be resorted to, cow's milk affords the best available substitute for human milk. The difficulty is to get it clean and free from contamination. This seems next to impossible under the existing state of milk production, even for the rich, but by the time it reaches the poor and has passed through endless channels of infection, milk is often little short of poisonous. It is useless to undertake to solve a question without going to the root of it, and the root of the national deterioration is in the health of the mothers during pregnancy and the feeding of infants during their earliest years. Until women lead healthier lives during pregnancy, and until there is a plentiful supply of pure clean milk available for infants that cannot be suckled and also for small children after weaning, they will grow into puny, sickly, rickety human beings who will never recover their false start in life. Until farms are inspected and the public ascertain for themselves the conditions under which milk is produced it seems almost hopeless to try and improve the physique of the children of the labouring classes. If it is too much to say that they are better without milk in the poisonous state in which it often reaches them, it is yet not to be wondered at that mothers prefer to feed them upon patent foods, cabbage, pickles, fried fish, and so on. From earliest infancy they get bits of the same food that their parents are eating. The result is digestive disorders, chronic and acute.

[10] *A Textbook of Surgical Principles and Surgical Diseases of the Face, Mouth, and Jaws for Dental Students.* By H. Horace Grant, A.M., M.D., Professor of Surgery and Clinical Surgery in the Hospital College of Medicine; Professor of Oral Surgery in the Louisville College of Dentistry, etc. London: W. B. Saunders and Co. 1902. (Demy 8vo, pp. 231. 68 illustrations. 11s.)

[1] British Medical Journal, November 7th, 1903, p. 1208.

Milk.

Under the existing system of the milk supply town children—when their parents give it to them—must submit to drink impure stuff, generally out of filthy long-tube bottles, while it is a fact that it is commonly very difficult if not impossible to get even dirty milk for country children, the whole of the milk being sent away to supply the towns.

It has been proposed to form country dépôts where milk from farms, within a certain radius, should be collected and cooled, and then sent direct to towns (always reserving a certain proportion for the babies in the country), where it would be received in dépôts and sold direct to mothers for their children. Such dépôts would be connected with, and under the supervision of, hospitals when possible, so that the infants should be weighed weekly, and their feeding systematically supervised by medical men. In this way milk would not pass through factories and retail shops, and much adulteration and uncleanliness which goes on under the present system would be prevented. The middlemen's profits would also be saved, and good clean milk could be sold in sets of bottles ready for the consumption of the infant. All this, which is worked on such an excellent system in France and other countries, at a profit to the dépôts, has been already suggested in this JOURNAL. But this was before the Government and the country awoke to the facts as to the existence of deterioration among the labouring classes.

Now we would again point out that this is the root of the question, and we venture to think that the Physical Deterioration Committee now sitting, and the Royal Commission if it is appointed, ought to go thoroughly into the milk question, and devise effective remedies for the existing deplorable state of affairs.

The chief remedy is simple enough: systematic inspection of the farms. Farmers ought to be the first to realize that to observe sanitary conditions in their cowsheds and dairies is very little dearer or more laborious than to persist in the insanitary methods tolerated at present. Sir Frederick Maurice, in the valuable article in the *Contemporary Review* on the national physique to which reference has already been made, says:

> Now, whether of the children sent from the towns into the country districts, either of soldiers or civilians, or of the children sent into hospitals, one hears the same story from those who have to look after them. The children have been so unaccustomed to the wholesome nutritious food suited to their time of life that they cannot eat it. They want what they have been accustomed to, what they call relishes—red herrings, pickles, fried fish, and the like.

Diet of the Poorer Classes.

Too little attention is paid to the feeding of children as they grow older. Wheaten bread, tea, jam, and tinned goods may be said to be the chief diet of the wives and children of the labouring classes. An interesting study of the diet of the labouring classes in Edinburgh, by Drs. D. Noël Paton, J. Craufurd Dunlop, and Miss E. M. Inglis, the chapter entitled "Preliminary Considerations" contains some important hints, which we quote.

"Since food is the sole source of the energy required (*a*) for building up the body, (*b*) doing work, and (*c*) maintaining the temperature, it is obvious that the working capacity and well-being of a community must be largely influenced by the food supply of the individuals.

"(*a*) Without an adequate supply of food proper growth and development of the body are impossible, and not only is the working capacity of the individual diminished, but a predisposition to disease is induced.....

"(*b*) .....The working capacity of a man is conditioned by the amount of food he consumes and uses.....Food may be consumed by a man and no proportionate amount of work be produced. Thus an insufficient supply of food diminishes the work-doing power of the body in two ways. First, by preventing the full development of muscle, the great energy liberating tissue; and, secondly, by not affording the potential energy for the work to be done.

"(*c*) Lastly, a sufficient diet is essential for the maintenance of the bodily heat."

The authors go on to point out that by a scientific study "it is possible to find what may be called a standard diet—that is, a diet from which the necessary supply of energy may be obtained. By comparing the diet of a community or any part a community with such a standard, we may ascertain if is deficient, and in what its deficiency consists." It should be borne in mind, they say, that in solving the food problem of masses of people, with an income no more than sufficient to supply the necessaries of life, the supply of food is the first essential, expenditure on rent, clothing, taxes, heating, etc., taking a secondary place. The energy requirements vary with the age of the person and the amount of work done.

The next consideration is the supply of proteid which must be contained in every dietary for the muscular development of the individual. In childhood, where growth is going on, the supply should be plentiful. The practical part of the problem is in imagining from what combinations of food stuffs an adequate supply of these necessary elements be most chiefly secured.

Two things must be borne in mind—the initial price of the food and the amount of waste material it contains. This waste is caused by the non-nutrient material contained, such as bone, gristle, skin, bran, etc., and nutrient material, which on account of being unpalatable or any other reason is not eaten.

A cheap food is one which contains a large amount of nutrient material at a low price, containing a small amount of non-nutrient waste, which is so palatable that it will not be rejected. According to Atwater, "The average person selects the different food materials offered in the market with less knowledge of their actual value (as a source of nourishment) than is found in almost any other line of purchases." The authors then proceed to analyse the ordinary every-day diet of a number of labourers. Some of the conclusions they come to are interesting with regard to the special articles of food chiefly used.

1. "*Bread*.....forms the basis of all the diets.....It provides on an average nearly one-third of the total energy, and fully one-third of proteid. It is a cheap food, as an energy provider oatmeal and sugar alone being cheaper; as a proteid provider oatmeal and peas alone are cheaper."

2. "*Potato*.....is a more expensive food than bread. As an energy provider it is twice, as a proteid provider more than twice, as expensive. In average diet it ranks second in actual quantity used, but only seventh as a provider of nutriment, both as proteid and energy. The antiscorbutic property of potato justifies its large use in these diets."

3. "*Milk*—.....Next to bread and potato, milk is found to be the most extensively used. It is comparatively expensive; as a source of energy it is five times as expensive as bread, and as a source of proteid it is fully three times as expensive. Milk is an essential food for small children, and the comparatively large use of it in a family diet is to be expected."

4. "*Vegetables*.—.....The average expenditure on fresh vegetables is a very small item."

5. *Sugar*.—Sugar is "one of the most important food stuffs of the poor. It is solely an energy producer, but as that it is the cheapest." In this it takes second place only to bread. "This large use of a food which provides energy but not proteid is one of the reasons why these labourers' diets are badly balanced, and contain relatively too little proteid to their energy."

6. *Beef*.—Beef is an "expensive source of nourishment compared to bread, its proteid being four times as dear, and its energy nine times as dear."....."Of all the food stuffs used the most money is spent on beef, 16 per cent. more being spent on beef than on bread."

7. *Oatmeal*.—Both as a proteid and energy provider oatmeal costs less than bread. "Peas are cheaper as proteid providers, but more expensive as energy providers. Sugar is cheaper as an energy provider, but contains no proteid. As a food providing cheap energy and having a good proteid value, oatmeal is the best in the entire list."

8. *Fish*.—Dried and smoked fish is expensive both as a proteid and an energy producer. "Fresh fish as a proteid provider is cheap, but as a energy-provider dear."

9. *Eggs*.—These seem to be universally used, and the money spent on them is considerable. "It is only exceeded by the money spent on bread, milk, and beef ..... Eggs are an expensive food, both as energy and proteid providers. Their large use may be attributed to the small amount of trouble entailed by their cooking and service."

10. *Meats other than Beef*.—Ham, "as an energy-producing food, is decidedly cheaper than beef, its proteid being also cheaper than that of beef." Sausage, as source of energy and proteid, is a cheaper food than beef; mutton also cheaper in both than beef. Veal appears to be a cheap food.

11. *Butter and margarine* are found to be a comparatively cheap source of energy; they are more expensive than vegetable foods. As a source of energy in the average diet they rank third, bread and sugar being the only two foods used which yield more.

12. *Suet and Dripping.*—A cheap source of energy but very little used.

13. "*Cheese.*—Both as a proteid provider and a source of energy it is cheap food."

"To improve the dietary of the labouring classes, the following principles should be instilled into them:

"(1) That a diet of tea and bread, or of tea, bread, and butter, is faulty.

"(2) That the faults of the tea and bread diet can be corrected by the free use of meat, eggs, and other animal food, but that this mode of correction is expensive.

"(3) That the faults can also be corrected by the free use of oatmeal with milk, or of peas or beans, without extra cost.

"(4) That to correct the faults of a tea and bread diet, either money spent on animal food or labour spent on cooking of vegetable food is necessary;" if they have not the money, they must give the labour necessary to the proper cooking of more nutritive foods.

The authors have shown that whereas the average price expended on diet per man per diem is about 7d., a fairly good diet can be procured for 4d.

They suggest that "simple tables may be published and distributed showing:

"1. The amount of work-producing power which can be purchased for 1d. in the more common foods.

"2. The amount of flesh-forming material which is also got in these foods for the same sum.

"If district visitors and other workers among the poor could receive some elementary instruction in the principles of dietetics, and could be supplied with such tables, they might assist in diffusing the knowledge of which so many stand in need."

As the authors very wisely suggest, similar investigations should be carried out in other towns and rural districts, money expended in procuring such information being soundly invested. We heartily endorse this suggestion, and hope it will be carried out, as at present there is no means of comparing on a general scale the diet of the urban and rural labouring classes—a most vital point if a serious attempt is made to find out the cause of physical deterioration and the best remedy for its arrest.

The recent Blue Book prepared by the Board of Trade, relating to various matters bearing on British and foreign industrial conditions, contains some information concerning the consumption of food and cost of living in the United Kingdom. Officers of the Labour Department and other investigators obtained particulars from some 400 working-class families in Great Britain as to quantities and cost of certain principal articles of food consumed by such families, consisting of a man, his wife, and children under 14 years of age.

This is the more interesting as the only other family budgets which we possess—those made by Mr. Booth and Mr. Rowntree and the Economic Club and Board of Trade—are for the most part based on the actual expenditure for a few weeks only, and may not therefore represent the average cost of food winter and summer. From the 400 returns mentioned above, it appears that in 286 cases the cost of bread, meat, eggs, and cheese can be summarized, while from 88 other returns, of which 68 refer to London, sufficient information has been given with regard to other articles, including butter, milk, potatoes, tea, and sugar. The average general income was 29s. 10d.

The districts from which returns were made included Birmingham, Bristol, Bolton, Dundee, Glasgow, Huddersfield, Ipswich, Leicester, Liverpool, London, Manchester, Middlesbrough, Norwich, Nottingham, and Plymouth.

The occupations of the wage-earners include bricklayers, masons, carpenters and joiners, painters, plasterers, plumbers, builders' labourers, miners, slate quarrymen, blastfurnacemen, fitters, turners, patternmakers, moulders, drillers, smiths and strikers, shipwrights, weavers, laceworkers, boot and shoe operatives, cabmen, coachmen, carters, horsekeepers, cabinet makers, wood turners, railway engine drivers, stokers, porters, guards, signalmen, harness makers, dock labourers, gardeners, road men, gas stokers, general labourers, policemen, and postmen.

The following table shows the quantity and cost of bread and flour and of meat consumed per family in Great Britain in 1903, according to the returns received. No cases are included in which any member of the family had meals away from home. The returns give an average of five persons per family—two adults and three children;

Table showing Average Quantity and Cost of Bread and Meat, respectively, Consumed by Urban Workmen's Families in 1903. (Based on 286 Returns, 101 of which relate to London.)

Articles.	Under 25s.	25s. and under 30s.	30s. and under 35s.	35s. and under 40s.	All Incomes.
	Weekly Income.				
	Quantity Consumed Weekly.				
	lbs.	lbs.	lbs.	lbs.	lbs.
Bread and flour	32.17	32.34	33.23	29.96	32.06
Meat (beef, mutton, pork, and bacon)	7.42	8.24	9.88	9.89	9.10*
Total ...	39.59	40.58	43.11	39.85	41.16
	Weekly Cost.				
	s. d.	s. d.	s. d.	s. d.	s. d.
Bread and flour	3 6	3 7	3 8	3 4¼	3 6⅜
Meat (beef, mutton, pork, and bacon)	4 8¾	5 7½	6 11¾	7 1⅜	6 3¾
Total ...	8 2¾	9 2¼	10 7¾	10 6½	9 10¼

* Of this quantity about 1.3 lb. consisted of bacon.

The principal item of food as regards the quantity consumed is bread, but meat absorbs a larger proportion of expenditure than bread. The amount of meat eaten by working-class families in towns consists of a larger proportion of beef and mutton and less of pork and bacon than in the case of agricultural labourers. This is due not only to the higher earnings, but to the greater opportunities artizans have in London and the large towns of purchasing cheap foreign and colonial meat.

In the following table the families consist of five (two adults and three children):

Table showing Average Quantity and Cost of Certain Provisions (other than Bread and Meat) consumed by Urban Workmen's Families in 1903. (Based on 88 Returns, 68 of which Relate to London.)*

Articles.	Under 25s.	25s. and under 30s.	30s. and under 35s.	All Incomes.
	Weekly Income.			
	Quantities Consumed Weekly.			
	lbs.	lbs.	lbs.	lbs.
Butter	1.67	1.54	1.54	1.59
Cheese	1.08	0.90	1.15	1.03
	Pts.	Pts.	Pts.	Pts.
Milk	3.70	4.81	10.33	8.38
	lbs.	lbs.	lbs.	lbs.
Potatoes	10.8	15.09	13.80	13.68
Rice, tapioca, oatmeal, etc..	0 63	3.08	2.66	2.36
Tea	0.73	0.59	0.59	0.62
Sugar	3.90	4.72	5 08	4 96
	Weekly Cost.			
	s. d.	s. d.	s. d.	s. d.
Fish†	0 5	0 7½	0 9½	0 8½
Eggs†	1 7½	0 11½	1 1	0 11½
Butter	0 4½	1 6½	1 11¼	1 8½
Cheese	0 8½	0 7½	0 9	0 8½
Milk‡	0 9½	1 1¾	1 10½	1 5½
Potatoes	1 0½	1 2½	1 3	1 2
Other vegetables and fruit†	0 5	0 10½	1 2	1 0½
Rice, tapioca, oatmeal, etc..	0 1½	0 6½	0 8½	0 6½
Tea...	1 0½	0 10½	1 1	0 11¼
Sugar	0 7½	0 8½	0 11¾	0 10
Jam, syrup, etc.†	0 2½	0 4½	0 8¼	0 7

* Except in the case of eggs and cheese, which are based on 286 returns, 101 of which relate to London.

† The quantities of these articles cannot be stated.

‡ The cost given includes condensed as well as fresh milk, the latter only being stated in the quantity above.

The averages for "all incomes" show that, apart from bread and flour and meat, the largest weekly expenditure is upon butter (1s. 8½d.), followed by milk (1s. 5d.), potatoes

(1s. 2d.), other vegetables and fruit (1s. 0½d.), tea (11¾d.), eggs (11½d.), and sugar (10d.). Of course, as in any other partial inquiry, it is difficult to come to a just conclusion as regards the feeding of the whole of Great Britain. Still a number of towns are included in this inquiry, and it may safely be concluded that the British urban labourer and his family have, as a general rule, enough money to spend upon food. But what is far more certain is that the vast majority of labouring men's wives have not the remotest idea of the relative properties of certain foods as compared with those of others, nor of their relative price. In nine cases out of ten, or more probably in ninety-nine out of a hundred, they have not the most rudimentary knowledge of decent cooking. For a quarter the price the poorest and most uneducated French peasant or labourer's wife will turn out a savoury dinner, and she will make an excellent soup out of some water, a handful of vegetables, and a small lump of butter, whereas an Englishwoman of the same class never dreams of making soup, because she is convinced that to make it she would require a quantity of meat.

Doubtless the rising generation will be better managers, thanks to the instruction they are getting at schools in cooking and housewifery. Lectures on the relative value of different foods and their prices should be included in every school at which cooking is taught.

One might also suggest that teachers of cookery should spend some of their holidays in France, a small grant for expenses being made them by the School Board. There, by perhaps living in a peasant's family, they would learn the secret of economy combined with excellent results. But then the French are born cooks, while we——!

(To be continued.)

ALLEGED PREGNANCY AT 51.

A curious case has recently been engaging public attention in Berlin which among other things illustrates the difference between the kind of evidence required to establish a fact in medicine, and that which lawyers find to carry weight with juries. Count and Countess Wesiersky Kwilecki lived in Posen, near a little village called Wroblewa. They had been well off, but had lived extravagantly, and were hard pressed for money. The Countess had had four children, the eldest a son (who was dead), the others daughters, the youngest being 16 years old. At the time of the events to be related the Countess was 51 years old. After the Count's death the estate, in default of a male heir, would go to the representative of another branch of the family, Count Miecislav Kwilecki: and this being so it was impossible for Count Wesiersky Kwilecki in any way to raise money on it. There being no male heir, the Countess being 51 and having had no pregnancy for sixteen years, Count Miecislav Kwilecki may have felt reasonably certain of inheriting the estate, and no doubt was proportionately astonished at hearing first that the Countess was going to have a baby, and then that she had a son, an event which enabled Count Wesiersky Kwilecki to mortgage the estate.

Pregnancy at the age of 51 is not impossible: nor is pregnancy after sixteen years of sterility impossible. But both events are rare, and are extremely improbable. Seeing the important consequences of the arrival of a male heir, one would have thought that those who were to benefit so much by it would have taken care to establish the fact of its occurrence in the most authentic way possible. But they did the very reverse. The Countess allowed no doctor to examine her during her alleged pregnancy. The village doctor had visited her, but was not allowed to examine her, the reason alleged being that her husband was drunk, and she was angry with the doctor for letting her husband get drunk. Nevertheless the Countess engaged this village doctor to attend her in her confinement: and then, in order that she might have the best possible help if necessary, she went to Berlin, a city where there were plenty of obstetric specialists who could have put the fact of pregnancy and childbirth beyond any doubt. But the lady consulted none of these. When the alleged labour came on, the village doctor was sent for from Wroblewa. There was of course delay in his arrival, and when he did arrive he was told that Nature and the lady's constitution had pulled her beautifully through, and that medical aid was superfluous. He saw the lady in bed, and the baby looked like a newly-born baby, and an aristocratic-looking lady who told him that she and another lady had been present at the birth. These statements the doctor seems to have accepted without making any medical examination either of mother or child.

Looking at the case merely as one of pregnancy at an unusually advanced age, we think the verdict of medical men would not only be that there was no evidence of pregnancy, but that the care taken to avoid verification suggests that no pregnancy existed.

This was the view that Count Miecislav Kwilecki not unnaturally took. Count Wesiersky appealed to the law courts to establish the legitimacy of his son. The Countess, with great dramatic effect, held up the boy and called upon the Count to note the resemblance between mother and son: and she won her case.

But afterwards Count and Countess Kwilecki were put on trial for fraudulently pretending the child to be hers for the following reasons. The inquiries set on foot by Count Miecislav discovered a young woman, the daughter of a railway watchman in Galicia, who had become the mother, by a captain in the Austrian army, of an illegitimate son. This son was an unwelcome encumbrance; and she sold it for £4 to a midwife from Warsaw. This midwife had since died. She gave the child to a Russian lady, formerly in the service of the Countess, who took it to Cracow. There a wet nurse took charge of it and conveyed it to Berlin. There she delivered it over to two women who spoke Polish. A cabman was found who the evening before the Countess's alleged confinement had driven to Countess Kwilecki's residence two women carrying with them a burden, and noticed how tenderly they lifted the burden and carried it to Countess Kwilecki's flat. Some evidence was given to show that some time previously the Countess had visited Paris, and had there tried to obtain a newly-born child but without success; and that a foreign lady had been to a surgical instrument maker in Paris to buy a stuffed abdominal covering made of indiarubber.

This was a story not in itself improbable—and to the medical mind, we think, much the more probable explanation of the arrival of the baby. But in a case of this kind the story has to be proved to a jury by the evidence of witnesses, and this the conductors of the prosecution of Countess Kwilecki failed to do. The jury found that the Countess had given birth to the child. We have tried to understand the reason of their verdict, and the things that seem likely to have influenced them are first the character of the witnesses against the Countess, all of them persons of the lower class, who it was suggested had been paid large sums for their evidence, who obviously could not have given evidence had not their expenses been paid, and whose stories were not altogether consistent with one another. Then there was the noble and dignified bearing of the Countess; and the emphasis of her assertions that the child was hers. Then there was a piece of evidence of another kind. The railway servant's daughter, who was alleged to be the real mother of the child claimed by the Countess, had had by the same Austrian captain another son. This son was brought into court, and a Committee composed of two doctors and an artist was appointed to report on the likeness of the two boys to one another, and to their alleged parents. The artist found no resemblance between the two boys, but a strong one between the Countess and the son she claimed. The doctors were less decided. Finally, the jury could hardly help being influenced by the statements of witnesses, that they believed that the Count and Countess were incapable of committing such a fraud.

In the two stories, we have, on the one hand, an extremely improbable event, unsupported by evidence of any real cogency, and discredited by the care taken to prevent good evidence being available; but supported by plenty of testimony by persons prejudiced in the prisoners' favour, but having no knowledge of the matter. On the other hand, we have a tale most difficult to fabricate; difficult also from mere lapse of time, to prove; and, as the event showed, not proved; a tale also reflecting on the honour of a very stately lady, who was entitled to the benefit of any doubt there might be. Had we been on the jury we should probably have also given her the benefit of the doubt; but, as medical men, we should not take the case as one proving the possibility of pregnancy at 51.

Association of Registered Medical Women.—A meeting was held on Tuesday, November 3rd, Miss Webb, M.B., President, in the chair. Miss Cock, M.D., read a paper on a case of acute yellow atrophy of the liver in a girl of 18, which occurred recently in her practice at the New Hospital for Women.—Miss Wilson, M.D., read notes of a case of puerperal infection due to sewer gas.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1903.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, DECEMBER 5TH, 1903.

THE SECRET OF LONGEVITY.

The late Sir Benjamin Ward Richardson once gave it as "his fixed opinion that every man, and every woman for that matter, should attain the age of 100." How few actually do so is shown by the unimpeachable evidence of figures derived from life insurance and Government annuity records quoted in Mr. T. E. Young's book *On Centenarians*. It is encouraging, however, to find that some actually do complete their century of years—a fact which has been doubted by critical inquirers, and that this limit is occasionally exceeded. Whether the mere prolongation of life is to be desired as an end in itself may be doubted. Mr. George Meredith, who has recently been "pulled through" a severe illness by his medical advisers declares that "it is an ill service to a man of 75," and the late Bishop Westcott expressed the opinion that an indefinite prolongation of human existence in its present form would be intolerable. Nevertheless, it is certain that length of days is looked upon by the majority of mortals as the thing of all others most devoutly to be wished for in this sublunary sphere. Yet to outlive everything that makes life worth living is the portion of nearly all whom Death seems to forget for a time. In them is fulfilled the awful curse of the old Romans: *Ultimus suorum moriatur!* If perchance they escape disease, they are the prey of infirmities which make them a burden to others. The mind shares in the decay of the body, and in the last stage the man passes into a condition not far removed from that of the Strudlbugs, of whom so terrible a description is given by Swift. These are the things that make calamity of so long life.

Yet it is a healthy instinct that leads men to look upon long life as a blessing. It makes for the preservation of the species, for if all men and women died young, few children would reach maturity, and the human race would in a relatively short period of time become extinct. There is no question that excites more general interest than that discussed in so interesting a manner by Sir Hermann Weber in the lecture before the Royal College of Physicians, which we publish this week. For the most part, indeed, what may be called the art of longevity, like Dogberry's reading and writing, comes by Nature, for unless she has endowed a man not only with a sound constitution but with a long-lived ancestry, any efforts of his own are too likely to be futile. In nothing does heredity show itself more distinctly than in a tendency to long life; indeed, in this mainly lies the secret of longevity. Obedience to the laws of health and avoidance of known causes of disease will help to save a man from premature death, but these things will not of themselves make a centenarian of him. Richardson, who said that there was no reason why any one who observed "the proper rules" should not live to be 100, himself died at 67. Every "grand old man," however, is believed to have some secret by which he preserves his life. Whenever a man of any note is thought to be a candidate for centenarian honours, he is asked to reveal his method. These methods are curiously diverse in details though in essentials they are alike.

Moltke, when asked in his 90th year how he had maintained his health and activity, answered, "By great moderation in all things and by regular outdoor exercise." Crispi said that "regularity and abstinence are the secrets of long life." Sidney Cooper also believed in regularity. Legouvé attributed his long life to regular exercise. An American nonagenarian, the Hon. Neal Dow, of Maine, laid stress on the careful avoidance of fretting, of disturbance of the digestive organs, and of exposure to sudden or protracted cold with insufficient protection against its influence. Cornaro's rule was extreme temperance in eating and moderation in drinking; he took anything that agreed with him and nothing that did not. Chevreul was sparing in food, and, like Cornaro, cultivated cheerfulness. The late Sir Isaac Holden believed that he owed his great length of years to his habit of living mainly on fruit, and avoiding all starchy articles of diet, including bread. Victor Hugo inscribed the following rule of life on a wall of Hauteville House:

> Lever à six, dîner à dix
> Souper à six, coucher à dix
> Fait vivre l'homme dix fois dix.

Jowett told Dr. G. N. Pope, the well-known Tamil scholar, that "to have a great work in progress is the way to live long." According to Sir James Sawyer, the secret of longevity consists in "paying attention to a number of small details." Among these are the following: (1) Eight hours' sleep; (2) sleep on the right side; (3) keep the bedroom window open all night; (4) have a mat to the bedroom door; (5) do not have the bedstead against the wall; (6) no cold tub in the morning, but a bath at the temperature of the body; (7) exercise before breakfast; (8) eat little meat, and see that it is well cooked; (9) (for adults) drink no milk; (10) eat plenty of fat, to feed the cells which destroy disease germs; (11) avoid intoxicants, which destroy those cells; (12) daily exercise in the open air; (13) allow no pet animals in living rooms—they are apt to carry about disease germs; (14) live in the country if possible; (15) watch the three D's—drinking water, damp, and drains; (16) change of occupation; (17) take frequent and short holidays; (18) limit your ambition; and (19) keep your temper. Abraham Lincoln's maxims were: "Do not worry; eat three square meals a day; say your prayers; think of your wife; be courteous to your creditors; keep your digestion good; steer clear of the biliousness; exercise; go slow and easy. Maybe there are other things that your especial case requires to make you happy, but, my friend, these, I reckon, will give you a good life." Sir Benjamin Ward Richardson said: "The would-be centenarian should never smoke nor drink—especially the latter, and he should eat very little meat. He should keep early hours and work as little as possible by artificial light. Moreover, he should not make haste to be rich, and he should avoid worry and consuming ambition."

All these precepts may be summed up in the old maxim *Ne quid nimis*. Unluckily there lurks in this formula the fallacy of the undistributed middle, for the definition of

the term *nimis*, if it is to be applicable to the individual peculiarities of all members of the human family, must be so vague as to be useless for practical purposes.

Sir Hermann Weber has nothing very new to say as to the means of prolonging life; that, however, is the fault not of the teacher but of the subject. The elixir of life has still to be discovered, and till M. Metchnikoff's method of strengthening the resistance of the higher elements and transforming the "wild" microbes that haunt the intestine into a cultivated population has been perfected, we must be content with such means of protecting ourselves against arterio-sclerosis and the other pathological changes which are the physical equivalents of old age as are available. These are clearly set forth by Sir Hermann Weber, whose counsel has the advantage of being detailed and precise. His advice as to the means of avoiding diseases to which a tendency is inherited is especially valuable, and he shows clearly the great importance of well-regulated exercise in strengthening the heart, improving the nutrition, and increasing the power of resistance to chills and other morbid influences. Mr. C. T. Yerkes has recently been denouncing the week-end holiday, which he seems to think accountable for the alleged commercial decay of this country. For our part we agree with Sir Hermann Weber that it is of the greatest use in keeping people in health, and giving them the staying power which in the long run must prevail over "hustling." As to food and drink the advice given is practically that of all the authorities quoted above. Sir Hermann's views as to sleep strike us as just a little austere. More, we think, depends on the quality than on the quantity of the sleep; if it be sound and uninterrupted, perhaps six hours may suffice. But Sir Walter Scott said that his brain would not work unless he had seven hours of complete unconsciousness, and many men want more. On the other hand, some brain-workers can do with less. Alexander von Humboldt, who lived to be 89, said that when he was young two hours of sleep were enough for him; in later life he required four. Brunel, if hard pressed, slept in his armchair for two or three hours, and at early dawn was ready for the work of the day. Sir George A. Elliot, afterwards Lord Heathfield, who was in command during the great siege of Gibraltar during the whole siege—which lasted four years—never slept more than four hours out of the twenty-four, and lived to the age of 84. But for the majority of people we do not think eight hours of sleep an excessive allowance. The difficulty with many persons of advanced age is to get even a modicum of refreshing sleep. Sir Hermann Weber's advice as to the prevention of mental torpor is especially applicable to such cases. Intelligent occupation of the mind, with a suitable amount of bodily exercise during the day, will do much to induce a restful sleep at night.

Sir Hermann Weber has not perhaps shown how all men may live to the age of a hundred. But he has shown how all may more or less approximate to that ideal, and, what is more important, he has shown how the preventable causes of premature death may be avoided and how lives that might be darkened by the shadow of hereditary disease may be made healthy, useful and happy.

THE annual dinner of the Royal Free Hospital and London School of Medicine for Women will be held at the Hotel Cecil on December 15th, when Mrs. Garrett Anderson, M.D., will take the chair at 7.15 p.m.

THE GENERAL MEDICAL COUNCIL AND THE FIRST YEAR OF MEDICAL EDUCATION.

THE dispute between the two Royal Colleges of England and the Council which has gone on so long is not yet settled, though it appears that it has borne fruit in causing the Colleges to reconsider their curriculum and examinations, and it seems likely that it will die out by the adoption of the Council's reforms, without the actual powers of the Council being defined.

It will be remembered that in the first instance the Council objected to courses of study in physics, chemistry, and biology, which had been taken at certain schools and institutions recognized for the purpose by the Conjoint Board, but not recognized by the Council, being held to constitute the whole or part of one of the five years of medical study. The two Colleges strenuously denied that the Council had any jurisdiction in the matter, and the Council, adhering to its position, finally declined to register as having commenced medical education students who had taken out their courses at the institutions in dispute. The Colleges countered this move by ceasing to require that candidates for their diplomas should register on the *Students' Register*. In the further development of the controversy returns were obtained from the institutions in dispute, which abundantly justified the contention of the Council that the courses of study held in many of them were inadequate, whilst later an inspection of the first professional examination held by the Conjoint Board resulted in a report that the examination was not of a wholly satisfactory kind, at all events was not such as to compensate for any laxity as to the places where instruction was received.

Nevertheless, the two Colleges did not recede in the least from the position which they had at first assumed, and a motion was set down by Sir Victor Horsley to the effect that the Council under the terms of the Act should report to the Privy Council that the courses of study and examinations were not such as "to secure the requisite knowledge and skill, etc." This resolution was withdrawn at that time in the hope that some more satisfactory solution might be found, but so rigidly have the Colleges adhered to their attitude that, while promising attentive consideration to the views of the Council, they have firmly refused to accede to a proposal to appoint representatives to confer with the representatives of the Council on the subject. In these circumstances Sir Victor Horsley again brought forward his motion, and, as will be seen from the report published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL it was discussed at great length, nearly the whole of Saturday being devoted to it. An amendment postponing immediate action was carried, but this amendment when put as a substantive motion was not carried, and finally a motion to postpone its discussion was carried by one vote. There was more justification for this apparently illogical course than might at first sight appear. The rather involved wording of the amendment did not commend it as a definite pronouncement by the Council, and the whole matter had drifted into a somewhat peculiar position. The representatives of the two Colleges, when appealed to, had declined to tell the Council anything more than that the syllabus, curriculum, and examinations were under consideration The ground alleged for this reticence was that they could say no more till alterations were finally adopted. No official communication had been received indicating the

scope of the alterations, and it was left to Dr. Windle—an independent member of the Council—to point out that the Conjoint Committee had presented a report, which, subject to minor modifications, had been adopted by the Council of the College of Surgeons at its meeting on November 12th. The scheme was published *in extenso* in the British Medical Journal on November 21st, p. 1380.

Thus did the General Medical Council become aware that the Conjoint Committee had reported, and that the College of Surgeons had adopted, subject to such alterations as might seem desirable after consultation with the medical schools and examiners, a scheme which in all essentials met the desires of the Council on the points chiefly in dispute. It is, perhaps, a pity that this scheme should have been allowed to come within the cognizance of the Council in this indirect manner, but it is an interesting proof of how indispensable the medical journals—for the report appeared also in our contemporary, the *Lancet*—have become even to the General Medical Council. The Conjoint Committee proposes that a minimum should be fixed to define the length of courses which should be recognized as counting towards medical study, this minimum being in the case of chemistry 180 hours, of physics 120 hours, and of biology 120 hours, but that unless attended at a medical school these courses will not be accepted as equivalent to more than six months of the five years' curriculum. As it may be presumed that the Council would not itself object to recognize the institutions at which this amount of study could be taken, the substance of its requirements is met, and the very issue in dispute is indirectly conceded. No allusion, however, is made in the report to the subject of students registration, which is not now required by the Conjoint Board, but which is of proved value. It is to be hoped that when the new regulations take their final form this will be resumed.

Other features in the scheme of the Conjoint Board in England are that where it is not desired to count the period as a part of the five years' curriculum, these courses may be attended before the Preliminary Examination has been passed, a measure which will do much to promote the teaching of chemistry, physics, and biology in secondary schools. The report, indeed, expressly states that the Committee sees no objection to these subjects being taken up during school life. Hence a student might be in a position to pass his examination in these subjects immediately after passing his Preliminary Examination, and so have five complete years for more purely medical study. It is also proposed to recast the examination in these subjects with the view of encouraging a more practical and thorough teaching of the subjects. The synopses also are undergoing revision. Anatomy and physiology are not to be studied until the examination in the scientific subjects has been passed. The preference accorded to the medical schools, in that at them only can the study of these subjects be counted as an entire year of the five years' curriculum, will probably secure to them a considerable proportion of the students, though the scheme is open to criticism in this respect. The minimum having been fixed at a total of some 420 hours, the Conjoint Board would not be in a position to raise any objection if that minimum had been fulfilled. It must be noted that anatomy and physiology are not to be taken up till the First Professional Examination has been passed, so that if we take 200 working days as the sum of the medical session, a student might claim that a year of study should be reckoned, although he had spent little more than two hours a day at work. Hence it would rest with the medical schools, and not with a supervising authority, to ensure that his year of study was of a more genuine nature.

These important modifications in medical education are in the direction repeatedly advocated in these columns, and the General Medical Council may fairly be congratulated upon having brought them to pass, even though the Colleges have preferred that it should appear that they have effected them on their own initiative. It is a rather childish way of "saving face," but although the precise extent of the authority of the Council will probably remain undefined, we do not imagine that that body will concern itself greatly, so long as its aims in the matter of medical education are accomplished.

PUS AS A BEVERAGE.

Last spring a series of articles on the milk supply of large towns was published in our columns, and subsequently collected in a pamphlet.[1] These articles showed that the milk which reached the consumer in towns, especially the poor consumer, was commonly exceedingly unsatisfactory in quality and seriously contaminated by bacteria. As nearly all the milk now sold in large towns is brought in from country districts, it was obvious that one source of the bacterial contamination might be insanitary conditions at the farms and a want of sufficient attention to cleanliness on the part of the milkers. Inquiry showed that such insanitary conditions and want of cleanliness did in fact exist. As the Dairy, Cowsheds, and Milkshops Order of 1885 and the Model Regulations of the Local Government Board provided powers and means for preventing at least the grosser evils to which attention was called, it was thought that it would be profitable to address a set of questions to the medical officers of counties and the medical officers of health of combined districts, asking them what steps their authorities have taken to protect the milk supply. We are indebted to many of these gentlemen for very interesting replies which are analysed at page 1488. Of twenty-six medical officers of county councils fifteen have replied, and of thirty-one officers of combined districts twelve have replied. In one or two instances information has been sent which we have been requested not to publish. This is a fact which speaks for itself. That the replies published refer only to those counties and districts in which most zeal is displayed in combatting insanitary conditions is also a fact which speaks for itself. "Thus bad begins but worse remains behind."

Judging from the general tenour of the replies which we are authorized to publish, we think that it is quite safe to conclude that throughout England and Wales the conditions under which milk is obtained and dispatched to towns are exceedingly unsatisfactory, and that law and regulations are alike, to a very large extent, dead letters. The Model Regulations of the Local Government Board may be susceptible of improvement, but at present they represent an unattained ideal. Yet were they enforced farmers would soon realize that it is not really more difficult or costly to conduct a dairy farm on sanitary than on insanitary lines, and the milk supplied would cease to be as it now is a danger to the public health. We are quite aware that a short time ago this statement would have excited the derision of "prac-

[1] To be obtained through any bookseller. Price 6d.

tical farmers" and milk dealers. We are aware that it will still excite their anger, but in view of the disgusting facts which have been brought to light by the inquiry so promptly and ably conducted by Dr. Pierce, M.O.H. for Woking, into the serious and extensive outbreak of fever and sore throat in that borough due to pyogenic infection traced to suppurative mammitis in four cows (see page 1492), we imagine that the truth of the proposition will not be disputed. The report affords a striking and indisputable proof, plain for any man or woman, medical or lay, to read, that milk may be drawn and distributed in a condition which must be disgusting, we repeat the epithet for none other is so applicable, to every one, though the full significance of the risks to which the consumers were thus wantonly exposed can only be appreciated by medical men.

The incident is calculated to strike the imagination of the most apathetic, but we would carefully guard ourselves against appearing to acquiesce in the assumption that it is only in such gross cases that country milk may be responsible for town diseases. Again, we would appeal to the series of articles published this spring for proof that milk from healthy cows may be, and very commonly is, so carelessly drawn by milkers, so carelessly handled by farmers and railway companies, and too often so badly, if not fraudulently, manipulated by dealers, wholesale and retail, that by the time it reaches the consuming baby it is, to use Professor Thorpe's phrase, putrescent. The evil effects caused by the consumption of this miserable liquid are as yet imperfectly realized by the public and even by the profession. They do not end with the murderous epidemics which sweep through the poorer quarters of large towns in warm weather. They lie at the root of much of the chronic ill-health of infancy and childhood, and find expression at last in puny men and women, and in undergrown lads whom recruiting sergeants dare not submit to the examination of the army medical officers.

The ingenuous contention of more than one of our correspondents that rural councils are under no obligation to protect the interests of the towns cannot be accepted. That the obligation exists from the altruistic and patriotic point of view no one who knows the lethal effects of putrescent milk on infants and children can for a moment doubt; that it exists from the administrative point of view is proved by the Parliamentary powers acquired by many large towns to inquire and inspect in milk-producing districts outside their own boundaries; that it exists also from the pecuniary or commercial point of view remains to be proved to most dealers and to nearly all farmers. Like so many other matters affecting the welfare of children and determining, therefore, whether our race is to deteriorate or improve, this is largely a woman's question. As the writer of the articles on the milk supply of towns, to which we have already referred, truly observes in a letter published at page 1496: "With mothers and housekeepers lies the handling of this national problem." If a few ladies in every town would take up the question, would insist on their milkman telling them where the milk they give their children comes from, and would give a day or two to visiting the farms, we believe that, so far as the milkmen who supply the wealthier classes are concerned, the problem would solve itself, we had almost said, in a month. And we do not believe that these ladies, having set their own milk supply in order, would rest content until they had effected a like reform for the milk supplied to the poor. It is really a question of supply and demand; if housekeepers insist on having clean milk it will be supplied. And it will be supplied at the same price to the public, and at much the same rate of profit to farmer and milkman as now. This has been amply proved by the experience of a few companies. We appeal to women to look into the facts and to act; and to act before next summer.

EPSOM COLLEGE.

At an extraordinary meeting of the Governors of the Royal Medical Benevolent College, Epsom, held on November 26th, a report of which appears elsewhere, a momentous decision was come to which cannot fail to have a far-reaching influence on the future development of the school. The meeting was held under the presidency of Lord Rosebery to consider a recommendation that the title should be changed to "Epsom College." A resolution to that effect was carried unanimously. The school will therefore, like other public schools, henceforth be known simply by the name of the place where it is situated, without any descriptive epithet. There can be no doubt that its former title was not merely cumbrous but misleading. The word "Benevolent" inevitably carried with it something of the social stigma of a charity school, and thus conveyed an altogether erroneous impression as to its real character. The general public were naturally disinclined to send their sons to a school which, however excellent in other respects, seemed to bear on its face the brand of poverty so repugnant to the British mind. Then the word "Medical" gave the idea of a class institution. In both these ways the title exercised a depressing influence on the school, putting it in a false light before the world and preventing its taking the rank which rightly belongs to it among the public schools of the country.

As pointed out by the Treasurer, Dr. Holman, the school was never intended by its founder to be either a class or a charity school. John Propert's intention was to found a school for the liberal education of boys, with certain advantages for the sons of medical practitioners in the form of scholarships, absolutely similar to those established by other pious founders at other public schools. Epsom College, in fact, was intended to be "medical" just in the same way as Wellington was primarily military and Marlborough primarily clerical. The growth of those two schools has taken place exactly on the lines along which Epsom is now developing. While retaining all the original advantages offered to the sons of officers and clergymen, they have expanded into large and most successful public schools in the full sense of the word. If Epsom has not yet grown quite to the same level in point of numbers, this is due solely to the retarding influence of its name. In respect of efficiency Epsom will compare not unfavourably with any public school in England, and in honours and more substantial rewards obtained at the universities and medical schools it more than holds its own in proportion to its size. Now that it has got rid of the greatest hindrance to its development to the full stature of a public school, a future of steadily increasing prosperity and success may be looked for with confidence by all its well wishers, among whom may be counted the whole medical profession.

Some may for sentimental reasons regret the disuse of the epithet "Royal," but while it is right and proper that the interest taken in the school by the Royal

Family should always be gratefully remembered, the retention of the word "Royal" as part of the name is for this purpose unnecessary, and for every other reason it is better that what Parliamentary draftsmen call the "short title" of the school should be as simple as possible. We heartily congratulate the governors of Epsom College on a decision which we think will prove of immense advantage to the school.

Although Epsom College is not a charity school, there is an element of charity in it and there is also a charitable institution in connexion therewith. The establishment, indeed, closely resembles that of Charterhouse, which is at once a public school, possessing a number of scholarships by means of which a free education is provided for a certain number of boys, and a foundation for pensioners. Epsom educates fifty foundation scholars in the school, and grants pensions to fifty aged or disabled medical practitioners or their widows. The charitable work of the institution will not be affected in any way by the change of name. It is hoped, indeed, that increase of prosperity in the school will bring corresponding increase in power to give help to those who may need it for themselves or those dependent on them. The governing body of Epsom College has so far been able, thanks largely to the support of the medical profession, to maintain the full number of scholars and pensioners, but it is only by the most strenuous and persevering efforts that this has been accomplished. It is most important therefore that the foundation should be placed on a secure financial basis. For this purpose the capitalization of a sum that would yield from £6,000 to £7,000 a year—that is to say, about £200,000—would be required. This seems a formidable demand on the charity of the public, but we believe that a considerable part of the amount is already in view, and the success which has rewarded the efforts of the Treasurer justifies the hope that the object for which he has laboured so indefatigably may, at no very distant date, be attained. Within the last fifteen years 80 acres of freehold land, sufficient to make playing grounds for 500 boys, have been secured; a lower school with accommodation for nearly a hundred junior boys has been built; an emptied asylum has been made available for school purposes, and bring in a rental to the charity; a laundry standing sentinel to prevent the invasion of disease from without has been provided; a first-class laboratory has been added to the educational equipment of the school; and a beautiful chapel, unfortunately not yet complete, has been erected. If all this has been done within a relatively short period of time, and in the face of difficulties which sometimes appeared insuperable, surely it is not too much to hope that before many more years have passed a foundation which has rendered such splendid service, and before which larger spheres of usefulness are opening up, may be saved from any impairment of efficiency and from all possibility of financial disaster, by the provision of the capital needed for the successful carrying on of its work.

ADDRESS BY SIR VICTOR HORSLEY.

As will be seen by a letter from Dr. Alfred Cox, published at page 1496, Sir Victor Horsley has undertaken to deliver an address on medical politics, at a meeting of the profession in the North of England to be held in the College of Medicine, Newcastle-on-Tyne, on December 9th, at 4.30 p.m. There are a good many subjects of interest in connexion with the present position of medical politics, especially the need for united action to maintain the rights and privileges of the profession and to obtain an amendment of the Medical Acts, which are now ripe for discussion; and the deep interest which Sir Victor Horsley has shown for so many years in medical politics, and his present occupancy of the post of Chairman of the Medico-Political Committee of the British Medical Association, render it certain that his address will be both interesting and important. As we have no doubt a very large number of the medical profession within reach of Newcastle will attend his address, they may be grateful to us for calling attention to the fact that the annual dinner of the Northumberland and Newcastle Medical Association will be held at Tilley's Restaurant, Blackett Street, Newcastle-on-Tyne, at 7.30 p.m. on the same day.

MEDICAL REFEREES UNDER THE WORKMEN'S COMPENSATION ACT.

A fortnight ago we published under this title a short article upon the manner in which the provisions of the Workmen's Compensation Act with reference to the employment of medical referees were being allowed by county court judges to become practically a dead letter. As illustrating the point we would call attention to the report in the *Yorkshire Post* of November 19th, of a case in which a collier made application to the judge of the Leeds County Court for compensation for personal injuries. The medical officer to the Miners' Association in giving evidence, stated that the collier was absolutely and permanently incapacitated, and would never be any better. This evidence was controverted by three medical witnesses, and it was stated that the man was able to do light work and would soon be able to resume his ordinary occupation. Although the medical evidence was most certainly conflicting, the judge did not refer it to one of the medical referees appointed by the Act, but said that he was of opinion that the applicant was suffering from serious disease of the spine. This is only one instance out of many of the way in which the medical referees appointed under the Workmen's Compensation Act are ignored.

LONDON WATER.

While the water companies are preoccupied with their claims before the Arbitration Court and are engaged in the pleasant diversion of thinking in millions, we hope they are not relaxing the attention which should be continuously directed to securing the purity of that necessary of life which it is their particular duty to supply. During the autumn and winter months the need for precaution in regard to filtration is specially great. The occurrence of flood and frost is apt to upset the normal process of filtration and thus render pollution of the water as supplied to consumers not improbable. Some recent analyses have shown that such fears are by no means groundless. Some of the Thames companies' water as supplied in the west of London has recently been obviously turbid, and, when seen in milk, of a brownish colour. The public analyst for Southwark has found samples of the Lambeth and Southwark and Vauxhall Companies' water to be of a yellow colour, and to contain an excess of organic matter. The amount of albuminoid ammonia on several days has been unusually high, and the Southwark analyst has reported to his Borough Council that several samples he has analysed were "quite unfit for drinking purposes." Turning to reports from the Arbitration Court, over which Sir Edward Fry is presiding, we note that several important decisions have already been obtained. Thus it was held that the contention of the Water Board that the undertaking as transferred is subject to the payments to the sinking fund is maintained as against the contention of the East London Waterworks Company that the property is transferred free from that liability. Again, a most important decision in regard to the sterilization clause determined that this clause applies whenever powers have been given by Parliament to a company, and have been exercised with advantage resulting to the company as a whole, and that abatement must be made

in respect of that advantage, although not in its nature separable from the general undertaking; and, further, that the mere possession of the statutory power, if not actually exercised, if it be shown to have strengthened the position of the company, must be considered as an advantage within the meaning of the section. Then, again, in the case of the New River Company it has been held that, having regard to the incorporation of certain sections of the Water Works Clauses Act, 1847, in the New River Company's Act, 1852, the contention that the company is entitled to pay an unlimited dividend cannot be maintained, and that they are subject to Section LXXV of the first-mentioned Act, which limits the dividend to 10 per cent. Lastly, lands belonging to the New River Company have been held to form no part of their undertaking for the purpose of purchase. The final effect of such decision upon the amount of the award cannot of course yet be precisely estimated, but the decision must tend to reduce the total sum.

THE GERMAN EMPEROR.

RUMOURS of a more or less unfavourable character have been current as to the condition of the German Emperor's health. These have been "officiously" denied, but such *démentis*, even when strictly accurate as far as they go, do not always convey the whole truth. It is with the greatest satisfaction, therefore, that we are enabled to state on absolutely trustworthy authority that the medical advisers of the Emperor consider that the cure of the slight local affection for which he was recently treated is complete, and have no fear whatever of any untoward developments.

BOARDS OF GUARDIANS AND MIDWIFERY FEES.

WE see by a report in the *Stockport Express* that at a recent meeting of the Stockbridge Board of Guardians the question of extra medical fees as paid for midwifery by them to their district medical officers was discussed at some length. These fees in the Stockport Union vary from 10s. to 40s., according to the gravity of the case. The Stockbridge Board, on the receipt of a report made by its House Committee, resolved that the action suggested by the Sunderland Board of Guardians should be supported by them. This, in effect, is to appeal to the Local Government Board to sanction the lowering of the higher fees from 40s. to 1 guinea, but to allow the 10s. fee for ordinary cases to remain as at present. The main supporter of this line of action would appear to have been a member of the Board at Stockport, who, without any medical qualification whatever, has succeeded in establishing for himself a reputation for ability to treat successfully cases of disease which baffle the medical profession throughout the world. The main reason assigned for lowering these medical fees was stated to be that "the rates were heavy enough, and that there were many people out of work." If this latter part of the statement is correct, it almost of necessity follows that the duties of the district medical officers at Stockport are becoming more laborious rather than the reverse, and it is even probable that then our contributions to the rates of the union are more rather than less. Should such be the case, we fail to see on what grounds this state of affairs at Stockport could be put forward as a reason for lowering the district medical officers special fees. We should be inclined to regard it as a strong reason for increasing their annual stipend. We do not for a moment believe that any alteration such as that proposed by the Sunderland Guardians and supported by their *confrères* at Stockport, will have any influence at Whitehall.

DAMAGES FOR SHOCK.

THE question whether in assessing damages in an action for personal injuries the jury are entitled to give the plaintiff any compensation for shock to the system has arisen upon one or two occasions in England, and appears to have been decided favourably to the plaintiff. Thus in a case where a lady sought to recover damages for injuries occasioned to her in a railway accident, an additional sum was awarded by way of compensation for the nervous shock caused by fright. In America matters seem to have progressed further still. In that country substantial damages were awarded for the mental shock caused by failure on the part of a telegraph company to deliver a telegram announcing the death of a lady's husband. The suit was not brought for the death of the husband, but for the disappointment and mental anguish caused by the plaintiff not being permitted to see him in death, and of being deprived of the privilege of paying her respect and love to his memory by attending his funeral obsequies. In another case which was heard in North Carolina, where the action was brought for damages for the non-delivery of a telegram requesting a husband to come, the Court said: "It is a question for the jury to decide, under charges from the Court, whether the suffering and danger from childbirth was the proximate cause of the injury, or the mental suffering on account of the absence of the husband." Cases of this class have not arisen in this country, perhaps because the Postmaster-General is entirely relieved of responsibility for any injury which may be sustained owing to the non-delivery or mis-delivery of a telegram. The only satisfaction which the sender of the message can obtain is the return of his money. In America, however, a telegraph company is a common carrier of intelligence, and owes a general duty, under the law, both to the sender and sendee to transmit and deliver its messages within a reasonable time.

THE SURGERY OF THE COMMON BILE DUCT.

LIVER surgery has greatly advanced since the energy of Lawson Tait established it after a few bold pioneers had demonstrated that the gall bladder could be opened and emptied with comparative impunity. This operation is usually, or almost always, undertaken for calculus, and too often the surgeon detects stones beyond its limits, especially in the common duct. The breaking-up of a calculus in that duct by needles and by the pressure of forceps proved unsatisfactory. Now the opening of the common duct (choledochotomy) and removal of the calculus is freely practised. Naturally the surgeon would close the incision in the duct by means of sutures, but some authorities believe that there are objections to this practice, or rather that it is not always practicable. For sometimes the duct is too deep to be reached, although Mayo Robson's incision, with the application of a big cushion to the loins of the patient, will, in the opinion of many operators, bring the deepest part of the duct conveniently forwards, whilst needleholders will help in the application of sutures. A much more important objection is the unhealthy condition of the tissues of the duct in most cases in which it is opened. The sutures will not always hold, whilst when a fistula is left and drained, the tissues soon become healthy and close over it. Hartmann and Tuffier[1] alike advocate drainage in preference to suture. Hartmann passes a big drainage tube between the liver and the transverse colon, placing its lower end against the incision in the duct. A strand of aseptic gauze is passed along each side of the tube. The gauze is removed on the fourth day, the drainage tube on the sixth. Hartmann finds that the fistula closes in from three to six weeks. Tuffier objects to suture, excepting when the duct is supple and healthy as well as accessible. He has applied Chaput's forceps to serve simultaneously as a *serre-fine* and a drain. The duct bears much handling, and if its canal be left patent always tends to close; the same cannot be said of the gall bladder. Indeed, Tuffier refers to a case in his practice where he performed cholecystotomy and choledochotomy at one sitting, draining both incisions. The duct healed before the gall bladder. This one case in itself is highly instructive. Bidwell has recorded similar experiences in the course of a recent discussion on choledochotomy,[2] where, on the other hand, it was shown by Mr. Percy Paton that the practice of leaving the incision in the common duct unsutured was not without danger. In a case which had been under his observation the fistula began to

[1] Report of the meetings of the Société de Chirurgie de Paris, *Rev. de Gynéc. et de Chir. Abdom.*, September-October, 1903, pp. 913-916.
[2] *West London Med. Journ.*, January, 1903, p. 17.

discharge milk given by the mouth, and as it was found impossible to stop this escape of nourishment, the patient died of inanition. In conclusion, more than one operator, we understand, has found that after suture of the incision in the common duct, leakage of bile may occur, and obstructive symptoms due to the narrowing of the calibre of the duct are not unknown.

ASSOCIATED SENSATIONS.

A remarkable instance of the subjective condition known as associated sensations or synaesthesiae is recorded in the *Revue Philosophique* for August, 1903, by Dr. Alfred Ulrich, Medical Superintendent of the Swiss Epileptic Colony at Zurich. The subject was a boy, born in 1878, of neuropathic family, who developed epilepsy in his 13th year after an attack of measles. He was in certain directions mentally endowed. At the age of 5 he showed a remarkable power of mental arithmetic, and his intellectual development was unusually rapid, but after the epileptic attacks showed themselves his mental faculties, and especially his memory, rapidly deteriorated although his colour sense remained extremely acute, so that he could recognize the most delicate differences of shade. From his earliest years, he said, the human voice had had colours for him: indeed, he heard nothing without a definite impression of colour. The colours were much more transparent than those on paper, and such as he had never seen or conceived, very delicate and very beautiful, like the colours seen in a prism. All sounds were coloured, including cries of animals as well as the human voice. The most intense impressions of colour were experienced, however, on hearing the vowels sounded. *A*, for example, gave the impression of light green, but in addition a sickly taste was experienced, a sensation of cold, and a sensation of form as of a flat surface like a field of glass; the impressions followed each other like clouds, one being transformed into another. *E* was yellow with other associated sensations, *i* black, *o* red, *u* dark green, and *y* white. The impressions aroused by the vowels were perfectly constant, and not only so, but seeing the vowels, whether printed or written, gave the same sensations only less vividly. The spoken consonants were of a light yellow colour with a slightly grey tinge. The cry of a dog was yellow, of a blackbird red, of a raven greenish, of a cow indigo, and of a goat light yellow. Sensations of form were associated with colour and auditory sensations; thus a circle always appeared red and had a sound of the vowel *o*. Smells also had associated colours; thus, that of iodoform had a deep red colour, also a sour, bitter taste. Impressions of taste had colours; thus sweet was carmine, salt an agreeable yellow; and impressions of colour had accompaniments of taste and temperature. Cold was green and heat was red. Careful observations by this expert were made at different times during a period of three years and always with the same results. A brother of the patient had had colour-hearing from his fifth year, but as is the rule the colours aroused in the two brothers by the same sounds were different. The case is remarkable, not only as an example of associated sensations, the most common of which is the so-called colour hearing, but because this subject combined in himself all the different varieties of synaesthesiae described up to the present time. It is probable that a considerable number of healthy persons, estimated at 10 per cent., have the faculty of hearing colour, many of whom do not know that they are different from the majority. Almost every one has experienced the association of sensations of common sensibility with sounds, as of the squeaking of a slate pencil on a slate, or the filing of metal, setting the teeth on edge. Epileptic aurae sometimes exhibit what may be a correlated subjective phenomenon of which may be mentioned the "dreamy state" associated with sensations of smell, and the aura described by a patient as an awful smell of green thunder. As a general rule, the colour sensations are aroused by sounds in series rather than by indiscriminate sounds, such as the vowels or notes of the musical scale. The subjects, who are usually quite healthy persons, notice the association from quite early life; the same colour is usually aroused by the same sound, and by no other; but the colours and other associated sensations are not the same, as exemplified by the two brothers, in different persons. As to the inner significance of such associations one of the more probable suggestions in regard to colour hearing, which, however, has not been confirmed, is that made by Kaiser,[1] that the associated colours are those of the letters of the alphabet in the book first used in learning to read, and from a similar hypothesis the explanation of many of the other associated sensations could doubtless be built up.

THE PREVENTION OF FEEBLEMINDEDNESS.

From the report of the Lancashire and Cheshire Society for the Permanent Cure of the Feebleminded for the year ending September, 1903, we learn that the residential special schools at Sandlebridge (near Alderley Edge, Cheshire) are doing useful work, 16 feebleminded boys being under training in one house, and 20 feebleminded girls in the other. We believe that a considerable portion of the inmates—though this is not stated in the present report—are children paid for by the school authorities of Manchester, Salford, and some other Lancashire towns that have adopted the provisions of the Elementary Education (Defective Children) Act of 1899. This gives power to board in residential institutions, with the consent of parents, feebleminded children whose home circumstances are unfavourable. From the treasurer's statement it would appear that the receipts from local authorities for the maintenance of children amount to £351 15s. 10d., while the actual cost of maintenance of the whole establishment amounts to £827 3s. 5d., exclusive of capital and estate expenses. There remains, therefore, a considerable margin to be covered by charitable contributions, and though the list of annual subscriptions amounts to over £300, there is a debt of £519 14s. 6d. on the account for current expenses (reducible however by £147 18s. 4d. due from local authorities). It is, indeed, stated that the subscription list requires to be trebled in order to relieve the Committee of anxiety, and to enable it to proceed with the contemplated industrial homes for young men and women beyond school age. The utility of permanent homes for feebleminded persons, both in their own interests and in those of society, cannot be doubted, and Miss Dendy, the zealous honorary secretary and founder of these homes, strongly insists that permanent segregation of the weak-minded children of this generation is the best way of diminishing the number of defectives in the next. How far this is practicable by charitable effort alone is, however, problematical, and it is much to be regretted that Government has not yet found time to consider, as has been influentially requested, the whole question of how best to deal with idiots, imbeciles, and feebleminded persons on a comprehensive basis, having regard not only to the needs of the present, but to the prospects of prevention in the future.

ILL-HEALTH AND BREACH OF PROMISE.

Many of the daily papers last week contained the report of an extraordinary breach of promise case, in which a jilted lover recovered £250 from a lady who had transferred her affections to a member of one of the learned professions. This case serves to show that no legal difficulty stands in the way of an action being brought by a man, but there are very few cases in the books in which men have figured as plaintiffs. In one such case, however, it was decided that bodily infirmity arising after the contract is a good reason for either of the parties to break off. The authority of this case is now open to question; for, upon a later occasion, a woman brought an action for breach of promise to marry within a reasonable time. The defendant pleaded that after the promise he began to suffer from a dangerous disease—consumption—by reason of which he became and remained incapable of marriage without danger to his life. It was decided by the majority of the Court

[1] *Arch. f. Augenheilk.* for 1896.

that a party cannot set up as an excuse for the breach of a promise to marry that the performance of the conjugal duties would be dangerous to his life, and that the plea, therefore, disclosed no good defence. It is believed that this is still regarded as good law. The minority of the Court, however, held that there is an implied condition in a contract of marriage that the parties remain in sufficient health to undergo the excitement of the ceremony of marriage, and to perform the functions of the married state without danger to life; that the circumstances set forth as to the state of health of the defendant were a bar to the plaintiff's claim to maintain an action for the breach of contract, and that the averment of notice to the plaintiff was immaterial.

HERNIA AS AN ACCIDENT.

In Belgium a law much on the same lines as the English act dealing with the liability of employers towards their workpeople in respect of accidents is about to be promulgated, and in anticipation thereof Dr. Solè[1] has recently discussed a question of great practical interest in a communication to the Medico-Chirurgical Society of Brabant. This question is how far can a development of a hernia ever be considered truly accidental, and under what circumstances should a hernia acquired in the course of physical labour be considered to constitute good ground for compensation. To determine the question, Dr. Solè has made an examination of all the literature which he can find touching the subject from a medical and physiological, not legal, point of view. He concludes that there is no difference of opinion as regards hernias which are the direct and immediate result of penetrating wounds, extensive tearing of the abdominal wall, or injuries such as those which are commonly suffered by a man who gets crushed between the buffers of a railway carriage, or is kicked, or run into by a shaft of a vehicle. In accidents of this character there is complete or subcutaneous division of soft parts, or else the compression of the abdominal cavity is so severe that the intestines perforce have to break out somewhere. Except with respect to hernias of this purely traumatic character, views are conflicting. One view held commonly is that the development of a hernia is never truly the result of a "strain," and that in cases in which a hernia is first noticed after heavy work or an unusual effort, the circumstance is merely the last link in a chain. It is held, in short, that protrusion of intestine is simply the final phase of aponeurotic and muscular conditions which must eventually result in hernia irrespective of strain or other provoking cause. Others, however, hold that a violent muscular effort may occasionally, though perhaps rarely, produce a hernia in a person with no predisposition, and of perfect aponeurotic and muscular development. In an endeavour to determine the question in any given case, Dr. Solè suggests that the following points should be borne in mind: (1) The past history of the patient, and the occurrence or otherwise of any recent illness calculated to reduce his strength; (2) the precise nature of the effort to which the accident is ascribed, for muscular effort in a constrained and unnatural attitude is especially liable to cause hernia; (3) the size of the hernia and the pain which accompanies its appearance, for an accidental hernia is always very small, and the pain not vague but sudden, and so intense as to immediately unfit the patient for any other effort. Other points that may throw light on the question are the character of the canal on the opposite side, whether tight or slack, and the occurrence of hernia in other members of the patient's family. It is obvious, moreover, that a hernia which is irreducible but not strangulated cannot be recent. The question has perhaps less direct interest in England than in Belgium, for in cases of an analogous character English courts have shown up to the present a tendency to sweep the medical aspect of such questions aside, and assume that the view of *post hoc, propter hoc* must be the correct one. But there is reason to believe that later on either the assistance of medical assessors will more frequently be summoned, or that large employers of labour will protect themselves by rejecting the labour of all but the obviously very healthy.

[1] *Presse Médicale*, October 29th, 1903.

ST. BARTHOLOMEW'S HOSPITAL.

The past week has witnessed the exchange in the columns of the *Times* of two or three letters between the Treasurer of St. Bartholomew's Hospital and Sir Henry Burdett, but the correspondence has not carried matters much further except in one small particular, which for the moment may be left aside. Meanwhile regret may be expressed that Sir Henry Burdett should have afforded to the governors, as represented by the Treasurer, Sir Trevor Lawrence, any opportunity of obscuring, unintentionally or otherwise, the true and, for the moment, the only important issue. The question of whether the income of the hospital is £100,000 a year or whether administrative charges reduces it for practical purposes to more than a third less, is only of secondary importance, and the same may be said of the point as to whether the opinions of the medical staff have been suppressed or whether the administration of the hospital has or has not been of a character the abolition of which elsewhere has produced such excellent results. These, however, are merely side issues, and the only one of pressing moment is whether the governors intend to justify the appeal which is to be made on January 26th by the production of a thoroughly satisfactory scheme, or a mere patchwork or a feeble compromise between the two. There is, as we pointed out last week, a most undesirable obscurity as to what the scheme of the governors really is, but the only one of which the public has any present knowledge is that covered by the plan published in the British Medical Journal of November 21st. This plan Sir Trevor Lawrence, in one of his letters to the *Times*, has himself stated is not abandoned, and it is further to be noted that the resolution passed at the governors' meeting on November 5th contains no reference whatever to further additions to the site, and on the other hand does provide for the refitting of the interior of the existing main blocks. It may be taken therefore that unless something occurs meanwhile this is the scheme with which the governors will go before the meeting of citizens which the Lord Mayor has promised to convene. The issue therefore is whether that scheme is a satisfactory one and whether the governors are consequently justified in putting it forward, or whether, once having abandoned their position of independence, they should not adopt some bolder plan which, though it might entail rather more trouble upon them, would better meet the hospital requirements of the metropolis. The public will be the final judge of the scheme, and, without recurring to the objections to anything like the present scheme, which have been pointed out so often in these columns, it may be laid down as a general principle that no scheme is likely to be considered satisfactory by the public unless it can be shown that it is one which has the unqualified approval of the professional staff of the hospital. Is that approval likely to be forthcoming if the final scheme proves to be the present one? It certainly is not, unless the Medical Council is prepared to eat its own words; for, in documents of which the public is now in full possession, the Medical Council has repeatedly stated its opinion first that the site, even with the addition made a year or two ago, is insufficient for the number of beds which have to be maintained upon it, and secondly, that the modern ward-unit cannot be evolved from the existing main blocks. In reference to the size of the site Sir Trevor Lawrence, in one of his recent letters, has endeavoured to mitigate the objections raised by suggesting that presently the site will be automatically enlarged by removal of certain parts of the school buildings. But even if such removal were effected it would not in any way decrease the objections, for the ground covered by any school buildings which could possibly be removed is extremely small, and all the objections to the size of the site in relation to the number of beds placed upon it have

treated the question as if there were no buildings but wards upon the site.

HERTER LECTURES, NEW YORK.

For a number of years Dr. C. A. Herter has given a course of lectures on pathological chemistry in the University and Bellevue Hospital Medical College, New York. On retirement from his work there, on receiving the appointment of Professor of Pharmacology at the Columbia University, he was desirous of perpetuating the course in his old College. To this end he has endowed a lectureship which, we understand, is to be offered annually to others who have devoted special attention to this department of science. Professor W. D. Halliburton, of King's College, London, has been selected to give the lectures in the coming year, and he has chosen as his subject the Biochemistry of Muscle and Nerve. The lectures commence on January 4th, 1904.

THE KING EDWARD VII SANATORIUM.

Mr. John Brickwood, a well-known brewer, has offered to present a chapel to the new sanatorium at Midhurst, the foundation stone of which was recently laid by the King. The chapel will, it is estimated, cost about £20,000. Lord Knollys has written, on behalf of the King, assuring Mr. Brickwood that His Majesty sincerely appreciates the proposal, and that it affords him much pleasure to take advantage of it.

THE ROYAL COMMISSION ON ARSENICAL POISONING.

The final report of the Royal Commission on Arsenical Poisoning is issued this week too late for us to notice it at length, for though the information it contains is much condensed, it is still a long document. It deals with a number of important questions, including the consideration of the toxic effect of small quantities of arsenic, the articles of food and drink which are liable to be contaminated by arsenic in the absence of proper precautions, the questions of tests for arsenic in food, and of the "standards" which should be adopted by manufacturers and applied in the case of prosecutions under the Sale of Food and Drugs Acts. It concludes with a detailed review of the present position of these Acts as a means of preventing contamination by deleterious substances and adulteration, and it makes some important recommendations for amendment in legislation and administration to secure improvement.

Sir Patrick Manson, K.C.M.G., will deliver an address on "The London School of Tropical Medicine: What it has done, is doing, and hopes to do," at the School, Royal Albert Dock, E., on Monday, December 7th, at 3 p.m.

It is interesting to note that out of the 93 successful competitors in the much advertised *Times* competition, 14 (including one lady) were members of the medical profession, most of whom, from the descriptions attached to their names, would appear to be engaged in private practice.

We learn that the President of the Local Government Board in England has consented to receive a deputation of the Imperial Vaccination League at an early date before Christmas with reference to the revaccination Bill which it is understood the Government intends to introduce next session.

We are asked to state that copies of the *Digest of Researches and Criticisms bearing on the Last Revision of the British Pharmacopoeia*, prepared for the Pharmacopoeia Committee of the General Medical Council by Mr. Chattaway, F.I.C, may be obtained from the Council's publishers, Messrs. Spottiswoode and Co., 54, Gracechurch Street, E.C., price 1s., or by post 1s. 1d.

Arrangements have been concluded between the London School of Tropical Medicine and the Royal Veterinary College, by which students of the former school will be afforded opportunities of acquiring knowledge of the diseases of animals peculiar to tropical regions. Conversely students of the Veterinary College will be enabled, if they desire it, to gain some insight into the more important features of ordinary medicine in the tropics.

A tablet recording the endowment of a bed for cancer patients in the New Hospital for Women, Euston Road, in memory of the Emperor Frederick and the Empress Frederick, who died from that disease, was unveiled on November 28th by Princess Henry of Battenberg. Mrs. Fawcett, in explaining the object of the memorial, expressed the hope that it would do something to carry out the great principles of the late Empress, whose care for the health of the people, and for the moral and intellectual education of women ought never to be forgotten.

At a recent meeting of the subscribers to the proposed testimonial to Dr. T. Henry Green, on the occasion of his promotion to the position of Consulting Physician to Charing Cross Hospital, it was decided it should take the form of a prize in clinical medicine. The contributions have already reached a handsome sum, and the list will presently be closed; but those of Dr. Green's old students and other friends who may not have had an opportunity of contributing may still do so by communicating with Dr. Woollett, "Ambleside," Streatham, S.W., the honorary treasurer of the fund.

Ireland.

Irish Poor-law Reform.

At a recent sitting of the Viceregal Commission on Poor-law Reform Dr. L. Kidd gave evidence. He laid it down as a general proposition that there were too many hospitals and workhouses in Ireland, and that the necessary combination of efficiency and economy was not obtained. He illustrated his views from Fermanagh. The population there was only 65,000, but as many as 218 beds were provided exclusive of fever hospitals, and institutions for incurables, and aged and infirm paupers. There ought only to be 80 beds, exclusive of fever hospitals and of beds intended for the infirm and aged poor, etc. The general standard elsewhere was 1 bed per 1,000 of population in rural districts, but in Ireland 1 bed per 800 was sufficient. He would place his 80 beds in hospitals of two classes, A and B, and provide for the infirm and aged poor and the chronic incurables in a third class of hospital, C. Class A in Fermanagh would consist of one 60-bed hospital centrally situated and fitted up and worked with all the accessories of a first-class modern hospital. Class B should consist of three cottage hospitals, providing the balance of the 80 beds, and placed wherever they were most required in charge of local surgeons. As for Class C, the number of beds at present provided for the three unions was about a thousand in three buildings, of which only some 327, upon an average, were in use. Two of these places might be abolished with great benefit, as the third would meet all requirements. The same system could be applied throughout the country, though possibly in some counties two hospitals of Class A might be necessary. These hospitals should be administered by a Committee of the County Council in each county, be supported by a general county rate, and subjected to the supervision of a special department of the Local Government Board. The introduction of the scheme would entail the repeal of a great deal of the useless legislation with which county infirmaries were encumbered, and provision would have to be made for paying the medical officers employed in proportion to their work and responsibility. Infirmary surgeons were at present paid upon a scale fixed seventy years ago, when the practice of medicine consisted largely in bleeding and surgery, in poultices and pitch plasters.

Nursing.

Hospitals of Class A which were properly equipped should be recognized as training schools for nurses. They would learn their duties better there than in clinical hospitals where students did part of the work. Each county should provide and train its own nurses for all purposes, hospitals of Class A supplying those of Classes B and C, and keeping extra nurses

for emergencies, and to send out upon payment to private cases. All nurses in these rate-supported hospitals should have midwifery training.

Dispensary Work.

The old system of having extern departments at the county infirmaries, which was abolished by the Medical Charities Act of 1851, should be revived and substituted for the present dispensary system. The dispensaries should be abolished, and the work done at, and as, the out-patient work of the hospitals of Classes A and B; the officers in charge of these out-patient departments being the local dispensary doctors. District nursing should be conducted from the same centres.

Payment by Patients.

As to payments by patients the same considerations did not apply to rate-supported as to voluntary hospitals. The rates should be considered merely as a grant in aid. On this point Dr. Kidd quoted at length from a report he had made to the Board of Fermanagh Infirmary in 1899. In this he advocated the introduction of payment by patients upon a sliding scale, the payments being based not upon what each patient cost the infirmary but upon what his living would have cost the individual patient had he remained at home. He showed that the payment made by each individual ratepayer towards the infirmary of his county was only a few pence a year, and argued that this payment should be regarded not as entitling the ratepayer to free treatment, but merely as a sort of insurance by which he secured the existence of a hospital in his neighbourhood at which, in time of need, he could obtain hospital treatment at a cost precisely proportionate to his individual means.

Fever Hospitals.

Fever hospitals he would manage upon the same general system as the others, but he would make no charge therein, since the patients went there as much in the public interest as in their own. Each central hospital should provide for the treatment, if need be, of at least three different diseases.

Ambulances.

If the hospitals were properly located the need for ambulances would be reduced to a minimum, but the provision of an ambulance service would be an advantage under many circumstances.

Tuberculosis and Insanity.

He was anxious to see special provision made for dealing with tuberculous disease, and protested against the idea that abandoned workhouses could be converted to use as sanatoria unless they were completely rebuilt. Unless sanatoria were properly built upon properly selected sites and properly officered, a reputable system of treatment would fall into disrepute. Groups of counties should combine to promote sanatoria which should be located in counties which did not provide asylums. Into the latter, epileptics and insane persons of every variety among the poor should be removed; none should be allowed to remain in workhouses, and if necessary, the asylums should be enlarged in order to provide accommodation.

Boarding Out.

He was entirely opposed to the boarding out of pauper children; instead of this they should be grouped in central establishments and taught a trade; at present they were used as domestic or farm drudges and learnt nothing. Old people on the other hand might well be boarded out; they cost the unions about 3s. 6d. a week for food and necessaries and if a subvention to this amount or even less were paid for them outside they could generally remain with their friends, but the £5 a year or about 3¾d. a day paid for boarded-out children was quite insufficient to feed a growing child.

SMALL-POX IN BELFAST.

Five patients suffering from small-pox admitted to the Purdysburn Hospital are convalescent.

THE CONSUMPTIVE POOR IN BELFAST.

The Local Government Board has written to the Belfast Board of Guardians with reference to the establishment of a sanatorium for the consumptive poor. If the guardians proposed to use the new premises for the treatment of such cases of tuberculosis as were from time to time admitted in the ordinary way to the infirmary, the Board thought the guardians might consider the alternative of dealing with the matter by the establishment of an auxiliary workhouse. At the meeting of the Health Committee of the City Council on November 19th it was decided that the Committee could not recommend the Council to take part in any conjoint scheme with the Board of Guardians if the latter's sanatorium was placed on the footing of an auxiliary workhouse. It was agreed to inspect a site near Donaghadee as to its suitability for a sanatorium.

HOSPITAL ACCOMMODATION FOR PORTADOWN.

The distressing accident to an actress, and her subsequent death at Portadown, has brought to a climax the necessity of hospital accommodation there. The young lady, with others, was driving to the station, when probably, not being familiar with the Irish car, on turning a sharp corner she was thrown to the ground and sustained a compound fracture of the leg. She received medical attendance at once, but she had to be removed to the Lurgan Infirmary, five miles distant. Gangrene set in, and unfortunately proved fatal. At the meeting of the Portadown Town Council, held on November 23rd, a letter from the Poor Law Commission was read, asking the Council to appoint delegates to give evidence at an inquiry to be held at Armagh. Every one agreed that the town was very badly off for hospital accommodation, and strong feeling existed, especially in regard to the number of sudden deaths that resulted from accidents. Finally the following resolution was unanimously adopted:

That we are of opinion that the town of Portadown, with a population of 10,000, should have a hospital or infirmary. Portadown is nine miles from Armagh and five from Lurgan. Serious accidents frequently occur, and the removal of patients such a long distance is very painful, and often has serious results.

THE GRANARD CASE.

The Granard guardians, having refused to recognize the master appointed by the sealed order of the Local Government Board, have been warned by the inspector representing that body that they would be surcharged for any expenses incurred. If they could not pay they would be sent to prison. Any guardian wishing to escape must dissent from the course being pursued. Upon this a stocktaker was appointed.

The most interesting part of the proceedings was a communication from the Chief Secretary (Mr. Wyndham) in reference to Dr. Kenny's letter, a copy of which had been sent to him. He declined to comment upon the Bishop's letter, but he asked the guardians "to accept Dr. Kenny's letter in the conciliatory sense which he knew inspired it, rather than to pass or invite criticism on its terms. The course pursued by Dr. Kenny, and the undertaking given by the guardians under the circumstances, the difficulty of which he did not minimize, were in his judgement creditable to both. They must think of the maintenance of an adequate standard of trained nursing for cases which the nuns could not be asked to undertake. He hoped that the poor of Granard would not for long be deprived of the valuable and acceptable ministrations of the nuns." A copy of the letter was ordered to be sent to the Roman Catholic Bishop.

Scotland.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

A MEETING for a discussion of the ray treatment of diseases of the skin will be held in the Royal Infirmary on January 8th, 1904, at 4 p.m. A discussion on the diagnosis of, and indications for operation in, acute appendicitis, will take place at the ordinary meeting on January 20th, at 8 p.m.

EDINBURGH SCARLET FEVER EPIDEMIC.

During the week ending mid-day Saturday, November 14th, 62 cases of scarlet fever were reported to the public health authorities, and there was no death registered. During the week ending November 21st, 27 cases were notified and one death was registered. During the week ending November 28th, 23 cases were notified, and no death was registered. It would thus appear that there has been something of a lull in the epidemic during the last two weeks, and that although there have been a good many severe cases the outbreak thus far has not been of a severely virulent type, leading to a large mortality.

THE TREATMENT AND PREVENTION OF CONSUMPTION.

At length the public of Glasgow are being roused from their apathy in regard to the care of the consumptives and the ultimate prevention of that disease. Suitable provision is

already made for the treatment of the well-to-do, and the very poor are being well cared for in the special wards and sanatoria of the poorhouses and the asylums. But the working classes and middle classes have hitherto been in a hopeless condition. Refused admission to the general hospitals, unable to pay for admission to sanatoria, and too independent to accept parochial relief, they have been compelled to continue at work till totally unfit, and have then lingered on in their crowded and badly-ventilated homes spreading the disease amongst the members of their families. The Corporation of Glasgow has recently had this matter under careful consideration; and, though unable to recommend the introduction of compulsory notification, a conference is proposed between the Health Committee and the various Poor-law and other interested bodies in regard to the care of the advanced cases. The local Branch of the National Association for the Prevention of Consumption has also been at work, quietly spreading information regarding the disease by pamphlets and special lectures, and for some months has been endeavouring to raise money for the erection of a sanatorium in Lanark, where they had secured a site. The sanatorium at Quarrier's Bridge of Weir Homes, which has been open for some years, provides for female cases only, 290 patients having been treated there in the course of the past year. At the Lanark Sanatorium it is intended to provide for male patients only—at least to begin with—and some £6,000 has now been raised for this special object, though it will take very much more than that to make anything like an adequate beginning. However, chiefly through the energy of the *Glasgow Evening News*, the interest of the working men themselves has now been secured in this project, and a shilling fund started by this paper has, in the course of little more than a week, resulted in the subscription of fully 5,000 shillings. It is hoped, also, to enlist the help of the Friendly Societies, and, with this special end in view, the Glasgow Branch of the National Association arranged a public meeting last week, at which the principal speaker was Dr. Alfred Hillier, the secretary of the parent Association in London. The meeting, which was held in the City Hall, was largely attended, and the President of the Faculty of Physicians and Surgeons, Dr. Henry E. Clark, was in the chair. Dr. Hillier referred specially in his address to the success of the sanatoria established in Germany by the insurance associations, and urged that the Friendly Societies should combine to form a company which might conduct sanatoria for the members: he was convinced that it would pay a monetary dividend, but more important for the members, a health dividend and a dividend of preventive and educational value. As an illustration of the havoc at present played amongst the working men he mentioned that in the Ancient Order of Foresters during the five years from 1897 to 1901 there were 5,320 deaths from consumption amongst the members and 1,626 amongst the wives and widows of members. He expressed his belief that tuberculosis might be absolutely extinguished just as leprosy had been, and that within a comparatively short time, if the proper precautions were taken. This very successful meeting was also addressed by ex-Bailie W. F. Anderson, the Chairman of the Health Committee; Dr. Chalmers, Medical Officer of Health; and Dr. Ebenezer Duncan.

The Care of the Pauper Insane.

The Civic Society of Glasgow, whose president and originator is the energetic Professor of Moral Philosophy in the University, Professor Jones, has frequently interesting discussions and addresses on questions of interest to the citizens generally. At a recent meeting, Mr. Motion, the Inspector of the Glasgow Parish Council, read a very important paper on the care of the pauper insane and its cost, which was followed by a discussion in which several medical men connected with psychology took part. Mr. Motion pointed out that originally the poor were provided for in certain Royal and district asylums, and in licensed wards of the poorhouses. But the Board of Lunacy had set their faces against these licensed wards, and the result was that the parish councils had all been building new and expensive district asylums, and the chronic insane were now provided for under really extravagant conditions. In 1871 there were in the parishes of Glasgow, Barowy, and Govan—all really included in Greater Glasgow—760 lunatics maintained at a cost of about £19,000 during that year, while in 1901 there were 2,672 lunatics, and the cost of maintenance reached the total of £68,500, an increase out of all proportion to the increase of the population. In spite of all this extreme care for the outward conditions of the insane, but little improvement had taken place in their medical treatment since 1871; and while the population of Scotland had increased 50 per cent. since 1858, the number of lunatics under treatment had increased 186 per cent. It would be necessary to deal seriously with this increase, and already some of the newer asylums were being found too small. Among Mr. Motion's recommendations was that a commission of inquiry should be appointed to investigate the situation in Scotland generally. He maintained that the treatment and care of the insane should be placed in the hands of a Government Commission like the prisons, but with less cast-iron rules and regulations, that the chronic incurable cases should be relegated to some less costly confinement than at present, and that fuller use should be made of the preliminary treatment of those transient acute cases which, if carefully treated, might speedily recover without ever being in an asylum at all.

Glasgow Hospitals.

One is again reminded by the occurrence of the annual meetings of the various infirmaries of the great work they are doing, and of the constant call for more money to enable them to carry on that work, and to complete the various extensions and improvements the different boards of managers have on hand. Happily the subscriptions for the Glasgow infirmaries keep up and even show some increase, but the expenses become proportionately greater, and in the three great general hospitals—the Royal, the Western, and the Victoria—the excess of ordinary expenditure over ordinary income amounted last year to over £26,000, a deficit which had to be met by drawing upon the legacies. The sum required annually for the maintenance of these three institutions has now increased to £80,000, which should largely be made up from voluntary subscriptions, and as all the hospitals have schemes of enlargement on hand the sum demanded is likely to become greater. Hospital Sunday—a recent institution in Glasgow—fell to be observed on November 29th, and it is hoped that the amount realized last year—about £5,000—may be considerably increased in view of this pressing need for money.—The twenty-ninth annual general meeting of the Western Infirmary of Glasgow was held last week, when a powerful appeal was made by the Lord Provost and other speakers for continued and increasing support. With the growth of the city and the extension of industrial works along the banks of the Clyde, there has been great need not only for the new dispensary buildings in course of erection, but also far a large increase in the number of beds by the building of a new wing. There are usually fully 300 patients waiting for admission, and while the proper number of beds in the infirmary is 416, there have been an average of 440 beds fully occupied, an amount of overcrowding that is to be regretted. There is ample room on the present site for an addition to the existing building of a wing capable of providing 250 beds, and for this it is estimated that £60,000 to £70,000 will be required. Plans and specifications for this extension have been prepared, and it is suggested that it may be carried out in sections. The appeal of the managers for this object has already resulted in the subscription of about £29,000. The statistics for the year ending October 31st show a considerable increase in the number of patients treated. The outdoor patients numbered 19,902, an increase of 1,343 over the preceding year, and these patients paid 84,713 visits to the hospital. The indoor patients numbered 5,984, an increase of 56, the average period of residence of each patient being about twenty-seven days. The number of deaths was 480, or 8.65 per cent. of all the cases treated to a termination. Of the fatal cases, however, 139 were of such a hopeless character when brought to hospital that the patients died within forty-eight hours of admission. By deducting this number the death-rate is reduced to 6.14 per cent. The convalescent home at Lanark continues to be a great benefit as an adjunct to the infirmary, and during the year 793 of the patients were sent there for a fortnight's residence on leaving the wards of the infirmary.

The Students' Number of the *Progrès Médical* was issued on November 7th. It contains an account of the medical schools, hospitals, laboratories, and other teaching establishments of France, with full information as to courses of instruction and examination for degrees. The offices of the *Progrès Médical* are at 14, Rue des Carmes, Paris.

GENERAL MEDICAL COUNCIL.

NOTES.

The Inspection of Examinations.—It was suggested that the reports of the Examination Committee upon the inspections should be taken as read, attention only being called to conclusions drawn or recommendations made, thereby saving the time of the Council. Though the reports have been in the hands of members of the Council for some time this was resisted, and led to a criticism of the character of the Committee's reports, which were alleged—and with considerable reason—to consist mainly of a recapitulation in brief of the reports of the Inspectors, sometimes in their very words. The examination of the Scottish Conjoint Board in practical chemistry was declared to be insufficient. On a subsequent day some discussion took place as to the manner in which the report upon the Final Examination of the English Conjoint Board should be treated. The examination had been, on the whole, praised and declared to be sufficient, and on that declaration the Conjoint Committee, though promising attention to criticisms which it contained, had stated that they did not deem it necessary to offer any comments. An endeavour was made on this ground to postpone the adoption of the report, but perhaps because the Council felt such a course would have been a policy of pinpricks, the report was adopted.

The Examinations in Physics, Chemistry, and Biology.—At the invitation of the President, the Inspectors, Dr. Windle and Dr. Campbell Brown, had drawn up a general report in which they summarized the results of all their inspections and commented thereon. This report we deem of such importance that we have printed it *in extenso* at p. ccxx of the Supplement. In general terms it criticizes the teaching, the syllabuses, and the examinations as not quite calculated to secure the best educational results which might be obtained under revised conditions, and throws doubt upon the value of such a knowledge of biology as can be reasonably expected from students at that period of their career. It may be remembered that Professor Huxley, though his life was devoted to biological science, many years ago expressed a strong doubt whether it was desirable to load the curriculum of the medical student with this subject.

The Council and the Royal Colleges in England.—The postponement of any resolution bearing upon the issues in dispute was the almost inevitable result of the discovery, which it was left to the Council to make, that the Colleges, whilst steadfastly maintaining their attitude of autonomy, were, in fact, in process of yielding all the essential points in dispute. It would have mollified their refusal to confer with representatives of the Council had they communicated the substance of the proposed alterations, which, in fact, rendered such a conference less helpful, and it would certainly have saved the time of the Council not a little by rendering any discussion for the moment inappropriate.

The Apothecaries' Hall of Dublin.—The proposal of this body to institute a preliminary examination of its own, notwithstanding that it has no particular relation to general education, was deprecated by the Examination Committee, and their conclusion was endorsed by the Council; nor did the request of this body that it should be relieved of the travelling expenses of the examiners in surgery meet with a more favourable reception.

Public Health.—The Committee had received somewhat late in the session an application that Bombay should be recognized as a sanitary district for the purposes of study for the D.P.H. diploma. Some protest was raised against the introduction of this report so late in the session, and some members of the Council differed from the Chairman of the Committee in their estimate of the importance of the step. It was pointed out that this would not, indeed could not, be the only application which would be made, and that in fact other applications on similar lines, but relating to other Indian districts or commands, had actually been before the Conjoint Committee or the English Colleges, so that the question of creating a precedent arose. It was, however, finally agreed to recognize this command.

The "Pharmacopœia."—The sales of the *Pharmacopœia* were reported as having been very satisfactory, 700 having been sold in the year, and 34,591 in all since its publication. A digest of the criticisms upon its formulae and directions was printed for the use of the Council, and although this digest extends to some seventy odd pages, it was stated that the objections and criticisms mainly had relation to matters of detail, so that in fact it constituted an endorsement of the general excellence of the last edition.

A Side Light on Medical Education.—An analysis of the return forwarded to the Council in respect of the recent examinations held for admission to the Royal Navy Medical Service, the Royal Army Medical Corps, and the Indian Medical Service, which will be found at page ccxvii of the Supplement, is interesting. The return includes three competitions for the army and one for each of the other two services. It will be seen that 46 per cent. of all the candidates were from English schools of medicine, or rather, held English qualifications only, and that they carried off between them 63 per cent. of all the appointments. The extent of the existing competition for admission to each service is also shown. Thus, it will be seen that there were three candidates for every two vacancies in the Royal Navy, five for every two vacancies advertised in the Indian Medical Service, and nine for every five commissions in the Royal Army Medical Corps. It will be noted that the competition for the Indian Medical Service was still the most severe, though the examination was held in August before the new regulations were published. Another point of view from which the analysis is interesting is as follows: These examinations are practically the only post-graduate examinations which exist in the subjects covered by the ordinary medical curriculum, and their results, so far as they go, throw some light on the question of the efficiency of medical teaching. On the whole the result may be considered satisfactory, for it will be seen that, although only 54 per cent. of all candidates received appointments, the number of them who passed the qualifying standard was 85 per cent., or, in other words, only some 14 per cent. totally failed. Another interesting point is the comparison that is possible between the three countries. It will be observed that, candidate for candidate, England appears in a much more flattering light than either of her sisters; for five out of every nine of her candidates won appointments in competition, while twelve Scotch candidates were required to win the same number of posts, and Ireland required as many as fifteen. Amongst those who totally failed, the English candidates occupy an equally favourable place, for only 7 per cent. of them figure in this list, against twenty-one from Ireland and twenty-three from Scotland. In the list of those who qualified, while England again heads the list with 93 per cent. of her candidates, Ireland again beats Scotland by 81 per cent. to 75 per cent. It is to be noted, too, that although the list of the Scottish candidates won rather more appointments than the Irish, the difference in favour of Scotland is less than would appear at first sight from the analysis, for two of the winners with whom Scotland is credited held also the diploma of the Conjoint Board of England. A point of further interest is that the great majority of the English candidates held the diploma of the Conjoint Board of England alone, and that almost throughout the series the higher places were won by these diplomates. Seeing how high a proportion of the Irish and Scotch candidates held degrees, it looks as if a further analysis of the returns from this point of view might serve as a valuable test whereby to decide the vexed question of whether the English diplomate is not entitled to consider himself at least as well trained a man as his Scotch or Irish *confrère* graced with a degree. But this is an analysis which we leave to those specially interested in the question.

Dental Cases.—The case of Mr. Bush, who desired that his name should be entered on the *Dentists' Register*, had been before the Council in 1896. It was revived at this session by a fresh application under the clause which gave, under certain conditions, apprentices the position of persons already in practice at the time the Act was passed. The second part of this clause gives to the Council a discretionary power in dealing with cases arising under it; but in 1890, after the Act had been in operation for twelve years, the Council resolved no longer to exercise these discretionary powers as a matter of routine, though, of course, they persist under the Act. It was asked that they should be exercised in favour of

Mr. Bush, who was a chemist as well as a dentist. The case presented some peculiarities, but the Council appeared to think that sufficient cause for departure from its resolution had not been shown, and declined to register him. David Barnett Bradlaw, a medical practitioner whom the Council had at its last session found to have been associated with a dental practice carried on by means of advertisement, and to have personated his brother, came up for the deferred judgement of the Council. The practices complained of having been discontinued, no further action was taken. The case of the brother, Henry Jacob Bradlaw, registered on the *Dentists' Register* as in practice prior to 1878, had not been previously heard, it was decided that the facts proved against him justified the erasure of his name. The case of James Grant, registered as a dentist in practice prior to 1878, was of interest as bearing upon the relation of a registered practitioner to a limited company. One John Panhans had been convicted and fined under the Dentists Act, and had then adopted the now common device of forming a company; subsequently a second conviction had been obtained against Panhans. The evidence given by Grant in this last case formed part of the evidence adduced against him before the Council, and the charge was in effect one of covering, it being alleged that Grant was put forward as the qualified man in a practice in reality conducted by Panhans. The Council directed the erasure of his name from the *Register*.

Preliminary Examinations.—In the letter which the Secretary of the Consultative Committee of the Board of Education addressed to the General Medical Council inviting that body to send two representatives to a conference on December 4th to consider a scheme of leaving examinations at secondary schools in England it will be observed that reference is made to a detailed scheme under the consideration of the Consultative Committee which it was hoped might be made public before the date of the conference. As the matter must be of great interest to the medical profession we applied to the Secretary of the Consultative Committee for a copy of this document, and we are indebted to him for the information that: "The Committee has intimated to the various professional bodies who have been invited to send representatives to the conference of December 4th that it would prefer not to submit copies of its preliminary plan in its necessarily tentative form to the bodies themselves at present, as to put forward a scheme which must still be immature might lead to misapprehension." It would appear, then, that no immediate publication of the scheme must be expected, and it remains to be seen how far the Scotch plan of leaving examinations may be found applicable in England.

EPSOM COLLEGE.

Lord Rosebery, as President of the Royal Medical Benevolent College, presided over an extraordinary meeting of the governors held on November 26th to consider a recommendation to change the title so that henceforth the name of the college shall be Epsom College. Among those present to welcome Lord Rosebery on taking the chair of the college for the first time were Dr. Holman, the treasurer, Sir William Church, Sir Thomas Smith, Sir William Broadbent, Sir Douglas Powell, Sir James Reid, Sir Dyce Duckworth, Dr. Galton, Mr. Reginald Harrison, Mr. Christopher Heath, Mr. Henry Morris, the Rev. Edward Nortley, Mr. W. A. Propert, Dr. de Havilland Hall, Dr. Buzzard, Dr. F. Taylor, Mr. Guy Elliston, and Mr. Bernard Lamb, the secretary.

Dr. Holman, the treasurer, moved:

> That in accordance with the powers given under Section xii of the Royal Medical Benevolent College Act, 1894, the name of the college shall henceforward be Epsom College, in lieu of the Royal Medical Benevolent College, and that in documents issued from the office in London the following words, so far as is practicable, be added immediately after the title: "Established in 1855 as a public school with a Royal medical foundation."

After expressing regret at the absence owing to indisposition of Sir Joseph Fayrer, the Chairman of the Council, Dr. Holman said that for the past five-and-twenty years he had been looking forward to the change in the title as now proposed, a change which he believed would redound enormously to the benefit of the medical profession and Epsom College. From the date of its foundation by John Propert in 1855 Queen Victoria had shown great interest in the College; the late Prince Consort opened the school accompanied by King Edward as a boy, and would have laid the foundation-stone but for an untimely attack of measles. This interest of the Royal Family had always been maintained. The King had succeeded his mother as Patron of the College, while as Prince of Wales he presided at a dinner of the College, when the sum of £2,000 was collected. On another occasion he opened the lower school, which had been of great advantage in the educational work of the College. Now his son, the present Prince of Wales, continued this same interest, and in June last personally inspected the College, and presided over the dinner, when the sum of £7,000 was collected for the funds of the College. Not to lose sight of the great help which the Royal Family had from the first extended to the College, the governors felt it most desirable that the word "Royal" should continue incorporated in the title. When John Propert first launched the scheme of a benevolent college he desired to create two things—a great benefaction for the profession at large by offering a good education at cost price; and, secondly, a charity for two classes of recipients, a number of pensions for necessitous members of the profession or their widows, and a number of foundation scholarships for the sons of medical men. John Propert never intended to make Epsom College a class or charity school, but only to provide for a certain number of boys, sons of medical men, gratuitous education by means of scholarships, similar in all respects to the scholarships existing at other public schools. In support of this Dr. Holman read a letter, written in 1891, by Mr. Lumsden Propert, son of the founder, setting out what, in his opinion, were the real intentions his father had in view in founding the Royal Medical Benevolent College. Moreover, a daughter of the founder had stated that the word "Benevolent" was in the early days of the College introduced into the title only as a matter of necessity at the time. The general public did not like the idea of sending boys to a benevolent school, the impression being that it meant a charity school; in fact, it had been proved that boys of all classes had not been sent to Epsom College in consequence of its title. For this reason alone it was desirable that the title should be changed to simply Epsom College. The College was not a charity school, but he looked forward to the day when the College would share with other public schools of England the enormous advantage of an adequate capitalized foundation. The change of title did not imply any alteration in the original scheme of the charity, the fifty pensioners and fifty foundation scholars would still exist.

Mr. Henry Morris, in seconding the proposal as an old Epsomian, declared that there was not a single boy who had been educated at Epsom College who would not welcome the change of title, as owing to the word "Benevolent" appearing an impression frequently prevailed that what was really a first-rate public school was a charity school, and only boys whose fathers were in straitened circumstances could be educated there. Such an impression was misleading, and harmful to the school.

Lord Rosebery then put the resolution to change the title to Epsom College, which was carried unanimously.

On the motion of Sir William Church, seconded by Mr. Christopher Heath, a hearty vote of thanks was accorded to Lord Rosebery for presiding.

Lord Rosebery in response said: I am very much obliged to you for the cordiality with which this vote has been proposed and received, and I have also to extend my thanks to you for having allowed this meeting to be postponed in order to enable me to be present. I asked this great boon at your hands because of the peculiar interest I feel in the reform which has been so successfully carried through. Ever since I have been connected with Epsom College, and long before I was connected with it except in the capacity of a neighbour, I have felt very deeply that this question of its name handicapped very severely the energies and prosperity of the College. In the first place, the title Royal Medical Benevolent College has the fatal difficulty of being much too long. There is no institution in my judgement that could thrive under so lengthy a denomination as that, and I think it says wonders—it says miracles—for those who have been connected with the management of the College, whether as treasurers or governors, or as head master, that they should have made the College, what it is, with the great disadvantage of its name. The other disadvantage under which the late title laboured has been called attention to by one or two who have spoken to it, which is the inclusion of the meaningless but distasteful word "Benevolent." When you come to think of it there is no reason in the world why Eton, which in my judgement holds the pride of place

amongst public schools—I hope there are no Harrovians or members of rival schools here who will tear me in pieces for saying so, of course we have these childish prejudices, and I put Eton at the head of all educational establishments—not perhaps in respect of education, but from other points of view—there is no reason in the world why, by omitting the word "Benevolent," the title we have just discarded should not have been given to Eton, because when Eton was founded by Henry VI for seventy foundation scholars, in the place it now occupies, it was a royal benevolent college. I cannot conceive that anybody would think that Eton would prosper so well if it was suddenly to claim the two additional adjectives of "Royal" and "Benevolent" to the name of Eton College, or that it would prosper if it added those epithets to the name which it already enjoys. I say this because I observed that in one of the letters of objection which were read one of the governors expressed a lingering regret for the word "Royal." Now, our discarding the word "Royal" does not in the least imply that we are ungrateful or unmindful of the constant proofs which have been referred to by the Treasurer of the interest of past and present members of the Royal Family in our institution. We are justly proud of them; but so great is the interest of the Royal Family, developed under the reign of our late gracious Queen, in all public institutions in this country that almost every institution which has any beneficent work to do would be justified in claiming and retaining the word "Royal" as having received some mark of Royal interest. That I regard as an immense credit to our Royal Family, but though that be so, would it not be thought absurd if Eton College were suddenly, in memory of the various bounties which it has received from Kings of England, beginning from Henry VI, to say that the word "Royal" would be a flattering addition to the name of Eton College which it already possesses? You can hardly imagine a "Royal Eton College" any more than you can imagine a "Royal Benevolent Eton College." I think that simple illustration goes to the root of the whole matter, and shows that you are doing the right thing in discarding the superfluous epithets and getting the simplest and most direct name that you can, and after all the name by which the school has long been popularly known. I asked you to postpone the meeting in order that I might be present, because I believe in my heart of hearts that this day may be a memorable date in the history of Epsom College. I believe that the change in the name may mean a new start, and in all probability will mean a new start for Epsom College. You will have dropped the encumbrance which I think weighed you down, and I, who know fairly well as a neighbour the admirable character of the school, and of the lads who are trained by the school, in the most sanguine spirit venture to prophesy that to-day will mark a new era of prosperity in the history of Epsom College.

LITERARY NOTES.

IT may interest some readers to know that the managers of the London Medical Book Club carried on in connexion with Lewis's Library, in Gower Street, have altered their arrangements so as to make the subscription include exchange of books by library messengers on any day of the week chosen by the subscriber except Saturday.

It is announced that at the end of the present year Professor Eulenburg will cease to be one of the editors of the *Deutsche medicinische Wochenschrift* with which he has been so long and so honourably associated. Professor Eulenburg took a leading part in founding the German Medical Press Association, and his retirement from active journalism is viewed with deep regret by all his colleagues.

La Revue de Déontologie is, as its title imports, a journal devoted to medical ethics. It is the organ of the French Corporate Association of Medical Students. The new periodical is introduced by a prospectus from the pen of Dr. Le Gendre. The working editor is M. Wicart, *interne* of the Paris hospitals.

At a recent meeting of the Paris Société d'Hypnologie, Dr. Felix Regnault presented a small statue found in the course of excavations made at Smyrna. The statuette represents the god Bes, who is shown as the subject of myxoedema and goitre. The limbs are short, the belly large, the face like a full moon, and the tongue hanging out. The cult of Bes was spread throughout Asia, and his effigy was largely used as an amulet. At the present day in certain districts in the Alps the subjects of goitre are regarded with special veneration.

THE MILK SUPPLY OF LARGE TOWNS.

ACTION AND INACTION OF RURAL AND COUNTY AUTHORITIES.

SOME months ago we addressed to the medical officers of counties and to the medical officers of health of combined sanitary districts in England and Wales a series of questions, in the hope of eliciting information with regard to the extent to which the sanitary authorities used the powers conferred upon them to supervise the production and distribution of milk, and to guard it against contamination and infection. We are indebted to a number of these gentlemen for very kindly sending us full replies, but unfortunately the officers of some counties and districts have not seen their way to respond to our invitation, while in some instances we are not permitted to make use of the answers which we have received. We have postponed the publication of an analysis of the replies in the hope that further information would reach us; but as this has not hitherto been the case we think it well to publish now such information as we have been able to gather.

The following is a list of questions sent to county medical officers; the questions addressed to the medical officers of combined sanitary districts were similar:

1. To what extent do the local authorities in the county of — —— enforce the requirement that every cowkeeper, dairyman, and purveyor of milk shall be registered in accordance with Section 6 of the Dairies, Cowsheds, and Milkshops Order of 1885?
2. Have all the local authorities in the county of — —— made regulations under Section 13 of the Dairies, Cowsheds, and Milkshops Order of 1885?
3. Do these regulations prescribe a minimum of floorspace and cubic contents in cowsheds, and what is the minimum enforced?
4. Do the regulations contain any clause enforcing the notification of any case of infectious disease occurring on the same premises as the dairy or cowshed?
5. Has any action been taken by local authorities in the county of ——— in connexion with the Order of 1889 rendering it illegal to use the milk from animals certified by a veterinary surgeon to be suffering from tuberculosis of the udder? If so, what is the machinery by which this Order has been enforced, and how many visits have been made by your veterinary inspector in carrying out the Order?
6. What supervision is exercised as to the cleanliness, etc., of milk vessels, and as to the protection of milk from exposure to infection?
7. Have the local authorities adopted, and do they enforce, model regulations, 17 (5), He shall not cause or suffer any cow belonging to him or under his care or control to be milked for the purposes of obtaining milk for sale:
   (*a*) Unless, at the time of milking, the udder and teats are thoroughly clean; and
   (*b*) Unless the hands of the person milking such cow, also, are thoroughly clean and free from all infection and contamination.

The following is a brief analysis of the replies received:—

COUNTIES.

Bedfordshire.

Dr. Newman, County Medical Officer, informs us that (1 and 2) the local authorities enforce registration of milk producers and vendors to a considerable extent, but that not one-half of them have made regulations under Section 13 of the Dairies, Cowsheds, and Milkshops Order of 1885. (3 and 4) A minimum floor and cubic space in cowsheds, and the notification of infectious disease on the same premises as the cowshed are generally prescribed, but (5) so far as he knows no action has been taken by the local authorities to carry out the Order of 1889, rendering it illegal to use the milk of animals certified by a veterinary inspector to be suffering from tuberculosis. (6 and 7) There is practically no supervision to ensure the cleanliness of milk and to protect it from exposure to infection, or to ensure that, at the time of milking, the udder and teats of the cow are clean, and the hands of the milker clean and free from infection.

Cheshire.

Dr. Francis Vacher, County Medical Officer, states that (1 and 2) registration is fairly enforced in some districts, and that 37 out of 41 urban districts, and 13 rural districts, have made regulations under the Order of 1885, (3) the regulations prescribe cubic contents (from 800 to 400 cubic feet, usually 600), but not the minimum floor space. If cows are turned out regularly to graze, the minimum air space cannot be insisted on. (4) The regulations as to notification of infectious disease on the premises follow closely the model regulations of the Local Government Board. (5) The County of Cheshire has no veterinary inspector to carry out the Order. Cowsheds in the county are visited by inspectors from Liverpool, Manchester, and other towns. (6) Registered premises are visited and attention is given to the cleanliness of milk vessels and protection of milk from exposure to infection.

Any house at which infectious disease is notified is visited. (7) Many attempts have been made to enforce regulations to ensure that the udder and teats of the cow are clean, and the hands of the milkers clean and free from infection but without much success.

Derbyshire.

Dr. Barwise, the County Medical Officer, informs us (1) that 16 urban and 10 rural districts keep registers of milk producers and dealers. (2) Regulations have been made under the Order by some but not by all local authorities. Where they exist they are fairly well enforced. The County Council is awaiting the report of the Commission on Human and Bovine Tuberculosis. Dr. Barwise suggests that the Dairies, Cowsheds, and Milkshops Order should be enforced by county councils, and the expenses charged to Imperial taxation.

Durham.

Dr. T. Eustace Hill, County Medical Officer, states that (1) the registration of producers and dealers is enforced in every rural district, and in all the urban districts with the exception of three. (2) All the rural and 21 urban district councils have adopted regulations under the Order of 1885. (3) In 14 urban and 5 rural districts a minimum cubic space is enforced varying from 500 to 800 cubic feet. (4) There is no special rule requiring notification of infectious disease on the premises. It is considered hardly necessary except in the cases of tuberculous phthisis, as the Infectious Diseases (Notification) Act is in force in every district. (5) He is not aware that any action has been taken by local authorities to render the use of milk of cows suffering from tuberculosis of the udder illegal. (6) In some districts systematic and fairly efficient supervision is exercised by the medical officer of health and inspector. In many districts it is feared that there is no supervision to ensure cleanliness of vessels and to protect milk from infection. (7) In many districts the regulations to ensure cleanliness of the udders and teats, and that the milker's hands are clean and free from infection, have been adopted, but in very few are efficient steps taken to enforce them.

Essex.

Dr. Thresh, County Medical Officer, has given answers to the effect following: (1) The great majority of districts enforce registration, and (2) the majority have made regulations under the Order; (3) the regulations as to floor and cubic space vary—none specify floor space, but the air space required varies from 500 to 800 cubic feet; (4) no notification is required other than that under the Infectious Diseases (Notification) Act; (5) two or three districts have empowered the medical officer of health to take a veterinary surgeon to inspect dairy cows if deemed necessary; (6) in many districts the inspector of nuisances gives special attention to dairies and cowsheds. When infectious disease occurs in the house of a dairyman, the medical officer of health insists upon whatever he considers necessary being done. There is rarely occasion to complain as to the care taken in cleansing milk vessels. (7) No authority has adopted model regulations as to washing of hands, udders, etc., and it is doubtful whether rural councils would agree to it. If such attention to cleanliness were enforced great improvement in the quality of the milk would be effected. As sanitary inspectors have other duties to discharge it is impossible for them to give the time necessary for inspection over large areas.

Gloucestershire.

Dr. J. M. Martin, County Medical Officer, informs us that: (1) Registration of producers and dealers is by no means universal in the county; (2) 5 out of 37 districts have made regulations under the Order of 1885; (3) there are no regulations as to floor space, but a minimum cubic contents of 800 cubic feet per cow is prescribed; (4) there are no special regulations with regard to notification of infectious disease, nor (5) has any action been taken to prevent the sale of milk from tuberculous cows; (6) the only supervision exercised as to cleanliness of vessels and protection of the milk from infection is such as the sanitary inspectors, often in rural districts part-time officers, may give during their ordinary visits; (7) with regard to cleanliness of cows and milkers, Dr. Martin believes that the regulations are included in those made by such authorities as have adopted any regulations at all, but he does not know how far they are enforced.

Lancashire.

We learn from the report of 1901 of Dr. Edward Sergeant, County Medical Officer of Health, that at that date the number of districts in which regulations under the Order have been made was then 101. Of the 35 districts without regulations 5 are rural, and the medical officer expresses the opinion that these districts, which are great milk-producing centres, have been, to say the least, unusually remiss in neglecting to adopt regulations for securing the health of the cows and purity of the milk supply. Five boroughs had during the year obtained powers to guard themselves against the introduction of diseased milk and to take action in case infectious disease broke out among persons engaged outside their boundaries on premises from which the borough milk is obtained. Dr. Sergeant adds that "even in districts where regulations are adopted the farms are frequently without any surveillance from the local authorities, and the conduct of dairy operations from a health point of view cannot be regarded with satisfaction. It is not easy to find a shippon without some serious defect, and I regret to say that the shippons in rural districts are, as a rule, worse than those under urban administration. Rural authorities too often adopt the mistaken policy of non-interference with cowkeepers, and appear to be quite indifferent to the danger incurred by the milk-consuming public outside their area. To save the expenditure of a few pounds, filthy, overcrowded, badly-ventilated, and generally insanitary shippons, not infrequently stocked with tuberculous cows, are allowed to remain, and many authorities even discourage the efforts towards improvement made by their officials. Inadequacy of supervision would be best provided against by entrusting councils with the duty of inspection. By such a course there would be more likelihood of efficiency, and greater uniformity would be secured than is possible under the existing régime."

Northamptonshire.

Dr. C. E. Paget, County Medical Officer, states that (1) all districts in the county now enforce registration of producers and dealers; (2) only 9 out of 12 urban districts and 9 out of 16 rural districts have made regulations under the Order of 1885; (3) in 12 districts a minimum cubic space of 800 cubic feet is prescribed, in one district the minimum is 600 cubic feet, and in 5 districts there is no regulation on the point; (4) there are no special regulations as to notification of infectious disease on the premises, and (5) he is not aware whether any steps have been taken to prevent the use of milk from cows suffering from tuberculosis of the udder; (6) supervision as to cleanliness of vessels and the protection of milk from exposure is entirely under local administration, and he has no information on this head; (7) where local authorities have recently adopted regulations, they include provisions with regard to the cleanliness of cows and milkers.

Shropshire.

Dr. J. Wheatley, County Medical Officer, has informed us that (1) registers of producers and dealers are kept by almost all authorities, but that no special efforts are made to render them complete. (2) About 60 per cent. of the authorities have made regulations under the Order of 1885. (3) By-laws with regard to minimum floor space and cubic contents vary, those most recently adopted specifying 800 cubic feet for cows not turned out regularly, but probably all the milk cows in the county are turned out. In some instances the cubic space required is less than 800 feet, and in very few is a minimum floor space specified. (4) In the case of a few authorities which adopted regulations at an early date, there was a special clause with regard to notification of infectious disease occurring on the premises. For a short time the borough of Shrewsbury employed a veterinary inspector to examine the udders of all milk cows in the borough; this has now been discontinued, and no other steps have been taken. (6) In most districts there is practically no supervision to ensure cleanliness of milk vessels and the protection of milk from infection. The visits of sanitary inspectors are so rare that no systematic inspection can be said to exist. (7) Few of the local authorities have adopted regulations to inquire that at the time of milking the udder and teats of the cows are clean, and the hands of the milkers clean and free from infection. He fears it is impossible to hope that rural sanitary authorities will maintain efficient inspection of cows. At present, although many authorities have adopted regulations, they have not provided machinery for putting them into force. The inspector of nuisances is supposed to undertake the work so far as premises are concerned, but is already fully employed in other ways. Dr. Wheatley sees no chance of the work being done properly

unless put in the hands of larger bodies—county councils or possibly the Local Government Board.

Surrey.

Dr. Seaton has called our attention to a section of his annual report for 1900 dealing with cowhouses and dairy sanitation. After giving particulars of the action taken in various districts he sums up the present situation, and points out (*a*) that the year 1900 was marked by greatly-increased interest and considerable improvement in the condition of the sources of milk supply; (*b*) that, with regard to the deficiencies which remain, "We must hope for a gradual, steady improvement in this as in other directions where financial conditions are not to be altogether disregarded"; (*c*) he observes that the question cannot be governed by purely local considerations, and states that in Surrey the medical officers of Surbiton, Woking, Reigate, Guildford, and other fairly populous places point out that these districts, which are being well attended to, suffer by importation of milk from neighbouring districts, and that it is important to secure equally good administration in all parts of the county; (*d*) that the medical officers of health are responsible for keeping themselves and their authorities informed of existing conditions; and that (*e*) periodical inspections for this purpose are necessary. In conclusion, he points out the inadvisability of publishing condemnatory views with regard to some particular source of milk supply, when at the same time no reference is made to the condition of other similar places in the district.

Warwickshire.

Dr. A. Bostock Hill, County Medical Officer, states (2) that 25 out of 26 districts have adopted regulations under the Order of 1885; (3) a minimum cubic space is insisted upon: (4) the Notification Act enforces notification of infectious disease occurring on the same premises as a dairy or cowshed; (5) no machinery exists by means of which any animal suffering from tuberculosis can be certified by a veterinary inspector; (6) in some districts there is fair supervision as to the cleanliness of milk vessels and the protection of milk from exposure to infection; (7) though many authorities have adopted regulations, the carrying of them out in some districts is very lax, particularly as regards cleanliness of the hands of persons milking the cows.

Wiltshire.

Dr. J. Tubb-Thomas, County Medical Officer, informs us (1) that a register of producers and dealers is kept but is not complete; (2) all the districts with the exception of 7 have made regulations under the Order of 1885, but (3) in only 8 is a minimum cubic space prescribed (800 cubic feet); (4) there are no special provisions with regard to notification of infectious disease on the premises; (5) the medical officer has called the attention of each district to the question of tuberculosis of the udder by a circular letter; (6) in those districts in which regulations have been adopted they embody model regulations 15 and 16: (7) model regulations to ensure cleanliness of udders and teats and the hands of milkers have been adopted in 7 districts, but Dr. Tubb-Thomas has no knowledge of any proceedings having been taken to enforce it.

Regulation 15 is as follows:

Existence of Disease among Cattle.

15. If at any time disease exists among the cattle in a dairy or cowshed, or other building or place, the milk of the diseased cow therein (*a*) shall not be mixed with other milk, and (*b*) shall not be sold or used for human food, and (*c*) shall not be sold or used for food of swine or other animals unless and until it has been boiled.

Yorkshire (East Riding).

Dr. J. Mitchell Wilson states: (1) That cowkeepers are registered in all urban districts and in about 40 per cent. of the rural districts; (2) regulations have been made in all urban districts under the Order of 1885, and in some they have been brought up to date by the adoption of the model regulations of the Local Government Board—regulations have been adopted in about 40 per cent. of rural districts; (3) the regulations which have been adopted prescribe a cubic space of from 600 to 800 cubic feet; (4) information as to cases of infectious disease on the premises is obtained under the Notification Act; (5) the reports of medical officers of health give no special information as to the prevention of the use of the milk of cows with tuberculosis of the udder; (6 and 7) the sanitary inspector notes how far the requirements as to cleanliness of milk vessels and the hands of milkers, and the udder and teats of cows are carried out in his ordinary visits to the cowsheds. Recently Dr. Mitchell Wilson gave a lecture to the sanitary inspectors of the East Riding on the regulations for dairies and cowsheds, going fully into the various questions. He hopes that in future more detailed attention will be given to the work of protecting the milk supply.

Yorkshire (North Riding).

Dr. W. H. Cheetham, County Medical Officer, informs us that (1 and 2) most of the districts have adopted registration, and that he believes regulations have been made under the Order of 1885; (3) the minimum cubic space prescribed is 800 cubic feet; (4 and 5) notification of infectious disease on the premises is enforced, and action has been taken to render the use of milk from animals suffering from tuberculosis of the udder illegal; (6 and 7) the only supervision exercised is that by the sanitary inspectors at their ordinary visits, and he is not aware that any special regulation has been made to ensure at the time of milking that the udders and teats of the cow are clean, and the hands of the milkers clean and free from infection.

Yorkshire (West Riding).

Dr. J. R. Kaye, County Medical Officer, states that: (1) During the last five years there has been a very general awakening among local sanitary authorities, chiefly as the result of action by the County Health Department, and he believes the requirement as to registration of cowkeepers, etc., is pretty generally enforced. In the annual reports for 1901 mention is made of 3,241 persons so registered in the administrative county. (2) Three years ago Dr. Kaye ascertained that regulations had been adopted by 110 out of 160 authorities, and it is probable that many of the remainder have since adopted regulations. (3) The regulations are chiefly on the lines of the Model Regulations prescribing 800 cubic feet for urban cowsheds and 600 cubic feet for rural. The floor space is not defined, except indirectly—that is, no height above 16 ft. is reckoned in calculating cubic space. (4) He considers that as notification of infectious sickness is compulsory by statute a clause prescribing such notification would be *ultra vires* in milk regulations. (5) He is not aware of an instance in which it has been necessary formally to certify a cow to be suffering from tuberculous udder. When suspicious animals are detected by the local officers the cowkeeper is prompt to dispose of same without waiting for formal machinery. (6) The supervision falls within the province of the sanitary inspectors of the respective local sanitary authorities. (7) The regulations in force are usually the "models" containing the clause 17 (5) as to cleanliness of cows and udders. The enforcement rests with the officers of the local authority. Dr. Kaye adds that a set of suggestions with regard to the construction of cowsheds and the keeping of a register of inspections, prepared by him, has been extensively circulated by the county council among local authorities, farmers, and the public generally. These suggestions have reference (1) to the best mode of constructing new buildings or premises proposed to be newly occupied as cowsheds; (2) to the improvement of existing cowsheds; and (3) as to the form of register which should be kept by every sanitary authority recording the results of periodical inspections. No cowshed should be used for housing a greater number of cows than is specified on the register, and information should be obtained on the following points: (1) Name and address of person registered; (2) situation of premises; (3) owner of premises; (4) number of sheds, with size (length, width, height, and cubic space per cow); (5) number of cows in each shed; (6) flooring (material and condition of); (7) walls, material (rough or smooth); (8) water supply (source, position); (9) lighting (number and size of windows or other lights); (10) ventilation (number and size of permanent openings, number and size of openings capable of regulation); (11) midden (distance from cowshed, open or covered, disposal of liquid manure); (12) yard (formation, paving, drainage); (13) cleanliness (general condition of floors, walls, midden, yard); (14) general drainage system; (15) disposal of drainage.

The sanitary authority of the West Riding has held conferences and organized public lectures on the means of securing pure milk supplies, and permanently good results have been achieved. The sanitary department is now engaged upon a detailed sanitary survey of the whole county, in which great attention is paid to the sanitary deficiencies of dairy premises; faulty cowsheds are measured up and the results quoted in the reports of the county medical officer, and the attention of the local authority urgently called thereto. Dr. Kaye finds that by pointing out how better internal arrangements of the stalls, provisions of head walk, water, channels, light, ventilation, etc., may be obtained, it is usually possible induce the farmer or cowkeeper of the need for alterations which end in procuring the required air space.

Combined Districts.

Atcham, Shropshire.

Dr. M. Gepp, Medical Officer of Health, states that (1) with one exception all the local authorities require registration, the inspectors keep up the registers as information is received, but no special energy is shown in enforcing registration; (2) five urban and two rural authorities have made regulations under the Order of 1885, two urban and three rural authorities have made none; (3) four authorities have adopted model regulations requiring a minimum of 800 cubic feet, but this only applies to cows not habitually turned out to graze, and it would be exceptional for cowsheds to come under these regulations. One other authority having regulations dating from 1886 requires 400 cubic feet, another with regulations also dating from 1886 require 32 cubic feet floor space and 800 cubic feet air space. The third authority, which adopted regulations in 1898, does not require any specified air space; (4) special notification of infectious disease on the premises is required by the two authorities having regulations dating from 1886; (5) in one district only, the Borough of Shrewsbury, inspection was made by the veterinary inspector for the borough of all cows on registered premises within the borough for two quarters (1900-1). Two visits at least were paid to each cowshed during this period, and it was then decided to proceed no further, partly on account of the absence of any power to make, and the failure of the corporation to secure, any veterinary inspection of cows kept in premises outside the borough whose milk was sent into and consumed within the borough. The rural district council concerned and the county council were invited to co-operate, but without success; it was decided to await the findings of the Royal Commission as to the dangers of tuberculous milk before taking further action; (6) the only supervision exercised as to cleanliness of milk vessels, and the protection of milk from infection is that afforded by the occasional visit of the sanitary inspector or medical officer of health; (7) four authorities have adopted regulation 17 (5) prescribing precautions as to the cleanliness of the cows and milkers, but it is not known that any steps are taken to enforce the regulation. The general conclusions from the experience of this district is that rural and small urban authorities fail to use the powers they could exercise. Members of rural authorities are for the most part farmers, and sometimes milksellers. They are not as a class impressed with the need for special or model measures of cleanliness in the milk trade. They object to veterinary interference, unless compensation for loss of a milch cow can be in some way guaranteed. As regards big towns, rural councils feel under no obligation to guard their interests. If rural councils are to be expected to spend public money in veterinary inspection of cows, it must be shown to be to their undoubted interest as farmers. In Dr. Gepp's opinion, the veterinary inspection of milch cows should be assigned to county councils—bodies which could carry it out economically.

Bakewell, Derbyshire.

Dr. P. S. Fenton, Medical Officer of Health, informs us that the Bakewell District Council has issued posters and handbills calling attention to the Order as to registration, and that all applications for registration receive proper attention from the inspectors; nothing further appears to be done, and there seems no probability that rural district councils will do anything unless compelled.

Bromyard, Herefordshire.

Dr. Herbert Jones, Medical Officer of Health, informs us (1) that registration of premises has recently been enforced: (2) 2 of the 7 districts in the combination have adopted regulations under the Order of 1885; (3) a minimum floor or cubic space is not prescribed; (4) the regulations enforcing the notification of infectious disease occurring on the premises. Speaking generally these are the only precautions taken.

Chertsey, Surrey.

Dr. H. Hanslow Brind, Medical Officer of Health, informs us (1) that registration is enforced and (2) that the model regulations have been adopted by 2 urban districts; another urban district is adopting regulations fixing a minimum space of 600 cubic feet, giving the power to leave out the word "retail" in Clause 17, and providing additional powers to prevent the storage of grain in or the accumulation of manure within 60 feet of a cowshed; one rural sanitary authority adopted regulations as to lighting, ventilation, cleansing, drainage, and water in 1888. (5) No veterinary surgeon has been as yet employed to inspect cows, but dairies are inspected by the medical officer of health and the sanitary inspector.

Chester, Cheshire.

Dr. G. A. Kenyon, Medical Officer of Health, informs us that (1) registration is enforced and (2) the model regulations have been adopted, (3) no regulations prescribing a minimum floor space or cubic space in cowsheds have been adopted; (4 and 5) the notification under the Notification Act is relied upon for learning of the existence of the principle infective diseases, while with regard to tuberculosis everything possible is done, and infected animals are at once removed when their existence becomes known. With regard to questions 6 and 7 Dr. Kenyon states that the machinery of inspection is not complete, and he considers that efficient inspection would need an inspector always on the spot. He adds that the action taken by Liverpool and Manchester with regard to tuberculosis in milk is beginning to have a beneficial effect, and he expresses the opinion that this is the kind of way by which alone progress can be made.

Dorking, Surrey.

Dr. J. Williamson, Medical Officer of Health (Carshalton, Dorking, Epsom, Leatherhead), informs us: (1) That registration is strictly enforced. (2) That the model regulations were adopted in 1899. (3) That minimum floor space and cubic contents (800 cubic feet and floor space 50 square feet) are prescribed only in the case of cowsheds "from which the cows are not habitually grazed on grass land." A representation however is made to the cowkeeper in the case of any shed in which the space is much below this standard. (5) The Epsom Urban District Council has appointed a veterinary inspector who examines the cows quarterly. No case of tuberculous udder was discovered last year; in the previous year four cows with this disease were disposed of to be slaughtered. No appointment has been made in other districts. (5 and 6) Vessels are examined in the ordinary course of inspection, and it is required that apparatus for boiling water be easily accessible. The regulations with regard to cleanliness of vessels are complied with generally. No person is allowed to take part in a milk business while residing in a house in which there is a case of infectious disease. The cowkeepers in these districts are always willing to assist the authorities by giving their cowmen who have been in contact with a case of infectious disease some other work on the farm for a fortnight after the removal of the case. (7) Regulations as to cleanliness of cows and milkers are in force, and the attention of cowkeepers and cowmen is drawn to the requirements when premises are visited. Dr. Williamson adds that though inspection in some of the districts has not in the past been very satisfactory, and though some difficulty has been experienced in getting councils to enforce certain regulations, yet in both respects considerable progress has been made during the last few years, and the authorities show increasing appreciation of the necessity of complying with the regulations.

East Kent.

We are indebted to Dr. M. K. Robinson, Medical Officer of Health, for the information that (1) public notices have been issued pointing out the necessity for the registration of dairies, etc.; the inspectors call attention to any cases in which they find that premises have not been registered. (2 and 3) The local authorities have made regulations under the Order of 1885, and have prescribed 800 cubic feet as a minimum cubic space. (4) The notification of infectious disease on the premises is provided for by the Notification Act. (5) The risk attending the use of milk from cows suffering from tuberculosis of the udder has been pointed out to dairymen generally, and the inspectors have instructions to make a visit if necessary. Professor Koch's statement has much interfered with further action. (6) The regulations in force forbid persons from depositing milk in places where it is liable to become infected. (7) The local authorities have adopted model regulations 17 (5).

Guisborough, Yorks.

Dr. W. W. Stainthorpe, Medical Officer of Health, states that (1) advertisements are inserted in the local papers and handbills issued calling attention to the necessity for registration; (2) all the authorities except one have made regulations under the Order of 1885; (3) there is a clause prescribing the cubic space per cow, but this does not apply where the cows are habitually grazed on grass land during the greater part of the year; (4) the Infectious Disease (Notification) Act

is found to be sufficient to ensure the notification of infectious disease; (5) no special regulation exists with regard to tuberculosis; (6) when inspections are made the condition of the vessels is examined; (7) the authorities have adopted the model regulations as to cleanliness of cows and milkers, but it is found that their enforcement would be difficult unless special inspectors are appointed.

Holme, Yorks.

Dr. R. H. Trotter, Medical Officer of Health, informs us that (1) two of the districts enforce registration strictly, and one with some laxness; (2) two of the districts have model regulations, one has regulations which require revision, and the fourth has no regulations. (3) In the two districts which have model regulations the cubic space prescribed in 800 cubic feet per cow. (5) No action has been taken by any of the authorities with regard to tuberculosis. (6) There is no especial supervision as to the cleanliness of milk vessels and the protection of milk from infection, and such infection would, it is thought, be impossible unless there was an inspector who could devote his whole time to the work. As it is, 3 of the districts have to be combined in order to provide an adequate salary for one inspector, and in addition to his ordinary work, one or two visits to each cowshed in a wide and scattered district in each year is all that can be managed. Even in the fourth district, which has its own sanitary inspector, adequate supervision of cowsheds is practically impossible. (7) One district has adopted model regulations with regard to cleanliness of cows, and milkers, but in the absence of supervision the matter is necessarily left to the milk dealers.

South Westmorland.

Dr. R. Musgrave Craven informs us that (1) registration is nominally enforced in all the 9 districts of the combination, but that the registers are not produced for his inspection. (2) One urban and 1 rural district have adopted the regulations under the Order of 1885. (3) No minimum cubic space is prescribed. (4) The regulations require notification of infectious disease on the premises. (5) With regard to tuberculosis, milk vendors in Kendal were warned that a bacteriological examination would be made; samples were accordingly taken, and all were found free from the tubercle bacillus. In one rural district the regulations require that milk shall be taken when tuberculous disease of the udder is suspected. The county of Westmorland is necessarily agricultural and butter-producing. In spite of careful inquiries by the county council through its veterinary inspectors and the press, not one case of tuberculosis of the udder has been discovered. (6) There is little or no supervision with regard to cleanliness, but in Westmorland infectious cases are removed to hospital even as far as thirty miles by road ambulance. (7) Model regulations as to cleanliness of cows and milkers have not been adopted, and there is practically no inspection.

Ulverston, Lancs.

Dr. G. H. Patterson, Medical Officer of Health, informs us that (1) the urban districts in the combination enforce the Order as to registration, but that the rural districts carry it out very imperfectly. (2) All the authorities have made regulations under the Order of 1855, but (3) the cubic space is not specified. (5) No special precautions are taken with regard to tuberculosis. (6) Two urban district councils employ an inspector. (7) The model regulations as to cleanliness of cows and milkers are not enforced, and it seems improbable that farmers, or persons interested in farmers, will spontaneously put such regulations into force.

Carnarvon.

We learn from Dr. P. Fraser that (1) a register is generally kept in the urban districts by the authorities, and that recently some of the principal rural districts have commenced registering. Most of the milk sold in rural districts is in small quantities to neighbours; (2) a considerable number especially of the rural districts have not adopted regulations under the Order of 1885; (3) regulations prescribing minimum floor space and cubic contents are not as a rule in force; the minimum cubic space he recommends is 600 cubic feet; (5) action with regard to tuberculosis has been taken to a limited extent only, the sanitary inspectors if they suspect a cow to be suffering from tuberculosis of the udder would call in a veterinary surgeon, and Bangor has appointed a veterinary inspector; (6) the only supervision exercised as to the cleanliness of milk vessels and the protection of milk from infection is afforded by the ordinary supervision of premises by the sanitary inspectors. (7) No regulations have been adopted with regard to the cleanliness of cows or milkers. Dr. Fraser adds that a large part of the milk sold in the rural districts in the county of Carnarvon is produced by farmers who sell "milk of their own cows in small quantities to their workmen or neighbours for their accommodation;" by the Dairies Order 1885, Section 6, Subsection (6), they are apparently therefore not subject to registration. Special veterinary inspectors appointed by the county council and acting in co-operation with the local sanitary authorities seem to be required to supervise the milk supply in the country; the sanitary authority ought to have the power to stop a milk business in case of failure to comply with a notice.

EPIDEMIC SORE THROAT AND SUPPURATIVE MAMMITIS IN COWS.

WE are indebted to Dr. R. W. C. Pierce, Medical Officer of Health for Guildford and Woking, for the following valuable report which he addressed on Saturday last, November 28th, to the Woking Urban District Council:—

My attention was first drawn to the prevalence of cases of sore throats, about the beginning of October, by the receipt of several swabs from medical men taken from the throats of patients whom they suspected to have diphtheria. The majority of the swabs, however, gave no evidence of the presence of the diphtheria bacillus, but only of the organisms commonly found in severe cases of sore throats. The initial cases having thus been proved not to have been due to diphtheria, the subsequent cases did not come under my notice until the end of October, when I was informed of the apparently infectious nature of the sore throats, which had in some instances terminated fatally. Having obtained some particulars as to the character and distribution of the cases, I was at once led to suspect the milk supply as a possible source of the epidemic. On November 11th one of the medical men in the district took me to see several of his patients, whom I found to be suffering from sore throats of different grades of severity, some being cases of ulcerated sore throat or follicular tonsillitis, and others being cases of quinsy. In several instances there was marked enlargement of the glands of the neck, which in some cases broke down into abscesses and in others remained persistently enlarged. There was very considerable constitutional disturbance in the way of headache, pains in the back and limbs, and fever. In several instances, also, there were joint pains after a few days, which was probably due to the extension of the infective matter into the joints. Unlike an epidemic of diphtheria, there was a distinctly larger number of adults affected than young children. There was a history in a great many instances of the throat affection having occurred in several members of a household, either simultaneously or in succession, which latter fact suggested that the illness was infectious. Several cases developed erysipelas of the face and neck, which were subsequently notified as such. On inquiring into the milk supply of the 7 households thus visited, I found that the supply of 6 out of the 7 was obtained from 2 dealers. These dealers were found to derive their milk, one from 2 sources, both without the district, and the other from 5 sources, 4 of which were outside the district. It was noted, however, that one of the sources was common to both. In order to further confirm my suspicion, I approached several medical men, who gave me every assistance, either by handing me a list of their patients or offering to make inquiries as to the milk supply themselves. On November 12th, with the assistance of the sanitary inspector, visits were paid to about 50 houses where cases had occurred and doctors had been called in. Information was obtained altogether of 98 infected houses and out of this number it was found that no less than 76 obtained their milk from the two dealers in question—48 from one and 28 from the other, whilst the remaining 22 households derived their supply from 9 other different dealers, the numbers of households supplied by the several dealers being 5, 3, 3, 3, 2, 2, 2, 1, 1. Of these 9 dealers, 4 do approximately the same amount of business and supply the same area as the 2 suspected dairies. The 22 exceptions may be accounted for by—

1. The practice of milkmen of borrowing milk from one another on their rounds.
2. The practice of householders in occasionally buying extra milk from passers-by.
3. The conveyance of infection from one house to another.

4. The possibility of the milk being similarly impure, but to a less extent.

5. By making allowance for the prevalence of the usual number of sore throats at this time of the year.

My suspicions being thus confirmed as to the implication of the milk supply, on November 13th I asked Mr. Wild, the veterinary inspector to the Council, to accompany me to a farm in Hersell, which was the source common to the two milk dealers, for the purpose of examining the cows. We were also accompanied by the medical officer of health for the Chertsey Rural District, in whose district the farm is situated. Mr. Wild examined the milk yielded by each quarter of the udders of the 20 cows, with the following result:—From first cow, dirty pinkish milk from 1 teat, the 3 others normal. Second cow, pinkish thick curdy matter from 2 teats, which settled on standing into an upper half of reddish brown liquid a half of a layer resembling pus, or so-called matter. Third cow, two teats gave similar matter to cow No. 2, but not so coloured. No. 4, three teats gave similar matter to No. 3 cow, and the fourth teat gave coagulated milk. It must be mentioned here that although No. 4 cow was housed with the other the farmer denied that her milk was mixed with the rest. The information was elicited that the farmer had suffered from a quinsy sore throat about the middle of September, and that he had had pains in his joints subsequently and was disabled for at least a month. Moreover, the other members of his family had also had sore throats.

Bacteriological examinations were then made of the four samples obtained at the farm, as well of the samples of the mixed milk from the farm as delivered to the 2 milk dealers. In single loopfuls, namely, about one-tenth of a drop of the liquids, distinct evidence was found of the presence of organisms—streptococci and staphylococci—similar to those usually associated with severe cases of sore throats, and similar, if not identical, with those already found in swabs from the throats of persons affected. The liquids yielded by cows Nos. 2 and 3 consisted for the most part of pus such as would be contained in an abscess. It was the custom to send the afternoon's milk to Woking in the evening, and it was kept there overnight for distribution next morning. This keeping of the milk would contribute enormously to the growth of the organisms concerned, so that every drop would be thoroughly impregnated with the infection before it reached the consumer.

On November 14th the results of the inquiry were communicated to the two milk dealers, who have not taken in any of the milk from the farm since that date; and as far as I have been able to ascertain there has been a corresponding cessation of the epidemic.

The evidence, therefore, of the infectiousness of the milk in question is of an overwhelming character and to my mind quite convincing. The possibility of a similar pollution taking place in other dairies in the district deserves the serious consideration of the Council. It is noteworthy that external examination of the diseased udders gave no indication of the conditions such as would be yielded by tuberculous udders. It was only by the actual milking of the cows that the inflammatory conditions of the udder was revealed. It is therefore obvious that nothing short of a similar periodical examination of milking cows in addition to the general examination for tuberculosis will safeguard the district against a similar occurrence in future.

CENTRAL MIDWIVES BOARD.

We have received the following report from the Secretary of the Central Midwives Board:

At a meeting of the Central Midwives Board, Dr. F. H. Champneys in the chair, held at the Board Room, 6, Suffolk Street, S.W., on November 26th, the following business was transacted:

1. Letters were read from the Clerk of the Worcestershire County Council and the Medical Officer of Health for the County Borough of Croydon, inquiring whether illiterate women, unable to sign their own names, were eligible for enrolment as midwives under the Midwives Act.

The Secretary was instructed to reply that in the opinion of the Board the express terms of Section 11 of the Act gave the Board no option to refuse an application from an illiterate woman otherwise qualified under the section.

2. In the case of a claim for enrolment on the ground of having been in bona-fide practice for the statutory period within the Commonwealth of Australia, the Board decided that as there was nothing in the Act to limit the area of practice to the United Kingdom, the claim might be admitted if otherwise eligible.

3. The following matters were, after discussion, referred to the Standing Committee for consideration and report:

1. Application of the Dundee Maternity Hospital for recognition of its certificate as an approved qualification under Section 11 of the Act.

2. Claims for enrolment on the qualification of holding a certificate from one of the following bodies, not hitherto approved by the Board under Section 11:

(*a*) Sir Patrick Dun's Maternity Hospital, Dublin.
(*b*) Hospital for Women and Children, Lupus Street, S.W.

3. Applications for recognition as approved institutions for the training of midwives under Section c of the Rules:

(*a*) District Nursing Association, St. James's Square, Cheltenham.
(*b*) Maternity Charity and District Nurses' Home, Plaistow.
(*c*) Brighton and Hove Hospital for Women.

Together with others already received.

4. After consideration of applications for certificates the names of 213 women were passed under Section 11 of the Act, and ordered for entry on the roll. Of this total, 61 claimed as holding the certificate of the Obstetrical Society of London, 4 that of the Rotunda Hospital, Dublin, 5 that of the Glasgow Maternity Hospital, and 143 were admitted as having been in bona-fide practice for one year prior to July 31st, 1902.

5. Draft Rules of Procedure on proposed restoration to the Roll of a name removed were considered, amended, passed, and ordered to be submitted to the Privy Council for approval.

SCOTTISH EXAMINING BOARD FOR OBSTETRIC NURSES.

At a meeting of the physicians and assistant physicians of the Scottish maternity hospitals held in Edinburgh on November 9th, with Professor Simpson in the chair, a Scottish Examining Board for Obstetric Nurses was formed. The Board is for the purpose of examining and granting certificates to obstetric nurses, and consists of the physicians and assistant physicians of the maternity hospitals of Edinburgh, Glasgow, Aberdeen, and Dundee. The examinations, written and oral, are to be held quarterly; the written is to take place simultaneously in each of the four centres (Aberdeen, Dundee, Edinburgh, Glasgow) on the last Friday of January, April, July, and October; the oral is to follow a week later alternately at Edinburgh and Glasgow. It is trusted that the directors of the maternity hospitals of these two towns will give their consent to the oral examinations being held in them.

Only those nurses who have had six months' training in a maternity hospital of not less than ten beds, or three months' training in a maternity hospital and not less than three years' training in a general hospital, shall be eligible for examination and for the certificate of the Board. The fee for examination is one guinea for a first appearance, and half a guinea for each subsequent appearance.

Professor Simpson was elected President of the Board for the first year; and a Committee consisting of Professor Stephenson (Aberdeen), Professor Murdoch Cameron (Glasgow), and Dr. Buist (Dundee), with the President (Professor Simpson), and the Secretary (Dr. W. Fordyce), was appointed to carry out the arrangements.

The examination and certificate of the Board are not intended to take the place of the examinations and certificates at present being held and granted by the maternity hospitals of the four towns above mentioned; but it is hoped that many obstetric nurses will take the additional training required to enable them to appear for examination before the Board. Details as to the mode of application, etc., can be had from the Secretary, Dr. Fordyce, 20, Charlotte Square, Edinburgh.

At a recent meeting of the Royal Meteorological Society a paper was read by Dr. H. R. Mill and Mr. R. G. K. Lempfert on "the great dust fall of February, 1903, and its origin." Maps were exhibited which showed that the dust fell on February 21st or 22nd over nearly all parts of England and Wales south of a line drawn from Anglesey to Ipswich. It attracted attention either in the form of a dense yellow haze like a London fog or as a yellowish-red powder lying thickly on roofs and trees. Its fall was accompanied by temperatures considerably above the average and very low relative humidity. The dust consisted largely of a fine-grained reddish clay which was certainly not of British origin, and from a study of the winds prevailing at the time the authors came to the conclusion that the dust reached England from the north-west coast of Africa via the Azores.

ASSOCIATION NOTICES.

COUNCIL.

NOTICE OF MEETING.

A MEETING of the Council will be held in the Council Room of the Association, at 429, Strand (corner of Agar Street), London, on Wednesday, the 20th day of January next, at 2 o'clock in the afternoon.

November, 1903. GUY ELLISTON, *General Secretary.*

COUNCIL.

NOTICE OF QUARTERLY MEETINGS OF COUNCIL FOR 1904.

MEETINGS of the Council will be held on Wednesdays, January 20th, April 20th, July 6th, and October 19th in the Council Room of the British Medical Association, 429, Strand, London, W.C.

ELECTION OF MEMBERS.

ANY candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are fitted up for the accommodation of the Members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 a.m. to 5 p.m. Members can have their letters addressed to them at the office.

RESEARCH SCHOLARSHIP.

OWING to the resignation of a scholar the Council is prepared to consider applications for the portion of the unexpired scholarship of the value of £150 per annum. The successful candidate is eligible for re-election in July, 1904.

Forms of application and terms of appointment can be obtained on application, and must be returned on or before December 31st, 1903, to

GUY ELLISTON,
General Secretary, British Medical Association,
429, Strand, London, W.C.

BRANCH MEETINGS TO BE HELD.

BATH AND BRISTOL BRANCH: TROWBRIDGE DIVISION.—The inaugural meeting of this Division will be held in the Council Room, Town Hall, Trowbridge, at 3 p.m. on Tuesday, December 8th, when an address on Some Dangers and Difficulties in the Surgical Treatment of Appendicitis will be given by Mr. Albert Carless, M.B., M.S., Surgeon to King's College Hospital. The members of the Division will be pleased to welcome any practitioners from the county of Wilts or neighbouring Divisions, whether members of the Association or not. At the close of the meeting tea and light refreshments will be provided by the ladies of the Trowbridge Division.—JOHN TUBB THOMAS, County Offices, Trowbridge, Honorary Secretary.

BORDER COUNTIES BRANCH.—The next meeting of this Branch will be held on Friday, December 11th, in the Dumfries and Galloway Royal Infirmary, Dumfries. The meeting will be a clinical one. Drs. Clarke, Kerr, Grieve, and Livingston have promised to show cases; Dr. Donald (Carlisle) will read a short paper on the Electrolytic Treatment of Naevi. There will also be an opportunity of discussing the Medical Acts Amendment Bill, and it is intended that members shall dine together at the Station Hotel after the meeting. A notice will be sent to every member of the Branch giving the hour of meeting and allowing him an opportunity of notifying his intention of dining or not.—FRANCIS R. HILL, 62, Warwick Road, Carlisle, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: CITY DIVISION.—A general meeting of this Division will be held on Thursday, December 17th, at 4 p.m., in the Lincolnshire Room of the Great Eastern Hotel, Liverpool Street, E.C. Agenda: Minutes of last meeting and correspondence. Medical Acts Amendment Bill. Vaccination Acts: Resolutions relative to future legislation. Resolution respecting the representation of the British Medical Association upon the General Medical Council. (N.B.—The full text of the Medical Acts Amendment Bill and the various resolutions will be found in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL, August 22nd, 1903.) The Organizing Secretary of the Association, Mr. J. Smith Whitaker, M.R.C.S., L.R.C.P., will be present, and will speak on the work which the Association will undertake to promote the welfare of the profession. Any such business as may arise.—E. W. GOODALL, Eastern Hospital, Homerton, N.E., Honorary Secretary.

SHROPSHIRE AND MID-WALES BRANCH.—The next meeting of the Clinical and Pathological Section of this Branch will be held at 5 p.m. on Tuesday, December 15th, at the Salop Infirmary. Members who wish to read communications or show cases or specimens are requested to communicate with the Honorary Secretaries before Tuesday, December 8th. It is hoped that every member will endeavour to attend this meeting.—HAROLD H. B. MACLEOD, LEONARD J. GODSON, Shrewsbury, Honorary Secretaries.

SOUTH-EASTERN BRANCH: REIGATE DIVISION.—A special meeting of this Division will be held at Laker's Hotel, Redhill, on December 10th, 1903, at 4 p.m., for the purpose specially of considering questions referred by the Representative Meeting and Council of the Association to the Divisions, namely: (1) Six resolutions as to the reforms required in the vaccination law; (2) proposed Medical Acts Amendment Bill; (3) the advisability of petitioning the Privy Council in favour of direct representation of the British Medical Association on the General Medical Council. The text of the resolutions above referred to and of the Medical Acts Amendment Bill will be found in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL for August 22nd, 1903. Members are requested to bring their copies of this SUPPLEMENT to the meeting.—W. A. BERRIDGE, Oakfield, Redhill, Honorary Secretary.

SPECIAL CORRESPONDENCE.

VIENNA.

An Antivivisectionist Movement: Conflict between Public Opinion and Politicians: New Regulations to be made.—Measuring the Blood Pressure in the Heart.

GREAT excitement prevails among the profession in the whole of Austria, and its effects are also felt in Germany, which is closely connected in all affairs of science and scientific work with our country, owing to the conflict between the Medical Faculty of Vienna and the Clerical majority of the Austrian Diet. The question of vivisection was the cause of the storm. The gynaecological and obstetrical department of the General Hospital is under the supervision of the officers of the Diet, and one of these officers saw during a visit of inspection some guinea-pigs and rats kept in the clinical laboratory for bacteriological examinations. He at once requested the directors, Professors Schauta and Chrobak, to have these animals removed from the premises, as vivisection could not be allowed in the hospital. Upon their refusal the matter was brought to the knowledge of the President of the Diet, and in open session some members of the anti-Semitic party vehemently attacked the above-named professors and the profession as a whole, and accused them of unnecessary cruelty towards mankind and animals. The representative of the Government failed to repel the attacks, and even seconded the resolution of the anti-educational majority, condemning the pretended cruelty of medical science. A storm of anger on the part of the educated classes of the public was aroused. The students, including many not belonging to the Medical Faculty, arranged street demonstrations against certain members of the Diet. The Senate of the University of Vienna passed an indignant resolution against the attacks on the freedom of science and research. The *Arztekammer*, or representative board of practitioners, which is responsible to the Government for the whole of the profession, resigned its functions as an answer to the inactivity of the Government in protecting the honour of their constituents. This antiscientific action by politicians is in accord with the former attacks on prominent German and Austrian physicians of world-wide fame, and will tend to prevent eminent men from accepting a call to the posts of several clinics now vacant. The loss will be entirely on the part of our old city, which is slowly losing the reputation in medicine founded by Skoda, Billroth, and other great men, all of whom had to resort to vivisection as a principal means of investigation. The movement to restore the position of medicine and repel the malignant attacks is, however, growing day by day in force, and the practice of vivisection will be regulated by new laws, giving full liberty to make researches on living animals for strictly scientific purposes. Thus the attacks will be beneficial to our profession, giving lawful rights where hitherto only a few regulations were in force. The calumnious statements by men entirely unqualified to criticize hygienic institutions were refuted by statistics in the daily press, supplied from impartial sources. All the beneficial results obtained by vivisection, such as the discovery of serum treatment, the diagnosis of typhoid fever, the malaria treatment, the investigations into the nature of putrid infection, were explained to the public, and thus the general mind was made to see clearly on this question.

Professor Gaertner, the well-known pathologist, who has made a special study of the variations of blood pressure in normal and diseased conditions of the body, has succeeded in devising a new method for measuring directly the pressure, or rather the minimum of pressure existing at any given time in the right atrium of the heart. The veins standing in direct communication with the auricle form uninterrupted tubes and can thus be used as a manometer; a simple reflection will show that under normal conditions a vein which can be brought to the level of the mouth of the vena cava in the right heart, must stand under the same pressure as the right atrium. Very numerous experiments have been made at the clinics of Professors Neusser and Pál, which gave remarkable results. If the lowered arm of a healthy person, on which the veins form prominent cords, is raised slowly, the veins will suddenly collapse, when the observed vein is on a level with the atrium venosum dextrum, that is, at the height of the cartilage of the third to the fifth rib. The difference between the height at which this phenomenon takes place, and the height of the tricuspidal valve, measured by the weight of the corresponding blood column, is the pressure in the atrium. Experiments based on these reflections gave the following results: The pressure in the atrium was found higher than normal whenever other examinations tended to make a stagnation in the pulmonary circulation probable. Thus in all cases of diseases of the mitral and tricuspidal valves, in pericarditis, pleuritic exudation, pulmonary emphysema, pneumonia, and advanced phthisis. In making the experiment it is necessary to loosen all tight clothes, to stretch the arm, and keep it in slight pronation. Only thin veins should be chosen for observation, as veins with thickened or fibrotic walls will not collapse at the right height. The arm is slowly raised, and at a certain moment the veins collapse. Then the difference of height (in centimetres) is measured simply by measuring how far in perpendicular direction the vein is distant from the level of the tricuspidal valve, which can be found either by means of the stethoscope or by Roentgen rays. If the pressure is very high it may even be necessary to raise the arm above the head of the patient, generally a difference of 10 to 40 cm. (4 to 16 in.) was found, compared with the normal pressure of about 2 cm. (¾ in.). It is remarkable that higher atrium pressure was found in cases where the patient complained of uneasiness in the heart region, whilst in all other cases examinations failed to detect any organic lesion of the heart. Thus Gaertner's method will surely be a very useful addition to the physical methods of examination.

MANCHESTER.

Treatment of Cancer Patients.—Victoria Dental Hospital.—Journey of a Roumanian Medical Student.—Amalgamation of Owens College with the University.—Appointments at the Royal Infirmary.

From the annual report of the Christie Hospital, Manchester, we gather that there were 101 in-patients and 85 out-patients during the year. An exhaustive clinical and pathological report on the cases treated during the past ten years is promised by the medical staff. Fourteen patients were treated with the *x* rays; ten were not benefited; in two an improvement was noted, one healed and one was nearly healed. So far no benefit had been obtained in deep-seated and malignant forms of cancer, a result that is in accord with that of other observers. On the other hand, the treatment was successful in the majority of cases of rodent ulcer. It was still too early to say whether recurrence would be less common than after surgical operation.

At the annual prize distribution of the Victoria Dental Hospital, the Dean of the Dental School stated that 20,000 patients were treated annually at the hospital. The hospital, however, is also the training ground for the already large number of dental students—twenty-nine—who are studying at Owens College and the Victoria Dental Hospital. During the present year twenty of the students passed the final dental examination and obtained the L.D.S. diploma—a larger number than in any previous year. Those who have qualified from this hospital since it was started, in 1884, number 119.

The young medical student, Oskar Radvaner, who is making a "moneyless" journey round the world, visited the medical department of Owens College on November 23rd and gave an account of his journey. Mr. Radvaner left the University of Bucharest in the summer of 1900, and traversed Western Russia from south to north. With a passport given him by the Tsar he travelled through Siberia and Manchuria to China, thence to India, Persia, and Asiatic Turkey. He next made a tour of European Turkey and Greece, and, passing through Eastern Europe, Austria, Germany, Belgium, and Holland, he reached Rotterdam, where he took ship to Harwich. Mr. Radvaner walked to London and afterwards visited Sheffield and Liverpool. During his travels Mr. Radvaner had many notable experiences. He was stricken with plague in Bombay, made a prisoner by insurgents in Macedonia, and was in Belgrade when the King and Queen of Servia were murdered. Before he finishes the task he has set himself to accomplish he purposes, after walking through European countries he has not yet visited, journeying through the African continent from north to south and visiting South and North America and Canada.

The Owens College has now taken the definite step of obtaining Parliamentary powers to merge the College in the Victoria University of Manchester. The Act it is proposed to apply for has been published.

The Chairman of the Infirmary Board, Mr. John Thompson, was elected to be the first representative of the Board on the Court of the University of Manchester. On the recommendation of the Appointments Committee the following appointments were confirmed: Medical Officer for Home Patients, Dr. A. C. Sturrock; Assistant Medical Officer, Dr. W. R. Matthews; Senior Anaesthetist, Mr. Alexander Wilson, F.R.C.S.; Third Anaesthetist, Mr. M. B. Wilson, M.B., Ch.B. (Vict.); Accident-Room House-Surgeon, Mr. E. Hawey Cox, M.B., Ch.B. (Vict.). On the nomination of the Medical Board and on the recommendation of the Infirmary Committee the following appointments were confirmed: House Physicians, Mr. J. C. Smythe, M.B., Ch.B. (Vict.), and Mr. G. Coogan, M.B., Ch.B. (Vict.); House-Surgeons, Mr J. Arnold Jones, M.B., Ch.B. (Vict.), L.S.A., and Mr. W. E. Rothwell, M.B., Ch.B. (Vict.). The appointments were for various periods up to a year.

CORRESPONDENCE.

BAYLISS v. COLERIDGE.

Sir,—May we ask you to be good enough to give publicity in your columns to the following undertaking and apology which we have obtained from the publisher of *The Shambles of Science*, a work intimately associated with the above action? We may state that the terms of Mr. Bell's undertaking have been complied with.

To Dr. W. M. Bayliss, "St. Cuthberts," West Heath Road, Hampstead; and To Messrs. Hempson, 35, King Street, Cheapside, E.C. (his Solicitors).

I, the undersigned Ernest Bell, of 5, York Street, Covent Garden, London, W.C., the printer and publisher of a book entitled *The Shambles of Science*, the authors of which are Lizzy Lind Af Hageby, and Leisa K. Schartau, and which book contains therein certain matter libellous upon Dr. Bayliss, hereby acknowledge that I have given instructions for the withdrawal from circulation of all copies of such book, and hereby undertake that no further copies of such book shall be printed or published by me, that the circulation of such book shall cease, and that all copies in stock and withdrawn from circulation shall be handed over to Messrs. Hempson, Dr. Bayliss's Solicitors; and I hereby express to Dr. Bayliss my sincere regret for having printed and published the book in question.

Dated this 25th day of November, 1903.

Ernest Bell.

Witness, Henry Rayment.

In the interests of truth and of science it is desirable that it should be publicly known that the circulation of the book has been suppressed.—We are, etc.,

Hempsons,
London, E.C., Nov. 28th. Solicitors for Dr. W. M. Bayliss.

ST. BARTHOLOMEW'S HOSPITAL.

Sir,—I am glad to find that Mr. Andrew Motion has not the hardihood to repeat his statement that "the views of the staff have never reached the governors."

My object in writing has been attained, and I thank you for the opportunity you have afforded me of proving beyond the possibility of contradiction that no one can truthfully say that the staff did not inform every one of the governors most fully of their opinions more than two years ago.

I will only add that I did not expect Mr. Motion to be able

to give satisfactory answers to my questions as to what action he has taken in the past; neither do I regret his reticence. My questions have quite satisfactorily answered themselves, for Mr. Motion's silence is more eloquent than many words.—I am, etc.,

December 1st. A St. Bartholomew's Man.

SIR VICTOR HORSLEY'S ADDRESS AT NEWCASTLE.

Sir,—I am requested by the Secretary of the Northumberland and Newcastle Medical Association to announce to members of the North of England Branch of the British Medical Association that Sir Victor Horsley will give an address on medical politics on Wednesday, December 9th, in the College of Medicine, Newcastle-on-Tyne, at 4.30 p.m. At 7.30 on the same day the annual dinner will be held at Tilley's Restaurant, Blackett Street. Tickets, 7s. 6d. each. A cordial invitation to both events is given to all members of the Branch, and I trust that the medical men of the district will turn up in large numbers to testify both their interest in the subject of the address, and their respect for the speaker. Those intending to attend the dinner are requested without delay to notify Dr. D. W. Patterson, Cardigan Terrace, Newcastle-on-Tyne.—I am, etc.,

Alfred Cox,
Gateshead, Nov. 30th. Honorary Secretary.

THE MEDICAL ARRANGEMENTS IN THE SOUTH AFRICAN WAR.

Sir,—I have read with somewhat mixed feelings the evidence of Professor Ogston and Sir Alfred Fripp on the medical arrangements in the South African war. With much I cordially agree, with much I do not, and I claim, with 24 years' experience, to know more of the internal economy of the R.A.M.C. than either of them. Neither of these gentlemen, nor the Advisory Board, nor anyone else, so far as I have heard, have struck the keynote, namely, the English and Indian Budgets. Increase the medical vote, make the medical department a spending department (which it is not at present), and in a few years, if I know anything of my "incompetent" brother officers, we shall see what we shall see. It may be news to some of our critics to know that in the face of the *non possumus* of no money, a general, "titled" or otherwise, is just as powerless, or shall we say "incompetent," as "the-first-two-page-Army-List" medical officer. Sir Alfred Fripp dimly sees this when he talks about £20,000 being granted next year. "Next year" is instructive. I think, and hope, we will get it, and we shall be largely indebted to our civil brethren for it. Unfettered by red tape, untrammelled by the restrictions of discipline, living outside of our environment, perchance it may haply prove that their's is not "a voice crying in the wilderness."

A little knowledge is a dangerous thing and I think it would have been more judicious if our civilian critics had confined themselves to strictly professional questions, on which they are eminently competent to speak, and left other matters severely alone. The doctor in the army is neither better nor worse than his civilian comrade. Both in equal proportion are good, bad, and indifferent. Sweeping condemnatory generalizations *re* want of professional pride, rank, skill, discouragement of enthusiastic juniors, etc., etc., are uncalled-for, untrue, and somewhat discourteous. Better far to leave such matters to the good sense of the R.A.M.C. themselves.

I hail with unalloyed satisfaction the promise of reform which looms so brightly in the future; I afford the full measure of praise to those who have pressed and are pressing it forward; but, I would add, it is the fruition of what my brother officers have been struggling for ever since I entered the Service—honour to whom honour is due, and a goodly portion of it is theirs.

With all due deference to Sir Alfred Fripp, I must say that his picture of the "quaking" and "chattering-kneed" medical officer is fantastic. Somewhat mixed metaphor, too, is it not? "Chattering" knees are not a common physiological or pathological phenomenon. I have never quaked, nor chattered either; I never saw any cause to. My own experience of the service is that the vast majority of officers, medical and others, try strenuously to struggle towards efficiency against difficulties which only they can appreciate and understand. That we have advanced I know; that a psychological moment in that advance has arrived I hope. The efficiency of the service in all its branches is what we, as patriotic Englishmen, have earnestly at heart; and if the medical branch is one of the weakest links in the chain, as I believe it is, I am certain that no thinking, or even moderately intelligent, officer will not do his utmost to strengthen that link irrespective of petty personal prejudices.—I am, etc.,

R. H. Forman, Lieutenant-Colonel R.A.M.C.

Bangalore, November 2nd.

THE PRODUCTION OF MILK FOR INFANTS.

Sir,—Dr. Ralph Vincent, in his interesting letter, published in the British Medical Journal of November 28th, page 1436, was good enough to ask my opinion as to the necessity for the more careful inspection of dairy farms.

I quite agree with him that monthly inspection, even of the most rigorous kind, and by well-qualified inspectors, is practically useless. Until there is a system of frequent inspection by Government inspectors, employed solely for that purpose, and working independently of councils and local influence, who will continually pay surprise visits and prosecute whenever necessary, the magistrates backing them up by making examples, the farms will remain, so far as administrative control is concerned, in their present filthy state, and bacteria-laden milk will be supplied to a trusting public.

It is to be hoped, however, that the regrettable outbreak of illness at Woking, caused by milk from diseased cows, may have for effect not only the waking up of the Local Government Board and the Board of Agriculture to a sense of their responsibilities, but the opening of the eyes of the public to the danger they incur by blindly accepting as pure anything looking like fresh milk with which their milk shop chooses to supply them.

One can never repeat too often that with mothers and housekeepers lies the handling of this national problem. Let them refuse to deal at any shop without first visiting the farm or farms supplying that shop. This seems simple enough and not unreasonable to ask.—I am, etc.,

The Writer of the Articles on the Milk Supply of Towns.

Dec. 1st, 1903.

Sir,—I quite agree with Dr. Ralph Vincent that an undue confidence in a monthly certificate, given by municipal bodies to milk dealers under their supervision, would be foolish. But half a loaf in better than no bread. A daily inspection of the milk farm, of the cows, of their food and water supply of the mode of cooling the milk and its transportation, and a daily analysis of the milk, would no doubt be more perfect measures; but it is somewhat Utopian to think that there is any prospect of such complete measures being carried out. They are not always essential, for as a matter of fact all milk dealers are not engaged in trying to evade the regulations which they bind themselves to observe when taking certain milk contracts. Dr. Vincent somewhat misrepresents me. I did not suggest a monthly certificate as a solution of the problem. Bearing in mind the old saying, *Festina lente*, I proposed, as one means of lessening the infantile mortality, the provision of a good milk supply, which would be within reach of the poor and might in certain circumstances be obtained gratuitously.

It is useless to expect good results from feeding infants on milk lacking in freshness, deficient in quality, and perchance contaminated by contact with impure water or the addition of chemical preservatives. At present it is difficult for the poor to obtain good milk. The diet for the infant under my scheme only depends upon the municipal authorities to the extent that they shall provide a good milk. It is not even suggested that they are to recommend the milk in any particular form or modification. I am strongly opposed to such bodies acting as dry nurses and relieving the mothers of the responsibility of preparing the infant's food, and the medical practitioner of his proper functions of ordering a diet suitable in quality and quantity for the particular child.—I am, etc.,

London, W., Nov. 30th. Edmund Cautley, M.D.

THE SENSIBILITY OF THE PERITONEUM AND ABDOMINAL ORGANS.

Sir,—Under this title attention was called in the British Medical Journal of November 14th, p. 1288, to the work of Professor Lennander. As the observations on this subject can only be done satisfactorily on the conscious human subject, might I direct the attention of those who have the opportunity of noting the sensibility of the viscera to one or two points? My reason for this is that hitherto observers have not been careful enough to discriminate exactly their methods and their results. I have for instance, seen an

eminent surgeon cut what he thought was the peritoneum in a semi-conscious patient, and, when the patient winced, turn to the spectators and point out what a sensitive structure the peritoneum is! The first point is, then, to make sure exactly what tissue is being stimulated. The varied opinions as to the sensitiveness of the peritoneum have been, in my opinion, due to a want in careful discrimination. If the very fine but very sensitive connective tissue that lies outside the peritoneum be first carefully detached from the peritoneum, the denuded peritoneum will be found to be absolutely insensitive.

The next point to which I would call attention is the necessity for great care in determining what produces the pain in stimulation of the exposed viscera. If a hollow organ is stimulated, care should be taken to note whether it is the serous, mucous, or muscular coats that give rise to pain. Thus, for instance, I have observed that in resecting the bowel the introduction of the suture may, after a short pause, set up a wave of peristalsis, which passes down the bowel and contracts with sufficient force to produce a spasm of pain. There is a distinct interval between the application of the stimulus, the rousing of the peristalsis, and the production of pain. In exploring the ureter for a calculus the palpation may not be sufficient to produce a peristaltic contraction, so that one observer may then say that the ureter is insensitive. In another case peristalsis is produced and the observer finds it sensitive. In a third case the observer does not wait long enough to see if pain arises, but passes on, and when the pain from the ureter is felt, the source is overlooked, and some other structure credited with sensibility. It must also be borne in mind that the mere handling of the bowel in exploring the abdominal cavity may produce painful peristalsis in a portion of bowel out of sight. A third point is to note the situation in which the pain is felt. It will often be found that the patient refers the pain to a site apart altogether from the place stimulated. Thus stimulation of the ureter may give rise to pain in the testicle.

If careful attention be given to such methods a most interesting and instructive series of facts will be obtained which will permit deductions to be made of a far-reaching nature.—I am, etc.,

Burnley, Nov. 17th. J. MACKENZIE.

ISOLATION HOSPITALS.

SIR,—Dr. Marriott, in his letter on the above subject in the BRITISH MEDICAL JOURNAL of October 31st, refers to the opinion expressed by the late Sir R. Thorne-Thorne, Principal Medical Officer to the Local Government Board. As this question is now arousing a good deal of interest and as the opinion of so pre-eminent an authority must necessarily be entitled to respect, I venture to quote Sir Richard Thorne's statement *in extenso*, especially as the original is not very accessible. He was giving evidence before the Royal Commission on Vaccination in 1889, and had been questioned as to the cause of the reduction which had taken place in the mortality from scarlet fever. He replied as follows:

> There has unquestionably been a very marked diminution in the total amount of scarlet fever, although infants have not benefited by it in so far as the share per cent. of deaths is concerned. This period of diminution from 1881 to 1887 is in some respects very difficult of explanation; my own impression is that it is a phase of scarlatina which we can hardly rely upon as lasting. I know that some people attribute it to hospital influence; but wherever we have been able in a given large town to inquire how far any diminution has been due to isolation we cannot make out that the diminution has in any sensible way been due to that practice. The truth is that the decline of scarlatina in London commenced at a time when only about 7 per cent. of the total deaths were taking place in hospital; that is to say, not a very large proportion of the total persons attacked with scarlet fever were in hospital. Then, taking Leicester and Warrington, I presented a report to the Local Government Board upon the influence of isolation on infectious diseases, and I was keenly disappointed to find how little effect the isolation of scarlet fever cases in Leicester and Warrington had had on epidemic scarlet fever. In both of these towns there is compulsory notification of infectious disease. For instance, taking Leicester during the epidemic, from September 12th to December 31st, 1879, there were 64 deaths from scarlet fever, 159 cases having been admitted into the hospital; the hospital, therefore, was at work, but notwithstanding that, in 1830, 117 deaths occurred, although 230 cases were admitted into the hospital. But again in 1881, the epidemic being still in progress, the number of deaths increased to 152, and this although a still increasing number—namely, 387 cases—had been admitted into the Borough Hospital.
>
> What a contrast this to the experience of Leicester, in the present year, when the fever hospital was closed to scarlet fever for six months on account of small-pox! Sir Richard Thorne continues:
>
> But the case of Warrington is even more striking. Taking a period of months from June, 1880, to February, 1882, I will just read together the cases notified to the authority, and the number of cases admitted into hospital. In June, 2 notified, 1 taken to hospital; in August, 22 notified, 20 taken to hospital; in September, 7 notified, 7 taken to hospital; in October, 10 notified, 0 taken to hospital; in November, 7 notified, 7 taken to hospital; and so on right away to the end of July, 1881, as the following table will show:

Table Showing Cases of Scarlet Fever Notified to Warrington Sanitary Authority and Removed to Hospital.

Date.	Cases Notified.		Cases admitted to Hospital.	
1880.—June	2		1	
July	3		2	
August	22		20	
September	7		7	
October	10		9	
November	7		7	
December	11	115	8	101
1881.—January	4		3	
February	4		4	
March	3		3	
April	10		9	
May	6		6	
June	7		7	
July	19		15	
August	38		36	
September	66		60	
October	83		57	
November	69		49	
December	53		32	
1882.—January	42		26	
February	25		21	

> By that date no less than 101 out of a total of 115 cases notified had been removed to the hospital; in some months every case had been removed to the hospital, and yet we now find that the number is mounting up—38 were notified in August, and 36 were removed to hospital; the next two months 66 were notified and 60 were put in hospital. I believe they could not take the total into the hospital; but the epidemic, instead of decreasing from June, 1880, has been steadily increasing right up to the end of 1881, and it was still continuing in 1882, although the efforts of Warrington as regards isolation can only be admired for their strictness and for the care with which they were carried out. They did all that can be done to know of every case of disease, and they did their utmost to isolate them all, yet notwithstanding this took place. I am sorry to add that we have evidence quite recently in the last few months of precisely the same thing; they have done their utmost to isolate nearly every case of scarlatina, and have failed to arrest the epidemic: the poison appears to be so ubiquitous that the epidemic of last year at Warrington went on steadily increasing.

Such testimony, coming from one who, from his official position, was so well qualified to speak authoritatively, cannot be ignored; and I venture to submit that even though no further indictment were forthcoming the question of hospital isolation ought to be subjected to a searching inquiry. Nothing approaching a full official investigation of the subject has been made for over twenty years.

It may be well before concluding to refer to the subsequent experience of Warrington. It is, to say the least of it, a curious "coincidence" that whilst during the 10 years 1880-89 Warrington "pushed" the hospital aggregation of scarlet fever more than any other large town, during the following ten years, 1890-99, her mortality from scarlet fever was higher than in any other large town. This was due to the exceptional severity of the type of the disease. Prior to the days of aggregation there is no evidence that Warrington suffered specially from scarlet fever!

There is some reason to fear that certain other towns at the present day are following in Warrington's footsteps.—I am, etc.,

Leicester, Nov. 28th. C. KILLICK MILLARD.

SIR,—As my name has been specifically mentioned in this connexion by Dr. Meredith Young—whose complimentary references to the value of my work I deeply appreciate—perhaps I may be allowed a few lines. In the paper that Dr. Meredith Young mentioned in his letter I endeavoured to show that the diagnosis of the infectious diseases that it treated of is a feeble art, and that its inherent difficulties were such that, as at present practised, it cannot attain a level of efficiency at all commensurate with the requirements of sound hospital administration. Now not only must the management of isolation hospitals depend upon diagnosis, but it must rest to a very large extent also on accurate, or approximately accurate, knowledge of the principles of infection. I ask, what do we know about the principles

of infection in scarlet fever and diphtheria, except that sometimes some persons after contact with some patients suffering from these diseases develop them subsequently? Is it surprising that the practical working of institutions whose bases rest on guesswork, and whose management is guided by a rather raw variety of empiricism, should be faulty and unsatisfactory? The question whether fever hospitals do more harm than good is an open one, and deserves the most careful consideration. Dr. Killick Millard has made out a strong prima facie case for inquiry, and it is to be hoped that the movement he has so courageously inaugurated will not be allowed to rest. If the profession were mistaken in urging the provision of isolation hospitals as means for checking the spread of infectious diseases, and if the enormous expense that their upkeep entails is not justified, it would be far more in accordance with our dignity that we should discover the fact for ourselves than wait for a State inquiry by laymen.—I am, etc.,

Eastbourne, Dec. 1st. HUBERT E. J. BISS.

THE COMPARATIVE VALUE OF ORAL AND RECTAL TEMPERATURES IN THE STUDY OF PULMONARY TUBERCULOSIS.

SIR,—I have read with interest the report of an address by Drs. Kelynack and Williams delivered in the Section of Medicine at the recent annual meeting held at Swansea. Regarding the matter in a common-sense light, it would appear that if a thoroughly accurate temperature of the body be required the thermometer should be so placed that every portion of its bulb will be in close contact with some internal part of the body which is least likely to be influenced by varying external conditions. Obviously the rectum fulfils these conditions with a completeness which could not be expected of the oral cavity.

I do not doubt the possibility of raising the temperature very considerably in health if by exercise the manufacture of heat in a given time were altogether out of proportion to the power of the body to balance it by loss during the same period.

To a greater extent would this be the case in disease, where the recuperative power of the body is impaired. But a distinction should be clearly drawn in the diseased condition between the results recorded in cases in which the patient is under no proper supervision, and those in which his daily life is so regulated that the amount of exercise taken is in proper proportion to his individual needs; the body is then presumably enabled to maintain a proper balance between the manufacture and loss of heat without needless taxation of its physiological powers. To compare a patient so circumstanced with a healthy adult under circumstances quite different is obviously misleading.

In the case of the patient the "normal physiological variation in the temperature as taken in the rectum during exercise and rest" will be reduced to a minimum, if not entirely obliterated. This being so, it would surely be fair to regard the temperature immediately after exercise as pathological in the sense that, in spite of the careful regulation of exercise, the nervous control of the balance between manufacture and loss of heat is impaired, probably owing to the presence of toxins in the blood.

Of course this argument is based on the assumption that if a healthy person were placed under the same close supervision and the details of his daily life as carefully regulated, his temperature would not show a rise to any marked extent, if at all, above the normal.

In support of this view I have it on good authority that though amongst mountain climbers the temperature of the healthy body will rise considerably as the immediate result of this form of exertion, yet if the amount of exercise be carefully regulated, mountain guides can be trained to the indulgence in a considerable amount of exertion without disturbing the temperature to any marked extent, if at all.

Again, personal observation during several years has taught me that phthisical patients can be trained to take two and a-half hours' exercise (hill climbing), and return with a temperature of 98.4° F. (rectal). The cases selected for observation were patients upon whom I felt I could implicitly rely. In one of these the rectal temperature was 103° F. on his reception into the sanatorium.

I am therefore one of those who attach great importance to the rectal temperature taken immediately after exercise. In addition to this, the temperature may be ascertained after a period of rest following upon the exercise, and a comparison drawn between the fall at one time and that at subsequent periods. This is doubtless instructive, but to my mind much value is to be placed upon the rectal temperature taken immediately after exercise.

I have never met with the least objection on the part of the patient (irrespective of sex) to the use of the thermometer "per rectum."

The whole subject is most interesting, and in commenting upon Drs. Kelynack and Williams's most interesting paper I merely in turn lay my own statements open to criticism.

The cases cited in which the rectal temperatures were constantly below the oral give us food for thought. I would here remark, however, that to obtain an accurate rectal temperature the thermometer should be passed not less than 2 in. into the rectum; if the bulb only be passed within the sphincter a lower temperature will be recorded.

Another interesting fact was pointed out to me by one of my patients (a naval officer) about a fortnight ago. His rectal temperature immediately after the morning walk was 99.8°, the thermometer remaining *in situ* five minutes. Being of an inquiring turn of mind, he replaced the thermometer after a short interval, and then found that after another five minutes' trial it recorded 100.4°. The patient was in the recumbent position the whole time. Of course explanations of these apparent anomalies occur to one, but I must not trespass further upon your space.

I would summarize my own impressions as follows:

1. That when accuracy is an important point the temperature should always be taken in the rectum, whether during rest or after exercise.
2. That in phthisical patients subjected to close supervision and guidance in a sanatorium the rectal temperature taken immediately after exercise is almost, if not entirely, a pathological one, and as such it is of primary importance as a guide to the physician.
3. That the rest temperature taken "per rectum" also affords useful information to the sanatorium physician.
4. That the actual temperature of the blood while circulating in the living vessels is unknown.

—I am, etc.,

Shotley Bridge. E. W. DIVER, M.D.

REPRESENTATION ON THE GENERAL MEDICAL COUNCIL.

SIR,—The Divisions have been asked, as your readers are no doubt aware, to consider the following resolution, which was passed by the Representative meeting at Swansea:

That a petition be presented to the Privy Council praying that in any future legislation the British Medical Association be directly represented on the General Medical Council in proportion to its magnitude and representative character.

The British Medical Association is a joint stock company, composed of medical men who already are represented in the General Medical Council by the five direct representatives. That the medical practitioners who belong to this Association should be more fully represented on the General Medical Council than the practitioners who do not may have appeared desirable to the meeting at Swansea, though I think it would be very difficult to persuade the Privy Council to take that view. But the meeting was not content to ask for representation: it desired the Association to be represented to a particular extent, namely, "in proportion to its magnitude and representative character."

Now as regards its magnitude, the Association includes I suppose three-fourths of all the practitioners in the United Kingdom, and it may be hoped that the proportion will go on increasing. We must presume, therefore, that the Swansea resolution, in advocating a proportional representation, contemplates a considerable addition to the General Medical Council. On the other hand, it is proposed that the "representative character" of the Association should be taken into account, apparently in oblivion of the fact that the Association is not a representative body at all. As I have already said, it is a joint stock company, and it is no more representative than is a railway company or a social club. I think it would be desirable to have some definite pronouncement as to the extent of representation on the General Medical Council that is desired, and also as to the novel sense in which the expression "representative character" is employed in the resolution.—I am, etc.,

Liverpool, Nov. 16th, THOS. R. BRADSHAW, M.D.

SALINE INFUSIONS IN THE TREATMENT OF PUERPERAL ECLAMPSIA.

SIR,—My attention has been directed to Dr. Jardine's letter in the BRITISH MEDICAL JOURNAL of November 21st to a mistake in the report of two cases of treatment of puerperal eclampsia given by me in the issue of November 7th, p. 1211.

The saline solution injected is there stated to be "common salt ℥j, potassium carbonate ℥j," as recommended by Jardine.

The salts used were one drachm of common salt and one drachm of potassium bicarbonate added to two pints of boiled water.—I am, etc.,

Cleland, N.B., Nov. 21st. JOHN LITHGOW.

A PRACTICAL ANTICIPATION OF THE MODERN PROPHYLAXIS OF MALARIA.

SIR,—Recently in the Levant I came across what may be described as an interesting proof, and in a sense an anticipation, of the truth of the discoveries made by Major Ross in connexion with the causation of malarial fever.

The river Moulahitch enters the Sea of Marmora from the south between the towns of Moudania and Banderma. The mouth of this river is surrounded by marshes which are so notoriously malarial as to deter all but the hardiest and most daring from penetrating them, even to enjoy the excellent shooting offered by the game which abounds.

The whole country in this neighbourhood is unhealthy, but the delta of the river is peculiarly so. During the summer and autumn months—that is to say, during the unhealthy portion of the year—certain of the inhabitants dwell in these marshes in order to gain a livelihood by cutting reeds. They are more ignorant than even the general run of the Turkish peasantry; still they have been practising for years past methods of prevention against malaria which are only now being slowly introduced into some of our own tropical colonies. The reed cutters have provided themselves with mosquito nets made from a species of muslin.

The head man or chief has a large shelter formed by wooden stakes driven into the ground, each prop being about 4 feet high, and over them is stretched the net and pegged down. Smaller shelters are used by the men. During work all must expose themselves but at meal times they all collect in the large shelter of their chief, and they sleep and pass their intervals of rest in their own. All work ceases before sunset, and the labourers immediately retire under their mosquito covers, where they remain until the sun has risen. In reply to inquiries they stated that they found by experience that if they did not employ nets they could not withstand the fever and ague. They were unable to say how many years this practice had continued—even the old men could not remember. Although many of them showed signs of having suffered from fever, still they looked better and stronger than the inhabitants of the higher and healthier uplands.

Certainly one would suppose that Asiatic Turkey was a very unlikely place to find such an interesting proof of the value of the great discovery of Ross. It is bad enough to think that we might have picked up a few "wrinkles" in sanitation from the ancient Cretan, but it is almost painful that the poor Turk, for whom it is now so unfashionable to say a good word, might still teach us a thing or two.—I am, etc.,

T. H. M. CLARKE, Captain R.A.M.C.

Canea, Crete.

THE MASTER-WORD IN MEDICINE.

SIR,—Professor Osler's address to the students of the Medical Faculty of the University of Toronto and your leader on the same, both of which appear in the BRITISH MEDICAL JOURNAL of November 7th, will be read with much profit. It is the teaching of stern reality—the philosophy of a good and honest heart. It is the philosophy of *must*, so hateful to those who bend to the modern fashion of "higher criticism," of idealism. "Men must endure going hence, as they must endure coming hither; ripeness is all." The philosophy of realism teaches that a man must work, which is best done cheerfully. Thus the hopeful man receives his reward at the time he commences work, while the idealist has his reward deferred till his work is finished; and who can tell whether he will finish it? Success is not gauged by position in life nor by banking accounts. The successful man is he who "rejoices in his own work, for this is his portion." Real success is therefore within the reach of all, for every man's portion is the watchword—Work. "All labour of man is for the mouth, yet the appetite is not filled"; and "goods are increased to those that eat them."

Whatever philosophy goes beyond man's narrow sphere is false, is imaginary. Man may prepare the field but he may not prepare the seed: he has no further influence over the growing of the fruit. He cannot tell whether it will prosper. When the cottager's pear excels the squire's pear the squire envies the cottager. An envious man, therefore, cannot be successful, for he sets his thoughts on the issue, the portion that may not be his, and over which he may not have any control. The absence of aims is the insurance against disappointment.

The pernicious, false philosophy of idealism does more harm than disease germs, for it causes men to dangerously overtax themselves in the pursuit of ever-receding Will-o'-the-wisps. In this pursuit some tire, some die on the way, and others enjoy *themselves* in the chase, but not one of such ever enjoys the good of his labour—his portion.

To the soundness of the philosophy of realism animated Nature has borne witness from the commencement of time; even the science of dead matter teaches that no organ ever so diseased fails to show that some of the cells remain real and undamaged to the end; and so the good old acceptable words as reproduced by Professor Osler in his address will be welcomed by all those who love life. A man may muddle through life with any philosophy, with even that of idealism, but the excellency of sound philosophy is the knowledge that all philosophies are of no account in the end.—I am, etc.,

Wolverhampton, Nov. 10th. DOBSON POOLE.

ENTRY OF MEDICAL STUDENTS AT LIVERPOOL UNIVERSITY.

SIR,—My attention has been drawn to a mistake in the return made by me of the winter entry of medical students at the University of Liverpool, and published in the BRITISH MEDICAL JOURNAL of October 31st. The number 111 in the first column represents the total number of students now in the school who are taking the full medical curriculum. The number of students entering for the first time and taking the full medical course is 23, as against 24 last year.—I am, etc.,

Liverpool, Dec. 1st. B. MOORE,
Dean of Medical Faculty.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

FLEET-SURGEON C. PEARSON, M.D., M.A., has been promoted to be Deputy Inspector-General, October 10th. He was appointed Surgeon, September 30th, 1875; Staff-Surgeon, September 30th, 1887; and Fleet-Surgeon, July 14th, 1896. He was Surgeon of the *Invincible* at the bombardment of the Alexandrian forts in July, 1882, and during the subsequent war, and has the medal with clasp, and the Khedive's bronze star.

The undermentioned gentlemen have been appointed Surgeons in His Majesty's Fleet, dated November 23rd:—W. P. YETTS, N. S. MEIKLEJOHN, T. D. LIDDLE, M.B.; W. P. HINGSTON, G. L. BUCKERIDGE, A. H. S. RICHARDSON, H. WOODS, M.B.; G. H. S. MILLN, M.B.; C. J. BOUCHER, M.B.; R. H. ST. B. E. HUGHES, F. M. V. SMITH, G. D. WALSH, D. H. VICKERY, P. D. RAMSAY, W. G. M. ANDERSON, M.B., B.A.; A. R. DAVIDSON, M.B.; E. B. KENNY, M.B.; J. E. JOHNSTON, M.B., B.A.; J. C. BRINGAN, M.B.; F. J. GOWANS, M.B.; J. SHIPSEY, M.B.; L. C. E. MURPHY, F. COCK, E. R. TOWNSEND, A. D. C. CUMMINS, C. M. WOODS, A. R. SCHOFIELD, M.B.; T. W. JEFFERY, E. P. G. CAUSTON, B.A.; B. R. BICKFORD.

The following appointments have been made at the Admiralty: EDWARD B. TOWNSEND, Fleet Surgeon, to the *Monmouth*, December 8th; JOHN D. HUGHES, Staff Surgeon, to the *Pioneer*, on recommissioning; L. KING, Surgeon, to the *Monmouth*, December 2nd; GEORGE HEWLETT, Staff Surgeon, and WILLIAM E. GRIBBELL, Surgeon, to the *Bonaventure*, December 3rd; ALFRED E. WRIGHTMAN, Staff Surgeon, to the *Dido*, December 3rd; WARREN G. WESTCOTT, Surgeon, to the *Britannia*, December 3rd; DAVID W. HEWITT, Surgeon to the *Wildfire*, November 26th; CHARLES E. C. STANFORD, Surgeon, to the *Phœnix*, November 26th; ELIJAH R. L. THOMAS, Surgeon, to the *Revenge*, November 26th; WILLIAM R. M. YOUNG, Staff Surgeon, to the *Venus*, December 8th; JOHN MCDONALD, M.B., Surgeon, to the *Hibernia*, for the *Maine*, November 30th; A. D. SPALDING, Surgeon, to the *Jackal*, November 30th; C. E. C. CHILD and C. DAWE, Surgeons, to the *Fire Queen*, for disposal, November 30th.

ARMY MEDICAL STAFF.

COLONEL J. D. EDGE, M.D., C.B., Royal Army Medical Corps, to be Surgeon-General, *vice* G. J. H. Evatt, M.D., C.B., retired, November 11th. Surgeon-General Edge was appointed Assistant Surgeon, September 30th, 1874; Surgeon, March 31st, 1886; Surgeon-Major, August 30th, 1887; granted the rank of Lieutenant-Colonel, September 30th, 1893; made Brigade Surgeon-Lieutenant-Colonel, January 8th, 1896; and Colonel, June 1st, 1901. He was noted on December 3rd, 1872, "to be promoted Staff Surgeon, as soon as he has qualified for the superior grade, in recognition of his gallant services when engaged against the Indians at Orange Walk, British Honduras," on September 1st, 1872. He served in the Zulu war of 1879, and was in the engagement at Gingindhlovu and at the relief of Ekowe (medal with clasp); in the Afghan war in 1879-80, being present in the engagement at Maiwand in charge of a field hospital, and in the defence of Candahar (received the thanks of the Government of India; medal); in the Egyptian war of 1882 with the Indian contingent, and at the battle of Tel-el-Kebir in charge of a field hospital (medal with clasp, 4th class of the Osmanieh, and Khedive's star); with the Burmese expedition in 1887-9 (medal with two clasps); and in the South African war in 1899-1900 as Principal Medical Officer; afterwards Principal Medical Officer of a section of the lines of communication and Johannesburg district, and was in numerous operations in various parts of the country (mentioned in dispatches and made Companion of the Bath).

Surgeon-General T. O'FARRELL, M.D., is placed on retired pay, November 20th. He entered the service as Assistant Surgeon, March 31st, 1865; became Surgeon, March 1st, 1873; Surgeon-Major, March 31st, 1877; was granted the rank of Lieutenant-Colonel, March 31st, 1885; was made Brigade-Surgeon-Lieutenant-Colonel, December 10th, 1890; Surgeon-Colonel, November 24th, 1895; and Surgeon-General, July 1st, 1899. He was in the Afghan war of 1878 80, receiving the medal.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT-COLONEL J. J. MORRIS, M.D., to be Colonel, *vice* J. D. EDGE, November 11th. Colonel Morris entered the service as Surgeon, February 4th, 1877; was promoted Surgeon-Major, February 4th, 1889; granted the rank of Lieutenant-Colonel, February 4th, 1897; and made Brigade-Surgeon-Lieutenant-Colonel, October 17th, 1898. He was in the Afghan war of 1878-80, and was at the battle of Charasiah and in the different affairs round Kabul in December, 1879, including the defence of Sherpur, the expedition to Kohistan, and the affair at Childukhtean; he was mentioned in dispatches, and received a medal with two clasps.

Lieutenant-Colonel H. GRIER is placed on temporary half-pay on account of ill-health, November 20th. His commissions are thus dated: Surgeon, February 3rd, 1878; Surgeon-Major, February 3rd, 1890; and Surgeon-Lieutenant-Colonel, February 3rd, 1898. He was in the South African war in 1899-1901 in charge of a general hospital, and was mentioned in dispatches. He was awarded the Albert Medal of the 2nd class for the following service: On August 26th, 1880, Lieutenant Graham, 10th Regiment, was dying of diphtheria, when Surgeon Grier performed upon him the operation of tracheotomy, and, observing that no inspiration followed, at the imminent risk of his own life applied his lips to the wound, and by suction restored to the patient the power of breathing. Lieutenant Graham's life was thus saved for the time, although unfortunately on the following day the disease extended to his lungs, and he died.

MEDICO-LEGAL AND MEDICO-ETHICAL.

FEES FROM HOSPITAL PATIENTS.

DR. THOMAS EASTES, F.R.C.S. (Folkestone), writes: I have just read "Fees from Hospital Patients" (page 1441, BRITISH MEDICAL JOURNAL), and, in consequence of your remarks, I beg to enclose a copy of the rules of the Victoria Hospital, Folkestone:

"*Private In-patients.*

Rule 85. Private patients may be admitted into the hospital, when accommodation is available, on the recommendation of a medical officer. Application shall be made to the matron, who shall furnish the patient, on admission (or his representative), with a form of security, which shall be signed by himself, or some one of assured respectability, who shall be responsible for the weekly payments.

Rule 86. Private patients shall be of two classes:

Class 1 shall be charged from 3 to 5 guineas a week. Such payments shall entitle the patient to a private room, board, lodging, nursing, medicines (wines and spirits shall be extra); patients of this class shall, in addition, be charged £1 1s. per week for ordinary medical attendance, which charge shall not include extraordinary attendance or the fee for important surgical operations, which must be the subject of arrangement between the surgeon or medical officer and the patient.

Class 2. Persons whose means will not admit of their entering the hospital under Class 1, but who are able and willing to pay towards the expenses incurred for their maintenance, nursing, and medical attendance, may, subject to Rule 70, be admitted at a charge not exceeding £2 2s. a week.

In cases where extraordinary attendance is necessary, or an important surgical operation has to be performed, an additional fee may be charged; but if the patient can show that he is not in a position to pay such extra charges, he can, under the special order of the house visitors, have such medical services without fee.

Rule 70, mentioned above, simply states how all in-patients are to be admitted.

These rules have been in force for several years, and I shall be very sorry if they are really "contrary to the rules of all hospitals, as well as to professional ethics."

HUMBER writes: I notice a letter in the BRITISH MEDICAL JOURNAL of November 28th, p. 1441, as to the remarks of "Refero Relata" respecting the honorary staff accepting fees from hospital patients. I can confirm his suspicions as to this town. The way it has told chiefly against me is this—that they use the house-surgeon's time and the hospital chloroform, etc., and so are able to undercut the general practitioner to the extent of a guinea as a small operation fee. Not long ago I had a patient to see me about her child with adenoids. I offered to operate for 2 guineas as they were in rather poor circumstances—not altogether hospital patients. She called again a few days ago, and told me she saw Dr. X., who told her to go up to the hospital in the afternoon, and he would then charge her a guinea. She took the child up and paid Dr. X the guinea when he called to visit the child next morning. Again, I have distinct evidence that the same thing is done with circumcisions, etc. I have been told by patients too of having paid for their operations in the hospital, even though their bed was free.

*** In our comments upon "Refero Relata's" letter, we did not intend to allude to hospitals which avowedly have paying departments. "Refero Relata" and "Humber" presumably complain of members of the staffs of free hospitals who take advantage of their position to admit to the wards patients who pay them fees without the knowledge of the hospital authorities. By so doing they impose upon the charity and compete unfairly with their outside colleagues by this misuse of a charitable foundation.

MEDICAL ETIQUETTE.

CIVILIAN writes that he has been employed by several officers' wives at a neighbouring barracks, but that one lady writes to him to say that, being entitled to the gratuitous services of the medical officer, she proposes to avail herself of them in future, except in severe illness, when she hopes that our correspondent will attend her. He asks what is he to do if invited to a consultation, in a case of midwifery, for instance?

*** There can be no objection to our correspondent undertaking a case of midwifery for which he is regularly engaged; but he might explain to the lady that he can only visit in consultation in cases where another practitioner is already in attendance.

LIABILITY FOR MIDWIFERY ENGAGEMENT.

L. LYTTLE, M.D.—Every patient has a right to choose his or her medical attendant, and the only questions which arise out of the facts related are: (1) Whether our correspondent, having been engaged to attend, has not a claim to at least half fees? We think he has. (2) Whether, if he can prove that the nurse interfered to the extent alleged, her conduct should not be brought before the local division of the British Medical Association, so that she may be warned that such conduct will not be permitted? We think it should.

MEDICAL ADVERTISING.

DR. JAMES HOLMES.—We referred to this matter last year in the BRITISH MEDICAL JOURNAL of July 7th, 1902, p. 159. On general grounds the announcement of the names of medical practitioners in connexion with the advertisements of hydropathic establishments seems open to objection, but it has gone on so long that it may plead established custom in its defence, and can only be stopped by general action on the part of the profession. The question is one for the Ethical Committee to consider.

PROFESSIONAL SECRECY.

DR. STANLEY B. ATKINSON, barrister, Honorary Secretary of the Medico-Legal Society, writes: The design of the Birmingham Police Force, referred to in the BRITISH MEDICAL JOURNAL of November 28th, is but a repetition of what their fraternity at Southport attempted in August, 1899 (duly reported in your columns). A circular was issued concerning a neonate found in a garden, dead, apparently from exposure. Then the medical practitioners of that town refused to be caught in the trap, apparently considering that if professional confidences were to be divulged in such cases as these, many lives would be jeopardized, for such puerperal women would rather bear the ills they had and suffer, even to the death, than court the publicity which seeking the assistance of medical aid might gain them, under the fulfilment of these novel suggestions. There is no statute which degrades the profession into a huge detective agency. Closely akin to this subject is the question, How far should hospital authorities allow "the relic of the right of sanctuary" to be abused by encouraging the pertinacity of the police in their search for criminals? An actual case in point was where a burglar lost the tip of a finger, crushed by the dropping of a window frame. The police shrewdly suspected that a hospital surgery would shortly be visited by him, nor were they unsuccessful in the result of their inquiry.

LIABILITIES OF A MINOR UNDER SCOTTISH LAW.

CRUX, who writes from abroad, asks for advice on the following case: A youth (a minor) was lately employed by a local firm. He contracted fever and was attended to. When he was sufficiently improved to be moved, on the doctor's advice he was sent home to Scotland. Having no money when he left, his medical attendant sent the bill for professional attendance to his father, as he considered him responsible for the debts of his son, especially debts connected with his illness. The father replies that he does not intend to pay his son's bills, and that he (the son) may do so when he is able and willing to pay. "Crux" wishes to know the law in Scotland on the subject.

*** We are informed that according to the law of Scotland our correspondent has no claim against the father for payment of the professional bill incurred by his son although the son was a minor. When a son leaves his father's house he is no longer under his father's control and is said to become forisfamiliated, and the father is not in any way responsible for any debts incurred. Scottish law, which is founded on Roman law, differs much from English law. In many respects a child becomes of age at 14 and not at 21 years.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF OXFORD.

Degrees.—In a Congregation holden on Thursday, November 19th, the following degrees were conferred in medicine:—Doctor of Medicine: John Wood, Pembroke College; Peverell Smythe Hichens, Magdalen College.

The Salary of the Professor of Anatomy.—In a Convocation holden on Tuesday, November 24th, the following decree was proposed and carried *nemine contradicente*: "That, notwithstanding anything contrary in Decree (1) of Convocation of January 22nd, 1901, contained, the delegates of the Common University Fund be authorized to assign to Arthur Thomson, M.A., Exeter College, as Professor and Reader of Human Anatomy, a stipend of £700 a year, to be reckoned from the first day of Michaelmas Term, 1903, in lieu of the stipend of £500 a year specified in the above-mentioned decree."

Examination in Preventive Medicine and Public Health (D.P.H.).—The following gentlemen have passed in this examination.

Part I.—E. H. Roberts, M.R.C.S., L.R.C.P.

Parts I and II.—J. B. Coombe, F.R.C.S., G. K. Gifford, M.D., H. J. Hutchens, D.S.O., M.R.C.S., L.R.C.P., T. W. G. Kelly, M.D.

UNIVERSITY OF CAMBRIDGE.

Appointments.—Professor Marsh has been appointed a member of the Museums Syndicate and of the State Medicine Syndicate; Dr. D. MacAlister a member of the latter Syndicate; Dr. J. Griffiths a member of the Special Board for Medicine; Mr. F. C. Parsons an Examiner in Human Anatomy for Medical Degrees in place of Dr. A. Birmingham.

University Studies.—The appointment of a syndicate to consider what changes are desirable in the studies and examinations of the University

was on November 26th carried by 170 votes to 79. The persons nominated as syndics were approved by 156 votes to 92.

D.P.H.—Professor Woodhead, Mr. J. E. Purvis, Dr. Tatham Dr. Lane Notter, and Dr R. D. Sweeting have been elected Examiners in State Medicine for the Diploma in Public Health.

Degrees.—On November 26th the following degrees were conferred. *M.B. and B.C.*: H. A. Cutler, Clare. *M.B. only*: F. Bryan, King's: C. V. Bulstrode, Trinity; W. H. Fisher, Emmanuel.

CONJOINT BOARD IN IRELAND.

CANDIDATES have passed the Final Examination as undernoted:

Honours.—M. J. Ryan.

Pass.—E. B. Bird, J. Casey, A. H. R. Duncan, G. H. Enright, J. Hayes, D. F. Hegarty, P. J. Irwin, L. C. E. Murphy, J. J. M'Connell, P. J. O'Farrell, C. F. P. Plunkett, J. J. Ryan, P. Sampson, G. G. Tabuteau.

VICTORIA UNIVERSITY OF MANCHESTER.

Advanced Lectures on Public Health.

DURING the months of January, February, March, May, and June a series of lectures will be given in the library of the Public Health Laboratory by a number of well-known authorities, who will each deal with some subject to which he has more particularly given attention. The course is intended specially for medical officers of health, medical men who are members of sanitary committees, and candidates for the D.P.H. After each lecture the laboratory will be open to members of the class, and the laboratory staff will exhibit or demonstrate specimens, apparatus, experiments, and methods. The lectures will be given at 4 p.m., and, as a rule, on Wednesdays. The first, on industrial diseases due to certain poisonous fumes or gases, will be delivered by Professor Thomas Oliver, of Newcastle-on-Tyne, on Wednesday, January 13th. Further particulars can be obtained from Professor Delépine, Public Health Laboratory, 1, Stanley Grove, Oxford Road, Manchester.

TRINITY COLLEGE, DUBLIN.

THE following candidates have passed the Final Examination as undernoted:

Section A.—H. H. A. Emerson, W. Nunan, W. J. Powell, C. H. M'Comas, C. Seaife, H. B. Leech.

Final in Surgery.—T. H. Gibbon, H. Stokes, R. C. Hallowes, P. S. Stewart, W. Boxwell, F. F. Willington, C. J. Wyatt, T. J. Crean.

THE SOCIETIES OF APOTHECARIES.

Meeting of the Association of Physicians and Surgeons of the Society of Apothecaries.

A MEETING of the Licentiates of the Societies of Apothecaries in London and Dublin was held on December 1st at the Apothecaries' Hall, Blackfriars, London, under the auspices of the Association of Physicians and Surgeons of the Society of Apothecaries. The chair was taken by Mr. Rivers-Willson, of Oxford, who in submitting the following motion announced that this was the first meeting of the Association since its incorporation, after existing as a private society for three years:

"That the Association of Physicians and Surgeons, Limited, having for its objects the professional advancement of the Licentiates of the Society of Apothecaries of London, and of the Apothecaries' Hall in Ireland, deserves the encouragement and cordial support of all Licentiates of the Corporation."

He suggested that instead of the title "Licentiate of the Society of Apothecaries" they should use the title "Licentiate in Medicine, Surgery, and Midwifery."

Mr. G. Jackson, a direct representative on the General Medical Council, in seconding the motion, took occasion to regret the disappearance of the apprenticeship system. The main point to strive for was to effect some alteration in title, so as to indicate that the possessor of the Licence of the Society of Apothecaries was qualified in medicine, midwifery, and surgery. It appeared that Licentiates might use the title of physician and surgeon, but that was not expressed in the letters L.S.A. Mr. Jackson then proceeded to compare the position of the Licentiates of the Society of Apothecaries with that of the Members of the Royal College of Surgeons, England, and the Licentiates of the Royal College of Physicians, London. From what he could gather the Licentiates of the Society of Apothecaries had some influence in the management of their own affairs.

Mr. A. M. Upton (Clerk to the Society of Apothecaries) welcomed the licentiates to the Apothecaries' Hall. He said there was no doubt that the Licentiates of the Society of Apothecaries were looked down upon and despised by certain people. There were two causes for this: the first was the comparative youthfulness of the qualification, for in less than a century the Licentiate had developed into a professional gentleman among the most professional of all professions. The second cause was, in his opinion, due to professional jealousy; the sneer of M.D. Blackfriars, though of course unmerited, was not unknown. The first remedy for this state of things was time, and further it had to be remembered that the world at large did not very much care about fine distinction in regard to medical titles. He hoped that a good deal would be accomplished by the union of the Licentiates into an association.

The motion was then put to the meeting and carried unanimously.

Mr. Rivers-Willson moved a vote of thanks to the Master of the Society of Apothecaries. Dr. Clarence Cooper, for his kindness in allowing the Association to use the hall. In replying to this, Dr. Cooper assured those present of the sympathy of the Society in their movement. He proceeded to discuss the legal and other views in regard to granting of the title Fellow by the Society of Apothecaries, to those who had qualified as Licentiates. It was not possible to alter the title of a qualification without taking proper steps, but after a qualification had been gained the Society, according to a competent authority, could proceed to grant further titles without examination if it so wished.

A hearty vote of thanks to Mr. Rivers-Willson brought the proceedings to a close.

PRESENTATION.—Dr. Ronald Daniel, on the occasion of his leaving Ravenscourt Park, where he has practised for some years, was presented by his old patients with a testimonial consisting of silver plate and a cheque to purchase a personal present.

OBITUARY.

WE regret to announce the death of Mr. THOMAS HIGHTON, of Derby, which occurred quite suddenly on November 26th, at the age of 54. He commenced his professional education at St. Thomas's Hospital, and became M.R.C.S.Eng. in 1873 and L.S.A. in 1875. He was House-Physician at St. Thomas's Hospital in 1873-4, and held the post of Senior House-Surgeon at the Derbyshire General Infirmary for five years (1874 to 1879). He was afterwards Surgeon to the Derby Dispensary, and had been in practice in Derby for over a quarter of a century. Mr. Highton was very well known in the neighbourhood, and was held in high esteem by all with whom he became associated. He was married and leaves four children. The news of his sudden and altogether unexpected death, when he was apparently enjoying good health, has cast a great gloom over a very large circle of friends.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 7,956 births and 5,092 deaths were registered during the week ending Saturday last, November 28th. The annual rate of mortality in these towns, which had been 16.2, 17.9 and 17.4 per 1,000 in the three preceding weeks, rose again last week to 17.6 per 1,000. The rates in the several towns ranged from 8.0 in Hornsey, 8.1 in Wallasey, 8.7 in Hastings, 9.0 in Stockton-on-Tees, 9.3 in Walthamstow, 9.7 in Leyton, 10.3 in Croydon, and 10.6 in Smethwick, to 23.0 in Coventry, 23.2 in Bootle, 23.6 in Warrington, 23.7 in Preston, 24.7 in York, 25.1 in Swansea, 26.2 in Burnley, 29.6 in Sunderland. In London the rate of mortality was 17.4 per 1,000, while it averaged 17.7 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.5 per 1,000 in the seventy-six large towns; in London this death-rate was equal to 1.3 per 1,000, while it ranged upwards in the seventy-five other large towns to 2.6 in Bootle and in Rhondda, 2.7 in Bury, 2.0 in Walsall, 3.5 in Sunderland, 5.9 in Preston, 6.2 in Willesden, 7.9 in Warrington, and 9.1 in York. Measles caused a death-rate of 1.5 in Ipswich, 1.6 in West Bromwich, 2.4 in Sunderland, 2.6 in York, 3.2 in Preston, 5.3 in Willesden, and 5.5 in Warrington; whooping-cough of 1.7 in Walsall, 2.4 in Warrington, 2.6 in Bootle, and 3.9 in York; and diarrhoea of 1.4 in Preston and 2.0 in York. The mortality from scarlet fever, from diphtheria, and from "fever" showed no marked excess in any of the large towns. One fatal case of small-pox was registered last week in London, 1 in Coventry, 1 in Newcastle-on-Tyne, and 1 in Tynemouth, but not one in any other of the large towns. The Metropolitan Asylums Hospitals contained 40 small-pox patients on Saturday last, November 28th, against 43, 51, and 47 on the three preceding Saturdays; 5 new cases were admitted during last week, against 5, 16, and 5 in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 1,854, 1,824, and 1,833 at the end of the three preceding weeks, had declined again to 1,770 at the end of last week; 157 new cases were admitted during the week, against 224, 185, and 191 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, November 28th, 871 births and 611 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 15.8, 17.4 and 17.4 per 1,000 in the three preceding weeks, increased last week to 18.7 per 1,000, and was 1.1 per 1,000 above the mean rate during the same period in the seventy-six large English towns. The rates in the eight Scotch towns ranged from 9.3 in Perth and 11.6 in Aberdeen, to 20.8 in Glasgow, and 22.7 in Paisley. The death-rate from the principal infectious diseases averaged 1.9 per 1,000, the highest rates being recorded in Glasgow and Paisley. The 315 deaths registered in Glasgow included 3 which were referred to small-pox, 17 to measles, 2 to diphtheria, 7 to whooping-cough, 3 to "fever," and 12 to diarrhoea. Five fatal cases of diarrhoea occurred in Edinburgh, 2 in Aberdeen, and 2 in Paisley.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, November 28th, 475 births and 342 deaths were registered in six of the principal Irish towns against 469 births and 367 deaths in the preceding period. The mean annual death-rate of these towns, which had been 19.8, 19.1, and 17.6 per 1,000 in the three preceding weeks, fell to 15.3 per 1,000 in the week under notice, this figure being 2.3 below the mean annual rate in the seventy-six English towns during the corresponding period—a somewhat rare event. The death-rates ranged in these six Irish towns from 7.8 in Waterford and 10.3 in Cork, to 19.1 in Limerick and 25.9 in Dublin. The death-rates from the principal zymotic diseases in the same towns averaged during the week 0.7 per 1,000, or 0.5 less than during the preceding period. The highest point—1.7—being reached in Dublin, while Cork, Londonderry, and Waterford registered no deaths from zymotic disease at all. With the exception of 1 death from diphtheria in Dublin, no deaths were registered in any part of Ireland from diphtheria, small-pox, measles, scarlet fever, or typhus. In Dublin 3 deaths each were registered from whooping-cough and diarrhoeal diseases, and 4 from enteric. In Belfast the number of deaths ascribed to whooping-cough was 18 high as 11, but excepting 1 case ascribed to enteric, no other deaths from zymotic disease were registered there at all.

ATTENDANCE ON SMALL-POX PATIENTS.

ARDUUS AD SALEM states that a case of small-pox has occurred in his village. The medical officer of health when asked to remove the patient states that there is no hospital and that our correspondent must remain in attendance. His other patients complain of his doing so, and are not unnaturally wishful that he should discontinue. He now asks: (1) If the sanitary authority will do nothing, what can he do? (2) Has he a claim against the sanitary authority for loss of work, etc., if he is compelled to remain in attendance? (3) Can he insist on the sanitary authority providing suitable accommodation and medical attendance? (4) Ought he to give up attending his other patients?

*** The last question may be answered first. There is no need to give up attending other patients if the usual precautions are taken. As to question (3), there is, we fear, no compulsion on the sanitary authority to provide hospital accommodation. Section CXXXI of the Public Health Act, 1875, says, "any local authority may provide for the use of the inhabitants of their districts hospitals," etc. This clearly does not involve any compulsion. The instances in which no accommodation is provided in cases like the above must be rare, and the facts reflect grave discredit on the sanitary authority concerned. We are doubtful if any claim lies against the sanitary authority for loss of work, etc. So far as we can judge, the only way in which our correspondent can relieve himself of his responsibilities is by giving notice to the sanitary authority and to the relatives of the patient that he will no longer attend the patient. We assume he would only do this if the patient is out of danger. It would be well also to send a statement of the facts to County Council and to the Local Government Board.

PERIOD OF SECLUSION OF PERSONS IN INFECTED HOUSEHOLDS.

NESCIO states that in his district notices are posted and circulated warning persons resident in a house infected by scarlet fever against going into any other house, or attending school or any place of worship, or other public meeting, or using any public conveyance either during the sickness or within one month of the recovery of the last case which has occurred in such house; and he asks (*a*) whether it is the fact that no matter what may be the measures taken for isolation of the sick, all the residents in the same house, including the breadwinners, are legally or even morally bound to accept the disabilities indicated above; (*b*) when forbidden to enter "any other house," are they to hold themselves precluded from workshop or store? (*c*) does "public conveyance" include railway carriage; (*d*) must children that are well and do not come near the sick, be kept at home for five or six weeks or longer, to the loss of their education, of the school grant, and the greatly increased risk of their taking the disease?

*** The answer to (*a*) and to (*d*) depends on the degree of isolation which is secured. In the majority of households of the working classes and among small shopkeepers it would be unwise to allow children from the same household to attend school. In fact, all authorities are agreed to exclude all children from infected households from school attendance in all cases in which the patient is treated at home during the whole period of infection, and subsequently for a period covering the longest-known incubation period of the disease. Our correspondent will, on reflection, see that no other cause would be justifiable in the interests of non-infected households. There is ample power to enforce the exclusion of such children from school under Art. 88 of the Code of Regulations for Day Schools.

The exclusion of breadwinners from work is a more difficult problem. It cannot be enforced unless it can be shown that the breadwinner in question is capable of acting as an intermediary in spreading infection. He must, in other words, be an infected person or thing. If his clothes could be shown to be infected, the Public Health Act gives power to enforce his seclusion until disinfection has been carried out, or, in default, to enforce a penalty when a person wilfully exposes himself or infectious articles belonging to him. The exclusion of breadwinners from work is seldom enforced, and arrangements have not infrequently been made for compensating them when the exclusion is required, as for a tailor, or ironer, or dressmaker. Clearly the proper remedy in such instances is not to interfere with the breadwinner, but to secure the isolation of the patient himself in a fever hospital; and the chief moral to be derived from Nescio's difficulties is the necessity for such an institution when otherwise breadwinners may be injured.

Question (*b*) is answered above; and in answer to (*c*), public conveyance includes railway carriage.

MEDICAL NEWS.

THE Plumbers Company gives notice that it will register the names of indentured plumbers' apprentices free of cost; such apprentices will be eligible for the examinations of the Company, and those who pass the final examination will be eligible to receive the certificate of registration under the national registration of plumbers.

A PAMPHLET entitled *St. Bartholomew's Hospital* has been issued by the Scientific Press, 28 and 29, Southampton Street, London, W.C., containing the report of the Medical Council to the Lord Mayor's Committee, and a reprint from the *Hospital* of the article and plan which appeared in our issue of November 21st. We are asked to state that copies can be obtained on application to the Manager of the Scientific Press, and that applicants who wish a copy sent by post should enclose two stamps.

THE Otological Society of the United Kingdom will hold its annual dinner on Monday, December 7th, at the Trocadero Restaurant (Balmoral Rooms), Piccadilly Circus. The chair will be taken by the President, Dr. Urban Pritchard, at 7.30 p.m., and the Earl of Crawford, the President of the College of Surgeons, Sir Thomas Barlow, Bart., Sir Henry Norbury, K.C.B., Sir William Taylor, K.C.B., and other distinguished guests are expected to be present.

PRESENTATION.—On November 23rd Professor Arthur Gamgee was presented with a testimonial, consisting of an address and a silver embossed plate, by his friends and colleagues in Montreux as an expression of their gratification on the occasion of his recent presentation to the honorary degree of LL.D. at the University of Edinburgh. In reply to the deputation, Professor Gamgee expressed his high appreciation of this proof of kindly feeling, adding that a most gratifying circumstance was to find his two English colleagues warmly co-operating in giving voice to so eloquent a token of regard. He was convinced that the *odium medicum* was less pronounced among members of the English profession than among those of any other nationality.

THE BIRMINGHAM MEDICAL STUDENTS' ANNUAL DINNER.—The annual dinner of the past and present students of the Queen's Faculty of Medicine in the University of Birmingham, which was held on November 26th, at the Grand Hotel, was very successful; over one hundred and twenty sat down to dinner—the largest attendance on record. There were even a few past students from the old Sydenham College, besides many from the old Queen's and Mason Colleges. The chair was taken by Mr. George Heaton, and among those present were Sir Oliver Lodge (Principal of the University), Sir James Sawyer, Dr. Malins, Dr. Purslow, Dr. Taylor and Dr. Higgs of Dudley. After the toast of "The King" had been proposed by the President and duly honoured, the toast of "The Medical School" was proposed by Sir Oliver Lodge in a speech which was full of sanguine hopes for the future of the school, and of good advice to the students. He went on to speak of the benefits which might be obtained by examining all the recent discoveries in chemistry, physics, and other allied sciences, with the view of adding some new methods to the treatment of disease, and deprecated the tendency of passing them lightly by as of very little practical value. He also recommended the study of the influence of the mind upon the body. The Chairman, in responding to this toast in a very able and humorous speech, reviewed all the work and events of the past year. The toast, "Students, Past and Present," was proposed most eloquently by Dr. Malins, and responded to by Dr. Purslow and the Honorary Secretaries, Mr. F. T. H. Davies and Mr. H. B. Jones. In the intervals between the toasts two 'cello solos were given by Mr. W. H. Pickup, a song by Mr. A. W. Nuthall, and humorous sketches by Mr. H. H. Whaite.

THE BELGRAVE HOSPITAL FOR CHILDREN.—The Bishop of Rochester, who presided at the formal opening of the Belgrave Hospital on December 1st, said that the hospital had already had a more stately inauguration on the occasion of the visit of Her Royal Highness Princess Henry of Battenberg last summer, but that the present occasion was of a more domestic nature, the friends and neighbours of the hospital having assembled to wish the good work godspeed. He hoped that the removal of the hospital from Pimlico to the south side of the Thames was an earnest of more to come. He had been pleased to hear the decision at which King's College Hospital had now definitely arrived. He believed that every one would think highly of the arrangements of the Belgrave Hospital, and observed that there would be found but one fault in it, and that was that it was not yet completed. Forty thousands pounds had been spent on the hospital and he feared that but little help would come from the inhabitants of the district, for they were a poor community. The Vice-President of the Committee of Management, Mr. Warden, thanked the Bishop, and the company then made a tour of inspection of the hospital, showing particular interest in the operating theatre and sterilizing chamber, the whole equipment of which was the gift of Mr. Clinton T. Dent.

THE GLASGOW UNIVERSITY CLUB, LONDON. The members of the Glasgow University Club dined together on November 26th at the Trocadero Restaurant, London, under the chairmanship of Sir William Taylor, K.C.B., Director-General of the Army Medical Service. The toast of "The Imperial Forces" was proposed by Sir G. Hare Philipson, who made particular allusion to the humanity displayed by soldiers.

In naming Surgeon-General Keogh, C.B., to reply to the toast, Sir G. H. Philipson described how he had served with great distinction in the South African war, and was as well known in the army for his professional worth as for his administrative capabilities. Surgeon-General Keogh, in responding, said that the Army Medical Service was indebted to Scotland for some of its greatest traditions. Sir James MacGrigor originated the departmental system, which led up to the corps system, and was followed by Sir William Muir, who practically founded the present system successfully broke up the regimental system, and emancipated the medical service, enabling efficiency to be secured in time of war. Lieutenant-Colonel Beatson, C.B. (Glasgow) replied for the Volunteers. He considered that the Volunteers should receive more generous treatment from the Government, because when a nation lost its martial spirit the other national virtues also disappeared. The Chairman then proposed "The University and the Club," and after giving an amusing description of the origin of the Boydeian Library and narrating some humorous incidents in the history of Zachary Boyd, he passed on to mention how the University of Glasgow had kept abreast of the times by providing a new botanical department costing £20,000, a new engineering department costing £20,000, and buildings for natural philosophy and physics to cost £40,000, together with laboratories for materia medica, physiology, medical jurisprudence and public health, to cost about £60,000. The University continued to send out into the world men who were in the front rank of every profession. He reminded his audience of Lord Kelvin, Lord Lister, Professor Gairdner, and many others, and concluded by describing how the club was of practical benefit in many ways. To the great delight of the company Dr. G. Ogilvie was called upon to tell Scotch stories. Dr. Guthrie Rankin proposed "The Guests," which was acknowledged by Colonel Hensman and Surgeon-General Don. Mr. A. A. Jack proposed "The Chairman" after Sir Charles Ball had given some amusing details of the successful sales of decrepit animals from the Dublin Zoological Gardens by the anatomist, Professor Cunningham.

MEDICAL VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—House-Surgeon, resident. Salary, £75 per annum.

BOURNEMOUTH: ROYAL BOSCOMBE AND WEST HANTS HOSPITAL.—House-Surgeon, resident. Salary, £80 per annum.

BRIDGWATER INFIRMARY.—House-Surgeon, resident. Salary, £80 per annum.

DUBLIN: SIR PATRICK DUN'S HOSPITAL.—Assistant Physician.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark.—Clinical Assistants in the Out-patient Department.

GREAT YARMOUTH COUNTY BOROUGH.—Medical Officer of Health. Salary, £500 per annum.

HEREFORD COUNTY AND CITY ASYLUM.—Senior Assistant Medical Officer, resident. Salary, £150 per annum.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary, £100 per annum, increasing to £110 on reappointment.

LIVERPOOL CANCER RESEARCH.—Assistant Director. Salary, £200 per annum.

LIVERPOOL INFECTIOUS DISEASES HOSPITALS.—Assistant Resident Medical Officer. Salary, £120 per annum.

METROPOLITAN HOSPITAL, Kingsland Road.—Assistant Surgeon.

MOUNT VERNON HOSPITAL FOR CONSUMPTION, Hampstead.—Male Resident Medical Officer. Honorarium, £60 per annum.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Gynæcologist.

NORTHAMPTON GENERAL HOSPITAL.—Assistant House-Surgeon, resident. Salary, £75 per annum.

NORTH EASTERN HOSPITAL FOR CHILDREN, Hackney Road.—(1) Pathologist and Bacteriologist; (2) Medical Officer in charge of Electrical Department. Salary, £50 per annum in each case.

NOTTINGHAM GENERAL HOSPITAL.—House-Physician, resident. Salary, £100, rising to £120 per annum.

OLDHAM INFIRMARY.—Junior House-Surgeon, resident. Salary, £100 per annum.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—Milroy Lecturer for 1905.

ROYAL DENTAL HOSPITAL OF LONDON, Leicester Square.—Demonstrator. Honorarium, £200 per annum.

ROYAL EYE HOSPITAL, Southwark.—(1) Refraction Assistants; (2) Clinical Assistants.

ST. PETER'S HOSPITAL FOR STONE, Etc., Henrietta Street, W.C.—(1) Junior House-Surgeon, resident. Salary at the rate of £50 per annum; (2) Clinical Assistant.

SALFORD COUNTY BOROUGH.—Assistant to the Medical Officer of Health. Salary, £200 per annum.

SHEFFIELD ROYAL HOSPITAL.—Assistant House-Physician, resident. Salary, £50 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House-Physician, resident. Honorarium at the rate of £75 per annum.

MEDICAL APPOINTMENTS.

BALLACHEY, H. H., L.R.C.P.Edin., M.R.C.S.Eng., Certifying Factory Surgeon for the Heckington District, Lincolnshire.

BERNSTEIN, Julius M., M.B., M.R.C.S., Assistant Pathologist and Curator of the Museum to Westminster Hospital.

BUCK, Joseph, L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glasg., Medical Officer to the New Workhouse and Infirmary of the Hunslet Union, Rothwell Haigh, Leeds.

CÆSAR, A. K. A., L.R.C.P. & S.Edin., L.F.P.S.Glasg., District Medical Officer of Health of the East Ashford Union.

CARDIN, H., M.R.C.S., L.R.C.P.Lond., District Medical Officer of the Chelmsford Union.

COCKLE, W. P., M.D., District Medical Officer of the Brentford Union.

GENT, W. Conway, L.R.C.P., L.R.C.S.Edin., Honorary Surgeon to the Fairford Cottage Hospital, *vice* J. O. March, M.R.C.S., L.R.C.P., resigned.

HASLEWOOD, Clarence, M.R., C.M.Aberd., Medical Officer and Public Vaccinator for the Slaithburn District of the Chtheroe Union, *vice* W. Bannerman, M.B., C.M., resigned.

JENKINS, A. W., M.B.Lond., M.R.C.S.Eng., Certifying Factory Surgeon for the Hinckley District, Leicestershire.

LINDSEY, Eric C., M.R.C.S., L.R.C.P.Lond., Assistant House-Surgeon to the Scarborough Hospital and Dispensary.

LUCAS, Geoffrey, B.A.Cantab., L.S.A.Lond., Assistant House-Physician to the Westminster Hospital.

MCNABB, A. A. J., M.B., B.S.Durh., District Medical Officer of the Louth Union.

OLIVER, Charles Pye, M.D.Lond., Physician to the West Kent General Hospital, Maidstone, *vice* C. Boyce, M.D.Edin., resigned.

ROBERTS, Charles, M.B., B.S.Lond., F.R.C.S.Eng., Assistant Honorary Surgeon for Children to the Northern Hospital for Women and Children, Manchester.

SHANAHAN, T., L.R.C.S.I., L.A.H.Dub., Certifying Factory Surgeon for the Kilmacthomas District, Waterford.

THOMAS, E. R., L.R.C.P. & S.Edin., L.F.P.S.Glasg., District Medical Officer of the Bangor and Beaumaris Union.

YORATH, T. H. B., L.S.A., District Medical Officer of the Carmarthen Union.

ST. THOMAS'S HOSPITAL. The following gentlemen have been selected as House-Officers from Tuesday, December 1st, 1903:

House-Physicians.—R. E. H. Leach, M.A., M.B., B.Ch.Oxon., L.R.C.P., M.R.C.S.; G. R. Rickett, M.A., B.C.Cantab.

House-Physicians to Out-patients.—G. C. Adeney, L.R.C.P., M.R.C.S.; E. A. Ross, M.B., B.C.Cantab.

Obstetric House-Physicians.—(Senior) W. H. Harwood Yarrel, B.Sc.Lond., L.R.C.P., M.R.C.S.; (Junior) F. E. Shipway, M.A., M.B.Cantab.

Clinical Assistants in the Special Department for Diseases of the Throat.—A. C. Birt, L.R.C.P., M.R.C.S. Skin.—B. Higham, L.R.C.P., M.R.C.S. Ear.—J. C. F. D. Vaughan, L.R.C.P., M.R.C.S.

Several other gentlemen have received extensions of their appointments.

DIARY FOR NEXT WEEK.

TUESDAY.

Royal Medical and Chirurgical Society, 20, Hanover Square, W., 8.30 p.m.—Professor E. A. Schafer: Description of a Simple and Efficient Method of Performing Artificial Respiration on the Human Subject, especially in Cases of Drowning, to which are appended Instructions for the treatment of the apparently drowned. (Being supplementary to Report of the Committee on Suspended Animation in the Drowned.) Dr. H. E. Symes Thompson: Hypertrophic Pulmonary Osteo-arthropathy, illustrated by the Epidiascope.

WEDNESDAY.

Dermatological Society of London, 11, Chandos Street, Cavendish Square, W., 5.15 p.m.—Demonstration of Cases of Interest.

Hunterian Society, London Institution, Finsbury Circus, E.C., 8.30 p.m.—Hypermetropia in Relation to Squint, to be opened by Dr. J. M. Ettles, who will show lantern slides.

South-West London Medical Society, Bolingbroke Hospital, Wandsworth Common, 8.45 p.m.—Clinical Evening.

THURSDAY.

Ophthalmological Society of the United Kingdom, 11, Chandos Street, W., 8.30 p.m.—Clinical Evening. Cases by Messrs. N. U. Radley, E. Marcus Gunn, Wm. Anderson, and W. T. H. Spicer.

FRIDAY.

Epidemiological Society, 11, Chandos Street, Cavendish Square, W., 8.30 p.m.—Dr. Louis Sambon: On Sleeping Sickness.

Clinical Society of London, 20, Hanover Square, W., 8.30 p.m.—Mr. A. Ernest Maylard, M.B., B.S.: Congenital Narrowness of the Pyloric Orifice a Cause of Chronic Gastric Disease in the Adult, illustrated by seven cases successfully treated by operation. Mr. B. G. A. Moynihan, M.S.: One Hundred Cases of Gastro-enterostomy for Simple Ulcer of the Stomach and Duodenum.

Society for the Study of Disease in Children, 11, Chandos Street, W., 5.30 p.m.—Clinical Cases and Papers.

POST-GRADUATE COURSES AND LECTURES.

Charing Cross Hospital, Thursday, 4 p.m.—Demonstration of Medical Cases.

Hospital for Consumption and Diseases of the Chest, Brompton, Wednesday, 4 p.m.—Lecture on Intrathoracic New Growths.

Hospital for Sick Children, Great Ormond Street, W.C., Thursday, 4 p.m.—Lecture on Cleft Palate.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—Demonstrations will be given at 4 p.m. as follows: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Ear. Lectures will also be given at 5.15 p.m. as follows: Monday, the Clinical Anatomy and Physiology of the Nervous System; Tuesday, Life Insurance; Wednesday, Tremor; Thursday, Tuberculous Diseases of the Skin; Friday, Optic Neuritis.

Mount Vernon Hospital for Consumption and Diseases of the Chest, 7, Fitzroy Square, W., Thursday, 5 p.m.—The Surgical Treatment of Cavities in the Lung (illustrated by museum preparations).

National Hospital for the Paralysed and Epileptic, Queen Square, W.C.—Lectures will be delivered at 3.30 p.m. as follows: Tuesday, Surgery of the Nervous System: Friday, Pathology of Anterior Poliomyelitis and Diphtheria Paralysis (lantern demonstration).

North East London Post-Graduate College, Tottenham Hospital, N., Thursday, 4.30 p.m. Nasal Obstruction.

Post-Graduate College, West London Hospital, Hammersmith Road, W.—Lectures will be delivered at 5 p.m. as follows: Monday, Practical Surgery; Tuesday, Chronic Pancreatitis; Wednesday, Practical Medicine; Thursday, Rectal Cases; Friday, Ankylostomiasis, illustrated by specimens and lantern slides.

Samaritan Free Hospital for Women, Marylebone Road, N.W., Thursday, 3 p.m.—Lecture on Leucorrhœa.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 8s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

GORDON-WILSON.—On the 26th November, at 1, Philbeach Gardens, South Kensington, S.W., the wife of Dr. A. Gordon-Wilson, of a son.

O'MEARA.—On the 1st inst., at Curragh View, Skibbereen, Co. Cork, the wife of T. J. O'Meara, A.B., M.B., etc., of a son.

MARRIAGE.

DRINKWATER—JAY.—On the 18th November, at St. Pancras Church, London, by the Rev. W. H. Fletcher, Vicar of Wrexham and Canon of St. Asaph, Harry Drinkwater, M.D., Grosvenor Lodge, Wrexham, to Katherine R. Jay, L.C.A., B.Sc., Chippenham, Wilts.

DEATHS.

BAILLIEU.—On the 19th November, at the Surgery, Hafod, near Pontypridd, Charles P. F. Baillieu, L.R.C.P. & S.Edin., L.F.P. & S.G., aged 39.

WOLFENDALE.—At Beech House, Gorton, Manchester, on Wednesday, the 25th November, Winifred Margaret (Winsome), aged 2 months, the beloved and only daughter of Dr. and Mrs. Geo. A. Wolfendale.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aetiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

ALPHA would feel obliged for any information regarding the bee-sting treatment of rheumatism.

ANSWERS.

E. C. W.—The amount paid for ambulance lectures varies, we believe, from 10s. 6d. to 1 guinea a lecture.

A. G.—We know of no textbook dealing with the technique and cost of erection of temporary wood and iron buildings. Several firms (for example, Messrs. Humphreys) issue booklets respecting the cost and manner of erection of their isolation hospitals, and we recommend our correspondent to write for such a prospectus.

THE MIDWIVES ACT.

N. J. K.—The Midwives Act, 1902, Section 11. specifies certain bodies as being competent to grant certificates in midwifery, but it also gives the Central Midwives Board power to approve other certificates. In this connexion it must be remembered that a midwife who produces evidence satisfactory to the Midwives Board that at the passing of the Act she has been for at least one year in bona-fide practice as a midwife and bears a good character may claim to be certified. With regard to the last point raised by our correspondent, we imagine that there must be some misunderstanding: a certificate given by an individual practitioner would be of no value to the recipient.

NOTES, LETTERS, Etc.

ADRENALINE CHLORIDE IN UTERINE HAEMORRHAGE.

MISS SOPHIE PALMER, M.B., Ch.B.Edin. (Charlotte Hospital, Ludhiana, Punjab), writes: I recently used adrenalin chloride in a case of post-abortion haemorrhage with great success. The patient was a multipara; she came to me with a history of having aborted at the fourth month, four days before, and she affirmed that she lost a quart of blood or more at the time, and for the following four days had had bad haemorrhage. She was certainly blanched and very anaemic. I found the external os patulous, the uterus enlarged and soft. I gave her chloroform, and curetted, removing masses of putrescent clots, membrane, and débris. Although I only used my finger and the flushing curette the haemorrhage was very severe. A hot douche (120°) with tr. ergotae had no effect. I finally soaked some gauze in a 1 in 1,000 solution of adrenalin chloride (Parke Davis and Co.'s preparation), packed it into the uterine cavity, and plugged the vagina with wool. The haemorrhage ceased almost immediately, as was demonstrated by the condition of the vaginal plugs when removed 24 hours later. The uterus contracted well, there was no recurrence of the haemorrhage, and the patient made an uninterrupted recovery. I should be glad to know if there are any risks which contraindicate the use of adrenalin chloride solution in such cases as the above or in true *post-partum* haemorrhages.

PARAGUAY TEA

DR. ARTHUR WATSON (Leamington Spa) writes to express the pleasure with which he read the annotation upon Paraguay tea (yerba maté) in a recent issue of the BRITISH MEDICAL JOURNAL. When near Lima he heard frequently of its regular and general use, and learned that travellers having maté with them feared neither exhaustion from fatigue nor absence of food for many hours. He thinks that the importation of Paraguay tea into this country is desirable.

TO THE LORD MAYOR.

Congratulations, Sir, with all our hearts,
And may the Baronet be kind to Bart's! E. W. R. D.

PROPOSED DURHAM UNIVERSITY LODGE.

DR. FREDERICK SPICER, Honorary Secretary *pro tem.* (17, Wimpole Street, London, W.), writes: I note with pleasure a letter from Dr. Bedford Fenwick which appeared in the BRITISH MEDICAL JOURNAL of November 28th, calling attention to the fact that a Masonic Lodge in connexion with the University of Durham is under consideration. The writer is evidently unaware of the steps already taken. An influential Committee has been formed, with Sir George Hare Philipson as chairman, to carry out this laudable object, and I am directed by my Committee to say that I shall be pleased to receive the names of any Masons who are graduates of the University who may wish to join.

LETTERS, COMMUNICATIONS, ETC., have been received from

A Alpha; Mr. S. B. Atkinson, London; Anti-noise; Admiralty, Director-General of the Medical Department of, London. B Dr. M. Brown, London; Dr. F. Bushnell, Plymouth; Dr. N. Benoly, London; Dr. A. W. Beaumont, London; Mr. W. M. Beaumont, Bath; Miss E. H. Bolton, Southport; Mr. L. A. Bidwell, London; Messrs. C. Beaumont and Co., London; Dr. E. R. Bowen, Cardiff; Dr. A. G. Barnes, Leeds; Dr. H. E. J. Biss, Eastbourne. C Civilian; Mr. H. W. Carson, London; W. B. Clarke, M.B., London; Dr. J. B. Cleland, Glasgow; Mr. J. Clark, Street; R. J. Coulter, M.B., Newport, Mon; Dr. J. A. Calantaraints, Scarborough; Mr. G. A. Casalis, Capetown; Dr. S. D. Clippingdale, London; J. A. Craig, M.B., Belfast; Congratulator; Dr. E. Cautley, London; Mr. A. A. Cooper, London; Mr. E. Crockett, Hampton Wick; A. Cox, M.B., Gateshead. D Dr. W. R. Dawson, Finglas; A. V. Davies, M.B., Shaw. E Mr. T. S. Ellis, Gloucester; Dr. T. Eastes, Folkestone. F Mr. H. P. Fitzgerald, Wellington College; Messrs. Fannin and Co., Dublin; Mr. A. E. Freer, Stourbridge; E. R. Fothergill, M.B., London; Dr. E. Fraser, London. G Mr. A. R. Guest, London; Dr. J. Galloway, London; Miss Gill, London; Dr. L. Grant, Ballachulish; Mr. H. B. Gardner, London. H E. Huntley, M.B., Sudbury, Suffolk; F. R. Hill, M.B., Carlisle; Dr. J. P. Henry, London; Dr. P. S. Hichens, London; Dr. W. J. Harris, Shaftesbury; Dr. P. Horrocks, London; Mr. J. Houston, London; Humber; Mr. J. Hall-Edwards, Birmingham; F. G. Haworth, M.B., Darwen; Dr. W. J. Horne, London. J Dr. E. L. Jones, Cambridge; Dr. A. James, Edinburgh; Dr. A. C. Jordan, London; Dr. E. Jepson, Durham; Justice. K Dr. T. N. Kelynack, London; Mr. R. N. Khory, Bombay; Kidderminster Medical Society, Secretary of, Kidderminster. L Lieutenant-Colonel E. Lawrie, I.M.S. (Ret.), London; F. H. Low, M.B., London; Mr. P. G. Lee, Cork; Dr. R. R. Law, Sidcup; W. H. Lowman, M.B., Dera Ismael Khan; Dr. T. G. Lyon, London. M Dr. H. W. G. Macleod, London; Dr. J. Mackenzie, Burnley; M.R.C.S.Eng.; Mr. F. C. Melhado, London; Mr. H. H. B. Macleod, Shrewsbury; Dr. C. K. Millard, Leicester; Dr. E. W. G. Masterman, Jerusalem. N N. T. H.; N.M.C. P Mr. S. Phillips, London; Mr. W. P. Pearsall, Dublin; B. Pollard, M.B., London; Dr. C. B. Plowright, King's Lynn; Mr. J. J. Pickles, Leeds; Primus. Q Query. R J. Rigg, M.B., Preston; Recruiting Medical Officer; Retired Practitioner; R. J.; Rustic; Mr. H. M. Raven, Broadstairs. S Dr. J. O. Symes, Clifton; Dr. W. Sykes, Paignton; Dr. E. Schiff, Vienna; Messrs. G. Street and Co., London; Mr. S. Spokes, London; B. Strachan, M.B., Sunderland; Sardam; Dr. R. Stockman, Glasgow; Sheffield Medico-Chirurgical Society, Secretary of, Sheffield; Dr. F. H. Spencer, Exeter; Surgeon's Dispenser; St. Bartholomew's Man. T Mr. A. J. E. Terzi, London; Mr. J. L. Taylor, London; Dr. P. Thompson, London. V Mr. W. Valentine, Earlestown; Dr. G. G. Valentine, Richmond, Va. W Miss M. Webb, Manchester; H. H. White, M.B., Corwen; J. Wallace, M.B., Weston-super-Mare; Dr. W. White, Manchester; Mr. J. A. Whitty, London; Dr. F. J. Waldo, London; Dr. H. Waldo, Clifton; Mr. W. B. Winckworth, Taunton; Dr. A. J. Wallace, Liverpool; Messrs. J. Wright and Co., Bristol; Dr. F. Willcocks, London; B. H. Walker, M.B., Stoke-under-Ham.

BOOKS, Etc., RECEIVED.

Transactions of the Ophthalmological Society of the United Kingdom. Vol. xxiii. Session 1902-3. London: J. and A. Churchill. 1903. 12s. 6d.

Casebook for Private Nursing. London: The Scientific Press, Ltd. 3d.

The Examination of the Urine. By J. K. Watson, M.D.Edin., M.B., C.M. London: The Scientific Press, Ltd. 1s.

Manual of the Diseases of the Eye. By Charles H. May, M.D. Third Edition. London: Bailliere, Tindall, and Cox. 1903. 8s. 6d.

Die progressive Myoklonus-epilepsie (Unverrichts myoklonie). Von Dr. Herman Lundborg. Upsala; Almqvist and Wiksell.

The Treatment of Plague with Professor Haffkine's serum. By N. H. Choksy, M.D. Bombay: The Indian Textile and Municipal Journal Company, Ltd. 1903. Rs. 5.

Manual of Midwifery. By W. E. Fothergill, M.A., B.Sc., M.D. Third Edition. Edinburgh: William F. Clay; and New York: The Macmillan Co. 1903. 9s.

Yearbook of the Scientific and Learned Societies of Great Britain and Ireland. Compiled from official sources. Twenty-fifth Annual Issue. London: Charles Griffin and Co., Limited. 1903.

Clinical Treatises on the Pathology and Therapy of Disorders of Metabolism and Nutrition. By Professor Dr. Carl von Noorden. Part IV. The Acid Autointoxications. By Professor Dr. Carl von Noorden and Dr. Mohr. New York: E. B. Treat and Co. 1903. 50c.

Sammlung klinischer Abhandlungen über Pathologie und Therapie der Stoffwechsel und Ernährungsstörungen. Herausgegeben von Professor Dr. Carl von Noorden. 4 Heft.

Health, Wealth, and Wisdom. London: Methuen and Co. 1s.

Ueber diabetische und nicht-diabetische Autointoxicationen mit Säuren (Acetonsäure). Von Dr. L. Mohr. Berlin: August Hirschwald. 1904. M. 1.20.

The Nutrition of the Infant. By Ralph Vincent, M.D. London: Bailliere, Tindall, and Cox. 1903. 10s. 6d.

Materia Medica of India and Their Therapeutics. By Rustomjee Naserwanjee Khory and Nanabhai Nowroji Katrak. Vols. i and ii. Bombay: "Times of India" Press.

A Guide to the Housing Acts. By Arthur P. Poley, B.A. London: Eyre and Spottiswoode. 3s. 6d.

The Archives of the Middlesex Hospital. Vol. i. London: Macmillan and Co. 1903.

A Manual for Students of Massage. By Mary Anne Ellison. Second Edition, revised by Guilelma Manley. London: Bailliere, Tindall, and Cox. 1904. 3s. 6d.

Reports of the Society for the Study of Disease in Children. Vol. iii. 1902-3. Edited by George Carpenter, M.D. London: J. and A. Churchill. 12s. 6d.

The Prevention of Consumption. By Alfred Hillier, M.D., C.M., B.A. Revised by Professor R. Koch. London: Longmans, Green, and Co. 1903. 5s.

An Atlas of Human Anatomy. By Carl Toldt, M.D., and Professor Alois Dalla Rosa, M.D. Translated from Third German Edition by M. Eden Paul, M.D. Brux., M.R.C.S., L.R.C.P. Second section. C. Arthrology. London: Rebman Ltd. 1903. 6s.

Diseases of the Nose and Throat. By Charles Hunsdon Knight, A.M., M.D. London: Rebman Ltd. 1903. 17s.

Bacteriology of Milk. By Harold Swithinbank and George Newman, M.D., F.R.S.E., D.P.H. London: John Murray. 1903. 25s.

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The Bradshaw Lecture

ON

CANCER AND ITS ORIGIN.

Delivered at the Royal College of Surgeons on December 9th.

By HENRY MORRIS, M.A., F.R.C.S.,

Senior Vice-President and Chairman of the Court of Examiners of the Royal College of Surgeons of England: Senior Surgeon to, and Chairman of the Cancer Investigation Committee of, the Middlesex Hospital.

I HAVE chosen cancer, meaning thereby both carcinoma and sarcoma, as the subject of this lecture for several reasons.

1. The discovery of the microbic origin of certain diseases has led to the most painstaking efforts to ascertain, by means of modern bacteriological methods, the cause, or causes, of cancer. What the result has been I shall endeavour to show.

2. The premature publication of immature and disputable conclusions, and of crude and impossible theories, has unfortunately aroused false hopes, and has attracted the impatient and somewhat too credulous attention of the general public to everything connected with the word "cancer." It would be well, if it were possible, to allay these consequences.

3. No lecture, especially on cancer, has been given at this College since the last Morton lecture was delivered in May, 1894.

4. This Royal College has for the first time in its history recently embarked on a great and important scientific inquiry by, conjointly with the Royal College of Physicians, undertaking the general direction and control of what may be called a national movement for the investigation of cancer; and it may be of interest to review, although very imperfectly, the general position of the subject at the commencement of this undertaking by the Royal Colleges.

I had thought of prefacing what I have to say to-day on cancer and its origin by a short account of the leading views which have been expressed in this country during the last thirty years about cancerous affections. To this end I studied and made epitomes of all the lectures bearing on cancer which have been delivered in this College during that period, as well as of the two great debates on cancer which have taken place within the same period, the one in London in 1874 and the other in Glasgow in 1886.

These lectures and debates contain all that was known about cancer, and of the theories as to its causation, up to the date of their publication; but I found that even the briefest summary of them would extend far beyond the limits of an hour's discourse.

With regard to the theories of causation of malignant diseases which have been published since the delivery of the last of the Morton lectures, even a mere statement of them would occupy much time; and any attempt at a complete account would take up several hours.

Dr. Alexander Katz of Hamburg, in a paper read before the Berlin Cancer Committee in January, 1902, grouped the alleged causes of cancer formation into the entogenous (or intrinsic) and the ectogenous (or extrinsic).

By entogenous causes are understood certain spontaneous and anomalous changes within the organism; by ectogenous causes those derived from outside the body. The entogenous embrace, amongst many others, the causes alleged under the two important theories of Thiersch and Cohnheim. Thiersch's theory, and all the variants of it, may appropriately be called the "lost balance theories" in contradistinction to the "matrix" or "tumour germ" theory of Cohnheim and his followers.

According to Thiersch, the beginning of a tumour formation is due to a loss of balance between the epithelial cells and the connective tissue. In carcinoma, for example, this loss of balance occurs during advancing age by the degeneration of the connective tissue, and results in an invasion of these tissues by the epithelial cells. In other words, the theory supposes that in its origin carcinoma depends on some cause which produces, as age advances, a local impairment of resistance, a retrograde process in the subepithelial structures, whilst the epithelium maintains its activity, or, it may be, acquires a special vigour. This view, Katz says, has never gained a foothold, and is only of value in that by means of it the age limit of cancer can be explained. Katz's statement is, however, at variance with the somewhat considerable importance which has been attached to Thiersch's theory, at any rate, in this country, for it was accepted as probable by Coats and Maylard in the Glasgow debate; it was adopted in his Morton lectures by Sims Woodhead, who corroborated it by what he found on microscopic examination of the tongues of old people; in principle it has been quite recently supported by Fowlerton and by Woods Hutchinson; it appears also in the theory of "unstable equilibrium" of Powell White: and its influence is also traceable in certain other modern theories, as, for example, the "anaplastic" theory of Hansemann.

Thiersch's theory, and the other "lost balance theories" are all open to the same objections which the "localists" brought against the "constitutional" theory.

To hold that the formation of carcinoma is due to a loss of the normal balance between the epithelium and the connective tissue, the result of advancing age, is to imply the existence of an "all-pervading condition" of the connective tissues, and yet that this "all-pervading condition" can give rise to a disease which, at its outset at least, is strictly localized. A disease so originating is not less of a constitutional disease than one due to a "special material in the blood"; and such a theory of cancer is open to all the same arguments as the "blood theory."

Indeed Paget, after pointing out that there are not many things which do "all pervade the body," fixed upon the "all pervading blood," rather than the "all pervading connective tissue," as the medium of the supposed "virus," merely, as he said, "because at any rate we can then hold to our study by some sort of analogy with things that we recognize as blood diseases." If the theory was correct, cancer should commence, not as a solitary tumour, but as a general carcinomatosis or sarcomatosis.

I must pass now to a brief consideration of the ectogenous group of conjectural causes.

These are (1) the various forms of injury, chronic irritation, and chronic inflammation; and (2) micro-organisms.

Great importance has been attached by Virchow and many others to chronic irritation as a causative factor in cancer; and it is certainly needful for us all to bear in mind the pernicious rôle played by the clay pipe, the carious tooth, and many and various agencies of the kind in provoking the development of cancer.

But not one of them can take rank as the essential and unconditional cause of malignant disease; that is as the factor without which cancerous diseases cannot arise; though they are unquestionably amongst the agents which excite the real factor of tumour formation into activity, and as such they must be referred to again in connexion with the "tumour germ" theory.

The Microbic Theories.

The theory of the microbic origin of cancer still occupies the very forefront of cancer research. There are not wanting, however, indications that it is on the wane, and that it may soon come to be described, as indeed Hansemann in his recent work has already spoken of it, as "belonging to history."

The search for a specific micro-organism of cancer dates back to the early days of modern bacteriology. As soon as tuberculosis was removed from the list of diseases due to a so-called diathesis, by the discovery in 1882 of the bacillus tuberculosis, a very large number of scientific workers made it their aim to demonstrate, if possible, the existence of a corresponding micro-organism as the causative agent of carcinoma and sarcoma. Nedopil, in a memoir published in 1883, was the first to sustain with conviction the microbic origin of cancer. No sign of a specific cancer organism had, however, at that time been demonstrated. But research soon led to the alleged discovery by different experimental workers of three classes of living agents, namely, bacteria, protozoa, and saccharomycetes and blastomycetes, or yeast fungi.

The Bacterial or Schizomycetic Theory.

Bacteria were the first organisms which were thought to be the cause of cancer. Nepveu, as far back as 1872, had found them in carcinoma, and Rappin is said to have actually isolated a diplococcus both from epithelioma and sarcoma in 1886. During 1887 there appeared a number of writings by different investigators who claimed to have discovered, either in cancerous tumours or in the blood of cancerous persons, the microbe of cancer, and to have isolated and cultivated it, and by means of inoculation of the fluid culture to have obtained the reproduction of the disease in animals.

Scheuerlen claimed to have isolated and cultivated a

special bacterium from carcinoma. Francke described a bacillus of sarcoma which he differentiated from the bacterium found by Scheuerlen in carcinoma. Schill stated that he had successfully cultivated a bacterium from both carcinoma and sarcoma. Others subsequently made similar claims, whilst, on the other hand, several eminent observers were arriving at the conclusion that many of the supposed micro-organisms were the factitious products of faulty technique, and that such micro-organisms as had been actually discovered played but a very subordinate rôle, if any, in the evolution of malignant tumours.

The Protozoic or Psorospermic Theory.

Before the year 1884 attention had scarcely at all been directed to the presence of sporozoa in human pathology; but between that date and 1891 coccidia (a group of parasites belonging to this class of protozoa) were found in a variety of the organs of man, especially in the pleura, the intestinal epithelium, the liver, and ureter, as well as in the mucus from the air passage of persons suffering from whooping-cough.

In 1889 and the following year a number of descriptions were given by several observers of coccidia-like bodies having a great resemblance to the coccidium of the liver of rabbits which they had discovered in carcinoma of the skin, jaw, intestine, stomach, nipple and breast, prostate and bladder, and other parts. These bodies were found both in the nucleus and protoplasm of cancer cells. In 1891-2 Ruffer found and described bodies which he regarded as psorosperms in the protoplasm of carcinoma cells. In the same and the following years other workers described similar results. In 1901 appeared Schueller's monograph with the description of the round or oval yellowish-grey or yellowish-brown protozoon of cancer, showing radiating striae or cilia in their structure, which he had discovered. In 1901 Gaylord published an account of certain spherical bodies alleged by him to be cancer organisms; and v. Leyden described a protozoal organism in the form of motile cells. In a work just published Dr. Ludwig Feinberg argues for the animal nature of his cancer parasite, to which he gives the name "histosporidium carcinomatosum."

On the other hand, many observers have asserted that all these alleged cancer organisms are not psorosperms, but the products of cell degeneration or cell inclusions of leucocytes or red blood discs, or are the result of irregular forms of indirect division of epithelial cells; and Ribbert brought forward, amongst other objections, his ingenious and telling argument of "symbiosis" against the validity of the microbic origin of cancer.

The Blastomycetic Theory.

The theory that carcinoma is due to infection by a vegetable parasite belonging to the blastomycetes or yeast fungi was first promulgated by Russell in 1890. Russell found certain small round bodies within the cells of carcinoma which retained the fuchsin stain after sections of carcinomatous tumours had been treated with carbol fuchsin, then decolorized with alcohol, and finally counterstained with iodine green. These "fuchsin bodies" he regarded as yeast-like or "sprouting fungi."

Prior to Russell's paper the yeasts had been considered as wanting in any pathogenic effect; but within a few years after cases of yeast infection in man, resulting in the formation of granulomata but not of malignant new growths, came to be recorded.

The blastomycetic theory of the origin of cancer has been since pursued chiefly by Sanfelice and Roncali, who not only confirmed Russell's views, but have gone much further. Plimmer, who was previously a strong supporter of the protozoic theory, and had, like Soudakewitch, Metchnikoff, Ruffer, and others, described the cancer bodies as protozoa, became a convert to the views of Russell, Sanfelice, and Roncali, whilst Sawtschenko, who was also converted, has recently described as representing yeasts the same figures which he had formerly described as representing protozoa.

As in the case of bacteria and psorosperms, so with the yeasts alleged to have been found in cancers, their nature is disputed by many observers. The "fuchsin bodies" of Russell were regarded by Cazin and Duplay as a certain form of cell degeneration (*globes hyalines*); by Nepveu as being derived from changes in the nuclei of leucocytes, or in red blood corpuscles, or still oftener from the endothelial cells of the lymphatics; and by others they were considered to be due to degeneration of protoplasm, or to atypical mitosis and phagocytosis; whilst Foulerton and Price-Jones pointed out three possible sources of fallacy as to the presence of yeasts in cultures obtained from malignant new growths, the chief of the three being contamination owing to the presence of yeasts or torulae in the air of the laboratory.

In short, neither fission fungus, yeast fungus, nor psorosperm—neither bacterium, blastomycete, nor protozoon—has up to the present moment been satisfactorily shown, in spite of years of patient study by many skilled workers, to be in any sort of causal relationship to these diseases.

How different was the case of the tubercle bacillus! for when Koch announced his great discovery he was able to bring forward such overwhelming proof of the correctness of his claim that, with few exceptions, the most sceptical were forthwith convinced.

The Transmission of Cancer by Grafting and Direct Inoculation.

Some of the results of grafting and direct inoculation have often been evoked in support of the microbic theories of cancer genesis, though upon very inadequate grounds. For more than a century experiments have been resorted to with the object of testing:

1. Whether cancer can be transmitted from man to animals, or from one animal to another of a different species.
2. Whether cancer is communicable from man to man, or from one animal to another of the same species.
3. Whether one part of a cancerous individual can be inoculated from another part which itself is the seat of cancer.

Clinical observations have also been directed to the solution of some of these questions.

Reference may be made to Cazin[1] for the earlier, and to Behla's lecture on "*cancer à deux*" delivered before the Berlin Cancer Committee, April 3rd, 1901, for the most recent information on the second of these questions. Macewen in his speech at the Glasgow debate, and De Bovis[2] in a recent article have also quoted several cases of the alleged communication of carcinoma from man to man; and my friend and former house-surgeon, Mr. Nash, of Bedford, has collected 5 cases of supposed communication of cancer of the tongue and lip from man to man. Morau's observations seem to prove that cancer was communicated from mice to mice by means of bugs.

Many of the cases in man were instances of what is called "conjugal cancer"; and in these, as well as in the cases other than of the genital organs, the cancer formation was, I consider, excited by chronic or repeated irritation, rather than communicated by the transmission from one person to the other of the carcinoma cells.

Several instances of auto-inoculation were quoted by the speakers in the London and Glasgow debates. Hahn succeeded in grafting carcinoma and Cornil sarcoma from one part of a human being with incurable disease to another part of the same patient's body.

Some experiments by Morau are of great importance, because they were the first which were made in a systematic manner to show the transmissibility of a malignant new growth from one animal to another of the same species.[3] Quite recently Jensen and Borrel have had successful series of inoculations and graftings in white mice.[4] Jensen had a series of eight, and Borrel of six, successes. Jensen's work[5] has now extended over two and a-half years and includes nineteen generations.

None of the results of the experiments, and none of the clinical cases just alluded to, however, give satisfactory support to the microbic theories; nor do they explain the specific capacity of the cells which enables them to grow and multiply on new soil.

The tumour products of microbic infection are the so-called granulomata formed out of the corpuscular elements of the blood and the proliferation products of pre-existing tissue; they are the results of a chronic inflammatory process, and all the tumours caused by the same kind of microbe are structurally the same, no matter in what part or organ they originate or develop. Not so the tumours of carcinoma and sarcoma. In endothelioma and spindle-celled sarcoma the cells of the secondary tumours are, as in carcinoma, histologically identical with the cells of the primary neoplasm. It is only in round-celled sarcoma that we cannot be sure whether the cells of the secondary growths are derived from the cells of the primary tumour or from the tissue in which the secondary growths occur. The round-celled sarcoma more closely resembles the chronic inflammatory processes than does spindle-celled sarcoma, and still more so than carcinoma.

The primary tumour of carcinoma varies in structure

according to its location and to the type of epithelial cell which is normal to the part affected. The secondary tumours are also composed of epithelium which has the same form and the same arrangement as that of the primary tumour; and the secondary tumours have, moreover, all the same delicacy of construction as to stroma, blood vessels, and lymphatics, as well as other points of similarity with the primary tumour. All this was strikingly, if quaintly, put by Moxon at the London cancer debate, when he remarked: "You find that rectum cancer is rectum tissue ..... whose structure is that of the Lieberkühn follicles of the mucous membrane of the gut"; and, as to the metastatic growths, you do not "find rectum cancer in the rectum and liver cancer in the liver; but, instead of that, I have repeatedly seen rectum in the liver."

Coats in the Glasgow debate told how the delicate structure of the blood vessels which had led to fatal haemorrhage from a primary growth was repeated in the secondary growths in the form of extensive extravasations of blood throughout the tumours.

Stewart has recorded a case in which growths in the liver and lung secondary to carcinoma of the pancreas, besides having the racemose glandular structure of the primary tumour of the pancreas, had also a chemical resemblance, for upon analysis the secondary growths were proved to contain a high percentage of trypsin.

The definite establishment of these facts has proved that the secondary growths are produced by the migration of cells from the primary seat: that the development of these growths is solely by the multiplication of their own cells, and that there is no transition of the parenchyma of the part invaded into the tissue of the carcinoma. So with reference to sarcoma. The typical sarcomatous tumour element is the connective tissue cell, and the secondary tumours resemble the primary in every respect.

From nothing that we know up to the present time of the action of micro-organisms could the microbic theory throw the least light upon the cases of alleged transplantation and direct inoculation of cancer from one person to another. How can we, on the microbic theory, explain a glandular-celled carcinoma producing in another person a squamous-celled carcinoma, or a squamous-celled carcinoma of the tongue giving rise to a spheroidal-celled carcinoma of the mamma, or to a columnar-celled carcinoma of the stomach or rectum. Such alleged cases are at total variance with what occurs in auto-inoculation, and with all the knowledge we have of the local, regional, and general infection of cancer, as well as with our experience of the action of microbes upon living tissues.

Auto-inoculation is then comparable to, if not identical with, the recognized mode of regional and metastatic infection of carcinoma, and is as unlike microbic infection as these other processes are admitted to be.

The "Tumour Germ" Theory—Cohnheim's Theory.

There is one theory which is more consistent than any other with all that we know about malignant diseases, which fully explains the origin of very many non-malignant tumours, and is, I believe, destined to be accepted as the true explanation of the genesis of malignant new growths. It is the theory which was put forth by Durante of Rome about the year 1874, and a year or two later by Cohnheim (1877).

Cohnheim referred the origin of carcinoma to the proliferation not of mature but of embryonic epithelial cells. He taught that all tumours originate from a matrix of embryonic cells, which during fetal life are cut off from their proper connexions, remain in an undeveloped state, are surrounded by developing and ultimately developed tissues, and thus become, so to speak, "embryonic inclusions." According to Cohnheim these groups of of cells, or "tumour germs" are portions of the germinal layers which, through not being utilized in the growth of the embryo, or by becoming displaced from their proper relations during the process of cell differentiation in the embryo, remain in a quiescent or latent state until excited into activity by one or other of several causes at some indefinite period after birth.

Cohnheim insisted that a tumour never had its origin directly or indirectly from mature tissue. And herein lies the difference between Durante and Cohnheim, for whilst the latter regarded the matrix of embryonic cells or "tumour germ" as always of congenital origin, Durante thought that the elements from which arise all neoplasms, and especially the malignant, are either those "which preserve in the adult organism their embryonic anatomical characters, or which have acquired them again through weakening of their chemical and physiological activity."

Obviously Cohnheim's doctrine is insufficient by itself to explain the formation of malignant new growths in scar tissue, in immature callus, in unabsorbed inflammatory products, and in parts after injuries and operations of various kinds. This deficiency is met by extending the theory so as to include groups of cells which become isolated beyond their own natural boundaries by post-natal processes.

Nicoladoni in 1881, in a paper on epithelioma in sequestrated wounds (*les plaies à séquestre*) attributed the origin of the new growths to shreds of skin which had become displaced into fistulous tracts, and had there proliferated under the stimulus of an accidental inflammation of the part or of an operation.

Ribbert has indicated the possibility, during an inflammatory process, of a group of newly-formed epithelial cells becoming completely detached from their natural parent tissue, and of the cell or cells, so withdrawn from the control and growth-regulating influence of normally surrounding cells, assuming an exalted independence and power of proliferation, whereby a tumour becomes developed. He also recognizes that a fragment of sequestrated tissue detached by trauma of any sort may in the same way become a "tumour germ."

It was to meet this deficiency of the Cohnheim theory that Senn added to it this corollary: "The tumour matrix may be composed of embryonic cells, the offspring of mature cells, which have failed to undergo transformation into higher tissue, and which may remain in a latent, immature state for an indefinite period of time, to become, under heredity or acquired exciting causes, the essential starting-point of a tumour." Senn expresses this extension of the "tumour germ" theory, in his definition of a tumour, thus: "A tumour is a localized increase of tissue, the product of tissue proliferation of embryonic cells, of congenital or post-natal origin, produced independently of microbic cause."

We thus see how Durante, Nicoladoni, Ribbert, and Senn embrace and supplement the incomplete theory of Cohnheim by recognizing a post-natal origin of a cell matrix.

I propose now to examine separately, as well as the time will permit, the evidence in favour of the separate parts of the "tumour germ" theory, namely:

1. The existence of congenital matrices of embryonic cells.
2. The existence of matrices of post-natal formation.
3. The continuance of these matrices for a time in a dormant state.
4. The causes which arouse the matrices into activity.

1. First, what proof do we possess of the existence of *congenital* matrices of embryonic cells? It is hardly necessary to enumerate the many instances of "vestiges" and "fetal rests" which are found in the human body, as they now form a brief chapter in the latest textbooks on anatomy. Tracts of embryonic epithelium are well known to occur in the tongue, gums, face, scalp, neck, brain, eye, testicle, broad ligament, ovary, and along the lines of coalescence of the trunk.

For many other instances of vestigial and abnormal structures reference may be made to Professor Arthur Robinson's article in Morris's *Treatise on Anatomy*.

Dr. J. Beard, in a lecture on Embryological Aspects and Etiology of Cancer,[6] states that in elasmobranch fishes—and he implies that the same conditions pertain in man—a considerable percentage of the primary germ cells fail to reach their normal position, the germinal ridge; that many of these vagrant germ cells degenerate and disappear, but all do not; and that the common situations for the origin of cancer are the very ones in which vagrant persistent germ cells are usually met with.

2. The occurrence of matrices of embryonic tissue of *post-natal* origin is capable of completely satisfactory explanation. Leo Loeb[7] has described how in the healing of a superficial wound the epithelium of the skin on either side of the wound was seen to have fused itself into a cell mass which sent off branches not only across the wound, but down into the blood clot and the connective tissue, especially if the connective tissue had been injured; and these branches of the cell mass even burrowed through cartilage. It is intelligible enough therefore how in the cicatrization of ulcers and wounds generally, some of the epithelial buds may become "isolated," and being thus shut off from their proper anatomical relations and from their normal function, may under suitable stimulation develop into carcinoma. Epithelial cells not utilized in

the process of epidermization and becoming buried in the scar tissue may, when brought under the influence of the needful exciting cause, give rise to carcinoma. This sequestration of unused cells may occur after burns, chronic ulcers, lupoid and syphilitic sores, fissures, sinuses, fistulae, compound fractures, cracked lips, the excoriations from soot, tar, or paraffin, lacerations and ulcerations of the cervix uteri; and after the alternate breaking down and healing in such diseases as ichthyosis of the tongue, cheek, vulva, and vagina, or ulcers caused by carious teeth, as well as after wounds whether operation wounds or otherwise.

In like manner a matrix may be produced from which sarcoma may arise. In parts which have been the seat of chronic inflammation, and in scars, unspecialized connective tissue cells may be buried, and will be there ready to grow into a sarcoma under the influence of a sufficient exciting cause. Some of the embryonic cells during the process of repair of a fracture may fail to attain to the perfection of their parent cells, and will thus remain in the part in a latent condition like the congenital matrix of embryonic cells predicated by the original theory of Cohnheim.

3. What proof have we that a matrix of embryonic tissue, whether of congenital or acquired origin, can remain for a length of time in a quiescent state, and then suddenly start into active growth under the influence of some stimulus?

This is actually witnessed in the growth and development of the teeth, bones, the skin and its appendages, the larynx, the mamma, and the organs of generation, the cells of which remain for years in a state of incomplete differentiation, and then normally, under the physiological stimulus which occurs at puberty, take on rapid proliferation. Pathologically the same suddenly aroused activity is seen in certain epithelial tumours which are rarely noticed before puberty, such as dermoids, branchial cysts, and mammary adenomata. Rudimentary organs and accessory organs, which hitherto as to growth have been stationary as well as functionless, become the starting points of tumours, more especially at and after puberty.

4. The causes which arouse a matrix into action are numerous. For a matrix of embryonic cells to be transformed into a tumour it must be aroused into activity by some exciting agent. We must now inquire what these exciting agents are, and in what relation the commonly ascribed causes of cancer stand to the "matrix" or "tumour-germ" theory of cancer causation. The stimuli which arouse the cells of the dormant matrix to active proliferation are either general or local, congenital or acquired, and the chief amongst them are the alleged common causes of cancer just enumerated. Let us consider four of them in some detail, namely, heredity, age, traumatism, and chronic irritation:

4. (*a*) *Heredity.*—A case like that of Friedreich, where a woman with carcinoma gave birth to a child affected with carcinoma, is altogether exceptional. Statistics hitherto have given insufficient and inaccurate information concerning the frequency with which the offspring of parents carcinomatous at the moment of conception or delivery have been affected with carcinoma. There is, however, no more reason to doubt that an aptitude is transmitted from parent to child for the development of carcinoma and sarcoma than for denying an hereditary disposition to various other diseases. This aptitude, or predisposition to malignant disease, has been appropriately described as "a diminution of the physiological resistance of the tissues," which permits of their being invaded and destroyed by the proliferating cells of the tumour matrix. In the great majority of cases (in Cohnheim's view, in all cases) the matrix itself is of congenital origin; but, though congenital, it may never be excited into activity. In others the matrix is of post-natal origin, and if the necessary stimulus arises and the tissue resistance is weak, cancer will occur, even in persons in whose family cancer had hitherto been absent.

4. (*b*) *Age.*—There may be in the same person several congenital matrices, one or more of which may be of the epithelial type, one or more of the connective tissue kind. During childhood and young adult life the exciting cause, or matrix stimulus, will start into activity a connective tissue "tumour germ"; but during mature life and in advanced age the same stimulus will arouse by preference a matrix of embryonic epithelial cells, because the epithelium is more active and vigorous than the connective tissue at the later periods of life.

Assuming the presence of a congenital matrix of each kind in the same individual, and that middle life has been reached without the occurrence of any matrix-arousing stimulus, but that after this period some general exciting cause comes into existence, the matrix of embryonic epithelial cells will most likely be the one to respond, and a carcinoma, not a sarcoma, will result. But there may be the simultaneous appearance of different kinds of tumours. Should the stimulus be a local not a general one, the matrix upon which alone it acts will be aroused, and a carcinoma or a sarcoma will be developed according to the type of cells forming the matrix which is stimulated.

With advancing age or senility of tissue come impaired vitality and lessened power to resist the effects of injury, hence the diminution of the physiological resistance of the tissues and the increased proneness to the formation of cancer. Little is known, it must be admitted, of what this "physiological resistance" really consists; what this power is which holds in check altogether, or for a long time, the proliferating tendency or force of a tumour matrix, as it does for years the growth and development of the mammary glands, the organs of generation, the teeth, the larynx, and the beard.

The existence of such a force was, however, demonstrated by Cohnheim and Maas, who introduced pieces of young periosteum into the jugular veins of animals. The periosteum produced bone which was always limited in size to the lumen of the vessel in which the periosteum embolus became impacted; the bone never extended beyond the vessel walls, a physiological resistance restricted it, no further growth ensued, and in time the ossified periosteal graft was absorbed. The same investigators showed that transplanted grafts of embryonal tissue succeed, whereas grafts of mature tissue are invariably removed by absorption in a short time.

Embryonic tissue—fetal cartilage, for example—taken from animals before they are born and engrafted into rabbits, proliferated abundantly; grafts from benign tumours only grew to a very limited extent, if at all, and were then removed by absorption.

Grafts of malignant tumours have almost without exception failed, though, composed as they are, of embryonic tissues. This seems to show that the physiological resistance to malignant cell proliferation is, happily, more effective than against fetal embryonic tissue, or against the embryonic tissue of benign tumours.

The weakness, or want, of this physiological resistance, besides being sometimes inherited, and often a consequence of age, can be acquired through injury, irritation, inflammation, and other pathological, general, or local causes.

4. (*c*) *Traumatism* is often said to cause malignant disease, just as it used to be said to cause inflammation and suppuration. But just as no amount of injury will of itself excite suppuration without the presence of pathogenic and pyogenic organisms in the injured tissues, so no amount of injury will give rise to a tumour without the presence of a matrix of embryonic tissue of either congenital or post-natal origin. No so-called exciting cause will produce cancer or sarcoma in the absence of the "tumour germ" of epithelial cells or connective-tissue cells respectively. But given the presence of such a matrix, then injury of any kind, irritation of any kind—mechanical, chemical, thermal, or microbic—may excite cancer formation, both by arousing the matrix into activity and by diminishing the physiological resistance of the surrounding or adjacent tissues. Whether the cancer follows the injury quickly or tardily depends upon the intensity of its effects upon the matrix or upon the degree to which the physiological resistance or, what is probably the same thing, the nutrition is affected, or upon both these conditions.

4. (*d*) Prolonged irritation and inflammation may (1) excite a matrix of congenital tissue to proliferate; (2) may diminish physiological resistance of the tissues around it; or (3) may provide a post-natal matrix of embryonic epithelial or connective-tissue cells, and thus originate the essential factor of malignant disease, as well as stimulate it into proliferative activity.

Carcinoma of the breast following eczema of the nipple is an instance of malignant disease aroused by chronic irritation and inflammation. Epithelioma of the tongue following long-standing ichthyosis of that organ is another. They are typical illustrations of agents which act in each of the three ways just mentioned. Yet that neither of these pathological irritants is of itself the true and essential cause of carcinoma is proved by cases in my own practice. In 1880 I published two of the earliest reported cases of chronic eczema of the nipple (Paget's disease). Out of 305 cases of mammary diseases which up to that time I had seen in my hospital cancer out-patient practice, eczema of the nipple was met with in

8 cases, in 6 of which there was no cancer present in the mammae. In only 2 cases, then, out of 8 did carcinoma of the breast follow the chronic eczema of the nipple and areola. It is certain, therefore, that something more than the long-standing irritation of chronic eczema is needful for the development of mammary cancer, and this something is a "tumour matrix" in the breast. If due to irritation alone, why did not carcinoma occur in all the eight cases equally?

Ichthyosis of the mucous membrane affords similar proof against the sufficiency of chronic irritation *per se* to excite carcinoma. In 1883 I published a paper on ichthyosis and epithelioma of the tongue. In 13 out of 36 cases of epithelioma of the tongue ichthyosis of the tongue had been a precursor of the carcinoma. In 11 other cases of ichthyosis of the tongue and in 3 cases of ichthyosis of the buccal and labial mucous membrane (14 in all), carcinoma did not occur.

The inference from these cases also is that in the 13 cases in which carcinoma supervened there was in the corium or submucous structures a matrix of embryonic epithelial cells which was stimulated into malignant growth by the long-standing ichthyosis. In the 14 cases in which carcinoma did not supervene, the presumption is either that there was no matrix, or that the exciting cause was inadequate to arouse the matrix into activity, or that the physiological resistance of the surrounding tissue was sufficient to prevent its growth.

5. The validity of the premisses of the "tumour germ" or "matrix" theory being assured, let us see whether the conclusion to which the theory leads can be established by actual facts. This conclusion is that cancerous as well as simple tumours spring from "inclusion masses," some of which are "displaced" masses, of embryonic cells either of congenital or post-natal origin.

5. (*a*) A large variety of benign tumours which are now known to arise from *congenital* matrices might be quoted.

5. (*b*) There is no lack of evidence, either, that tumours are formed from matrices of *post-natal* origin. We know that tumour germs arise as the outcome of surface epithelium, hair follicles, or portions of skin forced into the deeper tissues by punctured and other wounds. From such sequestrated fragments of tissue "implantation cysts" are formed—a group of small tumours allied in character to the sequestration dermoids derived from matrices of congenital origin. These "implantation cysts" when occurring on the fingers are known as "digital dermoids." Others following lacerated wounds have been met with on the scalp containing hair and sebaceous material.

Cysts of the iris following mechanical injury have been found to contain sebaceous matter, and in one recorded case an eyelash. Cysts lined with layers of cells like those on the anterior surface of the conjunctiva have been known to form in the cornea after gunshot and other accidental wounds, as well as after operations for cataract, and are almost certainly derived from conjunctival epithelium forced into the deeper layers of the cornea.

5. (*c*) It has been unquestionably proved that the "tumour germ" theory correctly accounts for the origin of many varieties of benign solid tumours, and of dermoids and other cystic tumours; and we must now try and answer the question with which we are especially concerned. Does it not afford the true explanation of the etiology of malignant tumours also? In attempting to reply to this question, it may first be pointed out that regions and organs in which embryonal inclusions are specially likely to occur are also common situations of primary malignant diseases. To realize the truth of this statement we have but to recall the frequency of sarcoma near the ends of long bones, the occurrence of myeloid and perio-steal sarcoma and epithelioma in the mandible and upper jaw, of carcinoma of the uterus, œsophagus, stomach, and rectum, tongue, and mouth. In the lip the commonest seat of origin of carcinoma is along the line of junction of the skin and mucous membrane. In the rectum the parts at or near the junction of the skin and mucous membrane, and those near the union of the proctodæum (cloaca) and the hind gut are the areas of the greatest liability to carcinoma. In the stomach the pylorus and its immediate region are the chief seats of carcinoma; and it is here, as Cohnheim has pointed out, that the anatomical structure of the organ varies most; it is here, also, that there is the greatest liability to pathological changes, and thus to the development of post-natal as well as of congenital matrices. Such anatomical areas as those just mentioned, like the cervix uteri, are zones of transitional epithelium and are provided with glands not always of normal functional perfection; in these so-called "cancer belts" we may expectantly look for "tumour germs" in the form of isolated congenital nests of embryonic cells.

In a thesis for the Doctorate of Toulouse in 1902 Guillaume Cargue has written on the occurrence of epithelioma in the old sites of osteomyelitis. The author quotes 44 cases collected from literature, together with 5 cases observed in the clinic of Professor Jeannel, of Toulouse. In all these cases epithelioma of the bones was due to fragments of skin which became invaginated, or to detached epidermis cells which became implanted in the bones. The carcinoma appeared either in a diffuse form, or completely enclosed in the tissue of the bone.

Cargue referred to other cases of primary epithelioma of bones after fractures, or in connexion with necrosis. He also quotes from a communication on Tumours of Bone, made to the Congress of Surgery in 1899 by Polossen and Bérard of Lyons to the effect that epithelioma occurring in the maxilla is always due to the proliferation of epithelial cells of the mucous membrane, which have become included in the bones with the dental germs. He refers also to Nicoladoni's work on the formation of epitheliomata in sequestration wounds. Several observers are mentioned by Cargue as having contributed to medical literature cases of epithelioma which have developed in old scars, ulcers, callosities, fistulae, and such-like affections of the soft parts; and he concludes that the same paucity as regards these as well as of similar recorded cases of primary epitheliomata in connexion with bones is due to surgeons not having recognized the real nature of the disease, or of having failed to ascertain the actual seat of it.

Various forms of malignant tumours of the kidney are attributed to fetal rests, such as adrenal inclusions and aberrant renal tubules, embedded in the capsule of the kidney, and which have been stimulated into epithelioma.

Dr. Charles Creighton has described malignant tumours as arising in and near the mammae, and in the axillae, from certain sweat glands situated under the skin, not usually in it, but between it and the axillary fascia. These sweat glands sometimes occur also along the lateral and anterior regions of the chest, and as appendages of the milk sinuses scattered through the mammae. They must be regarded as survivals or rudimentary organs, and as subject to all the risks of such survivals or rudiments.

Dr. Creighton also describes coiled tubular glands and a rudimentary mammary lobule consisting of a branched tube without real acini as being the starting-points of carcinoma within the mammary gland, and he considers that the proper mammary structure takes really no part in the morbid growths of the organ.

Volkmann described deep-seated primary carcinoma originating in the neck from the branchial clefts under the name of "carcinoma branchiogenes" and Guttmann refers to similar cases starting from accessory thyroids as "struma carcinomatosa accessoria."

In the cases of multiple tumours in bones of the nature of thyroid tissue recorded by myself and others, the conclusion was irresistible that the tumours were metastases from accessory thyroids, or from matrices or "inclusions" within the substance of the thyroid gland itself.

It is doubtless due to the fact that in these cases, as in some instances of carcinoma, the metastatic growths so far exceeded in size and conspicuousness the primary tumour that the nodule in the thyroid gland from which the tumour cells had migrated has been overlooked.

I am indebted to Dr. Bashford for the details of a case recently published by von Oderfeld and Steinhaus which is a confirmation of this opinion. A nodule slightly differing from the normal thyroid tissue and surrounded by a connective-tissue capsule was found in the right lobe of the thyroid of a female, forming a primary tumour from which metastases in the cranial bones, the clavicle, and sternum were derived.

The pernicious growth of the chorion, known as deciduoma malignum, which occurs in the human uterus when the embryo is aborted, or dies before the asexual generation has been suppressed, was pointed out by Marchand in 1895 to be of a carcinomatous character, and is quoted by Beard as being "the key to the problem of the nature of cancer," and as making the cause of cancer as "clear as the light of day."

The remnant of ovarian tissue occasionally left behind after an ovariotomy may become pathologically active, serve as a post-natal matrix, and develop into malignant disease.

Roger Williams[8] attributes the great frequency of malignant disease which follows the removal of one or both ovaries—and which in Spencer Wells's experience amounted to 36 per cent. of the known causes of death of those who had recovered from the operation—to the excessive formative activity aroused after the operation in the aberrant accessory ovarian structures which are so frequently present in the broad ligament and its vicinity.

Primary carcinoma originating in a situation where no epithelium normally exists sometimes springs from a previously undetected dermoid cyst or dermoid cyst matrix. A displaced matrix of epithelial cells isolated from its own blastodermic tissue and buried in the mesoblast, if it becomes a tumour, will develop into one of an epithelial character. Tumour cells, like normal cells, always breed true. Connective-tissue cells cannot produce epithelial cells, and epithelial cells invariably produce their own kind and no other. Virchow when he met with a primary carcinoma in the tibia, not recognizing this physiological law, believed the cells of the carcinoma were produced from the connective tissue at the spot where he found them, and called them epithelioid. The knowledge of this law as applied to a carcinoma developed from a displaced or misplaced epiblastic matrix which had been roused into proliferative activity by some exciting agent corrects such a histological error, and explains the occurrence of the heteroblastic tumour. It also explains how an "endothelioma," which resembles carcinoma in its characters, is developed as a primary new growth in serous membranes and lymphatic glands—structures which are of mesoblastic origin, and in which, therefore, no epithelium normally exists; it likewise explains how a glioma, which in its anatomical and clinical characters is a sarcoma, can occur in the brain or retina which are derived from the epiblast.

6. We must next inquire whether the "tumour germ" theory can account for the transformation of a benign into a malignant new growth. We need not stop to inquire what evidence there is that this transformation takes place. The fact of its doing so is no longer, as formerly it was, disputed. Warts, moles, dermoids, fibromata of the skin, uterine myomata, and papillomata in various situations might be quoted in proof of benign tumours passing into malignant.

The change to malignancy may originate in a matrix of tissue derived from the organ or part affected, and which become sequestrated and enclosed within the structure of the benign tumour during the process of the growth of the tumour. Or in the process of the growth of the benign tumour some of the daughter cells may fail to attain the degree of differentiation of the parent cells, and may subsequently develop on their own account into a malignant neoplasm.

A woman under my care some years ago was the subject of an intramural uterine fibromyoma, which became the seat of colloid carcinoma. The case was published by Mr. Roger Williams,[9] who mentions that a few cases of carcinoma originating in uterine fibroids had been recorded by Virchow and others. It is probable that in my case the carcinoma, which was clearly glandular, was developed from the deep extremity of one of the utricular glands sequestrated in the process of the growth of the fibromyoma, and which thus came to form an epithelial tumour germ—just as glandular elements have been observed in the analogous new growths of the prostate.

Other Evidence in Favour of the "Tumour Germ" Theory.

A.—The matrix theory escapes equally the objections raised against the local and the constitutional theories of cancer.

B.—The matrix theory enables us to understand the long intervals which occur after removal of cancer by operation before recurrence takes place; for just as the "tumour germ" of the primary growth remained for years unaroused, so a single cell or a few cells migrated to a lymph gland or duct, or into the areolar tissue some distance away, may continue quiescent owing to the efficiency of the physiological resistance of the surrounding tissue. The cell or cells are the "tumour germ" of the recurrent growth, as the original matrix was of the primary, and are subject to the same kind of restraint and respond to the same kind of stimuli.

C.—The "tumour germ" theory also explains the so-called recurrences, after either short or very long intervals, in parts or organs away from the original site, and out of the line of direct lymphatic infection. It explains, too, the development in the same person at the same time of two tumours of different blastodermic sources, or of another tumour forming after one of a different kind has been excised.

D.—Lastly, the "tumour germ" theory affords a better explanation of the local extension of carcinoma than any other which has been put forward. It ascribes it to cell proliferation of the margins of the matrix; the growth of the tumour to the multiplication of the matrix cells, not to the "reversion" or conversion of the pre-existing mature epithelium into tumour tissue.

The foregoing are some of the reasons for regarding the "tumour-germ" theory as the most—indeed, in my opinion, as the only—probably correct theory of cancer origin which has ever been put forward, as the only hypothesis which is consistent with all the known facts of cancer.

Hitherto, so far as I can ascertain, what would seem to be the strongest evidence against this "tumour-germ" theory is that which seems the strongest evidence in favour of the microbic theory—namely, the successful serial experiments upon mice with cancer-tumour tissue, which were carried out by Morau in 1893, and have been recently repeated by Jensen and Borrel. But Borrel admits that his successful series was only obtained by treating at each *passage* a number of mice, varying from twelve to fifteen. This is of much importance, because many mice were found to be unaffected. The proportion of successes to the total number of animals experimented upon at each *passage* in the series ought to be given by each experimenter. The tendency to the development of cancer in mice would seem to be strong judging from what is stated in Borrel's paper as to the frequency of cancer in certain caged mice not operated upon.

Up to the present time the microbic theory has not advanced our knowledge of the cause of cancer one iota, in spite of all the talent and skill which have been employed upon it; whereas every year facts in support of the "tumour germ" theory are discovered almost without being sought for. Excepting for these aforesaid recently discovered facts, our knowledge of the causation and nature of cancer would be no greater now than it was thirty years ago; indeed, the very facts about cancer which were recognized and established a generation ago are to-day the strongest *a priori* arguments against the probability of the microbic origin of cancerous diseases.

The truth is that for the last ten or fifteen years cancer research has been too exclusively directed to microbes, and too little to cancer. The attention given to cancer research by many able workers has been too restricted to the search for the problematical "cancer organism" to allow of much thought being directed to the other factors in cancer. The "high power" lens, and the fine adjustment, so to speak have put into the background for the time being the binocular field glass with its adaptibility for focussing the various features of an extensive perspective. It is, however, well that all these bacteriological observations and experiments have been made; indeed, others are still necessary, if only to clear up certain difficulties respecting the nature of the so-called "cancer bodies," and how they come to be present in the cancer cells.

But what is wanted also is that some equally-skilled research work should be directed to other questions—embryological, morphological, chemical, and functional; to such subjects, for example, as those to which Marshall drew attention in his suggestive Morton lecture—namely, the chemistry of cancer tissue the structure and changes in the stroma, the minute anatomical relation of nerves to the cancer cells, and of the effect of the loss of control of the nerves over them. We want more information respecting the state of the arteries in cancerous new growths. The arterial changes in cancer tumours have not so far been sufficiently studied. They may, however, prove to be of importance in connexion with treatment, with the clinical effects and histological results of the *x* rays upon cancers, and also in relation to the rate of growth and the tendency to metastasis by various degenerations, and to ulceration and sloughing of cancerous tumours.

All questions of this kind may be worked out in private or hospital laboratories; but there are numerous other important questions to be answered—for example, as to the agencies which excite into action the invariable and unconditional cause of cancer. These never yet have been properly investigated, and they can only be so by some such organized scheme as that which has recently been undertaken by the two Royal Colleges. Questions as to the geographical and racial distribution of cancer, of climate, soil, articles of diet

occupations, cancer houses, and many others can only be settled after statistical and other investigations have been made and checked and cross-checked, controlled and re-controlled by each other. Such investigations are beyond the means and powers of individual science workers or of medical institutions, and need to be undertaken by an organized body with relays of workers and sufficient funds at its command to provide for the uninterrupted pursuit of the inquiries.

Katz, of Hamburg, whom I have previously quoted, remarked: "It is to be deplored that Cohnheim's doctrine has so long found an extended acceptance, for the further development of cancer research would have, through it, no value. A standstill would result from the fatalism which underlies this theory. The same may be said with regard to Ribbert's theory, which, though of far later date than Cohnheim's, is in pursuit and continuation of it."

But a theory, if it has the evidence of truth, must be minutely and impartially examined, even though it seems to lead to a conclusion which we might wish to escape. There is, however, no occasion for so pessimistic a view as that of Katz. The "tumour-germ" theory, at least does this: it convinces us of the local origin of cancer, and of the positive curability of it if removed quite early and completely. Of course, it does not guarantee one against the formation of another malignant new growth, any more than the repair of a broken bone guarantees one against the occurrence of another fracture. It should also encourage the early and more frequent removal even of benign growths. Future researches may reveal a method whereby a special inhibitory influence may be brought to bear upon the cells of the "tumour matrix," on the lines tried by Foulerton; or a restraining, even a strangulating, effect upon the tumour cells by the tumour matrix may be produced, as suggested by Marshall. But in any case, we can reasonably hope and expect that the organized researches now commenced by the Colleges will in time yield much information as to how to prevent cancer by teaching us what are the real agencies which stimulate it into existence.

In bringing these remarks to a conclusion I will borrow the description recently given by Mrs. Crawford of the mind of the late M. Thiers, and apply it to the theory founded by Durante and Cohnheim. "It has search-light luminosity. Like radium, it keeps burning brightly, without consuming itself." And, I would add, it will not only remain active and brilliant to the end, but it will, I believe, shed more and more light on the etiology of cancer with every fresh addition made to the science of embryology and to our knowledge of tumours.

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THE PARASITIC THEORY OF CANCER.

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Few things, even in medicine, have ever been so tangled as the views which are held by different people on the origin and cause of cancer, and few subjects have suffered so much from extremes of opinion, from no parasites to all parasites. The too hasty and too certain views of many workers (some of them founded on the examination of only one case) have made the thinking heads in our profession very shy of theories, and the critics work easy, or apparently so. But the battle around cancer still rages. Is it parasitic or not parasitic? The parasitic theory is by no means yet extinct, although some would have us believe so, especially those who are more willing, as are many, to talk about cancer than to work at it. I shall try to give some reasons why I think we dare not at present give up the parasitic theory of cancer, and I shall try to show that this theory is not founded entirely upon speculations, but that it has sprung really from wider clinical and biological considerations of the subject.

The idea that cancer is an infectious disease is an old one: so long ago as 1797 it was classed amongst infectious diseases by the Prussian sanitary laws. But the question only came actually into practical pathology after the development of bacteriology: then the differences between cancer and the other bacterial infectious diseases gave rise to the view (after a very short-lived cancer bacillus) that it may be due to an organism of another kind, one on the animal side—a protozoon—and to this view Metchnikoff gave his support.

In reviewing the present position of this question I shall first consider it from the more general points of view, and shall then proceed to a more special examination of cancer itself, so far as concerns the present subject.

There can be no doubt that during the last few years there has been a considerable increase in the number of cases of cancer, and this increase is out of all proportion to any known general cause except a parasite. There are also on record many instances of relative increase in the frequency of cancer, which may be called epidemics of cancer, and it is very difficult to see why there should be such increase if the etiological factor were a constant one, but these epidemics are easily explainable from the parasitic point of view. The facts that the death-rate from cancer is in many districts abnormally high, and that it varies greatly in the same district at different times, so that, as in other epidemics, a sudden increase in the number of cases occurs in certain years, seem only able to be explained by the presence of a parasite, which in certain places and times finds better conditions of existence for itself.

Again, the disease has been shown to have a predilection for low-lying, damp districts, and especially for districts which have both wood and water; and of late years a number of observers, both here and abroad, have brought forward a quantity of facts showing its incidence in certain houses—"cancer houses" they are even called—all of which points most urgently towards a parasitic origin.

Behla, who lived for a great number of years in Luckau, has made a most careful study of the occurrence of cancer in the various parts and houses of the town and its suburbs; and he showed that in certain parts the incidence was extremely high, and that in other districts there was none. The history is so remarkable, and I think so important as evidence for the parasitic theory, that I will briefly re-tell it. Luckau is a town with 5,000 inhabitants, 3,000 being housed in the central part, or town proper, and 1,000 in each of the two suburbs which flank it east and west. The population is agricultural, and during the years from 1875 to 1898 remained the same in number; their habits and ways of life also remained unchanged. Between these years the deaths from cancer numbered 1 out of 25-30 for the entire town; 1 out of 9 for the eastern suburb; and in the western suburb there was not a single case. The houses were similar in size and arrangements, and were, as a rule, damp. The soil of the main town and eastern suburb was moist, and lay low; that of the western suburb was, on the contrary, sandy, dry, and elevated. There was a large ditch which encircled the central town and the eastern suburb, not touching the western suburb, and the cancer followed closely the course of this ditch; the cases in the main town occurred chiefly in those houses whose gardens bordered on the ditch, and in the eastern suburb all the gardens were watered from the ditch. There were 127 houses in this quarter, and 56 of these were cancer houses, 43 with 1 case each, 10 with 2 cases, 2 with 3 cases, and 1 with 4 cases. The ditch contained foul stagnant water with which the people watered and washed their vegetables, many of which were eaten raw. In Behla's opinion the probable source of infection—for such he considers it must be—was in the uncooked vegetables; and in this connexion I may mention the case of a very distinguished pathologist who, for the same reason, gave up eating salad and uncooked vegetables to my knowledge more than ten years ago. The figures of the city of Buffalo are also very striking with regard to this point. Dr. Lyon, in studying the cancer statistics of Buffalo for a period of twenty years, found that, roughly, for the same population, the cases of cancer in the German wards of the city were double the number of those in the native wards, and he mentions the fact that the Germans usually grew some vegetables, and were in the constant habit of eating many of them uncooked.

Apart from the question of uncooked vegetables, these figures are striking enough, and it is much to be hoped that more inquiries similar to Behla's will be undertaken elsewhere, with the care and intelligence which characterize his work.

How can we explain this occurrence in certain regions? How can we explain the increase of cancer at the present time? Is it that Nature does not now do her work so well as she did formerly, and that there are now more people than

there were years ago with bits of detached embryonic tissue in them?

Can we really believe that in all these people who make up this increased number of sufferers from cancer there are chance embryonic vestiges; that in all there has been some chance traumatic influence, or a chronic inflammation; or that they have all already a latent cancer? It surely accords far better with our experience that a parasite should be at the bottom of all this; which parasite, in some places and in some years, can increase and spread better, on account of some more favourable conditions of existence.

In the formation of a cancer there must be a cause for the cell proliferation being so greatly in excess of that of the normal growth processes, otherwise it would not be possible for one cell or a small group of cells to become in a short time relatively so great in quantity. Will the theories of those who are opposed to the parasitic view explain this peculiar and destructive cell proliferation? The theory of the formation of cancer from embryonic remains will not, as it often arises in parts where these rudiments have not been found, and moreover those tumours which can with some reason be attributed to this cause are not as a rule malignant.

Von Hansemann's view that cancer arises from a cell which has become essentially altered and then has suffered from some peculiar irritation does not take us far, neither does it shut out the view that this alteration and irritation may be due to a parasite. He says that if this irritation affect a normal cell we get a hyperplasia, and if it affect an anaplastic cell—that is, a cell which has from some cause become or other essentially altered, which grows in a way in which it did not before, and which behaves more like an embryonic cell—we get cancer. But what is the cause of the anaplasia, and what is the irritation which sets the anaplastic cell going towards cancer?

Ribbert's view is even less satisfying. He suggests that there is a possibility that inflammation arising in a tissue may destroy the continuity of certain epithelial cells and set them free, and that the isolation of these cells from their proper surroundings determines the formation of cancer.

Von Hansemann, whose two books on tumours are, in my judgement, the best we have upon the subject on the pathologico-anatomical side, says that he does not believe that any irritation acting alone on a normal tissue can produce a malignant tumour, as Ribbert suggests: neither do I.

Let us now examine cancer more closely from the parasitic standpoint, and I think it will be possible to show that in cancer we have, without exception, all the lesions of a chronic infectious disease.

One of the functions of epithelium in the normal state is that of protection against external influences, organized agents, and chemical poisons. We know that in us the epithelium is harder and more abundant in those parts which are exposed to pressure or injury; for instance, the epithelium of the mouth and tongue is always more abundant than that in regions of the body less exposed to injury—the stomach, for instance. We also know that epithelium proliferates in direct ratio to any irritation which is applied to it. The hard patches on the hands of certain workmen, corns, the thickened epithelium of the tongue in smokers, are cases in point. But these epithelial proliferations disappear when the cause is removed. Further, epithelium is a barrier against solid particles, living or dead, for instance, the micro-organisms in the respiratory passages and in the intestine are not able to penetrate the epithelium so long as this maintains its vitality, or is not injured. It is also a barrier to chemical poisons. Compare, for instance, how slowly morphine can get into the body through the unbroken skin, through the stomach even, and the speed of its absorption when injected hypodermically, where the epithelial barrier does not come into play.

Let us think of epithelium now in connexion with cancer. A cell is infected by a parasite which has penetrated it. It may give rise in the cell to a local lesion only, and may become encysted in the cell, as actually happens in the case of the parasite *Klossina helicina* in the kidney of the snail. But supposing the parasite should produce a poison, then the neighbouring cells will be irritated, and will react, as normal cells do to irritation, by proliferating; they will then group themselves around the infected cell, and will continue to proliferate so long as the irritation remains, thus fulfilling their function of preventing the further penetration of the parasite into the tissues, and of preventing the absorption of the poisons. The parasite multiplies, and in consequence more cells will multiply, and will eventually destroy the fixed-tissue elements in their vicinity.

With regard to the stroma, this can be considered as the phagocytic reaction of the organism against the invasion of the parasites and the cells in cancer. In any part the action of the tissues is the same against an invading organic body. The normal connective supporting tissue of the part is damaged or destroyed, as above mentioned, and a new cicatricial tissue is formed, which, with the amœboid phagocytes, does its best to destroy the cancer cells.

This description of a cancer is not by any means fanciful, as it can be seen and followed under the microscope. Clinically, too, the effect of this phagocytic reaction has been known for long years, since it was long ago taught that the harder a cancer was so much the less likely was it to become generalized. Many cases of cancer show the primary growth practically cured, the patient having died from metastases. With regard to the metastases, no doubt many cells get detached from a cancer which do not form metastases; one can often see in a lymph-gland cancer cells undergoing destruction there, and no cancerous infiltration of the gland; but if a cell containing a parasite should get detached and lodged somewhere, it would possess both the necessary protection against the cells amongst which it landed by means of the possible secretion of some noxious body, and at the same time the stimulation to division and multiplication. From the above it will be seen that the essential lesion in cancer is an epithelial lesion, which is most naturally to be explained by an intracellular parasite, and the tumour is the result of the reaction of the organism against this parasite and the cells which it has made cancerous.

Let us now look a little closely at the objective signs of this parasite in cancer. It has been known for a long time that there are certain definite bodies which are found in cancer, generally embedded in the cytoplasm of the cancer cells, but which are sometimes found also in the nucleus, or free between the cells. These are round bodies, from about 0·004 mm. to 0·04 mm. in diameter, and they contain a very small more or less central body, surrounded by a very delicate substance, which in fixed specimens is irregular in shape, and this again is surrounded by a capsule which often has a double contour. These bodies have very definite reactions to certain stains. There are a number of appearances in cancer cells which have nothing whatever to do with these bodies, such as the ordinary known degenerations, vacuolation, etc.; and one of the first things which Rüffer and I attempted, when we began to work at cancer, was to separate these bodies, by description and drawings, from those appearances in the cells which were due to degenerations, invaginations of other cells, leucocytes, etc. These bodies have still to be reckoned with, as there is no evidence that they are degenerations of nuclei or of nuclear figures, or that they are mucous, colloid, or hyaline drops, or leucocytes; and the theory that they are parasites is not to be wiped out by a stroke of the pen, as some would have us think. They are found in practically all cancers in the growing, active parts, and not at all in the degenerated parts, and they are not found anywhere else. Some observers, who maintain that they are secretory products, have stated that they are only to be found in breast cancers; but this, I take it, means that they have not had patience to examine sufficiently, or rightly, cancers from other parts.

There is one method of examination of cancer which should be preferred to all others, or which at least should be used to control all others; that is, the examination of the living cells in their own juices, or in serum, on the warm stage. No stained specimen is, I think, so convincing that the bodies in question are organisms separate and distinct from the cells; and, moreover, the ordinary degenerations can be by this method very easily differentiated from the bodies. Personally, I would take no one's opinion on the morphology of this or any other organism or tissue, unless I knew that it had been examined fresh and unstained. It is a method at present but little used, as it is delicate and difficult in manipulation, and takes much time, and necessitates withal a systematic schooling of the eye, and a knowledge of how to use the microscope. The cancer cells by this method can, with the leucocytes, be kept alive for many hours, even days, and the changes, which many regard as multiplication, in the bodies can be observed.

I will now take the points up a little more in detail. I have stated that these particular bodies are found in practically all cancers, and I am speaking from an experience of about 1,500 cases. In the New York State Pathological Laboratory at Buffalo

a systematic investigation has been undertaken with a view of testing my statement, and from Dr. Gaylord's report it will be seen that they completely substantiate my claim "that these bodies are present in all carcinomata." Those who have failed to find them in epitheliomata must bear in mind that they do not occur in like quantity or manner in all cancers. In epitheliomata, for instance, they occur in patches: and you may cut many sections and find none, and may then come across a section containing a large number. This may be compared with the occurrence of the tubercle bacillus in lupus, where the bacilli occur sparingly compared with their plenteous distribution in the other manifestations of tubercle.

I have also stated that the bodies are not to be found in other structures, and in this I am confirmed by Professor Benda, of Berlin, who states that after careful search in all kinds of tissues he has only found them in malignant growths.

Nösske, who is strongly opposed to the view that the bodies are parasites, and believes that they are secretory products, states that he has found them in the epithelium of the normal breast. The specimen in which he showed this, and which was supposed to be from a normal breast, was really taken from a cancerous breast just outside a nodule of cancer, and it was exhibited at the Surgical Congress in Berlin in 1902, and a number of the pathologists there were of the opinion that the epithelium had already begun to undergo cancerous change, as in places there were as many as three layers of epithelium. I have often seen the same thing at the apparently healthy margin of a cancer nodule; in fact, one can see the bodies better here almost than elsewhere, and it is, I think, a fact rather in favour of their being parasites than of their being degenerations.

A view which has attracted much attention, from the position of its author, was that of Borrel, which set forth that these bodies were centrosomes. There are two points which render this extremely unlikely. First, the great number of these bodies which may be found in one cell, sometimes as many as 30; and, secondly, that normal centrosomes can be found in cells containing the bodies, and can be readily distinguished from them. I have lately been working at this point, and have had no difficulty in demonstrating this fact. Moreover, Benda, who was one of the first to describe centrosomes, speaking at the Surgical Congress mentioned above, said that he also had found, with new methods, the quite normal centrosome in cells which contained numbers of the special inclusions, and he holds, therefore, that Borrel's theory is inaccurate, and does not correspond with facts.

Von Hansemann thinks that the bodies may be artefacts, due to the action of the fixative, which extracts water from some hyaline material embedded in the protoplasm, which in consequence shrinks and forms the central mass of the inclusion. This is negatived at once by the fact that they have such a constant appearance in fresh living cells.

Again, the bodies have been stated by Nösske and Greenbough to be secretion products, and to occur only in the breast. This has been disproved by my own experience in finding them elsewhere (for example, in epitheliomata, as mentioned above), which has been confirmed by Gaylord in America. We have found these bodies in cancer arising from all the various types of epithelium, and many instances of the same fact are also recorded by the earlier writers on the subject.

Lubarsch has suggested that the bodies may be broken down erythrocytes. Cancer cells, no doubt, do occasionally take up erythrocytes, but there is never any difficulty in separating these from the cell-inclusions of which we are speaking. Phagocytic cells in many conditions (for example, typhoid fever) do take up red corpuscles, and it is quite easy, by comparing these, at all stages of destruction, with the cell-inclusions in cancer, to see that there is no connexion whatever between them. The bodies, moreover, are often larger than an erythrocyte, and by certain methods of preparation the central bodies of the inclusions can be stained with powerful nuclear stains—such as iron-haematoxylin—which cannot be done, of course, with the englobed erythrocytes. Gaylord relates, in this connexion, that the same interpretation has been given in specimens of his own to the injected spores of *Plasmodiophora Brassicae* (a recognized parasite) which have been taken up by phagocytes, and which are indistinguishable from certain of the forms of the inclusions in cancer.

As regards colloid, it is interesting to note that in colloid cancers one can see that there is no resemblance whatever between a colloid cell and a parasite, and that these latter are never found in colloid cells, but only in the active, undegenerated parts of the tumour. In cases of skin-cancer in which the tumour has grown into the thyroid one can see again that there is no resemblance in reaction or appearance between the cell-inclusions and the colloid cells, or the colloid material, or that material in the vicinity of the growth which has been altered by its presence.

One of the most ardent supporters of the view that these bodies were degenerations of the cytoplasm or nuclei of the cancer cells was Pianese, and his large monograph on this subject is constantly cited. His work deals with a great variety of inclusions and appearances, very few of which can be accepted as being the same as the bodies in question; and a later paper of his on a protozoon found in a guinea-pig shows that he appears to have modified his views somewhat as to the interpretation of some of the appearances described in his former work. This protozoon was found in the renal epithelium of a guinea-pig, and Pianese concludes that the extensive karyokinesis in the cells adjacent to the parasite must be due to its presence. These mitoses were found to be often atypical, similar to many forms of atypical mitoses found in cancer. The cells also show many of the degenerative changes (nucleolysis or karyolysis, nucleorrhexis or karyorrhexis) so often seen in cancer. Many of the cells also contained inclusions not dissimilar to some seen in cancer, but Pianese is not sure whether these are stages in the growth of the parasite or cellular changes induced by it. From this paper it would seem that Pianese would not now be quite so dogmatic with regard to some, at least, of the bodies seen in cancer cells as when his book was written.

Some of those who have regarded these bodies as parasites have unfortunately given them various names; they have been classed with the protozoa (on the great authority of Metchnikoff), with the coccidia, and with the gregarinadae. Then came Sanfelice's work on the production of tumours with blastomycetes, and the ground was shifted. The question became greatly complicated by the undoubted fact that blastomycetes have been isolated by several workers from cancers of various parts, and they have also been described as occurring in sarcomata, and in some skin diseases. I have myself isolated them from six cases of cancer, four of which were not ulcerated, either from the growth or from the glands. Whether these saccharomycetes-like bodies are really blastomycetes or stages in the life-history of organisms of another group (as De Bary, Cuboni, etc., have suggested with regard to the saccharomycetes), I cannot yet say, as they are still under investigation, but they are generally classed with the blastomycetes by most writers on the subject, and are always so classed by those who have not seen them.

Recently attention has been drawn to the Mycetozoa on account of the connexion of one of them—*Plasmodiophora Brassicae*—with a disease called Kohlhernie in certain plants, in which certain intracellular forms of this parasite show a remarkable resemblance to the cell-inclusions in cancer. Podwyssozki, who was struck with this resemblance, performed several inoculation experiments with the spores of this organism upon animals, and succeeded in producing new growths of considerable size, formed from connective-tissue cells, or from endothelium from the lymph spaces. He found that this organism led to the proliferation of the infected cells, which new cells were in their turn invaded by the parasite. Von Leyden and Feinberg, who are the most recent writers on cancer, have also been struck by the resemblance of the cancer cell-inclusions to the amoeboid form of the Plasmodiophora. This organism lives symbiotically with the infected cell, and divides by a peculiar form of division which has been carefully described by Nawaschin, and which, as Gaylord has pointed out, has a very great similarity to certain forms of the cell-inclusions in cancer, which I and others have repeatedly figured, and which some of us have thought to be connected with the process of division. Prepared and stained by the same methods, they present appearances, as regards size, shape, structure, and staining reactions, which are indistinguishable from the cell-inclusions in cancer. This resemblance, and the fact that the changes preparatory to division in this parasite are so like forms described in the bodies in cancer, although of course no proof, give support to the view that the bodies in cancer may be parasitic. At any rate their great resemblance to a well-recognized parasite should make us pause a little.

From the present point of view the rôle which injury may play in the production of cancer can be explained by the fact,

which Pfeiffer pointed out years ago, that weak and new tissue cells are the most easily affected by any parasitic infection. There is also a parallel between traumatic tubercle, osteomyelitis, and cancer, all arising at a point of injury; and the deduction does not seem far off that in the case of cancer an infecting agent (as in osteomyelitis and tubercle) is present in the blood or in the body, which, in consequence of the lessened or altered resistance of the part, is enabled to determine the development of the cancer. Behla considers that much which we call Disposition and Inheritance with regard to cancer has its reason in a greater local susceptibility of the skin or mucous membranes, by means of which the infection is favoured.

Noël, thinking of the possibility of a transference of the malignant tree-tumours to man, thinks that possibly the especial frequency of cancer in dwellers in woods may be dependent upon the many scratches, bruises, and other wounds of the surface to which these people are liable.

It is a remarkable fact that skin-cancer is almost entirely confined to the face and hands, whilst on the covered parts it is very rare, and only in my experience occurs there in connexion with warts or cicatrices, or where uncleanliness is common—for example, the scrotum. In the face it is much more frequent in those who do not wash carefully (in several cases I have records that no soap had been used for years), and it begins in corners and depressions, or in warts, which are all difficult to keep clean. Dirt in fact, affording a better nidus for a parasite, seems to me to play a greater part than injury in the evolution of the disease; for instance, in the lip cancer seems to occur much oftener in connexion with the use of a dirty tobacco-pipe than from cigars, which are very much hotter, and therefore must be much more irritating than a pipe.

That cancer is locally contagious has been known for centuries, long before any thought of parasites—for example, between the upper and lower lips, between the labia, etc.—and in the well-known case of Mr. Harrison Cripps, in which carcinomatous infection of the skin of the arm occurred from contact with an ulcerating scirrhus of the breast.

There have now been got together by Behla in Germany, and others in France and England, a large number of cases of *cancer à deux*—that is, cancer occurring in people who are living together, which, as the recorded cases accumulate, will form most important evidence for the parasitic view of cancer. Behla has collected with his usual care 19 cases, and Guelliot has brought together 103 cases. At present the material is small, but so important is this part of the question that I have no doubt other workers will soon interest themselves in it.

Closely connected with this point are the various inoculation experiments from man to animals and from animals to animals. Much is sometimes made of the fact that no attempt at transferring cancer from man to animals has been successful; but that these experiments fail is not against the parasitic view, for we know that there are other diseases, for example leprosy and the acute exanthemata, which cannot be transferred to animals, or the parasite may not be in the stage in which it is capable of transmitting the disease, of which many similar instances are known. Moreover, a cellular parasite may only be able to live in one kind of cell, as in the case of Kohlhernie mentioned above; this recognized parasite cannot be transferred to another kind of plant; it can only be inoculated on a plant of the same species.

This inoculation from animal to animal of the same species has been often successfully done. Hanau was the first to record a positive result, he having been successful in inoculating other rats from a rat he found suffering from cancer. Morau published in 1894 an account of successful inoculations from a cancerous mouse to other mice, and he says the inoculation was always followed by success. Borrel, in this year, has recorded also inoculations from a cancerous mouse to other mice, but his experiments were only successful in 1 out of 10, but he states also that he put several mice into one cage with two cancerous mice, and that five or six of the others became affected naturally. He says "dans tous ces cas, il semble bien qu'une cause de contagion locale doit être invoquée." After recounting other experiences, he says: "Tous ces faits plaident en faveur de l'existence du virus cancéreux," which shows that his opinions have somewhat altered since his paper mentioned above on the bodies found in cancer cells. I may here mention an epidemic of cancer which occurred naturally amongst white rats in the cellar of the Pathological Institute at Freiburg: in these instances the cancer was always on the hind part of the body. Still more recently Jensen has published an account of cancer in mice. He attained positive results after inoculations into other mice from a cancerous mouse in from 40 to 50 per cent. Inoculation was also tried upon a variety of other animals, but with negative results. Jensen himself regards the successful cases as simple transplantations, not as an infection; but from what we know of the transplantation of epithelium from the experiments of Loeb and others, I do not think we are bound to accept this deduction. When ordinary epithelium is transplanted it may grow for a short while, but then invariably dies, or is destroyed by phagocytes.

The above instances would seem to show at least that the cancer-cell is the bearer of a parasite, and that this cell is able to grow only in an animal *ejusdem generis*. Knowing the fate of ordinary epithelium when transplanted, we must, it seems to me, assume that these cancer-cells are at the same time the carriers of a parasite, when the transplantation of a few cells can cause the growth of relatively very large tumours of the same kind.

I think if these things be really so, that cancer can be given by one person to another, and by one animal to another, and that it can occur both amongst man and animals as an epidemic, that a parasite must be at the bottom of it: and it is at the same time possible to conceive, which is sometimes forgotten, that it is quite possible for a disease which is produced by a parasite not to be contagious.

I will just mention briefly the most recent work on this subject. In 1901 Professor Schueller published a book describing parasites in cancer and sarcoma which has called forth much adverse criticism. He describes bodies occurring in very large numbers in cancer and sarcoma, and he states that his "young organisms" may be the same as the bodies others and I have described, with very careful safeguarding of our descriptions. But he mentions so many other bodies that one is tempted to think that he has gone somewhat too far. Amongst other forms, he places great importance on certain "large capsules" of a golden-yellow colour. These have been stated by some—for example, Dr. Voelcker—to be simply cork cells from contaminated cedar-wood oil: and by others again—for example, Dr. Mohr—who have prepared specimens with every precaution against artefacts, to be bodies which can be demonstrated in all cancers and which may reasonably be said to be parasitic. From the specimens I have seen in Germany I cannot agree with the latter opinion; but as the book, although confused, is published by an earnest worker, I would rather not make any definite statement on the subject until I have completed work which is still in progress on the lines he has laid down.

The next work before me was that published last year by the veteran Professor von Leyden on the parasites of cancer. The cell-inclusions which he regards as parasites are the same as those which others and myself have already described, and he agrees essentially with my own views on the subject, which have been already discussed. An interesting part of his paper is the comparison of the appearances seen in cancer with those seen in the plant disease Kohlhernie, caused by the recognized parasite *Plasmodiophora Brassicae*, and mentioned above.

The most recent work on the question is one published a few weeks ago by Dr. L. Feinberg on the cause of cancer, with especial reference to the structure of unicellular animal organisms. The absolute necessity of an exact knowledge of the various unicellular organisms and their complicated life-histories became evident to me many years ago, but Dr. Feinberg has been the first to put into practice what must have impressed itself on all those who have earnestly worked at cancer, for quite half of his book is devoted to a very good summary of the latest knowledge of unicellular organisms. He names the body which he considers to be the cause of cancer "Histosporidium carcinomatosum," which I think, in the present state of our knowledge, is unnecessary; and he describes it as consisting essentially of a markedly double-contoured capsule containing a nuclear point in the centre surrounded by a clear unstainable zone, and between this and the capsule is a delicate protoplasm which in many instances is striated radially. From this description, and from his plates, it is evident that this organism is the same as the bodies others and I have already described, similar again to those of von Leyden just mentioned.

He brings out a point of importance with regard to the

staining reaction of the bodies, which I can confirm from my own experience. In using the methylene blue and eosin stain of Romanowsky the nuclear point of the cell-inclusion easily stains red, whereas with the ordinary nuclear dyes it is stained only with great difficulty. The zone immediately around this point remains unstained, and the protoplasm stains a faint blue and the capsule a darker blue. This reaction of the bodies to this particular stain is precisely the same as that of the unicellular animal organisms—for example, amoebae, the malarial parasite, the trypanosomata, etc.—and in all these instances there is also the unstained zone immediately around the nuclear point.

There has not been sufficient time as yet to confirm or disprove the part of his book referring to the development, multiplication, etc., of the bodies.

So far, then, has this particular part of the cancer question reached. If we consider the points I have brought forward above, it will be, I think, impossible for us to shut out the parasitic theory, for not only does the origin of cancer, but also its growth and the differentiation of its cells, find complete explanation in this theory.

Moreover, it seems to me, if we think of the clinical course of the disease, its beginning in one spot, its extension to distant parts by lymphatic or blood ways, the cachexia out of all proportion to the extent of the disease, the spread by contagion, the occurrence in certain parts of the body, and its return after years of quiescence, we are driven, from this side, too, on to the parasitic theory, in which (as in no other) all these events find their explanation.

Lastly, the only hopeful outlook in cancer would seem to rest, too, on the ground of the parasitic theory, for was it not Pasteur who said that the mind of man shall become lord over all infectious and parasitic diseases?

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THE BEHAVIOUR OF CANCER WITHIN NERVE AND TROPHIC AREAS.*

[With Special Plate.]

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It would be advisable for those who read this paper to separate the consideration of cancer into three parts. I regard these three headings as essential to the study of carcinoma.

1. The genesis, which includes those matters which appertain to the actual agent which induces epithelial proliferation.

2. The incidence, those matters which relate to the site or soil in which cancer primarily begins; and

3. The spread, that which concerns the area of occupation of the cancer when considered apart from its secondary deposits.

There can be no doubt that the genesis and incidence must be closely related, but the fundamental influence at work in each may be quite different. I do not intend to enter into the genesis of carcinoma under a separate heading in this paper, but will refer to it during the observations on the incidence and spread of cancer.

The Incidence of Cancer.

In my last paper[1] I pointed out that there were grounds for considering the incidence of cancer had possibly a direct or indirect connexion with the nerve area on which it fell. My reason for so doing was, among others, that it is impossible to omit the subject of irritation from among the etiological factors of cancer. Cancer, and especially squamous epithelioma, more often than not begins upon the actual site of irritation.[2] As constant irritation applied over a long period produces marked intracellular changes in the ganglia of the posterior sensory roots, it will also probably induce profound physiological changes in the areas of their distributions as well as at the actual sites of irritation.

Again, the incidence of squamous epithelioma and rodent ulcer are very closely associated with the distribution of the fifth cranial nerve. When rodent ulcer is multiple, the points of incidence are nearly always on the area or areas of one or both fifth cranial nerves respectively, and chiefly on those parts which are not overlapped by the second cervical spinal nerves (see Fig. 1). I also pointed out that squamous epithelioma and rodent ulcer often appeared on those points at which nerves become cutaneous. Dr. Head has described points in the peripheral distribution of the posterior spinal ganglia, which he terms maximum points.[3] The maximum



Fig. 1.—Dr. Colcott Fox's case of multiple rodent ulcers on one fifth cranial nerve. The two upper ones have united to form a single ulcer.

points are those foci within the areas of referred pain in visceral disease at which the pain is most acute. Herpes zoster, when its distribution is complete, maps out the whole area of referred pain, but when incomplete generally appears on the maximum points. These maximum points somewhat closely correspond to the situations at which nerves become cutaneous. Whether maximum points are necessarily connected with such sites I do not know. I understand that Dr. Head's maximum points are the maximum points of central influence, but I do not know whether even a peripheral nerve can or cannot exhibit or claim its maximal points of central influence. To-day I attempt to show that the incidence of cancer frequently falls on these maximum points described by Dr. Head. I have Dr. Head's kind permission to reproduce three plates (Figs. 2, 3, and 4) from the articles to which I have already directed attention. By comparing the rodent ulcers in Figs. 1, 5, 6, 7, 8, 9, 10 with the maximum points in Dr. Head's plate (Fig. 4), my meaning will be clear. Mr. Harold Barnard has collected ten cases of tar cancer in which only one lesion occurred in each case. Fig. 11, Diagrams A, B, C, show the distribution of Mr. Barnard's cases. Diagram D is one of my own. These cases show points of incidence.

The rodent ulcers are only examples of my meaning, but

* The substance of two papers recently read before the Pathological Society of London.

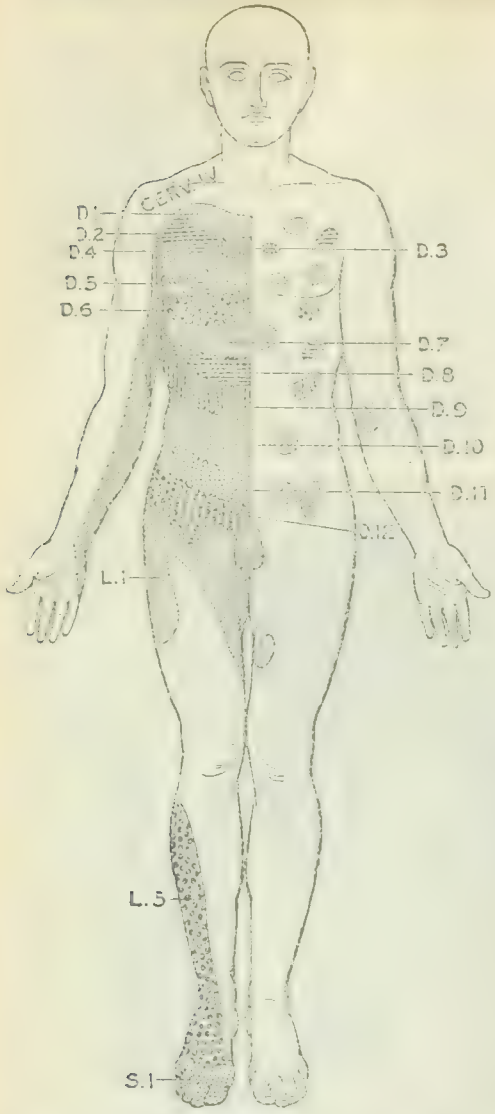


Fig. 2.—The maximum points are shown on the left side.

the tar cancers represent the distribution of all the tar cancers on the face which I can now produce.

The number of rodent ulcers which appear on the face are so numerous that one requires a great many more cases than I have been able to collect to show fairly the proportion of cases arising on maximum points to those which do not. However, those cases in which a rodent ulcer appears on the trunk are uncommon, therefore it may be reasonable to compare the one with the other. The maximum points, too, do not correspond so closely with what the limit of our knowledge at present recognizes as embryonic clefts. And the points on the trunk have an extra advantage of appearing on a bigger field, which makes the proportion more valuable as evidence. I have collected 10 cases of rodent ulcer on the trunk, not with the special object of collecting rodent ulcers on the body, but simply taken out of my collection. Out of 10 separate cases 7 began exactly on maximum points. In 1 of the remaining 3 the ulcer was extensive, and its history does not record where it began. Another of the cases which is corresponding to part of the distribution of the twelfth dorsal could not have begun on the maximum point; and in the drawing of the remain-

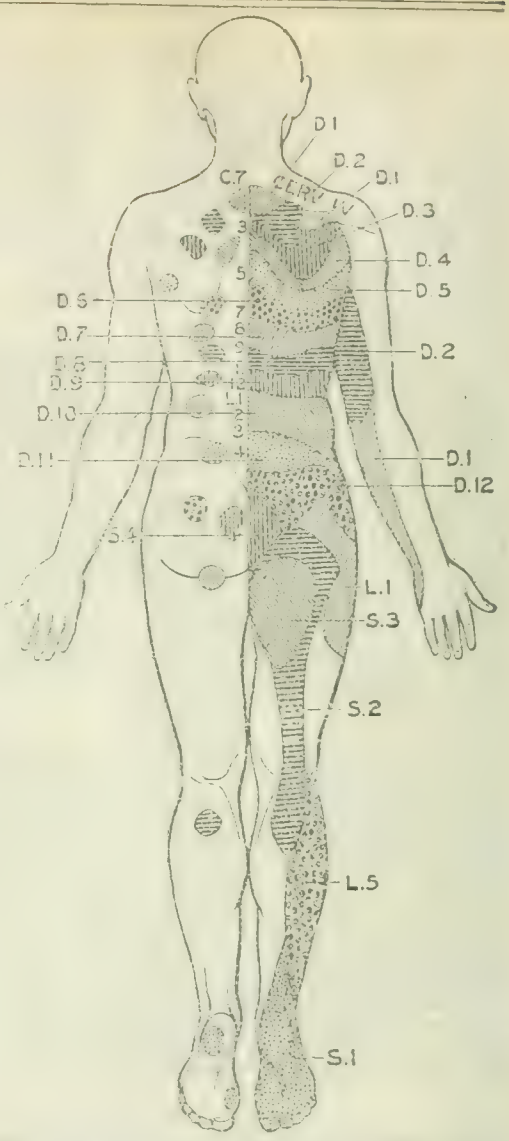


Fig. 3.—The maximum points are on the left of the figure.

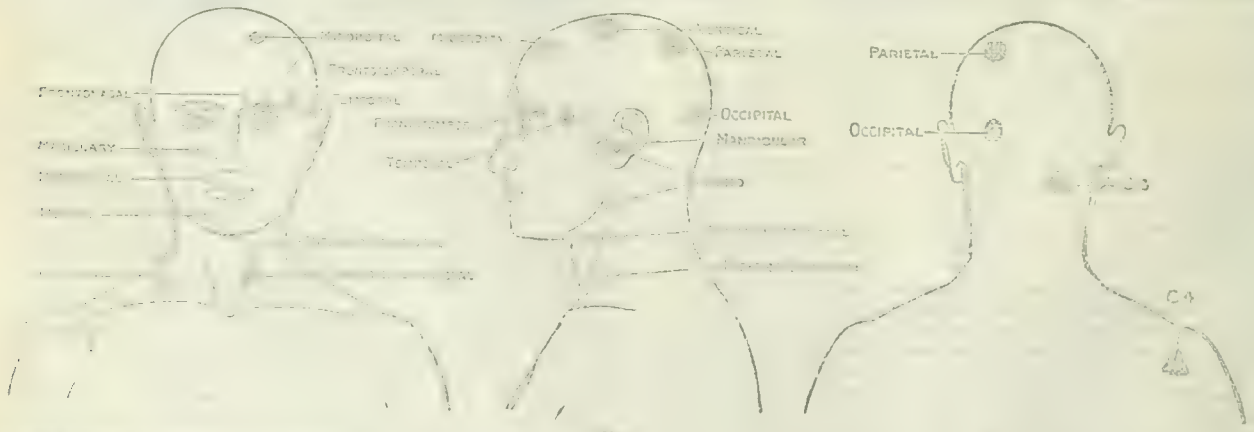


Fig. 4.

the case so many lesions are developed it is difficult to say which are rodent ulcers and which are not. This proportion may be accidental, but the fact justifies attention being drawn to it.

With regard to the tar cancers (Fig. 11) there are 11 cases; 4 began on the centre of the maximum point; 2 began at maximum points, but towards their margins. Of the 11 cases 8 are in relation to clefts; I do not see how tar cancers can be etiologically related to clefts. With regard to clefts it is interesting to point out that the incidence of cancer is generally at the same point in the same cleft region, as if some other influence than the mere presence of a cleft was an agent involved in the process.

Rodent ulcer more frequently begins on the lowest part of the fronto-nasal maximum point where the infra-trochlear

nerve becomes cutaneous than on any other part of the body. The temporal, fronto-temporal, fronto nasal, maxillary, and mandibular are maximum points on which cancer of the face frequently falls.

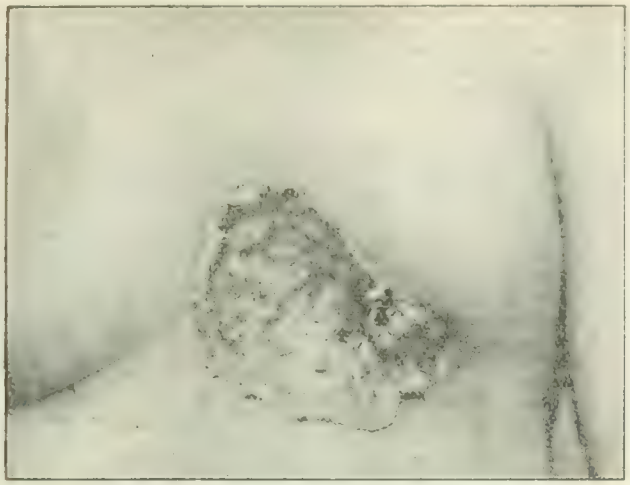


Fig. 5.—Dr. Sequeira's case of rodent ulcer on chest (5th dorsal).

It must be recognized in considering this question of possible relationship between maximum points and the incidence of cancer that the maximum point of an area does not claim to possess qualities and properties which do not exist elsewhere on that area, but only to possess them in a more accentuated degree. It is possible to imagine that constant peripheral irritation over a long period would produce profound physiological changes in a nerve area; and in cancer, as well, one sees marked intracellular changes in posterior spinal root ganglia.

With these ideas in mind, one can understand that providing the irritation includes a maximum point and part of the same nerve area, the more likely place for the incidence of cancer would be on the maximum point, that is to say if cancer has any connexion with peripheral irritation and direct or indirect nerve influence. (See Fig. 30, special plate, which is the reproduction of a drawing made from the right forearm of a man suffering from tar cancer and under the care of Mr. F. S. Eve, who kindly gives me leave to publish the case here.) The



Fig. 6.—Mr. Reid's case of rodent ulcer on back of shoulder (2nd dorsal).



Fig. 7.—Mr. J. Hutchinson's case of rodent ulcer of front of axilla (2nd dorsal).

patient was a tar worker, his whole hand and forearm were exposed to and suffered from the effects of the tar irritation, but the place at which the squamous epithelium became cancer was on the maximum point of the first dorsal root. See Dr. Head's diagram in Fig. 2. If, however, the maximum point be not included in the actual focus of peripheral irritation, then the irritation ought to be greater or of longer duration to induce the same effect. At present I cannot see any evidence which leads me to suppose that



Fig. 8.—Mr. J. Hutchinson's case of rodent ulcer (maxillary).

the incidence of cancer in the referred areas can be related to visceral lesions. If one is careful to recognize the central cause of herpes zoster it is a very interesting disease with which to compare cancer from a genetical point of view. Because in herpes zoster, for some reason, either from the nerve stimulus, vasomotor, toxic, or other causes, the epithelium dies. Whatever is the cause of death, it is

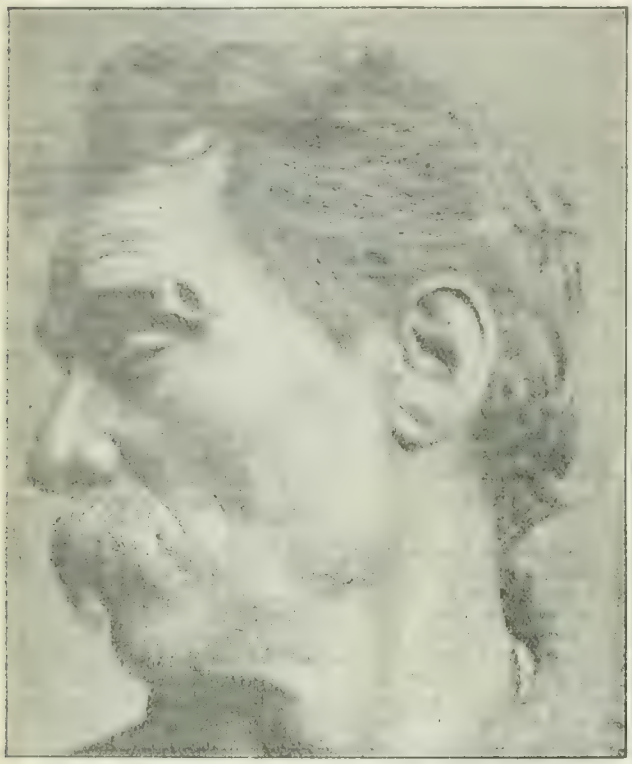


Fig. 9.—Dr. Sequeira's case of rodent ulcer (fronto-temporal).

inseparably connected with changes in the posterior spinal root ganglia. One could understand that part of, or modifications of, the same process which induces death of the epithelium may also lead to proliferation of epithelium, and hence the possibility of a direct or indirect nerve agency being



Fig. 10.—Dr. Sequeira's case of rodent ulcer (temporal).

concerned in the genesis of cancer ought to be borne in mind. Again, if I can show that, when spreading, the growth of cancer stops at lines of normal and abnormal nerve limitations, whether natural or artificial nerve boundaries (vide infra). and often erode denser tissues as bone and fasciae after they have reached those lines, then the argument is justified that it may possibly be a direct or indirect nerve influence, and probably not a mechanical or purely uncontrolled vascular influence, which is at work limiting spread.

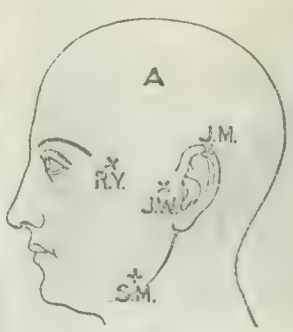


Fig. 11 A.

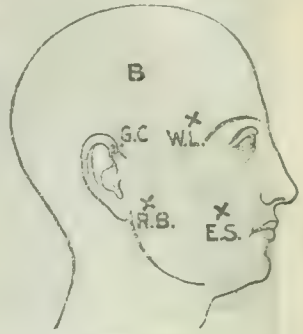


Fig. 11 B.

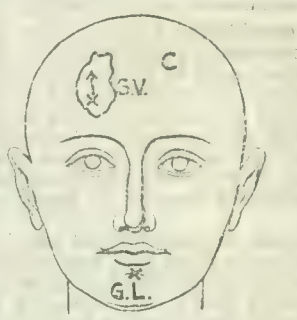


Fig. 11 C.

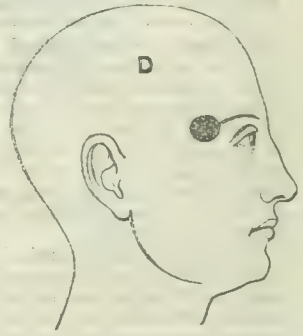


Fig. 11 D.

Now if such a nerve influence may limit spread, and as it were shut the gates, even if in some cases it appeared to be temporarily, then one is justified in arguing, when considering the question of incidence, that it may allow the area to be opened, or when considering the question of genesis may open the area. The fact that the glans penis, cervix of uterus, and alimentary mucous membranes are common sites for carcinoma indicates that merely tactile sensation apart from pain sensation may not have so much to do with the matter as vasomotor or other impulses of which we are at present unaware. But, whatever the explanation, the fact appears to me to be that maximum points described by Dr. Head are points too frequently associated with the incidence of cancer to be regarded only as belonging to the dictates of accident.

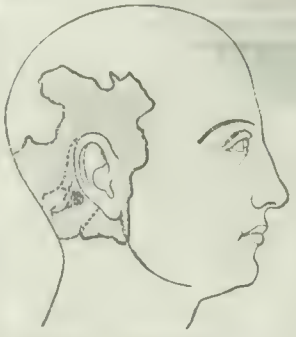


Fig. 12.—Dr. Sequeira's case of rodent ulcer.

Spread of Cancer.

The other point I ventured to suggest was that a possible direct or indirect nervous influence was the chief agent in directing the areas occupied by cancer. I now more firmly believe in the possibility of a direct or indirect nervous agent, above all others, influencing the spread, a belief which is constantly receiving support by the addition of fresh cases and continued investigation. But one cannot look at Figs. 12, 13, 14, 15, 16, 17, 18, 19, and compare them with Fig. 20, without being at once struck with the similarity between the arrangement of cutaneous muscles and the distribution of these ulcers. For example, Fig. 13 (special plate) seems to exactly correspond to the area of the levator labii superioris alaeque nasi muscle, and Fig. 16 shows a distribution which can be explained from a possible nerve point of view by saying

the ulcer occupies an area formed by the first and second division of the fifth cranial nerve, whilst the third division is quite free; even that part escapes which is supplied by the buccal branch at the angle of the mouth. But it can also be explained more or less from a cutaneous muscular limitation point of view by saying that the ulcer covers the anterior belly of the occipito-frontalis, the orbicularis palpebrarum, the zygomaticus minor, and part of the orbicularis oris muscles. Where the growth seems to have transgressed these muscular borders in Fig. 16, it may be explained by assuming that the shapes and directions of the contours of the muscles are maintained by a regular excentric growth from the margins at which arrest had previously occurred. It is interesting to observe here that if one closely watches the facial muscle of a clean shaved thin man in the act of public speaking, one can often detect a demarcation between that part of the orbicularis oris at the angle of the mouth and the point which may be the outer border of the levater labii superioris or zygomaticus minor muscle. (See Fig. 15, special plate.) I think these two cases alone will save me from being accused of paying too much attention to this point. Before publishing my last paper I fully considered it among other pos-



Fig. 16.—Mr. Malcolm Morris's case of rodent ulcer.

sibilities as chief limiting factors of spread. I can see that it will be a point raised against the possibility of a nerve influence, and I can see that muscles by their fasciae, intrinsic lymphatics, and vascular arrangements, and also that other vascular arrangements, hair follicles, and cutaneous glands outside the sphere of muscles, do exert a subsidiary action, but only within certain specified lines which I have all along ventured to believe marked the normal or abnormal limits of nerve areas. I will try to point out that this is so.

First of all I will call attention to the intimate anatomical relationship which exists between the cutaneous muscles of the head and neck and the skin. These cutaneous muscles lie ensheathed in comparatively great masses under the cutis vera. They break up into small bundles which can be readily detected, occupying an area within the cutis vera at a level of the sebaceous and sweat glands and hair follicles. With more careful investigation still smaller and more isolated fibres and bundles of fibres can be seen here and there almost reaching the ridges of the squamous epithelium. This arrangement of the facial muscles is most intimate, so far as I can judge, in the orbicularis palpebrarum and the orbicularis oris muscles. Even at their actual beginning it is almost impossible for rodent ulcer and squamous epithelioma to be too superficial to be in direct anatomical relations to the cutaneous muscles of the region.

Now take the microscopical appearances of the rodent ulcers, at first they spread superficially on the top of the fasciae over the deepest and largest of the three masses of muscles and among the two uppermost sets which I have just described, and completely destroy these and all structures lying above that fascia; after a time they penetrate it and the subjacent muscles, periosteum, and bone. The edges of rodent ulcer for the purpose of this paper may be divided into two—the spreading margin and the margin of arrest. Most edges have much in common; they are all seen situated between the fascial covering of muscle (where there is muscle below) and the atrophying squamous epithelium above. The tumour is closely in contact with both. Hair follicles, sebaceous and sweat glands can be seen being, as it were, pushed before the growth where it impinges upon them, and, indeed, from their assumed shapes, they appear to be offering obstruction to the oncoming tumour.

The most marked factor of mechanical limitation in the cutis vera is probably fibrous tissue. Can the sheaths of the scattered muscular bundles, either collectively or individually, be the means by which growth is arrested? Clinical



Fig. 17.—Mr. Henry Morris's case of rodent ulcer.

evidence is here much more valuable than microscopical evidence, for the appearances at the edge of a tumour not rapidly spreading are relatively about the same as those at the edge of a growth arrested by encountering strands of fibrous tissue. This is so because around the edges of a tumour or that part of a tumour which is not rapidly spreading, the fibrous tissue may proliferate to such an extent as to resemble the edge of a growth mechanically arrested by fibrous tissue.

Take Fig. 13 and realize the clinical fact that a rodent ulcer, whether covering a muscle or fascia, can be penetrating deeply into bone and yet remain limited superficially. This is not common, but I have seen a case. A barrier formed by a cutaneous structure would surely give way before bone or even temporal fascia ulcerated, were it the predominating cause of limitation.

I can quite understand and appreciate the argument that in a large ulcer as represented in Figs. 14 and 15 (special plate), in which the lateral views of the same case are reproduced, the ulceration of bone is most likely to occur in those parts on which the ulcer has existed longest. The rodent ulcer in this case began on the forehead. From this point in ten years it extended all over the face, ulcerated through fasciae, muscles, and bones, too far away (double the distance) from the point

of incidence to permit the argument that mechanical limitation stopped the further ulceration on the scalp. It may be said that it was attracted by the greater vascularity in the direction of spread. But I shall presently show that when a rodent ulcer destroys the nerve supply of the skin and renders it completely anaesthetic and analgeic the growth does not spread into that senseless area. By looking at the devastation wrought by this ro lent ulcer in Figs. 14 and 15, no doubt can exist as to the certainty of destruction of all sensory nerves going to the scalp from the orbit. I believe this is the reason of the want of spread further on the scalp in this case.

Fig. 17 is the drawing of a case under under the care of Mr. Henry Morris, which he kindly allowed me to photograph and reproduce. It is a rodent ulcer, which from a cutaneous-muscle point of view may be said to cover part of the orbicularis palpebrarum muscle, and be guided towards the ear by the attrahens aurem muscle (the exact point of posterior limitation is not accurately depicted). Fig. 18 represents the same case six or seven years after, and shows that the ulcer has in the meanwhile destroyed the larger amount of one-fifth cranial nerve area, bones included, and yet the posterior

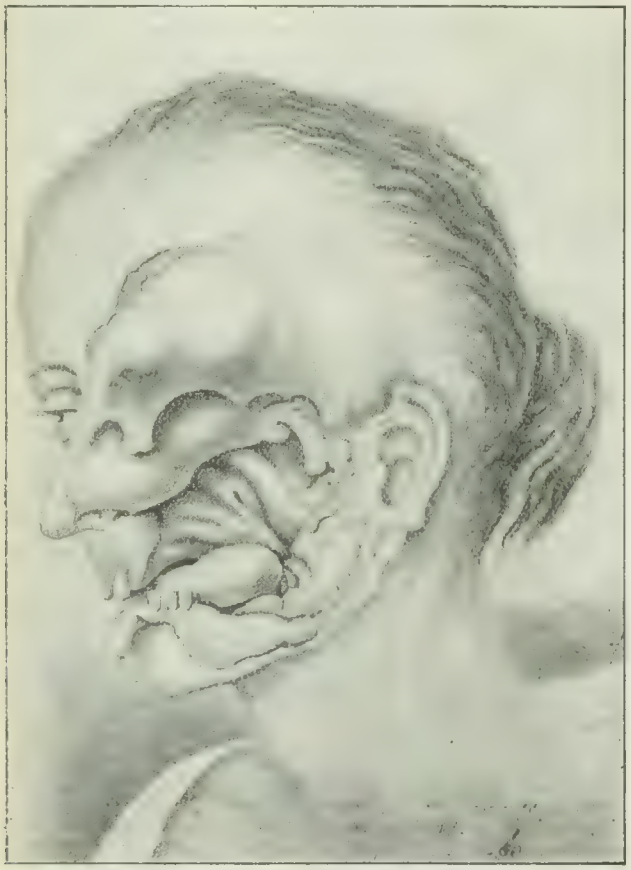


Fig. 18.—Mr. Henry Morris's case of rodent ulcer.

limit cannot justify the assumption that muscle, fascia, and greater advantage of blood supply form adequate reasons for the want of spread posteriorly on the ear and scalp after six or seven years' ulceration of bone anteriorly. It is a unilateral fifth cranial nerve lesion to which further reference will be made when discussing the effect of destruction of the nerves on the spread of the disease.

Fig. 19 shows a case in which the rodent ulcer began on the side of the head just above the ear, in the region of the attollens aurem and attrahens aurem muscles and temporal artery. Muscles and fascial bands connected with them cannot be held to have arrested growth at the posterior margin when the zygomatic process, the temporal fascia, have been eroded and the facial nerve destroyed by the same ulcer further away from the starting point anteriorly. The spread here was not merely circumferential, for when it reached the posterior margin it stopped, while spread continued anteriorly. Eight months after this photograph was taken the ulcer had crept up towards the scalp without transgressing the posterior limit seen in this photograph. Had it been an uncontrolled arterial limit one would have imagined that during all this time the free collateral anastomosis would have taken its share in inducing the spread in all directions, but the posterior limit of the fifth cranial nerve was not transgressed.

In Fig. 12 the rodent ulcer began at the position of the cross mark, and at first occupied the position of the dotted lines. The lowest level (which it almost at once reached and has maintained so far throughout) corresponds with the posterior limit of the second cervical posterior spinal root ganglion, as demarcated by Professor Sherrington on monkeys (see Figs. 22 and 23).

It is in the monkey 1.5 cm. below the external occipital protuberance, and therefore below the attachment of the posterior belly of the occipito-frontalis muscle, hence it is at once impossible to give this muscle any share in the limitation of the growth at this line. Also the direction in which the ulcer first spread was towards the maximum point of this area, and transverely across the direction of the fibres of the muscle to which it is in topographical relation. The diagram shows the distribution of the ulcer six months after the case was first seen. It is still seen to be in the second cervical nerve area, and has not transgressed the posterior limit at which it has remained from the start. Again, it is exceedingly difficult to see how an uncontrolled arterial distribution could cause limitation posteriorly and allow its progress forward. The direction of the blood flow and the comparatively smaller



Fig. 19.—Dr. Sequeira's case of rodent ulcer.

vascular supply behind this line would not account for its sharp definition at the back and side of the neck.

It may be of interest to remember here that a muscle does rarely exist which joins the posterior belly of the occipito-frontalis with the platysma on the cheek, the occipito-facialis muscle, even supposing the existence of the muscle or its undeveloped representative, neither could account for the limitation, as the line is too low. There is an important line which in the macacus rhesus

extends from the mid-dorsal line of the scalp at about the junction of the posterior with the middle third of the distance from the glabella to the external occipital protuberance. Thence it takes an almost rectilinear course to the base of the pinna about 4 millimetres behind the anterior surface of that structure; the boundary then ascends the hinder (mesial) surface of the pinna, finally attaining to and winding over its upper edge. On the anterior (lateral) surface of the pinna the boundary descends a little in front of the fossa of the helix, sweeps forward below the concha to the tragus, and then dips over it slightly into the concha, and winds out again in the notch between the tragus and the antitragus. Having thus left the ear, the boundary line proceeds along the outer surface of the vertical ramus of the lower jaw, running slightly in front of the posterior edge of it. It crosses in front of the angle of the jaw, and turns horizontally inwards toward the mid-ventral line of the neck, which it reaches a few millimetres above the thyroid cartilage (Sherrington). See V in Fig. 22 or 23.

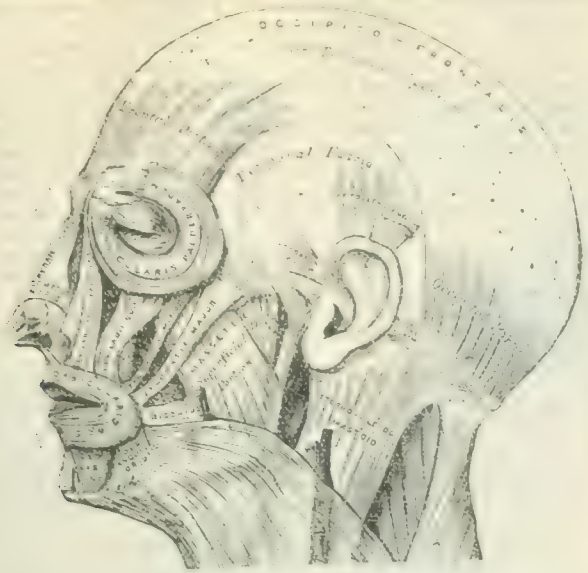


Fig. 20.—From Gray's *Anatomy*.

Compare Fig. 22 with Frohse's posterior lines of the human fifth cranial nerve (Fig. 21), and compare these lines to the rodent ulcers in Figs. 18, 19, 27, 28, and 29 (special plate). This line transgresses all possible muscular boundaries, and even vascular relations must be secondary to it.

The rodent ulcers of Figs. 24 (special plate) and 25 represent a type of distribution which I have seen partly mapped out in six cases, one of which is a squamous epithelioma, kindly sent from the Hague by Dr. Schoemacher. Compare these two rodent ulcers with Heiberg's conception of the fifth cranial nerve (Fig. 26) and Dr. Head's mandibular area. There are exceptions to my statements, and they occur when cancer begins in mixed nerve areas. The difficulties of explaining such cases will be realized when the difficulty is appreciated of working out normal areas and the chief functional parts of normal areas, and areas which are rendered abnormal by the destruction of nerves by the growing tumour.

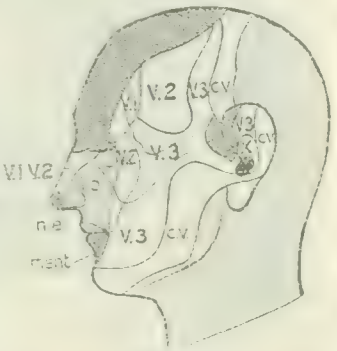


Fig. 21.

I will now pass on to describe cases in which the rodent ulcers during their progress have divided nerves and have not extended in the denervated areas.



Fig. 25.—Mr. Lynn Thomas's case of rodent ulcer which began on the mandibular maximum point.

The man shown in Fig. 36 (special plate) has completely lost those sensations of pain and touch over the left supercilliary ridge, and incompletely lost those sensations on either side of it (at the shaded areas), and it will be seen that the spread of the rodent has respected the horizontal line of skin at which anaesthesia and analgesia begin. It must be said that the seventh nerve supply to the cutaneous muscles of the forehead has been destroyed. Although it began at the left inner canthus, the ulcer is not spreading over that line, at which it has been situated for at least six months, although its spread has been in all other directions.

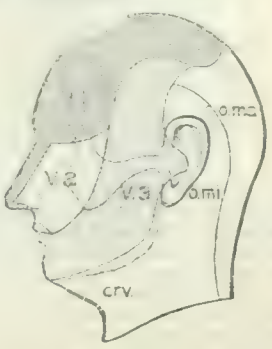


Fig. 26.

Mr. T. H. Cheatle, Burford, Oxon, has now a case of rodent ulcer under his care which began in the same place as Fig. 36, and occupies the same area and has the same absence of pain

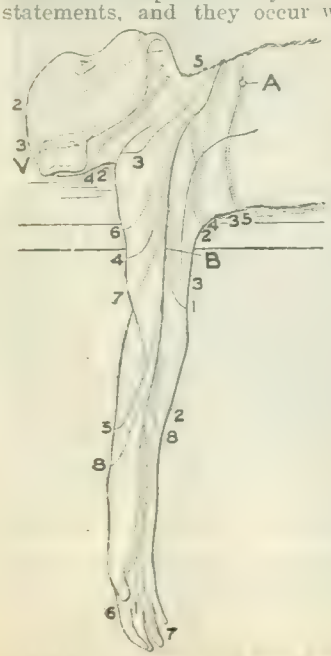


Fig. 22.—A, upper; B, the mid-ventral line of the limb.

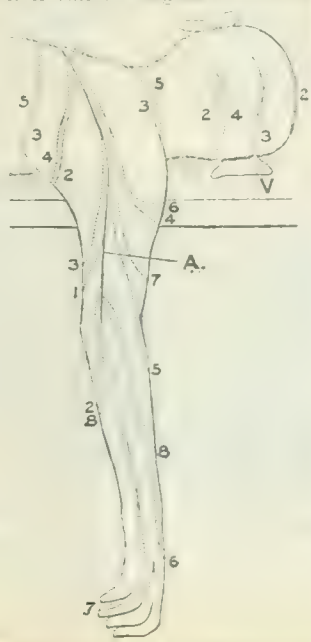


Fig. 23.—A, the mid-dorsal line of the limb.

and touch sensations in the same region. The disease has been under observation for seven months, and the ulcer has spread in all directions except in the anaesthetic and analgesic area on the forehead, where it has remained stationary.

Compare these cases with Figs. 14, 15, 18, and 37. A very limited ulceration of the scalp over the frontal eminences in these cases has occurred, and, from the amount of ulceration of the superciliary ridges and sides of the heads the cutaneous nerves had gone. Now from the histories of these two living cases limitations at these lines probably have been of com-



Fig. 27.—Rodent ulcer (St. Bartholomew's Museum).

paratively long duration, because so much ulceration has extended so far and so deep from the point of incidence as to lend great support to my suggestion that the destruction of the nerves is in causal relation to the limitation. In fact the distribution of Fig. 36 and Mr. Cheatle's case in marked degrees resemble that of Fig. 37 (special plate).

In Fig. 37 the escape of the skin supplied by the mental branch of the third division of the fifth cranial nerve is very suggestive that the destruction of this nerve (which has certainly occurred as it leaves the mental foramen) has been the cause of the tissue's immunity of spread; the same may be said of the mental region in Fig. 14. In Fig. 18 the immunity of the scalp is explicable by the same reasons.



Fig. 28.—Dr. Harrison's (Bristol) case of rodent ulcer.

It may well be asked how, if this is so, Figs. 18, 19, 27, 28, and 29 are so extensively ulcerated before limitation by ulcerated nerves. The answer is that the rodent generally spreads superficially over large areas, and only penetrates deeply in the nerve strata later, and then only in small parts of them. It will also be seen that the rodents have attacked the supraorbital nerve area from the side, and would likely destroy the nerve branches longitudinally instead of its trunk at the point of emergence, and thus the parts invaded have not been rendered analgesic and anaesthetic.

With this relationship in mind, compare this state of things to the ulcer in Fig. 19, in which the auriculo-temporal nerve is probably destroyed. The spread of the disease and its occupation of the auriculo-temporal nerve area must have occurred before the nerve was destroyed, and its subsequent spread after destruction of that nerve was probably due to the presence of the supraorbital and other branches of the fifth cranial nerve. If the spread or normal spread of the rodent ulcer demands the presence of the tactile or pain sensory nerves, how is it that lines like that on the scalp of Fig. 29 and the posterior line in Fig. 19 are obtainable? If there is truth in the last observation just noted, it is complicated by these cases definitely proving that limitation can also occur in the presence of active nerve impulses, which may be explained that the one set of active nerves are in a different condition of irritability to the opposing set; the difference of this irritability being due to the profound physiological changes, the possibility of whose presence I have already mentioned. But the matter is further complicated by the presence of the

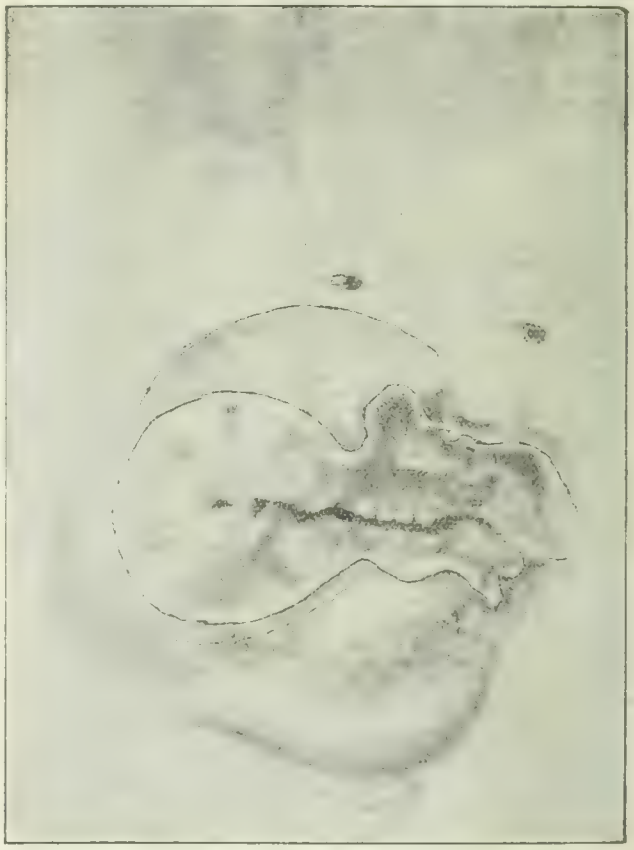


Fig. 33.

second cervical overlap in the auriculo-temporal region; and the question may well be asked if involvement (whether anabolic or catabolic) of nerves is concerned, why does not it (the second cervical nerve root overlap) assume the function and aiding the diffusion of the growth? The full explanation is wrapped up in mystery probably for many reasons, and at present one can only say that in the spheres of influence belonging to two or three overlapping roots nobody can tell with certainty which root is predominant or functional. Besides, the question is still further complicated by the fact that in the lowest form of reflex act an afferent impulse does not reach the centre, but, as it were, "short circuits," and passes down the same nerve as an efferent impulse to reach the periphery; hence the spread of a cancer may not be due to only central nerve impulses. For example, an efferent impulse in a vaso dilator effect is capable of demonstrating peripheral expression by either the higher or the lower form of reflexes to which I have just referred.

If my observations are confirmed and it is proved that cancer does not spread in areas deprived of certain nerve impulses, then the importance of the thing is not merely academic; practical questions from the point of view of treatment arise. In considering this possibility it must be



Fig. 13.—Rodent Ulcer, Guy's Hospital Museum.



Fig. 14.—Rodent Ulcer, Royal College of Surgeons' Museum.



Fig. 15.—Rodent Ulcer, Royal College of Surgeons' Museum.

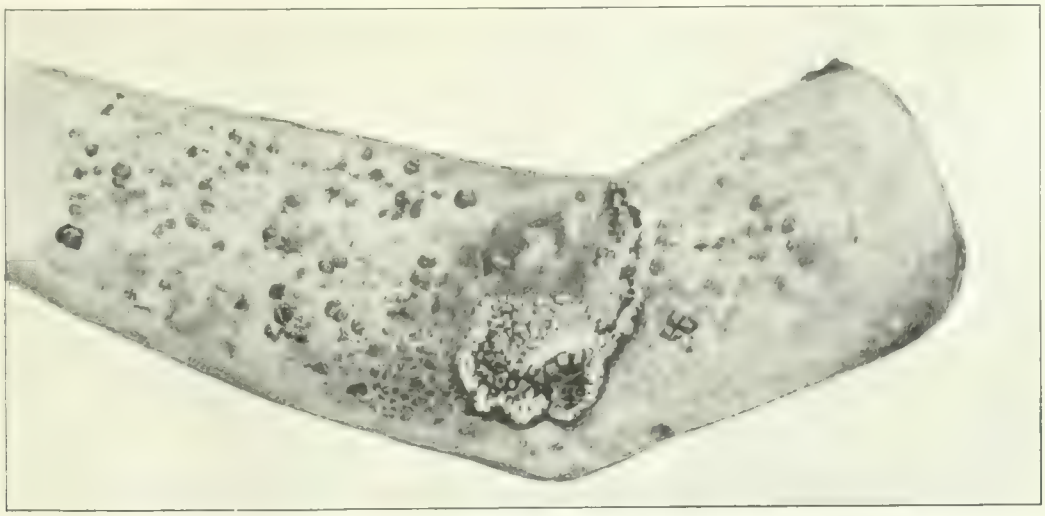


Fig. 30.—Mr. Eve's case of Tar Cancer at the bend of the elbow.



Fig. 24.—Rodent Ulcer, the Cancer Hospital Museum.



Fig. 29.—Rodent Ulcer of left orbit, scalp and ear, Westminster Hospital Museum.



Fig. 36.—Dr. Lunn's Case of Rodent Ulcer.



Fig. 37.—Rodent Ulcer, St. George's Hospital Museum.

realized that the abolition of the nerve impulses by the destruction of a peripheral nerve by a cancer is permanent so long as the cancer exists, and that the destruction by excision of a peripheral nerve is not so permanent, and that pain and tactile sensations can recur in a spot from which cancer has been excised. Possibly the curative action of *x* rays are related to trophic changes which of necessity include nerve changes.

The knowledge and the extent of these areas of occupation and hence the likely directions of spread would be a fundamental guide in making incisions so long as the removal of cancer by the knife remains a recognized practice.

I have shown that the spread and limitation of cancer in the skin and muscles bear a marked relationship to the presence of nerves, and the absence of nerves where normally they previously existed bears a marked relation to the limitation of cancer. But I cannot say whether cancer can genetically arise in a completely denervated area. Dr. Trevor kindly allowed me to cut a section from the forehead skin in Fig. 37, and Dr. Lunn has allowed me to do the same in Fig. 36. One can detect some rodent ulcer cells among the tissues, hence I know this disease can exist for a considerable time in a completely denervated area, although it does not spread in that area.

For fear of falling into the error that rodent ulcer alone follows definite areas, I would remind the reader that I pointed out that remarkable limitation of cancer, and curiously enough benign but diffuse papillomata of the tongue show remarkable middle line limitations.

The squamous epithelioma beginning on the lip or elsewhere on the naso-labial region, described by Dr. Head, with remarkable regularity covers the whole area, and apparently rather than leave that area it fungates.

I must offer my best thanks to Dr. Sequeira for sending me many cases; to Dr. Lunn, Dr. Harrison of Bristol, and Mr. Lynn Thomas I owe similar debts of gratitude. The ideas contained in this article are rendered more tenable to those who possess a complete knowledge of the published works of Dr. Head and Dr. Sherrington.

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An Address

ON THE

NATURE AND PHYSIOLOGICAL ACTION OF RADIUM EMANATIONS AND RAYS,

WITH OBSERVATIONS ON OTHER RAYS.

Delivered before the Royal Scottish Society of Arts.

By DAWSON TURNER, M.D.,

President of the Society; Physician in Charge of the Electrical Department, Edinburgh Royal Infirmary.

Of all the scientific discoveries of the last year one stands out pre-eminent, not only from its scientific importance, but also from the great public interest it has excited. I refer to the discovery by Monsieur and Madame Curie, of radium. This discovery was not, like that of the Roentgen rays, made suddenly, but had been led up to by the researches of Becquerel and of Roentgen, and was ultimately due to the painstaking and laborious analytical work of the Curies. Roentgen's great discovery of a radiation that would render the human body transparent was made in 1895, and Becquerel followed this in 1896 by finding that uranium and some of its compounds emitted a radiation akin to that of the Roentgen rays, but in very feeble amount; lastly the Curies, after examining almost every known element, found that thorium and certain ores of thorium and uranium—namely, the pitchblendes—were also radio-active, and that the latter were even more energetic than the element uranium itself. The next step they took was to separate pitchblende into its constituents, each of which was carefully tested for radio-activity; proceeding slowly and laboriously by this method they gradually separated the chief source of the radio-activity of pitchblende—the elements polonium and radium. As my interest in this subject is chiefly medical, I will commence by referring to the forms of radiation which have been more or less recently made use of in practical medicine and surgery. They can be divided into five groups, as follows:

1. Radiant heat rays.
2. Ordinary light.
3. Ultra-violet light.
4. Roentgen rays.
5. Radium emanations and rays.

The *effluve* or brush discharge produced by high-frequency currents and by static electricity has some of the properties of the last two.

Light.

About three of these forms of radiation a good deal is known. Thus, below the ordinary spectrum of white light we have the long radiant heat waves, while above are the short ultra-violet rays; the latter, together with the blue, indigo, and violet, are called after the great Danish doctor who first used them in the treatment of disease, the Finsen light. The chief properties of ultra-violet light are that it is:

a. Powerfully actinic.

b. Can excite fluorescence.

c. Can discharge an electrified body, particularly if it be negatively electrified.

d. Has clinical and bactericidal effects.

e. Can produce nuclei for cloud condensation in moist air.

Roentgen Rays.

Coming next to the Roentgen rays we find that their nature is still unknown, though evidence has been accumulating in favour of Sir George Stokes's theory that they are due to irregular impulses in the ether comparable acoustically to a noise. Thus it has been shown by Blondlot that they travel with the velocity of light and that the rays are polarized, but they differ from ordinary light in not being capable of regular reflection or refraction: they can, however, excite fluorescence, affect a photographic plate, and discharge an electrified body. The latter properties are shared by ultra-violet light, so that the Roentgen rays more closely resemble ultra-violet light than ordinary visible light. They differ chiefly in their powers of penetration: ultra-violet rays have but little penetrative power as regards our tissues and are absorbed by the thinnest film of blood, while the Roentgen rays pass through our skin and soft structures with great facility, but throw shadows of the bones. Transparency to Roentgen rays is a question of density, but transparency to ultra-violet light is selective; thus rock-salt and ice are transparent, while glass, mica, and gelatine are opaque. Further, the Roentgen rays appear to have no bactericidal effect, while ultra-violet light has marked bactericidal effects; a very important clinical difference is this, that while the Roentgen rays will produce, if pushed, a severe inflammation and destruction of the skin and nails, the Finsen light never produces such untoward effects.

Whether the clinical effects of the Roentgen rays are due entirely and purely to the rays, or whether the electro-static field and ionization round the tube also play a part, is an unsolved and difficult problem; there are for instance certain diseases, principally of the skin, in which the Roentgen rays usually produce a curative effect. I have, to test this question, treated three such cases with the cathode breeze and have produced the same beneficial results, and in fact in one case where the Roentgen rays utterly failed the cathode breeze was successful. These results favour the view that the curative action produced by exposing a patient to an *x*-ray tube is not due wholly to the Roentgen rays.

Radium Emanations and Rays.

The distinguishing radio-active properties of radium, according to Professor Rutherford, are that it gives off a radio-active emanation and three kinds of rays—α rays, β rays, γ rays.

It also maintains itself constantly at a higher temperature than its surroundings, and it continually emits heat at an estimated rate of about 100 calories per gram per hour. It is thus in its behaviour in outstanding antagonism to some of our fundamental physical laws.

The emanation is of the nature of a luminous gas which can be condensed by intense cold and which imparts radio-activity to objects in its path; more than two-thirds of the heating effect of radium is due to this self produced emanation, and 1 c.cm. of it would probably instantly melt down the glass tube which contained it.

The α rays consist of a stream of positively charged particles of mass about twice that of the hydrogen atom and projected

with a velocity of about 20,000 miles a second. These rays have but little penetrative power.

The β rays appear to resemble the cathode rays of a Crookes's tube: they are negatively charged, more penetrative than the α rays, and consist of particles of about the one-thousandth of the mass of a hydrogen atom. They are powerfully actinic.

The γ rays are the most penetrative of all, and evidently resemble the Roentgen rays from a hard tube.

Not content with manufacturing this extraordinary emanation and with emitting three kinds of rays, radium appears to have a hand in the genesis of the but recently discovered gas helium, so that we have the antithesis of a gas of absolutely negative properties being produced by a substance of altogether extraordinary properties.

Madame Curie has measured the atomic weight of radium, which is 225; that of thorium is 232; it would be placed in Mendelejeff's table in the group of the alkaline earths.

Attempts have already been made by various observers to use the wonderful properties of radium in practical medicine. It has been suggested by Mr. Soddy that consumptive patients should inhale the emanation so as to bring the powerful agent into as close contact as possible with the diseased lung. A few milligrams of radium bromide might be placed in water in a suitable inhaler, and the emanation drawn into the lungs with a deep breath; what effect if any this treatment might produce is not yet known, but a strong word of warning to patients not to attempt such a remedy without previous medical sanction may not be out of place. Owing to the property the emanation has of imparting radio-activity, the effect of the inhalation would probably continue for a considerable time, for the walls of the air passages would for the time become radio-active themselves.

Experiments have been made by Pfeiffer and Friedberger on the bactericidal action of radium rays; the micro-organism of cholera, of typhoid fever, and of woolsorters' disease were destroyed by a three days' exposure to 25 mg. of radium bromide placed in close proximity. This result is not very encouraging, still it must be remembered that the Roentgen rays have no bactericidal effect, though their beneficial effects in certain diseases cannot be doubted.

Though the micro-organisms of certain diseases are not very susceptible to radium rays, the human tissues are. It is unsafe to carry radium about in one's pocket; several cases are on record of an inflammation and ulceration of the skin following such a procedure; even the carrying of it in a glass tube from one patient to another may set up an inflammation similar to that induced by an improper use of the Roentgen rays, and any ulcer formed is highly intractable and may last for weeks or months.

E. S. London tested the effects of the rays on mice. Reddening of the ears and blinking of the eyes appeared on the third day; general torpor and paralysis followed, with death, on the fourth or fifth day; the skin and brain were the parts most affected. London has also discovered that persons who are almost blind can perceive light when radium is brought near, and that people with perception of light, but not of form, can detect the shape of objects which are in the neighbourhood of the screen. He thinks that there may be in this a possibility of teaching such blind people to write or draw. Persons who are totally blind are unaffected by radium. The position of the radium can, he reports, be detected with covered eyes, and even when the box is held behind the head. I regret I have not been successful in repeating the latter experiment, possibly because the fragment of radium that I possess is too minute.

The chief physiological effects of radium, so far as at present investigated, can be arranged in three groups:

1. Effects on the skin producing inflammations and ulcers.
2. Effects on the nervous system producing paralysis and death.
3. Luminous effects produced in the partially blind.

The radiations of radium have been tried in various diseases, principally those in which the Roentgen rays and Finsen light have been found useful, and in many cases distinct benefit has resulted. The effects produced appear to be similar to those produced by the Roentgen rays. At present the prohibitive cost of radium precludes its more frequent trial. Should it become possible to obtain it in larger quantities, we may speculate on the uses to which it may be put. In practical medicine it would do away with our bulky and costly x-ray installations; patients would instead be provided with a fragment of radium sealed in a tube which they would themselves apply as directed to the affected part. Radiographs of the teeth or bony walls of cavities could be taken by introducing a fragment of radium and placing the negative outside. A few grams of radium would light up an x-ray screen brilliantly through an inch or more of lead, and this it would continue to do for perhaps a thousand years; thus we should have a perpetual source of light and heat. An objection to its use would be that the lead would have to be enclosed in running water to prevent it from fusing; another objection would be that it would be quite unsafe to go near it unless one were completely clothed in leaden armour, otherwise one would run the risk of having one's skin destroyed and one's nervous system paralysed. Could this slight difficulty be overcome the reign of coal and smoke would be over; a small receptacle of radium in a house would both warm it by day and light it with a soft diffused light by night; a sufficient block placed in the furnace chamber of an Atlantic liner would drive it backwards and forwards for generations across the ocean.

Our knowledge of Nature's secrets is ever advancing, and for those who wish to join, and there cannot be too many of them, in the investigation of such enthralling subjects as these new elements, much help and encouragement is afforded by this our Royal Scottish Society of Arts.

RADIUM AND ITS THERAPEUTIC EFFECTS.

By JOHN MACINTYRE, M.B., F.R.S.E., F.R.M.S., M.I.E.E.,
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ANY statement made at present about the therapeutic effects of radium can only apply to the experimental stage of inquiry. Three questions, at least, may be asked, however, and these are: (1) Have the salts of radium any therapeutic value? (2) In what class of diseases are they likely to prove useful? (3) How do any results yet recorded promise when compared with those obtained from other agents, such as the Finsen light, x rays, or high-frequency currents because the phenomena observed, when studying the salts of radium, suggest at once the possibility of therapeutic action similar to that due to the last-named forces? It may at once be said, from the experiments already published, that, to some extent, they possess therapeutic value, and, for the most part, as yet in the same class of cases in which the other forces have already been tried with success. The third question is more difficult to answer, for reasons which will appear in this paper.

It may be as well also to state here that, just as in the case of all other branches of electro-therapeutics, we have not yet any record of great improvement or cure in any case of serious malignant disease situated deeply in the tissues or within the great cavities of the body. Any records of results so far obtained have been in the superficial parts or within the accessible cavities. It has been suggested that small quantities of radium might be introduced into the deep tissues in serious malignant diseases, and left there, but most surgeons after studying the properties of radium will meantime be careful in carrying out the suggestion, and take due precaution that the active agent can be withdrawn again if required. Be that as it may no results so far of such a suggestion have been fruitful.

Properties of Radium.

During the past six months we have learned much from the physical laboratory about the properties of radium which have a distinct bearing upon surgical work. To begin with, the one important thing when experimenting with a new agent is to find out its nature and strength. At first, when the radium salts were obtained, many concluded that all that was required was what the makers termed a chemically pure salt of the element, if element it be. This is not so, because the salts which are offered to the surgeon vary very much in what is to them the most vital thing—namely, radio-activity. Apart altogether from its enormous cost, the experimenters have the greatest difficulty in obtaining suitable specimens. A considerable number of medical men and others have submitted samples of bromide of radium to me for an opinion, and I am bound to say many of them were doubtfully of any therapeutic value. It would be of the greatest value to the profession if some standard measurement could be obtained, because once in possession of this fact experimenters could regulate the dosage by the distance from which they held the salt from the part, and the time during which it was applied.

Unfortunately no such standard is easily available, and we

have to fall back upon the following: (*a*) The physiological effects when applied to the tissues of a normal subject which involve discomfort and risk; (*b*) the action upon photographic plates; (*c*) the fluorescence upon a suitable screen; (*d*) the power to discharge the electroscope. Some experimenters like Mr. Soddy have methods of their own by means of liquid, but these are complicated. In any case every experimenter should not only ask for chemical purity of the salt, but also for some guarantee of radio-activity, and he will find all sorts of figures mentioned, from 40 units (uranium being the unit) to 1,800,000 units of radio-activity. A further test, of course, may be had when once the surgeon has obtained results in a case, because he can compare one with another.

The second important question is to be found in the fact that the emanations are not all of the same kind. Since my last communication to the British Medical Journal (June 6th) we have learned much from the physicists about the rays which emanate from radium, owing largely to the brilliant researches of M. Curie, Professor Rutherford, Sir William Ramsay, Mr. Frederick Soddy, and others. In the paper referred to it was suggested that the physicists divided the rays into three kinds, called respectively α, β, γ rays, and it was understood that the α rays are new, whilst the second set resemble the cathode rays, or what Lenard first described, and the third set correspond to x rays. Some doubt has been thrown upon the last named, and various workers have expressed different opinions on the subject. Lord Kelvin states that the experimenters believe the α rays to be positively electrified bodies larger than those constituting the second set. They are easily stopped by solids, liquids, or gases and they are acted upon by a magnet. The β rays are much smaller and are probably atoms of radium or perhaps molecules of bromide of radium, negatively electrified, easily influenced by the magnet and corresponding possibly to the corpuscles and electrons or the fine particles of matter which make up the cathode stream in the Crookes's tube, Lord Kelvin goes on to say a simple prima-facie view is to regard the third set as merely vapour of radium. These rays are neutral and are not acted upon by the magnet. In support of this view the Honourable R. G. Strutt comes to the conclusion, as the result of experiment, that in some ways the γ rays behave differently from the Roentgen rays. Clearly, therefore, it is important that surgeons should discover which of these rays may be the active agents.

Inasmuch as frequently the salts are applied through mica, paper, glass, or aluminium screens it is difficult to conceive how these can affect the tissues. This reduces the question to the other two. While there is some doubt as to the third set and will be until more is known about them, it is natural to think that the β rays have more to do with the results. This view is further strengthened by the fact that even if the γ rays were proved to be x rays, they are so small in quantity that, knowing what we do of the results of the powerful x-ray tube, it is difficult to see how they can produce the result. If we accept this view of the question then the β rays are probably the powerful agents upon the tissues. In a communication to me Sir Oliver Lodge is inclined to accept this view, of course with all reservation in the present state of our knowledge. In any case the subject is of importance and further experiments are necessary.

What we do know, however, at present, is that the β rays are more penetrative than the α rays and that the γ rays are still more so. It does not, however, necessarily follow from what has been said that the α or γ rays will not be proved to be of therapeutic value. On the contrary, many think they may be, and Mr. Soddy in the pages of this Journal suggested inhalations of the α rays in respiratory troubles, and his idea was based upon physical research and their bactericidal properties.

As I have said, from the fact that radium is usually applied through screens when treating neoplasms the α rays can scarcely reach them, and, therefore, whatever results have been obtained in these affections are not the result of their application. It remains to be seen, however, whether they will have an effect when applied differently. For this reason some experimenters are having salts of radium applied on paper, like a plaster, but of course in this case the tissues are subjected to all three emanations. Sir William Ramsay and Mr. Soddy have shown that the α emanation is a gas and that this contains helium, which itself is one of the most inert substances known. The spectrum of it is not got at first from the α rays, but it subsequently appears. This has led to the view that radium is not an element at all, and that it is being split up into simpler elements. This involves another question that secondary or more changes are taking place and that necessarily forces are liberated. What effect these may have upon normal or diseased tissues when applied to them cannot be stated at present. Another important phenomenon as a result of the emanations is the power of fluorescence which these rays possess and also the most extraordinary thing yet recorded of radium, namely, its power of constantly giving off heat. The possibilities of all these things must be thought of when we are trying to reason out the effects of the agent upon diseased tissues, also that they are, when in sufficient quantity, destructive to life. At present, however, nothing definite can stated.

Results.

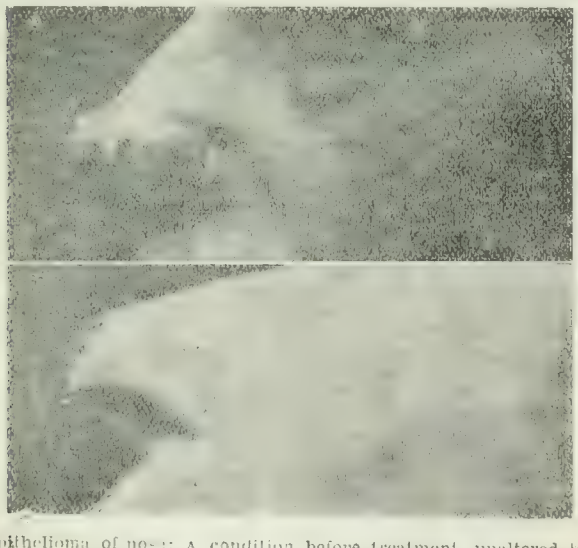
It is exceedingly difficult to obtain definite statements as to cures after the application of radium from any papers yet published. There are many accounts of experiments, but only a few references to cures, and as I have already said, any success recorded seems to have been in lupus, rodent ulcer, and superficial lesions of the skin or within accessible cavities. A case of malignant disease of the palate and lip was treated in the clinic of the late Professor Gussenbauer. The patient was aged 61, and had been repeatedly operated on for what is termed cancer of the palate and lip with no benefit. The parts were exposed to the rays of bromide of radium, and the case, which was reported to the Viennese Imperial Academy of Science, responded to the treatment, the tumour gradually and completely disappearing. From the same source the cure of a case of melano-sarcoma was reported. Drs. Goldberg and London, of St. Petersburg, have published a preliminary paper upon the results of the application of the Becquerel rays in skin affections. The physiological effects were first of all studied by applying the rays from radium to the skin of normal subjects. Two cases of rodent ulcer are recorded in the communication, one a patient, a man aged 58, and who had suffered from the disease for ten years; and another aged 48, who had been ill for eight years. The results in both cases were satisfactory. After mentioning the advantages of such an agent over other more complicated methods, they conclude that undoubtedly in radium we have a new and energetic therapeutic agent.

Cases of rodent ulcer have also been referred to in the lay papers in this country, but on application to the surgeons in charge of the department of the hospital where the patients were treated, I find nothing has been published in the professional journals. Inquiry as to what has been done abroad with radium elicits the same evidence of purely experimental work. Thus one friend of mine, at my request, described what he had seen at the Paris hospitals two months ago. He reports simply a number of men making experiments in different affections, who were exceedingly reticent when asked about improvement or cure, particularly when the question was put with reference to malignant disease. Dr. Darier, of Paris, has made two communications to the Académie des Sciences during the last month, and I have also had reports of much the same kind by a visitor during the autumn to Breslau, where improvement and decided therapeutic action were seen in small lesions or small parts of the lesions in skin affections. Dr. Delsaux has been trying this agent in lupus of the larynx, and reports favourably upon its use. He quotes the early work of Walkoff and Giesel, also that of Danlos, and also refers readers to the papers of Hallopeau and Gadaud, Carez, Oudin, Blandamour, Tremolières, Danysz and Bohn. Dr. M. A. Cleaves reports several cases treated with radium, and says: "The fact that radium emits rays of a greater penetrating power and of a higher vibration than the cathode rays—that is, the γ rays, taken in connexion with the change in appearance and relief obtained in the writer's case of sarcoma and the cure of the cases reported, stimulates the hope that in radium a therapeutic measure of value over and above the x rays is at command."

In my last communication to the British Medical Journal I stated that I had convinced myself, from the application of the rays of bromide of radium to small patches of lupus and rodent ulcer, that some at least, if not all, the rays coming from the salts had a therapeutic effect. With a view of trying the agent still further I selected another case, one of epithelioma of the nose. The selection of a case is by no means an easy matter. It must always be remembered that in malignant disease it is right that the patient should have the benefit of what surgical science has shown to be the most speedy and efficacious way of dealing with the disease. Take the case of malignant disease of the larynx, which is a good

example of what I am stating. After the brilliant results recorded by Sir Felix Semon at last year's meeting of the Laryngological Section of the British Medical Association from thyrotomy very few surgeons in this country, however well acquainted they may be with the results obtained from any of the newer methods, would hesitate to urge his patient to undergo immediate operation in the hope of saving the much more serious and dangerous operation of laryngectomy. Hence it comes that most of the cases at present selected for treatment by *x* rays, radium, or such agents are considered inoperable, and, thanks to early diagnosis and the number of men nowadays skilled in the use of the laryngoscope, these are few in number. The case which I am about to record was sent to me for treatment, and after carefully explaining matters to the patient the selection of the agent was left to me.

One reason for selecting this case was the fact that it was taking a step farther than in applying it in ordinary ulcerating rodent ulcer. The feature of this case was the local induration as well as ulceration. I had no doubt, however, as was proved afterwards, that by *x* rays the mass could be broken down and improved. The diagnosis clinically and microscopically was epithelioma. The patient was a man aged 78. Its history was that it began as a wart thirteen years before. After four or five years increased, but still slow growth took place, but one year ago signs appeared of rapid development. The ulcerated parts indicated the seat of the old wart. The skin was affected externally, and the new growth extended throughout the whole length of the ala. It was irregular in shape and more prominent anteriorly. For the most part the skin was unbroken, but there was an ulcer about ⅓ in. in diameter on the point of the nose. The disease extended to the septum and passed inside the vestibule to a



Epithelioma of nose: A, condition before treatment, unaltered by radium bromide; B, condition at present after *x*-ray treatment.

distance of more than ½ in., so that the mucous membrane was involved, particularly on the outer wall near to the inferior turbinated body. The specimen of radium applied weighed 10 mg. It was of great radio-activity, and had produced a distinct burn on the normal skin of the body which lasted for months, although it had only been applied for one hour and through a plate of mica. Nevertheless, the fact that it was applied first at a distance to the patient and then nearer and nearer until it was practically resting on the skin; that some of the sittings gradually increased in duration were over forty-five minutes; and that thirty-nine applications of radium bromide failed to produce the slightest change as far as I could detect, it was unfair to submit the patient to further trial, and *x* rays were commenced. As had been anticipated, the hard matter very speedily began to break down. An improvement was distinctly seen within a week. The application of the *x* rays was given at first daily and then at intervals. In all thirty-seven applications were given and in five weeks the treatment was stopped. The progress continued steadily without treatment for one month afterwards, and the parts inside and outside are now nearly well. In the first photograph the lesion is seen before any treatment was applied, and the second shows its condition at the present day.

One's first conclusion about the failure of radium to do anything in this case might be that the *x* rays are superior to the emanations of radium; doubtless in this case they were, but the question arises Is it not one of degree? Had I had salts of greater radio-activity and a greater quantity of them, or had we been able to apply them longer, the result might have been different. The results in rodent ulcer lead one to suppose that this might be the case, and this leads me to another point which has often struck me when treating such diseases as rodent ulcer and epithelioma with any of these new agents, namely, apart from the class of disease, the patient's idiosyncrasies, and many other circumstances, there would seem to be a difference in response to treatment according to the state of the lesion at the time the agent is applied. When the parts are ulcerating or fungating, both of which conditions may in a sense be looked upon as the results of attempts on the part of the tissues to cast out disease, one seems often to get the quickest and afterwards a good result. Of course it has to be remembered in this connexion that as a rule the cases one gets for treatment are inoperable, and most of them are exactly in these conditions. Our experience of superficial tumours where the skin is unbroken is more limited so far.

I have noticed the effect of the breaking down of the tissues in more than one case of epithelioma when being treated with radium. At present I have a serious case of epithelioma of the fauces and tongue under treatment. The patient was sent to me as quite inoperable, the lesion being far too old and extensive. A large proliferating mass had a projecting part the size of a small nut, which was steadily growing, much to the inconvenience of the patient in swallowing, and it seems to have been arrested and is now breaking down. I have also observed the same thing in another case of epithelioma of the fauces at present under observation.

In trying to answer the questions raised at the beginning of this paper, from what I recorded in my previous communication published in the BRITISH MEDICAL JOURNAL in June of this year, and all I have since learned, it is evident that the salts of radium have a therapeutic effect. These results, in my experience, have been in lupus and rodent ulcer, for the most part as yet in limited lesions, and where the agent could be applied directly to the affected part. The indications would point further to its being useful in the same class of affections as are at present being treated with the *x* rays, Finsen light, or high-frequency currents. Thirdly, that the experiments, so far, do not justify comparison between the salt of radium and other agents; and, lastly, that what is wanted at present is further investigation into the physiological and other properties of the different radium salts. In pursuance of this I have tried to get salts of greater radio-activity and in much larger quantity, but no maker has been, so far, able to satisfy me upon the tests which I asked for, or to supply me with sufficient quantity.

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ON THE TREATMENT OF CANCER.

BY LOVELL DRAGE, M.A., M.D.OXON.,

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THE satisfactory results obtained from the treatment of uterine fibroids by oil of cinnamon led to a speculation concerning the therapeutic value of the oil and its mode of action. This speculation dovetailed in, curiously enough, with a study of the conditions connected with the formation of blood clot in the veins of pregnant and lying-in women. As a result I was led to exhibit the oil in full doses in an inoperable case of cancer of the breast. Certain reactions were then noticed, and a woman whose breast I intended to remove because of the presence of scirrhus growth was in consequence of these observations placed under the influence

of the drug for a month before operation and for two months afterwards. The result was in every way satisfactory; there was nothing to notice except a strikingly rapid return to good health, which condition has remained for more than two years.

A paper by Dr. Batty Shaw, in the *Journal of Pathology*, on the leucocytosis which can be produced in cats by the intravenous injection of sodium cinnamate, gave me a clue as to the mode in which cinnamic acid acts therapeutically. It was therefore determined to obtain the co-operation of scientific chemistry. Dr. G. T. Morgan, of the Royal College of Science, South Kensington, very kindly consented to take up the subject, and very soon furnished me with a 10 per cent. solution of sodium cinnamate in glycerine, and with that I first worked.

It was early found that pulmonary tuberculosis was very easily and beneficially treated by the injection of 30 minims of this solution once a week. That in early cases a return to health could be guaranteed in two months' time, and that in all but very advanced cases the fibroid change in the lungs could be either initiated or hastened. This change is believed to be that by which Nature effects her cure.

It was found that, although this was the case, cancer was not so easily attacked: in the cases treated, secondary glandular growths readily disappeared, and, although the main growth was prevented from invading adjacent tissue, there was not complete cessation of growth. Enough evidence was, however, furnished to show that the lines upon which cancer was being attacked were correct ones.

As this appeared to be the case, Dr. Morgan pursued his work in the laboratory, and we decided to prosecute a search among the new allies and derivatives of cinnamic and salicylic acids, the extent of the latter appearing to open up possibilities of success. Dr. Morgan has supplied me with several compounds belonging to this group of substances, and these have been used at intervals of a week in varying doses.

Four injections of one of these solutions has caused the disappearance of what was diagnosed as a carcinoma of the breast in the cases of two women of about 40 years of age, one of whom was treated as long as seven months ago.

Case I.

This patient, a nurse, when nursing a case for me consulted me about a lump in the breast, because she feared that she would be compelled to give up her work on account of the pain she suffered on the side of the chest where the growth was, and the increasing difficulty which the pain in the arm of that side caused her in moving patients. She absolutely refused operation of any kind, but consented to allow me to inject the solution, which I did between the growth and the healthy tissue three times before she left the lady she was then nursing. About six weeks later she came to see me, saying that the pain had practically ceased and that the growth had very much altered.

It was then found that the growth was no longer a dense hard mass deeply situated in the breast, but was a diffuse one, smaller in size than before: it was freely movable and close to the surface of the skin. A fourth injection was then given; about two months later the growth was very much the same in condition, only there was less compactness, and a fifth injection was administered. The patient was not seen again until about seven months subsequent to the first injection. She was at that time again nursing a case and suffering no inconvenience or pain: the growth then felt just like the rest of the mamma, only the trabeculae between the gland substance were harder and more defined than usual. The growth was considered to be arrested, and no further injection was given.

Case II.

The growth in the second woman presented the same appearances after four injections administered in the same way: in this case, however, the patient had been previously treated by injections administered into the subcutaneous tissue of the abdominal walls. When I first saw her in May she was suffering from continual retching, occasional vomiting, and a feeling of discomfort in the belly: the belly was tense, and as I suspected from her appearance, and the signs and symptoms, that she had malignant disease of the upper bowel or of the pyloric end of the stomach, I placed her under treatment. The symptoms gradually disappeared, and the patient had so far improved that she left on a visit to friends in the middle of August. She returned at the end of September with oedema of both extremities and shortness of breath, in fact with signs and symptoms of heart failure. She was treated for this and improved.

Whilst examining her heart one day I noticed a hard lump the size of a walnut in her left breast; on questioning her I found that she had noticed it for some weeks, and that she thought that the pain which she had felt proceeded from it. Injections of the solution were given weekly for four weeks between the tumour and the healthy gland substance: all that remained at the end of that period was a thickening of the trabeculae of the gland.

These are cases which show what relief can be given in early cases of cancer.

Cases III and IV.

Two late cases of carcinoma, one of the tonsil and one extralaryngeal, have given very decided evidence as to the alleviation which it is possible to afford in hopeless cases. In both cases, although there was a gradual increase of the mass growing from within, the growth appeared to be encapsulated; there was no invasion of adjacent healthy tissue, glands which were enlarged disappeared, and both patients died peacefully from exhaustion, the result of want of rest and difficulty in swallowing sufficient food. No other pain than that of discomfort connected with the difficulty in clearing the air passages of secretion and in swallowing food was experienced; tracheotomy was not necessary in either case, and there was absolutely no fetor in the discharges.

The relief given in the latter cases has impressed me very forcibly with the fact that the basis upon which the treatment rests is a correct one; the ability to give relief to such cases would certainly not have occurred to me at all if I had not already developed confidence in the method. At the Swansea meeting of the British Medical Association I had the advantage of a talk with my friend Dr. Lewis Jones, and it was agreed by us that a trial should be given of the treatment of cancer by cinnamic acid and its allies after the *x*-ray treatment had been pursued.

Case V.

A man, about 50 years of age, consulted me with the history of a rapidly-growing tumour connected with the liver. He had already consulted both physicians and surgeons in London; the unanimous opinion being that the growth was malignant, and the days of the patient numbered. When I first saw him he was complaining of feelings of weight and oppression at the pit of the stomach, and on examination I found a very large growth obviously connected with the liver. Treatment was commenced; the symptoms from which the patient was suffering have been practically removed, and there is a very distinct alteration in dimensions in the direction of distinct diminution, and one in texture on palpation in that of contraction.

The case is still under treatment, so no more can be said at the present moment, but in view of the fact that there is a cessation in the growth of the tumour, noticeable even by the patient himself, and an alteration in the tumour itself which can be felt, I must confess to a belief in a result of some degree of success.

Case VI.

In one case of recurrent cancer of the right breast the patient was treated by *x* rays during May, June, July, August, and September. A gradual decrease in some of the patient's symptoms took place under the *x*-ray treatment. Especially noticed was the clearing up of an area of dullness in the chest in the region underlying the breast, and the return of breathing sounds over that portion of the lung. The appearances of the surface in and around the scar changed very little during this period, but on the whole there was some increase in the cancerous appearance. Unfortunately, in July the patient suddenly developed a lump on the opposite side in the lower part of the left breast which grew with great rapidity during August and September, and at the time when I saw it first, early in October, formed a large solid tumour involving the whole of that organ.

The patient received a first injection on October 8th. Within forty-eight hours there was a violent reaction, rigor, temperature of 105°, diffuse red rash on trunk and limbs, accompanied by oedema. These symptoms disappeared rapidly, and the breast rapidly diminished in size. With the subsidence of the breast it was possible to define clearly a large hard mass in the lower portion of the breast. The injections were continued weekly until November 11th, when the mass was excised. The patient is recovering rapidly from the operation, and treatment was recommenced on November 24th. Dr. R. Andrews reports that the growth is a rapidly-growing spheroidal cell carcinoma, without much fibrous stroma, and there are no appearances microscopically which are different from those found in any rapidly growing cancer.

Case VII.

In the other case *x* rays were begun and continued for about the same period. The case was one of recurrence after operation for removal of the breast. Three or four small nodules could be felt in the subcutaneous tissue around the healed scar. These nodules underwent retrogressive changes, so that they could hardly be felt, but never disappeared completely. In August a small nodule of the same character was discovered on the border of the latissimus dorsi muscle in the posterior fold of the axilla, and in September it seemed as if the old nodules were again disposed to enlarge, in spite of a continuation of the *x* rays.

Accordingly, after a consultation, it was decided to try the injections, and on October 29th the first injection was given, and injections have been given since at weekly intervals. All the nodules have diminished in size, and the oedema of the arm, which had persisted since the last operation, has markedly diminished. As in the former case, forty-eight hours after the first injection, there was a definite reaction, a rigor, and rise of temperature.

Only these two cases have given such definite reaction, so it appears that my views expressed at Swansea of combining the two methods of treatment may ultimately work out successfully.

It is disappointing, of course, that microscopic evidence was not obtainable from the growth in the first of these two cases which would shed light upon the diminution in size of breast, but it is the fact that no injection was delivered

between the cancer and the healthy breast tissue, at the place, in fact, which has been found to be most desirable. The operation was made possible by the use of the drug, and it was thought undesirable to allow the patient the distress arising from the weight of the growth. At the time at which this paper is written it appears probable that the patient will benefit notwithstanding the unfavourable microscopic evidence.

The second case, so far, appears to be more favourable, owing to the rapid diminution in the size of the nodule, and a further report will be published later.

Conclusions.

To sum up: The condition which the treatment is designed to produce is, first, a leucocytosis; and, secondly, a fibrosis in the tissue affected by cancer. In the case of pulmonary tuberculosis there is no difficulty in producing these conditions; in that of cancer much greater difficulty is experienced in advanced cases than in the case of tuberculosis. However, it is claimed that the treatment is soundly based, and that although it is quite likely that the best possible means of initiating the changes desired has not yet been found, it is only a matter of time for improvement in the details of treatment to be effected.

In connexion with this statement it must be remembered that cancer is a very wide term, embracing a very large number of pathological growths; that it is not always possible to obtain specimens to satisfy the lust of pathology; that a clinician like myself has for his first object the removal of the morbid condition; his second—if he fails in his first—the alleviation of suffering.

The solution of the whole problem requires time and many workers. At Birmingham[1] my great master, the late Dr. Matthews Duncan, speaking upon the subject of puerperal fever, said: "The ideas suggesting the researches of Pasteur, of Toussaint, of Greenfield, and Buchner may prove to be mere *ignes fatui*, but they may prove, on the contrary, to be true guides. It is by following out such ideas, verifying or disproving them by new investigations, that progress is made in science."

I intend to proceed in the course which I have adopted, and that is, to report from time to time the different clues which I obtain, and I must leave it to the rest of my profession either to follow Dr. Matthews Duncan's line with regard to my work, or to leave the matter alone.

It may be objected that I have not published the name of the second substance with which I have worked; this I shall do at the earliest possible moment, but at present the work is scarcely sufficiently forward for me to justify a preference for it over the cinnamate of sodium. Dr. Morgan and I intend to leave no stone unturned which would prevent the placing at the command of the profession the best possible substance.

Finally, I desire to point out that the process of repair in tissues affected by cancer requires from the vital powers of human cells a very great expenditure of energy, and that there is therefore a loss of energy in the effort to repair. Success, therefore, in attempting to treat patients stricken with the disease with good results must depend to a great extent upon the physical condition of the patient treated, and, to some extent, upon the portion of the body attacked. The expectation of any successful specific form of treatment will probably prove a vain one—that of one based upon any lines such as those which I have above set out has, I venture to believe, been found, and no doubt improved ones will follow.

Reference.
1 *Lancet*, November 6th, 1880.

"PARAFFIN CANCER."

By ROBERT KIRK, M.D.Edin.,
M.O.H. Bathgate, Linlithgowshire, etc.

To medical men practising in the mineral oil district, the prevalence of epithelioma among the workmen has been for many years a well-recognized fact, and the most cursory examination of the cases has shown that while the shale miners and retort men are generally exempt, the great majority of cases is found among the men employed in refining the solid paraffin. Cases, although not yet uncommon, are not nearly so numerous nowadays as they were some thirty years ago, and this, I think, is accounted for by the different process now used to purify the shale. This is now effected by superheated steam, while in the early days of the industry the method of refining was shortly as follows: The crude paraffin was melted and mixed with naphtha, thoroughly agitated, and then run over a revolving drum containing a freezing mixture, which solidified it. It was scraped off the drum by a stationary knife, and the solid mass was then placed in bags and subjected to hydraulic pressure, by which the naphtha with impurities was got rid of. This process was repeated three times, and the naphtha used for the first washing was redistilled, fresh naphtha being always used for the third.

The workmen employed wore leather aprons and generally also leggings, and worked with their arms bare to the elbows, and from the nature of their work the hands and fore-arms were constantly in contact with the naphtha mixture, and as a consequence cases of eczema of a most intractable nature were very common. A continuation of the irritant generally caused deep inflammation of the hair follicles with small indurations which went on to what were generally known among the workmen as "paraffin plukes," and which were really small boils. These took a long time to heal, and left considerable hardening of the skin behind them, the cicatrices being generally pigmented of a dark brown colour.

Instead of healing, however, a considerable proportion of these boils after the slough had separated took on an ulcerative action, the centre breaking down and the edges remaining hard and ragged. These ulcers were very indolent, but were not accompanied by any affection of the glands, and when they cicatrized the cicatrix was without pigment, a smooth white patch on an otherwise pigmented arm. The great majority of these ulcers were simple non-malignant, but a considerable proportion took on malignant characters, the centre covered by unhealthy sanious discharge, the edges very hard, with considerable infiltration of the surrounding skin, and exhibiting all the characters, both macroscopic and microscopic, of epithelioma.

Early excision gave always satisfactory results; indeed, I have never seen recurrence of the growth in the scar when the incision included healthy skin all round, and as a result a fatal issue from the disease was extremely rare. Sometimes, although rarely, the gland on the inner aspect of the elbow became infiltrated and removal of it was necessary, but as a general rule the glands were not infiltrated.

The forearms were generally the site of the disease, but one case came under my notice eighteen years ago which was quite analogous to chimney sweeper's cancer. The patient, a man 30 years of age, would not wear the leather apron and in consequence his trousers got soaked with the paraffin mixture. He had eczema of the scrotum, with boils over the anterior surfaces of the thighs, but having heard so much about them from his fellow workmen paid little heed to them. He sought no advice but persevered at his work until at last he could not walk without very great pain. Then I saw him, and found him in an utterly hopeless condition with the right side of the scrotum, the root of the penis, the abdominal wall and inguinal region all involved in an epitheliomatous mass. Operation was out of the question and the poor fellow died some two months afterwards.

At present I have under observation a man whose history is shortly as follows. He is 71 years of age, healthy looking, well-nourished, working nine or ten hours a day. He entered the paraffin refinery thirty-four years ago, and suffered both from eczema and boils. Twelve years ago one of these boils broke down, ulcerated, and became epitheliomatous, and troubled him for nearly a year, when I excised it, the tumour being 1¼ in. in diameter, situated on the right forearm 4 in. below the olecranon to the ulnar side. To-day the scar is perfectly healthy. Eighteen months ago he consulted me about another ulcerating tumour on the right forearm near the head of the radius. Mr. Caird removed this in the Edinburgh Royal Infirmary. There has been no recurrence in the scar, but last July he again consulted me about another tumour within an inch of the scar; that was also removed, and at present there is no evidence of any further lesions. These tumours were all epitheliomata, and the conclusion that one must come to is that long-continued irritation certainly does predispose to the production of malignant disease.

Bequests to Hospital.—The executors under the will of the late Mr. Robert Munn, of Burnley, have paid over to the Victoria Hospital for Burnley and district his residuary estate of £8,000, of which £4,000 is to form part of the endowment fund of the hospital, and the remainder to be for its general purposes.

THE POSSIBLE ASSOCIATION OF THE CONSUMPTION OF ALCOHOL WITH EXCESSIVE MORTALITY FROM CANCER.

By ARTHUR NEWSHOLME, M.D., F.R.C.P.Lond.,
Medical Officer of Health of Brighton.

Part II of Dr. Tatham's decennial supplement to the 55th report of the Registrar-General, published in 1897, contained extremely valuable statistics relating to the relative death-rates and what are known as the "comparative mortality figures" of men engaged in different occupations. These statistics dealt not only with deaths from all causes in conjunction, but also from certain diseases; and the latter figures throw important light upon the influence of occupation on the mortality, for instance, from tuberculosis and cancer.

In commenting on these figures in 1899[1] I drew attention to the fact that the comparatively low mortality figure for medical men (43) and other instances which were adduced did not lend support to the theory that excessive mental strain and anxious work provoked cancer. The following remarks were added; "The low cancer figure for coalminers (38) indicates that they enjoy a relative immunity from cancer as well as from phthisis. Can any reasonable hypothesis be framed to explain why the manipulation of coal underground should be so much less irritating than its manipulation overground? (coalheavers' comparative figure 56). *Can it be that we have to look to intemperate habits as being a main factor at work rather than the particular occupation?* The figures for commercial travellers (63), coachmen and grooms (58), seamen (60), brewers (70), innkeepers (53), ditto in London (70), and butchers (57) certainly point in this direction. The figures for chimney sweepers (156) appear, however, to stand in a separate and independent category."

My attention was again drawn to the same suspicion at a later date, and in October, 1902, I communicated with Mr. T. P. Whittaker, M.P., the Managing Director of the United Kingdom Temperance and General Provident Institution (spoken of throughout this paper as the Institution), and through his kindness and that of Mr. R. M. Moore, the Actuary of the Institution, the figures summarized in Tables I and II came into my hands in November, 1902. After working out the death-rates from cancer in standard populations for abstainers and non-abstainers (from alcohol) respectively, and finding that the former were startlingly lower than the latter, I postponed publishing the results, first, because of paucity of data, and secondly, because at the time it appeared impracticable to eliminate a fallacy arising from the unknown proportion of males and females in the sections of the Institution under comparison.

The second source of error can now be practically dismissed in the light of Mr. Moore's paper read before the Institute of Actuaries on November 30th, 1903.[2] This paper gives the experience so far as deaths from all causes are concerned during the years 1841-1901 of 864 953 male lives at risk, of whom 398,010 were abstainers, and 466,943 non-abstainers; while the corresponding number of females exposed to risk in 1841-1901 were 34,013 abstainers and 67,056 non-abstainers. It may be added that of the females at risk, 19,777 abstainers and 42,495 non-abstainers were over 45 years of age (that is, of the special cancer ages).

The figures supplied to me gave the number of lives at risk in each of three successive quinary valuation years, 1891, 1896, and 1901: and the number of deaths from all causes, and copies of the death certificates from malignant disease were also supplied for the same years. In each set of figures ages were given, and in the mortality figures sex was also indicated.

From these data Table I has been prepared. It will be noted that the abstainers' section is somewhat larger than the non-abstainers' section; but if 45 and over be taken as the special cancer age, then the number of years of life at risk is 27,411 in the abstainers' and 29,968 in the non-abstainers' section.

The last two columns in Table I deal with deaths from cancer. The total number of deaths from cancer given in this table is 125. But the total number of deaths from cancer in the death returns for these three years was 146. The 21 excluded are deaths of females from cancer. This exclusion obviously needs justification. Either exclusion or inclusion is a possible source of error, as the number of female lives at risk in these three years, classified according to age, was unascertainable. Now, during 1841-1901 the proportion of male to female lives at risk was as 8 or 9 to 1; the proportion of abstainers to non-abstainers was among men as 398 is to 467, among women as 34 is to 67. It is, I think, fair to assume that the same proportions of men to women and of abstaining to non-abstaining women holds approximately good for the figures in Table I. Among the women included in the lives at risk in this table 21 deaths from cancer occurred. It is well known that the registered mortality from cancer is much higher among women than among men. Thus in 1901 the death-rate from cancer per million living aged over 35 years, corrected for differences in the age-constitution of the respective populations, was 2.12 among men and 2.90 among women in England and Wales.[3] Consequently if the 21 deaths from cancer among women were left in Table I without a corresponding statement (unobtainable) of the female lives at risk a considerable error would arise. On the other hand, by leaving the female lives at risk out of the same table the death-rate among men in the two sections will be understated. This is of minor importance if the proportion between the two sections is not disturbed. Such freedom from disturbance cannot be secured; but it can be secured that the disturbance shall influence results towards a conclusion opposed to that which will be eventually reached. The distribution of the 21 female deaths from cancer was 3 in the abstainers' and 18 in the non-abstainers' section. But we have seen that the proportion of female abstainers' lives was to female non-abstainers' lives as one to two (34 to 67). It follows that by altogether excluding the female deaths from cancer, and leaving in the female lives, the abstainers' section is unfairly handicapped in comparing its experience respecting cancer with that of the non-abstainers' section.

The first source of error—that involved in the paucity of the data—will be discussed later.

Table I.

Ages of Insured Persons or of Persons Dying in Each Group.	Aggregate Population or Years of Life at Risk in the Three Years 1891, 1896, and 1901.		Deaths during the Three Years 1891, 1896, and 1901. From All Causes.		From Malignant Disease in Males.	
	Abstainers' Section.	Non-abstainers' Section.	Abstainers' Section.	Non-abstainers' Section.	Abstainers' Section.	Non-abstainers' Section.
Under 24	1.490	321	4	—	—	—
25-34	5.926	2.980	13	20	—	—
35 44	10,184	7.055	44	52	1	4
45 54	11,884	10,764	120	149	14	12
55-64	9 182	10,882	170	283	13	25
65-74	4 912	6,500	227	399	13	33
75 and upwards	1,433	1,822	180	269	6	4
	45,011	40,324	758	1,172	47	78

From the data given in Table I it is desired to obtain the death-rate in each section from all causes and from cancer respectively. This can be stated in terms of the number living at each age-period 25—, 35—, 45—, etc.; and this is the method adopted in Mr. Moore's paper referred to above. This method, however, does not give the *idée d'ensemble* secured by the method adopted in Table II, and is open to objection as regards cancer that the number of deaths at each age-period is too small to be free from accidental variations. In Table II the number of deaths occurring among the lives at risk at each age-period being given, the number that would occur in a standard million, aged 25 and upwards, is calculated. By this means death-rates in a standard population, aged 25 and upwards, are obtained, which are strictly comparable. The standard population chosen for this purpose is that of the English Life Table No. 3 Persons, in order that the results may be comparable with those given by Mr. George King, F.I.A., and the present writer.[4] In Table II, as printed, only the cancer death-rates are given, but similar rates were calculated for deaths from all causes. *The death-rate from all causes in the three years 1891, 1896, and 1901 was 17.18 among the abstainers and 23.52 per 1.000 lives at risk among the non-abstainers; while the death-rate from malignant disease was 0.95 among the former and 1.82 per 1.000 among the latter. In other words, if the death-rate among non-abstainers in each instance be stated as 100, that of abstainers from all causes was 72.8, and from cancer was 52.0.*

The italicized sentences give the main conclusion to be derived from Table I. In discussing the validity of this conclusion we must revert to the already mentioned fallacy of paucity of data, and consider whether, apart from this, the abstainers' and non-abstainers' sections are truly comparable.

TABLE II.—*Death-rate per Standard Million in (A) Abstainers' and (B) Non-Abstainers' Section of the United Kingdom and General Provident Institution from Cancer.*

A.—Abstainers' Section.

Age.	Number Lives at Risk.		Number in a Standard Million of Population.		Actual Number of Deaths from Cancer among the Lives at Risk.		Calculated Number of Deaths from Cancer.
25	5,926	is to	260,259	as	0	is to	0
35	10,184	,,	232,106	,,	1	,,	22.8
45... ..	11,184	,,	199,912	,,	14	,,	235.5
55... ...	9,182	,,	158,812	,,	13	,,	224.8
65... ...	4,912	,,	102,196	,,	13	,,	270.5
75 and upwards	1,433	,,	46,715	,,	6	,,	195.6
	44,521	,,	1,000,000	,,	47	,,	949.2

B.—Non-Abstainers' Section.

25... ...	2,980	is to	260,259	as	0	is to	0
35... ...	7,055	,,	232,106	,,	4	,,	131.6
45... ...	10,764	,,	199,912	,,	12	,,	222.9
55... ...	10,882	,,	158,812	,,	25	,,	364.9
65... ...	6,500	,,	102,196	,,	33	,,	518.8
75 and upwards	1,822	,,	46,715	,,	4	,,	102.6
	40,003	,,	1,000,000	,,	78	,,	1,320.8

The labour involved in extracting the death certificates was so great that returns for only three years could be obtained. These dealt with a population at risk of 85,335 persons, among the predominant male portion of whom 125 deaths from cancer occurred. It is possible that the next series of extracts would give somewhat different results. It is highly improbable that they would go far towards transposing the two cancer death-rates. The trustworthiness of this small basis of cancer death-rates is confirmed by the corresponding death-rates for all causes. As already stated, Mr. Moore has compared death-rates from all causes among abstainers and non-abstainers for 60 years, including 864,953 male lives at risk. These are not given for standard populations as in Table II, but for each quinary age-period separately. Taking the ages 35 to 75 the ratio of the non-abstainers' to the abstainers' mortality varies from 100 to 54.8 up to 100 to 86.5. The proportion between abstainers' and non-abstainers' general death-rate is, therefore, not very different from that during the three years in Table I, and it is reasonable to suppose that the same proportion would be likely to hold good for cancer if this could be tested. The figures as to cancer, however, indicate the necessity for further investigation on the same lines, and do not justify any dogmatic conclusion until this further statistical investigation has been made. It should be noted, also, that the ratio of the abstainers' to the non-abstainers' death-rate is almost identical, whether the total death-rate or the death-rate from cancer be taken. It cannot therefore be claimed, assuming that more extensive data confirm those in Tables I and II, that alcohol has a greater influence in increasing the death-rate from cancer than in increasing that from other causes of death.

Such a remarkable difference in the corrected death-rate from all causes and from cancer among abstainers and non-abstainers respectively suggests the desirability of ascertaining whether the data are untrustworthy, either by transfer of lives from one section of the Institution to the other, or because of other sources of error. From Mr. Moore's paper we learn (p. 215):

"Persons are eligible for the temperance (abstainers') section who do not take alcohol as a beverage in any form. The continued adherence of the assured to the principles of abstinence is checked by an annual declaration to that effect.....People who do not come within these conditions are eligible for the 'general section' only, and are herein described as 'non-abstainers.' If an abstainer cease to abstain he is transferred to the general section; and on the other hand, assurers in the general section who become abstainers are generally eligible for transfer to the temperance section. The effect of these 'transfers' on the mortality of the two sections respectively will be dealt with later on in this paper, but it may be here stated that such transfers are not made if the assurers be known to be in bad health or of intemperate habits, and transfers from the temperance section are not made in the cases of persons over 70 years of age. Moreover, the 'transfers' are few in number."

Mr. Moore adds:

"The same care is exercised in admitting a new assurer into either section as regards family history and personal condition. But possibly if there were any unfavourable information on either of these points the case may have a better chance of acceptance if the life be an abstainer. It should thus be made clear that the temperance section has never been favoured or nursed with the view of securing more favourable mortality results, either by the admission of unexceptionable lives only in the first instance or by the removal or transfer of inferior or doubtful lives."

The same point is further dealt with on p. 238 *et seq.* of the same paper, in which Mr. Moore answers the suggestion that "when an abstainer's health deteriorates, if he takes alcohol, he is transferred to the non-abstainers' section to die, and his death is included in the latter section." On this point Mr. Moore says: "Now (*a*) an abstainer is allowed to take alcohol temporarily as a medicine bona fide, and (*b*) he is not transferred if he be known to be in bad health or of intemperate habits. (In the latter case (*b*) a record is made in the Institution's registers that he is to receive non-abstainer's rate of bonus only). But, apart from these facts, the transfers have been so few that their effect can be but insignificant."

Table XV in Mr. Moore's paper shows that during the period 1847-1901 only 2,685 transfers to non-abstainers and 1,465 to abstainers occurred. These form a very small percentage of the total number of lives at risk, and by experimental tables combining the experience of the transfers with that of the non-abstainers and of the abstainers respectively (Tables XVIII and XIX in his paper) Mr. Moore is able to establish satisfactorily that the superiority of the abstainers' over the non-abstainers' section has not been brought about by the operation of the "transfers," and that, in fact, this element in the problem may be dismissed from consideration.

Nor can it be said that the non-abstainers come from any stratum of society distinct from that supplying the abstainers. The average sum assured in the two groups is approximately equal throughout the whole experience.

There appears, therefore, to be good reason for accepting the above death-rates from cancer in the two sections as stating, subject to the remarks on paucity of data, the true relative position of the two, or at least as not understating the mortality among the abstainers. In view of the preceding remarks about the 21 deaths from cancer among women insured in the institution, the relative mortality from cancer among the abstainers is possibly overstated.

It may be added that among the 125 deaths from cancer, 4 male deaths in the abstainers', 4 male deaths in the non-abstainers' section, and no female deaths, were certified to be due to sarcoma. These deaths have not been excluded, and it is likely that a number of other deaths from cancer were due to sarcoma and not to carcinoma. This pathological source of error is inherent in nearly all cancer statistics available, and in those contained in Table I like the rest. There is, however, no apparent reason why this error will differ in the two classes compared.

The cancer statistics of the institution were further analysed as to site of cancer: but the figures thus obtained did not indicate any special irritating effects of alcohol on the œsophagus or stomach. The influence of alcohol in favouring or provoking cancer, if any, must be chiefly an indirect one. The view suggested by the figures in Table I is supported by occupation statistics of the Registrar-General and by other figures tabulated in Germany. Evidently, however, if alcohol exerts an irritating effect, this is only one of a number of conditions favouring cancer, and alcohol cannot be elevated to the position of a primary cause. This is at present unknown.

The directors of the United Kingdom Temperance and General Provident Institution and of similar associations would be conferring a public boon if they gave facilities for the investigation of their experience as to cancer on a large scale.

REFERENCES.

[1] The Statistics of Cancer, *Practitioner*, April, 1899, p. 379. [2] *On the Comparative Experience among Assured Lives of Abstainers and Non-Abstainers*

from Alcoholic Beverages, by Mr. R. M. Moore. [3] 64th Ann. Rep. of Registrar-General of England and Wales, p. lxii. [4] On the Alleged Increase of Cancer, by Geo. King, F.I.A., and A. Newsholme (*Proc. Roy. Soc.*, vol. liv, and *Journ. Instit. Actuaries*, vol. xxxvi, p. 120).

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

A CASE OF MALFORMATION.

[By permission of the Director-General, Medical Department of the Royal Navy.]

A case of bifurcation of the proximal phalanx of the right thumb, with two separate terminal phalanges, came under my notice while serving in His Majesty's ship *Assaye* on the East Indian station last year. It occurred in a Lascar, a native of Ratnagiri, serving on board that ship. In other respects he was an exceptionally well-developed man. From the photo it will be seen that the bifurcated phalanx is completely ossified, and at the termination of each branch there is a joint for the two terminal phalanges. He had free movement at the metacarpo-phalangeal joint, both in extension and flexion. There was no power of extension of the distal phalanges, but power of flexion, as he could grip anything placed between fairly strongly. The soft parts of the distal phalanges were normal, each having a well-formed nail, and the tips were just touching each other. He had a good grasp with this hand, and could pull an oar easily.



I am indebted to Major Collis Barry, Indian Medical Service, of the Grant Medical College, Bombay, for his kindness in preparing the above excellent photo.

R. St. G. S. Bond, M.B., F.R.C.S.Edin.
Surgeon, Royal Navy.

FLUORESCENT PINK-GREEN URINE.

A few weeks ago the mother of an epileptic girl consulted me at the Ancoats Hospital on account of the peculiar colour of the urine passed by her daughter. A specimen brought for examination had a well-marked green colour when seen by reflected light, but appeared pink by transmitted light. The urine had exactly the appearance of a dilute alcoholic solution of eosin, such as is used for the staining of microscopical specimens; in other respects it was quite normal. The girl had been attending the hospital for several months on account of epileptic fits and was taking 10 gr. of potassium bromide three times a day.

The mother declared that the vessel into which the urine had been passed was quite clean, and that the bottle into which the specimen had been placed was also quite clean. The peculiar colour of the urine had never been noticed previously. I thought it probable that the colour of the urine was due to colouring matter in some article of food, and inquired if the girl had taken any coloured sweets. At first this was denied, but after some consideration she remembered eating coloured musk lozenges the day before the peculiar urine was passed. A sample of the coloured musk lozenges was brought to me next day. Some of the lozenges were white, others were blue, and others pink.

The girl was told not to eat any more of the lozenges; the potassium bromide mixture which she was taking was discontinued, and chloroform water given. Next day the urine was of normal colour and remained of normal colour for a week. The bromide mixture was then repeated, and the girl took a large quantity of the pink musk lozenges. Next day the urine had again the peculiar appearance—pink when seen by transmitted light, green by reflected light. She continued the bromide mixture for four weeks, but did not take any of the pink musk lozenges during this period. The urine remained normal in colour. The bromide mixture was then discontinued, and the girl took a large quantity of the pink musk lozenges. Next day the urine had again the peculiar colour—pink when seen by transmitted light, green by reflected light. There can be no doubt that the peculiar appearance of the urine was caused by the pink musk lozenges. When these lozenges were simply dissolved in water or in normal urine, a pink solution was obtained, but it had only the very slightest green tint when seen by reflected light. In this respect the solution differed from the coloured urine passed by the patient.

I do not know what is the exact nature of the pink colouring substance in the musk lozenges, but I think it is probably some form of eosin, or some substance closely allied to this stain. Probably this peculiarly coloured urine will have been observed previously, and will have been reported somewhere in medical literature; but the condition is certainly rare, and might be somewhat puzzling when seen for the first time. Hence it appeared to be worthy of record.

Manchester. R. T. Williamson, M.D., F.R.C.P.

REPORTS

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

CANCER AND SKIN HOSPITAL, LIVERPOOL.

SCIRRHUS OF THE BREAST TREATED BY THE "X" RAYS.

(By H. Lyle, M.R.C.S.Eng., Senior Surgeon.)

M. S., aged 38, unmarried, was sent to me on February 4th, 1903, as an inoperable case of scirrhus of the breast.

State on Examination.—I found a growth of from three to four years' duration of stony hardness occupying the site of the original breast tissue on the left side. The tumour was the size of a small orange, and had an ulcer about the extent of half-a-crown piece, which had almost destroyed the nipple. The growth was firmly fixed to the chest wall, being absolutely immovable, and surrounded by a ring of nodules of the same stony hardness as the breast. A chain of enlarged glands was present in the axilla. She complained of considerable pain, and looked emaciated.

Treatment.—My colleagues agreed with me that any cutting operation was useless. She was accordingly put back for treatment with the *x* rays. On my part I admit that I regarded the performance without much hope. The tube we had at that time was of high vacuum, having been in use for some months. I ordered her an exposure of half an hour's duration three times a day—the whole of the axillary region to be exposed as well as the mamma.

Progress.—On February 25th the ulceration was less and the pain had diminished. There was no sign of any dermatitis. On March 9th the ulcer had cicatrized to a considerable extent, but was covered with an incrustation which was removed from time to time as it formed. There was scarcely any pain; the tumour was unmistakably smaller and softer. Her general condition had improved. Owing to our *x*-ray apparatus getting out of order, the treatment was frequently suspended—namely, from February 27th to March 1st; April 29th to May 12th; May

27th to June 8th; June 12th to June 20th. On July 1st we procured a new tube, which necessarily had a low vacuum, and half-hour sittings three times a day were resumed. After a fortnight's exposure to the new tube the amount of dermatitis induced was so great that all treatment by the rays was abandoned and the dermatitis treated alone. She had no further treatment, and left the hospital on July 28th.

Result.—Her condition now is surprising. She was weighed on April 15th, and was 7 st. 4 lb. On July 23rd she was 8 st. 1 lb. The site of the left breast is occupied by tissue of a fairly firm consistence, with no vestige of the stony hardness left. The nipple, which was nearly gone on admission from ulceration, has reformed, and the chain of enlarged axillary glands has entirely disappeared. The ring of indurated nodules which surrounded the scirrhus has vanished, and the breast, formerly absolutely fixed to the chest wall, can now be moved with comparative freedom.

REMARKS.—No doubt this case was particularly fitted for treatment by the *x* rays. The cancer was of slow growth, and as there was no superplaced tissue, was directly accessible to the rays. The thoughts that arise in one's mind are, Would it be advisable after this case to subject other cases of mammary scirrhus to *x*-ray treatment from time to time after operation with a view to possible prevention of recurrence, or even when nodules have appeared in or about the cicatrix? Or how would it be in an inoperable case of malignant disease when the growth is not too deeply placed, to remove superjacent tissue, and allow the rays to play directly upon the growth. I have seen the patient to-day (October 3rd), and she seems in perfect health. There is not a trace of hardness in the breast, and the nodules show no sign of reappearance. In rapidly-growing cancers, though I have used the rays very freely, amounting to four, five, and even seven hours in a day, I have never seen the slightest benefit effected.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

BIRMINGHAM BRANCH.

JORDAN LLOYD, F.R.C.S., President, in the Chair.

Birmingham, Thursday, November 12th, 1903.

Ureteral Stone.—Mr. BARLING showed two specimens of stone removed from the ureter:

(1) A male, aged 20, had suffered attacks of pain in the left loin since childhood. During the last year the pain had been almost constant, and was associated with vomiting and haematuria, but there was nothing in the symptoms to suggest that the stone had left the kidney and become impacted in the ureter. The kidney was exposed by the ordinary lumbar incision, and it was found a good deal damaged by fibrosis, and its pelvis and ureter were much dilated. The stone was found quite low down the ureter, about an inch from the bladder, was brought up thence to the pelvis of the kidney, where it was removed by an incision, which was sutured, and the patient made a good recovery. The stone was oval, made up of urates, studded with oxalate of lime nodules, and weighed 43 gr. (2) A male, aged 33, had a stone removed from the urethra in childhood, and remained well until two years ago, when he had an attack of left renal colic, the second attack three months ago, and a third one fourteen days before operation. There was nothing to suggest that the stone had left the kidney and was in the ureter, but when the kidney was exposed it was found much puckered and scarred with fibrosis around the capsule, the kidney pelvis was dilated and the ureter also. The ureter was opened at its upper part, and a bougie passed freely into the bladder, and only when it was withdrawn was a roughness felt which indicated the position of the stone. By enlargement of the usual lumbar incision a stone was discovered 3 inches below the brim of the pelvis, was expressed thence up to the opening in the ureter and then removed, the ureter being sutured. This stone was ovoid in shape, made up of urates, with an encrustation of phosphates at the upper end, and weighed 50 gr. The patient was now convalescent.

Epithelioma Treated with X Rays and Potassium Iodide.—Mr. HALL-EDWARDS showed a woman, aged 61, whom he had treated for an ulcerated epithelioma of the nose.

Between January 20th and March 1st, 1903, eighteen exposures to the *x* rays were administered, a hard tube with a heated anticathode being used at a distance of 6 in., and each exposure lasted ten minutes. On March 1st the treatment was discontinued owing to the onset of dermatitis. On March 13th there were only slight signs of healing, and it was then decided to give small doses of potassium iodide. A few days later the patient fractured her femur, and Mr. Hall-Edwards did not see her again until the middle of April, when the ulcer was found to be completely healed. The patient stated that she had taken the drug for several weeks, and that the nose was healed within ten days of commencing the treatment. Prior to the exposure to *x* rays potassium iodide had been given without benefit. Portions of the growth had been previously removed by Dr. Foxcroft, and the microscopic structure was found to be that of typical epithelioma.

At the present time the patient was in good health.

Intussusception.—Mr. D'ARCY ELLIS showed two children whom he had successfully treated for this condition by abdominal section and reduction of the invaginated bowel.

The first child, aged 4 months, was taken suddenly ill on July 19th, 1903, at 6.30 p.m. When seen by Dr. Keith Gifford at 7.30 p.m. the child was collapsed, and the displaced gut could be felt per rectum. Operation was performed at the Corbett Hospital at 11 p.m. The abdomen was opened by median incision, the tumour lifted out, and the intussusception reduced. There was no shock after operation and recovery was complete. The second child, aged 12 months, was seen by Dr. Keith Gifford at 7 p.m. on August 1st, 1903, five hours after the onset of symptoms characteristic of intussusception. Operation was performed as in the previous case at 9 p.m., and with the like satisfactory result. Both children were given Brand's essence and barley water for the first three days.

Mr. Ellis attributed the success of these cases to early diagnosis and immediate treatment.

Strangulated Hernia in an Infant.—Mr. D'ARCY ELLIS showed a male infant, who was 5 weeks old on August 23rd, 1903.

On that day the child was first seen by Dr. Clarke, of Stourbridge, and at once sent by him to the Corbett Hospital. There was a tense inguinal swelling associated with complete obstruction and stercoraceous vomiting, and the child was collapsed and almost pulseless. Mr. Ellis cut down on the swelling, and found a congenital sac containing dark-coloured strangulated bowel, which he returned after dividing the stricture; the sac and testicle were removed. The child made a satisfactory recovery, and was now in good health.

Symmetrical Fibroma of the Superior Maxilla.—Mr. BARLING showed two specimens removed from a School Board teacher, aged 28.

The patient, a female, had noticed for a long time fullness of the upper jaw, and latterly this had increased with some rapidity. There were some old teeth stumps embedded in a mass on each side of the superior maxilla, and, as it was uncertain whether all the teeth had been erupted or not, it was thought that the condition might be double dentigerous cyst. A growth was enucleated on each side of the jaw by means of chisel and raspatory, the larger of the two tumours being the size of a small hen's egg; both the tumours were encapsuled, and removal was effected without dividing the tissues of the face. Microscopic examination showed that the growths were pure fibromata without any evidence of being derived from tooth sacs. With the skill of the dental surgeon, Mr. Hilder, at the General Hospital, the patient has been provided with a plate which entirely prevents any deformity, and enables her to speak as clearly as before.

Splint for Hallux Valgus.—Mr. WILLIAM THOMAS showed an appliance which he had designed for the treatment of hallux valgus, hammer toes, and other deformities of the digits of the foot, and which he called the "tomato splint." He also exhibited a photograph of its application in a severe case of hallux valgus.

Gall Stones.—Mr. JORDAN LLOYD showed six specimens of gall stone, recently removed by operation, for the purpose of illustrating certain practical points connected with cholelithiasis, such as—(*a*) Single gall stones are ovoidal, sausage-shaped or spherical; (*b*) although only two gall stones are found, each may be facetted in several places; (*c*) gall stones lying free within a gall bladder resemble each other in shape and surface, but when one or more are impacted in the ducts they acquire other characteristics; (*d*) impacted gall stones always have roughened surfaces, and when in the common bile duct are usually softened.

Congenital Occlusion of the Oesophagus.—Mr. WILLIAM THOMAS read a paper of which the following is a synopsis: Congenital occlusion of oesophagus hardly mentioned in textbooks on surgery, partly on account of its rarity, but also because, for many reasons, it is frequently overlooked. Cases—the writer's a case with account of necropsy published 1697; cases collected by Hirschsprung (Copenhagen); other published cases. General facts and conclusions; recommendations for treatment.—Remarks were made by the PRESIDENT, and Mr. THOMAS replied.

High-Frequency Currents in the Treatment of Disease.—Mr. J. HALL-EDWARDS read a paper on this subject under the following headings: Modern electro-therapeutics contrasted with old methods. The ethics of electro-therapeutics. History of high-frequency currents. Apparatus and modes of administration. Physiological and therapeutic properties of high-frequency currents. Their application to some diseases. Illustrative cases and conclusions. The paper was discussed by Mr. J. W. TAYLOR, Dr. MELSOM, Dr. ROBERTSON, Dr. CODD, Dr. KAUFFMANN, and the PRESIDENT. Mr. HALL-EDWARDS replied, and afterwards exhibited the apparatus he employs.

MESSRS. WILLIAM HENMAN AND HENRY LEA will read a paper on the Royal Victoria Hospital, Belfast, before the Royal Institute of British Architects on Monday, December 14th.

REPORTS OF SOCIETIES.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Alfred Willett, F.R.C.S., President, in the Chair.

Tuesday, December 8th, 1903.

New Method of Artificial Respiration.

Professor E. A. Schäfer communicated a paper in which, after referring to the disadvantages of the older methods of performing artificial respiration in the human subject, especially in cases of drowning, he described a simple and efficient method he had devised which had certain important advantages. The subject was laid in the prone position, preferably on the ground, with a thick folded garment underneath the chest, and the arms forward. The operator put himself athwart the subject, facing his head and kneeling on one knee, with the other knee and hip flexed, and placed his hands on each side over the lower part of the back of the chest. He then slowly threw the weight of his body forward to bear on his own arms, and thus pressed on the thorax of the subject and forced air out of the lungs. He then gradually relaxed the pressure by bringing his own body up again to a more erect position, but without moving the hands; as he did this air was drawn by elastic reaction of the chest walls into the lungs. This process was repeated regularly not less often than 12 times or more often than 15 times a minute. By this means it was easily possible in an average man to effect an exchange of nearly 500 c.cm. per respiration—an amount more than enough to maintain complete aëration of the blood. The advantages of this method were: Ease of manipulation, efficiency of gaseous exchange, simplicity, impossibility of air passages being blocked by falling back of the tongue, and facilitating escape of water and mucus from them. Detailed instructions for the treatment of the apparently drowned were appended.

Dr. R. L. Bowles agreed with practically everything contained in the paper as far as it went, but it did not go far enough. For drowned persons at least the other movements of the Marshall Hall method, rolling the patient on one side with a movement of the arm on the Silvester type, were requisite, only the side should not be changed, the object being to keep one lung clear. The state of the lungs required these additional measures in order to get rid of the water they contained.

Dr. H. Silvester said the method described in the paper, that of simple pressure, dated from quite remote times. Its disadvantages were that it made expiration precede inspiration, it called into play the elasticity of the ribs alone, the prone position hampered the movements of the chest and also exerted injurious pressure on the heart, and the amount of air that could be drawn in was very small indeed. The method could not be carried out in a hot bath, and the posture in regard to female patients was undesirable.

Mr. Warrington Haward thought that all the methods described had advantages and disadvantages. In the drowned, however, the first thing was to get rid of fluid from the chest, hence the prone position in the early stages was advisable. The method described by Dr. Bowles combined the advantages of all the methods.

Dr. F. W. Hewitt also considered that Dr. Bowles's combined method was the best. The prone position in asphyxia after anaesthetics was inadmissible. The inspiratory effort was important, and bleeding would be of use in relieving the right heart.

Dr. M. S. Pembrey supported the method of Dr. Bowles from the physiological side, and advocated venesection. In the newly-born the method of blowing into the lungs was to be recommended. He also alluded to the importance of warmth. The main object of the methods was to start the circulation, and carry oxygen to the medulla.

Dr. G. Newton Pitt asked if any cases of injury to the liver in the human subject by the Howard method were on record.

PATHOLOGICAL SOCIETY OF LONDON.

Rickman J. Godlee, F.R.C.S., Vice-President, in the Chair.

Tuesday, December 1st, 1903.

Pathology of the Thymus.

Mr. L. S. Dudgeon read a communication on work which he had carried out upon the pathology of the thymus. His observations were based on an examination of 105 children of all ages, 10 fetuses, adults up to the age of 70, and lastly, various animals such as sheep, cats, dogs, rabbits, etc. Technique: Every child's body was weighed just before the necropsy was commenced. The thymus gland was examined *in situ*, then removed, weighed, and re-examined. Normal weight of the thymus: Ever since Friedleben published his monograph on the thymus some forty-five years ago, the results of his observations had been handed down in textbooks and monographs in English, French, and German up to the present day. Friedleben considered that the normal weight of the thymus gland at birth was about 13 grams, at the age of 9 months about 19 grams, and at the age of 2 years about 26 grams. Testut, quoted in *Quain's Anatomy*, from an analysis of 20 cases, considered that the average weight of the thymus at birth was 5 grams. Dr. Hugh Thursfield, in an excellent paper published in the *St. Bartholomew's Hospital Reports*, vol. xxxviii, placed the weight of this gland in children under the age of 2½ years at about 6·7 grams. From his own observations, obtained from various sources already referred to, the speaker considered that the average weight of the thymus was about 7·10 grams, and therefore his views coincided with Dr. Thursfield's, but were in direct opposition to those of Friedleben, which had been so far accepted by the profession. Many authors considered that the gland did not diminish in size until after puberty. This statement, however, required some explanation. The weight of a thymus gland at puberty and a normal child's gland, aged 2 years, might be similar, but while the latter was red and firm and consisted of two definite lobes the former usually had only one lobe and was much shrunken. If a histological examination of the gland were made at puberty it was found that the weight was chiefly due to connective tissue. From the results of his examination of the thymus gland he had adopted the following classification: (1) Cases of "sudden death" and "found dead"; (2) deaths from various acute diseases; (3) chronic wasting diseases; (4) the adult thymus; (5) the fetal thymus; (6) the thymus of animals. Cases of "sudden death" and "found dead": He had examined 16 of these cases, and found that the average weight of the thymus was 25 grams. The largest gland occurred in a child aged 5 months, and weighed 47 grams 50 mg.; the smallest gland occurred in a child aged 16 months, and weighed 7 grams 770 milligrams. If a large or an enlarged thymus were cut into and the slightest pressure on the gland exerted, thick yellowish-white fluid which resembled pus appeared from all directions. If the gland had been allowed to undergo *post-mortem* decomposition for some time, regular cavities were discernible filled with this thick fluid. Dubois noticed this peculiar feature of the thymus for the first time while he was making necropsies on four cases of congenital syphilis. He described the fluid as pus and considered that *it* alone was diagnostic of congenital syphilis. He thought that it was due to the breaking down of a gumma or many gummata. Unfortunately for Dubois, his observations did not bear the very slightest investigation. If his statement were correct every child with a normal thymus would have to be described as syphilitic! Mr. Dudgeon had made large numbers of cover-slip preparations of this fluid, and stained them by Leishmann's, Jenner's, and other methods. He had found that it consisted almost entirely of lymphocytes. Pus corpuscles were not present, and he considered that it was due to liquefaction of the lymphoid tissue, the normal constituent of the thymus, and was not pathological. Bacteriology: He had made a complete bacteriological examination of the fluid described in 8 of his cases of enlarged thymus. In 7 cases of enlarged thymus the fluid was found to be sterile. In one case a definite micro-organism was obtained. This case was of great interest:

A child, aged 17 months, was taken ill quite suddenly with a sort of convulsion, and fell back dead. At the necropsy, marked evidence of rickets was found; hypertrophy of the lymphoid tissue throughout the body; an over-distended stomach which was filled with porridge and a large quantity of potato-skins. Lastly, a large thymus which weighed 22 grams, 100 mg. The right lobe of this gland consisted of little more than the wall of a large cavity which contained thick reddish-yellow fluid. Broth tubes were inoculated, and films were prepared of this fluid, and stained by Gram. Enormous numbers of capsulated cocci, diplococci, and short chains were seen in all the films, and the organism was found to stain by Gram. At the end of 24 hours, a somewhat similar coccus was obtained, with cultures from which various artificial media were inoculated. A pure culture was obtained of an organism which resembled the pneumococcus of Fraenkel, both in its morphological and cultural characteristics. The pathogenicity of the coccus was proved by injecting 0·5 c.cm. of a 24 hours' broth culture into the peritoneal cavity of a white mouse, with the result that death occurred in about 18 hours. A coccus which stained by Gram, and with similar morphological characters, was obtained from scrapings of

the spleen and from the heart-blood of the mouse. An identical organism was also cultivated from the blood of the mouse. A histological examination of the fluid present in the right lobe of the thymus was of no value. As the cells were degenerated beyond recognition, the pneumococcus could not be demonstrated in sections of the thymus gland stained by Gram.

Summary of the Cases of Sudden Death and Found Dead.

Well-marked rickets was present in most of the cases, but not in all, and also hypertrophy of the lymphoid tissue of the pharynx and a large thymus gland.

Enlargement of the spleen, lymphatic glands, and hypertrophy of the solitary follicles and Peyer's patches of the intestine only occurred as a characteristic feature in three cases. The thyroid gland was enlarged in one case; superficial haemorrhages in the thymus were only seen twice; subpleural and pericardial haemorrhages were present on several occasions. He has never met with thrombosis of arteries or veins, distension of the right side of the heart with clot, narrowing or twisting of the trachea, which are among the numerous theories of sudden death in cases of enlarged thymus. Pyrexia was never very marked.

The microscopical structure of an enlarged thymus gland was usually stated to be normal. He agreed with this view to a large extent. A few eosinophiles had usually been described in the histology of a normal thymus. He considered, however, that the characteristic feature in a microscopical specimen of the enlarged thymus was large cells with eosinophilic granules. They were to be found throughout the gland tissue, but were especially numerous along the septa, and in the connective tissue around the small blood vessels. In some cases he had found large clusters in the glandular tissue. Differential counts of the cells in such areas might show that the eosins were present in the proportion of 20, 30, 40, or even 50 per cent. Four varieties of eosinophile were found in the thymus gland: (1) Large cells, containing large darkly staining circular or oval-shaped nuclei, in which a coarse granular matrix could usually be seen; the nucleus was frequently found at the periphery of the cell; (2) similar cells, but in which the nucleus was pale and very faintly granular; (3) cells with a transitional nucleus; (4) lastly, the true polymorphonuclear eosin, such as was met with in the blood.

The first and second varieties, which were much more numerous than the other types of eosins, differed from the eosinophile cells found in the blood, by the character of the nucleus, and also by the fact that the granules were usually smaller. They were, however, somewhat similar to the eosins which were present in the bone marrow. If any small blood vessel in which leucocytes were present was examined in section of an enlarged thymus they sometimes found that the typical eosinophile of the blood might form 10 per cent. of the leucocytes, and a few of the eosinophiles of the tissues might also be present. Acute diseases: He had collected 33 cases of children who had died from the various acute infections. The average weight of the thymus in these cases was found to be 5 grams 440 mg. The ages of the children varied from a few weeks up to 14 years. The thymus appeared to undergo a slight loss of weight in an acute disease. Most of the glands were found to be normal microscopically except for haemorrhages, which were scattered throughout the tissue in about 95 per cent. of children who had died from broncho-pneumonia or lobar pneumonia. An increase of the fibrous tissue of the gland was present in a few cases. Atrophy: He had divided atrophy of the thymus under two headings—(1) primary atrophy, (2) secondary atrophy. By the term primary atrophy he meant an atrophy of the thymus gland which was found at the necropsy of a child in whom no other pathological change was discovered beyond atrophy of the muscle and subcutaneous fat. Marasmus was usually the term which was applied to such a condition. Secondary atrophy was dependent on some definite disease such as tuberculosis and chronic non-tuberculous diseases, like chronic empyema, post-basal meningitis, etc. Primary atrophy: From an analysis of 15 cases of marasmus he had found that the average weight of the thymus was 2 grams 680 mg. The smallest gland was obtained from a child 16 days old, and was found to weigh 905 mg.; the largest gland occurred in a child, aged 14 weeks, and weighed 5 grams 150 mg. The characteristic changes in the thymus gland in cases of marasmus were as follow: (1) At the necropsy the gland appeared to be soft, white, and oedematous, but it cut with great resistance; (2) thick yellowish-white fluid was never found in the thymus in these cases; (3) loss of differentiation of cortex from medulla; (4) capsule thickened; (5) fibrosis was usually well-marked and often accompanied by thickening of the outer coats of the blood vessels; (6) atrophy of the lymphoid corpuscles, which were replaced by endothelial cells, connective tissue cells, and small giant cells which were very similar to the small type of giant cell which were found in the lymphatic glands in lymphadenoma; (7) Hassall's corpuscles appeared to be more numerous, but only by comparison with the rest of the cellular tissue; (8) all forms of degeneration were met with in the Hassall's corpuscles, but especially the hyaline and calcareous. Secondary atrophy due to tuberculosis: He had collected 28 cases of this variety of atrophy. Average weight of the thymus was found to be 3 grams 65 mg.; the smallest gland weighed 345 mg. There were four specimens of tuberculosis of the thymus, which had undergone extensive caseation in each case. Thirteen cases had been examined of secondary atrophy apart from tuberculosis. The average weight of the thymus was found to be 2 grams 605 mg.; the smallest gland weighed 1 gram 280 mg. In one of these cases the thymus could not be isolated from the surrounding tissues indurated from chronic mediastinitis. In secondary atrophy similar changes in the thymus as occurred in marasmus were encountered, but much less frequently. Fibrosis, which was often very extensive, appeared to be the commonest change. In several cases the glandular tissue was infiltrated with adipose tissue. Professor Ruhrah had recently drawn attention to the important alterations which occurred in the histology of the thymus in cases of marasmus. There was one special point with which he disagreed. Ruhrah considered that Hassall's corpuscles frequently underwent hyaline degeneration, and were therefore coloured bright red in sections treated with Van Gieson's connective-tissue stain; he considered that this staining property of Hassall's corpuscles was most important; he also drew a comparison to the cell nests in squamous-celled carcinoma, which he had found to stain in patches bright red with Van Gieson. The speaker had stained a very large number of atrophic thymus glands with Van Gieson, including all the cases of marasmus, but had always found, without any exception, that Hassall's corpuscles stained bright yellow, occasionally orange. He had had exactly similar results with the cell nests in squamous-celled carcinoma. In conclusion, he considered that: (1) Atrophy of the thymus gland was the most characteristic morbid lesion found in cases of marasmus, but it was also present in any chronic wasting disease, such as tuberculosis; (2) atrophy of the thymus and wasting of the tissues were usually found to go hand in hand; (3) lastly, the state of nutrition of a child by a macroscopical and microscopical examination of the thymus could be judged with some certainty. The adult thymus: This gland had been examined in adults up to the age of 70. Usually in old people it resembled a small patch of fibrous tissue. It was usually infiltrated with fibrous and adipose tissue which isolated small patches of the cellular constituents of the gland. The lymphoid corpuscles were present in large numbers in these cellular regions and one or two Hassall's corpuscles might be found in each patch. These bodies generally stained in a homogeneous manner, except for one or two well-defined cells at the periphery. He had never seen any eosinophile in the thymus of old people. Owing to the kindness of Dr. Seligmann he had obtained a large thymus from a case of Graves's disease. It appeared to be normal in structure except for a slight fibrosis, and there were more connective tissue corpuscles than was met with in the large glands of children. He only found a few eosinophiles. Sir Astley Cooper, in his monograph on the thymus, published in 1832, referred to a most interesting case. A young girl suffered from severe dyspnoea, for which he could give no relief. There was some difficulty in deglutition and there was a prominent swelling in the neck. She died after a short illness. At the necropsy he found a large thyroid gland and a very large thymus. It seems to him that this may have been a case of Graves's disease, and, if so, it would be the first case in which a large thymus was noticed. Lastly, he would very briefly refer to the fetal thymus glands. He had examined 10 fetuses, from the fourth month till term. The average weight of the thymus was 4 grams 570 mg.; the smallest gland weighed 600 mg., the largest gland was found to weigh 22 grams 200 mg., but the thymus in this case was obtained from an anencephalic fetus; these monstrosities were known to have enlarged thymus glands. It was impossible to differentiate cortex from medulla in the thymus of the fourth-month fetus, while this division was very poorly marked in the fifth-month fetus. The structure of the glands in every case was otherwise normal. Large numbers of eosinophiles were found in most cases, especially in the thymus of the anencephalic fetus.

Dr. Morley Fletcher asked whether the variations described by the author in Hassall's corpuscles in the fetus in infective disease and atrophic conditions of the gland in the adult could be regarded as constant.

Dr. C. R. Box asked whether there was ground for thinking that atrophy of the thymus was the primary lesion in marasmus;

and what the mechanism of sudden death might be in cases of enlarged thymus.

Dr. F. J. Poynton inquired whether the juice of the gland would be fatal if introduced intravenously in an animal.

Dr. H. Thursfield observed that he had recorded four cases of sudden death associated with enlargement of the thymus. In these there was no reason furnished by the necropsy for thinking death to have been due to asphyxia. Possibly some bacterial toxin was responsible for the result, but cultivations had proved negative. The cause of death could not as yet be explained.

Mr. W. G. Spencer pointed out that during life the enlarged gland produced an obvious swelling at the root of the neck which might disappear after death. He referred to Wooldridge's experiments, which showed that a thymus extract produced intravascular coagulation and death, if introduced experimentally into animals.

Mr. S. G. Shattock referred to the discrepancies obtained by Mr. Dudgeon and Professor Ruhrah in regard to the coloration of Hassall's corpuscles by Van Gieson's stain. Different persons used different admixtures, etc., and the stain was influenced in its results by such variations; the author of the paper might not be using the same composition of stain as the writer whom he had cited.

Mr. Dudgeon, in briefly replying, said the changes exhibited by Hassall's corpuscles in the various conditions cited by Dr. Fletcher were the same. Marasmus had been supposed to be due to the atrophy of the thymus, but the subject needed further inquiry. He did not think the cause of death could be intravascular clotting, as he had not detected any such, although he had looked for it; a microbic poison was unlikely as a cause. He had found Van Gieson's stain vary in result according to differences in the proportions used in mixing it, but he had not obtained by any variations he had used the results described by Professor Ruhrah.

An Anatomical Criticism of "Total Prostatectomy."

A paper, with illustrations, was read by Mr. C. S. Wallace upon this subject, and will be published in full in a future issue of the British Medical Journal.

Thyroid Carcinoma.

Dr. H. A. Lediard exhibited a specimen of the above, together with a metastatic growth involving the frontal region of the calvaria. He referred to three similar cases published in the Society's *Transactions*, in all of which the calvaria were the site of the metastasis.

Mr. J. Berry noted that profuse haemorrhage had attended operations upon the calvarial tumours, in such cases as Dr. Lediard's. He would draw attention to an exhaustive account of this class of tumour, by Jaeger, published in 1897 in the *Beiträge für klinische Chirurgie*.

Mr. H. L. Barnard referred to three cases of adrenal sarcoma which had come under his notice, and in which secondary tumours grew in the calvaria.

Mr. C. A. Morton exhibited a specimen of calcifying chondro-sarcoma of the breast; five somewhat similar had been brought at different times before the Society.

REVIEWS.

BOOKS OF THE SEASON.

The Yellow Crayon,[1] by E. Phillips Oppenheim, tells how the Order of the Yellow Crayon was so-called because the correspondence of the members was written with a yellow pencil. It was a secret society founded by the aristocrats of Europe in order to check the growth and spread of the revolutionary spirit, and had at its head no less a person than the German Emperor. It had three grades, the first corresponding to the Primrose League, the second intended to combat Socialism, while the third or inner circle was allied for its own purposes with criminals in every European capital. To this last belongs the heroine of the book, Lucille, Duchess of Souspennier, who, after three years of happy married life in the seclusion of a small American town, is forced to go to England to carry out the designs of the society. She is followed to London by her husband, who discovers her mission is to bring about the ruin of an English Radical leader who is deeply in love with her. The Prince of Saxe-Leinitzer, the real head of the society, and himself in love with the Duchess, tries to get rid of the inconvenient husband. The atmosphere of the book is thick with plots and counterplots; poison and that modern substitute for the dagger, the revolver, naturally play a part in the lurid drama, but all ends happily in the defeat of the machinations of the villain and the suppression of the society by the Emperor when he is made aware of its true character. The plot is ingenious, but the whole thing is so unreal and the characters are so lifeless that one can take no real interest in their fortunes. Lucille, who is presented as a type of perfect womanhood, inspires one with absolute disgust by the callous way in which she lures the unfortunate politician to his ruin, and the calmness with which she hears of his disgrace and murder. By those, however, to whom sensation and mystery are the chief attractions in a novel, *The Yellow Crayon* will doubtless be read with interest.

When I was Czar,[2] by A. W. Marchmont, is an account of the adventures of a young American in Russia, who by reason of the resemblance which he bears to the ruler of that country is persuaded to personate the Czar. He at once becomes involved in a whirl of conspiracies and Nihilist plots. Desperate enterprises and hairbreadth escapes follow one another in quick succession. The heroine is a beautiful maiden, burning to avenge the memory of her father who had died in disgrace, a victim of the unscrupulous wiles of a powerful Minister. The hero falls in love with the girl, and gets into all sorts of scrapes for her sake. Although for a time the course of true love does not run quite smooth, the shrewd American finally brings about the ruin of the Minister, and all ends happily. The story, which is written in a lively style, never flags from beginning to end, and holds the interest of the reader throughout. There are thrilling incidents in abundance, and comic relief is supplied by an American journalist who personates the hero to facilitate his escape from Russia, and hails his own imprisonment with delight as a source of first-rate copy. The wicked Russian Minister, the faithful servant Ivan, the exiled Polish count, are somewhat conventional; but as a story, both for the young and for their elders, we can heartily recommend *When I was Czar*.

A Sleeping Giant[3] is really a treatise on hypnotism in disguise. The plot is clumsy, and the story is told in a manner which almost suggests that the author had succumbed to the soporific influence of his subject. Mr. Tipple takes it very ill that the medical profession has shown such indifference in respect to hypnotism. This attitude he of course ascribes to jealousy. His knowledge of the subject may be gauged by the account which he gives of Elliotson, of whom we are told he "discovered that by applying the mesmeric form of treatment to certain diseases hitherto considered incurable, he was enabled to produce the most extraordinary results. That caused him to introduce it into the wards of the hospital, and then the trouble began." His colleagues, it is added, resented his unorthodox practice, whereas Elliotson "considered that it was the physician's privilege to determine how his patients should be cured; so he forthwith retired from the hospital, its schools and concerns." We should recommend Mr. Tipple to read the true account of the exposure of the medium who hoodwinked the unfortunate physician as told in the contemporary numbers of the *Lancet* or in Mr. Squire Sprigg's *Life of Thomas Wakley*; it will supply him with the plot of a much more interesting story than *A Sleeping Giant*.

George Newnes, Limited, send two of their sixpenny illustrated novels—Mr. E. W. Hornung's *Peccavi* and Mr. G. R. Sims's *Memoirs of a Mother-in-Law*.[4] Mr. Hornung's powerful but unpleasant book can scarcely be recommended as reading for the young. Men and women, however, who have courage to face the facts of life will find this tale of a great sin and its expiation of vivid interest. The illustrations by Mr. A. S. Hartrick are spirited. Though the book is printed in double columns the type is clear and legible. Mr. Sims's book, if read after Mr. Hornung's, will dissipate the gloom engendered by *Peccavi*. The time-honoured theme of the mother-in-law, the butt of ages, is here treated in a somewhat novel fashion

[1] *The Yellow Crayon*. By E. Phillips Oppenheim. Illustrated by Oscar Wilson. London: Ward, Lock, and Co. 6s.

[2] *When I was Czar*. By A. W. Marchmont. Illustrated by Norman H. Hardy. London: Ward, Lock and Co. 6s.

[3] *A Sleeping Giant*. By Henry Tipple. Illustrated. London: The Gutenburg Press, Limited. 3s. 6d.

[4] Newnes's Sixpenny Novels, illustrated: *Peccavi*, G. W. Hornung; *Memoirs of a Mother-in-Law*, G. R. Sims. London: George Newnes, Limited.

and with admirable results. The story (if it can be so called, for there is no plot) is amusingly told, the narrator unconsciously revealing her character at every turn. Whilst protesting bitterly against the charges of interference and bad temper on the part of mothers-in-law in general, she tells us in all innocence of her own offences in this respect against her long-suffering husband and her married children. Her real kindness of heart and affection for her family are equally displayed together with her natural shrewdness and good sense. The print is all that could be wished, and the book is admirably illustrated by Mr. H. M. Brock.

Tychiades,[5] by Alfred Dickeson, is a tale of the Ptolemies purporting to be written by one Ornithovius in the third century B.C., and to be translated by Alfred Dickeson, who claims to be his descendant. It is an interesting and lifelike picture of Alexandria in the old days of her glory under the Ptolemies. The interest is well sustained and the characters are natural. Perhaps the author's learning is somewhat oppressively displayed, but the book will delight children whose taste in reading is for more serious fare than the ordinary stories of adventure. The author is entitled to the credit of having hit upon a new path in historical fiction and of having followed it with success.

Sir Conan Doyle allows us, in the *Adventures of Gerard*,[6] to renew our acquaintance with a Napoleonic cavalry officer, modelled, as the author practically admits, on the never-to-be-forgotten Marbot. The new volume consists of a series of detached episodes related by the gallant colonel himself. In all he performs feats of daring and cunning unsurpassed, as he tells us, by any other, and only equalled by Marbot himself. An element of light comedy is introduced into the description of Gerard's sporting experiences during his captivity in England, but for the most part the incidents are adventurous, and every page is full of life and movement.

Musk of Roses,[7] by Mary L. Pendered, is the diary, or rather confession book, of a pretty and popular singer, who has married a typical country gentleman. The gradual disclosure of her somewhat selfish and hysterical character is cleverly worked out, and her honest reserved husband is well drawn. He is such a good fellow and so evidently in love with his wife that it is quite a relief when an understanding is finally established between them. The book contains some charming descriptions of country life and scenery, and Delia's experiments in her still-room sound fascinating, though the results do not strike one as appetizing. One sympathizes with the unfortunate husband, who, confronted with a supper of dainty trifles after a long day spent out of doors, rushes off to the house to get cold beef. Miss Edith M. Hinckley's frontispiece is really beautiful, and the book is well printed and prettily got up.

Messrs. George Newnes send us *Odd Craft*,[8] by Mr. W. W. Jacobs, a collection of stories, most of them exceedingly amusing. Perhaps the most so is that entitled the "Money Box," which describes how three sailors decide to save their money, and to this end give it to one of their shipmates, a teetotaller, to keep on the understanding that he gives them so much a day for food and drink. They soon get tired of this arrangement, and their devices to regain possession are most ingeniously related. Although almost all the stories are about sailors, in none is the reader actually taken to sea, but in Mr. W. W. Jacobs's hands the sailor, whether ashore or afloat, is always a most amusing character, and it is with great regret that we close the book.

The story of the Annandale peasant who by sheer force of intellectual and moral worth rose to the highest place in English literature could scarcely be made uninteresting by the dullest narrator, but we are bound to say that A. S. Arnold[9] has come very near to achieving the impossible. The facts of Carlyle's life are indeed set forth more or less accurately in the book, but they are mixed with such a mass of irrelevant and irritating twaddle as to make an almost indigestible literary hotchpotch. How Carlyle himself would have described the book and its author we can only dimly conjecture. But as any account of a life that was more worth living than most is better than none, A. S. Arnold's *Story of Thomas Carlyle* may be read with profit by those who have not the opportunity of reading any other.

We are glad to know that the success which has attended the issue of *Robert Browning's Works*, in eight small volumes, printed on India paper, has encouraged Messrs Smith, Elder and Co. to produce a uniform edition of the works of his gifted wife. *Elizabeth Barrett Browning's Works*, printed from the same type on ordinary paper, formed six volumes. This new issue on India paper forms three handy pocket volumes, which will be highly appreciated by the many devoted admirers of the lady who was, as most will admit, the chiefest poetess who has written in English. The price of each volume is 2s. 6d. net in limp cloth and 3s. in leather. The print is good and clear, and the paper, as we can bear witness, wears well, better indeed than many kinds of much heavier substance.

We are indebted to Messrs. Chatto and Windus for a very neat and well printed edition of the set of essays by Robert Louis Stevenson first issued and now reprinted under the title of the first and longest of them, *Virginibus Puerisque*. They contain some of the most charming occasional pieces of that admirable writer, and incidentally it is interesting to note that among them is a highly appreciative notice of "Some Portraits by Raeburn" written a quarter of a century or more ago long before the present rage for that virile painter began. This volume is one of a series issued by the same publishers under the name of the St. Martin's Library (cloth 2s., leather 3s., net). Among other volumes of the same series are Stevenson's *Familiar Studies*, and *New Arabian Nights*, Hardy's *Under the Greenwood Tree*, and the *Compleat Angler*.

Mr. Fisher Unwin, who is keen to read the signs of the times, has seen in the prevailing epidemic of "fiscalitis" a good opportunity for the reissue of Mr. John Morley's *Life of Richard Cobden*.[10] The book has long passed into the serene region where reviewers cease from troubling, and all that need be said of it here is that it should be read by every one, to whatever political party he may belong, who is interested in social progress and the conditions of national prosperity. The book is excellently printed, and is published at a price which places it within the reach of all.

We have also received a specimen of the "Newnes Thin-paper Reprints of Famous Novels,"[11] well printed on thin but opaque paper, and ornamented with a photogravure frontispiece and engraved title page on Japanese vellum. The volume before us—Charles Whitehead's *Richard Savage*—contains some 550 pages, but is yet small enough for the pocket. Of the novel itself we need say nothing; it is a remarkable study of an unprincipled but brilliant man of letters, who won the affection and admiration of Samuel Johnson, by one who was a friend of Dickens, and made almost as terrible shipwreck as Savage himself.

Messrs. Cassell send us a specimen of the new issue of their National Library—a copy of *Silas Marner*, by George Eliot, with an explanatory and critical introduction by Stuart J. Reid. The price of each volume, bound in cloth, is 6d. net, and one will appear weekly. Those which have already been issued are Sterne's *Sentimental Journey*, and Shakespeare's *Richard II*, with an introduction by the late Professor Henry Morley. Other volumes to follow immediately are *Evelyn's Diary*, with an introduction by Austin Dobson; Horace Walpole's *Letters*, Hazlett's and Emerson's *Essays*, and Thackeray's *Four Georges*. Each volume is to have a portrait, and altogether the series deserve success.

Mr. Barry Pain is a social philosopher in his way, and his knowledge of the workings of the mind of a certain level of the lower middle class is almost uncanny. A new woman found in *Mrs. Caudle's Curtain Lectures* a serious moral lesson as to the causes of the subjection of women; the same lady may find a hidden lesson on the futility of what passes for education in Mr. Pain's new volume. For ourselves we prefer to laugh with him, and counsel those who knew *Eliza*

Tychiades. By Alfred Dickeson. London: T. Fisher Unwin. 6s.

Musk of Roses. From the Ego Book of Delia Wycombe, by Mary L. Pendered. London: G. Newnes, Limited. 6s.

Odd Craft. By W. W. Jacobs. London: George Newnes, Limited. 3s. 6d. [illegible] Library Series.

The Story of Thomas Carlyle. By A. S. Arnold. Illustrated. 2s. 6d. London: T. Fisher Unwin.

[10] *The Life of Richard Cobden*. By John Morley. London: T. Fisher Unwin. 2s. 6d.

[11] London: George Newnes, Limited. (Limp cloth, 2s. 6d.; limp lambskin, 3s., net.)

to read *Eliza's Husband*,[12] and those who do not to hasten to make her acquaintance.

Messrs. Chatto and Windus have issued a popular edition of *Phil May's Sketch Book* (2s. 6d.). It contains fifty cartoons on foolscap paper, and the preface in which the artist gave some account of his life and methods. It is very interesting and rather saddening, because, as he says, he lost much time in finding out for himself things which he might have been taught had he had any artistic training, and his life was to be short. Of the sketches themselves, what can be said that has not been said many times? They are all true to type; but of all his types there is none so true to life and so new to art as his London women of the lower class, his portly "mothers of fourteen," his flower girls, and, alas! his quarrelling, drunken harridans. One of the last drawings in the volume is the portrait—for it is hardly a caricature—of Mr. Gladstone. The portfolio would be worth possessing for this alone.

The annual volume of the *Leisure Hour*[13] for 1902-3 forms a very attractive Christmas book. Besides a number of short stories, many of them of a high order of merit, it contains two serials: a charming romance, "The Intriguers," by Mr. John Bloundell Burton, and "Jill's Red Rag," by Miss Amy Le Feuvre. In addition to fiction, there are articles on various subjects, ranging from astronomy to London clubs, all readable and instructive, amongst which may be mentioned Mr. Mottram's "True Story of Seth Bede and Dinah Morris, with other Characters in Adam Bede;" Dewey Bates's "Notes made in a Dutch Village," and "Oxford from Two Points of View," by W. and M. Montgomery. There is an abundance of illustrations, especially the frontispieces, many of which are reproductions of works by Mr. Briton Rivière and other well-known artists, are admirably executed. For the school library or the nursery there could be no more suitable volume. Intelligent readers of all ages will find a delightful mixture of the useful and the agreeable in it.

The youthful readers of *Little Folks*[14] will not be disappointed in this year's volume. As usual it offers a wide range of interest. In addition to stories we have charming articles by Miss Violet A. Wilson on "Possible Pets" with excellent photographs of the said pets for the lovers of animals; for those interested in history there is an interesting series of tales "Boys of Long Ago," by A. Lincoln, and "Heroes of other Lands." There are two serials "In Search of Shadow Land," by David Ker, which is exciting enough to please any boy, and "The Children of Hermitage," by Frances E. Compton. The very little ones will rejoice in the nonsense rhymes, the little tales in two syllable words and above all in the delightful adventures of "Cheepy the Chicken." The illustrations are very pretty, especially Mr. Rowntree's deliciously funny drawings of animals. *Little Folks* will be a great boon to mothers and nurses during the Christmas holidays.

Bo Peep[15] is, indeed, a "treasury for the little ones." Whoever is lucky enough to get this brightly-bound volume for a Christmas present will thoroughly enjoy the stories and rhymes, all good and suitable for the small readers for whose delectation they are intended. There are illustrations, both pretty and amusing, on every page, and several charming coloured plates. Messrs. Cassell and Co. are to be congratulated on the successful manner in which they cater for the artistic needs of the child population of these realms.

Sir David's Visitors,[16] by Sarah Tytler, treats of the time of Queen Caroline and the Prince Regent. In her lightly written story the authoress takes for principal characters Sir David Wilkie and his sister and mother. Incidentally she introduces many celebrities, including Sir Thomas Lawrence, Lord Byron, Mrs. Siddons and her daughters, and so on. The book is charmingly written and can be picked up and opened at any page with a certainty of pleasing the reader.

In *Mr. Woodhouse's Correspondence*[17] we have a series of amusing letters on selfishness. The following saying of Lord Beaconsfield's in *Sybil* is quoted on the title-page: "As for Fitz-Heron, he is so very selfish, he always wants his letters answered." While in the Epilogue we read, in explanation of the *raison d'être* of the book: "The foregoing correspondence (which appeared originally in the *Pilot*) is reproduced at the request of many who recognize in Mr. Woodhouse a friend and a brother, and by the kind permission of Mr. D. C. Lathbury." The letters are amusing and readable.

Stories from Fairyland[18] are not fairy tales, as would be supposed from the title, but are short attractive stories in the style of fables translated from the Greek by Mrs. Edmunds. She explains in her preface that the notion of fairies, so cherished by children, is confined chiefly to our race. The Nereids of Greece are different to England's fairies, albeit they are of the same type of beauty. There is, however, one story, "The Maiden's Three Gifts," which unmistakably resembles our fairy tales, and the Moipai and their gifts are so like our fairies and their endowments to royal infants, that the authoress has translated the word into "fairy," and settled on the above title from this particular story. There is one illustration—the frontispiece.

An Enchanted Garden,[19] by Mrs. Molesworth, consists of four fanciful stories like fairy tales told to two children who follow a wren into a very ancient garden supposed to be haunted. There they find an old woman who declares herself to be the caretaker of stories and of Nature. They persuade her to tell them two stories, the other two being related by birds. We recommend this book for children who are fond of purely imaginative stories. This little volume has a frontispiece, and belongs to the same series as *Stories from Fairyland*—the Children's Library.

In *The Child "Wonderful"*[20] a china figure on the mantelpiece is supposed to relate stories to two children and to tell them about the Nativity of Christ in six talks. The idea of making an old man in china tell the story is certainly new, though not very true to Nature. The subject is carefully explained for small children to understand, and for such it is intended. There are several very brilliantly-coloured illustrations.

Three Rascals[21] (by Ramond Jacberns) will be a real treat for children who like stories of mischievous rascals, which is often the case. It relates the pranks of three children who go down to the country farm of their "Pater's" old Scotch nurse to spend their holidays, running wild. They keep old Margot in a perpetual stew, and in the last chapter she is obliged to send for their father owing to the disappearance of the girl twin. After a long search she is found in a pit in a copse belonging to an old gentleman, another good character. But if any reader wishes to make his acquaintance and that of some other children, he must read the book. The illustrations are very lifelike, and appear to have been taken from photographs.

In *Bird Life in Wild Wales*.[22] Mr. Walpole-Bond mentions in his preface that the ensuing pages are not meant to be a scientific work on British birds, but simply records of observations and sketches made in the course of many rambles amid their haunts. He points out that he has been lucky in finding some of our rarer species, notably the kite, buzzard and raven, the crested grebe, pied flycatcher, and others. The fact that he writes from personal experience makes his descriptions all the more interesting, and the numerous photographs are very interesting too. Though much resembling other publications on the subject it will be found a most pleasant volume by all bird lovers.

The *Popular Natural History of the Lower Animals*,[23] by Henry Scherren, consists of descriptions of small sea-creatures and insects, "the backboneless tribe," and shells. There are innumerable drawings, and the habits of each animal are

[12] London: Chatto and Windus. 1s.
[13] *The Leisure Hour*. 1902-3. London: The Religious Tract Society. 7s. 6d.
[14] *Little Folks*. London: Cassell and Co. 3s. 6d.
[15] *Bo-peep*. London: Cassell and Co. 2s. 6d.
[16] *Sir David's Visitors*. By Sarah Tytler. London: Chatto and Windus. 6s.
[17] *Mr. Woodhouse's Correspondence*. By G. R. and E. S. London: Methuen and Co. 6s.
[18] *Stories from Fairyland*. By George Drosines. London: T. Fisher Unwin. 1s.
[19] *An Enchanted Garden*. By Mrs. Molesworth. London: T. Fisher Unwin. 1s.
[20] *The Child "Wonderful."* London: Cassell and Co. 2s. 6d.
[21] London: Macmillans. 4s. 6d.
[22] *Bird Life in Wild Wales*. By John Walpole-Bond. London: T. Fisher Unwin. 7s. 6d.
[23] *Popular Natural History of the Lower Animals* (invert.). By Henry Scherren. London: Religious Tract Society. 3s. 6d.

faithfully depicted. For instance, we read: "The trap-door spiders live in burrows, which they make in the ground and line with a silk. Most of them close the entrance to their retreat with a neatly-fitting door made of earth, held together by silk threads, of which the hinge is also formed. They come out at night in search of prey, and resist any attempt to open the door by clinging to its silken lining. The species . . . . is abundant in the South of Europe."

Nature—Curious and Beautiful,[24] by Richard Kerr, is an excellent little work, and deserves its name. It contains many curiosities of the animal, vegetable, and mineral kingdom. The sketches are made direct from Nature, for which purpose the author has spent many hours in the Natural History Museum in South Kensington. He has succeeded admirably well. Perhaps the most interesting of the many subjects he has treated is the glass seaweeds and the process of "weaving stone into cloth," but it is hard to choose between so many attractive descriptions.

Chums[25] is too well known a boys' paper to need any introduction, and no properly-constituted boy could fail to appreciate a present of its handsomely bound annual volume. It is full of wildly exciting and delightfully improbable stories of daring deeds done by youthful heroes, who, though frequently in direst peril, always contrive sooner or later to come out on the top. They are the sort of stories that used to appeal to us hugely, and which would appeal to us still if ever we could manage to detach ourselves sufficiently from the crude actualities of later life. Besides the serial stories there are plenty of short tales, also pictures, which will satisfy the sense of humour which is probably stronger in youth than at any other period.

The annual volume of *Tiny Tots*[26] is a book to be acquired in their own interest by those who are called on at times to entertain the 3 and 4 year olds. Besides the ready-made stories, there are plenty of pictures out of which to concoct fresh tales, while those which are supplied by the publishers all have the advantage of being written in short words and equally short sentences not calculated to puzzle young children, and, what is better still, not calculated to excite them to pose the impossible questions which are the terror of truthful elders.

S. S. seems to have sent a small, commonplace book to the printers and labelled the resulting pamphlet *Prose and Poetry. Quaint and Curious*.[27] His selections are not very original, and he has not always given the best versions, but the collection is quite harmless, and may serve to make an idle half hour pass.

LITERARY NOTES.

A work by Professor Exner of Vienna embodying the results of his therapeutic experiments with radium in the treatment of malignant disease is now in the press, and will, we are informed, be ready for publication before the New Year.

Mr. F. Shillington Scales, F.R.M.S., well known as a writer on microscopy and microscopes, will, from January next, edit, in *Knowledge*, the columns devoted to microscopy. We are informed that still more space is to be given to this subject in our contemporary in the New Year.

The Medical Library and Historical Journal for October gives what purports to be a "practically complete record of all medical books (exclusive of serial publications of all kind, including transactions, year-books, government reports, periodicals, etc., and graduating theses) published during the year" from October 1st, 1902, to October 1st, 1903. America heads the list with 367 new books: Germany stands next with 354: then come France, 288; England, 250; and "miscellaneous," 25. This conveniently comprehensive word "miscellaneous" recalls the story of the sergeant who announced the times of divine service in camp as "Church of England at 10, Roman Catholic at 11, fancy religions afterwards." We have grave doubts of the practically complete character of a record which groups together Italy, Spain, Portugal, Holland, Switzerland, Russia, Australia, and India, and gives their total literary output as twenty-five books! The compiler seems to have looked upon their medical literature as of a "fancy" character.

The *Journal of Infectious Diseases*, the first number of which will be published on January 1st, 1904, will be devoted to the publication of original investigations dealing with the general phenomena, causation, and prevention of infectious diseases both of known and of unknown origin. The journal has been established in connexion with the Memorial Institute for Infectious Diseases by the munificence of Mr. and Mrs. Harold F. McCormick, and will, it is stated, be conducted under conditions that ensure its permanence as well as the adequate presentation of the material submitted for publication. The editors are Drs. Ludvig Hektoen and Edwin O. Jordan, in conjunction with Drs. Frank Billings, F. G. Novy, and W. T. Sedgwick. All communications should be sent to the *Journal of Infectious Diseases*, Chicago, Illinois.

Some of our readers will doubtless be interested to learn that the literary partnership in the *Review of Reviews for Australasia* between Dr. Fitchett, the well-known author of *Deeds that Won the Empire*, etc., and Mr. W. T. Stead, has come to an end. The break in the relations is due chiefly to a fundamental difference of opinion on Imperial affairs, and is brought about by Dr. Fitchett's own choice. As a result, from January next a new magazine called the *Busy Man*, and edited by Dr. Fitchett, will be published at Melbourne. The *Busy Man* will consist of sixteen permanent departments, the more important of which are as follows: Notes on Australasian Affairs; Notes on Affairs Abroad: What "the Man in the Street" Wants to Know; What the World is Thinking About; The Humour of Things, in Prose, and Verse, and Caricature: The Busy Man's Fiction: New Things in Science: The Book-lover, etc.

Continuing, in *Knowledge* for December, his studies in the Struggle for Existence in Sociology, Mr. J. Collier says it is estimated that over 5,000 distinct languages are spoken among men. A calculating prodigy would be wanted to compute with exactness how many separate dialects are in use. Sixty years ago it was reckoned that sixty different vocabularies were to be found in Brazil, but the actual number must be far greater, for in much smaller Mexico the Nahua language has broken up into 700 dialects. There are hundreds in Borneo. In Australia the complexities defy classification. If it be assumed that only fifty dialects on an average belong to every language, we get the colossal total of a quarter of a million linguistic varieties. In this Babel the battle is incessant. Could we examine the habitat of a language or a dialect as we watch the advancing or receding boundaries of a biological species, we should perceive its frontiers to be in similar continual movement, as now one and now the other gained the victory. All manner of inflections—numbers and tenses, cases and moods—likewise strive with one another for predominance. Modes of utterance dictated by differently modified laryngeal organs struggle for superiority. Unlike manners of arranging the written words are found to be mutually incompatible, and several succumb, while one survives here and another there. The visible transcripts of sounds gather into alphabets, and the cuneiform, ideogrammatic, syllabic, and literal contend on bloodless battlefields, where most of them perish or else live on in isolated environments. What are the laws of the conflict among all these groups? Canon Isaac Taylor affirms that "plainly the laws which regulate the survival of language do not conform to the same conditions as those which regulate the survival of race." If such were the case, either set of laws, or both sets, would be convicted of unsoundness or inadequacy. The laws of evolution are universal, or they are no true laws. The laws of survival are identical in all provinces of sociology. They are the same as those which govern the survival of vegetable and animal species.

Professor Guilio Fano of Florence has decided to found a new periodical, to be entitled *Archivio di Fisiologia*. He will be assisted in the editorship by Professor Filippo Bottazzi of Genoa. The *Archivio di Fisiologia* will especially concern itself with experimental work, but synthetic reviews and philosophical disquisitions will not be excluded. Papers will be published, according to the wish of the author, in one of the four official languages of the International Physiological Congress—English, Italian, German, or French. The *Archivio di Fisiologia* will appear every two months, forming a yearly volume of about 500 pages. Communications should be addressed to Professor Giulio Fano, Director of the Physiological Laboratory, Florence.

[24] *Nature—Curious and Beautiful*, by Richard Kerr. London: Religious Tract Society. 3s. 6d.

[25] *Chums* (an Illustrated Paper for Boys). London: Cassell and Co. 1903. 8s.

[26] *Tiny Tots* (a Magazine for Little Folks). London: Cassell and Co. 1903. 1s. 6d.

[27] Eastbourne: Strange Bros.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1903.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London. W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, DECEMBER 12TH, 1903.

THE BRITISH MEDICAL ASSOCIATION.

We publish elsewhere this week an illustrated article upon the annual meeting of the British Medical Association, which is to take place at Oxford in the last week of July, 1904. The history of Oxford is so closely bound up with the history of learning in this country that it only needed the great development of its scientific and medical schools which has taken place in recent years to render it an ideal place of meeting for an Association which seeks to advance medical science and to maintain a high standard of honour and conduct among those who practise the medical art. In Dr. William Collier, Physician to the Radcliffe Infirmary, the Association will have a President closely identified with the life of Oxford, and the interest which the University is taking in the meeting and the generosity with which it has placed its buildings at the disposal of the local executive for the purposes of the general, representative, and sectional meetings will ensure that nothing will be wanting to facilitate the annual business of the Asssociation. In addition to the President's address, an address in Medicine will be given by Sir William Church, President of the Royal College of Physicians of London, and a distinguished graduate of Oxford: and an Address in Surgery by Sir William Macewen, whose fame as a surgeon has shed so much lustre on the University of Glasgow. The arrangements for the Sections, which will number thirteen, are now nearly complete, and there can be no doubt that both from the scientific and from the clinical side a great deal of valuable work will be done.

Much interest will attach to the meeting of the representative body formed of members elected by the Divisions, the first meeting of which was held last July at Swansea. We have now had practically a year's experience of the working of the new constitution of the British Medical Association, and we venture to think that the results justify the confident expectation that the efficiency of the work which it can do for the profession will be very greatly increased. If the use of the future tense in the last sentence suggests some reservation, this is only due to the belief that, considerable as are the results already attained, they will be still greater in the future.

It was of course inevitable that a good deal of time and energy should be absorbed in working out the details of the new organization and in becoming habituated to the use of its several parts. This preliminary task is now practically complete, and it remains only for every member of the Association to take full advantage for himself of the opportunities afforded, and to contribute his share of work to the common good. The main objects of the change have been, first, to make it as easy as possible for every member to take part in the various activities of the Association; secondly, to provide suitable instruments for collecting medical opinion, reducing it to a definite expression, and giving due effect thereto. For the first of these purposes the Association provides its Divisions, formed to pursue in every locality the fundamental objects of the Association, the promotion of the medical and allied sciences, and the maintenance of the honour and interests of the medical profession. For the attainment of each of these objects a Division depends chiefly on meetings of its members. Therefore in the task of adjusting the boundaries of Divisions, in which the Organization Committee has been engaged in consultation with those locally concerned, the guiding principle has been that it should be reasonably possible for the great majority of the members of a Division to meet without undue sacrifice of their private work and leisure. So constituted, a Division of the Association is believed to be capable of serving every purpose of a local medical society, of bringing medical neighbours into friendly relations, of stimulating them to bring into the common stock their individual observations in clinical medicine or the kindred subjects of knowledge, of affording an instrument whereby they may assist one another to sustain the honour of the profession, and to defend on occasion professional interests individually and collectively.

In most districts, by an adaptation of the constitution previously in force, Divisions are grouped to form Branches, which afford opportunities for conference and combined action between members residing within the wider area. At the meetings of the Branches, as will have been observed from the reports published in our columns, many interesting clinical and scientific papers are read, and many valuable discussions take place. Important administrative work is done both at these meetings and by the Branch Councils, which are composed chiefly of representatives of the Divisions, while the Branches elect the majority of members of the Council of the Association.

The extent to which each Division and each Branch shall achieve the objects for which it has been constituted must depend mainly on the zeal and energy of its members. That the capabilities of the Division for satisfying these needs of the profession are already being appreciated is shown by the reports which we have been able to publish of their proceedings—social, scientific, and for the discussion of political and ethical matters: it is shown also by the fact that in certain Divisions the membership of the Association has grown during the last year to the point of including over 90 per cent. of the members of the profession practising in the locality. Such an accession of strength is, of course, gratifying as enhancing the prosperity of the Association. But it will be valued certainly not less on the ground that the services which the Association can render to the profession increase in more than direct ratio with the degree in which it can justly claim to be representative, locally, nationally, and imperially, of the whole profession.

After this review of the extent to which the Divisions may be held to be fulfilling, or promising to fulfil, the local purposes of their existence, the other aspect of their work demands equal attention. For the feature distinguishing a Division of the Association from any purely local medical society is of course its partnership in an imperial organization.

It seems worth while to recall in this connexion that the demand of the profession for such an organization was a

factor contributing greatly to shape the recent reconstitution of the Association, and that that demand came not only from within the Association but from many external medical societies which had realized the limitations imposed by isolation upon their usefulness. Hence the resolutions unanimously adopted by the Manchester conference of delegates from such societies, drawn from all parts of England and Wales, in favour of an imperial organization holding together a fabric of local societies, and urging that the British Medical Association should undertake the task of becoming such an organization. From this standpoint the Division is an organ for the formation of opinion, successful in proportion to its membership and the attendance at its meetings. The opinions so formed are co-ordinated primarily through the Representative Meeting. We will not dwell here on the mechanism of representation. It will be sufficient for the present purpose to state what we believe to be the almost unanimous verdict of those who took part in or witnessed the first meeting of the kind, held at Swansea this year, that an instrument capable of great benefit to the Association and to the profession has been brought into existence, and that as experience develops the use of this instrument the profession will suffer less and less from inability to ascertain and express its collective opinion and will.

The experience of the past year has also brought out with increasing clearness the constant reciprocating action of the central executive of the Association (the Council, and Committees) on the one hand, and the local bodies on the other; the Divisions and Branches providing mechanism constantly available for the collection of information and for carrying out locally the general policy of the Association, defined by the Representative Meeting; the central executive furnishing a medium through which the Divisions may draw upon the Association for help of every kind.

If the brief experience already acquired indicates the capabilities of the British Medical Association for serving the needs of the medical profession, and especially of its own members, that experience shows not less plainly the exertions that must be made fully to develop those capabilities. The Association will be of service to its members in proportion to the share they take in its work; the Association will achieve its one and only object—the good of the medical profession—in such degree as the profession, by its support of the Association, shall determine.

It is now within the power of practically every medical men at no undue cost of time or trouble by joining the Association and interesting himself in the work of the Division in his own district, to partake individually of the benefits of the Association, to influence the opinion of the Division, and through it of the Association.

Medical men, like other members of the population of these islands, are given at times to the kind of grumbling which makes no effort to amend. For this in the British Medical Association there is no excuse. If it shall appear to any member of the Association that things are done which should not be done in the name of the Association, or that things which should be done are left undone, he is personally responsible for each and all of those errors and defects until he has personally exerted himself to convince the majority of his fellow-members in the Division, and, if successful there, of the Association through the Representative Meeting, of the justice or expediency of such remedies as he may propose.

The constitution of the Association is essentially democratic. The crucial problem of democracy is to combine self-government with executive efficiency. If the British Medical Association fails to secure this combination in greater degree than other professional organizations, the members of the medical profession must be prepared to share the blame.

THE PROBLEM OF CANCER.

THE present number of the BRITISH MEDICAL JOURNAL is largely devoted to original papers and other articles dealing with cancer. The subject is discussed from various points of view by men whose special knowledge and experience give weight to their utterances. In his admirable Bradshaw Lecture Mr. Henry Morris gives a critical review of the theories that have been advanced to explain the mystery of the origin of cancer. While admitting that the microbic theory still occupies the very forefront of cancer research, he says that indications are not wanting that it is on the wane, and that it may soon come to be described as belonging to history. As he emphatically puts it, "neither fission fungus, yeast fungus nor psorosperm, neither bacterium, blastomycete, nor protozoon, has up to the present moment been satisfactorily shown, in spite of years of patient study by many skilled workers, to bear any sort of causal relationship to these [malignant] diseases."

The theory which Mr. Morris believes to be destined to be accepted as the true explanation of the genesis of malignant new growths is that generally known by the name of Cohnheim, though a similar doctrine had previously been taught by Durante. Cohnheim ascribed the origin of carcinoma to the proliferation of embryonic epithelial cells. It has been objected to this view that it is likely to engender a pessimistic feeling as to the possibility of curing, and still more of preventing, cancer. Mr. Morris, however, maintains that, on the contrary, by attributing a local origin to cancer, it encourages the hope of a definitive cure if the disease is completely removed at a sufficiently early stage.

On the other hand, Mr. Plimmer insists that the parasitic theory is by no means extinct; and the evidence which he brings forward in its support is strong, if not wholly convincing. He does not, it will be noted, present it as proved, but he thinks that it affords the most satisfactory explanation both of the pathological process and the clinical course of the disease. Moreover, it gives the most solid ground for hope. The fact, however, that this statement is not accepted by a surgeon of such large experience in the treatment of cancer as Mr. Morris, deprives this *a priori* argument of whatever weight it may be supposed to have. It may be pointed out that the term "cancer" has a very wide connotation; hence even if it were positively shown that malignant disease of one type was caused by a parasite, this would not prove that other forms had similar origin.

Mr. G. Lenthal Cheatle brings forward a number of new facts in support of his ingenious theory that both the incidence and the spread of cancer have a definite relation to the nerve area in which the disease occurs. Dr. Newsholme supplies an important addition to the controversial armament of the advocates of total abstinence in his suggestion of a possible association of the consumption of alcohol with the excessive mortality from cancer. The result of the analysis of the figures which he quotes, showing a death-rate from malignant disease of 1.32 per 1,000 among non-abstainers

against one of 0.95 per 1,000 among abstainers, is certainly somewhat startling; the statistics, however, are as yet insufficient to form the basis of a definite conclusion.

Turning to the question of treatment, the papers by Dr. Dawson Turner and Dr. John Macintyre on the physiological action and therapeutic effects of radium will doubtless be read with great interest. It is reported that good results have been obtained in Vienna by Professor Exner and others, but such particulars as have so far been made public do not appear to warrant the conclusion that radium has a really curative effect on true cancer. Nor are the results reported elsewhere altogether encouraging. As Dr. Macintyre says, the cases in which success has been recorded are examples of lupus, rodent ulcer, and superficial lesions on the skin or within accessible cavities. Dr. Macintyre's experience has led him to the conclusion that the salts of radium have a therapeutic effect in lupus and rodent ulcer, but for the most part only in lesions of limited extent.

The results obtained by Dr. Lovell Drage by the injection of a solution of sodium cinnamate in glycerine are sufficiently remarkable to warrant an extended trial of the method. The further report which he promises will be awaited with interest.

The conclusion to be drawn from the contributions to the literature of cancer which are published in this number of the JOURNAL is that although much valuable work of the nature which Bacon would have called *luciferum* has been done, comparatively little to which he would have applied the epithet *frugiferum* has yet been accomplished. In regard to the discovery of the cause or of the means of absolute cure we seem as far from the goal as ever. But we need not despair. Little by little error is being cleared away and knowledge is being gained. We look with hope to the result of the work done by means of the Cancer Research Fund and we commend the undertaking to the support of all who have the means to contribute. May the glory of the discovery be reserved for our countrymen. But we shall welcome the solution of the problem with equal enthusiasm from wheresoever it may come.

THE CONSUMPTIVE ON THE RIVIERA.

DURING the past few years there has been an increasing reluctance on the part of the hotel keepers of the Riviera health resorts to receive tuberculous patients. This feeling found open expression a year ago in a circular issued by the Mentone hotel keepers stating that for the future no tuberculous cases would be received in hotels. This manifesto only put into words what is practised at most of the other Riviera resorts.

The reasons for this action were set forth with engaging frankness by one of these *hôteliers*. He maintained that the fashionable crowd pays far better than the invalid; and is apt, moreover, to be unduly sensitive to the risks of infection. In the pecuniary aspect he is probably right, for if a hotel-keeper does not know what can be made to pay presumably nobody else does. It seems a strange irony of events that the little township which Henry Bennet converted into a city should be the first to close its doors to the very class which made it what it is. And yet this position, in its essence commercial, merely reflects the trend of contemporary medical opinion. In every health resort the consumptive has been the pioneer: for him hotels were constructed, for him greater facilities of travel were procured. These advantages having been gained, other invalids followed. Sufferers from bronchitis, asthma, and heart disease, neurasthenics, and old people flocked to the warmth and sunshine of the south. Then came the doctrine of the communicability of tubercle. Once this had taken hold of the public mind it was precisely the non-tuberculous invalid who was, quite rightly, most afraid of his tuberculous neighbour. Coincidentally with this awakening to the risk of infection came the development of the sanatorium method of treatment. What this method can do we to some extent know; what greater results in the future we can only guess. From the Riviera hotel-keepers' point of view, however, it appears that while the stream of consumptives lessened, the number of his somewhat unduly sensitive clients sensibly increased.

Further, it may be remarked that the type of case which now comes to the Riviera has markedly changed. The early case goes, as a matter of course, to a sanatorium. After a longer or shorter sojourn a fairly clear idea can be formed as to his future progress. Many cases are cured, others are obviously hopeless. There remain, however, a certain number who from a physical disability to bear open-air treatment during an English winter prefer the drier and sunnier atmosphere of the South. Others, again, with marked fibroid change or a tendency to bronchial catarrh, can avoid cold and eke out their limited store of strength to greater advantage under less depressing influences. It is precisely this class of case which the hotel-keeper finds least desirable. And, indeed, from the patient's point of view the ordinary fashionable hotel is the worst possible lodging. The stuffy rooms, the lengthy table d'hôte, the balcony always too small to permit of lying-out, compare unfavourably with the rougher but more practical arrangements of the sanatorium. Further, recent experience tends to show that patients derive far greater benefit when they can sleep out at night as well as lie out in the daytime. An invalid can hardly be expected to pass a peaceful night bolstered up against the front of a staring white hotel. The only available means of housing such cases are a few small sanatoria, two or three nursing homes, and a few hotels which have not joined in the movement against tuberculous patients. The only solution of the difficulty would appear to be the conversion of some of the smaller hotels into houses for invalids. Sanatoria on a large scale would probably be a financial failure, since they would only be available for seven months at the outside, the weather during summer months being quite unsuitable for phthisical cases. With the doors of the larger hotels closed to the consumptive, such small and well-equipped hotels ought to be certain of pecuniary success.

EDUCATION AND DETERIORATION.

SIR JOHN GORST has contributed to the *Guardian* for this week a valuable article on the question, "Is the British race degenerating?" and it is interesting to note that his main suggestions are in striking agreement with the views expressed by our Commissioner in the article published this week on the effects of compulsory education on the physique of the nation. The conclusions have been arrived at quite independently, and the coincidence must help to establish their validity. Compulsory education had become a necessity, but it is no disparagement of the great statesman who carried it into law, and of those upon whose work his legislation was founded, to say that they did not foresee all its indirect effects. Four-fifths of the child population of Great Britain are now taught in

elementary schools under the supervision of public authorities, and it can need no argument to prove that the effect of compelling all children to pass many hours a day for some forty weeks in a year in school-rooms may be seriously injurious to their physical development, if the school-rooms are not suitable for their purpose, and if the children themselves are not so fed and supervised as to ensure that their bodies and minds are alike ready to receive with advantage the instruction given. As is suggested in the article published at p. 1555 this week, the local education authorities can at once obtain information which must be of the first importance to the Royal Commission, if it is appointed, and without which its usefulness must be very greatly diminished. Information as to the physical standard reached by children in elementary schools at various ages, and under the varying conditions of life in towns, is meagre. This fact has been pointed out both in the Report of the Royal Commission on Physical Education in Scotland, and by Dr. Kerr in his report as Medical Officer of the London School Board. Sir John Gorst suggests that it should be "the duty of every class teacher to make such a daily inspection of the children in the class as an officer in the army and navy makes of the men under his charge, and to record and report anything abnormal—hunger, nakedness, dirt, or disease." In London and in Liverpool a charitable society has undertaken—we believe the official phrase is "has obtained permission"—to make an investigation into the physical condition of children in certain schools with regard to weight, height, and other measurements; but, as our Commissioner points out, such observations to be of value in fixing a standard, ought to be carried out on a large scale. Moreover, even during the process of making them, they would furnish valuable indications and assist teachers to recognize those children who have been underfed or overstrained. Another point to which Sir John Gorst calls attention is the necessity for training teachers to recognize at once the first signs of disease; he would have skill and care in the performance of this duty reckoned among their qualifications for promotion. Our Commissioner has arrived at a similar conclusion, and calls attention to the evils which may result from the withdrawal of what was called the epidemic grant, a matter to which the Council of the British Medical Association, at the suggestion of the Public Health Committee, has drawn the attention of the Board of Education—unhappily without a favourable result. Upon the subject of the feeding of children, to which our Commissioner's article, published last week, was mainly devoted, Sir John Gorst is equally emphatic. "If," he says, "the child is not fed, neither must it be taught." The actual underfeeding due to poverty or neglect affects, no doubt, only a minority of the children in elementary schools, but underfeeding in a scientific sense is far more common, and is due not to want of money, or, indeed, to want of care, but to ignorance of the first principles of dietetics. For the cure of ignorance we must look mainly to the better education of the rising generation, but to ensure this we must see a great extension of the teaching of such subjects. For carelessness or neglect, Sir John Gorst would invoke the assistance of the police, but for underfeeding due to poverty he has, so far as we can see, no remedy to suggest. "It is," he says, "a branch of a problem hitherto unsolved." Our Commissioner has a practical suggestion to make on this head which we would commend to the attention of authorities throughout the country, the more since the training of children to prepare and to cook meals would in the long run have an immense economic effect. In this country the choice of food is often unintelligent, and the cooking is not of such a kind as to correct the primary error and to render the dishes set before the worker and his children palatable. Whatever the reason, there can be no doubt that the average English woman of the poorer—or, indeed, of any—class is a very indifferent cook. We have few good traditions such as exist in France, and our educational authorities have done little to correct this national defect.

HERBERT SPENCER.

By the death in his 84th year of Herbert Spencer one of those who by their intellectual achievements added most lustre to the Victorian age has passed away. Much time and labour have been spent in the earnest endeavour to classify skulls, but it is somewhat remarkable that no one has had the courage to attempt a classification of men's minds. Broadly considered, the minds of intelligent men fall into three groups: (*a*) the objective mind, which only clearly appreciates things by the sense of sight; this may with equal propriety be called the visual mind; (*b*) the mathematical mind—the rarest and most wonderful attribute of man: and (*c*) the Spencerian mind. This means that the mind of Herbert Spencer was not only out of the common, but that it had something peculiar in itself. It is very difficult to define what is meant by a philosophic mind, and yet we all appreciate the kind of mind that is intended by the phrase. No one would venture to deny that Herbert Spencer would be classed as a philosopher, but we should at once deny that he had any claims to be considered as a biologist: yet he wrote a remarkable work, *The Principles of Biology*, and propounded views which demanded and received the consideration and commendation of the greatest among contemporary biologists, Charles Darwin. No one who studies Spencer's *Principles of Biology* can deny that they betray ignorance of very simple botanical and zoological facts, yet his great skill in recognizing the bearing of the leading facts of evolution is expressed by his terse and surviving phrase, "survival of the fittest." Many brilliant minds have evolved theories and left them to be proved by the plodding labours of painstaking men, and we frequently find ourselves in doubt as to which should be accorded the greatest meed of praise, the enunciator of a great problem or he who solves it. However, it is certain that although Herbert Spencer was in no sense a biologist, yet it is evident to all who read the *Origin of Species* and the *Descent of Man* that Darwin had a very great respect for Herbert Spencer, and speaks of him as "our great philosopher." It is also obvious that no two men could be found whose minds worked in such opposite ways, for Darwin had an eminently objective mind. Thus, in considering natural selection, especially in relation to "the degree of organization tends to advance," after discussing the matter from the Spencerian standpoint, he writes: "But as we have no facts to guide us speculation on the subject is almost useless" (*Origin of Species*). One mind cannot move without facts, and the other is ready to frame hypotheses and point to conclusions, often startling and alluring, and in many instances borne out by subsequent work, but by the zeal and labours of other workers. Herbert Spencer won our admiration in the early struggles of the doctrine of evolution, when bigotry and prejudice attempted to strangle it. Huxley was its doughty champion among the biologists, and Spencer showed, from the standpoint of philosophic thought, that its principles were unassailable. They have prevailed, and he lived to see evolution calmly acclaimed in the strongholds of its most determined assailants.

DR. HENRY BARNES.

Dr. Henry Barnes, of Carlisle, who was President of the British Medical Association in 1896, when it met in that city, has recently completed thirty years' service as Physician to the Cumberland Infirmary. He was its Senior Physician and has now become Consulting Physician, an office which all who know him will hope he may long be spared to fill. His election to the consulting staff was marked by much cordiality. Mr. Boyd, who moved the resolution, said that Dr. Barnes had been an unwearied friend of the infirmary, giving it not only his services as a physician, but also on the Board and Committees. Every one connected with the institution hoped that he would maintain his interest in it and continue to give his assistance. Dr. Maclaren said that the medical staff had found in Dr. Barnes not only a helpful, judicious, and assiduous colleague, but also a personal friend. Dr. Barnes, in

thanking the governors, said that he valued very highly the distinction conferred upon him by his election to be Consulting Physician. To render service to the infirmary had been one of the greatest pleasures of his life, and he hoped that he might be spared to render further services. As showing the growth of the work, he said that when he was first appointed physician the number of patients was 350, whereas last year they had numbered nearly 1,000; the annual income was then £1,000, whereas last year £6,000 had been spent. In conclusion, he thanked the Committee for the way in which it had always endeavoured to meet the recommendations of the staff. At a special meeting of the representative delegates of the Carlisle Hospital Saturday Fund a resolution was unanimously adopted thanking Dr. Barnes for his many years' gratuitous services to the institution, and assuring him of the continued best wishes of the Hospital Saturday Delegates. May we add that the members of the British Medical Association will long remember the ability and geniality with which Dr. Barnes presided over the annual meeting in Carlisle, and that those who know the unstinted devotion with which he gave himself to the work of the Association, its Council, and Committees will be glad to know that his services in his own city are thus highly appreciated? We join with his fellow-citizens in wishing him many years of continued usefulness.

SIR VICTOR HORSLEY'S ADDRESS.

Under the auspices of the Northumberland and Newcastle Medical Association a meeting of the local profession was addressed by Sir Victor Horsley on Wednesday, December 9th, in the Library of the College of Medicine, Newcastle-on-Tyne. Mr. Rutherford Morison, President of the Association, took the chair, and the meeting was probably the largest of its kind ever held in the district, about 120 being present. Sir Victor Horsley, who was very cordially received, said that the whole subject of medical organization and representation had been revolutionized during the last three years owing to the changes in the British Medical Association. Whereas before that date various oligarchies—for example, the General Medical Council and the Royal Colleges—had misrepresented the profession, it had now in the British Medical Association a means whereby it could really be represented. It had been one of the greatest pleasures of his life to take the chair at the annual Representative Meeting at Swansea. Such a business-like meeting of men who not only had the desire to work, but the full intention of working, was most remarkable in the history of the profession. Sir Victor Horsley then applied himself particularly to the question which has been much exercising the local mind, namely, the proposed amalgamation of the medical unions with the North of England Branch of the Association. He strongly advised this on the grounds of economy of time and money. The only difficulty he recognized was the financial one, and that could be met by a levy for special purposes. He pointed out how the new organization of the British Medical Association would enable it to deal with all the questions which interested the profession. Sir Victor then touched on various questions in connexion with the General Medical Council, and commented strongly on the attitude taken up by the Royal Colleges. He was of opinion that the General Medical Council as at present constituted was unable properly to control medical registration. The speaker wound up with an appeal to the profession to close its ranks, and to every practitioner to join the British Medical Association. A very interesting discussion occurred afterwards, and Sir Victor replied. A dinner attended by over forty practitioners was held later in the evening, Sir Victor Horsley being the guest. The toast of his health was very enthusiastically received; and in his reply Sir Victor, amongst other things, dealt specially with the claims the profession fairly had on the State. He urged that through the British Medical Association the profession should make representations to the Government for assistance to medical education on the grounds that this was a kind of technical education of the greatest importance to the community.

PROFESSIONAL ADVERTISING.

A Correspondent has asked us to deal with some of the absurdities in which our contemporary *Truth* has been indulging on the subject of medical advertising. We have looked them through, and it really seems scarcely worth while to spare space for their consideration. Except in one or two places, where there are definite statements of non-existent fact, the whole deliverance may be described as an irresponsible expression of views not shared by any but papers of the type of *Progressive Advertising*, which, equally with *Truth*, takes it very ill that medical men object to advertising. The greater part of the press appreciated the importance of the principle underlying the request recently addressed by the Ethical Committee of the British Medical Association to the more important daily papers that they abstain from mentioning the names of medical men in attendance upon patients other than members of the Royal Family. The Committee's wish was, we believe, simply to assist the more prominent members of the profession to avoid being made unwilling parties to a breach of a rule which is strictly enforced by common consent upon the profession. It is a law which, to quote from the *Outlook*, which discussed the subject, is the most strictly adhered to by the man of sensibility and sense, the most galling to the man with a little capital who has chosen medicine as a field for the exercise of his commercial instincts. "Thou shall not advertise," indeed, is a law written upon the tablets of nearly all professions dealing with matters which require technical knowledge to appreciate the capacity of those who practise them. In short, if the law is a good one for actuaries and members of the Stock Exchange, it is a still better one for medical men. No thoughtful person can doubt that it would be an evil day for the public if members of the medical profession took to advertising their attainments after the fashion of vendors of patent medicines. That is what it would come to in many instances if no attempt were made to stop practices which, whether intentionally or otherwise, are breaches of the general principle. Questions of the sort could formerly be dealt with successfully by "that mysterious council which sits in every street of every town, and in every village of every county, and adjudicates on questions of taste"; but nowadays the press has annihilated space, and the village has become so large that the mysterious council requires a megaphone to make its judgements known. That the question is to some extent a matter of taste may be admitted, but at the same time it is one upon which the profession has converted its decision into a law, and misstatements of fact such as those in *Truth* are not likely to alter it. It is stated, for instance, that the College of Surgeons has a by-law which gives it power to remove any Member who uses a card with "M.R.C.S.Eng." on it or who describes himself as "surgeon" on his doorplate. Our readers scarcely need to be told that there is no such law, and that the only law or by-law which provides for the erasion of a Member's name is one which reserves power to the College to remove from its roll any Fellow or Member proved guilty of disgraceful conduct in a professional respect or convicted of a criminal offence at common law. It is the same sort of law as that by which every association of men defends itself against possible gross misconduct on the part of a member, and is on all fours with the regulations by which every business, even a newspaper business, protects its own interests and those of people who deal with it against misbehaviour on the part of its employés.

THE *ARCHIVES* OF THE ROENTGEN RAY.

The journal formerly known as the *Archives of Skiagraphy* now appears under the expanded name of the *Archives of the Roentgen Ray and Allied Phenomena, Phototherapy, Radiotherapy, Thermotherapy, and Electrotherapy*, and is edited by Mr. Hall Edwards, L.R.C.P. In an editorial

article in the current issue, attention is directed to the change which we are told marks the intention to claim for it a position as a medical journal dealing with the whole of these departments of therapeutics. The article contains a complaint that many surgeons send cases for radiography to photographers and other non-medical persons who have no knowledge of pathology or surgery. We agree with the view that this employment of unqualified persons is injurious to the medical profession, and tends to hinder the evolution of a class of properly-trained medical practitioners competent to undertake the whole of the work indicated in the title of the periodical. Our contemporary contends that without medical knowledge no one can properly interpret a radiographic picture, and insists upon the undesirability of allowing electro therapeutics to remain in the hands of nurses and masseurs. The use of the high-frequency currents, from which so much is expected, is instanced as a method which cannot have a fair chance unless used by competent persons. A timely protest is uttered against the atmosphere of charlatanry which too often surrounds electro therapeutic practice, and an urgent claim is made for the assistance of the medical profession in placing it upon a better footing. In our opinion there can be no question that the interests of the public as well as those of the medical profession are involved, and that there is great need for reform. We wish success to the *Archives*, and trust that a brighter future lies before the department of practice which it represents.

INCIPIENT AND TRANSIENT INSANITY.

AT the meeting of the Medico-Psychological Association of Great Britain and Ireland, held in London on November 18th, Dr. Nathan Raw read a paper on the relation of mental symptoms to bodily disease, and referred also to the treatment of temporary insanity in the "receiving-houses" proposed to be erected by the London County Council. He referred at the outset to those mental disorders which were not accompanied by organic disease of the brain, such as the toxic delirium of alcohol, belladonna poisoning, and of infectious fevers, such as pneumonia and puerperal septicaemia. Some individuals, as the result of temporary stress, might pass into an acute state of mental depression with suicidal tendencies: he instanced the case of a clerk who, as the result of a family bereavement, passed into a mental condition of this kind, but recovered in a few days. In the meantime, however, he had been taken first to the workhouse infirmary and thence to an asylum, to be discharged almost immediately afterwards as recovered. For all cases of this kind a mental hospital, for temporary detention and treatment without certification, was desirable. The statistics of the Liverpool Infirmary for six years showed that out of a total of 3,934 cases 1,003 were instances of delirium tremens or alcoholic mental disorders of transient character, and experience showed that the majority of these cases recovered within the time (six weeks) scheduled by the proposed Bill for the treatment of incipient and unconfirmed cases of insanity. The plan of the London County Council to erect four receiving houses required much serious consideration, as it was a sober attempt to supply a real need. After some comments on the conditions necessary to make such receiving houses a success as hospitals mainly for acute and curable cases of insanity, Dr. Raw passed on to enumerate the various local bodily affections which might be associated with more or less characteristic mental disturbances. These comprised pulmonary phthisis, in which he said depression and delusions of persecution were common symptoms; cardiac disease, in which hallucinations of smell and taste were developed; renal disease, which was liable to be associated with uraemic delirium, epileptiform attacks, and failure of memory; gout, which was associated with depressive or, on the contrary, maniacal symptoms; exophthalmic goitre, in which the patient was suspicious and irritable; myxoedema, in which the patient was dull and apathetic; the acute specific fevers, especially typhoid fever, pneumonia, and rheumatic fever, in which maniacal delirium occurred early, whereas an asthenic depressive mental state sometimes succeeded convalescence; alcoholism and the arsenic habit, which were attended with depression of spirits and vague delusions of suspicion and fear; and finally, the mental disturbances accompanying local retro-abdominal lesions, such as fibroids, ovarian disease, and in the male removal of the testes. Among those who took part in the discussion which followed were Drs. Urquhart, Wiglesworth, Robert Jones, Lloyd Andriezen, Hayes Newington, Baker, Bower, and Ernest White.

CANCER IN IRELAND: AN ECONOMICAL QUESTION.

DR. HILL-CLIMO has contributed an article under this title to the *Empire Review*, in which he seeks to establish that "cancerous diseases . . . are caused by the long-continued consumption of unwholesome animal food, and that this unwholesomeness is produced by modern economic conditions." Apart from the undesirability of first broaching such an important medical proposition as the first half of the above quoted statement in a lay journal, in which it cannot be conveniently subjected to skilled criticism, it is still more undesirable that striking theories should be advanced which have no substantial facts in their favour, thus diverting attention from investigation on sound scientific lines. The first proposition laid down in Dr. Hill Climo's contribution is that cancer has enormously increased in Ireland. The fallacies involved in such a dogmatic conclusion have been repeatedly exposed in these columns, and reference may be made to page 1550 of this issue of the JOURNAL. We are then assured that this increase has been coincident with the increased import of cheap food into Ireland. Before the Irish famine the Irish lived on oatmeal porridge, potatoes, eggs and milk, with fish and home-cured bacon occasionally. "Now, cheap American bacon and flour pancakes cooked in bacon fat, Indian meal porridge sweetened with chemically-coloured beet sugars, and boiled tea are the staple food commodities of the people." We are informed that the imported flour is inferior to the home-grown and lacks freshness; but it is "unwholesome animal food" which Dr. Hill-Climo believes to be the direct cause of cancer, and which in Ireland consists of "cheap American bacon." Here, then, the mischief is out. "Cattle slaughtered abroad, and all imported food products in the manufactured state, must be looked upon with suspicion, both in regard to the increasing mortality from cancer, and to the physical deterioration of certain classes of the population who are the greatest consumers; their relation to each other is not a mere coincidence, but it is cause and effect." These remarks may receive the attention of fiscal reformers, though whether they will venture to burden their case with such unsupported statements is open to doubt. It is not for us to join in a discussion which may have bearings on the fiscal problem of the day; and lest we should be considered to be taking sides on that thorny subject, we are almost afraid to ask that a statement which, if well based, is very important, should be accompanied by a few crumbs of evidence in support of it. Meanwhile we are reminded of some lines written by Sir George Trevelyan in his "ardent youth," which, as they relate to the days when *ex hypothesi* cancer was much less prevalent, do not support the contention of Dr. Hill-Climo. They run as follows:

When sailors lived on mouldy bread and lumps of rusty pork,
No Frenchman dared to show his nose between the Downs and Cork.
But now that Jack gets beef and greens, and next his skin wears flannel,
The *Standard* says we've not a ship in plight to hold the Channel.

THE MILK SUPPLY OF LARGE TOWNS.

IN the county of Worcestershire the question of milk supply has received more attention than in many places, and the information published in the Annual Digest of the Reports of Medical Officers for the Year 1902 by the County Medical Officer of Health, Dr. G. H. Fosbroke, is very full. The principal points of this report, which were accidentally omitted from the general summary of information received upon the subject published in the BRITISH MEDICAL JOURNAL on December 5th, pp. 1488-92, are as

follows: The information given covers all sanitary areas within the county, with the exception of the Tenbury and Rock rural districts, the medical officer of which did not comply with the request made for special information. In all other areas with the exception of Droitwich Corporation, Shipston-on-Stour, and Winchcombe, it is stated that registration is required of every cow-keeper, dairyman, and purveyor of milk, but in Droitwich Rural District only purveyors of milk are required to be registered. With some eight or nine exceptions all areas have made regulations in accordance with Section 13 of the Order of 1885, and the great majority of districts demand in these regulations 800 cubic feet of cubic space as the minimum for each cow; certain of them also prescribe the amount of floor space to be allowed. In no area is there any regulation making illegal the use of milk from cows certified by a veterinary surgeon to be suffering from tuberculosis of the udder. From the fact that the annual reports from the various medical officers indicate that the dairies and cowsheds are inspected, Dr. Fosbroke thinks it right to assume that the regulations are generally enforced. In the early part of this year the County Council adopted the resolutions recommended by the County Councils Association with regard to meat and milk and have added to them certain further recommendations of its own Sanitary Committee in respect of periodical inspections of cows, as well as of dairies, and the disuse, for a stated period, of milk from any farm in which cows have suffered from anthrax. The anticipation is expressed that if legislation giving effect to the principles of these resolutions is undertaken the improved management of milk and meat supplies which is so necessary will be obtained.

MEDICAL EVIDENCE.

Mr. Justice Gibson had before him last week a motion in the matter of McNally *v.* the Great Northern Railway, in which it was sought to have the case remitted to the county Down for trial. It appeared that one medical man said that the plaintiff had inflammation of the knee-joint; the other believed the stiffness would disappear with gentle exercise. The judge said this was not a matter of opinion, but of certainty, and he should like to send down an expert to make a disinterested report. This could not be done, as the plaintiff's counsel had no instructions on the point, and the case was remitted, Judge Gibson remarking "that the medical gentlemen in the case had differed on an elementary matter of surgery as to which neither of them ought to have been mistaken. A difference of speculative opinion was pardonable, but this was a difference on a matter of surgical fact." The suggestion that an experienced surgeon should examine the case and report was quite admirable. It is the recognition of the principle of assessors in the hearing of cases where medical or surgical problems arise, which problems a few lawyers and a dozen poor laymen set about settling with amusing confidence. But to suggest that there ought to be no difference on a question of surgical fact in connexion with a knee-joint only shows where the legal mind, entirely uninformed in these matters, fails to apprehend the position. There is plenty of room for difference about "surgical facts" in a knee-joint and the interpretation of them.

THE PREVENTION OF CONSUMPTION.

The Dublin Committee of the Association for the Prevention of Tuberculosis has been considering the dissemination of the disease in Ireland in the light of the Registrar-General's report. In 1902 the death-rate was 2.7 per 1,000, in 1901 2.8, in 1900 2.9, and the progressive decrease in successive years is probably due to the better knowledge which prevails among the people as to the nature of the disease and its prevention. The Committee, following the advice issued last year by the Minister of Public Instruction in France, calls the attention of the principals of boarding schools and public institutions for the young to the desirability of sterilizing milk before its use by those under their charge. This, however, is not likely to make much improvement in the death-rate. In such institutions the children are usually well fed and clothed, and protected from weather risks. They are in a comparatively resistant condition. What of the half-starved and half-clothed children of the slums? It is from these that great numbers of bone and joint cases come. In their protection the whole question of the housing of the poor is involved, and the solution is a long way off; but meantime could not something be done to secure them from the dangers of watered or infected milk? The effort has been made elsewhere with success, and it ought to be widely imitated. This would be a very laudable form of municipal trading.

LORD IVEAGH'S GIFT TO DUBLIN HOSPITALS.

The Committee appointed to distribute the sum of £50,000 presented to His Majesty by Lord Iveagh for the benefit of Dublin hospitals has made its report to the King. No official public announcement of the amounts given to various claimants is to be made, but we learn that amongst those which have received cheques are the following: Mater Misericordiae, £3,500, and £300 to its convalescent home; Richmond Hospital, £2,000; Victoria Eye and Ear Hospital, £2,000; Meath Hospital, £2,000; City of Dublin Hospital, £2,000; the Orthopaedic Hospital, £1,500; Adelaide Hospital, £3,000; Jervis Street Hospital, £1,500. The only condition attached to the donation is that it shall not be used for any increase of beds.

THE LEAD GLAZE AWARD.

Lord James of Hereford has delivered his final award upon the use of lead glaze in pottery. It establishes a new rule under which it is generally provided that after February 1st, 1904, no glaze shall be used which yields to a dilute solution of hydrochloric acid more than 5 per cent. of its dry weight of a soluble lead compound calculated as lead monoxide when determined in a manner prescribed by the rule. There is, however, a contracting-out clause which throws upon the worker the responsibility of working with a glaze that contains more than the permitted quantity of lead so long as the manufacturer is prepared to assent to a new scale of compensation for illness caused by lead poisoning. Due notice of the use of such a glaze must be given to the factory inspector for the district, and such employés as use this glaze must not only submit to periodical medical examination but also to suspension on being certified as suffering from plumbism.

A TUBERCULOSIS EXPOSITION.

The Tuberculosis Commission of Maryland proposes to open a tuberculosis exposition in the early part of the New Year. The Commission was organized under an Act of Assembly in 1902 for the purpose of studying the prevalence of tuberculosis in Maryland, its causes, its effects upon the social and economic welfare of the State, and the means by which its progress may be restricted. The exposition is intended primarily to display the more striking results of the investigations of the Commission. It is believed that the next General Assembly is very likely to do something towards the restriction of tuberculosis. The promoters of the exposition will endeavour to show as fully as possible all the phases of the subject which are of interest from the point of view of prevention. The prevalence and mortality of tuberculosis will be shown in relation to population, age, sex, habits, race, occupation, and environment. All the devices for disposing of sputa and all the means employed for the restriction of indiscriminate spitting will be shown. Whatever is done by Boards of Health, dispensaries, charity workers, to enlighten the people concerning the avoidance of infection will be displayed. There will be a large exhibit of the requisites of outdoor life, and of the contrivances which bring more or less of the advantages of outdoor life within reach of dwellers in towns and cities. The special tuberculosis sanatoria and dispensaries will be illustrated by photographs and architects' drawings. A collection of photographs will show conditions actually existing in the especial haunts of tuberculosis in large cities. All the printed matter used

by municipal Boards of Health in connexion with tuberculosis will be conviently arranged for examination. A loan collection of books on tuberculosis will be on exhibition. The Maryland Commission will illustrate its methods of investigation by showing all the various inquiry and record blanks. These cover the mortality records of the disease, morbidity so far as that is ascertainable from the notifications and the laboratory examinations, and from a census of tuberculosis which the Commission will undertake in November. The studies of the Commission include also the relations of tuberculosis to housing, occupation, habits, race, heredity, poverty, child-bearing, and school life. The economic influence of the disease, both public and private, has been studied: and, while the very nature of the inquiry restricts the amount of information collectible, the results are, nevertheless, reliable as far as they go. Lectures will be given by men of authority on the subject daily during the exposition, which will last one week.

SNAKE VENOMS AND THEIR ANTITOXINS.

Dr. G. Lamb, I.M.S., records further investigations upon these subjects in the fourth and fifth numbers (New Series) of the *Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India*.[1] He finds that both cobra and daboia venom have a marked haemolytic action, but that cobra venom never produces intravascular clotting. Daboia venom, on the other hand, produces extensive intravascular clotting and rapid death when injected in sufficient quantity, though smaller doses are followed by a marked diminution in blood coagulability. Dr. Lamb therefore disagrees with Calmette's statement that all snake venoms are alike in their physiological action. He also brings forward evidence against Martin's theory that the venom of one variety of snakes differs from that of another variety only in the proportionate amounts of two toxic proteids present, the one a neurotropic poison incoagulable by heat, and the other a haemotropic poison coagulable by heat. Whilst admitting that the proteid constituents of cobra venom and of daboia venom are probably alike, Dr. Lamb maintains that since these two poisons are quite different in their mode of action, and are not rendered inactive by the same immune serum, their poisonous constituents are not of a proteid nature. He thinks that probably all other snake toxins are of a non-proteid character, and is at present conducting a research with a view to separating the proteid constituents from the poisonous elements of snake venoms.

THE DIAGNOSIS OF CONCEPTION.

A monograph of great practical importance was recently read before the Belgian Gynaecological and Obstetrical Society by Dr. Keiffer.[2] He considers that what he calls the pregravidic signs of conception may possibly be defined, and his clinical evidence is of much value in relation to tubal pregnancy. When once the fertilized ovum is in the uterus—that is to say, when uterine gestation has commenced, diagnosis is not easy for several weeks. Von Braun and Piskacek claim to have detected pregnancy in the first week, by noting a more or less longitudinal groove either in the back or front of the uterus. Dirner, of Buda-Pesth, claims to have diagnosed pregnancy very early, if not so soon as the first week, by von Braun's sign. Obstetricians would like to hear of yet wider experience of this method of diagnosis. Hegar's sign, the detection of a soft tract, on bimanual palpation, between the cervix and the body, is not available till the sixth week. Keiffer believes that there may be definite signs associated with the rupture of a Graafian follicle, and with the passage of the impregnated ovum along the tubal canal. He fancies that sensations of slight pelvic discomfort accompany these phenomena, but are not as a rule severe enough to lead the subject to seek medical advice; occasionally they are severe but an incorrect diagnosis of a pathological condition is made. Keiffer reports three cases in which sudden pelvic pain and very distinct swelling of one or both ovaries occurred. The Fallopian tubes in two instances could be detected swollen, in one patient uterine haemorrhage with spasmodic pain was noted, and in another there had been inflammation of the appendages which had subsided, but was supposed to have recurred. In all three patients perfectly normal pregnancy followed the attack of pain and ovarian swelling. Keiffer observes that the ovary is much enlarged when the follicle due at the period is ripe; indeed this enlargement has often been observed in the course of an ovariotomy. Possibly the sharp pain signifies muscular contraction of the tube when it receives the ovum and they may perhaps be sharper when that ovum happens to be impregnated. Haemorrhage is also a tubal sign and may explain some of the false periods which mislead women in reckoning their own pregnancies. Keiffer warns the physician and obstetrician against the prescription of hot douches and other local therapeutic methods for sudden attacks of pelvic pain and ovarian swelling. For these symptoms may mean pregnancy and may not the enormous number of tubal pregnancies reported during the last twenty years be in part attributed to too hasty "uterine therapeutic measures" for a condition purely physiological? Is it not quite reasonable to suppose that the local disturbance caused by the douche may cause the "oösperm" to be arrested in the tube, so that a normal is converted into a tubal pregnancy?

[1] Calcutta: Government Printing Office. 1903. (Demy 4to, No. 4, pp. 47. 9d. No. 5, pp. 14. 4d.)

[2] Les Symptômes Prégravidiques. *Bull. de la Soc. Belge de Gyn. et d'Obstét.* Vol. XIV. 1903-4. No. 2.

PHARMACOPOEIA REVISION.

The issue by the General Medical Council of the *Digest of Researches and Criticisms* bearing on the revision of the *British Pharmacopoeia, 1898*, which has been prepared by Mr. W. Chattaway, F.I.C., by direction of the Pharmacopoeia Committee of the General Medical Council has been briefly noted in our columns. As explained in the preface, the results of valuable investigations conducted in the Research Laboratories of the Pharmaceutical Society have only been briefly noted, for they were carried out at the instigation of the Committee, and have already been reported *in extenso* to that body. With this exception, the *Digest* ably represents the progress of pharmaceutical research during the period 1899-1902 inclusive. A careful perusal shows that the compiler has done his work extremely well, and with a due sense of proportion. The *Digest* differs in principle from its predecessor in that no criticism of the recorded matter is attempted. The very large number of references to published researches says much for the healthy condition of pharmacy, for it must be borne in mind that these investigations are chiefly carried out by individual pharmacists, who freely give both time and material.

DR. WILLIAM GILBERT.

The tercentenary of Dr. William Gilbert, who died on November 30th, 1603, was celebrated on Thursday afternoon by the Institution of Electrical Engineers. Gilbert, who graduated M.D. at Cambridge in 1569, was born at Colchester in 1540, and part of the celebration consisted in the presentation to the Mayor and other representatives of Colchester of an historical picture. Papers were read by Monsieur M. Hospitalier and Dr. Hans Behn-Eschenburg, who paid due honour to the English founder of the science of electricity, which in these later days has received so many practical applications.

Sir J. Blundell Maple left instructions in his will as to the completion of the rebuilding of University College Hospital.

We understand that the Government has abandoned its intention to introduce a Revaccination Bill next session assigning as a reason that it finds its hands too full with other business. In consequence the Imperial Vaccination League, which had proposed to ask the President of the Government Board to receive a deputation, will probably postpone any action of this kind.

We regret to have to record the death, on December 3rd, of Dr. William Newman of Stamford. We shall hope to publish an obituary notice in our next issue.

A gentleman who wishes to remain anonymous has given, through Professor Starling, the sum of £50,000 to University College, London, to be used by the Council of the College for the promotion of higher scientific education and research at that institution.

We are asked to state that the meeting of the Central Division of the Metropolitan Counties Branch of the British Medical Association on Wednesday next will commence at 5 p.m. Owing to a printer's error in some of the notices issued this was not made clear.

We regret to learn that Dr. Samuel Woodcock, of Manchester, who attended a conference between the Medico-Political and Public Health Committees of the Association in London on December 3rd, was taken seriously ill on the evening of December 6th, and that his condition is such as to cause grave anxiety.

The annual lecture under the Richard Middlemore Post-Graduate Endowment will be delivered at the Birmingham and Midland Eye Hospital by Mr. J. Jameson Evans, M.D., F.R.C.S., Surgeon to the hospital, on Friday, December 18th, at 4.30 p.m. The subject of the lecture will be bacterial diseases of the conjunctiva, and a clinical and microscopical demonstration will be given after the lecture, which is open to all members of the medical profession.

At a recent meeting of the Council of the Pathological Society, Professor Johannes Orth, who succeeded Professor Virchow as Professor of Pathological Anatomy in the University of Berlin, and Professor C. J. Salomonsen, Professor of General Pathology and Bacteriology in the University of Copenhagen, were nominated Honorary Members of the Society. Both have expressed their gratification at the honour offered to them.

We understand that in consequence of a strong representation made by the medical staff of St. Bartholomew's Hospital, it has been decided in principle that the appeal to the public for funds to be made in connexion with the Mansion House meeting on January 26th, 1904, shall include a scheme for enlargement of the site but that the precise terms of the appeal remained to be fixed at a meet- of the court of governors summoned for December 17th.

Scotland.

Edinburgh Scarlet Fever Epidemic.

During the week ending mid-day, December 5th, 23 fresh cases of scarlet fever were intimated to the Public Health Authorities, and two deaths were registered as due to that disease.

Edinburgh Royal Infirmary.

At a meeting of the Managers of the Edinburgh Royal Infirmary on Monday, December 7th, Messrs. A. A. Scot Skirving, C.M.G., M.B., C.M., M.R.C.S.Eng., F.R.C.S.Edin., and George L. Chiene, M.B., C.M., F.R.C.S.Edin., were appointed Assistant Surgeons. There were seven candidates.

Jubilee Institute for Nurses.

On December 8th H.R.H. Princess Louise, Duchess of Argyll, presented badges, brassards, and certificates to a number of nurses of the Queen Victoria Jubilee Institute for Nurses, Scottish Branch. The badges and brassards are given when the nurses place their names on the roll of the institute, and the certificates to those who have served two years as Queen's Nurses. The ceremony took place at the District Training Home, 29, Castle Terrace, Edinburgh.

Royal Edinburgh Hospital for Sick Children.

The new building for the out-patient department, which has been erected at a cost of £8,000, was formally opened by Her Royal Highness Princess Louise, Duchess of Argyll, on December 8th. The dispensary is said to be the best equipped in the kingdom. On the ground floor are the medical consulting rooms, waiting and dressing rooms, and dispensary. On the upper floor are the surgical department, consisting of consulting and chloroform rooms, operating theatre, waiting-rooms, etc., photographic or dark room for Roentgen-ray work, laboratories for bacteriological and experimental work. The building outside is plain and unpretending, and inside it is equipped with all the most recent medical and surgical appliances and accessories.

Livingstone Memorial Dispensary, Edinburgh.

The extended and altered dispensary recently finished at a cost of £6,000 for the Livingstone Memorial Mission, situated in the Cowgate, one of the central and poorest districts of Edinburgh, supplies gratuitous advice and medicine. A staff of visiting physicians attends in the afternoon. In the evening a large number of patients come for minor surgical ailments and necessary dressings. The students visit the patients at their own homes, and midwifery cases are also attended by them. Last year 3,228 new cases came for consultation, 2,855 individual patients for surgical necessities, and 268 midwifery cases were attended. On the extended premises there is accommodation for 12 students and a qualified resident, each student having a separate bedroom and two sharing a study. These men are students of the Edinburgh Medical Missionary Society, who to approved candidates give a free complete medical education sufficient for obtaining the triple qualification if they intend to become medical missionaries. Other students not requiring this help also join the dispensary for the sake of medical training. The Society has at present 18 men and 4 women students under training. The medical part of the extended premises consists of a waiting room, dispensary, two medical consulting rooms, and two surgical rooms, all conveniently arranged *en suite*. They are all heated with hot water, and the whole institution is fitted with electric light. The surgical rooms are fitted up in the latest style with terazzo floors, enamelled walls, rounded corners, hosing apparatus, etc.; they have electric handlamp switches, sterilizing Bunsens, and a specially abundant supply of hot water. In the teaching rooms roller rubber blackboards are fitted up. The institution combines efforts for the religious, temperance, and social improvement of the inhabitants with the purely medical and surgical work.

The new premises were opened on December 4th, and there was a large attendance. The chair was occupied by the Earl of Aberdeen, who was supported by Dr. James Ritchie, the President, and by many of the directors of the mission. The President gave an account of the origin and growth of the Cowgate buildings. The Earl of Aberdeen then referred to the history of the mission, the admirable work it was doing in training medical missionaries, and the catholicity of the mission shown in the fact that once trained the missioners were free to go to their life-work in connexion with any missionary society. The dispensary, apart from its value as a training field for their missionaries, was of special benefit to the people of the district from the medical, the religious, and the social aspects. Dr. Lyall (Swaton) and Dr. Sargood Fry, Secretary of the institution, spoke. On the motion of Professor A. R. Simpson a vote of thanks was given to the Earl of Aberdeen for his presence.

Small-pox in Glasgow.

The outbreak of small-pox in Glasgow continues to spread, and is causing the health authorities considerable anxiety. On December 7th there were as many as 83 cases in hospital. In his usual fortnightly report Dr. Clalmers refers to the increasing numbers and the difficulty of getting the people to go in for re vaccination. During the fortnight ending November 28th, there were 45 cases of small-pox removed to hospital as compared with 19 during the previous fortnight. Among the numbers were five children under 10 years of age, in none of whom were vaccination marks discoverable. The large proportion (31 per cent.) of the cases was got from the eastern district of the city, and in view of that extra sanitary inspectors had been detailed to that district to make house-to-house visitation, and offer revaccination whenever it was required. This effort has so far been attended with only a moderate degree of success. Indeed, it is being found now, as in the past, that until something akin to apprehension takes possession of the public mind the numbers who will resort to revaccination for purely prudential motives are comparatively few. Everything at the moment points to a period of considerable anxiety during the next few months.

In his report, Dr. Chalmers also refers to the occurrence of

small-pox at the Tweedymuir Waterworks near Broughton. The engineers had been good enough to let him know of this, and of the fact that some forty of the navvies had left for addresses unknown, and might not unlikely reach some of the lodging-houses at Glasgow. Subsequently three of these men did present themselves at one of the lodging-houses, but on being told that admission could only be had on condition that they would be revaccinated they left, refusing to give any address. The part played by this portion of the population is disseminating small-pox and other infectious diseases has frequently been remarked upon, and Dr. Chalmers urges that it would be to the public advantage if there existed some legislative method of following up and controlling the movements of such men.

Ireland.

Sayings, Proverbs, and Humours of Ulster.

At the meeting of the Belfast Natural History and Philosophical Society on December 1st, Professor Symington, M.D., in the chair, Professor Byers, M.D., gave an address on the Sayings, Proverbs, and Humours of Ulster. He said that for three hundred years there had existed in Ulster, especially the north-east, a special race, which had been described by the late Lord Dufferin, as "Scotchmen improved by three hundred years' residence in Ireland." They had quaint sayings, proverbs, and humour, which had been inspired more by a shrewd observation of men and Nature than by book-learning. These were as characteristic as the curt, abrupt, and matter-of-fact delivery of his words. Some had been introduced, but the majority were essentially Ulster in origin and adoption. As examples of expressions whose origin it would be difficult to find, he instances "the rale McKay," a "Morgan Rattler," and "Tibbs' eve." The first is one of the clan McKay from Sutherland; or else the "real" or royal McKay, one of this name earning in Spain the "real" (*regalis*), and adopting it on his return. The second expression meant something that could not be caught or beaten, and it was taken from the name of a famous armed smuggling lugger that some time ago traded along the county Down coasts. Tibbs' eve meant a day that would never come; its origin was unknown. The superstitions of the North were also illustrated; the "evil eye" was not unknown, and the "wraith" not yet disbelieved in. As expressive phrases might be cited: "He's no a chicken for all his cheepin';" "Eaten bread is soon forgotten;" "As hard as Derry walls;" "As slippy (slippery) as a Bann eel;" "He's aye to one side like Clogher" (a village with all its shops on one side). The humour of the North was often keen and sarcastic. A hospital patient was overheard saying to another, "Is your chicken soup thin?" The reply came, "Ay, the bird only walked through them," to which the first answered, "Maybe it was on stilts."

Health of Belfast.

At the monthly meeting of the Belfast City Council, the Medical Superintendent Officer of Health reported that 301 cases of zymotic disease had been notified, including 93 of scarlet fever, 70 of typhoid, 49 of simple continued fever, 4 of typhus, and 3 of small-pox. There were 1,030 births and 618 deaths. The total death-rate was 17.9, as compared with 21.3 during the same period of last year. All the small-pox cases were traced to one man from Glasgow. The Public Health Committee recommended the contribution of £300 towards the removal of decaying seaweed from the foreshore at Cultra, as the Corporation were under an obligation to purify the waters of the Lough.

Presentation to Dr. R. W. Harley.

There was a large gathering at the Dublin Nursing Institution last week, when the Superintendent (Mrs. K. Tracy) and the nurses presented Dr. R. W. Harley, the Honorary Physician, with an address and a piece of plate in recognition of twenty years of help given to the staff. Lord Justice Fitzgibbon, Dr. J. Dallas Pratt, Dr. W. de C. Wheeler, Dr. Lumsden, Dr. Ledwich, and Dr. Maunsell and many ladies were also present.

Presentation to Dr. A. Gordon.

Dr. Alexander Gordon, of Rathmines, has been the recipient of an illuminated address from many friends. Some months ago an attempt to blackmail him was made by a female who called at his house ostensibly to consult him, and the subsequent proceedings in court ended in a triumphant vindication of his character. A fund was raised by his medical colleagues to meet his expenses, and the address came from his lay friends. Alderman Ireland, J.P., presided at the dinner on the occasion of the presentation, and Mr. Adam S. Findlater was in the vice-chair.

Typhus in Sligo.

There has been a very serious outbreak of typhus fever in the neighbourhood of Sligo. At a meeting of the Fever Hospital Committee it was stated that 48 cases of a malignant type had been admitted. But even more alarming than this was the declaration of Dr. McCarthy, the Medical Inspector to the Local Government Board, that the hospital itself was "absolutely without drainage, and the building was standing in a mass of sewage, which was sapping the foundations. The doctors and nurses were in daily danger of losing their lives from the poisonous gases which had now become so bad that the nurses could not sleep at night." It was agreed to have sewers constructed at once. At the Board of Guardians Dr. McCarthy called attention to the indescribably filthy condition in which he found houses in the infected area, and he asked the guardians to receive patients as the fever hospital was already over-crowded. If the fever hospital is as described we cannot understand why it is used at all. It is a danger to patients and attendants, and, of course, to the community. The emergency ought to be met by special tents or wooden houses, to be destroyed after the outbreak has been successfully dealt with. The Local Government Board incurs serious responsibility if it permits these present arrangements to continue.

The Granard Trouble.

The Roman Catholic Bishop, Dr. Hoare, has written to the guardians of the Granard Union acknowledging the receipt of a copy of the Chief Secretary's letter. He states that he is unable to accede to the request that the nuns should resume the nursing of the hospital. "No nun of this diocese will be available for the position of nurse in the Granard Union Hospital as at present constituted." He attributes the blame to the Local Government Board, and he urges the guardians to make the best provision they can for the sick poor. Dr. Kenny and the superior authority were thereupon denounced by the guardians, but they resolved to appoint a trained lay nurse. For the present the scandal is laid. Perhaps the guardians will learn wisdom.

Croly Memorial Fund.

It is felt that there should be some permanent memorial in the Royal City of Dublin Hospital of the late Surgeon Croly, who for more than forty years devoted the best of his work and energies to it. It has been proposed to endow a bed in perpetuity in his memory, this being undoubtedly the kind of tribute which would have commanded his sympathies. To carry out this proposal a sum of £500 is required. There are doubtless many of his old friends and pupils who would wish to co-operate, and any such are cordially invited to send their contributions to the Lady Superintendent of the Royal City of Dublin Hospital, by whom they will be gladly received and acknowledged.

Jubilee Homes.

The Countess of Dudley was last week present at the annual meeting of St. Laurence's Catholic Home for providing home nursing for the poor. It was stated in the report that 42 Jubilee nurses were connected with the institution, 1,501 cases were nursed, 31,286 visits paid during the year; 275 persons died, and 172 were removed to hospital. The Earl of Meath, Rev. Dr. Delany, S.J., Dr. McWeeney, Judge Barry, Judge Carton, and Bishop Donnelly spoke. The Countess of Dudley, in the course of an interesting speech, said:

> I would like to touch upon the twofold nature of the work which it is possible for these nurses to accomplish, and the twofold character of the mission which they have it in their power to perform. I speak of the educating and civilizing influence which can be exercised by the district nurses in one of the typical, poverty-stricken agricultural districts in this country. In such a place the people, as we know, are sometimes very ignorant of even the simplest rules of health and sanitation and cleanliness, and it is possible for a refined and tactful woman possessing, as a nurse does, and ought to do, the confidence of the people, to instruct them, without seeming to do so, in such a way that she can effect considerable improvement in these respects. I therefore end my remarks by suggesting, with great diffidence, to the Committee of St. Laurence's Home the necessity for constantly reminding during the process of training of district nurses of this twofold character of their work.

THE INTERNATIONAL SANITARY CONFERENCE, PARIS, 1903.

[FROM OUR PARIS CORRESPONDENT.]

THE International Sanitary Conference, which has been sitting at the Ministry of Foreign Affairs since October 10th, has just held its last meeting, under the chairmanship of M. Barrère, Ambassador to Italy, the chief French delegate.

The convention, as finally drawn up, was signed by twenty Powers, that is, Germany, Austria and Hungary, Belgium, Brazil, Spain, the United States, France, Great Britain, Greece, Italy, Luxembourg, Montenegro, Holland, Persia, Portugal, Roumania, Russia, Servia, Switzerland, and Egypt. The representatives of four Powers—Denmark, the Argentine Republic, Turkey, Norway and Sweden—reserved their signatures till they shall have received official approval from their respective Governments, but in spite of these abstentions the present convention was signed by eight Powers more than its predecessors.

The Conference was divided into three commissions and held seven full meetings in addition to thirty-five meetings of the sub-commissions.

The Chairman at the closing meeting pronounced first a eulogium on Professor Proust, General Inspector of the Sanitary Service in France, and general reporter of the Conference, who died before the work was concluded, and then proceeded to give a summing up of the work accomplished and the progress which has been realized.

The final convention consists of 184 articles divided under six principal headings.

I. General provisions.
II. Special provisions for countries situated outside of Europe.
III. Special provisions for pilgrimages.
IV. Supervision and execution.
V. Yellow fever.
VI. Adhesions and ratifications.

The most important and heaviest part of the work has been the codification of the regulations drawn up at the previous conventions held in Venice, Paris, and Dresden, which are thus replaced by the new convention.

The convention contains many important modifications and fresh regulations, more especially with regard to the part played by rats in the dissemination of plague.

The period of observation for plague or cholera has been reduced to five days, as is shown by Article 9:

That a circumscription be no longer considered as contaminated, an official statement is necessary.

1. That there has been no death or fresh case of plague or cholera for five days after isolation,[1] or after the death or recovery of the last case of plague or cholera.

2. That all the measures of disinfection have been applied, and if it is a question of plague that the measures against rats have been carried out.

The following articles are important, especially those referring to *Article* 20:

Plague.—Classification of Vessels: A vessel is considered as *infected* which has plague or cholera on board, or which has had one or several cases of plague or cholera during the preceding seven days.

A vessel is considered as *suspicious* on board of which there have been cases of plague or cholera at the time of sailing or during the voyage, but no fresh case during the preceding seven days.

A vessel is considered as *free* which, although coming from a contaminated port, has had no death or case of plague or cholera on board, either before sailing, during the voyage, or at the moment of arrival.

Article 21.—Vessels *infected with plague* are subjected to the following rules:

1. Medical inspection.

2. The sick are immediately taken ashore and isolated.

3. Other persons should also, if possible, be taken ashore, and either be put under observation[2] for not more than five days from the date of their arrival, which period may or may not be followed by supervision[3] for not more than five days, or else simply be subjected to supervision, which cannot exceed ten days.

It is the duty of the port sanitary authority to apply this one of the above measures which shall seem to him preferable according to the date of the last case, the state of the vessel, and the local possibilities.

4. Dirty linen, clothes, and articles belonging to the ship's company and to the passengers which, on the advice of the sanitary authority, are considered as contaminated, shall be disinfected.

5. Those parts of the vessel which have been occupied by plague patients, or which, on the advice of the sanitary authority, are considered as contaminated shall be disinfected.

6. The destruction of the rats on board must be carried out before or after the cargo is unloaded, and as rapidly as possible—in any case, within a maximum period of forty-eight hours, avoiding any deterioration of the merchandise, steel plates, or engines.

And in every case for vessels in ballast this operation should be carried out as soon as possible before loading.

Article 22. "*Suspicious*" vessels are subjected to the measures indicated in Article 21, Sections I, IV, and V. Moreover the ship's company and the passengers can be subjected to a supervision which shall not exceed five days from the date of the ship's arrival. During the same period the ship's company may be prevented from coming ashore, except for reasons of service.

The destruction of the rats on board is recommended. This destruction is carried out before or after the unloading of the cargo as quickly as possible; in any case within a maximum period of forty-eight hours, avoiding any deterioration of the cargo, steel plates, or engines.

For vessels in ballast this operation shall be carried out, if necessary, as soon as possible, and in any case before loading.

Article 23. Vessels "*free*" of plague are immediately admitted to free pratique whatever be the nature of their bill of health.

The only regime to which the port sanitary authority may subject such vessels consists of the following measures:

1. Medical inspection.

2. Disinfection of dirty linen, clothes, and other objects belonging to the ship's company or the passengers, but only in exceptional cases when the sanitary authority has special reasons for believing in their contamination.

3. Without the measure being constitued into a general rule, the sanitary authority can submit vessels coming from a contaminated port to an operation destined to destroy the rats on board before or after the loading of cargo. This operation must be carried out as soon as possible, and in any case must not exceed forty-eight hours, avoiding the deterioration of the cargo, plates, and engines, and without in any way interfering with the circulation of the passengers and crew between the ship and the shore. For vessels in ballast, if it is necessary, this operation shall be carried out as soon as possible, and in any case before loading.

When a vessel coming from a contaminated port has been subjected to the destruction of her rats, this operation can only be repeated if the vessel has touched at an infected port, being moored to the quay, or if the presence of rats either dead or sick has been noticed on board.

The crew and passengers can be subjected to a supervision which shall not exceed five days from the date when the vessel left the infected port. During an equal length of time, the crew may be prevented from landing except for reasons of service.

The competent authority of the port of arrival can always demand a certificate under oath from the ship's doctor, or, in default of him, from the captain, affirming that no case of plague has occurred on board since sailing, and that no unwonted mortality of rats has been noticed.

Article 24. Whenever on a "*free*" vessel rats have been recognized after bacteriological examination as infected with plague, or whenever an excessive mortality has been noticed among those rodents, then there are grounds for applying the following measures:

I. Vessels with plague-infected rats:

(*a*) Medical inspection.

(*b*) The rats must be destroyed before or after the unloading of cargo as rapidly as possible, and in any case within a maximum period of forty-eight hours, avoiding any deterioration of cargo, plates, or engines. Vessels in ballast undergo this operation as soon as possible, and in every case before loading.

(*c*) The portions of the vessel and such objects as the local sanitary authority considers to be contaminated shall be disinfected.

(*d*) Passengers and crew can be subjected to a supervision, the duration of which must not exceed five days reckoned from the date of arrival, except in exceptional cases, in which the sanitary authority can prolong the supervision for a maximum of ten days.

II. Vessels on which an unwonted mortality has been noticed among the rats:

(*a*) Medical inspection.

(*b*) The rats shall be examined for plague, the examination being carried out as fully and as quickly as possible.

(*c*) If the destruction of the rats is considered necessary, it shall take place as indicated above in relation to vessels with rats infected with plague.

(*d*) Until all suspicion is removed passengers and crew may be subjected to supervision, which shall not exceed five days in duration from the date of arrival in port, except in exceptional cases, in which the sanitary authority can prolong the supervision for a maximum of ten days.

Article 37. On land quarantine should no longer be established. Such persons only as show symptoms of plague or cholera can be detained at the frontier. This principle does not exclude the right on the part of each State to close if necessary a portion of her frontier.

Article 56. The medical inspection prescribed by the regulations is made by one or several doctors of the station for every vessel arriving at Suez; this visit is made by daylight for vessels coming from ports infected with plague or cholera. It can be carried out even at night for vessels which present themselves to go through the Canal if they are lighted by electricity, and on every occasion when the local sanitary authority has the assurance that the conditions of lighting are sufficient.

Article 81.—Measures taken on land routes against importations from regions contaminated with plague or cholera should conform to the

[1] The word *isolation* signifies isolation of the patient, of the persons who are permanently in attendance on him, and prohibition of visits of all other persons.

[2] The word *observation* signifies isolation of the passengers either on board ship or in a sanitary station before they obtain free pratique.

[3] The word *supervision* signifies that the passengers are not isolated; that they are immediately granted free pratique, but are notified to the local authority at their various destinations, where they are subjected to a medical examination as to the state of their health.

sanitary principles formulated by the present convention. Modern methods of disinfection should be substituted for quarantine on land. To this end, steam disinfectors and other disinfection apparatus shall be placed in well-selected points on routes followed by travellers. The same means shall be employed on railways already created or to be laid down. All merchandise shall be disinfected in accordance with the principles of the present convention.

Article 181.—The Conference having taken act of the annexed conclusions of its Commission of Ways and Means on the creation of an International Sanitary Bureau in Paris, the French Government shall, when it shall judge opportune, present by diplomatic means propositions to this effect to the States represented at the Conference.

The work of the proposed international bureau will be to collect information on the progress of infectious diseases, such information being communicated by the sanitary authorities of the States signing the convention. The bureau will send an official report which shall be made public to the respective Governments periodically.

The Government on whose territory the International Health Bureau shall be established shall be charged, within three months from the date of signing the convention, to submit to the approval of the contracting States the regulations for the installation and working of this institution.

The resolutions of the Commission of Ways and Means were signed by all the Powers, but under reserve by England, Germany, and Austria-Hungary.

THE PRESENT POSITION OF THE QUESTION OF THE ALLEGED INCREASE OF CANCER.

DURING the last two or three years a considerable number of contributions to the BRITISH MEDICAL JOURNAL have dealt from various new points with the supposed increase in mortality from malignant diseases, and with supposed explanations of the cause or causes of this increase. The present is a convenient opportunity for briefly referring to some of these papers, and to the present position of the statistical aspects of the cancer problem.

One of the most noteworthy of these contributions was the one by Professor de Bovis, which was very fully summarized by us.[1] In his exhaustive study of the subject, M. de Bovis investigated the incidence of cancer of different parts of the body with due regard to questions of age and sex; and came to the conclusion, after a comparative inquiry into the statistics of Vienna, Hamburg, Berlin, Christiania, and Paris, that both uterine and mammary cancer have declined, that cancer of the rectum is at least stationary, that cancer of the mouth and its annexes are perhaps increasing; but that the total registered increase of cancer is above all due to the registered increase of deaths from visceral cancer. Professor de Bovis concludes that a careful study of statistics contradicts rather than confirms the supposed alarming increase of cancer signalized by most writers; that this increase may be real, but the alarms expressed are certainly out of proportion to the increase.

In a presidential address to the Yorkshire Branch of the British Medical Association,[2] Dr. H. C. Major like Mr. Gilbert Barling in a similar address, draws attention to the necessity for regarding our national statistics of the causes of death "with the greatest distrust," and considers that this remark applies in an especial manner in regard to a disease such as cancer. He urges with force that the question of the more careful and accurate certification of the causes of death ought to receive the consideration of the entire profession in this country. This, we may remark in passing, is the crux of the entire statistical problem. Until necropsies, followed by microscopical investigation, are made after all deaths from obscure internal disease, or until or unless some serum reaction be discovered for the living patient, all statements as to increase or non-increase of mortality from cancer must be received with reserve.

Remembering, however, that under present conditions all available statistics are subject to the same disabilities, it is interesting to note that Dr. Templeman's results[3] are in conflict with those given by M. de Bovis. In commenting on this at the time, we pointed out that, if cancer of certain organs be on the decrease in some civilized countries at the same time that it is increasing in others, this fact forms a useful basis for further investigation. Attention may also be drawn to our remarks on an important discussion at the Institute of Actuaries[4] on the alleged increase of cancer.

[1] BRITISH MEDICAL JOURNAL, October 4th, 1902, pp. 1067-70 and 1081.
[2] BRITISH MEDICAL JOURNAL, July 26th, 1901, p. 144.
[3] BRITISH MEDICAL JOURNAL, February 14th, 1903, p. 384.
[4] BRITISH MEDICAL JOURNAL, June 29th, 1901, p. 1631.

The Irish statistics as to cancer[5] were shown in our columns to be unsatisfactory because of the initial uncertainty of the data, the inequality of the certification of causes of death in different parts of Ireland, and the absence of corrections for age distribution of population. Thus we were able to show that the registered death-rate from cancer of 10.47 in Armagh becomes 9.63 when this correction is made. Before dealing with the recent statistics of the Cancer Research Fund, reference may be made to Dr. Wolff's contributions in these columns. These, like several other contributions to this JOURNAL, dealt with the local incidence of cancer and the local conditions associated with an excessive amount of cancer. His results appeared to show that the presence of a well-wooded environment and the undue consumption of beer both conduced to a high mortality from cancer. The conclusion as to beer is based chiefly on Bavarian statistics, but before this conclusion is finally accepted it will be necessary to secure statistics in which due corrections for age and sex have been made. On the same point the cautiously stated conclusions in the article on page 1529 of our present issue may be mentioned. In any case, alcohol cannot be regarded as an essential cause of cancer, as this disease occurs in life-long teetotallers and in the lower animals. Any effect which it has must be in the direction of an irritating influence or of lowering of resistance.

We come finally to the valuable statistics collected in the first annual report of the Cancer Research Fund. Dr. Bashford, in his report on the statistical aspect of the cancer problem, draws attention to the elastic character of the statistics which have been commonly accepted, and emphasizes the importance of the compilation in the first instance of more limited statistics based upon sound principles. He points out that the age distribution of cancer, the statistical importance of which has been repeatedly urged in these columns, has also a biological significance. "Later life" is reached much earlier in many mammalia, and this may enable several problems as to cancer to be experimentally verified. The Statistical Committee of the Cancer Research Fund has made a good beginning by collecting accurate hospital statistics from the records of four general and one children's hospital in London. The cases are collected into two groups, accessible and inaccessible: and operation and *post-mortem* cases are separately classified on this basis. In both groups, but particularly in the latter, the fact comes into prominence that a very high proportion of the cases show "no specific symptomatology." A very large proportion of the "inaccessible" cancers would never have been recognized but for the surgeon's or pathologist's knife. Thus, of 393 inaccessible cancers in which a microscopical examination was made 109 had no clinical manifestations: while in 442 accessible cancers 43 similarly had no clinical manifestations. We agree with Dr. Bashford's remark that "to speak of 'error of diagnosis' and 'under-' and 'over-diagnosis' in this connexion is quite unjustifiable, both from the absence of a specific symptomatology and from the fact that, in the interest of the patient, the clinician adopts treatment adapted to a condition less grave than that which he has reason to suspect."

The preceding results and others indicated in the same report show the necessity for caution in arguing as to the supposed increase of cancer. Malignant new growths very frequently present themselves at necropsies which were not previously suspected. Such necropsies are now much more commonly made than in the past. They are much more common in England than in Ireland, a fact to be noted in connexion with the lower recorded death-rate from cancer in the latter country.

But whatever doubts may be expressed as to the increase of cancer mortality, its terrible magnitude does not need any exaggeration to be of the gravest importance. During the fourteen years 1888-1901, 6,791 necropsies were made at Guy's Hospital, and in 816 of these malignant disease was found, or in 1 case in 8. With these facts before us we may earnestly hope that by modern biochemical methods some "means may be devised for the more early and certain diagnosis of malignant new growth."

The late Mr. Benjamin St. John Attwood-Matthews, of Pontrilas, Hereford, in addition to bequests of £5,000 each to the general funds of the University and Trinity College, Cambridge, has left £5,000 to the Herefordshire General Hospital.

[5] BRITISH MEDICAL JOURNAL, June 20th, 1903, p. 1442.

British Medical Association.

SEVENTY-SECOND ANNUAL MEETING, OXFORD, 1904.



Magdalen Tower.

THIS article is written with a purpose. It is an attempt to show the intending visitor what he may expect and in what manner he may be pleased, and to point out to individuals the chances of gratification of their own particular desires. It is not a guide—they are to be had here in profusion; it is a mere indication. The photographs, too, make no pretence of giving any idea of the architectural beauties of Oxford; a whole album were insufficient; they only illustrate some of the buildings which will be especially used by the Association—the new Examination Schools and the new Museum, where general and sectional meetings will respectively be held; the University Church, where there will be a service; and Christ Church, where it is hoped there will be a dinner.

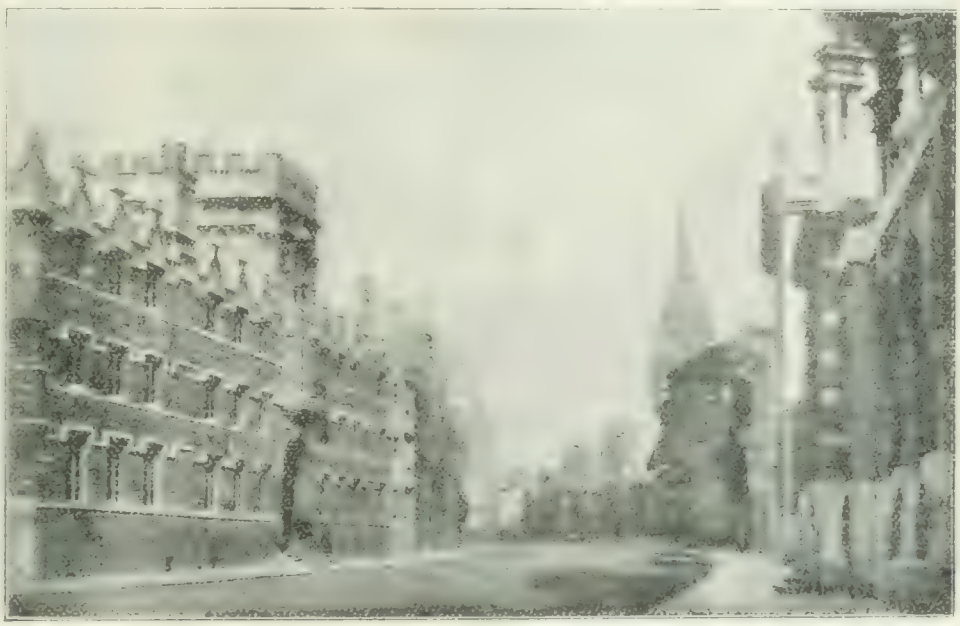


Fig. 1.—High Street, Oxford.

"The world surely has not another place like Oxford; it is a despair to see such a place and ever to leave it, for it would take a lifetime, and more than one, to comprehend and enjoy it satisfactorily." So wrote Nathaniel Hawthorne—no partial observer and by no means too favourably impressed with all things English; and Hawthorne's stay in Oxford was of about the same duration as the projected visit of the British Medical Association next year.

For such a meeting it would certainly be difficult to find in the world a more suitable place. The members and their families who attend annual meetings have certain expectations. Apart from their purely professional desires, which can be satisfied as well in one town as another, they look perhaps most eagerly for interesting surroundings and ample and convenient accommodation. The majority, in short, desire a pleasant holiday in addition to mental improvement.

Accomodation.

Now, to take first the lower and material requirements, consider that there is here a university city, which during term time provides, within a circle whose radius does not exceed one mile, accommodation for several thousand persons, whose tastes for the most part incline to the luxurious. First, there are the Colleges, where some members will be housed, and secondly, there are hundreds of lodging-houses—not the sorry tenements which elsewhere render the name abhorrent, but to all appearance private houses, comfortably furnished, and subject to regular sanitary inspection by the University authorities. The usual occupants will be absent, and their landladies delighted at the prospect of filling their places for even a short time during the interminable and usually profitless length of the Long Vacation. Then, in addition, there are three or four first-class hotels, and several others which, in the words of Baedeker, are less pretending, but comfortable. Oxford, moreover, is accustomed to invasions, and its resources are elastic. Every year, in Eights week, there pours in a torrent of visitors, who are all accommodated to their satisfaction, notwithstanding that term is in progress, and the city already normally full; apparently numberless extension students have also been provided for of late years during several weeks of the Long Vacation.

Pepys once spent part of a day in Oxford, and discovered that it was "a very sweet place." There is another entry in his diary: "Oxford mighty fine place, and well seated, and cheap entertainment." He managed, however, during a few hours, to disburse to a barber 2s. 6d., to various guides and college officials 21s., for dinner and servants £1 0s. 6d., strawberries 1s. 2d., and a bottle of sack for the landlord 2s.; modern visitors need not fear that their expenses will be on so profuse a scale. So much for the material side of the question.

The creature comforts are not negligible factors in in the success of meetings, and even if, as is hoped, next year's should be a record in point of numbers, there will be no lack of accommodation—central, and within easy distance of the places of meeting, and all objects of interest, while the traditional hospitality of Oxford will ensure a hearty welcome.

Intellectual Pleasures.

If, however, we turn from these carnal matters, if we try to convey, within the compass of this article, even some slight hints of the intellectual pleasures which the visitor may, if he choose, enjoy, the task becomes difficult indeed, difficult to begin, more difficult to end.

With regard to the medical and surgical work to be done, the arrangements are not yet complete; every effort will be made for success, and full particulars will be published later. But, presumably, most of the members have hobbies or tastes outside their profession—tastes antiquarian or archaeological, or artistic, or literary or scientific; or perhaps some may be content to spend their spare time idling among beautiful surroundings. Let us consider in some sort of order the prospect before each.

History and Archaeology.

Nature has done little for Oxford: she provided a site, not of the healthiest, but excellent for purposes of defence, and man has done the rest. The whole place teems with recollections, through a thousand years and more, of historic deeds and historic men and women, traces of whose works in many cases still remain. First comes the half legendary St. Frideswyde, who, fleeing with her holy maidens from her too importunate lover, King Algar, founded a nunnery on the site of Christ Church. Algar she miraculously blinded, but afterwards, relenting, restored his sight. Less considerate for posterity, she laid a curse on all kings who should thenceforward visit Oxford. There is still to be seen the reputed shrine of St. Frideswyde in the Cathedral, and the cloisters of the old Priory still exist near the entrance to the hall of Christ Church.

The advantages of position in an angle where two rivers meet, with, close at hand, the convenient ford, which gave

the name "Oxenforde," were early recognized by the chiefs of Mercia and Wessex, by the Danes, and by the Anglo-Saxon kings. It seems, too, that even then Oxford was a favourite place for meetings, for there are records of Danish Councils and of the treacherous murder by Ethelred the Unready of delegates summoned to meet him in conference. It may not be true that Alfred the Great founded the University, or University College, but he has at least left us his wonderful jewel, of enamel and pure gold, found in the neighbourhood, and preserved in the Ashmolean Museum.

Then came the Normans, leaving many traces. In the time of the Conqueror, Robert d'Oily built the castle, massive, impregnable, picturesque, with a "shining coronal of towers," of which only one remains, together with the dismal crypt, now used as a place of execution. Robert, grown older and warned by a most unpleasant dream, wished to atone for his earlier robberies by pious works. He built the great Abbey of Osney, of which the bells of Christ Church, and perhaps the pendants from the roof of the cathedral are the sole remnants. He restored ruined churches, witness especially St. Peter's-in-the-East and St. Michael's. The tower of the latter seems to have lost nothing of its strength through the centuries. Square and massive, its walls are still pierced by the loopholes, from which arrows were showered on enemies, for this church tower formed part of the city defences. The town walls themselves were built later, in the reign of Henry III, and here and there, especially in the gardens of New College, detached portions still exist. Later, again, in the civil war, Oxford was still a stronghold and great earthworks were thrown up by the Cavaliers — an additional protection.



Fig. 2.—The University Museum where the meetings of Sections will be held.

Despite the curse of St. Frideswyde, more than half the sovereigns of England have visited Oxford, and many have left signs and memories of their presence, some by buildings or benefactions, others by extortion or the "borrowing" of college plate to replenish the royal treasury. Henry I, Stephen, and John were frequent visitors. There are recollections of Henry II and his Queen Eleanor and fair Rosamund. Edward II founded Oriel; his cup is still in possession of the college; and to the memory of his mother, Eleanor of Castile, was built the University Church of St. Mary the Virgin, with its glorious spire, so conspicuous an object in most views of the city. Philippa, wife of Edward III, gave her name to Queen's, where were educated Edward the Black Prince, and the jovial youth who afterwards became Henry V; two windows from the rooms of the latter are preserved in the cloister below the library. Edward IV lived for a time in Magdalen, and Richard III held his court there. In the Ashmolean Museum is the sword presented by the Pope to Henry VIII as Defender of the Faith. Elizabeth witnessed plays in Christ Church Hall, where it is hoped the Association will dine, and there, too, and in the Divinity School, Parliament several times assembled in the time of the Stuarts, being driven from London by popular turmoil, or by the plague, and the students being turned out to make room. Both Charles I and Charles II were welcomed at Oxford, and the college plate was sadly diminished in consequence. Cromwell was Chancellor for ten years; William III, Anne, George III, and Queen Victoria knew Oxford well: His present genial Majesty was an undergraduate at Christ Church.

Statesmen of all generations, from Wolsey to Mr. Gladstone, and Lord Salisbury: prelates like William of Wykeham, and Waynflete and Cranmer, and Latimer and Ridley and Laud; divines like Wycliff, and John Wesley, and Pusey and Keble and Newman; historians like Gibbon and Froude; poets like Shelley, and Landor and Swinburne; writers like Erasmus and Dr. Johnson, and De Quincey and Addison and Ruskin; physiologists like Harvey, physicians like Sydenham and Linacre and Radcliffe have all here a local habitation and a name; if one seeks their monuments one has only to look around.

The old buildings of New College, new 500 years ago, stand as a memorial of William of Wykeham; in the chapel may be seen his pastoral staff, a splendid specimen of mediaeval art; in like manner, in Corpus may be found the crozier and chalice of the founder, Bishop Fox. All Souls was built by Archbishop Chichele in memory of Agincourt, and to provide prayers for all the souls of the faithful departed, especially those who had fallen in the war for the French crown, which had been considerably encouraged by the Archbishop. The perfect beauty of Magdalen perpetuates the memory of Waynflete, Christ Church tells of Wolsey. The Martyr's Memorial and the place of the burning testify in honour of Cranmer and Latimer and Ridley. The beautiful garden front of St. John's is a memory of Laud, and the image which he set up of the Virgin over the porch of St. Mary's formed one of the articles of impeachment against him. Radcliffe is commemorated by his library, and infirmary, and observatory. Johnson's desk and gigantic teapot may be seen in the library at Pembroke, and there are many other interesting relics scattered amongst the colleges. Moreover, the antiquarian and archaeologist will find in the Taylor Buildings a library and museum specially adapted to his requirements. This is the Ashmolean Museum, which took its origin in "Tradescant's Ark," the first-known English collection of curiosities, and has since received numerous valuable additions. It contains Prehistoric Egyptian, Greek, Roman, British, and Anglo-Saxon objects, as well as mediaeval jewellery, a unique series of Hittite seals, and splendid specimens of Italian majolica and bronzes, with other works of art of the Renaissance period, and also many historic curiosities from King Alfred's jewel, before mentioned, to Cromwell's watch, and Guy Fawkes's lantern.

LITERATURE.

A lover of books, who visits Oxford, will probably discover that it is quite impossible to leave at the end of a few days. He will find at his disposal the Bodleian, one of the finest libraries in the world, with its hundreds of thousands of volumes, its priceless manuscripts, and literary curiosities; here he may sit undisturbed in an armchair, by a window with a beautiful outlook, and read almost any book he may choose to ask for. And, as if this were not enough, there is the magnificent library of All Souls, and the large collection of foreign books and periodicals in the Taylorian Library. Every college, too, has its own library, and nearly all are

worth visiting, though they are not open to the public for reading purposes. Merton possesses the oldest in the University, with many ancient Bibles, and Caxton's first edition of Chaucer; the libraries of Queen's and Magdalen also deserve special mention.

Art.

Turning from literature to art, the attractions offered by Oxford are still remarkable. The numerous styles of architecture, ranging from Norman and pre-Norman, through various stages down to the very latest productions of the twentieth century, must furnish fresh objects of study even to the most expert. There are many fine portraits in the College Halls and Libraries and in the Bodleian, painted by Hogarth, and Lely, and Gainsborough, and Lawrence, and Reynolds, and many others, besides examples by Herkomer and other modern artists. In the library at Christ Church are to be found works by Lippi, Leonardo da Vinci, Andrea Mantegna, and Albrecht Dürer. There is fine old painted glass in some of the College Chapels, notably Merton, and University, and Lincoln. There is the Burne Jones tapestry at Exeter and the Shelley memorial at University, an altar-piece by Rubens at Corpus and Holman Hunt's "Light of the World" at Keble. But the principal art treasures of Oxford are collected in the admirably-arranged University Galleries in the Taylor buildings. There may be seen an unrivalled collection of 240 original drawings by Raphael and Michelangelo, many of them sketches for their most famous pictures. There are also 50 drawings and sketches by Turner and examples of the works of Rembrandt and Vandyck, of Canaletti, Teniers, Reynolds, Gainsborough, Constable, and David Cox, besides pictures by members of the pre-Raphaelite brotherhood, Holman Hunt, Millais, and Rossetti. Nor can mention be omitted of the Arundel marbles and the marvellous Westwood collection of fictile ivories.



Fig. 3.—The New Examination Schools in which the Reception Rooms and Annual Exhibition will be arranged.

Science.

It is evident, then, that there is abundant interest awaiting in Oxford any visitor whose tastes lie in the direction of archaeology, or literature, or art, and there will probably be many such amongst the members of the British Medical Association and their families. But perhaps the tendency of the majority will be towards scientific matters. It is only of late years that science has made any headway at all in Oxford. There was a Jewish school of medicine in the twelfth century, and ever since the Middle Ages the University has made some profession of teaching medicine and the allied sciences. "Here," says Sorbière in 1664, "is a place of anatomy not worth seeing." But although such men as Harvey and Sydenham and Linacre studied in Oxford; although Wilkins of Wadham and his friends were amongst the founders of the Royal Society; although, later, Daubeny and Buckland did their best to arouse interest in the study of Nature, yet up till fifty years ago, and to some extent much later, the attitude of the University towards matters of science was contemptuous and hostile. It is only quite recently that there has been any real attempt to encourage systematic scientific teaching. The Radcliffe Infirmary was opened in 1770, and about fifteen years later was the subject of a dismal report by John Howard. He described it as "a modern shewy building," but pointed out that the ceilings were too low, the windows always shut, and the wards offensive beyond conception. He recommended that the fanlights over the ward doors should be left open, in order that the noxious effluvia might pervade the building, and so perchance reaching the noses of the matron and the gentlemen who only attended in the committee room, might induce them to invent effective means of ventilation. The infirmary would scarcely now be called "a modern shewy building." It is certainly smaller than one might expect, in so important a city, but the best use is made of the limited accommodation, and the new operating theatre and electric room are excellently fitted. All branches of science are now thoroughly taught in Oxford, and the number of students in these subjects is steadily increasing.

There are laboratories at Christ Church and Queen's, and other colleges, but the headquarters of scientific teaching is the University Museum, which will be the place of sectional meetings of the Association, and which now affords a very complete equipment for the study of science. The Museum owes its existence, in great part, to the energy of Sir Henry Acland, and was opened in 1860. Woodward and Deane were the architects, and Ruskin is responsible for the design of some of the interior decoration. The aim from the first was not to house a mere collection, but to provide the best possible opportunities for systematic study. In the words of Sir Henry Acland the objects of the Museum are as follows:

"First to give the learner a general view of the planet on which he lives, of its consistent parts, and of the relations which it occupies as a world among worlds; and, secondly, to enable him to study in the most complete scientific manner any detailed portion which his powers qualify him to grasp. The departments, to which are assigned, for mutual aid and easy interchange of reference and comparison, a common habitation under one roof, are astronomy, geometry, experimental physics with their mathematics, chemistry, mineralogy, geology, zoology, anatomy, physiology, medicine. For the illustration of Nature the student requires four things: first, a workroom where he may

practically see and work for himself; secondly, a lecture room where he may see and be taught that which, by himself, he can neither see nor learn; thirdly, general space for the common display of illustrative specimens, so placed as to be convenient for reference and comparison between all the different branches; and, lastly, a library in which whatever has been done or is now doing in the science of this and other periods and countries may be conveniently ascertained."

It has been the endeavour of the controllers of the Museum to follow this scheme throughout. Even the interior ornamentation of the building has been designed with a view to scientific illustration. The wrought-iron tracing of the roof represents foliage of various trees; the arches of the double arcade, which surrounds the central court, are supported by 125 pillars, the shafts formed, each of a different stone, selected to represent the most important rocks of the British Isles, and the capitals carved in the forms of various natural objects. There are statues on the ground floor of Bacon, Galileo, Newton, John Hunter, Sydenham, Darwin, and other eminent scientists. The collections are admirably arranged in the court and galleries, and include the celebrated Hope Museum of entomology. Extensive additions have been made to the original Museum building; there are new laboratories for chemistry, experimental physics, physiology, morphology, and pathology, all splendidly fitted; there is an adjoining anatomical department, the very dissecting room of which is so well managed that it forms a cool and pleasant retreat in the heat of summer: there are numerous lecture theatres with conveniences for illustration by lantern and otherwise; finally there is the new building which contains the magnificent Radcliffe library of scientific works and periodicals, with every convenience for reading, or for consulting books of reference. This library is a model of perfection in its own line, and owes its present habitation to a munificent gift by the Drapers' Company. In an annexe entered from the main court of the museum is the extremely interesting Pitt-Rivers anthropological collection, extensive and unique, containing numerous objects which illustrate the evolution of arts and crafts and manners amongst the various races of mankind.

The University Astronomical Observatory is in the Parks, a few yards from the museum, and there is a second observatory, under the management of the Radcliffe trustees, situated near the infirmary.

Dilettante Delights.

So it will be granted that the visitor also, whose hobbies or inclinations or work are scientific, will not find himself at a loss to occupy his spare time. But perhaps the greatest pleasure of all will be experienced by the person who is content to wander amongst beautiful surroundings, fraught with many memories of bygone years. He may be lodged within the ivy-covered walls of some old college—quiet, peaceful, mediaeval in aspect. He will tread the echoing cloisters of Magdalen or New College; at every turn, as he walks the streets, he will see stately buildings, towers, spires, and pinnacles blending into majestic groups, and gifted by time with most harmonious colouring. Here and there he may turn aside into old gardens, made lovely by centuries of care; the gardens of New College, where are the remnants of the old town walls; the gardens of Worcester with their lake, the gardens of St. John's, and Trinity, and Wadham. He will see the beautiful water walks of Magdalen, and the deer browsing in the grove. Then he may visit the Physic Garden, with its fine entrance and its cypresses and wealth of tropical plants in the hothouses. He will stroll along the curving High Street, alleged to be the most beautiful street in the world, and, turning, will enter the great quadrangle of Christ Church, with on one side the cathedral, on the other the domed campanile, in which Great Tom still rings curfew every evening at five minutes past nine, with 101 resounding clangs, the former number of the students. Then he may pass out into Christ Church meadow, with its avenues of lofty elms, and so down to the river, here edged with the long line of college barges. Few will be content to leave Oxford without spending some time on the river, down stream to Iffley, with its Norman church and its mill, beloved of artists, and further to the beautiful woods of Nuneham or the ancient town of Abingdon; or perhaps, up stream to Godstow, and the ruined nunnery which contains the grave of Fair Rosamund; or perhaps, again, on the deep lazy Cherwell, starred with water lilies, and shaded by graceful willows. For rowing, punting, canoeing, and sailing there is ample provision; every day there will be opportunities offered of making the longer voyages by steamboat, and one evening there is to be an illuminated river *fête*. If road be preferred to river, then there is Cumnor to be visited, the home of Amy Robsart; or Woodstock, and the palace and park at Blenheim. Moreover, there will be organized excursions farther afield, to Leamington and Warwick Castle, perhaps to Stratford-on-Avon.

Lawn tennis and croquet and golf will be available, and the Union Society will offer the hospitality of its reading rooms and garden to the members of the Association.

It is the hope, then, of those who are to be hosts on the occasion of this meeting that not one guest will regret his visit; that there may be something offered to be seen, or to be done, which will appeal to every individual taste. It will be their strong endeavour to accomplish this result, and they are conscious that nowhere else in the world ought such endeavour to have a better chance of success.

The Sections and the Pathological Museum.

The meeting will commence on Tuesday, July 26th, and the business will terminate on Friday, July 29th. A service will be held at Christ Church Cathedral on Tuesday morning, and the annual general meeting, at which Dr. T. D. Griffiths, of Swansea, will resign the chairmanship to the President-elect, Dr. William Collier, at noon. This meeting will be followed by the Representative Meeting, and in the evening the new President will deliver his address to the Association. The Representative Meeting, and the general meeting also, if necessary, will adjourn from day to day. A general meeting will be held on Wednesday evening to hear the Address in Medicine, which will be delivered by Sir William Selby Church, Bart., K.C.B., M.D., President of the Royal College of Physicians of London, and Consulting Physician to St. Bartholomew's Hospital. The Address in Surgery will be given by Sir William Macewen, M.D., F.R.C.S., LL.D., Regius Professor of Surgery, University of Glasgow, on Thursday afternoon. The meeting will comprise thirteen sections: Medicine, Surgery, Obstetrics and Gynaecology, State Medicine, Psychological Medicine, Pathology, Physiology, Anatomy, Ophthalmology, Dermatology, Laryngology and Otology, Tropical Diseases, and Navy, Army, and Ambulance.

We are glad to learn that considerable interest has already been awakened in the University with regard to the meeting, and that in all the Sections preparations are actively progressing. As regards the Section of Pathology, special steps are being taken to ensure the success of the meeting, and most interesting discussions are expected to take place.

It is intended also that the Pathological Museum shall be, as far as possible, of general interest to all the Sections. It is to be arranged in a readily accessible situation, and the exhibits will be demonstrated individually at stated times.

The subjoined letter dealing with the formation of the museum will shortly be circulated. It is intended to distribute it as widely as possible, but lest it should fail to reach any member of the Association who may be desirous of contributing an exhibit, it has been thought advisable to publish it here.

Pathological Museum.

Committee:

Dr. Ritchie. Dr. Walker, Secretary.
Dr. Waters. Dr. Ormerod.

Dear Sir,—In connexion with the above meeting it is proposed to arrange a Pathological Museum under the following headings:

1. Specimens and photographs illustrating the latest advances in medicine, surgery, and pathology.
2. Instruments for *x*-ray work and skiagraphs.
3. Colour photography as applied to medical, surgical, and pathological work.
4. Photomicrographs and instruments for photomicrography.
5. Instruments for clinical diagnosis.
6. Surgical anatomy.

Provision will also be made for specimens bearing on any of the discussions in the various Sections.

The Committee solicit your co-operation, and I shall be glad to hear if you are willing to make an exhibit. If there is any subject not mentioned above in which you are interested, and in connexion with which you can furnish specially interesting specimens, I shall be glad to hear from you.

The Pathological Museum will occupy the dissecting room at the Department of Human Anatomy, University Museum, and thus will be in close contiguity to the meeting places of all the Sections.

It is hoped that it will be possible to arrange for demonstrations of specimens and instruments by the exhibitors, at stated times, during the evening.

I remain, yours faithfully,

E. W. Ainley Walker.

University College, Oxford, Nov., 1903.

PHYSICAL DEGENERATION.

[By our Commissioner.]

(*Continued from p. 1474.*)

IV.—Compulsory Education.

In endeavouring to discover whether the labouring classes are physically less fit than they were, the question of education plays a very important part. What effect has thirty years of compulsory education had upon the parents of the children who attend the Board Schools and on the children themselves? Morally, no doubt, they must be benefited in a marked degree. Removed from surroundings generally squalid, where their time has been spent between a miserable home (where they are perhaps hard-worked or sent out to work) and the gutter, into conditions of cleanliness and method, with plenty of occupation, who can doubt the great moral benefit of compulsory education to the children of the poorest classes? It is a fact that they themselves like and look forward to going to school, and nearly all the non-attendances may be traced to the parents, who try to keep them at home to work. As in school children of all classes, there must be a certain percentage of born idlers and incorrigibles whose one aim in life it is to dodge school. But, as a rule, boys and girls, once their intelligent interest has been aroused, are keen to learn, and given the brain to understand what they are being taught, and the health to stand the long hours of enforced confinement and strain upon their minds, they really enjoy their lessons, and usually look back upon their school days as the happiest of their lives.

But the question of the effect of long hours upon their health and brain is seen to be of great import when the question of national deterioration is faced. While recognizing the immense general benefit of compulsory education, given children in robust health and given also a perfect system of mental and bodily training, we have to look at the reverse side of the medal. Those 60,000 children of whom Sir William Anson spoke as being physically inferior and therefore unable to get the benefit of teaching in the schools, and imperfections in the system of mental and physical education must be remembered.

Some of the questions which have to be faced are: (1) The ventilation of schools; (2) long hours without breaks for recreation; (3) insufficient food for the amount of work done in school; (4) risks of infection.

(1) *Ventilation of Schools.*

The ventilation of schoolrooms in schools under the London School Board is under the personal control of the teachers. The School Board supply doors and windows. A teacher may be a believer in fresh air, then he opens the windows of his classroom. Those in the next room may possibly be kept hermetically sealed because the teacher fears daughts or feels the cold. Where a head master is very keen on hygiene he may, by extreme watchfulness, insist upon the various schoolrooms being properly ventilated, but in a body of teachers numbering some 20 000 it is obvious that great difficulties must be encountered. The unsoundness of this state of affairs is obvious. The system of ventilation should be carefully thought out and applied in every school. Care would of course be taken that no risks to health should be incurred by violent draughts. But by windows or louvres high up near the ceiling (possibly with a grating) continually open, and by others lower down always open in summer, and in winter regulated from the top, according to the direction of the wind and the temperature, a comparatively fresh atmosphere could be obtained. In America a system of ventilation by stoves, quite independently of ventilation by doors and windows, is employed. Professor Matthew Hay, Medical Officer of Health of Aberdeen, in his evidence before the Royal Commission on Physical Training in Scotland, stated that, at the instigation of the School Board in Aberdeen, mechanical ventilation was employed. The air is downcarried by fans on a propulsive system. This is more expensive than so-called natural ventilation, and would be difficult to carry out in existing buildings. Dr. Hay was of opinion that, although the results were not ideal, a mechanical system of ventilation gave distinctly better results in the purity of the atmosphere than natural.

In his evidence before the same Commission Dr. J. Kerr expressed the opinion that, quite apart from door and window, nearly every school required ventilation either by stoves or by some other appliances. When it is borne in mind that to have a fairly pure respiratory air every boy should have 800 cubic feet of space, and that even a young child should have 2,000 cubic feet of fresh air per hour, it will easily be conceived that under the present system children's health must suffer.

The first step towards reform is the compulsory teaching of hygiene to teachers, in order that they in their turn may be capable of teaching it to all the children in elementary schools. Teachers would then understand the use of fresh air in their schoolrooms. The least that can be expected of school inspectors is that they should be sufficiently aware of the importance of hygiene to insist upon the children doing their lessons in healthy surroundings. Mr. Horsfall, at the Jubilee Conference of the Manchester and Salford Sanitary Association of 1902, speaking on the importance of the best possible kind of influence passing from the local educational authorities to the schools, gave, as an example of the dangerous ignorance of the people who now rule our school system, the following instance: "In an elementary school (of which he was one of the governors) I have seen one of His Majesty's inspectors, on the occasion of an annual inspection, order the closing of all the windows when the windows were the only means of providing ventilation."

If it be urged that there are already too many subjects crowded into the school time-tables, every intelligent person having at heart the health of the nation will see that even if half the school time had to be devoted to the study of hygiene it would be time well employed, for only by training the present generation in the laws of health will our national health be assured in coming generations. We are glad to note that Dr. Kerr, in his report as Medical Officer of the London School Board, emphasizes the fact that anaemia and debility, contributed to by school conditions, exist from neglect of efficient ventilation. On the children attending schools should all efforts be concentrated, for it may be taken for granted that those parents who are now steeped in ignorance and squalor will be ignorant and squalid to the day of their death. Only by impressing upon the children the importance of fresh air, and by practising what one preaches, can it be expected that they will hereafter carry out the teaching they have received at school in their own homes.

(2) *Long Hours without Breaks for Recreation.*

Any one who has had anything to do with children knows that to ninety-nine children out of a hundred keeping quiet even for a short time is about the most trying thing in the world. But when it comes to sitting at a desk for many consecutive hours daily, during the nine most active years of their lives, it will be realized that the German system is wiser than ours. In Germany the rule is to allow the scholars ten minutes or a quarter of an hour's recreation at the end of each hour, so that they may run about and exercise their bodies and their lungs, and go back fresh to the next lesson. It stands to reason that this is an excellent plan, and that the lost time is more than made up by the mental rest and physical stimulation. It helps to develop the child's body, more or less cramped while sitting at a desk, unfortunately very often in a stooping posture, leading to contraction of the chest and spinal curvature. When it is possible the recreation should be in the open air, the teachers of the class joining in, for fresh air and change of idea is as necessary for them as for their pupils. The coming down to the level of the children and playing with them promotes good understanding and affection for their teachers. During recreation the children should be allowed to run wild, and scream and shout to their hearts' content, to the benefit of their lungs and limbs. Great harm is done by keeping children too long in one position, and it was recently stated that in a set of German schools, doubtless not among those which give a few minutes' recreation once an hour, that while there was not one case of lateral curvature of the spine among the children of the first year's attendance, 52 per cent. were found to be suffering therefrom during the fifth or sixth year of school life. Doubtless what happens in Germany happens elsewhere, and the practice of keeping growing children confined to their desks during long consecutive periods must be strongly condemned.

(3) *Insufficient Food for the Amount of Work Done.*

To find out the real state of affairs with regard to the underfeeding of children attending Board schools presents almost insurmountable difficulty. It is generally believed that not so many as is often believed are actually so underfed as to require free meals at the schools. Teachers have to discriminate between two classes: (1) The really starving child, too ashamed to acknowledge the truth, and whose mother—respectable, but in bad circumstances—would probably be unlikely to admit her penury; (2) the professional beggars

who let their children go hungry to school in order that they may get food there, although they can perfectly well afford to feed them at home. It must rest with the head masters and head mistresses of schools to find out the real state of affairs, so that in some schools where these are philanthropists or tender-hearted, much more is done than in others where the head considers the labouring classes an ungrateful lot, and is therefore out of sympathy with any movement to help them.

The usual plan adopted by those who have it in their power to give free meals to hungry children attending their schools is to make a surprise inquiry among the children as to how their fathers and mothers are employed, what wages they are earning, what they had for breakfast, dinner, and tea the day before, and so on; a note is made of this, and further inquiries are made at random in the homes to verify these statements. A child will not, as a rule, make up a pitiful story on the spur of the moment, but were it known by the parents that such an inquiry were to take place, they would be primed with the most moving details.

There are, of course, many genuine cases of dire poverty, when the fathers and mothers are really doing their best to keep bodies and souls of their families together, but there is always the fear that free meals at schools may increase pauperism among those well able to maintain their offspring, but only too glad to escape doing so. Of the 60,000 children in London declared by Sir William Anson to be physically inferior, and, therefore, unable to get the benefit of teaching in the schools, we presume that in a large percentage their unfitness is caused by insufficiency of food or improper feeding. At the last meeting of the London School Board before the summer recess, Mr. Percy Alden stated that in his opinion 60 per cent. of the children attending schools were underfed, and that there was great need, especially in winter, of providing meals for them.

At the same meeting the first annual report of Dr. Kerr, Medical Officer of the Board, was presented, in which he stated that of the general causes affecting progress in school, ill-nutrition was an important one. He thought it due to poverty or ignorance. Much misery of the child population and subsequent physical inefficiency depended upon the ignorance of parents, more especially with regard to infant feeding.

Funds are raised by some of the teachers, who beg for subscriptions from their friends, and ask the better-off pupils to do the same. But in some schools the latter practice is condemned. There are also some free-meal funds; we may mention the Lambeth Teachers' Association Scholars' Free Meal Fund, by which, for the last ten years, underfed children attending the Board and voluntary schools of Walworth, Newington, Camberwell, and Peckham have been given meals, and which has also reported cases of cruelty on the part of dissolute and culpably negligent parents to the Society for the Prevention of Cruelty to Children. The Free Meal Fund is managed by those who are not only brought into contact with the sufferers, but also with the real condition of their homes. There is a general committee and subcommittees which take charge of the feeding centres located throughout the district. To these centres fortnightly grants are made. The Food Supply Dépôt in the crypt of St. Peter's Church, Walworth, is managed by Rev. J. W. Horsley and a band of workers. The Society can supply a daily demand of 5,000 meals at a cost inclusive of preparation and distribution averaging 1d. per meal. To those thousands of children sent to school with a make-shift dinner of perhaps a slice of bread and butter these hot dinners are a real godsend. There are three classes—those able to pay their penny, those only able to pay part of the cost (numbering in 1902 8,646), and those who are given a free meal; on behalf of the last class appeals were made for 60,000 last winter.

No matter how excellent the work done by these unselfish societies, it seems impossible to know how to discriminate, without passing over many a starving child, among all the children attending Board and voluntary schools in London. The only sound plan would seem to be that every one of the pupils should be provided with a dinner at school, for which he would pay, charitable funds, such as that we have described, coming in to defray the expenses of those given to the extremely poor. A strenuous effort should be made to organize a cooking centre at each school large enough to supply these dinners, which the pupils should take turns to cook under efficient supervision and instruction. The effect upon physique would be lasting, for few girls, after nine years' decent dinners at school, would when they got homes of their own return to the squalor and discomfort of meals as they are served in the families of the poorer classes in England. The elder girls should be trusted with small weekly sums for the purchase of materials necessary for the dinners, and they should be trained to do the shopping, keep accounts, and so to learn the value of money. Lectures should also be given on the properties of various foods and their relative value.

We may take it that no child attending the Board schools is now better fed than it would be if the above system were adopted, and in the case of the underfed, malnutrition is the cause of stunted growth, deficient muscle, inattention, weariness, want of concentration: they would therefore all benefit. If underfed children are not actually more prone to contract infectious diseases, they are undoubtedly more likely to suffer severely from an attack and its sequelae.

It is curious to notice how the lower the scale of poverty, the duller the children look, some of them seeming very little better than imbeciles. In the discussion on the relation of poverty and disease at the Jubilee Conference (1902) of the Manchester and Salford Sanitary Association, the Deputy-Chairman of the Sanitary Committee of the Corporation of Manchester expressed the opinion that large numbers of children of school age succumb to phthisis and lung diseases, owing partly to defective nutrition and partly to lessened power of resistance to infection.

If education is to benefit instead of harming insufficiently-fed children, the sooner the problem is faced the better, and some general method suggested, for are half measures possible where the welfare of the sons and daughters of the Empire is at stake?

(4) *Risks of Infection.*

In a vast congregation, and especially such a congregation as the Board schools, the risks of infection are necessarily great. Apparently the teachers are not responsible for trying to guard healthy children from infection. Probably if a child is actually covered with a rash it is packed off home. The sanitary inspectors are responsible for giving the teachers formal written notice that so-and-so is not to be allowed to attend school until further notice, as there is infectious illness in his or her home. In due course the teacher receives a notice, saying that fear of infection being over the pupil may be received back. No doubt in the case of measles and some other disease the child may have become infectious to its schoolfellows before the disease can be recognized. But this risk must be run, and considering the vast numbers epidemics necessitating the closure of schools are rare. The importance of proper ventilation in lessening the risks of infection is obvious.

Of the zymotic diseases measles seems to be on the whole the most important in its effect on school life. Dr. Kerr recommends that every school should keep a record of the measles history of each child attending it. Where outbreaks have occurred in single classes of schools, otherwise free, the schools have not been closed, but children coming from homes known to be infected have been rigorously excluded. The infection is often carried by the children from infants at home, and the system of double desks assists considerably in its spread. In his report for the year ending March, 1903, Dr. Kerr mentions a school epidemic of sore throat at Isleworth which was found to be diphtheria, and its continuance in spite of very active measures to be due to the presence of the bacillus in the throats of children to all appearance healthy.

After the late epidemic of sore throats at Woking, one cannot help wondering if infected milk may not sometimes be responsible for outbreaks of infectious sore throat, and inquiry into the milk which children so suffering may have been given might throw some light on the question.

The epidemic grant formerly made under Clause 101* of the Code removed any temptation to the teachers to keep up attendances at the risk of infection. Unfortunately that grant has been abolished, and teachers are still remunerated according to the number of attendances. The Council of the British Medical Association, at the suggestion of the Public Health Committee, recently represented to the Board of Education that the withdrawal of the grant would be detrimental in two directions: First by causing the return to school of children not completely convalescent from acute diseases; and, secondly, by making it increasingly difficult to exclude from attendance at school children who, although in fair health, are still capable of spreading infectious disease, either because they have suffered from slight attacks or because they have recently been in contact with cases of disease. The Board of Education, however, thinks otherwise.

We believe, however, that it would be wise even to go so far as to remunerate teachers for every case of infectious illness they are able to trace and report. This would make them doubly watchful, and might often arrest an outbreak at the beginning.

There are no trustworthy statistics as to the height and weight of London children. Dr. Kerr is of opinion that they should be obtained for both boys and girls at each quarter year of age from 5 to 15. The National Society for the Prevention of Cruelty to Children has obtained leave to try and obtain standards of height, weight, and physical conditions out of school hours. It would, however, be simple to have a weighing machine and a measuring-rod in every school and to measure and weigh all the children by degrees—say one class a week—entering the results in a ledger. This could be done in the hall, say after a drilling lesson, the class teacher measuring or weighing while the head master made the entries; thus the work would not take long and the results would be exceedingly valuable. They would be a general guide as to whether children received a sufficient amount of nourishment. We say general, for some children remain thin and undergrown no matter how much food they get; this, however, is the exception, and slow development can generally be traced to improper feeding in infancy or to congenital weakness.

It is significant that insufficient feeding is often accompanied by marks of neglect. Not only are the bodies of such children puny and rickety, but their heads are generally neglected, their eyes sore, and their glands enlarged. Feeble, dull brains are often the accompaniment of feeble bodies. Such children are apt to be neglected by the teachers, who think their energies are profitably centred in those who have strong bodies and quick brains. Supposing children to be underfed, over-fatigue and badly-ventilated class rooms will certainly not tend to make their brains capable of enduring a mental strain. In view of the inevitable waste of public money on the education of the physically unfit, we observe that were such sums of money expended in the first instance upon the building up of their bodies, even were the years of their education shortened by this, the benefit they in the end derived would be a thousandfold greater than that which these poor starvelings are now able to enjoy.

THE ROYAL COMMISSION ON ARSENICAL POISONING.

The final report of the Royal Commission on Arsenical Poisoning, which contains many matters of interest to the medical profession, as well as to analysts and to the general public, was issued last week. It is a Blue Book of 50 pages, price 5½d., and obtainable from Messrs. Eyre and Spottiswoode, or through any bookseller. It will be remembered that the existence of a widespread epidemic among beer drinkers in Manchester was discovered at the end of 1900, which was proved by Dr. Reynolds to be due to the fact that the beer contained arsenic. The matter immediately received the attention of many medical officers of health and analysts throughout the country, and was made the subject of inquiry by an Expert Committee appointed by the Manchester Brewers' Association, of which Sir Lauder Brunton, Dr. T. Stevenson, and Dr. A. P. Luff were members. The Local Government Board instructed Dr. Buchanan to make an inquiry into the outbreak, and an important report on the subject was issued by that Board early in 1901.

The Origin of the Commission.

Meanwhile, however, it became evident that the epidemic had given rise to all kinds of technical, scientific, and administrative difficulties, and it was extremely doubtful whether the position of affairs would be improved if Sir Cuthbert Quilter's "Beer Bill," which had received considerable support in the House of Commons as a consequence of the epidemic, were passed. In these circumstances the Government appointed a Royal Commission, of which the members were Lord Kelvin (Chairman), Sir W. Hart Dyke, Sir W. Church, Dr. T. E. Thorpe, Mr. Cosmo Bonsor, and Dr. B. A. Whitelegge, with Dr. Buchanan as Secretary. The Commission rapidly got to work, and after hearing a considerable amount of evidence published an interim report in July, 1901.

The Interim Report.

The immediate cause of the outbreak was then generally known. For a period of eight months, or thereabouts, a firm of sugar makers, Bostock and Co., had been using arsenical sulphuric acid in the conversion of starch into glucose, and of cane sugar into "invert sugar." This firm supplied glucose and "invert" almost exclusively to brewers, with whom their business was extensive. But although the evidence against these particular "sugars" was overwhelming, it was by no means certain that smaller amounts of arsenic which were found in many beers in 1900 were due to the brewing sugars used, and the interim report drew attention to the recently discovered fact that arsenic is liable to be deposited on malt (owing to the way in which malt in this country is dried by prolonged exposure to the fumes of a kiln fire) if the fuel used is unsatisfactory and if other precautions to guard against this risk are neglected.

In this report, also, the Commission recommended as an interim precaution that the Board of Inland Revenue should exercise control at breweries by testing samples of brewing ingredients and in other ways, and it appears from the final report that much useful action has lately been taken by the Revenue Department in this direction.

The Final Report.

In giving a brief summary of the report now issued, it will be convenient to utilize the headings of the several parts into which the report is divided.

Part I. *Further observations regarding the epidemic of arsenical poisoning in 1900, and as to the medical and public health aspects of the evidence received regarding arsenic in beer and food.*

Shortly after its appointment the Commission took steps to secure that the 700 tons of arsenical glucose and "invert" remaining on Messrs. Bostock's premises should be properly disposed of. The disposal does not appear in the first instance to have been done to the satisfaction of the Commission as they found it necessary to "make strong representations to the official liquidators" of Bostock and Co. and also to communicate with the Local Government Board. When Mr. H. Hammond Smith, M.R.C.S., who appears to have done much valuable work for the Commission, visited Bostock's works in May, 1901, he found not only a large stock of brewers' glucose on the premises, but also some tinned preparations termed "table syrups" to the extent of 14 tons. Dr. McGowan, who analysed samples of these syrups for the Commission, found them to contain 1 gr. of arsenious oxide per lb. All these tins of syrup were afterwards burnt by order of the liquidators.

In reporting on the extent, distribution, and fatality of the 1900 epidemic the Commission states that the number of cases "was certainly 6,000 and probably.....considerably greater." They occurred in 10 administrative counties and in 17 county boroughs; 2,000 of the cases are allotted to Manchester, 1,000 to Liverpool and 996 to Salford. There were no cases in London or in the Southern Counties. The deaths which were definitely ascribed to arsenical poisoning numbered 70, but the Commission is of opinion that many deaths were certified, before the cause of the epidemic was ascertained, as due to "chronic alcoholism," "cirrhosis of the liver," "Addison's disease," and "locomotor ataxy." Other deaths from arsenical poisoning were also recorded as due to "alcoholic," "peripheral" or "multiple" neuritis.

In Manchester, Salford, and Liverpool the epidemic had been steadily increasing for several months until the discovery of its cause in November, 1900, and the report draws attention to a remarkable fall in the birth-rate of these cities which occurred in the third quarter of 1901, a circumstance attributed by Dr. J. Niven, of Manchester, to the epidemic of the year before. Not only was the general birth-rate diminished in Manchester, but the reduction in births was greatest in those portions of the city which had been most seriously affected by arsenical poisoning.

The principal symptoms met with during the epidemic are dealt with in some detail, a distinction being drawn between the well-marked cases, where pigmentation, keratosis, and other clinical evidence pointed clearly to arsenic, and the less acute cases, most frequently observed during the earlier months of the outbreak, in which what may be regarded as idiopathic symptoms of arsenical poisoning were absent altogether.

On the much-debated question of the relation of "alcoholic neuritis" to arsenic the Commissioners conclude that much of the alcoholic neuritis which prevailed in Manchester, Liverpool, and other places before 1900 was due to beer and to the presence of arsenic in beer. Such arsenic was probably

introduced by means of malt contaminated by the fumes of gas coke, which was formerly used to a great extent in the North of England, and in several localities, particularly Yorkshire, has been shown to give off notable quantities of arsenic when burnt on the fire of the malt kiln. They have no doubt of the fact that this disease has hitherto prevailed to a much greater extent in Manchester and Liverpool than in large centres of population in Scotland, London, and the Southern Counties of England, and their opinion that arsenic was responsible is strengthened by the great diminution in alcoholic neuritis which has been observed in Manchester since precautions against arsenic have been taken in the local breweries. They do not, however, accept the thesis that there is, practically speaking, no alcoholic neuritis apart from arsenic. They have evidence that this disease occurs in spirit drinkers, and the evidence that spirits are liable to contain arsenic is entirely negative.

A striking illustration of arsenical beer poisoning, apart from the 1900 epidemic, was afforded by a small outbreak at Halifax in 1902, which the Commissioners investigated very fully by means of local inquiries and chemical examinations, and by hearing formal evidence from brewers and others. They have no hesitation in ascribing this outbreak to arsenical beer brewed from malt dried over gas coke. Some of the beers in question contained as much as one-sixteenth of a grain of arsenic per gallon. After the warning which had been given in the Commission's interim report, it is surprising that the Halifax brewers concerned had in some instances continued to use gas coke, and had taken no steps to ascertain whether the malt produced was free from arsenic.

The Commission gives credit to Dr. J. F. Hodgson for first drawing attention to the occurrence of cases in Halifax. It points out that even now it is easy for such cases to pass unrecognized, although a number may be occurring in the same place at about the same time, and it states that the Halifax beers must have been typical in respect of arsenic of a large class of the beers sold in some parts of the country before arsenical contamination of malt and brewing sugars was recognized.

The report reviews in sequence the evidence received regarding the form in which arsenic is present in arsenical beer, the great differences that exist in the matter of individual susceptibility to arsenic, the accumulation of arsenic in human tissues, the ways in which arsenic is eliminated from the body, and the importance of excluding small quantities of arsenic from beer and other food. On these points full marginal references are given to the minutes of evidence which will shortly be published, and it is evident that these volumes will form an important and comprehensive addition to the literature of the subject.

Some interesting investigations have been made for the Commission on elimination of arsenic by way of the hair. This part of the report finally concludes with a statement that the Commission, in view of all the considerations involved, adheres to the view expressed in the interim report that "it would be unwise to express an opinion that any quantity of arsenic, however small, is to be regarded as admissible in any articles of food, and we think it should be the aim of the food manufacturer to exclude arsenic altogether from his products."

PART II.—*The suggested relation between the disease "beri-beri" and arsenical poisoning.*

As the result of inquiries on this subject made by medical officers of health of various English ports, and of chemical examinations of foods and other specimens from ships arriving at these port swith beri-beri cases on board, the Commission concludes that so far as it limited opportunities of observation have gone, the facts available do not support the suggestion made by Major R. Ross and others that "beri-beri" may be a form of chronic arsenical poisoning. In a few instances, however, arsenic was detected in dried fish and other articles of food taken by sailors suffering from beri-beri.

(To be continued.)

THE Government of Siam has made arrangements by which, on and after April 1st next, the sanitation of the capital will be under the care of a medical officer of health devoting his whole time to this duty. There has been a medical officer of health and port sanitary officer at Bangkok for several years past, but hitherto he has been free to engage in other occupations as well. The first holder of the new post will be Mr. H. C. Highet, M.D.Glasg., D.P.H.Lond., who has for some years held medical appointments under the Government of Siam.

CANCER RESEARCH.

IN the report of the Cancer Research Fund presented at the first annual meeting of the General Committee on July 30th an account of the scope of the work was given, together with an outline of the scheme of systematic research which it was proposed to undertake. At that time necessarily there was little to record in the way of definite results. The organization was still incomplete and the work of investigation had scarcely commenced. In view of the great importance of the subject, and the keen interest taken in the inquiry both by the medical profession and the public, it has been thought desirable to obtain further information as to what is being done, and as to the directions in which the solution of the most pressing pathological problem of the present day is being looked for. With this object a representative of the BRITISH MEDICAL JOURNAL recently visited the laboratories on the Victoria Embankment, and was courteously received by Dr. Ernest F. Bashford, the General Superintendent and Director, who fully described the work that is being carried out and showed all there is to be seen. It would be out of place to give here anything more than a general indication of the lines of research that are being pursued. The problem is being attacked from all sides—experimental, histological, statistical, and therapeutic; and every effort has been made to secure co-operation from all sides whence any light on the subject is likely to be forthcoming.

EXPERIMENTAL WORK.

The experimental work has so far been hindered by the want of adequate accommodation, as in the three small rooms available it is impossible to keep any but very small animals. This difficulty has hitherto to some extent been overcome, thanks to the liberality of Sir William Church, who kindly placed a farm where animals could be kept under observation at the disposal of the workers. The General Committee has now, however, been able to get possession of a farm of its own, where it will be possible to give the fullest development to the experimental side of the inquiry. In addition to experiments directed to the discovery of the cause of cancer, using that term to include malignant disease of every kind, the work will include researches having for their object the preparation of immunizing and curative serums.

Already a considerable amount of experimental work has been done. Most valuable assistance has been given by the veterinary profession, which has shown the greatest willingness to co-operate. Many veterinary practitioners have presented horses, dogs, and other animals suffering from cancer. It has thus been established that cancer is extremely prevalent among domesticated animals, such as the dog, the cat, and the horse. Cows—especially in Ireland where they appear to be kept to a comparatively venerable age—and pigs also suffer from the disease.

The zoological distribution of cancer has been carefully studied. In this branch of the inquiry very valuable help has been rendered by Mr. A. E. Shipley of Cambridge, who induced workers in all British zoological institutions to lend active assistance by sending material for examination. By means of the opportunities of research thus afforded, it has been possible to trace the occurrence of cancer down through the scale of vertebrate animals, even including the lowest classes. So far malignant disease has not been found in any invertebrate animal.

A large series of experiments has been made upon the transmissibility of cancer from one animal of the same species to another. A form of malignant tumour (adeno carcinoma) which develops naturally in mice has been successfully transplanted. The result is not an infection but a metastasis from one animal to another, leading to the development of exactly similar growths. It should be noted that transplantation shows nothing more than the possibility of growing the disease in an identical soil. It indicates a mode of conveyance, but throws no light on the *causa causans* of cancer. The efforts of investigators are therefore being directed to the determination of the conditions favourable to the growth of the transplanted disease.

Another line of experimental research which it is proposed to carry out at the farm is the influence of local irritation in the production of cancer. The effects of irritant substances—paraffin, naphtha, petroleum, xylol, arsenic, soot, etc.—will be fully tested. It is well known that dogs are very liable to

be affected by epithelioma of the scrotum, and the causation of the disease will be fully investigated.

Histological and Bacteriological Research.

The amount of histological and bacteriological work done in the laboratory is already very extensive, and there is every prospect of its steadily increasing. In this branch of the inquiry Dr. Bashford is most efficiently assisted by Dr. Murray, on whom a large share of the work, which consists mainly in the examination of specimens sent for the purpose, has devolved. How vast is the ground already covered by these investigations may be gathered from the fact that tumours of all kinds are sent to the Cancer Research Laboratory not only from all parts of the country but from India and the Colonies. With the object of getting the largest possible supply of material Mr. Chamberlain in May last issued a circular letter to the Governors of all British Colonies, to the Governors and High Commissioners of Crown Colonies and Protectorates and to the Governors of Responsible Government Colonies, calling their attention to the importance of the inquiry, and asking them to impress on the heads of the Colonial Medical Department and through them on the other medical officers of the staff the desirability of carrying out as completely as possible the directions contained in a memorandum of instructions drawn up for their guidance. In this memorandum attention was specially directed to the necessity of seeking for whatever evidence there might be of the occurrence or non-occurrence of benign and malignant growths among natives. The necessity for making *post-mortem* examinations in all cases of death whenever possible, with special reference to the possible presence of cancer, was pointed out. A schedule of questions as to the clinical and pathological features of the disease was enclosed, and medical officers in the Colonial service were instructed to fill them in and forward them to Dr. Bashford. In view of the difficulty of carrying out microscopical examinations in some of the Colonies, it was enjoined that in all cases of operation at which any suspicion of the presence of a growth, benign or malignant, existed, small portions of the suspected tissue should be at once placed in 2 per cent. formalin or absolute alcohol, and forwarded to the laboratories. Mr. Herbert Read, of the Colonial Office, has taken a very active part in furthering the efforts of the administrators of the Cancer Research Fund to get into touch with the Colonies. Thanks to his good offices the Foreign Office has been induced to issue to the medical officers in its employ a circular on the same lines as that of Mr. Chamberlain. The India Office has also been approached, but the Indian Government is notoriously slow to move in matters belonging to the domain of medical research, and it is scarcely surprising that nothing definite has yet come of the request for assistance in this particular inquiry. In the meantime an attempt has been made to interest all medical officers of zenanas in the investigation. In this way it is hoped to collect data that may make it possible to arrive at definite conclusions as to the geographical distribution of cancer, as to the types prevalent in different countries, and as to the influence of environment and mode of life on its development and character.

The response from the Colonies has already been very satisfactory. Specimens have been received from Basutoland, Seychelles, Jamaica, Mauritius, and other Colonies. Dr. Sandwith in Egypt, and Dr. A. Balfour, head of the laboratory at Khartoum, have promised their co-operation. Hong Kong has shown its interest in the practical form of a grant of £30: it is to be wished that other colonies would do likewise.

At home an endeavour has been made to secure the co-operation of the London hospitals. We are pleased to be able to state that the appeal has met with the most gratifying response. All the metropolitan hospitals having medical schools attached have undertaken to make returns of the cases of cancer treated in them, with the necessary personal, clinical and pathological details and the results of microscopic examination made at the time of operation, and, in case of death, of the *post-mortem* inspection. The aim is to collect a large number—say 20,000—of records of cases which have been properly examined. It is hoped later to extend the inquiry to the provinces and to Scotland and Ireland.

Requests have been addressed to practitioners who report cases of anomalous forms of tumour in the medical journals for portions of the growth for examination. To this appeal the response has also been satisfactory. The examination of the tissues thus obtained has yielded some valuable results.

In order to make the inquiry as thoroughgoing as possible Dr. Bashford has placed himself in communication with the principal laboratories in foreign countries and with the leading investigators throughout the world. Very friendly relations have been established with the German Cancer Committee, and promises of co-operation have been received from the Harvard University, from Dr. Borrel of the Pasteur Institute, Paris, Professor C. O. Jensen of Copenhagen, Professor Pick of Berlin, Dr. Woods Hutchinson of San Francisco, and many others. A certain amount of difficulty was experienced at first in getting into touch with some of the foreign workers, but these have been successfully overcome, and there is now every reason to hope that in future the efforts of investigators in all countries will be co-ordinated like that of astronomers. Specimens will be exchanged between the various laboratories, and results will be communicated. This will save an immense waste of power in the rediscovery of truths already known, the repetition and perpetuation of exploded errors and the prosecution of unprofitable researches.

Statistical Work.

In addition to the information contained in the schedules sent in by the medical officers of the Colonial and foreign services and the London hospitals, the co-operation of the Registrar-General and of certain well-known assurance offices has been secured. The figures, so far as they have been collected, appear to support the contention of Dr. Newsholme that the alleged increase of cancer is apparent rather than real, being due really to greater accuracy in certifying the cause of death. Statistics obtained from certain Irish hospitals appear to show that the death-rate from cancer in these hospitals is practically identical with that in London hospitals.

Treatment.

In the annual report which has been referred to it was stated that inquiries had been made as to the results of treatment by means of Finsen's light, high-frequency currents and *x* rays, and that reports on the treatment of some 400 cases by those methods had been received. From these it appeared that there was a general consensus of opinion that many superficial rodent ulcers could be healed by the application of the *x* rays. In regard to other forms of malignant new growth, it was stated that the results so far recorded did not establish the efficiency of any of the measures mentioned as curative agents in sarcoma and carcinoma. As far as the workers in the Cancer Research Laboratory are concerned, the question is still *in statu quo*. A study of the results obtained by the use of radium does not inspire much hope of its therapeutic future. In the case of melanotic sarcoma it destroys the pigment; in other tumours it only influences the superficial cells. The evidence at present available seems to show that light, *x* rays, and radium are, in relation to the treatment of cancer, nothing more than caustics. They have, however, the advantage that their action is more easily limited. As to the high-frequency currents, it was stated that there were no facts in the possession of the investigators that would justify the expression of any opinion.

In regard to the possible discovery of a cancer antitoxin, there is a formidable obstacle to progress in this direction in the fact that at present nothing is known as to a toxin. The discovery of the toxin must necessarily precede that of an antitoxin. A necessary preliminary to the search for a serum that shall prevent or cure the disease is the knowledge which will permit of the production of malignant growths at will. This important question will, as already said, be the object of persevering study at the farm provided by the Cancer Research Fund.

Cancer "Cures."

It need hardly be said that numerous communications are received at the laboratory as to alleged "cures" for cancer. It would serve no useful purpose to give a list of these things which only serve to illustrate the eternal truth of Montaigne's maxim *L'homme se pipe*. Man indeed is only too ready to gull himself and to allow himself to be gulled by pretenders to knowledge. The workers at the laboratory, however, are always ready to consider any suggestion from whatever source it may come that seems to offer a serious promise of help towards the solution of the problem with which they have to deal.

The Financial Difficulty.

Enough has been said to show that the research, to the issue of which the whole world is looking with anxious

expectancy, has been begun in earnest. The scheme seems to include every line of inquiry that offers a clue, and every pathway that seems likely to lead the seekers to the truth. The workers are zealous, and they have the support of an enlightened Committee, which thoroughly understands the difficult nature of the problem and the consequent uselessness of looking for immediate results. The public may feel confident that everything possible is being done to ensure the success of the research. There is still, however, a serious obstacle in the way. It was estimated at the outset that an assured income of £3,000 a year would be necessary for the prosecution of the inquiry without interruption and without narrowing of its scope. To make up the capital sum of £100 000 needed for this purpose £20,000 is still required. There is no way in which money could be given to better purpose by wealthy persons who wish to benefit mankind. No disease causes more terrible suffering than cancer, which, unlike some other deadly scourges, generally leaves the patient under no illusion as to his state. It chooses its victims largely among men at the period of their highest intellectual productivity and social value. The discovery of its cause and of the means of prevention or cure is a matter of vital interest to the whole human race. It is earnestly to be hoped, therefore, that the work of research will not be hindered by the lack of a comparatively trifling sum of money.

PREVENTION OF CONSUMPTION.

London.

In October, 1900, a large meeting of representatives of Metropolitan Poor-law authorities, borough councils, and guardians in the metropolis, convened to consider the needs of the consumptive poor of London, unanimously resolved that the establishment of sanatoria was urgently required, and that the matter was one for the consideration and action of the Metropolitan Asylums Board. After three years the Board at its meeting on November 28th again considered the subject on a report from the General Purposes Committee. This report, which was adopted, was to the effect that the matter was of such vital importance to the community at large, and would entail, if adopted by the managers, so considerable an extension of their duties and responsibilities and so large an increase in their expenditure, that some authoritative expression of opinion from the Local Government Board was called for before the managers could take any action or make any further inquiries. It is to be regretted that in view of the admitted importance of the subject the timidity of the Board will not even allow of its making a full inquiry into the actual needs of the consumptive poor of the metropolis in the direction of sanatoria and the means of meeting such requirements.

Middlesex.

Sir Ralph Littler, C.B., K.C., presided recently over a meeting, at the Middlesex Guildhall, to consider the question of establishing a sanatorium for consumptives for Middlesex. Sir William Broadbent, speaking in favour of the project, urged the two-fold advantage of a sanatorium in prevention and cure. He said that Middlesex would gain no benefit from sharing a sanatorium with London, for the needs of the metropolis were overwhelming. The Chairman said that, though the Middlesex County Council was by no means committed to the scheme, he was sure that a good scheme would have sympathy and he hoped substantial support also from the Council, especially since there was to be no extravagant outlay on bricks and mortar. The Bishop of Kensington moved, and Dr. Bott seconded, a resolution to the effect that such a sanatorium for the County of Middlesex should be established. This was carried unanimously, and a committee was appointed to carry out the object. A donation to the scheme of 200 guineas was announced from Lord Rothschild and Mr. Leopold de Rothschild.

CONTRACT MEDICAL PRACTICE.

Northumberland and Newcastle Medical Association.

The third annual report of the Council of the Northumberland and Newcastle Medical Association to the members has been presented. It says: There is one circumstance in connexion with the working of the past year which qualifies the congratulations due to the members on the continued success of the principles for which they have contended. During the past year two very important contests have engaged our attention. Two Medical Aid Societies were opposing our colliery members. Only one such society now exists in the county of Northumberland. In both cases we have experienced the great advantage of the Judicial Committee formed in the previous year. It is a matter for regret that the appeals for assistance on behalf of the gentlemen who lost much by giving us their loyal aid have met with such inadequate support, especially having regard to the fact that the appeal was addressed to those who had most benefited by the past action of our Association.

In other directions the Association has done useful work. We have succeeded in obtaining the assistance of the leading druggists in dealing with Aid Societies, in preventing many applications from distant practitioners for undesirable appointments, and in dealing (*inter alia*) with the threatened formation of a new aid society, with a question of notification fees, with a question relating to colliery accidents, and advice has been given verbally and by letter to numerous inquirers both from our own members and from practitioners in other parts of the country.

The most important question that we have to deal with has been very carefully considered during the year by a Special Committee, namely, as to the advisability of sinking the identity of this Association in that of the British Medical Association. The special thanks of our Association are due to this Committee, to whom we are indebted for a most valuable and exhaustive report. This matter is now in the hands of the members themselves, and the Council express the hope that whatever decision be arrived at the work of promoting the material interests of the profession will continue and prosper, feeling assured that it is as much to the advantage of the public as of the doctors that a high professional standard should be maintained.

The thanks of the Association are due to the officers and to the members of the various committees who have given their time and attention to the various special matters entrusted to their consideration. It is satisfactory to note that no case has had to be investigated by the Ethical Committee during the year.

The number of members on the books of the Association at the close of year is 174, being the same number as last year.

Rates for Accidents.

W. V. asks: What fees are usually paid to surgeons of works for accidents only per annum and per head? I know, he adds, some surgeons receive 2s. 2d. a head per annum.

*** There is no general rule. Much depends upon the nature of the employment and upon the number employed at the works in question. For some years a register of all accidents has been kept at all works for the purposes of the Factory Act. It would be easy to ascertain the average number occurring, and then to calculate the sum per accident the amount of 2s. 2d per head would bring in. Another consideration is whether there is a hospital in the district at which the severe accidents are treated.

THE PLAGUE.

Prevalence of the Disease.

India.

During the week ending November 5th the deaths from plague in India numbered 17,853. There has consequently been a decrease in the mortality from plague compared with the week immediately preceding when 18,177 died of the disease. The decrease is chiefly accounted for by a lessened mortality from plague in the Bombay Presidency, where the number fell from 11,7 6 during the week ending October 20th to 10,927 during the week ending November 5th.

Plague during the week ending November 5th has increased in the North-West Provinces and Oudh from 569 to 776 during the two weeks in question; in the Punjab from 593 to 751; and in the Central Provinces from 1,522 to 1,646.

In the city of Bombay the number of deaths from plague during the week ending November 5th were 57 less than during the corresponding week of 1902.

Cape Colony

During the weeks ending November 7th and 14th the plague report in the towns of Cape Colony was as follows:

Port Elizabeth.—No fresh cases of plague: 1 plague patient remained under treatment in hospital.

Knysa.—No case of plague.

Queenstown.—No case of plague.

East London.—A native child died of plague during the week ending November 14th.

Plague-infected rats continue to be found at Port Elizabeth, Knysa, Lady Grey Bridge, and Queenstown. During the two weeks 627 rats examined were found free from plague infection.

Mauritius.

During the weeks ending November 26th and December 3rd the fresh cases of plague in Mauritius numbered 77 and 60 respectively; the deaths from the disease were returned as 41 and 41 respectively.

THE BRITISH MEDICAL BENEVOLENT FUND.

The Treasurer (Dr. Samuel West, 15, Wimpole Street, London, W.) begs to acknowledge the receipt of the following further special donations to the Fund in response to Sir William Broadbent's appeal:—

	£	s.	d.		£	s.	d.
Sir Anderson Critchett ...	10	0	0	"Thank Offering"	5	5	0
Mr. Morton Smale	5	5	0	Mr. J. B. H. Dawson (Sierra			
Mr. T. Corbett...	5	5	0	Leone)	5	0	0
Mr. W. F. Brook	1	1	0				

The *Colliery Guardian* has issued an illustrated supplement on ankylostomiasis, for the information of all connected with the mining industry. It is a comprehensive and comprehensible review of all that is known on the subject, and a full description is given of the various measures which have been adopted in Belgium, France, Germany, and Austria to deal with the complaint. Some information is also given as to the results which have been obtained and the expenses which have been incurred at individual mines and other places in which the disease has prevailed.

ASSOCIATION NOTICES.

COUNCIL.

NOTICE OF MEETING.

A MEETING of the Council will be held in the Council Room of the Association, at 429, Strand (corner of Agar Street), London, on Wednesday, the 20th day of January next, at 2 o'clock in the afternoon.

November, 1903. GUY ELLISTON, *General Secretary.*

COUNCIL.

NOTICE OF QUARTERLY MEETINGS OF COUNCIL FOR 1904.

MEETINGS of the Council will be held on Wednesdays, January 20th, April 20th, July 6th, and October 19th in the Council Room of the British Medical Association, 429, Strand, London, W.C.

ELECTION OF MEMBERS.

ANY candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

RESEARCH SCHOLARSHIP.

OWING to the resignation of a scholar the Council is prepared to consider applications for the portion of the unexpired scholarship of the value of £150 per annum. The successful candidate is eligible for re-election in July, 1904.

Forms of application and terms of appointment can be obtained on application, and must be returned on or before December 31st, 1903, to

GUY ELLISTON,
General Secretary, British Medical Association,
429, Strand, London, W.C.

BRANCH MEETINGS TO BE HELD.

BORDER COUNTIES BRANCH: WEST CUMBERLAND DIVISION.—There will be a meeting of this Division at the Globe Hotel, Cockermouth, on Tuesday, December 22nd, at 3.30 p.m. Members who wish to read communications or to show cases or specimens are requested to communicate with the Honorary Secretary. Dinner will be provided at the Globe Hotel after the meeting.—T. G. MATHEWS, Whitehaven, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: CITY DIVISION.—A general meeting of this Division will be held on Thursday, December 17th, at 4 p.m., in the Lincolnshire Room of the Great Eastern Hotel, Liverpool Street, E.C. Agenda: Minutes of last meeting and correspondence. Medical Acts Amendment Bill. Vaccination Acts: Resolutions relative to future legislation. Resolution respecting the representation of the British Medical Association upon the General Medical Council. (N.B.—The full text of the Medical Acts Amendment Bill and the various resolutions will be found in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL, August 22nd, 1903.) The Organizing Secretary of the Association, Mr. J. Smith Whitaker, M.R.C.S., L.R.C.P., will be present, and will speak on the work which it is hoped the Division will undertake to promote the welfare of the profession. Any such business as may arise.—E. W. GOODALL, Eastern Hospital, Homerton, N.E., Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: ST. PANCRAS DIVISION.—An ordinary meeting of this Division will be held in the Committee Room of the St. Pancras Workhouse on Friday, December 18th, at 4.30 p.m. Dr. Rhodes will show some pathological specimens. A discussion on Consumption Sanatoria from the point of view of General Practitioners and Public Authorities will be opened by Dr. Sykes. Tea at 4.30 by invitation of Dr. Sykes.—ROBERT POOLEY, 35, Highbury Grove, N., Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: CENTRAL DIVISION.—A general meeting of this Division will be held at the rooms of the Medical Society of London, Chandos Street, W., on Wednesday, December 16th, at 5 p.m. precisely. Agenda: (1) Minutes of the last meeting; (2) Medical Acts Amendment Bill; (3) Vaccination Acts; (4) Resolution respecting the representation of the British Medical Association on the General Medical Council; (5) to consider other business necessary. (The full text of the Medical Acts Amendment Bill and the various resolutions will be found in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL, August 22nd, 1903.) —COMYNS BERKELEY, M.B., M.R.C.P., 53, Wimpole Street, W., Secretary and Treasurer.

SHROPSHIRE AND MID-WALES BRANCH.—The next meeting of the Clinical and Pathological Section of this Branch will be held at 5 p.m. on Tuesday, December 15th, at the Salop Infirmary. Agenda.—Cases: Dr. Gardner will show a cretin. Mr. Russ Wood will show a case of congenital double dislocation of the lens. Dr. McCarthy will show a case of necrosis of both patellae from burns. Mr. Godson will show a case of neoplasm of the mandible following epithelioma of the lip. Papers: The Chairman will read notes on two cases of severe anaemia which were rapidly fatal. Dr. Gore will read a short paper on appendicitis. Dr. Macleod will read a note, "Is there any connexion between canine distemper and diphtheria in man?" Demonstrations: Dr. Stawell will show a skiagraph illustrating impacted fracture of the surgical neck of the humerus. Dr. King will show slides from a case of carcinoma testis following injury. It is hoped that every member will endeavour to attend this meeting.—HAROLD H. B. MACLEOD, LEONARD J. GODSON, Shrewsbury, Honorary Secretaries.

SPECIAL CORRESPONDENCE.

MONTREAL.

Defects in the New Isolation Hospital at Ottawa.—Quebec Board of Physicians and Surgeons.

THE new isolation hospital at Ottawa, which has been occupied for less than a year, has been condemned by a committee of physicians chosen for the purpose of investigating the condition of the building and its management. Reports have been circulating to the effect that patients entering the wards with one disease have been attacked by another before they could be discharged, and the house-physicians have been complaining unreservedly of the lack, not merely of modern facilities, but of requirements essential to the proper performance of their duties. When the members of the committee went to examine the hospital they were met on the threshold by a possible source of infection, for the clerk, who amongst other duties opens the front door and hands the visiting medical men their gowns, shares her office with the lady superintendent and house-surgeon, and her bedroom with nurses of the diphtheria ward. In her absence her duties are performed by the lady superintendent, who, owing to the arrangement of the building, is practically unable to change her clothes in going from one department to another. Inquiry soon brought out the fact that the isolation of nurses and others employed in the various wards was very imperfect, for although the nurses have separate dining-rooms, there is a common kitchen, and, again, the maids for the different wards have their meals together. The man who puts infected clothing into the sterilizer takes his meals with the cooks and laundresses. The house-surgeon himself has no bathroom, and has to use the ward bath and keep his street clothes in his bedroom with his hospital uniform. On leaving the entrance to go to any part of the building it is necessary to pass through a corridor connecting the two wings of the diphtheria ward, and kitchen-maids have to go through this entrance on their way to and from the storeroom. All patients have to be examined in the same admission room, and are then sent up by a common stairway or elevator to their respective floors. Some very interesting facts in regard to the ventilation were pointed out by the house-surgeon, namely, that there are two large air shafts, one for each wing of the building, which are connected with all the wards, public and private, as well as with the dining rooms; and as there are no fans, the draught of air, under certain atmospheric conditions, blows into the rooms supposed to be ventilated, thus producing an intermittent connexion between the scarlet fever and the diphtheria wards. In addition, although there is a separate dumb waiter for each floor, yet as there is but one kitchen, which is generally hotter than the wards above, there is a constant interchange of air and flies between the different stories. One of the most extraordinary points brought out in the examination was the utter impossibility of isolating mixed infections. There was at the time of the investigation a case of this nature in the scarlet-fever ward, attended by a nurse who had under her care a number of cases of pure scarlet fever. The hospital records showed that 184 cases of scarlet fever and 194 of diphtheria had been treated since the hospital was opened. Twenty-four cases of scarlet fever were complicated with diphtheria on admission. Nine cases developed diphtheria after admission, during convalescence; 5 of these occurred in the beds opposite an opening in the air shaft; 3 cases of diphtheria developed scarlet fever. The Committee congratulated the staff upon the splendid results shown under such disadvantageous circumstances, and recommended that the present building, with some alterations, should be used for scarlet fever and administration, and that another building should be provided for diphtheria, with a suitable annexe for cases of mixed infection.

At the recent meeting of the Quebec Board of Physicians and Surgeons held in the city of Quebec, three very important

points were brought up for discussion—namely, the lengthening of the medical course from four to five years before granting a licence to practise; the prevention of men having British licences from registration in the Province of Quebec without examination; and the question of a compulsory B.A. course or "*cours classique complet*" before admission to the study of medicine. In regard to the first point, the vote resulted in the adoption of the five-years' course. The Medical Department of McGill University has had this question under consideration for a number of years, and doubtless this move on the part of the Quebec Board will be a sufficient reason for bringing the subject again before the Faculty. The second point has been forced into the notice of the Board by the exasperating spectacle of a man, already rejected, coming before the Committee for admission to practise, some months later, with a British licence, which, of course, must be accepted, notwithstanding that his previous training may have been irregular. The law which has been in force up to this time was repealed by the vote of the members. With regard to the third point it will be well to explain that as a rule a French Canadian goes to a "college," in which the teachers are priests, at the age of 9 or 10, and after following a course in Latin and philosophy at a very moderate cost, graduates B.A. at 17 or 18. This is the "*cours classique complet*." On the other hand, an English-speaking boy completes his high-school education at 16 or 17, and then if he wishes to have a B.A. degree, must take a four-years' course at the university. The committee in charge saw the injustice of trying to force the measure alike on French and English, and a compromise was effected. As far as the French-Canadian element is concerned, the obligation of a complete classical course would be an advantage, as fewer students would leave their preliminary studies to pass an examination and enter medicine in an unprepared state. But looking at the other side, there is no chance for English-speaking students to obtain a similar education outside the large cities, and even there the fees are very much higher than in the French colleges. An amended motion was eventually passed to the effect that the law would remain unchanged for the Protestant or English-speaking candidate, while the Catholic, or French-speaking candidate would have either to present his diploma for the *cours classique complet*, or be prepared to pass an examination equivalent to that which would have been required for admission to the *baccalauréat*. These changes do not come into force until passed by the Quebec Legislature, but the probability is that they will become law without alteration.

SYDNEY.

Death of Dr. Goode.—Infected Oysters.—Hospital for Sick Children.—Sydney University Medical Graduates' Dinner.

Dr. W. H. Goode, a well-known medical practitioner of Sydney, died at his residence on October 15th, after a long illness, terminating in pneumonia. He was born in Dublin, and received his medical education at Trinity College, where he graduated in Arts. In 1867 he received the degree of M.B., and a year later the degree of M.Ch. Eight years later he took the degree of M.D. and the following year the Diploma in State Medicine. He entered the Medical Department R.N., and served on the African Coast, and subsequently on the Australian Station. In 1878 he retired from the navy and began private practice in Sydney. He was one of the first surgeons at Prince Alfred Hospital, and Medical Officer at the Randwick Asylum. He resigned his appointment at Prince Alfred Hospital, and shortly afterwards was appointed Honorary Surgeon at the Sydney Hospital, a post which he held until only a few months ago, when he retired in consequence of ill-health. From the commencement of the Medical School at the University of Sydney he held the appointment of Lecturer in Medical Jurisprudence and Public Health. He was also a member of the Board of Health, and was frequently employed by that body for the investigation of cases of infectious disease. He was also an Official Visitor to the Hospitals for the Insane. Dr. Goode was also interested in politics, and for many years occupied the position of Chairman of the Right Honourable G. H. Reid's Election Committee. He leaves a widow and three children. Dr. J. Foreman has been appointed his successor on the Board of Health, and Dr. A. Jarvie Hood his successor as Official Visitor to the Hospitals for the Insane.

It has been reported to the Board of Health that oysters at Long Bay at the head of Middle Harbour are infected with the bacilli of typhoid fever. This is the first occasion on which a report of this kind has been made here, although sewage matter has done great injury to molluscs on the Paramatta River, which has through this cause been depleted of oysters. Sewage is emptied into Long Bay, and it has been ascertained that for a distance of 1,000 yards along its foreshores the oysters are infected. The Fisheries Board have taken steps to prevent consumption of oysters from this part of the harbour, and it has recommended the Government to issue a proclamation preventing the taking of oysters from the shores of the bay and the foreshores on each side of the entrance to it for a distance of half a mile for a term of three years. Any breach of these regulations being punishable by a fine of £2.

The Sydney Hospital for Sick Children will, before long, be a building of which Sydney may be proud. At the last monthly meeting of the Board of Management it was reported that Sir John See, on behalf of the Government, had promised £5,000 towards the purchase of a site for the new hospital, consisting of certain land in Forest Lodge, a portion of the estate of the late Hon. John Lucas, and that the Board would be justified in entering into negotiations at once for the completion of the arrangements with the executors of the estate. The Board authorized the Site Committee to enter into a contract for the purchase of the land mentioned for the sum of £6,000, the difference to be provided by the hospital. Several contributions towards the necessary additional £1,000 have already been received. A Building Committee was appointed, and the architects have been requested to prepare plans at once.

The first annual dinner of the medical graduates of the University of Sydney was held last month under the presidency of Dr. W. G. Armstrong, the City Health Officer, who was the first student to complete his medical course and receive the degree of M.B. at the Sydney Medical School. There was a good attendance of graduates, and several of the professors and lecturers were present by invitation. The toast of "The King" was given by the Chairman, "The University" by the Chairman, and replied to by Dr. P. Sydney Jones; "The Medical School" given by Dr. Chisholm Ross, and replied to by Professor Anderson Stuart; "The Teaching Staff" given by Dr. Frank Tidswell, and replied to by Sir James Graham; and "The Chairman" given by D. . Hankins.

MANCHESTER.

City Schools in the Country.—Infant Mortality.—Dirty Houses in Manchester.—MS. Catalogue of Anatomical Specimens of Mount Street School of Medicine.

During the last twenty years nearly sixteen thousand poor children have benefited by the Children's Holiday Fund. Each child receives the benefit of a three weeks' residence in some healthy country district. The scheme is taking a new shape and direction. It is proposed to take classes of children from the elementary schools to the country for a period of three weeks or more and continue their education there, so as to instruct them in a knowledge of natural phenomena. The children would be accompanied by their teachers and it is proposed that there should be a school and houses where they could live and continue their school life. The instruction would be chiefly about the things seen in country life. The Board of Education is well-disposed towards the scheme. Already one generous donor has promised £1,000 to start the scheme. So that the suggestion made in one of the recent articles of your commissioner on Physical Degeneration is to have a trial. The Manchester scheme is tentative, but it may prove to be "the thin edge of the wedge."

It seems to be the same old story as regards infant mortality. From the report of the medical officer for the third quarter of the year we gather that the rate of infant mortality was 184 per 1,000, against 146 per 1,000 in the previous quarter, 155 in the third quarter of 1902, and an average rate of 279 for the corresponding quarter of the five years 1898-1902. The rate of infant mortality in Manchester was more than the average in the seventy-six great English towns by 25 per 1,000. In London the rate was 141, and in the 103 smaller towns of England and Wales it was 131. Yet there were fourteen of the seventy-six great towns with an infantile mortality greater than Manchester.

The Medical Officer of Health states that during the third quarter of this year the Female Health Visitors made 4,286 inspections of houses in their respective districts. Out of every 100 houses visited they found 5 dilapidated and 13 dirty. In only 0.6 per cent. of the houses was overcrowding

detected. In some districts 24 per cent. of the houses were in a dilapidated condition, and in one district the number of dirty houses reached 36 per cent. There was also great differences in the amount of really serious illness, ranging from 5 to 48 per cent.

A very interesting historical MS. catalogue has been presented to the Library of Owens College by Mr. J. Joseph Jordan. It is the catalogue of the anatomical preparations in the Museum of the Mount Street School of Medicine belonging to Joseph Jordan. Many of the specimens were mounted by his nephew, James Stephens. The number of specimens carefully described and catalogued is over 1,000. It is evident that even in the early days of medical studies in Manchester the Mount Street School was exceptionally well provided with museum specimens. Many of these are now in the Anatomical Museum of Owens College.

BRISTOL.

Lord Mayor's Hospital Sunday Fund.—Spitting in Public Places.

At the annual meeting of the constituent body of the Lord Mayor's Hospital Sunday Fund, held in the Council House under the chairmanship of the Lord Mayor, Sir Robert Symes, there was only a moderate attendance, considering that 600 people had been asked to be present and that the important question of alteration of the date of the collection was to be discussed. The Honorary Secretary, Dr. Bertram Rogers, in his report stated that since the inauguration of the scheme in 1898 nearly £9,000 had been collected, though the amount this year (£1,565 4s.) was less by £45 than that received in 1902. The number of places of worship taking part in the movement had increased from 92 in the first year to 327 in the present year, and it was a source of great satisfaction to the Council that they had the sympathy and support of all the institutions on whose behalf the collection was made. The Honorary Treasurer, Mr. E. J. Swann, in presenting the financial statement, said the sum received had been distributed as follows: The Royal Infirmary, £609; the General Hospital, £511; the Children's Hospital, £189; the Eye Hospital, £91; the Orthopaedic Hospital, £25; the Lock Hospital, £15, the Eye Dispensary, £5; and small sums to other institutions. After meeting general expenses, £23 remained in hand. The adoption of the reports was proposed by the Lord Mayor and seconded by the Bishop of Bristol, and the new Council appointed. After considerable discussion the proposal of Canon Tetley to change the day of collection to a Sunday in June, as it was probable that the weather then might be more settled than in January, was withdrawn, as the general feeling of ministers present was that no advantage would be gained by the alteration, and that possibly the Fund might suffer from the other important collections made in the summer. The collection will, therefore, be made on January 31st, 1904.

At a meeting of the Town Council held on November 24th, Mr. Gilmour Barnett, as Chairman of the Sanitary Committee, proposed that a by-law be formulated against spitting in public places. It cannot be said the discussion reflected much credit on certain members of the Council, and the proposal was opposed on the ground that it would add to the troubles of the people generally. An amendment that streets should be included in the by-law was lost. Finally, the original proposal was carried by 55 to 51, while 5 members abstained from voting.

NEWCASTLE-UPON-TYNE.

Newcastle-upon-Tyne Clinical Society: Lecture by and Banquet to Major Ronald Ross.—New Health Laboratories at the College of Medicine.

Under the auspices of the Newcastle Clinical Society, Major Ronald Ross, of the Liverpool School of Tropical Medicine, delivered an address in Newcastle on December 2nd, the subject being tropical sanitation. Since, he said, it had been clearly established that mosquitos were the cause of malarial fever, it seemed as if the time had now come when something should be done to diminish the high mortality from malaria that still prevailed in tropical countries. While education of the natives was very desirable, it was imperative that the breeding places of mosquitos should be drained. Our Colonial Government, therefore, ought to spend money to effect this, as well as take a greater practical interest in such problems. That energetic and decided action undertaken by a Government could effect much had been demonstrated by the extirpation of yellow fever from Havana. It was more difficult to stamp out malaria than yellow fever, but as in the former the mortality had already been reduced 80 to 87 per cent. at Ismailia by a system of drainage, there was much to encourage hope by adopting this line of treatment. If the large and important trading centres of Britain united and brought to bear joint action upon the Government as to the necessity of appointing health officers for the tropics, from whom sanitary reports could be received annually, and also commissioners, the good effected would be incalculable.

In the evening a complimentary banquet was given to Major Ross at Tilley's Rooms. About 40 sat down to dinner. The chair was occupied by the President of the Society, Mr. T. G. Ouston, and the vice-chair by the Honorary Secretary, Dr. George Foggin. Supporting the Chairman were the guests of the evening, the Sheriff of Newcastle, Mr. Plummer, M.P., Mr. Crawford Smith, M.P., Sir George H. Philipson and Principal Gurney. After the toast of the King had been duly honoured, Dr. Leech proposed "Our City," and pleaded for municipal help being rendered to medical research and science. The Sheriff of Newcastle responded. In giving the toast of "The Houses of Parliament" Professor Oliver alluded to the greatness of our dependencies abroad and said that the time had now come when it was not simply a question of governing these places but of making them habitable not only for the people who lived there but for those who went to govern. From an economic point of view the questions of drainage ought to receive more Government consideration. Mr. Plummer, M.P., in responding, admitted that in the solution of such questions as had been raised the Houses of Parliament would be largely guided by the medical profession. In submitting the toast of "Our Guest," Mr. Ouston alluded to the excellent address that had been delivered in the afternoon, and of the unanimity of opinion in regard to the sanitation of the tropics. In replying, Major Ross expressed the hope that the Northern towns would give support to the campaign for tropical sanitation. Science showed how, by combating malaria, tropical countries might become more valuable to the British Empire. All that was at present asked for was that the Government and the British people should act upon the dictates of science. The toast of "The Colleges of Medicine and Science" was given by Mr. Crawford Smith, M.P., and responded to by Professor Sir G. H. Philipson and Principal Gurney. Dr. Hume, in felicitous terms, proposed "The Public Health Service," which was responded to by Dr. Alderson.

At the Clinical Society's banquet, Sir George H. Philipson, in responding to the toast of "The College of Medicine," announced that the sum of £6,000 which was left by the late Dr. Heath to build a residential hall, was, with the consent and authorization of His Majesty's judges, to be diverted to more practical purposes. A new wing was to be added to the College of Medicine, and would contain physiological and bacteriological laboratories, also club and smoking rooms for the students, as well as a gymnasium. The laboratories would be furnished with the newest equipments. Already some of the lecturers of the College had visited the laboratories of other schools. It was now ten years since Dr. Heath died, and the interest had been accumulating. With the total and with private donations it was safe to say that the structural additions would not be unworthy of the College of Medicine, and that everything will be done on the most modern lines.

The occasion of the retirement from general practice of Dr. Thomas Johnstone, of Ilkley, has been seized by his patients and friends as an opportunity for giving public expression to the esteem in which he is held and to the gratitude which it is felt is due to him for the years of skilled attention bestowed upon residents in the neighbourhood. The feeling in the matter took the form of a public dinner, at which many things pleasant to hear about a member of the profession were said, and which terminated by the presentation of a very handsome silver salver and rosebowl. The former bore the following inscription: "Presented to Thos. Johnstone, Esq., M.D.Edin., M.R.C.P.Lond., by grateful friends and patients, on his retirement after nearly thirty years of general practice at Ilkley. November 30th, 1903."

CORRESPONDENCE.

THE SENSIBILITY OF THE PERITONEUM AND ABDOMINAL ORGANS.

SIR,—I have been much interested in the above subject as probably some positive facts as to the sensibility of the peritoneum can be ascertained in the practice of abdominal surgery. In former times my own knowledge was mainly clinical; and I was then in the habit of teaching that in peritonitis there was acute pain or tenderness only in the case where the inflammation involved the abdominal walls, and that there was often no pain when the inflammation attacked the surface of the viscera; this being sometimes unmistakably proved by the patient walking about with this form of peritonitis a few hours before death.

I taught, also, the analogous doctrine in reference to the pleura: that when the lining membrane of the chest was involved there was pain, slight when the upper part was affected, but of the most severe character when the lower region in the angles of the ribs was involved. This was evidently due to the greater movement of the lower part, for a patient might often be seen placing a pillow under his side and lying upon it; and shown also by the fact of the mitigation of the pain by means of bandaging or strapping. On the other hand, when the whole lung has been found covered with lymph there have been no symptoms whatever of pain. So that in both cases of chest and abdomen the pain has been proportionate to the movement, but as this movement seems mainly in the thoracic and abdominal walls it might be suggested that the sensitive cutaneous nerves may be involved either actively or by sympathy. My teaching ended here, but it is evident that now great opportunities occur of testing these questions by modern surgery.—I am, etc.,

Hampstead, Dec. 7th. SAMUEL WILKS.

THE PRELIMINARY GENERAL EDUCATION OF MEDICAL STUDENTS.

SIR,—May I ask whether the Association is taking steps to lay its views on the preliminary general education of medical students before the Board of Education? If not, I think it is making a serious mistake. The Board of Education is now considering "whether it is desirable and feasible to institute for secondary schools in this country—excluding for the present Wales and Monmouth—a general system of having examinations of such a nature as to be acceptable in lieu of the preliminary examinations now required for admission to the various professional bodies." Such a consideration involves the discussion of the standard and scope of examinations for medical students, and the Association cannot after its late experience rely on representatives of the General Medical Council urging on the Consultative Committee of the Board of Education any adequate standard or scope. Therefore I think the Association will neglect a duty and stultify itself if it does not place before the Board of Education the conclusions which it arrived at so laboriously and urged so strongly eighteen months ago.

Let me briefly recall what has already taken place about these conclusions. On April 16th, 1902, the Council of the Association adopted four resolutions proposed by Dr. Deas of Exeter, namely:

1. That it is essential, in the interests both of the public and of the profession, that there should be an adequate guarantee that every registered medical practitioner has received a liberal education such as would entitle him to be regarded as a member of a learned profession.

2. That at present, with the existing requirements of the General Medical Council and with the variations in the scope and standard of the various preliminary examinations for medical students, there is no such adequate guarantee.

3. That the General Medical Council, by its action in 1898, recognized that the minimum standard of general education was too low, and expressed its desire that it should be raised considerably, mentioning a standard of requirement represented by the senior local examinations of the several universities.

4. That since the above date practically no progress has been made in the direction of adequately raising the standard of the examinations recognized by the General Medical Council.

These resolutions were laid before the General Medical Council on May 31st, 1902, by a deputation from the Association, which was received on behalf of the General Medical Council by its Education Committee.

On November 28th, 1902, the reply of the General Medical Council was sent to the Council of the Association. It was to this effect:

That no definite answer could be given on the subject of the age limit until the General Medical Council had certain data before it.

That it was inexpedient at present to further suddenly raise the standard of examination, because doing so might seriously deplete the profession.

The question of scope of examination was ignored.

That it was inexpedient at present to attempt to establish a single examination in lieu of the existing multitude of examinations because powerful opposition would be met with and because certain proposals were already being considered by the educational authorities.

Now more than a year has elapsed, and the reply as to the age limit has still not been given. That question may, therefore, fairly be regarded as shelved, since the General Medical Council has had more than ample time to look up the data respecting it; so that the whole reply amounts to a general *non possumus*. Let us see where this leaves us.

Apart from the existing multiplicity of examinations, an evil which the Board of Education recognizes and is trying to lessen, matters stand thus:

The General Medical Council has taken the retrograde step and the grave responsibility of approving of boys leaving school at 16, just when school discipline is most needed, and beginning a course of study for which they are unfit, and which, a little later on, is unfit for them, amidst the risks of a great town where no proper supervision is exercised over them.

The standard of general education required by the General Medical Council from these boys of 16 is one adapted to boys of 15.

The scope of examination required by the General Medical Council differs little from what is now expected from students of veterinary surgery and pharmaceutical chemistry. In justification of this amazing state of affairs the General Medical Council alleges the fear of unduly depleting the profession, although it is well known that the profession is now greatly overcrowded, and highly probable that many clever boys are deterred from entering the profession because of this overcrowding. In short, the General Medical Council's policy is to increase numbers at the expense of efficiency, a policy injurious to the public and to the profession, and only advantageous to the qualifying bodies.

With these facts before the Association its members can have no confidence that any adequate recommendations as to examination, standard, and scope for medical students will be laid before the Consultative Committee of the Board of Education by representatives of the General Medical Council, and it becomes, in my humble opinion, a matter of public duty for the Association to take steps forthwith to lay its own proposals before the Board of Education.—I am, etc.,

Exeter, Dec. 5th. W. GORDON.

THE GENERAL MEDICAL COUNCIL AND THE ENGLISH COLLEGES.

SIR,—I cannot for a moment believe that the profession will be satisfied that the dispute, contest, quarrel—call it what you will—which has been going on for ten years between the General Medical Council and the Conjoint Board of the two English Colleges, should be allowed to remain in the unsettled condition in which it was left at the end of the last session of the General Medical Council.

The facts of the case are but little known to the profession generally, but it appears from a report of the Education Committee of the General Medical Council, that the Conjoint Board of the English Colleges have now for some years been opening a number of little backdoors of entrance to the profession, consisting of Board Schools, grammar schools, technical schools, and such-like places, sixty-two of which are not approved by the Council, in which the Conjoint Board have allowed from six months to a year to be spent as a part or whole of the first year of medical study. When the General Medical Council objected to this, its authority to interfere was questioned by the two Colleges, and these, standing upon their supposed legal rights, refused even to appoint delegates to discuss the matter with delegates from the Council. One of the results of this defiance of the Council by two of the most powerful corporations has been to incite an insignificant and obscure body, the Apothecaries' Hall of Dublin, to imitate the rebellious or contumacious conduct of the English Colleges, and start afresh, in opposition to the wishes of the Council, a preliminary examination which it had abandoned years ago.

It will be at once seen that the question of the Council's authority having been raised, it was desirable to get an authoritative pronouncement on the subject, and this would have been the result, so far as can be seen, of carrying Sir Victor Horsley's motion; but the Council, though it had

apparently committed itself to the policy of reporting the Colleges to the Privy Council at its July session, and had authorized its President to write to them about the insufficiency of their courses of education and examinations merely as a preliminary to such reporting, funked at the last moment, and so placed itself in the ridiculous position of having declared to the Colleges that certain of their examinations and courses of study are insufficient and require immediate steps to be taken to remedy their defects, and then being afraid to represent this state of things to the Privy Council.

I do not doubt that Sir Victor Horsley's action will commend itself to the profession in England and Wales whom he so ably represents, and I should be glad to see a resolution passed in every English and Welsh Division of our Association approving of his conduct; while I must add that I very much regret he was not better supported by the other direct representatives, one of whom is reported to have suggested that he should withdraw his resolution! "Call you this backing of your friends? A plague upon such backing!"—I am, etc.,

London, S.E., Dec. 5th. H. Nelson Hardy.

THE NOMENCLATURE OF TRYPANOSOMES.

Sir,—At a time when our knowledge of trypanosomes is extending rapidly and when within a brief space of time several new species have already been discovered it seems opportune to call attention to the law which governs the naming of a genus and its species, a law accepted without any reservations by all scientific men.

Briefly it is the "law of priority," which establishes once and for all the generic and specific names. Thus if an observer describing an organism for the first time does so in such a way as to make his description recognizable to subsequent observers, and if he at the same time proposes to call the organism *A* — *a* — then that name holds good absolutely and immutably always, and it is not possible for a subsequent observer to call it *A* — *b* —; and even if it were shown later that the organism does not belong to the genus *A*, but to the genus *B*; *a* — (the specific name) still holds good as *B* — *a* —. I desire to point out how in the naming of trypanosomes this law has lately been broken.

Leaving totally aside any question of priority of discovery, for it has not the least bearing on this matter, it was Dutton who first described a trypanosome in man and also proposed for it the name *Trypanosoma gambiense*. If Dutton had not taken the remotest part in the discovery, this name absolutely has priority and consequently *T. hominis* (Manson) and *T. nepveu* (Sambon) must disappear.

Similarly Castellani describing the trypanosome at present associated with sleeping sickness proposed for it the name *T. ugandense* and hence *T. castellanii* (Kruse) subsequently proposed is quite unjustifiable. Should eventually *T. ugandense* (Castellani) be shown to be the same as *T. gambiense* (Dutton) the former must also disappear. *T. gambiense* (Dutton) must therefore remain as the specific name for the trypanosome of human trypanosomiasis, and *T. ugandense* (Castellani) for the present at any rate of that associated with sleeping sickness.—I am, etc.,

J. W. W. Stephens, M.D.Cantab.,
December 2nd. Lecturer on Tropical Medicine, Liverpool University.

THE HISTORY OF THE ASSOCIATION OF TRYPANOSOMA WITH SLEEPING SICKNESS.

Sir,—In the report of the Second Commission on Sleeping Sickness, recently published by the Royal Society, there are a few points in relation to the history of my researches into the etiology of the disease to which I must take exception. This is specially necessary as the matter has also been lately discussed in the lay press. The exact history of the discovery of trypanosomes in sleeping sickness is as follows:

On November 12th, 1902, while examining a specimen of cerebro-spinal fluid taken by lumbar puncture during life from a well-marked case of sleeping sickness, I was surprised to observe a living trypanosome. This naturally aroused my curiosity, but I thought—and I suppose many at that time would have been of the same opinion—that it was simply a case of sleeping sickness complicated with trypanosomiasis. At that time I was attaching great importance in the etiology of the disease to a streptococcus which bacteriological examination had shown to me at the necropsy of about 80 per cent. of the cases. I noted the fact, however, and continued to examine for trypanosomes at every convenient opportunity the cerebro-spinal fluid of other cases. By the beginning of March, 1903, I had examined for trypanosomes 15 cases, and had found the parasite in the cerebro-spinal fluid of 5. In 1 case I had found the parasite also in the blood. This was the state of my investigation as regards the trypanosomes in sleeping sickness when the second Commission arrived (March 16th, 1903).

A few days after their arrival I acquainted Colonel Bruce with my observations as regards the presence of trypanosomes in sleeping sickness, but under these conditions:

1. That I should remain a few weeks more in Uganda to continue my experiments in this line of work.

2. That my work till my departure from Uganda should be independent and my own.

3. That at the end of my stay in Uganda I should write a note, and this note should bear my name only.

If the suspicion of a possible relation between trypanosome and sleeping sickness had never occurred to my mind, and if I had thought that the presence of the trypanosome in sleeping sickness had only the same importance as the presence of F. perstans, why should I have made these conditions?

Colonel Bruce was much interested in my observations, but he is too scientific a man to have stated at once that the trypanosome is the cause of the disease, as some writers in the lay press would almost appear to make one believe. He said, of course, that at the time it was impossible to come to any conclusion, and, as the Uganda natives are full of parasites, the trypanosome might very possibly turn out to be a simple concomitant parasite like F. perstans.

Work was started, and I demonstrated to Colonel Bruce the technique I employed for showing the parasite. On April 5th I brought to Colonel Bruce a rough draft of my note. He very kindly corrected the English of it. He advised me not to come to any conclusions as regards the etiological significance of the trypanosome. On April 6th, 1903, I left Uganda. On May 3rd, on my way to England, I stopped in Bonn, and acquainted Professor Kruse of my results and conclusions.[1] The same day he communicated my results to Professor Finkler and others. A few days later he communicated my results to a meeting of a medical society at Bonn. As regards my original note, it was published in the *Proceedings* of the Royal Society, vol. lxxi, 1903, p. 501.

Now a few words on the part that Dr. Baker and Dr. Moffat played in my researches. Dr. Baker lent me 3 cases of trypanosoma fever as controls. This has been amply acknowledged in my report. As regards Dr. Moffat, his services were invaluable in facilitating my researches, but I am sure he would never claim to have actually taken part in the investigations relating to the presence of the trypanosome in sleeping sickness. Dr. Baker and Dr. Moffat are both such good scientific workers that there is really no reason to give them the credit for researches not done by them.

As regards any experiments done by Mrs. Bruce and Colonel Bruce, I may remind the reader that the condition under which I acquainted Colonel Bruce with my discovery was that our work should be independent, and that my note should bear my name only. Besides which, Colonel Bruce saw my report before I left Uganda, and made no objection whatever to it, but, as stated, he only advised me not to come to any conclusion as regards the etiology of the disease. To sum up:

1. I found trypanosomes in sleeping-sickness patients as far back as 1902.

2. In March, 1903, I acquainted the leader of the second Commission with my observation, and I demonstrated to him the technique I employed to find the parasite.

3. During my stay in Uganda I examined for trypanosomes altogether 34 cases of sleeping sickness, with the result that 20 were found to contain trypanosomes.

4. Not only have I been the first to find the trypanosome in sleeping sickness, but I have also been the first to state and publish that the disease is probably a trypanosoma infection.—I am, etc.,

London, Dec. 4th. Aldo. Castellani.

[1] The mention of this date clearly shows that I could not have heard of the researches accomplished by the second Commission after my departure from Uganda, which were in favour of the trypanosome theory.

THE CASE OF TRYPANOSOMIASIS AND SLEEPING SICKNESS.

Sir,—I have read with much interest the note of Sir Patrick Manson on this important case detailing the history and termination of the illness. I venture to remind Sir Patrick Manson of one or two details of the case that have escaped his memory and led him into one or two inaccuracies.

Mrs. S. was sent to me by the Baptist Missionary Society in February, 1902, and I was told she was suffering from malaria. When I first saw the patient I found that she was subject to irregular attacks of fever, frequently of a remittent type, with evening exacerbations of temperature. These attacks alternated with periods during which there was very little fever. I have nothing to add to the early history of the case, which coincides with the account given to me. I found an enlarged spleen, and there was very considerable anaemia. I examined the blood on five different occasions, and could

discover no trace of any malarial organism. I found a moderate leucocytosis and a slight increase of eosinophile leucocytes.

Later a severe attack of thrombosis of the veins of the left leg and thigh occurred, and I sent the patient to her home with a letter to her doctor advising as to treatment. This attack subsided, but the febrile condition increased, and the spleen became more enlarged and acutely tender, and this at a time when treatment by quinine and arsenic was pressed to the utmost limits. Indeed I pressed these drugs until toxic effects were produced and without the smallest influence on the disease. I then recognized that though the complaint in some respects simulated malaria, I had to deal with an altogether anomalous case. I asked permision of my society to call in further opinion, and with their consent I took the case to Sir P. Manson, explaining to him my difficulties.

Sir Patrick Manson did not make any diagnosis on this occasion. He was much puzzled by the case and could give me no immediate help. He kindly offered to take the case into a private ward in the hospital. In fourteen days, after daily examination of blood, a trypanosome was discovered, and I was then informed of the fact. Sir Patrick Manson will, I am sure, allow me to correct his memory on this point when he states in his note that he diagnosed the case on the first visit. He had previously seen the first and only case of trypanosomiasis that had occurred in a human being some time previously in Liverpool, and I have no doubt that this was present in his mind when he promised to investigate the case, but he made no diagnosis at the time of my consultation with him. I never saw the case again, though I should have been glad to do so. My object in writing to you is to say that the case would never have seen the light if I had not recognized that it was one of great anomaly and obscurity. I had no idea of the nature of the case, as my own examination of the blood revealed nothing.

All credit is due to Sir P. Manson for his acumen in recognizing the nature of the case at the earliest possible moment. The importance of this case is very great, because it is the second case described of a general disease caused by the presence of a trypanosome in the blood, partaking of some of the characteristics of the disease of lower animals known as "surra" in India and "nagana" in West Africa, and recognized as due to an organism in the blood known as a trypanosome. The termination of this disease in symptoms similar to those of sleeping sickness, together with the results of the necropsy, altogether confirm the views recently expressed that the presence of a trypanosome in the cerebro-spinal fluid in many cases of sleeping sickness is the cause of this terrible disease. This case seems to afford an almost decisive proof of the correctness of these observations.—I am, etc.,

London, W., Dec. 7th. S. H. HABERSHON.

BOARDS OF GUARDIANS AND MIDWIFERY FEES.

SIR,—In reference to the annotation "Boards of Guardians and Midwifery Fees," which appeared in the BRITISH MEDICAL JOURNAL of December 5th, might I be permitted to say a few words?

At the last meeting of our Council this question came under consideration. From information received from various parts of the country we have reason to believe that Poor-law medical officers pretty generally would be willing to give up extra fees for difficult cases, provided that a uniform fee of one guinea were paid by Boards of Guardians for all midwifery cases, normal and abnormal alike.

Such a reform, in our opinion, would be conducive to a better understanding between the guardians throughout the country and their medical officers, and would do away with much of the friction that at present exists in many districts.

I have quite recently forwarded to the Local Government Board a resolution embodying our views on this subject.—I am, etc.,

MAJOR GREENWOOD,
Honorary Secretary, Poor-Law Medical Officers' Association of England and Wales.

London, E.C., Dec. 5th.

MIDWIVES ACT OF 1902: WHO WILL PAY THE MEDICAL FEES?

SIR,—I desire to call attention to the position of medical practitioners who will be called upon to render assistance to the midwives certified under the Midwives Act of 1902. In all parts of the country these women are commencing practice, and they are bound to attend only cases of normal labour, and on the occurrence of any symptoms of disorder or irregularity in either the mother or the child they are compelled to send for professional assistance.

On December 8th the local supervising authority appointed by the borough council of Portsmouth kindly received a deputation from the Portsmouth Medical Union, and undertook at once to give the question of medical expenses prompt and careful attention. On receiving the reply from the borough council the Union will call a special meeting of the profession in this locality.

Now, the purport of my letter is to ask for information respecting the payment of fees in other parts of the country, and I shall be glad to know of any arrangements which have been made between the profession and local supervising authorities.

There is no provision in the Act for the payment of medical practitioners, notwithstanding the fact that the successful operation of this piece of legislation wholly depends on the co-operation of the medical profession.—I am, etc.

Portsmouth, Dec. 7th. JOHN WARD COUSINS.

QUIESCENT TUBERCULOUS TUMOURS.

SIR,—Dr. Trevelyan, in the Bradshaw Lecture which is published in the BRITISH MEDICAL JOURNAL of November 7th, refers to the few published cases of quiescent or healed tuberculous tumours. In December, 1901, a case of the kind occurred in the *post-mortem* room of the Bristol Royal Infirmary, and the specimen is now in our museum. A calcareous mass the size of a large Barcelona nut is situated on the margin of the superior longitudinal fissure, in the right occipital lobe, at its junction with the parietal lobe. It was removed from a woman aged 43 years. There was old tuberculous disease, and a large calcareous mass at the apex of the right lung. No evidence of syphilis could be discovered. She had four living and healthy children, two had died in infancy, and there had been one miscarriage. I wrote to the husband with the view of obtaining a history of symptoms that might point to the tumour having made its presence felt when growing. He replied that thirteen years before his wife had complained of pains in the head, which lasted for some weeks. The fact that he should have remembered headache which had been present thirteen years before seems to suggest that the pain was of unusually severe character, and that it was probably due to the presence of the tuberculous tumour.—I am, etc.,

Clifton, Bristol, Dec. 7th. THEODORE FISHER.

HYPERPYREXIA IN MEASLES.

SIR,—In the issue of the BRITISH MEDICAL JOURNAL of December 5th Dr. Barnes narrates four cases of measles with hyperpyrexia, and also states on the authority of Dr. Reynolds that hyperpyrexia in measles is unknown. I should like to draw Dr. Barnes's notice to the following:

1. *Nothnagel's Encyclopaedia*, article Measles, English translation, p. 278: The temperature frequently approaches, or even slightly exceeds, 105.8° F.

2. In the same article, pp. 261-4, two cases ending in death with temperatures of 106° and 106.2°. In the first case the author states that "the insignificance of the organic lesions, as shown by the autopsy, proves the cause of death to have been systemic poisoning," and in the second the chief cause of death "is rather to be sought in the general systemic effects of the poison."

3. A case of measles narrated by Dr. Hunter in the BRITISH MEDICAL JOURNAL of April 30th, 1898: Extreme congestion of lungs, temperature 110° F., recovery.

—I am, etc.,

Sheffield, Dec. 7th. F. R. B. ATKINSON, M.D.

A PRACTICAL ANTICIPATION OF THE MODERN PROPHYLAXIS OF MALARIA.

SIR,—The letter in the BRITISH MEDICAL JOURNAL of December 5th headed "A Practical Anticipation of the Modern Prophylaxis of Malaria" prompts me to send you the following extracts from a book called *Thirteen Years among the Wild Beasts of India*, published in 1878. The writer was Mr. G. P. Sanderson, who for years superintended the Government elephant-catching establishment in Mysore. On p. 140 he says:

I believe that with a small fire kept up, in, or near the tent all night, and, of course, mosquito curtains, and a cot at least 3 ft. from the ground, a person may sleep in the most malarious swamps or jungles with safety.

Again, on p. 162, in describing the midnight visit of a rogue elephant to his tent in the Chittagong Hills, he says:

I thought of the rogue instantly, and was out of bed in a twinkling, not even waiting to untuck the mosquito netting which I always use as a precaution against malaria as much as against troublesome insects.
—I am, etc.,

London, W.C., Dec. 5th. WILLIAM P. S. BRANSON.

TEACHING OF HYGIENE IN SCHOOLS.

SIR,—In an editorial on the Organization of the Medical Inspection of Schools in the BRITISH MEDICAL JOURNAL of November 14th, the importance of teaching the laws of health in elementary schools and the necessity of training teachers in hygiene is mentioned.

It is certainly essential to spread a knowledge of the principles of health, not only among them, but also amongst the general public. Until this is done thoroughly the old ideas will continue, and rooms will be kept badly ventilated for fear of "causing a draught." It will only be by educating the masses up to the proper standard that antivaccinators and agitators against the isolation of infectious cases will "cease from troubling." Hygiene must be made a compulsory subject in all schools, as it is a matter concerning all classes of the community. Time lost in cramming unnecessary dates, and in committing to memory various conjugations in a dead language, would be far better spent in learning facts that are applicable to the daily life of every single individual.

Medical men specially trained in public health should be appointed inspectors of schools and lecturers on hygiene throughout the country. Their duties ought to be quite apart from those of medical officers of health. To the latter should be entrusted the superintendence of vaccination in their respective areas. That this will be so is inevitable. Why educational authorities as a body are averse to making hygiene a compulsory subject is a curious problem. *Quis custodiet ipsos custodes?*

The London School Board is an exception to a great extent; as, although not compulsory, health lectures are given by teachers who have passed an elementary examination in that branch. About eighteen months ago, at an annual meeting in connexion with the Evening Continuation Schools, I drew the attention of the Committee to the greater importance of lectures on hygiene for adults in contrast to those on first aid and home nursing. The latter subjects had been taught for several years in a manner similar to that followed by the St. John Ambulance Association; hygiene, never. The suggestion was favourably considered by the authorities, and owing, I believe, to the great interest taken in the matter by the Chairman of the Committee and the amount of energy and enthusiasm displayed by the superintendent of the ambulance and nursing classes, Dr. Collie, a complete course of lectures has been initiated, with suitable diagrams and experiments for illustrating, simply and popularly, all essential points.

The lecturers are specially qualified medical men accustomed to address audiences, and I believe the results are most satisfactory even at this early stage.

This method needs to be developed all over the country.—I am, etc.,

HERBERT W. G. MACLEOD.
London, S.W., Nov. 24th. M.D.Edin., D.P.H.Camb. and Lond.

OBITUARY.

DONALD J. A. McLEOD, L.R.C.S.EDIN.,

Some time President of the Hawick Border Counties Branch.

WE regret to announce the death of Dr. McLeod, of Hawick—the oldest practitioner on the Scottish Borders—which occurred on December 5th, after a long and painful illness. Dr. McLeod was licensed in 1849, and immediately came to the district where he was to spend the rest of his life. The occasion of his coming was to assist in an epidemic of cholera which had broken out in Teviotdale. He shortly after this succeeded to the practice of Dr. Wangler, and this he successfully conducted until he was laid aside by his fatal illness.

He took an interest in the work of the Association, and was at one time President of the Border Counties Branch.

He had the unusual privilege of holding nearly every public appointment in the town, with great satisfaction to the community.

Abrupt and at times even disconcerting in his manner, he was always ready to give his help and advice. He had a keen and ever-ready sense of humour, and was thus a general favourite alike with the profession and the public.

At his jubilee he was presented with a handsome cheque, subscribed amongst patients and friends, and by the local members of the profession with a beautiful drawing-room clock and ornaments. He was in his 77th year. He leaves a widow, one son, and one daughter.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

INDIAN MEDICAL SERVICE.

REVISED RULES.

THE following appeared in the *Gazette* of December 4th:

EDWARD, R. and I.

Whereas We deem it expedient to revise the rules for the promotion and precedence of Our Indian Medical Service:

Our Will and Pleasure is that the Warrants of Our late Royal Mother of 7th December, 1891, 21st October, 1895, and so much of the Warrant of 10th August, 1898, as applies to Our Indian Medical Service be cancelled, and that from and after this date the following rules shall be established, and that by these rules Our Viceroy and Governor-General in Council shall be governed.

1. The substantive ranks of Medical Officers in Our Indian Military Forces shall be as follows: Surgeon-General (ranking as Major-General), Colonel, Lieutenant-Colonel, Major, Captain, Lieutenant.

2. Except as otherwise herein provided, a Lieutenant shall be promoted to the rank of Captain on completing three years' full-pay service.

3. Except as otherwise herein provided, a Captain shall be promoted to the rank of Major on completing twelve years' full-pay service.

4. Except as otherwise herein provided, a Major shall be promoted to the rank of Lieutenant-Colonel on completing twenty years' full-pay service.

5. Time on half-pay, not exceeding one year, shall be allowed to reckon as service for promotion under Articles 2, 3, and 4, where removal to half pay has been the consequences of ill-health caused by Military Service.

6. A Captain, after at least six years' service, a Major or a Lieutenant-Colonel, may be promoted to the next higher rank by brevet for distinguished service in the field or for distinguished service of an exceptional nature other than in the field.

7. A certain number of Lieutenant-Colonels may be specially selected for increased pay for ability and merit.

8. Promotion from the rank of Lieutenant-Colonel with increased pay to that of Colonel, and from the rank of Colonel to that of Surgeon-General, shall be given by selection for ability and merit, and the grounds of such selection shall be stated to Us in writing and recorded in the Office of our Secretary of State for India.

9. A Lieutenant-Colonel may also be promoted to the rank of Colonel and a Colonel to the rank of Surgeon-General for distinguished service in the field. In any such case the Officer shall remain supernumerary in the higher rank until the vacancy to which in the ordinary course he would have been promoted, or in the case of an Officer promoted to the rank of Colonel until selection for the rank of Surgeon-General.

10. On appointment as Our Honorary Physician or Surgeon under Article 13 an Officer below the rank of Colonel shall be promoted to that rank, remaining supernumerary of his rank until he would have attained the rank of Colonel in ordinary course.

11. Exchanges between Officers of Our Indian Medical Service and Officers of our Royal Army Medical Corps, below the rank of Major, and transfers of such Officers from either of the above Services to the other, shall be permitted subject to the approval of Our Secretary of State for War and of Our Secretary of State for India in Council and on the following conditions;

1. That the Officers shall have less than seven years' service.
2. That the senior Officer exchanging shall take the place of the junior on the Departmental List, and shall not be promoted under Article 3, 4, or 5, until the Officer next above him shall have been so promoted.
3. That the junior Officer exchanging shall be placed for seniority next below all Medical Officers whose commissions have the same date as his own.
4. That the Officer transferred shall be placed for seniority below all Medical Officers holding the same rank at the time of his transfer, and shall not be promoted under Article 3, 4, or 5 until the Officer next above him shall have been promoted.

12. With a view to maintain the efficiency of the Service Medical Officers shall be placed on the Retired List when they attain the following ages:

Surgeon-General	60
Colonel	
Lieutenant-Colonel	55
Major	

But a Lieutenant-Colonel, who has been specially selected for increased pay, if he attains the age of 55 years before he becomes entitled to the pension for thirty years' service, may be retained until completion of such service; and in any special case where it would appear to be for the good of Our Service that an Officer should be continued in employment, he may be so continued, subject in each case to the sanction of Our Secretary of State for India in Council.

13. An Officer appointed on and after the 11th September, 1890, who may retire on pension before completing thirty years' service, shall be liable, till he completes 55 years of age, to be recalled to duty in case of emergency.

14. Six of the most meritorious Medical Officers of the Service shall be named Our Honorary Physicians and six Our Honorary Surgeons.

Given at Our Court at Sandringham, this twenty-eighth November, one thousand nine hundred and three, in the third year of Our Reign.

By His Majesty's Command.
ST. JOHN BRODRICK.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

WILLIAM BRYCE, M.D., to be Lieutenant in the Glasgow Companies, November 14th.

ROYAL NAVY MEDICAL SERVICE.

INSPECTOR-GENERAL E. E. MAHON has been placed on the retired list at his own request, December 5th. His commissions and war services are fully recorded in the BRITISH MEDICAL JOURNAL of November 21st.

Inspector-General THOMAS BOLSTER has also been placed on the retired list from December 5th. His commissions are thus dated: Surgeon, May 10th, 1867; Staff Surgeon, December 7th, 1875; Fleet Surgeon, March 8th, 1887; Deputy Inspector General, September 2nd, 1896; and Inspector-General, May 20th, 1901.

Deputy Inspector General J. C. B. MACLEAN, M.B., M.A., has been promoted to be Inspector-General, December 5th. He was appointed Surgeon, March 30th, 1872; Staff Surgeon, July 18th, 1882; Fleet Surgeon, December 23rd, 1890; and Deputy Inspector-General, April 5th, 1898. He was Surgeon of the *Alexander* at the bombardment of the Alexandrian forts in 1882 (promoted to be Staff Surgeon), and during the subsequent war in Egypt (medal with clasp, and Khedive's bronze star).

The following appointments have been made at the Admiralty: CYRIL J. MANSFIELD, M.D., Fleet Surgeon, to the *Grafton*, December 3rd; GEORGE T. BISHOP, Staff Surgeon, to the *Briton*, December 3rd; HENRY C. ADAMS, Surgeon, to Haslar Hospital, December 3rd; CHARLES W. BUCHANAN-HAMILTON, Fleet Surgeon, to the *Glory*, on recommissioning, undated; CHARLES E. GEOGHEGAN, Fleet Surgeon, and HAROLD HUSKINSON, M.B., and JAMES G. WALLIS, M.B., Surgeons, to the *King Alfred*, for the voyage home, undated; GEORGE WILSON, M.B., to the *King Alfred*, on commissioning, December 22nd, and to the *Leviathan*, undated; STANDISH T. O'GRADY, Fleet Surgeon, to the *Impregnable*, December 4th; ALEXANDER G. ANDREWS, Fleet Surgeon, to Yarmouth Hospital, December 4th; CHARLES W. SHARPLES, Fleet Surgeon, to the *St. Vincent* December 4th; JAMES O'B. WILLIAMS, M.A., Fleet Surgeon, and JOHN E. H. PHILLIPS and NORMAN H. MUMMERY, Surgeons, to the *Eurydice*, January 5th; JOHN DUDLEY, M.B., Fleet Surgeon, to the Royal Marines, Plymouth, January 5th; JOHN W. BIRD, Surgeon, to the *Excellent*, December 4th; JOHN WHELAN, Surgeon, to the *Lion*, December 4th; JOHN MARTIN and ROBERT MACMAHON, Surgeons, to the *King Alfred*, December 22nd, and to the *Glory*, on recommissioning, undated; AUGUSTUS J. LAURIE, Surgeon, to the *Cambridge*, undated; JOHN THORNHILL, M.B., Surgeon, to the *Kinsha*, on recommissioning; FRANCIS BOLSTER, M.B., B.A., to Chatham Hospital, January 5th; FRANK E. BOLTON, Surgeon, to the *Resolution*, January 5th.

ROYAL ARMY MEDICAL CORPS.

THE undermentioned Lieutenants, whose first commissions date from November 29th, 1900, are promoted to be Captains, November 29th, 1903: H. J. MCGRIGOR, M.B., W. R. P. GOODWIN, J. H. BRUNSKILL, M.B., A. C. DUFFEY, M.D., A. W. GIBSON, C. D. MYLES, M.B., R. N. HUNT, M.B., H. E. J. A. HOWLEY, R. F. M. FAWCETT, W. L. STEELE, H. A. DAVIDSON, M.B., J. W. WEST, M.B., W. RIACH, M.D., H. R. BATEMAN, H. G. PINCHES, T. WHITE, J. C. KENNEDY, M.B., A. R. C. PARSONS, J. B. CAUTLEY, W. M. B. SPARKES, S. B. SMITH, M.D., E. W. POWELL, J. L. JONES.

Lieutenant E. S. WORTHINGTON is also promoted to be Captain from November 30th, his first appointment being dated November 30th, 1900.

The name of Lieutenant JOSEPH EDWARD HENRY GATI, M.D., is as now described, and not as stated in the *Gazette* of February 3rd, 1903.

Colonel W. L. CHESTER, M.B., who has been serving in the Bengal Command, is appointed Principal Medical Officer, Peshawur District.

Major LANGTON PHILIP MUMBY died at Gosport on December 1st, aged 42. He was appointed Surgeon-Captain, January 30th, 1885; Surgeon-Major, January 30th, 1893; and was placed on half-pay, March 15th, 1901. He served with the Tochi Field Force in the campaign on the North-West Frontier of India in 1897, and was mentioned in dispatches.

EXCHANGES.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 3s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

A MAJOR R.A.M.C., expecting to proceed abroad early in September, wishes to exchange on even terms with an officer proceeding to India this trooping season. Bombay excluded.—Address, "3016," care of Messrs Holt and Co., 3, Whitehall Place, London.

A LIEUTENANT-COLONEL R.A.M.C., arrived home last March, is anxious to exchange at once to India for whole or part tour.—Apply S. W. L., care of Messrs. Holt and Co., 3, Whitehall Place, S.W.

INDIAN MEDICAL SERVICE.

SURGEON-GENERAL GEORGE STEWART WATSON OGG, M.B., late of the Madras Establishment, died at Bath very suddenly of angina pectoris on November 15th. He was appointed Assistant Surgeon, September 12th, 1854, and became Surgeon-General, August 5th, 1884.

IMPERIAL YEOMANRY.

SURGEON-LIEUTENANT J. R. KENNEDY, M.B., Lovat's Scouts, resigns his commission, November 14th.

The appointment of D. M. MACDONALD, M.B., to be Surgeon-Lieutenant in the Scottish Horse, which was announced in the *London Gazette* of October 23rd, is cancelled.

Surgeon-Lieutenant D. M. MACDONALD, M.B., from the 5th (Perthshire Highland) Volunteer Battalion the Black Watch (Royal Highlanders) to be Surgeon-Lieutenant in the Scottish Horse, October 24th.

ROYAL ENGINEERS (VOLUNTEERS).

SURGEON-CAPTAIN J. FULLER, 1st Devonshire and Somersetshire, to be Surgeon-Major, November 14th.

Surgeon-Lieutenant E. H. MONK, 2nd Lancashire (the Fusiliers), to be Surgeon-Captain, November 14th.

FURTHER HONOURS FOR THE SOUTH AFRICAN WAR.

THE *London Gazette* of December 4th contains an addendum to the dispatch from Lord Roberts dated April 2nd, 1901, giving a list of names which should have been included amongst those brought to notice "for meritorious services performed." The only medical officer cited is Lieutenant HORNABROOK Medical Officer 2nd Mounted Rifles.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

Histology.—The University Lectureship in Histology, vacant by the resignation of Professor Langley, will be filled up next term. The stipend is £50 a year.

Examiners.—Dr. W. L. Dickinson, Dr. H. D. Rolleston, and Dr. T. H. Kellock have, on account of the large number of candidates, been appointed additional Examiners for the Third M.B. Examination.

Degree.—On December 5th Mr. J. M. Martin, Peterhouse, was admitted to the degree of Doctor of Medicine.

UNIVERSITY OF GLASGOW.

Death of the Chancellor.

THE Venerable Chancellor of the University of Glasgow, the Right Hon. the Earl of Stair, K.T., died at the advanced age of 84 on December 3rd. He had held the office of Chancellor for nineteen years, and took a warm interest in the affairs of the University. The funeral took place on December 7th, and was of quite a private character, though the University was represented by the Principal and several of the professors. Out of respect to the deceased Earl none of the College classes met on the day of the funeral. Already the name of Lord Kelvin has been mentioned as a likely successor.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

DR. MICHAEL MCHUGH, Physician to St. Vincent's Hospital, Dublin, has been elected Professor of Materia Medica to the College.

MEDICO-LEGAL AND MEDICO-ETHICAL.

FEES FROM HOSPITAL PATIENTS.

SCOTUS writes: With reference to the paragraph by "Refero Relata" in the Medico-Ethical column of the BRITISH MEDICAL JOURNAL of November 28th, I am in a position to state that the custom of which he speaks does obtain. In the small provincial town in which I reside there is a small hospital supported almost entirely by a gentleman in the neighbourhood, who is also practically the hospital Board in himself. All the doctors in the town are on the honorary staff; each one admits and treats his own patients, and makes a charge or not as he pleases. And why not? Why should a person quite able to pay medical fees become a charity patient the moment he enters the hospital gates? The amount of hospital abuse in large towns is disgraceful. Surely it is meritorious rather than otherwise to try and check indiscriminate charity, which is possible in a district like this where the circumstances of each patient are well known.

*** Our answer to "Refero Relata" was based upon the assumption that he was writing about hospitals in which the payment of fees by patients formed no part of their recognized rules. Where all the medical men in the town are upon the staff of the hospital and a system of payment is recognized no one would have cause to complain that he was at a disadvantage.

MEDICAL ETHICS.

BENT desires to call attention to the following practices which he alleges are followed by certain medical men in his districts, and asks what steps he can take: (1) Keeping an unqualified assistant; (2) calling at houses (not patients, and unsolicited) asking, "May I vaccinate your child?"; (3) having numerous houses of call in different districts, and paying commission to the tenants of the houses for each patient brought in.

*** We would recommend our correspondent to bring the facts to the notice of the Division of the British Medical Association for the locality in which he resides.

CORONER VIEWING THE BODY.

PRIMUS inquires whether it is the duty of the coroner to view the body prior to the inquest?

*** It is a duty imposed on the coroner by statute law (see Coroners Act, 1887, Section IV (1)) to view the body previous to the inquest, but not necessarily at the same time as the jury. We are of opinion that this duty is rarely omitted, but cases have occurred when the death has been suspected to have arisen from some contagious disease, in which this obligation has been dispensed with. Every inquisition is taken "on view of the body," and the omission to do so might invalidate the inquest, especially if criminal proceedings followed.

FEES FOR SPECIAL SERVICES.

N. M. C. writes that he has agreed to attend a family, charging at the rate of 10s. 6d. a visit. Recently he has been in attendance for a miscarriage, in the course of which it has been necessary to dilate the cervix and remove the ovum. He wishes to know: (1) Whether he is entitled to charge extra for the operation; (2) whether the fee of 10s. 6d. ought to be paid for visits made to servants; (3) where there have been night visits, and it has been necessary to hire a conveyance, whether there ought to be an extra charge; (4) which is the best textbook on medical jurisprudence with special reference to the laws of Scotland; (5) which is the best textbook on gynaecology?

*** (1) If there have been a good many visits, it would be wise not to charge extra for the operation unless it involved special trouble and expense—for example, the services of an anaesthetist; (2) it is usual to charge somewhat less for visits made to servants than to members of the family, but the custom is not invariable, and depends on circumstances; (3) extra might reasonably be charged for night visits, and the expense of hire ought to be defrayed by the patient; (4) Dr. Dixon

Mann's book on this subject is to be recommended. In the article "Medical Jurisprudence," in the *Encyclopaedia Medica*, the laws of Scotland are partially dealt with; (5) Dr. Herman's book on this subject is very useful.

UNCERTIFIED DEATHS.

THEDWASTRE informs us that he was called to see a child a fortnight old and found it dead. From the appearance of the body and history of the case he strongly suspected that the child had died from suffocation, and accordingly refused to certify, giving directions for the coroner to be communicated with. This was done, but no inquest was held, the cause of death being entered by the local registrar as "unknown." A second case recently occurred in the same parish, the deceased, a woman, who had been ill for some days, dying without medical attendance. The coroner declined to hold an inquest, and as no medical certificate was forthcoming the registrar entered the cause of death as "unknown."

ALPHA reports a case respecting the death of a child which expired a short time after it was brought to his surgery in a dying condition. The coroner was informed, but decided not to hold an inquest, and gave an order to that effect to be delivered to the registrar. This was brought to "Alpha" by the father of the child, and afterwards taken to the registrar with a letter from our correspondent, stating that the child died from bronchitis, but that he refused to certify, because the child had been neglected and no medical man had previously attended it.

*** The above cases will be registered as "uncertified deaths," and add to the large number annually reported by the Registrar-General. In the first two cases the cause of death was unknown, and in the third neglect was suspected. We are of opinion that the coroner would have been justified in holding an inquest in each case, and in ascertaining the true cause of death and the attending circumstances. We do not hesitate to say that had the deaths occurred in the metropolis inquests would have been held; the deaths would have been registered as "certified," instead of adding to the number of "uncertified" ones. We are further of opinion that in each case the practitioner called in acted rightly in withholding the certificate of the cause of death, for unless he has been enabled to diagnose the case, or if neglect is suspected, he can legally refuse to issue his certificate, which otherwise he is called upon by law to give.

THE L.S.A.

HONESTY asks: Can a medical man who has the L.S.A. and also M.D.(Brussels) put upon his plate "J. Thomas Brown, M.D., Physician and Surgeon?"

*** In our opinion, he is entitled to do so, although it might be better to add the source of the degree.

PROFESSIONAL COMPETITION.

JUSTICE.—We cannot enter into the questions raised by our correspondent, which are of the nature of personal charges against a brother practitioner, and should be laid before the local Division of the British Medical Association, which can hear both sides of the question.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

DEATH CERTIFICATION.

DR. JAMES PEACOCK, Honorary Secretary of the Leicester Medical Union, has forwarded to us the following copy of suggestions for the reform of the present system of death certification which have been adopted by the Council of that Union:

Suggestions of Leicester Medical Union for an Act of Parliament to Extend and Amend the Law regulating the Registration of Births and Deaths.

DEATH CERTIFICATION.

1. No Burial shall take place until the fact and cause of death have been certified by a Registered Medical Practitioner.

2. The practitioner in attendance, when informed that death has taken place, shall, within twenty-four hours, see the body, satisfy himself that death has taken place, and certify to the fact and cause of death.

3. The two certificates shall be embodied in one form, and the forms shall be supplied by the registrars.

(Should the practitioner not feel justified in giving a certificate, he must forthwith notify the police.)

4. This certificate shall be given to the nearest relative of the deceased person, or other competent person present, who must forthwith take it to the registrar of the district, who shall then give an order for the burial, unless for any reason he considers it necessary to inform the Coroner.

5. If the practitioner in attendance is unable through illness or other unavoidable cause to certify the fact of death, he shall authorize another registered medical practitioner to see the body and certify. This must be stated in the certificate, and the fee is to be paid to the practitioner who authorizes.

BIRTHS.

1. When a birth has taken place, the Registered Medical Practitioner, or Registered Midwife, shall certify the fact to the registrar.

2. The above shall not stand in lieu of parental registration.

STILLBIRTHS.

1. No stillborn child shall be buried without a medical certificate.

2. The Registered Medical Practitioner in attendance at a stillbirth shall certify on a special form the fact of stillbirth, and shall give such certificate to the father, or other competent person, who shall forthwith take it to the registrar of the district.

3. If no medical practitioner is in attendance then the midwife or person in attendance shall as soon as a stillbirth has occurred, notify a Registered Medical Practitioner, who shall within 24 hours see the body, and give the necessary certificate, stating who was in attendance. In cases where the medical person does not feel justified in giving certificate, he must forthwith notify the police.

4. In cases where a child is born alive but dies within 24 hours, a medical practitioner not having seen the child, the midwife or person in attendance shall summon a Registered Medical Practitioner, who shall certify on an ordinary death certificate form the fact and cause of death, or shall notify the police.

5. By the term "stillborn child" is meant a child that is born at a sufficiently advanced period of pregnancy to be viable, but which does not breathe or show any sign of life after it is completely born.

FEES.

1. For every certificate of the fact and cause of any death occurring in an urban district the fee shall be 5s.

2. For every certificate of the fact and cause of any death occurring outside an urban district the fee shall be 5s. where the distance travelled does not exceed two miles from the nearest residence or surgery of the Medical Practitioner, by the nearest roadway to the place where the body is lying, and for every half mile, or portion thereof, beyond the two miles, 6d. extra.

3. For every certificate of fact and cause of death in any public institution the fee shall be 2s. 6d.

4. For every certificate of the fact of a stillbirth, 5s.

5. For every certificate of birth, 1s.

N.B.—Nothing in this Act shall be construed as interfering in any way with the jurisdiction of a Coroner.

VACCINATION EXPENSES.

THE Departmental Committee appointed to inquire and report with regard to the payments made to public vaccinators and vaccination officers under the Vaccination Order, 1898, on December 8th heard evidence given by Mr. Cooper, Clerk to the Guardians of the Bolton Union.

Owing to the delay caused by the failure of sixteen Boards of Guardians to send in a certain return asked for by the Local Government Board for the use of the Committee, the Committee has been obliged to defer consideration of its report until after Christmas.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8,107 births and 5,304 deaths were registered during the week ending Saturday last, December 5th. The annual rate of mortality in these towns, which had been 17.9, 17.4 and 17.6 per 1,000 in the three preceding weeks, further rose to 18.6 per 1,000 last week. The rates in the several towns ranged from 7.4 in Kings Norton, 10.3 in Grimsby, 10.6 in Hornsey, 10.8 in Walthamstow, 11.1 in Reading, 11.4 in Tottenham, and 11.8 in East Ham and in Handsworth, to 25.5 in Walsall, 27.5 in Warrington, 27.7 in Bury, 29.2 in Bootle, 29.9 in York, 30.2 in Middlesbrough, 30.5 in Hanley and 34.4 in Wigan. In London the rate of mortality was 17.8 per 1,000, while it averaged 18.9 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.4 per 1,000 in the seventy-six large towns; in London this death-rate was equal to 1.2 per 1,000, while in the seventy-five other large towns the rates ranged upwards to 3.6 Bury, in Rotherham, and in Merthyr Tydfil, 3.8 in Sunderland, 4.6 in Preston, 4.7 in Warrington, 7.0 in Willesden, and 8.5 in York. Measles caused a death-rate of 1.1 in Stockport, 1.2 in Salford, 1.8 in Rotherham, 2.7 in Bury and in Preston, 2.8 in Sunderland, 3.9 in Warrington, 4.6 in York, and 4.9 in Willesden; scarlet fever of 1.5 in Merthyr Tydfil; diphtheria of 1.5 in Merthyr Tydfil, 1.7 in Walsall, in Bootle, and in Wigan, and 2.0 in York; and diarrhoea of 1.1 in Stockport. The mortality from "fever" showed no marked excess in any of the large towns. Two fatal cases of small-pox were registered last week in Gateshead, and 1 in Manchester, but not one in any other of the seventy six large towns. The Metropolitan Asylums Hospitals contained 35 small-pox patients on Saturday last, the 5th inst., against 51, 47, and 40 on the three preceding Saturdays; 3 new cases were admitted last week, against 16, 5, and 5 in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 1,824, 1,832, and 1,770, at the end of the three preceding weeks, had further declined to 1,715 at the end of last week; 161 new cases were admitted during the week, against 185, 191, and 157 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, December 5th, 929 births and 655 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 17.4, 17.4, and 18.7 per 1,000 in the three preceding weeks, further rose last week to 20.0 per 1,000, and was 1.4 per 1,000 above the mean rate during the same period in the seventy-six large English towns. The rates in the eight Scotch towns ranged from 12.4 in Perth and 13.2 in Paisley, to 23.3 in Greenock and 24.0 in Dundee. The death-rate from the principal infectious diseases averaged 1.6 per 1,000, the highest rates being recorded in Glasgow and Dundee. The 324 deaths registered in Glasgow included 2 which were referred to small-pox, 22 to measles, 2 to diphtheria, 3 to whooping-cough, 2 to "fever," and 4 to diarrhoea. Five deaths from diarrhoea and 2 from "fever" occurred in Dundee; 2 from whooping-cough in Edinburgh; 2 from diarrhoea in Aberdeen, and 2 from diphtheria in Greenock.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, December 5th, 493 births and 438 deaths were registered in six of the principal Irish towns against 475 births and 342 deaths in the preceding period. The mean annual death-rate of these towns, which had been 19.1, 17.6, and 15.3 per 1,000 in the three preceding weeks, rose abruptly to 24.3 in the week under notice, this figure being 5.7 above the mean annual rate in the seventy-six English towns during the corresponding period—instead of 2.3 below it as during the previous week. The death-rates ranged in these six Irish towns from 15.8 in Cork to 29.2 in Waterford. The death-rates from the principal zymotic diseases in the same towns averaged during the week 1.63 per 1,000, or 0.9

higher than during the preceding period. The highest point—5.0—was reached in Londonderry, while Waterford and Limerick again registered no deaths from zymotic disease at all. From scarlet fever 1 death occurred in Dublin and 1 in Belfast. From whooping-cough 10 deaths were registered in Belfast and 5 in Dublin, and from diphtheria 2 deaths occurred in Dublin and 1 in Belfast. Whooping-cough also caused 3 deaths in Londonderry. A death from typhus was recorded in Dublin. The rise in the general death-rate seems to be mainly due to respiratory diseases.

MEDICAL NEWS.

Durham University Medical Graduates' Association.—Dr. Frederick Spicer, the President, took the chair at the autumnal dinner of this Association, which was held at the Cafe Monico on December 3rd. The toast list was limited to the usual loyal toasts and that of "The University of Durham," given from the chair. Other speeches are not permitted at these informal meetings of the Association, the idea being that they should be more of a social than an official character. Sir W. Selby Church, Bart., who was recently elected an honorary member, paid the Association the compliment of attending the dinner as a member.

The Skeat Zoological Expedition.—The members of the Skeat Expedition to Lower Siam and the Malay Peninsula in 1899-1900 collected several new varieties of entozoa, which have been described by Mr. A. E. Shipley, of Cambridge, in the *Proceedings of the Zoological Society of London* (October 1st, 1903). A new species of *Tetrarhynchus* was found in a Holothurian, the first instance, it is believed, of any member of this species having been discovered in any echinoderm. An undetermined species of *Tetrarhynchus* was also found in a sea snake, which is, again, an entirely new host. The expedition also made a valuable collection of new forms of *Acanthocephala*.

London Pauperism.—At a recent meeting of the Society of Poor-law Workers Mr. W. A. Bailward, the Chairman, gave a review of pauperism during the decade ending January 1st, 1903. Although this had been a period of exceptional prosperity the number of paupers had increased by 14,000, or, in other words, the ratio per 1,000 of paupers of all classes had risen from 26.9 to 29.4. The increase was common to indoor and outdoor paupers, showing that extension of the system of outdoor relief did not prevent people coming into the workhouses. The East and West Ends of London had apparently changed places, there being more paupers per 1,000 of population in several of the West End unions than in those of the East. In St. George Hanover Square, for instance, the ratio per 1,000 was not only about 10 higher than in Bethnal Green, but, in spite of its containing a much smaller population, it showed 1,200 more paupers. In unions adjoining some of those in the West End which showed very high ratios the proportion of paupers was very much smaller, although the economic conditions were very similar. South of the Thames some unions showed both relative and actual decreases, and only in Poplar and Stepney, of East End unions, had the ratio risen. The conclusion was drawn that the figures showed that a vast amount of unnecessary pauperism and consequent demoralization existed.

National Dental Hospital.—The annual dinner of the past and present students of the National Dental Hospital was held at the Trocadero Restaurant on November 27th, Mr. John Tweedy, President of the Royal College of Surgeons, who was in the chair, proposed the toast of "The National Dental Hospital and College." He said he was much impressed by the facilities provided for the treatment of patients, and also by the excellence of the various departments for carrying on the instruction in dentistry in its scientific and mechanical aspects. There was a well organized bacteriological department, presided over by an accomplished and enthusiastic bacteriologist, Mr. Goadby. On looking over the prospectus and the syllabus of the subjects in which the aspirants to the position of dentists had to be approved by the Examining Board, Mr. Tweedy said that he must admit that when he thought of the wide range of knowledge required he could not repress a feeling of thankfulness that he had not chosen dentistry for his vocation. In reflecting on the various departments of knowledge which the dentist of to-day has to study it had to be recognized that no department of the healing art better exemplified the adage that knowledge was power. The dentist, moreover, must not only know his work but he must know how to reduce his knowledge to practice. Mr. Tweedy then entered into a historical account of the beginnings of dentistry, and quoted Herodotus as his authority for stating that the Egyptians had amongst them specialists in the art of dentistry. He did not believe in any of the exaggerated statements lately circulated as to the degeneracy of the national physique, but it was a fact that within recent times at least 40 per cent. of the recruits for the army had been rejected on account of diseased teeth. The duty devolved on the dental profession to make a special effort to attack the national problem of the prevention of the diseases of the teeth in the rising generation. The dental profession should enlighten the public and make them feel the importance of the matter, and for that purpose some organization should be started to take the matter in hand. Mr. Sidney Spokes, the Dean of the hospital, in responding to the toast, spoke of the satisfactory condition of the institution, and mentioned that 9 out of 11 of its students who had gone up for the examination in dental subjects had passed. After the Chairman had distributed the prizes to the successful students, Mr. Tomes proposed the toast of "The Past and Present Students." He said that the British Dental Association had started a movement for the amendment of the Dentists Act, and he recommended that the discussions thereon should be of a moderate character. He observed that conclusions would be firmest if based on the wide experience of both London and provincial dental practitioners. The toast was acknowledged by Mr. G. H. New and Mr. G. W. Geekie. The toast of "The Visitors" was entrusted to Mr. K. W. Goadby, and replied to by Mr. A. S. Underwood. "The Health of the Chairman" was submitted by Mr. W. Rushton and suitably acknowledged.

Bequests to Hospitals.—The late Miss E. A. T. James, of Edgbaston, Birmingham, has left £1,000 each to the General Hospital, the Queen's Hospital, and the Eye Hospital of Birmingham; £1,000 each to the London Cancer Hospital and the Putney Hospital for Incurables; and £500 to the Leamington Hospital for Incurables. Miss M. W. Nash, of Cork, has left £200 to the Victoria Hospital for Women and Children at Cork.

MEDICAL VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BIRMINGHAM GENERAL HOSPITAL.—Resident Medical and Surgical Officer for the Jaffray Branch. Salary, £150 per annum.

BRIDGWATER INFIRMARY.—House-Surgeon, resident. Salary, £80 per annum.

BRISTOL ROYAL HOSPITAL FOR WOMEN AND CHILDREN.—House Surgeon, resident. Salary, £120 per annum.

CHELSEA HOSPITAL FOR WOMEN, Fulham Road.—Registrar. Honorarium, £40 per annum.

EDINBURGH UNIVERSITY.—Additional Examiners in Materia Medica and Clinical Surgery.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark.—Clinical Assistants in the Out-patient Department.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway.—(1) Senior House-Surgeon. (2) Junior House Surgeon. (3) Junior House-Physician. (4) Assistant Anæsthetist. Salary for (1) at the rate of £60 per annum, for (2) and (3) at the rate of £50 per annum, and (4) 10 guineas.

GREAT YARMOUTH COUNTY BOROUGH.—Medical Officer of Health. Salary, £400 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House-Physicians. Honorarium, £25 for six months.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary, £100 per annum, increasing to £110 on reappointment.

LIVERPOOL CANCER RESEARCH.—Assistant Director. Salary, £200 per annum

LIVERPOOL INFECTIOUS DISEASES HOSPITALS.—Assistant Resident Medical Officer. Salary, £120 per annum.

MOUNT VERNON HOSPITAL FOR CONSUMPTION, Hampstead.—Male Resident Medical Officer. Honorarium, £60 per annum.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Assistant House-Surgeon, resident. Salary, £70 per annum.

NORTHAMPTON GENERAL HOSPITAL.—Assistant House-Surgeon, resident. Salary, £75 per annum.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney Road, E.—Surgeon.

OLDHAM INFIRMARY.—Junior House-Surgeon, resident. Salary, £100 per annum.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Surgeon, resident. Salary, £100 per annum.

QUEEN'S JUBILEE HOSPITAL, Earls Court, S.W.—House-Surgeon, resident. Salary at the rate of £52 per annum.

ROYAL EYE HOSPITAL, Southwark.—(1) Refraction Assistants; (3) Clinical Assistants.

ST. GEORGE HANOVER SQUARE PROVIDENT DISPENSARY, Little Grosvenor Street.—Resident Medical Officer. Salary, £100 per annum.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, W.—Lecturer on Physics and Assistant Lecturer on Chemistry. Salary, £160 per annum.

ST. PETER'S HOSPITAL FOR STONE, Etc., Henrietta Street, W.C.—(1) Junior House-Surgeon, resident. Salary at the rate of £50 per annum; (2) Clinical Assistant.

SALFORD COUNTY BOROUGH.—Assistant to the Medical Officer of Health. Salary, £200 per annum.

SALISBURY: FISHERTON ASYLUM.—Assistant Medical Officer, resident. Salary, £130 per annum.

SHEFFIELD ROYAL HOSPITAL.—Assistant House-Physician, resident. Salary, £60 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House-Physician, resident. Honorarium at the rate of £75 per annum.

MEDICAL APPOINTMENTS.

ACKLAND, J. M., M.R.C.S., L.D.S.Eng., Dental Surgeon to the Royal Devon and Exeter Hospital.

ANDREW, Henry, M.R.C.S.Eng., L.R.C.P.Lond., Honorary Anæsthetist to the Royal Devon and Exeter Hospital, and Anæsthetist to the Devon and Exeter Dental Hospital.

HADGESOW, George W., M.B.Tor., L.R.C.P.Lond., M.R.C.S.Eng., House-Surgeon to the Throat Hospital, Golden Square.

BAKER, W. Langworthy, M.R.C.S.Eng., L.R.C.P.Lond., Assistant Resident Medical Officer at the Tottenham Union Workhouse.

BIRD, Jas. B., M.D Edin., Physician to the Cumberland Infirmary, *vice* Henry Barnes, M.D.Edin., F.R.S.E., appointed Consulting Physician.

BRUCE, H. W., M.D., Assistant Medical Superintendent of the Southwark Union Infirmary.

COWARD, F. A., L.R.C.P. & S.Edin., District Medical Officer of the Cannock Union.

DAVIS, Edward, L.D.S.Eng., Honorary Surgeon-Dentist to the Queen Adelaide's Dispensary, Pollard Row, Bethnal Green, E.

DE NYSSEN, P. J., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Halesworth District, Suffolk.

DYBALL, Brennan, M.B., B.S.Lond., F.R.C.S.Eng., Honorary Anaesthetist to the Royal Devon and Exeter Hospital, and Assistant Anaesthetist to the Devon and Exeter Dental Hospital.

EDWARDS, Arnold, M.D.Vict., Ch.B., Honorary Assistant Surgeon to the Manchester and Salford Lock Hospital.

FORBES, J. Graham, M.D., D.P.H.Cantab., Clinical Pathologist and Bacteriologist to the Hospital for Sick Children, Great Ormond Street, W.C.

GARNER, W. L., M.B., B.C.Cantab., District Medical Officer of the Ampthill Union.

GENT, W. Conway, L.R.C.P., L.R.C.S.Edin., Medical Officer, No. 2 District, Faringdon Union.

GRIFFITHS, J. A. K., M.B.Lond., M.R.C.S., District Medical Officer of the Knighton Union.

HAMILTON, P. J., M.B., B.Ch. R.U.I., Certifying Factory Surgeon for the Arklow District, Wicklow.

JONES, J. O., L.R.C.P. & S.Edin., District Medical Officer of the Holywell Union.

JONES, C. Royds, M.B., Ch.B.Vict., Honorary Surgeon to the Royal South London Dispensary.

MACFADDEN, A. W. J., M.B., C.M.Edin., D.P.H.Camb., Medical Officer of Health of the Edmonton Urban District.

POTTER, P. de C., M.R.C.S.Eng., L.S.A., District Medical Officer of the Leicester Union.

ROBERTS, J. Lloyd, M.D., B.S., B.Sc., B.A.Lond., M.R.C.P.Lond., F.R.C.S.Eng., Honorary Physician to the Royal Southern Hospital, Liverpool, *vice* William Williams, M.D., M.R.C.P.Lond., resigned.

SEQUEIRA, James H., M.D.Lond., M.R.C.P.Lond., F.R.C.S.Eng., Physician in charge of the Skin Department of the London Hospital, *vice* Sir Stephen Mackenzie.

SOLLY, Reginald V., M.D.Lond., F.R.C.S.Eng., Medical Registrar and Pathologist to the Royal Devon and Exeter Hospital.

VERNON, Ethel Miller, M.B., B.S.Lond., Attending Medical Officer, Western Dispensary, Rochester Row, Westminster.

WALKER, T. A., L.R.C.P.Edin., M.R.C.S.Eng., Certifying Factory Surgeon for the Weymouth District, Dorsetshire.

DIARY FOR NEXT WEEK.

MONDAY.

Medical Society of London, 11, Chandos Street, Cavendish Square, W., 8.30 p.m.—Discussion on Functional Albuminuria, (1) Introductory, The President (Dr. F. de Havilland Hall); (2) Its Pathology, Dr. J. Rose Bradford, F.R.S.; (3) Its Clinical Bearings, Dr. Samuel West.

TUESDAY.

Pathological Society of London, 20, Hanover Square, W., 8.30 p.m.—Dr. C. J. Martin: Methods of Estimating Blood Pressure, and other communications.

Chelsea Clinical Society, Chelsea Dispensary, Manor Street, Chelsea, S.W., 8.30 p.m.—Dr. Foster Palmer: Some Observations on the Rationale of certain so-called Drink-Cures. A few Statistics relating to Hereditary Immunity, with special reference to Vaccination. Mr. J. D. E. Mortimer: Anaesthetics in Abdominal Operations.

FRIDAY.

British Electro-Therapeutic Society, 11, Chandos Street, Cavendish Square, W., 3 p.m.—Annual Exhibition of Electro-Therapeutic Apparatus. 8.30 p.m.—Conversazione. Sir Isambard Owen will deliver an address.

POST-GRADUATE COURSES AND LECTURES.

Hospital for Sick Children, Great Ormond Street, W.C., Thursday, 4 p.m.—Lecture on Syphilitic and Rachitic Changes in the Teeth in Childhood.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—Demonstrations will be given at 4 p.m. as follows: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical. Lectures will also be given at 5.15 p.m. as follows: Monday, the Clinical Anatomy and Physiology of the Nervous System; Tuesday, Life Insurance as affected by life in the tropics; Wednesday and Thursday, the Clinical Anatomy and Physiology of the Nervous System.

Mount Vernon Hospital for Consumption and Diseases of the Chest, 7, Fitzroy Square, W., Thursday, 5 p.m.—Demonstration of Cases of Tuberculous Laryngitis.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C., Tuesday, 3.30 p.m.—Lecture on Gait in Nervous Diseases (lantern demonstration).

Post-Graduate College, West London Hospital, Hammersmith Road, W.—Lectures will be delivered at 5 p.m. as follows: Monday, on the Modern Aspect of Sympathetic Cyclitis (so-called Sympathetic Ophthalmia); Tuesday, Insanity in Relation to Crime: Wednesday, Practical Medicine; Thursday, Practical Surgery; Friday, Chronic Pancreatitis.

Samaritan Free Hospital for Women, Marylebone Road, N.W., Thursday, 3 p.m.—Lecture on Retroflexion and its Treatment.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

MARRIAGES.

COLLIER—LESLIE.—On December 2nd, at Christ Church, Bath, by the Rev. A. E. King, Vicar of St. Philip's, Sydenham, assisted by the Rev. Prebendary Norton Thompson, Henry Nunan Collier, L.S.A.Lond., of Axminster, only son of Lieutenant-Colonel Hopetoun Currie Collier, R.A.M.C. (retired), of Sydenham, to Annie Eleanor Leslie, eldest daughter of the late George James Leslie, formerly H.B.M. Vice-Consul at Iquique, and Mrs. Leslie, of "The Glen," Kirkdale, Sydenham.

KIRKBY—PUGHE.—On the 3rd of December, at St. Cadvans Church, Towyn, Merioneth, by the Rev. Titus Lewis, B.D., Rural Dean assisted by the Rev. David Pugh, M.A., Robert Casement Kirkby, M.R.C.S., L.R.C.P., 87, Barlsfield Road, Wandsworth Common, third son of the late D. E. Kirkby, Esq., J.P., of Llanfendigaid, Towyn, Merioneth, to Myfanwy Wenona, youngest daughter of the late John Pughe, Esq., J.P., F.R.C.S., of Aberdovey, North Wales.

STROVER—GILLANDERS.—1st instant, at St. Mary's Church, Kilburn, London, N.W., by the Rev. W. H. Stone, assisted by the Rev. Reginald Petch, Henry William Martyn Strover, M.B., Ch.B., of Dudley House, West Hartlepool, eldest son of the late Major-General Henry Strover, R.A., to Maggie Ann (Tickie), second daughter of the late William Robb Gillanders, of Aberdeen, N.B.

DEATHS.

FORSYTH.—On 30th November, at Harpley, Watford, suddenly, of uraemia, Ewerette Margaret Forsyth.

NEWMAN.—At Stamford, on 3rd December, 1903, William Newman, M.D.Lond.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aetiology, London*. The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

ALPHA asks for the names of general hospitals where provision has been made for the isolation of consumptive patients.

MILK FOR INFANTS.

MILK SUPPLY writes: I have read with great interest the correspondence in the BRITISH MEDICAL JOURNAL on the production of food for infants and the series of articles on milk supply preceding. I fear ignorance and indifference of the attending practitioner is largely responsible for the present state of affairs. Is there a handbook on infant feeding describing the proper diet for the artificially fed child, and explaining the details of sterilization, humanization, etc., of milk?

*** A useful book is *The Natural and Artificial Methods of Feeding Infants and Young Children*, by Edmund Cautley, M.D.Cantab., F.R.C.P. Second edition. London: J. and A. Churchill. 1903. 7s. 6d.

THE PRISON SERVICE.

INQUIRER, who is hoping to join the prison medical service, is anxious to know what books would be useful for him to read, and where information regarding medical statistics of prisoners can be found.

*** Information as to medical statistics of prisoners is to be found in the annual reports of the Prison Commissioners (Eyre and Spottiswoode). There are no books specially recommended, but information as to the subjects in which candidates are expected to show proficiency is given to them on applying for the necessary forms to the Secretary, Prison Commission, Home Office, Whitehall, S.W.

THE MEDICAL PROFESSION AND ALCOHOLISM.

J. H. W. asks for a list of authorities on the present-day teaching of the medical profession on alcohol.

*** We have made inquiries and are advised that there is a great scarcity of good English books on the subject. We are indebted to Dr. J. J. Ridge for the following list, which may be of use to our correspondent: *Narcomania*. By Norman Kerr. Third Edition. (London: H. K. Lewis. 1894. 7s. 6d.) *Scientific Valuation of Alcohol in Health*. Major O'Gorman, M.D. 1s. 6d. *Alcohol and Public Health*. Dr. J. J. Ridge. (London: H. K. Lewis. 2s.) Yearly volumes of the *Medical Temperance Review*. 2s. 6d. per annum. The *Scientific Temperance Handbook*. By F. R. Cheshire, F.L.S., F.R.M.S. 3s. The *Rôle of Alcohol*. Professor E. McD. Cosgrave. 3d. We are informed that Sir Victor Horsley's Lees Raper lecture will shortly be published, and we presume that Professor Sims Woodhead's more recent lecture on the same subject will also be issued. We are also informed that a treatise by various authors will be published in the spring.

ANSWERS.

R. R. R.—The case upon which was founded the statement that the ill-health of a party is not a justification for breach of promise to marry was Hall *v.* Wright, reported in Ellis, Blackstone, and Ellis, p. 746; 29 *Law Journal* (Queen's Bench), p. 43; 6 *The Jurist* (new series), p. 193; 8 *Weekly Reporter*, p. 160. Any of the above reports can be found in a law library.

THE CAVE OF RETZIUS.

A. M. B.—The "space" which Retzius described as the "preperitoneal space" is usually called the "cavum Retzii." It extends from the semilunar folds of Douglas to the visceral layer of the pelvic fascia, and laterally to the blending of the transversalis fascia with the iliac and lateral pelvic fascia. The exact boundaries of the so-called "space" are disputed, and it is doubtful if the first definition of the "space" given by Retzius can be sustained. A very good idea of the various opinions regarding the boundaries can be gained by the perusal of the following articles: Notiz über das Cavum praeperitoneale Retzii, by J. Hyrtl, *Sitzungsberichten der kais. Akad.*, 1858, No. 9. Ueber das Cavum Retzii und die sogenannten praevesicalen Abcesse, by J. F. Leusser, *Arch. f. klin. Chir.*, Bd. xxxii, 1885. Ueber die idiopatisch Entzundung des Zellgewebes des Cavum Retzii, by Dr. Jos. Englisch, *Wiener Klinik*, 1880-00, 15-16. The lymphatics of the membranous urethra communicate on the one hand with the lymphatics of the prostate and bladder, and so indirectly with the lateral pelvic glands, and on the other hand with the lymphatics of the penile urethra, and through them with the inguinal glands.

NOTES, LETTERS, Etc.

An Apparently Harmless Stimulant.

In reference to an article under the above title, which appeared in these columns on October 24th, p. 1081, upon the subject of maté or Paraguay tea, it has been suggested that some of our readers might like to try it. We have ascertained that the Apothecaries' Society, Blackfriars, keep it in stock, and sell it at the price of 2s. a pound, and no doubt any chemist could obtain it from the wholesale dealers The properties claimed for it by those who extol its virtues are that, while comparable as a beverage to tea and coffee, it has stimulating and sustaining effects of a different and more marked character, and that the natives of South America, though naturally listless and lazy, are, thanks to its use, capable of long and sustained effort without food. It is said, also, that, even when taken in large quantities and for very prolonged periods it causes neither dyspepsia nor sleeplessness. Meniert of Dresden, considers that it is one of the best of beverages, especially for labourers, because it reinvigorates the failing energies and reinspires the desire for work; it thus combats the evil effects of alcoholism. Dr. Gordon Sharp of Leeds informs us that he has endeavoured to induce dyspeptic patients to substitute it for tea but without success, and he believes that its somewhat bitter and harsh flavour will prevent its ever coming into favour. He adds that, in addition to caffeine, it contains a peculiar tannin which does not coagulate albumen, traces of ethereal oils, wax, a series of glucosides, choline (a substance acting like curare and muscarine), and a fatty body to which it owes its peculiar flavour. The infusion is pale green in colour, and when allowed to stand for some time a fatty body collects on the top, and if skimmed off and tasted is found to possess the flavour of the plant. The leaves of the holly tree, which belongs to the same natural order, have much the same flavour when roasted and infused.

Hyperpyrexia in Measles.

Dr. Duncan Forbes (Assistant Medical Officer of Health, Manchester) writes: Dr. E. Barnes's contribution on this subject (British Medical Journal, December 5th) is of great interest. He states, however, that he is led to believe that hyperpyrexia in measles is unknown. In Nothnägel's *Encyclopaedia of Practical Medicine* (p. 261-3) the histories of two cases of measles are reported as representing a type of measles in which the patient dies from "overwhelming intoxication." Particulars are given below with regard to their highest recorded temperatures on the day of death.

Sex.	Age.	Date of Rash.	Date of Death.	Temperature.
M.	6	December 4	December 6	106.5°
F.	2	April 3	April 8	107°

In Goodall and Washbourn's *Manual* (p. 171) the chart of a case of hyperpyrexia is given.

The Dissemination of Syphilis.

Anti-Syphilis writes: I attended a well-known prostitute for syphilis who gave up the treatment much too soon, and has since conveyed the disease to several persons. Under the protection of our laws she can do so, and I have no power to stop this fearful mischief. All I can do is to treat the cases that come to me. The Contagious Diseases Acts could not be tolerated as they caused respectable people to be interfered with, but when it comes to a case like this the law should step in and punish severely. Such cases should be heard *in camerâ* and publicity avoided. If such women knew that a severe penalty would follow they would be more careful. They should receive on reporting themselves good treatment, otherwise they will of necessity keep matters secret.

Medical Practice in Zanzibar.

Dr. Oswald A. Browne, member of the Medical Board of the Universities Mission to Central Africa, 9, Dartmouth Street, Westminster, S.W., states that he has been asked, on behalf of the Bishop of Zanzibar, the Right Rev. J. E. Hine, M.D., to make known that there is a great need at Kologwe, in his diocese, for the services of a fully qualified medical practitioner. There is a good deal of surgical work to be done among the native population, and the health of the European staff also calls for a resident practitioner.

A Minister of Health for India.

Sardam writes: With reference to Surgeon-General Evatt's letter on the necessity there is for the appointment of a Minister of Health for India, published in the British Medical Journal of September 26th, I think all who know India, and the sad neglect of sanitation in that country will agree with the main contention as to the vital necessity for such an appointment, and equally will they agree that before any such reform is carried out an enormous resistance on the part of the Indian Civil Service, the ruling class, will have to be overcome. This service is greedy and jealous of power, and will oppose to their utmost the creation of a Health Minister being a member of the Viceroy's Council. At the same time I do not think that surgeon-General Evatt will obtain much support in his contention that the Director-General, Indian Medical Service, is not the man *par excellence* for the post. His only argument is that that officer is "an Indian official with all the many limitations of that position," etc., whatever is meant by that. I think that Surgeon-General Evatt has overlooked the fact that if the Director General, Indian Medical Service, is unsuitable because he is an Indian official, so equally is every other medical officer in India, R.A.M.C. or I.M.S., and surely he does not suggest the appointment of a man from England who knows nothing about India, its people, customs, or languages. This would be to court disaster. What man is there who from his position, long service in many capacities, and knowledge of the people and their customs, is so capable of efficiently filling the post as the Director-General, Indian Medical Service? Further, all the members of the Council are "Indian officials;" does Surgeon-General Evatt consider that they are all unsuitable on that account? If not, why should the Health Minister alone be unsuitable? It would be just as reasonable, in fact more so, to argue that a civilian should be the head of the Army Medical Department, as R.A.M.C. men are Government officials, and therefore "with the many limitations of that position."

Errata.—In the annotation on "London Water" in the British Medical Journal of December 5th, p. 1475, line 16, for "milk" read "bulk."

Letters, Communications, Etc., have been received from

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An Address
ON
MEDICAL POLITICS,

Delivered before the Northumberland and Newcastle Medical Association on December 9th,

By Sir VICTOR HORSLEY, F.R.S., F.R.C.S.,
Surgeon, University College Hospital, and the National Hospital for the Paralysed and Epileptic; Chairman of Representative Meetings and of the Medico-Political Committee of the British Medical Association.

I am extremely obliged to you for giving me the opportunity of discussing one of the chapters of medical politics before so large and so representative a meeting.

Retrospective.

Before I enter upon the real matter of what I have to say this afternoon, I would like to look back for the last three years to see what we have gained. I would like to point out to you that the whole question of organization and representation of the profession has been successfully revolutionized during that time. This reform or this treatment of our organization and representation has been obtained by what the Germans would call an unbloody operation. I mean that we have effected a revolution in our main Association—the British Medical Association—without hurting anybody either in their worldly prospects or, to any reasonable extent, in their feelings. In saying that we have revolutionized our representation, I would like you to remember that three years ago, when any question arose between the medical profession and the central Government of this country, the opinions of the profession were not only not represented to the Government but were misrepresented by various oligarchic bodies. The most striking example of that is my own College, the Royal College of Surgeons of England. The Council of the College—twenty-four gentlemen—constitute one-fifteen-hundredth part of the profession. They constantly refuse to listen to the voice of their fellow Members; they never adopt their advice, yet they speak always—and will continue to speak—as though they represented the profession. The General Medical Council also speaks as though it represented the profession. It is, of course, only an oligarchy, formed partly out of the educational but mainly of the examining bodies throughout the country.

The Council of the British Medical Association.

So we come to the British Medical Association. Until last year, when the Council, under the new Constitution, began to sit, the Council of the British Medical Association was practically an oligarchy and not truly representative of the profession. Now the situation is changed. Those of us who have the honour, and I must add the pleasure, of sitting on the present Council must feel every time they go to that Council how different the atmosphere is. The Council is keenly interested in furthering the interests of the profession at large. It has undoubtedly a remarkable capacity for business, as the disposal of its agenda paper shows, but, above all, it receives ideas and projects with the intention of seeing how far they can be got through, helped on, and not with the intention of seeing how they can be put aside. Therefore, in the Council of the British Medical Association we have gained during the last three years a truly representative feeling, a feeling that is representative of the profession. Not only have we gained this in the Council, but we have the highest development of the representative system in the Representative Meeting. It was the greatest pleasure possible to see how, when a question was put before the Representative Meeting at Swansea the members of the meeting instantly understood it, grasped the situation, discussed it with the fullest intention of wasting no time over it, and of settling the matter there and then. I had never been present at such a meeting before. The desire to do work, and the intention to do it, were most remarkable. As far as the central representation of the profession goes—or what I may call the collective representation—I must say that the new Constitution of the Association has exceeded what my friends call my sanguine hopes. I don't think I am foolishly optimistic as a rule, although I may be so on occasion, and I don't think that my ideas are necessarily very wild, but I certainly did not think that it would be possible in three years to have seen this change in the Association. However, there it is; and as regards this central representation of the profession, there is no fear now, with the new Constitution of the Association, that when we have to go to the Central Government, to the Privy Council, to the Home Office, to the Local Government Board, which are the Departments with which our profession is most in contact, the profession's voice will not be heard.

We shall owe that to the British Medical Association, although, unfortunately, it will not at present be speaking with the full voice of 100 per cent. of the profession, but only with 55 or 60 per cent. of it.

Local Organization in Divisions and Branches.

So much for the central representation. Now, as regards peripheral representation. I am sure it was present to the minds of those who first moved to alter the Constitution of the Association that it was necessary not merely to rearrange the executive machinery of the Association, but that it was necessary to provide for devolution of government. The secret of every successful political or social machine is, of course, self-government, self-regulation. In all social life the individual, theoretically, should govern himself and his doings in the interests of the community. That is true socialism. Socialism is a sort of word that most people expect to see printed in red type, and I have no doubt that I shall be called to account for using it, but what we have to do in attempting to reform a large and powerful body like the British Medical Association is, naturally, to get at first principles, and, in this respect, the question of how far every individual can be helped to make his voice heard in a machine like the British Medical Association is a socialistic question, if you like to call it so. It was the idea of providing every individual in the Association with full political liberty that we instituted Divisions, and further fought until we obtained at Cheltenham the adoption of the principle that each Division should in itself be autonomous, that it should be an autonomic unit. What does this bring us to? It brings us to the position that it is ridiculous to suppose that any man or any body of men in London, for example, can, with any hope of success, regulate, or endeavour to regulate, the actions of the profession in any given part of the country. The fact is, of course, that for any given district—and the districts are topographically quite well marked off—the practitioners of that district alone can successfully deal with local conditions, and, therefore, all local questions must be settled by a Division or a group of Divisions—a Branch. The feeling is at present—not merely in Northumberland and Durham, but in the south-east of England, in Kent—that, where we have a manufacturing district (such as in the North) or an agricultural district (such as in the South) it is obvious that the interests of men in one Division will be almost identical with the interests of those in a neighbouring Division, and, therefore, the Divisions can, for certain purposes, be grouped. The original grouping that was, as it were, a legacy from the original Association, was naturally, a grouping into Branches, and so it came about that the old Branches were preserved.

This brings me to my next point, which is that, not only in recent times, but also, as I said at Leicester some months ago, in some parts of the country from the beginning of the century, there has been a feeling in different localities that the interests of the profession could be best met by forming local associations. That was, of course, perfectly true, so long as this Association was an oligarchic body and not a representative body. What are the conditions here? You have developed special associations and unions to deal with special local conditions—the Northumberland and Newcastle Association on one side and the Durham Union on the other side of the river. These associations or unions, of course, achieve their work successfully, because they are conducted and manned by people who know their business. It is perfectly obvious that the work of these associations or unions could not be successfully directed from any other part of the country. These unions or associations are exactly on the same footing as many local societies, but my feeling has always been that while, of course, they can deal with local requirements, they are only as it were half-fledged. There is no one question affecting the relation of our profession with the public which has not got a general side to it, just in the same way as there is certainly no surgical case which you do not have to treat generally as well as locally. A local association can apply the local treatment uncommonly well, better than anyone else, but it takes a whole association of the profession throughout the kingdom to deal effectually with the general side of the question. Therefore it seems to me that for purposes of the

full development of our work and our interests, it is essential that local associations should be somehow merged in or affiliated to the British Medical Association.

THE NEED FOR FEDERATION OF LOCAL ORGANIZATIONS.

What I want to put before you is that your local combinations are necessarily lacking in federal power; and personally, it seems to me that they could perfectly well join with the British Medical Association. In fact, the British Medical Association in this respect can act in exactly the same way as does the British fleet towards the Colonies. The Colonies can, probably, very fairly defend themselves locally, but, of course, they cannot defend themselves against the world, and the fleet is called upon to undertake that part of the work. I think it is just the same, really, with the Association. If that be so, what are the difficulties attendant on fusion? Personally, I believe there is only one real difficulty, and that is the financial question. Every member of the Association is entitled to have his general interests supported by the power and by the funds of the British Medical Association; and, as a matter of fact, now that we have got a general secretary, a professional secretary (called an organizing secretary), and well-arranged standing committees, I believe we have the machinery all appointed and properly ordered to safeguard the general interests of the Association; but unfortunately—according to the views of many of us—the subscription to the Association was pitched by the general meeting at 25s. per annum instead of 30s. Now, if you will study the balance sheet of the Association and the estimates of its expenditure, you will see that it is impossible for the funds of the Association to bear the strain of additional expenditure called for by local associations or unions. So long ago, however, as the formation of the Committee to draft a constitution, we provided that any local organization, such as a Branch, should have power to raise from its members special funds for special purposes, and it was fully understood that, if such a condition of things arose as exists here in the North of England Branch, it would be competent to make a levy on the members of the Branch to cover any local expenditure that the Branch by vote determined upon. I cannot see, therefore, that this financial question presents any real difficulty. On the contrary, I think that the mere fact that you are issuing a summons for a special fund will, in one sense, constitute another tie to the Branch members and, I hope to the members of the whole profession in the district.

Again, when two bodies are called upon to amalgamate, the question of the officials or executives of these bodies is often looked upon as a difficulty. I am extremely interested to see that the local bodies here have been successfully served by solicitors as secretaries. I say I am extremely interested to see that, because my own experience (now dating some fifteen or sixteen years back) of the Defence Union, in which a somewhat similar state of things existed, was rather that it answered better to have a medical man as a secretary, paid for his expenditure of time, and that a solicitor's help should be called in in addition as required. Obviously, there are the two plans of doing this work. I don't see that the fact in the least militates against the amalgamation of the unions with the British Medical Association, because, clearly, you will employ, under the terms of your special fund, your solicitors as you have done heretofore. Personally, I think that all medical associations should have a medical man as secretary, because there are a vast number of questions which arise—very often very small ones in their beginning—which a medical man alone grasps immediately and can settle in a few minutes. I also think that no man should be appointed as a paid medical secretary of the Branches of an Association like ours unless he is, like each of us, in active work. I think he ought to be a young man who clearly understands the difficulties of the position. If he is, like the rest of us, obliged to earn his living, his time must be paid for. In other words, when you have a Branch like this in the North of England, with such duties and responsibilities as you have got before you, you ought to have a paid medical secretary and not an honorary secretary, because I think you would be demanding of one man more than you would be really justified in asking. It always seems to me that it is unfair to get a willing man to do a great deal of work for nothing.

To summarize, then, the position. I would suggest the importance of effecting a combination between your local machinery and the general machinery of the Association. The officers, who really hold honorary posts and who stand, therefore, in a totally different position to the secretaries, the officers, of course, would naturally be sent by their respective Divisions to the Branch Council, so as to preserve continuity in the work. In saying that, I often think that we hear a great deal too much about continuity of work. I remember one of the greatest arguments brought against reforming the Association was that a lot of new people would come in who did not understand how to manage a large concern like the Association, a work which required experience. I do not agree with that at all. That is the principle of one-man government. It is perfectly true, no doubt, if you have got a despotism, but directly you make a political machinery automatically representative all these sort of difficulties disappear. They are imaginary. It is a question of measures and constitution—not of men. As men we are but pawns in the game. The moment we pass some one else takes up our work. The continuity of work will go on whether we are there or not. The real question is whether the machinery is properly constituted to do the work.

So far, I have been speaking of the consolidation of the local interests of the profession with the body which, alone, can represent the general interests of the profession. Under these circumstances I think you are naturally entitled to demand from me some sort of definition as to what these general interests are. My idea of the general interests of the profession is this: We all want to carry on our work with as much ease as work can be done in this world, and certainly with security. We want the State also to recognize the time and expense to which we, or our parents, have been subjected for our education. We want the State, consequently, to protect our practice. We are perfectly justified in saying to the State that this is a fair bargain. Of course, we know that the governing authorities are constantly being told by the so-called leaders of the profession that we are not justified in making that statement. Even the other day in the General Medical Council, Dr. Norman Moore, the representative of the Royal College of Physicians of London, one of the Colleges which has done more to injure medical education than any other, said that a practitioner had no right to protection. I have heard Sir John Williams also state that. I have heard a number of so-called leaders of the profession repeat it. I have answered them whenever I was given the opportunity, but nothing but what has been called the kindly lapse of years will get rid of that attitude of mind.

How does the new British Medical Association propose to meet these general interests? I think it is meeting them in a plain and straightforward way. It has reconstituted and reorganized its Standing Committees. It has divided up the work amongst those Committees, instead of throwing the work upon a single body—the Parliamentary Bills Committee—totally incapable of dealing with it. The work is split up into fractions and every man is given his part to perform.

MEDICAL REGISTRATION AND EDUCATION.

It is not enough to reorganize the executive of our Association. It is essential that we should obtain from the central government the reform of our present system of medical registration. We are not the only body which recognizes the extreme importance of registration. All sorts of bodies claim now to be registered, and with perfect justice. Our nurses now see that their calling is being invaded by people who have had no proper training, and they ask for registration quite justly. For a long time the plumbers have asked for registration in view of the sanitary necessities of accurate plumbing. The British Medical Association has itself, by direct vote, expressed sympathy with that movement. You know well that the maintenance of the purity of the *Register* carries with it the whole of medical education, and the whole of the protection of practice. The circumstances of registration at the present moment are that the General Medical Council is supposed to keep the *Register* pure, and is supposed to control medical education, which is the only way by which men can obtain entrance to the *Register*. In order to do that work it is allowed to tax the profession by imposing a registration fee, and this fee is what is supposed by the Government to keep the *Medical Register* pure and to enable the Council to keep an eye on medical education. The present state of things is that the General Medical Council, being really an assemblage of representatives of examining bodies who simply want students to come to them for their examinations, is not truly representative of the profession, and does not sympathize with the

profession in this matter of registration. One example of administrative and one of educational bearing will prove this.

Four years ago I pointed out, in the General Medical Council, that personation was committed by various evil-minded persons, who obtained medical practice by personating persons on the *Register*. It would have been supposed that that would have excited the sympathy of the Council: I met with nothing but hostility in bringing it forward. Eventually I obtained the appointment of a committee. That committee reported that the occurrence of personation was an important fact, that the regulations ought to be amended to prevent personation, and so on. The officials of the Council resisted me in every possible way, even with regard to the provision, insisted on by all Government departments and universities, that every person who wanted to register should write out the application in his own handwriting, so that we could trace that handwriting in future years. That precaution was actcally opposed by the officials of the Council. After from three to four years' hard work, at last we got our report adopted.

Take another example: the education of medical students in preliminary science, etc. It has been a notorious scandal in London for many years, that the examination of the Royal College of Surgeons and the Royal College of Physicians in the preliminary sciences was hopelessly inadequate, that it was wholly faulty in principle, and that students were admitted to it who were not properly trained. Ten years ago the General Medical Council issued a decree relative to the five years' curriculum, which, if it had been loyally carried out, would have prevented this scandal. It was not loyally carried out, however. The Royal Colleges in England took the lead in evading it, and the Irish corporations in particular complained to the General Medical Council on that score. My first experience at that Council was to hear a discussion on that question. So it has gone on. This, gentlemen, is called "honesty" in medical politics. Because I have called it dishonesty I have been called to account. I intend to call it dishonesty again, because the position in which we now are is that, although these discussions have been going on all these years at a cost of at least £1,200 to the profession, we are exactly to-day where we were before—namely, that the Colleges resist the decisions of the Council on a point in which authority was vested in the Council by the Acts of 1858 and 1886. Last session I succeeded in carrying a resolution in the Council to the effect that the examinations of the Royal Colleges were insufficient. This session I moved that we should take the next step and go to the Privy Council. The Colleges, although professing that their examinations were all that could be desired, secretly began to alter them without letting the General Medical Council know, and this was brought up by Dr. Pye-Smith and Mr. Bryant as a reason why the Council should do nothing in the matter. To my mind, politics, like ordinary transactions of life, should be characterized and governed by the ordinary rules of honourable conduct, and it appears to me that the action of the Colleges is not honourable.

Further, not only is this the state of things in the General Medical Council by virtue of the Council's constitution, but it is leading to a decay of medical education as a whole. At the last day of the recent session of the Council a project of the Apothecaries' Hall in Ireland, which is a body which with great difficulty grants a licence to three or four men per annum, was brought forward—a project to abrogate all the decisions of the Council with regard to preliminary education and to start an examination on its own. It simply meant that this Hall, seeing that the English Colleges are flouting the decisions of the Council, intended itself to follow that bad example. It is a logical but a very immoral position.

Medical Acts Amendment Bill.

It is clear that this question of registration cannot be left in the hands of the General Medical Council as at present constituted. That has been recognized by the Association for many years. A Bill has been drafted and circulated amongst the Divisions. The Divisions are answering in a way that I am sure many of the original reactionaries would never have dreamed of. The whole subject is receiving the most careful attention of the profession all over the country, and when that Bill is finally approved by the Representative Meeting, it will be brought forward in its proper place, and it will then be for the Branches in the country to move forward for the general interests of the profession. Much has been done, and much is being done; but there is one other point upon which I wish to say a few words. Although we can have a successful machine, and although it can work itself successfully, it will do so far better, as far as our relation with the general public is concerned, if we have every member of the profession in the Association. In order that that may come about the Association must meet the wants of every practitioner fairly and reasonably. In order to do that we must have advice on all hands. At the Representative Meeting the Divisions must bring up their views by resolution. The motive power in the Association must come from the periphery. It cannot come from the central executive body in London. When this is fully achieved, when we have got practically every member of the profession in the Association, I believe that most of the existing difficulties in our medical life will disappear. I believe that many vexed questions of the present day will vanish, just as one saw in the Medical Defence Union how blackmailing rapidly declined as soon as it got known that such a thing as medical defence had been organized. The work of ethical committees, I think, will shrink, because when a man is a member of the Association he will feel the moral influence of all his co-workers upon him. Then surely the profession will gain in public reputation, and will reach that status which its disinterested and humanitarian work merits.

A Lecture

ENTITLED

AN INTRODUCTION TO THE STUDY OF CLINICAL SURGERY.

Delivered at St. Bartholomew's Hospital on December 16th, 1903.

By CHARLES BARRETT LOCKWOOD, F.R.C.S.,
Surgeon to the Hospital.

It is part of my duty to lecture to you on clinical surgery and also to teach it in the wards. I propose to try and impart to you some of the general rules by which I wish you to be guided.

In his delightful memoirs Marbot says that he has noticed that each profession has its point of honour. He instances the Alpine guide whose point of honour is never to desert the traveller entrusted to his charge. The sailor's point of honour is, first, the safety of the passengers, then that of the ship, and last of all his own. The point of honour of the medical man is the safety and welfare of the patient. Now the safety and welfare of the patient cannot be safeguarded without a correct diagnosis of the disease or injury. Clearly it behoves all of us to use our best endeavours to learn that indispensable art. To make a correct diagnosis the patient has to be examined. Now the examination of the patient is guided by a few simple rules: First, and above all, by those of Sir George Humphry, "eyes first and much, hands next and little, tongue not at all." No one could tell in a few words the meaning of these, but after a while, as their import becomes known, you will learn to use them without thinking and as a matter of habit.

Let us try to understand the meaning of these rules and begin with "Eyes first and much." In by far the larger proportion of surgical cases the effects of the disease can be seen with the naked eye. This is most fortunate, for we can be sure of what is seen, but by no means sure of what is felt, heard, smelt, or tasted; seeing is believing. But to see anything correctly, even the simplest thing, much thought and training are needed. You come here to be taught to see and to think. At first you may be disheartened by the hardness of the task, but after a while it grows easier, and you will have learnt not only to see what others can see, but perchance to show others what they have never seen. You will have become, in fact, an original observer. Seeing is far from being a simple act. The mind itself has to think over and pass judgement upon that which is seen. A clear mind which can judge correctly is a very rare gift but I believe that every one can be trained to think clearly if he will only begin by acknowledging his deficiencies and seek to supply them. To see anything rightly is one of the hardest of tasks, but perhaps the hardest task of all is to give a clear and truthful account of that which has been seen. But after all, as the Stoic says: "No great thing cometh suddenly into being, for not even a bunch of grapes can, or a fig."

The science of reasoning is greatly neglected, and students

are strongly advised to devote a little time each day to reading an elementary book on logic, such as that of Jevons. The absence of a logical training is, in my opinion, one of the greatest defects in preliminary medical education and in English education in general.

Every day one has to wonder at the credulity in which our minds are steeped. We enter the temple of science through the portals of doubt. The everlastingly repeated story of an injury suffices to put every one on a false scent. Here is a man who says that he fell and put out a joint of his finger. A dislocation is diagnosed. Why? Because the joint is deformed, and the man says that he fell and put it out three months ago. The electrical department works at the joint with the screen, and reports that a dislocation can be seen. Doubtless the observer saw it. He had heard the history. The mind will make the eye see many things when under the influence of an obsession.

> What ardently I wished I longed believed,
> And disappointed still was still deceived.

You all accepted the report, and were prepared to try and reduce the dislocation. But, as I was unable to see the dislocation with the screen, a photograph was taken, and showed a very slight displacement of the articular ends of the phalanges. Such an amount of displacement is not unusual in chronic arthritis. Further inquiry threw much doubt upon the history. He might perhaps have fallen down, but clearly the arthritis began some months before the supposed injury.

Do not accept the statements of others; see for yourself with your own eyes. You may remember another occasion on which a girl said she had swallowed her false teeth, and that she felt them in her throat. Quite a number of credulous people used the screen and x rays, and saw the false teeth in the upper part of the oesophagus. I passed a full-size bougie into the stomach, and next day the teeth were discovered amongst the bedclothes.

Touch the patient with infinite care and tenderness lest bodily pain be inflicted. The human being fears death above all things; after death he fears pain, and after pain parting with his possessions. It has been written that "a man will give all he hath that he may live." The fear of death and of pain is deeply implanted in the human breast. The infliction of pain is nearly always the result of ignorance, carelessness, or clumsiness. No one who causes needless pain can ever hope to win the confidence or gratitude of his victims. Learn to use your eyes and if the eyes do not suffice learn to use your hands gently, skilfully, and with a definite intent. There are right and proper ways to feel for fluctuation the kidney, the spleen, the edge of liver, enlarged lymphatic glands, and many things besides. The art is learnt by watching the methods of experienced surgeons and by constant practice. A cultivated sense of touch is a valuable possession; what Luther Holden called "surgical fingers" is a rare gift. Hence Sir George Humphry's rules "Eyes first and much" "Hands next and little." The eyes may tell everything, the hands may hurt very much and tell nothing. A little rough handling at the beginning of an abdominal examination throws the muscles into spasm sufficient to mask a tumour of large size; and the terrified patient usually declines to be hurt again.

What is meant by feeling with intent? Beginners feel without any clear idea of that which they intend to do; perhaps they do not know what they ought to do. An inflamed knee, for example, is handled anyhow on the chance of sometimes being felt. Had the feeling been done thoughtfully and in proper order, the hand would have been gently laid upon the joint to feel for heat, the tip of the finger would have touched the patella to learn whether it had been hidden by the swelling; the patella would have been gently pressed to see whether it lay in contact with the femur; and the swelling would be tested for fluctuation; finally, each constituent of the joint would be felt in turn to try and learn the condition of the capsule, synovial membrane, synovial fringes, ligaments, cartilages fibro-cartilages, and bones.

The order in which anything is done should not be left to chance. As a rule, it is best to proceed in anatomical order. In a genito-urinary case begin with the urethra, then proceed with the membranous urethra, the prostatic, the bladder, ureters, and kidneys; from the prostatic urethra proceed to investigate the prostate gland, the vas deferens, vesiculae seminales, epididymis, and body of testis. Similarly follow the alimentary tract from mouth to anus. One of the objects of an anatomical training is to enable you to work in this systematic way. If we proceed in anatomical order the superficial structures are examined before the deep. Thus the skin and subcutaneous tissue of the abdomen are taken before the muscles, the muscles before the peritoneum, the peritoneum before the viscera.

The order of the examination may be determined by the question of pain. Thus, an inflamed joint is long looked at before being touched; the least painful part of the touching is done first, and movement is attempted by the patient before it is attempted by the surgeon. A man's thoughtfulness and gentleness are clearly shown by the way in which he handles an inflamed joint. When a joint is inflamed its movements depart and return in definite order. In tuberculous arthritis of the hip-joint, for instance, rotation is lost before abduction and adduction; and abduction and adduction are lost before flexion and extension. When the joint recovers, the movements return in due order, and those which were the first to depart are the last to return. Flexion and extension come back before adduction and abduction, and adduction and abduction before rotation. This is, I believe, a law for all joints which possess these movements. When the law is ignored and rotation is attempted before flexion and extension, great pain may be caused.

The degree of danger may determine the order of the examination. The abdomen is first examined without anaesthesia; then with the patient under an anaesthetic; and last, by means of an exploratory incision. I am accustomed to call this a surgical crescendo. The principles of progression from the easy to the difficult, from the painless to the painful, and from the safe to the dangerous pervades the whole of surgery.

The principles of the surgical crescendo also apply to treatment. For example, in congenital equino-varus the baby's foot may be massaged and manipulated, next wrenched and put in plaster-of-paris bandages; afterwards the plantar fascia may be cut, the tendons and ligaments divided; and, at last, the astragalus or portions of the tarsus may be taken away. Each step of the treatment is more severe than that which went before.

Beware of medical terms. Many are the names of mere abstractions. Such words as "diathesis, "cachexia," or "dyscrasia," or "idiopathic" call up no clear image in the mind. No one can show you a diathesis, cachexia, or dyscrasia. It is hopeless to try to define such vague terms. Let it suffice for us to use terms which serve to mark things which can be seen, handled, and measured.

It is useless to think that cases can be remembered and used for purposes of comparison. A few very striking ones may leave a strong impression on the mind, but in time these fade away and are lost for ever. Nevertheless, although cases are forgotten, the training which their investigation ought to give in seeing and thinking is never lost, and becomes a habit which helps not only in medicine and surgery, but in all the affairs of life.

Besides, a long array of remembered cases would not be very helpful, because no two cases are exactly alike. Neither the patients nor the diseases are ever the same. Should you fail to notice differences, begin to suspect that you are wanting in proper powers of discrimination. Each social grade has its own diseases. Rickets and chronic ulcers of the legs are common amongst the poor, gout amongst the rich. So that one who is familiar with the diseases met with in hospitals will be sometimes at fault when his practice lies elsewhere. It will not then help him much to remember a number of dreadful ulcers of the legs or severe cases of genu valgum.

The cases which we see together ought to be pondered over and read about in the textbooks. One who has cultivated the critical faculties cannot read too much. "Reading maketh a full man," "If he read little, he had need have much cunning to seem to know that he doth not," and Bacon also tells us how to read. "Read not to contradict and confute; nor to believe and take for granted; nor to find talk and discourse; but to weigh and consider." I advise you to read big rather than little books; and monographs rather than textbooks, dictionaries, or encyclopaedias. It is far easier to read about the disease than about the patient. No complete work has yet been written on human nature; perhaps memoirs and the writings of men such as Pepys tell us sometimes of what we want to know. But whatever you read let it be read critically, and remember that

> Books are not seldom talismans and spells
> By which the magic art of shrewder wits
> Hold an unthinking multitude enthralled.

The proper mental attitude for one who desires to learn

clinical surgery ought to be one of doubt and incredulity. "Without doubt there will be no inquiry, and without inquiry there will be no knowledge" (Buckle). It ought to be instinctive to say, "What reasons have I for believing that this is true?" But before the mind can weigh the proferred evidence it must be endowed with knowledge, judgement, and wisdom. How many confuse knowledge and wisdom.

> Knowledge and wisdom far from being one,
> Have oftimes no connexion. Knowledge dwells
> In heads replete with thoughts of other men;
> Wisdom in minds attentive to their own.
> Knowledge, a rude, unprofitable mass,
> The mere materials with which wisdom builds,
> Till smoothed and squar'd and fitted to its place
> Does but encumber whom it seems to enrich.
> Knowledge is proud that he hath learned so much;
> Wisdom is humble that he knows no more.

In describing that which has been seen I would counsel you most earnestly to learn to use the shortest, simplest, and easiest words. Much of my time is given to showing how ill you understand many of the words which are everlasting on your lips, "For words are wise men's counters, they do not reckon by them; but they are the money of fools," wrote Hobbes of Malmesbury more than two hundred and fifty years ago. It is surprising how little we all know of the full meaning of everyday words.

Take a word which is often used, such for instance as "normal." Here is a knee-joint which is called "normal." Now tell me why you call it "normal?" After a while you will learn to base your judgement upon the position in which the joint is held; upon the appearance of the skin over it; upon the absence of swelling or tumour; upon the absence of muscular wasting or contraction; on the absence of heat; and upon the presence of a full range of painless movements. But until all of these—and more, perchance—have been thought of and verified, the statement that the joint is normal is a mere guess, and the word used carelessly and without any clear meaning. The use of pronouns leads to many mistakes. Do not be afraid to call things by their names. We are accustomed to define ironically a pronoun as "a word used instead of a noun to make a sentence ambiguous." "Never put an *it* upon paper without thinking well what you are about. When I see many *its* in a page I always tremble for the writer." How dreary, stupid, and bad is the style of the lecturer who says "Gentlemen, this structure begins here, and after passing over that ends over yonder," and yet this is not a very gross exaggeration of some we have had to endure.

The true teacher may be known because he tries to educate but not to instruct. Instruction merely teaches to know, education teaches to think. But it is not enough to know what words mean to yourself; try and learn what they mean to others. A little while ago we saw together a man who had cellulitis of the leg with death of a large piece of skin. This man was not in the least alarmed when I told him that some of the skin of the leg had sloughed. Asked what he would have thought if he had been told that it had become gangrenous, he looked anxious and said that he would have thought that that was very bad indeed; and when asked what he would have thought if he had been told that it had mortified, his face became full of trouble and he said that he would have thought that he was about to die. All patients give a sinister meaning to the word "tumour," and therefore it is best paraphrased. It is very wrong and heartless to scatter words at random. A lady was told that her child had had "a touch of infantile paralysis." She at once said to herself: "My infant has had paralysis," and next: "I have a paralysed infant"—but happily all untrue.

Cultivate the habit of attention, for those who have it can fix the mind upon the matter in hand, being at the same time alert and ready to do the right thing at the right moment. Without the habit of attention no one can follow a train of reasoning or listen to a long narrative. Both sick and well dislike one who cannot listen and whose thoughts wander. They also dislike interruptions. "Do not interrupt" is sometimes called the eleventh commandment, although the cynical give another. The assistant at an operation must possess the habit of attention; if he does not, his thoughts are sure to be far away at the critical moment when his help is needed. Try always to come to a definite conclusion. A thing either is or is not. It is impossible to escape from this alternative, which few seem able to comprehend. I remember some one saying that a child had incipient disease of the hip. His bewilderment was extreme when asked whether the child had or had not got disease of the hip. Of course, if the child had got disease of the hip he had got it, and the word incipient merely implied that it was in its early stages. On the other hand, if the child had not got hip disease, then it may be supposed that the word incipient was intended to imply that he was about to get it and that the surgeon was prophesying. Some too weak to bear the insupportable fatigue of thought cannot make any direct statement without qualifying it with some such words as "I think," "it seems," "a somewhat," "apparently," and so forth.

Do not despise experience. "Much memory, or memory of many things, is called experience," and "much experience is prudence" (Hobbes). The surgeon who makes a mistake during an operation remembers and does not repeat it. As surgery and medicine become more scientific the need of experience grows less. Fifty years ago it needed great experience to recognize an anthrax pustule; to-day the characteristic square-ended bacillus may be found by some one who has never seen the patient, but who can nevertheless give a positive opinion upon the nature of the disease. Experience teaches us to be prudent and painstaking and not to fall into error. In addition, those who have long been in practice learn a great deal about the proclivities of their patients. It is known that one cannot take arsenic, another cannot take mercury, and another quinine.

Sir George Humphry's rule, "Tongue not at all," need not be taken too literally. It merely intended to emphasize the extreme caution with which questions should be asked and opinions given when the eyes and fingers have found out all that can be found out by their help. Information of great value can be sometimes obtained by judicious questioning, but always remember that the sick are critical, and that a silly question or remark may sap confidence. Inconsiderate questions are to be avoided. Mental pain is perhaps worse to bear than physical.

In asking questions try to avoid those which suggest the answer. Leading questions cannot elicit the truth. Also ask your questions in an orderly manner, and with a clear intent. For instance, the patient has obscure abdominal pain. Begin at the mouth, and proceed onwards. The mouth suggests the question, "What can you eat?"; the stomach, "Have you pain after food?"; the small intestines, "Do you suffer from flatulence?"; and the large, "Are you constipated?" "Have you passed blood?" Of course, many other questions have to be asked, but no important one can be forgotten if you follow this plan, and think in anatomical order.

The unconscious gestures which accompany some diseases are valuable aids to diagnosis. The gesture of the young adult who is suffering from syphilitic cephalalgia is most striking. When asked whether the head aches the patient's face becomes woebegone, the brows are slightly knit, the corners of the mouth depressed, the head drops towards the chest, and the tips of the fingers are placed upon each temple. Added to this the sorrowful voice and upturned eyes leave no doubts as to the reality of the suffering.

In chronic appendicitis the gesture is almost unmistakable. When the patient standing up is asked whereabouts the pain is felt, the trunk is slightly bent forward and to the right, the face being turned in the same direction, and the flat of the hand is placed upon the right iliac fossa. Sometimes the right thigh is at the same moment slightly flexed, adducted, and rotated inwards. These movements of the trunk and limb are instinctive. The question recalls the pain, and the attitude which gave most relief is instinctively resumed. The hand is held flat, to cover as much as possible of the painful area. A strictly localized pain is indicated with the tip of the finger.

Attitude is often a guide. A child with tuberculous caries of the lumbar spine stands in a stooping position with bent hips and knees and each hand upon the front of the thighs, so as to help in supporting the weight of the upper part of the body. When the odontoid process is carious both hands are used to hold the head. It is strange to see the patient rise from the bed by rolling over on the abdomen, and struggling into a kneeling position and thence on to the feet, the head being meanwhile held in the hands. No one who who has ever seen a boy with that strange disease, pseudo-hypertrophic muscular paralysis, can ever forget how he rose from the ground by climbing with his hands up his own legs.

Sir William Savory used to say that mistakes in diagnosis were more often caused by want of care than by want of knowledge. But I seldom meet any one who is not ready to take every possible care provided that he knows what kind of care

is required. The observance of three cardinal rules of diagnosis prevents any serious blunder.

First: Look at the whole patient.

Secondly: Examine the whole of the diseased part, limb, or structure, and at rest.

Thirdly: Compare the two sides of the body.

Again, by looking at the whole patient, how much can be taken in at a glance "in a moment of time, for thought is quick." After awhile you may learn to guess the patient's social position, character, mental peculiarities, general health, and perhaps the disease. Habits of rapid observation and of rapid inference are capable of the highest cultivation and yield astonishing results.

A glance at the patient's face has revealed an error in diagnosis. One day some one said "this girl has a syphilitic rash which does not get well, although mercury has been given until she has been salivated." The girl's eyes were bright, her cheeks red, her hair glossy. Clearly she had no trace of the anaemia which is always present during the period of general syphilitic eruption. This glance at her face awoke suspicion, and the suspicion was confirmed when the rash was seen to be scaly and upon the extensor surfaces of the limbs, which had been scratched and torn to allay the itching. As a general rule syphilitic eruptions occur on flexor surfaces, are not scaly, and do not itch. The girl had simple psoriasis, which no amount of mercury would have cured.

Learn to watch the muscles of expression. The emotions of the mind always disturb the muscles of the face. Every one is born a physiognomist, but few cultivate the gift. Most of us are familiar with the commoner expressions of anger, pain and pleasure, and grief, but dead to the subtler ones. "When he spoke I saw a little muscle at the corner of his eye give a twitch, and then I knew that he was telling me an untruth." Whole books have been written upon the expression of the emotions. Those of Lavater, Bell, and Darwin ought to be read and compared. Lavater is full of observation without science, Bell betraying the dawn of science, and Darwin full of observation guided by scientific method and reasoning. Much remains to be done in this fascinating branch of science.

But the rule which tells you to examine the whole patient implies more than this. Over and over again have mistakes been made as to the nature of venereal sores when the removal of the garments would have revealed a general syphilitic eruption. By use of a little tact and kindliness and the avoidance of unnecessary exposure there is seldom any difficulty in following this rule.

The second rule which tells you to examine the whole of the diseased limb or structure is often violated. Here is a man with a small ulcer upon the dorsum of the foot. He has had this ulcer for many years, but latterly it has grown bigger and become more painful. The base of the ulcer was hard, and adhered to the tarsal bones. I remember how much time was spent in endeavouring to tell what kind of ulcer this was, but no one knew until all the garments came off, and brought to light a mass of enlarged, hard, and adherent glands at the base of the Scarpa's triangle. Then it was clear that a neglected ulcer on the dorsum of the foot had become cancerous, with secondary invasion of the lymphatic glands.

It is also most important to examine diseased structures whilst the patient's body and muscles are at rest. Here is a patient with a mass of enlarged lymphatic glands beneath the left sterno-cleido-mastoideus. As he sits in the chair with his face turned towards the right, the glands feel immovably fixed to the spine, and some would think that they were enlarged by malignant growth which had spread beyond their capsules into the bone. But now ask the patient to lie upon the couch, and see how the glandular mass can be moved beneath the relaxed muscles. Further examination reveals the other groups of enlarged glands in the subclavian triangles.

Examine the whole of the diseased structure. In this instance the lymphatic glands of the neck are diseased. Examine, therefore, the lymphatic glands in the groin, axilla, and abdomen. This can be done in a few minutes. Next go a step further and feel for the spleen. It contains a great deal of lymphatic tissue. Diseased lymphatic glands sometimes send forth lymph cells into the blood, so that a blood count has to be made.

The examination of the whole of the diseased structure may be a hard task. To find out the source of a little pus or blood in the urine the urethra may be looked at with an endoscope; the bladder with another endoscope; the kidney may be photographed with *x* rays; and this in addition to the usual examination of the rectum, abdomen, and loins, and the microscopical and bacteriological examination of the urine.

Compare opposite sides of the body, for the sound side is a standard by which to judge the unsound. When a joint is diseased its healthy fellow tells the proper size, shape, temperature and range of movement. When the bones are at fault the comparison of opposite sides is all important, and may prevent serious blunders. I remember being shown the trapezium tubercle on the spine of the scapula by a man of long experience. He had taken it for an exostosis until the corresponding tubercle on the other scapula had been pointed out. When the bones are in question it is wise to have an *x*-ray photograph taken. Both sides of the body ought to be photographed for comparison because the shadow picture is so apt to mislead. A curious instance of misconception happened once. A man injured his hip. An *x*-ray photograph was taken, and as the neck of the femur on the injured side was so much shorter than the other an impacted fracture of the neck of the femur was diagnosed. The photographer had omitted to observe that on the sound side, owing to the position of his lamp, a longer shadow had been cast by the rami of the pubes, the ilium, the neck of the femur, and by the shaft of the femur, which looked twice its proper width. This made the injured side seem too short; as a matter of fact in the photograph it was the right length, and the opposite side was too long. Opposite sides of the body should be compared in feeling the arteries, testing the conductivity of the nerves, or the strength of muscles; hereafter you will learn to compare the eyes, the ears, the nostrils, and in truth all the paired organs.

Insist upon seeing what passes from the body. A man complained of a severe pain in the lower part of the abdomen, which was rigid and tender. The urine was passed into a glass, and contained flakes of lymph and muco-pus. He suffered from no increased frequency of micturition, and evidently did not attribute his pain and discomfort to the urinary bladder. A thin, anaemic woman had constipation and colicky pains in the abdomen. The course of the colon and sigmoid flexure was rather tender. After an aperient the motions were seen to contain mucous casts. A woman after parturition had a high temperature and rapid pulse-rate, abdominal pain, and, it is said, frequent vomiting. With very great difficulty a specimen of the vomit was seen, and found to be pneumonic expectoration. It had been assumed that she had so-called puerperal peritonitis.

Decline always to pass opinions upon things which you have not seen, and you will escape many pitfalls and humiliations. You ought to be ready to answer, "I cannot tell, for I have not seen it;" or, "I was not present." A pathologist asked to report upon a piece of tumour, said that the growth was cancerous and ought to be removed forthwith. Not having seen the patient, he was not aware that the unfortunate man had growth in nearly all the lymphatic glands of his neck. A surgeon was asked what he had found during an operation. In his reply, he advises that no further operation should be attempted, although he had not seen the patient for two years. He ought to have thought that in such a long time much might have happened. If you pass random opinions on things you have not seen, you are sure to be guilty of grave injustice to others, and will end by bringing yourself into contempt.

Learn to measure as accurately as you can what you see or feel. It is most unscientific and positively ludicrous to have tumours compared to fetal heads, oranges, apples, nuts, millet seed, and such like. Moreover, it is to my mind exceedingly nasty to compare the secretions and excretions of the body to cream, pea-soup, coffee, and other kinds of food.

These are some of the rules which I offer for your guidance. You will learn to use them by constant attendance in the wards and out-patient departments.

THE OPERATIVE TREATMENT OF CRANIAL DEPRESSION

(GREENSTICK FRACTURE OF THE SKULL).

By JAS. HENDERSON NICOLL, M.B., C.M.,
Professor of Surgery, Anderson's College, Glasgow; etc.

The following six cases were shown to the Glasgow Medico-Chirurgical Society on April 3rd last. Four of the cases were "birth fractures" and two due to injury during infancy. Of



Fig. 1.—Case I; before operation.

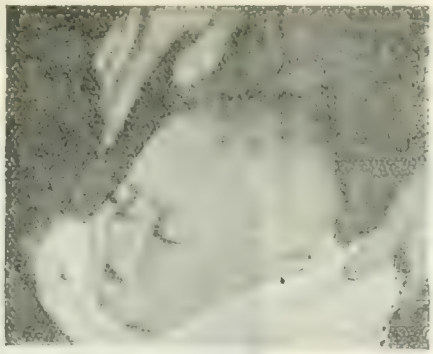


Fig. 2.—Case I; after operation.

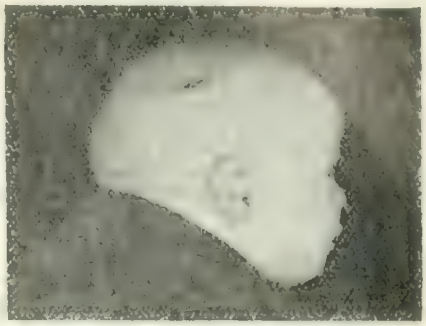


Fig. 3.—Case II; before operation.



Fig. 4.—Case III; before operation.



Fig. 5.—Case III; after operation.



Fig. 6.—Case II; after operation.



Fig. 7.—Case IV; Taken two weeks after operation. No photograph taken before operation.



Fig. 8.—Case V; before operation.



Fig. 9. Case V; after operation.

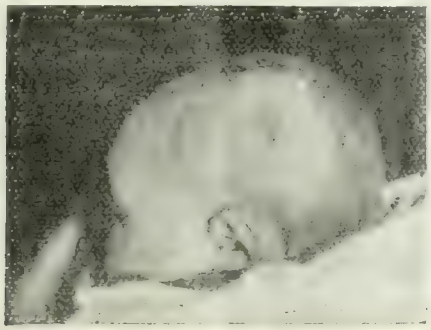


Fig. 10.—Case VI; before operation.



Fig. 11.—Case VI; after operation.

the four parturition cases, none had been treated at birth by Munro Kerr's manual moulding method. All six cases were treated as out-patients after operation at the Glasgow Sick Children's Hospital, being nursed at home by the mothers, instructed by the surgical sister, who visited them and undertook the dressing.

The operation was similar in principle in all the cases—namely, inversion of the depressed area of bone. Scalp and pericranium having been reflected in one layer, the depressed portion of skull was cut out by trephine ($1\frac{1}{2}$ to $2\frac{1}{2}$ in. diameter), inverted on the dura mater, and fixed in position by suture over it of the replaced scalp and pericranium.

Name.	Lesion.	Operation.	Result.
1. Baby E., 2 months	Parturition depression of left frontal. Elder brother, aged 3, formerly operated on by another method for similar depression.	Aug. 29, 1902	Scalp sutures removed at end of first week, at which time bony union in the skull was found to be firm.
2. Baby McL., 10 months	Traumatic depression of left parietal from fall out of bed at age of 6 months.	Sept. 9, 1902	Do.
3. Baby S., 3 months	Parturition depression of left frontal.	Oct. 17, 1902	Do.
4. Jessie B., 4 years	Parturition depression of left frontal.	Feb. 18, 1903	Do.
5. Baby McD., 4 months	Parturition depression of left frontal.	Feb. 17, 1903	Do.
6. Baby M., 4 weeks	Traumatic depression of left parietal from fall on edge of stool at age of 2 weeks.	March 17, 1903	Do.

The patients were photographed before and after operation, with the exception of Case No. 4, in which no photograph was taken before operation. The photographs after operation were taken at dates varying from ten days to three weeks after the date of operation.

The result has been in five of the cases complete correction of the deformity, and in the sixth partial correction. In this case (No. 3 in list) the trephine available was not sufficiently large to include the entire area of depression, and it is intended that by a second operation the united bony "dome" and the surrounding remains of the original depression be reinverted.

One of the most striking features in the results has been the rapidity of union observed in the bone. At the end of one week, when the scalp sutures were removed, the inverted disc of bone was in all six cases found to be firmly united with the skull, and this even in the one case, Jessie B., aged 4, in which the child was over infancy.

CASE OF CONGENITAL DEFORMITY OF THE NOSE ASSOCIATED WITH A DEGREE OF MEDIAN HARELIP.

By ALEX. MACLENNAN, M.B., C.M., L.M.,
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DEFECTS in the development of the median parts of the face and head are somewhat rare, for it is owing to an arrest in the growth of the lateral maxillary processes that the very common deformity of so-called harelip is due. At one time it was doubted if a median cleft could occur in the upper lip, but the occurrence of a number of cases of this rare condition has settled the question, and it is generally admitted that the deformity occasionally is seen. It is the explanation of the facts which still gives rise to the diversity of opinion.

P. M., aged 7 months, was brought to the out-patient department of the Western Infirmary, Glasgow, suffering from a deformity of the nose, which was congenital. The accompanying photographs give a much better idea of the condition than any description can do, but there are one or two points which the photographs (Figs. 1 and 2) do not bring out with sufficient clearness.

The protuberance on the nose was covered with normal-looking skin, and on section the normal structures of skin were found to be present. The small tubercle seen about the middle of the swelling was somewhat more hairy than the other parts, which were covered with the usual fine down. The internal anatomy of the nose was normal with the exception that the septum was much thickened in the region of the external deformity. There was no trace on the protuberance of the red part of the lip. That part of the lip which ought to form the labula was thinned in the middle, and it was quite apparent that the lip had escaped further deformity owing to a compensatory expansion of the lateral maxillary processes. The continuation from the borders of the nostrils of the normal structures which form the upper lip could be



Fig. 1.



Fig. 2.

clearly traced downwards from either side, sweeping in a curved manner to bridge over the gap left by the missing fronto-nasal process, and curving away from each other again so as to leave a small notch in the upper lip. The palate and mouth were normal.

I would offer the following explanation of the malformation: The deformity has arisen from an error in the growth of the fronto-nasal process, either in direction or in punctuality. The defect might conceivably be attributed to the lateral maxillary processes, which by their excessive growth united in the middle line and caused the median process to become diverted from its proper course. This, however, was unlikely, for the amount of union below the protuberance was not sufficient to lead to the belief that the lateral maxillary processes possessed such an exuberant growth. In all probability then, the growth of the lateral maxillary processes was compensatory, and they attempted to fill in the gap caused by the failure of the fronto-nasal process to do its proper share; and just because the union was so slender, the error in the growth of the nasal process was one of direction rather than of punctuality. The maxillary processes possessing a normal formative power grew on till they met in the middle line, and in a similar way the misplaced fronto-nasal process exceeded its normal dimensions—perhaps an attempt to reach its proper situation.

From a scrutiny of other examples of this malformation, it seems evident that the error lies in the fronto-nasal process which takes on a wrong direction of growth, for in certain cases the same deformity of the nose may be present while the gap in the lip is retained: thus showing that to produce this deformity no barrier to the downward growth of the median process is required.

On the assumption that the defect is due to the median process growing forwards, instead of directly downwards, the deformity is quite explicable. The nasal process turned forwards and left a gap, which in the present case became filled in by a compensatory growth of the lateral maxillary processes, but these left enough trace of their action to indicate the origin and nature of the deformity.

The description of the deformity as a tumour has been carefully avoided, for this is an example of growth which can in no sense be called a neoplasm, being merely a piece of tissue, normal in every respect save its position, and it is questionable if this tissue would ever have taken on such an excessive growth as to warrant the term tumour being applied to it. Still less can it be described as a teratoma, for the mass neither formed part of another ovum or of a blighted twin. In an ordinary double harelip the misplaced or normally placed fronto-nasal process is never called a tumour, and this swelling is merely the misplaced nasal process or part of it. This aspect of the subject has been discussed by Kredel[1] in connexion with his case, which is very similar to the present one.

The failure to grow in a proper direction is probably the least fault to which the various parts of the developing ovum are liable, and it is wonderful that such an event does not happen oftener. The supposition that the defect is only a

digression of the median process from the usual path is strengthened by the presence of an exuberant growth in the lateral maxillary processes.

Before describing the operations performed to correct the deformity, and to allow of a more normal subsequent development of the nose, it may be instructive to consider some allied or similar cases reported by other observers. The references to this rare abnormality, though not numerous, are so scattered that some of them may be overlooked.

Professor Trendelenburg,[2] who has written on and explained this deformity, kindly sent me two photographs in illustration of, and a number of references to, the subject. One case is apparently an example of the least possible degree of defect in the growth of the median process, and the deformity produced is a slight median furrow running down the point of the nose. Professor Trendelenburg could give me no further details of the case represented, but the illustration is none the less welcome and instructive. I am indebted to him for his courtesy.

As a different variety of the same defect in the trophic power of the median process, an interesting case was brought in the summer of 1902 to the out-patient department of the Western Infirmary. The child came from Paisley, being brought to have an opinion regarding the time for operation. No photograph was obtained, as the mother failed to return, and it is more than likely that the case of this interesting and rare defect is thus lost for the purposes of illustration; but I have consoled myself by sketching an atrocity, which will be hereafter referred to as the Paisley case. The lunula was represented by a diminutive atrophic flap, which formed a little projection into a median harelip (Fig. 3). The rest of the face and the mouth were normal.



Fig. 3.—The Paisley case

Here the defect was clearly in the trophic power of the fronto-nasal process as distinct from any error in its direction of growth.

Browne[3] reported a case "with entire absence of the nasal bones and no appearance of the nose whatever; also a wide single harelip; no deficiency of the palate, but a fistulous opening extending along its upper surface, leading directly backwards and communicating with the pharynx, anteriorly passing upwards in the direction of the nasal fossa for about ¼ in." No sketch is given with this paper, and the child only lived seven days. There can be no doubt that the defect in the fronto-nasal process was extreme, and was probably accompanied by some defect in the lateral nasal processes as well.

Rose,[4] in his work on harelip and cleft palate, cites Hadlich as follows: "(Hadlich) described changes in the brain in two cases occurring in Langenbeck's clinic, consisting mainly of amalgamation, more or less, of the two hemispheres; the corpora striata and the optic thalami were united in the middle line, and the third ventricle, fornix, corpus callosum, and the olfactory nerves were absent. It is interesting to note the association of such an abnormal fusion, with the defective development of the median parts of the nose and face." Such a case is of interest when compared with the one here described, where a defective development in one region is partly corrected by an increased development in another. Rose further remarks that a true median cleft is rare, and he refers to Pitt's case as being about the best example.

Pitt[5] described a case where the median cleft extended half way up the columna. Witzel[6] reported a case (to be found in the Rostock Pathological Museum) where behind a cleft in the upper lip was to be found a median division of the premaxilla, each half of which was firmly united to the adjacent superior maxilla. Here the defect extended to the upper part of the face as well.

Nase[7] and Lexer[8] have reported cases where the median fissure was confined to the nose.

A case similar to the one forming the text of this paper has been described by Kredel and referred to already. In it the outgrowth replaced the nose; the nostrils were situated at the sides. The root of what should have been the nose was very broad, and the eyes were correspondingly far apart. The palate and uvula were normal. Kredel affirms that a median fissure of the frontal process cannot occur; yet this very deformity is noted as occurring in the case which Witzel has described.

Bland-Sutton[9] shows that a median fissure can exist by absence of the median parts of the face. Thus it appears that an ordinary double harelip produces the so-called median harelip when the fronto-nasal process fails to take up its usual position between the lateral maxillary processes. The ordinary single harelip is due to the defective growth of the lateral maxillary process of the same side—the double variety is due to defect of both lateral processes, and as it implies a more profound abnormality, the lateral processes often fail to reach each other and the fronto-nasal process in its entire extent. The common double harelip with cleft palate is so formed. In the so-called median harelip the defect exists, not in the maxillary processes, but in the fronto-nasal process, and as already stated is probably due to an error in the direction of growth in such cases as the present one, and to an arrest of growth in such cases as the Paisley one.

To recapitulate: The common deformity appearing in the upper lip is due to an inadequate growth of one or both lateral maxillary processes. Inadequate growth of the median process will give rise to that type of deformity, a minor degree of which is exemplified in the Paisley case. When the defect is confined to the interglobular area the very rare and disputed (albeit mistakenly) true median fissure will occur as in the hare normally. Another kind of deformity will ensue when the growth takes place in the wrong direction; I believe the present case to be of this nature. Defects about the lateral nasal processes are very rare; they give rise to malformations about the eye and nostril. (See Fig. 4.)

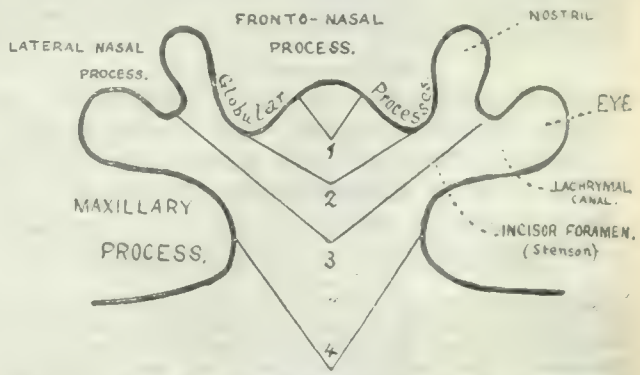


Fig. 4.—1. Defect produces median fissure, as in rodents (Pitt's case, etc.); Scarpa's foramen. 2. Defect produces median fissure by omission: (1) in growth (trophic) "Paisley case"; (2) in direction of growth, present case; (3) in punctuality (theoretical). 3. Defect produces (1) incomplete nostril, usually associated with ordinary harelip; (2) incomplete closure of lachrymal canal: fissure on the face. 4. Defect produces ordinary lateral or bilateral harelip, with or without cleft palate.

The operation performed to remove the deformity was not very complicated. Two segmental pieces of skin were removed from either side of the mass deforming the nose so as to leave a strip of skin sufficiently wide to fill in the gap between the nostrils. This bridge of skin was dissected free

from the outgrowth and formed a flap which extended down to the median fissure in the lip and the lower third of which formed the new lunula. The bulk of the outgrowth was formed of fat. By extending the horizontal incision above the median notch in the lip, and by stitching it vertically an attempt was made to obliterate the fissure. The nostrils were freed from their attachments to the bone and were sutured with catgut beneath the long median flap. Horse-hair and silkworm were employed for the superficial sutures. The operation was too ambitious, and healing did not progress as satisfactorily as was wished. The stitches in the lip gave way, leaving a raw surface, and the notch in the lip reappeared. In about six months a second operation was performed to improve the lip and to get a better angle between lip and nose. The incisions were complicated, but on this occasion healing took place by primary intention and the result has been fairly satisfactory (Figs. 5 and 6).



Fig. 5. Fig. 6.

The interest in the case, however, lies not in the operation but in the deformity itself.

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TRANSPLANTATION OF THE INSERTION OF THE BICEPS TENDON FOR PERSISTENT CONTRACTION OF THE KNEE-JOINT IN A CASE OF RHEUMATOID ARTHRITIS.

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E. B., a woman, 30 years of age, was admitted into the London Hospital, under the care of my colleague Dr. Sansom, on February 12th, 1901, for subacute rheumatoid arthritis. She was married, had had four children, and one miscarriage. There was no history of syphilis or gonorrhoea. She herself had never had rheumatic fever, but there was a well-marked history of articular rheumatism, rheumatic fever, and heart disease in the family. Her own illness began ten years before in the left metatarso-phalangeal joint. Then it spread to the ankles; later on it attacked the fingers, and then the knees. On an average, there had been one attack each year, and the only real respite she had had was for nine months, four years ago, after a prolonged stay at Buxton. For the last three months she had been confined to bed, nearly every joint in her body being affected.

On admission it was noted that she was very much wasted, and that hands, feet, elbows, and knees alike were swollen, painful, and contracted. There was no evidence of organic heart disease, arterio-sclerosis, or granular kidney.

Hot air baths relieved the pain, but did not otherwise benefit her. Massage effected a slight improvement. Weight extension was placed upon the legs, as the knees were contracted almost to a right angle; but after two months' trial the angle of flexion was scarcely lessened, and the hamstring-tendons at the back were as tense and rigid as they could be.

The case was transferred to my care on April 18th, and I determined to try the effect of transplanting the insertion of the tendon of the biceps from the flexor to the extensor side of the joint, in the hope that, by weakening one and strengthening the other, I might restore the balance of power, and get and keep the knees straight. It was recognized that the operation could do the complaint no good; but it was hoped that, at least, it would be able to allow the patient to stand upright, and walk even if the knees were stiff.



Fig. 1.—Showing the patient after operation.

An incision was made on the outer side of each limb; the tendon detached from the fibula; the quadriceps exposed, and the tendon of the biceps passed through a slit made in it, so that it lay upon the anterior aspect. A few sutures were passed through the two tendons to secure them, the ordinary dressings applied, and then the knees secured in their contracted position until the wounds were healed. The same weight extension that had been used without the least effect before was applied again, and the knees began to straighten out at once. It was some time before the patient was able to stand owing to her general condition, but at the beginning of July she was sent down to Buxton, and now, eighteen months after the operation, there is no recurrence of the contraction. She is able to stand without support and walk about sufficiently to come to hospital and perform her ordinary household duties.

The operation is so simple and devoid of danger and has succeeded so well in the present case that it seems to me it might be performed with advantage in other cases of contraction of the knee-joint, whether arising from rheumatoid

arthritis or other causes, which persistently and obstinately relapse. I am not aware that it has been performed in any similar instance, but recently I have tried it in the case of a child suffering from chronic disease of the knee, in which the joint always has begun to bend again as soon as the splint was left off, but it is too early as yet to enable me to say that the success is permanent. A photograph of the patient taken eighteen months after the operation is appended. (See Fig. 1, p. 1582.)

CASE OF SARCOMA OF THE FEMUR, WITH DESCRIPTION OF A RECENT METHOD OF AMPUTATION AT THE HIP-JOINT.

By CORNELIUS A. GRIFFITHS, F.R.C.S.,
Assistant Surgeon, Cardiff Infirmary.

On February 24th, 1903, there was admitted under my care at the Cardiff Infirmary a young girl, aged 16, suffering from an immense swelling of the right thigh.

History.—The patient, who had lived at home with her parents, stated that the trouble in the thigh dated back about six months, and the first thing noticed was pain resulting from no apparent cause (such as injury) on both sides of the right knee-joint. This was supposed to be due to rheumatism at first, and was treated as such. Soon, however, a swelling appeared in the lower end of the thigh, immediately above the knee-joint. The enlargement continued to increase steadily and rapidly. Sarcoma of the thigh was diagnosed, and the patient was sent to Cardiff.

State on Examination.—When admitted the patient was in a wretchedly emaciated condition. The right thigh in its lower two-thirds was occupied by an enormous swelling (Fig. 1). The skin was tense and shining, with many large veins apparent; there was no tenderness. The surface was uniformly smooth, and here and there were some rather soft patches where fluctuation could be obtained. There was no "egg-shell" crackling, and the limb, in spite of its great weight, could be held up from the bed by muscular action and moved freely, the continuity of the femur being still intact. The knee-joint was free, and contained no fluid in excess. A few slightly-enlarged glands could be felt along Poupart's ligament. Circumference of the thigh at its greatest part was 27 in., the opposite thigh being 9 in., and that of the waist was 20 in.

Diagnosis.—The diagnosis was that of a periosteal sarcoma of the femur, and the only treatment—amputation at the hip-joint—at first flatly refused; then, after a fortnight's delay, consented to, the intervening time being utilized in feeding up the patient and preparing her for one of the most severe operations in surgical practice.

Operation.—On March 6th the patient was anaesthetised, and a subcutaneous injection of strychnine (mv liq. strych.) administered before the operation was commenced. The vertical limb of a racquet-shaped incision was commenced about 2 in. above the great trochanter, and into this incision at its upper end was inserted the smooth blade of a pair of tourniquet forceps. This was pushed inwards parallel with Poupart's ligament for its whole length immediately in front of the hip-joint, and beneath the femoral vessels. The forceps were then closed. Thus clamping all the vessels in what would become the anterior flap, another pair of forceps was used, the deep blade this time passing behind the neck of the femur, thus controlling the circulation in the posterior flap; the oval part of the incision was now marked out, and the skin retracted a little way all around. The muscles attached to the great trochanter, and in front of the hip-joint, were next divided. The joint was opened from the front, and the limb quickly and easily disarticulated, and removed by a few strokes of the knife, the only spouting vessel seen at this stage being a tiny artery, in the capsule of the hip-joint; all the vessels which could be seen were now picked up and tied, and then the value of the forceps-tourniquet was demonstrated in the search for the smaller vessels, which were found by loosening the forceps and immediately closing them when a bleeding point showed the position of a vessel, thus reducing the loss of blood to a minimum. The operation was completed by closing the wound entirely by means of a series of buried sutures for the deep parts and the usual superficial skin sutures. Rectal injections of brandy and saline solution were given when the patient was put to bed, and subcutaneous injections of strychnine and digitalin.

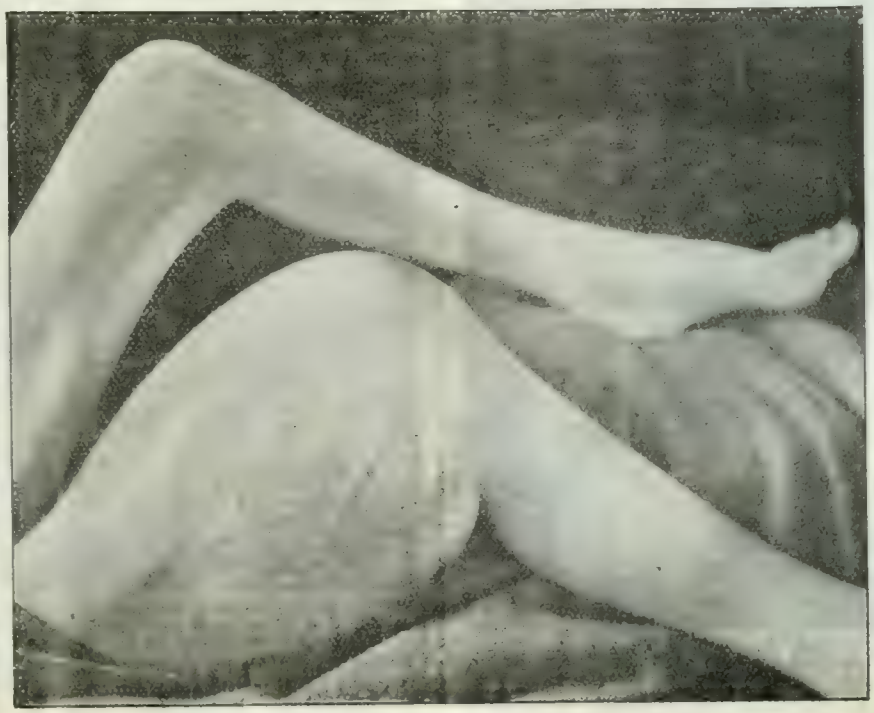


Fig. 1.—Tumour before operation.



Fig. 2.—Section of entire growth.

Progress.—The operation was borne well, but shock became more apparent on return to consciousness a few hours later, and in the evening was so great that Dr. Brownlee (house-surgeon) gave an intravenous injection of four pints of saline solution. This was followed by natural sleep, after which the patient rapidly improved, and left the infirmary on May 20th, having put on flesh at the rate of 1 lb. a week after operation.

Pathological Examination.—Fig. 2 shows a section of the entire growth; it will be seen to grow from the periosteum, the intact femur running down the centre; spicules of bone can be seen radiating between femur and surface, and cavities which contained blood and a glairy fluid. The separation of the epiphysis—well shown—occurred after removal. Microscopically the growth was found to be a small round and spindle-celled sarcoma.

For the immediate success of a severe operation, such as amputation at the hip-joint, it is essential that loss of blood should be reduced to a

minimum, and that other factors in the production of shock should be excluded by every means possible. For the control of haemorrhage in this operation works on surgery still give a number of methods, from Davey's lever to preliminary ligature of the external iliac or femoral vessels, but without going into the arguments for and against these methods I venture to say that the most satisfactory of all the methods known to me is that by means of the forceps-tourniquet, which I have already mentioned. For a fuller description of this instrument, which was originally introduced by my friend and colleague Mr. Lynn Thomas, C.B., I may refer those interested to a paper by that gentleman in the BRITISH MEDICAL JOURNAL of April 20th, 1901. I have recently used the forceps in an amputation at the shoulder-joint for malignant oedema, and in other amputations, and have always been pleased with it.

Another point to which I attach importance in this operation is that of immediate disarticulation instead of dividing the femur first and then dissecting out the rest of the bone. I think the sawing of the bone must contribute to the shock, and the time—another essential factor in any operation—can be reduced by removing the limb entire.

"INDIARUBBER JAW":

A PECULIAR CARCINOMATOUS INVASION FROM THE SUBMAXILLARY SALIVARY GLAND.

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(From the Pathological Department of the University of Sydney.)

THE clinical history of this case is as follows:

J. G., a commercial traveller, 55 years of age, was admitted to Prince Alfred Hospital, Sydney, on November 25th, 1901. I am indebted to Dr. MacCormick for permission to publish, and to Dr. Barling for the following details of the clinical history of the case: The patient complained of a lump under the lower jaw. He first noticed five months ago that the teeth were loose. This caused some difficulty in chewing. He also had occasional pains shooting up on either side of the face. Three weeks before admission he noticed a lump coming just below the middle of the lower jaw and extending along the left side. On examination he appeared a well-nourished man. The jawbone seemed broken at the symphysis, and the two halves could be readily moved on each other. Behind the symphysis, and extending along the inner side of the jaw for about 1 in. on the right and 2 in. on the left side, was a hard, smooth mass firmly attached to the bone: it was not at all tender. No enlarged glands were to be felt on either side of the neck.

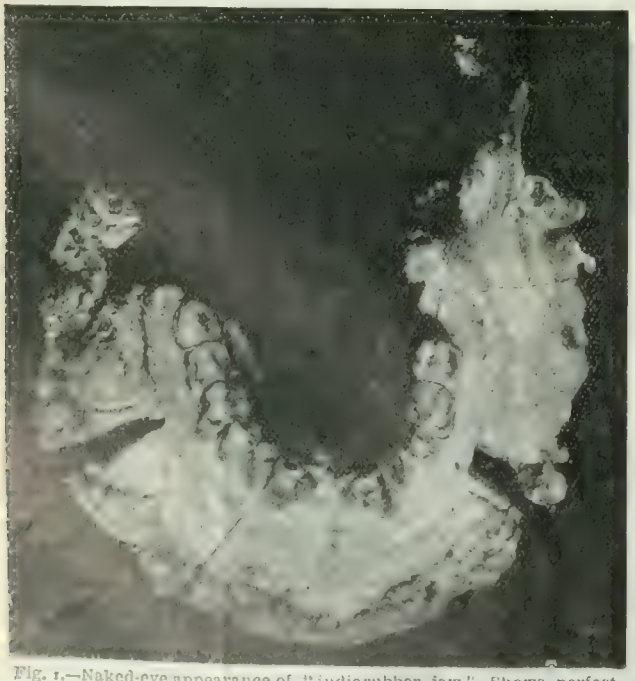


Fig. 1.—Naked-eye appearance of "indiarubber jaw." Shows perfect character of teeth and incisions made by knife.

November 30th.—Under chloroform, a skin incision was started just below the symphysis and was continued down the middle line for about 2 in. and then outwards over both submaxillary spaces. The skin flaps thus made were dissected up, the glandular tissues in the submaxillary spaces freed and left attached to the jaw, the lip divided and the skin flaps thus turned back, and then the jaw was removed, being divided on each side through the ascending rami a little above the angles. The wound was completely healed in 18 days. At the end of 1902 the patient was readmitted to the hospital for some medical ailment. There was then no sign of recurrence of the growth.

Description of Removed Jaw.—The horizontal ramus throughout from one angle of the jaw to the other is swollen into—on cross section—a pear-shape, whose apex is at the teeth and whose inner side is flattened. Macroscopically, no bony tissues remain in this, but the original structure is replaced by a dense whitish neoplasm, showing minute bloodstained streaks, which can be easily cut by a knife, yielding a creaking sensation (Figs. 1 and 2). The teeth are present and quite

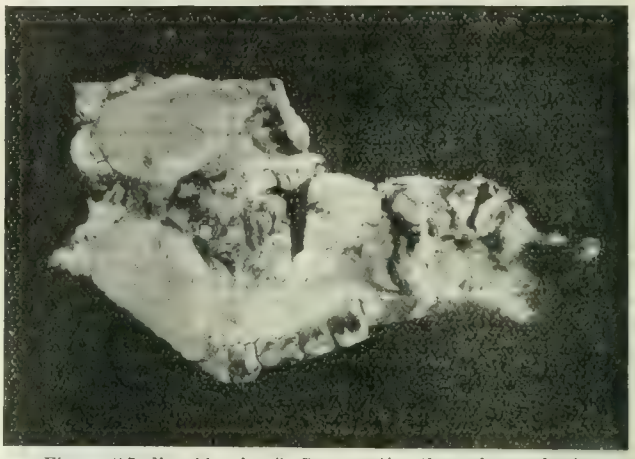


Fig. 2.—"Indiarubber jaw." Cross section through symphysis.

perfect and embedded in this new tissue, no bony tissue being present, even in their sockets. There is an irregular line of demarcation at the angle of the jaw where the healthy bone and angle of the jaw meet. The submaxillary glands and other structures subjacent to the jaw are adherent to it, but this adherence is not very dense. The submaxillary glands are a little enlarged and firmer than usual, with black lines of pigment in their septa. The fatty tissues surrounding the glands and under-surface of the jaw are firmish, greyish, and adherent.

Microscopical Appearances.—The typical appearance of the new growth, when unaltered by adverse conditions of environment, is well seen in the adipose tissue surrounding the lower jaw (Fig. 3). Here narrow epithelial-lined ducts may

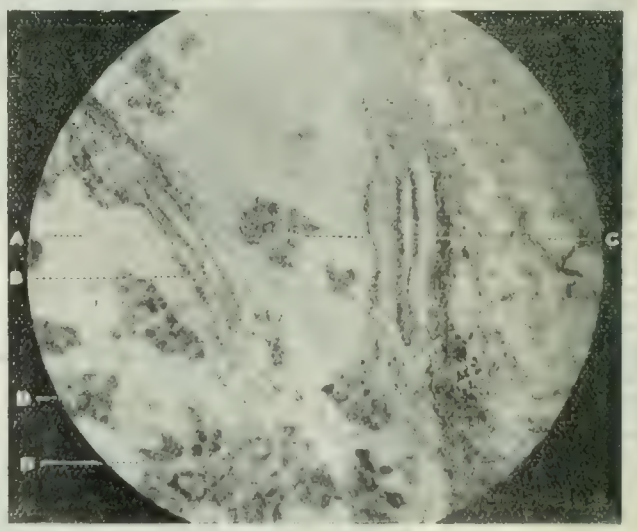


Fig. 3.—Carcinomatous invasion of adipose tissue. (Low magnification.) A, fat cells; B, new-formed duct; C, group of acini; D D, newly-formed acini.

be seen branching in an arborescent fashion between the fat cells and terminating after division in rounded alveolar ends. The epithelium lining the ducts is tall and columnar. The terminal acini form small clumps of polyhedral cells

packed closely together with no evident lumen. A definite basement membrane cannot be distinguished, but the groups of cells were separated by young fibrous tissue and connective tissue cells: in some places there is a minimum of this, and in others a considerable amount. In sections stained with eosin and haematein the smaller ducts can be distinguished from these groups by the larger amount of eosin-staining protoplasm, by the more columnar character of the cells, and by the presence of a lumen. The cells lining the ducts consist of one layer only. The larger ducts run through the fatty tissue in dense fibrous septa, and are accompanied by engorged blood vessels surrounded by many rounded connective tissue cells (these, fewer in number, also surround the ducts). Small homogeneous eosin-staining masses may be seen in many of the larger ducts. Scattered islets of acini are seen in the adipose tissue in advance of the main mass; these may be merely outlying portions cut off by the direction taken in cutting the section, or may show extension by detached masses along the lymphatics. The glandular formation appears to be growing in between and surrounding the fat cells.

Fig. 4 is the representation of an interesting section since it shows on one side (the left) of a dense fibrous band a healthy portion of a salivary gland, while on the other side (the right) is a dense invading mass of acini much less typical in character, traversing the fibrous tissue and extending into the surrounding fatty tissue. Indistinct in the photomicrograph, but under the microscope clearly distinguishable, small groups of acini of aberrant type may be seen

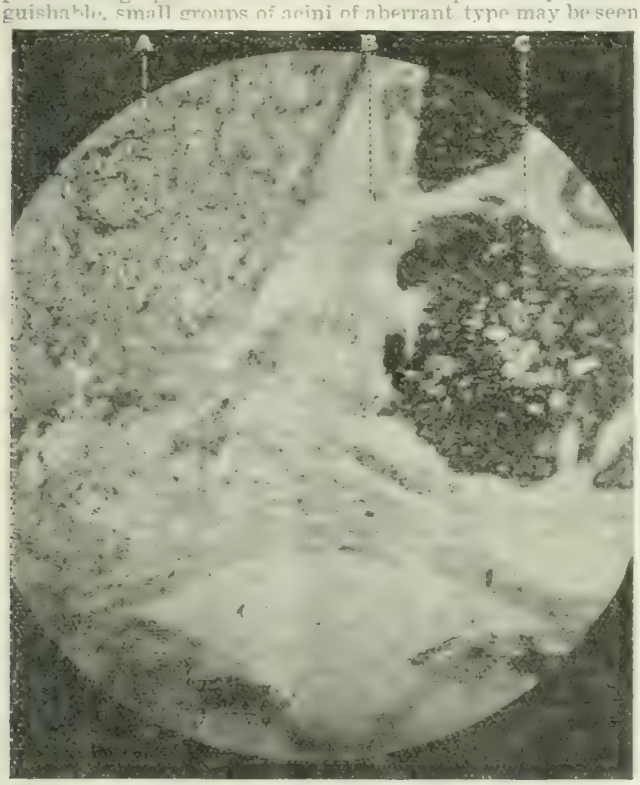


Fig. 4.—Showing healthy salivary gland tissue and mass of carcinomatous cells (low magnification). A. Healthy salivary gland; B, dense fibrous band: C. mass of carcinomatous cells.

scattered through the fibrous tissue between the two main masses and even amongst the peripheral acini of the healthy gland tissue. The cells of these atypical acini are smaller than the normal and their nuclei stain more deeply with haematein. It is hard to decide whether this section shows an invasion of a healthy portion of the gland from the outside or the development of a malignant character in the normal glandular tissue with secondary extension to the outside.

Muscle tissue seems to escape invasion entirely.

In *bone* the "natural" charrcters of the new growth are profoundly altered by the unyielding nature of the tissue it invades. The typical tubular arrangement is replaced by densely-packed masses of cells with large oblong nuclei and relatively little protoplasm; here and there they assume a more columnar shape, and surround a circular lumen whose centre may be occupied with a uniform eosin-staining mass

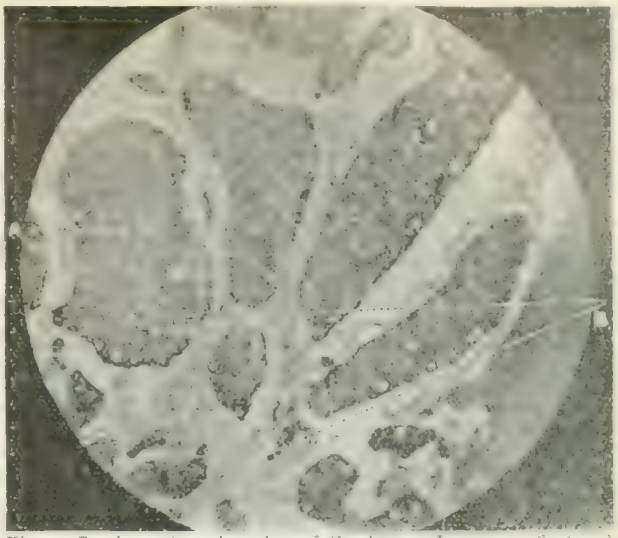


Fig. 5.—Carcinomatous invasion of the bone. (Low magnification.) A. Large epithelial mass showing attempted duct formation: B. matrix of decalcified bone converted into dense fibrous tissue and invaded by the carcinomatous masses.

(Fig. 5). The original osseous matrix which these large islands of cells have invaded has become quite decalcified, and is replaced by a dense fibrous stroma containing many spindle-shaped and irregular connective tissue cells. Occasionally, in the centres of the larger epithelial masses, a degenerated area with necrosing cells may be noticed tending to form a "false" cystic space. There is no other evidence of degeneration other than this. In places in the stroma accumulations of altered haematin may be seen, and occasionally this has burst into the cellular spaces, displacing their contents. The cell masses, having once invaded the jaw, tend to be limited by the representative of the periosteum, a thickened layer of dense fibrous tissue arranged in layers and showing dilated blood spaces and altered blood pigment.

The Invasion of the Bone.—In a section taken at the level of the symphysis, and in its posterior aspect, some islets of bony tissue yet remain. Such sections exhibit very clearly the processes preceding the invasion of the new growth. The least altered material appears in the centre of the islets as a calcified bony tissue, which, however, shows already a departure from the normal in the bony lacunae, and their corpuscles being enlargod, and in the calcified particles appearing as granules. Outside this somewhat granular centre is a zone stained uniformly with eosin, though containing a few bone corpuscles; this is completely decalcified bone matrix. The bone corpuscles towards the periphery of this bone enlarge, and apparently multiply; at any rate they form at its periphery a single layer of large irregular cells. Beyond this the bony matrix has quite disappeared, but these irregular cells become transformed into a mass of large spindle-shaped connective tissue cells, and into such the epithelial masses grow, the spindle cells forming, as it were, a cap to them. Whether the bone corpuscles really multiply to form this cap of spindle cells, or whether the epithelial masses in their advance merely push before them all the connective cells they have met by the way, I cannot definitely say, but incline to the former opinion as conforming more with the irritative properties of such cell invasions.

The appearances seen in this invasion of bone are exceedingly interesting. Far in advance of the epithelial columns we notice a change going on which can presumably only be due to the solvent action of some toxin associated with the new growth. Whatever it is, it has the power of dissolving the calcified matrix of bone, a decalcification from microscopic appearances independent of cellular activity, and therefore differing in nature from that occurring in osteomalacia or senility. Is this decalcification purely a chemical process? Is it dependent on the solvent properties of some complex organic acid? Is the production of the toxin the result of altered metabolism due to irritation of the epithelial cells, or is it elaborated by the, as yet, undiscovered organism that surely must originate such malignant neoplasms? These are questions that can be suggested, but not as yet answered.

As the epithelial masses are approached and the action of

the toxin increases, the previously almost stationary bone corpuscles rejuvenate, enlarge, and multiply, and eventually form a highly cellular and active mass of cells. They form, as it were, a corps of pioneers with outlying sappers and miners who by their cellular activity absorb and remove the already decalcified bone matrix that lies in the path of the advancing army of epithelial cells, thus smoothing the way and removing all difficulties. The connective tissue cells have become the working slaves of the epithelial; and, carrying the analogy still further, in their degradation have deteriorated from their once higher development. The epithelial cells have possibly no power in themselves for thus absorbing bony tissue, but by their influence on the connective tissue cells of bone origin which have this power they stimulate them to such exertion. Thus, with skilful generalship, the victorious army of epithelial cells triumphantly advances.

Origin of the Epithelium.—The arrangements and characters of the epithelial cells are unlike those of sebaceous or sweat glands, of dentigerous tissues, or remains of the thyro-glossal duct. They could then only originate in the sublingual or submaxillary salivary glands; no other glandular epithelial structures exist in this region. In which of these two it had originated the extent of the growth would not permit me to say.

Professor Welsh, of the Sydney University, has kindly allowed me to make sections of a portion of a tumour of the jaw in his possession, in which a duct-like arrangement and the characters of the cell-masses resemble closely those in this case, though the appearance is not so beautifully regular as that seen in sections of my tumour, where it traverses adipose tissue. Unfortunately, the clinical history is not obtainable, but I understand that the origin of the growth was supposed to be in the submaxillary gland.

In conclusion, let me draw attention to the following points:

1. The rarity of the condition.

2. The good general health of the patient before the operation, and at least for a year afterwards with no recurrence up to that time.

3. The peculiar characteristic of elasticity in the part of the jaw affected. This could be bent considerably, and would spring back on removal of the pressure. It is best described by the term, "indiarubber jaw."

4. The absence of practically all degenerative processes even where the cells were aggregated into considerable masses. This probably accounted for the complete set and perfect character of the teeth, which, fixed merely in a dense fibrous matrix, doubtless received an excellent blood supply. The decalcification of the bone forming the tooth-sockets must have very appreciably preceded the invasion of the epithelium. This preservation of the teeth—though loose—is an exceedingly remarkable fact.

5. Where the growth was but little affected by its environment, the perfect way in which the invading neoplasm aped the tissue from which it had sprung. Rarely in a carcinomatous growth do we see large ducts, small ducts, and acini, and all the arrangements of the original gland tissue faithfully reproduced. A carcinoma usually consists of a multiplication and alteration of the cells of one particular part of the gland only—of the ducts or of the acini. It is generally accepted that the less they resemble the structure of the origidal tissue the more malignant they become, and vice versa. This may account for the undoubted mild malignancy of this tumour.

6. The method of invasion of bone.

I desire specially to thank Professor Welsh of the Pathological Department of the University of Sydney for his skilled advice and kind direction to me during the preparation of this paper.

ABDOMINO-PERINEAL EXCISION OF THE RECTUM BY A NEW METHOD.

By LOUISA B. ALDRICH-BLAKE, M.S.Lond.,
Surgeon, New Hospital for Women.

The method of excision of the rectum which I am about to describe is one which in certain essentials I believe to be new. It gives free removal of the primary growth however high in the rectum it may be situated, permitting at the same time complete clearing out of the post-rectal fat and glands up to or beyond the bifurcation of the aorta. The continuity of the bowel is not interrupted until the abdominal stage of the operation has been completed. The anus is retained in its normal position, the nerve supply of the sphincter is not interfered with, and the union of the divided bowel is placed at or close to the anus; the danger of soiling the peritoneum with faecal matter either at the operation or by leakage at the junction is thus minimized.

The patient for whom the operation was designed was admitted to the New Hospital for Women on February, 25th, 1903.

Case 1.—Mrs. W., aged 54, widow, came to the hospital complaining of passage of blood and slime, diarrhoea and pain in the rectum.

History.—Fifteen months before admission she passed a large quantity of blood, having been previously constipated for a week. Since that time she had constantly passed blood and slime, with much pain on defaecation. During the same period she had suffered much from diarrhoea. She had never suffered from piles, and the bowels were always regular until the present trouble.

State on Admission.—The patient looked thin and ill. Appetite poor, no nausea or vomiting, no distension of the abdomen, no faecal accumulation. Liver not enlarged. Per rectum, the anus was normal, but ¾ in. from the anus the finger reached the lower limit of a hard, irregular mass with an everted edge. This mass filled the lumen of the bowel, and appeared to grow from the whole circumference. The finger could not be passed into, and still less beyond, the stricture, so that examination for glands in the hollow of the sacrum was inconclusive. The cervix uteri could be plainly felt through the rectal wall quite below the level of the growth, and examination both by the rectum and vagina showed the uterus to be freely movable, and in no way attached to the growth. Bimanual examination showed the rectum with the contained growth to be fairly movable. The bowel below the stricture was markedly ballooned. The mucous membrane of this part was quite healthy.

As there was no distension, and no faecal accumulation could be made out, I did not think a colotomy needful in order to get the bowels cleared, and as in the operation I proposed the junction would be close to the anus, the danger of leaking at the line of union would be very small. If not really needed preliminary colotomy appears to me a disadvantage, as it wastes two or three weeks of time, complicates the subsequent abdominal section, and necessitates a third operation for its closure when the union of the rectum is firm. The bowels were cleared by castor oil and enemata, and the operation was done the following day, February 27th.

Operation.—The patient was anaesthetised with A.C.E. mixture and placed in the Trendelenburg position. The abdomen was opened by a median incision 5 in. long, edges held apart by a Kelly's self-retaining retractor, and the uterus, covered by a gauze veil, was held forward with a flat retractor

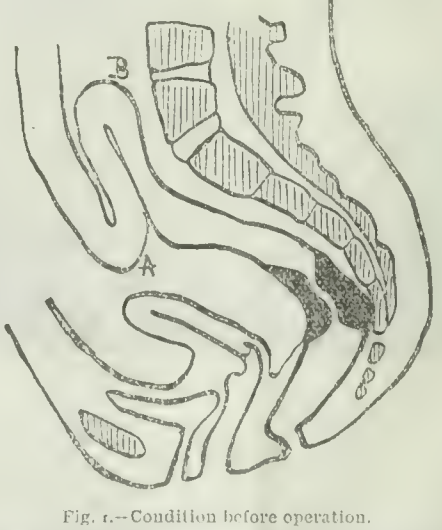


Fig. 1.—Condition before operation.

The rectal growth could then be plainly seen wrinkling the peritoneum over the anterior aspect of the rectum at the back of Douglas's pouch. The limits of the growth could be easily made out, and the rectum was found freely movable from side to side. A U-shaped incision in the peritoneum was made beginning on the left side of the sacral promontory going down the hollow of the sacrum just clear of the rectum, across Douglas's pouch well in front of the growth, and up on the right side to end on the promontory to the right of the rectum. With the finger and handle of scalpel the rectum and fatty tissue were completely freed from the hollow of the sacrum down to or a little beyond the tip of the coccyx. It also separated easily from the vagina in front. The

freed rectum was then held forwards and the fat and cellular tissue, which contained several enlarged glands, were followed up to the bifurcation of the aorta in one continuous mass till the upper limit of this tissue was apparently reached. The rectum was now held posteriorly only by the superior and two middle haemorrhoidal vessels, which were tied and then cut.

If the sigmoid mesocolon had admitted of it I had intended to bring the most dependent portion of that loop of bowel to the anus, removing the rectum and lower half of the sigmoid flexure. I found however that in this individual the sigmoid was unusually short, and I therefore determined to straighten out the lower part of the sigmoid and its junction with the rectum (B, Fig. 1).

The sigmoid was turned towards the mid-line, and the left end of the U-shaped incision in the peritoneum was continued up about ¼ in. outside the line of attachment of the bowel, care being taken not to go deep enough to injure vessels. A few careful snips in any portion of the sigmoid mesocolon, which seemed tight, freed the flexure sufficiently, when displaced towards the mid-line of the brim, to allow me to carry the lower part of the sigmoid to the tip of the coccyx without undue tension, and there was beyond this a healthy portion of rectum, which appeared to me perfectly well nourished, which would stretch from the coccyx to the position of the anus. A silk stitch was passed through the peritoneum of the anterior wall of the rectum at that spot to serve as a guide to the place of division selected, when the bowel should be brought out in the perineum.

The rectum, with the growth and attached fat and lymphatics, was pushed down into the lowest part of the pelvis (Fig. 2). The cut edge of the U shaped incision in the pelvic peritoneum was united to the lateral and anterior aspects of the straightened sigmoid in its new position by fine silk sutures, the pouch of Douglas thus formed being a very shallow one (Fig. 2, D.P.).

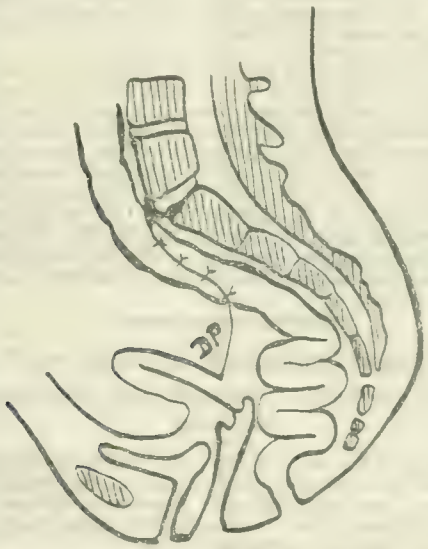


Fig. 2.—Condition at the close of the abdominal stage of the operation.

The pelvic peritoneum and viscera were sponged over with warm saline solution, and the abdomen closed by suture in three layers, dressed, and bandaged. Patient was now put into the lithotomy position, the rectum washed out, and the surrounding skin again cleansed.

A scalpel was passed through the posterior wall of the rectum about ¾ in. up, dividing the anal margin and all the tissues in the mid-line back to the coccyx. The posterior part of the incision was deepened till the portion of rectum which had been separated from above was reached. The anus was held open and a circular incision made through the rectal wall about ¾ in. up; the rectum above this was caught in a clamp and drawn down, a finger passed in at the posterior median incision easily freed any attachments that had not been divided, and the rectum could then be drawn out through the anus until the guiding suture appeared, at which level it was cut through transversely, the upper end showing its vitality by bleeding quite freely.

The upper and lower ends of the divided bowel were now united by five silkworm gut sutures passing deeply into the internal sphincter and levator ani below, and taking a good hold on the rectal wall above. Between these several catgut sutures were used to approximate the edges more accurately. In order to obviate danger of leakage into the cellular tissue at this junction I made no attempt to unite the sphincters posteriorly, as that can be done at a subsequent operation. The hollow of the sacrum was packed with iodoform gauze, secured by a pad of wool and a T bandage.

Progress.—The patient made an uninterrupted recovery. She was kept on a very low diet, but no opium was given, and there was no appearance of faeces at the anus until March 5th, a week after the operation. After that the bowels acted several times a day; she often knew when an action was about to occur, but had no control. On March 20th she began getting up and about the ward, and was discharged on April 23rd, to return for an operation to close the sphincter, when the small cavity, which was all that remained of the wound between rectum and coccyx, should have healed entirely.

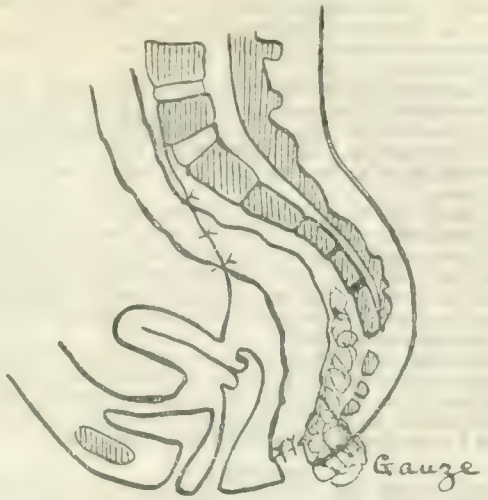


Fig. 3.—Condition at the end of the operation.

I have described the operation as I actually performed it on February 27th. By its means I removed 6½ in. of the rectum, together with all the fatty tissue and glands, from the hollow of the sacrum as high as the bifurcation of the aorta. The growth almost completely encircles the bowel, its vertical measurement is about 2 in., and microscopically it shows the structure of a typical adeno-carcinoma of the rectum. Some of the higher glands examined microscopically show no sign of growth.

M. Quénu[1] advocates abdomino-perineal excision of the rectum, but his method differs wholly from mine in that a permanent inguinal anus is made a fortnight beforehand, and the rectum is removed after ligature of both internal iliac arteries.

The idea of bringing the sigmoid flexure to the anus is by no means new. Kocher[2] mentions it as a possible procedure in his perineo-coccygeal excision, an advance which he attributes to Rehn; and it is strongly upheld as the proper method of completing an excision of the rectum by Schuchardt in a paper published in 1899,[3] in which he states that he on one occasion freed 40 cm. and removed 30 cm. as measured from the anus by the perineo-coccygeal method.

With regard to the perineal portion of the operation the median posterior incision does not interfere with the blood or nerve supply and does the least possible injury to the muscles, while it gives greater freedom in separating the lower part of the rectum than would be obtained by merely dilating the sphincter.

In the case I have described the median posterior cut through the sphincters was not sutured, as the line of union was just above the internal sphincter, and I feared strain on that junction, which I thought would be obviated by leaving the sphincter open. It has since struck me that by adopting Moulonguet's proceeding[4] of dissecting off the mucous membrane from the anal segment, after division of the rectum above the internal sphincter, and drawing the sigmoid or upper part of the rectum through the denuded sphincter, one could put the junction at the anal margin—that is, actually on the surface of the body, while still preserving the sphincter muscles. It might be possible to leave the sphincter intact, making the posterior median incision only from behind the anus to the coccyx, which in any case should be kept open for drainage, while if the freer access appeared desirable, the sphincters could be reunited immediately by silkworm-gut sutures. Within the last few weeks I have used this last method in an excision of the lower part of the rectum from the perineum for an early case of cancer low down. The sphincter and muco-cutaneous junction have healed by primary union, and the patient has had complete control throughout, the hollow of the sacrum being drained by a tube immediately in front of the coccyx.

I have ventured to bring forward this method of abdomino-perineal excision for cancer of the rectum, because it appears to me both simple and efficient. I have been further

encouraged by some statements in the last of the Erasmus Wilson lectures on Adenoma and Adeno-carcinoma of the Rectum, by Sir Charles Ball.

The third lecture, which dealt with treatment, was published in the BRITISH MEDICAL JOURNAL of March 7th, 1903, a little more than a week after the operation I have described was actually done.

In this lecture Sir Charles Ball strongly supports the "abdominal excision." He says this can be completed by bringing the sigmoid to the anus if the sigmoid mesocolon at its greatest length is 6 in. If decidedly less than this, he thinks the operation should be terminated by the formation of an inguinal anus.

His method differs from that I have described in this important particular—namely, that he divides the bowel after tying it above and, if possible, below the growth, from the abdomen, and only then turns to the perineum, which would seem to give greater risk of soiling the peritoneum, though doubtless this can be obviated to a large extent by careful use of gauze wraps and pads.

The fact that so great an authority on rectal disease states that "many cases which have been treated by trans-sacral excision would in his opinion have given a better result by this (abdominal) method" encourages me to hope that the operation I have described may prove a useful one.

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THREE CASES OF GASTRIC ULCER PERFORATING ACUTELY.

BY C. W. SMEETON, M.R.C.S., C. C. SMITH, M.R.C.S., AND J. G. E. COLBY, F.R.C.S.

CASES of acute perforation of the stomach may not be common in general practice, still they occur, and when they are twenty miles from a hospital must be dealt with on the spot, in spite of difficulties in obtaining immediate help and of time lost in travelling. The chief object in publishing these notes is to encourage the general practitioner to undertake cases which would otherwise be almost certain to have a fatal issue, and to remember that there is some compensation in his patient not having been moved, and that he is not working in the air of a large hospital.

CASE I.—E. P., a married woman, aged 30, who had often been treated for anaemia and symptoms of gastric ulcer, was suddenly seized on the morning of September 11th, 1899, before breakfast, with vomiting and acute pain in the epigastrium. She was a strong-looking woman in good condition, and when first seen two hours later was in a state of collapse, with a small pulse of 120, temperature 99° F., and repeated vomiting. The liver dullness could be made out, but the respirations were shallow and there was no movement of the abdominal walls. She had been given a pint of arrowroot with brandy. Five hours from the onset the abdomen was tense and the liver dullness gone. The abdomen was opened by a median incision above the umbilicus, when gas and fluid immediately escaped, and the latter kept welling up in large quantities. The stomach was covered with flakes of recent lymph, and there were numerous old adhesions round the perforation, which was on the anterior surface close to the cardiac end and the greater curvature. The opening itself was large enough to admit the end of the thumb, and the edges were rounded and worn as if it had been there some time before the acute symptoms came on. Access was difficult, and the silk cut readily, but closure was ultimately thought to be effected by two rows of Lembert sutures. The remaining fluid was sponged out as well as possible and one gauze drain left in. The patient bore the operation well, but an increasing peritonitis proved fatal after forty-eight hours.

CASE II.—L. S., a general servant, had occasionally during some months been treated for pain in the stomach and vomiting after food. There was never any haematemesis or melaena. On January 24th, 1903, she had supper at 9 p.m., consisting of a poached egg, toast, and tea; at 1 a.m. on January 25th she awoke with acute pain to the left of the epigastrium, and vomited some greenish fluid. When first seen at 5.30 a.m. she was found in great pain, collapsed, with a pulse of 120, and great tenderness in the left hypochondrium. There was no dullness in the flanks, and the liver dullness was normal. She was given a hypodermic injection of morphine and atropine. At 9 a.m. the patient was free of pain, the abdominal movements were not much restricted, the pulse was 120, respirations 32, and the liver dullness could still be made out, but at noon it had gone, the respirations being 40 and the temperature 100° F. The abdominal walls still moved and there was no distension. For unavoidable reasons nothing could be done till 9 p.m., when the abdomen was opened by a median incision, afterwards supplemented by one at right angles to it. A little gas escaped at first, and subsequently much fluid. There was lymph all along the lesser curvature and much more round the hole, which was the size of a slate pencil, near the cardiac end, and on the anterior surface. Though the actual hole was small—the ulcer could be felt the size of a florin, and so thickened and hard that it could not be infolded. The greater part was therefore removed by an elliptical incision, and then good approximation was obtained by interrupted silk sutures, and complete closure secured. The peritoneum was wiped dry, and the external wound closed without drainage. No food was given by the mouth for 14 days, only boiled water, the patient being fed entirely on nutrient enemata and suppositories. Recovery was absolutely uneventful, and most satisfactory.

CASE III.—E. G., 23, a waiting maid in a country house, who had been anaemic and had complained of ill-defined pain in the body, was suddenly seized, soon after rising on March 27th, 1903, with very severe pain in the epigastric region, but in spite of it went on with her work for an hour or so, till she was compelled to return to bed. She was first seen at 10 a.m., and was then lying on the left side, and complaining of agonizing pain to the left of the epigastrium and under the left shoulder. The pulse was good, the abdomen rigid, and the liver dullness easily made out. Two hours later this had gone, the pulse was rapid and small, and the facial expression quite altered. There was no vomiting, and the patient had had nothing by the mouth save a little milk since supper time the previous night. At 7 p.m. a median incision was made above the umbilicus, and gas and fluid escaped on opening the peritoneum. More fluid, with small curds, welled up from the left hypochondrium, and the perforation was found midway on the anterior surface and near the greater curvature. It would admit a lead pencil, and was surrounded by thin flakes of lymph. Closure with fine silk was easily effected in two rows of Lembert sutures, the abdominal cavity was wiped out, and the external wound closed without drainage. No opiate was used at all. The patient was fed by the rectum for a week, a little hot water only being allowed by the mouth on the third day, with the addition on the fourth of some grape-sugar. With the exception of an attack of influenza on the tenth day, the patient made an excellent recovery and left for her own home five weeks after the operation.

Case I was peculiar in the size of the opening, and though operated on in five hours was most difficult to deal with on account of its position and surroundings, while the large amount of food taken did not help matters. Case II, bad as it was, showed that the abdominal walls may continue to move freely in spite of the active mischief beneath, but the trouble with it lay not in the size of the opening, but in the extent and depth of the induration. Case III presented the symptoms which have been pointed out by Mr. D'Arcy Power as indicating operation—namely, acute localized pain with rigid muscles and a rapidly-increasing pulse-rate. It was very easily dealt with.

THREE CASES TREATED BY THE "X" RAYS.

BY F. OSMUND STEDMAN, M.B., B.S.LOND.

Hong Kong.

THE following three cases seem to be sufficiently interesting to be worth recording, both because of the rapidity with which a cure was obtained, and because, in two of them at any rate, sufficient time has elapsed to make it appear probable that the cure is a permanent one.

CASE I.—Ulcer on the right side of the bridge of the nose. The trouble was first noticed two years ago as a small wart-like growth, of which the centre used to come out, leaving a small, excavated ulcer; the whole growth was then about the size of a pea. The case, that of a man of 68 years of age, was first seen by me in January, 1902. There was then a deep, excavated ulcer situate towards the right side of the bridge of the nose, at the level of the inner canthus; the ulcer is three-eighths of an inch in diameter, nearly round in shape, the edges are raised three-sixteenths of an inch above the surrounding skin, the edges are hard, and present the rolled-out appearance typical of a rodent ulcer; the patient complains that a good deal of smarting pain is felt from time to time. Various remedies had been tried to induce the sore to heal before he came under my care, but without any success. The growth has every appearance of being a rodent ulcer. Treatment by exposure to the *x* rays was commenced the same day, January 11th; in all fourteen exposures were given between this date and February 3rd, on an average about four a week; the duration of each exposure was ten minutes. The focus tube was placed about three inches from the patient, in fact as near as it was possible to keep it without sparks coming off from the tube on to the patient. The face was protected by a sheet of thin lead, such as is used to line tea boxes, a small hole being cut out slightly larger than the diseased part. The focus tube was rather a soft one, giving from three to four inches spark-gap, the coil one capable of giving a twelve-inch spark. The first effect of the treatment was to increase somewhat the area of ulceration, the surrounding thickened edges gradually breaking down. By February 3rd the raised edges had become level with the surrounding skin, and in consequence of the red irritable appearance of the skin round about from burning by the *x* rays it was not thought prudent to give any more exposures; from this time healing commenced, and within three weeks the ulcer had entirely closed. Now over fourteen months have elapsed,

and there has been no recurrence of any kind; the scar is smooth, level with the surrounding skin, soft and supple, and, except that it is whiter than the rest of the nose, is almost imperceptible.

Case II. Male aged 50. Growth in the skin over the mastoid bone behind the lobule of the right ear. The first trouble was noticed a year ago, when a small pimple or wart appeared which used to catch the razor in shaving. Now, January, 1902, there is a thickened patch in the skin five-eighths of an inch long by half an inch in breadth. The patch seems to be about one-eighth of an inch thick, is slightly raised above the surrounding skin, and feels semicartilaginous not unlike the base of a hard sore. Down the centre of the patch there is a small scab; on removing this a narrow bleeding surface is left. It is not possible to say whether this condition should be classed as a rodent ulcer or as an epithelioma; it presented an appearance almost exactly similar to a case I saw some years ago, which after being excised several times finally infected the glands of the neck, after a total duration of over six years. Treatment by exposure to the *x* rays was commenced at once, and in all eleven exposures were given between January 10th and February 19th. The conditions were the same as in the last case, the focus tube being placed as close as possible, and the head and neck protected by a sheet of thin lead. As in Case I the first effect was to produce ulceration of the whole of the thickened patch, there was fairly free suppuration, and the raw surface became level with the skin, while the thickening beneath disappeared. A considerable amount of irritation was also produced in the surrounding skin, and also over the shoulder below the edge of the protecting metal sheet, which had been thought to be sufficiently out of the direct line of the rays to escape injury. The *x*-ray burn over the shoulder took place through the clothes, consisting of coat, shirt, and singlet. The appearances produced were exactly like what is seen when uncovered parts of the skin are burned by prolonged exposure to the sun; the skin became inflamed and felt sore, and finally desquamated. The further treatment by the *x* rays was stopped because of the irritation produced, and as soon as this had subsided healing began, and fourteen days later the ulcer had entirely closed, leaving a smooth soft scar scarcely distinguishable from the surrounding skin. Now, fourteen months later, the patient remains well; there has been no recurrence, the skin is smooth and soft, and, except that it is quite white in colour, would not be noticeable.

Case III.—Male, aged 46. Ulcer on ring finger of left hand. The sore is situate at the base of the finger close to the palm at the junction of the anterior and ulnar surfaces. The history is as follows. Some three years ago he began wearing a diamond ring; the diamond, a single one, was set in an open setting and the lower point projected somewhat below the setting and so came in contact with the skin; the ring being somewhat large used to slip round, and so the point of contact of the point of the diamond was usually in the situation where the sore afterwards formed. The ulcer first appeared two years ago and remained open for two months, and healed up under a dressing of sulphate of zinc lotion. Some time later he began to wear the same ring again, and after doing so for three months an ulcer appeared again and has remained open ever since,—that is for a period of nearly twelve months. At first it was somewhat larger than it is now, but some slight healing took place under treatment, but although various means were used no further healing occurred. Now there is an ulcer about the size of a threepenny piece at the base of the ring finger between the anterior and lateral surface; the edges are slightly thickened, the surface of the sore is nearly level with the skin and covered with red dryish looking granulations. If the sore is allowed to get dry he feels some pricking pain in it, but if it is kept soft with either a wet dressing or some ointment, no pain or other inconvenience is felt. In view of the fact that most kinds of treatment available seemed to have been tried before the patient came under my care I determined to treat the sore by exposure to the *x* rays. The ulcer was exposed to the rays twelve times between January 2nd and 31st, at somewhat irregular intervals, as he was not always able to attend when required, the rest of the hand being protected as far as possible with lead foil, but, owing to the situation of the ulcer, this was somewhat difficult to accomplish. The exposures were for ten minutes at a time, and the focus tube was placed as near as possible to the hand. At the end of the month the sore had slightly closed in round the edges, but no very marked improvement had occurred: no burning or irritation was produced in the surrounding exposed skin. At this date he was obliged to go away for a time, and so further treatment with the *x* rays had to be stopped; however from this time healing steadily progressed, so that when he next came to see me, three weeks later, the sore was entirely closed, the scar being soft and smooth and hardly perceptible. At the date of writing, three months since healing took place, the scar remains sound and the disease appears to be entirely cured.

Remarks.

The first two cases of this series were no doubt rodent ulcers, and cure was obtained by exposure to the *x* rays, leaving an almost imperceptible scar; and since in each case over a year has elapsed since they healed up, and there has been no sign of recurrence, it seems probable that the cure will be a permanent one. The third case of the series is more difficult to classify; the ulcer was no doubt caused by the irritation of the projecting point of the diamond in the ring, but after the wearing of the ring was discontinued it showed no tendency to heal, and had remained open for twelve months; on the other hand, it did not extend any further, and did not present the excavated appearance or the thickened rolled-out edges characteristic of a rodent ulcer.

DURATION OF MEDITERRANEAN FEVER.

By P. W. BASSETT-SMITH,
Fleet Surgeon, R.N., Haslar Hospital.

Dr. Hartigan, of Hong Kong, in the British Medical Journal of November 14th, 1903, quotes a case of 95 days' duration, and states that the question is often asked by the patient "why the fever lasts so long." From experience at the Royal Naval Hospital, Haslar, 3 months is generally the minimum of a case, although sometimes in the Mediterranean the whole disease may be over in 1 to 2 months, but in the majority of all cases relapses are likely to occur for 4, 5, or 6 months; in certain cases the patient again and again comes into hospital with slight attacks of fever and rheumatic pains for years, during which he had been for some time at duty, but rarely feeling quite well, and often only able to do light duty, these cases generally being finally invalided out of the service with a severe and pronounced cachexia; several I could quote having slight though almost continuous fever for 2 years, with a see-saw temperature which nothing seems to break, also an instance of an officer who after 3 years still has irregular attacks, though continuing at duty, who has not left England during this period, and whose blood reacts with well-marked agglutination in a dilution of 1 in 40 and over.

Thus the indefinite duration is very well demonstrated, and the prognosis as to time must therefore be very guarded. As to the causation of this very prolonged course, we have this positive fact to go on, that for a long period the micrococcus melitensis is present in the blood.

In the experimental research work carried out lately by Staff Surgeon A. E. Shaw, and Surgeon Gilmour, R.N., at Malta, and myself at Haslar, we have been able to isolate the micrococcus melitensis from the peripheral blood in cases actually suffering from the fever; not restricted as was expected to the early stages of the disease, but from my own personal observation found as late as the 58th, 84th, and 142nd day during relapses of the fever.

If therefore the organism can remain more or less latent in the spleen for long periods to be again and again let loose in the general circulation, causing an exacerbation of the fever, from any causes which decreases the "phagocytic" power of the leucocytes, which are, as I have already shown, feebly active and deficient in number in such cases[1], and as also the bactericidal action of the serum is also slight, then an explanation of the prolonged course of the disease is explicable; and, what is more important, the marked failure of drug treatment. This leads one to believe more and more that the only rational and effective curative agent will be found in the preparation of, and introduction into the body of an antigermicidal serum which will attack the organism in vivo.

It is noticeable that from the point of drug treatment the most satisfactory—which are, however, very uncertain—results have been obtained from preparations of free chlorine (Burney Yeo's mixture) and other disinfectants, as salol, resorcin, and creolin, the latter of which, in Dr. Hartigan's hands, acted once so successfully.

Reference.
[1] British Medical Journal, September 20th, 1902.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

HYOSCINE AS A SPECIFIC IN PARALYSIS AGITANS.

This disease is generally put down in most textbooks as one that the physician can do little for by way of relief or cure. I wish in this communication to show that the symptoms can be much relieved and life prolonged by the alleviation of same.

One does not come across many cases of Parkinson's disease in general practice, and as I have had under my care for over three years a most typical one I should like to give my experience of that most potent drug hyoscine as an alleviative agent, if not a curative one, in that disease.

The patient, a woman, is now 69 years of age. Five years ago she became aware that her writing—usually a good hand—was getting shaky, and her right hand at times tremulous. She did not pay much attention to it until about a year afterwards, when the other hand began to quiver, and both arms became much fatigued on the least exertion. She

also developed the subjective sensations of great heat, followed by free perspirations and much restlessness.

I saw her for the first time then; that would be about eighteen months after the tremor was first detected. She had the characteristic "pin-rolling" movements in the fingers and thumbs, along with the constant movements of flexion and extension at the wrist and elbow joints of both arms. She also began to take on the peculiar mask-like expression, and presented the characteristic stooping attitude. In walking she showed a slight tendency to hurry forwards. The muscles of both the arms and right leg showed increased irritability on tapping. The tremor could be stopped by a voluntary effort for a short time, and it ceased during sleep In the morning, on waking, it was very slight, but became worse towards night or after any exertion.

In the way of treatment I enjoined mental and physical rest, and gave at different times arsenic, Indian hemp, and phosphorus, but none were of much avail; indeed, the tremor increased in violence and was becoming more widely distributed, and the "festination" was much more noticeable. She also complained of acute neuralgic pains in the arms and chest, and altogether the patient was becoming very irritable, so much so that she "fell out" with almost everything and everybody. The heart also showed signs of failing, as was evidenced by the dropsy in the lower extremities and dyspnoea on the least exertion. There was no albumen in the urine.

While perusing the columns of the *Lancet* about fifteen months ago I saw that Drs. Williamson and Bury, of Manchester, found hyoscine to be the most useful drug that has hitherto been tried in the treatment of paralysis agitans. I procured some in the form of the hydrobromate, and commenced with a dose of $\frac{1}{100}$ gr. in aqueous solution morning and evening. The first dose had a most marked effect. The patient slept for ten hours and felt quite refreshed, and remarked that she did not feel so well for at least three years. After four doses the tremor lessened in its violence, and after four days was hardly noticeable. She stated that she felt more comfortable and was not now troubled with the flushings and restlessness which were so persistent before. The neuralgic pains gradually subsided, as well as the dropsy and dyspnoea, and her gait became more natural, although the characteristic posture remained the same.

As I have already stated, it is now fifteen months since I commenced the administration of this most potent alkaloid, and in the interval have given it in varying doses, but never more than $\frac{1}{100}$ gr. at a time. Now my patient is very much better in every way than she was previous to its use, and I feel confident that her life has been made much more pleasant and indeed has been prolonged by the administration of this drug which from my experience I should almost call specific for shaking palsy.

It is important to note that hyoscine is a very powerful drug, and must be administered with great care. It is best to give it well diluted with water. Dr. Williamson's prescription is a useful one—$\frac{1}{8}$ gr. of hyoscine hydrobromate in 6 oz. of chloroform water. At first two teaspoonfuls of this may be given in the morning just after breakfast and at bedtime, and the dose may be increased to even six teaspoonfuls ($\frac{1}{24}$ gr.), but I never had to give in my case more than $\frac{1}{100}$ gr. at one time.

Horwich, Lancs. A. ROSE, M.B., C.M.Aberd.

A CASE OF CHANCRE OF THE LIP.

AN intelligent, healthy-looking man of 29 was admitted to hospital on June 12th with the following history:

He exposed himself to infection on April 25th, and noticed that the woman had what he describes as a "pimple" at the right angle of her mouth. On May 23rd a small crack appeared on his own lip, and on May 26th he went to a doctor, who treated him with various applications for some days, and then sent him to hospital as a case of "epithelioma for immediate removal."

On admission he had an ulcer on the lower lip, a little to the left side of the median line, circular, and measuring $\frac{3}{4}$ in in diameter. It began in front at the junction of the skin and mucous membrane. The edge of the ulcer was thin, vertical, and sharply defined, not raised or everted, and without surrounding induration. The floor of the ulcer, examined with a hand lens, showed red, smooth, shining patches, and patches of yellowish-grey slough; there was no pain or tenderness. The submaxillary glands were enlarged and hard on both sides; those along the sterno-mastoid and in the suboccipital region were also easily felt. The fauces and posterior part of the soft palate were reddened and secreting thick mucus; the patient had been hoarse for about a week.

A mouth wash: ℞. Liq. pot. permang., 10 minims; aq. ad 1 oz., was ordered, but mercury was not at once given.

On June 15th a typical syphilitic roseola appeared on the abdomen, chest, and back. The following prescription was then given: ℞. Liq. hydrarg., 1 drachm: pot. iodid., 5 gr.; inf. quassiae, ad 1 oz. One oz. three times a day after meals.

By June 18th a convex greyish-black dry crust had formed on the sore, and this slowly increased in size. The rash and other secondary symptoms commenced to disappear, and were quite gone by June 27th. The crust on the lip then measured $1\frac{1}{8}$ in. by 1 in. On June 30th the crust came away leaving an almost healed surface.

It was decided that the ulcer could not be an epithelioma for the following reasons:

1. The patient was too young, epithelioma not being common until after 40.

2. The character of the ulcer, its regular form, shallowness, and the absence of the hard floor, thick everted edge, and surrounding induration of an epithelioma.

3. An epithelioma would not have reached so large a size, nor produced so much glandular enlargement, three weeks from the time of its appearance, being almost invariably of slower growth.

4. The history of exposure and painlessness of the ulcer also pointed to primary chancre. The appearance of the eruption and the rapid improvement with mercury leave no doubt as to the correctness of the diagnosis.

A point of interest, and one previously observed in labial chancre, was the formation of a slowly-enlarging "limpet-shell"-like crust, slightly resembling a sore in the eruption of rupia. This became evident during the treatment.

There was also the frequently noted absence of typical circumscribed induration. The occurrence on the lower lip, and in a male is a little against the rule.

P. N. VELLACOTT, M.B., B.S., F.R.C.S.,
Surgeon-Captain, S.A.C.

Sydenham, Bloemfontein, O.R.C.

OVARIOTOMY ON A PATIENT AGED 79.

M. H., aged 79, widow.

Past History.—She had had six children and no illness of any kind till five or six years ago, when she noticed a swelling on right side of abdomen, which had gradually increased. More recently she had suffered much from feeling of distension—"dyspepsia"—and shortness of breath.

Condition on Admission.—Abdomen greatly distended, measuring 30 in. at ensiform cartilage, 34 in. at umbilicus, and 35 in. over pubes. The swelling is fluctuating; dull in front and resonant in flanks. There is an umbilical hernia the size of a small cocoa-nut. Other organs are normal.

Operation.—On May 24th, 1903, at the Nursing Institute, Palmer's Green, Dr. B. E. Potter administered ether and I removed an ovarian cyst containing 12 pints of clear fluid. There were a few omental adhesions which were easily dealt with, the operation lasting half an hour. The patient made an uneventful recovery, the temperature never rising above 99.6° F., and this only on the first two evenings after the operation. The pulse on the evening of the day of operation was 80 and good, there being no shock and sickness on only one occasion. The bowels acted of their own accord on the third day. The stitches were removed on May 26th when the wound was healed. The patient got up on May 31st, 1903, and went to the seaside ten days later.

Comments.—This was a very ordinary ovariotomy, but the patient's age and the absolutely uneventful nature of the recovery are of some interest. It will be noted also that ether was the anaesthetic used, and that it gave rise to no ill-consequences whatever. In fact I attribute the absence of all shock to its use. The patient now (four months later) is in good health and going about daily.

THOMAS NORTH, M.D., B.Ch., B.A., T.C.Dublin.

New Southgate.

CARBOLURIA DUE TO SALOL.

ON September 29th I had reason to prescribe salol in tablets of 5 gr. in each for a Mrs. P., aged 43 years, for flatulent dyspepsia. I ordered one tablet three times a day after food. When she had taken six tablets, which was at the expiration of the second day of treatment, her urine became olive green in colour, and gave a purple reaction with dilute liquor ferri perchloridi. I at once stopped the administration of salol,

and thirty-six hours later all trace of carboluria had disappeared. There were no other symptoms. I think the symptoms of carboluria in this case came on exceptionally soon. I myself have taken 10 gr. of salol twice a day for over two months with no carboluria ensuing, and I have given it to young children in 2½-gr. doses for some time with no ill effects.

Bristol. JOHN WM. TAYLOR, M.R.C.S., L.R.C.P.

THE ETIOLOGY OF BERI-BERI.

DR. ELLIS maintains that rice eating is not the cause of beri-beri,[1] a view which the following cases confirm:

A batch of healthy Chinese carpenters were shipped from Hong Hong to Aden for shore work. Within a month all suffered from beri-beri, the rice consumed on the voyage and afterwards being the same as that eaten by other natives who were not attacked. Three successive batches occupying the same quarters were likewise stricken, but, on these being thoroughly disinfected, a fifth lot lived in them with impunity.

Again, beri-beri, evidently imported, broke out amongst coolies occupying new houses. The sick were segregated, the premises disinfected, and then reoccupied, no more cases occurring.

There was another epidemic amongst coolies living in old houses. Similar measures were adopted without success. Even renewing all woodwork was useless, the disease not being stamped out until the quarters were changed; the house infection was too well fixed to be eradicated. A severe epidemic occurred in a Chinese school, and, notwithstanding all precautions, did not cease until the buildings were evacuated.

Beri-beri cases have formerly been placed in the general wards of hospitals without infecting other patients, the hygienic surroundings not lending themselves to the propagation of the disease, whose genesis is undoubtedly favoured by overcrowding, moist heat, and sanitary neglect.

Our experience in Hong Kong, where year after year plague attacks the same houses and streets, proves it to be a place infection. Mr. Cantlie has shown how leprosy clings to certain houses and localities. Beri-beri is likewise a place disease. Rice-eating has as much connexion with its etiology as fish consumption with that of leprosy or "chewing tiger's" flesh with the production of heroes.

London. WILLIAM HARTIGAN, M.D Brux., D.P.H.

[1] BRITISH MEDICAL JOURNAL, November 14th, p. 1268.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the Executive Committee of the Medical, Sickness Annuity and Life Assurance Society was held at 429, Strand, London, W.C., on November 27th. Dr. de Havilland Hall was in the chair. The accounts presented showed the business of the Society to be in a satisfactory condition. During the current year the sickness claims have been rather less in amount than in the corresponding portion of last year, while already the number of new entrants is greater than the total of those who joined the Society in 1902. Notwithstanding the increase in the number of members, and the more than corresponding growth in the reserve, the economical system of management which the Society has always adopted is still maintained, and a large surplus in the management fund has been built up. Ever since the commencement of the business in 1884 the total management expenses have amounted to less than half the sum provided by the rules (namely, 10 per cent. upon the premium income), and in this way a large sum has been collected. The business is now being valued, and the surplus will be at the disposal of the members next year. Convincing evidence of the value of the sickness benefit lies in the fact that so large a number of the members are availing themselves of the opportunity allowed by a somewhat recent alteration in the rules to increase their sickness pay to £6 6s. per week. The additional sickness allowance has to be paid for at an enhanced rate, as the age of members is, of course, greater than when they first joined the Society. Prospectuses and all particulars on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

A CANCER HOSPITAL IN RUSSIA.—A cancer hospital has just been established in Moscow. The building of the hospital, which, we believe, is the first of its kind founded in Russia, has cost 250,000 roubles. The money has been given by a manufacturer of the city. The hospital has at present accommodation for 60 patients. When complete it will be capable of receiving a hundred.

REPORTS OF SOCIETIES.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

JOHN CHIENE, C.B., F.R.C.S.E., President, in the Chair.

Wednesday, December 2nd, 1903.

THE PATHOGENESIS OF GOUT.

DR. CHALMERS WATSON read a paper, illustrated by specimens, on the comparative pathology of gout, which will be published in full in the BRITISH MEDICAL JOURNAL.

RADIUM.

DR. DAWSON TURNER read a paper on radium in practical medicine; the views he expressed are covered by his paper on the Nature and Physiological Action of Radium Emanations and Rays, which was published in the BRITISH MEDICAL JOURNAL of December 12th, p. 1523.

THE OPEN-AIR TREATMENT OF BRONCHO-PNEUMONIA COMPLICATING WHOOPING-COUGH.

DR. C. B. KER, in a paper on this subject, drew attention to the great mortality of the children of the poorer classes from whooping-cough, and mentioned that the annual death-rate per 1,000 persons living in Edinburgh over a period of eight years was 0.48, no less than one-third of the whole zymotic death-rate of the city. In hospital the mortality was very high, from the fact that most of the cases admitted suffered from complications. The Edinburgh City Hospital death-rate for eight years was 18.11 per cent. of admissions, the Glasgow Fever Hospital giving a rate of 18.3 over a period of twenty-two years. The most fatal of all complications was broncho-pneumonia, and in any attempt to reduce the general death-rate this fact had to be kept in view. He had tried all the drugs recommended in pertussis, with a view of giving the broncho-pneumonic patients a better chance by reducing the number and severity of their paroxysms. In his experience, however, with the doubtful exception of belladonna pushed very freely, no drug was satisfactory. He had had equally unsatisfactory results with creosote and eucalyptus inhalations. As regard the treatment of the broncho pneumonia itself, everything, from the poultices once recommended to ice-cold compresses on the chest, had been tried. Steam tents were found to be of little value. The routine treatment was ultimately to give a stimulant expectorant mixture and wrap up the chest in cotton wool. The fact that many prolonged cases succumbed finally to tuberculous disease first suggested putting the patient out in the open air. The treatment had now, with various modifications, been in use for two and a-half years. The children were placed in uncovered cots in the open air for about six hours daily when it was not actually raining. They were well covered and wrapped up. Although they were kept out till as late in the year as November 15th, there were no bad results which could be attributed to the treatment. The only contraindications were the presence of laryngitis or the occurrence of convulsions, the treatment of the latter being better carried out indoors. In the winter months the worst cases occupied a ward called the sanatorium, which was practically completely open on two sides, and the results continued good. The good effects of the treatment were chiefly observed in the improved appetite and sleep of the patients. The temperature and pulse declined but slowly, as was also the case with the inspirations. But tuberculous sequelae were much rarer, and no longer did cases, admitted free from complications, contract broncho-pneumonia in the wards. The number and severity of the paroxysms remained quite unaffected. While convulsions seemed as liable to occur as before, the nervous tone of the patients was much better. As regard results, the hospital death-rate under the old conditions was 71 per cent. of the broncho-pneumonias. The first series of experiments, when only a certain number of the cases had the advantage of the new treatment gave a percentage mortality of 54 on 22 cases. When all the cases were carried out from the day of admission the death-rate on 26 consecutive cases was only 26 per cent. During the winter 11 cases were treated in the sanatorium, with a mortality rate of 27 only. In the summer of 1902, when the cases were out in the open air, and, if very severe, slept in the sanatorium, the rate was 34 6—a higher figure, probably explained by the bad weather which prevailed. Finally, when circumstances stood in the way of further carrying out the treatment, a series of 19 cases treated indoors during the winter showed a rise of

the death-rate to about 57 per cent.—a figure lower than the hospital average, but still in marked contrast to the open-air figures. In all, 76 broncho-pneumonias were treated under the new conditions, with a death-rate of 35 at most; whereas the cases treated indoors, of which there were records, were 74 in number, with a death-rate of very nearly 70 per cent., or just double.

Drs. Carmichael, Caverhill, and Littlejohn spoke: and Dr. Ker replied.

Bennett's Fracture of the Base of the Metacarpal of the Thumb.

Mr. Alexander Miles and Mr. J. W. Struthers presented a paper on this subject. In 1881 Professor E. H. Bennett, of Dublin, first described this fracture as passing "obliquely through the base of the bone, detaching the greater part of the articular facette with that piece of the bone supporting it which projects into the palm." He maintained that it was the most common simple fracture of the metacarpus, that it was readily recognized clinically, but was constantly overlooked, with resulting disfigurement. He described six specimens of united fracture from Trinity College Museum, Dublin, and referred to several clinical cases he had met with. In 1900 Dr. Beatson, of Glasgow, reported a clinical case. Up to this point the records only gave eleven cases. Bennett's claim of the frequency and importance of the fracture did not seem to be generally admitted. The authors were satisfied that Bennett's contentions were well founded. The fracture was always due to indirect violence, the most common cause being a fall on to the hand or hands in which the impact was against the tip of the thumb or the distal end of the first phalanx when the interphalangeal joint was flexed. The usual history was that the subject fell or was thrown to the ground, put out a hand to save himself, and "stayed his thumb." In two cases of the authors', as in one of Bennett's, the fracture was caused by the subject striking a blow in a fight. The mechanism and pathological anatomy of the injury were described, the signs and symptoms of the injury were indicated, and the appropriate treatment set forth. The prognosis, when efficient treatment was carried out early, was good. Complete recovery was to be looked for where treatment was begun early. Fourteen cases under the care of the authors were noted, five specimens were shown, and a note of the literature was given.

Cases and Specimens.

Patients were shown by Drs. Dawson Turner, W. Allan Jamieson, George A. Gibson, and by Messrs. Miles and Struthers.—Card specimens were shown by Dr. Hill Buchan, and by Messrs. David Wallace, A. Miles, and J. W. Struthers.

CLINICAL SOCIETY OF LONDON.

Frederick Taylor, M.D., F.R.C.P., President, in the Chair.

Friday, December 11th, 1903.

Mr. A. Ernest Maylard, of Glasgow, read a paper on congenital narrowness of the pyloric orifice as a cause of gastric disease in the adult, which will be published later in these columns. It was discussed with that of Mr. Moynihan.

Gastro-enterostomy for Simple Ulcer of the Stomach or Duodenum.

Mr. B. G. A. Moynihan (Leeds) reported 100 cases which he had operated on up to October 1st, 1903, and the mortality of which was 2. Eighty-five cases were operated upon for chronic ulcer with intractable dyspepsia, or dilated stomach, with 1 death; 15 cases were operated upon for profuse and recurring haemorrhage, with 1 death. There were 56 females and 44 males. The youngest patient was a female, aged 17; the oldest a male and a female, aged 62 each. The average age was 35. Duodenal ulcer was found alone in 9 cases, duodenal ulcer, with 1 or more gastric ulcers, in 13 cases. Haemorrhage was the immediate and determining cause of operation in 15 cases. In these latter there had been symptoms of stomach troubles for a shorter or longer time before the onset of the bleeding. Several of these patients were in a desperate condition. In all cases gastro-enterostomy alone, without the excision of the ulcer, was performed, and in none was there any renewed bleeding after the operation. Some gastric tetany was observed in 5 cases. In 3 it was slight, but 2 patients experienced the utmost agony. In 92 of the cases the result of the operation had been as satisfactory as could be wished. Appetite soon returned, food was taken in any quantity with relish, and all gained from 7 lb. to 4½ st. in weight. In the other 6 cases the after-history had not been so good. In each of these hyperchlorhydria was pronounced before the operation, and had proved a source of pain and inconvenience afterwards. Three had improved greatly under medical treatment continued from three to six months, and were now quite well; 1 was almost well, and 2 were still under treatment. The last 3 had all been operated upon within the last eight months. Gastro-enterostomy, preceded by careful oral, gastric, and rectal hygiene, was the best operation for pyloric stenosis and chronic gastric ulcer.

Dr. Batty Shaw inquired if Mr. Moynihan had seen a peptic ulcer appear in the intestine just beyond the point of junction, as it was known to occur in dogs who had undergone a similar operation.

Mr. John H. Morgan inquired if there was any peculiarity in the diet of the North which caused these frequent gastric troubles. Might he presume that the number of ulcers within the stomach was determined by an examination of the exterior of that viscus?

Mr. A. E. Barker thought that Mr. Moynihan's paper determined once for all, and in the affirmative, the question whether gastro-jejunostomy was the best surgical treatment for those severe gastric diseases. He doubted whether congenital contraction of the pylorus was as frequent as Mr. Maylard supposed: and suggested that the narrowing was in some cases due to inflammation of the pylorus, without marked symptoms, and followed by contraction long after. At any rate, the proper treatment was gastro-jejunostomy; and he was glad to learn that the readers of both papers had stitched the two viscera together without the use of any mechanical appliances.

Dr. E. Michels asked what percentage of the cases of gastric ulcer seen by Mr. Moynihan had been operated upon by him.

Mr. C. R. Keyser asked if Mr. Moynihan was satisfied with a single line of sutures going through all the coats at the junction of the stomach and bowel. He (the speaker) had seen it done three times without any bad after-effect.

Mr. L. A. Bidwell thought that the greatest narrowing of the pylorus was due to reflex spasm, especially that originating in old-standing disease. What after this operation was the percentage of permanent cures? The mortality when performed for gastric ulcer, as Mr. Moynihan had shown, was low, far lower than when done for cancer.

Dr. H. A. Caley inquired what proportion of the 100 cases had been previously treated by rectal feeding and diet.

Dr. E. Cautley considered that congenital narrowing of the pylorus would lead to thickening of the stomach wall around the pyloric opening; probably also the size of the pylorus varied greatly in different individuals. Possibly the condition of the pylorus found in Mr. Maylard's cases was due to gastric disturbance, and hence the good effected by the operation resulted from the "rest" afforded the stomach, and from the proper food. He did not recognize that cases of gastric ulcer as generally seen in London required such radical treatment.

Dr. J. W. Russell (Birmingham) had endeavoured to follow up the after-histories of 86 cases of gastric ulcer treated in the wards of the Birmingham General Hospital. He had traced 48 or 50 patients: in 45 per cent. there was no relapse; in 10 per cent. there was commencing relapse; and 45 per cent. were cases of chronic misery, and had vomiting, recurrent haemorrhages, etc. About 30 or 40 per cent. of the cases were candidates for surgical treatment; medicine had done all it could for them.

Mr. Pearce Gould thought Mr. Moynihan's results were quite brilliant. Had he met with a relapse after gastro-enterostomy for chronic ulcer? He himself had met with a case in which pain was afterwards severe and the power of digestion very feeble.

Mr. Maylard, in reply, said that indigestion in Scotland, now far more common than formerly, was probably due to inordinate drinking of tea and to the use of tinned food. As to the origin of the pyloric narrowing, he found nothing at the opening itself to indicate that there had been any inflammation; no indication of any thickening about the part. At first he thought spasm was the cause, but having seen such a case at one of his operations he was now sure that it was not the general cause in his cases, in all of which the finger had to be pushed, whereas it usually passed the pylorus easily. It was not possible to obtain *post mortem* a reliable gauge of the size of the pyloric aperture.

Mr. Moynihan said that as regarded Mr. Maylard's cases he doubted if they were of congenital origin. If they had been such he would have expected the symptoms to begin in

infancy and go on. But whether the pyloric narrowing was congenital or acquired, the treatment was, in his opinion, quite correct. Nothing could be worse than the food taken in the North; masses of bread washed down by stewed tea. He found that he operated upon an average of 25 per cent. of the cases of chronic gastric ulcer which he was asked to see. The general history of the cases was that they had been under various physicians as in-patients and out-patients for many years. He thought the needle and thread was the best method of joining the viscera. The resultant opening might be double the size of that left when a Murphy button was employed. He had seen one case of intestinal peptic ulcer following the operation. He thought that surgeons in the North saw these cases at an earlier stage than did those in the South. Gastro-enterostomy was not to be looked upon as the last resource; by a timely operation much suffering might be avoided.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

Pathological Section.

H. C. Earl, M.D., President, in the Chair.

Friday, December 4th, 1903.

Etiology of Leukaemia.

Dr. T. G. Moorhead read a preliminary account of some investigations which he had been making into the etiology of leukaemia. He had prepared a series of extracts from glands obtained *post mortem* from a case of lymphatic leukaemia, and claimed to have produced leukaemic changes in rabbits by the injection of one of these (sterilized) extracts. The changes found consisted in enlargement of the spleen and of several groups of lymph glands, and in the red marrow excessive development of nucleated red-blood corpuscles; changes were also observed in the white cells of the blood. Injections of a similar extract prepared from normal human lymph glands did not produce any change in the haemopoietic tissues of rabbits. The extract from the morbid glands caused a pronounced fall in blood pressure, while the similar extract from normal glands had no such effect. Chemical analysis also tended to show that the morbid glands contained some specific substance, not as yet isolated, which he believed might prove to be the specific toxin of the disease.

Professor McWeeney asked whether Dr. Moorhead had used glands from myelogenic or lymphatic leukaemia; inasmuch as their pathology was different, this was a matter of much importance. He suggested that Dr. Moorhead might enclose the material in a sponge capsule, and introduce it into the peritoneal cavity with the object of determining what classes of leucocytes were chemiotactically attracted.

The Secretary (Professor White) thought much of the effects described were probably due to the excessive amount of nucleo-proteid to be got from the glands.

Professor Scott, so far from thinking that the various forms of leukaemia were different, considered the principle of cellular intoxication might fairly be extended from the lymphatic lesions to other cellular conditions associated with blood changes, and that some common condition would be found underlying all of them.

Professor O'Sullivan believed that chemiotaxis would not account for the cell proliferation in lymphatic leukaemia.

Drs. Travers Smith, Parsons, and the President also spoke; and Dr. Moorhead replied.

Abscess of the Brain.

Dr. Alfred Parsons showed specimens removed from a man, aged 20, who was admitted to the Royal City of Dublin Hospital on September 23rd, suffering from Jacksonian epilepsy.

The patient, who had been previously in good health, with the exception of a chronic cough, was suddenly seized with a convulsion, and was carried into hospital during the attack. He had in all some seven or eight attacks on the day of admission. The lower half of the left side of his face and the left arm from the elbow down were paralysed. There was no loss of power in his left leg, but the reflexes were exaggerated. The paralysis gradually increased till he had complete left hemiplegia with greatly increased deep reflexes. He suffered also from violent paroxysms of coughing, accompanied by fetid expectoration, which poured out from mouth and nose. Physical examination revealed the presence of bronchiectasis in the lower lobe of the left lung. On September 20th, Mr. Benson found the eyes perfectly normal, but three days later detected the presence of definite double optic neuritis. The headache became violent. As there was no ear disease present, a diagnosis of intracranial abscess near the Rolandic area, secondary to chronic pulmonary suppuration was made, and Mr. Johnston was asked to trephine the patient over the arm centre, and explore for an abscess. This he did, but found no pus.

At the necropsy the lower lobe of the left lung was found to consist of numerous bronchiectatic cavities filled with pus, and on examining the brain after hardening, a large abscess filled with greenish pus was found underneath the arm centre, not more than ½ in. from the cortex. The needle used in exploring must have entered the abscess cavity, but before doing so had probably become plugged with brain tissue.

Cancer of Breast with Secondary Growths in Ovaries.

Dr. J. T. Wigham showed a cancer of breast and various internal organs secondarily affected, with sections. The cancer was ordinary scirrhus, the interest in the case lying in the route by which the disease had spread to the internal organs. The breast was removed surgically, and some two months afterwards the patient showed signs of secondary growths internally, and rapidly died. As the necropsy was not made until some three months after the operation, the connexion between the breast and the pleura could not be established with any certainty, but it was obvious that the greater part of the internal organs affected had formed secondary growths by direct continuity. Cancer nodules could be discovered in the liver and under the pleura, pericardium and endocardium, and sections showed the growth pushing through the heart fibres. Similar growths were also found in both ovaries and along the course of the Fallopian tubes, while the peritoneum was quite free, and no other cancer masses were discovered below the level of the liver.

Specimens.

Mr. W. S. Haughton showed a tumour removed from the pectoral skin; clinically it resembled a simple inflammatory growth, but under the microscopic it was seen to be a sarcoma of the deeper layers of skin. Dr. Haughton also showed a rectum, pelvic colon, and part of iliac colon removed for carcinoma by the double method of laparotomy and pansacral incision six weeks ago. The section showed the structure of tumour to be a typical adeno-carcinoma of rectum extending around the lumen of gut for more than 3 in. in length, without infiltration of perirectal tissues of glands—a point much to be appreciated both by patient and surgeon.

MEDICAL SOCIETY OF LONDON.

F. de Havilland Hall, M.D., F.R.C.P., President, in the Chair.

Monday, December 14th, 1903.

Discussion on Functional Albuminuria.

The President, in introducing the discussion, emphasized the importance of a hereditary history of albuminuria, apart from Bright's disease. The validity of the term "physiological albuminuria" was discussed, and it was suggested that the condition generally had a pathological cause. Intermittence of albuminuria was common in recovering nephritis. The relation of posture to intermittent albuminuria was discussed. In some cases it was excited by food, in others by exercise. In diagnosis from that of nephritis the presence of epithelial, granular, and fatty casts was important. The diversity of view as to prognosis was illustrated. The test of boiling with slight acidulation was recommended. The character of the blood elements seemed to be of importance in diagnosis. The presence of albuminuria was sufficient ground for deferring a proposal for life assurance.

Dr. Rose Bradford thought albuminuria in the apparently healthy might be due to latent gross renal disease, or the subsidence or onset of this, or accidental causes, as discharges, or as in the genuine cases be associated with diet and posture. The only clearly-established cause of albuminuria was a toxic agent, different agents having a selective action on particular parts of the kidney. The forms of albuminuria associated with fatigue and exercise might depend on a toxic influence, but all the forms certainly could not, for example, the postural. Reflex disturbances, as by cold to the skin, leading to congestion of the kidney, might be causes; and disturbances of the reflex changes in the circulation brought about by gravity might account for the postural cases which probably formed the majority. Hyaline casts were often present and sometimes granular casts also. Postural variations in the degree of albuminuria were seen in advanced renal disease, and in recovery from specific fevers. It was suggested that there was a point of potential slight leakage in these cases due to previous damage to the kidney by some acute specific disease.

Dr. Samuel West said albuminuria was never physiological in the sense that it could be shown by the ordinary tests on the urine of any and every one. By

delicate tests and repeated examination the percentage in apparently healthy persons might be as high as 40 per cent., but half of these were nucleo-albumin, and in 25 per cent. the trace was very minute. In the remainder albumen would be found by testing in the ordinary way. Among adolescents two groups might be recognized: one consisting of florid vigorous subjects with good pulse tension; the other, pale and flabby persons with low tension. Most of them soon got well; in some the albuminuria persisted without other signs of ill-health, and in a few renal disease developed. Functional albuminuria increased the risk of life, especially after 30. All cases of albuminuria with thickened arteries should be rejected.

Dr. F. W. PAVY objected to the term "physiological," and supported the term "functional." Many cases did not eventuate in renal disease, but he did not diagnose cyclic albuminuria if casts of any kind were present. The influence of diet was not certain. In the subjects of the disease there was an excitable vascular system liable to be influenced by reflex nerve influence, and there might also be a weak kidney; thus changes of posture came into effect.

Dr. A. E. GARROD said that albumen was present in normal urine, as nucleo-albumin, but it was not recognizable by clinical methods. Oxaluria was a cause of the condition. The selective proteid-retaining mechanism was a delicate one, small causes readily upset it. The effect of posture was rather in favour of organic disease. Albuminuria probably always meant some, but not serious, disease.

Dr. ARMSTRONG described his observations at Wellington College. The so-called postural cases seemed to have an emotional element. The association of cardiac disturbance and the good effect of exercise were emphasized.

OBSTETRICAL SOCIETY OF LONDON.

EDWARD MALINS, M.D., President, in the Chair.

Wednesday, December 2nd, 1903.

HYDATIDIFORM MOLE AND INVASION OF THE UTERUS BY CHORION-EPITHELIOMA.

MR. J. D. MALCOLM and Dr. HAMILTON BELL contributed a paper on the following case:

The patient came under the care of Dr. Malcolm Mackintosh, of Clapham Common, on April 10th, 1901. She had a rapidly enlarging uterus, from which there were free haemorrhages on April 9th, 14th, and 19th. The patient asserted that if pregnant she must have conceived on February 17th. Mr. Malcolm saw her in consultation on April 29th, and she was admitted to the Samaritan Free Hospital on the 30th. The first diagnosis was that the patient had a soft, rapidly-growing fibroid tumour. Subsequently it was thought that the condition might be one of ordinary pregnancy. Dr. Hamilton Bell suggested that there might be a hydatidiform mole. Delivery of the uterine contents being imminent, on May 8th Dr. Bell, after a consultation, emptied and curetted the uterus, the fundus of which was above the navel. A large quantity of hydatidiform material was evacuated. The uterus was again curetted on May 12th. On May 29th the conditions were unsatisfactory, and the diagnosis was uncertain. Mr. Malcolm opened the abdomen and removed two ovarian tumours, the right one having a twisted pedicle. The condition of the uterus did not seem normal, and it also was removed, the cervix being taken with it. The patient recovered, and has remained well.

Abstract of a Report on the Specimen by Dr. Cuthbert Lockyer.—The pathological interest of this specimen lies, first, in the discovery of two metastatic deposits of chorion-epithelioma in the muscular wall of the uterus three weeks after the removal of a hydatidiform mole: secondly, in the concurrence of bilateral ovarian cysts and malignant vesicular disease of the chorion; thirdly, in the type of cystic ovarian disease. In regard to the latter point the question whether the cysts arose from corpora lutea has not yet been definitely settled. No lutein cells have been discovered in the walls of the few loculi examined, but it is the author's intention to extend this investigation to other loculi before excluding the possibility of corpora lutea being the source of origin of the cysts.

The paper concluded by a review of the literature of the subject.

Dr. PETER HORROCKS congratulated Mr. Malcolm and all those concerned in the happy issue of their case, for there could be no doubt that this woman had been rescued from a very dangerous condition. He thought there was one practical point which stood out prominently during the reading of the paper, and that was the great superiority of the finger over the curette in the removal of a hydatid mole.

Dr. HERBERT SPENCER considered the essential feature of the case to be the occurrence of chorion-epithelioma after hydatidiform mole in a patient with cystic disease of the ovaries. He agreed with Dr. Horrocks that curetting was a dangerous method of removing a mole, and he did not approve of removing the uterus by the method of supravaginal amputation. Whatever views might be held as to the relative advantages of amputation and total hysterectomy in the case of fibroids, he thought that in suspected malignant disease, and especially in chorion-epithelioma (in which growths were known to occur in the cervix), total hysterectomy should be performed.

Mr. G. J. B. STEVENS, as a visitor, begged to thank the authors for their papers. In the course of 37 years of practice, the few cases he had to deal with were cleared out by the finger and ovum forceps. They happened before the curette was much talked about.

Mrs. SCHARLIEB gave a short account of a case of vesicular mole complicated with double multilocular ovarian cysts.

Dr. BELL, in reply, said he quite admitted that the use of the curette was not usually advisable in cases of hydatidiform mole, and in the only other two cases which had come under his own care he had been able to evacuate the uterus with the ovum forceps and the finger. This case, however, was exceptional. After removing the bulk of the tumour with the ovum forceps, he put in a finger to scrape away the rest. But it proved very tough, the haemorrhage was considerable, and the condition of the woman, bad before the operation began, became very serious. Under these circumstances it was determined to use the flushing curette, which checked the haemorrhage, and was more expeditious. He recognized that there was some risk, but it appeared to him that it was a choice of risks, and that, under the special circumstances of the case, he had made the right decision.

Mr. MALCOLM supported Dr. Bell's view that in this particular case it was impossible to remove all the hydatidiform material with the finger. Indeed it was thought that at the first operation all the disease was not removed by the curette. He also thought that it was not likely that the new growths could have been felt by digital examination, because they were so small and so deeply placed in the uterine muscle. The suggestion that a wound made by the curette might have allowed the disease to gain access to the tissues might be correct, but it did not seem necessary to assume the existence of a wound if a new growth were adherent to the interior of the uterus. As regarded the removal of the body of the uterus first, and the cervix afterwards, it would have been better to remove both at once: but the removal of the body was undertaken rather as a precaution than on account of any definite disease diagnosed, and the cervix had always appeared healthy. When the suspicious parts were observed, it seemed desirable to remove the cervix also, and this was done.

THE OVUM AT PREMENSTRUAL AGE.

Dr. T. G. STEVENS gave a lantern demonstration on the fate of the ovum and Graafian follicle in premenstrual ages.

Dr. EDEN said the labour involved in the examination of seventy pairs of ovaries by serial section was enormous, and the author deserved the greatest credit for the time and patience which he had bestowed upon the work. The field covered by the research was entirely new, so far as his knowledge went, and Dr. Stevens could quite fairly claim the credit of being a pioneer. The most interesting part of the demonstration consisted in the method by which the ovum was disposed of in the contracting follicles. If Dr. Stevens's view were correct, the normal protective and nutritive functions of the cells of the membrana granulosa became suddenly suspended when the follicle had reached a certain stage of development, and destructive functions were exercised by the same cells instead. This reversal of the direction of physiological activity had no analogue in any other part of the body.

Dr. PETER HORROCKS asked if the slides, as shown on the screen, represented both different degrees of development of the ovum and different ages of the children from whom the ovaries had been taken. At present it seemed a very strange thing, if Dr. Stevens's observations were correct, that the ovaries should develop ova up to a certain degree of maturity and then develop cells to devour them.

Dr. ROBERTS did not think Dr. Stevens had made it clear what was the exact process of degeneration which the cells of the membrana granulosa underwent or if it was a degeneration at all. He was inclined to think the cells depicted were rather of the nature of leucocytes than those of the membrana granulosa.

Dr. BLACKER thought that there were difficulties in the way of accepting Dr. Stevens's views as to the part played by the cells of the membrana granulosa in the destruction of the

ovum, and the phagocytic action he wished to assign to them. These cells were degenerating, and such cells did not as a rule take on such important functions as phagocytosis.

Dr. Victor Bonney thought the specimens showed very clearly that in premenstrual life the granulosa cells retrograded *pari passu* with the ovum, whilst in adult sexual life they continued to grow after dehiscence of the follicle, and formed the lutein layer of the corpus luteum. Dr. Stevens's work suggested strongly that it was to this continued growth that development of the characteristics of puberty was due.

Specimens were shown by Dr. Victor Bonney and Dr. Russell Andrews.

Dermatological Society of London.—At a meeting, on December 9th, Mr. Malcolm Morris in the chair, the following cases were shown:—Mr. Malcolm Morris showed a man in whom severe lichen planus of the legs had developed after prolonged mental worry. The disease appeared nine months previous to exhibition upon the fronts of the ankles, creeping up the legs to the knees and assuming the hypertrophic type. Within the last few months the disease had also invaded the mucous membrane of the mouth.—Dr. T. Colcott Fox showed a child, aged 10 months, suffering from sclerema neonatorum. It was the youngest of twelve children of whom nine were still living, and though always small had been free from any particular disorder when born. At three months of age it had been brought to the hospital on account of wasting, and it was then pointed out to the mother that the skin of the trunk, especially the abdomen, was thickened and infiltrated. When shown the sclerema was gradually resolving, and the skin gave a very peculiar sensation to the hand, some parts feeling thin and depressed, probably the normal parts, while others still gave an impression of hardness and infiltration Possibly a slow septic lymphangitis existed. —Dr. F. G. Penrose showed a case of rough skin in a child of 4½ years, coming on after a bad attack of bronchopneumonia. The child had been tested on two occasions with tuberculin but without producing any reaction. The condition was recognized in tuberculosis, but this child was evidently free from that disorder.—Dr. A. Whitfield suggested that the condition was that known as pityriasis tabescentium which might occur in any wasting diseases even among adults. He regarded it as a sign of malnutrition and thought that it was probably due to the horny cells not performing their full cycle and consequently accumulating in the shape of scales and follicular horns.—Dr. J. H. Sequeira showed (1) a woman with a widespread lupus erythematosus over the head, face and back. There was no history of tuberculous disease in the family and no evidence of it in the patient; on the other hand it was associated with albuminuria, as in several other cases which he had recorded; (2) a woman who had contracted syphilis 9 years ago and had for the last three years been affected with discoid patches and sheets of red infiltrated and oedematous eruption over the face and scalp. The eruption closely resembled seborrhoeic eczema and he believed it to be a mixed eruption of syphilis and seborrhoea.—Dr. J. M. H. MacLeod showed a boy, aged 14 years, who had had what was almost certainly a local tuberculosis of the skin over the outer left metacarpals and the ulnar side of the hand. It had existed since the age of 18 months and had greated improved under treatment with radium. —Dr. E. Graham Little showed a man suffering for four months from a small patch of sclerodermia in the centre of the hairy margin of the forehead. There was no trace of it elsewhere, and it was difficult to diagnose it from lupus erythematosus. —Dr. S. E. Dore showed (1) A girl with ringworm of the nails, in which the infection seemed to have occurred from the posterior fold into the matrix, only affecting the free margin later: (2) a man who was a profuse sweater with a very widespread pityriasis versicolor, affecting the whole of the trunk, the arms down to about half way between the elbows and wrists and the backs of the knees.—Dr. James Galloway showed a woman aged 37 years who had been affected with scleroderma over the region supplied by the right supraorbital nerve for the last twenty years. It had gradually involved also the region round the right ala nasi and the inside of the nose. Now she had deafness especially affecting the left ear, and this was found to be due to otosclerosis of the primary type.

Pathological Society of London.—The meeting of this Society on Tuesday, December 15th, Dr. F. W. Pavy, F.R.S., Vice-President, in the chair, was devoted to experimental pathology.

REVIEWS.

BOOKS OF THE SEASON.

(Continued from p. 1588)

Lovers of Frank Bullen's books will be delighted with his last volume, entitled, *Sea Wrack*.[1] The author's descriptive powers are as wonderful as ever, and his fund of stories of the sea appears to be inexhaustible. The book includes besides five articles from the *Spectator*, Life on Board a "Tramp," Whales at Home, Boy Life at Sea, and numerous other stories. Mr. Bullen, in the chapters entitled Whales at Home, criticizes severely a story by Jules Verne, summing up: "Extravagance in fiction is allowable, is necessary, perhaps, but such ridiculous travesty of the facts of natural history as that must surely be classed as unpardonable ignorance." He is entitled to criticize, for his own book is full of interesting natural history facts, which will be appreciated by grown-ups as well as boys. There are eight illustrations.

A Flame of Fire,[2] by Joseph Hocking, is one of the best novels he has produced, as is testified by the fact that the book is already at its twenty-third thousand. The story circles round three adventurous Englishmen who are in Spain at the time of the Great Armada. Mr. Hocking's knowledge of Spain and Spaniards is extremely good, and the story is interesting and well told.

We have before us the third edition of *T. B. B.*,[3] by W. W., described by the author in the title-page as "a story of real, which is sometimes enchanting, life." It is a pleasant and readable story and rather out of the common. "My name is Tom Bart Brown; and if you please may I show you my mother? because Mr Plankit says she's worth fifty pounds." This is how the small hero, Tom, is introduced showing the picture of his mother, and as the principal character of the book he is quite delightful. The story is sometimes very touching. We recommend it.

Goethe's *Faust*[4] must always be a source of delight to every man and woman of intellect. The scholarly translation by Mr. John Anster, LL.D., is probably the best available, and will be the more valued by English admirers of the great German poet because in Messrs. Newnes's edition it forms a volume charmingly bound, and very light to hold.

Robert Machray has given us a very interesting and exciting story in the *Mystery of Lincoln's Inn*.[5] It is full of incident, but ends happily for Gilbert Eversleigh and Kitty Thornton, the hero and heroine of the book, who had been kept apart by one Bennet. Robert Machray is a student of human nature. His book winds up: "When thou doest well unto thyself," said the satirist, "all men speak well of thee. And Gilbert Eversleigh, the rising barrister, backed by the beauty and wealth of his wife, is spoken well of by all the world." The book is to be recommended as a readable novel.

Messrs. Macmillan have sent us copies of condensed editions of *Alice's Adventures in Wonderland* and *Through the Looking Glass*,[6] adapted for very little folks, from the original by Lewis Carroll. The stories read continuously, although each is only about one-sixth of the length of the complete edition. Thirty-two of Tenniel's original drawings are reproduced in line and colour. The rabbit, and the mad hatter, and the queens, the white knight, the tweedles, and humpty dumpty all appear, and if these immortal books had to be adapted for very young children the task could not have been better carried out

Messrs. Cassell and Co. are issuing a new edition of Robert Louis Stevenson's novels. The volumes before us, *Kidnapped* and *Catriona*,[7] are well printed on thin paper, neatly bound in

[1] *Sea Wrack*. By Frank Bullen, F.R.G.S. London: Smith, Elder, and Co. 6s.

[2] *A Flame of Fire*. By Joseph Hocking. London: Cassell and Co. 3s. 6d.

[3] *T. B. B.* By W. W. London: Remrose and Sons. 1s.

[4] *Faust, a Dramatic Mystery*. By Wolfgang von Goethe. Translated by John Anster, LL.D. London: George Newnes, Ltd. 3s. 6d.

[5] *The Mystery of Lincoln's Inn*. By Robert Machray. London: Chatto and Windus. 6s.

[6] London: Macmillan. 1s. 6d. each net.

[7] London: Cassell and Co., 3s. 6d. each.

light cloth, and will slip easily into the pocket or take little space in a travelling bag; delightful companions will they be found by those fortunate folk who have still to read them for the first time.

The chief character in this exciting story, *The Children that Ran Away*, by EVELYN SHARP,[7] is a girl who, with her little brother, is caged in the gloomy London house of her unknown but hated guardian. At last they succeed in running away to the country house of a lady, having heard that she makes a home for lonely children, and they persuade her to let them stay. The girl meets her guardian, without knowing who he is, he having gone to America through a misunderstanding with the child's benefactress, his sweetheart. She makes up with him, and they conceive a beautiful plot to make him known to the child. This plot leads to much more than is expected, and has not only the desired effect, but even causes the marriage of the two friends. Miss Sharp has chosen the most delightful boys' expressions, and has entered thoroughly into her characters and the plot. We cannot too highly recommend this story for children.

The *Little Folks' Song Book*[9] is a collection of songs for children. The melodies are mostly pretty and cheerful, and several are good both as to words and music. We like particularly "My Pretty Pigeons," "The Song of the Clock," and a quaint negro song, "Makin' de Bunny on de Wall." These songs, we are convinced, will be liked by the little folks who learn them.

Pages from a Private Diary[10] is published anonymously. It is a most delightful volume, witty, entertaining, and laughter-provoking, and although it is a rambling book to be picked up at odd moments, we cannot believe that any one who commences it will be willing to put it finally aside unfinished. The author in a preface to the new edition explains how the editor of the *Cornhill Magazine* asked him to contribute to its pages a monthly diary of reflections. There were three conditions: first, that it should be a real diary written day by day; secondly, that it should be written in the country; and thirdly, that it should be anonymous. Much to the author's chagrin his name did leak out after two years and a-half. But, indeed, every one must have been curious to know who an author so witty and entertaining was. His book is full of amusing anecdotes. We quote at random: In Chelsea, he writes, I came across a remarkable handbill, which I transcribe as a "document" for the historian of the nineteenth century morals:

> Night tours through Whitechapel and Darkest London. The West End Agency, in organizing these tours through Whitechapel and the East End, has been careful to select men of well known character and experience to conduct them, and under their guidance no danger need be apprehended if their advice is followed.
>
> The party starts from the agency's offices at 8.30 p.m., and returns by 12 p.m. The charges are one guinea each, or, for a party of five, four guineas. The party is limited to five in number. Two clear days' notice is required of an intended visit to avoid disappointment, and the fee must be paid on booking the tour.
>
> Tall hats must not be worn. Ladies who wish to see this neighbourhood can be conducted round in the day, but under no circumstances by night. The places visited are varied—the resorts of the poorest of the poor—and in no city in the world can such sights be seen.

Again, he describes his search for a country house:

> One beautiful old house attracted me greatly, and I wondered it had been so long without a tenant, till on reaching the basement, in the room beneath the dining-room, the venerable housekeeper lifted up a board and said with pride, "And here is the cesspool; it must be hundreds of years old."

But these are only a couple of examples out of hundreds, and any one who reads the book will be delighted with it.

The *Rising Generation*,[11] by CONSTANCE ELIZABETH MAUD, is a collection of stories intended for the rising generation. The author is supposed from her study window to observe things happening to young people, which she tells in twelve separate chapters. She is a shrewd observer and knows a great deal about children. She writes:

> They are knocking at the door with all their startling questions beginning with a "Why"? And they are not going to be put off as some of us were, for this lot are coming on pretty quick, as the gardeners say; and it is a pathetic but by no means uncommon thing to see parents of quite average understanding completely floored by very babes and sucklings, the latter often grimly conscious of the fact, though generally possessing too much tact to insist on driving it home.

As James Whitcomb Riley makes one of his delightful American children say:

> Parents knows lots more than us,
> But they don't know all things;
> 'Cause we ketch 'em lots o' times
> Even on little small things.

The stories in the volume are clever and original.

In *The Lord of the Dark Red Star*[12] Mr. LEE-HAMILTON introduces us to an atmosphere of superstition of the most lurid kind. The Ghibelline despot, true son of Eblis his father, has built up the power he lives for on a foundation of pain and merciless cruelty. Fear is the secret of his strength, torture and death are his weapons. The price of his power is the delivery of his firstborn son body and soul to Eblis, and the description of the descent of Ezelin to Gehenna, whither he goes to make the compact with Eblis, if read by the fireside after the curtains have been drawn, is calculated to produce a nightmare of the most hideous type. That it is powerfully written and weirdly fascinating cannot be denied, while the reader's interest is aroused in the opening paragraphs and held to the end.

Ugly[13] is the name of a hospital dog whose reminiscences fill the first half of a volume written by Dr. G. H. R. DABBS. "Ugly" was a bulldog, who "never turned tail on a mortal thing in his whole life." He was a born fighter, who devoted odd moments to the extermination of his enemies. His only eccentricity was an overpowering impulse to run after his own tail in moments of intense excitement and elation. "Sarah Marks," the ward cat, tolerated him. Ugly possessed the intelligence of a man, and the clear head and keenness of the canine Sherlock Holmes. The second part of the volume is devoted to a collection of recitations and readings by Dr. Dabbs, and contains several pretty sketches and pathetic incidents. It is understood that any profits arising from the sale of this book are to be given to the funds of King's College Hospital.

Messrs. Macmillan are publishing a series of small 8vo volumes to which they give the general title of *Illustrated Pocket Classics*. Among the most recent volumes are *Old Christmas*[14] and *Bracebridge Hall*,[15] by WASHINGTON IRVING, with illustrations by R. Caldecott, engraved by James D. Cooper. Caldecott, though his work may have verged on caricature, was a genuine artist comparatively little known to the rising generation. He had a keen eye for eccentricities of character and for the interpretation of the feelings of animals. We give a hearty welcome to these reprints.

Mr. FRANK ELIAS has presented us with a shilling volume of excellent nonsense, bearing the title *The Political Advertiser*.[16] It opens with a collection of unauthenticated opinions of celebrities of all kinds on the subject of "Where to spend Christmas," whereupon follow some notes on health resorts, and next answers to ancestors, a travesty upon the answers to correspondents which appear in some of our contemporaries. Finally there is a collection of proverbs, the last of which, "Truth is stranger than fiction," is dedicated to Mr. Labouchere, to whom we may also commend the motto on the title page, "The secret of success in any undertaking lies in skilful advertisement." Possibly, however, the funniest part of the book will be found in what purport to be the advertisement pages. We notice that Mr. Chamberlain undergoes various safe cures for political disorders from which he is assumed to be suffering.

Pears' Annual, 1903, in addition to one or two short stories, contains "The Amazing Adventures of Monsieur Dumollet on His Matrimonial Tour," by A. Robida, translated by Mr. E. A. Vizetelly. The narrator is delightfully funny, and the illustrations by the author, a large number of which are coloured, have the felicity of touch and the richness of grotesque

[7] *The Children that Ran Away*. By Evelyn Sharp. London: Macmillan and Co. 6s.

[9] The *Little Folks' Song Book*. London: Cassell and Co. 2s. 6d.

[10] *Pages from a Private Diary*. London: Smith, Elder and Co. 6s.

[11] The *Rising Generation*, by Constance Elizabeth Maud. London: Smith, Elder and Co. 6s.

[12] *The Lord of the Dark Red Star: Being the Story of the Supernatural Influences in the Life of an Italian Despot of the Thirteenth Century*. By Eugene Lee-Hamilton. London: The Walter Scott Publishing Co., Limited. (Cr. 8vo, pp. 296. 6s.).

[13] *Ugly, a Hospital Dog: Told by Himself: with Recitations and Readings*. By George H. R. Dabbs, M.D. London: Charles William Deacon and Co. (Cr. 8vo, pp. 200. 1s.).

[14] and [15] Macmillan and Co., London. Cloth, 2s. 6d.; leather limp, 3s net.

[16] London: T. Fisher Unwin. 1s. net.

invention, never degenerating into the coarse extravagance of so many English caricatures, that are characteristic of the best French work. Besides this there are three coloured presentation plates which would of themselves suffice to make the *Annual* a desirable addition to the picture galleries of nurseries, orphanages and children's wards. Messrs. Pears may fairly be congratulated on having added to the gaiety of the young folk of English-speaking nations by the publication of this attractive *Annual*.

DIARIES.

From Messrs. John Walker and Co., Limited, of Farringdon House, Warwick Lane, London, E.C., we have received some specimens of the very large variety of diaries and pocket books which they issue. They vary in size from a compact waistcoat pocket diary, containing the four quarters in a loose case with loop back for pencil, to large desk diaries showing a page in an opening. In prices the diaries range from 6d. upwards, a good deal of course depending upon the binding, which is in some cases limp cloth and in others leather; in shape they vary from a long narrow volume to a short broad one, and we recommend readers in want of a diary to apply to Messrs. Walker for their complete list. A novelty appears to be the golfer's diary and matchbook; it contains the rules of the Royal and Antient, notes on etiquette, lists of champions, scoring and handicap charts. The diary is neatly bound in yellow leather, and we imagine that some of the many medical men who have become devotees of the game will be obliged to us for calling their attention to this diary. A good feature in all, or nearly all, of the diaries is that they contain a condensed almanack for 1905; this ought never to be omitted.

REPORTS AND ANALYSES

AND

DESCRIPTIONS OF NEW INVENTIONS

IN MEDICINE, SURGERY, DIETETICS, AND THE ALLIED SCIENCES.

MEDICAL AND SURGICAL APPLIANCES.

A Mechanical Chair to Facilitate the "Direct" Treatment of Phthisis.—Dr. Colin Campbell (Southport) writes: In the treatment of phthisis by the intratracheal method, three



Fig. 1.

objects are aimed at and attained. (1) The undesirable introduction of drugs to the stomach is avoided and that overworked organ left free to digest food; (2) the antiseptics and sputum solvents are introduced directly to the diseased part; (3) the emptying of cavities and blocked-up tubes is secured. Probably the last is the most important. Injections must be given whilst the patient is not far from upright. By inclining the patient to one side or the other it is easy to secure the entrance of fluids into basal cavities, but in the case of high apicial cavities posturing becomes necessary, and this involves a subjective effort, which in a considerable number of cases leads to premature coughing and other consequent results. To distribute injected fluids more accurately I have designed and for some months used—with excellent results—a mechanical chair shown in two photographs. The first shows a patient with a right apical cavity in position to receive an injection. Most of the fluid if properly injected will enter the right bronchus; then to bring it to the cavity the patient is rapidly turned to the horizontal position, shown in the second photograph. The mechanical arrangements of the chair, which is worked by hydraulic power, have been devised



Fig. 2.

by Messrs. Baxendale and Co., of Manchester, to whom I am much indebted for the time and trouble they have devoted to making it work, as it does, "like clockwork." The operator sits in front and works the pedals shown with his feet, lowering and raising the patient at any desired speed. Except the seat and head-rest, which are easily movable, the chair is metal throughout and can be most readily disinfected.

Birmingham Dental Students' Society.—The twelfth annual dinner of the Birmingham Dental Students' Society was held in the Grand Hotel on December 9th, under the presidency of Mr. Harold Round. Over fifty past and present members of the Dental School and visitors sat down to dinner. Among those present were Sir James Sawyer, Dr. Simon, Dr. Barnes, Dr. Sawyer, Mr. Haslam, Mr. Victor Milward, Mr. Malcolm Knott, and Mr. Cale Matthews. Among the visitors were representatives from Guy's Dental Hospital and from the Manchester Dental School. After dinner only a few songs and sketches were given on account of the extreme length of the toast list. References were made in the speeches to the probability that in a comparatively short time a new dental hospital would be built, worthy of the dental profession and of the City of Birmingham. On account of the growing number of patients and students who attend, the present hospital accommodation has been inadequate for some time.

Mr. Edward D. Madge, M.R.C.S., L.R.C.P.Lond., has been made an Officer of the Order of the Crown of Roumania by H.M. the King of Roumania.

KING EDWARD'S HOSPITAL FUND FOR LONDON.

A MEETING of the General Council of this Fund was held on November 14th at Marlborough House, for the purpose of awarding grants to the hospitals for the present year, H.R.H. the PRINCE OF WALES being in the chair.

ACCOUNTS FOR THE YEAR.

The minutes of the last meeting having been read and confirmed, Lord ROTHSCHILD, the Honorary Treasurer, presented a statement of the accounts drawn up to November 10th. It was pointed out that the amount received up to that date was £71,033 8s. 3d., but that no contribution had yet been received from the League of Mercy, and that there were other large subscriptions and donations which usually came in at the end of the year. Attention was also drawn to the fact that the total cost of collection and distribution was, thanks to the work of the honorary officials, under £2,000 a year.

THE REPORT OF THE EXECUTIVE COMMITTEE.

After Sir H. BURDETT had informed the meeting that the League of Mercy would be able to raise its contribution to £10,000 against £8,000 sent in the previous year, Mr. H. C. SMITH, the Chairman of the Executive Committee, presented its report. It recommended the distribution of £99 000, making with the £1 000 for Convalescent Homes entrusted to the Fund by the London Parochial Charities, a total distribution of £100 000. This course involved the withdrawal of a substantial sum from the reserves, but it was considered that it should be adopted in view of the fact that the hospitals were in urgent need of funds this year, and that the efforts of the Fund should for the present be devoted to meeting the pressing needs of the present generation. During the approaching year it might be possible to replace the sum, and mean time, if approved by H.R.H. the President, it was a step which would have the support of subscribers generally and that of all interested in London hospital work.

REPORT OF THE DISTRIBUTION COMMITTEE.

The Report of the Distribution Committee, read by Sir WILLIAM CHURCH, its Chairman, recorded the great loss sustained by the retirement of the previous Chairman, Lord Lister. The needs of the hospitals were more urgent than ever, inasmuch as while necessary expenditure on maintenance tended to increase, great sums had to be expended in putting the buildings and equipment into a condition conformable with the requirements of modern science. Nearly all the closed beds in metropolitan hospitals having been reopened, the next step was to endeavour to develop hospitals in localities where hospital accommodation was insufficient. The number of beds reopened during the past seven years as free beds was 443.

Hospitals.—It was proposed to set aside a sum of £10.500 to assist in the amalgamation of hospitals, and especially that of the orthopaedic institutions. It was considered that one first-rate orthopaedic hospital with a country branch would tend more to the general benefit of patients of this class than a number of institutions in London in rivalry with one another, and it was regretted that the City Orthopaedic Hospital had not at present seen its way to join in the scheme proposed.

Removal of Hospitals.—The removal of King's College Hospital to South London was a step to be viewed with great satisfaction, and in consequence a large grant to assist it was recommended; it was felt certain that subscribers to the Fund would feel the importance of encouraging the removal.

Visitors' Reports.—The reports of the visitors to hospitals were of the greatest utility in enabling the Committee to decide what grants were called for and the conditions which should be attached thereto, and the Committee was greatly indebted to those who undertook the work. The suggested awards were then read.

CONVALESCENT HOMES.

Mr. W. LATHAM, K.C., read the report of the Convalescent Homes Committee. Owing to the continued liberality of the London Parochial Charities it again had £1,000 of which to dispose, and it recommended fairly substantial grants to a limited number of institutions rather than the spreading of the sum over a large number. Fifteen institutions had been selected, most of which were repetitions of grants approved in former years.

ADOPTION OF THE REPORT.

HIS ROYAL HIGHNESS, in moving the adoption of the reports, expressed hearty concurrence with the recommendations made, and his approval of the various grants, and of the conditions which were attached to some of them. The meeting would share his feelings of deep regret at the loss sustained by the deaths of Cardinal Vaughan and Lord Rowton, and the retirement of Lord Lister, who since the inception of the Fund had been Chairman of the Distribution Committee. He trusted that when his health improved Lord Lister might again give them the benefit of his valuable services. The hopes expressed twelve months ago, that another £10,000 a year would be forthcoming, had not been fulfilled. But the year 1902 was an exceptional one, as a large sum was contributed specially as a Coronation Gift. They had, however, in addition to the sums set aside to be invested and those given in the form of investments, a considerable balance which could be utilized at the discretion of the General Council, to make the distribution among the hospitals this year not less than the year before. The recommendation that this should be done had not been made without duly considering the two opposing principles, one of which deprecated touching reserves, and the other advocated using subscriptions to relieve present necessity rather than increase capital. The appeals in contemplation by the London hospitals were enormous; apart from a probable appeal on behalf of St. Bartholomew's Hospital for a sum of between £300 000 and £600 000, other sums amounting to £700 000 were being asked for by twelve hospitals alone. It was, indeed, a serious question whether some limit should not be put upon hospital extension works, and he trusted that new schemes would not be undertaken by any hospitals without grave consideration of these heavy demands now being made on the charitable public. It was also a matter of regret to find that in the hospitals where the changes for maintenance were held to be too high no adequate reduction has yet been made. No doubt this matter would next year receive the close attention of the Distribution Committee. The importance of establishing amid the vast population of South London a large hospital with a medical school was known to all, and he was glad to feel that the decision to move King's College Hospital there met with general approval. The amount proposed for the amalgamation of orthopaedic hospitals was large, but the importance of establishing one first-rate orthopaedic hospital was great. He congratulated the League of Mercy on the steady progress it made, and which enabled it to increase the aid given by it to the Fund, and he was sure that the allocation of the sum entrusted to them by the London Parochial Charities chiefly to convalescent homes connected with London hospitals would meet with the approval of the trustees of those charities. The continued success of the other hospital funds, the Sunday and Saturday Funds, was a proof that, as promised by the King, they had not trespassed upon their field of operations. He was also directed by His Majesty to express his pleasure at the way in which work was being done, and especially at the care and thought bestowed in drawing up the list of proposed grants. He also had to congratulate Mr. J. G. Craggs on the honour bestowed upon him by His Majesty in recognition of his labours as one of the honorary secretaries of the Fund since its inception.

The proposal to adopt the reports was seconded by the LORD MAYOR and the DUKE OF FIFE. The latter expressed the opinion that the Fund was admirably managed, but that the sums it had to dispose of were very small compared with the needs of the hospitals. One of the great blots on London life was, he thought, the very inadequate way in which people supported the hospitals, especially the middle classes, tradespeople, and well to-do workpeople.

The resolution having been carried, it was further resolved on the motion of the CHIEF RABBI, seconded by the CHAIRMAN OF THE LONDON COUNTY COUNCIL, that all cheques in payment of grants should be dispatched on the same day, December 22nd.

A vote of thanks to His Royal Highness was then moved by the BISHOP OF LONDON and duly carried.

The seconder, the Rev. J. GUINNESS ROGERS, D.D., in referring to the services of His Royal Highness in connexion with hospital work, made the following allusion to the medical profession:

> May I refer to a class of men who, especially in times of criticism, realize and appreciate your work still more—that is, the noble body of men who minister with patience and skill and with success to the wants of the sick throughout all our hospitals? It seems to me there are times when we ought to express our feelings in regard to such men and

my own part I cannot express too strongly what I think in relation to the wide humanity as well as to the wonderful ability of the medical profession of this city.

His Royal Highness briefly acknowledged the vote of thanks, and then brought the proceedings to a close by expressing his gratitude to the members of the various committees for the labours which they had expended upon the work of the Fund.

Grants to Hospitals.

It is impossible to spare space for a complete list of the hospitals to which grants have been made, but the following selections will convey a conception of the principles upon which grants have been awarded or refused.

Cheyne Hospital, Chelsea.—£100 in consideration of the fact that curable cases are admitted.

City of London Hospital for Diseases of the Chest.—A subscription of £1,500 and a donation of £500, the subscription bein in support of the beds reopened by the Fund.

Dreadnought Hospital.—Subscription of £500 and donation of £1,000, the former being for general purposes and the latter for the department of tropical diseases.

East London Hospital for Children.—Donation of £1,000 on the condition that isolation and whooping-cough wards are put in hand in 1904.

Evelina Hospital.—Donation of £250 towards the cost of the out-patient department.

Guy's Hospital.—Subscription of £5,000 and donation of £1,000, the former being in support of the beds reopened by the Fund.

Hampstead Hospital.—Donation of £1,000 towards the building fund.

Hospital for Consumption, Brompton.—Donation of £1,000 for the country branch.

Throat Hospital, Golden Square.—Donation of £100 towards the purchase of fire apparatus.

Kensington Dispensary and Children's Hospital.—No eligible as a hospital on present information.

King's College Hospital.—Subscription of £1,000, donation of £1 500 towards general maintenance and £5,000 towards the expenses of the removal.

Middlesex Hospital.—Subscription of £1,000 and donation of £1,500. The Committee notes with satisfaction the abolition of the practice of keeping butter in the lockers by the beds.

National Hospital for Diseases of the Heart.—Donation of £50 towards purchase of an x-ray apparatus.

Passmore Edwards Acton Cottage Hospital.—The Committee is glad to say that it does not require help from the Fund this year.

Poplar Hospital.—Subscription of £500 to help to open the closed beds.

North-West London Hospital.—Donation of £7 0. The Committee urges the rebuilding of this hospital.

Queen's Jubilee Hospital, Earl's Court.—Donation of £200. The building Fund Committee considers a new hospital urgently required in this district.

Royal London Ophthalmic Hospital.—Subscription of £2,000 donation of £2,500. The Committee considers the hospital should receive more support from the public.

Santa Claus Home, Highgate.—£50 in consideration of curable cases being admitted.

Western Ophthalmic Hospital.—Question of a grant to be reconsidered when proper progress has been made towards collecting money for re-building.

THE TRAINING AND SUPPLY OF MIDWIVES.

The Association for Promoting the Training and Supply of Midwives held a conference on December 2nd, at 23, Cromwell Road, to consider methods and means for promoting the training and supply of midwives.

Lord Monkswell, Chairman of the London County Council, who presided, said he would like to know the opinion of the meeting whether or not the provisions of the Midwives Act should be administered in London by a central authority like the London County Council, or whether the work should be split up among the Borough Councils. On that question the mind of the London County Council was in a fluid state; its General Purposes Committee had received seventeen petitions from Borough Councils in favour of their being local administrators of the Act, and the seventeen petitions were backed up by the recommendations of many medical officers of health. On the other side there was a petition from Paddington supporting the view that the London County Council should do the work. The General Purposes Committee passed a resolution to the effect that subject to proper restrictions and additions they were of opinion that the Midwives Act should be administered by the Borough Councils. When that resolution came before the whole Council the General Purposes Committee were asked to consider what restrictions ought to be imposed on the local authorities if they were to administer the Act. At a subsequent meeting of the General Purposes Committee so much was advanced against the proposal that the Borough Councils should administer the Act that the General Purposes Committee were somewhat inclined to turn their back on the resolution they had passed, and to ask the Council to allow the Committee to consider the matter an open question.

Mrs. Wallace Bruce explained the objects and work of the Association for promoting the training and supply of midwives. It was anxious that a good standard of training should be maintained and that it should be given in approved hospitals. It would appeal to the country for a large sum of money for the purpose of training midwives so that grants or loans could be made to women who could not afford the necessary expenses of being trained.

A letter was read from Dr. Kaye (M.O. West Riding, Yorkshire), with reference to the cost of midwives. Among large populations there would be little difficulty in midwives finding employment, but in small villages the midwife would find it difficult to secure a living. He supported the proposal that in the rural districts midwives should also act as district nurses.

Miss A. Hughes, Superintendent of the County Associations Affiliated to the Queen Victoria Jubilee Institute for Nurses, stated that the County Associations were started in connexion with the Institute to meet the need of midwives for the poor and rural districts. It was not professed that the women trained by the County Associations were fully trained, but they were midwives, and were supplied to meet the needs of the poor. The birth-rate was not high enough in country districts to justify raising funds for the employment of women only for midwifery, and therefore these women, in addition to their midwifery certificate, received some training in what every cottage woman ought to know about poulticing, bandaging, and such matters. Miss Hughes particularly emphasized the fact that these women were under the constant supervision of a fully trained nurse, and were not allowed to become slack or depart from the standard of training they had received. In regard to illiterate practitioners of midwifery, the speaker quoted the opinion of a medical man that the best thing would be to put them on the roll as soon as possible so that they would in that manner become liable to supervision. The two points she thought of importance were that funds should be raised to help the training of widwives, and that there should be efficient supervision of the midwives by competent women.

Mrs. Broadwood said that the money should only be issued on loan, and Mrs. Rickman thought that the nursing should be kept clear from midwifery.

Mr. Shirley Murphy (M. O. London County Council) expressed the opinion that the Act might well be entitled an Act for the Prevention of Midwifery Practice. He considered that if the rules of the Act were enforced, a very small number of the existing midwives would be able strictly to comply with them. He instanced as an example that a large proportion of the existing midwives could not write, and would become disqualified because they would not be able to keep the reasonable notes of the cases required by the Act. The supply of midwives in the future would depend upon the fees received. In 1901 there were only 364 midwives in London, and that showed to what extent some 5 millions of people used midwives. Amongst the mining population in Wales midwives were generally used. The county councils were now in a position to contribute to the education of midwives, and they should be asked to contribute a reasonable sum.

Sir Michael Foster said the great object of the Association was to replace as speedily as possible the present midwives by trustworthy women. In the case of midwives for rural districts, they must be satisfied with fundamental conditions and not require expensive unobtainable training. It was undesirable that nursing should be mixed up with midwifery. He agreed that funds were necessary for the training of midwives.

Miss Wilson commented on the difficulty of removing the names of illiterate women from the roll after they had been put on.

Miss Clifford, of Bristol, moved, and Lady Mary Glyn seconded, the following resolution which was carried:

That this meeting is in favour of the work and aims of the Association for Promoting the Training and Supply of Midwives and will do what is possible to further the work of organizing the training of midwives on a sound basis.

After Mrs. Bruce and Miss Rosalind Paget had expressed themselves in favour of the London County Council administering the Midwives Act in the metropolis, Lord Monkswell asked those present for a direct expression of opinion on the

subject and the show of hands indicated an overwhelming majority in favour of the London County Council undertaking the work.

INSTITUTE OF MEDICAL SCIENCES OF THE UNIVERSITY OF LONDON.

The following appeal by the University of London in support of medical education, is issued this day (December 18th):

Sir,—We venture to ask your aid in giving publicity to an appeal which is now being issued by the Senate of the University of London for funds to build and endow an Institute of Medical Sciences under the control of the University.

Owing to the great changes which have taken place in medical education of late years, due to the increasing attention given to the teaching of the scientific subjects, it has become impossible for each medical school, out of the income derived from the fees of students, to build, equip, and maintain the laboratories, fitted with costly apparatus, which are necessary for modern scientific teaching.

It has long been felt that a great improvement would be effected if instruction in certain subjects could be given, not separately in a number of medical schools, but in one or more central institutions controlled by one authority.

The Royal Commission appointed to consider the charter for the proposed Teaching University in London reported as follows:

> The teaching of physics, chemistry, biology, anatomy, physiology, . . . pharmacology . . . should be concentrated into one or two institutions.
>
> It can hardly be doubted that considerable improvement in medical education would result from this arrangement, while by the saving of time and expense and concentration of force the several schools would be set free from what must now be a burdensome weight, and would be enabled to devote all their energies to the teaching of the clinical subjects of medicine and surgery, which in all their various branches have largely developed of late years.

The Statutory Commission appointed to frame the statutes of the reconstituted University adopted the recommendation of the former Commission, and embodied it in the following statute:

> .....In particular the Senate shall use its best endeavours whenever practicable to secure such common courses of instruction for internal medical students in the preliminary and intermediate portion of their studies under appointed or recognized teachers at one or more centres.

The Faculty of Medicine, a body consisting of 350 recognized teachers of the University, having ascertained the views of the teachers of the medical schools, recommended the Senate to establish an institute of medical sciences for the teaching of physics, chemistry, biology, anatomy, and physiology.

It is because the Senate believe that at the present moment there is a most favourable opportunity of obtaining that centralization in the teaching of these subjects which has been so much desired that they appeal for funds to help the University to carry out this project.

If London is to maintain the position which it has hitherto held as a centre of medical education, it is essential that money for these objects should be provided. This necessity has been fully recognized elsewhere, but hitherto nothing has been done to meet a similar need in London.

There is no city of the United Kingdom in which there are such opportunities for the study of medicine and surgery as in London. The importance of its hospitals, the immense number of patients suffering from every kind of disease who come from all parts for treatment, and the presence of distinguished physicians and surgeons as teachers, have combined to render London one of the most celebrated schools of practical medicine and surgery.

The public is indebted to medical schools not only for a supply of men competent for the public services and the private needs of the community, but also for many of those discoveries which have of late done so much for the advancement of medicine and surgery. The nation has, therefore, a very direct interest in the efficiency of medical education; and now that the needs of London in this respect have been made known, it is hoped that the University will obtain from the citizens of the metropolis the support which it requires in order to enable it to keep its teaching abreast of modern science.

A great advantage of carrying out this scheme would be that the hospitals, being relieved of the necessity of providing the space required for the teaching of the preliminary scientific subjects, would henceforth be able to devote all their resources to the care of the sick and to research into the causes of disease, to an improved knowledg of which future advances in medical and surgical treatmen must be due.

We confidently commend the present appeal of the University to those who are in a position to help it forward by donations or bequests.

Donations and applications for copies of the appeal and for further information should be sent to the Honorary Treasurers at 35, Clarges Street, W.

For the convenience of donors the payment of a donation may be extended over a period of three years.

Rosebery, *Chancellor.*
P. H. Pye-Smith, *Vice-Chancellor.*
Arthur W. Rücker, *Principal.*
J. K. Fowler, *Member of the Senate.* } *Honorary Treasurers of the Appeal Fund.*
H. T. Butlin, *Dean of the Faculty of Medicine.* }

THE AUTOMOBILE RELIABILITY TRIALS.

The Committee of the Automobile Club has on the recommendation of the Committee of Judges made the following awards of the medals competed for at the reliability trials held in September last. The conditions under which the medals were gained will be discussed in an early issue together with a number of points of interest to medical men in connexion with the choice of a machine for professional purposes.

Class A1. *Tandems and Quadricycles above 170 lb. in weight and below £160 in price.*
First Prize: Silver Medal, the Century Engineering Company's 5 h.p. Tandem (price £125).

Class A. *Vehicles declared at a price of £200 or less.*
First Prize: Gold Medal, Messrs. Jarrott and Lett's 5 h.p. Oldsmobile (price £150).
Second Prize: Silver Medal, Messrs. Jarrott and Lett's 6 h.p. Oldsmobile (price £200).

Class B. *Vehicles declared at a selling price of £200 to £300.*
First Prize: Gold Medal, the Motor Manufacturing Company's 8 h.p. M.M.C. (Price £270.)
Second Prize: Silver Medal, No. 24, the Swift Motor Company's 6 h.p. Swift. (Price £220 10s. 0d.)

Class C. *Vehicles declared at a selling price of £300 to £400.*
First Prize: Gold Medal S. F. Edge, Limited, 10 h.p. Gladiator. (Price £395).
Second Prize: Oscar Thompson, Esq., 7½ h.p. Wolseley. (Price £325.)

Class D. *Vehicles declared at a selling price of £400 to £550.*
First Prize: Gold Medal, New Orleans Motor Company's 12 h.p. New Orleans. (Price £500.)
Second Prize: Silver Medal, No. 91, De Dion Bouton's 12 h.p. De Dion. (Price £400.)

Class E. *Vehicles declared at a selling price of £550 to £700.*
First Prize: Gold Medal, Speedwell Motor and Engineering Company 10 h.p. Gardner-Serpollet (price £687 10s.). Special Gold Medal, No. 114, Captain H. H. P. Deasy's 14 h.p. Martini (price £695).

Class F. *Vehicles declared at a selling price of £700 to £900.*
First Prize: Gold Medal, Captain H. H. P. Deasy's 16 h.p. Rochet-Schneider (price £850).
Second Prize: Silver Medal, the Motor Manufacturing Company's 20 h.p. M.M.C. (price £750).

Class G. *Vehicles declared at a selling price of over £900.*
First Prize: Gold Medal, No. 137, the Daimler Company's 22 b.h.p. Daimler (price £975).

At a recent meeting of the Royal London Ophthalmic Hospital Guild it was stated that a Centenary Festival is to be held early next spring to celebrate the completion of the hundredth year of the hospital's work. This guild is an association of friends of the old Moorfields Hospital who desire to promote its financial interests and add to the comfort of its poorer patients.

The Scottish Graduates' Club, which has been formed for Shropshire, held its first annual dinner on November 30th at Shrewsbury, under the presidency of Surgeon-Lieutenant-Colonel Cureton, V.D., M.D. It has been decided that the club, which is to be open to undergraduates, as well as graduates, of all faculties, shall hold its annual dinner on each recurring St. Andrew's Day, or when that day is a Sunday on the following day. The Honorary Secretary is Mr. J. Hamilton, of Shrewsbury School.

A number of medical practitioners at Pittsburg, Pennsylvania, have formed themselves into a Physicians' Protective Association. A black list of non-paying patients has been made out, and a schedule of fees established on a somewhat higher scale than formerly.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1903.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, DECEMBER 19TH, 1903.

AN INSTITUTE OF MEDICAL SCIENCES FOR LONDON.

The University of London has issued its appeal to the public for funds to establish an institute of medical sciences under the control of the University. The intention to make this appeal has been foreshadowed in our columns, and the reasons which make it desirable are not far to seek.

It is now, we imagine, pretty generally recognized that the growing complexity of the study of medicine and of the sciences upon which it rests make it impossible for any private institution, such as are, practically, the medical schools of London, to make, out of the funds provided by the fees of students, adequate provision in respect of teachers and laboratories. This difficulty is aggravated by the fact that the rivalry between the institutions has induced them to attempt to build and maintain eleven completely equipped medical schools. The Royal Commission recommended that the teaching of physics, chemistry, biology, anatomy, physiology, and pharmacology should be concentrated into one or two institutions. University College has resolved to strain every nerve to make itself one of such institutions, and the University has now, as we understand it, resolved to establish another institute probably at South Kensington, upon land which it is expected may be obtained from the Exhibition Commissioners. The Senate, on the recommendation of the Faculty of Medicine, consisting of all the recognized teachers of the University, has therefore issued the appeal published at p. 1600. A large sum of money will be required, but the exact amount is not stated. The institute of medical sciences for the teaching of physics, chemistry, biology, anatomy and physiology ought to be worthy of the metropolis of the empire.

We most heartily commend the project alike to the public and to the medical profession. The medical profession we have no doubt will exert its influence and will do what it can in the matter of donations, but the sum required is large and the profession itself is not a rich body. The appeal ought to meet with a ready and generous response from the general public. Owing to the importance of its hospitals and the distinction of its teachers, especially in clinical medicine and surgery, London has hitherto been the most important centre of medical teaching in the United Kingdom, and one of the greatest in the world; it cannot be doubted that its decline would be a loss to medical education and detrimental to the public welfare. At the present time it is hampered by the want of such an institution as it is now proposed to found. For many generations the medical schools of London have produced year by year medical men competent to serve the public well both as private practitioners and as officers of public services. Of the contributions which London has made to the advance of clinical medicine and surgery there is no need to speak—are they not written in the pages of every textbook?—and even under the unsatisfactory conditions which have hitherto prevailed, much admirable research work in the ancillary sciences has been accomplished. The people of this country have therefore a direct interest in maintaining and extending the efficiency of medical education in London, and we trust that the appeal will receive a wide response.

But let us add that the occasion is one which ought to call out a striking display of that local patriotism which we all hope recent changes in the local government of London have been tending to develop. It would indeed be a reproach to the heart of the Empire if the detachment of its wealthier inhabitants and the apathy of its professional and well-to-do classes should justify such public-spirited cities as Manchester, Liverpool, and Birmingham in taunting the metropolis with a failure to fulfil the greatness of its destiny.

As the Royal Commission pointed out it can hardly be doubted that a considerable improvement in medical education would result from the establishment of an institute in which the preliminary and intermediate parts of the medical curriculum could be taught. The school buildings now attached to all the hospitals would be relieved of a burdensome task which they cannot hope to discharge efficiently, and would be set free to devote all their energies to researches into the causes of disease and the systematic scientific study of pathology in its bearings on the practical treatment of the sick in the hospitals.

The appeal is signed by the Chancellor of the University, Lord Rosebery; the Vice-Chancellor, Dr. Pye-Smith; the Principal, Sir A. W. Rücker; and is countersigned by two such representative members of the medical profession as Dr. Fowler, a member of the Senate, and Mr. Butlin, the Dean of the Medical Faculty, as Honorary Treasurers. It comes therefore with the best possible credentials, and we know that it is only issued after most anxious consideration and very full discussion; we hope that it will meet with the response which it so eminently deserves.

THE WAR AGAINST TROPICAL DISEASE.

Among recent advances in medicine none are more noteworthy in their scientific aspects and none have a more far-reaching practical importance than the discoveries that have been made in the domain of tropical disease. This pathological territory has till lately been almost unexplored, and the work of research is only in its first beginnings. Yet enough has already been done to justify the hope of larger achievement in the near future, and from the few points where the flag of science has been planted there opens to the mind's eye an almost limitless field for peaceful conquest.

It is a matter for special gratification that among the pioneers who are working at the expansion of the realm of science in this direction the leaders are our own countrymen. It is fitting that this should be so, for, as having the largest share of the "white man's burden," we are more closely interested than any other people in finding means to make it lighter. It is an unquestionable fact, however, that in many fields of scientific work we are behind not only Germany, but Italy and Switzerland. This, with all

deference to Mr. Balfour, we hold to be partly due to our stupidity. The British want of appreciation of ideas, so bitterly complained of by Matthew Arnold, is naturally reflected in Governments that look on the furtherance of scientific research as something outside the sphere of practical politics. Doubtless, our backwardness is also partly attributable to the clamour of fanatics, but this, too, is another proof of our stupidity. When an enlightened public opinion prevails, the voice of the fool is as that of one crying in the wilderness.

It is therefore all the more to the honour of the men who in this country have given themselves to the study of tropical diseases that, notwithstanding the many hindrances in their way, they have done so much. It is but fair to acknowledge that, although they have not had all the support from the State which they have a right to expect, they have received encouragement and help from one department of the Government. The credit of this belongs mainly to the late Secretary of State for the Colonies. It does not fall within our province to discuss either the general colonial policy of Mr. Chamberlain or the economic revolution of which he is the Cromwell. But whatever differences of opinion there may be as to the reorganization of South Africa or the fiscal question, there can be none as to the enlightened spirit in which he has grappled with the larger problems of the extirpation of the diseases peculiar to the tropics which constitute the greatest obstacle to the civilization of a large part of the most fruitful part of the earth. He had the sagacity to see that in the successful combating of these diseases lies the best hope of the future development of the empire. This alone stamps Mr. Chamberlain as a statesman of the highest order, and the active support which he has given to the study of tropical medicine in London and in Liverpool will be remembered to his credit when the noise of the political strife which dins our ears to-day is lost in the eternal silences.

The part which Mr. Chamberlain has taken in setting on foot and promoting a movement so important for the empire and the race is fully acknowledged by Sir Patrick Manson in an address recently delivered at the London School of Tropical Medicine, which is published elsewhere. To Mr. Chamberlain's interest in tropical diseases the establishment of that school is largely due, and its success is the best proof of the reality of the need which it was designed to meet. Since its foundation four years ago it has trained over 350 students not only to treat the diseases met with in the tropics, but to use to the best purpose the opportunities of original observation and research to be found wherever their sphere of practice may lie. The educational work of the school is sufficient to justify its existence; but in addition Sir Patrick Manson was able to point to several discoveries of first-rate importance that have been made in the school or by men who have been trained in its laboratories. It is impossible to estimate the saving of life that may be looked for as the direct result of those discoveries; and when the new outlets for commercial enterprise and the possibilities of industrial developments that will follow are taken into account it will be an immense loss as well as a disgrace to the nation if Sir Patrick Manson's appeal for help does not meet with a generous response. The school has recently been considerably enlarged, and no expense has been spared in bringing the equipment of the laboratories up to the highest modern standard. Some part of the cost of these improvements still remains to be defrayed, and money is also urgently needed for the carrying out of research work. We cannot believe that an appeal for an object so intimately connected with our national prosperity will fall on deaf ears.

As an illustration of the spirit which animates those to whom is entrusted the direction of the school, it may be mentioned that the Dean, Sir Francis Lovell, C.M.G., is about to start on an expedition to the tropics with the object of making known the work that is being done at the Albert Dock, and the claims which it has on public support. It may be remembered that Sir Francis undertook a similar mission two years ago, and, after visiting India, Ceylon, the Straits Settlements, the Federated Malay States, Penang, Hong Kong, Japan, and Canada, returned bringing his sheaves with him in the shape of nearly £10,000 in cash, and promises of subscriptions to the amount of about £1,000 a year. This time he will first proceed to Ceylon, and thence to Burmah. Afterwards he will go to the Straits Settlements and the Federated Malay States, and possibly to Siam. Next he will visit Hong Kong and some of the Treaty Ports, returning by way of Honolulu and the United States.

On his former expedition Sir Francis Lovell received the greatest assistance from the Branches of the British Medical Association at Singapore, Hong Kong, and other places. The members had learnt of his proposed visit from the BRITISH MEDICAL JOURNAL and were ready to welcome him. They formed committees for the furtherance of the object which he had in view, and it was largely to them that the success of his mission was due. It is natural, therefore, that Sir Francis should hope that on the present occasion also he will receive the active support of the Branches at Colombo, Rangoon, Singapore, and elsewhere. We venture to bespeak the sympathy of these Branches on behalf of the cause which he represents. The help which they gave him in his previous efforts affords an admirable exemplification of the usefulness of the British Medical Association in furthering the advance of medical science. There is no other medical body in the world whose influence is so far-reaching, and certainly that influence could scarcely be employed for a better purpose than that which has stirred Sir Francis Lovell, at an age when he might well enjoy the repose which he has thoroughly earned, to go forth on a long and, in many ways, uncomfortable journey. We heartily hope that his mission will be successful.

THE SURGICAL EXAMINATION FOR THE ENGLISH CONJOINT DIPLOMA.

THE report of the Visitor and Inspector of the General Medical Council on the Final Examination of the Conjoint Board in England contained, it may be remembered, some criticisms upon the surgical portion of the examination, to which at the time the Conjoint Committee did not deem it necessary to reply, seeing that the general conclusion was altogether favourable to the conduct of the examination.

The criticisms, so far as they related to the surgical portion of the final examination have been considered by the Court of Examiners of the Royal College of Surgeons, and the Council at its meeting on December 10th adopted the report which will be found at page 1625.

The Council of the College finds two reasons for disagreeing with the recommendation that a written report on at least one surgical case should be required of the candidates. One reason given is that their experience of written reports in the Fellowship examination is not

favourable. Formerly reports in writing of two cases were required at this examination; now only one is required, and the discontinuance of that one in favour of an extended viva-voce test, as on the whole more valuable, has been under consideration. The other reason is the practical difficulty which arises out of the very large number of candidates (766 in the past year). If written reports were required, a very large number of patients would be indispensable, as the time consumed in making a written report would be much more considerable than that required for a searching viva-voce examination.

The same difficulty, it is stated, arises in regard to the recommendation that there should be actual operations performed on the cadaver; subjects in London are not too abundant, and the provision for every candidate of material for an operation which can to any good purpose be employed as a test of his capacity, would present almost insuperable difficulty. The Council maintain in effect that the recommendation is a counsel of perfection, and impracticable when the number of candidates is large.

It must be admitted that there is considerable weight in these objections, and that conditions easily carried out in the case of examinations with a small number of candidates cannot be applied to large numbers. Nor is the remedy to be sought in the multiplication of examinations at different centres, for that would be a step in the opposite direction from the attainment of a one-portal system—an end the desirability of which is acknowledged by most who have thought upon the matter.

Another recommendation from which the College Council dissents is that there should be a special examination on ophthalmic or on aural surgery. The Council contends that candidates are as a general rule already adequately examined in these subjects, and that the principle is one to which there is no natural limit; the same thing may be urged as to any department of surgery which has, or is tending to, become specialized, and it is contended that the requirement of attendance on special courses of ophthalmology is a sufficient recognition of the subject for the purposes of a general qualification to practise. Here is more debateable matter; it might be contended that if a subject have sufficient individuality to call for special provision for its study, it would be only logical to make a commensurate provision for examination in it, and not to leave it more or less to accident whether a candidate be required to show that his course of study has been anything more than formal.

On the question of methods of marking, also criticized by the General Medical Council, some alterations are recommended, and we presume will be adopted; more marks are to be given for the clinical than for any other part of the examination except the paper, and a general average of 50 per cent. is to constitute a pass mark. At the same time a minimum, materially less than half marks, is fixed for each subject, and if this is not obtained the candidate is *ipso facto* rejected. It is thus possible for a candidate who has obtained less than half marks in one or more subjects to make up for this by getting more than half marks in other parts of the examination, provided that his deficient marks have not fallen below the minimum in any subject.

Although the Council of the Royal College of Surgeons has not in all respects adopted the recommendations contained in the report of the General Medical Council, yet we are glad to recognize that they have been received and discussed in a friendly spirit, and that where they have not been adopted reason has been given for non-compliance.

At the same meeting of the Council of the College some alterations were adopted in the regulations for the Dental examinations. It has, we believe, been found that a certain number of candidates present themselves for the special dental part of the examination only, or, presenting themselves for both, pass in this, and are rejected in the general part. Some of these candidates do not, so far as can be ascertained, present themselves again, but are content with this, and even make some public use of having passed in the special part. This, of course, is only possible because the Medical and Dental Acts do not prohibit unqualified practice. To prevent this abuse candidates will in future be required to pass the general, either at the same or at a previous examination, before being admitted to the special part.

THE ROYAL ARMY MEDICAL COLLEGE AND HOSPITAL.

The new military hospital which has been for some years in course of erection on the Thames Embankment at Millbank is now nearly complete, although no steps have yet, we believe, been taken for its furnishing. It is a red brick building with white stone facings, dimly recalling Chelsea Hospital, though its two low stories give it a somewhat squat appearance which will always prevent it from being seriously compared with its stately neighbour. It is, however, not more squat and undistinguished than the Tate Gallery across the road. At any rate, if it is not an ornament to the river it is not an eyesore, and possibly had it had an architect we might have fared no better. The new building is to be the military hospital of the London garrison. It was originally designed to provide 300 beds, but the increase in the female nursing staff which has been sanctioned has rendered it necessary to make changes which will reduce the number of beds to 225. Of this total 150 will be assigned for the ordinary purposes of the sick, excluding venereal cases, of the London garrison, while 75 beds will be reserved in clinical wards for special cases, many of which will probably be drafted from other districts. The Professors of Military Surgery and Tropical Medicine in the Royal Army Medical College will be at the head of the surgical and medical divisions respectively, and will give clinical instruction to the classes attending the College. The professors will be assisted in the treatment of patients by selected senior officers, and junior officers will be appointed to discharge duties similar to those of house-surgeons and house-physicians in civil hospitals. The Royal Army Medical College will be built on a vacant site on the opposite, west, side of the Tate Gallery; it will thus be sufficiently close to the hospital for all practical purposes. The college will contain class rooms and ample laboratory accommodation, chiefly devoted to pathology and bacteriology, besides residential accomodation for a number of officers undergoing courses of instruction. The relation of the hospital to the college will, in fact, be very similar to that of a civilian hospital to its medical school, remembering that the instruction given will be of the nature of post-graduate teaching.

THE REGISTRATION OF TRAINED NURSES.

The Society for the State Registration of Trained Nurses, of which Miss Louisa Stevenson, of Edinburgh, is President, and Mrs. Bedford Fenwick, 20, Upper Wimpole Street, London, W., is Honorary Secretary and Treasurer. was formed recently for the purpose of obtaining an Act of Parliament to provide for the legal registration of trained nurses. Trained nurses of three years' experience are eligible as members, and ladies and gentlemen interested in public and educational work as honorary members. A memorandum issued by the Society contends that

the State registration of nurses is a question of the highest importance to them, to the medical profession, and to the public. The memorandum argues that State registration is of great importance to nurses because there is at present no recognized standard of education for a nurse, and no means of control of or supervision over those who follow that calling; that it is important to medical practitioners because there is no central authority analogous to the General Medical Council, to define the curriculum for nurses, or empowered to enforce reasonable control and discipline of trained nurses; and that it is important to the public because it is to their interest that nurses employed by them in illness should be competent and trustworthy. At present private nursing is, it is alleged, more exploited by untrained and unsuitable persons than any other branch of nursing work, so that the public pay the fees commanded by trained and experienced nurses for the services of women who are neither one nor the other. At a recent meeting of the Society a draft Bill for the registration of trained nurses was considered and adopted with certain alterations. We are indebted to the Honorary Secretary for a copy of this Bill which proposes to constitute a General Council of Nursing Education and Registration of the United Kingdom. This council would consist of two persons appointed by the Privy Council, one of whom must be a registered medical practitioner and one a nurse, of two registered medical practitioners appointed by the General Medical Council, of six representatives of nurse training schools, of three past or present hospital matrons to be appointed by the Matrons' Council, of two nurses to be appointed, one, by the Queen Victoria Jubilee Institute, and one by the Royal British Nurses Association, of ten direct representatives of registered nurses, six representing those resident in England and Wales, and two each for Scotland and Ireland, and a president who must be a registered nurse elected by the Nursing Council. The Council would be empowered to appoint a registrar whose duties would be to keep a register of trained nurses to be called "The Nursing Register." The General Nursing Council would be empowered to regulate the issue of certificates and the conditions of admission to the register, to regulate the course of training and the conduct of examinations, the admission to the register of women already at the time of the passing of the Act occupied as nurses, to regulate, supervise, and restrict within due limits the practice of trained nurses, to appoint examiners and fix examinations, to decide upon the removal from the Nursing Register of the name of any nurse disobeying the rules and regulations of the General Nursing Council, or for other misconduct, and to cancel certificates. It is provided that the fee for examination or certificate shall not exceed two guineas. Members of the Council are to receive fees for attendance and travelling expenses. There is a clause imposing special penalties for personation or substitution, for obtaining a certificate by false representation, and for wilful falsification of the roll. Finally, the General Nursing Council is empowered to prosecute in respect of offences under the Act. There is a saving clause to exempt friends or members of a family undertaking the gratuitous nursing of the sick, and also a person attending the sick for hire who does not in any way assume to be a trained or registered nurse. The last clause is as follows: "Nothing contained in this Act shall be considered as conferring an authority to practise medicine or to undertake the treatment or cure of disease."

THE ARMY ESTIMATES AND MEDICAL EFFICIENCY.

A morning paper recently published a statement to the effect that the Secretary of State for War contemplated a material reduction in the Army Estimates, but that at the same time full efficiency would be maintained. We are quite prepared to believe that money might be saved in many directions, and that, for instance, the erection of costly fortifications in Surrey is a useless waste of money for a nation which depends for its safety and for its very existence upon the command of the seas. If this were all we should have nothing to say on the subject, but it is currently stated that the reductions contemplated are to include a serious diminution of the vote for the Army Medical Department, including in that the nursing staff. If this be so, and we fear that the rumour is too well founded, we can only say that the statement that such a reduction can be made and at the same time efficiency maintained is a contradiction in terms. The vote for medical establishments, etc., last year was about half a million, or about one-sixtieth of the total vote for the "effective services," while, to give an illustration from one head of expenditure only, the medical department has to make provision for hospital beds for one-tenth of the army. The slight increases in the vote sanctioned in recent years, have been granted only after their absolute necessity has been clearly demonstrated. It would be a disastrous example of cheeseparing to attempt to reduce the vote, as we hear is proposed, by something like an eighth. We can only repeat that any such reduction must inevitably diminish the efficiency of the Royal Army Medical Corps, of the army hospitals, and of the army nursing staff. We believe that the reductions to which we refer have been apportioned without reference to the views of the military authorities, and we trust that the Army Medical Service Advisory Board will at once protest. The medical profession will look to the civilian members of the Board to take a strong line, and we have no doubt that they will receive the unanimous support of the medical profession.

THE LATE DR. WOODCOCK.

We publish elsewhere an obituary notice, illustrated by a portrait, of Dr. Samuel Woodcock, of Manchester, whose death is so great a loss to the British Medical Association. The funeral took place at Stretford Cemetery on December 16th, and was attended by a very large number of friends and representatives of public bodies. The Corporation of Manchester was represented by the Lord Mayor, the Deputy Lord Mayor, and many members of the Corporation. The British Medical Association was represented by Dr. Griffiths (Swansea), President; Mr. Walter Whitehead, Past-President; Dr. T. Arthur Helme, Dr. James Barr, Dr. E. Rayner, Dr. J. Brassey Brierley, and Dr. Jones Morris (Portmadoc), members of the Council; Dr. Colin Campbell, and Dr. A. Brown Ritchie. The Lancashire and Cheshire Branch by Dr. A. Godson, Dr. W. G. Booth, Dr. E. E. Bowden, Dr. F. Vipont Brown, Dr. D. Owen, Dr. M. F. Dearden, and Dr. R. H. Wolstenholme, members of the Council of the Branch. The Manchester Medical Society by Dr. Edge, President; Dr. Steele, Mr. Coates, and Mr. A. H. Burgess. The Manchester Medico-Ethical Association by Dr. Roberts, President; Dr. J. Broadbent, Past-President; Dr. S. Bagley, Honorary Secretary; and Dr. J. Ferguson, Honorary Treasurer. The Medical Guild, of which Dr. Woodcock was a Vice-President, by Dr. Wolstenholme and Dr. D. Owen, and the Pathological and Clinical Societies of Manchester by Dr. T. Arthur Helme, Dr. Milligan, and Dr. C. Heywood. Various political bodies were also represented, as were the City Justices of Manchester. The usual service was held in the chapel. Dr. Goodrich delivered a short address, in which he spoke of the public work of Dr. Woodcock, and referred to his life as that of a Christian man. Some fifty floral tributes were received, including wreaths from many public bodies.

EXPERIMENTS ON THE TRANSMISSION OF CANCER.

We have often felt it our duty to protest against the publication of the absurd travesties of medical facts, theories, and opinions which so frequently appear in certain newspapers. Such irresponsible statements do harm either by exciting false hopes in the breasts of sufferers or by misleading ignorant readers as to the aims of rational medicine

and the methods of scientific research. A particularly serious example of the latter form of mischief has occurred in connexion with Mr. Henry Morris's Bradshaw Lecture in Cancer and its Origin, which was published in the last issue of the British Medical Journal. In the *Daily Telegraph* and one or two other newspapers Mr. Morris was reported to have made the following statement: "The communication of cancer, by means of grafting and inoculation, from one patient to another, or from one animal to another, had for many years been the subject of experiment. Innumerable attempts to convey the disease from one patient to a second had failed, although the experiments had proved successful in the case of white mice." Any one who will take the trouble to compare this passage with the text of the lecture will see that it completely misrepresents the distinguished surgeon's meaning. In speaking of experiments and observations on the transmissibility of cancer from man to man, Mr. Morris of course referred only to accidental inoculations. This is clearly shown by the following paragraphs in which cases of *cancer à deux* reported by Behla, Macewen, and De Bovis are mentioned. There are on record many instances of the alleged transmission of cancer from husband to wife or vice versa, from patient to nurse, and from one member of a family to another. The hands have usually been described as the medium conveying the disease, except in cases of "conjugal" origin. But dirty linen, vessels, and utensils used in eating and drinking, water and vegetables *ex hypothesi* germ-contaminated have also been said to play a part in the transmission of cancer from man to man. The only instances of the deliberate grafting or inoculation of cancer from man to man known are to be found in the experiments of Alibert at the end of the eighteenth century. The famous dermatologist inoculated himself, his pupil and friend Biett, and three other medical brethren, who were consenting parties to the experiment, with cancer; the result in every case was negative. The only cases of deliberate inoculation of cancer from one part of a patient's body to another that we know of are those recorded by Hahn, an unnamed surgeon referred to by Cornil, at a meeting of the French Academy of Medicine, von Bergmann, and Senn of Chicago. In all these cases, with the possible exception of that referred to by Cornil, it is certain that the experiment was made with the patient's consent. It must be remembered, too, that in all the cases the patient was suffering from inoperable cancer. In connexion with this matter it may not be out of place to recall the unwarrantable use made of the newspaper reports of some of those experiments by Miss Frances Power Cobbe. Writing in the *Daily News* of January 21st, 1902, with the philanthropic object of prejudicing the public mind against experimental research on cancer, she refers to some of the cases mentioned above, and then says, "How many scores of such experiments were made before and after these in France and Germany which have never come to light we cannot guess." This is an instance of that *suggestio falsi* which is the badge of all the anti-vivisectionist tribe. But she goes on to what can only be characterized as deliberate falsehood in charging the medical papers with expressing "no horror or indignation at the crimes which they reported as scientifically interesting." Mentioning the British Medical Journal in particular, she says that in referring to the case alluded to by Cornil we "blamed not the crime but the exposure of it." This charge she attempts to substantiate by the process, in which long practice has made her an adept, of garbling the document from which she professes to quote. In the article in question we distinctly said: "We cannot reprehend too strongly such an abominable action as has been perpetrated in these cases; the immorality is obvious." Again, we said we were glad to observe that the experiment was strongly condemned by the Academy of Medicine. It is scarcely necessary at the present day to expose Miss Cobbe's controversial methods which have made her name a scandal and a reproach to many who share her prejudices. We have only referred to her letter because it so well illustrates the utter unscrupulousness with which these fanatics conduct their campaign.

THE BALLACHULISH QUARRIERS AND THEIR DOCTOR

It is with the greatest pleasure that we are able to announce that the long dispute between the slate quarriers of Ballachulish and the company has ended in a victory for the men and for Dr. Lachlan Grant whom they have so staunchly supported throughout. The history of the struggle, which has lasted since July, 1902, has been told in considerable detail in the British Medical Journal. It need only be recalled that the directors, for reasons known to themselves, determined to terminate their agreement with Dr. Lachlan Grant, who had been engaged to take medical charge of the men. As the salary of the medical officer was provided out of the men's wages, the quarriers naturally resented this high-handed action, and insisted on their right to have a voice in the matter. The men left the quarries and found employment elsewhere. The battle was carried to the law courts, where decisions were given against the men and against their doctor, who was interdicted from practising in the district. We suppose the oracles of the law were right, but surely the maxim *summum jus summa injuria* never received a more striking illustration. Now at last the directors seem to have come to see the error of their ways. After the loss of more than a year's working of the quarries, and much unprofitable expenditure in lawsuits, they have come to terms with the quarrymen. These terms include the suspension of the interdict against Dr. Lachlan Grant. The men get an increase of pay, and the doctor recovers the right to practise his profession in the place where he elects to do so. Mr. Bumble's unflattering opinion of the law is surely justified by the experience of Dr. Lachlan Grant. A man of less strength of character might well have been ruined by the circumstances which he had to face. He fought stoutly for an important principle in the conservation of which the whole medical profession is interested, and he is entitled to the gratitude of his brethren for his vindication of their rights. We heartily congratulate him on his well-deserved victory.

THE GERMAN EMPEROR.

A fortnight ago we were able to state on absolutely trustworthy authority that the German Emperor was convalescent and that his medical advisers had no fear of untoward developments. We are pleased now to be able to state on the same authority that the cure of the local ailment is practically complete. The voice of the august patient is clear and resonant, and only a slight change of timbre is noticeable. The somewhat prolonged convalescence was due to the difficulty that would have been experienced in keeping the Emperor from using his voice had he been allowed to appear in public. His Majesty has shown his appreciation of the services rendered to him by Professor Moritz Schmidt by conferring on him the honour of an effective Privy Councillorship, which carries with it the title "Excellency." Professor von Esmarch, Professor von Bergmann, and Professor von Behring are the only members of the medical profession who have received that high distinction.

MEDICAL ADVISORY BOARDS.

A medical correspondent has written to us to express the opinion that the civilian members of the Advisory Boards of the Royal Navy and the Army Medical Departments are not acting wisely in giving their services on these Boards for the small salaries authorized by the estimates, and that the Government, if it finds it necessary to appoint such Boards, should be expected to pay their members salaries commensurate with the services rendered. While we are aware that this view is entertained by other members of the profession we are not persuaded that it is the right way to look at the matter. Both Services have at headquarters fully-equipped medical staffs, and the intention with which the Advisory Boards were created was, as we understand it, to bring to the development of the Medical Services of the Navy and Army the knowledge and influence of the civil profession. The members of the Advisory Boards may very well con-

sider that in giving their services in return for a small honorarium they are discharging a duty to the navy and the army, to the profession, and to the public. We have much sympathy with this point of view, but we are inclined to ask whether the sum allocated in the estimates is expended to the best advantage. At present each of the civilian members of the Army Medical Service Advisory Board receives £200 a year together with expenses. It is, perhaps, a question whether it would not be better to pay a fee for each attendance. The list of attendances at the meetings of the Board and its committees are not published, but we have heard rumours that all the members are not equally diligent.

THE LONDON POLYCLINIC.

THE fifth annual dinner of the Medical Graduates' College and Polyclinic was held on December 3rd at the Trocadero Restaurant, London, with Mr. James Cantlie in the chair. The friends and members of the Polyclinic mustered in such large numbers that the Empire Hall of the Trocadero Restaurant had to be secured. The Chairman, in proposing the toast of "The Polyclinic," described it as a fine, healthy, robust institution, which celebrated that night the fifth year of its active work. The progress of the Polyclinic had passed far beyond the anticipations of the most optimistic. In 1900 the record of the number of attendances of medical men was 10,000, in 1901 it was 11,200, in 1902 it was 14,025, and he was proud to say that in 1903 it was well over 15,000. At the Polyclinic the teachers were not drawn from any one school, but were chosen from every country and every place where medical science was cultivated; there was nothing parochial about the institution, which he regarded as a university for the education of medical men after they had qualified by means of the teaching they had received at a medical school. New institutions like the Polyclinic brought fresh life and modern ideas into vogue, and the opposition to the institution must die out because it was impossible to quench the enthusiasm of its supporters. In his opinion it was quite possible for a medical man to be loyal to his own medical school and also satisfy his duty to the profession at large by helping the Polyclinic in providing for the further education of the post-graduate. The Polyclinic had had its financial difficulties, but, happily, they had all been cleared away. Some of its members had fallen away when the troubles began, but those who truly believed in the benefits to be derived from it persisted in their support of the institution, and now had the satisfaction of finding the Polyclinic sailing safely in smooth waters. In the course of some further remarks, the Chairman incidentally described the Medical Superintendent of the Polyclinic, Captain Pinch, as "the embodiment of tact, of energy, and of capability." What the Polyclinic wanted was a hospital, and he said it had just been suggested by Professor Watson Cheyne that the Polyclinic should take over King's College Hospital on its being vacated. He concluded by asserting, amid the acclamation of those present, that the virility and the vitality of the Polyclinic was acknowledged by all, and because the foundations of the institution were well and truly laid it continued and would continue to bring forth excellent results. The toast of "The Guests" was proposed by Dr. C. O. Hawthorne and acknowledged by Mr. C. R. B. Keetley. Among the other speakers were Dr. G. Ogilvie and Mr. J. Hutchinson. The proceedings, which were marked with the utmost enthusiasm, did not terminate until a late hour.

PAROCHIAL MEDICAL OFFICERS IN THE HIGHLANDS.

A RETURN made to the House of Commons at the instance of Mr. Cathcart Wason, M.P., has recently been published by the Scottish Office, Whitehall. It bears upon the question of tenure of office by parochial medical officers in the Highlands. The statements which have been made to the effect that these officers are treated with indignity and injustice by those in whose hands their appointment and dismissal have unfortunately been allowed to remain hithero are fully, if indirectly, confirmed by this return. It deals with some sixty parishes in the counties of Orkney, Shetland, Caithness, Sutherland, Ross and Cromarty, Inverness, and Argyll, and shows that between them they have had changes of medical officer some 130 times in the short space of seven years. Ten or more parishes have changed their medical officers three times and upwards, the number of changes in some of them being nearly as many as the years included in the return. In English parishes changes of medical officer are rare, and though the work is hard and ill paid, no difficulty whatever is experienced in inducing men who have taken up the appointments to retain them, and continuously to show the utmost zeal in carrying out all the duties connected with them. Nothing that we know of Scotch medical men inclines us to believe that they are more capricious than their fellows in the south, or that they are likely without very good cause to throw up appointments which they have taken the trouble to obtain; nor have the Scotch as a nation got the reputation of fulfilling any duties which they have undertaken to perform in any but conscientious fashion. It is impossible therefore not to believe that the fault lies, not with the medical men, but with the local authorities who select and rule them. Either they must dismiss them from their posts without good cause or else force them to resign by treating them in a fashion to which self-respecting men will not submit. The matter is not one of merely medical interest; Mr. Cathcart Wason has performed good service in drawing attention to it, and it is to be hoped that in the public interest he will not allow things to rest until he has brought about the necessary reform. It is all very well to leave the original selection of a parochial medical officer in the hands of small local authorities, but once appointed the medical officer should be able to hold his head up and perform his work without fear or favour, knowing that he cannot be dismissed without cause being shown to, and approved as good by, a much higher authority than that of the chairman of the parish council or the landlord's factor. Constant changes of officer and the causes which lead to those changes mean chronic loss of efficiency, and however short the periods between consecutive appointments may be, the poor, for whose benefit the appointments are mainly made at all, must inevitably suffer by the continuance of such a state of affairs.

STREET NOISES.

IT would seem that those in authority in London are at length waking up to the fact that there is a strong body of public opinion in favour of the suppression of unnecessary street noises. In reply to a petition presented to the London County Council on behalf of the Betterment of London Association, asking that further by-laws might be made by the Council for the suppression of street cries, it was stated that the Home Secretary had expressed the view that as street shouting is a matter which affects different districts variously, the metropolitan borough councils are best qualified to deal with it. The County Council have therefore decided to refer complainants to those bodies. A further communication has been addressed to the County Council by the same body requesting that the Home Secretary be again consulted with a view to showing (1) that the existing statute—namely, the Streets (Metropolis) Act, 1864—is entirely out of date, and useless in respect to existing conditions; (2) that there is overwhelming medical testimony as to the evil effects of constantly-repeated irritating noises; (3) that there is a continually-increasing number of residents in London who feel assured that regulations such as are in force in the city of Liverpool, and to a larger extent in Berlin would tend to the better government of London, and would be much appreciated by the entire community. It is hardly necessary to state that the name of the medical profession has not been taken in vain in this connexion. Compelled, as they are, to live in every crowded district in the metropolis, medical practitioners know only too well the disastrous effects of hawkers' cries on nervous patients. The ear appears to grow accustomed to the roar of traffic and other necessary or unavoidable noises; but the efforts of the

street musician and the raucous cry of "coal" are made all the more exasperating by being intermittent. We trust that the local authorities may see their way to pass by-laws for their suppression in districts where residents do not buy their coal by the sack or hanker after the strains of the barrel organ. It is interesting to notice that a by-law is in force in one district under which street noises can be suppressed. Thus in a case recently heard by Mr. Rose at the West London Police Court, a coal hawker was charged with the offence of shouting. A number of residents were called, who proved that the defendant, who was one of a number employed by a coal company, had seriously interfered with their comfort. For the defence it was urged that the by-law was unreasonable, and that no less than 80,000 tons of coal were sold in this way every week in London. Mr. Rose said that matters of this kind had been left to the local authorities. He fined the defendant 2s. 6d., and costs.

THE ARTHUR WEBSTER SHANKLIN COTTAGE HOSPITAL.

Lord Alverstone and the Hon. Mrs. Arthur Webster offered to build a cottage hospital at Shanklin, Isle of Wight, at a cost not exceeding £2,000, in memory of the late Hon. Arthur Webster, the Lord Chief Justice's only son, if the inhabitants would undertake to maintain and find a site for it. Dr. Cowper, of Shanklin, was the intermediary, and the generous offer has been gratefully accepted. A convenient site has been secured on the Landguard estate, situated in the Landguard Manor Road. Miss Harriett Parr left to trustees £1,400 for the purposes of a hospital at Shanklin, the income from which had hitherto been devoted to the maintenance of two beds in a nursing home at Shanklin. This sum will be available as an endowment, and the interest, together with subscriptions promised, will be amply sufficient for the purposes of the proposed hospital. Thus will another of those cottage hospitals which are such a blessing to small communities, and so useful to the local members of the profession be provided in what is, perhaps, the best manner for securing the continued interest of the people in the institutions which benefit them.

ST. BARTHOLOMEW'S HOSPITAL.

The brief statement which we made last week upon the subject of St. Bartholomew's Hospital will have prepared our readers for the complete and most satisfactory change of front which the authorities of the hospital have since publicly made. From the correspondence published at p. 1622 it will be seen that the House Committee has unanimously resolved to accept the equally unanimous opinion of the medical and surgical staff that it is necessary to acquire more land. At a very largely attended meeting of the Court of Governors on December 17th it was unanimously resolved to ascertain the terms upon which a further addition to the site could be obtained. When they do agree at Bart's their unanimity is wonderful! The nature of the new scheme thus approved is made sufficiently plain in the letter from the medical staff. As at present arranged, a meeting to launch the appeal for contributions is to be held at the Mansion House on January 26th. The success of this appeal will to a large extent depend on the nature of the proposals put forward at the Mansion House meeting. In the present position of matters we would deprecate any haste. The decision now taken has happily changed the whole aspect of affairs, and we would strongly urge that the site, with the additions now approved, should be considered as a whole; that is to say, that the public before it is asked to subscribe the large sum of money which will be required should be presented with a complete, coherent, carefully-planned scheme for utilising the enlarged site to the best advantage. To prepare plans for all this will require time and any decision now taken to put up an out-patient department on any particular part of the existing site must inevitably lead to embarrassment in the future. It will be well worth while to consider whether it would not be better to pospone the Mansion House meeting. At any rate, we are clear that the appeal to the public should not go forward until next autumn. Whether the additional land can be obtained from Christ's Hospital remains to be determined. It is stated that the Post Office has obtained an option over the land still held by the trustees of Christ's Hospital site, and that a promise has been made by the City Corporation to give a large sum to the Trustees in return for running a street through the property by way of relieving Newgate Street. Even, however, if difficulties of this nature do arise and prove insuperable, it may be hoped that the weaker spirits will not allow themselves to be discouraged. Doubtless it would be very much better that the whole hospital and its appurtenances should stand upon one ring-fenced site, but it is not absolutely essential, and room might perhaps be found for many of the administrative and residential buildings in the neighbouring Close of St. Bartholomew's, or on the east side of Little Britain.

The London County Council, at its meeting on December 15th, resolved itself to exercise its powers under the Midwives Act, 1902. The General Purposes Committee was instructed to make a report on the administration of the Act.

The donor of the new site for King's College Hospital is the Hon. W. F. D. Smith, M.P., Chairman of the Removal Committee, and Treasurer of the Hospital. The donation is made in memory of his father, the late Mr. W. H. Smith, and the Committee has resolved that the administrative block of the new hospital shall be associated with the name of Mr. W. H. Smith.

We understand that six cases of cancer are at present under treatment with Dr. Otto Schmidt's serum in the Middlesex Hospital. The treatment is being carried out by Dr. Jossé Johnson with the permission of the surgeons of the hospital. The cases were examined by Dr. Schmidt who pronounced them to be suitable for the purpose. Although they have now been under treatment for more than a fortnight no reaction has been set up and no appreciable effect of any kind has been produced on the growths.

Dr. Rutherfoord Harris, who has been elected M.P. for Dulwich in the Unionist interest, was a student of the University of Edinburgh, and took the diploma of L.R.C.S.Edin. in 1881. In the following year he went to South Africa, and became Mr. Cecil Rhodes's confidential agent, and was the first Secretary of the British South Africa Company. He sat for Kimberley in the Cape Parliament from 1894 to 1896, and again in 1898; he was elected M.P. for Monmouth in 1900, but was unseated on petition. We trust that Dr. Harris, who is described in *Who's Who?* as "financier and surgeon," may be found, as a member of the House of Commons, to retain his interest in medical and public health questions.

Ireland.

The Iveagh Gift to Dublin Hospitals.

In addition to the hospitals named last week, we understand that the following awards have been made by the Committee: Cork Street Fever, £3,500; St. Vincent's, £2,000; Steevens's, £2,000; Sir P. Dun's, £2,000; the Meath, £2,000; Mercer's, £2,000; Rotunda, £2,000; Incurables, £2,000; Convalescent Home, Stillorgan, £1,500; National Maternity, £1,500; Lock, £1,000; Linden Convalescent Home, £1,200; St. Michael's, Kingstown, £750.

Nurses for Irish Poor.

The Countess of Dudley makes a further appeal for help in the establishment of district nurses in the poorest parts of Ireland. Eight jubilee nurses have already been appointed in the "congested districts." She points out that the areas to be occupied are so poor that it would be impossible to provide nurses at the expense of the rates. In many parts the people have to journey for a whole day across the bogs to obtain medical relief. The claims of this charity are particularly strong, and it is hoped that a generous response will be made to Lady Dudley's most urgent appeal.

Coronation Fund for Nurses.

The first annual meeting of the supporters of the Coronation Fund for Nurses in Ireland was held on December 14th at the Royal College of Surgeons, Dublin, under the presidency of Mr. Andrew Beattie. The report stated that the total amount subscribed was £3,865 16s. 9d. The fund is intended at first to be purely benevolent, but as it develops it is hoped that it may take the shape of an insurance fund. Many nurses have already joined, membership being a necessary condition for receiving aid in case of need. The following ten members were chosen to represent the subscribers:

Miss Mary Blount, His Honour Sir Frederick Falkiner, Recorder of Dublin; Sir Francis Cruise, M.D.; Sir Lambert Ormsby, President R.C.S.I.; Mr. Charles Martin, D.L.; Sir William Thomson, F.R.C.S., C.B.; Mr. Marcus Tertius Moses, J.P.; Mr. Fane Vernon, D.L., Governor of the Bank of Ireland; Mr. E. V. Longworth, and Sir Andrew Reed, K.C.B.

The five representatives of the nurses were chosen by ballot as follows:

Miss Kelly (Steevens's), Miss M'Donnell (Richmond), Miss Hampson (Portobello), Miss Shutter (City of Dublin), Miss Lamont (Superintendent Jubilee Nurses' Institution).

Irish Auxiliary Asylums.

In a leading article upon the above subject in the issue of the British Medical Journal of July 13th, 1901, we said:

We gather from letters addressed to the press by, amongst others, the Roman Catholic Bishop of Ross, who has taken a great interest in the scheme, that they intend to put a lay manager, otherwise a workhouse master, in charge, that they purpose employing as attendants "a few strong, vigorous women, neither squeamish nor over-refined," and a visiting physician to attend daily, and to expend the sum of 5s. 6d. a head per week to secure to the inmates every reasonable comfort.

On November 25th and 26th ult., an important meeting of representatives of each of the Irish lunatic asylums was held in the Richmond Asylum, Dublin, at which the Bishop of Ross said that "at Youghal they had purchased regular accommodation for 417 patients. ..... The idea of the Cork Asylum Committee was to conduct the place as a home rather than an institution ..... and as they had to deal largely with Catholic patients, they thought the best thing to do was to put the nuns in charge of it. ..... He felt satisfied that they could work the Youghal Auxiliary at £15 a head per annum." (Applause).

We observe the Most Rev. Dr. Kelly has succeeded in carrying out his programme, not forgetting, we trust, the "few strong, vigorous women, neither squeamish nor over-refined," and that he is still of opinion that it can be done at his original estimate, although such patients cost considerably more in an average Irish workhouse.

The members of the medical profession in Cork passed a strong resolution protesting against having these 417 insane people in charge of "a skilled attendant and a visiting physician at a salary of £100 a year." For all the effect it had they might as well have put their protest in the waste-paper basket. The governors of the Cork Asylum know far better than mere doctors the requirements of the insane poor, and decided to have a visiting physician only.

So far Youghal is the first of the auxiliary asylums in Ireland, and what has happened with regard to it confirms our fear that such institutions would be nothing more than workhouses under another name. As we pointed out, the auxiliary asylum scheme was a clever attempt to provide for the alarming increase of insanity in Ireland by cutting down the Government capitation grant 50 per cent.

At the meeting of asylum representatives above referred to the eminent Medical Superintendent of the Richmond Asylum read an able paper on the boarding-out of these poor people, and a resolution was passed that

It being desirable in the opinion of this conference that the system of family care of persons of unsound mind which is practised with success on the Continent generally and in Scotland should receive a trial in Ireland, it is resolved that the Government be asked to introduce legislation with a view to have family care legalized in Ireland in the same manner as recent legislation has done in England.

This is the plan we have repeatedly advocated not alone for harmless lunatics, but for aged and infirm paupers now incarcerated in workhouses, and we trust that its practicability as regards the insane having been demonstrated by Dr. Conolly Norman, the Government may be induced to give it a fair trial in Ireland where every facility for its adoption exists.

On December 11th, at one of the largest and most influential meetings of the medical profession ever held in Cork, the following resolution was carried unanimously:

That we view with apprehension the action of the Committee of Management of Eglinton Asylum in not appointing a resident medical officer to the Youghal Auxiliary Asylum, as suggested by a previous resolution of ours, which clearly pointed out the accidents likely to occur to harmless lunatics. Amongst others, we mentioned the dangers of choking during meal time, an occurrence by no means uncommon in this class. We now wish to draw the special attention of the Committee of Management and inspectors of lunatics to the Superintendent's report of December 8th, where such an accident is reported to have occurred in the Eglinton Asylum, and which certainly would have proved fatal but for the presence and prompt assistance of the resident medical officers. It can be easily imagined how the case would have terminated in the Youghal Auxiliary Asylum, which is at least one mile from the nearest medical man.

Proposed Cork Sanatorium for the Poor.

At a meeting of the Executive Committee of the Cork Branch of the National Association for the Prevention of Consumption, held on December 7th, Dr. P. J. Cremen in the chair, the subject of the proposed sanatorium for the treatment of poor consumptives was again under discussion. The Committee, though much surprised at the refusal of the Government to grant the small sum asked for building purposes, intends, if possible, to avail itself of Mr. Barter's free gift of a splendid site of 20 acres. It is now proposed to erect on this site at Myshall a sanatorium at a cost of £7,000. A communication was read from the Local Government Board, stating that the money for this purpose could be borrowed at 3½ per cent. on the application of any sanitary authority or combination of sanitary authorities. Accordingly a resolution was drafted calling on the various sanitary authorities of the City and County to unite and cooperate for the erection and maintenance of a sanatorium for the treatment of curative cases of consumption amongst the poor. Seeing that the annual death-rate from consumption in Cork is the highest in Ireland, and that it is expected the Local Government Board will shortly hold an inquiry into the cause of such a high mortality, the Cork Committee is determined if possible to avail itself of the free gift of Mr. Barter.

Scotland.

The Health of Edinburgh.

During the month of November last 259 cases of infectious disease were notified in Edinburgh: Enteric fever 17, diphtheria 46, erysipelas 39, scarlet fever 154. In the corresponding month of 1902 the number of cases of infectious disease was 195, and in 1901 it was 142. In the City Hospital at Colinton Mains there are now 373 patients. During the week ending mid-day December 12th, 28 cases of scarlet fever were notified to the public health authorities, and 1 death was registered. The total number of deaths registered in the month of November last was 428, equivalent to a death-rate of 15.68 per 1,000 of the estimated population. The deaths in the corresponding month of 1902 were 395, equivalent to a death-rate of 14.30 per 1,000 of the estimated population. The average rate in November during the last five years was 16.49.

Small-pox at the Edinburgh Waterworks.

Since the outbreak of small-pox at the Talla waterworks in Peebles-shire on November 9th the disease has been steadily spreading and cases have been reported in Glasgow, Edinburgh, Lanark, Airdrie and Sauquhar. The infection is believed to have been brought from the Talla centre. Ten cases have come under notice at the Talla waterworks within the last month although precautions have been taken by the sanitary and public health authorities of the county. We understand that three fresh cases were discovered in the late days of the week ending December 12th, and these have been placed in a temporary hospital. Six patients have been removed to the hospital, where one has died. There are now two cases in the small-pox hospital of Edinburgh, and both of these appear to have been traced to the Talla centre.

THE LONDON SCHOOL OF TROPICAL MEDICINE.

On Monday, December 7th, Sir Patrick Manson delivered an address at the London School of Tropical Medicine, in which he gave an account of what the school has done and is doing, and what it hopes to do. Admiral Sir Robert More-Molyneux, G.C.B., was in the chair, and among those present were Sir William Church, President of the Royal College of Physicians of London; Sir Frederick Young, K.C.M.G.; Mr. Herbert Read, of the Colonial Office; Sir Francis Lovell, C.M.G., Dean of the School; Professor W. J. Simpson, Dr. Sandwith (Cairo), Dr. Guthrie Rankin; Dr. Bashford, Director of the Cancer Research Laboratory; and Dr. Buzzard. Major Ronald Ross, who was expected to be present, telegraphed at the last moment to the effect that he was unavoidably prevented.

Sir Patrick Manson said his object was to put forward the claims of the school for public support in such a fashion that Sir Francis Lovell might make use of what was said in his forthcoming attempt (the second which he had made) to gather funds to carry on what they could not but consider an important and national enterprise. Before proceeding to this he took the opportunity of making public acknowledgement of two obligations the school was under. The first of these was to the late Colonial Secretary, Mr. Chamberlain, of whom it could truly be said that he had been the mainspring in the movement for education in tropical medicine. Some might think that fiscal policy, free trade and fair trade, protection and retaliation, were very important things. That they were important he admitted, but, after all, they were questions insignificant in comparison with the solid and enduring contributions to knowledge which that school, as well as other tropical schools, had made within the last few years. In the matter of tropical medicine, Mr. Chamberlain deserved a title far more honourable than that of Imperialist—he was a humanitarian. The other acknowledgement due from the school and from all interested in tropical medicine was to the Seamen's Hospital Society and their governing body. Without them, so far at least as London was concerned, tropical medicine would have had no suitable habitation. They perceived in the scheme a wider opportunity for discharging their trust than was afforded by the medical treatment of a few sailors in the Port of London. They had taken an active interest in the building of the school, in the extension of the hospital, and they had advanced money when temporary accommodation of this description was required. In a hundred other ways they had helped forward the good work. Passing to the subject of his address, Sir Patrick said it naturally fell under two headings—Education and Research. As regarded the former, he stated that since the school opened on October 3rd, 1899, no fewer than 354 students had passed through its portals. In the first session they had 27 students; in the first two years, that is to say, during six sessions, they had an aggregate of 149 students; in the last two years, also during six sessions, they had 178 students. These figures showed a steady increase in the numbers attending the school, but this increase in number did not adequately represent the increasing popularity and usefulness of the institution, for whereas in the earlier days of the school's existence many of the students came for one or two months only, in these later times a large proportion remained during the full course of three months. He felt justified in saying that every student who had entered the school had had an opportunity of acquainting himself with the more important facts of tropical pathology, with the practical methods of diagnosing tropical disease, and with the practical methods of treating tropical disease. When they left a large proportion of the students, if not all, had a genuine practical grasp of their subject. They had been in actual touch with the raw material, so to speak, the germ causes of disease, and the pathological effects of the operation of these germs on the human body. They had seen, and most of them had applied for themselves, the most recent methods of diagnosis. They had seen in operation the methods of treatment of best repute. As far as teaching and opportunity could ensure, they had left the school qualified for actual practice in the tropics. Over and above this the students in most instances had gone forth qualified not only to practise the art, but also to advance the science of tropical medicine. So it had come about that at the present day, instead of the two or three men who took a more or less languid interest in tropical disease five or six years ago, a whole army of eager investigators had arisen, mainly composed of men educated or inspired by the Liverpool and London schools. Thus multiplication of investigators, and therefore of chances of discovery, had already borne remarkable fruit. Without alluding to what their friendly rivals in Liverpool had done, he could point to not a few notable triumphs by men from the London School. As instances he pointed to an observation made in their laboratory by the present superintendent, Dr. Low. For the first time he showed in what manner the blood-worm, responsible for an important group of tropical diseases, represented by the hideous and disabling disease known as elephantiasis, gained access to the human body. He showed that this worm at an early stage of its existence—like the germ of malaria—was introduced into the human tissues by the proboscis of the mosquito. This important discovery indicated with precision the way by which elephantiasis and its congeners might be avoided. He next referred to the experiment made in the Campagna by Dr. Sambon and Dr. Low, which clearly demonstrated that man could live in the midst of malaria if he only employed simple and practical measures against mosquito bite. Again, the school, by importing infected mosquitos from Italy, and then setting them to bite healthy individuals in the laboratory, and thereby promptly conferring malarial disease to those so bitten, gave the final proof that malaria was conveyed by the mosquito. Further, a pupil of the school, Dr. Forde, discovered in the Gambia colony the presence in the blood of a man of a new parasite, a parasite which was subsequently recognized by Dr. Dutton, of the Liverpool School, as belonging to a group of germs responsible for many and grave diseases among the lower animals. This discovery was already bearing remarkable fruit. Again, only last year Dr. Castellani, another pupil of the school, demonstrated the association of this same parasite, called a trypanosoma, with sleeping sickness. Subsequent investigation by Colonel Bruce and others had confirmed the truth and importance of Dr. Castellani's discovery. Lastly, until a fortnight before, it could not be affirmed with certainty that the trypanosoma was really the cause of sleeping sickness. In consequence of the opportunities for study the school and hospital provided, this possibility had now been finally disposed of. Last year a patient, in whose blood it was conjectured that the trypanosoma was present, was admitted to the wards for treatment and observation. The late Superintendent, Dr. Daniels, after a lengthened search, confirmed the conjecture by finding the parasite in the patient's blood. Unfortunately, their efforts at treatment proved futile. The patient left the hospital in March, 1903, but they kept in touch with her, examining the specimens of her blood sent to the laboratory from time to time, and watching the progress of the symptoms. Some two months ago the patient began to show symptoms of sleeping sickness, and died of that disease on November 26th, two years and three months after receiving the infection through the bite of an insect, a species of tsetse fly, common in the place where she had resided on the Upper Congo. Knowing that the trypanosoma caused sleeping sickness, they knew how to proceed, if not in curing, at any rate in preventing, a terrible disease which was rapidly spreading, not only in the Congo Free State, but in Uganda and elsewhere in Africa. For this knowledge the world was mainly indebted to the London School of Tropical Medicine. This knowledge would in the end result, if not in our being able to cure, at least in our being able to prevent, sleeping sickness. Other discoveries might be credited to the school, but those he mentioned sufficed to show that their existence had not been unproductive. That the few thousand pounds the establishment had cost the country had been more than well invested who could gainsay? The permanent additions to human knowledge, which, as the years rolled on, were bound to accumulate, would yield a huge compound interest, and do more than justify their existence. After referring to the benefactions of Sir John Craggs, Sir Patrick Manson alluded to schemes they had undertaken, some of them in active operation, others only in contemplation. Two years ago they sent Dr. Durham to study that most important and mysterious disease, beri-beri. Although so far the results had been principally of a negative character they were none the less valuable, for negative results excluded many wrong hypotheses and narrowed down the field in which future investigators worked. They did not despair of

getting light on this disease. He also mentioned that, by arrangement with the Government of the Federated Malay States—where beri-beri was rampant—Dr. Daniels had been placed in charge of the very complete research laboratory at Kuala Lumpur. He went on to speak of the very satisfactory arrangement that had been concluded in reference to this appointment, an arrangement which Sir Francis Lovell did much to bring about. In future the school would have two superintendents, each of whom, during alternate periods of about three years, would have charge first of the London school and then of the Kuala Lumpur Laboratory. The advantage of such an arrangement was obvious, for the superintendent of the school in his three years' tenure of office in London would not have time to lapse into a mere demonstrator; and the superintendent of the Kuala Lumpur Laboratory, after having had practical experience of tropical conditions and medical needs, when taking his spell of work at the school, would be brought into contact with new minds, and with current European thought and discovery. At the present time they had two schemes of investigation in contemplation. For one of these they had a certain amount of money in hand; for the other they must wait for money, and for what was even more difficult to get, suitable men. He thought he had said enough to prove that the London School of Tropical Medicine had done good work, was doing good work, and hoped to do more good work, that is to say, they were fulfilling their function, and to this extent they were a prosperous institution having a distinct claim on the public. He was told by those who knew, that no public institution in Great Britain was entitled to be called prosperous until it was over head and ears in debt. They, too, had taken care to establish that claim to be considered prosperous. The bill for the new buildings had not been quite discharged. Their teachers were strictly honorary—their pay was so small that the laboratory microscopes were sometimes required to see it. They wished to furnish their museum and their library on a scale adequate to the needs of the school. These and many other requirements demanded money. In short, they wanted £100 000, or as much of that sum as they could get. They had given full value for that money. Apart from the education they had supplied to their 354 students, any one of the discoveries he had mentioned was worth the sum named ten times over. Two years ago, when they were in straits for funds, Sir Francis Lovell paid a visit to the East, and succeeded in collecting for them a very substantial and a very welcome sum. He was again about to leave on the same errand, and they were there that day to wish him godspeed in his self-imposed, somewhat arduous, and not very pleasant task. They trusted his success would be as great as on the previous occasion. Recalling the benefaction of the Hon. Bomanji Dinshaw Petit, who gave the school no less a sum than 100 000 rupees, Sir Patrick Manson said they hardly expected that Sir Francis Lovell would meet with such another. When, however, he thought of his former experience of the Chinese, and of their great interest in public charities, and the wealth so many of them had accumulated, under the aegis of the British flag, in the Straits of Malacca and elsewhere, he did not despair of finding a Chinese rival to Mr. Bomanji Petit. Perhaps no country in the world was so likely to benefit by the advance in tropical medicine made in recent years as the British Colonies and Protectorates in the Malay Peninsula. Beri-beri was a terrible drag on the mining and agricultural industries there. Now beri-beri was a disease which they hoped some day to find out the cause of, and perhaps thereby be able to see the way to an effective treatment, and also to appropriate means of prevention, and he appealed to their Chinese fellow subjects there to contribute something out of their wealth to enable them indirectly to add to their health, and wealth, and general prosperity. Could they but remove beri-beri from the Malay Peninsula they would add enormously to the prosperity of that country. In conclusion, Sir Patrick Manson made acknowledgements to the press, both of this country and of the East, and to the medical profession in India, the Straits, Hong Kong, and elsewhere.

In proposing a vote of thanks to Sir Patrick Manson, Sir WILLIAM CHURCH said he thought the money value of the work done at the school had been greatly understated; it seemed to him incalculable.

The motion was seconded by Sir FREDERICK YOUNG and carried by acclamation.

ADDITIONS TO THE SCHOOL.

Large additions have recently been made to the school, which is now one of the best-equipped of its kind in the world. The laboratory has been doubled in size, and now provides accommodation for forty students. A considerable sum of money has been expended in the purchase of new microscopes, microtomes, and other instruments and apparatus, all of the best kind. The other new buildings include a museum and a lecture room with seats for 100 students. A new out-patient department is in course of construction, for besides its proper function as a hospital for tropical diseases, the institution serves as a general hospital for the district in which it is situated. The library has been refitted, and six bedrooms for students have been added, making a total of twelve.

The total number of beds in the hospital is now 51. The wards are beautifully lighted, clean, and airy. Among the patients at the time of our visit were several Africans and Asiatics. The cases under treatment included examples of beri-beri, sprue, and other tropical affections.

It may be mentioned that the hospital is at present in debt to the amount of £10,000. This sum is not included in the £100,000 asked for by Sir Patrick Manson, which is wanted for the foundation of scholarships and for the furtherance of original research in the domain of tropical disease.

THE ROYAL COMMISSION ON ARSENICAL POISONING.

(Continued from p. 1558.)

PART III.—*Tests for arsenic in foods and substances used in the preparation or manufacture of food.*

THE question of accurate and delicate quantitative tests for arsenic has received very careful investigation by the Commission, which has had the assistance of numerous chemists and chemical committees (particularly that appointed by the Societies of Public Analysts and Chemical Industry), and also of work done in the Government Laboratory. In the result it is stated that the "Marsh-Berzelius" test, when applied with proper precautions to convenient quantities of material, will enable an amount of arsenious oxide well below $\frac{1}{10000}$ gr. per lb. of the substance analysed, or in liquids well below $\frac{3}{100}$ gr. per gallon, to be detected. In estimating quantities of arsenic by this method allowance has to be made for differences of personal judgement in comparing arsenical mirrors with "standards" in order to ascertain their quantitative value. When 10 grams of material are tested, the allowance needed for this and for other experimental errors is not likely to represent a greater proportion than $\frac{1}{100}$ gr. of arsenic per lb., or, with 50 c.cm. of liquid, $\frac{3}{100}$ gr. per gallon. "For practical purposes this extent of possible error can seldom be of importance; in particular instances, where close approximation is desired, the difficulty can be met by making more than one estimation, or if need be, by repeating the experiment with a solution corresponding to a larger or smaller amount of the substance." Among the points noted as necessary to be observed in applying this test are: Obtaining zinc which is not only free from arsenic, but also is "sensitive" and permits all the arsenic present to be evolved as arseniuretted hydrogen; obtaining pure acid; dealing specially with solutions containing salts of iron; and in the case of nearly all organic substances, including beer, destroying the organic matter before testing. The use of an electrolytic process to evolve arseniuretted hydrogen, in place of zinc and acid, has been worked out in the Government Laboratory, and has been found to possess several advantages. The Commission, while recognizing that the Reinsch test, introduced by the Brewers Expert Committee at the time of the epidemic, served a most useful purpose in that emergency, thinks that the routine adoption of this method is not now desirable, in view of the greater certainty and delicacy of tests involving the comparison of mirrors.

PART IV.—*Ways in which foods are liable to become contaminated by arsenic.*

(1) SUBSTANCES USED IN PREPARATION OF FOOD.

It is only possible in this article to give a brief outline of the facts set out in this part of the report. The scheme is to show what degree of arsenical contamination may arise through ignorance or carelessness on the part of the manufacturer, what amounts of arsenic have been detected by public analysts or other

chemists, and what degree of purity as regards arsenic can now be obtained commercially. Of the substances dealt with, sulphuric acid is by far the most important, as it is used in the preparation of many foods and food ingredients. The acid, prepared in the usual way from Spanish pyrites, is invariably arsenical unless a de-arsenicating process is applied. Proper de-arsenication, however, will produce an acid which is practically free from any trace of arsenic, and the additional cost of obtaining de-arsenicated acid is small and can seldom be of account to the food manufacturer. The "catalytic" process of sulphuric acid making, which is now coming into use, requires for its success that all arsenic shall be excluded before the sulphuric acid is made. Acid prepared from natural brimstone, recovered sulphur, and "spent oxide" is usually free from arsenic and is not subjected to a de-arsenication process. Nevertheless acids so prepared "must not be assumed without analysis to be free from arsenic."

Hydrochloric acid is used to a comparatively small extent in food preparation, and arsenic-free acid is less easily attainable commercially than arsenic-free sulphuric acid. From 2 to 6 per cent. of mineral acids (sulphuric or hydrochloric) are used in the preparation of the liquid glucose employed by confectioners and syrup makers, and of the solid glucose used by brewers. Even now arsenic is occasionally found in glucose; amounts varying from $\frac{1}{10}$ to $\frac{1}{12}$ gr. per lb. have been found in some samples apparently of recent manufacture. Such occurrences, however, have been quite exceptional. Some 3 per cent. of mineral acid is used in making "invert sugar," which is used by brewers and sometimes also in the preparation of cider and of certain fermented "non-intoxicating" drinks. Glycerine has sometimes been found seriously contaminated by arsenic derived from the crude hydrochloric acid—instances of 1 gr. or more of arsenic per lb. have been reported by analysts in recent years. Some mineral colours, notably oxide of iron and "bole Armenia," have been found to contain large quantities of arsenic, while certain "aniline" colours used by confectioners have shown $\frac{1}{4}$ gr. or more of arsenic per lb. Arsenic is not infrequently found in phosphates and boric acid and borates. Most foods dried, smoked, or roasted by exposure to fumes of coal or coke are exposed to the products of combustion for a short time only, and (except perhaps in the case of chicory) there is no risk of arsenic comparable to that which arises in the case of malt. A detailed account is given of the Commission's inquiries as to the means by which arsenic in malt can be minimized or avoided altogether, and should be of considerable practical value to maltsters. It is now commercially practicable to produce malt in which any arsenic present is certainly less than $\frac{2}{100}$ grain per lb., and it is satisfactory that most of the malt prepared during the past two years has been of this character.

(2) FINISHED FOOD.

Of the finished foods, in addition to beer, noted as liable to be arsenical the report mentions golden syrup and treacle, in the preparation of which about 2 per cent. of mineral acid is used; a variety of foods containing glucose; vinegar prepared from raw grain which has been "converted" by means of sulphuric acid; Demerara sugar, which has occasionally shown small amounts of arsenic—as much as $\frac{1}{10}$ gr. per lb. in some cases—attributed to the use of chloride of tin or of impure phosphates in its preparation; certain foods prepared from malt and yeast, notably a food termed "carnos," made principally from brewer's yeast, some specimens of which contained up to $\frac{1}{4}$ gr. of arsenic per lb. Glycerine may be added to cakes to the extent of 1 to 3 per cent. There is no evidence that arsenic has been detected in such cakes, but the liability of glycerine to be arsenical is not known to many manufacturers who use this substance in the preparation of food. A cheap chocolate powder, consisting largely of oxide of iron, and certain sweets similarly coloured, were lately found by Mr. Otto Hehner to contain between $\frac{1}{10}$ gr. and $\frac{2}{10}$ gr. of arsenic per lb.

The results of the Commission's inquiries into certain alleged risks of arsenical contamination of food have been negative. Roots and barley grown on soil heavily manured with arsenical superphosphates have shown no arsenic in the bulbs or grain, and a large number of analyses of enamelled cooking utensils of British and foreign make indicate that the dangerous practice of using arsenic as an ingredient of enamel is now seldom or never practised.

PART V.—*Precautions which should be taken by manufacturers to exclude arsenic from foods.*

After referring to instances in which manufacturers took precautions against arsenic before the 1900 epidemic, and to the general strengthening of these precautions during the last two years, the report points out that "it is satisfactory and reassuring that it has been found commercially practicable to produce for food purposes phosphoric acid, glycerine, glucose, 'invert sugar,' caramel, and malt either yielding no arsenic when tests of considerable delicacy are applied, or else no more than such traces of arsenic as are indicated in the foregoing part of this report." Various practical recommendations are made with regard to the extent to which analysis is necessary in the case of these and other ingredients, and respecting the form which any guarantees as regards arsenic should take. The Commission is of opinion that no substance should be used as an ingredient of food which contains a larger proportion of arsenic than $\frac{1}{140}$ gr. per lb. or in the case of solutions $\frac{1}{850}$ gr. per gallon. But it is pointed out that these are standards of failure, not standards of excellence, and that the manufacturer ought only to use these suggested limits for purposes of giving guarantees if he at the same time does his best to keep out arsenic altogether irrespective of the guaranteed limit.

It appears from this part of the report that the Pharmacopœia Committee of the General Medical Council is now undertaking a revision of the official *British Pharmacopœia* tests for arsenic. The Commissioners strongly condemn certain trade customs which have come under notice by which chemical substances such as phosphates are sold to food manufacturers under intentionally misleading names.

PART VI.—*Present means of official control over purity of food, in relation to arsenic.*

In discussing the present law and its administration the Commission finds much to complain of. Reporting on the control over the manufacture of food it states: "The existing machinery of public health administration provides little if any system of official control over the proceedings of manufacturers of food or of food ingredients..... Broadly speaking, the control which can be exercised becomes available only after the manufacture of the food is completed, and it is on sale to the public." The report proceeds to show in detail how the Sale of Food and Drugs Acts, as at present interpreted and administered, fail to protect the consumer against arsenic or other deleterious substances in food. Prosecution has to be directed against the retailer, frequently an innocent person. If the retailer protects himself by obtaining a "warranty," the prosecution must be begun again against the giver of the warranty, and, in the present state of the law, often with little chance of success. There is, the report states, very little real information available for local authorities or public analysts as to foods liable to contain deleterious substances, and there is no proper co-ordination between the different authorities and officials who undertake the administration of the Sale of Food and Drugs Acts. No official "standards" exist, and each case is fought out in the Courts at great expenditure of time and money, with expert assistance. The uselessness of the "seizure" clauses of the Public Health Acts is illustrated by the fact that the Public Health officials did not consider these clauses enabled them to secure the official seizure of arsenical beer in breweries after the cause of the 1900 epidemic was traced.

PART VII.—*Recommendations as to improvements in official control over purity of food.*

In this section, one of the most important in the report, the Commissioners set out what in their view should be done to remedy the serious defects disclosed in Part VI. They urge that there should be proper co-ordination between the central and local authorities in matters relating to the purity and adulteration of food products. There exists:

(*a*) Necessity for more extended administration by the Local Government Board.

(*b*) Necessity for official standards.

The Commission recommends under (*a*) that a scientific expert officer should be appointed, with suitable laboratory provision, with the duty of advising the Local Government Board on questions affecting the manufacture or sale of foods liable to be injurious to health or liable to valueless adulteration. This officer or his assistants should have the duty and power of making investigations and collecting information with regard to food products manufactured at home or imported from abroad, with a view to furnishing local authorities and their officers with authoritative information and advice as to the lines on which the Sale of Food and Drugs Acts

may be administered to much better public advantage than is at present the case.

With regard to (*b*) the Commission endorses the recommendations of the Select Committee on Food Products Adulteration, 1896, and the Committee on Preservatives and Colouring Matters in Food, 1901, that a scientific "Board of Reference" should be set up to deal with the question of "standards" required for the purposes of the Sale of Food and Drugs Acts.

They propose that this authority should be a consultative Board, available on the application of the Government department concerned, to pronounce on specific points which are specially referred to them. The findings of the Board should be carried into effect by order of the department concerned, whose action should be subject to the control of Parliament. The Board of Reference would obtain all technical information in a given case by means of evidence and inquiry. On this point Dr. Thorpe appends to the report a separate memorandum, pointing out certain advantages of prescribing "standards" by *ad hoc* committees, which in his view outweigh the convenience of the more permanent Board suggested by his colleagues.

The Commission recommends that the Sale of Food and Drugs Acts should be amended so as to permit of manufacturers or intermediate vendors being attached to the prosecution, by a procedure similar to that provided by Section CXLI of the Factory Act; the object being to enable the whole of the facts to be brought before the Court at one hearing and thus to permit responsibility to be brought home to the real offender.

It also recommends that with suitable safeguards the powers of a medical officer of health to obtain the condemnation of unsound food should be extended, so as to enable him to "lay an embargo" on the sale of suspected articles pending an official examination or analysis.

Part VIII of the report consists of a single paragraph, in which the Commission, pending the establishment of "standards," records its opinion that it would be entirely proper that penalties should be imposed under the Sale of Food and Drugs Acts on any vendor of food which is shown by an adequate test to contain more than $\frac{1}{10}$ gr. of arsenic per gallon in the case of a liquid, or $\frac{1}{10}$ gr. per lb. in the case of a solid, and this "no matter whether it is habitually consumed in large or small quantities, or whether it is taken by itself or mixed with water or other substances."

The recommendations outlined above are signed by all the Commissioners—Lord Kelvin, Sir William Hart-Dyke, M.P., Sir William Church, Dr. Whitelegge, Mr. Cosmo Bensor, and Dr. J. E. Thorpe, the latter with the reservation on the question of "standards," to which we have above alluded. They appear eminently practical, and it is to be hoped that they will speedily be adopted. The Commission has made a very valuable contribution to the science and practice of public health, and is to be congratulated on the successful termination of its labours.

REPORT OF THE LOCAL GOVERNMENT BOARD, 1902-3.*

[SECOND NOTICE.†]

No single subject occupies so large a part of this large volume as that concerned with the Poor Law. Some 75 pages of the President's report, which runs to 225 pages in all, is devoted to the question, and in the appendices another 250 pages are occupied with the same topic. We cannot do more, therefore, in this brief notice than touch upon some of the more salient features.

THE EXTENT OF PAUPERISM.

Throughout 1902 the increase which occurred in the number of paupers in 1901 (as compared with 1903) still continued. The rise took place in each registration division except that comprising Wilts, Devon, Dorset, Cornwall, and Somerset, and in every month of the year. The decrease in the division named was confined to outdoor pauperism, the number of indoor paupers showing a slight increase. Taking the whole of England and Wales, the greatest increase on the previous year occurred in the month of December, when 729,600 paupers were in receipt of relief, being 17,218 more than in December, 1901; February came next with 15,061, and June had an increase of 14,943. On the whole the increase was most marked in the North-Western, York, and South Midland Divisions during the first half of the year, and in the Eastern and Northern Divisions during the latter half. These are serious returns. Taking the estimate of the Registrar-General of the population of England and Wales (32,997,626) in the middle of 1902 as the basis of calculation it appears that the proportion of paupers per 1,000 of the population works out as follows: In London there was on January 1, 1903, one pauper to every 34 persons, though six months before it had been 1 to 38; in unions outside London the proportion on January 1st, 1903, was 1 to 40 as compared with 1 to 42 in the previous six months; and in England and Wales as a whole the proportion was one pauper to every 39, as compared with 1 in 41 in the previous July, and 1 in 42 the year before. It should be added that the rise in the number of paupers relieved, which usually occurs in the winter months, and which showed increase in December, 1902, was nearly twice as great in the numbers of the indoor as in those of outdoor paupers. The report contains many particulars respecting the relative numbers and conditions of these two main divisions of paupers, methods of relief, children indoor and boarded-out, medical relief, and increase of insane paupers. Respecting the last named, it may be said that the decennium of 1893-1902 shows an increase of insane paupers over the previous decennium of 30.1 per cent. It appears that in January, 1903, the number of insane paupers in England and Wales was 102,120, not including 1,585 insane paupers chargeable to county and borough rates. In 1859 the total was 30,132, and since that date there has been a steady and uninterrupted proportionate rise in the total. Here as elsewhere, in considering the rise of pauperism the matter is judged broadly and in a summary manner, as, owing to variations in the different classes of pauperism, it is not possible to arrive at just conclusions otherwise. It is, however, satisfactory to know that the present rise in pauperism commenced comparatively recently. The number is lower than in the years 1858 to 1873 with the exception of the year 1860. In 1840, instead of paupers being as 1 to 39 of the population, they were as 1 to 16. There has also been a substantial reduction in the number of able-bodied paupers if the period of 1903 be compared with 1848. Finally, reference may be made to the expenditure for relief of the poor and purposes connected therewith. In London, in 1902-2, £3,414,669 was so expended; in-relief cost £982,921 and out-relief £246,897. Outside London the expenses reached the sum of £3,846,523 (in-maintenance £1,832,017 and out-relief £2,589,274), and the total for the whole country was £12,261,192. This works out at an average charge of 7s. 6¾d. per head on the estimated population, which is an increase of 4¾d. on the previous year. The report contains an analysis of the details of expenditure and the sources of revenue from which they are met.

THE EXTENT OF VAGRANCY.

Not the least interesting portions of the section of the report which deals with pauperism are those appertaining to vagrancy. Owing to suggestions from headquarters, particular attention was given last year to the study of this question in the various divisions. As Mr. J. S. Davy, Inspector for Sussex, Kent, and Surrey, points out, vagrancy is but a symptom of a troublesome tendency which is not confined to any class, age, or country. He reminds us that Herodotus wrote respecting the Egyptian laws of Amasis (who flourished in the Sixth Century B.C.) in respect of the principle that every Egyptian should declare once a year to the governor of his district how he got his living, and if he failed to do this, or did not prove that he got an honest livelihood, he should be punished with death. Solon, the Athenian, imposed the same law upon the Athenians. For purposes of convenience it may be well to note in the first place something as to the extent of vagrancy in 1902-3. In the metropolis vagrancy has apparently increased, owing to "the continued diminution of the deterrent elements of indoor relief" and to the establishment of an increasing number of institutions of an eleemosynary character such as Salvation Army Shelters, and the like which attract vagrants to London. In Sussex, Surrey, and Kent vagrancy has apparently increased except in those unions where existing regulations are enforced. The same may be said of Bedfordshire, Herts, Hunts, and Cambridgeshire. In the eastern counties vagrants were found to be on the increase, and the same is true of the Devonshire and Cornwall district. Mr. Dansey, speaking of the western counties, reports, "The returns for the last six months of the year show a large increase in the number of adult vagrants." The same inspector lays emphasis upon what is referred to by various other

* Thirty-second Annual Report of the Local Government Board, 1902-3. Pp. ccxxvi, with Appendices, pp. 1-732, charts, etc.

† The previous article was published on November 28th, p. 1413.

inspectors, namely, the danger to the community of the conveyance of infectious disease such as small-pox by means of vagrancy. "Cases of small-pox," he writes, "in the district are believed to have occurred mainly through infection carried by tramps coming more often, however, from common lodging-houses than from casual wards. The cellular system is admittedly the best for the honest wayfarer and the most deterrent to the habitual tramp, as well as the safest during the prevalence of infectious disease." In the Midland district of Leicester, Lincoln, Nottingham, and Derbyshire male vagrancy increased in 1902, and small-pox was introduced into 17 out of 44 unions through the agency of tramps. In the East and West Ridings of Yorkshire vagrancy has decreased, which perhaps is fortunate, as "more than half the unions are not properly equipped for dealing with vagrants." Mr. Bircham, the inspector for Wales, reports that the number of vagrants relieved has increased in the past two years, and he considers that if the cellular system were enforced in every union, and the regulations strictly carried out as regards detention, vagrancy could be very fairly met. The ticket system is in force in many unions with useful results. He considers that associated vagrant wards are an unmitigated evil, whether from a sanitary or a disciplinary point of view.

In general, the evidence of the report goes to show that vagrancy in 1902 showed an increase with few exceptions throughout the country, and this brought with it the usual disadvantages *plus* the exceptional disadvantages due to the prevalence of small-pox as the aftermath of the recent epidemic. Repeatedly during last year and the present year our columns have borne witness to the conveyance of small-pox infection by tramps from one part of the country to another and from one town to another, and this has served to demonstrate the danger vagrants may be to the community, and the exceedingly small degree of control exercised over them by the central authorities or by the guardians.

Before passing on, it may be said that the suggested causes of increased vagrancy are in the main a certain slight depression in trade, and the sudden flooding of the labour market by the return of so many reservists and discharged soldiers from South Africa. But there have been other causes at work in addition to these two.

Preventive Methods.

Experience appears to show that a good deal may be done by guardians to solve the question of vagrancy within the limits of existing regulations. The rules as to detention should not be relaxed. Where these have been properly carried out the number of vagrants has been reduced. The Cuckfield Union in Sussex is a case in point. Up to 1895 the number of vagrants was between 12,000 and 13,000 a year. The obsolete task of stonebreaking and oakum picking were then given up, and the purely unskilled labour of stone-crushing was introduced, the regulations as to detention being rigidly enforced. The result was that the numbers of vagrants fell in one year to one-half, and in 1902 only 2,070 vagrants were relieved. In the Home Counties the same kind of administration has resulted in similar reduction. The Board's regulations are clear—the vagrant is to be registered, searched, stripped, and bathed, given a clean shirt, one or two warm rugs and sent to bed after having had his supper. In the morning after having had his breakfast he is to be set a fair day's work or task and then he is to be set free on the morning of the second day and several inspectors evidently hold that if these regulations were strictly followed widespread reduction would occur. There are, of course, other remedies, especially for the habitual vagrant, amongst which are labour colonies. In respect of such remedies, however, it is important to remember that their success depends upon the zeal and personal devotion of the management. Such qualities are not to be looked for, generally speaking, in the paid officers of State or municipality, and therefore the attempts made to change philanthropic, voluntary, and charitable movements of this character into State concerns are likely to result in robbing them of their good points. Then there is the question of passports. By this means the habitual vagrant would be quickly detected, his identification would be secured, and the number of actual tramps might be determined which is now impossible. As the vagrant generally objects to identification this might act as a deterrent. Then there is the question as to feeding of vagrants. Experience shows that the slightest relaxation with reference to quantity or quality of food given in workhouses leads immediately to an increase of vagrants.

The whole question is one of administration, of which the police and the guardians share the responsibility. We cannot but think that the admirable statements incorporated in the report in respect to vagrancy lead to the inevitable conclusion that the chief blame of increased vagrancy and the chief remedy for its reduction lies in the hands of the guardians. "Active, kindly, energetic, and sensible" guardians are needed, who will take the trouble really to see that their own Union is properly managed, and that due and thorough inquiry is made into the conditions of pauperism and vagrancy in their own district. As Mr. Fleming, the inspector for the union counties of Dorset, Southampton, and parts of Wilts and Surrey, writes: "In its nature and intention the English Poor Law is gentle to help, strong to save, always present, always ready, always competent, always sufficient. If it fail, the failure comes from wrong use, not from wrong constitution; and it is this wrong use which enables the bad to turn it to their own ends, and thus to wrong the legitimate recipients of its benefits." Speaking generally, the facts seem to lend support to this comprehensive statement; and in the interests of sanitation and the public benefit, as well as in the interests of the vagrants themselves, it is to be hoped that wise use of the Poor Law may become the rule rather than the exception.

INSPECTION OF FACTORIES AND WORKSHOPS.

Part II of the annual report of the Chief Inspector of Factories and Workshops[1] for the year 1902 containing tables has now been issued.

It is stated that during 1902 there were added 2,579 factories to places under inspection, and 2,656 workshops, making a total of 100,424 factories inspected in 1902 and 145,721 workshops. The report shows a slight increase in the number of half-time candidates in Lancashire and Yorkshire, but this was outweighed by decreases in Scotland and Ireland. As regards certificates of fitness, there was a smaller percentage of rejections on medical grounds—0.48, as against 0.51. The lead-poisoning reports show a further decrease from 1,058 cases in 1900 and 863 in 1901 to 629 in 1902. A similar declension is observed in the other forms of industrial poisoning and in anthrax. The rate of increase of accidents, both in fatal and non-fatal casualties, was greater in 1901-2 than in 1900-1. The increase is mostly explained by a rise of 10.6 per cent. in the minor accidents reported to the inspectors, and is confined to males. Among young persons and children there were fewer accidents.

The total number of cases of industrial poisoning reported for 1902 was 681 with 25 deaths as against 936 for 1901 with 45 deaths. Of these 681 cases lead poisoning claimed 629. From white lead works there were reported 143 cases with 1 death, as against 189 with 7 deaths for the previous year. In the earthenware trade there were 87 cases reported with 4 deaths, as against 106 with 5 deaths for 1901. It is noteworthy that in addition to the above there were reported to the Home Office 179 cases of lead poisoning with 32 deaths in house-painters and plumbers whose employment is not controlled by the Act. There were 8 cases of mercury poisoning, 1 of phosphorus, 5 of arsenic and 38 of anthrax during 1902, as against 18, 4, 12 and 39, the numbers respectively for 1901.

The total number of accidents during 1902 was 90,355 with 1,110 deaths. In the two previous years the numbers were 83,760 with 1,035 deaths and 79,020 with 1,045 deaths respectively. In the textile industries there were 4,898 accidents reported to the certifying surgeons. Under the heading of "All Reported Accidents, 1902" shipbuilding was responsible for 10,982 cases, of which 117 proved fatal. The shipbuilding industry caused nearly one-eighth of the total number of accidents reported to the Chief Inspector of Factories.

[1] Messrs. Eyre and Spottiswoode, East Harding Street, London. 1903 Price 8½d.

THE BRITISH MEDICAL BENEVOLENT FUND.

The Treasurer (Dr. Samuel West, 15, Wimpole Street, London, W.) has the pleasure to acknowledge the receipt of the following further special donations in response to Sir William Broadbent's appeal:—

	£	s.	d.
"A Friend," per R. D. P.	35	10	0
Dr. W. A. Satchell	11	7	0
Mr. E. W. Thurston	1	1	0

PHYSICAL DEGENERATION.

[By our Commissioner.]

V.—Personal Hygiene.—*Cleanliness of Person.*

Teachers in schools under the London School Board have, among many serious difficulties, the personal uncleanliness of the children to contend with. In the worst districts the children are sent to school scantily clad and often swarming with vermin—veritable pictures of neglect and squalor. As in everything else, the interest and energy of the teacher will do much to minimize this evil, and in some schools the children have gradually been made to understand that they must appear every morning with tidy clothes and brushed heads. It is curious to note that the lower in the social scale the worse the child's hair, until among the dregs one sees nothing but the meagre wisp tied with a bootlace and sticking straight out at the back like the tail of a pointer. It is to be supposed that these wretched heads are never touched with water, oil, or comb and seldom with a brush.

As a rule, the smaller the child the less neglected it is, and the majority of the infant class are a much less pitiful lot than those in the higher standards. Mr. Charles Booth describes a class in Standard I graphically:

> A sorry group they are, fifteen or twenty of them.....One or two are tidy-looking boys; one has a clean-washed face and a white collar on. The rest are ragged, ill-kept, and squalid in appearance. Some are filthily dirty, others sickly-looking, with sore eyes and unwholesome spect.....But some of them are beginning to make a start. They come cleaner than they did, for one thing, and that is a great step towards civilization.

But, as Mr. Booth remarks:

> This is the lowest circle in the mount of toil, and as we rise through the standards things improve. In schools of this class the lower standards are always the worst. Still even in them we can pick out a number, not a large one it is true, of tidy, tolerably healthy-looking children, fairly well fed and shod, and with tokens of being cared for at home.

The girls always look much smarter than the boys, on account of their pinafores, and where boys can be induced to wear collars the difference in the general appearance of the class is most striking.

The matter of personal cleanliness is a difficult one to tackle, when the kind of homes the children come from is remembered, and until the dwellings of the labouring classes can be built with bath rooms it is useless to expect the children to be spotlessly clean. Some double-storied houses have lately been built at Battersea containing a fixed bath. The scheme, originated by the vestry, has been carried through by the Borough Council. The total number of tenements on the estate is 315, there are 147 tenements of four rooms and a scullery, and 140 tenements of three rooms and a scullery, in addition there are 28 houses each containing five rooms and a scullery. Somewhat similar dwellings have been erected through the exertions of Mr. James Cornes at Leigh, Lancashire. There is much that is interesting about the dwellings, but at present we can only refer to the bath arrangements. The bath is fixed in the scullery, and at the side of the kitchen fire is a circular copper heated by it, and supplying hot water in the kitchen and to the bath. The total cost of the Battersea scheme has been about £114,000, and the tenements are let at 7s. 6d. and 10s. 6d. a week, the houses at 11s. 6d. These are rents far beyond the means of the class to which we are referring in this article.

Really at present the only thing teachers can insist upon is that the children should appear with clean hands and faces, and neatly brushed hair. The school authorities should assist in this by at least providing a sufficient number of wash-basins and towels in order that the children may be sent to wash their faces and hands when necessary. Dr. Kerr draws attention to the fact that the supply of towels is scanty in most schools in London, and he suggests that a good rule would be to supply a clean towel daily, or at least on alternate days, for each hundred children in attendance. This suggestion does not seem to err on the side of extravagance. The following table, giving the particulars returned by the nurses from schools as to the washing arrangements, may be of interest:

Schools.	No. of Departments noted.	Average Attendance of Schools.	No. of Wash-basins.	Weekly Supply of Clean Towels.
Infants	192	68,437	1,304	411
Girls	175	59,215	1,434	452
Boys	163	55,090	992	352
Mixed and Special	49	14,435	382	147

In summer of course there are the swimming baths. These exist in a good many and should certainly be built in all schools. A suggestion for new buildings would be to have the large drill halls on the ground floor, to build under them swimming baths with movable floors, which could be opened so many times a week, the water drained off after use, and the flooring replaced. These swimming baths could be left open during all holidays, the water being warmed in cold weather; the children might be allowed to bathe so many times in the week, and a day set apart for parents. This would encourage cleanliness enormously and not only improve the physique of the poor but in time would cause a distaste in them for the dirt and squalor they at present accept as part of their lives.

But it does not suffice to have swimming baths if the water in them is not changed sufficiently often. More harm than good can be done to children bathing after large numbers have used the bath. These conditions would be bad given clean, healthy children, but when it is realized that most of those of whom we are speaking are anything but clean, it becomes revolting and dangerous, and one shudders to think of the gulps of water accidentally swallowed by these innocents. The matter was stamped on our minds by a conversation which we had with the headmistress of a board school this summer. She informed us that the whole school bathed so many times a week in the swimming bath, which, though a capital one, was by no means very large; yet the water was only changed once a fortnight on account of expense, as the cost of refilling was 8s.! The state of the water those children were bathing in at the end of the fortnight can better be imagined than described. Should such things be allowed by the sanitary authorities?

Much trouble is experienced by teachers in dealing with children sent to school with heads often swarming with vermin. Dr. Kerr in his report says:

> Dirty heads, generally in consequence of pediculi, are a frequent cause of absence. In any such case the child can be completely cured in from ten days to a fortnight, but frequently is allowed to run on untreated for months. It is worth considering whether the policy should not be adopted of excluding the child, and then prosecuting the parents after reasonable notice, for not sending him to school in a fit state.

This is an excellent suggestion. Elementary schools necessarily contain a mixture of children of very different grades of society, and it is a hardship for the carefully-looked-after to be perhaps sitting beside some vermin-infested child at a double desk. For this reason and on account of infection dual desks are to be condemned, and strong measures should be taken against parents who persist in neglecting to send their children to school in a decent state of cleanliness.

We have already mentioned the question of eyesight, but it is well to call attention to the question of sufficient light in schools. Doubtless bad light may cause a great deal of harm to children possessing not necessarily bad sight. The light is necessarily better in some parts of the room than others; every effort should be made to equalize it and give plenty to those having to give close attention to reading or writing. Often children seem slow or stupid when in reality their progress is retarded by tired eyes. It is well known that continued straining of the eyes also strains the nervous system, and we are glad to see that Dr. Kerr thinks that fine finger and fine eye work should be discouraged in infant departments. He advocates coarse work such as free arm drawing with chalks, standing at a blackboard. He says:

> The necessity for a very considerable eye working distance, especially for young children, is at the root of educational hygiene; attitudes, fatigue, nutrition, the development of good physique and a stable nervous system are all involved in this question, and it is to be hoped that the oculists will succeed in impressing the teachers and others with its supreme importance in school work.

It is noticeable what large numbers among the children of the labouring classes have sore eyes from dirt and neglect. The following paragraph appears in Dr. Kerr's report:

> *Blight.*—Blight is a disease for which many children are excluded by the teachers. It is very doubtful how far these cases are contagious. The ordinary blepharitis or even granular lids are not matters of serious import as school infections.

As was stated in our columns recently trachoma has become epidemic among children in the elementary schools in New York, and it has been necessary to take very active measures to check its prevalence. If by granular lids Dr. Kerr means true trachoma, we presume that his statement that the condition is not of serious import must be taken as referring to the actual number of children so afflicted and not to the gravity of the condition. Probably, however, he intends to include follicular conjunctivitis—a less serious disorder, though one

which is apt to become chronic. Even so, we should be disposed to think his statement rather optimistic, for chronic follicular conjunctivitis is very troublesome to treat, and that cases drag on for years.

Among other consequence of dirt and neglect are catarrhal conditions of the ear in young children which if neglected not only interfere with their education but often cause permanent deafness. Dr. Kerr states that his experience is that about 1 per cent. of elementary school children suffer from discharging ears and though no measurements have been made in London, he thinks it probable from analogy that deafness interferes to a very considerable extent with the educational progress of at least 5 per cent. of the children and to some extent with at least 10 per cent. more. He also calls attention to the

catarrhal conditions in younger children frequently present with debilitated conditions and want of exercise, want of development of respiratory capacity and retarded school progress. The adenoid hypertrophy associated with open mouth and frequently excessive nasal discharge has mental accompaniments of bad memory and incapability of maintaining the attention. In these cases, where the child also snores at night, operative means are necessary. Unfortunately, too often, even on medical advice, parents believe that the children will grow out of it, but they are liable in the meantime to suffer sadly in educational efficiency and instability of character, and to have liability to permanent deafness or greatly increased mortality from zymotic diseases.

SIR VICTOR HORSLEY'S ADDRESS ON MEDICAL POLITICS.

On the afternoon of December 9th Sir Victor Horsley addressed a meeting, held under the auspices of the Northumberland and Newcastle Medical Association, in the Durham College of Medicine, Newcastle-on-Tyne. Mr. Rutherford Morison, F.R.C.S., presided over a large audience.

Sir Victor Horsley, who was received with applause, gave the address which is published at p. 1573.

The conclusion of the address was marked by much applause, and discussion ensued.

Dr. Jas. Drummond, of South Shields, said that they were extremely indebted to Sir Victor Horsley for coming to Newcastle to put the question so clearly before them. The speaker had been in the position in which many of those present were. He was a member of the Durham County Union and, also, of the Medical Defence Union, and there was a question whether another union was not to be formed locally. He thought that it was quite clear from what Sir Victor had said that one union would be quite sufficient. In his own mind, it seemed to him that if they could form a union or North of England Branch of the British Medical Association, finding out what was the adequate subscription required, what the proper salary would be to give a medical secretary, and, also, what the proper salary was for a solicitor, he felt sure that they had sufficient membership, and that they had the interests of the Branch at heart. For the first time in his own mind he had seen how the difficulty of combining that Defence Union with their own special needs in the North might be overcome.

Dr. Jepson congratulated Sir Victor Horsley on the part he had taken in putting down Mr. Coleridge. He hoped they should not hear very much more from that insignificant individual. As to medical science and medical politics, he looked upon Sir Victor as an apostle to the Gentiles. Sir Victor had come to convert them to one harmonious whole, to get them into one Association. He quite agreed with Sir Victor. He asked whether the Medical Defence Union, which had offices in London, might not be amalgamated with the British Medical Association. The Defence Union, however, had a perfect right to say that it would not come in until the Association was ready to do the work which the Union had been doing. They wanted to see organization of the Association completed and the secretary appointed. With regard to the Northumberland Union sinking itself in such a great hurry, he might say that the Durham Union was going to hold on a little longer. Dr. Jepson then spoke eulogistically of the work done by the local solicitor-secretaries and doubted whether it would be possible to get a medical man who could undertake such an amount of work as they did. He would like, he continued, to see a gentleman like Sir Victor Horsley in the House of Commons to defend their needs. There would thus be a great lifting up of the profession throughout England and the world. The Government did its best to get a great deal out of the medical profession, but it gave little in return.

Professor George Murray, Newcastle, said that as a member of the local union he could state that most of the members entirely agreed with Sir Victor as to amalgamation with the British Medical Association.

Dr. Hill Drury, Darlington, could not agree that it would be advisable for the present medical unions to join the British Medical Association. He believed that the unions were doing a work which had long been needed, and which was now being done remarkably well. He did not agree that it was an easy thing to get a levy. It was much easier to get an adequate subscription. If the charge to the Association all through the country was raised and if fully one-third of the subscription were returned to the Branches for the purposes they had in view, then he thought that the amalgamation would become an accomplished fact. He also differed from Sir Victor's opinion that a medical man was a better secretary than a solicitor. There was not a single medical man in active practice who could attend to the work sufficiently well. Negotiations such as had been conducted locally with miners' secretaries and club secretaries were very much better in the hands of some one who was not a medical man. The chief secretary in London of the British Medical Association was not a medical man. Sir Victor asked them to pull down the house they lived in, but he did not offer them another house to go into. He did not think the British Medical Association was doing as much as it might do. If the Association would give them some evidence that it was doing something more for the general wants of the profession, he thought they might then locally consider whether they could join it. A little while ago an attempt was made, and it was successful, on the part of insurance companies to get medical men to examine for half a guinea. The Association could, if it liked, by a stroke of the pen, have put a stop to that, yet it did not. The Association, with its 20,000 members, should write to each of the insurance societies saying that its members were not allowed to examine for a less fee than a guinea. Further, if the doctors were to have a fee of a guinea for examining people up to, say, £500, they should have a larger sum for examinations for insurances for a larger amount.

Sir Victor Horsley, replying on the discussion, said that, with regard to what had fallen from Dr. James Drummond with reference to medical defence, he was afraid that he had not made himself clear. The question of medical defence was already partly provided for by the Association by its Medico-Political Committee. The question of individual medical defence was now, as they knew, before a Special Committee appointed at Swansea. That Committee was to consider how far the Association could take up medical defence. He might say, without any breach of confidence, that the defence bodies Dr. Jepson had referred to had been addressed in the friendly way of which he spoke, and the Association had said, "Now, my good fellows, join us," and the said good fellows were considering it. Inasmuch as the men who composed the Medical Defence Union were exactly the same individuals who would be in the British Medical Association, it really did not matter what they called themselves. What did matter was whether they had got the power and the influence of the Association behind them, and that mattered a great deal. That was the reason why many like himself wanted to get the amalgamation. The details of the scheme were *sub judice* and he was not allowed to speak upon them, but they would be published very soon and remitted to all the Divisions for their criticism. As regarded the possibility of having a Defence Union in the North of England Branch he should say from his six years' experience of defence work, that it was perfectly impossible. The membership of the Defence Union at the present time was over 5,000, and, even now, they found that it required all their money to carry on their work. As regarded what Dr. Jepson had said, he was extremely obliged to that gentleman for his remarks about Mr. Coleridge. He wished to say that the antivivisection agitation was not merely an antiscience movement. It was quite a mistake to think that it was. Ever since it was started in 1874, it had been a movement on the part of certain persons, spiritualists, quacks, people of that kind, against the medical profession. It was not really an attack on science. As far as the scientific part of it went, the antivivisectors had been obliged to shift their ground time after time. They had not a leg to stand upon, for even the Government had recognized the necessity of vivisection by opening a laboratory of their own. The attack alluded to was got up by some Swedish spiritualists, and Mr. Coleridge thought that the time had come when they could say they had "caught some one out," in ordinary language. However, Mr. Coleridge was mistaken

Dr. Jepson was quite correct in saying that they must not throw away their organization, which was doing good work, until they were quite sure that there was another organization which could take it up. That went without saying. The North of England Branch must consider the matter—as he believed it had—and, having considered and come to a decision, that was enough for him, because they were the same men. It was not as if they were having different people to deal with. What difficulty could there be, therefore, in doing the work? None, excepting the important point raised by Dr. Drury—the financial question. Dr. Drury quoted a local instance of difficulty in carrying out a levy. That, however, was after the subscription, but the subscription to the Association now, at the start, did not cover the expense. He quite agreed with Dr. Jepson that the medical secretary of the Branch must be "a very clever chap," but his point was that the British Medical Association was full of them. They had plenty of men in the Association who could do the work. He had never been in any district in England or Wales—his acquaintance with Scotland and Ireland was more limited—where he did not come across half a dozen men any one of whom was quite capable of filling the post they were discussing. As regarded the M.P. question, personally he would like very much to go into the House of Commons to represent medical men, but he could not afford it, and he did not see any likelihood of being able to afford it until he was so old as to be doubtful of the value of his own opinions. It was a dreadful thing, but the process of growing old apparently so obscured the mind to the struggles of an earlier past that some authorities, for example, some members of the General Medical Council, spoke as if there were no difficulties, as if the medical man was in a kind of haven of rest.

He agreed with Dr. Drury that the ordinary subscription to the Association should be raised. If Dr. Drury would move that at Oxford, he (the speaker) would be very happy to speak in support of it. He ridiculed the idea of a medical man in practice not being able to undertake the work of secretary. The work could be perfectly easily done by such a man, only he should be paid for his services. It was quite true that the general secretary of the Association was not a medical man. The Association had now arranged the work and had a non-medical secretary to do non-medical work and a medical man to do the professional work. Their experience in the Defence Union was that, if the professional work was done by laymen it did not answer. When there were two machines doing the work of one set of people, surely it was extravagant. All that he suggested was that they should come into one association, and there they would find that it would then be better to have a medical man as secretary and have him at liberty to call in legal advice as he wanted it. The British Medical Association was going for fifty years before local unions were formed, and it had power and influence behind it which local unions could never have. As to the insurance fees, he took it that Dr. Drury had never brought the matter before the Association. The hands of the Association were already full, and, of course, unless its attention was drawn to the point it could not be expected to take it up.

On the motion of Dr. Murphy, of Sunderland, seconded by Professor Murray, a vote of thanks was accorded to Sir Victor for his address, and the meeting ended.

LITERARY NOTES.

Sir Patrick Manson's *Manual of Tropical Diseases* has been translated into French by Dr. Maurice Guibaud, Medical Officer of the French Navy, and Dr. Jean Brengues, Medical Officer of the French Colonial Army. Dr. Guibaud has added a number of notes and an appendix dealing with malaria, bubonic plague, dysentery, and hepatic abscess. The book, which is published by C. Naud, of Paris, is beautifully printed, and presents a much more imposing appearance than the English original.

The special Christmas number of *Food and Cookery* naturally deals with Christmas dinners, Christmas cake, mincemeat, plum pudding, and other subjects appropriate to the season. Need it be said, therefore, that it is full of interesting matter?

In a short paper reprinted from the *Popular Science Monthly* for November, Dr. F. J. Allen, late Professor of Physiology in Mason University College, Birmingham, discusses the question whether life exists in any other world than our own. He says that, of course, no absolute answer can be given to the question until perchance some hitherto undreamt-of means shall be discovered for the observation of distant worlds. There is one method, however, by which we can at least guard ourselves against erroneous speculation, and prepare the way for discovery when the opportunity comes, that is, to find out the conditions on which terrestrial life depends, and then to seek whether other worlds provide similar or parallel conditions. It is odd, says Dr. Allen, how, in spite of the advance of biological science, the notion still prevails that life in other worlds is similar to that of our earth.

We find astronomers searching for the absorption bands of chlorophyll in the spectrum of Mars; marks on planets described as probable vegetation: some worlds are supposed to be uninhabitable because they have no atmosphere, others because the temperature is too high for the existence of "protoplasm." All this indicates a very contracted view of the nature of life. Chlorophyll, respiration, vegetable, animal, and protoplasm are earthly phenomena which may exist nowhere else: their place may be taken in other worlds by phenomena no less wonderful.

Dr. Allen, after an interesting analysis of the physical conditions in Venus, Mars, the moon, Saturn, Jupiter, the sun, etc., concludes that what we know as to these conditions is distinctly against the probability of the other worlds of the solar system possessing life similar to that existing in this world. We may admit the possibility of other kinds of life having nothing in common with such life as we know, but at present we have no grounds for speculation concerning them.

ASSOCIATION NOTICES.

COUNCIL.

NOTICE OF MEETING.

A Meeting of the Council will be held in the Council Room of the Association, at 429, Strand (corner of Agar Street), London, on Wednesday, the 20th day of January next, at 2 o'clock in the afternoon.

November, 1903. Guy Elliston, *General Secretary.*

COUNCIL.

NOTICE OF QUARTERLY MEETINGS OF COUNCIL FOR 1904.

Meetings of the Council will be held on Wednesdays, January 20th, April 20th, July 6th, and October 19th in the Council Room of the British Medical Association, 429, Strand, London, W.C.

ELECTION OF MEMBERS.

Any candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

CHRISTMAS HOLIDAYS.

The Library will be closed on Thursday evening, December 24th, and reopened on Monday, December 28th.

RESEARCH SCHOLARSHIP.

Owing to the resignation of a scholar the Council is prepared to consider applications for the portion of the unexpired scholarship of the value of £150 per annum. The successful candidate is eligible for re-election in July, 1904.

Forms of application and terms of appointment can be obtained on application, and must be returned on or before December 31st, 1903, to

Guy Elliston,
General Secretary, British Medical Association,
429, Strand, London, W.C.

BRANCH MEETINGS TO BE HELD.

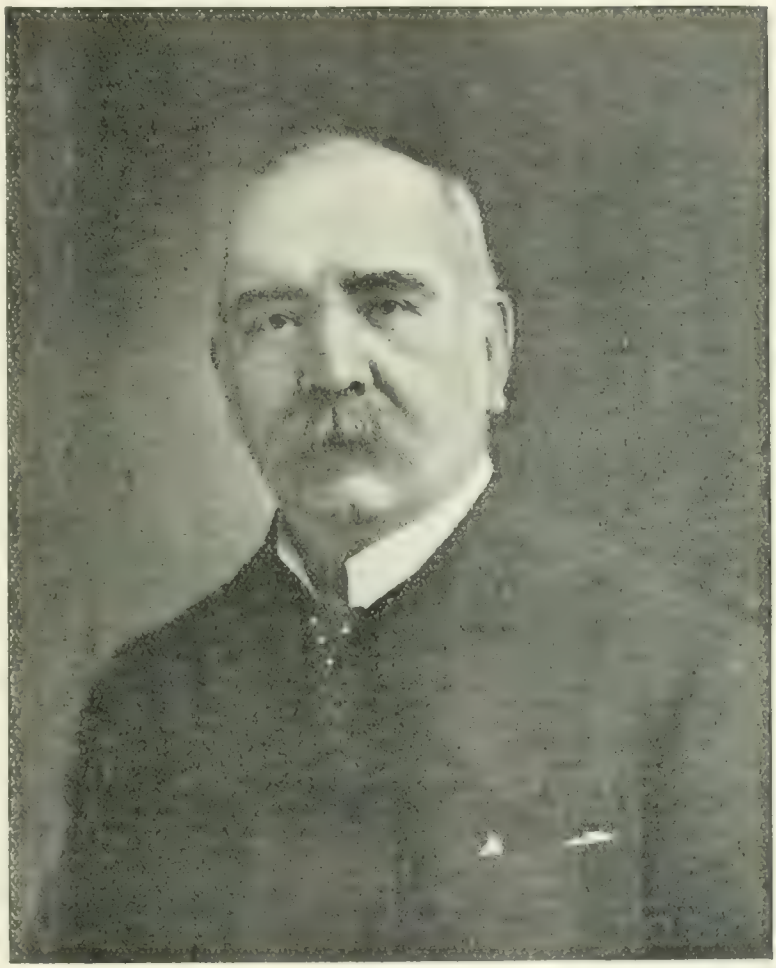
Border Counties Branch: West Cumberland Division.—There will be a meeting of this Division at the Globe Hotel, Cockermouth, on Tuesday, December 22nd, at 3.45 p.m. Agenda: Dr. Burnett: Some notes on a case of spina bifida and one of middle-ear disease. Dr. Dudgeon: Short account of an obscure kidney case, with specimen. Dr. Fletcher: Notes on a case of placenta praevia, with specimen. To receive report of Sub-committee on the proposed Medical Acts Amendment Bill. (Information on this will be found in the Supplement to the British Medical Journal of August 22nd.) A dinner has been arranged for at the hotel at 5.30 p.m.; tickets, 3s. 6d. Members who intend to be present at the dinner are requested to inform the Honorary Secretary not later than December 20th.—T. G. Mathews, Whitehaven, Honorary Secretary.

OBITUARY.

SAMUEL WOODCOCK, M.D. Brux., L.R.C.P. & S. Edin., J.P.,

Member of the Council and of the Medico-Political Committee of the British Medical Association.

Last week we had to announce with most sincere regret that Dr. Samuel Woodcock, of Manchester, had been seized with serious illness. To-day we have to record his death. Dr. Woodcock was attending to his practice on Sunday morning, December 6th, and was present on Sunday evening at the service at Russell Street Chapel. When going to bed that evening he fell heavily to the floor. His eldest son, Dr. Harold Woodcock, who was at once summoned, recognized the gravity of his illness, and at once obtained the assistance of his nearest neighbours and friends, Dr. Stephen Nesfield and Dr. Brassey Brierley. On the following morning Dr. Steell was called in and saw Dr. Woodcock frequently in consultation, but his illness was left hemiplegia with disturbance of speech, and death took place peacefully early on the morning of December 12th.



SAMUEL WOODCOCK, M.D., J.P.

Samuel Woodcock was born in 1840, at Brookfield, near Glossop. He received his early education at Mr. Bailey's school at Denton, and Mr. Hothersall's school at Altrincham, and was then apprenticed for five years at Middleton. At the end of his term, during which he gained much practical experience, he proceeded to Glasgow, and in 1866 took the diplomas of L.R.C.P. and S.Edin., and L.M. as well as that of L.S.A. He held the appointment of House-Surgeon to the Glasgow Lock Hospital for some time, and was then appointed one of the medical officers at the Withington Workhouse of the Chorlton Board of Guardians. On his resignation of this office he commenced private practice, and obtained the appointments of Medical Officer and Public Vaccinator of the First District of the Chorlton Union, and also became a Certifying Factory Surgeon, appointments which he retained up to the time of his death. He soon became well known as a medical practitioner alike in the houses of the well-to-do and in the cottages of the poor. He learned to know every crowded court and alley of the populous district in which he worked, and won the respect and regard of all. Though a medical practitioner first, Dr. Woodcock was not content to limit his efforts for the good of the people to medical treatment alone; he was one of those who under the late Dr. Macfadyen of the Chorlton Road Congregational Chapel, successfully established and carried on mission work in various parts of Hulme. Every Sunday afternoon for many years Dr. Woodcock held a large class of men for Bible study, and for many years also he conducted, whenever his professional engagements made it possible, a simple welcome service in the Congregational Mission Hall in Russell Street. He attracted men to him by the width of his sympathy, by his sincerity and straightforwardness, and last but perhaps not least, by his shrewd and ready humour.

Comparatively early he began to take a keen interest in politics, and for many years was recognized as a leader of the Liberal party in South-West Manchester. He was a member of the Reform Club, was at one time Chairman of its Political Committee, and had filled the offices of President and Vice-President. He was Chairman of the South-West Manchester Liberal Association for some years, and on the retirement of Mr. Jacob Bright in 1895 a strong effort was made to induce him to contest the division, but his professional engagements rendered it impossible for him to do so.

In 1891 he became a member of the Manchester School Board, and it is a proof of his wide popularity that when he had on that occasion to appeal to the electorate of all Manchester he headed the poll by a very large majority. While taking an interest in all educational questions, he particularly devoted himself to the improvement of the sanitation of the schools, and as chairman of a special committee, was instrumental in introducing many improvements, particularly in the older schools of the city. He was also Chairman of the School Attendance Committee. Although holding strong opinions and expressing them forcibly, the sincerity of his character won universal respect, and when he ceased to be a member of the School Board in 1900, his retirement led to general expressions of regret on the part both of members of the Board and its officials. In speaking of his public work in Manchester, mention must also be made of the fact that he was for several years a member of the Old Stretford Local Board, and with the assistance of a few medical men and other reformers on that Board brought about a new era of sanitation in the district.

Dr. Woodcock began to show a special interest in medical politics and in the work of the British Medical Association about 1894, when at the instance of some medical friends, he turned his attention to the proposals then being made for a Midwives Bill. Having been induced to take up the work he threw himself into it with characteristic energy. He was a member of deputations which interviewed members of Parliament on the subject, and as we gather became early convinced that legislation on the subject was inevitable. He took a leading part in drafting the Midwifery Nurses Bill prepared by the Lancashire and Cheshire Branch and frequently spoke on the subject. He was elected by the Branch a member of the Parliamentary Bills Committee in 1894 and a member of the Council of the Association in 1895. In 1900 he became chairman of the Parliamentary Bills Committee in succession to Dr. Farquharson, M.P., and when under the new constitution that Committee ceased to exist, he was elected a member of the Medico-Political Committee in July, 1902, and re-elected last July, when also

he was co-opted a member of the Council. On the Council of the Association he followed up the work he had already commenced in connexion with midwives legislation and also showed a deep interest in the proposed Bill to amend the Medical Acts. He had already given attention to this matter as a member of a small Committee in Manchester, and when the subject was taken up by the Parliamentary Bills Committee he was one of the most earnest workers on the subcommittee which presented the first draft of the Bill, published in an amended form in the Supplement of the British Medical Journal of August 22nd, 1903. His work in this direction continued from 1898, when he was first appointed to the subcommittee, until his death. Only a short time ago he attended meetings of the Divisions to explain and defend the Bill in its present form.

He took a deep interest in the projects for the reconstitution of the Association, and served upon the first Committee appointed in October, 1896. When, at the annual meeting in 1900, a Special Committee was appointed to draft the scheme for the reconstitution of the Association, Dr. Woodcock was chosen to be one of the members, and took an active part at the meetings of the Committee in that and the following year. His experience as a member of the Council and, for five years, of the Journal and Finance Committee had given him a clear insight into the working of the central office, and his long and active connexion with the Lancashire and Cheshire Branch, of which he was President in 1897, enabled him to obtain an equally clear view of local needs; he was, therefore, particularly well qualified to take part in the discussion of the reforms in the Constitution which had become necessary, and his opinion had on every question much weight with the Committee.

A friend who worked with him at that time writes: "I have often heard him say that with the midwives question settled, the new Constitution adopted, and no immediate prospect of a Medical Acts Amendment Bill coming on, his work was done, and that the many other matters he dealt with seemed to be trivial compared with these things. He was a man with whom many did not see eye to eye, for the simple reason that he was a politician, and what was ideal or desirable was reduced to what was, in his opinion, practicable, before he took it up. He was a man the horizon of whose views was very distant, and he was generally correct in his estimate of things."

The interesting notes from Professor Saundby and Dr. Roberts Thomson, who were successively Presidents of the Council of the Association during many of the eventful years when Dr. Woodcock was member, will excuse us from any fuller attempt to estimate his influence on the policy of the Association and on the conduc of its business, but we may be permitted to add to what they have written that he was always a loyal friend of this Journal. His experience in the give and take of party politics perhaps enabled him to sympathize more frankly than many with the difficulties which sometimes beset those to whom the Association has entrusted the conduct of its Journal. He was always ready to encourage its development and improvement as a medical periodical.

Any account of Dr. Woodcock would be insufficient which did not make reference to the fact that he was a most effective public speaker with a keen sense of humour. He did not indulge in rhetorical flights himself, and was a little impatient of such flourishes in others, but few men saw more clearly into the heart of a subject, few could state an argument more lucidly or enforce it more aptly. Deliberate in utterance, a master of simple terse English, knowing well the value of an illustrative story—and who could beat his store of North country stories or his manner of telling them?—none knew better how to hold the attention of a meeting. As a debater or in discussion in committee he was not less effective; he did not speak often or long, but many a time, by a timely word, often by a timely jest, he has turned the whole course of a debate. He had the faculty of seeing things as they were, and sometimes he could induce others to drop their green or sanguine spectacles. Many a man when in perplexity has found that a conversation with Sam Woodcock has straightened the matter out. He never seemed to be in a hurry, he would listen patiently, and the questions he asked showed that, instinctively as it were, his mind was searching out the principle underlying the details; then in a few words he would give his opinion. Usually it was very definite, but he knew when to suspend judgement. Altogether there were few men whose advice was more helpful in a difficulty.

Mr. Walter Whitehead, President of the Association in 1902, when it met in Manchester, and a life-long friend of Dr. Sam Woodcock, writes:

Manchester and the medical profession will be distinct losers by the death of Dr. Woodcock. He was one of the few members of the medical profession in Manchester who have shown to advantage when taking part either in politics, medical ethics, or sitting—as he did for many years—as a member of the Manchester School Board.

Perhaps Dr. Woodcock will be best remembered in the future by his personal friends for his somewhat peculiar style of oratory whenever he got up to speak in public. He always dealt with his subject in a manner which might be described as incisive, but relieved by playful banter. He almost invariably took a common-sense view of his subject, and drove home his opinions by associating them with some amusing and appropriate anecdote, and his resources in this respect were unique. His speech at the dinner of the British Medical

Association in Swansea last summer, when he proposed the toast of the Mayor and Corporation, will long be remembered as an instance of his keen and prompt wit and his great gift of impromptu speaking.

Dr. Woodcock was quick in reading the character of others, and in weighing up their possibilities, and many men engaged in public work have benefited by his kindly hints and friendly advice.

Although he was engaged for the last thirty-five years in many works outside his profession, I doubt very much whether he ever made an enemy, for, no matter what line he took, he never introduced bitterness into his arguments. For his personal friends he would do anything in his power, and many an appointment has been secured to them entirely through his perseverance and personal influence. He was a genial companion and a staunch friend, and I would that there were more like him.

Had he devoted himself to his profession, excluding politics and public matters, there is no telling what position he might not have won in it. As it was, he preferred to follow his bent, and contented himself with general practice.

His heart and mind took a wider scope than the purely physical aspect of life. No movement for the material, intellectual, or moral well-being of his fellow creatures escaped his active sympathy and support. In debate he was a good fighter, but always a generous antagonist.

His reputation was worthy of his life, and his life was worthy of his reputation.

Dr. Roberts Thomson (President of Council, British Medical Association, 1899—1902), writes:

Dr. Woodcock was a member of Council during the whole period of my Presidency, and I was therefore a good deal thrown into contact with him in the work of various Committes, notably the Committee which dealt with the new Constitution of the Association, and the Parliamentary Bills Committee, as it then existed, of which he was the last chairman.

His business capacity was of a high order. He took a broad, shrewd view of things, formed his opinions rapidly, and had a clear and straightforward manner of giving expression to them.

He took a deep interest in the affairs of the Association and indeed in all things appertaining to the welfare of the profession at large.

His opinion had much weight in the Council of the Association. The definiteness of his views, and the directness and incisiveness of his utterances, tempered as they were with a genial humour, often helped powerfully to determine how a question agitating the mind of the Council should be settled.

When moved, he had powers as a speaker much above the common, and he had what may be described as considerable platform gifts. I can recall no member of the Association who could be more happy in an after-dinner speech, as those who have heard him at some of the recent annual dinners of the Association can abundantly testify.

His personality was a very taking one. To a frank and genial manner was added a large fund of dry humour, which made him a charming companion. His stories were inexhaustible, and when told, as they often were, with a broad northern accent, highly delighted his friends.

He will be much missed at our Council meetings, for the wise guidance we so often had from him, as well as for his genial and popular presence.

Professor Robert Saundby, who was President of the Council in 1896-9, writes:

I have heard with deep regret of the death of Dr. S. Woodcock. As a member of the Council of the British Medical Association all who worked with him appreciated his many good qualities, his fairness of mind, his courage, and his moderation—qualities which made him one of the most useful of the many men who have sat in that not unremarkable assembly.

He was originally elected to the Council in consequence of something like a revolution in the Lancashire and Cheshire Branch, which was attended by a clean sweep of old office-bearers, and an entirely new set of representatives were sent to the Council, selected as was generally believed as uncompromising opponents of part at least of the policy favoured by the majority at the time responsible for the management of the Association.

Whatever may have been our expectations, we soon found that we had in Dr. Woodcock a capable and loyal colleague, who, while perfectly independent and by no means afraid of finding himself in a minority, would also support the majority with equal or even greater courage, if he thought it was right, and in any case treated his temporary opponents as animated by motives and reasons as respectable as his own. Such a man quickly acquired a position of authority, and his opinion was listened to with the respect that is accorded in every gathering of Englishmen to the man who forms his own ideas and expresses them with clearness and moderation. His practical mind realized and acted upon the principle that if we cannot get all we want we should not, therefore, refuse to take anything; in other words he understood the value of compromise.

His former colleagues will long cherish the memory of Samuel Woodcock, a kindly, capable, and loyal fellow-worker. May the Council be blessed with a succession of such men, for on their shoulders depends the welfare of the Association.

Sir Victor Horsley, Chairman of the Medico-Political Committee, of which Dr. Woodcock was a member, sends the following:

The Association and the profession have lost a good friend and supporter in Dr. Woodcock. In no respect will this be more apparent than in the medico-political work of the Association. As Chairman of the Parliamentary Bills Committee, or as member of the numerous committees which have from time to time carried out the political work of the Association, his extraordinary precision in instantly grasping the salient points of a matter raised, perhaps for the first time, was always of the greatest assistance in discussion, and always effected a great saving of time. It is hardly necessary to add that his imperturbable good humour and felicitous wit on many an angular occasion helped to bring a difficult question to a safe and lasting conclusion. If at times he was too prone to accept a compromise it was due to this same good nature and desire that peace at all costs should be maintained. As regards the public relations of the Association, Dr. Woodcock always took a keen interest in the shaping of opinions within the Association, and it was a great source of gratification to him when the new Constitution was accepted and the representative principle completely and fully adopted. Few men have deserved more from the Association for work most cheerfully and ungrudgingly bestowed upon it.

Our Manchester correspondent writes: The name of Sam Woodcock, as those who knew him intimately delighted to call him, will live long not only with them but also with the humble poor of the district where his lot was cast. His hearty, jovial, and kindly personality will be severely missed not only in Manchester but at the various meetings at which he took so active a part. He was more than a medical practitioner, and one both beloved and respected not only for his professional abilities but for his genial disposition, which gained for him troops of friends.

His energy found outlet in many ways of public usefulness. A man of earnest religious convictions without bigotry or self-conceit, his education and religious instincts led him to take an active part in the Sunday School work of the denomination to which he belonged. From time to time he officiated as a lay preacher, and this must have helped him to improve a gift which was specially marked—his facility in the art of public speaking.

Few men had a better knowledge of the work and apposite sayings of Tom Hood. When listening to his speeches one sometimes wondered to what extent the successful cultivation of the humour of Hood had influenced his natural bias to see the humorous side of things.

He was one of the most popular and effective of local platform speakers. Fluent of speech, racy and witty in his humour, the spontaneous way in which he could weave in anecdote and story or apt simile to drive home his meaning always ensured his success.

In his political life, perhaps the most dramatic incident was connected with a visit of Mr. William O'Brien, the Irish Nationalist leader, to Manchester more than a decade ago. Mr. O'Brien—who was "wanted" at that time for an offence against the Crimes Act—had arranged to address a meeting in Hulme, Dr. Woodcock being chairman. There was a general opinion that Mr. O'Brien would not keep his appointment. Dr. Woodcock thought differently and said so. Mr. O'Brien did keep his appointment, addressed the meeting, and then consigned himself to the care of one of the Inspectors of Police, who conveyed the Irish orator to the Town

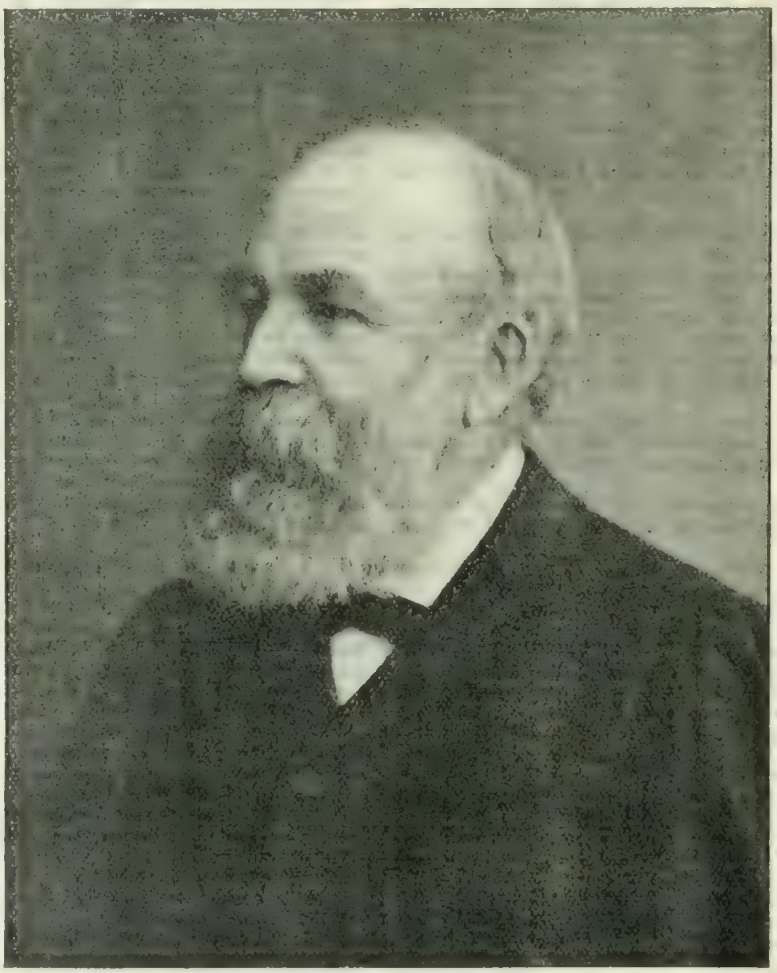
Hall, when the then mayor placed the mayoral apartments at the disposal of Mr. O'Brien.

Dr. Woodcock became a Justice of the Peace in 1892, and as a magistrate he gained the highest respect and esteem for the care with which he conducted and investigated every case that came before him. Wise and discriminate, the essence of fairness and integrity, his work in the Court was on many an occasion productive of good to the offender.

WILLIAM NEWMAN, M.D.LOND., F.R.C.S.ENG.,

Consulting Surgeon to the Stamford and Rutland General Infirmary.

WILLIAM NEWMAN, M.D.Lond., M.R.C.P.Lond., F.R.C.S.Eng., died in the Stamford Infirmary on December 3rd. Dr. Newman, who was in his 71st year was one of the best-known surgeons in the Midlands, was Vice-President of the Section of Surgery at the annual meeting of the British Medical Association held in Nottingham in 1892 and a Life Governor of Epsom College.



WILLIAM NEWMAN, M.D., F.R.C.S.

He received his medical education at St. Bartholomew's Hospital. After a distinguished career at the hospital he became house-surgeon to the Shrewsbury Hospital. Afterwards he acted as assistant to Dr. Eaton of Ancaster, and subsequently he practised for a short time at Fulbeck (Lincs.). In 1862 he settled in Stamford, where he practised for more than forty years. For thirty years he was Surgeon, and for ten years Consulting Surgeon to the Stamford and Rutland General Infirmary. He was a Justice of the Peace for the borough of Stamford, though he rarely sat upon the bench, and one of the most energetic governors of both the Boys' and Girl' Schools.

In William Newman of Stamford the medical profession has lost a man of rare force of character. It was to character not less than to the highest professional qualifications, accurate knowledge, extended experience, and shrewd insight that Newman owed the position he had attained of one of the most valued consultants in the Midlands. Had he settled in London or any other large centre his attainments would doubtless have brought him into wider prominence; but his destiny led him to settle in Stamford as a very young man, and finding there sufficient scope for his energies, ambition never led him further afield.

In Stamford and for many miles around he built up and retained unchallenged for many years a large family practice, enjoying in no common measure the implicit confidence and affectionate esteem not only of the principal families, noble and commoner, in the district, but of hundreds of humbler folk. The queer "Retro" carriage in which he drove about with his back to the horse, generally reading and with his favourite dog sitting on the seat beside him, was a familiar object for many miles round Stamford. In course of time his reputation as a general practitioner and his work at the Stamford and Rutland General Infirmary brought him a wide consulting practice in the Midlands and the confidence of a large circle of professional brethren.

We are indebted to one who for ten years was very intimately associated with William Newman, as friend and colleague, for the following notes :—

He was a man of middle height, with massive head and bushy beard, grave but kindly blue eyes twinkling under shaggy brows. One was struck at once by his grave and measured diction, formal and precise, in which quaint archaisms or odd turns recurred from time to time, such as "the story is briefly this." This precise diction, together with his impressive voice and somewhat austere aspect, made him appear formidable at times to timid patients on a first interview, and he had a reputation, not altogether undeserved, of being apt to take the gravest view of a case. His speech was a true index of the man. Austere, though kindly, and deliberately choosing the ideal of plain living and high thinking, slang, gossip and frivolity, much more the profane or obscene, were alien to his tongue.

As a professional rival one knew instinctively that no consideration of gain could induce him to take advantage of a brother in the craft: as a colleague or consultant one felt him utterly loyal. It has many times been the writer's privilege to meet him in consultation, and never was there a failure to get from him a valuable opinion. He strengthened the practitioner's position with the patient, and when, as not seldom happened, he felt it necessary to modify, supplement, or even traverse the diagnosis or treatment, the change was made with loyal tactfulness, so as to give the credit of it to his junior and increase the patient's confidence in his family medical man. This was a consultant to trust—and to call in the next time. *O si sic omnes!* He was a man of scholarly habit and literary tastes, but medicine was the goddess of his devotion, and he could spare but little time for literature or art. His favourite sphere of work was the Stamford Infirmary, which in every detail of its organization, and in large part as to its structure, may well be regarded as his own monument. To this provincial hospital, which owes more to him than to any other man, he devoted the best energies of his life, and when after thirty years of active work he generously retired from the staff to create a vacancy for a younger colleague, he still continued, as Consulting Surgeon, to take a most active interest in its work.

As a physician, his rare insight was the outcome of careful diagnostic methods and up-to-date knowledge of medical literature. As a surgeon he was cautious but intrepid, and was among the first to master the technique successively of antiseptic and aseptic surgery. Few specialists were his masters in the operative surgery of the abdomen.

His contributions to medical literature were few but admirable, both in matter and style. His collected *Surgical*

Cases is a record, showing the excellent work that may be done by a provincial surgeon attached to a hospital of some thirty beds. He was a pioneer in sanitation, and his *Drainage and Water Supply of Towns* and *How to Make Home Healthy* were valuable contributions to the early literature of public health. He contributed papers on Diphtheria and Cases of Lithotomy to *St. Bartholomew's Hospital Reports*, vols. ii and vi.

The keynote of his work was thoroughness. He embraced with enthusiasm the study of the Roentgen rays, and spared neither money nor time to perfect himself in practical radiography. If genius be an infinite capacity for taking pains, William Newman had it. The writer has known him to spend a whole morning in testing the relative efficiency of two Crookes's tubes. His collection of skiagraphs, annotated in his characteristically neat and precise handwriting, is in itself no unworthy monument.

But from first to last his fine professional record was the fruit, not merely of intellect, but of character—a character of which the dominant notes were unswerving integrity and utter loyalty.

Mr. C. B. Keetley writes: About the time when, 40 years ago, Dr. William Newman was induced to settle in Stamford by a good and loyal friend, Lord Ancaster, the opportunity was offered him of being Assistant Physician to St. Bartholomew's Hospital, an opportunity which, to a man of his talents, might have opened the way to some of the richest prizes of our profession. There was much in Dr. Newman which reminded one of his life-long friend, Sir James Paget: the same devotion to science, similar sound judgement and deep insight, more than the same measured care in every action, small or great, nearly the same powers of exposition in speech; Newman as well as Paget was an orator of the quiet, fluent, and lucid class. And there was the same high moral sense, scorn of wrong, and devotion to unswerving rectitude. Each was a scholar and a gentleman; but Newman was a classical scholar, and Paget has told us that he himself was not. Each also was quite a man of the world though so little contaminated by it. But Paget seemed to take the weak and foolish people more as he found them and with a certain good nature. Newman was more severe. This and a sternness and aloofness, which were apparent rather than real, combined in the later years of his life with his somewhat impaired health and capacity for work to drive not a few of his patients away from him, to their own injury.

For Dr. Newman was one of the greatest general practitioners of his time, a most excellent physician and a skilful, scientific surgeon, and, above all, a practical man, successful in curing his patients. I who write this, knew his mind and method of practice intimately of late years. I am grateful for having had this privilege.

His life also resembled Paget's in the beauty of its completeness. It was a blow to us to see him struck down while still zealous and still fresh, strong and active in his mind; but we may well be content with the seventy years of good work and high influence for good, of which he leaves us the memory.

SPECIAL CORRESPONDENCE.

PARIS.

Académie de Médecine: The Antituberculous Serum of Marmorek—the Experience of Professor Dieulafoy, M. Charles Monod, M. Hallopeau, and Professor Lucas-Championnière.—Dr. Rivière on the Treatment of Cancer by Physico-therapeutics.

Since Dr. Marmorek read his paper on his new tuberculosis antitoxin before the Académie de Médecine, a short account of which was given in the British Medical Journal of November 28th, p. 1434, the question has been brought before the members of that body at subsequent meetings. Professor Dieulafoy said that during the months of August, September, and October, 1902, seven patients in his wards at the Hôtel Dieu were treated by the serum of Marmorek. Four patients had pulmonary phthisis at different stages. Two patients had both pulmonary and laryngeal phthisis. One patient had tuberculous pleurisy with effusion. M. Marmorek himself gave the injections of serum, fixing the dose, and repeating the injections as often as he judged necessary. Professor Dieulafoy followed the cases closely, and arrived at the following conclusions:

1. The serum did not appear to have a favourable action on the fever, and, moreover, one of the patients who had apyretic phthisis had a high rise of temperature after the first injections.

2. The serum did not appear to have a favourable action on the expectoration, and in several instances the quantity of sputum in the twenty-four hours was doubled or trebled after the injections.

3. The serum did not appear to have a favourable action on the evolution of the tuberculous lesions, and even in several patients lesions in neighbouring tissue, either in lung or pleura, made their appearance during the treatment.

4. The serum did not appear to have a favourable action on the general nutrition, for the patients continued to lose flesh, and at times the wasting was rapid in spite of over-feeding.

To test the serum experimentally, M. Griffon, one of the heads of Professor Dieulafoy's laboratory, aided M. Marmorek in an experiment on guinea-pigs. Two lots, of four each, were rendered tuberculous by subcutaneous injections of phthisical sputum. The first lot received injections of serum, the second lot, serving as controls, received no injections. Not only did the serum not prevent the progressive and rapid evolution of tubercle, but the first lot of guinea-pigs all died before the animals which had not received any injections of of the serum.

M. Charles Monod, in whose wards at the St. Antoine Hospital M. Marmorek last spring gave injections of the serum to patients suffering from tuberculous suppurations of lymphatic glands and bones, said that the general impression he had formed was that all the patients so treated had derived benefit. In some the lesions improved to such an extent that they considered themselves cured; in others, in spite of an improvement in the local condition, the fistulae had not quite dried up, and the swelling of the glands still persisted to some degree. The majority of the patients had advanced lesions with no tendency to cure, and M. Monod felt encouraged to continue the experiment in treatment.

M. Hallopeau said that in his wards M. Marmorek practised inoculations in seven children or young people with different forms of tubercle of the skin. The injections were given during a month and then stopped because the curative effects were generally *nil*, and in several patients gave rise to accidents which were not without a certain gravity. First, several young patients had fresh outbreaks either on the old sites or in parts hitherto free. Secondly, in three patients changes occurred at the seat of inoculation; more or less voluminous nodes formed, and now at the end of a year had not completely retrogressed and were in full activity.

M. Lucas-Championnière said that during his holiday his substitute, M. Marion, in his surgical wards at the Hôtel Dieu authorized M. Marmorek to treat certain tuberculous cases. M. Lucas-Championnière on his return found five patients who had received a sufficiently large number of injections, and all of whom M. Marmorek considered had been benefited by the treatment. In one, a case of serious Pott's disease with abscess and pulmonary phthisis, the injection was very painful and followed by great rises of temperature, with rigor, and no improvement was observed. The other patients did not complain of the injections. One patient with congestive abscess of the thigh said that the flow of pus was less since the injections. One patient, with tuberculous disease of both testicles and with the prostate and lungs also affected, felt better, and, M. Marmorek said, had considerably benefited from the treatment. Mr. Lucas-Championnière had known this patient for several years, and did not notice any notable change. M. Marmorek showed him the patient on Wednesday; the following Saturday he felt uncomfortable, and the following Tuesday he died after convulsions from tuberculous meningitis after having had the few days of calm which often precede meningeal disease. At all events, remarked M. Lucas-Championnière, the injections had not prevented the meningitis in the only patient considered by M. Marmorek to have shown an important amelioration.

At the last meeting of the Académie de Médecine Dr. J. A. Rivière read a paper on the treatment of cancer by physico-therapeutics. Dr. Rivière is of opinion that this is the only treatment applicable to certain neoplasms which are inoperable or destined to rapid reproduction; in epithelioma of the vegetating forms which ulcerate and burrow; in epitheliomata and sarcomata which recur and multiply after operative intervention. For preference Dr. Rivière uses radiotherapy, static waves, and the high-frequency waves, without neglecting such general physico-therapeutic measures as static baths, d'Arsonval's method, etc.; in addition calomel

and quinine are given internally to force elimination and to neutralize the neoplastic elements set in motion by the local treatment and returning to the general stream of circulation. The most striking results of the treatment he has found to be the disappearance of oedema, swelling, and induration, the cessation of lancinating and other pain, the rapid and complete cicatrization of the rodent ulcer, the falling away and shrinkage of the prominent vegetations, and, lastly, the complete disappearance of cachexia and wasting, and the return of the integrity of the general condition. Treatment by this means must be long continued, and combined with general treatment to improve the diathesis.

MANCHESTER.

Hospitals and Wooden Pavements.—Mid-Cheshire Isolation Hospital.—Aid for Cripples.—Co-operative Convalescent Homes.—The Royal Army Medical Corps (Volunteers).

An interesting discussion took place at the last meeting of the City Council in regard to wood pavement near hospitals. It appears that the authorities of St. Mary's Hospital applied to the Paving Committee for wood setts to be placed in the street co-extensive with the hospital. The Paving Committee decided to give the wood pavement at a cost of a capital sum of £56 per year. It then turned out that the Tramways Committee was responsible for part of the street, and it was asked to bear its portion of the cost. This particular Committee replied that it did not see its way to pay a proportion of the expenditure. The particular street, it appears, is already paved, and is meant to relieve the district, and with the hope that it would be used for heavy traffic; indeed, it is the principal road for heavy traffic between the Ship Canal and certain goods stations. Some of the remarks made by some of the councillors cannot have been pleasant reading for the hospital authorities.

The Mid-Cheshire Joint Isolation Hospital Authority, the first to be constituted in Cheshire, have adopted plans for submission to the county council and the Local Government Board of a joint hospital for Northwich, Winsford, and Middlewich urban and Northwich rural districts. The estimated cost, including the site, but exclusive of furnishing and outfall works, is £13,537. The county council will bear one-third of the cost, and will obtain borrowing powers from the Local Government Board. A small-pox hospital will have to be provided in addition on a separate site.

A very important unifying movement has begun in Manchester, namely, the inauguration of a Cripples' Aid Federation, which has been formed for the purpose of combining the four agencies at present at work, and thus making possible more efficient service on their behalf. The Federation has representatives of the four original agencies, and several medical men and others actively interested in the welfare of cripples have offered their services. It appears that there are about 900 names of cripples in Manchester and Salford on the books of these societies, so that possibly the total number exceeds 1,000. The aims of the Federation are: (1) To prevent unnecessary overlapping: (2) the provision of further medical or surgical aid for cases which require it; (3) the provision of an employment bureau; without the aid of a bureau the difficulties in the way of a cripple finding employment are almost insurmountable; (4) the establishment of a home to receive incurable cases of adult cripples who cannot be provided for in ordinary homes; and (5) to urge on the public attention the need of the provision of special schools, a matter which rests primarily with the Education Committees of Manchester and Salford.

A scheme is on foot for providing convalescent homes for the co-operators of the Co-operative Union. It is proposed to establish two homes—one on the sea coast at Lytham, and the other at Otley (Yorkshire), and the Committee estimates that it will want at least £24,000 to carry out the project. The homes will not be run for the purpose of making a profit, consequently the shares will bear no interest. The directors of the Co-operative Wholesale Society are interesting themselves in the scheme, and they propose to recommend their shareholders at the forthcoming meeting to take up shares to the value of £8,000, conditionally on the retail societies in the section first subscribing £16,000.

The prizes won by the Manchester Royal Army Medical Corps (Volunteers) were distributed on the evening of December 9th by the Honorary Colonel, Walter Whitehead. The corps has reached its full strength of 904 efficient men. The new buildings are likely to be opened in April. For their erection the Government lent £10,000, and this, with £2,000 previously collected, covers the cost of the erection. This means that a sum of about £650 would annually have to be paid to the War Office for the next thirty years. Colonel Whitehead, before presenting the prizes, stated that actively and in other ways Colonel Coates had been able to send 300 men to the front during the South African War. Another important point mentioned was that though the corps numbered over 900 men it only cost the country £4,000 per annum. An equal number of men of the regular army, doing exactly the same work and in no measure more efficient than the men of this corps, would cost the country £90,000 a year.

CORRESPONDENCE.

THE INSANITARY AND IMPECUNIOUS DAIRY FARMER.

Sir,—I have read with much interest your articles on the subject of the milk supply. I trust the writer of them will not be offended if I express some incredulity as to the statement that dairy farms managed on scientific principles can be more profitably worked than those run on the old, though no doubt insanitary, methods. Farmers are conservative in the worst sense of the word, but surely even they would alter their system could they be convinced that, without any greatly increased expenditure, it would be possible for them to adapt themselves to the requirements of modern science, thus insuring a more certain market for their milk.

This is a matter which very much concerns England, but which is of even greater interest to Ireland, where I have the misfortune to be a landlord, and where the farmers nowadays live almost entirely by the sale of milk, making the small price they receive for it an excuse for the partial or total non-payment of rent.

It will doubtless be difficult to persuade them to give up their old methods, much more primitive and insanitary even than those which obtain in England: but the task may not be an impossible one if the writer of your milk articles can show by practical illustration that sanitation and cleanliness will not only not involve any largely increased expenditure, but will lead to a greater sale of, and a better price being obtained for, their milk.—I am, etc.,

December 14th. D. M.

ST. BARTHOLOMEW'S HOSPITAL.

Sir,—We, members of the Medical and Surgical Staff of St. Bartholomew's Hospital, wish it to be known that we support most cordially the appeal of the governing body for funds.

We beg to state that, in our opinion, the first essential is the acquisition of more land, the next the erection of new buildings, and the ultimate reconstruction of the whole hospital on the extended area.

In pursuance of this scheme we are in hearty agreement with the governors in their proposal to acquire more land and to erect first, and without further delay, the new out-patient block, on account of the urgent need of the departments which will be included in this building.

The acquisition of more land by the governors will necessitate the reconsideration of all previous plans for wards and other new buildings, and will enable St. Bartholomew's to become one of the most complete hospitals of modern times.

Upon the response to this appeal will necessarily depend the future of the hospital.—We are, etc.,

Samuel Gee,	John Langton,
Dyce Duckworth,	Harrison Cripps,
T. Lauder Brunton,	W. Bruce Clarke,
Norman Moore,	Anthony Bowlby,
Samuel West,	C. B. Lockwood,
J. A. Ormerod,	D'Arcy Power,
W. P. Herringham,	H. J. Waring,
H. H. Tooth,	W. McAdam Eccles,
A. E. Garrod,	R. C. Bailey,
James Calvert,	W. H. H. Jessop,
F. H. Champneys,	T. Holmes Spicer,
W. S. A. Griffith,	A. E. Cumberbatch.

St. Bartholomew's Hospital, Dec. 10th.

*** We have received the following official communication from the Clerk of St. Bartholomew's Hospital: "The House Committee and Committee of Treasurer and Almoners of this hospital have decided unanimously to recommend the

governors to take steps to ascertain the possibility of acquiring a further addition to their site. They have adopted this course in view of the great and general encouragement thereto given to them in the principal organs of the press and in other quarters. They believe that they have the unanimous support of their medical staff in the action they have decided to take in regard to this matter."

We received a short time ago a letter from Messrs. Hubbard and Moore, architects (London, E.C.), in the course of which they give the following table comparing the number of square yards allowed per patient in well known hospitals, at the time of their construction, with the quantity allowed by the scheme adopted by the governors of St. Bartholomew's:

Johns Hopkins, Baltimore, U.S.A.	196
Berlin, Military	135
Antwerp	118
Burnley Hospital	110
Bradford	100
Edinburgh	92
Liverpool	90
Paris, Menilmontant	89
St. Bartholomew's Hospital (rebuilding scheme for 700 beds)	45

This analysis, our correspondents contend, is sufficiently convincing to show that under favourable circumstances a hospital to accommodate 700 beds at 50 beds to the acre would require at least 13½ acres of ground, discounting the space required for the extra departments allowed in the scheme.

DR. LEES ON THE TREATMENT OF PNEUMONIA.

SIR,—I have read with much interest the, in many respects, admirable lectures by Dr. Lees on the treatment of pneumonia in the BRITISH MEDICAL JOURNAL of November 28th and December 5th.

It is with considerable reluctance that I attempt to disturb the equanimity of his mind, or appear to cavil with the statement of a man who is evidently so satisfied with his own views that he tries to impose them on his medical brethren with all the force of dogmata that I have rarely seen equalled and never excelled.

He tries to revive the practice of blood letting with an assurance of its efficacy which may carry conviction to the minds of many, but being naturally of a sceptical turn of mind, I want more evidence than that which has been portrayed. As an earnest inquirer after truth it is not sufficient to tell me that leeching and venesection do good in pneumonia. I want to know how they do good. Oh! I am informed that they relieve the right side of the heart and for this alone are they prescribed. But again I ask, How can they relieve the right side of the heart at a late stage of the disease—the time when Dr. Lees prescribes their use—when one or more lobes of the lungs are solid, and consequently the blood has difficulty in passing to the arterial tree? Leeches abstract blood in the course of circulation from the capillaries, and possibly in some cases from a small vein, but, from whichever source, the blood comes immediately from the left side of the heart, and not from the right. In venesection from the median basilic the bleeding is directly from the arterial tree, with the exception of the small quantity of venous blood between the tips of the fingers and the bend of the elbow. What good can there arise from drawing blood from a comparatively empty arterial system? You can only thus relieve the right side of the heart by diminishing the total amount of blood in circulation. Personally I fail to see the advantage that can accrue from abstracting 8 or 10 oz. of blood from the arm and putting a pint of milk in the stomach. The amount of fluid in circulation would soon be re-established.

It is not such an easy matter to regulate the amount of fluid in circulation as some imagine, but its diminution is better effected by abstention from liquids than by bloodletting. If Dr. Lees wants to relieve the right side of the heart by blood letting, he might accomplish his object by thrusting a large aspirating needle into a healthy portion of the lung where the blood is circulating or into the hepatic reservoir. I would prefer to do it by abstention from liquids, moderate purgation so as to increase the portal and hepatic reservoirs, and the use of some medicaments which raise the peripheral resistance and thus retain as much blood as possible in the arterial tree. If men would only draw blood from the arm when the arterial tension is high they would often do good.

Many competent observers have seen, or think they have seen—which in their opinion amounts to the same thing—relief to the right side of the heart by the application of a few leeches over the liver or some part of the thorax. The leeches are supposed to draw blood away from the right side of the heart in some peculiar way, the anatomy of which the advocates of their use do not seem to have sufficient knowledge to explain; possibly the assistance of the vena azygos may be conjured up; but as the blood is directly abstracted from the capillaries or venules supplied by the intercostal arteries, I do not see what the vena azygos can have to say in the matter.

If the exponents of leeching threw the mechanics of the circulation to one side, and invoked the pulmonary reflex of Abrams, or said that blood-letting increased leucocytosis, a condition which in the worst cases is defective; or acted, perhaps like a mustard poultice, by stimulating the vasomotor nerves to the lungs, we might think their reasoning specious whether we agreed with it or not. No doubt, a couple of leeches over the mastoid have a wonderful effect in relieving the severe pain of an acute otitis media; here the diminution of blood in one part of a vasomotor tract makes all the vessels of that tract contract. In cases of epistaxis where the arterial tension is low, the elevation of both arms may be sufficient to arrest the flow of blood; here the fall of blood pressure and contraction of the vessels in the arms stimulate the vasomotor tract, not only to the arms, but also to the head and neck. I do not see my way to extend this explanation to leeching for relief of the right side of the heart.

Again, I am confronted with the testimony of patients who have averred that they found great relief from leeching and venesection even at a late stage of the disease. I am quite willing—nay, anxious—to admit that "the blackies" did the old lady good, but how—mentally or physically? I trow the former. Patients are often as credulous as their medical attendants.

In my lectures on pneumonia, published in the BRITISH MEDICAL JOURNAL, June 9th and 16th, 1900, I said:

"In a large number of cases the sharp stabbing pain in the side, the quick shallow breathing and high fever make the early recognition comparatively easy; but even apart from these pronounced symptoms I am of opinion that the vast majority of cases can be readily recognized by a diligent observer within the first twenty-four hours of the onset. Very careful physical examination should detect a very moderate degree of lung engorgement, and thus you can early localize the mischief. Now is the time to act, and I have no doubt that prompt treatment will often cut short an attack or lessen its severity. Now is the time for the application of the icebags to the abdomen, and a mustard poultice applied to the affected side for twenty to thirty minutes often does good, especially if there be any accompanying bronchitis. The nerve supply to the lungs is derived from the first six dorsal segments; if, therefore you apply a mustard poultice to the cutaneous nerves of the upper part of the thorax on the affected side as low down as about the level of the eighth dorsal spine, you produce a reflex action on the nerves supplying the lung, and thus increase vasomotor tone. To be of any value this must be done at the very earliest stage; there is no use stimulating the nerves when the lung is solid and the mischief done. At this stage, however, good is often done if applied to other portions of the same lung or the opposite lung by lessening the collateral oedema which not infrequently occurs. A few leeches applied to a painful spot on the side acts in a similar way; there is a depletion of the whole of the vasomotor tract supplied by that segment of the spinal cord.

"This leads me up to the question of general blood-letting, which was so universally practiced at the end of last century and the beginning of the present. I have no doubt that a moderate bleeding at a very early stage would do good in a sthenic case with a full bounding pulse and laboured respiration. It should never be adopted after the first forty-eight hours, and never at any time if the pulse be small, feeble, and compressible. Pneumonia in the female is often relieved by a commencing menstruation, and an epistaxis is occasionally beneficial. A profuse bleeding from the arm may apparently relieve the patient's distress, but it masks the symptoms, does not shorten the length of the disease, but, on the other hand, often weakens the patient and protracts his illness. Dr. Albert Robin has recommended small bleedings with the view of increasing metabolism, but his reasoning is faulty and possibly also his observations. He thus thinks that in the advanced stages you may relieve the right side of the heart and lessen pulmonary oedema. Now the most oedema-

tous lungs I have ever seen were in a strong healthy man, who was stabbed and died in less than half an hour from haemorrhage. Again, you cannot siphon the blood back from the right side of the heart to the arm, and all such bleeding is in reality depletion of the arterial tree. You cannot relieve the right side of the heart by emptying an unfilled arterial system when the blood cannot get through the lungs."

From this position I have not since departed.

The manufacturers of cylinders of oxygen must feel deeply indebted to Dr. Lees for the maintenance of that fetish whose worship in this part of the country is gradually becoming extinct after wasting the funds of hospitals and impoverishing many a family who could ill afford to pay for an artificial substitute for an article which is bountifully supplied by nature in the form of pure air. No one can get on without oxygen, and no one can make use of more than 4 or 5 per cent. of the 20 contained in the atmosphere. Where, then, is the necessity for the artificial product? If the room in which the patient is located were supplied with 3,000 cubic feet of air per hour for each occupant, the patient would get better and more revivifying oxygen than any which was ever contained in a cylinder.

If Dr. Lees adopted my method of applying the icebags to the abdomen rather than to the chest he would find them much more effectual in reducing the temperature, and more comfortable for the patient. Although I am as strong an advocate for the use of icebags as Dr. Lees, I do not for one moment agree with him that they act by inhibiting the growth of the pneumococcus. On this point he refutes his own argument, as he gives 99.5° as the optimum temperature for the growth of the pneumococcus, and he removes his icebags when the temperature has fallen to 100° F.

I must protest in the strongest language of which I am capable against the frequent examinations advocated by Dr. Lees, in order to see if there be any fresh patch of pneumonia. I once saw the end of a patient quickly expedited by rolling him over on one side to see how the plant was growing. Any person with one eye should be able to see how the patient is progressing without these frequent examinations; and, if the ice be applied to the abdomen, there is no necessity for discovering the particular patch over which the icebag should be located.

I quite agree with Dr. Lees that pneumonia is a fearfully serious disease, and when a consultation is necessary it should be held at the earliest possible period. It is very annoying to a consultant to be called in at a late stage when his chief function is thought to be to cover the practitioner rather than treat the patient. I also agree with Dr. Lees that pneumonia can be often arrested and frequently modified by energetic treatment at its commencement.

I am afraid I have already occupied far too much space, but the importance of the subject, and my belief that Dr. Lees has been promulgating some errors must be my excuse.—I am, etc.,

Liverpool, Dec. 6th. JAMES BARR.

THE GENERAL MEDICAL COUNCIL AND THE ENGLISH COLLEGES.

SIR,—In the BRITISH MEDICAL JOURNAL of December 12th, Mr. Nelson Hardy, towards the end of a letter in which he relates the thrice-told tale of the long-existing dispute between the General Medical Council and the Conjoint Board of the Royal Colleges of England, assumes an air of injured indignation on account of the fact that Sir Victor Horsley "was not better supported by the other direct representatives." I cannot allow Mr. Hardy's imputations to pass without protest, and must ask you to allow me to state that from first to last during the dispute I have, both orally and with my vote, taken sides with Sir Victor Horsley, and, on the occasion Mr. Hardy refers to after we were beaten on the first division by the supporters of Dr. Bruce's amendment, I succeeded in saving the situation by proposing a motion according to the Standing Orders to postpone the debate. My motion was seconded by Sir J. Batty Tuke, and supported by Sir Victor Horsley, who said he hoped "that, in the interests of real peace, Mr. Brown's motion would be accepted." The motion was carried, but only by the narrow majority of one vote. I trust, however, that by the time the Council meets again "real peace" may have been brought about.

Your contemporary the *Lancet* in its issue of the 5th inst. suggests that the adoption of my motion in the interest of peace might be regarded as "a source of congratulation to all concerned." Why, then, all Mr. Hardy's tears?

Allow me in conclusion to suggest to Mr. Hardy that in future he might safely trust Sir Victor Horsley to take care of himself as far as his relations with his colleagues (direct representatives) are concerned. If he thinks we are lukewarm in backing him up he may be trusted to proclaim it from the house tops and not in the hackneyed terms affected by Mr. Hardy.—I am, etc.,

Callington, R.S.O., Dec. 14th. GEORGE BROWN,
A Direct Representative for England and Wales.

MEDICAL MEN AND THE MIDWIVES ACT, 1902.

SIR,—An editorial in the BRITISH MEDICAL JOURNAL of November 21st, and a letter in to-day's number by Dr. Cousins on this matter tempt me to submit a suggestion. The action of the profession on this measure has not in the past been either united or successful, and it would appear excessively desirable that any proposals emanating from the profession in regard to the administration of the Act should be well thought out and representative.

The Act and the rules of the Central Midwives Board show that it will be incumbent on all midwives to call in medical assistance under certain specified conditions; only in normal labour will the midwife be justified in continuing solely responsible. The Act, however, confers no greater legal power on the midwife to demand the attendance of any particular medical man than existed before. No medical man can be compelled to attend against his wish; and he can take the same precautions in regard to his fee in this as in any other contingency of practice. If a patient is so poor that a medical fee cannot be paid it may be reasonable to suppose that the services of the district medical officer will be available as heretofore.

From the fact that the scope of the practice of the midwife will be somewhat curtailed it is fair to presume that in the course of time this will become recognized and the inducement to employ a medical man from the first increased.

On the other hand, however, if, as is suggested, each supervising authority places at the disposal of all midwives and their patients free medical assistance, it may be expected that this premium on the employment of a midwife will in the future bring about an alteration in midwifery practice which it will be well to foresee. It will soon be appreciated that there are distinct advantages in employing a midwife from the first; the expense will be less, and everything will be well in a normal labour; if any complication arise a medical man's services can be obtained at no additional cost.

If medical men desire to lessen their midwifery practice by eliminating the poorer part of it, and also normal labours, no scheme could, I think, be suggested more calculated to effect this result.

There is one other aspect of the question which should be borne in mind, and that is that this would be a step towards the municipalization of medical attendance which could not fail to afford an important precedent. It would be the recognition of the right of every citizen to a particular class of medical help irrespective of whether he was either destitute or a fit object of charity. This may or may not be a desirable end; my excuse for this letter is my opinion that it will be well for the profession to consider wisely any recommendations it makes on this matter.—I am, etc.,

E. H. SNELL,
Coventry, Dec. 12th. M.O.H. Coventry.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL ARMY MEDICAL CORPS.

EXAMINATION OF MAJORS FOR PROMOTION.

AN Army Order just issued gives for the year 1904 the special subjects for the examination of majors, Royal Army Medical Corps, for promotion to the rank of lieutenant-colonel, referred to in Paragraph 5 (*a*), (*b*) and (*c*), Appendix VIIIB of the King's Regulations will be:

Subject 5 (*a*).—Medical History of the More Important Campaigns: (i) Report on the Ashanti Expedition, 1895-96, contained in Appendix III of Army Medical Department Report for 1895; and (ii) Report on Field Operations, West African Hinterland, contained in Appendix V of Army Medical Department Report for 1898.

Subject 5 (*b*).—A General Knowledge of the Army Medical Services of other Powers: The medical organization of the German army as described in the *Handbook of Medical Organization of Foreign Armies*, and papers in the *Journal of the Royal Army Medical Corps* for December, 1903, and January, 1904, on The German Regulations for Utilizing Voluntary Aid in War, by Lieutenant-Colonel W. G. Macpherson, C.M.G., and on the Medical Arrangements for War in the German Army, by Colonel F. Howard; or

the Medical Organization of a Foreign Army, selected by the candidate, described within similar limits.

N.B.—Candidates will not be examined in Subject 5 (*c*), the Laws and Customs of War.

Lieutenant-Colonel J. RIORDAN, M.B., retires on retired pay, December 12th. He joined as Surgeon, August 4th, 1883; and was made Surgeon-Major, August 4th, 1895; and Lieutenant-Colonel, August 4th, 1903. He was with the Burmese expedition in 1885-6, and has the Frontier medal with clasp.

MEDICO-LEGAL AND MEDICO-ETHICAL.

THE SALE OF DRUGS IN TABLOIDS.

ON December 14th Mr. Justice Byrne delivered judgement in the case of Burroughs, Wellcome and Co. *v.* Thompson and Capper. An action was brought to restrain the defendants, who are manufacturing and retail chemists, from passing off goods not of the manufacture of the plaintiffs as and for their goods, and particularly to restrain them from selling or offering for sale any such goods under the name "tabloid" or "tabloids," and from infringing the plaintiffs' trade marks

It appears that prior to March, 1884, the plaintiffs were manufacturing and selling compressed drugs in a solid form and of a lenticular or biconvex shape On the 14th of that month they registered the word "tabloid" The substantial question in the action was whether or not the word "tabloid" was a distinctive fancy word not in common use at the date of registration. Evidence was adduced to show that prior to 1884 the word "tabloid" was not known to the English language, and that it was actually coined by a member of the plaintiff's firm. It was argued on the part of the defendants that the word was descriptive of the article to which it referred, and that it would not therefore be valid subject matter of a trade mark.

It was alleged that the defendants in response to orders for "tabloids" had sold goods not of the manufacture of the plaintiff's firm. Thus, on the 12th September, 1902, one Thomas Smith was supplied with cascara sagrada in similar shape and form to the plaintiffs' tabloids, which were described on a list shown to and read by the assistant as "cascara sagrada tabloids, B. and W."

Mr. Justice Byrne, in giving judgement, said:—I come to the conclusion that in March, 1884, the word was not "really intelligibly describing the thing sold....." It is clearly proved that since the registration of the words "tabloid" and "tabloids," the plaintiffs have continuously and to an enormous extent advertised, sold and denoted their goods in connexion with the registered words.....I had the evidence of a very representative body of medical men and chemists, which convinces me that to these, who constitute that portion of the public who are primarily concerned in the matter, the words "tabloid" and "tabloids" mean and denote, and have always meant and denoted the goods of the plaintiff firm. I am satisfied that to doctors who prescribe and use the word "tabloids," the word means and intends the goods of the plaintiffs; and that it has the same meaning to chemists and others concerned in the drug trade.....I consider that the evidence does show, again speaking generally, that members of the public, when they ask for "tabloids," mean and expect to get the goods of the plaintiffs.

In the event judgement was given for the plaintiffs, and an injunction was granted.

UNIVERSITIES AND COLLEGES.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE ordinary Council was held on December 10th, Mr. John Tweedy, President, in the chair.

Diploma of Fellow.

Diplomas of Fellowship were issued to 19 candidates of those who had presented themselves at the November examination.

West London Hospital.

The application of the Dean of the Post-Graduate College of the West London Hospital, namely, that the West London Hospital be included in the list of hospitals at which candidates, who are not members of the college, may attend for the additional year of surgical practice, after obtaining a qualification recognized by the Council, under the conditions of Clause 2 of Section 4 of the Regulations for the Diploma of Fellow, was granted.

The General Medical Council and the Final Examination.

A report of the Visitor and Inspector of the General Medical Council upon the Third or Final Examination of the Conjoint Examining Board in England having been considered by the Court of Examiners, the following report was adopted by the Council of the College, and a copy of it was directed to be forwarded to the General Medical Council. The Council of the College dealt only with the statements made in regard to the surgical portion of the Final Examination.

Reply of the Council as to the Surgical Portion of the Final Examination.

1. In regard to the recommendation that, in addition to the Oral Clinical Examination, candidates should be required to furnish a written report on at least one surgical case:

The Court do not agree with this recommendation. They have had considerable experience of this form of examination in the Final Examination for the Fellowship, and so unsatisfactory has it, in their opinion, proved, that the two written reports on surgical cases which used to be required have been reduced to one, and the advisability of discontinuing the single written report has been seriously considered. The vivâ voce Clinical Examination appears to the Court to be much the better test of a candidate's knowledge, and quite sufficient for the purpose, especially as for the last six years the time devoted to this examination has been extended from fifteen minutes to half an hour.

Moreover, the Court are of opinion that this recommendation is impracticable, owing to the great number of patients that would be required and the time which would be occupied in the examination of the large number of candidates presenting themselves. (During the year ending June 24th last, 766 candidates were examined in surgery at the Final Examination of the Conjoint Board.)

2. With reference to the criticism that "there is still no special examination in Ophthalmic Surgery or Aural Surgery,"

The Court would remind the Council that the question of instituting a special examination in Ophthalmic Surgery was very fully considered in the year 1890 and again in 1895, when a circular upon the subject was addressed to the medical schools in England. Out of the eighteen schools consulted only three were found to be in favour of a special examination, and the Court, in a report dated May 25th, 1895, gave their reasons for considering a separate examination undesirable. The present Court, which, with one exception, consists of examiners appointed since that date, entirely agree with the views then recorded.

In that report the opinion was expressed "that at the present time candidates are adequately examined in ophthalmic surgery, and that a separate examination in this subject is undesirable":

And further that "if the principle be admitted that a special pass examination is to be required in opthalmic surgery, it may soon be considered necessary to appoint special examiners in other branches of surgery, such as laryngology, otology, dermatology, and orthopaedics."

The Court would also point out that by Clause 8, Paragraph II. Section I of the Regulations, candidates are required to produce a certificate

Of having attended clinical instructon in ophthalmic surgery at an ophthalmic hospital recoguized for the purpose by the Examining Board in England or in the special ophthalmic department of a recognized general hospital during not less than three months.

All candidates, moreover, are liable to be examined in ophthalmic and in aural surgery, as well as in any other branch of surgery, and the Court consider that a special examination in either subject is unnecessary and undesirable.

3. With regard to the statement that "no examination in operative surgery on the cadaver is held":

The Court do not agree with the remarks of the Visitor and Inspector in the views they have stated on the present mode of examination in operative surgery. In the opinion of the Court, a very good test of the candidate's knowledge is obtained by calling upon him to explain on the living model how he would perform an operation, to select and describe the instruments he would use, and to undergo examination as to the structures involved in such operation.

The Court do not consider it desirable that candidates at the Final Examination of the Conjoint Board should be examined in operative surgery on the cadaver Such an examination is at the best an uncertain test of a candidate's dexterity, and with numerous candidates and a scarcity of subjects it would be most difficult to maintain a uniform standard, because some would have to perform operations of an easy and others those of a difficult nature.

The question of the supply of subjects has also to be considered. As was pointed out to the Visitor and Inspector, the impossibility of obtaining a larger supply of subjects in London than that now available renders it impracticable to examine large numbers of candidates in operations on the cadaver without seriously diminishing the supply of subjects for dissection and for the courses of operative surgery which all candidates are required to attend.

4. The scheme of Marks.

The Court are of opinion that some modification may be desirable, and it is proposed that the following scheme of marks be tried. This scheme will enable a pass mark to be given in each part of the examination; at the same time, higher marks will be attached to the longer clinical examination. The pass standard will be 50 per cent. as at present.

	Clinical.	Surgical Anatomy.	Pathology. Table No. 1.	Pathology. Table No. 2.	Paper.	Total.
Maximum ...	12	10	10	10	18 :	60
Pass Mark ...	6	5	5	5	9 :	30
Minimum ...	3	2	2	2	4 :	13

Candidates who obtain not less than 30 marks (50 per cent.), provided they do not obtain less than the minimum at any one part, will be adjudged to have passed the examination.

Dental Surgery.

Seventy-two diplomas of the Licence in Dental Surgery were issued to candidates found qualified at the recent examination.

A report from the Board of Examiners in Dental Surgery dealt with the circumstance that a large number of students pass in the dental part only of the examination, having either failed in or not having presented themselves for the general part of the examination. With the object of obviating this the following resolutions were adopted by the Council:

1. That a candidate who elects to take the examination in two parts must present himself for, and pass in, the general section first.
2. That a candidate who presents himself for the whole of the examination at the same time may pass in the general section though he may fail in the dental section.
3. That a candidate who presents himself for the whole examination shall complete his examination in the general section before his dental paper is read by the Examiners, and before being admitted to the Dental Practical and Oral Examination, and, in the event of his failure in the general section, he shall not be allowed to proceed with the dental section.
4. That, in the event of the compulsory withdrawal of a candidate from the Dental part of the Examination, the fee paid for admission to that par twill not be forfeited by him, but will be held over until such time as he becomes eligible and presents himself to be examined by the Dental Section of the Board.

In order to give effect to these alterations the necessary changes were made in the regulations. The altered conditions are to take effect from November 1st, 1904.

The President reported that, in accordance with the unanimous recommendation of the Board of Examiners in dental surgery, he had authorized the Board to hold, in February, 1904, an additional examination in general anatomy and physiology, and general pathology and surgery (Part I of the Second Professional Examination for the Licence).

Annual Meeting of Fellows and Members.

The following resolutions were carried at the meeting—namely:

I. Moved by Dr. Thomas Morton, M.R.C.S., seconded by Mr. Dennis Vinrace, M.R.C.S., and carried *nem. con.*

That this meeting once more affirms the claims of the Members to representation on the Council on grounds of historical right, justice, and expediency.

II. Moved by Mr. Joseph Smith, M.R.C.S., seconded by Dr. G. Danford Thomas, M.R.C.S., and carried *nem. con.*:—

That the Council is respectfully requested to receive a deputation of Members to confer on the subject of the foregoing resolution.

Resolution No. I.

With reference to this resolution the Council adopted the following resolution, namely:

That, in the opinion of the Council, it is not expedient to reopen the question of the representation of Members of the College on the Council.

Resolution No. II.

In regard to this resolution the Council adopted the following reply, namely:

The Council, being of opinion that it is not expedient to reopen the question of the representation of Members of the College on the Council, consider that no useful purpose would be served by receiving a deputation of Members to confer on the subject.

Posting of Minutes of Council.

With reference to the motion proposed by Dr. Dickinson and afterwards withdrawn, the Council arranged that the minutes of its meetings be posted in the Library and Common Room as well as in the Hall of the College, and that Section I of the regulations of the Council be amended accordingly.

Fellows' Dinner.

It was determined by the Council to hold a Fellows' subscription dinner at the College on the day of the Council election in July, 1904.

Meeting of Fellows.

It was resolved that this meeting, due to take place on the first Thursday in July after the annual election of the Council, should be suspended during the year 1904.

Physical Deterioration.

A letter of December 1st was read from Mr. A. W. FitzRoy, Clerk to the Privy Council, forwarding a further memorandum from the Director-General of the Army Medical Service, together with four tables of figures giving more detailed statistics as to the percentage of recruits rejected and the causes of rejection, and stating that the Physical Deterioration Committee "will be glad if the Royal College of Surgeons will take these documents into consideration, and while favouring the Committee with any observations it is desired to make, will be careful to state whether the perusal of the supplementary matter now furnished suggests the modification in any degree of the opinions previously expressed on the subject."

The matter was referred to the Committee appointed by the Council to consider the previous Memorandum of the Director-General.

UNIVERSITY OF OXFORD.

Radcliffe Travelling Fellowship, 1904.

An examination for a Radcliffe Travelling Fellowship of the annual value of £200, and tenable for three years, will be held in Hilary Term commencing on Tuesday, March 1st. Candidates must have passed all the examinations required by the University for the degree of Bachelor of Arts and for the degree of Bachelor of Medicine. They must also have been placed in the first class in one, at least, of the public examinations of the University, or have obtained some prize or scholarship within the University unattached to any college or hall, and open to general competition among the members of the University. The successful candidate must before election declare that he intends to devote himself during the period of his tenure of the Fellowship to the study of medical science, and to travel abroad with a view to that study. The Regius Professor of Medicine and the Examiners, two months before the expiration of the second year after the election of each Fellow, present a report on the work done by him to the electors, who may, if they think the report unsatisfactory, declare the Fellowship forfeited. The examination will occupy three days. Papers will be set in physiology, pathology, and preventive medicine, and a subject will be proposed for an essay. There will also be a practical examination in pathology. Intending candidates should send their names, addresses, and qualifications to "The Radcliffe Examiners, University Museum, Oxford," on or before Tuesday, February 9th, 1904.

UNIVERSITY OF CAMBRIDGE.

Examiners.—The following have been appointed additional examiners for the third M.B. examination this term: Dr. D. MacAlister, Dr. J. H. Drysdale, Mr. T. S. P. Strangeways, Mr. D'Arcy Power, and Dr. C. W. Mansell-Moullin.

Degrees.—At the congregation on December 10th, the following degrees were conferred: *M.B. and B.C.:* R. T. Worthington, Trinity; W. L. Harnett, St. John's; H. I. Pinches, Sidney Sussex *M.B. only:* R. B. Etherington-Smith, Trinity; H. H. Weir, Trinity; J. E. Payne, Peterhouse. *B.C. only:* A. R. Brailey, Downing.

The following have passed the examination for the degree of Master of Surgery: C. E. Marriott, B.A., Clare; J. K. Murphy, M.D., Caius.

VICTORIA UNIVERSITY, MANCHESTER.

Meeting of University Court.

The first meeting of the new Court of the University of Manchester was held on December 11th. The only item of medical interest was the recommendation by Convocation that the representative on the General Medical Council should be nominated for election by this body. The Court did not see its way to alter the present procedure—namely, election by the Council.

DURHAM UNIVERSITY.

College of Medicine.

Memorial to the late Dr. Turnbull.

At a recent meeting of the past and present students of the University of Durham College of Medicine it was unanimously resolved to institute a memorial to the late Dr. Turnbull who, for nearly eight years, filled with so much acceptance the post of Demonstrator of Anatomy in the College. Although the ultimate form that the memorial may assume cannot be determined until the amount of money available for the purpose is known, it was felt that after erecting a tablet to his memory in the College, and presenting his portrait to the students' room, the funds might be invested and the interest thereon devoted annually to the giving of a "Turnbull" medal or prize in the Department of Anatomy. The Committee, which is constituted as follows, has agreed that the maximum subscription for students at present attending the College shouldbe 5s.

Professor Sir G. H. Philipson, M.D., Chairman.	Dr. Raw.
Dr. W. D. Arnison.	Dr. Monica Robertson.
Dr. Bolam.	Dr. G. G. Turner.
Dr. Cox.	Mr. Davies.
Dr. Dale.	Mr. Hamilton Drummond.
Professor Howden.	Mr. Gabe.
Dr. Evelyn Kendle.	Miss Johnston.
Dr. Parkin.	Mr. Lloyd.
	Mr. Willan.

The Treasurer is Dr. John Clay, 42, Jesmond Road, Newcastle-on-Tyne, who will receive subscriptions: the Honorary Secretary is Mr. W. T. Sewell, President of the Students' Representative Council. The following subscriptions have already been promised:—

	£	s.	d.
Professor Sir George H. Philipson	5	5	0
Professor Howden	5	5	0
Dr. Cox	1	1	0
Dr. Arnison	1	1	0
Dr. S. Raw	1	1	0
Dr. A. Maud Dodd	1	1	0

UNIVERSITY OF LONDON.

Recognition of Teachers.

Mr. G. H. A. Comyns Berkeley has been recognized as a teacher of midwifery and gynaecology, and Dr. R. A. Young as a teacher of diseases of children at the Middlesex Hospital Medical School.

Organic Chemistry.

A circular has been issued to students in the medical schools of the University pointing out that the last Preliminary Scientific Examination and the last Intermediate Examination in Medicine for internal and external students under the old regulations were held last July, and indicating exemptions which apply to certain undergraduates and graduates.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

Fellowship.

At a meeting of the College held on December 15th the following gentlemen, having passed the requisite examinations, were admitted Fellows of the College: Sydney Herbert Allen, L.R.C.S.E., Melbourne, Australia; Arthur Alison Bradburne, L.R.C.S.E., Buxton, Derbyshire; Arthur Bernard Cridland, M.R.C.S.Eng., L.R.C.P.Lond., Wolverhampton; Daniel Randolph Gonsalves, L.R.C.S.E., Ootacamund, India; William Colin MacKenzie, M.D., B.S., Melbourne; John Macmillan, M.B., C.M., D.Sc., F.R.C.P.E., Edinburgh; James Hutcheson Pestell, L.R.C.S.E., Victoria, Australia; Richard Staward, L.R.C.S.E., Springburn, Glasgow; and Harry Findlater Wilkin, L.R.C.S.E., Wickhambrook, near Newmarket.

Representatives on Royal Infirmary Board.

At the same meeting Dr. Peter Hume Maclaren and Dr. James Ritchie were elected representatives of the College on the Board of the Royal Infirmary for the ensuing year; and Mr. Henry Wade, M.B., F.R.C.S.E., was elected Conservator of the Museum.

TRINITY COLLEGE, DUBLIN.

The following candidates have passed the Final Examination in Midwifery:

T. H. Gibbon, G. B. M'Caul, R. H. Lee, H. St. M. Carter, D. Gray, H. R. Nelson, P. S. Stewart, W. S. S. Berry, T. C. A. Sweetman, S. H. Vickery, F. F. C. Willington, J. C. Hall, F. W. Bury, H. Stone.

MEDICAL NEWS.

Presentation.—Dr. W. Whitworth, of St. Agnes, Cornwall, has been presented by the members of the Miners' and Mechanics' Institute with his portrait, in recognition of his valued services as honorary secretary of the institute for twenty-one years. Dr. Whitworth, after acknowledging the gift, presented it to the institution.

The Royal Institution.—Professor Ray Lankester will commence a Christmas course of lectures illustrated by lantern slides and adapted to a juvenile auditory on extinct animals on Tuesday, December 29th. The first Friday evening meeting of the Institution for 1904 will be held on January 15th, when Lord Rayleigh will give an address on Shadows. Among other lectures announced we notice one fixed for March 4th by Professor Stirling, of Manchester, on Breathing in Living Things.

At the annual general meeting of the Metropolitan Hospital Sunday Fund on December 16th, accounts were presented which showed that the total received this year was £64,975, being the largest sum hitherto collected. Attention was drawn to the fact that only some twenty congregations in the Home Counties had contributed, although it was well known that persons from these districts furnished a large proportion of all the in-patients. A motion intended to deter institutions from taking advantage of Hospital Sunday to bring their individual needs into prominence was passed.

American Native Medicine.—According to the *New York Medical Journal*, Dr. J. W. Blankenship, botanist at the State experiment stations at Bozeman, Mont., is making a collection of the herbs used by the Indians for medical purposes. The collection will be exhibited at St. Louis. Dr. Blankenship has discovered the formula for breadmaking from sunflower seeds, used by some of the tribes, and also the nature of the wild tobacco which they used to grow, and which was milder than that now in use.

MEDICAL VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BIRMINGHAM AND MIDLAND FREE HOSPITAL FOR SICK CHILDREN.—(1) Honorary Surgeon. (2) Two Physicians for Out-patients. (3) Surgeon for Out-patients.

BRIDGWATER INFIRMARY.—House-Surgeon, resident. Salary, £80 per annum.

BRISTOL ROYAL HOSPITAL FOR WOMEN AND CHILDREN.—House Surgeon, resident. Salary, £120 per annum.

CHELSEA HOSPITAL FOR WOMEN, Fulham Road, S.W.—(1) Resident Medical Officer. Salary, £80 per annum. (2) Registrar. Honorarium, £40 per annum. (3) Clinical Assistant.

DERBYSHIRE ROYAL INFIRMARY.—(1) Senior House-Surgeon. Salary, £100 per annum. (2) Assistant House-Surgeon. Salary at the rate of £90 per annum. Both resident.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark.—Clinical Assistants in the Out-patient Department.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—House-Surgeon, resident. Salary, £75 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House-Physicians. Honorarium, £25 for six months.

LIVERPOOL CANCER RESEARCH.—Assistant Director. Salary, £200 per annum.

LONDON THROAT HOSPITAL, Great Portland Street, W.—House Surgeon, non-resident. Honorarium at the rate of £50 per annum.

MANCHESTER SOUTHERN HOSPITAL FOR WOMEN AND CHILDREN.—(1) Two Honorary Assistant Medical Officers. (2) Anaesthetist. Honorarium, £30 per annum.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Assistant House-Surgeon, resident. Salary, £70 per annum.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney Road, E.—Surgeon.

NORWICH: HEIGHAM HALL PRIVATE ASYLUM.—Assistant Medical Officer.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Surgeon, resident. Salary, £100 per annum.

ROYAL LONDON OPHTHALMIC HOSPITAL, City Road, E.C.—Assistant Surgeon.

SALISBURY: FISHERTON ASYLUM.—Assistant Medical Officer, resident. Salary, £150 per annum.

SEAMEN'S HOSPITAL SOCIETY, Greenwich, S.E.—Junior Resident Medical Officer. Salary, £40 per annum.

ST. GEORGE HANOVER SQUARE PROVIDENT DISPENSARY, Little Grosvenor Street.—Resident Medical Officer. Salary, £100 per annum.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, W.—Lecturer on Physics and Assistant Lecturer on Chemistry. Salary, £100 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House-Physician, resident. Honorarium at the rate of £75 per annum.

MEDICAL APPOINTMENTS.

CAREY, Conrad de L., M.B., B.C.Cantab., Medical Officer to the Parish and Infirmary, St. Peter Port, Guernsey.

CRIMP, G. Lydston, B.A., B.C.Cantab., Assistant to Professor of Pathology, Medical School, Cairo.

CROSSE, R. E., M.R.C.S., L.R.C.P.Lond., Medical Officer and Public Vaccinator of the Mitford and Launditch Union Workhouse.

DAWSON, Kathleen, L.S.A., M.O.Brux., Resident Medical Officer of the Maternity Department of the New Hospital for Women, Euston Road, N.W.

DUNCAN, William, M.R.C.P.Lond., F.R.C.S.Eng., Examiner in Midwifery to the University of Glasgow for the ensuing four years.

GARRETT, Richard H. O., L.R.C.P., L.R.C.S.Edin., Medical Officer, Public Vaccinator, and Medical Officer of Health to the Wolsingham District of the Weardale Union.

GASK, G. E., F.R.C.S., Surgical Registrar to St. Bartholomew's Hospital.

GREEN, A. L. B., M.R.C.S., L.R.C.P.Lond., District Medical Officer of the Ross Union.

HEILBORN, W. E., B.A., M.B., B.C.Camb., Anaesthetist to the Royal Infirmary, Bradford.

MAKINS, Richard, M.B., Ch.B.Glasg., Resident House-Surgeon to the Grimsby and District Hospital.

MURRAY, William, M.A., M.D.Aberd., Surgical Assistant at the Birmingham and Midland Hospital for Skin and Urinary Diseases.

MUSGRAVE, C. B. T., M.D., District Medical Officer of the Tavistock Union.

MYLES, Thomas, M.D.Dub., B.Ch., District and Workhouse Medical Officer of the Wigton Union.

PROCTER, G. H., M.R.C.S., L.R.C.P., District Medical Officer of the Tonbridge Union.

THORNTON, Bertram, L.R.C.P.Lond., M.R.C.S.Eng., Medical Officer of Health for Margate, and also Police Surgeon.

DIARY FOR NEXT WEEK.

TUESDAY.

Therapeutical Society, Apothecaries' Hall, Water Lane, Blackfriars, 4 p.m.—Agenda:—Dr. W. E. Dixon: On the Action of Drugs on the Pulmonary Vessels. Mr. C. Dennis Vinrace: A Plea for the More Thorough Study of Therapeutics.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

DEATHS.

GILLESPIE.—At 12, Walker Street, Edinburgh, on 11th inst., suddenly of acute pneumonia, Mabel Margaret, beloved wife of Alexander Lockhart Gillespie, M.D., F.R.C.P.E.

GRANT.—On December 13th, at Esnore, Boscombe, Bournemouth, Allan Ewen Grant, M.B., Major Indian Medical Service, aged 41 years.

TREND.—On the 7th inst., at 1, Grosvenor Square, Southampton, Theophilus William Trend, M.D., M.R.C.P.Edin., aged 69.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aetiology, London*. The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

Colour of Infants.

A. R. asks for information as to the colour of newborn children of different races the adults of which are yellow, brown, or black.

*** We have referred this question to Dr. J. G. Garson, who writes: The best reference I can give to A. R. on this subject is contained in Topinard's *Eléments d'Anthropologie Générale*, pp. 312-314. Exact observations made with the aid of definite scales of colour are much wanted. Numerous individual variations will doubtless be found in children at different ages, which should be compared with corresponding observations on adults of the same race and tribe.

ANSWERS.

W. S. F.—Our correspondent's statement appears to be founded solely on hearsay evidence, and we should hope that his informant was mistaken.

MEDICAL OFFICER.—Dr. Herman's *First Lines in Midwifery* (London: Cassell and Co., 1901, 5s.) will probably meet our correspondent's requirements.

T. H. M.—Mr. S. G. Shattock, F.R.C.S., has been good enough to inform us that the only practicable method of examining the living tissue of a new growth is by means of teasings or scrapings studied on the warm stage. This method is well recognized by histologists and has been carried out at different times by certain workers in the field of malignant and other tumours.

Ambulance Lectures.

BRIGADE-SURGEON-LIEUTENANT-COLONEL P. B. GILES (Bletchley) writes to point out that the fees paid by county councils for ambulance lectures vary. The County of Bucks gives £6 10s., and 1 guinea to the examiner on the condition that twenty-five students enter and that fifteen at least present themselves for examination. The Board of Education gives a grant of from 3s. 6d. to 5s. for every twenty hours' instruction, and also allows the medical man, if he cannot give all the twenty lectures himself, to employ as an assistant a schoolmaster who has passed the examination, or any other competent person, such as a sergeant in a bearer company.

Maintenance of the Insane Poor.

DR. T. DUNCAN GREENLEES (Grahamstown, S.A.) writes: In reply to the query of "L.L.D." in the BRITISH MEDICAL JOURNAL of October 31st, I beg to supply the desired information relative to Cape Colony, and may say that in all the South African Colonies the insane poor are supported by the various Governments. There are practically no local rates, certainly not for this purpose, and the expense of maintaining the asylums is chargeable to the general exchequers in all the South African Colonies. In Cape Colony the cost of maintenance during the year 1902 was £114,020 12s. 5d., but, deducting receipts, the net expenditure was £101,660 10s. 4d.; the total number of patients remaining under treatment on December 31st being 1,653. The cost per patient varied in the different asylums from 1s. 9½d. to 2s. 11d. per diem. The receipts from paying patients, which are returned direct into the treasury, amounted to £10,202 18s. 3d., and assisted materially in reducing the actual cost of the Colonial asylums. It should be noted, however, that this expenditure does not include additions or new buildings, stationery, water rates, payable to the local municipalities, and some other minor items of expenditure, but often includes repairs, furniture to new buildings, etc.

NOTES, LETTERS, Etc.

Medical Missionaries.

COLONEL T. H. HENDLEY, C.I.E., I.M.S. (retired) (London, N.W.), writes: I think a remark in the letter in the BRITISH MEDICAL JOURNAL of November 7th, page 1255, of your correspondent, Dr. W. F. Adams, should not be allowed to pass without some protest. He writes as follows with reference to the large number of persons who attend at mission dispensaries in India. "Why do such numbers come? In India, although some dislike the preaching, they come because they think, at any rate, that they get more consideration than in the Government dispensaries." I am afraid that not all medical missionaries content themselves with crediting the patients with such ideas, but go a step further by themselves depreciating—in ignorance, I trust—the work which is done in such institutions. I was present a short time ago at a meeting

at which a lady doctor emphasized the urgent necessity of supporting such a mission hospital as hers, which, if she only knew it, did not require such aid, by observing that no "respectable" woman would go to the Government hospital which was in the same town. It appeared that she based her remarks on the reports of native Christians, who are not very unbiassed witnesses in such a case as this, for reasons which it is not necessary to go into here.

Observations of this kind are, however, far from uncommon, and, I venture to think, do more harm to the mission cause than good. Some of the best friends missionaries have in India are the officers of the Indian Medical Service, whose aid is freely afforded not only to medical missionaries but to their clerical brethren, and, at their call, to their converts whenever it is required. During my term of office as an administrative medical officer for about eight years passed from one side of North India to the other, I have found, almost without exception, that as much care, kindness, and skill have been shown by the servants of Government in their hospitals as in any missionary institution; and, in writing thus, I do so as warmly of the native doctor as I do of his European colleague or chief. The enormous and rapidly-increasing attendance at the so-called Government hospitals is the best proof of the truth of my assertion. The fact is that where there are two institutions in a town the native, who is as human as most of us, will sometimes try first one and then the other, and, perhaps, in turn undervalue each to the staff of the other, and even occasionally take and use the remedies of both. It is generally a question of the man at the helm. If the mission hospital is under the care of a fully-qualified graduate, who personally treats the patients, and the other dispensary is worked by a young and comparatively inexperienced hospital assistant, it is natural that the sick man may prefer the former. He does not always do so.

I have always taken the strongest exception to the use of the word "respectable" with reference to the attendance of women at Indian hospitals. Not only did the lady to whom I have referred in this note use that word in the sense that respectable poor women could not attend the public dispensaries, but it has been repeatedly employed by our own lay officers and even by medical officers who ought to know better, and who should see that any such ideas can only injure the hospitals in the eyes of those for whose relief they are intended. The word has even been used in official reports. Any man who practically adopts such views would soon find that his dispensaries would only be attended by persons of the lowest classes, whereas it should be the desire and aim of us all to furnish skilled aid for every poor man and woman in the country within reasonable distance of their own homes, and to encourage females to attend by providing for them separate waiting and examination rooms, and by making other suitable arrangements to ensure their privacy and comfort. I admit that this has not always been done. Thus, for example, in Calcutta, and in the large towns of Bengal and in North India to which my personal knowledge extends, patients of both sexes waited in a common hall, and came up one by one to be questioned at the prescribing table, which was placed behind a rail. Similar indifferent arrangements were not unknown in mission out-patient rooms, and—what is worse—the employment of unqualified practitioners, which nothing can justify; but improvements have been made. In Bengal alone the number of waiting rooms has increased from 86 in 1898 to 536 this year, and I doubt not that similar changes have been made in other provinces; but of this I am sure, that no respectable woman, even though she is poor, need now be afraid of applying at a public dispensary for relief as an out-patient. If she needs to be treated as an in-patient she will find, moreover, in many places that she can obtain a private room or a cottage ward in which she can have the society of her husband or of some other relative without whose presence and comfort the vast majority of Indian women will not stay in a hospital, and all this can be secured for a very small payment for the rooms. In Dacca, for example, I found accommodation of this kind on the general side of the hospital grounds nearly always fairly well filled whenever I inspected at that station. Open wards are on this ground very much objected to by most Indian women and their male relations.

It is possible that many persons, who write so incautiously of what they style Government hospitals, do not know the fact that these institutions are usually charitable dispensaries (indeed they are so called officially) which are aided only to a limited extent by the State, generally by the provision of medical superintendence only, though, at head-quarters, the Civil Surgeon is expected to work in them and does so, and I assert performs this duty with the greatest zeal and pleasure, it being to an ardent doctor the best field for his energies. The charitable hospitals and dispensaries of a province are inspected regularly by professional as well as by lay officials from the Viceroy and Lieutenant-Governors downwards with keen interest on the part of them all, are directly managed by local committees on which all classes are represented. The members of these committees are encouraged to take personal interest in their management and to offer suggestions which shall tend to increase their popularity and add to the comfort of those who resort to them for relief in suffering. No institution could, therefore, long exist which does not ensure these ends, and whose officers fail in treating the sick poor with kindness, or where, in the words of Mr. Norman Barnett, another of your correspondents, the native does not "experience loving sympathy and care in his bodily weakness."

In conclusion, it has occurred to me and to other friends of missions that great good would often be effected if medical missionaries would not settle down where Government servants are already in the field, but would take up some out-of-the-way but not necessarily uninteresting or unimportant place in which there is no medical aid at present available, and so vast is the area of India alone that there are many such. It would be a great gain to missions themselves if this were done.

A most successful undertaking of this kind exists in Ranaghat in Bengal, which interferes with no one. It was founded by Mr. Monro, C.B., formerly Commissioner of Police in London, who, when a very high British official in that very district, saw its needs and lived to carry out his ideas with the aid of members of his own family. In this way the sphere of usefulness of medical missionaries would be doubled, and the difficulties which some of your correspondents also feel in obtaining skilled men for this important work would no longer be felt.

An Apparently Harmless Stimulant.

The Manager of the Apothecaries' Hall, Blackfriars, informs us that the price which he should have mentioned for yerba-maté or Paraguay tea is 2s. 6d. per lb., and not 2d.

Medical Officers' in the Highlands and Islands.

Dr. W. L. Muir (Secretary of the Scottish Poor-law Medical Officers' Association, Glasgow) writes: The Parish Council of Durness, Sutherlandshire, in 1898 dismissed its then medical officer without cause being given; it has at the present time with equal injustice dismissed its present medical officer. Might I ask the profession to take warning, as it is not likely the next medical officer will get any better treatment? I shall be glad to furnish any would-be applicant with further particulars.

Letters, Communications, Etc., have been received from

A Antisyphilis; Association of Registered Medical Women, Secretary of, London; Mr. S. B. Atkinson, London; Another Medical Fiscal Reformer; Dr. H. R. Andrews, London. **B** Dr. C. Buttar, London; B. F. P.; Dr. T. E. B. Brown, C.I.E., London; Mr. W. A. Berridge, Redhill; Beta; Mr. C. N. Barton, London; H. G. Barling, M.B., Birmingham; Mr. G. Brown, Callington; J. E. Blomfield, M.B., Sevenoaks. **C** Mr. H. S. Clogg, London; Mr. A. A. Cooper, London; M. Coghlan, M.B., Gloucester; C. F. P.; Dr. F. J. H. Coutts, Blackpool; Dr. W. T. Cocking, Sheffield; Mr. A. B. Clarke, Shebbear; Messrs. Cleeve Brothers, Liverpool; Dr. P. R. Cooper, Bowdon. **D** Dubitans; Director-General of the Medical Department of the Admiralty, London; Dr. D. R. Dobie, Crieff; Mr. J. Dunn, Sowerby Bridge; Mr. E. A. Duffield, Treherbert; Dr. A. H. Davy, Bournemouth; Mr. H. T. Dufton, Stowmarket. **E** Dr. G. A. Edsell, Surbiton. Enquirer; Dr. G. W. Eustace, Arundel; Dr. F. Edge, Wolverhampton. **F** Dr. R. Farrar, London; Dr. D. Forbes, Manchester; Major G. H. Fink, I.M.S. (retired), London; F. E. A. C.; N. S. Fraser, M.B., St John's, Newfoundland; Frontier. **G** Mr. R. N. Geach, London; Mr. P. A. Griffiths, London; Dr. S. Gee, London; Dr. T. D. Greenlees, Grahamstown; G. P.; Dr. L. Grant, Ballachulish; Dr. J. G. Garson, London; Mr. H. P. Gaston, Southsea. **H** Mr. W. W. Hornabit, London; Mr. W. R. Hall, London; Mr. F. W. Howell, London; Dr. J. Haddon, Hawick; Dr. R. Hutchison, London; E. Huntley, M.B., Sudbury, Suffolk; Dr. T. W. Hime, Bradford; Mr. P. E. Hill, Crickhowell; Dr. W. Haig, Crieff; Mr. W. Hall, Leeds; R. T. Halliday, M.B., Glasgow; A. Hall, M.B., Sheffield; Dr. J. Hay, Liverpool; Mr. B. F. Hartshorne, London. **J** Dr. T. Johnstone, Ilkley; Mr. B. H. Joy, London; Dr. E. Jepson, Durham. **K** Mr. C. B. Keetley, London; Dr. T. L. Kelynack, London; Kinks. **L** Lemco; Dr. J. C. G. Ledingham, Aberdeen; Dr. R. E. Laslett, Hull. **M** Dr. W. J. Morton, London; M.O.H.; Mr. W. L. Muir, Glasgow; Medical Officer; Dr. J. J. Macan, Cheam; Mr. E. D. Madge, London; J. P. D. Macara, M.B., Durness; Dr. T. R. Macdonald, Inverness; Mr. H. F. Mole, Bristol; Mr. R. Macartney, Cinderford; Mr. K. Monsarrat, Liverpool; Mr. P. J. McGann, Newport, Mon.; M.R.C.S.; Rev. W. T. McCormick, Bournemouth; Mr. H. J. Manning, Salisbury; A. E. Maylard, M.B., London. **N** Dr. E. G. Newell, Moville. **O** O muz; Mr. W. J. B. Odham, London. **P** Mr. E. C. M. Pooley, London; Mr. S. F. Pendred, Loughton; Dr. E. F. Potter, London; Mr. E. M. Pearse, Liskeard; B. Pollard, M.B., London; Dr. J. A. Parsons, Market Overton; P. M. **R** R.A.M.C.; Refero Relata; J. D. Russell, M.B., London; R. W.; Mr. W. Rushton, London. **S** Sa opian; Mr. M. Sarlie, London; Scrutator; Dr. E. H. Snell, Coventry; Super Mare; Dr. A. Sellers, Manchester. **T** Tubercle; Mr. J. Tubb-Thomas, Trowbridge; Mr. E. A. O. Travers, Selangor; H. P. Taylor, M.B., Mid Yell; Dr. R. Turner, Liverpool. **W** Dr. T. Outterson Wood, London; Mr. C. Worth, London; Mr. C. P. Weekes, Walton-on-the-Naze; Dr. A. Whitfield, London; Mr. T. Wilson, Tregantle; Mr. A. T. Wooldridge, Camberley; Dr. F. P. Weber, London; Mr. S. W. Wilson, Bath; West London Medico-Chirurgical Society, Secretary of, London; Mr. W. R. Williams, Clifton; Messrs. Williams and Norgate, London; W. D. A.; Mr. S. W. Williams, Port St. Mary.

BOOKS, Etc., RECEIVED.

Rabies: its Place amongst Germ Diseases and its Origin in the Animal Kingdom. By David Nunne, M.D. Cambridge: University Press. 1903. 10s. 6d.

An Almanack for the Year of Our Lord 1904. By Joseph Whitaker, F.S.A. London: J. Whitaker and Sons, Limited. 2s. 6d.

Whitaker's Peerage for the Year 1904. London: J. Whitaker and Sons. 1904. 3s. 6d.

Practical Physiological Chemistry. By J. A. Milroy, M.A., M.D., and T. H. Milroy, M.D., B.Sc., F.R.S.E. Edinburgh and London: William Green and Sons. 1904.

Heliotropes, or New Posies for Sundials. Written and expounded in an old book by John Parmenter in 1635. Edited by Perceval Landon, 1904. London: Methuen and Co. 3s. 6d. Lecture I. On Some Aspects of Light. By J. Ian Aikman, M.D. Guernsey: Frederick Clarke.

Clinical Pathology of the Blood. By James Ewing, A.M., M.D. Second Edition. London: Henry Kimpton. 1904. 21s.

Hints on How to Start a District Nursing Association. By a County Superintendent. London: The Scientific Press, Limited. 1s.

Breathing for Voice Production. By H. H. Hubert, B.A. Oxon., M.R.C.S., L.R.C.P. London: Novello and Co., Limited. 1903. 2s.

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Observations on DIABETIC COMA:

WITH SPECIAL REFERENCE TO BETA-OXYBUTYRIC ACID AS AN ETIOLOGICAL FACTOR.

By CARSTAIRS DOUGLAS, M.D., B.Sc., F.R.S.Edin.,

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The majority of the numerous pathological questions at present under consideration are being attacked from the standpoint of bacteriology and histology, but there are various diseases whose sombre problems still await full elucidation, and which one feels must be approached mainly from the side of pathological chemistry. Among these are eclampsia and diabetes mellitus. With regard to the former, in spite of all the histological and bacteriological work that has been done, we really know very little more now about its essential nature than we did a dozen years ago, nor shall we, I am convinced, until the blood, the liver, the placenta, and the liquor amnii have been subjected to the strictest scrutiny by the pathological chemist; while, in the case of diabetes, the the explanation of such a matter as the "coma diabeticum" lies almost entirely along chemical lines.

Without entering into details of the pathology of diabetes, I may be permitted to emphasize certain outstanding features in the disease. In a genuine case we have a patient exhibiting the presence of large quantities of glucose in the urine, and practically always a distinct though not great increase in the sugar of the blood, the latter consisting in part of glucose and in part of a combination of glucose with lecithin. Such a patient suffers from polyuria on account of the larger amount of fluid required to act as a solvent for the sugar, and, although the appetite may be voracious, there is a loss of flesh. It is in general accepted that the increase of sugar in the blood is due not to increased production, but to defective utilization, or as v. Noorden puts it, "diabetes is a disease in which the capacity of the organism for burning up grape sugar is morbidly depressed." As to the precise cause of this defective combustion, one cannot make a positive statement, and it is likely that it is not the same in all cases.

The established connexion between the complete ablation of the pancreas and the development of the classical symptoms of diabetes in lower animals, and the occurrence of pancreatic lesions in at least 50 per cent. of the fatal cases in man, have led to the suggestion of this plausible theory that from those peculiar groups of cells in the organ called the "islands of Langerhans" some internal secretion is added to the circulation which aids in glycolysis or the breaking down of the sugar molecule, and that when the gland is removed or has become the seat of disease this so-called secretion is lost and diabetes develops. A parallel, in short, is drawn between this disease and the gland associated with it, and myxoedema and the thyroid. I may say, however, that this simple theory of the matter is by no means free from objections, and that we do not as yet know the rôle which the pancreas plays in diabetes or the prevention of it. Let us now turn to the aspect of the subject with which we are specially concerned, and consider what is the most probable explanation of the causation and nature of diabetic coma, that most grave of eventualities that may arise in the course of the disease.

Of coma there are three types:

1. The typical and most common form, often met with in young subjects and where the symptoms develop with comparative suddenness. To begin with, the patient complains of digestive disturbance and vomiting, abdominal pain, muscular weakness, and drowsiness which passes into coma. The breathing is often deep (though not rapid), as if the patient was longing for air; this constitutes the *Lufthunger* described long ago by Kussmaul. Death may occur in 24 hours.

2. A form met with after fatigue, especially in elderly patients, where the symptoms are those of profound collapse.

3. A third variety in which the gait may become ataxic and the speech confused. It is with the first of these that we are particularly concerned. A careful study of the urine from the chemical standpoint shows that we have present in it in severe cases several substances which are calculated to throw light on this matter. Sugar, abundantly present though it may be, we may dismiss at once.

A substance nearly always present in severe cases is acetone, CH_3COCH_3. It is not peculiar to diabetic urine, but may be met with in cancer, fever, and digestive disturbance. It is usually regarded as having its origin in an excessive destruction of albuminous tissue or from fat. Acetone is a volatile, clear liquid when pure, and can easily be distilled off from urine. It is readily recognized by Lieben's test, in which iodoform is produced, and in a distinct case of diabetes the amount excreted per diem may, according to Hirschfeld, reach to 0.6 to 0.8 gram. (8 to 12 gr.). It is practically certain that it is not the cause of coma. The next substance to be mentioned is diacetic or aceto-acetic acid, whose formula is $CH_3COCH_2CO_2H$, being acetic acid where one atom of hydrogen in the methyl group has been replaced by the radicle acetyl CH_3CO. It is found in certain other pathological states, but most frequently of all in diabetes, and then usually in severe cases. In fact, acetone and diacetic acid in a diabetic's urine usually indicate that the outlook is somewhat grave. It is readily recognized by Gerhardt's test, and is easily driven off by boiling. If we compare the formulae of those two bodies we see the diacetic acid is acetone *plus* a molecule of CO_2. They are related chemically and physically, and usually occur together. In looking over my notes of the last forty-three examinations made in severe cases of diabetes, I find that acetone was present on thirty-seven occasions, while diacetic acid occurred thirty two times. On no occasion was diacetic acid present without acetone. The amount present in a severe case may be a few grams, and although it may possibly contribute to some extent to the causation of the coma, it is not regarded as playing any serious part in its genesis. The third and most important substance of the class found in diabetic urine is β-oxybutyric acid, and it merits some close degree of attention, since it is regarded by most clinicians as playing a large part in the development of coma. It is found in practically all very grave cases, and may be present in large amount. Its formula is $CH_3CH(OH)CH_2CO_2H$, and its relationship to acetone and diacetic acid are as follows:

CH_3 CO CH_3	CH_3CO	$CH_3CH(OH)$
	CO_2H	CH_2CO_2H
Acetone.	Diacetic acid.	β-oxybutyric acid.

Now the acid content of diabetic urine is very high, and is due chiefly to the presence of this acid. One need not be surprised at this, if it be borne in mind that from 20 grams to 30 grams or 1 oz. of this acid may be excreted in a single day; and in this connexion we may take note of the fact that diabetic urine in such cases is remarkably rich in a ammonia, the amount excreted being often eight or ten times that met with in health. And if we ask why this alkali should be present in such large quantity, the answer is that it is needed as a base for the oxybutyric acid. This is a point of importance, and will be referred to again.

As regards the detection of this acid, the method I employ is Külz's, where the urine, after full fermentation, filtration, and concentration is distilled with strong sulphuric acid, whereby the oxybutyric acid loses water and distils over as α-crotonic acid, thus:

$$\underset{\beta\text{-oxybutyric acid}}{CH_3CH.(OH.)\,CH_2CO_2H} - H_2O = \underset{\text{crotonic acid.}}{CH_3CH.CH.CO_2H}$$

The latter is obtained as feathery crystals with a melting point of 72° C. In 36 analyses performed on 15 cases of diabetes, most of them severe, I found the acid present on 19 occasions, the amount being distinct in 10 instances and scanty in 9. In one case ending fatally by coma which was examined only twice, it was found in the urine the first time, but in a second specimen removed by catheter after coma had set in I found none. The distillate in this case had a peculiar fruity odour which I had already noticed in another fatal case, and which suggested that some other organic body might be present.

The amount of ammonia required for neutralization of the β-oxybutyric acid is 1 gram for 5 of the acid. In one of the last cases I examined the ammonia was estimated, and found to be 1.95 gram. As this is about 1 gram above that usually met with in health, it suggests that that excess was required for the oxybutyric acid which was present, and, as a matter of fact, it was computed that the acid in this case was about 5 grams for the day—just what we should have expected. Indeed, it has been suggested that the estimation of the ammonia in the urine (which is not a troublesome operation)

might be taken as a fairly accurate measurement of the β-oxybutyric acid it contains.

And now to explain the precise relationship of the acid to the coma—a relationship first suggested by Stadelmann. I incline distinctly to the opinion shared by many others, that we are dealing here with an acid-intoxication, or acidosis as it is sometimes termed. The acid for its elimination requires a base, for it does not appear in the urine in the free state. It cannot obtain from the body enough soda or potash, and therefore unites with ammonia (which explains the high excretion of this substance), this ammonia being the result of the metabolism of proteids, and destined under ordinary circumstances to become urea. This ammonia is given up to protect the alkali of the blood. If now, as a result of gastric disturbance or defective nutrition this supply is cut off, the acid utilizes the alkali of the blood as a base, reduces its alkalescence, and stupor supervenes. In support of this view may be mentioned the fact proved experimentally by Walther that the introduction into the system of large quantities of dilute mineral acid, such as hydrochloric, can cause the onset of coma and dyspnoea in dogs and other mammals. It is further supported by the fact that in the gravest cases of diabetes the acid is almost always present, and greater in amount the nearer the coma is, while on the other hand relief has been obtained in cases actually in stupor by the subcutaneous or intravenous injection of saline alkaline fluid, or even by the administration by the mouth of massive doses of sodium bicarbonate. It does not necessarily follow because coma results from an excess of acid in the system that it is due to a specific toxic effect of that acid. Indeed, it has been shown experimentally that β-oxy-butyric acid is not in itself a noxious substance. The acid probably acts by diminishing the alkalescence of the blood, and so preventing the normal elimination of carbonic acid by the lungs. Indeed in coma the patient may be actually cyanosed. And it is this interference with internal respiration which gives rise to the *Lufthunger* of Kussmaul—the dyspnoea and gasping for air.

It is right to state that other substances have been regarded as the cause of coma besides oxybutyric acid. Sternberg, for example, finding that the introduction of the latter into a healthy mammal did not cause stupor, suggested that it might be β-amido-butyric acid that caused the fatal symptoms, since its administration to animals could produce deep insensibility, laboured breathing, and increased blood pressure. The acid has the formula: $CH_3\,CH\,(NH_2)\,CH_2\,CO_2H$. The facts just stated regarding its effects have been substantiated by Grube, and Lépine, in a paper published about three years ago, also seems inclined to favour this view. It may be noted that on hydration this acid yields β-oxybutric acid and ammonia, thus: $CH_3\,CH\,(NH_2)\,CH_2\,CO_2H + H_2O = CH_3\,CH\,(OH)\,CH_2\,CO_2H + NH_3$, and Lépine thinks that in this way he may explain the high ammonia output in diabetics. Other chemical bodies of known composition have from time to time been suggested as the cause of the coma, among which may be mentioned trimethyl-amine (Senator) and paraldehyde (Latham). Schmitz has propounded the view that the stupor develops as a result of an auto-intoxication from loaded bowels; while Klemperer, and to some extent Von Noorden, incline to attribute the fatal ending to a toxin developed within the system as a result of the destruction of albuminous substances.

The only rational line of treatment that can be suggested is the introduction into the system of an alkali, either by giving very large doses of sodium bicarbonate by the mouth, or better still by administering it as a subcutaneous or intravenous injection. Cases have been reported in this country by Fagge, Taylor, Oliver, T. K. Monro, and others, where undoubted benefit occurred and in all grave cases it should be tried. I have not seen, or heard of, any case in which the inhalation of oxygen produced anything save a transient benefit.

In 1901 Schwarz, of Prague, suggested that gluconic acid might be used in the treatment of the coma. He used it in a case where coma occurred twice in the same subject, and where recovery took place each time under the administration of from 50 to 70 grams of gluconic acid in alkalinized water, while at the same time large doses (140 grams) of sodium bicarbonate were given by the mouth and bowel. A third attack supervened in which no gluconic acid was available, although the soda was, and in this the patient succumbed.

In conclusion I may add that Lépine has suggested the use of some phenol, so that the toxic acid might be converted into a harmless nitrile within the tissues (nitrile-amido-butyrate itself is innocuous for example). The phenol treatment of diabetes, however, has not been very successful, although antipyrin and phenacetin have been used a good deal in France.

SOME OBSERVATIONS ON THE TEMPERATURE OF COMA.

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A few years ago I made observations on many patients who were in a comatose state, and also examined the records of other cases of that condition with the view of ascertaining what variations in the bodily tempeature occur in the different forms of coma, and whether a knowledge of the patient's temperature was of any value in the diagnosis of the cause of the condition. Although my observations have not perhaps been arrived at by any laborious or deep investigation, yet they are the outcome of an examination of many patients at St. Thomas's Hospital during a period extending over four years, and, although the results of this investigation are somewhat disappointing in certain respects, they appear, nevertheless, to be worthy of record on account of some interesting points which have been ascertained.

In certain conditions associated with coma the bodily temperature is well known to deviate considerably from the normal, as is the case in the high temperature of pontine lesions and in the low temperature of diabetic coma. After an examination of fifty-eight cases of coma I came to the conclusion that, while observations of the temperature might be helpful under certain circumstances, in the majority of the cases it was of comparatively little practical value in the diagnosis of the cause of the condition. Nevertheless, the changes in the bodily temperature are very constant in the different forms of coma, and, although a knowledge of these changes may only help occasionally in the diagnosis, yet, when the cause of the condition has been ascertained, the state of the patient's temperature has a distinct bearing upon prognosis. To obtain a complete record of the temperature in many of the forms of coma is naturally impossible, since the patients are often seen at varying intervals after the onset. In consequence of the examination of the patients being made at different intervals after the commencement of unconsciousness, the observations upon the temperature must vary considerably, even in cases in which the coma is due to a similar cause. For this reason, the condition of the temperature in many patients suffering from coma, when the cases are seen for the first time, does not appear to be of much diagnostic value. Notwithstanding this, the patient's thermometric temperature should always be observed, since, if it be above normal the coma is not likely to be due to alcoholic poisoning, or to be of diabetic origin, but to be dependent upon some other pathological cause; while, if the temperature be below normal, that condition may arise from the patient being in that state of collapse which occurs at the onset of many forms of coma.

In diabetic coma the bodily temperature is nearly always subnormal. I have never met with such a case in which the temperature was higher than 99° F. In those cases in which it was so before the onset of the coma, defervescence took place as the drowsiness increased. Dr. Saundby,[1] however, has observed pyrexia in this disease, and says that "death is sometimes preceded by a rise in temperature (103° to 104° F.)." It is very remarkable how rarely even slight pyrexia is found associated with glycosuria. It is not uncommon for the temperature in diabetic coma to fall so low as 96°; the lowest record in my series was 95°, which was noted about eighteen hours before the death of the patient.

There is considerable difficulty in explaining the cause of this subnormal temperature in diabetic coma. In this disease there is a great increase in metabolism, as is shown by the large amount of urea in the urine, and as a result of this one might be led to expect an increase in the heat production. According to Sir J. Burdon Sanderson[2] it is not necessary "to imagine more than one regulating centre in constant operation—that which presides over surface loss." If this thermolytic centre be injuriously affected, either by poisons circulating in the blood or by an increase in the cerebro-spinal pressure, the usual result is pyrexia. That there is very little increase in the thermolytic process is seen by the condition of the skin, which in this disease is usually dry and pale. There must, however, be a slightly increased loss of heat on account of the large amount of urine voided. By the excre-

tion of a large amount of glucose in the urine, the body is losing a substance which has great heat-producing capacities, and which would have taken some part, under normal circumstances, in maintaining the bodily temperature. It has been suggested that the loss of this heat-producing substance may account, wholly or in part, for the subnormal temperature. The condition of the skin, which causes a reduction in the thermolytic processes, may be a part of an effort on the side of the organism to keep the temperature at the normal level. If the subnormal temperature be the result of the excretion of sugar, then some relationship between the amount of this substance present in the urine and the variations in the temperature of the body ought to be found. The temperature should be low when a large amount of sugar is excreted, and nearer the normal when only a small quantity is passed. Investigations have been made with this object, and no relationship between the two has been observed.[3]

In uraemia the bodily temperature is usually slightly below normal, while in uraemic coma it is most commonly normal. There is often, however, in uraemic coma a rise in temperature, which begins a few hours before the death of the patient, and may reach as high as 102° or 103°. The highest temperature recorded in my series was 103 8°, which occurred about twelve hours before the fatal termination of the disease, and which fell to 103° at the time of death. The rise in temperature may be directly due to the injurious effect on the thermolytic centre of poisonous substances circulating in the blood, or if, as Traube thinks, cerebral oedema and anaemia be the causes of uraemic coma by the action of these two processes upon the regulating centre. Another view is that the rise in temperature may be due to an augmented metabolism incidental to the convulsive movements which occur so often during this form of coma. On the other hand, in many diseases just before the death of the patient there is often a sudden increase in the bodily temperature, which may even rise a degree or two (Fahrenheit) after death has taken place. The cause of this has not been ascertained, and it may be that in uraemic coma the pyrexia is of similar origin.

The temperature charts of patients suffering from intracerebral haemorrhage are very similar to each other, and are very characteristic of the condition. Coma usually makes its appearance immediately after the onset of the haemorrhage, and with it the temperature suddenly falls below normal. This may be called the temperature of collapse. The next stage is that of reaction, in which the temperature rises either slowly or rapidly, often many degrees above normal. When the first stage is long, the prognosis is very much better than if the temperature rose suddenly and soon after the commencement of unconsciousness. If the patient is going to die in the first stage, a fatal termination occurs almost immediately, or within a very few hours after the onset of the haemorrhage. This stage rarely lasts longer than twelve hours, and is usually only four to six hours in duration. In one of the cases under my observation, however, the temperature remained below 97° for twenty-four hours, while in another it was below normal for thirty-six hours, and then gradually rose to 107° in the following three days. At this point the patient died, never having regained consciousness during the whole of the period. The temperature of the stage of collapse is always rather difficult to obtain, as this period is often passed before the patient is seen. A temperature below 97° seems to be usual, and the lowest which I have found was 95.4°. Bastian[4] records a rectal temperature as low as 94 4° in a case in which there was rupture of a large aneurysm in the right corpus striatum with intra-ventricular haemorrhage. As a rule the temperature rises above normal within twelve hours, and the earlier this rise commences the more serious is the prognosis. If the rise in temperature be only a gradual one, that is, reaching its fastigium in about twenty-four hours, and if the temperature be not more than two or three degrees above normal, then the prognosis is more favourable. But if the rise be more sudden and the pyrexia be greater than this then a fatal termination is to be expected.

In cases in which the haemorrhage is very large and also when it occurs in the pons Varolii, the temperature generally rises suddenly and to an extreme height. Although in a pontine haemorrhage there is often hyperpyrexia, a very high temperature is also found associated with large haemorrhages in other parts of the brain. In my series there are two cases of pontine haemorrhage. In one the temperature rose to 105° in twelve hours, when the patient died; in the other, a temperature of only 98 4° was recorded, In the second case, the patient died in the stage of collapse about two hours after the onset of the symptoms. On the other hand, much higher degrees of pyrexia were found in some of my cases in which the haemorrhage occurred in other parts of the brain. In one case of rupture of an aneurysm of the right anterior cerebral artery the temperature rose to 107.8°; in a case of haemorrhage into the corpus striatum to 107°; and in another in which the haemorrhage ruptured into the lateral ventricle to 106 8°. In about a third of the cases of cerebral haemorrhage a temperature of 105° or above was observed just before the death of the patient. The rapidity of the rise in temperature may sometimes be very great. In one case of haemorrhage into the corpus striatum which extended into the lateral ventricle the temperature was 97 6° on admission to the hospital, and rose to 106.8° at the time of death, which occurred within nine hours after the onset of the symptoms.

In comatose patients suffering from fracture of the skull or from concussion the temperature curve is very similar to that found in the last class of cases and therefore requires no special description. In the stage of collapse the temperature was even lower, three cases of 95° being recorded.

In patients in a comatose condition from alcoholic poisoning, the temperature is nearly always found to be considerably below normal. In one case it was 95° on admission to the hospital. The patient remained in an unconsciousness condition for about twelve hours, the temperature rising to 97 6° at the end of that time. According to Dr. H. D Rolleston,[5] in some rare instances convulsions may occur and the temperature may rise until death closes the scene, apparently from hyperpyrexia.

The variations in the bodily temperature in cases of opium poisoning, and in patients in the comatose state following an epileptic seizure, I have been unable to ascertain, as my observationson individuals suffering from these two conditions are very few.

From the foregoing considerations it is seen that an observation of the bodily temperature in a comatose state is of considerable value in the prognosis, and is, except under certain circumstances, of comparatively little use in helping to diagnose the cause of the condition when the patient is first seen. In some cases, however, in which the cause of the coma is not evident, an examination of the temperature chart will sometimes clearly indicate its nature, as between uraemic coma and that due to cerebral haemorrhage. If the temperature be above normal soon after the onset of the coma, even only two or three degrees Fahrenheit, then the prognosis is nearly always unfavourable. A very low temperature of 96° or 95° at this period indicates usually a fatal termination, as it is generally dependent upon a large cerebral haemorrhage, or some other severe injury to the brain.

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THE STAGE OF INVASION IN MEASLES.

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In describing the course of any one of the infectious fevers we are accustomed to divide it into various stages (for example, incubation, invasion, fastigium, and defervescence), and with these terms a definite pathological process is associated in our minds.

According to our present knowledge the infectious disease can only be produced by the entrance into the system of the specific morbific element, and since in many instances the individual attacked has only undergone a very limited exposure, or the infective agent must have been enormously diluted by the conveying medium, we are bound to assume that only a relatively small number of micro-organisms usually effect an entrance. On the other hand, as instanced by those diseases in which the micro-organism has been isolated, we know that as the disease advances a very great multiplication of these organisms takes place within the body, this multiplication being accompanied by the production of various poisonous products on the part of the bacteria, and by the consequent and coincident response from the various cells of the body. It is this response which gives rise

to the different pathological changes, which are clinically recognized as the signs and symptoms of the disease.

Evidently, then, the length of time which will elapse before a certain sign is manifested, or during which it will remain (even its very occurrence or the severity of the change) must depend on many factors which may be most simply grouped and expressed as the relative "virulence" of the morbific element, and the "vitality" of the cells composing the individual attacked. On this account, then, we might expect that the periods above mentioned would show considerable differences in time of appearance and duration, and from our own experience and that of others we learn that such is the case; for, as T. v. Jürgensen[1] in his excellent article forcibly remarks, "we know that living beings taking a contagion from other living beings are not governed—at least so far as we can ascertain—by inflexible rules, such as can be applied to the force and frequency of the blows of a steam hammer." Under these circumstances we can hardly refrain from asking ourselves whether there is any advantage in dividing a disease into definite stages, but a little experience soon assures us that the course of the majority of cases is remarkably constant, and the duration, etc., of the various stages of each disease becomes of the greatest assistance in making a differential diagnosis. As the writer I have quoted, however, says, we must "bear in mind that they represent the course of an average case, the accepted length of the stages marking the progressive development of an average infection." Deviations from the standard will often be noted, but this does not necessarily imply that they are deviations from the "normal," since what we call "normal" only represents the average case.

It is, of course, distinctly unfortunate that in natural phenomena we are so frequently unable to fix a rule which will apply to all circumstances. We learn at first that scarlet fever say commences suddenly, the distinctive exanthem appearing in the subsequent 24 hours, and are then puzzled by occasionally meeting with a case in which its appearance is delayed two, three, or four days. Similarly with measles, the teaching becomes engrafted in our minds that the onset occurs gradually, catarrhal symptoms being followed on the fourth day by a distinctive rash, which is first seen about the face. Subsequently we meet with cases in which the prodromata preceding the exanthem are longer or shorter than this period, or the rash makes its appearance in an unusual situation, and many of us immediately begin to question the correctness of our diagnosis. It is with the view of emphasizing these irregularities, as regards the early stages of measles, that I wish to refer to the following cases.

According to v. Jürgensen prodromata may be practically absent in an attack of measles, or constitutional symptoms may arise soon after infection occurs. As an example of the former occurrence I may mention a case reported by Dr. Julius Grober.[2] The patient was a waiter, 16 years of age, who, with the exception of vaccination and "rheumatism of the joints," had been previously quite well and strong until the day before his admission to the hospital. He then complained of headache, and the same evening noticed small red spots on the left side of the forehead. Subsequently the rash spread over the nose, cheeks, breast, and back, and the following day was well marked, so that from its appearance, the associated temperature, and the catarrhal symptoms there could be no doubt that the illness was an attack of measles.

From a study of the literature, Dr. Grober states that he has only been able to find one similar case (recorded by Embden) in which the stage of invasion was practically absent. More common, however, are the instances in which the prodromal stage is unusually prolonged, the two following cases serving as examples:

Case I.—A boy, H. B., aged 9, was reported on the night of April 24th to have had a "croupy cough." The next day he seemed quite well, and there was no pyrexia. On April 26th, however, there was a thin serous discharge from the nares, the first alteration in the temperature (99.4° F.) occurring on the evening of the 27th. On each subsequent day the pyrexia became more marked, whilst on April 28th there was a laryngeal cough with slight retraction. On May 1st conjunctivitis was added to the symptoms. The rash did not appear till May 2nd, and consisted of small round spots not bigger than the head of a pin, and generally discrete, though larger in some places where several had become confluent. The rash became steadily more intense, the eyelids were oedematous, and the boy suffered from a rather severe attack of measles. On May 4th the rash was fading, the individual spots being still generally of small size, whilst in many instances small haemorrhages had appeared in them. Bronchitic signs were well marked, and the temperature finally settled on May 14th.

Case II.—A youth, G. W., aged 15, was attacked with measles about the same time as the foregoing. In this case the first indication of onset was a rise in temperature (100.4° F.) on the evening of April 24th. On April 25th there was congestion of the throat, with small spots of exudation on the tonsils, and slight rhinitis. For the next eight days the morning temperature was always above 100° F., whilst the evening temperature was one, two, or more degrees higher. On April 26th there was coryza and conjunctivitis, on April 27th herpes of the lips, and on April 29th the rash was first detected, consisting of some faint, blotchy erythemata on the face, and a few scattered macules on the body. The exanthem steadily became more marked though the individual macules remained of small size. On May 2nd, as in the previous case, haemorrhages were noticed in the spots on the back. The attack was again a severe one, the pyrexia subsiding by lysis, and reaching the normal on May 10th.

In both of these cases, then, the exanthem appeared on the sixth day from the onset of pyrexia, whilst in Case I the first indication of illness—that is, "croupy cough"—occurred on the ninth day preceding the eruption. It is thus evident that the stage of invasion in measles may be of very variable duration, and the question arises whether this variability takes place independently of or at the expense of the stage of incubation.

From a careful record of the epidemic in the Faroe Islands Panum[3] came to the conclusion that the "exanthem appears on the fourteenth day after the reception of the contagium." Like the cases which have been mentioned, he found that some patients suffered from coughs, pains in the eyes, or slight feverishness for six to eight days before the appearance of the exanthem, and that in a few mild cases the prodromal stage either was absent completely or lasted only one to two days. According to this rule, then, though either of the two periods taken separately may vary quite considerably, yet it is always at the expense of each other, their sum being practically a constant number.

Theoretically, one might expect that the absence or diminution of the prodromal stage would, as stated by Panum, occur in the mild cases; and, conversely, one would expect to meet with early symptoms of disease (that is, a prolonged prodromal stage) in severer cases, the individuals being either predisposed, or the number of micro-organisms introduced at the time of infection being unusually virulent.

Unfortunately I am unable to specify the exact period of exposure in the two cases recorded, yet it seems to me that they tend to support the view I have mentioned, for, though both patients were strong and healthy, one finds that the attack in each case was very similar (thus, prolonged pyrexia, severe general symptoms, small size of individual macules late haemorrhage), and one can hardly help the conclusion that two such unusual attacks from the same source of infection probably owe their "abnormalities" to the virulent properties of the infecting organism.

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SOME REMARKS ON A CASE OF CHLOROMA*.

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I should perhaps offer some apology for spending, I will not say wasting, your time over a case so rare as one of chloroma. In the provinces our lives are severely practical, and we cannot as a rule afford ourselves the luxury of investigating the by-ways and hidden places of medicine.

A practitioner may be pardoned for knowing little or nothing about a case of an occurence so infrequent that he is almost sure never to meet one in the course of his lifetime.

But there are cases of such rarity, or supposed to be of such rarity, that they ought not to go unrecorded, and chloroma is one of them. Since the disease was first described by Allan Burns in 1823,[5] I believe only 28 cases have been published, and hardly any of these have been diagnosed during life. The case that I am about to describe to you was unfortunately no exception to this rule. Though the patient did not live long enough to develop some of the most characteristic symptoms of this obscure disorder, yet I think I might have succeeded in arriving at a correct diagnosis if I had known more of the literature concerning former cases.

I have ventured, therefore, to bring this case before you today with some general remarks on the disease of which it was

* Read before the South Midland Branch of the British Medical Association.

an example in the hope that, should another case of the same nature occur in our district, it may not arrive at the *post-mortem* table undiagnosed.

The patient was a little boy aged 4, who was sent up to me at the Northampton General Hospital by Dr. Grindon of Olney.

Family History.—His family history presented nothing of importance. He was one of seven children, of whom one died in infancy and his mother had had one miscarriage said to be from fright.

History.—As regards his previous history he had been quite healthy until he had an attack of mumps six months ago. From this he was considered to have completely recovered. According to his mother he received two months ago a blow on one temple, side unknown, but the child on being questioned about this pointed to the right iliac region. The child was apparently quite well until a fortnight before attending the hospital, when he woke one morning with paralysis of the left side of the face. During the fortnight he complained a good deal of pain in the head and in both mastoid regions, and was sent up to me by Dr. Grindon under the impression that he probably had some form of intracranial disease.

Condition.—On examination, he was a well-nourished child with a good colour. He presented complete paralysis of the left side of the face, including the forehead muscles. There was no paralysis of the ocular muscles or squint, and no signs of optic neuritis. There was no history of discharge from the ears, but the tympanic membranes could not be seen owing to wax in the external auditory canals. The only other abnormality noticed besides the left facial paralysis was a slight puffy swelling over the right temporal bone just above and outside the right orbital cavity.

Diagnosis.—Owing to the absence of optic neuritis and other symptoms of intracranial tumour, together with the fact that the muscles of the forehead were paralysed as well as those of the face, it seemed to me more probable that the paralysis was of peripheral origin, and possibly of a rheumatic nature, so the child was given 2 gr. of potassium iodide three times a day and sent home.

After-history.—In eleven days he returned evidently worse, with a history of having been sick several times in the interval, of having been crying with pain in the right ear, and of having had several rises of temperature. His temperature was now 99·2°, and he looked dull and ill. The ears were syringed and examined. There was some inflammation of the right external auditory meatus, but the membranes on both sides appeared healthy. There was tenderness on percussing over the right mastoid process. The fundi of the eyes were again examined, and the left disc appeared a little blurred, but there were no definite signs of optic neuritis. The facial paralysis remained as before, and involved as before the left side of the face and forehead. The swelling in the right temporal region appeared to have somewhat increased in size, and a small, exactly symmetrical swelling had now made its appearance in the left temporal region. There was a question whether the left eye was a little more prominent than the right, but we came to the conclusion that this very slight appearance of extra prominence was due to inability to close the left eyelid. No abnormal physical signs were observed in the chest or abdomen. The urine was acid, specific gravity 1020, and contained no albumen or sugar.

History in Hospital.—The child was admitted to the hospital on that day, July 15th, and the after-history of his case until his death on July 27th may be briefly stated. The right mastoid region was leeched and hot fomentations were applied, which in a great measure relieved his pain, but he became increasingly drowsy and weak. Potassium iodide and perchloride of mercury were also given on the off-chance that there might be some syphilitic element in the case. Very few developments took place before death. The temporal swellings somewhat increased, and on the afternoon of the 26th some petechial spots were noticed in the skin of the abdomen and flank, and a small subcutaneous haemorrhage close to the inner canthus of the right eye. On July 27th, at 6.30 a.m., the patient began to bleed profusely from the nose and also vomited blood, which had probably been swallowed. He died at 9 a.m. His temperature during his time in the hospital was nearly always at 99° or below, but on the 24th of July it rose to 102°, and before death reached 102.6° I should mention that my surgical colleague, Dr. Milligan, saw the case with me and we came to the conclusion that it was probably one of sarcoma with metastasis, but we both agreed that we had never seen a case like it.

Necropsy.—The body is that of a well-nourished child. There are a few petechial spots scattered about the thorax and abdomen and there is a small subcutaneous haemorrhage just above the inner canthus of the right eye. In the temporal regions just above and outside either orbital cavity are two symmetrical swellings. They are rather hard to the touch. There are no signs of inflammation over them and the skin is not involved. Thorax, larynx, trachea, bronchi, lungs and pleurae healthy. No enlargement of bronchial glands. Thymus: Not seen. Heart: Weight 4 oz., healthy. Some dotted haemorrhage in the pericardium. Abdomen: Liver, weight 24 oz., somewhat congested. Scattered about the liver are small masses of whitish green new growth; in some places the growth is conglomerated into roundish masses, in others it grows in a ramifying manner along the portal spaces. There is no appearance of a capsule round the growths. Kidneys: Weight, 4½ ozs. Scattered about both cortices are numerous very small masses of whitish-green new growth. On the right kidney there are also some small haemorrhages into the cortex under the capsule. Spleen: Weight, 3 oz. congested, but otherwise healthy. Stomach and intestines: Healthy. Just above the pancreas at the back of the small omentum is a mass of new growth, of a greyish green colour, very much the colour of turtle fat. The mesenteric glands are enlarged and there are haemorrhages into them, but they do not present the green appearance. Head: On removing the skin from the calvarium the swellings external to the orbits are found to be under the temporal muscles. On incising the swellings they are found to be produced by the same green new growth, which here apparently starts from the pericranium, and is pushing forward and infiltrating the deeper surface of the temporal muscles. There was no appearance of the growth invading or eroding the underlying bone. The orbital cavities contained small masses of the green growth above the eyes in the orbital fat. These masses had not reached such a size that they projected under the conjunctiva or caused proptosis. On removing the calvarium the dura mater presented a striking appearance. The green growth was found to be scattered diffusely over the outer surface of the dura mater all along and for some distance on both sides of the superior longitudinal sinus. The masses of growth were in no cases dense. They did not invade the underlying brain, but they pitted and slightly eroded the overlying calvarium. On removing the brain there was found to be very much larger masses of growth of the same character in the dura mater in the basal fossae. These were scattered numerously here and there, and were especially noticeable about the petrous portion of the right temporal bone. They did not appear to invade the bone or the brain anywhere. There was a large excess of cerebro-spinal fluid in the leptomeninges. The brain itself was healthy, and contained no masses of growth, and the nerves coming off from the brain appeared quite normal. As a special request was made that there should be no disfigurement, none of the bones were examined except the petrous portions of the temporal bones, and the ribs where they were cut across to open the thorax. There appeared to be no green infiltration in these situations.

Microscopical Examination.—Portions of the growth from the dura mater, the temporal muscle, the liver, kidney, and the mass above the pancreas were hardened in alcohol and embedded in paraffin, and the sections of them are before you to-day. The growth is an infiltrating one. The neighbouring tissues show no signs of counter irritation. There is no attempt at the formation of a fibrous capsule. The infiltrating character is specially well shown in the sections of the temporal muscle and kidneys. In these the remains of muscle fibres, glomeruli, and tubules may be seen scattered about in the midst of the new cell formation. In the liver this is not so noticeable. The liver cells end sharply, and the new formation begins sharply, but there is no attempt at the laying down of a limiting membrane between the two. The new formation itself consists almost entirely of rather small round or oval cells; on the whole, most of them are, I think, smaller than a lymphocyte. In some cases two nuclei are present in a cell. There are no giant cells to be seen. There is very little stroma noticeable anywhere. In some places the cells seem to be embedded in an amorphous material of a clear, transparent character; in others a very delicate stroma may be seen branching about amongst the cells. This is best marked in the sections from the green mass above the pancreas. The appearance is sometimes almost suggestive of a commencing myxosarcoma. None of the intracellular hyaline granules are seen which Melville Dunlop speaks of.

The *post-mortem* appearances show that the case was a typical example of chloroma, dying suddenly at a somewhat early stage and before many of the classical signs had become visible. This was very regrettable, as the absence of a diagnosis caused a serious omission in the examination of the case which cannot now be rectified. No examination was made of the blood.

Now it has been shown by many observers that very marked changes occur in the blood in chloroma, changes which are apparently closely analogous to or identical with those which occur in lymphatic leukaemia.

There is a great increase of lymphocytes, and at the same time a great diminution in the number of the red corpuscles. In Rosenblath and Risel's second case, for example, the blood count showed 3,700 000 red corpuscles and 40 000 white corpuscles per c.mm.[23 24] In Melville Dunlop's case the blood count showed haemoglobin 32 per cent., red corpuscles 1,800,000, white corpuscles 245,000 per c.mm.[10]

Melville Dunlop's case was in other respects so like the present one under discussion that it may be of interest to give a brief epitome of it.

His patient was a boy aged 5. For fully a year patches of ecchymosis had been noticed from time to time under the skin, and for five months extreme pallor. Two months before admission he became dull and languid, his eyes became prominent, and he gradually got deaf. On admission his blood condition was as above recorded. There were numerous petechial haemorrhages in the skin. There was some prominence of the eyes, with anaemia and oedema of the conjunctivae. There were a few slightly enlarged glands below the lower jaw on both sides in the posterior triangle of the neck and in both groins. The axillary glands were not enlarged. The thyroid and thymus were normal. The respiratory and haemic systems were normal with the exception of haemic *bruits* in the vessels on both sides of the neck. The digestive system was normal. After a short time purplish swellings developed on the hard palate and on the lower jaw external to the teeth on the right side. Later, symmetrical rounded swellings appeared in the temporal region. A few days later the eyelids began to be infiltrated, and then greenish yellow tumours of jelly-like consistency appeared at the inner canthi, and gradually advanced over the canthi. The retinal veins were distended and tortuous, and the appearance of the discs suggestive of commencing optic neuritis.

Later examination of the blood showed haemoglobin 12 per cent., leucocytes 107,000, and red corpuscles 815,000 per c.mm. At the necropsy the ribs, manubrium sterni, and numerous other bones showed green material in the medulla. The periosteum of the vertebrae, from the neck to the pelvis, was infiltrated with the same green material, as was also the dura mater, the pericranium beneath the temporal muscle, the orbital cavities, the kidneys, the pancreas, and the glands just above the pancreas, the soft palate, tonsil, pharynx, mouth, and gums. The brain and spinal cord were healthy. Microscopically, the tumours consisted of large, round or oval-shaped cells, slightly larger than a white blood corpuscle, and containing often more than one nucleus, and occasionally a nucleolus. These cells were either embedded in an intercellular amorphous material of a very clear and transparent character or in a delicate network. At other times the tumour was interspersed with coarse bundles of connective tissue. In the midst of this granules with highly refractile properties were found lying in and between the cells.

I think it will be seen from this account that, with the exception of the involvement of the liver, this case very closely resembled my own, and would probably have still more closely resembled it had the life of my case been sufficiently prolonged.

A summary of the characteristics of the disease chloroma has been given by Hüber,[15] by Dock,* and by Byrom Bramwell.[6] Hüber based his remarks on seven cases. His oldest patient was 24, and he found that males were more often affected than females.

There were usually general symptoms such as dullness, apathy, pallor, and palpitation of the heart. There was often exophthalmos with violent pains and frequently deafness. There was frequently epistaxis and difficulty of breathing from tumours in the nasal cavity. The brain and nerves were not often affected. Headache and giddiness, apathy and somnolence, were common. Purpura and haemorrhages were frequent, and the blood condition above described was characteristic. Körner describes tinnitus and deafness in ten cases,[18] and Behring has seen apoplectiform seizures.[4] In Waldstein's case the urine was yellowish green.[27] Dock, who published his paper in 1893, based his analysis on 17 cases. His results in the main agree with Huber's. The average age in 15 cases was 15.26 years. In Waldstein's case the age was 44. The average duration of the illness in 12 cases was 5 months. The early symptoms were pallor in 6 cases, emaciation 3, nose bleed 3, scorbutus 1, petechiae 1, loss of energy 2, fever 1, frequent pulse 3, headache 3, tinnitus aurium 2, deafness 7, double vision 1, loss of vision 2, exophthalmos 6, facial paralysis 2, feeling of oppression 1, prominence of temples, tumour of mammary region, feeling of constriction, toothache, 1 each.

The symptoms occurring later on were thirst, fatigue, strabismus, double vision (in addition to those mentioned above), deafness, otorrhea, pain in epigastrium, dyspnoea, abscesses, anaemia, oedema, haemorrhages from the lungs, intestines, in the skin and from the nose; obstruction of the nose, fever, frequent pulse, nephritis, irritability, coma, delirium, convulsions, wasting, constipation, vomiting, involuntary stools, diarrhoea, anorexia, pain in the region of the liver, craving for meat (King and Dock), disgust for meat (Aran), enlargement of spleen (2, probably 4 cases), swelling of thyroid. Death occurred from profound exhaustion, inability to take food, and often with some of the nervous symptoms mentioned above.

It will be seen from Dock's account that he has put down all the symptoms that occurred in all the cases. Many of them are of course in no sense characteristic of the disease and are, indeed, often mutually contradictory. Byrom Bramwell's summary, which is more recent, is perhaps more helpful in enabling us to attain a clear idea of the characteristics of the disease. He finds that in typical cases the characteristic features are as follows:

1. The presence of lymphoid deposits in the orbits, temporal fossae, and periosteum of the bones of the skull, and the symptoms and signs arising therefrom.

2. The green colour of the lesions.

3. A profound blood change, of which the characteristic feature seems to be an enormous excess of lymphocytes.

4. The bone marrow, spleen, lymphatic glands, and organs throughout the body are affected (infiltrated with lymphoid deposits) as in lymphatic leukaemia.

Finally, may I be allowed a last word about the nature of the disease? Virchow regarded it as a kind of sarcoma. Byrom Bramwell seems to regard it as possibly identical with lymphatic leukaemia: I suppose a lymphatic leukaemia with local deposits. Dock does not seem to regard it as a sarcoma because of the absence of polynuclear giant cells.

On the other hand, the erosion of the bones which occurs in some cases, and which was present in the calvarium of my case, is certainly suggestive of sarcoma.

May it not be possible that both views are right? That lymphatic leukaemia is, as it were, a fluid sarcoma of the haemopoietic system, and that chloroma is only another manifestation of the same disease characterized by solid deposits.

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ON THE RELATION OF THE ARGYLL-ROBERTSON PHENOMENON TO SYPHILIS.*

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THE object of the present paper is to offer some observations on the relation of the Argyll-Robertson phenomenon to a past syphilitic infection. It is hardly necessary to allude to the importance of this sign as a frequent and often early symptom of certain degenerative diseases of the central nervous system.

With regard to the general incidence of the symptom, it is now usually stated that it occurs in tabes dorsalis, general paralysis, and acquired or congenital syphilis, and that it is only exceptionally found in other diseases of the nervous system. Thus Dr. Mott[1] says that "practically speaking reflex rigidity of the pupils to light and pain exists only in tabes, general paralysis, and acquired or congenital syphilis;" he adds that very rarely cases of focal cerebral lesions, especially of the corpora quadrigemina, may show Argyll-Robertson pupils, and that "some authors point out that in alcoholism and other diseases reflex rigidity of the pupil may exist, but these are cases complicated by syphilis."

Dr. James Taylor[2] writes to the same effect, and says that "its frequent association with diseased conditions of the nervous system, usually regarded as syphilitic or parasyphilitic, and its occurrence as an isolated phenomenon in patients with a syphilitic history makes it possible that this disease has a close causal connexion with it."

Sir William Gowers,[3] after remarking that it is chiefly seen in tabes and general paralysis, and occasionally in other degenerative diseases of less definite type, states that when he had found it existing alone, in most of the cases there had been constitutional syphilis many years before.

Drs. R. Cestan and Dupuy-Dutemps,[4] in a paper on the Argyll-Robertson phenomenon, based on the examination of a large number of cases, state that, apart from tabes and general paralysis, it is altogether exceptional to find this sign either occurring as an isolated symptom or associated with other mental or organic nerve disease, and they conclude that its presence points to congenital or acquired syphilis, with a possible exception for some cases of syringomyelia and of the interstitial hypertrophic neuritis of Déjerine.

We should expect, therefore, to find, according to authors, reflex pupil rigidity most frequently, apart from tabes and general paralysis, in cases of former syphilitic infection.

Tabes and general paralysis are now very generally regarded as, in most cases, the remote consequence of a past attack of syphilis, as parasyphilitic affections. In a small number of cases, however, no history or evidence of syphilis

* Read at a meeting of Bath and Bristol Branch.

can be obtained, and although some of these may still be held to be syphilitic, the infection being purposely concealed or having escaped notice from taking place in an unusual way, yet in some of them it is possible that there is some other precursor, the nature of which is at present unknown. Nor is the exact process set up by syphilis known, but it may be conceived with great probability as a profound disturbance of nutrition slowly established as a consequence of syphilis, or as a kind of chronic blood poisoning from the same cause, leading to degeneration of certain parts of the central nervous system.

It is possible, however, that there is some other factor, at present unknown, which, working in conjunction with the syphilitic poison, leads to this chronic degeneration. Whatever the exact origin of the process, it is certain that it is of a different kind to the ordinary visceral (gummatous) lesions of syphilis, and that tabes and general paralysis stand on a totally different footing from the latter. If, therefore, the Argyll-Robertson phenomenon is part and parcel of the degenerative process of tabes or general paralysis, one would not regard it as likely that it should occur as a result of syphilis alone, but only when there is added to syphilis that special additional change which results from the infection, and is a further stage in its action in those patients who are to become victims of these diseases, and which induces the degeneration proper to them; this further stage itself being either the remote but direct consequence of syphilis, or, on the other hand, the result of the combination of syphilis with some other unknown factor.

It is of course a well known fact that reflex pupil rigidity is sometimes found in patients without other signs of tabes or general paralysis being present, and with a history of past syphilitic infection, and the question arises as to the meaning of such cases. Two views are open with regard to them, on the one hand the Argyll-Robertson phenomenon may occur simply after syphilitic infection without further development of it, on the other its presence is evidence that the degenerative process underlying general paralysis or tabes is in existence. If the former is correct the presence of reflex pupil rigidity as an isolated symptom is of no particular moment, except that it may be of value as evidence of past syphilis; if the latter it must always be a serious symptom, for although in a few persons no further symptoms of these diseases may be developed, in which case we must conclude that for some reason the process has been checked, there is no guarantee in any particular patient that other symptoms may not occur at some future date, and in the majority it is an indication that degeneration is in active progress. The great frequency of reflex pupil rigidity in tabes and general paralysis, taking Mott's statistics[1] as 73.5 per cent in the former and 70 per cent. in the latter, or including unilateral cases as 76.5 per cent. and 77 per cent. respectively, points strongly to the latter view as the correct one.

It seemed to me that if the Argyll-Robertson sign occurs in persons affected with syphilis but without any further (degenerative) change it should be most often found in cases in which there are gross syphilitic lesions of the brain or spinal cord. If, on the other hand, it should be absent or only exceptionally present in such cases it would be a strong argument that syphilis alone, even when the brunt of its incidence falls upon the central nervous system, is not sufficient to produce it, but that there must be in addition that further degenerative change which we have supposed to underlie tabes and general paralysis. I have, therefore, analysed, with a view of elucidating this point, the notes of cases of gross syphilitic disease of the nervous system; in all the cases there was an undoubted history of infection, with, in many the additional evidence of scars, skin lesions, ulcers, etc., in a few the diagnosis was confirmed *post mortem*, and in very many the effect of treatment must be considered as a further confirmation.

The cases were not selected except from the point of view of presenting certain evidence of syphilis; those in which there previously had been or was at the time of examination affection of the oculo-motor nerves were excluded as likely to cause confusion. My idea at starting, influenced by my reading, was that the Argyll-Robertson phenomenon would be found not infrequently in such cases, the result was therefore somewhat unexpected. The cases are 37 in number—31 males and 6 females; the average age was 36½ years, the average date of onset of cerebral or spinal symptoms was 13 years after infection. Twenty-eight were cases of cerebral syphilis; several showed slight optic neuritis; in 15 hemiplegia was the chief symptom; in 8 there were attacks of Jacksonian epilepsy, in most unilateral, affecting one or both limbs on one side, and followed by paralysis of longer or shorter duration; in 5 other cases no definite paralysis was present, but characteristic headache, drowsiness, mental hebetude, epileptiform fits, etc. In one case the lesion was in the medulla oblongata, and in 5 the spinal cord was affected with meningomyelitis.

Of these cases in 25 the pupils reacted well to light and accommodation; in 4, the reaction to light was feeble or sluggish but present, to accommodation normal; in 2, there was unilateral reflex pupil rigidity, but one of these must be deducted, as there was optic atrophy of old standing in the affected eye; in 4 cases the reaction to light was sluggish in one eye, but in two of these there had been paralysis of the third nerve on the same side, which had cleared up so far as regards oculo-motor paralysis, and in a third case there was some degree of optic atrophy with marked syphilitic changes in the retinal arteries. In all these patients reaction to accommodation was normal. Lastly, in 2 cases, in one of which slight optic neuritis was present, the pupils neither reacted to light or accommodation. So that in not one of these cases was the Argyll-Robertson phenomenon present in its complete form; in 2 it existed on one side, but one of these cases should probably be deducted for the reason given above; if, then, syphilis without further change is a cause of this sign it is somewhat remarkable that there was no typical example of it in the above series of cases of severe cerebro-spinal syphilis.

For purposes of comparison I examined my notes of the last 40 cases of tabes dorsalis that I have seen, and I found that reflex pupil rigidity was noted in 31, or 77 per cent. The number of cases with an undoubted history of syphilis was 26, or 65 per cent., and of these the sign was present in only 23, or 88 per cent. In addition there were 2 cases with the Argyll-Robertson phenomenon, who had had some venereal infection, which could not with absolute certainty be said to be syphilis. Further, reflex pupil rigidity occurred in 6 patients in both eyes, and in 1 unilaterally, who all positively denied syphilis. Such a denial does not obviously absolutely exclude syphilis, as they might have contracted it without being aware of it; but in order not in any way to beg the question I have taken these cases as non-syphilitic.

This number of cases of tabes was taken in order for better comparison with the cases of cerebro-spinal syphilis, and of course in such a small number I do not wish in any way to lay stress on the absolute percentages, but apart altogether from this the contrast as regards the occurrence of the Argyll-Robertson phenomenon between the two sets of cases is certainly very striking, and if the sign may safely be taken as one of degeneration within the central nervous system points to an essential difference between them.

If it is permissible to draw conclusions from this number of cases, the following would seem to be legitimate: That a previous syphilitic affection is not sufficient without some further change to lead to the presence of the Argyll-Robertson phenomenon, and in 37 cases of cerebral and spinal syphilis, where the mischief was confined to the ordinary visceral lesions of that disease, that is, gummata, gummatous meningitis, syphilitic endarteritis, the sign was not typically present. That in similar cases where it may be present, and in other cases with a history of past syphilis in which it occurs as an isolated sign of disease, it is evidence of a further degenerative process at work within the nervous system. That this degenerative process is to be regarded in the large majority of cases as a parasyphilitic one, although in a certain proportion proof of this is wanting, and there is possibly some other cause at present obscure. That this degeneration may remain stationary at an early stage without further development for long periods. If these observations are correct, the Argyll-Robertson phenomenon is an even more important sign of disease than it has been previously considered.

I may briefly mention that with regard to other affections of the pupils in these 37 cases of syphilis of the nervous system the pupils were both dilated in 7 cases, both contracted in 2, unequal in 18, and there was well-marked hippus in 1 case, in one eye in which a former third nerve paralysis had been recovered from.

References.

1 Archives of Neurology, vol. ii. p. 29. 2 Allchin's *Manual of Medicine*, vol. iii. p. 388. 3 *Diseases of the Nervous System*, Second edition, vol. ii. p. 184. 4 *Gaz. des Hôp.*, 1901, p. 273.

Bequest.—Miss S. Peckover, of Wisbech St. Peter, has left £1,000 to the North Cambridgeshire Hospital.

ON SUDDEN HEART FAILURE IN TOXAEMIC CONDITIONS,

WITH A SPECIAL REFERENCE TO DIPHTHERIA AND BERI-BERI.

BY ARTHUR STANLEY, M.D., B.S.LOND., D.P.H.,
Health Officer of Shanghai.

HAVING had the unusual experience of being in charge consecutively of a comparatively large number of cases of diphtheria and beri-beri, I feel justified in treating of this important subject of sudden heart failure, as it is in these two diseases *par excellence* that degeneration of the heart muscle is so frequent and terrible a cause of death.

Shortly after making a clinical study of the heart condition in diphtheria while in charge of a diphtheria ward at the North-Western Fever Hospital, London, I came out to China, and was especially struck by finding an almost precisely similar heart condition in the beri-beri cases in the Shanghai Municipal Isolation Hospital. And this heart condition, compared with that caused by certain poisons, such as alcohol and arsenic, and associated with certain diseases, such as influenza, typhoid fever, and plague, appears to show a close relationship among many bacterial and chemical poisons in their action on the heart. Inasmuch as the heart is the most sensitive part of the human machine from the point of view of both prognosis and treatment, the subject is an important one and merits close attention.

In both diphtheria and beri-beri sudden heart failure is the most terrible complication, and one in which, as a rule, no treatment is available in preventing death. So marked a feature is this of beri-beri that the Japanese have given the name of "shiō-shin" (signifying literally "heart stroke") to this mode of fatal termination; and this connexion with diphtheria—a disease which is also associated with peripheral neuritis—is a suggestive leading motive in etiology. In both these diseases the occurrence of vomiting is almost the invariable herald of a rapid fatal termination by heart failure.

Practically speaking, the main signs met with in heart failure occurring in any of these conditions are vomiting, restlessness, lilac-tinted pallor, dyspnoea, increasing weakness of the pulse, and coldness of the extremities. These symptoms occurring together in diphtheria or beri-beri denote, as a rule, a fatal termination. The syncopal attack is marked rather by duration than by intensity; loss of consciousness is rare. Heart failure may occur in diseases accompanied by neuritis before any skeletal muscular paralysis is obvious, and the usual time for death from this cause to take place appears to be about the end of the first week in diphtheria and towards the end of the first month in beri-beri.

Heart failure in diphtheria and beri-beri is always preceded and accompanied by physical signs of heart muscle degeneration. The heart signs are those induced by weakness of the heart muscle, namely, lowered pulse tension, feeble short pulse wave, feeble heart impulse, short first sound and relatively accentuated pulmonary second sound. The second sound is almost always reduplicated. Reduplication of the first sound is not unusual, and the cause of the cantering rhythm is so frequently met with just before death. Some dilatation of the heart is frequent, but not invariable. The cardiac impulse is usually feeble and, when there is dilatation, diffuse. Not rarely the heart's action is bounding and apparently forcible, but the actual circulatory output, as measured by the pulse, remarkably feeble by comparison, there being a marked difference between the violent over-action of the heart and the small feeble pulse.

Some change in the heart rhythm is invariable; changes in the length of the pauses of the heart cycle being frequent and of great importance in prognosis. Most common is a shortening of the long pause, giving rise to spacing of the heart sounds. The relative shortening of the long pause may be of all degrees up to "tic-tac" rhythm, where the short equals the long pause, so that the heart sounds are equidistant. The change in the relative length of the two pauses is almost always accompanied by a change in the character of the sounds, the first sound becoming like the second in quality, losing its deep so-called muscular sound, and making more audible the valvular sound, which resembles the ordinary valvular second sound. In this way the two sounds and the two intervals tend to become alike. This "tic-tac" rhythm, caused by the shortening of the long pause—the recuperative intervals, indicates diminished cardiac recuperative power, and prognosticates danger ahead—danger of heart-failure. But of worse prognosis is that condition, where in addition to the long pause being shortened, the short pause is likewise shortened, so that the second sound follows very closely on the first. This condition is almost always a fatal sign, and occurs with or may be followed by heart failure.

A condition characterized by what may be termed delayed beats or "tumbling rhythm," is a common form of irregularity of the heart's action both in diphtheria and beri-beri. After a series of regular heart beats a pause occurs, followed by a sudden scramble of two or more heart beats, in order, as it were, to make up for lost time. This gives rise to an intermittent pulse, because all the beats do not reach the wrist.

Analysis of 500 Cases of Diphtheria with Regard to Fatal Heart Failure.

Fatal cases	80
Pulse tension lowered	440
Dilatation of the heart	11
Cases dying of heart failure	30
Of these, vomiting was associated in	27
Well-marked dilatation of heart in	3
Cases dying of heart failure before the onset of paralysis	22
Average day of the disease on which death took place in these cases	9·3
Cases dying of heart failure after the onset of paralysis	8
Average day of the disease on which death took place in these cases	28
Average day of the disease on which paralysis was first detected	15·4

Analysis of 341 Cases of Beri-beri.

Fatal cases	72
Cases dying of rapid heart failure	31
Pulse tension lowered	254
Dilatation of the heart	98
Second sound reduplicated	245
First sound reduplicated	35
Long pause shortened	48
Short pause shortened	42
Cardiac murmur	84

DILATATION OF THE HEART.

Signs of dilatation of the heart were present in 11 out of 500 cases of diphtheria, and in 98 out of 341 cases of beri-beri. The comparative infrequency of dilatation in diphtheria may be due to the low arterial pressure which obtains; though the heart wall is degenerate and yielding, the blood pressure is insufficient to cause dilatation. In beri-beri, however, the process is a less acute one than in diphtheria, and though the toxin produces similar changes in the heart muscle, it acts through greater periods of time, causing more cardiac wear and tear.

The special effect of both beri-beri and diphtheria on the heart is to produce a marked diminution of force leading to defective arterial pressure, hence the low tension pulse and the frequency of syncopal attacks.

The degree of dilatation can be best measured by percussion of the deep cardiac dullness; the superficial cardiac dullness merely shows how much of the surface of the heart remains uncovered by lung and is no index of its actual size. Dilatation of the right auricle may be easily detected by percussion of the fourth right interspace and of the right ventricle by palpation of the epigastric region. It is, however, the dilatation of the left ventricle which causes the urgent danger of death from syncope, and neglect of this indication may cost the patient's life.

CHANGES IN THE HEART RHYTHM.

Changes in the heart-rhythm may be summarized as follows:—

1. Shortening of the long pause giving rise to spacing of the heart sounds or "tic-tac" rhythm.
2. Shortening of the short pause, the second sound following the first rapidly—a sign of grave import.
3. Lengthening of the long pause, causing infrequent heart beat and slow pulse.
4. Laboured over-action or excited action of the heart—a condition of irritable weakness where there is much show of force, but little circulatory result.
5. Delayed "heart-beat" occurring at rhythmic intervals, and giving rise to intermittent pulse: "Tumbling action" of the heart. "Hesitating heart" being a slight form of this.
6. Irregularities in force and frequency apart from above.
7. Reduplication of heart sounds, especially of the second sound. "Cantering rhythm," usually from reduplicated first sound—a fatal sign.
8. Murmurs.

The frequency of the heart's action in both beri-beri and

diphtheria is almost always above normal, and, as a rule, the lower the arterial tension the greater the frequency; but in beri-beri, as is found in some cases of diphtheria in adults, the pulse may occasionally be very slow.

In both diphtheria and beri-beri the second sound is almost always reduplicated. "Cantering rhythm" may occur, caused either by reduplication of the first or second sound; but more frequently by an apparent doubling of the first sound and nearly always accompanied by dilatation, and leads to a fatal termination.

The mechanism of the common heart changes is generally easily explained by weakness of the heart muscle. "Spaced rhythm" is caused by the shortening of the long pause or recuperative interval and leads to a vicious circle being established. The heart is weak, and is rendered still more so by diminished recuperative rest. The condition, therefore, leads to the still worse condition where the short pause is shortened, the second sound following the first sound more quickly than normal, due probably to the heart being brought up short by the resistance in front of it in the arterial system. The condition thus tends to go from bad to worse, and, as in the heart, it is "all or nothing." A stage is reached when the circulation can no longer be maintained, and the heart ceases function suddenly—sudden heart-failure, the "shiō-shin" of the Japanese (literally "heart-stroke").

Murmurs are frequent, and are possibly due to some yielding of the mitral or tricupid curtains, yet most usually come under the category of so-called "haemic murmurs."

Conclusions from Clinical Observations.

Heart failure may occur prior to any manifestation of disturbed innervation. As in diphtheria, so in beri-beri, heart failure often supervenes before any paralysis has appeared; about the end of the first week in diphtheria, towards the end of the first month in beri-beri. The cardiac muscle is the prime factor in the circulation. The heart, in contradistinction to the skeletal muscles, partakes of the nature of an automatic mechanism, though influenced through the vagus and sympathetic nerves. No extra-cardiac trophic nerve to the heart is as yet known. To attribute heart failure in beri-beri or diphtheria to a neuritis of the vagus is alike unnecessary, inadequate, and unproved.

To a certain extent heart failure and changes in the rhythm occur in other acute specific diseases which do not commonly produce peripheral neuritis, such as typhoid fever, influenza, plague, and acute rheumatism. In these and in arsenic and alcohol poisoning a somewhat similar condition of the heart is found *post mortem*, as in beri-beri and diphtheria, namely, one of parenchymatous degeneration of the heart muscle. To explain the unusual frequency of heart failure in beri-beri and diphtheria it is necessary, therefore, to establish that the degeneration of the heart muscle is more marked in these than in other toxin diseases where the heart degenerations are produced. Necropsy does establish this. That the toxin of diphtheria has a special predilection for heart muscle is also borne out by experiments on animals. Alcohol is another toxin, the product of a micro-organism, which produces peripheral neuritis, and has a specific degeneration action on the heart muscle. Some cases of alcoholic neuritis with dilated heart and oedema are almost indistinguishable from beri-beri, and death may take place from sudden heart failure. In arsenical neuritis also death not infrequently takes place from sudden syncope, and localized oedema has been described.

Muscle is less resistant and therefore more quickly acted upon than nerve, and hence the heart changes occur as a rule at an earlier date than nerve degenerations. The results of muscle degeneration through direct action of the toxin manifest themselves before those of muscle degeneration, the secondary result of trophic nerve change.

The suddenness of the heart failure does not, however, indicate a sudden lesion. In an involuntary muscular organ like the heart it is "all or nothing." Either it acts with sufficient force to maintain the circulation, or it ceases altogether, and often suddenly. The stoppage of the heart, though sudden, may therefore be really due to a gradual accumulating weakness, and this is borne out by clinical experience. That the heart failure, also, is not due to a general loss of vitality, but rather to a specific effect on the heart itself, is evident from the marked distinction between the condition of the heart and the comparatively good general, physical, and mental condition, even a short time before death from heart failure.

In conclusion, the circulatory physical signs point to a weakness in circulatory power, due to primary degeneration of the heart muscle.

Post-Mortem Confirmation of Conclusions from Clinical Observations.

Sidney Martin has shown[2] that the diphtherial albumoses produce an advanced degree of fatty degeneration in the heart muscle, and he was unable to find any degeneration in the vagus nerve. Mott[3] found fatty degeneration of the heart muscle in each of four cases of diphtheria paralysis which he examined, but in only one of them was there degeneration of the peripheral nerves. Poynton[4] has recently published a comparative study of the condition of the heart wall in diphtheria and rheumatism respectively, and has described very marked degeneration of many of the cardiac muscle fibres, and complete destruction of some parts of them. Mott and Halliburton,[5] by making an alcoholic extract of the blood of a beri-beri case, filtering, evaporating to dryness at 40° C., dissolving the residue in normal saline, and injecting into the jugular veins of an anaesthetised cat, showed that the blood contained a substance which, like choline, produced a fall of arterial pressure, slowing of heart's action, and dilatation of heart. The beri beri case was found *post mortem* to show extensive degeneration of the peripheral nerves and fatty degeneration of the muscles, including the heart. The substance in the blood therefore resembling choline may have been rather a product of this fatty degeneration.

Giacomelli[6] has made a series of experiments on animals with the object of ascertaining the changes in the myocardium produced by various toxin diseases and poisons. More or less marked alterations were constantly seen, for the most part confined to the heart muscle itself, sometimes, but rarely, affecting the interstitial connective tissue or the vessels. The changes in the connective tissue were generally associated with the presence of micro-organisms and consisted of diffuse lymphoid infiltration. There was no causal relationship between the changes in the connective tissue and vessels and those in the heart muscle; the two existed independently. The changes in the heart muscle varied from simple atrophy to fatty degeneration and destruction. There were no definite anatomical lesions corresponding to definite specific poisons. The changes were due to the direct action of the bacterial toxin and poison on the muscle fibre itself, and were sufficient in themselves to cause cardiac failure.

The heart of a case of diphtheria dying by cardiac failure is to the naked eye usually flabby, soft, pale, wanting in lustre, and in sections it often has a greyish colour. Punctiform haemorrhages are common in the visceral layer of the pericardium and pleurae.

On teasing out the muscle under the microscope there may be seen small albuminous granules varying in size, which are insoluble in ether but swell up and become almost invisible on being treated with acetic acid, and they may be so abundant as to conceal the striation of the muscle.

The degeneration is usually general and uniformly distributed through the heart. This granular albuminous degeneration may be associated with the formation of fat globules, which are soluble in ether and brought out by osmic acid solution. Sometimes fatty degeneration only is seen and appears to be a later stage of the granular albuminous degeneration. Sometimes granular degeneration is seen which in certain parts has gone on to fatty change. While the granular degeneration is usually general, the fatty degeneration is more often patchy. Fragmentation of the contractile substance of the muscle is frequently seen.

The importance of the clinical evidence of heart degeneration lies in the fact of the warning it gives and the possibility of preventing the onset of heart failure by an unusual degree of care, with the object of saving the labour of the heart as much as possible.

Cardiac failure is undoubtedly the commonest cause of death in beri-beri and diphtheria, and this clinical association of beri-beri with diphtheria, influenza, alcoholism, and arsenic poisoning give an important etiological clue, which, in association with ergotism, pellagra, and lathyrism, it is proposed to closely follow.

Conclusions.

1. Beri-beri and diphtheria have a marked degenerative action on the heart muscle, which frequently causes fatal circulatory failure.

2. In this respect beri-beri and diptheria resemble other toxaemias such as influenza and alcohol and arsenic poisoning

which often cause peripheral neuritis, and also other toxaemic diseases, such as typhoid fever, plague and acute rheumatism, which do not or rarely give rise to peripheral neuritis.

3. Beri-beri and diphtheria are the diseases *par excellence* in which sudden fatal heart failure occurs.

4. The heart-muscle degeneration is not a secondary result of neuritis of the vagus.

5. The heart-muscle degeneration takes place as a rule before skeletal-muscle degeneration and is the result probably of direct action of the toxin and not a secondary result of nerve change.

6. Sudden heart failure does not indicate a sudden lesion, but rather is the result of a gradually-increasing heart weakness from cardiac-muscle degeneration, which may be precipitated by any sudden exertion, but more frequently is the result of the principle of "all or nothing," the transition from "all" to "nothing" being necessarily rapid.

7. The cardiac physical signs in beri-beri closely resemble those found in diphtheria and are of paramount importance in prognosis and treatment.

References.

[1] Metropolitan Asylums Board Report, 1897, p. 180. [2] *Goulstonian Lectures*, 1892. [3] *Croonian Lectures*, 1900. [4] *Lancet*, May 12th, 1900. [5] British Medical Journal, July 29th, 1899. [6] *Il Policlin.*, an. viii, f. 3, 4.

A CASE OF COMPLETE OPHTHALMOPLEGIA OCCURRING DURING WHOOPING-COUGH.

By B. W. GOWRING, M.R.C.S., L.R.C.P.Lond.,
Late Ophthalmic Surgeon, Newport and Monmouthshire Hospital.

The following are brief notes of the case:

J. B., a little boy, aged 4 years, was suffering from an attack of whooping cough. Being of a particularly lively and mischievous disposition, his mother was surprised when he awoke one morning particularly subdued, unsteady in his walk, and only too willing to lie down. I saw him the day these symptoms appeared (March 9th), and noticed that there was ptosis of both eyes; the pupils were dilated, and failed to react to light or accommodation; there was a slight divergent strabismus; the child was perfectly conscious and extremely irritable. There was a bruise about the size of a florin on the forehead above the bridge of the nose, which the mother said was not due to a blow, and which she had only noticed that morning.

In two or three days' time he began to get about again, keeping the right eye closed or covered with his hand. In ten days' time the strabismus had disappeared, and with it the ptosis. The eyeballs appeared slightly protruded, and it became quite evident that the orbital muscles in both eyes were paralysed.

The fundi were normal, and the patient could evidently see fairly well except in a very bright light, although he occasionally made "bad shots" when reaching for anything he was playing with.

On April 5th he was taken to see Mr. Charles Higgens, who kindly wrote to me about the case. He expressed a doubt, after seeing my notes, as to the etiology, and gave a favourable prognosis.

The occurrence of acute nuclear paralysis, from whatever cause, is so remarkable and sufficiently uncommon to warrant recording. Occurring, as in this case, during an attack of whooping-cough, the interest is heightened.

Whether the case is to be rightly regarded as a complication of the disease, or a mere coincidence, or due to an attack of diphtheria occurring at the time or before the commencement of the whooping-cough it is difficult to determine. In the literature at my disposal I am unable to find any such complication of whooping-cough noted, which is the more strange in such a common disorder.

That such paralyses of the orbital muscles sometimes follow an attack of diphtheria is well recognized. It is true this may have been the cause, but if so the disease was not clinically recognizable nor even suspected, and it is certain that no other member of the family, in a family of small children, suffered.

The mode of onset, too, was so sudden as to probably not warrant this supposition. I am inclined to regard the attack as one of acute inflammation in the nuclei, possibly accompanied by some haemorrhagic lesion due to straining during a paroxysm of coughing, and akin to the process which produces acute anterior poliomyelitis, the child, as in this case, except for the cough, going to bed quite well and waking in the morning with the paralysis.

Two other children suffered at the same time from whooping-cough, but except that one had convulsions, there were no complications. I regret that no examination was made for the Klebs-Loeffler bacillus, but even this may not have been final, as it is said to occur sometimes in the throats of apparently healthy persons.

ACUTE RHEUMATISM: FIVE CASES OF APPARENTLY DIRECT INFECTION.

By E. SYDNEY HAWTHORNE, F.R.C.S., L.R.C.P.
Mudgee, N.S.W.

In the British Medical Journal of August 8th last there is an interesting article by Dr. Turner, Nantwich, on three cases of acute rheumatism of apparently infective origin. I ask the courtesy of your pages for the insertion of particulars of five cases, and a probable sixth, of the above-mentioned disease occurring in or near one house, with intervals of from a few days to one week of each other, and in one family.

The first to suffer was the eldest son, aged thirty years, who came into town from his home, thirty-two miles distant, and was treated by Dr. N., who diagnosed acute rheumatism and treated him accordingly.

The second eldest a few days after complained in a similar manner and was at once brought to town by his mother and placed under the care of Dr. H., who diagnosed acute rheumatism and treated it in the usual way. His mother, contrary to the doctor's orders, to save expense returned home two days after with this son, although, as Dr. H. afterwards told me, he had a temperature 103° F.

About a week after his return I was wired for to go out at once to him as he was very ill. On arrival I found him suffering from acute rheumatism complicated with right pneumonia and pericarditis, temperature 103° F., and rising, delirious, and altogether in a bad way. I gave a grave prognosis, and prescribed suitable treatment.

The eldest daughter now presented herself for examination as she had been ailing for two days with pain and swelling in the joints, feverishness, loss of appetite, sleeplessness. As her temperature was 102° F. I ordered her to bed and prescribed salicylates with success, and she got all right in two weeks' time.

Three days after my visit I received a second hurried wire to visit the second boy, and on arrival found him dead, he having no doubt succumbed to pneumonia and heart trouble. Now the fourth and fifth cases presented themselves in the father and youngest son, both suffering similarly to the other members of the family. I ordered their removal to the hospital, where they are now being treated by Dr. N. for acute rheumatism.

A week later I received a wire to visit Mrs. C.'s eldest daughter who lived about half a mile from her parents, and on arrival found she had been confined a week, and was now suffering from pains in her joints, feverishness, rigors, almost complete cessation of lochia, cessation of milk. She had been a regular visitor up to her confinement at her parents' house. I could detect no evidence of puerperal fever, beyond a rise of temperature. I prescribed salicylates with success, and in a week's time she was able to go about her work. I have not included this last case, but merely mention it as being one probably of acute rheumatism.

The first case, who had now returned home as cured, consulted me for a return of his complaint, so diagnosing a relapse I ordered his removal to hospital, where he is now under the treatment of Dr. N.

That the diagnosis in the above cases could not be well wrong must be admitted, as all of them, with one exception, have been examined by two independent medical men, and some by three. Also, mere coincidence where so many cases have occurred could scarcely be thought of, and damp, cold weather could certainly not be assigned a cause as we are now suffering from a most disastrous drought in the colony. Therefore to my mind the only solution as to the cause is: direct conveyance from one patient to the other.

Charitable Bequests.—The late Mr. Charles Samuel, of Sutherland Avenue, Maida Vale, in addition to numerous other charitable bequests, has left £500 to the London Hospital, and £200 each to St. Mary's Hospital, the Metropolitan Hospital, the Royal Free Hospital, the City of London Hospital for Diseases of the Chest, Victoria Park; the National Hospital for Diseases of the Heart and Paralysis, Soho Square; the North London Consumption Hospital at Hampstead and the Earlswood Asylum for Idiots.—Under the will of the late Mr. Henry Brooke, of Huddersfield, £1,000 has been bequeathed to the Huddersfield and Upper Adbrigg General Infirmary.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

A SIMPLE METHOD FOR THE ADMINISTRATION OF ETHYL CHLORIDE.

Since the introduction of ethyl chloride as a general anaesthetic scarcely a month passes without the publication of some new and ingenious mechanism for its administration. It is with the object of showing how needless many of these inventions are that I describe the following simple device, from which the happiest results in the giving of ethyl chloride can be obtained.

The apparatus consists of Clover's ether inhaler, any ordinary pattern of which will answer the purpose. The inhaler is set up in the same manner as when ether is used, with the exception that the ebony plug is removed from the opening by which the ether chamber is filled. In place of this plug a short cork is substituted, through which a hole about a quarter of an inch in diameter has previously been bored. The hole in the cork should be made well to one side, so that there shall be a free way into the ether chamber, since in most Clovers a metal lip occupies the upper half of that opening. It is through this hole in the cork that the ethyl chloride is sprayed.

For the administration the pointer should be moved to the mark II, bringing the cork to the right-hand side, while the facepiece is held in the left hand, the bag also being to the left. When the patient has gained confidence by freely breathing into the bag, from 2 c.cm. to 3 c.cm. of ethyl chloride can be sprayed into the ether chamber through the hole in the cork, which hole should then be closed with the finger. If more ethyl chloride be required the operation may be repeated. The ethyl chloride tube should be one provided with a spring clip to close the nozzle, since much of the drug is wasted by using a tube of the ordinary screw-stoppered type. Should it be desirable to prolong the anaesthetic for some time, the Clover is complete and ready to be charged with ether, the perforated cork being removed and the ebony plug fitted in its place.

There are several points in which this Clover ethyl-chloride arrangement is superior to many of the inhalers made expressly for this anaesthetic. (1) The drug is given gradually, the patient taking several breaths before the air in the bag becomes thoroughly saturated with vapour. Consequently both coughing and holding the breath are avoided, and the anaesthetic is easily taken. (2) The ether container makes a perfect chamber for vaporizing the ethyl chloride, since the metal of which it is made so readily parts with its heat. It is in this respect that some inhalers fail, the drug being sprayed upon lint, which, being a bad conductor, and containing practically no heat in itself, entails the freezing of the anaesthetic as soon as the first few drops have evaporated. Again, it is impossible for any liquid ethyl chloride to run down the facepiece, or to get into the bag and destroy the rubber of which it is made.

I have found this simple contrivance work in so satisfactory a manner that I hope this description may be the means of introducing ethyl-chloride anaesthesia to the notice of those who have not tried it hitherto.

E. Hugh Kitchin, M.A., M.B., B.C.Cantab., etc.,
Surgeon to the Skipton and District Hospital.

A DRUG RASH.

In the British Medical Journal of April 25th, 1902, a case of drug rash is reported by Dr. Percy E. Adams. About that time I had been consulted by two patients who were suffering from a rash produced by taking "Doan's Backache Pills," but the symptoms were of a very slight and transient character.

This month (November 5th) I was sent to see a patient in bed who had taken two white-coated and four of the dark-coated pills contained in a packet of the above-named pills. She was covered with a rash and swelling on face, and rash on legs and back, and on the next day the temperature went up to 100°, and she was feeling very ill, the rash resembling belladonna rash.

The eruption cleared up quickly on leaving off the pills.

Leeds. John J. Pickles, M.R.C.S., etc.

HAY-FORK IN THE ABDOMEN: RECOVERY.

On March 20th I received a note from Dr. McKee to go and assist him and bring everything necessary to stitch up a wound in the abdomen of S. R., aged 68, caused by falling off a cart of corn on to a hay-fork, on which he was impaled. Dr. McKee had been called in while out visiting and had not a "bag" with him.

On arrival I found several coils of intestine protruding—covered with warm cloths—which had now been out about three hours. One prong of the fork had penetrated the abdomen, the other grazing the side above the iliac crest, but the fork had been pulled out before I got there. The prong that had entered the abdomen was bent nearly to a right angle—it was thought by impact against the pelvis—and in pulling it out this bent piece first tore through the peritoneum and abdominal muscles, then ripped down between the latter and the skin for about 1½ in. before coming out, causing a wound about 4 in. in length into the abdominal cavity. The wound was clean, not much laceration, nor was there a great deal of haemorrhage. There were five punctured wounds in the coils of bowel that were protruding, which I stitched up as well as I could with catgut, trying to keep the peritoneal surfaces of the bowel together by inverting the edges of the wound, while all the time more coils kept coming out. Having finished this part, with considerable difficulty I got the intestines back through the two wounds. I then stitched the inner abdominal wound with catgut, and finally the skin wound also with catgut, Dr. McKee keeping the parts clean as I went along with wool steeped in warm weak carbolic lotion. We put a good pad of dry boracic lint and absorbent wool over the wound and bandaged it on firmly. We then gave him 20 minims of tr. opii to keep the bowels quiet, and gave instructions not to give the patient anything but sips of hot water or a little milk and water.

On March 24th we dressed the wound, which looked in excellent condition. The pad which came off showed very little discharge, and there was no suppuration. The bowels were kept locked up till March 29th, when an injection was given, but without much result. The next day I gave him another, and he had a good motion. We now allowed him a little whisky and meat juice occasionally, but not much change otherwise in the diet, the bowels being still kept locked up with opium and opened every few days with an enema. The temperature never rose above 100° till the third week, when he got hypostatic congestion of the lungs, his temperature going up to 102.6°. He had then a very critical time, and we were afraid of the cough doing the wound some harm, although it seemed perfectly healed. However, under treatment this cleared up and he went on well, the pad and bandage keeping the abdomen quiet, and he was able to be removed home on April 18th. We got him a colotomy truss, and he is now going about as usual.

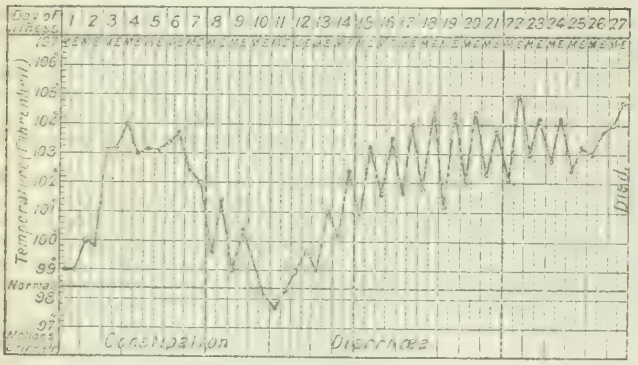
Remarks.—The chief object in publishing this case is to encourage the younger members of our profession, especially those in country practice where, like myself, one has not much practice in surgery, and where it is hard, or often impossible, to get a specialist in time to do the work, and to show that even when a case seems desperate, as this one did to Dr. McKee and myself, it is not necessarily hopeless. Much of the credit of the recovery of this case is due to Dr. McKee, who kept the sensitive intestines warm and protected from the cold air when they were out so long; and also a great deal of credit is due to the farmer and his sister (at whose farm the accident happened), who without a murmur took him into their own house and nursed him unremittingly for four weeks night and day. Had chloroform been administered no doubt there would not have been so much straining and so much of the intestines would not have come down, and it would have been easier to get them back, but it might have caused more sickness afterwards. The patient had had something to eat just before the accident happened, and after our operation he vomited once, but had no return of it.

Randalstown. C. V. H. Nesbitt, M.D.

SCARLET FEVER: ENTERIC FEVER: DEATH.

Some months ago, on one of the Union Castle liners, I had under my care a case of illness in a steward, H. B., aged 21 years. A few days from the start of the attack I unhesitatingly pronounced it one of scarlatina in typical form—the headache, shivering, and vomiting of the abrupt onset, the sore throat and the rash, demanding only one diagnosis, which the course of the temperature, the tongue, and the subsequent desquamation amply confirmed. The temperature

reached normal on the tenth day, and I had hardly begun to congratulate myself that the worst was probably past, when it began to rise night upon night, showing a remission in the mornings; the constipation gave place gradually to diarrhœa, the motions becoming of the so-called pea-soup type; there was right iliac gurgling, but no stress was laid on this point in diagnosis; a roseolar eruption then appeared on the lower abdomen and thighs, but not in profusion; the tongue became cleaner, red, and fissured transversely; the spleen enlarged; the patient gradually sank into a typhoid state, with marked low muttering delirium, and died on the twenty-seventh day of the whole illness and seventeen days from the day the temperature had reached normal in the primary febrile attack. We had arrived at Table Bay on the sixteenth day of the illness, and I asked Dr. Thomas, of Cape-town, the plague medical officer, to come on board and see the case. He agreed with me that it was a typical case of enteric fever, a fact which I proved later, for on the night of the patient's death I made a *post-mortem* examination, and, in the words of the notes I took at the time, "typical enteric ulcers were present in the lower ileum and caecum; the intestines generally were markedly congested; there was some pale brownish fluid in the abdominal cavity; the spleen and many mesenteric glands were large and soft."



L. I., a fellow-steward of H. B., was taken ill two days later than his friend, and survived a well-marked attack of scarlatina, continuing to desquamate till a week after H. B. died. They were both certain that they never had had scarlet fever in their childhood.

Now, two days after leaving Southampton a nurse travelling third class, who, previously to sailing had been nursing some cases of scarlatina, was seized with that disease in a severe form, and died on the sixth day of her illness. On the first hint of her condition she was at once isolated in the hospital aft on the poop-deck, and was nursed by her mother and a stewardess, both of whom were also completely isolated. The destruction of clothing, linen, etc., and disinfectants were all along used unstintedly, and the only other cases that occurred were those of the stewards above mentioned, who were not employed in the third class, where only the nurse —the first case—had been. In the circumstances, therefore, the mode of transmission of the infection was merely matter for conjecture.

As a point of interest in the case of H. B. may be mentioned the fact that cold sponging was used to prevent the temperature getting into hyperpyretic registers, despite the fact that he was desquamating freely, and it was only at the very last that the urine showed the presence of a small quantity of albumen.

The temperature curve is shown in the chart.

A. D. THOMPSON, M.B., B.Ch.,
Late Surgeon to the Union-Castle Royal Mail Line; Assistant Medical Officer, Cheshire County Asylum.

THE AFTER-TREATMENT OF APPENDICITIS.

ANY facts tending to elucidate the after-treatment of appendicitis seem to me worth recording, for professional opinion is far from being united as to the appropriate treatment of appendicitis after a first attack, moderately severe, has occurred.

H. B., aged 9, was admitted into the Tunbridge Wells General Hospital after an illness of about ten days' duration. He was said to have had a very severe attack of appendicitis, and his condition on admission fully bore this out. His pulse was quick and weak, temperature 103°, and there was a good deal of abdominal distension with sense of resistance and relative dullness over the region of the appendix.

The day after his admission his condition improved, the temperature fell to 99°, and the following day became normal. The distension gradually disappeared until there was nothing whatever abnormal to be felt in the abdomen except a small rounded hardness about the size of a large walnut about 1½ in. internal to the anterior superior iliac spine and a little below it. This lump was slightly tender. The general condition of the patient was now (thirteen days after admission) very good, and it was decided to operate with the view of removing the appendix. On opening the abdomen in the usual position the lump was found to consist of the appendix apex surrounded by adherent intestines. The parietal peritoneum was not adherent to it. In separating the adhesions from the appendix first of all a body resembling a horse bean, followed closely by a grape stone, came up into the wound. These two bodies had sloughed through the appendix and were lying outside it surrounded by adhesions. The appendix was removed, a drainage tube and gauze inserted. The case did well.

E. P., aged 28, was admitted into the hospital about a fortnight after the onset of a severe attack of appendicitis. On admission his general condition was very fair, temperature 100°, slight abdominal distension and tenderness on pressure over McBurney's point.

He improved until there was no tenderness nor anything abnormal to be felt about his abdomen. Eleven days after admission laparotomy was performed for removal of appendix. The latter was discovered lying behind the caecum in a cavity containing about two drachms of pus. The appendix had sloughed in half, and its distal end was lying loose in the cavity. The remaining portion of the appendix was removed, the abscess cavity was swabbed out with 1 in 20 carbolic lotion, and a drainage tube with gauze inserted, etc. No faecal concretion was discovered at the time of operation. The wound was some time healing, but five weeks after operation it was soundly healed, and the patient was able to go home one week later quite well.

R. A., aged 13, was taken ill during a voyage from Marseilles to London. On his arrival at his destination he was very ill with appendicitis. Some ten days after his arrival his medical attendant, Dr. H. A. Hall of Rotherfield, asked me to see him. He was then getting better; temperature 100°; abdominal distension, etc., beginning to subside. I advised removal of the appendix as soon as his general condition allowed—that is, when it became quiescent. This occurred about ten days afterwards. At this time the patient appeared quite well, except, of course, that he was weak. There was no tenderness, and nothing abnormal to be felt in his abdomen. Laparotomy disclosed a very similar state of affairs as in the second case. The appendix lay in a cavity behind the caecum, containing about one drachm or so of pus. Its distal end lay loose in the cavity. The treatment adopted was exactly similar to that in the second case. No faecal concretion was found at the time of operation, but some days afterwards, on removing the drainage tube, a concretion about the size of a horse bean was found sticking in its lower end. The patient was well in six weeks.

These cases seem to favour the removal of the appendix during the quiescent period, after a first moderately severe attack of appendicitis has subsided. It is difficult to suppose that the cases if left alone would not have had a relapse.

Looking at the small mortality of the operation when a favourable time can be chosen for it, a mortality which should be almost *nil*, it would appear to be safer for the patient to submit to operation rather than chance a relapse of the disease, with the terrible uncertainty of its possible results. It should be mentioned that all the cases were first attacks of appendicitis.

J. B. FOOTNER, F.R.C.S.
Senior Surgeon, Tunbridge Wells General Hospital.
Tunbridge Wells.

A CLIMATO-THERAPEUTIC CONGRESS.—On the initiative of Dr. Huchard of Paris, arrangements have been made for the holding of a Congress of Climato-therapy and Urban Hygiene at Nice from April 4th to 9th, 1904. Dr. Chantemesse will preside. The Vice-Presidents are Professors Rénaut of Lyons, Grasset of Montpellier, Calmette of Lille, and Dr. Dalestre of Nice. All communications should be addressed to the General Secretary, M. Hérard de Besse, Beaulieu-sur-Mer.

REPORTS OF SOCIETIES.

HARVEIAN SOCIETY OF LONDON.

W. Winslow Hall, M.D., President, in the Chair.

Thursday, December 3rd, 1903.

Discussion on the Treatment of Enlarged Prostate.

Mr. C. Mansell-Moullin, in opening the discussion, put on one side all those cases in which successful catheter life had been already established, an instrument being passed, at the utmost, twice in twenty-four hours. If all the symptoms present, or likely to occur, were adequately met by so simple a proceeding, and if the frequency of use of the catheter did not increase, the necessities of the case were sufficiently met. But in a large proportion of cases this treatment was a failure from the first, or morally certain to become so, and downward progress might be the direct result of the treatment. The patient became older and more feeble, and the prostate increased in size. The habitual passage of a catheter was enough to destroy the contractile power of the bladder within two years. Haemorrhage became more frequent, and septic inflammation, due to organisms carried in by the catheter, was certain to set in at last. It was impossible for a patient growing older and more feeble to take adequate precautions for cleanliness. The catheter might be tried first, but if the frequency of its use and cystic irritability increased, and if the amount of residual urine became larger, if there was a tendency to cystitis, and frequent attacks of congestion, with difficulty in passing instruments and a tendency to the formation of calculi, then some other treatment must be adopted. In considering this treatment the cause of the enlargement must be ascertained; whether simple congestion of the venous plexuses, or actual overgrowth, or the two in varying proportion. In the early days of enlargement, congestion was a potent factor, and the main cause of early irritability. In this early stage, when the congestion was often chiefly passive, constitutional measures, such as rest in bed, hot baths, dieting with free purgation, were often sufficient to give relief. As a rule local interference made the congestion worse, but Mr. Moullin had often found great benefit in certain cases from the use of Bottini's cautery as modified by Freudenberg. The bladder was distended with air, and three parallel incisions were made with a white-hot blade along the floor of the bladder. This method, however, was of no use in enlargement due wholly, or in great measure, to overgrowth of the gland. As regard the division of the vasa deferentia, or rather of the nerves that accompanied them, no doubt this operation checked to some extent the liability to congestive attacks, but it was often a failure. In enlargement due to irregular glandular overgrowth, if palliative measures failed there was no alternative but removal. This could be effected either by inducing atrophy, or by operating on the enlargement itself. The former method, after being unduly praised, was now falling into somewhat undeserved discredit. The fear of mental disturbances, and the strong sentimental objection to the operation, combined with the success attending the removal of the enlargement, had caused the procedure to fall into the background. An enlargement could be removed through a perineal or a suprapubic opening. If the bladder were very very small and rigid, and the prostate very hard and dense, the former incision was indicated. Under all other conditions the prostate was best approached through the bladder. The operation was performed by McGill fourteen years ago, and remained the same in all essential details. In 1892 Mr. Moullin pointed out that the whole vesical mass must be removed, and the exploration extended down the whole length of the prostatic urethra. This was the operation now generally performed. A certain amount of confusion had been caused by an erroneous description of what was called the capsule of the gland; but Shattock and Wallace had shown that the covering of the enucleated masses was a pathological product. Before performing the operation, if the muscular coat of the bladder had been ruined already by catheterization and cystitis, the patient must be warned that the removal of the gland could not restore it.

Mr. Buckston Browne thought that the satisfactory or unsatisfactory progress of a catheter case depended largely on the aseptic care used. A distended bladder must be only gradually emptied. He did not agree that after two years of catheter life the bladder lost its contractility. Eleven years ago he did a suprapubic prostatectomy on a patient who had used a catheter for twenty years. No catheter had been required since, the bladder acting perfectly. He had never seen any good result from vasectomy or castration. He was glad Mr. Moullin only spoke of partial removal of the prostate; the prostate, being actually part of the bladder and part of the urethra, had never been removed in its entirety, and never would be. Partial removal of the prostate, as performed now, was McGill's operation, and while too dangerous to be a routine operation, it was perfectly justifiable in certain extreme cases.

Mr. P. J. Freyer said that operations based purely on theoretical considerations were happily passing rapidly into the limbo of foregotten things. He had never performed Bottini's operation, as he considered it unscientific, useless, and dangerous. He had never had much faith in vasectomy, though he had given it a fair trial. Any benefit arising from it was not lasting. Against castration he had always set his face. He believed that both it and vasectomy were dead and buried in this country. He was quite satisfied with the progress which his own operation had made in the last two and a-half years. No operation was attended by more completely successful results, and the mortality, considering the age and condition of the patients was very small. It had also been proved that there was no such thing as atony of the bladder in connexion with prostatic enlargement, as in no instance had a patient failed to regain complete power of natural micturition. It was absurd to talk of McGill's operation as similar to his. No specimen of an entire prostate, resembling those he exhibited, had ever been placed in a museum before the date when his operation was placed before the profession. He believed that Mr. Shattock confirmed his views that the capsule was removed with the prostate. This, however, was a question of merely academic interest.

Mr. Herring said that only cases which interfered with the function of micturition called for treatment. He did not agree that the disease was markedly progressive, or that bad symptoms necessarily followed the use of catheters. Such symptoms did not arise from the prostate, but from contamination of the urine with micro-organisms. The symptoms were rarely if ever increased by the habitual use of a sterile catheter. He denied that it was impossible for a patient to keep himself surgically clean. If properly taught and given some efficient method of sterilization of instruments, other than by chemicals, the patient was able to keep himself aseptic. In cases already infected it was necessary to cut off the doses of micro-organisms introduced by instrumentation. The repeated administration of those doses kept up the inflammation, and the prolonged existence of this assisted in producing the large prostate so frequently seen.

Mr. J. G. Pardoe considered that in the case of very aged men, with tolerant bladder, catheterism was the treatment of choice. He had never seen loss of expulsive power after complete removal of the prostate even when catheter life had lasted from six months to sixteen years. He thought it impossible to secure asepsis in the large class of those who had hard manual work to perform for their living, or in old, feeble persons unable to procure assistance to secure asepsis. Prostatic enlargement, also, was commonly due to adenomatous new growth, which would not tend to cease, however aseptic the catheterism.

Mr. P. L. Daniel thought the present treatment of prostatic obstruction was not based on sound pathology. Most symptoms were due to contamination by micro-organisms introduced from without. Symptoms due to prostatic disease *per se* were those of slight difficulty and frequency of micturition. Adenoma of the prostate differed from all other adenomatous growths in developing in the later years of life, and was due probably to a pre-existent posterior urethritis. Treatment should, therefore, be directed, first, to the prevention of a posterior urethritis, or to its cure, and, secondly, to the prevention of chronic cystitis due to dirty instruments. The use of a properly-made catheter, such as that suggested by Mr. Herring, would relieve the few symptoms really dependent on the prostatic condition, and if commenced early surgical interference would never be needed.

Dr. Horace Manders did not think elderly men, reduced to the constant use of the catheter, showed such universal tendency to sink and die from sepsis. With careful attention to cleanliness the catheter alone would suffice, but in some cases total removal of the prostate was necessary.

Mr. Mansell-Moullin replied.

EDINBURGH OBSTETRICAL SOCIETY.

N. T. Brewis, M.D., F.R.C.P.E., President, in the Chair.

Wednesday, December 9th, 1903.

Hypertrophy of the Fetal Thyroid, with Maternal Eclampsia.

Dr. W. E. Fothergill (Manchester) read a paper on this subject. The patient upon whose case the paper was founded was 37 years of age, and of gouty family history.

Potassium of chlorate was administered during her fifth pregnancy, because she had aborted on four occasions, owing, it was believed, to placental thrombosis. Her last menstruation began April 14th, 1902, and pregnancy occurred soon after, and continued undisturbed, the general health being excellent. The last occasion on which the urine was quite normal was December 3rd, 1902. On December 7th there was slight swelling of the hands and feet. On December 16th the urine continued 0.2 per cent. of albumen. Ten grains of thyroid per diem were exhibited. On December 26th, after a slice of goose and a little plum pudding on Christmas Day, she was not well. On the 27th she had headache and vomited. On the 29th no urine was passed, and in the evening prolonged and violent eclamptic seizures occurred. On January 1st a small female child, with a large thyroid, covered by an enormously dilated venous plexus, was born. The child died in a few minutes. The mother recovered.

Dr. Fothergill, after describing the macroscopic and microscopic *post-mortem* appearances of the child, discussed the use of thyroid gland extract in the prevention and cure of eclampsia, and the possible significance of the occurrence of congenital goître in the child of a woman to whom potassium chlorate had been administered during pregnancy. He summed up thus: (1) In habitual abortion continuous use of potassium chlorate in small doses in a certain number of cases carried pregnancy to full time. (2) In such cases death of the ovum was as a rule due to thrombosis in the intervillous space. (3) Large doses of potassium chlorate produced destructive changes in the blood. The literature of the four cases already reported was noted, and reference was made to the literature of congenital goître in Ballantyne's *Antenatal Pathology*.

Puerperal Eclampsia and Thyroid Extract.

Dr. Oliphant Nicholson read a paper on some cases of pregnancy in which he had used thyroid extract. In one it was used for eclampsia both as a prophylactic and also after the onset of convulsions. As a prophylactic it should be given, he thought, in small doses—5 to 20 gr. in the 24 hours—with the object of readjusting the processes of nutrition so as to complete more fully the metabolism of nitrogenous substances. If convulsions had already occurred it must generally be used in large doses—30 to 40 gr., and soon repeated if necessary. Its object at this stage of eclampsia was to act as a vaso-dilator, and the main object of treatment was to relax the renal arterioles, and thus enable the kidneys to secrete urine again; vaso-dilatation was the only rational principle of medical treatment in eclampsia. The combination of morphine and thyroid extract seemed to provide a most successful method of rapidly re-establishing the secretion of urine. The following case was given as an illustration:

Primipara, aged 21. No "morning sickness" in early months. Had one severe fit shortly before labour, and two more shortly after the expulsion of the placenta; ½ gr. of morphine was injected after the second fit. The patient was deeply comatose. After the third fit the bladder was found to contain only 3 drachms of urine, which became solid on boiling; 40 gr. of thyroid were then exhibited. Eleven hours later the bladder contained 40 oz. of urine; 30 gr. more of thyroid were now given. Four and a-half hours later 35 oz. of urine were passed. "Thyroidism" was thus produced rapidly by 70 gr. of thyroid given during twenty hours; 85 gr. of thyroid were given in twenty-three hours, and urine was afterwards secreted copiously.

The patient made a very rapid and complete recovery.

As an illustration of its use in the control of abnormal vomiting the following case was narrated:

The patient, aged 27, in her second pregnancy, suffered from severe vomiting at the seventh month. No albumen in the urine. Ordinary remedies controlled the symptoms for a fortnight and no vomiting occurred for one week. Vomiting then recommenced and became intractable. Albumen appeared in the urine. The question of induction of premature labour was discussed, but instead thyroid extract was used and living twins born at full time.

Another case was as follow: The patient was a primipara, aged 21.

Vomiting at the middle of the eighth month became very obstinate and produced serious symptoms. The usual remedies were quite unavailing. There was no albuminuria, but the urine was rather scanty. Vomiting ceased under thyroid treatment; her general condition improved, and a living child was born at full term.

The two papers were discussed together by Professor A. R. Simpson, Drs. Berry Hart, James Ritchie, J. W. Ballantyne, J. Haig Ferguson, Church, Gibbons, of Boston, W. Fordyce, and the President.

Drs. Fothergill and H. O. Nicholson replied.

Specimens.

Specimens were shown by the President, and Drs. D. Berry Hart and J. Haig Ferguson.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

John Tweedy, P.R.C.S., President, in the Chair.

Thursday, December 10th, 1903.

This was a clinical evening, and given up to the exhibition of cases.

Arterio-venous Aneurysm of the Orbit.

Mr. N. C. Ridley showed a case of arterio-venous aneurysm of the orbit, recurring six months after ligature of the common carotid.

The patient was first seen in December, 1901, with paralysis of the left sixth nerve, following a fall on the head. In April, 1902, the left eye began to protrude, the pupil to dilate, and the vision to fail. Iodide was given, but without any effect. In March, 1903, pulsation was first noticed with a thrill. On April 8th, 1903, the left common carotid was ligatured in the usual situation above the omo-hyoid. The result was the immediate cessation of the pulsation and symptoms. On July 28th faint pulsation was again felt, but there was no proptosis nor other symptoms, and the vision was $\frac{6}{18}$. When shown the pulsation and thrill were both very marked, although the patient still felt much relief from the operation.

The condition was probably due to a traumatic communication between the cavernous sinus and carotid artery.

Mr. Pritchard showed a case of the same nature with corresponding result, and experiences in connexion with such cases were narrated by Mr. Johnson Taylor, Mr. Adams Frost, Mr. Hartridge, Mr. Flemming, Mr. Collins, and Mr. Nettleship.

Mr. Brewerton thought that owing to the free communication between the branches of the two external carotid arteries, it would be much better to ligature the internal carotid artery.

Mr. Fisher, in view of the size of the communicating arteries in the circle of Willis, thought it unlikely that ligature of the internal carotid would be better than ligature of the common carotid, to say nothing of the much greater difficulties of the operation.

Mr. Ridley, in reply, did not think that ligature of the internal carotid would be any more likely to cure the condition than that of on the common carotid. If he did anything more he should feel inclined to clear out the orbit, but in this case, as apparently in most of the others mentioned, the patient had derived much relief, although the condition could not be said to be cured.

"Silver Wire" Arteries.

Mr. Percy Flemming showed the drawing of a fundus with marked arterial degeneration.

The patient was a woman, aged 48, with granular kidney. She died of apoplexy a few weeks after the drawing was made. During life the arteries had a typical sclerosed appearance with "silver wire" lines along them. There was venous obstruction at the points where they crossed the veins. There were also haemorrhages in the retina.

Microscopic sections were shown of the retina with photo-micrographs; there was enormous thickening of the vessels.

Mr. Marcus Gunn showed specimens of "silver wire" arteries from a similar case.

Mr. Doyne showed a woman, aged 54, with somewhat similar ophthalmoscopic appearances. Her urine was healthy, but the radial arteries were thickened.

A discussion followed on the cause of the apparent constriction of the veins by the arteries.

Retinal Effusion.

Mr. Doyne showed a case of retinal effusion in a patient aged 65 whose sight had recently failed. There was no history of syphilis, but years ago he had had gonorrhoea.

In the right fundus were discrete patches of fluffy whitish exudation, especially near the disc; some vessels were concealed by it. There was no obvious disease of the blood vessels. The disc was clear, and there were some pigment spots on the anterior capsule. Pigment spots were also seen on the capsule of the left lens. The effusion had extended since it was first seen.

Pemphigus of the Conjunctiva.

Mr. William Anderson showed a case of conjunctival pemphigus.

The patient was a woman, aged 29, who had always enjoyed good health until a sudden febrile attack four months ago. There was a general rash, becoming vesicular; the eyes were dim, and the lids were closed for about four days, when adhesions were seen to have formed between the lids and the eyeballs; there was also a severe superficial ulcerative stomatitis. After a time there was complete desquamation, with shedding of the nails of the hands and feet. The skin of the arms, chest, back, and legs when shown were covered with patches of dark-brown pigmentation. The lids of the right eye were thickened, and the lower *cul-de-sac* nearly obliterated. The upper one was free in its middle third. There was also a muco-purulent discharge but the cornea was clear. In the region of the lacrymal gland was a large retention cyst: vision = $\frac{6}{18}$. The left eye was in a somewhat similar condition, with vesicles in the lower fornix; vision = $\frac{6}{24}$.

HEREDITARY NODULAR OPACITIES OF THE CORNEA.

Mr. HOLMES SPICER showed a case of this condition and some drawings. It was, he said, a family disease, though probably not congenital. Fuchs in one case had removed a portion of the cornea, and found it softened and Bowman's membrane absent. The deposit, which was amorphous, lay in the substantia propria. One observer had described the deposit as sodium urate, but Mr. Spicer doubted whether it were so. The condition was progressive, and in Mr. Spicer's example the father as well as the daughter was affected.

Mr. JOHNSON TAYLOR described a somewhat similar condition that he had seen in puppies; it was thought to be due to malnutrition.

Mr. SPICER said that Fuchs had also seen this condition in dogs.

UNILATERAL ANOPHTHALMOS.

Mr. A. H. P. DAWNAY showed an infant suffering from this condition. The child was very feeble and delicate, and without an anaesthetic it was impossible to say if a rudimentary eye existed.

Mr. TWEEDY commented on the term used in describing this case. He thought the condition should be termed anophthalmia, and the child described as anophthalmos.

LARYNGOLOGICAL SOCIETY OF LONDON.

J. CHARTERS SYMONDS, M.D.Lond., F.R.C.S.Eng., Vice-President, in the chair.

Friday, December 4th, 1903.

EPITHELIOMA OF THE LARYNX.

SIR FELIX SEMON described a case of epithelioma of the larynx in which operation had been twice performed by thyrotomy and resection of crico-thyroid membrane.

The patient was a man 58 years of age, who had suffered for a long time from albuminuria and chronic bronchial catarrh and had become quite aphonic. Examination revealed the presence of irregular nodular outgrowths on the anterior parts of both vocal cords. Considering the age of the patient, the probability of the growth being malignant was much greater than that of simple papilloma, and operation was decided on. On thyrotomy being performed the whole of the anterior and lateral walls of the larynx in the region of the vocal cords was found to be a mass of disease. This was removed, together with the whole of the crico-thyroid membrane which was involved. The thyroid cartilage was found not to be affected. On microscopical examination the growth proved to be a squamous-celled carcinoma. The patient made a good recovery, but two months after began to suffer from breathlessness, and on laryngoscopic examination a greyish mass, of what appeared like granulation tissue was seen projecting into the lumen of the larynx. The wound was reopened, and it was found that recurrence had occurred on both sides of the middle line in front. The soft parts were removed from the thyroid cartilage, together with a U-shaped piece of laryngeal framework and a small portion of the upper part of the trachea. The patient made a good recovery, and had so far remained free from further recurrence.

The case was noteworthy as illustrating (1) that chronic albuminuria and chronic bronchial catarrh were not necessarily contraindications to radical operations of this kind; (2) that the disease was very much more extensive than appeared on laryngoscopic examination; (3) if the disease had extended beyond the precincts proper to the larynx, the danger of recurrence was much greater.

RUPTURE OF THE TRACHEA.

Mr. CHARTERS SYMONDS showed a man, 30 years of age, $2\frac{1}{2}$ years after operation for rupture of the trachea.

The patient while riding a bicycle had run into the pole of a van. He was unable to state exactly what had happened, but had obviously received a heavy blow on the neck. He had great pain in the neck, was unable to lie down, and expectorated blood. There was an irritating cough, which was relieved on the fifth day by the expectoration of a slough. No cartilage was found in the slough. About a month later he began to breathe with difficulty and stridor. The voice was clear, showing the larynx had not been injured. On laryngoscopic examination the larynx was normal, and there could be seen about the level of the third ring a pale projection from the left side, and to the extreme right a dark irregular aperture, evidently the altered lumen of the trachea. Externally the trachea was irregular, somewhat depressed on the left side, and prominent on the right. As the man was unable to take any exertion without difficulty of breathing, an operation was advised with a view to removing the obstruction. On dividing the trachea in the median line, the bulging from the left side was confirmed. The third and fourth rings were injured. One was broken and bent inwards. They had been also separated, so that the trachea appeared lengthened and sharply bent inwards. The deformity was partly corrected by removing a part of the cartilage and sewing the adjoining rings together. The sutures were placed so as to evert as much as possible the indented wall. The trachea was not closed. The wound was covered with gauze; a tube was not used.

The patient made a rapid recovery, and had suffered from no inconvenience since.

SCHMIDT'S SERUM.

Dr. J. DONELAN showed a specimen and temperature chart from an inoperable case of epithelioma of the larynx in a man 45 years of age undergoing treatment by Schmidt's serum.

There had been no rise of temperature, and but slight constitutional disturbance. The local reaction had been marked, and the growth had become decidedly smaller. The treatment appeared to be useful for diagnostic purposes, but it was impossible to say if there were any curative effect.

NASAL OBSTRUCTION.

Dr. H. TILLEY showed a case in which complete nasal obstruction on the right side had existed, due to chronic dental abscess arising from the root of an incisor tooth, and forming an external fluctuating swelling below the right nasal bone. The condition was successfully treated by operation.

CASES AND SPECIMENS.

Cases and specimens were also shown by Dr. LAMBERT LACK, Dr. DUNDAS GRANT, Major O'KINEALY, I.M.S., Dr. SCANES SPICER, Mr. HUNTER TOD, Mr. CRESSWELL BAKER, Dr. STCLAIR THOMSON, Dr. H. J. DAVIS, and Dr. CATHCART.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.—At a meeting on December 14th, Professor MUIR, Vice-President, in the chair, Professor MUIR showed a liver weighing 14 lb. and containing very large carcinomatous tumours secondary to an adeno-carcinoma of the sigmoid flexure. The patient was only 26 years old, and the disease ran its course in three months: there was no jaundice.—Dr. BARLOW showed a specimen of enteric intussusception successfully treated by resection of the bowel. It was very tightly strangled, and contained fully 15 in. of intestine.—Mr. R. H. PARRY showed a tumour of the prostate removed by Freyer's method, and a large faecal concretion, which lodged in the caecum and necessitated its excision.—Dr. J. LINDSAY STEVEN and Dr. WORKMAN described the clinical features of, and showed the heart from, a case of sudden death caused by embolism of the main trunk of the left coronary artery.—Dr. CARSTAIRS DOUGLAS communicated a short note on the ortol reaction for milk, and demonstrated the test. It enabled, he said, a distinction to be made readily between fresh milk and milk which had been pasteurized at too high a temperature. The fresh milk gave a brick-red reaction on the addition of ortol and hydrogen peroxide, while the sterilized or boiled milk remained colourless. The importance of this in relation to infantile scurvy was discussed.

REVIEWS.

LOCOMOTOR ATAXY AND GENERAL PARALYSIS.

PRACTITIONERS are indebted to Dr. FREYBERGER for the volume bearing the title *The Treatment of Tabetic Ataxia by Means of Systematic Exercises*,[1] which is an adaptation in English of Dr. FRENKEL'S well-known book. Although written from the practical point of view to show how the incoordination of tabetics may be diminished or overcome by use of systematic and simple exercises, it is possible that the earlier part will prove of most interest, at any rate to neurologists. In the first sixty-six pages Dr. Frenkel's views of tabetic inco-ordination are given, and a very complete account of hypotonia, the chief characteristic of which is the diminution or entire abolition of the power of checking certain movements. This is a symptom of tabes dorsalis frequently overlooked and receives very short notice in our

[1] *The Treatment of Tabetic Ataxia by Means of Systematic Exercise.* By Dr. H. S. Frenkel. Translated and edited by L. Freyberger, M.D. London: Rebman, Limited. 1902. (Demy 8vo, pp. 185; 132 illustrations. 12s. 6d.)

current textbooks. Hypotonia is in fact seldom absent in tabes, and may be met with in the early stages of the disease long before the first ataxic manifestation of the ataxy has appeared. It is thus a diagnostic sign of much importance. General hypotonia is, Dr. Frenkel says, found almost exclusively in tabes, and slight degrees may be found in the pre-ataxic stage of the disease. As to the pathological changes underlying hypotonia, Dr. Frenkel says that it is impossible to say more that that it must necessarily be brought into relation with changes in the centripetal parts of the spinal cord. There is, he says, no direct relationship between the loss of muscular sensibility and hypotonia, and degrees of hypotonia may exist side by side with more or less exaggerated tendon reflexes. The treatment is based upon the education of the central nervous system by means of repeated exercises, whereby it is enabled to receive distant stimuli from the limbs, although the available amount of sensation is small. A certain minimum of sensation is indispensable. The greater the loss the more difficult will be the treatment and the less certain the result. No means of defining the minimum quanitity of sensation which is necessary for producing a good result has been arrived at by the author, but it is sufficient if the patient has a vague sensation of the active or passive movements which are performed by the limbs. The exercises are varied according to the kind and degree of the ataxy and according to the functions of the affected limbs, and are designed to approach as nearly as possible conditions existing in ordinary life, and thus of most importance to the individual. The apparatus required is simple in the extreme, and the numerous exercises are so clearly expressed that there should be no difficulty in reconstructing them from the book if the patient is treated at home. Throughout the exercises there runs the broad principle of a maximum of co-ordination and a minimum of muscular contraction. The results are, the author affirms, most satisfactory, in many cases "splendid results having been obtained by the exercise treatment, although there was an extreme degree of loss of muscular and articular sensibility." Symptoms of spinal irritation contraindicate this treatment so long as they continue. Moderate degrees of hypotonia do not adversely influence treatment by exercises, but cases of severe ataxia coupled with blindness and almost complete loss of sensation hold out no promise of improvement. Fortunately tabetics who develop optic atrophy early in the disease seldom develop much ataxy, and it is interesting to note in this connexion that where slight degrees of ataxy are already present when the optic atrophy begins this tends to improve as the atrophy increases. The exercises given are clear and succinct, admirably illustrated by excellent photographs and there is a comprehensive bibliography.

Dr. L. E. LEREDDE[2] has never seen a case of tabes without an undoubted history of syphilitic infection, and he has seen one case of complete cure of tabes by mercurial treatment. His book on *The Syphilitic Nature and the Curability of Tabes and General Paralysis* is a critical examination of the terms "parasyphilitic" "pseudo-paralysis" and "pseudo-tabes," all of which he wants to do away with as superfluous and misleading. In fact, he recognizes only one form of syphilis of the nervous system. Differences in clinical appearance of the various diseases caused by the presence of the poison in the nerve tissue are due to and explainable by differences of localization. Fournier's definition of a parasyphilitic lesion as one syphilitic in origin but not in nature he rejects altogether. With Marie and Guillain (*Bulletin Médical* No. 5, 1903) he considers the pathological process in tabes as a truly syphilitic alteration of the posterior lymph vessels of the spine. The treatment, to be effective, must be commenced early and pushed to big doses, that is, more than 2 cg. of mercury a day by subcutaneous injection. The comparatively small number of successful cases up to the present is, he thinks, due to the circumstance that treatment has either been begun too late or not been carried out with sufficient energy. The author does not deny that in an individual case of general paralysis specific treatment may prove harmful, but on the whole he looks upon it as the only salvation for a patient otherwise doomed. It seems that his own experience has furnished the author with only one instance of recovery in tabes, but he adduces others—not very numerous—in which specific treatment led, if not to complete cure, at least to considerable improvement. In a short appendix he tries to show that leucoplakia, which Fournier adduces as an example of typical "parasyphilis," is, like tabes, an affection truly syphilitic not only in origin, but also in nature, and therefore curable by specific treatment.

[2] *La Nature Syphilitique et la Curabilité du Tabes et de la Paralysie Générale.* Par L. E. Leredde (Travail de l'Etablissement Dermatologique de Paris). Paris: C. Naud, 1903. (Demy 8vo, pp. 141, Fr. 3 50.)

THE ACHILLES TENDON REFLEX.

Dr. ARTHUR VON SARBO,[3] of Buda-Pesth, has in a pamphlet before us made a praiseworthy endeavour to ascertain the diagnostic significance and value of the tendo-Achillis reflex by a systematic series of observations on patients of all classes, special attention being given to its significance in the diagnosis of early tabes and general paralysis of the insane. Eulenberg had stated that the reflex might be absent in normal persons, nearly 20 per cent. of whom failed to exhibit it. The subsequent observations of Bird (1897), Babinski (1891), and others gave varying results as to its occurrence in health and in various nervous affections. The author therefore undertook a systematic survey of cases to determine the elementary facts as to the occurrence or absence, the degree of strength, and other characteristics of this reflex in 884 cases of all kinds of nervous disease. The following results are given in summary as regards the conclusions reached: Out of 240 cases of neurasthenia, the reflex was present in 115 to a normal extent, and was exaggerated in the remaining 125. Hysteria (86 cases) showed 34 normal and 52 exaggerated reactions. Epilepsy (36 cases) gave 18 normal and 18 exaggerated. Of 35 cases of migraine, 24 were normal and 11 were exaggerated. Of 72 cases of cephalalgia, 35 appeared normal and 17 were exaggerated. The rest included 43 cases of cephalalgia and anaemia—21 normal, 22 exaggerated; 58 cases of trigeminal neuralgia—48 normal, 10 exaggerated; 10 cases of cerebral syphilis—7 normal, 3 exaggerated; 20 cases of sciatica—8 normal, 6 exaggerated, 1 difficult to elicit, and 5 failing on one side; 68 cases of alcoholism—35 normal, 26 exaggerated, 5 difficult to elicit, and 2 feeble; 26 cases of general paralysis—6 normal, 12 exaggerated, 1 difficult to elicit, and 7 failing; and 92 of tabes dorsalis—6 normal, 2 exaggerated, 3 difficult to elicit, 81 failing; and a number of others. Thus of 884 cases of nervous disease, the tendo-Achillis reflex was present in 761—being normal in 429 and exaggerated in 332. The author refers also to cases of hysteria, epilepsy, and allied neuroses, and then passes into a detailed discussion of his cases, giving fairly full accounts of some 40 cases. Among other general conclusions reached it is stated that the tendo-Achillis reflex is exaggerated in the functional neuroses like hysteria and neurasthenia, alcoholism, general paralysis, and certain forms of anaemia associated with cephalalgia. The book is a valuable contribution to the clinical and diagnostic study of tendon reflexes.

[3] *Der Achillessehnenreflex und seine klinische Bedeutung* [The Tendo-Achillis Reflex and its Clinical Significance]. Von Dr. Arthur von Sarbo, Docent at the University of Buda-Pesth. Berlin: S. Karger; and London: Williams and Norgate. 1903. (Demy 8vo, pp. 44. 1s.)

FERMENTS AND TOXINS.

IN summarizing the present state of our knowledge concerning the chemical changes and products resulting from fermentations, Dr. ADERS PLIMMER[4] has selected a very extensive and important subject, and one upon which, though it still remains highly obscure, an enormous amount of research has already accumulated. It is, therefore, only to be expected that, when compressed within the limits of a small volume, many departments of the subject can only be dealt with in a brief and somewhat sketchy manner. There is, however, a distinct advantage in a general survey of fermentative processes which presents in systematic order the chemical changes which those processes bring about in different compounds. In the chapters on the starches, sugars, and allied bodies Dr. Plimmer has collected a very considerable amount of valuable information and expounded it with sufficient detail to lighten very materially the reader's task of reference to the original authorities. But many of the chapters on other subjects are far too brief to be of much value. This objection applies, for example, to the treatment of nitrification and denitrification, pigment formation by bacteria, the chemistry of fibrin formation in the blood, and the changes produced by ferments in milk and muscle. The discussion of peptic and tryptic digestion, too, is much too scanty, and cannot be regarded as replacing the fuller treatment of these subjects to be found in many good books on physiology; it may, however, usefully serve as an introduction to the latter.

[4] *The Chemical Changes and Products resulting from Fermentations.* By R. H. Aders Plimmer, D.Sc. London: Longmans, Green and Co. 1903. (Demy 8vo, pp. 184. 6s.)

At the end of the book there is an excellent and very full bibliography, of which those who are engaged upon this class of research will be glad to avail themselves.

Under the title *Cellular Toxins, or the Chemical Factors in the Causation of Disease*,[5] Drs. Vaughan and Novy do not indicate very clearly the variety of subjects with which their work deals. It is a condensed summary, interspersed with comments by the authors, of the work which has been done upon bacteriological chemistry and physics, immunity, food poisoning, methods of toxicological analysis, and the chemistry of the ptomaines and the leucomaines. The first half of the book will be found particularly useful as a digest of recent research upon the bacteriological topics which are exciting most interest at the present day. The toxins of the infective bacteria, the bactericidal properties of blood serum, the precipitins, lysins, and agglutinins, and the problems of immunity are all dealt with in a way which affords a good general grasp of what is known upon these subjects. The toxicological matter is presented much less fully, and we think that a student of this science would find it advisable to seek his information in a textbook exclusively devoted to toxicology. The section on the leucomaines ought to prove extremely useful to those who are interested in modern physiological chemistry treated from the standpoint of the expert organic chemist. Almost the whole of the original literature on this important subject consists of isolated articles published in various scientific journals, and a general survey of them, such as Drs. Vaughan and Novy have provided, will be a great saving of time to those who are working at the chemistry of the tissues and want to know what has already been established in the analysis of the particular class of compounds they are investigating.

REPORTS AND ANALYSES
AND
DESCRIPTIONS OF NEW INVENTIONS
IN MEDICINE, SURGERY, DIETETICS, AND THE ALLIED SCIENCES.

APPLIANCES.

A Gas Griller.—We recently had the opportunity of inspecting the gas griller the invention of Mr. A. E. Harris, dentist, of 64, Finsbury Pavement, E.C. The apparatus, which we saw in use, is an iron casing 13 in. long., by 9 in. wide and 15 in. high. The gas and air are brought in on each side at the bottom through a modified Bunsen burner into a series of chambers. The interior surface of each side of the grilling chamber is corrugated. The corrugations consist of a double plate with an interval varying from $\frac{1}{32}$ to $\frac{1}{8}$ in. between the plates. In the chambers thus formed the mixture of gas and air is superheated, and the corrugations and constrictions act as baffles, distributing the pressure equally; the burners are apertures on the inside of the corrugations, and when in action the inner sides of the grill show rows of small blue flames. The chops, steaks, or other small pieces of meat to be grilled, or the bread to be toasted, are fixed into a vertical wire case, which is introduced into the centre of the grill, the front being closed by an iron door. In this way the food is exposed to heat equally on both sides, and the juices of the meat are retained. The apparatus is open at the bottom and is also furnished with a damper. Air which becomes superheated and envelops the meats under treatment is drawn in by the heat produced by the burning gas. A reservoir placed in the open space below catches all fat. An ordinary chop or steak is cooked in four or five minutes, and with a minimum of trouble. The result is a very palatable dish, free from any baked or charred flavour. Three or four chops or small steaks can be cooked at one time in the apparatus of the size mentioned, and it is calculated that the cost of gas for the grill for one hour would be under five farthings (taking the average cost of gas at 3s. per 1,000 feet), as in one hour it consumes 32 to 33 cubic feet. By a further adaptation of the principle, Mr. Harris has been able to design a cooker for restaurants and large establishments on which from forty-eight to eighty chops can be cooked at one time. The cooker for eighty chops would be about 4 ft. 6 in. long by 12 in. by 15 in.

[5] *Cellular Toxins, or the Chemical Factors in the Causation of Disease.* By Victor C. Vaughan, M.D., LL.D., and Frederick G. Novy, M.D., Sc.D. Fourth Edition. London: Rebman, Limited. 1903. (Royal 8vo, pp. 495. 14s.)

WHISKY.

It is a matter of common observation that during the last few decades the use of whisky as a beverage in place of beer and wine has increased enormously in England, and that among the British in India it has to a great extent replaced brandy, which used to be foundation of most pegs. We do not at present propose to inquire how this change has been brought about, nor to attempt to estimate the degree of the responsibility which should be accepted by the medical profession in the change, but it will be admitted that the change of habit cannot be without practical interest to medical men who are often invited to approve the use of whisky as a less harmful alcoholic beverage than others formerly in more general use. This change in habit has been accompanied by a change in the mode of manufacture of the spirit sold as whisky so considerable, that whereas years ago 70 per cent. was malt whisky and 30 per cent. grain or patent spirit, now the proportions are reversed.

The character of an ardent spirit is determined by three distinct factors:

(*a*) By the raw materials employed.

(*b*) By the method of manufacture by which those raw materials are converted into spirit.

(*c*) By its age or maturity.

Originally whisky (or at any rate Scotch whisky) was manufactured solely from barley malt, and this is still the case with the whisky distilled in the Highlands in pot-stills. At a moderate computation, roughly two-thirds of the spirit vended as "whisky" nowadays is derived from other materials, chiefly maize (Indian corn) and molasses. The spirit so obtained is (or should be) called "grain" or "patent" or "silent" spirit, the word "grain" referring to the materials, and the qualification "patent" to the type of apparatus in which this variety of alcohol is distilled.

The Manufacture of Malt Whisky.

The manufacture of malt whisky as carried out in the Highlands of Scotland will first be briefly described. The raw material employed in the process of manufacturing this spirit—if the necessary water and yeast be excluded—is barley malt.

Preparation of the Malt.

The barley is first steeped in water for, roughly, sixty-five to seventy hours, and is then spread out on the malting "floors," where it remains from twelve to twenty days, being subjected to occasional turning and sprinkling with water. At the end of this period, the rootlets and acrospire of the young plant having attained a considerable length, the barley (now called "green-malt") is removed from the floors and subjected to the process of "withering," after which it is placed on the kiln, where it is dried and cured by means of the fumes derived from a fire fed with anthracite and peat. Formerly peat alone was used for this purpose, but to suit the change in public taste, or to meet the exigencies of southern palates, the quantity of this material now employed is far smaller than was formerly the case. The peat "reek" of whisky can be to a great extent regulated, therefore, by the nature of the materials used in drying the malt.

Objects of Malting.

The objects of malting grain as a preliminary to the conversion of the starch into sugar—and subsequently of the latter into alcohol—are manifold. The young plant, deprived of all nourishment except air and water, is forced to live upon its own reserve material. The latter, however, whether starchy or albuminous, is not, to begin with, in a readily-assimilable state, but the plant develops a number of enzymes which in their turn are ready to transform the carbohydrates and proteids. When this enzymic development has reached a certain stage the growth of the plant is stopped by the maltster, and the enzymes which were created by the plant for its own purposes, serve to modify and transform the products of the grain in the sense desired by the distiller. On the kiln the enzymes are further modified, and in addition flavour is developed.

Mashing.

The finished malt is crushed and then transferred to the mash tun, where at appropriate temperatures it is mashed with suitable quantities of water. In this stage the major part of the starch is liquefied and converted into a series of

saccharine substances ranging from the so-called stable "dextrin" down to maltose and finally glucose. The "wort," as the liquid portion of the mash is termed, is now separated from the "grains" (husks) by filtration through a false bottom, and, after cooling to a certain temperature, is "pitched" with yeast.

Fermenting.

The fermentation is carried a good deal further than is the case in the brewery, as the object of the distiller is to convert as much as possible of the carbohydrates present into alcohol, whereas the brewer must necessarily retain a portion of the dextrins and dextrin-derived substances in order to give body and stability to the beer. The gravity of the fermented liquor, or "wash," is at the close of the fermentation period roughly equal to or somewhat below that of water.

Distillation of Malt Whisky.

Distillation is effected in Highland malt distilleries in a so-called "pot" still. The process is one of simple distillation without any attempt at a fractional separation of the various constituents of the original liquor. The "pot"-still is a flat-bottomed copper vessel with a head and swan-neck varying somewhat in height and design. It is heated by means of an open coal or coke (or sometimes wood) fire. The yeast,[1] particles of husk, etc., are not separated prior to distillation, and in order to prevent excessive "burning" or charring of the solid contents of the wash which tend to settle on the bottom and sides, the pot-still is provided with a stirrer or scraper. The neck of the still is connected with a water-cooled copper worm, and it is in the latter that the dilute spirit driven over from the still condenses. The product so obtained is called "low wines." The residue in the still is termed "pot" or "burnt" ale.

The low wines are next redistilled in a still similar to the wash-still, except that it is not provided with a scraper. The distillate from the low-wines-still is collected in three fractions, termed respectively (1) foreshots; (2) clean spirit (or whisky), (3) feints (or tailings). The residue in the still is called "spent lees." The proper separation of the distillate as indicated above is gauged either by means of a spirit hydrometer or by the fact that both the foreshots and feints do not dissolve to a clear solution in water. The foreshots or feints are united and redistilled with the low wines of the next operation. It is obvious, therefore, that there is no ultimate fractional separation of the various constituents, but that the final products are "clean" whisky and spent lees.

The strength of the low wines is roughly 19 to 20 per cent. of absolute alcohol, of the foreshots 60 to 80 per cent., of the clean spirit 55 to 80 per cent, of the feints 25 per cent., and of the spent lees 0.5 to 1 per cent. The whisky is reduced in strength prior to storage to roughly 55 per cent. in Scotland and to 65 per cent. in Ireland. Schematically the manufacture of pot still malt whisky may be set out as follows:

Barley (steeped, floored and kilned)

Barley malt (crushed, mashed with water and filtered)

Draff or spent grains

Wort (pitched with yeast)

Wash (distilled in "wash" still)

Burnt ale (residue in still) Low wines (distilled in "low-wines"-still)

Spent lees (residue in still) Foreshots Clean spirit (whisky) Feints

THE MANUFACTURE OF "GRAIN" OR "PATENT" SPIRIT.

"Grain" or "patent" spirit is sharply differentiated from pot-still malt whisky, inasmuch as the materials employed, and the methods of manufacture, are entirely different in the two cases. Whereas the Highland malt distiller employs barley malt, the "grain" or "patent" manufacturer can make use of any material either starchy or saccharine which is capable of being converted into alcohol. The materials mainly used in the United Kingdom for this purpose are maize (Indian corn) and molasses (the residues of the sugar factories). In Germany potatoes are chiefly employed, and in France beet roots, maize, and molasses. The molasses are of two kinds—namely, sugar cane molasses and beet molasses. The process of preparing these materials for fermentation does not, as a rule, involve any malting nor the use of a mash-tun in the ordinary sense of the word. Molasses are simply diluted and then "pitched" with yeast. Maize and other starchy substances are treated with boiling water and steam (usually under pressure nowadays) in a "converter" in such a manner as thoroughly to rupture and disintegrate the starch cells, and the material so "prepared" is saccharified by means of a little highly diastatic malt. The liquid thus obtained is filtered, or partially filtered, and then pitched with yeast and fermented in the usual manner. Occasionally a mineral acid is used for the conversion or partial conversion of the raw starch, but this practice is now somewhat rare.

"Patent" Stills.

The pot still, as we have said, connotes a simple, non-fractional distillation; the patent still embodies the principal of fractionation in a high degree. The object of the malt distiller is to produce malt whisky, that of the "patent" distiller to evolve plain spirit, alcohol pure and simple, or something approaching the latter as closely as possible. The "patent" still generally employed in this country is that named (after its inventor) the Coffey Still. It consists essentially of two upright columns termed the "analyser" and the "rectifier" respectively. The wash (previously warmed by its passage through closed pipes in the rectifying column) passes into the "analyser" in a continuous stream, and pursues its course from top to bottom over a series of shallow trays. At the same time steam is introduced at the lower end of the "analyser," and this, travelling in the opposite direction to the descending wash, gradually robs the latter of its alcohol. The exhausted wash enters a special receiver at the base of the "analyser." The mixed steam and alcohol vapours pass from the "analyser" to the base of the rectifier and thence upwards, and finally into the condenser—a series of coils cooled by water. During their passage up the rectifying column the vapours undergo a process of fractional condensation. The greater part of the steam and the higher alcohols and other substances possessing a relatively high boiling point are condensed in the lower part of the rectifier and fall into a special vessel termed the "hot feints receiver." In this the "fusel oil" separates as a layer on the surface and is skimmed off automatically. Another part of the vapour is condensed in the upper part of the column and passes by a special pipe into the condenser, where it is joined by the uncondensed residual vapours, which in their turn are liquefied and pass off into the spirit receiver.

Nature of "Patent" Spirit.

The product so obtained is of high alcoholic strength, indeed in some of the more modern apparatuses a spirit of 95 per cent. may be obtained in one operation. Although the patent still (as generally employed here) removes the greater part of the higher alcohols and less volatile ethers, it does not eliminate the substances which are of approximately the same or of lower boiling point than ethyl alcohol, particularly the aldehydes and such volatile nitrogenous bodies as may be present in the wash. The patent-still spirit if properly prepared is practically odourless and tasteless; that is to say, it possesses none of the characteristic flavour or taste of the pot distilled article. If not distilled on rational lines, or if prepared from inferior material—such as beet molasses, for instance—it possesses characteristics which it is extremely difficult to modify or eliminate even by the most careful rectification.

STATISTICS AS TO MATERIAL EMPLOYED.

It will be obvious from the above brief sketch that pot-still malt whisky and "patent" or "grain" spirit are different articles.

In Tables I, II, and III some particulars are given as to the extent to which spirit derived from barley malt and other materials is produced and employed in this country for potable purposes.

TABLE I.—*Material Employed in Distilleries of the United Kingdom.*
(1901-2.)

Malt	1,195,790	qrs.
Unmalted grain (chiefly maize)	1,442,039	,,
Molasses	843,708	cwt.
Glucose	8,377	,,
Sugar	749	,,
Other materials	9,496	,,

Table II.—*Quantity of Spirits Actually Consumed, etc., in 1901-2 in the United Kingdom.*

	Proof Gallons.
Distilled in the United Kingdom	33,749,231
Foreign spirit (other than rum and brandy)	1,905,703
Total	[illegible]

Table III.—*Quantity of Spirits Actually Produced in (or Imported into) the United Kingdom in the Same Period.*

	Proof Gallons.
Spirit distilled in United Kingdom	55,192,324
Foreign spirit (other than brandy or rum imported) ...	2,617,090
	57,809,414
Less home and foreign spirit used for methylation ...	5,268,180
	[illegible]

Proportions of "Pot" and "Patent" Spirits Consumed as Whisky.

Taking a rough average over the past five years the total quantity of spirit distilled in the United Kingdom (less the spirit employed in methylation) was 55 million gallons, the quantity actually consumed was 35 million gallons. Calculating the quantity of malt employed in the spirit actually consumed on this basis, we arrive at a total of roughly 700,000 quarters, corresponding to roughly 12 millions out of a total of 35 million gallons. On this basis it would appear that about one-third of all the spirit produced (and consumed) is pot-still and two-thirds patent-still spirit. The patent distilleries also employ a certain proportion of malt, but against this may be placed the unmalted grain employed in the Irish pot-stills and the spirit consumed as gin. It is interesting to note that the figures arrived at by the above process of calculation are borne out by the leading trade authorities, who are unanimous in considering that the bulk of the whisky on the market consists roughly of one-third malt and two-thirds patent spirit. In addition, there are annually imported some two million gallons of foreign plain (mostly potato) spirit, which apparently pass into consumption either as whisky orgin.

Differences between Malt Whisky and "Grain" Spirit from a Chemical Point of View.

The differences between the two classes of spirits from a chemical point of view will now be indicated. It is evident that they must be traceable either to the raw material or to the method of manufacture. The natures of the differences due to the method of manufacture are to a certain extent clearly defined; those which have reference to material, on the other hand, are somewhat obscure.

Differences due to Mode of Manufacture.

Broadly speaking, all the volatile constituents of the wash will be represented in pot-still spirit. In patent-still spirit some of these are eliminated, or eliminated to a great extent by the process of fractional distillation. The patent-still being operated by steam no secondary products of any importance are formed during distillation. The pot-still wash, containing a considerable quantity of suspended solid material and heated by means of a naked fire, must necessarily produce some of the secondary products formed by the carbonizing action of the fire on the solid and liquid particles practically in immediate contact with them. The nature and amount of such secondary "fire products," if they may so be termed, will vary according to the size of the still, the fierceness of the fire, the efficiency of the stirring apparatus, and so on. The characteristics of malt whisky are due to a great extent, though not entirely, to the production of these fire-products.

Differences due to Materials.

The impregnation of the malt intended for the pot-still with peat fumes also determines, though as compared with fire action and the absence of fractionation to a considerably minor extent, the character of the ultimate product.[2] The secondary or "by" products in patent still spirit are (apart from certain oxidation products produced during distillation) entirely due to the original materials. Sugar-cane molasses will give a spirit which is decidedly reminiscent of rum. Beet molasses contain considerable quantities of basic and alkaloidal substances—more particularly the fatty amines and substances of which "betain" is a type—which must pass over into the final spirit to a greater or less extent. Potatoes contain traces of solanine, and though there may be little reason on this score to object to spirit prepared from healthy potatoes, when the latter are diseased or putrid they develop a number of toxic substances, chiefly of a basic type. This also applies to other grain.

Analytical Considerations.

Analytically considered all spirits consist of ethylic alcohol (together with a varying proportion of water) and a small quantity of other substances usually termed secondary or by-products. Although, quantitatively, the by-products form a very small proportion of the whole, yet it is to these that the "character" of a spirit is due. Some of the by-products are well-defined and can be determined with accuracy by analytical methods; others are present in such extremely minute quantities that, up to the present, it has not been possible to investigate either their exact nature or the extent to which they may be present. Broadly classified, the by-products present in whisky are:

(*a*) Higher alcohols chiefly:	Propyl alcohol. Butyl alcohol and Amyl alcohol.
(*b*) Acids chiefly:	Acetic acid.
In smaller quantities:	Fixed acids.
(*c*) Compound ethers, chiefly:	Ethyl acetate.
In smaller quantities:	Amyl acetate. Amyl valerate. Ethyl palmitate. Ethyl oleate.
(*d*) Aldehydes and ketones, chiefly:	Acetic aldehyde. Furfural.
In smaller quantities:	Acetone Acetal.
(*e*) Basic substances, character undetermined:	Probably traces of ammonia and bases of the pyridine series.

All the above substances have actually been recognized and most of them determined quantitatively.

The higher alcohols were formerly termed fusel oil, but it is now recognized that this name should be reserved for the article which is commercially known by that appellation, and which, as a matter of fact, is a complex mixture containing numerous other substances besides the higher alcohols. The following analyses (Table IV) will give a fair idea of the nature of the higher alcohols in various spirits, and at the same time illustrate the differences that exist in this respect.

The figures in Table IV referring to grain, molasses, and potato spirit indicate percentages of the various constituents in the "fusel" separated in course of manufacture and not the higher alcohols in the finished spirits. The higher alcohols actually present in finished "patent" spirit consist almost entirely according to Bell of propylic alcohol, but figures by Schidrowitz (see Table IX, p. 1649) appear to cast doubt on this statement. The figures relating to malt whisky are percentages of the various higher alcohols in the total higher alcohols actually present in the finished malt whisky.

Table IV.—*Higher Alcohols.*

—	In Grain Spirit Fusel (Bell).	In Molasses Spirit Fusel (Bell).	In Potato Fusel (Rabuteau).	In Malt Whisky (Bell).
	%	%	%	%
Propyl alcohol	18	13.0	[illegible]	29.9
Butyl alcohols	[illegible]	4	11.5	37.6
Amyl alcohols	41.2	36.0	33.5	32.5
Other alcohols	[illegible]	[illegible]	[illegible]	[illegible]

* Of total.

In this connexion it will be remembered that no "fusel oil" is separated in the manufacture of malt whisky, but in the case of patent spirit a quantity of this complex mixture of higher alcohols and other substances is obtained and separated in the hot-feints receiver of the patent still.

The Acids.—Freshly-distilled spirits contain no more than traces of acid. On storing in cask, however, a certain amount of acid, increasing with age, forms at the expense, directly or indirectly, of the alcohol. It was formerly thought that this acid was wholly volatile, and consisted substantially of acetic acid, but Schidrowitz[3] has recently pointed out that all mature whiskies contain a sensible proportion of fixed, or non-volatile, acid. Whether this is derived

[2] It is considered by some authorities that the herbage and soil through which the water passes has a decided influence on flavour. In this connexion it is interesting to note that many whiskies distilled in districts where the pine and fir predominate develop on storage a distinct flavour of vanilla. Vanillin (which is the active constituent of vanilla) is closely allied to coniferin, a glucosidal substance which is formed in considerable quantities in the sap and other parts of the conifers. Incred vanillin is (or rather was) actually manufactured from this substance on a large scale.

[3] Chemistry of Whisky, *Journal of the Society of Chemical Industry*, June, 1902.

wholly from the cask, or whether it is in part formed by condensation, is still a moot point.

The Compound Ethers.—The bulk of the compound ethers present both in pot-still and patent-still spirit undoubtedly consists of ethylic acetate. No examination of the actual constitution of the compound ethers in finished whisky is on record, but the following analysis (Bell) of the compound ethers in a pot-still foreshot is interesting:

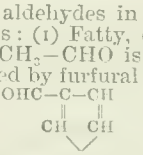
TABLE V.—*Compound Ethers in Foreshot.*

(In terms of the corresponding Acids.)

Ethylic acetate	66.7 per cent.
Ethylic propionate	0.2 ,,
Ethylic valerate and butyrate ...	22.6 ,,
Ethylic salts of higher acids ...	1.5 ,,

All genuine malt whiskies contain small quantities of oily ethers derived from the fats present in the grain. These apparently consist chiefly of ethylic palmitate and ethylic oleate. It is to these substances in part that the cloudiness produced by the dilution of genuine malt whisky with a large volume of water is due. They are not present in "patent" spirit. If a sample of genuine malt whisky be distilled (after boiling with a caustic alkali), very considerable frothing of the liquid, due to the formation of a soap from the oily ethers, occurs. The proportion of compound ethers present in a new whisky depends to a considerable extent on the original acidity of the wash. The ethers are formed by the action of the acids in the wash on the alcohol. Broadly speaking, the main difference between the compound ethers in pot-still whisky and those in patent-still spirit is that the molecular weight of the former is decidedly higher than in the latter. This holds good with regard to the higher alcohols also.

The Aldehydes.—The aldehydes in spirits may be broadly divided into two classes: (1) Fatty, open-chain aldehydes, of which acetic aldehyde CH_3-CHO is the type; and (2) cyclic aldehydes as represented by furfural



The aldehydes of the furfural type are characteristic of pot-still spirits. They do not exist (except possibly in the minutest traces) in "patent" spirits. Up to the present only furfural as such has been identified in pot spirits, but it appears to be more than probable that small quantities of other bodies of this series are also present. Furfural is formed by decomposition of carbohydrates of the pentose series. There is little doubt, therefore, that the furfural in pot spirits is formed by the action of the fire (and possibly also of the acid) in the pot-still on the woody fibre and gum contained in the husks, etc., suspended in the wash. We are indebted to Hewitt[4] for a large number of determinations of furfural in whiskies. The following are a few of his results:

TABLE VI.—*Furfural in Whiskies. Results in Grams per Litre of Spirit.*

Scotch Whiskies.		
From same distillery. Glenlivet type of whisky.	Foreshots	0.0030
	Mixed feints and low wines ...	0.0080
	New malt whisky	0.0550
	Whisky 5 years old	0.0440
	New malt	0.0150
	Whiskies from various distilleries	0.1050*
		0.0200
		0.0550
Old malt whiskies ...	5 years	0.0410
	10 years	0.0390
	17 years (Islay)	0.0320
Other Whiskies.		
New Irish		0.0640
Old Irish (? 5 years)		0.0150
Canadian Club whisky (1891)		0.0150
American rye		0.0140

* Appears to be an exceptional type.

The fatty chain aldehydes present in new spirits (whether pot or patent) are generally regarded as consisting entirely of acetic aldehyde, but whatever the truth may be in respect to new malt whisky, it appears to be beyond doubt that matured pot spirit contains appreciable proportions of acetales.[5] In patent spirits acetic aldehyde appears in varying proportions, usually very little in German plain spirits but somewhat more in Scotch "grain" whisky. The fatty aldehydes are produced by oxidation of alcohol. In the English "patent" stills the process is—owing to the Excise regulations—intermittent; a considerable amount of air is therefore introduced at the commencement of each operation and this, acting on the alcohol, produces a small quantity of aldehyde. In continuous working stills of the Continental type this introduction of air is avoided and the spirits so produced therefore contain little or no aldehyde. The only quantitative figures relating to the aldehydes in whisky on record are those contained in Table IX (p. 1649).

[4] *Journal of the Society of Chemical Industry*, January, 1902.

[5] Schidrowitz, loc. cit.

Bases and Alkaloids in Spirits.

It has long been known that most spirits contain traces of substances of a basic nature, but up to the present there is no definite information as to their nature or quantity in regard to whisky. With regard to "spirits" generally we quote the following from the article on Spirits by Dr. Schidrowitz in the Tenth Edition of the *Encyclopaedia Britannica*:

Guareschi and Mosso first drew attention to the fact that numerous samples of reputedly pure spirits contained small quantities of certain volatile bases of an alkaloidal nature. They apparently belong to the pyridine series and have effects similar to those of strychnine. Recently Bamberger and Einhorn have discovered the presence of pyridine, dimethyl pyridine, and other bodies belonging to the same series in commercial fusel oil. It is possible that the existence of these volatile bases in spirit may have given rise to the—on the face of it absurd—suggestion that wood spirit and tar bases have been used as adulterants of whisky. It appears likely that the formation of the bases in question is connected with the use of inferior or decaying grain or maize. Thus the spirit produced in Sweden in 1879 was particularly bad and had very curious effects, and it was found on investigation by Husz that it had actually been largely prepared from decomposing grain. Moreover, Lombroso discovered an alkaloidal body in decayed maize, the action of which was not unlike that of strychnine. The quantities of these bases which have been found in spirits are very small, but it must be remembered that substances are known—such as abrine, for instance—which have marked effects in practically unweighable quantities. It is possible that these volatile bases may be responsible for some of the effects—very similar to alkaloidal poisoning—produced by crude spirits such as Cape smoke and cheap Portuguese liqueurs.

Analytical Composition of Whisky.

The number of published analyses of whisky which are at all complete is very small. A considerable number of analyses were placed before the Royal Commission on Spirits (1891) by the then head of the Somerset House Laboratories, Dr. Bell, but the figures given can only be regarded as fragmentary, inasmuch as they referred only to the higher alcohols, the compound ethers, and the acid. It is unfortunate that Dr. Bell did not see his way, for instance, to differentiate between the various higher alcohols and ethers, between the fixed and volatile acid, and so on. At the same time it is

TABLE VII.—*The Results are in Milligrammes per 100 c.cm. of Absolute Alcohol (Recalculated from Bell's Tables.)*

First Series.

	No.	Free Acid (as Acetic Acid).	Compound Ethers.	Higher Alcohols.
Pot spirits, new (malt whisky) ...	1	6.66	48.41	191.18
	2	4.20	39.46	191.18
	3	16.66	59.63	184.17
	4	15.08	158.05	191.18
Patent spirits, new (British) ...	1	3.85	18.39	63.14
	2	2.45	1.75	17.54
	3	6.31	59.10	63.14
	4	3.68	27.71	57.88

Second Series.

	No.	Age in Years.	Free Acid.	Compound Ethers.	Higher Alcohols.
Pot spirits, old (malt whisky)	1	2	21.040	56.12	213.98
	2	3	24.550	71.91	182.41
	3	4	33.320	54.37	185.92
	4	6	33.320	112.25	349.04
	5	7	55.880	135.05	217.49
Patent spirits (British), old	1	2	11.570	29.81	43.85
	2	4	10.170	16.83	38.58
	3	5	9.820	1.64	50.86
	4	6	19.290	11.75	52.62
	5	7	17.180	33.32	45.60
Foreign patent spirit. Potatoes, beet, etc. ...	1	—	6.310	85.31	15.78
	2	—	14.030	32.62	15.78
	3	—	4.910	2.80	8.77
	4	—	11.570	15.43	5.26
	5	—	5.080	3.68	5.26

TABLE IX.—*Analyses of Whiskies (Schidrowitz). Results (except Alcohol, which is expressed in per Cent. by Volume) denote Milligrammes per 100 c.cm. of Absolute Alcohol.**

Number of Sample.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
Description	Malt	Malt	Malt	Malt	Malt	Malt	Grain	Grain	Grain	Grain	Malt	Malt
Cask	None	Plain	Sherry	None?	Sherry	Plain	Plain	None?	Sherry	None	None	Plain
Age (years)	New	4	4	New	2	2	3	New	5	New	New	4
Alcohol per cent.	62.66	60.41	60.55	63.52	60.48	59.74	60.34	52.39	59.74	70.60	62.22	60.45
Higher alcohols	263 3	182.0	265.9	94.3	160.8	148.3	[illegible]	84.9	77.4	67.7	199.4	258.0
Total acid (calculated)	14.3	49.6	65.9	9.4	72.6	25.1	3.3	Nil	18.6	Nil	25.4	31.1
Volatile acid (as acetic acid)	14.3	28.1	31.3	9.4	61.1	20.1	[illegible]	[illegible]	13.5	Nil		
Permanent acid (as tartaric acid)	Nil	21.5	34.6	Nil	[illegible]	[illegible]	Trace	Nil	5.1	Nil		
Compound ethers (real; as acetic acid ether)	73.4	112.5	85 9	75.6	110.8	100.4	76.2	60.9	77.7	35.4	61.9	69.4
Compound ethers (apparent)	90.0	112.7	90.0	82.3	111.0	109.4	69.4	56.2	72.4	47.6	—	—
Extract	16 3	316.1	264.2	10.0	122.0	22.4	124.6	17.3	104.7	7.0	27.0	29.1
Molecular weight of acids corresponding to higher alcohols	—	—	105.1	—	100.0	103.9	114.5	106.7	108.1	74.4	—	—
Furfural	3.4	1.8	3.0	[illegible]	[illegible]	[illegible]	Yellow, fairly strong	Yellow, slight	Yellow, very strong	No colour	6.2	4.3
Total aldehydes (ex. furfural)	3.0	13.2	29.6	19.8	35.2	21.3	12.8	5.9	0.1	3.7	11.4	13.5

* These figures divided by 3 roughly give grains per proof gallon.

only fair to say that at that time the methods for quantitively estimating the aldehydes as a whole and of furfural in particular were not satisfactorily worked out, and it would be going too far, perhaps, to suggest that more might have been done in this respect in those days. Table VII gives some of the results obtained by Dr. Bell in the case of pot and patent spirits respectively.

These analyses are selected as being fairly representative of the full tables. It will be observed that both in the case of new and old spirits there is a very distinct difference in the general composition (as far as Bell's analyses go) of pot as compared with patent spirits, and that this difference is still more marked if malt whiskies are compared with foreign plain spirits. In the case of old spirits it should be mentioned that the figures do not refer in any series to the same whisky analysed at different periods, but merely to whiskies corresponding to the ages mentioned.

The following table gives analyses of new Irish whiskies by Mr. A. H. Allen (Spirits Commission Appendix).

The results have been recalculated to milligrammes per 100 c.cm. absolute alcohol, except where otherwise stated.

TABLE VIII.—*New Irish Whiskies.*

	I.	II.	III.
Specific gravity	0.8852	0.8876	0.8852
Alcohol per cent. (weight measure)	54 9400	55 5600	54.9400
Extractives (weight measure	0.0080	0.0065	0.0068
Free acid (as acetic acid)	2.6	3.5	2.6
Ethers, etc. (as acetic ether)	53.5	42.6	53.5
Amylic alcohol	105.6	67.2	70.7

In conclusion of this section on published analyses of whiskies we give a series of more modern date (June, 1902), from a paper by Dr. Schidrowitz on the Chemistry of Whisky published in the *Journal of the Society of Chemical Industry*. Analyses 1 to 3, 4 to 6, and 11 to 12 respectively represent whiskies from the same distilleries and of corresponding makes. The figures are, therefore, fairly comparable *inter se*, although, owing to the fact that the make at the same distillery varies slightly from time to time, they are not quite absolute. With regard to the furfural, the word "yellow," etc., in the case of the "grain" whiskies, refers to the fact that these spirits contain no furfural, but give a peculiar yellow colour (see next column), with the furfural reagent acetate of aniline).

THE MATURATION (AGEING) OF SPIRITS.

There is a general opinion that potable spirits "improve" with age, and it is usually conceded that this applies in a higher degree to "pot" than to "patent" spirits. The changes which pure ethylic alcohol may undergo on storage under ordinary conditions are strictly limited. If kept in glass and unexposed to light or air, alcohol undergoes practically no change. If preserved in glass and exposed to some extent to air and light, a little acetic aldehyde and acetic acid are produced. The same applies to plain spirit preserved in wood. On the other hand, the further a spirit is removed in its chemical composition from pure ethylic alcohol the greater will be the change that comes over it, provided, however, that the spirit is preserved in cask; pot spirits preserved in glass undergo practically no change. It is frequently stated that grain whisky does not "improve" with age, but the statement is too sweeping. There is grain whisky which is practically pure alcohol; that variety certainly will not change. Again, there is grain whisky, which is, chemically speaking, unrectified patent spirit. This class of spirit will "improve" on keeping to the extent that it contains substances capable of modification with age, substances in some respects similar to those existing as by-products in pot spirits. Again, "patent" spirit made from certain classes of materials may contain toxic ingredients which will not be eliminated by the process of ageing.

The nature of the changes undergone by "pot" spirits during maturation is a question which still remains partially unsolved, though a good deal of light has been cast on the problem during the last decade. It was formerly thought that the improvement was due to the disappearance of "fusel oil" and this term, unfortunately, was considered to be synonymous with the higher alcohols. The analyses given in Tables VII and IX do not, however, indicate that the higher alcohols actually disappear to any extent. On the other hand the compound ethers, as appears from theoretical considerations to be probable, do increase somewhat on ageing. The total acid increases appreciably, and fixed acid which is absent in new spirits, is formed or extracted from the cask. The greatest change, speaking with respect only to the substances of which we have definite analytical knowledge, takes place in the case of the aldehydes. As a whole the aldehydes undoubtedly increase, but there is good reason to believe that the aldehydes originally present undergo considerable modification and that substances of this class which form during maturation are of a different nature to those present in new whisky. The furfural undoubtedly decreases and gradually disappears with age. Acetales are formed and also a peculiar body [6] of an aldehydic nature which yields a yellow reaction with the furfural reagent.

Bell [7] has suggested that the improvement is due in part to the disappearance or modification (by resinification or oxidation) in small quantities of substances of a creosotic or phenolic nature which exist in new pot spirits. This appears probable, for substances of this nature would undoubtedly tend to form under the conditions of pot-still manufacture. It seems likely that bodies of this class are not actually eliminated, but modified and converted into products to which a part of the "bouquet" of old spirits is due. In this connexion reference may be made to the intimate chemical connexion between bodies of the creosote class and perfumes such as vanillin. Again, it appears probable that the substances of a basic nature present in new spirits undergo considerable change.

Artificial Maturation.

There are numerous processes for effecting the maturation of spirits by artificial means. The most recent of these is that of Hewitt, which is based on the assumption that it is desirable to remove the aldehydes, and particularly the fur-

[6] Schidrowitz, loc. cit.
[7] Loc cit.

fural from new whisky. That these substances are responsible for the irritating character and for some of the evil effects of new whisky appears to follow from the work of Brunton and Tunnicliffe.[7] Hewitt proposes to eliminate the aldehydes by means of phenyl-hydrazine-sulphonate of soda, a salt which forms non-volatile compounds with the former, and thus permits of their separation in the low-wines-still. The process of Scott consists in blowing cold, dry, filtered air into the spirit. There are other processes relying on the action of extreme cold, of electrolysis, etc. These processes claim to render new spirits more quickly potable.

Physiological Effects of Constituents of Spirits.

In a consideration of the physiological effects of potable spirits it is necessary to distinguish as far as is possible those due to the ethylic alcohol which is not only common to but forms (apart from water) the main constituent of all spirits, and of those substances which for want of a better name may be termed by-products, and to which the character of a spirit is entirely due. The quantity and quality of those by-products vary according to the raw material, the method of manufacture, method of storage, and age. In the present instance attention is confined to malt whisky, and that which is generally termed "patent" or "grain" spirit.

The Acids and Compound Ethers.—The quantity of these substances present in ordinary whiskies is so small that it seems improbable that any appreciable physiological action can be attributed to them.

The Higher Alcohols.—At one time it was considered that some of the evil effects of spirit drinking, more particularly the effects of new spirits, were due to the higher alcohols. Experiments by Fürst, Cros, Richardson, and others appeared to support this contention, but these experiments were generally carried out with commercial fusel oil or (there is good reason to believe) higher alcohols which had not been properly purified. Experiments by Dujardin-Beaumetz and Audigé showed that the toxicity of the higher alcohols does indeed increase with their molecular weight, but in view of the relatively small quantity of these bodies present in properly distilled whisky it is scarcely conceivable that any particular ill effect is ascribable to them. The toxicity of the various higher alcohols, according to Dujardin-Beaumetz and Audigé is as follows:

Alcohol.	Fatal Dose per Kilo. Body Weight (Dogs).
Ethylic alcohol	5 to 6 grams.
Propylic alcohol	3.8 to 3.9 grams.
Butylic alcohol	1.8 to 1.85 gram.
Amylic alcohol	1.5 gram.

Seeing that the relations of ethylic alcohol to higher alcohols in whisky is roughly 500 to 1, it is obvious that only a very slight part of the toxic effect of this spirit can be due to their presence. Moreover, mature pot whisky, which is considered to be less injurious than new spirit, does not apparently contain appreciably less of the higher alcohols.

The Aldehydes.—Brunton and Tunnicliffe[8] have recently drawn attention to the fact that the aldehydes present in new spirit may be responsible for some of their unpleasant effects. As the aldehydes apparently undergo profound changes during maturation, this theory appears to be not unreasonable, but there may be other and equally important factors at work in this connexion.

"*Purity*" *of Spirits.*

It has lately been contended—and this argument was elaborated by certain parties before the Royal Commission of 1891—that "patent" spirit is far "purer" and more wholesome than a heavy malt whisky. The use of the word "purity" in this sense is misleading. It is argued that "patent" spirit is purer than malt whisky because it contains less "by-products." In the same way it might be argued that a solution containing 1 per cent. of strychnine was "purer" than a solution containing 10 per cent. of sugar, because 10 is greater than 1. The example is relevant, for the by-products present in patent spirit are not only quantitatively but also qualitatively different to those in malt whisky. But even if the by-products were the same (qualitatively) in both classes of spirit, this would be no reason for saying that one was "purer" than the other, or for selling patent spirit for malt whisky without disclosure of the fact of substitution.

[7] *Lancet*, December 8th, 1900, and June 2nd, 1902.
[8] Loc. cit.

The Adulteration and Substitution of Whisky.

We have already referred to the fact that, roughly, two-thirds of the whisky consumed consists of "patent" spirit. Figures placed before the Royal Commission of 1891 demonstrated the fact that, roughly, 30 per cent. of the whisky consumed at that time consisted of "patent" and 70 per cent. of "pot" spirit. In a space of ten years the proportion of "patent" to "pot" has risen from 30 per cent. to 70 per cent.! Large quantities of English spirit are blended with Scotch "malt," and even Scotch "grain." An instance is known in which English spirit manufactured from molasses is simply coloured and sold as whisky—chiefly for export. An analysis of this spirit recently made has been placed at our disposal, and we print it below (A), together with the analysis of a similar but somewhat better-class spirit (B).

Table X.—*Analyses of English "Patent" Spirit Vended as Whisky and Blended with Malt Whisky.*

	A. (Molasses Spirit).	B. (Materials Unknown. Probably Part Molasses and Part Maize.)	
Specific gravity	0.9065	0.8887	
Alcohol vol. per cent.	63.0000	70.4800	
Total acid	Trace	Trace	
Fixed acid	*Nil*	*Nil*	
Higher alchols	93.8	166.6	Mg. per 100 c.cm. alcohol.
Compound ethers (apparent)	106.5	105.0	
Total aldehydes	17.5	4.3	
Furfural	*Nil*	*Nil*	

Note.—In both cases, on evaporating off the bulk of the alcohol, the residue possessed the characteristic smell of rum. A. in its original condition possessed a raw and objectionable odour and taste. B. was somewhat better in this respect.

The above analyses show that both spirits were manufactured in a patent still and were only rectified to a very partial extent. Considering the materials from which "patent" spirit of this class is made, it appears highly desirable that if its use for internal consumption is to be permitted it should be subjected to rectification of the severest nature. Another concrete example is the case of a spirit which consists roughly of two-thirds "patent" and one-third malt whisky, and there is good reason to believe that the "patent" spirit used in this blend is the same as that designated B in Table X. The product is described in such a manner as to lead the public to believe that it is a choice old spirit manufactured solely from malt in the Highlands. Apart from information as to the composition of this spirit, it is clear from the analysis alone (see below and Table IX) that the words used to describe it are misleading and inaccurate.

Analysis.

Specific gravity	0.9427
Alcohol vol. per cent.	44.6800
Extractives per cent.	0.1400

Total acid	21.4	
Fixed acid	6.0	
Compound ethers (real)	55.4	Mg. per 100 c.cm. alcohol.
Higher alcohols	44.2	
Total aldehydes	20.1	
Furfural	2.2	

Note.—Very little frothing on distillation after treatment with alkali.

The Royal Commission of 1891.

The Royal Commission appointed to inquire *inter alia* whether it was desirable that certain classes of spirits should be kept in bond for a definite period, and also to inquire into the question of blending of spirits and of the application of the Sale of Food and Drugs Act and the Merchandise Marks Act to spirits, presented a report in 1891, which was entirely of a negative nature on these points. No definition of whisky was attempted; no recommendation was made to check the blending of grain and malt spirits and the sale of such blends as malt whisky. The arguments which apparently induced the Commission not to interfere were: (1) The difficulty of defining whisky; (2) the fact that there was apparently no method of applying the Food and Drugs Act, inasmuch as analysts did not see their way to distinguish with certainty between "all-malt" and blended whiskies; (3) the non-production of any spirit actually containing well-known poisonous by-products.

Conclusion.

In this article we have not attempted to discuss the question whether spirits ought to be recommended by medical men as beverages for ordinary use. Accepting the fact that the use

of such beverages is largely recommended or sanctioned, we have endeavoured to give authentic information as to the mode of manufacture, and as to chemical constituents, other than ethyl alcohol, of the spirit now so largely sold under the name of whisky in England, in India, and in the Colonies.

It appears, first, that when whisky began to come into extensive use it was made from malted barley, and that such reputation as it possesses for relative wholesomeness was founded on this malt whisky. Secondly, we now learn that this type has been replaced as to two-thirds of the total consumption by a spirit made from different materials by a different process, and that the by-products it contains are, as might have been anticipated, different. Thirdly, it appears that knowledge of the chemical nature of these by-products, though it has increased in recent years, is still very imperfect, and that practically nothing is known as to their physiological action; and, lastly, that nevertheless this new spirit is sold as whisky both at home and in the Colonies, and is used for blending with malt whisky, the blend being in some instances so labelled as to give the purchaser the impression that it is malt whisky. These are facts which the medical profession ought, we submit, to know and to weigh.

There is another aspect of the matter to which the profession, as the natural advisers of the public, ought to take into consideration. It is believed, or rather, perhaps, we ought to say it is known in the trade, that much of the so-called whisky most carelessly made from the cheapest materials is exported to West Africa and other tropical colonies, where it is sold under Government sanction to native races.

THE IRISH POOR-LAW MEDICAL SERVICE: THE CASE FOR INQUIRY.

By W. R. MacDermott, M.B.

In view of the attempts made to settle the issue between the local authorities and the Poor-law medical officers by local conferences and by consolidation of dispensary districts, I desire to point out here that no permanent settlement can be effected by these means. The medical officers, I submit, in their own interests and in the public interest, should adopt the policy of the present Government, and insist that a case for inquiry and study has arisen, and having taken up the position allow nothing to turn them from it.

The first point I would direct attention to is that the public health service of the country is administered in spirit and letter under Medical Charities Acts passed half a century ago. The original intention of these Acts was simply to meet the personal case of the sick pauper as a matter of charity, and therefore at a minimum of expense and trouble. But at that time nine-tenths of the Irish population were, if not exactly paupers, unable to contribute materially to the support of an adequate medical staff, and the result of the system as it developed was to force the Poor-law medical officers to undertake the charge of virtually the entire population under the false pretence of having to attend only a limited number of paupers.

The primary matter for inquiry is, I submit, whether the medical wants of the population are adequately met now, discarding the principle of meeting them as a matter of charity as false in principle.

These wants are met, of course, by the whole body of medical practitioners in the country, and inquiry should be directed to their ratio to population both generally and locally. Inquiry would show that while population has decreased so has the number of medical practitioners, and that since the work of the last is determined more by area than by numbers their work has not decreased correspondingly with decrease in population. The average area of an Irish dispensary district being 27,000 acres, the medical officer has always to reckon on twenty to thirty patients scattered over it as little affected by any change that may occur in its population. But his work must be greatly increased if other medical men disappear from the scene; and as the reason for their disappearance must be that they cannot earn a living, the new work thrown on him is such that he not merely does not covet but is unable to discharge it.

Inquiry would show that the decrease in the number of medical practitioners in Ireland, particularly in rural districts, requires prompt attention as an evil which by overworking the medical man is rapidly making country practice unpopular, and discouraging entry into the profession as a vocation.

In 1881 the number given in the census report under the heading "medical profession" was 5,891—males 4,170, females 1,721. In 1901 the corresponding number was 5,933—males 3,840, females 2,093. In 1881 the number of physicians and surgeons was 2,470, all males. In 1901 the number was 2,221, of which 20 were females and 133 over 65 years of age. As there was a considerable increase in some city centres, the serious decrease of from 10 to 30 per cent. must have occurred in rural areas.

But the decrease is being rapidly accentuated. In 1891 the number of medical students was 1,646; in 1901 the number had fallen to 1,285. Thus, in the short period of ten years the number in preparation for the profession had fallen by nearly 20 per cent.—a fact, of course, represented in the present number of medical men under the condition that the call on the number for the army, navy, and Colonial service has increased.

The preference given to Roman Catholic members of the profession by the majority of the local Boards under the new system might lead to the supposition that this section would increase in response to the favour: but such is not the case. In 1881 the Roman Catholic physicians and surgeons were 968, in 1901 only 948; and as the students of the denomination were 649 in 1891 and only 575 in 1901, the number in the profession must be decreasing.

The Roman Catholic element of population contributing to professional life gives its youth to the Church and Bar. The clerical profession, 16,165 in 1891 was 18,407 in 1901, an increase altogether Roman Catholic. The clergy of the denomination, 3,363 in 1881, was 3,711 in 1901, and monks rose from 866 to 1,130. In the ten years 1891-1901 Roman Catholic barristers and solicitors increased from 848 to 975. The medical profession is distinctly unpopular among Roman Catholics able to give members to the professions.

This gives the general case for inquiry. The number of medical men in Ireland available for work has fallen and is falling to a figure which does not meet the wants of the rural population, even though these wants are legally matter of charity. The talk about rings and combines in the profession is beside the question: the combination merely expresses the fact that the decay of the profession compels ill-paid and overtasked medical men to act in self-defence and enables them to do so with reasonable prospect of success. The ill-judged attempts of the authorities to meet "combination" simply show that they do not understand and take no pains to understand the true nature of the case.

In no respect is inquiry more necessary than as to the competition which no doubt occurs for some places when vacant. In general any competition that exists is due to total absence of selection on grounds of competence. I got a Poor-law appointment when I had not six months' experience, and was not even a registered medical practitioner. Of course in the particular case no mistake was made, but if a rule existed requiring for responsible posts from one to three years' standing in the profession, where would the competition be that satisfies the official mind? The absence of the rule shows the way the public health is muddled up in that mind with pauperism, Poor Laws, and public charity. But there is selection on grounds of politics and religion by the public Boards. I am to be understood here as making this statement impartially in respect of every sect and party. Without taking space to enforce the view, I am convinced that honest inquiry would show that this has done more to bring about the present state of things than combination on the part of medical men; and that if not promptly and effectively remedied, will leave the country very soon with an altogether inadequate staff of medical men.

In the army the medical officers had to insist on being accorded military rank for reasons which need not be stated here. The Irish medical officers are forced to assert their social status for like reasons. While allowing the gentlemen who sit on Irish Local Boards to be on the whole discreet and courteous there are many individuals among them who assert in coarse and vulgar language that they are the "masters" of the medical officers. No service over which these men claim and exert mastery can be otherwise than intensely disagreeable and unpopular.

A profession the instrument and victim of a false principle of public charity, ill-paid, over-worked and exposed every day to vulgar insolence has the answer which even common labourers make under the circumstances and the case for inquiry is that the answer is being made now to the injury of the public interest.

PHYSICAL DEGENERATION.

[By our Commissioner.]

V.—Personal Hygiene *(continued)*.

Dress.

Cheap finery gives many of the Board School children an air of squalor and untidiness. To see a fairly decent class in their schoolroom, especially on a Monday morning when their pinafores are clean, any observer would be favourably impressed, but were he to meet those same children in the streets clad in every sort and kind of old coat, with battered hats covered with stark feathers and filthy old flowers he would be shocked at the contrast.

Girls attending Board Schools should be required to wear a neat hygienic dress. The parents would gradually see that for the health and appearance of their children, as well as for economical reasons, a neat dress of blue serge would be more becoming than the miscellaneous rags they are clad in now. Each girl should wear a flannel chemise, blue serge knickerbockers fitted to the waist with an elastic band—no stays of any kind. They would probably object to this, as uneducated parents begin to put their girls into ill-fitting steel-boned corsets at the most tender ages, ignoring that at the growing period of their life their limbs and chests should be free to expand. She should wear a woollen jersey and an overdress with shoulder straps, fastened into the waist with a loose belt. In summer the jersey should be left off and a cotton blouse substituted. For-out-of-doors they should have capelines, such as all French children wear, which protect the ears and look tidy, and ulsters of the same colour—probably dark blue or scarlet. Not only would this neat dress be healthier and by its smartness give the schools a better tone, but it would raise the *moral* of the children, and give them self-respect, which few of them possess at present. In summer it is unnecessary in our climate that they should wear any head-covering, especially that particular class of children who live in narrow shady streets which seldom see the sun.

The sameness of the school clothes might have a good effect in stopping pawning, for at present it is well known that the best of the children's clothes live half their time in the pawnshops, and in many cases where the London School Board provide boots they have to be marked specially in order that pawnbrokers may refuse to take them in.

Apart from the moral degradation of ragged and filthy clothes, there is the unhealthiness of it. What plant flourishes under bad conditions? And the same applies to growing children. If their outer garments are often repulsively dirty, one shudders to think what their under ones are like. As we have already said on other subjects interwoven in this great social problem, let all our efforts be centred upon the rising generation. To them should be pointed out the moral and physical poison of dirt and neglect, only let it be taught to them in easy lessons which they are capable of understanding; and let teachers be firm in refusing to admit to their classes untidy and dirty children, while praising and holding up as examples to their companions all those deserving of praise. Often ten words of praise do more than a world of punishments, and too often in dealing with the unfortunates of the earth the mistake is made of treating them as inferior beings instead of encouraging them to rise superior to their surroundings. That is why such vastly better results are obtained by educated gentlewomen in dealing with social questions than could be expected from routine work carried on by less refined though otherwise competent teachers.

Teeth.

Little or nothing seems to be done for the teeth of the children of the labouring classes, and certain it is that it is rare to see them with a sound set of teeth. That nothing should be done to arrest this seems all the more surprising, when it is remembered how large a percentage of recruits are rejected on account of bad teeth or of insufficient numbers due to numerous extractions.

In connexion with the subject of dental caries it will be necessary to go back to the period of infancy. It should be remembered that the classification of the teeth commences in infancy, and that, in fact, the cusps of the first permanent molars are partly calcified at birth, though not yet united together.

The table at the foot of this page, has been kindly corrected by Mr. C. S. Tomes, F.R.S. It gives some particulars with regard to the process of calcification during the first three years of life. The facts which it contains make it seem not impossible that defective nutrition during infancy and early childhood may have some effect upon the regular progress of calcification in the permanent teeth.

Dr. William Hall, of Leeds, who has made an investigation into the home feeding of Jewish and Gentile children in Leeds, has tabulated the results, showing the average physical development at various ages. He finds that the Jewish child not only presents better general physical development, but suffers to a less extent from bad teeth. Comparing a Gentile school in a good district with a Jews' school in a similar district, he found that among the Gentiles 8 per cent. had rickets, and 38 per cent. had bad or backward teeth, while among the Jews 5 per cent. had rickets and 11 per cent. defective teeth. In a Gentile school in a poor district he found rickets in 50 per cent. and bad or backward teeth in 60 per cent. of the children; among Jewish school children in a school in a similar district 7 per cent. had rickets and 25 per cent. bad or backward teeth. The percentage in the Jewish poor district school child was better even than in a country school where 11 per cent. of the children had rickets and 33 per cent. bad or backward teeth. Evidence that this condition of the teeth is at least associated with better physical development is afforded by Dr. Hall's observation that the Jewish child aged 7 years weighed on the average 4 lb. more than his Gentile neighbour, and at 9 years, 7lb. more. The difference he is disposed to attribute mainly to the fact that Jewish women are better nourished during pregnancy, are more anxious to suckle their children, are more attentive to them in early childhood, and feed them with more intelligence.

Defects in the teeth due to imperfect nutrition will only influence the portion of the teeth then being calcified, as no change is known to occur in a tooth once formed. It would appear to follow from this that if the progress of calcification in the permanent set is disturbed during infancy or early childhood, any damage then done is never recovered from. An acute illness will mark teeth by a line, just as the nails may be similarly marked, so that the nutrition of the teeth is interfered with in the sense that it is stopped or checked for a time. This line, of course, marks the edge of the dentine formed at the date of the illness, and thus does not occur on all the teeth at the same level. Further, it is well known that stomatitis will interfere greatly with the formation of enamel, although it is not known to effect the dentine, which is often of good formation under a honeycombed enamel. In children suffering from rickets, the temporary teeth are often seen to be broken or ground down almost to the gums, but the point to which we desire to call attention is the possibility that failure of general nutrition, which certainly retards the calcification of the teeth, may possibly render them more vulnerable.

The mischief can be increased by neglecting to brush first teeth; as a matter of fact they are generally altogether neglected, for the public do not seem to realize that a carious milk tooth can perfectly well cause a permanent tooth cut alongside of it to become carious also. Except among the more instructed classes the periodical visit to the dentist is unknown; until a tooth begins to ache nothing is done, and even then all sorts of nostrums and domestic remedies are

Calcification of Permanent Teeth (Man).

	At Birth.	At Six Months.	At Three Years.	Age of Eruption.
Central incisors	—	Cap of dentine 3.0 mm. long	Crown complete	6½ to 8 years.
Lateral ,,	—	,, ,, 2.5 mm. ,,	Cap of dentine 7.0 mm. long	7 to 9 ,,
Canine	—	,, ,, 1.0 mm. ,,	,, ,, 8.0 mm. ,,	11 to 13 ,,
First bicuspid	—	—	,, ,, 5.0 to 6.0 mm. long	9 to 11 ,,
Second ,,	—	—	,, ,, 1.0 to 2.5 mm. ,,	10 to 12 ,,
First molar	Cusps calcified	,, ,, 2.0 to 3.5 mm. long	Crown complete, root 1.5 mm. long	5½ to 7 ,,
Second ,,	—	—	Cusps calcified	11½ to 13 ,,
Third ,,	—	—	—	17 to 24 ,,

tried, until, as a rule, when the dentist is eventually visited, extraction is the only possible treatment. This, of course, ought not to be, and among the classes earning good wages it seems to be due mainly to indolence, ignorance, or carelessness, for we believe it to be true that reasonably skilled conservative dentistry is now available for them at rates within their means in all large centres of population at least, and would be even more general but for the laxness of the law and the slackness of authorities and magistrates permitting all sorts of ignorant quack dentists to impose upon the credulity of the public. With regard to the very poor, however, the case is different; the Poor Law, so far as we know, makes little or no provision, and the dental hospitals are quite incapable of dealing with the immense mass of work which ought to be done.

The determining cause of dental caries is to be found in the activities of certain microbes commonly present in the mouth. Some of these are produced by fermentation of the food lactic and other acids which dissolve the lime salts of the teeth, while others attack the dentine directly. So long as the enamel remains intact they produce no effect, and even when the dentine is exposed, if its surface be smooth, they do little harm, as was proved by the old practice of levelling, smoothing, and polishing the surface of exposed dentine. The first essential for the production of caries is some depression or cranny in which food particles are retained, and where they undergo decomposition. The points of contact between the teeth may afford such nooks, as may also natural depressions in the crown, or slight congenital defects. For instance, deep pits or clefts may exist in otherwise sound and well-formed teeth, and the bottoms of such clefts are commonly not covered with enamel: in such cases caries is an almost inevitable result, but if treated early excellent and permanent results may be obtained. But it cannot be said that caries traceable to collections of food in other depressions is equally inevitable: on the contrary, strict attention to cleanliness by removing the pabulum of the microbes will be an effectual preventive of caries.

There is no doubt that even in the artisan class small attention is paid to the brushing of teeth night and morning, and as one gets lower down in the social grade it may safely be surmised that it is almost absolutely neglected, and will be neglected until the ignorance prevailing on the subject is lifted. As in most other social problems of the day, the solution lies with the growing generation. Let them be taught in the elementary schools the evil consequences, direct and indirect, of neglect of the teeth. The great importance of using a good toothbrush should be impressed upon them, as well as the strengthening effect upon the gums of cold water; and charitable societies might use their money well by distributing toothbrushes and tooth-powder. Bad teeth prevent proper mastication; people are reduced to eating soft foodstuffs: the teeth get no exercise, and dyspepsia—a disease so much found among the poor—is the inevitable result. The children should be discouraged from eating quantities of cheap sweets—sweet-shops have the same attraction for the children of the labouring classes as public-houses have for their parents—any pocket money they are allowed to have being spent upon cheap sweets.

Provision by the Poor-Law Authorities and by charitable agencies of more ample opportunities for obtaining conservative treatment should be forthcoming, while quack dentistry should be vigorously put down in the interests of the labouring poor.

INEBRIATE REFORMATORIES.

The Report of the Inspector under the Inebriates Acts for the year 1902 gives evidence of highly satisfactory results. Whereas in 1899 there were 88 committals to certified reformatories under the Act, in 1902 there were 714 committals. The Inspector, however, points out that for various reasons depending partly on the point of view of the magistrates, partly on the conditions of admission to the various institutions, the Act cannot be said up to the present time to be in operation to anything like its fullest possible capacity. Progress has, however, been steady, two new reformatories have been added during the last year, and eight of these institutions are now at work. Much work is still being done with regard to the classification of the cases. A perfect classification in one institution is almost impossible, but a further experiment has been initiated by the new Lewes Reformatory. It has been arranged to remove the best and most hopeful cases from contact with the inmates of the ordinary reformatory. The new Chesterfield Reformatory, which is arranged more on the plan of a private residence, has been opened for the reception of these better cases only. No inmates are received direct from the courts, but they are chosen for transfer from other institutions entirely on account of good conduct. A further departure in the same direction is the conversion of the Royal Victoria Home, Horfield (which was formerly a receiving house for the Brentry Reformatory), into a "discharging house," cases being transferred there for the six months previous to release on licence or discharge, in order to accustom them to the life of a town and to a modified form of freedom. In conjunction with this scheme the Inebriates Reformation and After-care Association may be mentioned, having practically the same aim. The Inspector speaks strongly on the subject of the earlier committal of cases, giving exceedingly convincing illustrations and reasons to prove his contentions.

A very interesting section of the report deals with the group of cases known as "criminal inebriates" convicted on indictment after committal for trial from the summary jurisdiction courts. The numbers of these have been respectively during the four years 1898 to 1902, 7, 17, 26, 46. Out of a total of 96 of these cases, 78 were convicted of neglect or cruelty to children, the convictions being due to the energy of the National Society for the Prevention of Cruelty to Children. About 400 children benefited by their action. The Inspector shows that the application of the Act in other directions has evidently not been at all commensurate with its possibilities. He instances the numerous and repeated cases of attempted suicide due to drunkenness which escape treatment and incur punishment, where the opposite mode of procedure would be entirely to the public advantage. In this connexion he instances many other offences and crimes of violence which could only be prevented by the proper control of the offenders in inebriate institutions. For instance, "during 1901 25 persons were convicted on indictment of attempt to murder, 77 of manslaughter, 98 of felonious wounding, and 536 of wounding not amounting to felony. It is certain that a very large proportion of these had been led into crime by drink, and yet only one was sent to an inebriate reformatory."

All the 96 "criminal inebriates" above mentioned were received into certified reformatories, and in only two cases was it found necessary to remove them to a State inebriate reformatory. A remarkable fact is noted by the Inspector, namely, that, taken as a whole, the "criminal inebriates" have proved more amenable and more hopeful than the "drunk and disorderly" group committed from police-courts.

In the drunk and disorderly group 618 persons were committed to reformatories previous to December, 1902. They are classified into four groups: Amenable and hopeful, 70.5 per cent.: refractory and violent, 11.4 per cent.; insane, 5.0; and defective from other causes, 13.1. Of these the Inspector says: "It was easy enough to select the amenable and hopeful cases, but it proved extremely difficult to judge as to the hopelessness of the remainder." He instances four of the very worst cases, now discharged and doing well.

The Inspector puts the case for the State inebriate reformatory in a nutshell. The 24 persons detained in these institutions are so detained in order to allow the proper application of reformative influences to 500 persons elsewhere. These cases are classified as: Insane, 10 per cent.; borderland, 70 per cent.; sane, but bad, 20 per cent.

The Inspector recommends that it should not rest with reformatories to refuse cases, but that all that are committed should be accepted and dealt with as is found possible. He gives weighty reasons for keeping even the irreformable in safety in these institutions rather than in the prisons, workhouses, and asylums, into which they drift in the end. He says of the reformatories—"About 500 of the worst possible characters are now in these institutions, receiving constant care and attention, all living sober and many of them industrious lives. We are giving such persons an opportunity of recovery which has been denied them hitherto, and which will convert some of them into decent members of society, into wage-earners instead of burdens upon the sober section of the community. We are relieving many hard-working men and women of untold misery, and at the same time preventing the exercise of an evil influence over a still greater number of young persons and children. We are reducing crime both now and for the future, and we are lessening street violence and disorder. I think it would be difficult to find a

more useful work—one which more thoroughly combines economic principles with the dictates of science and humanity, or one more deserving of the fullest possible co-operation and support."

"PATENT MEDICINES."

Dr. Robert Hutchison delivered recently at the London Hospital a lecture on patent medicines.

He observed that students of medicine would be expected sooner or later to express an opinion on these preparations, and that that opinion could not be intelligent unless they knew something of the composition of the remedies. In Dr. Hutchison's judgement it would often be their duty to condemn patent medicines, but they must be prepared to give a reason for doing so.

According to law, a patent medicine must be a genuine original invention, and a complete description of it must be filed at the Patent Office, so as to be easily obtainable by the public; neither of these requirements, however, was fulfilled by the majority of the preparations to which the term "patent medicine" was applied. It would not be unfair to describe most of the preparations of the patent medicine vendors as quack remedies. The chief means by which patent medicines were made to succeed was persistent and audacious advertisement. It was monstrous that people should be allowed to produce in the public mind an exaggerated dread of disease simply to serve their own ends. It was intolerable that false hopes should be raised in persons suffering from incurable diseases, in order that money should be made out of a patent medicine. The medical profession ought to make some organized effort to suppress this obtaining of money under false pretences. He advocated a Committee of the British Medical Association to inquire into the composition of these so-called remedies and to expose them.

In the meantime, however, they must all do what they could in their private capacities to fight the evil. The public looked to the medical profession for guidance in these matters as in everything relating to health. If necessary the public must be edueated in the elements of physiology and the process must be begun in the higher ranks of life, for quackery was not confined to any particular section of the community; it was certainly as rife in Belgravia as in Bethnal Green. The upper classes, the so-called cultured classes, believed in patent medicines and quackery to an extent which was almost incredible. Dr. Hutchison concluded his lecture by pointing out that it ought never to be possible for a patent medicine vendor to say with truth that he had succeeded in curing a case where a doctor had failed. That meant that practitioners must give more attention to the treatment of disease, and particularly to the treatment of minor ills, than they did at the present time. In the hospitals it was difficult to teach treatment as thoroughly as it should be taught, for there was so much else to be learnt that the management of slight ailments was apt to receive less attention than it deserved. If, however, medical students used to the full the opportunities afforded them of studying the scientific diagnosis of disease and its treatment, they would not when they engaged in practice need to fear the competition of the charlatan and the quack. The following particulars were given by Dr. Hutchison as representing the approximate ingredients of various patent and proprietary preparations compiled from analyses, partly made specially for the purposes of the lecture, and partly derived from various sources believed to be trustworthy. It was not contended that all the ingredients of each preparation were mentioned, but those given were believed to be those to which the particular preparation owed such activity as it might possess.

Aperient and Liver Pills.

Beecham's Pills: Aloes, ginger, and soap.
Baillie's Pills: Aloes, colocynth, oil of cloves, and soap.
Bile Beans: Cascara, rhubarb, liquorice and ol. menth. pip., coated with gelatine.
Cockle's Pills: } Aloes, colocynth, and rhubarb.
Barclay's Pills: }
Carter's Little Liver Pills: Podophyllin (gr. $\frac{1}{8}$) and aloes soc. (gr. $\frac{1}{2}$) in each pill.
Dixon's Pills: Taraxacum, podophyllin, jalap, and soap.
Holloway's Pills: Aloes, rhubarb, saffron, Glauber's salts, and pepper.
Page Woodcock's Wind Pills: Aloes, ol. carui, and soap.
Scott's Pills: Aloin and cascara, with a soap basis.
Whelpton's Pills; Rhubarb, aloes, ginger, pulv. ipecac., and soap.

Saline Aperients.

Eno's Fruit Salt: Sodium bicarbonate, tartaric and citric acids.
Lamplough's Pyretic Saline: Citric acid with potassium and sodium bicarbonate.
Abbey's Salt: Tartaric acid with sodium bicarbonate, magnesium sulphate and sugar.

Cough Mixtures and Lozenges.

Keating's Cough Lozenges: Ipecacuanha, lactucaria, squill, liquorice, tragacanth, and sugar.
Owbridge's Lung Tonic: Balsam of tolu, oil of aniseed, and oil of cloves.
Balsam of Aniseed: Contains aniseed and other ingredients with $\frac{1}{10}$ gr. morphine in every ounce.

Preparations for Gout and Rheumatism.

Eade's Pills: Sodium salicylate, guaiacum, and aloes.
Gloria Tonic: Colchicum, guaiacum resin, and sodium iodide.
Blair's Gout Pills: The active ingredient is colchicum.

Preparations for Headache and Neuralgia.

Antikamnia: Sodium bicarbonate, antifebrin, and (?) caffeine.
Bromidia: Potassium bromide, chloral, hyoscyamus, cannabis indica, oil of aniseed, syrup, and water.
Bunter's Nervine: Creosote, chloroform, camphor, balsam of tolu, and alcohol.
Kaputine: Antifebrin and sugar (coloured).
Kay's Tic Pills: Iron sulphate, quinine, and soap.

Preparations for Asthma.

Crevoisier's: Belladonna, foxglove, stramonium, sage, and potassium nitrate in equal parts.
Hair's Cure: Potassium iodide and tar water.
Plant's Cigarettes: Leaves of stramonium, lobelia, and green tea.
Tucker's Cure: Atropine, cocaine, hypo-nitrous acid, and various balsamic extracts, administered by means of an aërizer.

Remedies for Obesity.

Trilene Tablets: Sugar and a vegetable constituent of unknown nature.
Grey's Specific: Contains 47.2 per cent. of free sulphur and a bitter (? gentian).
Mrs. Frost's Anti-Obesity Remedy.—The active ingredient is extract of fucus vesiculosus.
Russell's Anti-Corpulent Cure: Citric acid (20 gr. to $\frac{1}{2}$ oz.), glycerine, and water; the pink tablet contains saccharine.

Cosmetic Applications.

Mrs. Allen's Hair Restorer: Lead acetate, milk of sulphur, scented with oil of cinnamon.
Tatcho: Purified oil of paraffin and essential oil of lemon.
Koko: Borax, glycerine, and rose water.
Harlene: Glycerine, alcohol, ammonia, and oil of cassia.
Mexican Hair Restorer: Lead acetate, precipitated sulphur, glycerine, and water.

Ointments and Liniments.

Cuticura: Vaseline and oil of bergamot.
Elliman's Embrocation: Acetic acid, turpentine, and white of egg.
Holloway's Ointment: Turpentine, resin, olive oil, lard, wax, and spermaceti.
Homocea: Camphor, oil of cajuput, and lard.
St. Jacobs Oil.—Oil of turpentine, ol. succini, soft soap, and capsicum.
Lineel Liniment: Zinc and magnesium chlorides with glycerine.
Singleton's Golden Ointment: An imitation of ung. hyd. nit. dil.

Miscellaneous Preparations.

Buer's Piles Cure: Ointment, gall, and hamamelis with lanoline basis: powder, precipitated sulphur, and magnesium carbonate.
Californian Syrup of Figs: Senna (active constituent), syrup of figs, and cinnamon.
Doan's (Backache) Pills: (1) White coated aperient (dinner pills), podophyllin, aloin, rhubarb, and peppermint; (2) brown coated (backache), oil of juniper and a resinous constituent (? benzoin).
Guy's Tonic: Phosphoric acid, tinct. cocci, infusion of gentian, and chloroform water.
Dalby's Carminative: Pulv. rhei, magnes. carb., glycerine, sugar, ol. menth. pip., and ol. anethi, and a small quantity of laudanum.
Chlorodyne: Chloroform, ether, hydrocyanic acid, morphine, cannabis indica, capsicum, peppermint, treacle.
Clarke's Blood Mixture: The active constituent is potassium iodide (about 6 gr. to the oz.).
Oxien: Powdered sugar and starch and ol. gaultheriae.
Ozerine: Potassium bromide and ammonium iodide with chloroform water.
Pink Pills: Iron sulphate, an alkaline carbonate, and liquorice, thickly coated with sugar and coloured with carmine.
Phosferine: Quinine, phosphates, and hypophosphites.
Seigel's Syrup: Aloes, capsicum, liquorice, and treacle.
Steedman's Teething Powders: Calomel and starch.
Warner's Safe Cure: Potassium nitrate (about 10 gr. to the oz.), and various diuretic herbs.
Woodward's Gripe Water: Liquor magnes. carb., ol. anethi, sugar and a trace of alcohol.

Drink Cures.

Mrs. Terry's contains sugar (98 per cent.), salt (2 per cent.).
Antidipso: Potassium chlorate and sugar.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1903.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, DECEMBER 26TH, 1903.

THE WHISKY HABIT.

The article on whisky which is published at page 1645 contains trustworthy information not easily accessible elsewhere on the mode of manufacture and the chemistry of this popular beverage. The article deals mainly with Scotch whisky and imitations of it, for, judging from common observation, Irish whisky, which is made in a somewhat different way, is not so commonly drunk in Great Britain. It will be seen that a great change has taken place in the nature and quality of the spirit sold as whisky during the last ten years; and that dealers have often failed to make the fact known to the public, and have even in many instances concealed it. A newspaper storm was raised on the subject in the spring, and it seemed desirable that an accurate statement should be laid before the profession, which is to a very considerable degree responsible for the extraordinary growth of the popularity of whisky. This popularity in England and India dates back some twenty or five and twenty years, and alike in private houses, in clubs and in hotels probably five men out of six now take whisky habitually in place of wine and beer. It is therefore of some consequence to know that two-thirds of the whisky now sold is made in a different way from that in which the greater part of the whisky supplied when medical men began to recommend or sanction its general use as a less "gouty" drink than wine or beer was manufactured. Much of the whisky now sold in this country and still more of that imported from the Continent and exported to tropical colonies is a spirit made to imitate whisky from maize, potatoes, and molasses or anything which can be fermented.

Is not the time opportune for the medical profession as a whole to consider the attitude which it should take up in the near future with regard to the alcohol question? It may freely be admitted that the exceedingly intemperate accusations levelled against the medical profession by some temperance orators were calculated to arouse indignation, and communications which we have received from time to time show how deeply the wild charges occasionally made have been resented. But there are signs that the temperance movement is developing on more reasonable lines, and that many men are now joining it with the object of seeking to bring about reform by saner action and more scientific arguments. An important manifesto was issued this autumn outlining a policy the main points of which were a large reduction in the number of licensed houses, an increase of the powers of local initiative and control, and compensation "provided entirely out of funds raised from the trade for licence holders whose licences were not renewed solely on the ground that they were not required, or that all licences or any particular classes of licences were being abolished in the locality." In this connexion the movement which has taken concrete shape in the Public House Trust is significant, for, whatever opinion may be held as to the wisdom of its methods, the Trust is at least evidence that men who are very far indeed from being extremists realize that practical efforts must be made to check drunkenness.

We do not know by what train of reasoning Sir Victor Horsley brought his hearers in Birmingham the other day to the conclusion that medical men should tell their patients that if they choose to take even a little alcohol they must look upon it as a luxury; but we think that it can easily be shown that even from the point of view of that perhaps unjustly abused person, the moderate drinker, a very similar, in fact an almost identical, conclusion inevitably follows from the facts.

The habitual use of alcohol may be advocated or defended either on the ground that it is a useful part of diet in health, or that the physical and psychical effects it produces are agreeable, or that certain alcoholic beverages are palatable. We conceive that it is not necessary to contest the view that alcohol forms an essential part of a healthy diet. If anybody ever held such a view, it has been amply disproved by observation. Nor does it seem necessary to discuss the question whether alcohol is a food or not; even accepting the most extreme assertions of the strongest defenders of the thesis, nobody contends that its food value is more than infinitesimal.

When we come to consider the physiological and psychical effects produced by alcoholic beverages we are on less sure ground. The belief once very common that alcohol helps a man to do more work, physical or mental, has, we think, been completely disproved. That under uncommon circumstances of physical exhaustion or mental distress a dose of a suitable alcoholic beverage has enabled a man to pull through a brief emergency is nothing to the contrary. Such a man may, without any great straining of words, be said to be for the moment in a pathological condition. It is from its action, sometimes very striking, in shock, mental or physical, that alcohol has earned the reputation of being a stimulant. In health, after a brief exciting effect, it is a sedative. It is, indeed, probably partly for this effect, so far as they knowingly take it with the desire of producing an effect at all, that the majority of head workers—in this country at least—take alcohol. All that has been so picturesquely written about the sociability produced by the flowing bowl may be traced to this sedative effect, which diminishes irritability, and disposes a man to forget his worries. Whether alcohol offers the best means of arriving at this result is another question, which we are not now discussing. We are merely contending that this is one of the reasons why many people habitually take wine or beer.

It is often said that alcohol taken with a meal assists digestion. Indirectly, the sedative effect of a moderate quantity of alcohol on the higher centres may be conducive to good digestion, and the argument which the late Sir William Roberts founded upon the generality of the practice in so many countries tends in this direction. But the quantity of alcohol must be really small, otherwise its local inhibitory effect will predominate. So far as we are aware the general effect of the experimental evidence is that alcohol, in a proportion which has any appreciable influence, retards digestion. Sir William Roberts used to contend that this was often desirable. This may or may not

be true, but whether true or not, if we mean that alcohol retards digestion it would be better not to appear to sanction the theory that it aids that process.

The other chief reason why people who do not drink to intoxication take wine and beer at meals is that they find these beverages palatable. Probably most educated people who drink wine at dinner do so for this reason, and as a matter of fact, we believe it will be found that a man who has a fine taste in wine seldom or never drinks enough to upset his mental equilibrium. That is to say, such people drink wine for its aesthetic, not for its physiological, effects. It is partly for this reason that the common fashion of recommending patients to replace wine by whisky under the impression that gout may thus be staved off assumes so very questionable a shape.

The whole question is of course complicated by two facts to which we cannot refer at length. The one is the fact that all alcoholic beverages contain other bodies besides alcohol which contribute more or less to the total effect produced, and the other is the existence of very marked idiosyncrasies with regard to alcohol itself and to beverages of which it forms the most active part. In the case of much of the whisky sold, however, these bodies, being present in very minute quantities, are probably of little physiological importance. In most whisky and in gin also we have to do mainly with the effects of alcohol itself. This being so, the question is surely one in which the medical profession ought to interest itself, and its investigation may serve as an introduction to the study of the larger question of the responsibility of the profession with regard to the habitual use of alcohol as a beverage. If the profession as a body were prepared to admit that alcoholic beverages, even when of good quality and taken in moderate quantity, were, under the most favourable construction, merely harmless luxuries, we should have advanced a long way towards a policy on the temperance question. We should then have to consider the further question whether, having regard to the evil consequences of intemperance and the insidious manner in which the alcoholic habit becomes established, it is not the duty of the medical profession to go even further in the future.

THE STUDY OF CHILDREN'S DISEASES.

AMONGST so many improvements in the medical curriculum, both accomplished and proposed, it is disappointing not to find greater attention paid to increased facilities for the study of children's diseases at the London general hospitals. The lack of a special knowledge of such disorders is a frequent ground of complaint with the laity against the profession, and it has to be admitted that only too often the complaint is well founded. It is a very common grievance, too, amongst recently qualified men that they were afforded such limited opportunities at their schools of gaining a satisfactory knowledge of a class of cases which experience proves forms a major part of their ordinary practice. That there should be a just ground of complaint on this score, both on the part of the profession and the general public, is surely matter for regret.

It is futile to assert at the present day that there is nothing directly special in the diseases of children. That point was settled many years ago by the hospital authorities themselves, when it was the universal custom to bestow on the obstetric physician the additional title of "physician for diseases of children." This admittedly-pious fraud, if it served to quiet the consciences of the responsible authorities, certainly deceived no one else, not even the gentlemen nominally appointed to deal with complaints which they were never by any chance called upon to treat. But the very fact of the bestowal of the title on these gentlemen proves that the diseases of children were recognized as a subject of separate study, long before those of ophthalmology, dermatology, and numerous others had attained their present permanent position.

In contrast with the indifference to the teaching of children's diseases on the part of British hospital authorities is the recognition of the subject as a distinct speciality in other countries. In almost every university on the Continent and in America there is a professor of pediatrics or the holder of a post with some equivalent title. Where there is no university in the larger towns there is a special physician for diseases of children at general hospitals of any considerable size. This, indeed, would seem to be all that is necessary and desirable. That such appointments are made, however, emphasizes the fact that this country is, indeed, far behind the rest of the world in the consideration paid in its hospitals to the diseases of children. In this respect London is behind Edinburgh and more than one provincial town. In Edinburgh lecturers on children's diseases are appointed by the University, and every candidate for the medical degree is required to attend a course of clinical instruction in that subject as an alternative to attendance on that of one of two other specialities. It is interesting and gratifying to learn that of these three special courses, that on children's diseases is the one most largely attended and favoured by the students. In Manchester, too, there is a lecturer on children's diseases at Owens College, and a knowledge of the subject is insisted upon for a medical degree at the Victoria University.

In London, the provision of children's wards in the general hospitals is of comparatively recent date. At St. Bartholomew's, St. George's, and Guy's they have not even yet been established, although the last-named advertises that such a ward is to be opened in the near future. That it is undesirable, in the interests of both classes of patients, to group sick children and adults together, except in so far as the exigencies of space render this unavoidable, will hardly be disputed. The objection often raised against children's wards in general hospitals where they are non-existent—that they would frequently be the means of introducing infectious disease, owing to the inexperience of the resident officer in dealing with the early stages of the exanthemata—is surely only an argument in favour of such wards, and the adequate instruction of house-physicians in a class of cases that will form a large part of the practice of most of them in the days to come. If there is any truth in this alleged incompetence, it must mean either that many suitable cases in children must be refused admission to hospital by the more cautious amongst the residents, or that many infectious cases must be admitted into the general wards by the more reckless, and by those unaware of their own defective training. Nothing teaches so quickly as responsibility, and we would trust the discretion and tact of the resident staffs, and would regard the establishment of children's wards at every general hospital as in every way a commendable step.

Commendable as the institution of children's wards in the general hospitals may be, there are several points in the arrangements connected with them that leave much to be desired. At King's College Hospital the old fallacy of

there being some subtle connexion between a knowledge of midwifery and that of diseases of children still persists, and the children's ward is entrusted to the charge of the Senior Obstetric Physician. At University College Hospital the children's ward is placed under the care of the Senior Assistant Physician and the Senior Assistant Surgeon for the time being. At most other hospitals the members of the senior staff either divide the beds between them, or take entire charge of the wards in rotation for a certain period of the year. Under these conditions it is evident that there can be no assurance that the gentlemen appointed to the charge of the wards have any special knowledge of the diseases of children.

Recognizing that their duty in dealing with the diseases of children went further than the mere establishment of special wards, the authorities of several London hospitals have, in addition, initiated a system under which the junior assistant physician treats children only. Such an arrangement as this is far from satisfactory. In this instance, as in that generally of the care of the wards, no guarantee is demanded that the gentlemen appointed have any special knowledge of the subject. The fact, moreover, that their first promotion will release them from the direct care of children is no incentive to them to perfect themselves in a knowledge of the complaints which they are temporarily called upon to treat. The student, too, seeing the treatment of children's diseases relegated to the temporary care of the most junior member of the staff, is not induced to entertain a high opinion of the importance of the subject. At King's College Hospital the subject has been dealt with in a satisfactory manner as regards out-patients, and the appointment there of Dr. Still as Assistant Physician for Diseases of Children is in every respect an admirable one. It would be well if similar appointments were made at every hospital with a teaching school attached. There would seem, indeed, to be no valid reason why diseases of children should not be placed on the same footing as gynaecology. But whilst at every teaching hospital there are at least two gynaecologists on the staff, and at one no fewer than three, King's College Hospital alone recognizes diseases of children as worthy of a permanent and distinct appointment. It is no disparagement to the science of gynaecology to insist upon the fact that, in ordinary general medical practice, for one case in which a special knowledge of it will be of service to its possessor, at least fifty will occur in which a competent knowledge of diseases of children would be highly desirable and useful. The disparity, then, between the manners in which the two subjects are recognized and represented by appointments on the teaching staffs of hospitals is inexplicable.

For the indifference displayed in regard to the study of children's diseases, the examining bodies are responsible to an equal extent with the hospital authorities. When the former insist upon an adequate knowledge of the subject from candidates, then the hospital authorities will be forced to make satisfactory provision for instruction in it. In a recent report upon an examination of the English Conjoint Board, the Visitors note with pleasure that a question was set upon the diseases of children. Reference to the examination papers, however, shows that the question calling for this admiration is only an addendum to one dealing with a complaint in adults. That the Visitors should have deemed such a circumstance worthy of special note is proof, if any were really needed, of the small attention paid by examining bodies to the subject in question. Still, the Visitors' action is a happy augury of amendment in the near future. Having regard to this, it was a matter of regret with many that in the new regulations of the University of London no special mention was made, even in a subsection, of the diseases of children. To have done so would not have necessarily entailed any material change in the examinations, but the mere verbal inclusion of the subject amongst the others would have forced the hospital authorities to make more adequate provision for dealing with it.

The objections likely to be raised against the institution of another special department at the general hospitals, by which physicians would be permanently appointed to deal solely with children's diseases, can be readily anticipated. The one that there is nothing sufficiently special in the diseases of children to warrant such appointments is abundantly refuted by the example of foreign countries, and by the establishment of the present unsatisfactory temporary posts, and need not be further discussed. An objection sometimes raised that the bestowal of more attention on children's diseases would add to the cares of the already over-burdened student, is not valid. There are many complaints, common to both adults and children, which are more profitably studied in the younger subjects, and one who has mastered the ordinary physical signs in children will have much less difficulty in dealing with the same in adults. The proposed additional department might alter a portion of the students' work but would not necessarily increase it. Were there any ground for the objection, it would still have to be admitted that the present condition of affairs, in which a student is turned out inadequately equipped to deal with cases that will form a majority in his practice, is anomalous and calls for early change So far from the student finding a children's department an additional burden, we believe he would welcome it in his days of study, as much as in his later qualified life he would certainly look back to it with gratitude and pleasure. We would, indeed, be disposed to go further and say that there is no department in which the advanced student can be so well trained in physical examination, and in which he can so surely acquire confidence in this all-important part of his outfit for successful practice. He is not confused or led astray by subjective symptoms or by an emotional "history;" the sick child neither exaggerates nor conceals. Further, there can be no better training in practical therapeutics; if a child is better or not better the fact is obvious. If its health has not improved, it conveys that discouraging fact without any sanguine attempt at concealment, and there is no more unalloyed pleasure than to witness the smile of the convalescent infant, who in some dim way associates the fact of returning health and freedom from pain and discomfort with its physician.

There is no need to labour the point further. Permanently-endowed children's departments are an urgent need at all teaching hospitals, and the sooner each one follows the example of King's College and establishes such a department, the better for itself, the students, the patients, and all concerned.

A MILK DEPOT BY PRIVATE ENTERPRISE.

As far as anything of the kind, not under medical control, can be perfect, Mr. Seebohm Rowntree's Infants' Milk Dépôt at York is run on lines which may confidently be taken as an example to be followed by any philanthropists interesting themselves in the welfare of the children of the poor. What makes it such a capital model is the extreme simplicity with which it is equipped, while at the same

time every detail has been carefully thought out. As in the Battersea Dépôt a shop has been rented, and in the rooms over it the matron is allowed to live. The shop is painted white, and is fitted up with rows of shelves and a counter. Crossing a yard one enters a good-sized outhouse, which has been converted into a room containing the appliances for mixing the milk and the sterilizer. This latter is of the pattern designed by Wittenbach. The kitchen and scullery have been converted into a room in which is fixed up a bottle-washing arrangement with sprays. Mr. Rowntree has had the wisdom to arrange for his supply of milk from a farm carefully selected and under special rules as to veterinary inspection, the diet of the cows, cleanliness of the byres and milkers, cooling of the milk, etc. The farm is so near that the milk comes straight in from it by cart: thus the risk of contamination at the milk dealer's is avoided. The importance of getting milk direct from an inspected farm cannot be too much emphasized, but it seems not to have struck others who have established infants' milk dépôts. Another excellent point about the York dépôt is that ladies interested in it visit the houses of the mothers who deal there, and see that the advice on the printed forms handed to each person employing the milk is carried out. They have an opportunity of seeing how the baby thrives upon the milk, and of advising the mother not only upon that, but upon other matters, and of warning her against giving anything but this one food to her child. Women, as a rule, are fond of their babies, and incalculable good might be done if this plan were adopted everywhere. The babies are weighed, when possible, once a fortnight, but the matron told us that a great deal of superstition exists on this subject, and she could not, therefore, insist. This superstition might gradually be overcome, for weekly or fortnightly weighing is essential in order to note the progress of the infant. The milk is mixed and bottled before being sterilized, the strength of the mixtures (milk, water, cream, and sugar) and the quantity varying according to the age of the infant. The bottles containing the milk mixtures are placed in special wire baskets made to hold the number required for twenty-four hours, and introduced into the sterilizer, the temperature of which is raised to 206° F. All that the mothers have to do is to place each bottle in hot water for a few moments as it is required, and to exchange the stopper for a teat. All contamination by dirty vessels is thus avoided. The charges are: For infants under 6 months, 3d. a day, 1s. 6d. a week; from 6 to 8 months, 3½d. a day, 1s. 9d. a week (6 oz. bottles); over 8 months, 4d. a day, 2s. a week (7 oz. bottles). In addition to the principal dépôt there are 5 branches depending upon it, so that distance may not be a deterrent to mothers anxious to employ the milk. Mr. Rowntree has been fortunate in securing a most capable matron to manage the dépôt, a practical woman not afraid to work herself, and we are of opinion that this is a most important consideration. Altogether he is to be congratulated upon the valuable assistance he is giving in saving infant life and helping mothers to bring up their children to be strong and healthy members of the community.

THE LEAGUE OF MERCY.

The annual meeting of the Presidents and Lady Presidents of the League of Mercy was held on December 18th in the Board Room of Charing Cross Hospital. H.R.H. Princess Alice of Albany was present, and Colonel Owen occupied the chair. Reports were made by the Honorary Treasurer, Sir Henry Burdett, and by one of the Honorary Secretaries, Sir William J. Collins. It appears that the past year—the fourth of the League's operations—has been singularly successful. By its agency some 60,000 men, women, and children resident in London and the Home Counties have been induced to take an interest in the work of the metropolitan hospitals. Most of these belong to the humbler classes of our citizens to whom the hospitals more directly minister. The League, which is founded under Royal Charter does not limit its operations to financing the King's Hospital Fund, but, through its Samaritan wing, contemplates yet wider fields of beneficence. At the same time, money is, and is likely to be for some while yet, the foremost need of our hospitals. It is the raw material which they are in a position to transmute into a hundred and one forms of active succour and benevolence. It is therefore highly satisfactory to learn that more than £12,000 has been collected by the League of Mercy during 1903 for the hospitals. In 1899 only one-fifth part of the revenue of the King's Hospital Fund was contributed from this source, while this year one-eighth of the total revenue of that Fund was received from this source. Any who are desirous of learning more of the League of Mercy should address themselves to the Honorary Secretaries at 29, Southampton Street, Strand.

FEES FOR INSURANCE WORK.

We have received from several correspondents copies of a communication which the Law Union and Crown Insurance Company is causing to be made to medical men who have done work for it. The communications are not all identical in terms, but their general purport is the same, and is to the effect that the burden of paying a guinea for proposals of under £200 is too great to be borne, and that therefore it is proposed in future to pay only half a guinea. This appeal to the charity of the profession is coupled with a thinly-veiled threat that if the medical man addressed does not soften his heart the company will take its work elsewhere. In some cases, moreover, matters are rounded off by a naïve statement that the company has such complete confidence in the medical profession that it is quite sure the work will be done just as well for half a guinea as hitherto done for a guinea. This is the first time that we have seen a belief in the squeezability of the medical profession so frankly stated; and while we bow on behalf of the profession at the compliment made to its rectitude, we groan at the truthful picture of the unbusiness-like habits which it represents. Let us not be misunderstood. It is right that the medical man should give to the sick labourer as good work for half a crown or nothing as to the rich invalid for eight times that sum; but then the relief of suffering is the primary and essential object of medicine. Work done for an insurance society falls within quite a different category. It is of the same nature as that done by a solicitor who examines title deeds for a possible purchaser, and the considerations involved are purely monetary; if therefore the labour involved to the medical man is as great in connexion with a proposal of £100 as of £1,000, the payment equally should be the same. It would be different if this company had a sliding scale and payment were made from 10s. 6d. upwards strictly in accordance with the amount of the annual premium, but so far as we understand no more than a guinea is paid whether the insurance be for £300 or £30,000. The present expressed intention of the company to reduce its fee in the manner stated appears to amount, therefore, to what is generally known as "sweating." The disadvantage of this practice not less to the sweater than to the sweated is so generally acknowledged by serious business firms that the fact that this company has been induced to resort to it by way of effecting a petty economy suggests that its margin of profit cannot be very great. But it may be pointed out that the step taken is not calculated to improve matters, for after all, medical men are but human, and it is doubtful if in a matter involving none of the ordinary interests of a medical man's work, quite as good work will invariably be forthcoming for half a guinea as for twice that sum. The general question of insurance fees and attempts at sweating in connexion with them is one of those which the Divisions of the Association might do well to consider.

THE ROYAL ARMY MEDICAL COLLEGE.

The Royal Army Medical College to be erected, as mentioned last week, on a site on the Thames Embankment, to the west of the Tate Gallery, will consist of two main parts, the laboratories and a residential college. The façade of the

laboratories will face north, and we understand that the buildings will consist of a basement and three stories. The plans are now complete, and show on the ground floor a pathological department to the left, and a hygiene department to the right, with a theatre at the rear. On the first floor will be a library and a series of small laboratories for various purposes, and above this a museum and model room. The chief front of the residential college will be towards the river, and the entrance will be on the Embankment: it will contain a mess room, smoking room, drawing room, and other apartments on the ground floor, and on the upper stories quarters for senior medical officers, junior medical officers, and officers of the Indian Medical Service. There has been a good deal of delay in satisfying all the necessary formalities, but we believe that the plans for the laboratories are now complete and approved, and that those for the residential college are in a forward state.

PLUMBISM AND POTTERY MANUFACTURE.

In February, 1899, Professor T. E. Thorpe, of the Government Laboratory, London, and Professor Thomas Oliver, of Newcastle-on-Tyne, conjointly presented to the Home Secretary a report on the employment of compounds of lead in the manufacture of pottery, and their influence upon the health of the workpeople, with suggestions as to the means which might be adopted to counteract their evil effects. From these gentlemen information was asked by the Home Secretary as to how far the danger of lead poisoning in pottery manufacture could be diminished or removed by substituting for the lead carbonate ordinarily used a less soluble compound of lead or a leadless glaze, the applicability of such substitutes, so far as the manufacture of pottery was concerned and any other preventive measures. During the three years previous to the publication of this report 1,085 cases of plumbism had been notified to the Chief Inspector of Factories as having occurred in the manufacture of pottery. It is unnecessary to recapitulate the various points dealt with in the Thorpe-Oliver report, but, briefly, their conclusions were that a very large amount of earthenware could be glazed without the use of lead in any form, that as regards certain branches of the industry while the need for using lead was admitted insoluble lead compounds could be used such as fritted double silicates, that the use of raw lead should be prohibited, women and young persons excluded from the dangerous processes, and that adult males working in dangerous processes should be subjected to systematic medical examination. This report, it may be remembered, gave rise to a good deal of opposition on the part of the manufacturers. Although compromises were subsequently attempted no solution of the various problems raised was effected. Accordingly the matter was referred to arbitration. The court sat at Stoke-on-Trent, Lord James of Hereford acting as umpire. On December 30th, 1901, Lord James gave his primary award, and on November 28th, 1903, as was briefly noted two weeks ago, he gave his final award. The umpire has decided that after February 1st, 1904, no glaze shall be used which yields to a dilute solution of hydrochloric acid (0.25 per cent., the same strength as the acid in the gastric juice) more than 5 per cent. of its dry weight of soluble lead calculated as lead monoxide. Higher percentages of lead are allowed on condition that the employer adopts a scheme of compensation for those of his workpeople who suffer from lead poisoning, knowing the risk and agreeing to run it: periodical medical examination and suspension is also required. One of the conditions of compensation is that if any workman who has been suspended dies within nine calendar months from the date of his certificate of suspension by reason of plumbism contracted before the said date there shall be paid to his dependents a sum equal to the amount he earned during a period of three years prior to the date of the certificate, such sum not to be more than £300 nor less than £150 for an adult male, £100 for an adult female, and £75 for a young person. During the term of his suspension the workman shall receive 50 per cent. of his weekly earnings, but if a workman refuses to submit to medical examination there shall be no payment until this rule is complied with. Last week the pottery manufacturers met and discussed the award of the umpire. The jubilant note at first sounded by the local press now falls before the more serious view with which the Joint Committee of the Pottery Manufacturers regard the decision of Lord James. In the circular they are about to issue they state that they have done all in their power to convince Lord James that no such rules as he has proposed are either necessary or reasonable, and that they regret that he has seen fit to issue an award which will be very difficult to carry out. The manufacturers, however, are recommended to take no exception to the new rules, but to continue to work loyally for the reduction of plumbism. The Committee also give it as its opinion that the compensation scheme will for some time at all events have the effect of increasing the number of reported cases.

TROPICAL MEDICINE IN FRANCE.

Upon a recent occasion we had an opportunity of visiting the School of Tropical Medicine at Paris, which works in connexion with a very perfect little hospital at Auteuil. It seemed to be thriving and most admirably managed, and gave the impression that it was inevitably destined to become before long one of the most prominent and successful schools of tropical medicine in Europe. On further inquiry, however, we found that so far from its future being thus happily assured, its very existence is immediately threatened. This surprising fact is due to the circumstance that it receives practically no assistance whatever either from the French Government, the French Colonies, or the French public. The school is part—and, in fact, practically constitutes the whole—of the Institute of Colonial Medicine, which, thanks to the initiative and perseverance of Professor R. Blanchard, was founded and affiliated to the Faculty of Medicine at Paris. During the time it has existed the only income has been an allowance of 30,000 francs from the Government of Indo-China. This subvention, however, was only promised for two years, and is now about to be withdrawn, and thereon this school, which has offered every prospect of making rich additions to the fame of French medicine, will perforce have to be closed. It is almost incredible that France, which has led science so often and whose colonies are almost wholly tropical, should be content to leave to other countries, and especially to England, the task and glory of working out those problems of tropical medicine the solution of which is not only interesting but of the highest economic importance. Has the terrible lesson of Madagascar been forgotten, or is the spirit of French scientific enterprise dead? It seems to us that the saving of half a dozen French lives would be well worth the whole cost of putting the school upon a firm foundation. In England, which is not given to sentiment, it was not found difficult to raise the seventy or eighty thousand necessary to found its two tropical schools, which are now flourishing and independent. The greater part of the money, it should be noted, was received from merchants and the tropical Colonies themselves, for both recognized that their interest and further advancement demanded the provision of a staff of medical men thoroughly trained to deal with the diseases of tropical lands. The interests of France with her colonies in West Africa, Indo-China, and Madagascar, not to speak of her great and extending possessions in North Africa, must be equally important. What might be expected from the French school has already been shown by the promising results of the expedition made by Dr. Brumpt in connexion with sleeping sickness. The apathy which at present exists is illustrated better perhaps by the facts which preceded that expedition than by anything else. Money, of course, was required, and application was made to the Government and to the public. The Ministry of Public Instruction limited its benevolence to a cheap blessing on the expedition, the public subscribed 300 francs and the Ministry for the Colonies brought the total to the miserable sum of

1,800 francs or £72. It would, indeed, have been impossible for the expedition to start at all but for the fact that three of the laboratories of the Faculty of Medicine came forward with a gift of 4,500 francs. Indifference of this sort towards a matter of scientific importance is rarely shown in France, and looking for a cause it seems as if the fault must lie with the Institute of Colonial Medicine itself. It is a young institution, and has not only to win its spurs but to prove to the patriotic French public the real necessity of its existence. To achieve this end incessant personal effort on the part of the head of such an institution is essential, and it appears that this would be more likely to be shown if the head of the institution were not merely a man who had attained great eminence in other directions, but one whose interests were centred in tropical medicine. However this may be, the English schools have already sent some dozen expeditions abroad, and, thanks to the co-operation of the Foreign Office, the Colonial Office, the learned societies, and the public, are prepared to send more. The benefit of their discoveries will, it is true, be distributed over the whole world, but the credit of them will belong to England alone.

LONDON SCHOOL OF MEDICINE FOR WOMEN.

The second annual dinner of the Royal Free Hospital and London School of Medicine for Women was held on December 15th, and the Grand Hall of the Hotel Cecil was well filled by members, friends, and wellwishers of the School. We cannot doubt that the large attendance was in large degree a personal tribute to the occupant of the chair, Mrs. Garrett Anderson, whose personal popularity was very evident on several occasions during the evening. In her speech proposing the toast of "The Hospital and School" she had an interesting story to tell of her own early struggles to obtain teaching and a diploma; of her own personal triumph over difficulties which at one time must have seemed almost insuperable; of the rallying of friends of the higher education of women for the foundation and maintenance of the Medical School for Women; of the success of that school, which at one examination recently presented 17 successful candidates for the degree of M.B. of the University of London; of the foundation and success of the New Hospital for Women, and the opening of the staff of the Royal Free Hospital to women. The victory was due, she said in words which deserve to be remembered, to a combination of patience, enthusiasm, imagination, and labour. The toast was acknowledged for the hospital by Mr. Boyce Barrow, and for the school by Mr. Stanley Boyd, who said that it had helped to place over four hundred women on the *Medical Register*, of whom one-third held degrees from the London University and another third from other universities. The toast of "The Guests" was given by Dr. Crawford, and acknowledged by Sir William Broadbent and Sir Thomas Smith. The Rev. Llewellyn Davies gave "The Health of Mrs. Garrett Anderson," whose brief response brought the formal part of the proceedings to a close.

COMPANY PRACTICE.

On November 27th the name of H. J. Bradlaw, who had obtained registration in virtue of having been in practice prior to the passing of the Dentists Act in 1878, was ordered by the General Medical Council to be removed (under Clause XIII) from the *Dentists' Register*. On December 5th there appeared in the *Freeman's Journal*, Dublin, an advertisement, or rather a series of advertisements, in which Mr. H. J. Bradlaw, Surgeon Dentist, Limited, promises personal attendance, etc. Either this gentleman had converted himself into a limited company in anticipation of the Council's verdict, or else he showed considerable expedition in so doing after the decision. In any case the matter affords a striking object lesson of the means of evading the provisions of the Act which existing company law affords. It is not to be supposed that the public in reading such announcements as those which have appeared in the *Freeman's Journal*, will understand that because the letters "Limited" follow the designation "Surgeon Dentist," the person who so advertises is not, in fact, a registered practitioner. Thus can the objects of medical legislation, as set forth in the preamble to the Medical Act, 1858, that it is expedient that persons requiring medical aid should be enabled "to distinguish qualified from unqualified practitioners," be set at naught.

DUEL DOCTORS.

There is a story of an Irish priest who explained his appearance as second in a duel by pointing out the convenience of an arrangement which made his professional services readily available in case of need. In France this, like other things, is managed differently. There is seldom any occasion for the ministrations of the clergy after a duel in that country; this is perhaps fortunate for them as well as for the principals, since at the present time the administration of the last rites of religion in such circumstances might be treated as an attack on the delicate constitution of the republic. No meeting can, however, be considered as conducted according to the etiquette of the duello without the presence of one or more doctors. In view of the bloodlessness of French duels it might be thought that their attendance was as superfluous as that of a priest. But this is an erroneous notion founded on a misconception of the true function of a doctor who officiates at a duel. This function is set in a clear light by the writer of an article which appeared the other day in the *Temps*. From him we learn incidentally that the surgery of the duel is one of the latest developments of specialism in Paris. The leader in this branch of practice is himself a master of fence, a fact which is said to inspire confidence in those who may have need of his skill, and which enables him to judge of the effects of a "wound of such and such a muscle." From this it may be gathered that as a rule he does not anticipate to have anything more serious than flesh wounds to deal with. Nevertheless he must be prepared for any emergency, and in describing his surgical case the scribe does not know which most to admire, the artistic finish of its fittings or the completeness of the armamentarium. The owner of this wonderful case has assisted in his professional capacity at sixty-two duels. He is discreetly silent as to the number of these in which he had occasion to use the apparatus contained in his case. He testifies that nearly all combatants give proof of real courage when they cross swords; we have no reason to doubt this, though we may point out that it is not difficult to be brave when there is no particular danger. Our expert, however, holds that the duel always presents serious dangers, but his opinion cannot, for obvious reasons, be regarded as altogether unbiassed. If we may be allowed to parody Lord Beaconsfield's famous retort to Dean Stanley, we would say, "No danger, no doctor." The function of the duel doctor is, it seems, not so much curative as preventive. It is his duty to come

> Betwixt the pass and fell incensed points
> Of mighty opposites

as soon as the skin of one of them has been pricked. The doctor "must always ask himself whether the prick will not bring about a numbness that will hinder or paralyse the movements of the wounded man. As soon as a man runs the risk of losing all his means of defence, and of thus increasing the chances of his adversary, our duty does not allow us to hesitate. We must not be moved by prayers, supplications, or protests. What a terrible responsibility would be ours if our client or that of our *confrère*, incapable of parrying with his usual vigour, should happen to be killed!" The responsibility would be serious, no doubt, though we learn that under the French law the doctor cannot be held accountable whatever happens. But in encounters subject to such strict medical supervision the chance of any unpleasant accident is so remote that the most timid practitioner need not be afraid to undertake the duties of a duel doctor. In the ordinary course of things the only opportunity the specialist can have of using any surgical appliance other than sticking plaster

must be when an impetuous person like M. Rochefort spits himself on his adversary's point, or an untaught swordsman thrusts, like Toinette, in tierce instead of in quart and fails to limit the action of his weapon to the skin. When we are inclined to take a despairing view of the status of the medical profession we may perhaps find comfort in the thought that there is at least one country where the doctor holds a position of the highest dignity as the arbiter of the fate of gentlemen who seek for satisfaction of their wounded honour in mutual phlebotomy.

THE STUDY OF THE HISTORY OF MEDICINE.

A Society for the Study of the History of Medicine has recently been founded in Holland. The president is Dr. Peypers, well-known as the Editor of *Janus*, a monthly periodical largely devoted to subjects connected with the history of medicine. It is announced that a chair of the history of medicine has been established in the University of Maryland. It is said to be the first foundation of the kind in the United States. Dr. Eugene F. Cordell, of Baltimore, author of essays on medicine and its professors in Horace and Juvenal, and of *The Medical Annals of Maryland*, has been appointed to the chair.

WHAT IS AN ACCIDENT?

The question what is an accident within the meaning of the Workmen's Compensation Act has arisen in several cases which have been heard in the High Court. It is now a matter of common knowledge that claims can only be made for compensation for injuries caused by "accident" arising out of and in the course of employment. When the Act first came into force it was thought that the Legislature only intended to impose liability upon employers in respect of those injuries which are ordinarily sustained by persons engaged in manual labour, but the trend of recent decisions has been to give a less narrow meaning to the term "accident." The extension of the definition has taken place along lines which are of interest to the medical profession. In one case it was proved that a collier who was at work in a narrow seam of coal got a small piece of coal into his knee. This caused blood poisoning, from which he died. It was held that his death was due to an "accident," entitling his widow to claim compensation. In another case the applicant alleged that while he was carrying a beam weighing about 100 lb. on his shoulder he felt something crack in his back. The medical evidence showed that he had torn some of the fibres of the muscles of his back. This was held to be an accident, the Master of the Rolls, saying:—"This case contains all the elements of an accident—the fortuitous and unexpected." Until recently, the Court of Appeal had not been asked to consider whether disease shown to have been acquired by a workman in the course of his employment could be termed an accident. On December 10th, however, two curious cases involving this question came before the court. In the first it appeared that a woolsorter who had a slight abrasion on his neck became affected with anthrax. He claimed compensation for the time during which he was disabled. The county court judge held that he had not been the victim of an accident. In the second case it was proved that another sorter had died of anthrax, which had been caused by a particle of dust from the wool getting in his eye. In this case another county court judge had held there was an accident. The Court of Appeal upheld the latter decision and reversed the former, the Master of the Rolls saying:—"The immediate cause of death was the accidental alighting of a bacillus from the infected wool on a part of the deceased person, which afforded a harbour in which it would multiply and grow and so cause malignant disease and consequent death. I can see no distinction in principle between the accidental entry of a spark from an anvil, or the accidental squirting of scalding water or some poisonous liquid into the eye. The only difference is that in those cases the foreign substance would be so large as to be visible, in this case the foreign substance is microscopic." The logic of this passage is irresistible, but will the definition of accident stop here? If a man becomes infected with any disease during the course of his employment must not the same principle apply? In view of recent decisions it seems that the Act of 1897 provides almost universal insurance to workmen injured in their employment.

THE DIAGNOSIS OF GASTRIC ULCER.

It is well known that the diagnosis of gastric ulcer in the absence of haematemesis is a matter of great uncertainty, so that any means that promises additional help should be welcome. Dr. I. Boas, of Berlin,[1] believes he has found this means in the careful examination of the faeces for blood by the guaiacum method. The plan he adopts is to shake up 5 to 10 grams of faeces (which must be liquid and if necessary diluted with water) with 20 c.cm. of ether in order to remove the fat. This is then treated with 3 to 5 c.cm. of glacial acetic acid, the whole poured into a test tube and again extracted with ether. Care must be taken not to add alcohol to the ether as alcohol may give a blue colour with guaiacum. To the ethereal extract a fragment of guaiacum resin should be added. It should then be carefully shaken with 20 to 30 drops of French oil of turpentine. After standing a violet blue colour develops which may be made more distinct by the addition of chloroform. As in certain cases the blue colour is more or less hidden by a brownish tint, aloin may be substituted for guaiacum as suggested by Klunge, Schaer and Rossel. As much aloin as will go upon the end of a spatula is dissolved in a test tube with 3 to 5 c.cm. of 60 per cent. to 70 per cent. alcohol. To the acetic acid extract of faeces are added first 20 or 30 drops of turpentine and then 10 to 15 drops of the freshly prepared aloin solution. In the presence of blood a bright red colour is rapidly developed which on standing turns to cherry red. If no blood is present the aloin in the course of one or two hours turns rose red and ultimately yellow. The aloin reaction is hastened by the addition of a few drops of chloroform. The chloroform sinks to the bottom and forms an intense vermilion precipitate. Ozonic ether may replace turpentine in either method. Boas holds that the value of the positive reaction either with guaiacum or aloin is exactly the same as that of the presence of blood in sufficient quantities to be recognized in either the vomit or the faeces by the naked eye. The necessary precautions to be taken are to exclude the possibility of blood from the lower part of the bowel or the neighbouring passages, and to take care that the diet for at least two days before the examination has contained no meat that has not been thoroughly well cooked. Boas finds that the blood reaction when present rapidly disappears upon milk diet; where this does not occur the prognosis of the case is serious, as healing is evidently not taking place.

THE PROTECTION OF CHILDREN AGAINST TUBERCULOSIS.

Professor Grancher, member of the Paris Academy of Medicine, has taken the initiative in founding a society for the protection of children against tuberculosis. He says that for a long time he has had in his mind the leading idea in Pasteur's work on the diseases of silkworms, that in order to save a race threatened by a contagious disease, the best thing is to protect the young. Professor Grancher's idea is to remove children belonging to consumptive families while they are still healthy, and board them out amid wholesome surroundings in the country. Children between 5 and 13 years of age will be selected. The parents will be invited to contribute a small sum, which in case of need will be advanced to them out of the funds of the Society. The object of this is to keep up the natural relation between the child and its family. Professor Grancher's scheme has already met with wide support among the public. The Lille Antituberculosis Dispensaries Organization has formed a branch under the patronage of the Social Hygiene Association, the president

[1] *Deut. med. Woch.*, November 19th, 1903.

of which is M. Casimir-Périer. Madame Grancher, the wife of Professor Grancher, has given £4,000 in furtherance of the scheme.

HARVARD MEDICAL SCHOOL.

THE foundations are being laid for the new Medical School of Harvard University, and it is expected that by the autumn of 1905 it will be ready for occupation. The fund for the erection of the new buildings was started in 1902, when a gift of £40,000 from Mr. J. Pierpont Morgan was announced. Subsequently large donations were received from Mr. J. D. Rockefeller and Mrs. Collis P. Huntington, together with smaller contributions from other friends of the University. Altogether a fund of £1,000,000 has been collected. The new school will consist of six large buildings, five of which will be grouped about three sides of a court 520 ft. long by 215 ft. wide. The sixth building, to be used as a power house, will stand apart from the main group. It has been decided to give up for the present the contemplated new building for the Dental School. The buildings alone will cost over £40,000, and it is believed they will be the finest of their kind in the world. They are to be constructed entirely of white Vermont marble, with the exception of their bases, which will be of pink Milford granite. The Medical School faculty are planning to have many affiliated hospitals in the neighbourhood. Among the several institutions which have expressed their willingness to meet offers made with that view are the Brigham Hospital, the Children s Hospital, the Samaritan Hospital, and the Infants' Hospital.

A PIONEER MEDICAL WOMAN.

Dr. AMELIA WILKES LINES, said by the *Medical News* of New York to be the oldest female practitioner of medicine in the United States, recently celebrated her eightieth birthday at her residence in Brooklyn. She presided all the afternoon at a reception, at which were present four generations of her descendants and about 200 old friends, patients, their children and grandchildren. Mrs. Lines was born in the Isle of Wight on November 21st, 1823, on the country estate of her father, Sir William Wilkes. She was one of thirteen children, and she centred her affection on her oldest brother, William, who entered the navy as a surgeon when she was still a child. When she was about twelve years old, Mrs. Lines came to America to visit some relatives of her father in Painsville, Ohio. On the death of her father she took up her residence in America. When she was 16 years old her favourite brother died and was buried at sea. When the division of his property was made she asked only for his medical library, instruments, and diplomas. After returning to the United States she devoted much of her time to reading the books, and in this way she became interested in medicine. In 1842 she married Dr. T. T. Lines, and two years later they went to New York. Mrs. Lines continued her independent study of medicine, and worked much with her husband. In 1850 it was suggested that she should attend a medical college. The bare suggestion of such a thing astounded the President and Faculty of the National College of Amsterdam, which has since passed out of existence. However, as Mrs. Lines was young and pretty, and the wife of a well-known physician, she was finally admitted to the classes. In 1853 she obtained a licence to practise in the State of New York, the first granted to a woman in that State.

THE DEFINITION OF INSANITY.

IT is possible that at some future time the votaries of law and medicine may agree upon a definition of insanity which will be adequate both for the purposes of administering the law of lunacy, and the admeasurement of responsibility in a court of criminal jurisdiction. At present the law is in a nebulous condition. Sir John Macdonell, in the course of his Quain Lecture last week, quoted the following observation of Lord Blackburn: "I have read every definition I could meet with of insanity, and was never satisfied with any of them." Possibly the explanation is that insanity assumes such an infinite variety of forms that no definition can be made sufficiently wide to include them all. A writer in the *Law Journal* states that "modern psychology and medical science have deepened the problem, and carried us far beyond the crude conception that insanity meant a total deprivation of understanding." The well-known rule in Macnaughton's case was framed, not by a judge in the course of a judicial inquiry, but by a whole bench of judges who were summoned to give assistance to the House of Lords. It was therefore a mere expression of opinion which ought not to be regarded as binding upon any judge; nevertheless some judges always refer to it in summing up to the jury, while others disregard it. In our view the question whether the accused is insane or not should be left without any reserve to the jury which tries each particular case—subject, of course, to the direction of the learned judge. The Home Office takes care that if there is any suspicion of mental derangement the prisoner shall be seen and examined by an expert before the trial. Why should he not be called in every case to state his view? Why should not the jury accept his opinion, or at least have an opportunity of considering it? The test that the accuser knew that he was doing what was wrong is, according to modern opinion, unsatisfactory. In the course of an address recently delivered by him at a legal debating society Dr. Mercier stated that numerous cases came before him in which patients asked to be protected against themselves. For instance, one woman asked him to take her under his care because whenever she took a knife in her hand she felt an irresistible inclination to kill her children. Under treatment she completely recovered. Had she killed any child, it is probable that Dr. Mercier, if called as a witness, would have had to say she knew she was doing wrong. But could she help it? That would in our view be the proper question to leave to the jury.

THE ETIOLOGY OF SYPHILIS.

THE work of Hamonic, mentioned in the BRITISH MEDICAL JOURNAL of November 14th, p. 1285, was referred to a Commission of the French Academy of Medicine, consisting of MM. Fournier, Pinard, and Hallopeau, whose report appeared recently. They recall the facts of the inoculation of the monkey Fracastor, and state that the reproductions which they have seen strongly suggest that the primary lesions resulting from the inoculation were of a specific nature. With regard to the secondary lesions they are held to have been less significant in character, and, being limited to the generative organs, did not agree with the usual distribution of secondary syphilides. The Commission declared itself unable to decide as to the specificity of the appearances in the monkey in question. It considers the only means of proving this will be to repeat the experiment under identical conditions.

THE large gold medal for services rendered to Art and Science has been awarded by the German Government to Professor Ehrlich.

SIR JOHN BURDON SANDERSON, Bart., has resigned the Regius Professorship of Medicine at Oxford, which he has held since 1895, when the late Sir Henry Acland retired. We understand that Sir John Burdon Sanderson's decision is entirely based on the score of years; he will very shortly attain the age of 75.

LIEUTENANT-COLONEL DAVID BRUCE, F.R.S., M.B., Royal Army Medical Corps, has been granted the brevet rank of Colonel "in recognition of his services in investigating the cause of the 'sleeping sickness' in Uganda, as well as in consideration of the distinction already attained by him in researches connected with Malta fever and tsetse fly disease."

The work of the Huntington Fund for Cancer Research has now found a local habitation in the Loomis Laboratory, New York. The directors are Dr. B. H. Buxton and Mr. S. P. Beebe, who will approach the subject from the chemical rather than the pathological or bacteriological side, and will study the cell products of malignant growths with the object of determining if they differ in any way from those of normal tissues.

Professor Marmorek paid a brief visit to England recently, and left some of his serum with Dr. Arthur Latham, who has selected certain cases at St. George's Hospital, and intends to investigate the claims of Professor Marmorek's method thoroughly. For this purpose he has obtained the co-operation of other medical men specially interested in the treatment and pathology of phthisis. The result of this interesting investigation will appear upon its completion in the British Medical Journal. Judging from an account of a corresponding inquiry by Professor Dieulafoy, of which our Paris correspondent gave an account in his letter last week, it does not appear very probable that the verdict will be favourable to Professor Marmorek's claims.

Scotland.

Edinburgh Medico-Chirurgical Society.

A special clinical meeting of the Society was held in the large theatre of the Royal Infirmary at 4.15 p.m. on December 16th, Professor John Chiene, C.B., President, in the chair. Patients were shown by Drs. F. D. Boyd, R. Mackenzie Johnston, G. A. Sibson, Logan Turner, Alexander Bruce, and by Messrs. Cathcart, F. M. Caird, J. M. Cotterill, and Alexis Thomson. Card specimens were shown by Messrs. Caird and Alexis Thomson. Messrs. Cotterill and Cathcart exhibited a number of specimens, etc., illustrated by various surgical conditions.

Small-pox in Scotland.

The outbreak of small-pox in Scotland continues to spread. During the period from December 1st to the 15th inclusive, the following cases of small-pox were intimated to the Local Government Board: Ayrshire, 2 cases; Dumbartonshire, 1; City of Edinburgh, 1; Dalkeith, 1; Kincardineshire, 1; Lanarkshire, 6; Glasgow City, 68; Govan, 4; Hamilton, 1; Kinning Park Burgh, 1; Partick Burgh, 1; Rutherglen Burgh, 2; Peebles-shire, 6; Renfrewshire, 1; total, 96. Most of the cases in Glasgow have occurred in the eastern district. During last week there was an increase of 42 in the numbers under treatment in the Glasgow Fever Hospital, and on December 20th there were 130 cases in hospital. It will be a matter of surprise if during the next few weeks these numbers are not considerably augmented, for the Christmas and New Year-holidays are bound to lead to crowding of the people to the many places of amusement and recreation provided for them, and so unsuspected cases may have ample opportunity of spreading the disease. The Industrial Exhibition recently opened in the east end of the city will no doubt be a special danger in this respect. The antivaccinators are trying to make capital out of the progress of the outbreak, notwithstanding the amount of vaccination that has been practised within the last few years. They have been refused access to the registers of the small-pox hospital by the Corporation, but have appealed to the Secretary for Scotland in the matter, and an interesting correspondence on the subject has been published in the newspapers. It is to be hoped that their methods of assertion and insinuation will have no effect in shaking anyone's faith in vaccination, especially in view of the dangers of the present epidemic.

Ireland.

Further Bequests to Dublin Hospitals.

The late Mrs. Sarah Thom, who died in Dublin on September 20th last, bequeathed to the Royal Victoria Eye and Ear Hospital, the Stewart Institution for Imbecile Children, the Hospital for Incurables, the Adelaide Hospital, the National Hospital for Consumption, and the Richmond, Whitworth, and Hardwicke (Combined) Hospitals, £1,000 each; to Sir P. Dun's Hospital £500, to the National Children's Hospital £250, and to the Orthopaedic Hospital £250. After certain pecuniary legacies the testatrix directs that all residue not disposed of by her said will shall be divided between the Royal Victoria Eye and Ear Hospital, the Stewart Institution, the Adelaide Hospital, the National Hospital for Consumption, and the Richmond, Whitworth, and Hardwicke Hospital in equal shares.

The Irish Poor-Law Commission in Belfast.

The Irish Poor-Law Commission, which consists of Mr. W. L. Micks (Chairman), Mr. George Murnaghan, M.P., and Dr. E. Coey Bigger, held its first sitting in Belfast on December 16th. The main object of the Commission is to inquire and report whether any administrative or financial changes are necessary in order to secure a more economical system in Poor-law relief; as to the dissolution of Poor-law unions; the alterations of boundaries of areas; the provision of auxiliary lunatic asylums; the boarding-out of children; methods of dealing with casuals; erection of additional hospitals; the best methods of obtaining payment from patients.

Amongst the conclusions and recommendations submitted on behalf of the Antrim County Council were the dissolution of the unions of Ballycastle and Antrim, and of that part of the Union of Belfast outside the county borough of Belfast. It was proposed that the Ballycastle Union be amalgamated with the Ballymoney Union. Ballycastle Workhouse had on an average only 26 inmates, though a regular staff had to be maintained; there was convenient train service between Ballymoney and Ballycastle, and the proposed amalgamation would tend to economy. Antrim Union and the portion of Belfast Union outside the borough would be amalgamated with Larne and Lisburn Unions.

Many other witnesses were examined, including representatives of the Ballycastle, Ballymoney, and Larne Board of Guardians, and there was a practically unanimous expression of opinion that economies ought to result from amalgamation; that some change ought to be carried out with regard to the treatment of tramps, and to the transference of lunatics to one asylum; also as to the boarding-out of children, to remove them from the pernicious influence of workhouse life. There was a general feeling favourable to small cottage hospitals throughout the country.

On the second day of the sitting several medical men contributed valuable evidence. Dr. St. George (Surgeon to the County Antrim Infirmary, Lisburn) thought that the hospitals attached to workhouses should be dissociated from them, and made distinct hospitals. There should be some form of district hospital for infectious diseases, where respectable people might go. There was a great need for a sanatorium for consumptives. Lunatics should be placed in asylums, and an attempt made to teach imbeciles something. It would be a great advantage to have some land at institutions such as his own infirmary in order that those who could work might have an interest in life, and help to contribute towards their own support.

Dr. Elizabeth G. Bell (Belfast) gave evidence as to rescue work and the assistance given to certain cases in the Maternity Home in Belfast.

Dr. Wilson (Whitehouse) said that Boards of Guardians desired to get lunatics out of workhouses.

Dr. P. R. O'Connell (Belfast) expressed the opinion that Belfast was on an essentially different footing from country places; in the country the population was decreasing and amalgamation was advisable. He feared that technical education would increase emigration, as there was not sufficient work for those with technical education at home. He did not believe in maintaining two hospitals for small towns. He thought there should be a rate for essentials and public benevolence should do the rest. He was opposed to workhouses being used for sanatoria, as they were too near towns and unsuitable. Hospitals should be free from workhouse environment.

Dr. Mackenzie (Lisburn) thought the institution at Antrim should be converted into an auxiliary asylum; Ballycastle could be incorporated with Ballymoney and Antrim with Lisburn, Larne, and Ballymena: Lisburn could also relieve Belfast of some of the congestion by taking some of the Ligoniel, Shankill, Springfield, and Falls districts, and in the County Down, some of the Ballynateigh and Newtonbreda districts.

Several lay members of various Boards also gave evidence.

A CAUSE OF MALIGNANCY IN NEW GROWTH.

IN a paper read before the Royal Society on December 10th by Professor Farmer, F.R.S., Mr. J. E. S. Moore, F.L.S., and Mr. C. E. Walker, the authors communicated the results of their joint observations upon malignant growths occurring in man.* The conclusion at which they arrived is that the malignancy of these tumours is intimately connected with the reduction of the normal somatic cells of the body into reproductive or germinal tissue. To emphasize the similarity existing between malignant tissue and that which is normal in the sexual reproductive glands, the authors propose to introduce the term "gametoid" to express the former, "gametogenic" the latter.

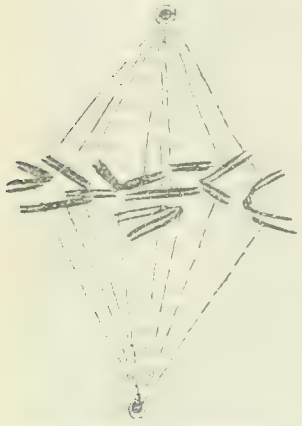


Fig. 1.—Diagram of a somatic division showing the split chromosomes, the halves of which form the daughter nuclei. The full number of the chromosomes is not shown.



Fig. 2.—Diagram of a heterotype division showing the characteristic rings and loops which split transversely to form the daughter elements. As in the preceding figure, the full number of chromosomes is not shown.

As the investigations which have led to this conclusion have involved a minute examination of the structure of the cells of the various malignant tumours, a brief description of the changes taking place normally in the nuclei of cells as they proliferate is perhaps advisable in order to render the description of the various observations recorded clear to those who have not made a special study of cytology, or who have not hitherto found it necessary to keep pace with the most recent work in this science.

From the time the fertilized ovum begins to segment, the nuclei of the cells, in dividing, exhibit a definite and constant number of small rod-like bodies known as chromosomes. Each species of higher animal and plant has a number of chromosomes which is constant to itself. When the cell is resting the material of which these chromosomes are formed is seen in the nucleus of the cell as granules of a highly stainable material known as chromatin.

After a series of very definite changes, the chromatin takes the form of chromosomes, which are delicate and thin, and often present the form of V's. These lie at this stage in the equatorial plane of the spindle, with the apices of the V's directed towards its axis. The chromosomes are observed to have split lengthwise, and half of each chromosome is drawn towards each pole of the spindle, so that the daughter-nuclei when they are formed, possess a number of chromosomes equal to that of the mother cell.

The above is a brief description of what happens in the nuclei of somatic cells, that is, cells which in proliferating go to form the ordinary tissues of the body. The same thing happens in the production of tissue which, as the result of injury or disease, is differentiated into normal somatic tissue, for example, scar tissue following a burn. This is also the constant mode of formation of somatic tissue throughout the higher animals and plants.

The production of "gametogenic" (germinal or reproductive) tissue is, however, very different. At some stage during the life of an organism, perhaps quite early in embryonic life, perhaps later on in some species, certain cells which are destined to give rise to sexual reproductive elements, go through particular changes. From this time their history is quite different from the rest of the cells making up the organism, and different also from that of the cells to which they themselves owe their origin.

Before entering upon gametogenic development, these particular cells go through a period of nuclear rest, during which they grow very considerably. At this stage, cells which are going to give rise to sexual elements are often easily recognizable. After a series of nuclear changes differing somewhat from those of ordinary somatic cells, the chromosomes make their appearance, but not as delicate rods and V's split lengthwise, and arranged with their apices towards the axis of the spindle. Instead of this they now take the form of loops, rings, aggregations of four beads, etc., which are arranged *longitudinally* upon the spindle, and which divide transversely. Furthermore it is seen that these chromosomes are present in only half the number proper to the species. This is a most remarkable fact, and is constant throughout the higher animals and plants.

Subsequent divisions in the cells which have undergone this, the "heterotype," division, are similar to the ordinary somatic divisions, except that in these a reduced number of chromosomes continually reappears. In the case of normal gametogenic cells, the fusion of two (ovum and spermatozoon) each possessing half the normal number of chromosomes, restores the number proper to the particular species. This normal number continues in subsequent divisions until the heterotype division again supervenes when the time for the development of gametogenic cells approaches.

A remarkable circumstance in connexion with gametogenic tissue is that under certain circumstances it has been proved to act as a parasite upon the parental soma of the organism. One case quoted from many will serve as an illustration. The embryo sac in the ovule of a flowering plant acts in a parasitic manner, sometimes invading and destroying the somatic tissues of the parent organism. It has also been proved that gametogenic tissue may be produced upon the somatic tissue of certain plants, by appropriate stimuli.

In their investigations into the minute cytology of malignant growths occurring in man, the authors found a series of nuclear and cellular changes which presented a very remarkable similarity to the changes which take place during the production of normal gametogenic tissue. Thus, for instance, in the case of an epithelioma it was observed that the cells near the invading edges presented numerous somatic divisions. These were followed by a number of greatly enlarged cells, many of which showed typically heterotype division figures, and a reduction in the number of chromosomes, in many cases to definitely about half the normal number. Among these were many amitotic divisions, which are also found in normal gametogenic tissue. (For example, in the testis of a monkey, particularly in the case of a young one.) Besides this, the cells of the Malpighian layer early lose their prickly character, parts of the new growth presenting that characteristic appearance of indifferent germ tissue, so well known as a feature in malignant tumours.

The same heterotype divisions, and more or less the same series of changes have been observed in other carcinomata, and in sarcomata, the heterotype division figures being found in all growths which were malignant.

The authors lay particular stress upon the fact that the cells which have undergone these changes, must in no sense be considered as embryonic. Embryonic tissue is somatic in character, the cells possessing the potentiality of the normal number of chromosomes, and exhibiting them during division.

The gametogenic tissue, which is found in malignant tumours, and which will not produce sexual cells, the authors call "gametoid."

It will thus be seen that the series of changes which have been observed in malignant growths, present a remarkable similarity to the changes which take place during the evolution of normal gametogenic tissue. It is also evident that the various forms of malignant growths present many features which are common to all of them.

The authors feel themselves justified, with this evidence before them, in attributing the malignant character of carcinomata and sarcomata to the cellular changes they have described. The causes which produce these changes must, they believe, be sought among those stimuli, some of which are already known to favour the development of malignant growths—for example, continual irritation.

* In a footnote appended to the original paper it is stated that the authors while working at the subject each approached the problems from an independent standpoint. The paper is in every sense a joint one.

In the case of those slow-growing tumours of a malignant character which, in the course of their development, tend to produce a large amount of somatic tissue—for example, the fibrous tissue produced in scirrhus of the breast—cells undergoing, or recognizable as having undergone, heterotype divisions are, as would naturally be expected, more difficult to find than in the case of quickly-growing tumours. The authors here explain that such cells as are destined to form somatic tissue never undergo a heterotype division.

Various irregularities with regard to the number of the chromosomes and other details have been observed in malignant tumours; but this fact, the authors claim, does not really affect their position, for similar irregularities have constantly been observed in cells of normal sexual tissues, which do not eventually become definite sexual germ cells. Space will not permit of a consideration of these irregularities in detail.

With regard to *transmission* the authors merely pointed out that this apparently only occurred when living cells from a malignant growth were transplanted to another part of the same individual, or were transmitted to another individual under circumstances which allowed of the continual introduction of cells which had gone through the heterotype phase under very favourable and peculiar conditions; for example, (1) the appearance of a malignant growth in the wound inflicted during an operation for the removal of a pre-existing growth; (2) epithelioma of the penis in the husband of a woman suffering from malignant disease of the cervix uteri.

In the case of localities—for example, cancer houses—it was pointed out that such cases were directly comparable to abnormal cellular developments following suitable stimuli, to which reference has already been made.

If the authors are correct in their observations, they can discriminate between malignant and benign growths with some certainty by a microscopical examination, for they state definitely that they have failed to find anything like a heterotype division in benign growths. The divisions they have seen in growths other than malignant have all been typically somatic in character, nor have they seen in their nuclei any evidence of a reduction in the number of chromosomes.

Particular attention is drawn in the paper to the fact that the cellular changes described are always rapid, and are possibly, if not probably, hastened by the approaching death of the tissue. It is therefore most important that such material as is to be examined should be so treated as to fix the cells as soon as is possible. If this is not done, the cells are found to be in a typical state of rest or more or less disintegrated. This fact was mentioned because in the ordinary pathological methods of preparing specimens, it has not hitherto been considered necessary to make proper provision for the preservation and fixation of the cells, either with regard to time or suitable reagents. Such preparation, though of course admirably adapted to the study of general histological characters, is not suitable for the elucidation of the finer cytological characters of the individual cells.

LITERARY NOTES.

We understand that Dr. Lees is making arrangements for the issue of his Harveian Lectures on Some Acute Visceral Inflammations, recently published in the British Medical Journal together with some other papers, in a small volume.

The first number of *The British Journal of Psychology*, a new journal whose title describes its scope and character, will be published in January, 1904. The journal will be edited by Messrs. James Ward and W. H. Rivers, with the collaboration of Messrs. W. McDougall, C. S. Myers, A. F. Shand, C. S. Sherrington and W. G. Smith. It will be printed at Cambridge, at the University Press. It is considered that the time has come for starting an English journal devoted exclusively to psychology in all its branches—analytical, genetic, comparative, experimental, pathological, individual, ethnical, etc. It will side with no school and have no predilections; its one aim will be to serve as the "organ" of all alike who are working at any one of the many branches into which psychology has now differentiated. Besides original articles the *Journal* will contain from time to time critical discussions of current controversial topics whether arising out of articles in journals or in consequence of the appearance of new books of importance. In common with those of many other scientific periodicals the parts of the *Journal of Psychology* will be issued at irregular intervals; whether the completion of a volume is to occupy more than a year or less will depend primarily on the activity of contributors. The following papers will appear in early numbers: On the Definition of Psychology, by J. Ward; On the Interrelation between Corresponding Retinal Points, by C. S. Sherrington; A Sixteenth-Century Psychologist, Bernardino Telesio, by J. L. McIntyre; The Sensations excited by a Single Momentary Stimulation of the Eye, by W. McDougall; The Taste-names of Primitive Peoples, by C. S. Myers; A Case of Recovery from Congenital Blindness, by R. Latta; Observations on the Senses of the Todas, by W. H. R. Rivers; also papers by F. W. Mott, A. F. Shand, H. Head, and others. The proceedings of the Psychological Society will also be published in the *Journal*.

In honour of the tercentenary of William Gilbert, the "Father of Electrical Science" which, as already stated in the British Medical Journal, was celebrated by the Institution of Electrical Engineers on December 10th, a reprint of the chapter on Electrics from his great work *De Magnete*, Lib. 2, has been issued with notes by Professor Silvanus P. Thompson. The treatise *De Magnete* first saw the light in 1600. Born in Colchester on May 24th, 1544, William Gilbert was educated at Colchester School, and at St. John's College, Cambridge, where he became Mathematical Examiner and Senior Bursar. He graduated M.D. in 1569, and after three years of travel and study in Italy and elsewhere, settled down in London as a physician in 1573. He rose rapidly to eminence in his profession, and for twenty years took an active part in the administration of the Royal College of Physicians, of which in 1599 he became President. He was also in favour at Court, and was appointed in February, 1600-1, Physician to Queen Elizabeth, who conferred upon him various marks of distinction: and after her death he was continued as Chief Physician by James I. He died during a visitation of the plague, December 10th, 1603, and was buried in the Church of Holy Trinity, Colchester, where there is a monumental tablet to his memory. Gilbert's renown rests not on his eminence as a physician, but on his achievements in the foundation of the twin sciences of electricity and magnetism. He is beyond question rightfully regarded as the Father of Electric Science. He founded the entire subject of terrestrial magnetism. He also made notable contributions to astronomy, being the earliest English expounder of Copernicus. In an age given over to metaphysical obscurities and dogmatic sophistry, he cultivated the method of experiment and of reasoning from observation, with an insight and success which entitled him to be regarded as the father of the inductive method. That method, so often credited to Bacon, Gilbert was practising years before him. A print from a photograph of a picture by Mr. A. Ackland Hunt representing Gilbert showing his electrical experiments to Queen Elizabeth and her Court forms the frontispiece of the pamphlet. The painting was presented by the Institution of Electrical Engineers to the borough of Colchester.

In M. Jusserand's *English Wayfaring Life in the Middle Ages (XIVth Century)*, an English translation of which by Lucy A. Toulmin Smith, has recently been published by Mr. Fisher Unwin, some account is given of mediaeval quacks. The herbalists were among those who were pursued in France and England by royal ordinances for the illegal practice of medicine. Philip the Fair in 1311, John the Good in 1352, issued severe decrees against them. They were reproached with being "ignorant of men's temperament, of the time and mode of administering, of the virtues of medicines, above all, of laxatives, in which lies danger of death. These people "often come from abroad," go through the town and the suburbs, and venture to administer to the too confiding sick, "*clisteria multum lavativa et alia eis illicita*," which things aroused righteous wrath in the royal bosom. In England the itinerant druggsellers had no better reputation; the popular songs and satires always show them to us in the taverns on good terms with the worst society. In the country the quack almost always found means to escape the rigour of the laws; but woe to him if he attempted to try his cures publicly in towns. Roger Clerk, in 1381, found himself sued for the illegal practice of medicine in London, because he pretended to cure a woman by making her wear a certain parchment on her bosom. He was brought to the pillory "through the middle of the city, with trumpets and pipes," on a horse without a saddle, his parchment and a whetstone round his neck. Other disgraceful signs were also hung round his neck and down his back in token that he lied.

"The Doctor's Recreation Series" comprises a dozen books in lighter vein, of which Dr. Charles Wells Moulton is the editor. The following volumes will form the series:—

Vol. I: *The Doctor's Leisure Hour.* Facts and fancies of interest to the doctor and his patient. Arranged by Porter Davies, M.D. Vol. II: *The Doctor's Red Lamp.* A book of short stories concerning the doctor's daily life. Selected by Charles Wells Moulton. Vol. III: *In the Year 1800.* Being a relation of sundry events occurring in the life of a practitioner in the year 1800. A novel, by Samuel Walter Kelley, M.D. Vol. IV: *A Book about Doctors.* By John Cordy Jeaffreson, author of *The Real Lord Byron, the Real Shelley, A Book about Lawyers,* etc. Vol. V: *The Doctor's Window.* Poems by the doctor, for the doctor, and about the doctor. Edited by Ina Russelle Warren, with an introduction by William Pepper, M.D., LL.D. Vol. VI: *Passages from the Diary of a Late Physician.* By Samuel Warren, author of *Ten Thousand a Year, Now and Then,* etc. Vol. VII: *The Inn of Rest.* Divers episodes in hospital life relative to the doctor, the nurse, and the patient. Edited by Sheldon E. Ames. Vol. VIII: *Doctors of the Old School.* Being curiosities of medicine and ancient practice. Arranged by Porter Davies, M.D. Vol. IX: *The Shrine of Æsculapius.* A recital of various exploits, projects and experiences of the medical student. Edited by Oswald Sothene. Vol. X: *The Doctor's Domicile.* Concerning the home life of the physician, his wife, family, and friends. Edited by I. Arthur King. Vol. XI: *A Cyclopedia of Medical History.* A ready reference of medical practice from the earliest times, biographical and statistical. Edited by Charles Wells Moulton. Vol. XII: *The Doctor's Who's Who.* A biographical dictionary of living practitioners in all parts of the world. Edited by Charles Wells Moulton. The associate editors with Dr. Moulton are Dr. Nicholas Senn of Chicago, Dr. William Henry Drummond of Montreal, Dr. John C. Hemmeter of Baltimore, Dr. Wm. Warren Potter of Buffalo, Dr. Titus Munson Coan of New York, Dr. Emery Lanphear of St. Louis, Dr. Albert Vanderveer of Albany Dr. Winslow Anderson of San Francisco, Dr. W. J. Bell of St. Joseph, Missouri, and Dr. Henry W. Robey of Topeka, Kansas.

Mr. George Allen will publish in the spring a book entitled *Ideals of Science and Faith,* which is to consist of nine essays by different authors, edited by Mr. J. E. Hand, the editor of *Good Citizenship.* The following is a list of the subjects dealt with by the various authors:—Approaches through Science and Education: (1) A Physicist's Approach, by Sir Oliver Lodge, D.Sc., LL.D., F.R.S., Principal of the University of Birmingham; (2) A Biological Approach, by Professor J. Arthur Thomson, M.A., Professor of Natural History, University of Aberdeen, and Professor Geddes: (3) A Sociological Approach, by Victor V. Branford, M.A., Honorary Secretary, Sociological Society; (4) A Psychological Approach, by Professor J. H. Muirhead, M.A., Professor of Philosophy, University of Birmingham; (5) An Educational Approach, by Professor Patrick Geddes, F.R.S.E., University Hall, Edinburgh. Approaches through Faith: (6) A Church of England Approach, by the Rev. Ronald Bayne, M.A., editor *Hooker's Laws of Ecclesiastical Polity,* etc. (fifth book); (7) A Church of England Approach, by the Rev. Philip Napier Waggett, M.A.; (8) A Presbyterian Approach, by the Rev. John Kelman, M.A., author of the *Faith of Robert Louis Stevenson,* etc.; (9) A Church of Rome Approach, by Wilfrid Ward, B.A., author of *Witnesses to the Unseen,* etc. The prospectus points out that on all sides is a growing recognition that the ideals common to both religion and science are not only numerous, but are indeed the very ideals for which the nobler spirits on both sides care most. Hence it is that men of science and theologians alike evince an increasing desire for mutual toleration, sometimes even for some measure of co-operation, if not positive alliance. The further definition of the ideals of the sciences, their correspondence with those of faith, their application to life, are the questions which the editor of this volume has proposed to the writers whom he has invited as representatives of different standpoints.

CONTRACT MEDICAL PRACTICE.

MIDLAND MEDICAL UNION.

At the annual meeting of the Midland Medical Union on December 8th the Council presented its report, which showed that an attempt was being made to collect precise information as to the fees paid throughout the Midlands by all colliery clubs. It was stated also that the Belper branch had succeeded in bringing about an increase in the rates paid for contract work in its neighbourhood, and had been able to foil a scheme to amalgamate all the local clubs and societies into a Medical Aid Association.

PREVENTION OF CONSUMPTION.

SOUTH AUSTRALIA.

Adelaide.—A meeting of prominent citizens was recently held at Adelaide, when it was decided to form a South Australian Branch of the National Association for the Prevention of Consumption. The credit of the initiative of the movement is due to the Mayor of Adelaide and to Drs. Gault and Jay. It is intended that the work of the branch shall be educational in character, and efforts will be made to disseminate knowledge as to the means of preventing the spread of the disease. Dr. Gault said it might reasonably be hoped that in another quarter of a century consumption would be very rare, and all the speakers expressed confidence that the movement would be generously supported by the public. Lord Tennyson has consented to become patron of the branch. Sir George Le Hunte was elected president, and a representative committee was appointed.

UNITED STATES.

Philadelphia.—The Pennsylvania Society for the Prevention of Tuberculosis has now made new plans to educate the public concerning the hygiene of tuberculosis. The society will try to reach the public by posting regulations and instructions upon bill boards and street poles and by regularly publishing short articles in the newspapers.

ASSOCIATION NOTICES.

COUNCIL.

NOTICE OF MEETING.

A MEETING of the Council will be held in the Council Room of the Association, at 429, Strand (corner of Agar Street), London, on Wednesday, the 20th day of January next, at 2 o'clock in the afternoon.

GUY ELLISTON, *General Secretary.*

COUNCIL.

NOTICE OF QUARTERLY MEETINGS OF COUNCIL FOR 1904.

MEETINGS of the Council will be held on Wednesdays, January 20th, April 20th, July 6th, and October 19th in the Council Room of the British Medical Association, 429, Strand, London, W.C.

ELECTION OF MEMBERS.

ANY candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

CHRISTMAS HOLIDAYS.

THE Library will be closed on Thursday evening, December 24th, and reopened on Monday, December 28th.

RESEARCH SCHOLARSHIP.

OWING to the resignation of a scholar the Council is prepared to consider applications for the portion of the unexpired scholarship of the value of £150 per annum. The successful candidate is eligible for re-election in July, 1904.

Forms of application and terms of appointment can be obtained on application, and must be returned on or before December 31st, 1903, to

GUY ELLISTON,
General Secretary, British Medical Association,
429, Strand, London, W.C.

THE MOSQUITO WAR IN AMERICA.—An antimosquito convention, said to be the first meeting of the kind that has been held anywhere, met in New York on December 16th. Addresses were delivered by Dr. L. O. Howard, of Washington; Dr. Lederle, President of the New York Board of Health, and others. Professor John B. Smith, the State entomologist of New Jersey, in an address recently delivered before the New Jersey Sanitary Association, expressed the belief that the complete extermination of the mosquito in New Jersey was practicable. At the same meeting, Dr. Charles Wardell Stiles gave an account of parasites which in his opinion can be used for the destruction of the mosquito.

SPECIAL CORRESPONDENCE.

VIENNA.

Radium in the Treatment of Cancer.

Radium has been tried by Exner and Holzknecht in cases of carcinoma and sarcoma with results that are so far satisfactory. A longer period of observation is necessary, however, before a definite conclusion can be arrived as to the value of the treatment, as only half a year has elapsed since the treatment by radium was begun. Recurrence has taken place in one case, but in two others the disease seems to have been arrested. An account of the cases was given to the Medical Society of Vienna in a paper read by the two clinicians on June 26th, 1903. The patients were shown at the same time. The first patient was a man, aged 37 years. Three years previously he had to undergo an operation for melanosarcoma of the left humerus. For eight months the patient had noticed several small subcutaneous, dark-coloured nodules not far from the original seat of disease. He was first seen in February in the clinic of the late Professor Gussenbauer. The microscopical examination of a small extirpated nodule proved it to be melanosarcoma. Exner applied radium to all the metastastic tumours by the following method:—A small capsule of vulcanized indiarubber, of which one side was replaced by mica, was fixed to the skin by means of bands of adhesive plaster exactly above the dark-coloured spots. The time of exposure to the radium rays varied from five to twenty-five minutes. No metastasis was exposed more than once. The first result was a dermatitis, which came on between two and forty-eight hours after the application of the radium. After a fortnight the results were as follows:—On the spots, where the exposure lasted less than fifteen minutes, there was no change whatever, the dermatitis having disappeared, but in places where the *x* rays had acted from fifteen to twenty-five minutes there was a marked diminution of the metastatic nodules, and a number of them had entirely disappeared; their size varied from ½ to ¾ of an inch in diameter. New nodules appearing on the shoulder, breast, and left humerus in the course of treatment were also exposed; within a month these could neither be seen nor felt. Their seat was betrayed by a flat depressed cicatrix, where the skin appeared atrophied. Another case of melanosarcoma with metastases in the skin was treated in the same way with the same result.

The next case was that of a man, aged 61, who was operated on in the year 1888 for carcinoma mucosae oris. In 1891 and 1897 recurrences took place, necessitating further operations. He was seen again on May 11th, 1903, when the following condition was found: On the right side of the upper and lower lips, and at the right corner of the mouth, there was an ulcer of the size of a shilling, somewhat prominent, covered with greyish detritus. Palpation revealed a hard tumour of the size of a small nut, extending into the surrounding tissues. A small extirpated portion was examined with the microscope; it was carcinoma of the epithelial type. There was another tumour of similar qualities on the left arcus palatoglossus.

The first tumour was exposed to radium on May 11th, and subsequently altogether six times, each spot being treated for fifteen to twenty-five minutes. Seventeen days after the first exposure the ulcer began to show healthy skin on the border, the nodule was smaller, and quickly disappeared within the ensuing twelve days. When the patient was shown, however, on June 26th no trace of it could be found. Subsequent observation, however, showed that in the depth of the tissues some malignant cells must have remained, for the patient was again attacked by cancer, and succumbed to the disease after a few months.

Dr. Holzknecht showed a third case—an epithelioma of the left cheek of the size of a sixpenny-piece. The margin was hard, solid, somewhat raised, the centre atrophic, depressed. Three days after application of the capsules containing the radium the margin appeared as flat as the centre. Two more applications, each lasting for only five minutes, were sufficient to bring the disease to an end, although on one spot of the margin there was still some infiltration. The patient did not present himself again for treatment; the result has therefore not been verified by longer observation.

The conclusions to be drawn from the facts are summed up by Exner and Holzknecht as follows: "Radium rays irritate the cells of the strata of the skin less vehemently than cells of cancer and sarcoma. The last named are brought to necrosis before the other tissues suffer severely from the effects. The radium dermatitis is very similar to the Roentgen-dermatitis." The experiments were made with bromide of radium, the strongest preparation at present available. Further reports containing the results of a further series of observations on the same subject will be published shortly by the Royal Academy of Science of Vienna.

CAPE COLONY.

The Medical Congress.—A Proposed Medical Guild.—The Cape Medical Council.—Draft Medical Ordinance for Orange River Colony.—Proposed Federation of Medical Council.—Dr. A. H Petersen.

Arrangements for the forthcoming Medical Congress are now fairly complete. It is to open on December 28th, and will last a week. The selection of this holiday time of the year seems inevitable, as at no other period can many men leave their practices, and, moreover, it is the only time of the year when any considerable reductions in railway and shipping rates can be obtained—a matter of great importance in this country of magnificent distances. I do not think that people at home realize that it is a much bigger business to get from Johannesburg or Durban to Capetown than it is to make the journey from London to Rome. I do not think any large number of outside practitioners will be able to attend. The aftermath of the war and the presence of so many newly-arrived "squatters" around their practices constrain them to be very chary about leaving home. But most of those who are coming are representative men, and the local profession is so strong in numbers that the local attendance at congress should be fairly good according to our modest South African notions. But I am afraid the work done will be very meagre, not from lack of material, but lack of time. The Cape Peninsula is the one place in South Africa with abundance of varied attractions for holiday-makers, and the "junketings" that have been arranged are numerous. Work will be done in five sections, but these will not sit contemporaneously owing to the doubt as to whether there will be a sufficient attendance to go round.

A proposal is to be brought forward for the formation of a medical guild, which is designed to combine the functions of medical "trades union," a defence society, and a benevolent fund. A committee of practitioners has prepared a detailed scheme which will be embodied in a paper. Over-competition is rapidly demoralizing the profession in an ethical sense, and some sort of organization for making the corporate opinion of the profession felt is a matter of urgency.

The election for the Cape Medical Council terminated in the unopposed return of three old members, Drs. Hewytt, Wood, and Stevenson, with a new one, Dr. Darley-Hartley. Dr. J. H. M. Beck, late Member of the Legislative Assembly, did not seek re-election. This is a gain for the party determined to maintain the principle of reciprocity.

A draft ordinance for the regulation of medical, dental, and pharmaceutical practice in the Orange River Colony has been prepared for submission to the ensuing session of the Legislative Council. Dr. Pratt Yule, the Medical Officer of that Colony, is mainly responsible for it, and an excellent Bill it is. One can only hope that it will go through unmutilated. If so, the Orange River Colony will have about the best medical Act in the Empire. The Cape and Natal Acts are in advance of anything in England, especially in the prevention of quackery, inasmuch as they render penal not merely the assumption of titles, but the act of practising. The Orange River Colony proposals, however, are much more stringent than any existing legislation even in South Africa. In the clause dealing with the assumption of titles indicating qualifications a whole list of titles is inserted, even including the simple "Dr.," so that a quack, even if he held a doctorate, would come under the clause if he used that title in connexion with pretence to practise. "Dental practitioner," "medical practitioner," and even "mechanical dentist" are proscribed. Also there is the general prohibition of the use of any titles or designations "implying or calculated to lead the public to infer" that the individual is qualified to practise. This is most usefully elastic. There is also a clause providing that proprietors as well as managers of chemists' shops shall be registered chemists and druggists and requiring that if any joint stock company carries on pharmacy all the directors shall be registered chemists and druggists. Unfortunately, no such drastic provision has been made against

medical aid associations. We have nothing of the kind here as yet, but we may have, and it would have been wise to have legislated in time. Reciprocity is very clearly provided for, and it is specified that the privileges required in a foreign country must be "equivalent to those granted by registration under this Ordinance." This, of course, obviates any such dubious interpretation of reciprocity as that adopted by the British Privy Council. There is to be a combined Board for medicine, dentistry, and pharmacy. It will contain five medical practitioners, one dentist, and two chemists and druggists. The dentists and chemists will be nominated by the Lieutenant-Governor. Of the medical members two will be nominated and three elected. The President must be a medical member, and the dental and pharmaceutical members can only vote on matters previously decided by a majority to be concerned with their respective callings.

A proposal is on foot to arrange a federation of the medical councils of South Africa. Both the Cape and Natal councils have taken it up, and a conference of representatives is being arranged. The only difficulty is that the Cape wants the conference at Capetown, and Natal at Pietermaritzburg.

Dr. A. H. Petersen, a widely-respected gynaecologist practising at Capetown, has been elected at the head of the poll by a large majority as member of the Upper House of the Cape Colony for the Western Circle, which includes Capetown and its vicinity. He belongs to the South African party, and was largely supported by the Labour organizations. He is the only medical member of the Upper House, but at least six or seven medical candidates will offer themselves for the Assembly election which occurs at the beginning of the year.

SYDNEY.

Report on the Second Plague Epidemic in Sydney.—Prosecution for Food Adulteration.

DR. ASHBURTON THOMPSON, President of the Board of Health, has published an elaborate report on the second plague epidemic in Sydney. The observations of 1900, that the epidemic was not caused by direct communication with the sick, nor by diffusion of infected articles, nor by place infection, have been confirmed and amplified. The epidemic declared itself with the third case in January, 1902, and ended on June 8th of the same year. There were 132 cases among whites, 34 proving fatal, and 7 among the Chinese, of which 5 ended fatally. The onset of the disease was marked by extreme deliberateness at first, and by an almost regular acceleration in its later stages, while its end was abrupt and decisive. Only two of the persons attacked asserted that they had been inoculated; one patient who died had been inoculated with the Haffkine serum at Rockhampton two years previously. Dealing with the origin of the epidemic, Dr. Thompson states that the only hypotheses worth considering were the following: Either the epidemic depended upon a recrudescence of the epizootic of 1900, or upon a second epizootic set going by newly-imported plague rats. As to the former, the Health Department had reason to believe that the epizootic of 1900 died out in the course of that year, but the evidence was insufficient to establish the fact. Still, the recurrence was apparently too long delayed to have been a recrudescence, and the balance of evidence at Sydney appears to tell in favour of reimportation. The Board of Health has decided that while there is no pathological evidence that man is infected by feeding, there is abundant testimony that he is usually infected by inoculation, and that the agent between the rat and man is the flea. It was found that, although commonly the flea which infests the rat has no special predilection for man, it yet appears to have no repugnance to him, but will feed freely upon his blood if it be hungry. Hence it is plain that there are at least two chances against man's being bitten by any of the species of fleas which infest rats. One is that fleas which have left a plague rat may never come within reach of man though on the same premises with him; the other is that if they reach him, they may do so at a time when they are not so urged by hunger as to bite an unaccustomed host. These chances account for the fact that persons who inhabit premises infested with plague rats frequently escape infection.

An important prosecution was recently undertaken by the City Council, under the Public Health Act, a large firm of mineral water manufacturers being charged with selling raspberry syrup not of the nature, substance, and quality of food demanded as required under the Public Health Act. It was proved that essence of raspberry was used in the preparation of the syrup, in the proportion of 80 ozs. to 100 gallons, also sugar, roseine or rubene, acetic acid and water. The line of defence adopted was that a liquid of this composition was innocuous, and on this ground the information against the firm was dismissed. The fact that a syrup of this composition was not "raspberry syrup" within the meaning of the Public Health Act was not considered by the magistrate as constituting any offence. It is a matter of regret that the attempt of the Health Department to secure a pure food supply, and to put down the wholesale adulteration of foods does not meet with more vigorous support from the medical profession. The mere fact that such concoctions may possibly be harmless is no argument in favour of such a state of things being allowed to continue. Fortunately we have a vigorous Health Department, which will not be discouraged in their attempts to secure the purveyance of pure foods and drinks. Some other prosecutions have taken place; for selling mustard containing 50 per cent. of wheaten flour the defendant was fined 20s. and the costs of the court. Two persons were fined for selling sweet spirits of nitre not of the nature, substance, and quality demanded. The evidence of the analyst in these cases showed that the sample analysed contained none of the principal constituent of the drug.

THE ARGENTINE REPUBLIC.

[FROM OUR CORRESPONDENT IN BUENOS AIRES.]

The Argentine Attitude.—The Influence of France.—Conditions of Medical Practice.—The University of Buenos Aires and its Examinations.

THIS country in things medical, as in mutton and wheat, is moving ahead with such strides that it is interesting to compare our rapid advance with the slowness of your methods and the extreme conservatism of your ideas and procedure which I have observed on my frequent visits to England. We cannot boast here of many actual scientific discoveries, but the Argentine is remarkable for the extreme rapidity with which he absorbs new ideas from the workers in the Old World and applies them with a certain enthusiasm which reminds me of student days when we sat at the feet of our Gamaliels drinking in our teachers' ideas without hesitation and very little questioning. The Argentine student at the present time is entirely led by the French school of pathology, and even in surgery and therapeutics the younger men are entirely devoted to Parisian methods. They have a certain veneration for Berlin and Vienna more as one admires a colossal statue for its size and stability, but there is an enthusiasm for methods French. London, if not actually despised, is gently tolerated; they credit you with the possession of fine hospitals and asylums, where much attention is paid to hygiene and cleanliness, but where they consider treatment is well-nigh a century behindhand. Not to be outdone they are completing in this city a national asylum for the insane, where the kitchens have cost £15,000 and an attached pathological research laboratory, £18,000, with a French professor at a salary of £1,500 per annum.

Paris is the Mecca of the Argentine, socially, artistically and medically. Rich patients whom I have recommended to London, have all gone off at a tangent to Paris for treatment, advice, and operations, as for good dinners, good plays, out-door amusements and fine dresses. The pomposity of the average London consultant bores them, the dinginess of their consulting and waiting rooms disgusts them; the formalities which have to be gone through before they can see a big man in London they do not understand; such writing of notes and making of appointments, and solemn servants and dark rooms! To see a great doctor in London is as difficult as to get an audience of the Pope. Not 10 per cent. of the patients who drop in to see us here bring letters from a general practitioner, and I only ask who he may be in special cases. If the patient is not satisfied with me he goes along and drops into somebody else's rooms, nor does the practitioner care whether his patient has seen me or not; the patients pay and can choose whom they like; why not?

The extreme care with which the ordinary general practitioner nurses his patients in England is amusing to me now, and the nervous way in which the consultant nurses the general practitioner is still more amusing. Amongst the medical men themselves strict etiquette is carried out as regards consultations and attendance at patients' houses. Every medical man in the place has a couple of hours "at home," and his street door is open (literally, our street doors are open

all day long) and all may walk in who fancy the door plate. Fees therefore vary. The ordinary general practitioner charges 5 dollars (about 9s. just now) at his rooms, while the specialists and better known men charge 10 dollars; the smallest thing in operation—galvanic cautery, Politzer inflation, sight testing, ophthalmoscope, rectal examination, etc., are all extra. Taking it altogether, year in, year out, the London consultant at two guineas makes more money, but we get a more varied experience. So much then for a certain independence of thought and action and consequent latitude on the part of the practitioner.

The influence of the French school is probably due to the language; all educated Argentines speak French while few study English and still fewer German; hence they are at sea in London and Berlin, but more at home in Paris.

The Faculty of Medicine of the Buenos Aires University thinks no small beer of itself now. Having got rid of the older professors, the younger men have studied in Paris and Berlin, with perhaps a flying visit to London. Besides this they periodically send a delegate to study medical education and administration in Europe and the United States. He sends in a detailed report, with the result that the medical school here educationally includes the best from all the big schools in the world. Not having any traditions to keep up the Argentine freely absorbs the best aliment from abroad, and he is wonderfully clever at picking out the best. Money is freely spent, and the laboratories and class rooms are splendidly equipped, so there is no excuse for the modern student here. The school being in a flourishing condition, the authorities care no longer about admitting medical men with foreign degrees, and have, therefore, of late years made it very difficult and tedious for Europeans. The examinations are all viva voce in Spanish, no interpreter being allowed; the standard is high, higher than the Conjoint Board in England, and the unprepared Englishman or German has a rough time of it. A really good man will, of course, get through and will be welcomed here as elsewhere. Taking it altogether, an Englishman or English lady arriving here with properly-registered diplomas (M.B. or M.D necessary), and without knowledge of Spanish, will probably require two or three years to get through. By special permission a foreign doctor can practise for six months in some out-of-the-way place in the country, especially where there happens to be no Argentine registered medical practitioner, and he can make money there and wait patiently till he is ready to go up for examination at Buenos Aires. Practically and finally, there is no opening here in general practice for English medical men, although there are a few appointments in connexion with the English railways. The faculty is crowded with native medical students, and however welcome the labourer and artisan may be—and we have room for many thousands—the medical practitioner landing here from foreign ports is tolerated, but not received with open arms.

MANCHESTER.

Difficulties of Diagnosis.—Milk Producers' Association.

A CASE of considerable interest to medical men was decided in the law courts before the stipendiary. The Manchester Health Department brought an action against a medical man in Gorton for failing to notify the occurrence of small-pox to the health authorities. The doctor did notify the medical authorities of a case of small-pox on September 30th. On October 1st the doctor was asked to go through his list of cases to see whether any of them were of a suspicious nature, the authorities being unable to trace small-pox in the neighbourhood. The prosecution alleged that although at the time the doctor was treating four cases in one house in Buxton Street for chicken-pox, and although chicken-pox should come under the heading of suspicious cases, he did not mention the fact when asked to go through his list. On October 3rd another case in the same district was reported to the authorities. The latter were unable to trace the cause of the outbreak, and when another case was reported on October 9th, in Buxton Street, investigations were made, and four cases of small-pox were found in one house in Buxton Street, also a case in the next house. These patients were under the doctor's care and were being treated for chicken-pox. Thus the prosecution alleged that at the time the doctor made his first report he was treating four cases of small-pox in one house as chicken-pox, and that although more than once asked by the authorities if he had suspicious cases in his list he did not mention these cases, which were undoubtedly suspicious. The medical authorities were forced to organize a house-to-house visitation in order to try to trace the origin of the small-pox outbreak in this district. A medical officer of the Manchester Health Department visited the four cases in Buxton Street. He diagnosed them as cases of small-pox. The defence was that the doctor honestly believed the cases to be chicken-pox, of which he had had fair experience. He said the only reason he now had for thinking that the cases in question were small-pox and not chicken-pox was that they had not proved infectious. Four cases were brought, and the stipendiary inflicted a fine of £5 and costs in one case only, dismissing the others.

Milk purveyors, like other persons, naturally object to be forcibly coerced by laws laid down by town councils. At a recent lecture delivered by the Secretary of the Cheshire County Milk Producers' Association, it was stated in reference to criticisms made recently as to the Manchester supply, that the milk trade was more severely criticised than any other trade. It appears that at the Bradford Health Congress it was stated that in that town the adulteration of milk was as bad as it was ten years ago. It appears, however, that while ten years ago the adulteration was 10 per cent., last year there was only 2 per cent. In Manchester itself last year there was 3 per cent.

CORRESPONDENCE.

ON THE IMPORTANCE OF SANITARY AUTHORITIES HAVING INCREASED POWERS OF CONTROL OVER MILK SUPPLY.

SIR,—May I express the hope that your earnest and able advocacy of greater interest being taken in the question of milk supply will be successful in its object? The matter is one, as you show, of first-rate importance as regards the public health.

As I have had a considerable amount of personal experience with regard to the condition of dairy farms in this part of Yorkshire, it may perhaps be of interest to some of your readers to learn something about them, especially as they corroborate your own statements and strengthen your plea for further legislation on the subject. Perhaps, too, any medical officers who have not hitherto given special attention to the subject may be induced to do so on learning my experiences in this part of the country. I shall only refer to matters which I have personally observed.

Bradford, like all large towns, is obliged to obtain a considerable part of its milk supply from farms situated outside its municipal area. When I was the Medical Officer of Health here I wished to see for myself the condition of the dairy farms which supplied our milk within the borough. From what I saw within our borough boundary I felt the necessity for extending my inspection to the farms outside the borough which contributed to our supply.

Strange as it may seem, I had no legal authority whatever to do so. No matter how abominable and unhealthy the condition of these dairy farms or how diseased the milch cows supplying Bradford might be I had no right of inspection or control whatever over those outside our boundary, even in cases—and there were many such—where every drop of the milk from the farm was regularly sold for human food in Bradford. From time to time I had communicated on the subject with the Medical Officers of Health of neighbouring districts where there were farms supplying milk to Bradford, and where I had reason to believe insanitary conditions existed likely to affect the milk. Sometimes I was politely thanked and told to mind my own business. As if the source and quality of the milk supply of Bradford was not the business of its Medical Officer of Health! But in most cases I received friendly assurances that I might do anything I wished, provided I did not cause any personal trouble to my colleagues over the border. For they were much more interested in their private practices than in their miserably and inadequately paid official duties, and were not eager to make long journeys to distant farms to see if proper precautions were taken as to the milk sent away to Bradford. I was often assured that my good friends felt little anxiety concerning farms which sold no milk in their own district but sent it to Bradford. Whether these farms were infected or filthy their withers were not wrung, as Bradfordians alone would endure any ill effects due to the unwholesome dairy produce from these farms.

Making a virtue of necessity, I proceeded to visit these outside farms without any authority. I felt that I could always make any farmer who objected understand that I could and would interfere with the sale of his milk in Bradford if necessary—and in many cases the milk was practically the whole of the farm produce for sale. Thus I succeeded in inspecting them without more than grumbling objections to the strange and unaccustomed visitation. I may add that I succeeded in getting something done in the way of improvement.

In general, I can say that there prevailed a complete absence of any idea of cleanliness in dealing with milk. The suggestion that milk and the utensils used in connexion with it should only be dealt with by those who were cleanly in person and healthy, they regarded as nonsense, or they protested that filthy hands and clothes were "good enough." My view that milkers should have clean hands and arms and have at least a clean apron, and that the cow's udder and teats should be kept clean, they could not comprehend at all. When I insisted that milk and milkcans must not be kept in dwelling rooms or sleeping rooms and must not be washed along with the general filthy things of the farm, I was looked on as, and told to my face I was, unreasonable, mad, and an outrageous tyrant trying to inflict wrong and financial ruin on industrious, painstaking farmers.

On making a similar inspection at a later date, as mentioned further on, I am glad to say there were slight symptoms that there was an idea abroad that cleanliness regarding milk was a condition theoretically desirable, but only as a pious aspiration. As to cleanliness connected with the cows or the cowsheds, that is a matter as incomprehensible as space of four dimensions. Cowdung comes from the cow as well as milk; why make a bother about it? As to the condition of the farmhouses, I did not find one, even where milk-production was the sole business, in which suitable structural provision had been made for the special business of dairy-farming.

The houses differed in no way from the farmhouses where no milk was dealt in; the mistles whence large supplies of milk were sold were as dark, dirty, and ill-ventilated; there were no properly ventilated cool dairies or cellars, no place for washing or keeping milk utensils different from what are to be found on farms which did not sell milk. The milk vessels were often kept in the dwelling room, which is not uncommonly used as a sleeping room also; or in the scullery (the general storeplace for dirty things, lumber, boots, harness, soiled linen waiting for wash-day, chamber utensils waiting to be emptied, etc.), or outside the house door, in proximity to the mistle and its filth, and of the manure heap. Never did I see any kind of covering provided to keep the dust off. "What more could I want than the fresh air?" I was often asked, even though I could point to the coating of dust blown from the manure and dust heaps inside the cans. I have found the milk and milk cans in dwelling rooms where cases of scarlet fever were lying. I have seen the cans used for washing dirty linen and babies' napkins; once I saw articles even yet more foul being washed in a milk can which was to be used an hour later for dairy purposes. When remonstrated with, these filthy people stood aghast at my extravagant sentimentality.

I never saw in one of these farms any special appliance, or place, for washing milk vessels. They were invariably washed on the sink in the scullery, where all the dirty things of the house are kept and washed. Frequently I have seen chamber pots containing liquid and solid excrement on the sink stone along with milk vessels. I have seen half a dozen milk pails on the sink stone with a pile of half-washed clothes, while on the floor lay a pile of dirty clothes waiting to be washed, several of those prime filth collectors called "ragrugs," dirty boots, and other things. A couple of years ago I was engaged on a similar inspection of dairy farms, to qualify to give evidence in support of a Bill by which the Bradford Corporation sought to obtain, *inter alia*, increased powers over such outlying dairy farms. The West Riding County Council were opposing, as they objected to Bradford, which was keenly interested in the state of the dairy farms which supplied its milk, exercising any authority within its (the West Riding County Council's) jurisdiction, even though it exercised no effective control itself. This opposition was ultimately withdrawn. I happened to call at one farm which I found supplied about 60 gallons of milk daily to one of the largest infirmaries in the district. Three empty milk cans were standing on the sink stone along with a well-filled chamber pot and unwashed dinner things. A lot of old harness was lying with other rubbish in one corner, and a dirty hairbrush stuck behind the water tap and a fragment of looking glass hanging over it indicated that members of the family performed their toilet there. It is quite usual in these parts for all the members of a family to do so at the sink stone.

As to the condition of the mistles, and the manner in which the milch cows (indeed all the housed beasts) were kept, it was in every case filthy and unhealthy in the extreme. The mistles had often no window at all, or only one, perhaps, 20 in. by 15 in., which was usually covered thickly with dirt. No ventilation was provided, except perhaps a hole made by knocking a stone out of the wall, and this hole was usually stuffed to "keep the draught out." I did not find more than three to four which had the walls plastered in any part inside, and in every case the dark, stuffy interior was badly floored and filthy—the ground and stalls, the walls behind the cows splashed with dung, and other parts covered with dust and cobwebs. The high temperature which is maintained regardless of the health of the animals, greatly encourages the formation of dust, and it was everywhere in large quantities. Rarely was there sufficient cubic or floor space, the usual arrangement being to have the cows as closely packed as is possible, so that they might be just able to lie down. The drainage was primitive and ineffective; usually there is no supply of water in the mistles, all drinking water for the cows being carried by hand. Water for washing any part of a cow, even dung off the udder or teats, or for cleansing floor or walls, seemed unknown, as well as absent. The water supply was, in many cases, defective both in quantity and quality. I never heard of any inspection of the beasts by a veterinary surgeon on behalf of either the owner or the sanitary authority. Healthy or diseased the dairy cow's business is to give all the milk she can, and the dairy-farmer's business is to sell the milk at the best price he can get, and at the minimum cost of production. As to the quality of the milk, the farmer's policy is *caveat emptor*.

After such experiences, I induced the Bradford Corporation to apply for powers of inspection over outlying farms supplying milk in Bradford and I drafted the first clause to this effect, which was granted to a sanitary authority. Owing to the opposition of Mr. Hastings, M.P., the then Chairman of the Police and Sanitary Committee of the House of Commons, there was considerable difficulty in getting the clause passed. He could not tolerate any official from one sanitary area making an official inspection in another area. Several times I had to rewrite the clause, saying the same thing in other words. At last, during the absence of Mr. Hastings one day, the clause was approved. Other sanitary authorities followed the lead, and ultimately, as is so often the case, Parliament discovered that local sanitarians are sometimes wiser than their masters at Whitehall, and Section 4 of the Infectious Disease Prevention Act, 1890, which was founded on the Bradford Clause, became law.

This clause, however, is surrounded by so many circumlocutory precautions to prevent the blissful ignorance or perversity of the dairy farmer being disturbed by an inquisitive Medical Officer of Health as to be practically inoperative. The medical officer may not inspect a dairy farm outside his own district, which supplies his people with milk, unless provided with an order from a justice having authority in the district where the farm is. Why not? Why should any order at all be necessary unless there is refusal to admit? Why should a magistrate in the district in which the milk is consumed not have power to give an order? Where is the Medical Officer of Health to find a magistrate in the other district? The extent of the obstructive delays imposed where prompt action is needed is an object-lesson in the art. But perhaps the extreme of absurdity is the prohibition of permission for the Medical Officer of Health, order or no order, to inspect the cows unless he has a veterinary surgeon along with him. It may be advisable that, before any serious step is taken regarding a dairy cow, a veterinary surgeon should be called in. But to prohibit a Medical Officer of Health from inspecting a milch cow whose milk is sold within his district, when he notices its emaciated condition, or hacking cough, or enlarged mamma, or inflamed teats, etc., is certainly not practical hygiene. Without some examination he can hardly insist on the milk not being publicly sold in his district for food, although he has good reason to believe the animal is seriously diseased, and it may take many days before a visit by a veterinary surgeon can be arranged and an order from a magistrate in a district unknown to him obtained.

It would be intelligible if the law only allowed the medical officer of health to inspect on the report of a veterinary

surgeon, though it would be ridiculous. The law, however, allows him to inspect the farm, the walls and floors and drains, and to take action regarding the cows as a result of this inspection of the buildings; but he must not presume to cast inquiring glances toward the cows, the essential point, unless there is a veterinary surgeon or inspector present to inspect himself! This section is altogether so badly drawn that it needs thorough amendment, so as to give power of efficient and prompt action to the medical officer.

The problem of how to make suitable provision for the wholesomeness of milk which is sent hundreds of miles to its consumers, as is the case with London and other great cities, is a serious and difficult one. But Parliament is elected for the purpose of solving difficult questions, and this one ought to be laid before it without delay.—I am, etc.,

Bradford, Dec. 11th. THOS. WHITESIDE HIME.

INFANT MORTALITY.

SIR,—It is needless in a medical journal to discuss the amount or dangers of high infant mortality, but I should like to mention one of the causes, and also point out how that cause is likely to increase and how it may be diminished.

Dr. Newsholme, in his well-known work on *Vital Statistics*, says that one of the causes is the omission on the part of the parents to call in medical aid soon enough. Dr. Harris, the M.O.H. for Islington, in a recent report, attributed many of the deaths from measles to the same cause. Recently in an Oxfordshire village a large number of children had diphtheria and went about in this condition, and even attended school with their throats swathed up, no doctor being in attendance upon them.

It is needless to multiply instances; and the reason is obvious.

Poor people of the labouring classes cannot afford to pay doctors' bills, or even to subscribe to clubs. If the baby is upset or a child has a sore throat, a father or widowed mother will hesitate to call in the doctor when the result will be (even on the very moderate terms on which doctors attend poor people) that the family have to go without dinner for several days.

But, it will be said, the Poor Law provides a doctor for the poorest. Yes, so it does; but unfortunately there is a "hard school" of so-called Poor-law reformers. These people have persuaded many Boards of Guardians to use methods of deterring the poor from applying for medical relief; such as giving all medical relief on loan (in the first instance), or compelling the parent to come before the Committee. In unions which have adopted these measures, "medical relief" has largely diminished, and it is, I think, practically certain that this must have caused much suffering, and, in some cases, death.

I think the attention of the medical profession, and of the Local Government Board, should be drawn to this subject.—I am, etc.,

Oxford, Dec. 15th. J. THEODORE DODD.

HERBERT SPENCER AND EVOLUTIONARY PATHOLOGY.

SIR,—More than twenty years ago I drew the attention of the profession to the valuable results which were likely to accrue from application of the principles which it was Mr. Herbert Spencer's life-work to elucidate to some of our unsolved pathological questions. At that time I pointed out that the influence of evolution in pathology had been almost *nil*. The specificity doctrines of Laennec, Bretonneau, Trousseau, and indeed of Sydenham still held the field. The immutability of species of disease was regarded with as much sanctity as was the immutability of species of animals and plants in the eyes of the older biologists. I then ventured to urge "that the common ancestry of specific diseases once recognized would do much to remove the hard and fast lines so often drawn between disease and disease in textbooks and dissertations, but of which Nature knows nothing."[1] These views were afterwards included in a pamphlet entitled *Specificity and Evolution in Disease* (H. K. Lewis, 1884), and Mr. Herbert Spencer, in accepting the dedication of the work to himself, was so good as to add that "its conception is thoroughly philosophical, and promises to open the way to a considerable reform in pathology."

At the present time, when we are regretting the close of the great evolutionist philosopher's life work, there is not wanting evidence that light may be shed on pathology by the further application of Spencer's doctrines. In 1888[2] I claimed that:

> The hard-and-fast line which once in the minds of pathologists, though never in the methods of Nature, sharply divided, upon a morphological basis, the benign from the malign, has been wiped out, and that the old doctrine of the "heterology" of malignant growths has been so qualified, restricted, and modified to meet modern requirements that it is practically ruled "out of court."

I then propounded the following thesis. I said:

> If, then, we believe that in her wildest vagaries of pathological neoplasm nature makes no jumps; if we recognize a transition between the simple and the specific, the innocent and the malign, chronic inflammation and cancerous infiltration, sarcoma and carcinoma—in what, then, does cancer consist? In generation, in inflammation, in repair, in carcinomata and sarcomata the individual factor is morphologically apparently identical; what differences there may be are latent, not expressed. In inflammation, repair, and in malignant growths, then, there is a reversion to embryonal cell type. In the two former processes there is either organization of embryonal cells into tissue or liquefaction into pus. In the neoplasms, on the other hand, there is indisposition of the component cells either to differentiate into tissue or to suppurate. They lack the influence which makes for organization; their instincts are of the lowest—are amœboid, in fact. They possess the fecundity of cells unfitted for "colonial" life, and share their vagabond propensities. Herein lie the factors of malignancy, the causes alike of rapid growth and the infectivity of cancer.

I then cited the felicitous suggestion of Dr. Creighton as to the quasi-spermatic influence of malignant cells. By their contact they appear to cause other cells to generate, and make the offspring like themselves. The demonstration then recently made of similarity in the nuclear structure of cancer cells and spermatoblasts, I pointed out, afforded a morphological peg on which this theory might be suspended. Researches carried out since these views were promulgated have served both negatively and positively to confirm the position then advanced. It seems to me there is accumulating evidence to support the contention that in the evolution hypothesis we shall find guidance to the solution of the mystery of malignant growths.

> That we are "the heirs of all the ages," of the lowly amœba as well as of our parents. That, as we believe with von Baer the history of the individual repeats the history of the race, so we carry within us (happily not all in the same degree) the idiosyncrasies which pertained to the life-history of our earliest progenitors. That while, in the processes of repair and of organizing inflammation we see a survival of tendencies inherited from a later generation, a generation which had acquired colonial habits and a lower grade of fecundity, and which we regard as beneficent, in the life-history and tendencies of the cancer cell, we see occasional persistence of, or reversions to, that still earlier type of a structureless cell, inapt at specialization, indisposed to colonial collaboration, and multiplying by fission with that terrific rapidity characteristic of the lowliest of living things.

I should like to add that recent work in connexion with the protozoal bodies in malignant growths seems to point in the same direction. Are not these bodies the bastard brood of some anomalous form of cell conjugation?

In the case of cancer bacteriology has apparently drawn blank, despite its zealous search for a *causa causans*. A return to cellular pathology illuminated by evolutionary principles seems to offer a more fruitful line of research.—I am, etc.,

London, N.W., Dec. 16th. W. J. COLLINS.

THE FINANCES OF THE GENERAL MEDICAL COUNCIL.

SIR,—When I wrote the letter which appeared in the BRITISH MEDICAL JOURNAL of November 14th I dealt with the question of the finances of the General Medical Council from a circumscribed point of view—the view of temporary expediency. Mr. George Jackson, of Plymouth, however, one of our valued Direct Representatives of England, in his letter published in the JOURNAL of November 21st, raises the question to the higher platform of medical reform. That so eminent a medical politician as Dr. Laffan, of Cashel, should, in the JOURNAL of November 28th, follow in a similar strain is not surprising: the author of the "Carmichael Prize Essay" of 1879 has ever been an earnest advocate of progressive medical legislation: what he says is a vigorous and terse expression of what many think. Nor, in the same number, do your correspondents "M.R.C.P.Ed." and "Spectator" deal less trenchantly with their subject; their criticisms of the business habits of the Council are levelled with singular directness at what undoubtedly is the dominant contributory factor in the Council's financial crisis.

It is beyond dispute that the General Medical Council has so far outgrown its original proportions that the increase taxation of the profession for its support cannot for many sessions be longer delayed; the harmonizing of the conflicting opinions advanced by the representatives of interested

[1] *Lancet*, May 14th, 1881. [2] Ibid., August 25th.

corporations uncontrolled by summary judicature must ever prove expensive. Increased taxation, however, is an anachronism without compensatory representation; nor would it be to the betterment of the profession to further tolerate a system of government so out of touch with its more personal interests as the present. To obtain the powers to further tax the medical practitioner the General Medical Council must appeal to Parliament. It is there that a united profession must urge such direct representation as will permanently secure its autonomy.

The precedent of direct representation has been made; its hopeless minority has been again and again demonstrated. It is impossible to believe that if we had had a direct representation of sufficient numerical strength the melancholy story of the Hunter case would have been written, that so-called club doctors would be compelled to accept the present inadequate wage their "masters" offer them, or that impostors could personate medical men with impunity, the General Medical Council remaining impassive. The specialists, the consultants who preponderate on the Council, however eminent they may be in their professional spheres, can hardly have those sympathetic qualifications which make for the legislative and administrative economics of a profession harassed as ours—harassed on every side by the pressure of trades-union combinations, over-hospitalism, prescribing chemists, and various forms of rampant quackery. To attack these inimical conditions the general practitioners require a General Council strengthened by recruits from their own ranks—in short, men who feel the burdens the practitioners have to bear and who know best how such burdens can be lightened.

In the British Medical Association the medical profession has to its hand an organization ramifying with beneficent effect through every division and subdivision of the kingdom. Year by year finds this organization becoming more and more effective as a machinery of defence. With such a powerful organization it should be able to mould legislative enactment in such a form that past years of faulty medical legislation may be repaired and the welfare of the profession promoted.

In conclusion, let me appeal more particularly to the junior members of the Association to take such personal interest in the issues that may be raised through the depleted funds of the General Medical Council as may ensure that the important interests of the profession may not now suffer through their indifference.—I am, etc.,

Dublin, Dec. 12th. S. WESLEY WILSON.

ISOLATION HOSPITALS.

SIR,—The letter of Dr. Killick Millard in the BRITISH MEDICAL JOURNAL of December 5th is very interesting reading. To the lay mind it must have appeared strange that at the very time when Sir R. Thorne-Thorne was proving to the Royal Commission the utter failure of the aggregation method, as evidenced by the data furnished by those towns where the system had been in operation, the Legislature was engaged in passing the general Notification Act (1889). Sir R. Thorne-Thorne, than whom no more honourable official has ever graced the Local Government Board, must surely have lacked the courage of his convictions, or he would have raised his voice against the passing of an Act the natural outcome of which was to multiply the unfortunate experiences of Leicester and Warrington.

It was no new suggestion in 1889 that the "isolated" of the fever hospitals were not likely to fare very well. In 1871 Sir Thomas Watson was telling us that:

> Fever ceases to spread in those houses from which patients are taken away and when means of purification are employed. This well-ascertained fact it is which gives to fever hospitals their greatest, nay, almost their only value. They would otherwise, as we have seen, be detrimental or dangerous to all concerned with them, by concentrating the poison that produces the fever, without equivalent benefit (*Practice of Physic*, edition v, vol. ii, p. 900).

The reference is to what happened in an Edinburgh fever house in the years 1817-19. The writer quotes Dr. Welch, who says:

> In this hospital since it was opened (one year previously) my friends Messrs. Stephenson and Christison, the matron, two apothecaries in succession, the shopboy, the washerwoman, and thirty-eight nurses have been affected, and four of the nurses have died. With the exception of two or three nurses who have been but a short time here, I am now the only person who has not caught the disease within the last eight or ten months (pp. 898-9).

What would have been Sir Thomas Watson's attitude on this question had he been aware of the deadlock created by "return" cases, second attacks, and the formidable list of sequelae, including that terrible new aggregation disease—post-scarlatinal diphtheria?

Is it not marvellous that, possessing this knowledge, the sanitary authorities of this country have not been restrained by the Local Government Board from rushing into enormous expenditure on permanent hospitals without the most elementary inquiry as to what kind of work these institutions were doing?

Officers of the public health service are on the horns of a dilemma. Many have urged their authorities to spend large sums of money on "isolation" hospitals, and a confession of failure now would amount to stultification. It becomes urgently necessary, therefore, that a solution of the difficulty should be found for them by an authority higher than themselves, the acts of which would relieve medical officers of health of all responsibility. A Royal Commission could take evidence from any quarter; why not support the demand for an inquiry? It is abundantly evident that the movement is gaining strength. Within a few weeks the medical officers of health of Portsmouth, Stockport, and Windsor have joined their voices to ours in a request for such inquiry. In an abstract from the annual report of Dr. Thresh, M.O.H. to the County Council of Essex, we learn that he also joins issue with Dr. Millard in claiming:

1. That the hospital isolation of scarlet fever appears to have failed to reduce the prevalence of the disease.
2. That the hospital isolation of scarlet fever appears to have failed to materially reduce the fatality of the disease.
3. That the fatality of the disease has fallen most in those towns which have not practised isolation.

"Many attempts have been made to upset his figures," says Dr. Thresh, "but in my opinion they have materially failed to affect his conclusions."—I am, etc.,

Nottingham, Dec. 6th. EDWARD DEAN MARRIOTT.

IS CANCER CONTAGIOUS?

SIR,—It is evident that, out of the confusion of a transitional period but two clearly-defined conceptions as to the origin of malignant disease have emerged, the one ascribing its causation to extrinsic influences (microbes, inflammation, traumatism, irritation, etc.); and the other to intrinsic influences—modifying the formative activity through perversion of the cellular metabolism (domestication, alimentation, developmental irregularity, heredity, etc.).

Now these two conceptions are undoubtedly incompatible and contradictory; for, if microbes or other irritants *ab extra* be the essential causative factors, then intrinsic influences can only be of secondary importance, and vice versâ. Hence the importance of choosing a working hypothesis, for of the two alternatives available, only one can be true.

If it could be proved that cancer were a contagious disease, the issue would be greatly simplified in favour of extrinsic factors; indeed, the crux of the whole matter seems to lie in the decision of this question, which had already been propounded at the beginning of the last century, and even at more remote periods.

The evidence bearing on this subject may, for convenience of discussion, be grouped under the following heads: (*a*) Contagion as between human beings; (*b*) as between human beings and animals; (*c*) as between animals of the same; and (*d*) of different species.

Interest, of course, centres especially on the evidence as to the contagiousness or otherwise of the disease between human beings; and this is the aspect of the question to which I now propose to invite attention.

During my eight years' connexion with the Middlesex Hospital, although I was daily in the cancer wards, I never noticed a single fact that could possibly be construed as evidence of the communicability of malignant disease from one human being to another: but I noticed many indications which seemed clearly to imply that the disease was neither infectious nor contagious. At that time the special wards were densely packed with patients in advanced stages of cancer, mostly of the breast and uterus in a state of ulceration. There were no day rooms for these patients; they lived and died in the same wards. No sooner was one dead than her place was taken by another. The crowding was great; yet, during a period of twenty years, not a single instance is known in which a nursing sister, probationer, nurse, ward servant, surgeon, student, or any one engaged in attendance on the cancer patients ever acquired the disease. The nursing sister in charge held her office for over a quarter of a century, but she was never affected.

Among these cancer patients were several who had been

inadvertently admitted, with various chronic ulcerative affections of a non-cancerous nature; some of these lived for many years in the cancer wards, but none of them ever took the disease.

The attempts made at the Hôpital St. Louis, early in the last century by Alibert, Biett and others to inoculate themselves and their pupils with the disease were uniformly unsuccessful. There is not a single well-authenticated case on record of a surgeon having acquired cancer during the performance of an operation for the removal of this disease, notwithstanding the frequency of exposure to contagion under such circumstances. Of the thousands of persons habitually engaged in attendance upon the victims of this disease how few have ever become similarly affected!

In matters of this kind, experiments made by Nature are often far more conclusive than those made under artificial conditions, with their numerous sources of fallacy. Now, during the early stages of uterine cancer sexual desire is undoubtedly increased, and sexual intercourse is of common occurrence under these circumstances. In proof of this it may be mentioned that Noble had no difficulty in collecting records of 166 cases of pregnancy complicated with uterine cancer published during the decennium 1886-95, and it would be easy to add to this list. Cohnstein has reported a remarkable series of cases in which more than a single pregnancy was known to have taken place during the course of the progress of uterine cancer. I know of instances of pregnancy having occurred after amputation of the cancerous cervix and after curettage for the same. Yet, in spite of these facts, I am not aware of a single well authenticated case of cancer of the penis acquired in this way. Of 134 men with cancer of the penis, tabulated by Demarquay, only one had a wife with uterine cancer. Bossi, who has recently reinvestigated this important subject, has arrived at a similar result. Of 180 husbands known to have had marital relations with wives, the subjects of uterine cancer, not a single one had acquired the disease.

The comparatively few cases in which cancer of the uterus and penis have coexisted in husband and wife is so small as to deprive them of all value as evidence of contagion. It accords with this, that cancer of the penis is a rare affection, while uterine cancer is exceedingly common; thus, in 1900, 3,679 women died of uterine cancer, but only 100 men died of cancer of the penis.

Again, the children of cancerous mothers have never been known to have acquired the disease, even when the placenta, uterus, or other part of the genital tract had been the seat of the malady.

Thus there is every reason to believe that cancer cannot be transmitted from one human being to another, and that it is, in fact, essentially a non-contagious malady.—I am, etc.,

Clifton, Bristol, Dec. 12th. W. Roger Williams.

FLUORESCENT PINK-GREEN URINE.

Sir,—In reference to Dr. R. T. Williamson's memorandum in the British Medical Journal of December 12th, p. 1531, on "Fluorescent Pink Green Urine," I may mention that in an article on "The Occurrence of Green or Blue Urine" (*Lancet*, September 21st, 1901, p. 774) I referred to the case of a child who passed similar pink-green fluorescent urine after eating sweets containing an eosin-like aniline dye. Dr. A. E. Garrod also had told me of a similar case. In the case which I investigated the pink "musk-drops" when dissolved in water yielded a fluorescent solution like the child's urine. Another person (healthy) by eating a few of these sweets failed to obtain any fluorescent appearance in his urine. Therefore, either the child had been eating a relatively large quantity of the sweets or else the sweets cannot produce the characteristic urine in everyone equally readily. It would be interesting to know if Dr. Williamson tried whether the fluorescent urine could be obtained equally easily in other persons from eating the pink musk lozenges which his patient had eaten, or whether there was some peculiarity (temporary or permanent) in his patient in this respect. That the effect on the urine is partly due to some peculiarity in the person who eats the pink lozenges has been suggested to me by Dr. Cameron Kidd on account of a case which he observed.—I am, etc.,

London, W., Dec. 12th. F. Parkes Weber.

Sir,—In the British Medical Journal of December 12th there is a report by Dr. Williamson of a case of fluorescent pink-green urine, probably due to the elimination of a dye taken in pink musk lozenges. Some months ago a similar fluorescent pink urine was sent to me at the Pathological Laboratory of University College for examination. The specimen had been passed by a boy, aged 9 years, a patient of Mr. Edward Skinner, of Sheffield, and had caused considerable alarm. It was passed in four consecutive micturitions, and the boy was otherwise in good health.

There was no doubt that the colouring was due to eosin or some closely-allied body, partly because of its typical appearance and partly because sections of tissue stained in the urine gave a characteristic eosin reaction, and the only question was whether the boy had put some red ink into the urine after it was passed, or whether it had been absorbed into the system from coloured spice. The latter proved to be the correct view, and it was traced to some pink spice the boy had eaten.

At the time this case occurred I could not find any record of another case, nor have I heard of one since. It seems as though all children were not similarly affected, or it is probable more cases would have been noted; or, possibly, it is only a question of degree, and that in these cases sufficiently large quantities of the dye had been taken to make the colour of the urine noticeable.—I am, etc.,

University College, Sheffield, Dec. 14th. Arthur Hall.

"THE CONSUMPTIVE ON THE RIVIERA."

Sir,—In your article of December 12th, under the above heading, you call attention to the fact that there is "an increasing reluctance on the part of the hotel keepers of the Riviera to receive tuberculous patients." This feeling is not confined to Riviera hotel keepers; they share it in common with hotel keepers anywhere, but have expressed it to remove a prejudice from which they peculiarly suffered. It is not, however, to tuberculous patients a manager specially objects, but to the stigma associated with receiving them. He is as human as most men, and exaggerates a little to emphasize his point. The reproach of tuberculosis being so unreasonable, his protest, to be effective, must be unreasonable too.

As a matter of fact I have lately treated a larger proportion of phthisical patients in the hotels whose managers were chiefly responsible for this protest than in others, and if 50 such patients announced their desire to come here to-morrow they could enter the hotels of their choice without difficulty. To begin with, the manager would not know that two-thirds of them were invalids, and the more serious cases would be unrecognizable if they promised to be worth receiving.

The only phthisical patients not admitted are those who do not come, and as the Engadine and sanatoria now absorb almost all, our hotel managers have made a virtue of necessity and repudiate the absentees. While the climate of the Riviera remains what it is, the medical profession, at least, should know that their patients may without difficulty have the advantage of it.—I am, etc.,

Mentone. D. W. Samways, M.D., M.R.C.P.

HALLUX FLEXUS OR RIGIDUS.

Sir,—In my note to which Mr. Cotterill refers I recognized that irritation of the metatarso-phalangeal joint, by whatever name it be called, may be associated with flat-foot; and I have elsewhere remarked that Mr. Tubby and others have unconsciously illustrated the conjunction of hallux flexus and flat-foot by giving diagram footprints of the sole in this deformity with no impression of the second toe, which obviously had been uplifted by the great toe, habitually packed beneath it, in the hallux flexus position. The resulting irritation, by inducing muscular inactivity, had been the cause, not the consequence, of the flat-foot.

I recognize, too, that any distortion of the great toe may cause irritation of the metatarso-phalangeal joint; but, for reasons given and as a matter of fact, the irritation will be much the more or the less severe according as the great toe has been habitually packed under or over the second.—I am, etc.,

Gloucester. T. S. Ellis.

An International Exhibition at Brussels.—An International Exhibition of Food, Beer, Wine, and Liqueurs, comprising lectures on hygiene, medicine, and pharmacy will be held at Brussels in 1904. The date of opening is fixed for March 5th. The exhibition is under the patronage of the Belgian Minister of Industry and Labour, and the Burgomaster of Brussels is Honorary President.

OBITUARY.

THEOPHILUS W. TREND, M.D.St. And., M.R.C.P.,

Formerly Physician, Royal Hants Infirmary.

In Dr. Theophilus William Trend, who died after a short illness on December 7th, Southampton loses one who, both as a citizen and as a member of the medical profession, played a very active and useful part in its life. Dr. Trend was a student of Westminster Hospital, and one of its resident medical officers, and his earliest qualification dated back to 1859, when he received the licence of the Society of Apothecaries. To this he added in the same year the Membership of the Royal College of Surgeons, and at later dates became M.R.C.P.Edin. and Ireland, as well as M D. St. Andrews.

His connexion with Southampton began in 1860, when he became assistant to the late Mr. J. King Sampson, F.R.C.S., but it was not long before he gained an independent position for himself. From that time onwards he enjoyed the esteem and confidence of a very large circle of friends and patients. He was for many years one of the Physicians of the Royal Hampshire Infirmary, and he continued to take an active interest in its affairs after he resigned that position. He was also at one time President of the Southern Branch of the British Medical Association. His interests and influence, however, were not confined to professional matters. All questions of public utility appealed to him and, besides assisting nursing and various charitable institutions, he took a keen interest in educational matters, and especially in Hartley College and other endowed schools. In politics he was a pronounced Conservative, and he generally appeared on the platform at local elections. Earlier in his career he was Surgeon Major of the Volunteer battalion of the Hampshire Regiment, and held his commission sufficiently long to receive the Volunteer decoration for long service. About ten years ago he became a Justice of the Peace for the borough, and was a very constant attendant at the court which, upon the occasion of his death, suspended operations for a short time in order that the Bench and local Bar might unite in sending an expression of regret and sympathy to the surviving relatives of their late colleague.

LANGTON PHILIP MUMBY, M.B.Lond., D.P.H.Camb.,

Major Royal Army Medical Corps.

We regret to have to record the death of Major Langton Philip Mumby, which occurred on December 1st at Gosport. Major Mumby received his medical education at Westminster Hospital, gaining at its medical school one of the principal scholarships. He obtained the qualifications of M.R.C.S., L.S.A. in 1883, and the degree of M.B.Lond. in the following year. Shortly afterwards he entered the Army Medical Department and was at first stationed in England. Later he went to the West Indies and on his return took the diploma in Public Health at Cambridge. On his next foreign tour he went to India, where he was appointed to the Punjab command, and put in charge for some time of the cantonment hospital at Umballa.

Subsequently he took part in the fatiguing operations on the North-West Frontier known as the Tochi expedition, and in connexion therewith was mentioned in dispatches as well as awarded the medal. It was during this campaign that he first showed symptoms of the disease which finally proved fatal. In spite of ill-health, however, he stuck to his work, and it was not until its termination that he put himself on the sick list and returning home obtained a year's sick leave. During this period the symptoms of cystic tuberculosis increased, and in 1901 he was placed upon half-pay. Little by little the disease extended up to the right ureter to the kidney and he was never fit to serve again, and died somewhat suddenly from an intercurrent attack of laryngitis. Major Mumby has left a widow but no children.

Many old students of Westminster Hospital will learn with sorrow of the death of Mr. John Green, sometime Secretary of the Medical School, which took place at Yew Tree Cottage, Wrotham, Kent, on December 17th, from chronic spinal myelitis. He suffered long and patiently, and for the last few years was as happy as his sad lot allowed him to be under the skilful and incessant care of his kind friends, Mr. and Mrs. Hogben. All those who knew him well will remember him as a man of rare culture and wide sympathies, with an influence of remarkable power for good over those with whom he came in contact. He received several tributes of affection from friends and old students up to the time of his death. His grave is in Wrotham Churchyard, where it is proposed to place a stone *in piam memoriam*. Mr. Green had recently nearly finished a small book of considerable philological interest, which it is hoped may soon be issued to subscribers.

We regret to have to record the death, at the age of 73, of Deputy-Surgeon-General J. H. Sylvester, formerly of H.M. Indian Medical Service. He received his medical education at King's College Hospital, and joined the Indian Medical Service in 1854. He served both in the civil and military branches, and his career in both was distinguished. His military service included the Persian campaign, during which he was attached to the 14th Light Dragoons, and with the same regiment he served in the Deccan, Malwa, Nerbudda, and Central Indian Field Force during the Mutiny. Later on he served with Beatson's Horse in Bundelkhand and Rajputana, and later he again accompanied the Euzofzai Field Force. For these services he was awarded the medal and clasp for Persia, Umbeylla, and Central India. His civil service was chiefly at Bombay, where he was one of the professors of the Grant Medical College and also a member of the staff of the Jamsetjee Jeejeebhoy Hospital. After his retirement and return to England he devoted himself to painting. He was a skilful artist, and the well-known picture of Lord Roberts which was published by Messrs. McLean was engraved from one of his works. A few years before his death his interest in medicine revived, and he became a constant attendant at the meetings of the West London Medico-Chirurgical Society. Until about eighteen months ago he led a very active existence, and was devoted to bicycling and fishing. He leaves a widow and a married daughter.

Deaths in the Profession Abroad.—Among the members of the medical profession in foreign countries who have recently died are Dr. F. Brun, *agrégé* of the Medical Faculty of the University of Paris, Surgeon to the Hôpital des Enfants-Malades, and author, in conjunction with M. Morax, of a treatise on ocular therapeutics, aged 49; Professor Proust of Paris, one of the foremost hygienists of the world, aged 69; Dr. J. McFadden Gaston of Atlanta, U.S.A., a leading surgeon of the United States, sometime President of the American Academy of Medicine, and a frequent contributor to current surgical literature, aged 79; Dr. G. J. Engelmann of Boston, a distinguished gynaecologist, aged 55; Dr. R. Secondi, Professor of Ophthalmology in the University of Rome and author of works on glaucoma, etc.; Dr. Gustav Reyher, for many years Lecturer on Medicine in the University of Dorpat, aged 72; Dr. Nikolai Tschermak, sometime Professor of Histology, Comparative Anatomy and Embryology in the University of Dorpat, aged 47; Dr. Robert Newman of New York, widely known as an advocate of electrolysis in the treatment of stricture of the urethra, and a frequent contributor to the medical journals, aged 73; Dr. Frederich Goll, Professor of Therapeutics in the University of Zürich, aged 75; Dr. Angelo Maffucci, Professor of Morbid Anatomy in the University of Pisa; Dr. Gennaro De Luca, formerly Editor of the *Rivista Clinicae Terapeutica* and *libero docente* of pathology in University of Naples; Dr. R. Pott, Professor of Children's Diseases in the University of Halle; Dr. Theodor von Schroeder, Director of the Ophthalmic Institute of St. Petersburg, aged 50; Dr. Achille Urbain, President of the Hainaut (Belgium) Ankylostomiasis Commission; Dr. Chachereau, Director of the Municipal Health Office, Nantes, aged 54; Dr. Cyrus Edson, sometime Health Commissioner of New York City and Commissioner of Health of the State of New York, aged 46; Dr. William Shaw Stewart, one of the founders of the Philadelphia Medico-Chirurgical College, in which he was for a long time Professor of Obstetrics and Clinical Gynaecology and of which he was dean for ten years, aged 65; Dr. Georg Loewenbach, Chief Assistant in the Vienna Clinic of Syphilis and Skin Diseases, and author of numerous contributions to the literature of these subjects, aged 31; Dr. Antonio Augusto da Costa Simoes, for many years Professor of Histology and Experimental Physiology in the University of Coimbra, a member of the Portugese Chamber of Deputies of which he was more than once President, and a prominent sanitarian and expert in hospital administration, aged 84; Dr. Delotte, Professor of Internal Pathology at the Medical School of Limoges; Dr. P. A. Duflocq, physician to the Hôpital de la Charité, Paris, and author of *Leçons sur les Bactéries Pathogènes*, aged 47, and Professor A. Th. Almén, head of the Swedish Medical Department, aged 71.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

DEPUTY-INSPECTOR-GENERAL C. C. GODDING has been promoted to be Inspector-General, from December 5th. He entered the service as Surgeon, April 1st, 1873; became Staff Surgeon, November 18th, 1882; Fleet Surgeon, December 31st, 1890; and Deputy-Inspector-General, June 4th, 1900. As Surgeon of the *Modeste* he was with the Naval Brigade during operations against Malays in 1875-76 (medal with clasp). He was attached to the 1st Battalion of Royal Marine Light Infantry, and served with it throughout the Egyptian campaign, 1882; being present at the actions of Mallaha Junction, Kassassin (28th August and 9th September), and the battle of Tel-el-Kebir (medal with clasp, Khedive's bronze star, fourth class of the Order of the Medjidie, and promoted to Staff-Surgeon). He was awarded Sir Gilbert Blane's gold medal for years 1887 and 1890.

Fleet Surgeon H. J. M. C. TODD is promoted to be Deputy-Inspector-General from December 5th. He was appointed Surgeon, March 31st, 1877; Staff Surgeon, March 31st, 1889; and Fleet Surgeon, January 6th, 1898. He was in medical charge of the Niger Expedition in 1879, and was in several engagements with the natives at Oulsha (mentioned in dispatches). He received the expression of their Lordships' great satisfaction at the display of zeal and devotion to duty manifested during the epidemic of yellow fever at Jamaica in 1885-6.

The notice which appeared in the *London Gazette* of November 13th, 1903, relative to the withdrawal from His Majesty's Naval Service of Surgeon M. J. SMITH, M.D., F.R.C.S., B.A., is hereby cancelled.

In accordance with the provisions of His Majesty's Order in Council of October 9th, 1903, the seniority of the undermentioned Fleet Surgeons has been antedated to the dates shown against their names, namely: W. R. Wilde, C.B., M.B., B.A., October 2nd, 1888; S. F. Hamilton, July 29th, 1889; H. A. W. Richardson, September 21st, 1890; E. W. Luther, September 30th, 1890; E. H. Saunders, October 1st, 1890; W. H. Patterson, December 7th, 1890; W. E. Bennett, December 9th, 1890; A. McKinlay, March 2nd, 1891; A. Patterson, October 26th, 1891; J. Dudley, M.B., January 9th, 1892; H. L. Crocker, September 9th, 1892; G. S. Smith and L. H. Kellett, M.D., M.A., April 27th, 1893; J. D. Henwood, May 7th, 1893; J. C. Dew, M.B., June 4th, 1893; C. E. Geoghegan, September 3rd, 1893; S. D. Twigg, F.R.C.S., September 27th, 1893; T. E. H. Williams, November 20th, 1893; S. T. O'Grady, December 6th, 1893; H. Todd, January 6th, 1894; A. L. Christie, M.B., February 20th, 1894; C. James, March 12th, 1894; F. A. Jeans, May 21st, 1894; C. W. Buchanan-Hamilton, July 15th, 1894; J. S. Lambert, July 25th, 1894; H. X. Browne, August 11th, 1894; A. W. May, August 21st, 1894; A. J. J. Johnston and J. O'B. Williams, M.D., November 16th, 1894; S. W. Vasey, December 19th, 1894; R. E. Biddulph, M.B., B.A., W. Tait, M.B., and J. Crowley, M.B., October 1st, 1895; W. M. Lory and W. S. Lightfoot, March 31st, 1896; J. J. Dennis, M.D., October 2nd, 1896; F. J. Lilly, October 21st, 1896; J. L. Thomas, November 9th, 1896; H. S. R. Sparrow, A. Kidd, and J. H. Beattie, February 20th, 1897; E. J. Biden, W. Eames, and C. W. Sharples, August 25th, 1897; W. G. K. Barnes, M.D., February 27th, 1898; W. H. Norman, J. M'C. Martin, D.S.O., and W. M. Craig, M.B., August 28th, 1898; T. J. Crowley, M.D., D. T. Hoskyn, M.B., R. H. Nicholson, and J. L. Barring on, February 25th, 1899; P. W. Bassett-Smith and G. Welch, March 25th, 1899; E. B. Townsend and P. B. Handyside, M.B., May 30th, 1899; E. J. Morley, F.R.C.S., H. W. Macnamara, J. H. Whelan, M.D., E. R. Dimsey, D.S.O., J. R. M'Donnell, and H. Meikle, August 21st, 1899.

Consequent on the above, the undermentioned Staff Surgeons have been promoted to the rank of Fleet Surgeon in His Majesty's Fleet, with the seniority shown against their names, namely: H. Harries, E. Corcoran, J. L. Smith, M.V.O., M.B., J. H. Thomas, J. Dowson, and H. F. Hiewicz, February 11th, 1900; J. Sugrue, M.D., February 26th, 1900; A. G. Wildey, H. R. Osborne, J. M. Rogers, F.R.C.S., C. L. Nolan, M.B., H. F. D. Stepheus, M.B., E. C. Ward, M.D., W. R. M. Young, H. W. G. Doyne, G. A. Dreaper, A. F. Harper, H. W. A. Burke, E. R. D. Fasken, J. C. F. Whicher, A. G. Andrews, A. S. Nance, and E St. M. Nepean, August 21st, 1900; H. E. South A. M. Page, A. Cropley, J. Jenkins, H Elliott, M.D., and R. F. Bowie, February 18th, 1901; W. E. Home, M.D., R. A. Fitch, H. B. Beatty, W. Spry, P. E. Maitland, J. J. Walsh, M.B., J. Moore, M.D., B.A., C. J. Mansfield, M.D., R. Hickson, and J. Lowney, August 20th, 1901; F. W. Stericker, M.B., M.A., W. W. Pryn, G. E. Kennedy, J. Barry, M.D., A. J. Pickthorn, J. Andrews, M.D., H. J. Hadden, M.B., B.A., V. G. Thorpe, and E. H. Mexden, February 18th, 1902; A. E. Weightman, J. W. O. Underhill, M.B., F. J. Burns, M.D., D. J. P. M'Nabb, C. Strickland, J. M. France, J. Meuary, M.D., W. G. Axford, G. T. Broatch, M.B., W. Bett, F. A. Brice, J. W. Slaughter, M.B., B.A., and G. H. Foott, M.D., August 20th, 1902; J. D. Hughes, W. J. Colborne, J. H. Stenhouse, M.B., J. A. Moon, R. Hardie, M.B., C. Bradley, M.D., G. T. Collingwood, R. Miller, M.B., J. E. Coad, M.B., H. Holyoake, G. Wilson, M.B., and W. Bowden, D.S.O., February 20th, 1903; O. W. Andrews, M.B., June 2nd, 1903; J. Bradley, M.D., G. Hewlett, M.B., G. A. Walters, M.D., W. G. Stott, M.B., M.A., C. S. Woodwright, J. Shand, M.B., and W. A. Whitelegge, M.D., B.A., August 17th, 1903.

Also the seniority of the undermentioned Staff Surgeons has been antedated to the dates shown against each, viz.:—J. H. Acheson, M.B., J. McKilwee, M.D., D'A. Harvey, M.B., R. T. A. Levinge, B.A., J. C. Ferguson, M.B., B.A., and E. P. Mourilyan, M.B., February 22nd, 1896; C. M. Beadnell, May 2nd, 1896; E. C. Lomas, M.B., D.S.O., October 21st, 1896; R. H. J. Browne, E. B. Pickthorn, and J. F. Hall, M.B., November 9th, 1896; L. Bidwell, E. H. H. de Courtmacsherry, M.D., W. J. Bearblock, W. Hackett, M.D., C. G. Matthew, M.B., T. Austen, and J. Chambers, M.B., B.A., February 21st, 1897; P. V. Jackson, A. H. L. Cox, and A. Maclean, M.B., August 22nd, 1897; R. Hill, November 6th, 1897; F. W. Parker, G. G. Borrett, W. H. S. Stalkartt, M.D., F.R.C.S., G. A. S. Bell, and J. A. Keogh, M.B., B.A., February 21st, 1898; H. W. Finlayson, M.B., F. Fedarb, M.B., R. C. Munday, E. C. Cridland, M.B., F. Bradshaw, B.A., M. J. O'Regan, M.B., and R. F. Bate, July 26th, 1898; A. Gaskell, F.R.C.S., October 31st, 1898; T. C. Meikle, M.B., M.A., T. C. Wood, H. B. Marriott, N. L. Richards, E. A. Penfold, M.B., E. J. Finch, J. K. Robinson, M.B., and H. Clift, February 11th, 1899; E. A. Shaw, M.B., B.A., F. H. A. Clayton, M.D., F. J. A. Dalton, and E. Sutton, March 26th, 1899; A. R. Bankart, M.B., M.V.O., May 5th, 1899.

The following Surgeons have been promoted to the rank of Staff Surgeon in His Majesty's Fleet, with the seniorities shown against their names, namely: E. Cooper, C. F. Facey, M.B., W. E. Marshall, M. L. B. Rodd, R. L. Penny, and A. E. Kelsey, M.B., B.A., November 11th, 1899: H. B. Hall, M.B., H. W. G. Green, T. E. Houey, M.D., G. T. Bishop, E. F. Mortimer, B. F. Parish, and F. A. Capps, May 11th, 1900; P. M. May, C. L. W. Buuton, M.B., F. D. Lumley, E. F. Meagher, H. E. Tomlinson, and A. S. G. Bell, November 15th, 1900; J. W. W. Stanton, H. N. Stephens, and M. C. Langford, November 14th, 1901; T. W. Philip, M.B., M.A., and L. Kilroy, May 6th, 1902; A. H. H. Vizard, M.D., November 14th, 1902; P. H. M. Star, E. S. Miller, M.B., and O. Rees, M.D., May 15th, 1903.

In accordance with the provisions of His Majesty's Order in Council dated May 13th, 1901, commissions of the rank and date shown have been restored to the following gentlemen, formerly in His Majesty's Navy, who have been placed on the list of volunteers for service in the event of war or emergency:—Surgeons: J. H. Dawe, M.B., February 19th, 1886; P. N. Randall, M.B., February 21st, 1891; G. M'Gregor, February 11th, 1891; F. E. Rock, M.B., May 16th, 1894; E. D. Macnamara, B.A., November 29th, 1897.

Civil Practitioner J. KILLIN has been appointed Surgeon and Agent at Stokes Bay, December 15th.

The following appointments have been made at the Admiralty:—R. MILLER, Fleet Surgeon, to the *Dreadnought*, additional, December 16th; WALTER H. O. GARDE, Surgeon, to Haslar Hospital, December 11th; GEORGE ROSS, M.B., B.A., Surgeon, to the *Albion*, December 11th; DAVID W. HEWITT, A. THOMPSON, Surgeon, to the *Drake*, December 11th; JAMES M.B., Surgeon, lent for service at the Admiralty, December 14th; THOMAS D. HALAHAN, M.B., B.A., Surgeon, lent to the R.N. Engineering College, Devonport, December 16th; GEORGE C. C. ROSS, M.B., B.A., Surgeon, to the *Hussar*, on recommissioning; D. P. CHAPMAN, Surgeon, to the *Magnificent*, undated; MICHAEL J. SMITH, M.D., B.A., Surgeon, to the *King Alfred*, December 22nd, and to the *Glory* on recommissioning.

In accordance with the provisions of her late Majesty's Order in Council of April 1st, 1851, Surgeon J. G. FOWLER has been placed on the retired list of his rank, December 19th. His commission dates from May 13th, 1897. He was surgeon of the *Powerful* during the war in South Africa, 1899-1900, and (Captain Lambton says, in the "*Boer War*," 1899-1900) "has been most assiduous in his attendance and duties towards the sick, of which, unfortunately, there has been a heavy percentage."

CHANGES OF STATION.

THE following changes of station amongst the officers of the Royal Army Medical Corps have been officially reported to have taken place during the last month:

	From.	To.
Surgeon-General J. A. Clery, M.B., C.B.	Pretoria	2nd Army Corps
,, W. L. Gubbins, M.B., M.V.O.	Home District	Bombay.
Colonel G. D. N. Leake	Thames Distr.	,,
,, J. D. Edge, M.D., C.B.	Cape Colony	South Africa.
,, J. C. Dorman, M.B., C.M.G.	Dublin	Cape Colony.
,, E. H. Fenn, C.I.E.	Salisbury	Bermuda.
,, W. O. Wolseley	Edinburgh	Malta.
Lt.-Col. R. Jennings, M.D.	Chatham	,,
,, R. E. R. Morse	York	Leeds.
,, G. E. Weston	Gosport	Bermuda.
,, J. C. Haslett, M.D.	Chester	Bengal.
,, J. R. Stuart, M.B.	Bombay	Edinburgh.
,, E. H. L. Lyndeu-Bell, M.B.	—	Aldershot.
Major H. M. Sloggett	Dover	Malta.
,, R. H. Clement	Portsmouth	Gibraltar.
,, G. B. Russell, M.B.	Punjab	Cork.
,, J. R. Mallius, M.B.	Woolwich	Halifax, N. S.
,, G. E. Moffet, M.B.	Glasgow	Hamilton.
,, A. O. Fitzgerald	Portsmouth	Gosport.
,, R. I. Power	Madras	Dublin.
,, R. H. Hall, M.D.	Kilworth	Cork.
,, S. C. Philson	Brighton	Bengal.
,, H. Carr	Nedey	Bombay.
,, J. W. F. Long	—	Dover.
,, W. H. Starr	Canterbury	,,
,, M. T. Yarr	Aldershot	Bombay.
,, H. M. Adamson, M.B.	Bengal	Devonport.
,, T. G. Lavie	Clonmel	Madras.
,, H. H. Brown, M.B.	Hong Kong	York.
,, S. J. W. Hayman	Dundalk	Bengal.
,, J Moir, M.B.	Colchester	Landguard.
,, J. Fallon	Leeds	Punjab.
,, J. V. Salvage, M.D.	Salisbury Plain	Tidworth.
,, G. Bent	Chester	Warwick.
,, J. J. Russell, M.B.	Mullingar	Punjab.
,, T. Browning	South Africa	Dutlin.
,, W. L. Gray, M.B.	Golden Hill Ft.	Malta.
,, W. S. Boles, M.B.	Madras	Dublin.
,, H. E. Winter	Devonport	Crowuhill.
,, F. Smith, D.S.O.	Netley	West Africa.
,, T. J. Lenehan, M.B.	Dublin	Kildare.
Captain W. G. Beyts	Colchester	Punjab.
,, N. Tyacke	Shoeburyness	Bengal
,, C. B. Lawson	Woolwich	Malta.
,, C. O'C. Hodgens	Dover	Jamaica
,, B. W. Longhurst	York	Cyprus.
,, C. T. Samman	Woolwich	Jamaica.
,, H. C. French	—	Egypt.
,, E. M. Williams	Portsmouth	Malta.
,, M. Boyle, M.B.	Edinburgh	Aberdeen.
,, H. A. Berryman	—	Coldstm. Gls.
,, A. C. Fox	Edinburgh	West Africa
,, S. H. Fairrie, M.B.	Madras	Dover.
,, J. Grech	Cork	Dublin.
,, E. Brodribb	—	Gibraltar.
,, R. T. Brown, M.B.	Bulford	Bengal.
,, E. F. Q. L'E-trange	Aldershot	West Africa.
Lieutenant S. B. Smith, M.D.	Dublin	Punjab.
,, J. H. R. Winder, M.D.	Aldershot	Malta.
,, M. C. Beatty, M.B.	Belfast	Bombay.
,, A. B. Smallman, M.B.	B.A.M. Coll.	Home District.
,, J. M'Kenzie M.B.	Salisbury Plain	Portsmouth.
,, R. L. V. Foster	—	Woolwich.
,, S. M. W. Meadows	Woolwich	Punjab.
,, H. V. Pagshawe	Aldershot	Madras.
,, N. E. J. Harding, M.B.	Dover	,,
,, H. B. Kelly, M.B.	Curragh	Galway.

ARMY MEDICAL STAFF.

SURGEON-MAJOR-GENERAL JAMES DAVIS died at Southsea on November 8th. He was appointed Assistant Surgeon, March 10th, 1858; Surgeon, March 1st, 1873; Surgeon-Major, April 1st, 1873; Brigade-Surgeon, October 29th, 1883; Surgeon-Colonel, December 19th, 1888; and Surgeon-Major-General, January 11th, 1894. He served in the New Zealand wars in 1861 and 1865, and was present at the repulse of the attack on Camp Nukumaru and at the affair at Kakaramea (medal).

ROYAL ARMY MEDICAL CORPS.

CAPTAIN T. H. M. CLARKE, C.M.G., D.S.O., from the seconded list, to be Captain, November 30th.

Colonel J. F. SUPPLE, C.B., is placed on retired pay, December 14th. He was appointed Assistant-Surgeon, April 1st, 1867; Surgeon, March 1st, 1873; Surgeon-Major, April 1st, 1879; granted the rank of Lieutenant-Colonel, April 1st, 1887; made Brigade-Surgeon-Lieutenant-Colonel, April 6th, 1893; and Surgeon-Colonel, May 29th, 1898. His war record is as follows:—Ashanti war, 1873-4, including defence of Foomanah (medal with clasp); Afghan war, 1879-80 (medal); Burmese Expedition in 1886-7, as Senior Medical Officer 6th Brigade (mentioned in dispatches, medal and clasp); and South African war in 1899-1900 as Principal Medical Officer at the Base, Capetown (mentioned in dispatches, and made Companion of the Order of the Bath).

Lieutenant C. H. ROBERTSON, M.B., resigns his commission, December 19th. His commission was dated August 31st, 1903.

EXCHANGES.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 3s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

A FIELD OFFICER R.A.M.C., recently home, is desirous of exchanging with an officer under orders for foreign service.—Address No. 6,390, Offices of the BRITISH MEDICAL JOURNAL.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL C. P. LUKIS, M.B., Bengal Establishment, is placed temporarily on special duty with the Governor-General.

Lieutenant-Colonel G. DUNCAN, M.B., Bengal Establishment, is appointed to officiate as Principal Medical Officer, Derajat District.

ARMY MEDICAL RESERVE.

SURGEON-CAPTAIN E. GRAY, 2nd Cheshire Royal Engineers, Railway Volunteers, to be Surgeon-Captain, December 12th.

Surgeon-Lieutenant A. MACKENZIE, 3rd Volunteer Battalion the Prince of Wales's Own (West Yorkshire Regiment), to be Surgeon-Lieutenant, December 16th.

Surgeon-Captain J. SHAW, M.D., having resigned his commission in the Volunteers, ceases to be an officer in the Army Medical Reserve.

Surgeon-Captain F. A. BROOKE, 1st Suffolk and Harwich Royal Garrison Artillery (Volunteers), to be Surgeon-Captain, December 19th.

ROYAL ARMY MEDICAL CORPS (MILITIA).

SUPERNUMERARY Lieutenant (Honorary Lieutenant in the army) G. J. D. DAVIES, Home District (late Middlesex) Company, to be Captain, December 19th.

ROYAL NAVAL VOLUNTEER RESERVE.

WILLIAM J. TIVY, F.R.C.P.E., F.R.C.S.E., and WALTER K. WILLS, M.B., M.R.C.S., L.R.C.P., B.A., to be Surgeons, December 11th.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

SURGEON-CAPTAIN J. B. BERRY, 1st Cinque Ports, to be Surgeon-Major, December 12th. Surgeon-Captain W. MCCLELLAND, M.B., 4th Lancashire, resigns his commission, December 12th. Mr. FRANCIS W. BAILEY to be Surgeon-Lieutenant in the 6th Lancashire, December 12th. Surgeon-Lieutenant J. H. HUNTER, M.D., 3rd Durham, to be Surgeon Captain, November 21st. Surgeon-Major F. W. SINCLAIR, M.B., 3rd Durham, resigns his commission, November 21st. Mr. RICHARD W. MULLOCK to be Surgeon-Lieutenant in the 1st Norfolk, November 21st. Surgeon-Major W. FERGUSSON, M.D., 1st Banff, to be Surgeon-Lieutenant-Colonel, December 19th.

VOLUNTEER RIFLES.

SURGEON-CAPTAIN S. H. PERRY, 2nd Volunteer Battalion the Lincolnshire Regiment, resigns his commission, November 14th.

Mr. PERCY G. MCREDDIE to be Surgeon-Lieutenant in the 3rd Volunteer Battalion the Prince Albert's (Somersetshire Light Infantry), November 14th.

Surgeon-Lieutenant-Colonel R. A. PRICHARD, 3rd Volunteer Battalion the Royal Welsh Fusiliers, resigns his commission, is granted the honorary rank of Surgeon-Colonel, and retains his uniform, November 14th.

Surgeon-Captain H. M. BROWNFIELD, from the 3rd (Duke of Connaught's Own) Volunteer Battalion the Hampshire Regiment, to be Surgeon-Captain in the 1st Volunteer Battalion the Hampshire Regiment, November 14th.

Mr. WILLIAM H. HARLAND to be Surgeon-Lieutenant in the 5th (Isle of Wight, Princess Beatrice's) Volunteer battalion the Hampshire Regiment, November 14th.

Surgeon-Lieutenant J. E. MOLSON, M.B., 2nd Volunteer Battalion the Essex Regiment, to be Surgeon-Captain, November 14th.

Surgeon-Lieutenant P. J. LE RICHE, 2nd Volunteer Battalion the Royal Sussex Regiment, to be Surgeon-Captain, November 21st.

Mr. [illegible] J. GODWIN to be Surgeon-Lieutenant, and to be borne as supernumerary while doing duty with the Hampshire Volunteer Infantry Brigade Bearer Company, November 21st.

Surgeon-Captain W. S. MALCOLM, M.B., 3rd (Dundee Highland) Volunteer Battalion the Black Watch (Royal Highlanders), resigns his commission, November 21st.

Surgeon-Captain J. COWAN, M.B., Galloway, resigns his commission, December 12th.

Mr. CHARLES P. ALLEN to be Surgeon-Lieutenant in the 1st Volunteer Battalion the Dorsetshire Regiment, December 12th.

Mr. CHARLES R. WHITE to be Surgeon-Lieutenant in the 3rd Volunteer Battalion the Welsh Regiment, December 12th.

Surgeon-Major W. KINNEAR, M.B., 3rd (Dundee Highland) Volunteer Battalion the Black Watch (Royal Highlanders), is borne as supernumerary while commanding the Black Watch Volunteer Infantry Brigade Bearer Company, December 12th.

Surgeon-Lieutenant-Colonel F. E. FENTON, 1st Middlesex (Victoria and St George's), resigns his commission, retaining his rank and uniform, December 12th.

Surgeon-Lieutenant W. A. PRIDE, M.B., 3rd (Renfrewshire) Volunteer Battalion Princess Louise's (Argyll and Sutherland Highlanders), to be Surgeon-Captain, December 12th.

Surgeon-Major J. CANTLIE, M.B., 7th Middlesex (London Scottish), to be Surgeon-Lieutenant-Colonel, December 12th.

Brigade-Surgeon-Lieutenant-Colonel C. DUKES, M.D., 2nd Volunteer Battalion the Royal Warwickshire Regiment, Senior Medical Officer Worcester and Warwick Volunteer Infantry Brigade, resigns his commission, and is granted the honorary rank of Surgeon-Colonel, retaining his uniform, December 19th.

Surgeon-Lieutenant A. W. CLARK, 3rd (Cambridgeshire) Volunteer Battalion the Suffolk Regiment, resigns his commission, December 19th.

Surgeon-Lieutenant W. HAIG, M.B., 4th (Perthshire) Volunteer Battalion the Black Watch (Royal Highlanders), to be Surgeon-Captain, December 19th.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

MAJOR H. W. DODD, the London Companies, resigns his commission, December 12th: he retains his rank and uniform.

Lieutenant H. FULHAM-TURNER, the London Companies, to be Captain, December 12th.

The surname of the gentleman appointed Lieutenant in the Manchester Companies in the *London Gazette* of July 28th last, is FYFE-WATERSTON, and not as therein stated.

VOLUNTEER INFANTRY BRIGADE

SURGEON-MAJOR E. J. HUNTER, 3rd Volunteer Battalion Hampshire Regiment, to be Brigade-Surgeon-Lieutenant-Colonel, while holding the appointment of Senior Medical Officer to the Hampshire Brigade, December 19th.

Surgeon-Captain W. G. HEASMAN, 1st Volunteer Battalion Princess Charlotte of Wales's (Royal Berkshire Regiment) resigns his commission, December 19th.

VOLUNTEER INFANTRY BRIGADE BEARER COMPANY.

MESSRS. DAVID RORIE and ALEXANDER E. KIDD to be Lieutenants in the Black Watch Company, December 12th.

THE VOLUNTEER OFFICERS' DECORATION.

THE Volunteer Officers' Decoration has been conferred upon the following officers: Surgeon-Lieutenant J. H. MACLEAN, 2nd Volunteer Battalion the Sherwood Foresters (Nottinghamshire and Derbyshire Regiment); Brigade-Surgeon-Lieutenant-Colonel E. LEE, 1st Volunteer Battalion the King's Own Yorkshire Light Infantry; Brigade-Surgeon-Lieutenant-Colonel J. DUNCAN, M.B., 3rd Volunteer Battalion the Manchester Regiment; Surgeon-Major R. T. C. ROBERTSON, M.B., 2nd Volunteer Battalion the Cameronians (Scottish Rifles); Major C. H. HARTT, Royal Army Medical Corps (Volunteers), the Woolwich Companies.

VOLUNTEER AMBULANCE SCHOOL OF INSTRUCTION.

SURGEON-GENERAL SIR WILLIAM TAYLOR, K.C.B., Director-General Army Medical Department, will present the prizes and certificates to the members of the Volunteer Ambulance School of Instruction at 8.45 p.m. on Monday, December 14th, at 130, Bunhill Row, E.C. (Head Quarters of the London Rifle Brigade.)

MEDICO-LEGAL AND MEDICO-ETHICAL.

CONSULTATION WITH HOMOEOPATHS.

A. B. L.—We must refer our correspondent to the opinion expressed in the BRITISH MEDICAL JOURNAL of March 16th, 1901, to which we have at present nothing to add.

FEES FROM HOSPITAL PATIENTS.

REFERO RELATA.—We do not publish our correspondent's second letter because it seems undesirable to mix up a discussion of the policy or impolicy of "pay departments" in hospitals, and the relations of the staffs thereto, with the much more serious question raised by him involving the honour of the medical profession, namely, whether any members of hospital staffs take fees from hospital patients for treatment carried out within the walls of the hospital without the knowledge of the hospital authorities.

MEDICAL TESTIMONIALS IN TRADE ADVERTISEMENTS.

OUR attention has been drawn to an advertisement of Dr. King's Liver Pills, in which there appears, under the heading "A Medical Man's Certificate," a commendatory letter dated from Upwell, Norfolk, and signed "J. Cherwin, Surgeon." We cannot find such a name in the *Medical Register* or the *Medical Directory* for the present year, nor have we been able to find it in such search as we have made through the directories for the last twenty-five years. This is not the only instance brought to our notice of testimonials purporting to be from medical men which are in the names of persons either long deceased or who perhaps have never existed. We draw attention to this case because the Ethical Committee is taking measures to stop the use of testimonials from medical practitioners in all trade advertisements. Obviously, however, it can do nothing to prevent the use of letters from writers who cannot be traced and whose existence is at least doubtful.

LUNACY CERTIFICATES IN SCOTLAND.

M.B. writes that he attended a case of insanity lately for a week, and then reported it to the inspector of poor for certification. He got the parish medical officer for the district to examine and certify the case, and M.B. expected to give the second certificate. Instead of that, however, another of the parish medical officers (there are three) was asked to examine and certify. M.B. thinks this was unfair, and wishes to know if there is any legal requirement as to the parish doctors certifying such cases. He also asks whether he has any claim on the parish council for attendance on the case before certification.

*** The Lunacy Act requires that two medical men should grant a certificate before the sheriff can order the removal of a patient to an asylum, unless an "emergency" certificate is granted, in which case the patient can be detained for a limited period on one certificate. Any qualified medical practitioner may grant these certificates, and the usual fee is a guinea for each certificate, but when the patient is sent in by the parish council one of the certificates is invariably granted by the parish medical officer, who sometimes has to do this without any fee and at other times there is a small allowance made for such certificates. If there is no arrangement he of course charges the usual fee. If there are two parish medical officers in the district they are both employed, and this appears to have been done in M.B.'s case. We do not think M.B. has any claim on the parish council for attendance on the case before certification, because the patient did not become a pauper until the certificate was granted. He has a claim against the person who employed him, and against the estate of the patient if he possesses any.

DEATH CERTIFICATES AND THE CAUSE OF DEATH.

CERTIFICATE.—If in serious doubt, the best course for the medical attendant to take in such cases as those mentioned is to seek a personal interview with the coroner and explain the circumstances. If the coroner is satisfied he can then give a certificate in the usual form, mentioning only the disease as the cause of death.

CERTIFICATES FOR FUNERAL SOCIETIES.

RUSTIC writes as follows: One of my patients, who was a member of a funeral society, died recently, and the relatives applied to me for a certificate to get the money from the society. Was I entitled to give a certificate in this case? The registrar says it is quite illegal for me to grant a certificate to any one for the purpose of obtaining money from any society whatsoever.

*** On the facts as stated we are advised that the contention of the registrar is untenable, and that our correspondent was not acting illegally in giving the certificate.

BONDS NOT TO PRACTISE WITHIN AN AREA.

F.R.C.S. asks if it is customary in the usual bond not to practise within a certain distance, to insert a clause to prevent an assistant from acting in the same capacity, or as *locum tenens* for another practitioner within the prescribed area.

*** Such a clause, we believe, is inserted in many bonds, and this condition is necessary to safeguard the principal's interests; his practice might suffer as much harm by an assistant entering the service of a rival practitioner as by his going into practice on his own account.

VALUATION OF DRUGS.

INQUIRER.—Judging from the account given us of the clause in the articles of partnership, the incoming partner is required to pay half the value of the drugs then in stock. If at a subsequent date A. retires from the firm, he can claim to receive half the value of the drugs in stock at the time he retires. It is of course to be presumed that all drugs acquired during the partnership were paid for by the firm. If A. paid any of the firm's expenses out of his private pocket he is entitled to be repaid the amount.

ATTENDANCE ON SERVANTS BY CONTRACT.

A CORRESPONDENT writes that a wealthy gentleman, living about three miles distant from his residence wishes him to attend his domestic servants—about a dozen in number—for an annual fee. How much ought he to charge?

*** This is a matter about which our correspondent ought to be the better judge. If he is the medical attendant to the family, it might be wise on his part to charge a moderate fee, say a guinea per annum for each.

THE RISK OF PURCHASING DEATH VACANCIES.

M.D.—Our correspondent's misfortune is much to be regretted. The purchase of a death vacancy is always a matter attended with great risk, and nowhere is it more necessary that the maxim "Caveat emptor" should be borne in mind by the would-be purchaser. If he is in a position to prove misrepresentation on the part of the vendors, he might successfully bring an action against them for rescission of the purchase, and damages, but before taking such steps, he would be wise to consult a good solicitor, who would be the best judge whether the evidence he could produce would be sufficient for this purpose.

ETHICS OF CONSULTATION.

W. J. H.—We cannot agree that it would be a breach of confidence to inform the guardians of the result of the consultation. The Board presumably stands *in loco parentis* to the child, and its request that such a serious operation as amputation should not be performed without a consultation at the hospital seems natural and right, and if there is to be a consultation it is only reasonable that the Board should be informed of the result. As to whether a fee should be paid for the consultation, it is not the rule to pay or such work done in a hospital, but we are aware that some cottage hospitals are not managed on precisely the same lines as larger institutions, and that they are in part "pay hospitals." If the guardians are going to pay our correspondent for the operation he proposes to perform, they ought to pay his colleague a fee. We do not know the rule of the hospital or the powers of the committee, but it would be very unusual for the committee to interfere.

"ANTIPHLOGISTINE" CIRCULAR.

DR. COLIN CAMPBELL (Southport) writes: I have just received from the United States a copy of a circular re antiphlogistine, accompanying which is a reprint of an article which I recently contributed to the *Medical Press and Circular*. As this might be regarded as a sort of self-advertisement, I desire to say I much regret its appearance, which is entirely without my knowledge or permission. Certain capitals—implying a qualification which I do not possess, and an ancient appointment—have been added which did not appear in the original article.

IS MIDWIFERY MEDICAL OR SURGICAL?

MEMBER.—We are unable to decide this knotty point, for although midwifery practitioners are Members and Fellows of the Royal College of Physicians, physicians as a rule do not attend midwifery, and in many provincial hospitals the rule was, or still is, that they are debarred from this line of practice. As the parties in the present instance are in general practice, although holding office respectively as physician and surgeon to the hospital, and both are presumably in the habit of attending midwifery cases, no question of principle appears to arise, and we recommend that the case should be attended by the officer under whom it would fall in ordinary rotation.

REMUNERATION OF MONTHLY NURSE

A CORRESPONDENT writes that a nurse was engaged to attend a lady in her confinement; shortly afterwards the patient miscarried, and owing to distance the nurse was not sent for. She was, however, immediately informed of what had happened, so that she had over four months to obtain another engagement. She only succeeded in getting employment for a portion of the time for which she had been engaged, and now claims that the lady should make up to her the difference, that is, she claims the whole fee minus a guinea she received for the above employment.

*** The nurse's claim is in accordance with the law. If two parties contract together, the contract cannot be put aside by one without the consent of the other. If one of the parties breaks the contract the other can claim damages for the breach. In this case, as the nurse was indemnified to the extent of a guinea, she can only claim the difference between that and the fee she had contracted to receive.

TERM OF MEDICAL PARTNERSHIP.

SUPER MARE.—Medical partnerships can be arranged either for a limited number of years or for life, according to the wish of the parties.

MEDICAL TESTIMONIALS.

HEALTH OFFICER.—The rule which has been approved by the Council of the Association is that medical testimonials should not be given for use in advertisements in the lay press or otherwise so as to be brought under the notice of the general public.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF OXFORD.

THE following candidates have passed the second Examination for the degree of Bachelor of Medicine in the subjects undermentioned:

Pathology.—G. B. D. Adams, B.A., Christ Church; C. H. Barber, B.A., non-collegiate; H. A. Barnes, B.A., Keble College; G. E. Barry, B.A., Trinity College; F. L. Golla, B.A., Magdalen College; A. F. Hertz, B.A., Magdalen College; A. C. Inman, B.A., Wadham College; P. A. Mansfield, B.A., Keble College; E. M. Smith, B.A., Queen's College.

Medicine, Surgery, Midwifery, Forensic Medicine, and Public Health.—G. B. D. Adams, B.A., Christ Church; C. H. Barber, B.A., non-Collegiate; E. F. Beaumont, B.A., Wadham College; W. E. Blackall, B.A., non-collegiate; A. G. Gibson, B.A., Christ Church; F. L. Golla, B.A., Magdalen College; C. M. H. Howell, B.A., Trinity College; F. P. Nunneley, B.A., Brasenose College; P. N. L. Odgers, B.A., Lincoln College; D. R. Pike, B.A., Jesus College; E. E. White, B.A., University College.

The following candidates have passed the First Examination for the degree of Bachelor of Medicine in the subjects undermentioned:

Organic Chemistry.—J. F. Aldridge, Magdalen College; C. N. Finney, Corpus Christi College; R. F. Briggs, University College; H. G. Butterfield, Wadham College; R. Evans, M.A., Jesus College; P. H. C. Fowell, St. John's College; G. H. Hunt, Christ Church; J. F. Penson, non-collegiate; E. A. Ramsden, New College; O. L. V. Simpkinson, Corpus Christi College; H. G. F. Spurrell, B.A., Merton College; B. A. W. Stone, B.A. Brasenose College.

Materia Medica and Pharmacy.—O. A. R. Berkeley-Hill, B.A., Trinity College; S. S. Strahan, Keble College; W. W. Wells, Merton College; C. F. M. West, Christ Church.

Human Anatomy and Human Physiology.—G. M. Johnson, B.A., Magdalen College; O. G. F. Luhn, Christ Church; A. S. MacNalty, Non-collegiate; H. A. Philpot, B.A., New College; C. J. Pitching, B.A., St. John's College; A. G. J. Thompson, B.A., Queen's College.

UNIVERSITY OF CAMBRIDGE.

The following candidates have passed the Third Examination for Medical and Surgical Degrees, as undermentioned:

Part I. Pharmacology and General Pathology.—E. D. Anderson, B.A., Pemb.; F. O. Arnold., Trin.; L. J. Austin, B.A., Sid. Suss.; I. G. Back, B.A., Trin. H.; G. F. S. Bailey, B.A., Cai.; A. L. Baly, B.A., Emm.; A. E. Barclay, M.A., Christ's; S. Barradell-Smith, B.A., Joh.; J. R. Beale, B.A., Cla.; J. H. Board, B.A., Pemb.; J. R.

Briscoe, B.A., H. Selw.; F. M. Bulley, M.A., Emm.; A. S. Burgess, B.A., Cai.; C. Cassidy, B.A., Sid. Suss.; A. de C. C. Charles, B.A., Magd.; H. J. Clarke, B.A., Trin.; C. St. A. Coles, B.A., Trin.; G. H. Colt, B.A. Sid. Suss.; G. L. Cox, B.A., Christ's; A. P. Day, B.A., Christ's; T. R. Elliott, M.A., Trin.; J. N. F. Fergusson, B.A., Joh.; H. R. Fisher, B.A., Emm.; R. E. French, B.A., King's; N. H. Gandhi, B.A., Cai.; M. F. Grant, B.A., Trin.; H. T. Gray, B.A., Trin.; C. R. F. Hall, B.A., Trin.; R. F. V. Hodge, B.A., Emm.; H. D. Hoffman, B.A., Trin.; V. C. Honeybourne, B.A., Joh.; W. R. Honeyburne, B.A., Pet.; C. W. Hutt, B.A., Trin.; J. H. Iles, B.A., Cai.; F. A. G. Jeans, M.A., Joh.; P. P. Laidlaw, B.A., Joh.; J. W. Linnell, B.A., Joh.; W. Lowe, B.A., Cai.; A. H. Miller, B.A., Trin.; W. P. Morgan, M.A., Cla.; H. E. H. Oakeley, B.A., Joh.; F. W. M. Palmer, B.A., Jes.; W. E. Paramore, B.A. Joh.; J. E. Pellow, B.A., Joh.; M. C. M. Pitkin, B.A., non coll.; C. W. Ponder, B.A., Emm.; D. W. Roy, B.A., Sid. Suss.; C. T. Scott, M.A., Sid. Suss.; K. S. Singh, B.A., Pemb.; P. H. Smith, B.A., Pemb.; E. C. Sparrow, B.A., Trin.; C. Stanley-Clarke, B.A., Cai.; C. M. Stevenson, Joh.; B. H. Stewart, B.A., Jes.; R. Wade, B.A., Christ's; G. H. H. Waylen, B.A., King's; G. L. Webb, B.A., Cai.; J. K. Willis, B.A., Queens'; H. L. Wilson, B.A., H. Selw.; N. Wilson, B.A., Pemb.; A. F. R. Wollaston, B.A., King's; V. J. Woolley, M.A., King's; F. Worthington, B.A., Joh.; E. A. Wright, B.A., H. Selw.; A. Wylie, B.A., Pemb.; S. L. O. Young, M.A., Christ's

Part II. Surgery, Midwifery, and Medicine.—E. Bigg, M.A., Cai.; H. S. D. Browne, B.A., Trin.; C. Burrows, B.A., Emm.; N. C. Carver, B.A., King's; H. H. Clarke, M.A., Trin.; J. S. Cooper, M.A., Jes.; G. E. Davidson, B.A., Cai.; G. B. Davis, M.A., Corp. Chr.; S. Dodd, B.A., Cai.; J. H. Donnell, B.A., Cai.; T. L. Drapes, B.A. Sid. Suss.; J. B. Dunop, M.A., Sid. Suss.; H. R. Fisher, B.A., Emm.; W. S. Fox, M.A., Trin.; E. Gardner, B.A., Cai.; C. B. Goulden, B.A., non-coll; C. F. Hardie, B.A., Queens'; P. Hardy, B.A., Trin. H.; R. N. Hart, B.A., Sid. Suss.; G. S. Haynes, King's; F. A. Hepworth, B.A., Joh.; E. Higson, B.A., Magd.; W. H. Hills, B.A., Pemb.; H. D. Hotman, B.A., Trin.; H. M. Joseph, B.A., Trin.; P. A. Lloyd Jones, B.A., Joh.; C. M. Murray, M.A., Pemb.; S. H. Nathan, M.A., Trin.; C. L. Nedwell, B.A., Trin.; B. H. Pain, B.A., Emm.; J. E. Pellow, B.A., Joh.; D. Pennington, B.A., Cai.; H. J. Robinson, B.A., Joh.; H. C. Sidgwick, B.A., Cla.; J. G. Slade, M.A., Cla.; S. J. Seward, Down.; W. B. Swete-Evans, M.A., Cla.; E. J. D. Taylor, B.A., Cai.; E. Ward, M.A., Cla.; T. H. E. Watts-Silvester, M.A., Cai.; A. F. R. Wollaston, B.A., King's; E. A. Wright, B.A., H. Selw.; A. Wylie, B.A., Pemb.; S. L. O. Young, M.A., Christ's.

The following candidates have passed the First Examination for Medical and Surgical Degrees as undernoted:

Part I. Chemistry and Physics.—A. Abrahams, Emm.; F. S. Adams, Christ's; J. W. Adams, Cai.; G. C. Alderson, Cai; B. W. G. Angus, Christ's; R. R. Armstrong, Trin.; H. A. Ash, Pemb.; H. L. Attwater, Pemb.; M. W. Baker, Joh.; E. Billing, Cai.; C. J. Blaikie, Cai.; C. L. Boulenger, King's; A. E. A. Carver, Cai.; F. G. Cawston, Cai.; A. J. Clark, King's; H. M. McC. Coombs, Emm.; F. C. Davies, Down.; J. R. Dick, Down.; H. G. Earle, Down.; L. A. Exham, H. Selw.; R. Fisher, Sid. Suss.; J. T. Fox, Sid. Suss.; G. Gamlin, Pemb.; W. Gillison, Pet.; R. H. P. Hick, Christ's.; R. F. Higgin, Cai.; W. C. Hodges, Trin. H.; A. N. Hodges, Queens; C. C. Holman, Cai; J. S. Jobson, Sid. Suss.; M. Lea, Cai.; R. J. B. Leney, Cai.; R. L. Ley, Pemb.; J. C. Marklove, Cai.; J. L. H. Mogg, B.A., Trin.; H. G. Monteith, Pemb.; V. H. Mottram, Trin.; H. M. D. Niboll, Cai.; L. B. Perry, Queens'; C. Raymond, Cai; H. G. Rice, Joh.; I. Singh, Pemb.; A. L. H. Smith, Cai.; F. R. Thornton, Trin.; H. A. Treadgold, Down.; L. B. C. Trotter, Cla.; R. J. Vernon, Cai.; J. N. Wheeler, Christ's; E. T. Willans, Emm.

Part II. Elementary Biology.—A. Abrahams, Emm.; R. R. Armstrong, Trin.; C. J. Blaikie, Cai; C. L. Boulenger, King's; R. N. Chopra, Down.; A. J. Clark, King's; F. C. Davies, Down.; W. Denston, Christ's; J. R. Dick, Down.; E. A. Dyson, Jes.; H. G. Earls, Down.; J. T. Fox, Sid. Suss.; H. A. Hett, Trin.; W. C. Hodges, Trin. H.; C. C. Holman, Cai; L. R. King, Pemb.; M. Lea, Cai.; E. W. Nelson, Christ's; H. F. Percival, Trin.; L. B. Perry, Queens'; A. J. Rae, B.A., Cai; A. C. Rayner, Cai.; H. G. Rice, Joh.; L. M. Routh, Cai.; H. W. Scott, Cla.; R. B. Taylor, Cla.; F. R. Thornton, Trin.; H. A. Treadgold, Down.; R. M. Vick, Jes.; E. P. W. Wedd, Cai.

UNIVERSITY OF EDINBURGH.

UNIVERSITY COURT.

AT a meeting of the University Court on December 14th the Senatus reported that they had re-elected Professor Crum Brown as one of their Assessors in the University Court.

Physics.—The Court approved of the recommendation of the Senatus that the classes of advanced practical physics and senior practical physics should qualify as half courses for graduation (second stage of the Final B.Sc. Examination in Pure Science.)

Applied Anatomy.—On the recommendation of the Senatus the Court resolved to institute a Lectureship in Applied Anatomy for senior students, and appointed Mr. Harold J. Stiles, M.B., F.R.C.S.E., as Lecturer. The class fee for the course (which is purely optional) was fixed at one guinea.

Examiners.—Additional Examiners for higher degrees in Science were appointed as follows: Degree of D.Sc., Sir T. Lauder Brunton, London; Professor James Walker, Dundee; and Dr J. B. Readman, Edinburgh.

Lecturers and Assistants.—The Court's Draft Regulations as to the performance of the duties of University Lecturers and Assistants during their temporary absence or disability were submitted, adjusted, and approved. The class returns for 1902-3 were submitted, and sent to a Committee for consideration and report.

TRINITY COLLEGE, DUBLIN.

THE following have passed the Final Examination in Medicine:

F. F. C. Willington, C. E. Moore, H. R. Nelson, R. C. Hallowes, T. C. A. Sweetman, T. J. Crean, H. Stone, C. J. Wyatt, *W. Mitchell, *H. M. Crawford, *A. A. M'Neight, *W. Thunder, *H. Stewart, *W. J. M'Iver, *R. S. Symth, *E. G. Scroope, *T. Wilson, *J. Chambré.

* Section B.

SOCIETY OF APOTHECARIES OF LONDON.

PASS LIST, December, 1903.—The following candidates passed in:

Surgery.—A. A. Angelis (Sections I and II), Athens; E. M. Cox, C. P. and S., New York; G. C. M. Davies (Sections I and II), Oxford and Charing Cross Hospital; A. H. Falkner (Section II), Cambridge and St. Mary's Hospital; H. J. Gater (Sections I and II), Guy's Hospital; A. C. George (Section I), Manchester; R. H. Rigby (Section I), Leeds; F. Robinson (Sections I and II), Manchester; A. Rogers (Section I), Cardiff and St. Mary's Hospital; D. A. Stepney (Section II), Royal Free Hospital; J. W. Watson (Section I), Manchester.

Medicine.—C. C. Bernard (Section II), Royal Free Hospital; E. M. Cox, C. P. and S., New York; G. Dewick (Sections I and II), St. Thomas's Hospital; A. C. George (Section II), Manchester; G. R. Hannon, King's College Hospital; W. Lovell (Sections I and II), St. Mary's Hospital; S. Northwood (Sections I and II), Birmingham; H. G. Peel (Sections I and II), Leeds; R. Reynalds (Sections I and II), Bristol; S. H. Ryan (Section II), Manchester; D. A. Stepney (Sections I and II), Royal Free Hospital; A. C. Story (Sections I and II), St. Mary's Hospital; A. Williamson (Section I), Royal Free Hospital.

Forensic Medicine.—W. H. Bush, Guy's Hospital; E. M. Cox, C. P. and S., New York; G. R. Hannon, King's College Hospital; J. A. Kilpatrick, King's College Hospital; W. Lovell, St. Mary's Hospital; R. Reynalds, Bristol; R. H. Rigby, Leeds; L. C. A. Savatard, Manchester; D. A. Stepney, Royal Free Hospital; A. C. Story, St. Mary's Hospital.

Midwifery.—A. Bernfeld, Royal Free Hospital; A. E. Bird, Manchester; E. M. Cox, C. P. and S., New York; W. S. Gibson, Manchester and Middlesex Hospital; J. C. Johnson, Middlesex Hospital; R. H. Rigby, Leeds; L. C. A. Savatard, Manchester.

The diploma of the Society was granted to A. E. Bird, W. H. Bush, E. M. Cox, G. C. M. Davies, A. H. Falkner, H. J. Gater, G. R. Hannon, W. Lovell, S. Northwood, F. Robinson, S. H. Ryan, L. C. A. Salvatard, and D. A. Stepney.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8,207 births and 5,553 deaths were registered during the week ending Saturday, December 12th. The annual rate of mortality in these towns, which had been 17.4, 17.6, and 18.6 per 1,000 in the three preceding weeks, further rose to 19.2 per 1,000. The rates in the several towns ranged from 6.3 in Grimsby, 8.8 in Leyton, 10.6 in Hornsey, 10.8 in Walthamstow, 13.1 in Kings Norton, 13.3 in Barrow-in-Furness, 13.4 in South Shields, 13.8 in Tottenham, and 14.0 in Stockton-on-Tees, to 25.2 in Oldham, 25.4 in York, 25.7 in Reading, 26.2 in Burnley, 26.5 in Plymouth, 29.6 in Middlesbrough, 30.2 in Wigan, and 32.0 in Merthyr Tydfil. In London the rate of mortality was 18.9 per 1,000, while it averaged 19.4 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.5 per 1,000 in the seventy-six large towns; in London this death-rate was equal to 1.2 per 1,000, while in the seventy-five large provincial towns the rates ranged upwards to 3.7 in Bury, 3.9 in Warrington, 4.0 in Great Yarmouth, 4.1 in Preston, 4.5 in Bury, 5.5 in Rotherham, 5.9 in York and 6.2 in Willesden. Measles caused a death-rate of 3.0 in Great Yarmouth, 3.6 in Bury, 3.9 in Warrington, 4.1 in Preston, 4.6 in Rotherham and in York, and 5.7 in Willesden; diphtheria of 1.4 in Coventry and 1.5 in Merthyr Tydfil; whooping cough of 1.1 in Wolverhampton and in Leeds, 1.2 in Brighton and in Rochdale, 1.3 in Aston Manor, 1.5 in Newport (Mon.) 1.6 in Burnley and in Swansea and 1.7 in Bootle; and diarrhœa of 1.9 in Burnley. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. Two fatal cases of small-pox were registered last week in Gateshead, and 1 in Birmingham, but not one in any other of the large towns. The number of small-pox patients under treatment in the Metropolitan Asylums Hospitals which had been 51, 47, and 40 at the end of the preceding weeks had further declined to 32; 2 new cases were admitted during the week, against 5, 5, and 3 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital on Saturday, December 12th, was 1717, against 1824, 1,832 and 1770 at the end of the three preceding weeks; 173 new cases were admitted during the week, against 191, 157 and 161 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday, December 12th, 934 births and 735 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 17.4, 18.7, and 20.0 per 1,000 in the three preceding weeks, further increased to 22.4 per 1,000, and was 3.2 per 1,000 above the mean rate during the same period in the seventy-six large English towns. The rates in the eight Scotch towns ranged from 16.4 in Edinburgh and 17.0 in Paisley, to 25.8 in Glasgow, and 29.3 in Greenock. The death-rate from the principal infectious diseases in these towns averaged 2.2 per 1,000, the highest rates being recorded in Glasgow, Greenock, and Perth. The 391 deaths registered in Glasgow included 34 which were referred to measles, 9 to diarrhœa, 5 to scarlet fever, 5 to whooping-cough, 2 to diphtheria, 2 to "fever," and 1 to small-pox. Two fatal cases of whooping-cough, and 2 of diarrhœa were recorded in Edinburgh; 2 of diarrhœa in Dundee; 3 of whooping-cough in Aberdeen; 2 of whooping-cough in Paisley; and 2 of "fever" in Greenock.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, December 12th, 502 births and 383 deaths were registered in six of the principal Irish towns against 493 births and 438 deaths in the preceding period. The mean annual death-rate of these towns, which had been 17.6, 15.3, and 24.3 per 1,000 in the three preceding weeks, fell to 19.9 in the week under notice, this figure being only 0.7 above the mean annual rate in the seventy-six English towns during the corresponding period—instead of 5.7 as during the preceding week. The death-rates ranged in these six Irish towns from 10.1 in Londonderry to 25.6 per 1,000 in Dublin. The death-rates from the principal zymotic

diseases in the same towns averaged during the week 1.7 per 1,000, or approximately the same as during the preceding period. The highest point—1.9—was reached in Waterford, while Limerick and Londonderry registered no deaths from zymotic disease at all. In Dublin measles and enteric fever each caused 1 death, diarrhœal diseases 2, and whooping-cough 7, but no deaths were recorded from any other disease on the zymotic list. In Belfast 1 death occurred from diphtheria, 1 from scarlet fever, and 8 from whooping-cough.

THE ART OF ADULTERATION.

We have received from Mr. A. W. Stokes, F.I.C., the Public Analyst of Paddington, his usual quarterly report, which contains an interesting note on the "changes which have taken place in the art of adulteration" during the last twenty-five years. Bread is now, as is well known, no longer adulterated with alum, which appears to have gone out of fashion owing to its making bread indigestible, and to the better milling of flour. Mr. Stokes considers that there has been improvement in butter owing to the manufacture of margarine, which, however, opened the way to adulterations, one of the most common during recent years being "watered" butter. Though there is a standard fixing 16 per cent. as the legal limit for water in butter, yet any amount may be added legally if only some approximate declaration is made. Milk is still the most adulterated article, but Mr. Stokes considers that the bad samples are but few in comparison with the mass retailed. On the other hand, it should not be forgotten that the samples examined are but few compared with the amount sold. Groceries, on the whole, appear to be fairly free from adulteration, though coffee, which heads the list, is still mixed with chicory. Mustard, pepper, cocoa, sweets, sugar, etc., are also less adulterated than formerly. Spirits are weaker and beer in London is said to be consistently free from injurious ingredients.

BUILDING BY-LAWS.

The Building By-laws Reform Association, which was instituted about a year ago, has now appointed a committee to consider and report on the amendments needed in the existing building by-laws. The object of the Association would appear to be to obtain relief from "the more oppressive" of the by-laws now in force in rural districts, and to bring about such changes as will lead to future by-laws dealing only with matters of principle.

FEE FOR CERTIFICATION OF LUNATIC.

Sigma states that he was called to a patient of unsound mind with a suicidal tendency. He informed the relieving officer, and asked the latter for a lunacy form on which to certify the case. The relieving officer did not provide this, but said the case was one for the police. "Sigma" subsequently, by the aid of the police, obtained a form of certificate and filled it up. The patient was then taken to a magistrate and another practitioner consulted and paid. The relieving officer refused to pay our correspondent any fee, and he now asks whether he can claim one, and, if so, from whom.

*** We are sorry to say that "Sigma" cannot claim any fee as he certified the lunacy of the patient in question without being requested by anyone to do so. After having informed the relieving officer of the condition of the patient he should have waited for further instructions before formally certifying the case.

APPOINTMENT OF DISTRICT MEDICAL OFFICERS.

X. Y. Z. writes to ask whether, in the case of an election of a district medical officer, if one candidate resides in the district and one out of it, the one residing in the district has any prior claim for the vacancy.

*** The resident in the district would appear to have a prior claim, as in the event of the guardians selecting the non-resident candidate the Local Government Board would request them to give their reasons for not appointing the resident and would not confirm the appointment of the non-resident till satisfactory reasons for discarding the resident had been given.

MEDICAL NEWS.

His Majesty the King has been graciously pleased to permit Dr. James Donelan to accept and wear the insignia of the Order of Chevalier of the Crown of Italy lately conferred on him by the King of Italy in recognition of his services as Physician to the Italian Hospital.

At the Congress of the Royal Institute of Public Health to be held at Folkestone, July 22nd to July 27th next year, there will be a Section for Child Study and School Hygiene. Dr. George Carpenter has been appointed London secretary, and Dr. Percy Lewis local secretary.

French Obstetrical Congress.—The fourth session of the French National Periodical Congress of Gynaecology, Obstetrics, and Paediatrics will be held at Rouen, April 5th to 10th, 1904, under the Presidency of Dr. Richelot of Paris. The section of gynaecology will be presided over by Dr. Richelot, that of obstetrics by Dr. Guillemet of Nantes, and that of paediatrics by Professor Kirmisson, of Paris.

The Light Treatment at Philadelphia.—The appropriation of £5,000 recently awarded by the Pennsylvania Legislature to the University of Pennsylvania is to be used for the erection of a laboratory where patients may be treated with the Finsen and *x* rays. Dr. Henry K. Pancoast, Assistant Instructor in Clinical Surgery and Assistant Demonstrator of Surgery at the University, will conduct an extensive series of experiments, which will be begun as soon as the laboratory is completed. This will be the first extensive use of the Finsen rays in Philadelphia.

A Reuter's telegram states that Sir William Gowers, F.R.S., has been elected an honorary member of the Vienna Internal Medical Society.

The Prussian Coltus-Minister has issued an order that a strict investigation is to be made of the sanitary condition of all the higher schools of Prussia.

The Royal Hospital for Diseases of the Chest, City Road, is making a special appeal for £50,000 to provide a suitable home for the nurses, and a country sanatorium for the open-air treatment of consumption.

MEDICAL VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—Third House Surgeon; resident. Salary, £6 per annum.

CITY OF LONDON LYING-IN HOSPITAL, City Road, E.C.—(1) District Surgeon. (2) Surgeon Accoucheur. Salary, £100 per annum and fees.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—House-Surgeon, resident. Salary, £75 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House-Physicians. Honorarium, £25 for six months.

LANARK COUNTY.—Resident Physician for the Middle Ward Isolation Hospital. Salary commencing £140 per annum.

LEEDS: YORKSHIRE COLLEGE.—Junior Demonstrator of Pathology. Salary, £120 per annum.

LIVERPOOL STANLEY HOSPITAL.—Honorary Physician.

LONDON THROAT HOSPITAL, Great Portland Street, W.—House Surgeon, non-resident. Honorarium at the rate of £50 per annum.

MANCHESTER SOUTHERN HOSPITAL FOR WOMEN AND CHILDREN.—(1) Two Honorary Assistant Medical Officers. (2) Anæsthetist. Honorarium, £50 per annum.

NORTH-EASTERN HOSPITAL FOR WOMEN, Hackney Road, E.—(1) Surgeon. (2) Medical Officer in charge of Electrical Department; salary, £50 per annum. (3) Pathologist and Bacteriologist; salary, £50 per annum.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Surgeon, resident. Salary, £100 per annum.

POPLAR HOSPITAL FOR ACCIDENTS, E.—Assistant House-Surgeon; resident. Salary at the rate of £80 per annum.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone Road, N.W.—Clinical Assistants.

SEAMEN'S HOSPITAL SOCIETY, Greenwich, S.E.—Junior Resident Medical Officer. Salary, £40 per annum.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House-Surgeon. Salary £50 per annum.

WEST LONDON HOSPITAL, Hammersmith Road, W.—Pathologist. Salary, £200 per annum.

MEDICAL APPOINTMENTS.

ALCOCK, Dr. N. H., Lecturer on Physiology at University of London Medical School, *vice* Augustus Waller, M.D.Aberd., F.R.S., resigned.

CASE, H., L.R.C.P. & S. Edin., L.F.P.S. Glasg., Certifying Factory Surgeon for the Withnell District, County Lancaster.

CRAWFORD, W. T., M.D. Edin., Medical Officer of the Kilton Hill Infirmary of the Worksop Union.

EDWARD, J. E., M.B., Ch.B., House-Physician to the Nottingham General Hospital, *vice* J. W. Scott, resigned.

FAGGE, C. H., F.R.C.S., M.S.Lond., Surgeon in charge of In-patients to the Evelina Hospital for Sick Children, Southwark, *vice* F. C. Abbott, M.S., F.R.C.S., resigned.

HALL, W. S., M.B., Ch.B.Aberd., District Medical Officer of the Bradford Union.

HASLEWOOD, C., M.B., C.M.Aberd., District Medical Officer of the Clitheroe Union.

HAWKES, Ernest E. U., L.S.A., Senior Resident Medical Officer at the Nottingham Union Workhouse.

HOUGHTON, N. N. A., M.B.Lond., Assistant House-Physician to the Nottingham General Hospital.

KELYNACK, T. N., M.D., M.R.C.P., Physician to the Mount Vernon Hospital for Consumption and Diseases of the Chest.

LUMSDEN, Thomas, M.D., reappointed Registrar to Out-Patients, Central London Throat Hospital.

PRICE, Frederick W., M.B. Edin., M.R.C.P. Lond., Assistant Physician to the Mount Vernon Hospital for Consumption and Diseases of the Chest.

RICHARDS, W. Hunter, M.B., M.S., F.R.C.S., Honorary Gynæcologist to the Plymouth Public Dispensary.

VERLEY, R. C. M.B., Ch.B. Edin., Honorary Surgeon to the Swansea Hospital.

WEBER, F. Parkes, M.D., F.R.C.P., Physician to the Mount Vernon Hospital for Consumption and Diseases of the Chest.

KING'S COLLEGE HOSPITAL.—The following resident appointments have been made:
Senior House-Physician.—R. H. Lee, M.R.C.S., L.R.C.P.
Junior House-Physician.—W. B. Clark, M.R.C.S., L.R.C.P.
House-Accoucheur.—W. O. Smales, M.R.C.S., L.R.C.P.
Assistant House-Accoucheur.—Cyril Beattie, M.R.C.S., L.R.C.P.
House-Surgeons.—J. A. Drake, M.B. Lond.; E. U. Williams, M.R.C.S., L.R.C.P.
N. E. Dunkerton, M.R.C.S., L.R.C.P.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

BATEMAN.—On December 17th, at Heath End, Blackheath, S.E., the wife of F. J. Harvey Bateman, M.A., M.B., C.M., of a son.

MILTON.—December 11th, at Higher Lupton, South Brent, Devon, the wife of J. Penn Milton, M.R.C.S. Eng., L.R.C.P. Lond., Medical Superintendent of the Devon and Cornwall Sanatorium, Dunsworthy, South Brent, of a daughter.

PRIDMORE.—On December 14th, at Villa d'Este, Ryde, Isle of Wight, the wife of John Walter Pridmore, M.R.C.S. Eng., L.R.C.P. Lond., of a daughter.

VEENDAM.—On December 17th, at 75, Carlingford Gardens, Hampstead, N.W., the wife of J. L. Veendam, M.D., late of the British Guiana Medical Service, of a son.

MARRIAGE.

KNAPP—FLETCHER.—On November 14th, at St. Thomas's Cathedral, Bombay, by the Rev. Canon Hill, Herbert H. G. Knapp, M.A., M.D., B.Ch. Oxon., Indian Medical Service, to Dora, daughter of the Rev. J. P. A. Fletcher, M.A., Rector of Burbage.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aetiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

CHICKEN-POX, WHOOPING-COUGH, AND PAROXYSMAL COUGH.

KINKS would be grateful if some member of the BRITISH MEDICAL JOURNAL would offer a solution of the following outbreak, which occurred lately in his practice. At the commencement of the winter term in a preparatory school containing twenty-five boys, one who had been exposed to the infection of pertussis, and who had been considered well over the incubation period, was heard to cough in school; he was promptly isolated, and afterwards developed well-marked symptoms of the complaint. Shortly after this another boy was attacked with chicken-pox, which communicated itself to several others. Six weeks after the removal of the case of whooping-cough, about twenty boys were attacked with an infectious cough of a markedly paroxysmal nature, the cough being in some instances exactly similar to whooping-cough, only without any suggestion of a whoop, the contents of the stomach also being in some ejected after the paroxysm. Two or three of the sufferers were day pupils, and did not communicate the same spasmodic cough to their brothers and sisters at home. All the cases are now convalescent; from first to last there has been no whoop, and the period of convalescence has varied from fourteen days to five weeks. Was this a mild form of pertussis? If so, how would one account for the escape of young susceptible children, who would probably contract the complaint in an aggravated form, or had the outbreak any connexion with the chicken-pox existing at the same period as the cough? "Kinks" has heard of a similar epidemic at a school where chicken-pox was raging, and where two scholars were isolated on the supposition of whooping-cough, but this was only on hearsay evidence.

INCOME-TAX.

"P. M." wishes to know (1) what various items a country practitioner can deduct for working expenses in making his return to the surveyor of taxes; (2) what is the best income-tax handbook applicable to the case of medical practitioners.

*** The first question was fully dealt with in the BRITISH MEDICAL JOURNAL of April 11th and June 20th, 1903, in an article on Income-tax Assessment. As to the second query, we are not aware of any handbook which applies specially to medical practitioners, and the subject is so technical that few, if any, of the popular handbooks that have been published are really satisfactory. If our correspondent wishes to learn more income-tax law than is contained in the articles above referred to, he had better consult the standard work on the subject *Dowell's Income-tax Laws*, fifth edition; Butterworth and Co., price 17s. 6d.

MATS.

DR. JOHN F. MACGREGOR (Morven, Oban) writes: In the BRITISH MEDICAL JOURNAL of December 5th, in your very interesting leading article on Sir Hermann Weber's address on longevity, you make various comments, and quote the sayings of various eminent medical men who have written on the same subject, and among these are instanced Sir James Sawyer's. His secret of longevity consists of "paying attention to a number of small details," and nineteen of them are given. Number 4 of these rules I should much like to see explained. Why does he wish to "have a mat at the bed-room door"? Many of these rules are applicable to cases of consumption, and most medical men have cases of that disease to treat, and if there is any charm about a mat at the door it is as well that we should know how it acts. I tell my patients to keep their bed-room door open as well as the window, and under these circumstances I consider a mat at the bed-room door only ornamental and not essential.

ANSWERS.

ST. JOHN'S.—For a set of lectures on ambulance work and first aid suitable for a class of men the following will be found satisfactory and helpful: *First Aid to Accidents*, By Collie and Wightman. London: George Gill and Sons, Limited. 1903. 6d. Each chapter represents one lecture.

TUBERCLE.—(1) A very good popular lecture on the prevention of consumption, delivered to the National Health Society by the late Dr. Sheridan Delepine, was published in the *Sanitary Record*, March 31st, 1894. A copy might be obtained from the National Health Society, 53, Berners Street, W., or from the Sanitary Publishing Company, 6, Exeter Lane, E.C. (2) The second Royal Commission on Human and Bovine Tuberculosis has not yet reported.

A. G. P.—In making a report to a landlord on the sanitary condition of houses belonging to him, altogether, would be directed to the following points: Address, occupier, site surroundings, foundations, walls, roof, floors, rooms, drainage, sanitary conveniences, accommodation, refuse, water supply, cleanliness, animals, and number and age of inmates. It might or might not be necessary to refer to rental, tenancy, occupation, etc.

NOTES, LETTERS, Etc.

THE MEDICAL PROFESSION AND ALCOHOLISM.

DR. T. N. KELYNACK informs us that Professor Sims Woodhead's Lees Raper Lecture on recent researches on the action of alcohol in health and sickness, to which we referred in the BRITISH MEDICAL JOURNAL of December 12th, p. 1571, will be published in the *British Journal of Inebriety* (London: Baillière, Tindall and Cox).

THE MEDICAL ARRANGEMENTS IN THE SOUTH AFRICAN WAR.

DR. ERNEST JEAFFRESON (Middleburg, Transvaal) writes: May I be allowed to approve, from my personal experience, of Mr. C. G. Watson's letter in the BRITISH MEDICAL JOURNAL of October 17th, p. 1017, on the medical arrangements of the war, though I must decline to support the delightful bull in his closing sentence, "If army medical organization is to emerge *with a clean slate* from its former travails, now is the time, *while the iron is yet hot.*" The italics are mine.

LETTERS COMMUNICATIONS, ETC., have been received from

A Mrs E. Garnett Anderson, M.D., London; Dr E. Ambrobus, Great Malvern; Alpha. **B** Blackpool; H. G. Barling, M.B., Birmingham; Dr. J. W. Byers, Belfast. **C** Mr. H. C. Chambers, Manchester; Mr. C. Campbell, Southport; Right Hon. Sir S. Crossley, Bart., M.P., London; Mr. W. R. E. Coles, London; Mr. A. A. Cooper, London. **D** D. M.; Dr. C. C. Douglas, Glasgow; Dr. L. G. Davies, Pelsall; Dr. T. Dutton, London. **E** Mr. H. Elliot-Blake, Bognor; Dr. J. M. Elder, Montreal. **F** Dr. R. Farrar, London; Dr. C. Fox, Caerphilly; Mr. A. MacL. Forrest, London. **G** G. P.; Mr. J. Grimshaw, Birkenhead; Glasgow Obstetrical and Gynaecological Society, Secretary of, Glasgow. **H** Dr. T. Horder, London; Mr. W. R. Hall, London; Health Officer; Mr. J. Houston, London; Mr. A. R. Hudson, London; Mr. F. Haydon, London; Dr. J. Haddon, Hawick; Miss C. F. Hill, Agra. **I** Interested. **J** Dr. A. C. Jordan, London; E. H. Jones, M.B., Northampton. **K** Dr. G. Kidd, Enniskillen. **L** Dr. D. B. Lees, London; W. H. Lowman, M.B., Dera Ismail Khan; L.R.C.P. **M** Dr. D. J. Mackenzie, Glossop; M.R.C.S.; Member; Mr. J. E. S. Moore, London; J. E. Molson, M.B., Chelmsford; Mr. F. Miller, London; Mrs. Mumby, London; Dr. J. F. Macgregor, Morvern, Mr. E. D. Marriott, Nottingham; Dr. R. D. Mothersole, Bolton; Manchester Medical Society, Secretary of, Manchester. **O** Mr. G. S. O'Rorke, Nottingham. **P** Nurse Pitt, Alton; Mr. F. E. Pickis, Nutfield; Parish Doctor; Miss E. F. Putz, London; Perplexed. **Q** Querist. **R** Mr. J. Robertson, Edinburgh; Messrs. H. Rolt and Co., London. **S** Dr. D. W. Samways, Mentone; Dr. S. Sunderland, London; Dr. C. E. Stokes, Exeter; D. F. Shearer, M.B., London; Dr. W. S. Syme, Glasgow; "Stamford Guardian," Editor of the, Stamford; H. Stanley, M.B., St. Leonards-on-Sea; Mr. G. Stevens, Southampton. **T** J. H. Teacher, M.B., Glasgow; Dr. E. Trevithick, Cheltenham; Dr. J. Taylor, Philadelphia. **W** Mr. A. Watts, London; Dr. R. T. Williamson, Manchester; D. C. Watson, M.B., Edinburgh; Dr. A. Whytt, Stirling; Dr. F. J. Waldo, London; Dr. C. J. Whitby, Bath; Dr. A. J. Wallace, Liverpool. **Z** Z. D.; etc.

BOOKS, ETC., RECEIVED.

Cookery for Invalids and the Convalescent. Compiled by C. Herman Senn, T.C.A. Third edition. London: The Food and Cookery Publishing Agency. 1s.

Revue Critique sur les Lois de la Formation des Sexes. Par le Dr. F. P. Guiard. Paris: Octave Doin. 1903. Fr.2.

Recherches Cliniques et Thérapeutiques sur l'Epilepsie, l'Hystérie, et l'Idiotie. Par Bourneville, etc. Vol. XXIII. Paris: bureau du "Progrès Médical" et Félix Alcan. 1903. Fr. 7.

Army Inefficiency: its Greatest Cause. By A. C. Profeit, M.R. London: J. and A. Churchill. 1903. 1s.

The Transactions of the Society of Anaesthetics. Vol. VI. London: John Bale, Sons and Danielsson, Ltd. 1903.

A Textbook of Surgery. Edited by William W. Keen, M.D., LL.D., F.R.C.S. (Hon.), and J. William White, M.D., Ph.D. Fourth edition. Vols. I and II. London and Philadelphia: W. B. Saunders and Co. 1903. 30s.

Transactions of the Otological Society of the United Kingdom. Vol. IV. Fourth session 1902-3. Edited by Arthur H. Cheatle, F.R.C.S. London: J. and A. Churchill. 1903.

The Lymphatics. General study by G. Delamere. Special study by P. Poirier and B. Cunéo. English edition translated and edited by Gwen Hoyt, M.A., M.B., F.R.C.S. Westminster: Archibald Constable and Co., Ltd. 1903. 18s.

The following books have been received from Messrs. W. B. Saunders and Co., London:—Clinical Examination of the Urine and Urinary Diagnosis. By J. Bergen Ogden, M.D. Second edition. 1903. 12s. 6d. A Textbook upon the Pathogenic Bacteria. By Joseph McFarland, M.D. Fourth edition. 1903. 15s. A Textbook of Clinical Anatomy. By Daniel N. Eisendrath, A.B., M.D. 1903. 21s. Modern Surgery, General and Operative. By John Chalmers da Costa, M.D. Fourth edition. 1903. 21s. A Textbook of the Practice of Medicine. By James M. Anders, M.D., Ph.D., LL.D. Sixth edition. 1903. 24s. A Manual of the Practice of Medicine prepared especially for students. By A. A. Stevens, A.M., M.D. Sixth edition. 1903. 10s. 6d. A Textbook of Pathology. By Alfred Stengel, M.D. Fourth edition. 1903. 28s. Atlas and Epitome of the External Diseases of the Eye. By Professor Dr. O. Haab. Authorized translation from the German. Second edition. Edited by G. E. de Schweinitz, A.M., M.D. 1903. 13s. Diseases of the Eye. By G. E. de Schweinitz, A.M., M.D. Fourth edition. 1903. 21s. The Four Epochs of Woman's Life. By Anna M. Galbraith, M.D. Introductory note by John S. Musser, M.D. Second edition. 1903. 6s. 6d. A Textbook of the Diseases of Women. By Barton Cooke Hirst, M.D. 1903. 21s. A Manual of Medical Jurisprudence, Insanity, and Toxicology. By Henry C. Chapman, M.D. Third edition. 1903. 8s. Nervous and Mental Diseases. By Archibald Church, M.D., and Frederick Peterson, M.D. Fourth edition. 1903. 21s.

*** In forwarding books the publishers are requested to state the selling price.

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N.B.—It is against the rules of the Post Office to receive letters to *Postes Restantes* addressed either in initials or numbers.

THE

British Medical Journal.

THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION.

EPITOME

OF

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MCMIII.

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AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

(1) Primary Gangrene of the Tonsils.

IN dealing with this condition, F. Oberwarth (*Deut. med. Woch.*, April 23rd and 30th, 1903) points out that one must distinguish between it and secondary gangrene occurring in the course of the infective affections, such as diphtheria, scarlatina and others. Primary gangrene is a separate disease *sui generis*. After discussing the literature of the subject, and reviewing the descriptions of the disease as given by various authors, he proceeds to describe his case. On November 22nd, 1902, the patient, a boy of 12, presented himself for treatment in the out-patient department, complaining of pain in the throat and ear, on the left side. Three weeks before he had been suffering from pain on the right side, which had disappeared of its own accord. On the left tonsil, which was reddened in its anterior portion, there was a yellowish, slimy, stinking exudation, which also covered the posterior pillar of the palate, and which had led to deep ulceration of the palate and superficial ulceration of the uvula. There was further a deep ulcer in the posterior portion of the left tonsil. Temperature, 102° F. The throat was treated with a gargle and cauterized with 10 per cent. chromic acid. Ten days later the local signs had cleared up and the boy was much better. Still ten days later a whitish exudation appeared on the posterior pole of the right tonsil and the general condition became worse again. On December 28th some very offensive shreds were cast off, and the heart showed signs of distress, and petechiae appeared on the arms, legs, and trunk. The spleen also was affected, it being enlarged. The local throat signs cleared up on January 15th, and a few days later the pain in the neck again returned. The sputum was blood-stained and fresh petechiae appeared. On January 18th the patient was admitted as an in-patient, his general condition being very bad. The boy was extremely pale: there was a systolic murmur over the apex and pulmonary area: the apex beat of the heart was in the nipple line in the fourth space, and the limits of dullness were normal. Both spleen and kidneys were palpably enlarged, but there was no albuminuria. On February 7th the general and local signs had improved greatly, but on the 16th a dense bluish black and painful area was seen on the under lip and right cheek. There was also a retinal haemorrhage on the left side and the blood showed a considerable increase of the colourless elements. The left tonsil next became necrotic and a stinking fetor exhaled from the mouth. The patient became very ill, having the appearance of extreme sepsis, and died on the 26th. At no time were there any diphtheria bacilli in the fauces, and the portions of tissue examined after the necropsy revealed only streptococci. The *post-mortem* diagnosis read: Pharyngitis, laryngitis, amygdalitis necrotica (noma) fatty metamorphosis of the myocardium and dilatation of the right ventricle, petechial haemorrhages in endocardium, pericardium, pelvis of kidney, mucosa of stomach, bronchopneumonia, nephritis (parenchyma), etc. The points of importance in the case, as illustrating the type of disease, are: the course being divided into several stages, which are separated by intervals of more or less complete recovery. In this case there were five distinct stages, each one being more severe than the preceding one, and only in the later ones producing marked general signs of septic poisoning. The intolerable fetor from the mouth is characteristic of this disease, and is likened to a faecal odour. Cutaneous and other petechial haemorrhages also are characteristic. The case reported, like one reported by Stein, presented an interesting condition of the heart. According to the physical signs, the systolic murmur heard at the apex and at the pulmonary area, the diagnosis of endocarditis was reasonable, but *post mortem* it turned out to be erroneous. The characteristic appearance of the local changes are well exemplified in the case, and need not be repeated. Oberwarth says that he is not in a position to decide whether the streptococci found in the fauces are the causal organisms or not.

(2) Calculous Obstruction of the Bile Duct.

LECLERC (*Lyon Médical* May 3rd, 1903) records a case of obstruction of the common bile duct by gall stones which followed an unusual course. His patient, a woman, 50 years of age, first suffered from painless jaundice twenty-seven years before, and from that time had had occasional attacks of hepatic colic with subicterus. A month before admission into hospital she suffered from an attack of colic accompanied by vomiting and followed a fortnight later by slight jaundice. The vomiting persisted after admission into hospital. The vomited matter was mixed with a green fluid having all the characteristics of bile. The stools were normally coloured, and the urine contained no bile. As no nourishment could be retained and the wasting was very rapid, the operation of choledochotomy was performed, and two large calculi which were found in the retroduodenal portion of the duct were removed. The patient made a good recovery, although the vomiting did not absolutely cease for some weeks. In spite of its persistence, the vomiting must have been purely reflex, due to pressure upon branches of the solar plexus, for a careful examination of the stomach proved the absence of dilatation or retention, or, indeed, of any sign of pyloric or subpyloric stenosis. The amount of bile vomited was extraordinarily large, and suggested the existence of a true reflex polycholia, analogous to the obstructed polyuria, seen, for instance, in cases of enlarged prostate. The slight intensity of the jaundice, considering the great obstruction caused by the calculi, is difficult of explanation. The absence of jaundice following calculous obstruction in alcoholics is not uncommon, and is probably due to an infective suppression of the secretion of bile. But in the case recorded bile was freely secreted, and this hypersecretion might, according to Riedel and Ehret (who assert that calculous obstruction causes inflammatory jaundice, biliary stasis causing angiocolitis), account for the slightness of the jaundice, the rapid secretion forcing a passage and biliary stasis being consequently avoided.

(3) Pulsus Paradoxus.

F. RIEGEL (*Deut. med. Woch.*, May 14th, 1903) deals with the condition of pulse known as paradoxus. This condition was first described in 1856. It is a weakening or disappearing of the pulse during inspiration, and was first noticed in a case which turned out at the necropsy to be a case of fibro-purulent pericarditis and fibrinous mediastinitis. Kussmaul ventured on a diagnosis of mediastinitis on the strength of the paradoxial pulse some years later. Since then it has been shown that this form of pulse does not necessarily depend on mediastinal disease, and some observers go so far as to assert that it can be observed in perfectly healthy subjects. Riegel denies this, at all events if the usual palpation and sphygmographic tracings are depended on for its recognition. He regards it always as a pathological sign, but recognizes three different methods in which it may be produced. The first is exemplified in Kussmaul's case, and is caused by the compression of the arteries and veins at the mediastinum. The adhesions and bands produced in the fibrous mediastinitis mechanically compress the great vessels during inspiration, and thus produce the phenomenon. The chief point to be noted in such cases is that the veins in the neck are distended. The second group of cases which give rise to this form of pulse is very different. In this group one is dealing with altered cardiac activity, which is due to deficient entry of air. The simplest examples of this are to be found in laryngeal and tracheal stenosis. The difficult air entry heightens the negative inspiratory pressure, and thus the inhibitory effect of the inspiration on the heart makes itself very evident. A pulsus paradoxus due to laryngeal croup disappears immediately after tracheotomy has been performed. The third group also depends on an altered action of the heart, but instead of a heightened negative pressure, a diminished power of resistance on the part of the heart is the cause. In emphysema when complicated by non-compensated heart mischief the pulse may weaken, or even become blotted out, during inspiration, as a direct result of the incapability of the cardiac muscle to do its work. Riegel says that he has watched this in a well-marked case, and has seen the peculiar pulse disappear on giving the patient digitalis and thus strengthening his heart beat. He considers that in every case of paradoxial pulse one should attempt to discover which of the three groups are acting, but on realizing that more than one of them may be present, he would have the practitioner attempt to consider, as far as possible, which factors carry the greatest share in producing the change in the pulse, and to utilize this in the treatment of the case.

SURGERY.

(4) Operations on the Thoracic Portion of the Oesophagus.

Tuffier (*Bull. et Mém. de la Soc. de Chir. de Paris*, No. 17, 1903) discusses the surgical methods that have been suggested for exposing the thoracic portion of the oesophagus; and also whether in cases of impermeable stricture and cancer of this tube the surgeon should practise simple oesophagotomy or resect the portion that is diseased. A full clinical record of three operations on the thoracic oesophagus, performed by the author, is followed by a comparison of the different methods of reaching and exposing this portion of the digestive canal. The anterior thoracic method, in which the sternum is divided transversely, and the lateral walls of the thorax above and below the extended line of section are separated, affords, it is stated, a very free exposure of the oesophagus in animals, but has not been performed by Tuffier on the human subject. The abdominal method proposed by Kelling for attacking the cardiac end of the oesophagus is condemned as an extremely difficult and dangerous operation, which entails much risk of cutting through the diaphragm. There are, it is held, but two practical methods of thoracic oesophagotomy, one known as the mediastinal, the other as the transpleural method. The approach to the oesophagus by the posterior mediastinum, whether on the right or left side of the spine, has, it is believed, its advantages, and also its indications. Amongst the advantages, however, cannot be included an assurance against injury of the pleura, as in four of six reported instances of the operation this membrane was perforated. The main objection to the mediastinal method is that the field of operation it allows is very small; the surgeon, hindered by the rigidity of the sides of the wound, works with a sound or with the tip of his finger at the bottom of a deep hole, and in a dangerous region, where it is indispensable to gain a good sight and sure recognition of every organ. This method, Tuffier concludes, may be found useful for the removal of an impacted foreign body, but if resection of a diseased portion of the oesophagus is indicated, should be rejected as an inadequate and dangerous procedure. The modification recently advocated and practised by Faure, which consists in partial resection of the first rib, permits a wide separation of the margins of the wound and overcomes the difficulties of the mediastinal method, but serious shock, it is thought, is likely to result from the sudden loss of support to the shoulder and undue straining of the brachial plexus and the main blood vessels of the upper limb. Moreover, it is applicable only to a restricted portion—the upper third—of the thoracic oesophagus. Tuffier describes the successive stages of a transpleural operation devised by himself and Dujarier, which from the results of its application to animals is held to be feasible as a surgical procedure on the human subject. This operation consists in the formation of a large cutaneo-costo-pleural flap enclosing portions of the seventh and two or three inferior ribs, the base or attached portion of which is situated posteriorly and near the spine. On elevation of this flap there is a free exposure of the left pleural cavity and the pericardium, and, after incision of the pleura over the posterior mediastinum, of the oesophagus as far as the diaphragm. In his concluding remarks Tuffier expresses the opinion that the therapeutical results to be expected from oesophagectomy for cancer are at the least problematical. The more surgical practice is developed the more helpless we feel, he states, in our struggle against malignant disease. He believes that the weapon destined to overcome this formidable affection is to be found beyond the range of operative surgery.

(5) The Treatment of Bone Cavities of the Tibia and Calcaneus.

Carl Boyer (*Zentralbl. f. Chir.*, May 9th, 1903,) describes a simple method of treating cavities of the tibia and calcaneus after sequestrotomy which much shortens the after-treatment. After removal of the sequestrum, the cavity in the tibia is thoroughly cleaned out and all bony irregularities and edges are removed with the gouge until the bone presents the appearance of a shallow trough with smooth walls. Enough bone must be removed from each side to enable the soft parts and periosteum to be brought across easily, and the incision in these soft parts may require extension upwards and downwards. All remains of fistulous tracks in the soft parts must be carefully removed and the flaps are then brought across. They are kept in position by sutures from each side which oversew a narrow roll of iodoform gauze; this keeps each flap apposed to the bone surface beneath. The first dressing may be left in position for eight to ten days when the flaps are adherent in position and there remains only a narrow linear raw surface in the centre. Cavities in the calcaneus may be similarly treated, using a T-shaped or semi-circular incision.

(6) The Sterilization of Catgut.

Perez (*Il Policlinico*, N. 31, f. 3, 1903), reviewing the various methods of sterilization of catgut, comes to the conclusion that, whilst it is possible to get complete sterilization, yet no method can reach that result constantly and absolutely so as to avoid suppuration with certainty. Similarly with regard to the effect on the resistance of the threads to the different methods of sterilization, authors are at variance. Equally desperate are the results in reference to absorption of catgut; indeed, some have said that it is absorbed no better than silk, yet most surgeons, after giving up catgut sutures, return to them eventually. The author has tried a new method of sterilization, and finds it satisfactory. This consists in the use of fluoride of silver. The gut is first of all washed in soap and water, then in ether for twenty-four to forty-eight hours, afterwards in sterilized water, and finally for twenty-four to forty-eight hours in 1 in 1,000 solution of fluoride of silver, changing the solution two or three times. The gut is next kept for one to two days in ordinary alcohol, and kept in alcohol until required for use. Experiments made with threads so prepared were satisfactory, and during the past year the author has used sutures prepared in this manner with good clinical results.

(7) Aesthetic Removal of Tumours.

Morestin (*Bull. et Mém. de la Soc. de Chir.*, No. 20, 1903) advocates a new method for the ablation of small and movable benign tumours from the breast. This method, practised with the object of avoiding an unsightly scar over the gland, consists in making an incision in the axilla behind the anterior wall, and in dissecting beneath the skin as far as the tumour, which, after careful division of its capsule, can be readily "shelled out." Desmoulin, in a report on this communication, states that this operation, which has been successfully performed in four cases by Morestin, is applicable to very small and very movable adeno-fibroma, which are but loosely attached to the mammary gland and surrounding tissues. The operation is a delicate and difficult one, and there is some risk, it is stated, of approaching too close to the surface of the skin in the course of the subcutaneous dissection, and thus of causing some sloughing and consequent unsightly cicatrix. Morestin has paid much attention to so-called aesthetic operations in different regions of the body. An axillary incision, such as is used for removal of mammary tumours, has been found useful in opening a chronic abscess of the thoracic wall, and also in resection of a fragment of bone from the upper part of the humerus. A retro-auricular incision, the scar of which may be concealed by the auricle, is suggested as suitable for opening small purulent collections, and for removing small tumours in the parotid region. Attention is also directed to a practice that has already been adopted by some surgeons of removing small ovarian cysts by a transverse incision made in the hairy region of the pubes.

MIDWIFERY AND DISEASES OF WOMEN.

(8) Puerperal Goitre.

Malade (*Berl. klin. Woch.*, May 4th, 1903) notices the peculiar connexion between the sexual organs and the structures found in the neck, and instances as a common example the change of voice at the period of sexual ripeness. Laryngeal growths frequently appear during pregnancy, and changes in the thyroid gland are known to be affected by pregnancy. French authors have described a form of bronchocele which they call "goitre puerperal." This goitre develops during the act of parturition very rapidly, and sometimes attains a great size. Malade has come across three cases; the first affected a woman of 48, who had not had a goitre before the birth of her first child, some fifteen years previously, but had noticed soon after that a small swelling had appeared. At the second and third labours the goitre again appeared, and disappeared later. At the fourth there was a sudden considerable growth, and since that time the goitre had not gone away again. At the fifth, sixth, and seventh no changes

took place in the thyroid, but at the eighth birth, that is, five years ago, the goitre became markedly larger. The second case was that of a woman of 39 years. Her first child was born when she was 25, and the midwife was much struck at the appearance of a goitre, which, however, disappeared later on. At the following eight labours the goitre reappeared, each time becoming larger than before. During the last few births it had not disappeared between the pregnancies. The third case is somewhat different. A woman of about 29 years of age had given birth to her first child two years previously. She reached the end of her second pregnancy after having had profuse haemorrhages three or four times during the last two months. She applied for treatment on account of renewed bleeding. Placenta praevia was diagnosed, and she was carefully removed into hospital. Next day the bleeding again appeared, and the os was therefore dilated at once, and after the placenta had been perforated (it was attached centrally), the fetus was turned and a foot brought down. The patient was under chloroform anaesthesia, and lost very little blood. She was put back into her bed, and twenty minutes after the version had been completed she died suddenly. Although the cause of death could not be settled for certain at the necropsy, Grawitz attributed it to cerebral anaemia, due to a comparatively large bronchocele. Very little chloroform was used, and it is very unlikely that death was due to it. Malade discusses the possible ways in which the sudden increase of size in the thyroid gland led to her death.

(9) Recurrent Tubal Gestation.

REIFFERSCHEID (*Zentralbl. f. Gynäk.*, No. 22, 1903) notes how many authentic cases of repeated tubal gestation have been reported since 1898, when Zangemeister collected 34 examples. By 1901 Pestalozza was able to collect 111 cases. Reifferscheid notes 2 recurrent tubal gestations in 43 operations for tubal pregnancy in the Gynaecological Department at Bonn. The first patient was 25, and had aborted two years previously; pelvic inflammation followed. Symptoms of a ruptured right tube set in a few weeks before admission to hospital. No recurrence of symptoms of haemorrhage was noted, but severe hypogastric pains set in. On June 24th, 1899, a tumour developed from the right tube was removed; it contained a fetus 1½ in. long. There were firm old adhesions to omentum, and the left tube and ovary were set free from inflammatory bands in Douglas's pouch. Just two years later symptoms of rupture of a left tubal sac set in. On June 20th, 1901, the sac was opened through the vagina; but three days later it had become as large as before, so abdominal section was performed. The sac was strongly adherent to intestine; it represented tubal abortion at the second month. The membranes were complete and torn at one point, but the fetus could not be found. The second patient was 32, and had been four times pregnant: the last confinement was in October, 1897. The catamenia were very free till the first week of October, 1902, when the show was scanty; a fortnight later sharp pains in the right side of the pelvis set in, and a tender mass was detected to the right of the uterus. On October 17th, 1902, the right tube was removed. It was of the size of a hen's egg, and freely movable, as there were no adhesions. It contained a fetus of the sixth week of gestation. On March 13th, 1903, the same patient was admitted into hospital almost moribund from internal haemorrhage. The last period had occurred at the end of December, 1902, and the symptoms of rupture of a fetal sac set in with a fainting fit a week before admission. There was also intestinal obstruction. Riefferscheid operated at once. Great masses of coagulum were found in the peritoneal cavity. A large rent was found in the left tube, which was removed; it was the seat of an ectopic pregnancy. The patient was revived with great difficulty; a subcutaneous injection of saline fluid with other measures brought her to, and recovery was rapid.

(10) Simultaneous Normal and Interstitial Pregnancy.

MAINZER (*Zentralbl. f. Gynäk.*, No. 20, 1903) attended a case of abortion and cleared the uterine cavity of an ovum of about the fourth week. Thirty-one days later symptoms of internal haemorrhage set in and Mainzer operated. There was a hemispherical dilatation of the left cornu, the rent in its walls was so small as to be only recognized with difficulty with the naked eye, yet the peritoneal cavity was full of blood. Both tubes and ovaries were normal; the left ovary contained a corpus luteum. The left cornu was excised, and the wound thus made in the uterus was closed by suture. The history and the anatomical conditions discovered at the operation seemed to indicate that there was simultaneous normal and interstitial pregnancy.

THERAPEUTICS.

(11) A Supposed Sarcoma of the Kidney Cured by X-Ray Treatment.

C. H. RICHMOND (*New York Med. Journ.*, May 30th) reports the following case. A woman, aged 40, married, the mother of three children, began to lose flesh and strength, and looked anaemic during the latter part of the summer of 1902. She suffered somewhat from nausea attended with eructation of fluids. Physical examination revealed nothing abnormal in the thoracic or abdominal cavity. The urine was tested, but was attended with negative results. Backward displacement of the uterus, however, existed, together with some inflammation of the uterine neck. A little local treatment for the relief of the uterine irritation was attended with cessation of the nausea and waterbrash. During the latter part of October she thought she was gaining in flesh. Another abdominal examination was made, and a hardness was found over the upper portion of the stomach, and immediately below the ribs of the left side. There was flatness on percussion over the space beneath the ensiform cartilage, over the lower portion of the ribs of the left side, the line of flatness extending posteriorly. On subsequent examination it was found by conjoined manipulation that the growth was deeply seated, extending downward, and the line of posterior dullness reaching as high as the eighth rib. Evidently the tumour was developing with great rapidity. Richmond came to the conclusion that the seat of the difficulty was in the kidney, and from the rapidity of its development that it must be sarcomatous. His experience of operations upon sarcomata had been anything but favourable on account of the extreme vascularity of such growths and their attachments, so that the outlook in this case seemed utterly hopeless. However, as he had known something of the favourable effects of *x*-ray treatment upon lupus and epithelioma, he made inquiries of several medical men of prominence regarding its possible effects upon internal growths of a sarcomatous and carcinomatous nature. To these inquiries he could obtain nothing as to definite results, but Weigel, of Rochester, advised him to employ it, as it seemed to be the only treatment likely to offer any reasonable hope of success. Having a Holtz static machine run by hand with an *x*-ray attachment, Weigel suggested that he should try his machine for a time, and, if benefit resulted, that he should afterward send her to him for treatment with a more powerful outfit. Weigel, accordingly, met the patient at Richmond's residence, agreeing in the diagnosis made. Her pulse at this time ranged from 108 to 120, the evening temperature from 101° F. to 102° F.; she had night sweats, had ceased to menstruate, had lost about 20 lb. in weight, was not able to dress herself without help, and measured 2½ in. or 3 in. more than normal in circumference just below the ensiform cartilage, with the tumour extending downward as far as the crest of the ilium. Richmond afterwards gave her daily treatments of 15 minutes each with the *x* ray, for 19 consecutive days, beginning December 10th. At the end of this time the temperature was nearly normal—on some days entirely normal; night sweats had lessened, the tumour had apparently ceased to grow and seemed softer, her appetite was good, she slept well, the pulse had somewhat improved, and she was buoyant in spirits. He then sent her to St. Mary's Hospital, Rochester, under the care of Weigel. Her removal to the hospital caused a temporary rise in temperature, but after a little it became normal, she began to improve in general appearance, and soon began to take walks outside the hospital grounds. At the end of nine weeks from the time of going to to the hospital—about twelve weeks from the time treatment was begun—the growth had entirely disappeared, so far as could be determined by bimanual examination. On April 1st, 1903, she was at her home, apparently as well as before she began to decline, except that she had not fully regained her powers of endurance. On the advice of Weigel, Richmond intends to continue *x*-ray treatment two or three times weekly during the next few months as a precautionary measure. The result of treatment in this case, he says, is the most remarkable of anything he had ever witnessed, as the patient was failing rapidly in flesh and strength, and a

speedy fatal termination seemed the only possible outcome.

(12) An Antitoxin for the Treatment of Morphine Poisoning.

L. Hirschlaff (*Berl. klin. Woch.*, December 8th and 15th, 1902) has attempted to produce an antitoxin which is capable not only of dealing with acute and chronic morphine poisoning, but which is able to remove the "abstinence" symptoms during the time when an attempt is made to break the habit. Working with mice and rabbits, he started by injecting increasing doses subcutaneously. In the case of rabbits these animals showed a great resistance against the poison, and only became somewhat depressed, slept for a short time, and became paretic in the hind legs. Later, when the doses had been increased, the only sign noticeable was a fixation of the pupil. He began with 0.015 gram, or at times with 0.03 gram pro die, and increased this by the same quantity every third or every day. The maximal doses given varied between 0.51 and 1.2 gram pro die. The highest amount which any one animal received was 63.61 grams, and the lowest 4.59. The animals did not show any marked disturbance of general health, and mostly put on weight slightly. The serum was either taken on the day following the end of the treatment or after the lapse of about four weeks. He next found it necessary to determine the minimal lethal dose of morphine. For rabbits he found that this worked out at 0.58 gram per animal, or 0.24 gram per kilo. weight; 0.75 gram per animal, or 0.47 to 0.49 gram per kilo. weight were found to be lethal doses under all circumstances. In employing the serum he found that the most potent antitoxin was obtained from animals which had received up to 0.72 gram pro die, and 5 c.cm. of this serum was injected in his early experiments. In using mice he determined that, while 0.007 gram was the minimal lethal dose per animal, 0.01 gram was certainly fatal under all circumstances, 1 c.cm. of the serum was used as antitoxin for mice. He found that the given doses of antitoxin were capable of saving the animal after injection of twice the certain lethal dose, and three to four times the minimum lethal dose. Both the serum taken immediately and that taken at the end of four weeks proved active. In this way he was able to show that Ehrlich's assertion that the alkaloids did not admit of an antitoxin production does not hold good. He carried out some experiments after Wassermann, with mixtures of brain substance of immunized animals and morphine, and found that this mixture in appropriate proportions was non-toxic to mice. Carrying these results over to human beings, he reports that he happened to be called upon to treat a case of acute opium poisoning during the time when he was carrying out his experiments, and that he injected 5 c.cm. of his morphine antitoxin and again 1 c.cm. The patient made a very rapid recovery, although she had taken twice the quantity given as a fatal dose, that is, she had drunk 0.066 gram of morphine (= circa 1.0164 gr.). The stomach had been washed out an hour and a-half after the poisoning, and its contents only accounted for unmeasurable traces of morphine; from this he infers that the greater part of the poison had been absorbed. Lastly, he recites his experience with the treatment of breaking off the habit, and states that in two cases he was able to withdraw the morphine suddenly, and after a single injection of 5 c.cm. of his serum no symptoms were felt. In others who had been in the habit of taking morphine for years, he was able to reduce the dose materially by injecting the serum once or three times. In a fifth patient, the experiment was marred by severe hypochondriacal neurasthenia, and although the patient insisted on having her usual dose of morphine, after the injection this dose is said not to have had its usual effect.

(13) Exercise in Phthisis.

J. Mjöen (*Zeit. f. Tuberkul. u. Heilstätten.*, Band iv, Heft 3) advocates active exercise for phthisical patients at a certain stage of the disease. It improves the general condition of the patient and to some degree directly affects the local condition, as the rapid breathing induced by it assists the expulsion of the residual air from the lungs more effectually than artificial exercises in breathing such as are commonly practised at sanatoria. Apart from this Mjöen has been strongly impressed by the difficulty with which patients, after a prolonged "rest cure" at a sanatorium, return to ordinary life. Although presenting no symptoms of phthisis and being apparently in perfect health, they often lack energy and confidence in their own capacity for work. When treated on Mjöen's system patients leave the sanatorum able to perform the duties and bear the strain of every day life. Active exercise is started as soon as the more serious symptoms have disappeared. The exercise taken consists in walking often at a rapid pace and uphill. The distance and the time taken are fixed by the doctor, and the exercise is such as to demand effort on the part of the patient, who often returns from his walk sweating profusely. At first only a few short walks are taken daily, but it is found that the time can be quickly increased without causing undue fatigue, until the whole day is spent in walking with short intervals for rest. In the example given to illustrate the treatment, the patient, a man 26 years of age, was admitted on September 8th, 1901, with infiltration of both apices, but no signs of a cavity. The illness had lasted for about six months; there were fever and night sweats, and tubercle bacilli were present in the sputum. On October 10th the temperature became normal. On October 31st the physical signs on the right side had improved, the temperature was still normal, night sweats had disappeared, and the cough had diminished. He was now ordered to walk for three half-hours during the day. On November 21st both the physical signs and the symptoms showed further improvement, and two and a-half hours daily walking was ordered. The patient continued to improve rapidly, and the amount of exercise was steadily increased. He left the sanatorium cured on April 17th, 1902, and was then able to walk for six hours a day comfortably and without loss of breath, a third of the time being passed in walking briskly uphill. The symptoms which contraindicate active exercise are fever, night sweats, and marked cough. If a rise of temperature follows exercise, the patient rests until the temperature is again normal, and similar treatment is adopted if there is increased cough or pain in the chest. Short walks on level ground may often be taken when severe exercise is undesirable, and even when the patients are confined to bed, lung exercises for a quarter of an hour twice a day are beneficial. There has been no example at the sanatorium of haemoptysis following exercise.

PATHOLOGY.

(14) Epithelioma and Epitheliosis.

Borrel (*Ann. de l'Inst. Pasteur*, February 25th, 1903) in a valuable paper draws an analogy between true epitheliomatous growth and a class of conditions which he terms the infective epithelioses. Vaccinia, variola, molluscum contagiosum, aphthae, the pustule of bovine plague have furnished him with material for the study of these conditions, and the anatomy of the lesions of variola in the sheep are especially described in full. All these conditions are characterized by marked local epithelial proliferation as the result of the activity of an infective virus. In sheep-pox there occurs a characteristic type of cell with large vacuolated nucleus and pseudo-parasitic inclusion; in all situations the lesion commences as a mesodermic process accompanied by a proliferative reaction on the part of the epithelium. The process is the same in the skin, lung, liver, kidney, and there develop epithelial growths with an origin in the pre-existing epithelium of the organ. The pseudo-parasitic inclusions are probably due to the penetration of polynuclear leucocytes into the cell, which subsequently undergo degeneration. The vaccinia pustule shows essentially the same process, the epithelial proliferation being rapid: the cell inclusions in these proliferative cells have been much discussed; they are probably leucocytic in origin, and Sikorsky has recently shown that the same appearances can be produced by inoculation of the cornea with diphtheria toxin or sterilized vaccine. The infective agents in these epitheliosses have one point in common, they are sufficiently minute to pass through filters which retain ordinary microbes; this has, at any rate, been demonstrated in the case of aphthous fever, bovine plague, sheep-pox, and molluscum contagiosum. Borrel describes certain observations on a form of epithelioma in the mouse which is capable of transplantation, and has been studied by Jensen and v. Leyden. True epithelioma differs essentially from the epitheliosses in that the metastases are directly related to the primary growths; the comparison of the two conditions only permits of a statement that the epithelial proliferation of cancerous tumours is not an exceptional reaction, without analogy in known diseases, and this fact encourages the search for a cancerous virus. The form of cancer in the mouse affords a very favourable material for study.

AN EPITOME

OF

CURRENT MEDICAL LITERATURE.

MEDICINE.

(15) The Occurrence of Right-sided Diaphragmatic Pleurisy in Heart Disease.

LOUIS RENON (*Arch. Gén. de Méd.*, June 16th, 1903) draws attention to three cases of right-sided diaphragmatic pleurisy occurring as a sequel to pulmonary infarction in cases of valvular disease or arterial degeneration. Huchard first recognized this variety of pleural effusion. A typical case presents, during a passive congestion of the pulmonary bases, the onset of sudden and violent pain at one spot in the chest on the right side. On examination, the signs of a pulmonary infarction are complete: dullness, fine subcrepitant *râles*, *souffle*. Later, the development of haemoptoic crepitations confirm the diagnosis. The infarct may (1) be absorbed, (2) give rise to an effusion of a sero-fibrinous, haemorrhagic, or purulent nature. The fate of the infarct is determined (1) by its position under the pleura or in the lung substance, (2) by the septicity or asepticity of the embolic area. The effusion (1) may occupy the general pleural cavity, (2) may become encysted and situated in the mediastinum, (3) may be limited between the base of the right lung above and the diaphragm below. The signs of this diaphragmatic effusion are latent; the pain and dyspnoea are referred to the infarction, and the impaired resonance is attributed to the basal congestion. Vocal vibrations and subcrepitant *râles* are felt and heard posteriorly. If a pleural effusion is suspected, an exploratory puncture in the lower intercostal spaces in the axillary line fails to withdraw any fluid. On the contrary, the liver appears enormous, the hepatic dullness extending almost from the clavicle downwards into the abdomen. These signs were present in Renon's first case, which he diagnosed as a cardiopathic liver and which he treated with rest, milk, purgation, and cardiac tonics. The patient died suddenly, and at the necropsy a litre and a-half of fluid was found between the base of the right lung and the upper surface of the right half of the diaphragm. The liver proved to his surprise to be normal in size. He points out his triple error in diagnosis, prognosis, and treatment. This mistake enabled him to recognize his two latter cases. A few days after a right pulmonary infarct, there supervened a considerable dullness in the axilla and in front, with absence of vocal vibrations and vesicular murmur, and the liver was depressed. An exploratory puncture in the fourth intercostal interspace in the mammary line withdrew sero-fibrinous fluid. A puncture at the seat of election behind failed to reach the fluid on account of the thickness of the lung tissue pressed against the posterior chest wall. Only a very long needle would have succeeded. The essential points of diagnosis insisted on by Renon are these; dullness commencing on the right side in the axilla and in front, with rapid depression of the liver after clear indications of a pulmonary infarct. In cases of doubt he advises without hesitation an exploratory puncture in the centre of the dullness. Phonendoscopy and radioscopy will render considerable help in this difficult problem. Apart from the infective nature of the pleural effusion the prognosis is good if the case is recognized and dealt with at once. He urges treatment by thoracocentesis at the level of the exploratory puncture with withdrawal up to 1,200 grams of fluid, to be repeated in a few days if the dyspnoea and signs of hepatic displacement are not relieved. The treatment of the particular form of heart disease should be carefully carried out at the same time in order to limit the formation of further infarctions.

(16) Pruritus in Syphilis.

PRURITUS has always been considered a rarity in syphilis, and generally speaking pruriginous features in an eruption have been considered sufficient to exclude a diagnosis of syphilis. Within recent years several facts have been recorded showing that this attitude is untenable; and Louis Regis (*Thèse de Lyon*, 1902) has collected several instances and observations which go to show that pruritus is not so uncommon in syphilis as has been supposed. Many forms of syphilides are accompanied by tingling and itching more or less marked in degree. The writer suggests that pruritus may possibly be independent of the syphilitic manifestation and that it is a superadded element in the case, appearing side by side with the syphilides in patients who show tendency to seborrhoea. Thus, in persons suffering from pruriginous syphilides, the treatment must be directed towards the possible seborrhoeic element as well as towards the dominant lesion.

(17) Fever following Ratbite.

FRANCIS R. SHERWOOD reported recently (*Medical News*, June 20th) to the Chicago Medical Society a case of ratbite in a boy, aged 8 years. The rat had been caught in a trap the night before, taken to a vacant lot by some boys for the purpose of turning it loose and killing it, and when the rat escaped from the trap it ran over the boy's left foot and bit it over the inner malleolus. The bite was through the stocking. The wound healed promptly and caused the boy no trouble. At the end of three weeks he complained of pain in the foot and leg, headache, loss of appetite, and fever, which was reported to have reached 105° F. The fever continued off and on for about nine weeks from the commencement of the symptoms, or twelve weeks from the injury. The author stated that William A. Evans had made a very exhaustive study of the literature of the subject of ratbites. Evans had reported two cases which occurred in the practice of his father. Both ran a similar course to that of the author, except one had a more continued high fever. Evans had succeeded in collecting all the cases reported up to date, which is 64, 2 in European literature, 26 from American literature, and 36 reported by Miyake, of Japan. In his review of the cases Evans thinks that the diagnosis was somewhat doubtful in about 10 cases. Many of the writers thought there was a relation between the disease and rabies. In a number of the early cases staphylococci and streptococci were found, probably due to secondary infections as the result of lancing and poultices. A few of the early cases died from this cause, and one from tetanus. The incubation period in most of the cases was from two days to four weeks. Miyake reports one as five to six hours, and another as four years. Miyake divides the disease into three forms: (1) Febrile form with exanthemata; (2) afebrile form, with mainly nervous symptoms; (3) abortive form, unimportant. The symptoms as given by Miyake are pain at the seat of the bite, fears, tired feeling, headache, dyspnoea, small pulse, cold extremities, delirium, sensory and motor paralysis, collapse and death. The subacute variety has a well-marked incubation period, and most of the cases exanthemata, and lasts months or longer. The symptoms which Miyake gives in this form of the disease correspond very closely to those which the author found in his case, namely, reinflammation of the wound, pain in the muscles, breasts, and limbs, hoarseness, anorexia, nausea, vomiting, feeling of oppression, feeble pulse, cachexia, anaesthesia of the extremities (not present in the author's case), hallucinations, decrease in urine secretions, exanthemata, and urticaria. The pathology is not understood. Examination of the urine was negative in the author's case. The examination of the blood and inoculation experiments were also negative. The prognosis of the disease is good, apparently self-limiting. Treatment was symptomatic. The patient, who made a complete recovery, was exhibited to the Society.

(18) Iodic Purpura.

J. B. CLELAND (*Thesis* for M.D., Sydney, 1902) records the case of a man, aged 59, who was admitted to hospital suffering from a swelling in the sternal region. As this was evidently gummatous, potassium iodide and liq. hydrarg. perchlor. were given; after three doses (amounting to 15 gr. of the one and 2 drachms of the other) the medicine had to be discontinued on account of violent vomiting. This having been subdued by lavage, the iodide was recommenced a week later. After taking 20 gr. he was suddenly seized with severe pains in the extremities. An extensive purpuric eruption rapidly developed, he became collapsed, and in thirty hours was dead. There was slight vomiting. *Post mortem*, recent ulcers—becoming gangrenous in places—were found in the stomach and small intestines, particularly the duodenum. The author considers that purpura is due to direct injury to the endothelial cells of the blood vessels, impairing their function, and that in the case under notice it might have been due to the elaboration of a combined poison by the joint action of potassium iodide and a factor constructed directly or indirectly by tissue metabolism. He further holds that all cases of purpura can be ascribed to similar poisons in which the factor potassium iodide is replaced by toxins, some of bacterial origin, the other factor being now more, now less, evident.

SURGERY.

(19) The Operative Treatment of Wounds of the Diaphragm.

Lenormant (*Rev. de Chir.*, May, 1903) deals with the surgical treatment of wounds of the diaphragm, and suggests some definite rules of practice based on a study of 31 recorded cases, 3 of which were under his own observation. It is held that in every case in which the surgeon is assured of the existence of a wound of the diaphragm with or without a visceral lesion, intervention is urgently indicated with the object of closing this wound, and of thus preventing any possibility of consecutive hernia. The author, indeed, goes still further, as he believes that even when there is no absolute certainty but only a probability of such injury, the surgeon should explore the track of the external wound, and make sure whether the diaphragm be wounded or not. The injured portion of the diaphragm should, it is held, be exposed through the wall of the chest by partial resection of one or two ribs. Statistics prove most undoubtedly the superiority of the transpleural method of dealing with a wound of the diaphragm, the mortality of laparotomy in such cases being 62.5, and that of thoracotomy only 13 per cent. When the wound in the diaphragm has been exposed and any protruded viscera returned into the abdomen, the simplest and most efficient way of dealing with the injury is to bring the edges together by direct suture. The author prefers this to the method practised by Walther and other surgeons of stitching the margins of the diaphragmatic wound to the margins of the incision in the thoracic wall. The author's views on the treatment of wounds of the diaphragm hold good also, he states, to cases in which there is concomitant injury of the abdominal or thoracic viscera. Intervention, moreover, is indicated by lesions of this kind on which depends so much the gravity of the prognosis. In those cases of somewhat frequent occurrence in which the diaphragm alone is wounded, the surgeon in following the practice here recommended will, the author believes, have the satisfaction of ensuring his patient against the invariably fatal risk of hernia by means of a simple and safe operation.

(20) Tetanus after Injection of Gelatine.

Dieulafoy (*Bull. de l'Acad. de Méd.*, No. 19, 1903) reports a case in which a fatal attack of acute tetanus followed an injection of gelatine serum practised on a phthisical woman, aged 38 years, suffering from profuse haemoptysis. The solution had, it is stated, been very carefully prepared and subjected to boiling for more than half an hour. This, Dieulafoy points out, is not an isolated or exceptional instance, as what is regarded as the enormous total of 23 such cases has been recorded in the course of the past two years. All these cases present similar features, and it is well known at the present day that tetanus is imparted to patients because the gelatine used in the preparation of the injected serum contains the tetanic microbe. To avoid such terrible and frequent accidents it is necessary to abstain altogether from the practice of injecting gelatine serum, unless gelatine of absolute purity can be obtained for such purpose. It is necessary to be careful not only in preparation of the serum, but also in the fabrication of the gelatine itself. Dieulafoy asserts that in his own practice he has never used gelatine serum, and that he intends to hold to this exclusion in the future.

(21) Results of Operations for the Radical Cure of Hernia.

Coley (*Annals of Surgery*, June, 1903), in a paper prepared chiefly to determine the permanent results of operation for the radical cure of hernia, states that of 1,003 cases under his own care, 647 were traced and found well from one to eleven years after such surgical treatment; 705 were well from six months to eleven years, and 460 were well from two to eleven years. This list of 1,003 operations shows 92 double herniae, or 911 individual patients; 937 were cases of inguinal, and 66 cases of femoral, hernia. Of the 911 patients, 212 were females. In about 700 cases the patients were under the age of 20 years. Bassini's methods both for inguinal and femoral hernia were practised in all these cases. These statistics confirm the opinion long held by the author that by far the greatest proportion of relapses occur within the first year after operation, and that most of them occur within the first six months. Patients who are quite well one year after the operation may therefore reasonably be expected to remain well, and after two years may be considered permanently cured. The author is a firm believer in the superiority of absorbable to non-absorbable sutures in operations for the radical cure of hernia. The occasional occurrence of suppuration usually attributed to imperfectly-sterilized sutures is chiefly due, it is held, to infection by the hands of the operator or his assistants. The proportion of instances of suppuration has been reduced from 4.2 to 1.25 per cent. since the author began to use rubber gloves in performing his operations. In discussing the indications for operation the author holds that such treatment is seldom advisable, except in cases of strangulation in subjects under the age of 4 years. In many of these cases, probably two-thirds, the hernia can be cured by a truss. In all adult cases under the age of 50 years, unless there are strong contraindications such as (1) serious organic troubles of the heart, lungs, or kidneys; and (2) a very large, adherent and irreducible hernia containing both intestine and omentum, especially in a stout individual, operation is advisable. Between the ages of 50 and 70 years operation is advised in healthy patients in cases in which the rupture is ineffectually retained by a truss.

(22) Synorchidia.

Pascale (*Rif. Med.*, An 19, N 23) under the above title describes a conservative operation upon the testes designed to preserve as far as possible the functional capacity of that organ after portions of it have been removed for disease (chiefly tuberculous). Of the four successful cases published by the author three were cases of tuberculous epididymitis with cutaneous fistula and one of new growth (of uncertain character). The operation consists in the union of the sound testis with the remains of the diseased testis. The whole of the diseased epididymis and vas deferens are removed. The corpus Highmorianum is opened and examined for possible disease; then the terminal portion (rete vasculosa of Haller) is implanted into the sound testis, after removal of the intertesticular septum. The double testis is then invested with its usual coverings and fixed in the hemiscrotum. In the four cases upon whom this operation was practised the results were found distinctly satisfactory, the functional capacity of the testes remaining unchanged. By this mode of procedure the danger of infection is avoided, which is not the case in simple implantation of the vas deferens.

MIDWIFERY AND DISEASES OF WOMEN.

(23) Tubo-ovarian Varicocele.

Since Richet and Devalz first drew attention to tubo-ovarian varicocele and its supposed frequent association with retro-uterine haematocele, little attention has been paid by gynaecologists to this affection. Michel and Bichat (*Arch. Gén. de Méd.*, June 9th, 1903) distinguish two main varieties: (1) A varicocele of the broad ligament accompanying a pelvic tumour or a prolapse, and being of secondary importance compared to the main affection; (2) a tubo-ovarian varicocele, constituting the principal and essential lesion, being always secondary to an antecedent pelvic inflammation. They quote a case of the latter class in a patient, aged 24, who had suffered from pelvic pain, irregular menstruation, and leucorrhoea for five years. These symptoms commenced two months after an apparently normal puerperium, and followed a heavy fall. Vaginal examination showed a soft enlargement of the cervix with an old left-sided laceration, and bimanually a boggy thickening of the upper part of the left broad ligament, tender on pressure, was felt. The diagnosis of chronic cervicitis with salpingitis was made. Laparotomy was performed, when an enormous varicocele was found extending from the uterus to the parietal peritoneum on the left side. The ovary was small, atrophied, hard, and cystic; the tube was slightly thickened. Microscopic examination of the ovary showed an enormous dilatation of the lymphatic vessels at the hilum, and considerable fibrous thickening of the external coat of the veins. Various causes for tubo-ovarian varicocele have been given—want of support of the veins, congenital weakness in their walls, absence of valves (Dudley). Of mechanical causes, constipation, repeated pregnancies (Budin), pelvic tumours, uterine displacements, affections of heart, lungs, and liver, by inducing a venous stasis, may cause an alteration in the vascular walls. The authors suggest a totally different etiology for the case quoted—namely, an attenuated infection during the puerperium of the lymphatics of the tubo-ovarian pedicle, with extension to the neighbouring vessels, producing a periphlebitis with subsequent dilatation. In support of this theory they adduce the argument that there was a

cervical laceration on the same side as the varicocele, with great dilatation of the lymphatic vessels in the broad ligament. Further, the ovary on that side was sclerosed and cystic, which they consider evidence of an attenuated infection. De Sinéty has observed similar conditions in one other case, and the authors urge the careful examination of the lymphatic vessels in future cases and tubo-ovarian varicocele associated with a sclerosed and cystic ovary.

(24) Chorea in Pregnancy.

C. WALL AND H. RUSSELL ANDREWS (*Journ. of Obst. and Gynaec. of the British Empire*, June, 1903) discuss the causes and treatment of chorea in pregnancy, and give a detailed account of 40 cases occurring in 37 women seen at the London Hospital. That the cases were truly choreic in character was shown by the type of movements, which was indistinguishable from that of Sydenham's chorea. A woman's power of emotional control is diminished in pregnancy, and tends to revert to that of childhood, and the incidence of a disease otherwise confined to childhood is thus explicable. The predisposing causes of chorea in pregnancy closely resemble those of the same disease in children. In 16 out of the 37 patients there was a previous history of rheumatism: 23 out of the 37 had previously suffered from chorea, which in some instances was no doubt rheumatic in origin, and in others may have predisposed to the later attack by causing instability of the controlling centres. A small majority of the cases of chorea in childhood show physical or mental mal-development, and a corresponding case in an adult is here given. The patient in question was microcephalic, and had left school at the age of 14 in the fifth standard. Her mother was an epileptic. There was no history of rheumatism in herself or any member of her family. The determining cause of chorea is often worry. Examples are here given where the worry was due to illegitimacy of the child, fear of difficult labour, or dread of increasing an already large family. A sudden shock was in one instance the determining cause. Five only of the 40 cases ended fatally, 2 spontaneously aborted, and in 3 abortion or premature labour was induced. Both patients who spontaneously aborted, and two of the three in whom labour was induced, died. The proportion (5 per cent.) to spontaneously abort is lower than the average (16 per cent.) for normal pregnancies. The non-development of chorea in many cases till comparatively late in pregnancy in part explains this, yet the proportion is so small as to show that there is probably no great tendency to spontaneous abortion in cases of chorea. The mortality reported after induction of labour in these cases and in those of other authors is such as to render this procedure undesirable, and it has been discontinued at the London Hospital since 1895. The treatment recommended consists for the most part in ensuring sleep and quiet, and in providing good nursing and food, especially carbohydrate food. Bromides and opium are both dangerous if given in doses large enough to be effectual. The most satisfactory hypnotics are chloral hydrate or chloralamide given in small doses and infrequently. Alcohol is often used and is of more value than arsenic, but should not be given when arsenic is being systematically administered. Under such treatment the prognosis is good, both as regards the life of the patient and the natural termination of labour.

(25) Removal of Appendix in Pregnancy.

MONOD (*Comptes Rendus de la Soc. d'Obsét. de Gyn. et de Péd. de Paris*, May, 1903,) notes that according to Bapteste's statistics of 67 cases of acute appendicitis occurring during pregnancy, the mortality in 43 cases operated upon was 30 per cent. whilst in the rest, where no operation was undertaken, it was but 11 per cent. The operation cases, he points out, included the worst, for when symptoms were mild expectant treatment was nearly always adopted. Bapteste's statistics, however, show the gravity of appendicitis in pregnancy and Monod considers that in any case where that disease has occurred, the pregnant woman should be advised to have the appendix removed at once. Monod describes 3 cases of this practice which he terms *résection de l'appendice à froid*, in all the patient informed him when she consulted him for her pregnancy that she had suffered from one or more attacks of appendicitis and in all that disease was in abeyance. In the first case he operated in the sixth month and he was obliged to "fish out" the appendix from behind the caecum after freeing numerous adhesions. Yet the patient carried her child to term. This patient had gone through three attacks. The second had suffered from one only and the operation was performed in the fourth month. There was great hypertrophy of the appendix without adhesions. Delivery occurred at term. The last patient had experienced several bad attacks of appendicitis, and becoming pregnant desired an operation which was done in the third month. There were free adhesions. The pregnancy was progressing very favourably five months after the removal of the diseased organ, when the report was read. In a fourth case Monod anticipated trouble. A woman, aged 25, had a sharp attack of appendicitis in February, 1900. In April she was married and a fortnight later a severe attack set in. After waiting for five days Monod removed the appendix, which was severely diseased, its extremity lay embedded in dense adhesions which enclosed a small abscess. He operated on the principle that pregnancy would expose the patient to greater dangers. Pregnancy did not occur until late in 1901, and in June, 1902, she was delivered at term of a well-nourished male child which was reared and, like the mother, remains in good health.

THERAPEUTICS.

(26) Treatment of the Opium Habit.

S. E. JELLIFFE (*Amer. Journ. Med. Sci.*, May, 1903) says that it is assumed by many that the opium habit is just the opium habit, and "there's an end on't." Such, he holds, is far from being the case, and he knows of no psychological problem that offers a more extended gamut of individual variation than this. Hence the laying down of general rules for its treatment is, in his experience, fruitless. The habit is a complex social-psychological network, and its treatment should take into consideration the many factors concerned in it. As far as the general grouping of the different types of the habit is concerned, opium takers may be classed as those who take the drug in the form of some one of its official preparations - laudanum, paregoric, the extract, etc., by the mouth, by the rectum, by the vagina, or other natural orifice; a second and very large class, if not the largest, absorb the drug through the respiratory mucous membrane by means of the pipe or by smelling; the third class includes those who take morphine or allied products by the mouths or subcutaneously by the hypodermic syringe. The habitual use of the drug is certainly distributed in New York City among about 30,000 individuals. Jelliffe believes that the fundamental psychological factors in the opium habit closely resemble those found in other drug habits, and that the phenomena noted for the opium habit have many features in common with those noted for the alcohol habit. This is not referring at all to similarities or dissimilarities in the physiological activities of the two drugs, but rather to the conception of what feelings the taking of the drug as an entirety, apart from individual sensational variations, gives the individual, and why he is induced to continue, and why it is difficult for him to stop. It is a well-known pharmacological fact that the stimulant narcotics are capable of affecting consciousness in two opposite ways: they either increase or diminish the intensity of the incoming stimuli, and this heightens or clouds the waves of conscious impressions. According to the evolutionary point of view adopted by Partridge in discussing the subject of alcoholism, the *habitué* may be regarded as one in whom the craving for intense states of consciousness is overdeveloped, or who is lacking in control, or one who, usually as a result of pain, has an abnormal craving to revert to a state of consciousness which is less intense. It is in this latter group that the great class of opium *habitués* may be classed. If he has acquired the habit, so soon as distressed or painful—sometimes termed nervous—sensations commence to crowd into his consciousness, then it becomes necessary for him to attempt to revert to a state of consciousness which is less intense and more agreeable. The cardinal principles on which a rational therapy are to be founded consist, according to the author, in the substitution of different ideas by suggestion and the substitution of different sensations by other drugs. These two factors, if judiciously combined, will certainly be of service in the most intractable cases. It is necessary in the first place, however, to obtain some relief from the actual sufferings of the morphinomaniac before one can use mental influences, and therefore the principle of substituted sensations must first be brought into play. Many drugs have been employed to bring about this purpose, but practically none have been of service out-

side of sanatoria or in patients confined to rooms and under surveillance. For such Jelliffe's experience confirms that of many others, that the bromide method is one of the very best. This method of late years has been termed the Macleod method, but as an actual fact the use of bromides is much older—how old no one can now say. The details of this method are as follows: 120 gr. of sodium bromide are given in half a tumbler of water every two hours during the daytime, until 1 oz. has been administered in the same day. This may be sufficient to produce the "bromide sleep," or the drug may have to be continued on the third day. It is a safe rule to stop the administration after twenty-four hours if the drowsiness is so profound that the patient cannot be aroused from sleep to take further doses, or when aroused is incoherent, since it is to be remembered that the drug acts in a cumulative manner. After the second or third day of the sleep, which may even deepen into coma, the bromide is withdrawn. There is usually some difficulty in feeding the patient, swallowing being sometimes impossible, so that rectal alimentation has to be practised; and a tendency to aspiration pneumonia, which occasionally manifests itself, makes feeding by the mouth doubly dangerous. Of the use of hyoscine in comparatively large doses, as advocated by many on the introduction of this drug, Jelliffe's experience is contradictory. It has proved of good service in stages of marked excitement, but its use has given him more than one unpleasant shock in that dangerous collapse has followed its administration. While being the last one to hold forward a single remedy for the treatment of such a complex condition, it seems that if once one is enabled to relieve the victim of the sense of *ennui* and unrest that afflicts him at the recurrence of his dosage time—be it once in six hours or twelve or every day or two, as the case may be; then with the relief given at such a time by other means than by morphine a point is reached where other means of influencing the patient are more liable to be of effect, both temporary and lasting. Much has been claimed of the newer morphine modifications heroin, dionin, and peronin—within the past few years as fulfilling this very indication. From a somewhat extended use of these remedies Jelliffe believes this to be in part true; but they are by no means as efficient as many have been led to believe from too hasty a recital of the results. In the earliest days of his experience with these drugs the belief was engendered that Eldorado had been found; but, after waiting three to six months, it became apparent that in some cases he had simply substituted one habit for the other.

(27) Aronson's Antistreptococcus Serum.

The results of many careful experiments made on animals with Aronson's antistreptococcus serum have stimulated expectation as to its value for man, and interest, therefore, attaches to Meyer's description (*Zeit. für diet. und physik. Therap.*, April, 1903) of the treatment with this serum of 18 cases of undoubted streptococcus infection, though the number of cases is too small to finally settle its value. In 5 out of the 18 cases beneficial results undoubtedly followed the use of the serum, in 2 the effect was doubtful, and in the remaining 11 none was produced. Three out of the 5 patients successfully treated were suffering from erysipelas of the face with fever, quick pulse and subjective symptoms. In 2 cases after one injection of 20 c.cm. of the serum there was improvement of all these conditions, the temperature of one patient falling from 103.1° F. when the injection was made at midday to normal within twelve hours. In the third case the erysipelas almost disappeared and the temperature dropped from 102.5° F. to 98.9° F. after the injection which was made on the thirty-first day of illness, but the pulse-rate increased for a short time. The fourth patient suffered from double suppurating tonsillitis. Rapid improvement followed the injection, and the temperature dropped 5.4° in twelve hours. The last case was one of puerperal fever. Two injections were made, and temporary improvement followed on both occasions. The injections were, however, discontinued because of a scarcity of serum, and convalescence was tedious. Three cases of erysipelas, 2 of scarlatinal rheumatism, and 6 of sepsis were not affected by the treatment. The lack of success is partially explained by the fact that most of the cases of sepsis came under treatment only at the end of the first week of illness. In one case of puerperal fever with two or three rigors daily the physician in charge considered that the rigors tended to supervene after the serum was injected. Meyer believes this sequence to have been accidental, but states that absolutely no benefit resulted in this case. In none of the cases did the injections cause any rise of temperature, and in only one any but the most trifling local irritation. Meyer points out that the use of the serum is not limited to such cases as have been given. Its employment is also indicated by way of precaution before operations, especially operations on mucous membranes containing streptococci, as for example those of the mouth and nose, and before confinements during epidemics of erysipelas. It does no harm when given in moderate doses, and does not in any way endanger the success of other methods of treatment; 20 to 30 c.cm. is an ordinary dose, but where the blood is swarming with streptococci as much as 50 to 60 c.cm. may be given. In erysipelas and in convalescence small doses often repeated give better results than a single large dose. The only contraindication to the use of the serum is the presence of considerable inflammation of the pericardium or pleurae. In such cases the mechanical results of the increased exudation caused by the serum might possibly cause death.

PATHOLOGY.

(28) Elastic Fibres in Cicatricial Tissue.

Domenico Taddei (*Le Fibre Elastiche nei Tessuti di Cicatrice*. Ferrara, 1903) describes his experimental researches into the origin and development of cicatricial elastic fibres. He has observed regeneration beginning about a month from the time of injury in scars produced both by first and second intention. The elastic fibrils of regeneration usually appear first in the superficial and peripheral parts of the scar. In the cicatrix of the wall of a jugular vein injured by lateral ligature the elastic fibrils appear first on the whole extent of the cicatrix in the subendothelial layer, and in this layer also appear first the newly-formed elastic fibrils in the aorta of a fetal sheep. New elastic fibrils, whether of regeneration or of embryonal new growth, appear as very thin homogeneous fibrils, tapering to their extremities, not branched, and of a size no greater than those of adult connective tissue. The descriptions by other observers of elastic fibres taking origin as granules Taddei ascribes to optic errors or to fatty degeneration caused by faulty histological technique. Both fibrils of regeneration and of embryonal new formation are a product of adult connective-tissue cells and of the endothelial cells of blood vessels (elastogenic cells). The first elastic fibrils are formed at the expense of the protoplasm and of the prolongations of the elastogenic cells. The stumps of pre-existing elastic fibres take no part in the regeneration. The elastic fibrils of regeneration, like those of embryonal new formation possess to a limited extent the power of increase in length and thickness. Increase in length comes chiefly by the fusion of corresponding ends of fibres lying more or less in the same plane. Increase in thickness comes by the fusion of neighbouring and parallel fibres. Taddei does not admit the increase of newly formed fibrils by the apposition of granules of elastin. The evolution of the elastic network in cutaneous cicatrices is slow, and subject to great variation. The greater development is undertaken by the peripheral fibres. Even in cicatrices as old as three years points may be found in which the development of elastic fibres is unfinished, but in cicatrices of the vessel walls the development of the regenerated fibres is quicker, and is complete in two and a-half months. The direction, calibre, number, and disposition of the regenerated elastic fibrils in the different planes of the cicatrix are analogous, but not identical with what is observed in corresponding planes of neighbouring normal skin. Up to a certain stage of development the regenerated elastic fibres maintain a direction parallel to that of the connective tissue elements. Taddei also describes the inclusion in the cicatrix of elastic fibres from the spot injured. Such fibres may be distinguishable for as long as three months, but after that time they shrivel up, lose their branches, undergo granular fragmentation and are removed by a process akin to phagocytosis. The scars on which these observations have been made are the cicatrix of the jugular vein of a rabbit treated by lateral ligature, the cicatrix following simple division of the skin of a rabbit's neck healing by first intention, cicatrices following deep burning of the skin of a rabbit's back and legs healing by second intention without suppuration, and cicatrices of the abdominal walls of the rabbit and dog, healing by second intention after a partial resection of the liver.

AN EPITOME

OF

CURRENT MEDICAL LITERATURE.

MEDICINE.

(29) Congenital Stenosis of the Arterial System.

PARADIS draws attention to this curious and rare congenital condition (*Thèse de Lyon*, 1902). Congenital stenosis of the arterial system is characterized by uniform and general narrowing of the calibre of all the vessels. The condition is a rare one, as the writer has only been able to collect 20 cases. The chief symptom is loss or feebleness of the arterial pulsations, followed by indications of cardiac hypertrophy, which is necessarily due to the stenosis of the vessels. The diminution in amplitude of the radial pulse has been named microsphigmia, a name first applied to it by Variot. The face and skin are pale, and there may be slight cyanosis when the cardiac embarrassment is more than usually increased. There is sudden dyspnoea with palpitation and headache. Examination of the heart does not reveal the presence of any particular sign except the occurrence of hypertrophy. It is a remarkable fact that sexual abnormalities are present in these cases and other evidences of maldevelopment such as infantilism and rickets. Congenital stenosis of the arteries, so far as its course and duration are concerned, depends on the state of the myocardium. The symptoms generally resemble organic lesions of the heart. This organ may show dilatation affecting the ventricles, and subsequently the auricles. This is followed in course of time by hypertrophy. The right cavities are early affected, and when the cardiac action begins to fail a fatal termination is not far off. In some instances the disease progresses much more rapidly than in others. Passive oedema, ascites, and other indications of failing circulation appear quickly, Prognosis is therefore grave and uncertain, and it is rarely that patients reach the age of 30 years. In the 20 observations collected by the writer there was a necropsy in 15. Patients with congenital stenosis of the arteries are liable to acquire tuberculosis and other infective diseases. The etiology of the condition is obscure. All that can be said is that it is due to congenital malformation, and may be entirely latent till the patient reaches puberty. The writer is of opinion that these cases should be watched for and carefully distinguished from other and more common cases of cardio-vascular disease with which they may be confused, as the treatment is entirely different.

(30) Nervous Depression following Influenza.

MANCEL states (*Thèse de Paris*, 1902) that among the sequelae of influenza one of the most important and remarkable is the extreme depression from which many patients suffer even in cases where the attack of influenza has been slight. A short time after convalescence begins the patient complains of insomnia, great weakness, and loss of appetite for all kinds of food. On getting up he is immediately attacked by giddiness; there is tendency to fall forward; the least movement may occasionally bring on vomiting of a particularly mucous viscid material. He is thrown into a profuse perspiration, and is glad to return to bed. Any muscular effort may be attended with dyspnoea. In less marked cases the patient may be able to walk a little distance, but after a short time the feeling of intense weakness which is characteristic of this state brings him to a stop, and dangerous syncope may result. The gastric symptoms in such cases are always prominent. In many instances mental symptoms are also present. Any mental work is impossible, and reading soon causes fatigue. Memory is considerably affected, the patient forgetting the names of objects. He is inclined to take an exaggerated view of all his symptoms, and the fear of impending death may greatly trouble him. This state of nervous depression may continue for several months. The treatment of such cases is important, and among the best means is the exhibition of strychnine and caffeine. The former may be given in the usual doses, or as arseniate of strychnine in small doses. In the worst cases a subcutaneous injection of strychnine is necessary. Preparations of caffeine have a mere tonic effect in these cases than ether. It may be given in conjunction with benzoate of soda or else as a subcutaneous injection dissolved in distilled water with salicylate of soda.

(31) Arsenical Poisoning.

FERRANNINI (*Rif. Med.*, June 3rd, 1903), after discussing the ordinary symptoms of poisoning by arsenic, refers briefly to some of the rarer forms. In addition to paralysis one may get ataxia, which may be associated with other tabetic symptoms—for example, absence of knee-jerks, Romberg's sign, lightning pains, anaesthesia, and ocular disorders (diplopia, amaurosis, absence of pupillary reflex). This ataxic form is due to a polyneuritis, and not a myelitis. Tremor may also be due to arsenical poisoning. In differentiating between alcoholic and arsenical poisoning, the following data should be borne in mind. In the first place alcoholic neuritis is rarely due to acute alcohol poisoning, but usually occurs in the chronic drinker, and the delirium which opens the scene is the equivalent of the acute gastro-enteritis of arsenical poisoning. In alcoholic dyspepsia chronic gastritis with morning catarrh and pyrosis are the common type. In arsenicism you get insomnia, in alcoholism terrifying dreams. The sensory disturbances in alcoholic paralysis are usually less severe than in arsenical poisoning. Desquamation is peculiar to arsenical poisoning, whilst psychical disorders prevail in alcoholism. In arsenical poisoning the motor disorders, the atrophy and deformities chiefly affect the fingers and toes; in alcoholic poisoning the forearm and calf are more prominently affected, and it is the wrist and ankle articulations rather than the phalangeal which share in the deformity. The author then relates three cases of arsenical paralysis occurring in the same family (mother and two sons), and presenting identical symptoms, due to eating flour made from latyrus beans (vetch). Chemical analysis showed that it contained a considerable amount of arsenious anhydride. In each case it was the lower extremities that were paralysed. Sensory disturbances (itching, numbness) were present in the palms of the hand and soles of the feet. Some static ataxia was present. The tendon reflexes were abolished. Sensation normal. There was considerable wasting of the forearm and leg.

(32) Cirrhosis of the Stomach and Colon.

J. B. CLELAND (Thesis for M.D. Sydney, 1902) records a case of this extremely rare condition. The patient, a man aged 39, had had an attack of "indigestion" lasting a week, six months before admission; otherwise no previous illness. When taken into hospital he had been suffering from diarrhoea and vomiting for about two months; for the last ten days he had noticed a tender and somewhat painful lump in the right side of the abdomen. No blood had been passed by the rectum, but the patient had lost nearly 2 st. in weight during the last six months. On admission, he was found to vomit from ten to fifteen minutes after food, and to have a rounded, ill-defined mass to the right of the umbilicus. An exploratory laparotomy was performed. The mass was found to be associated with the colon, was considered to be malignant, and the wound was closed. Death ensued five days later. *Post mortem* the principal changes found were in the stomach and colon, in each of which there was a thick cartilaginous-looking layer immediately beneath the mucous membrane. This layer consisted almost exclusively of fibrous tissue, which was massed especially round the vessels. The circular layer of muscles was cut up by bands of fibrous tissue into lobes and lobules like those of a cirrhotic liver. The masses of fibrous tissue were in places separated by clusters of small young cells surrounding small vessels. The mucous membrane was nowhere ulcerated, though its defective blood supply had led in places to an increase of small round cells. The author considers this case to have been one of fibrosis, started by the presence of a toxin circulating within the blood vessels.

SURGERY.

(33) Surgical Treatment of Pancreatic Cyst.

CUMSTON (*Rev. de Chir.*, June, 1903,) publishes a personally observed case of cyst of the pancreas, together with some remarks on the pathology and the surgical treatment of this affection. The treatment of pancreatic cyst, it is pointed out, is exclusively surgical and consists in one or other of two methods: incision with subsequent drainage and total extirpation. If after exposure of the tumour by laparotomy which is usually performed in the median line, the cyst be found free, or if such adhesions as exist can be readily separated, extirpation is indicated. When incision and drainage are indicated, by contrary conditions the cyst should be attached by sutures to the abdominal wall. It is a point of little importance whether the contents of the cyst be removed or not

before the application of sutures, because if the abdominal cavity be well protected by strips of gauze there is very slight risk of its being infected in case of the escape of a small quantity of the fluid during the stitching. The author recommends suturing the parietal peritoneum to the serous covering of the cyst. When the cyst has been emptied and its cavity irrigated with a sterilized solution, a wide glass tube should be inserted as far as the bottom of the depression in the pancreas. The practice of performing this operation in two stages is regarded as useless if the surgeon be quite sure of his aseptic methods. Of the ultimate results of surgical treatment of these cysts but little is known at present. It is evident, the author states, that in cases in which it is possible to perform total extirpation, there is very slight probability of a relapse, but it should be borne in mind that it is very possible that another cyst may be subsequently developed, having its starting point in a portion of the pancreas invaded by cystic degeneration, and naturally escaping the surgeon's suspicion at the time of the operation. Theoretically the treatment by incision and drainage is very likely to be followed by recurrence. A persistent fistula may follow this method of treatment and may give rise to other complications. Still in most of the cases that have been treated by drainage, the secretion of the cyst increased at first, and afterwards gradually diminished to complete cessation.

(34) Disarticulation at the Hip for Sarcoma of the Femur.

Quénu and Desmarest (*Rev. de Chir.*, May, 1903) describe a method they have devised for removing the lower limb at the hip-joint, and publish three cases in which this was successfully performed for sarcoma of the femur. The immediate results of disarticulation at the hip have, it is stated, been much improved since the general adoption of antiseptic and aseptic methods in surgical practice, and also by observance of the plan of haemostasis in which the main vessels of the limb together with the large muscular branches are secured by double ligature before they are divided. In the radical treatment of sarcoma of the femur, however, although the direct mortality of the operation has lately been much reduced, surgeons have failed in their endeavours to improve the prospects of such intervention by affording so long a freedom from subsequent recurrence, to say nothing of the probability of definite cure, as to justify the risk incurred by disarticulation, and the extensive mutilation thus inflicted. Statistics, it is asserted, show that the speedy return of the disease after removal of the lower limb for sarcoma of the femur is due to retention in the flaps of muscle and of veins which at the time of the operation were already attacked by the growth. In the method of disarticulation at the hip devised and practised by the authors, the main features are the formation of a single large cutaneous flap and removal of all the subcutaneous soft parts likely to be involved in the growth. The cutaneous flap is taken from the inner surface of the limb, and its length is equal to the transverse diameter of the root of the thigh. This flap having been dissected upwards, the main blood vessels of the thigh and also their large branches are divided between double ligatures; the extensor and abductor muscles are cut through near their pelvic attachments; the head of the femur is next exarticulated, and, after this, the rotators and the muscles of the buttock are carefully detached from the upper part of the femur. Much importance is attributed to complete preservation of the gluteus maximus, a thick cushion being thus afforded to the ischial enterosity, which bony process remains the solid basis of support for the body, and the point of attachment for any prothetic apparatus. In the absence of any illustrative diagram it is difficult to make out from the authors' description where the skin incision is made on the outer surface of the hip.

(35) Surgical Exclusion of a Large Portion of the Intestinal Canal.

Legueu (*Bull. et Mém. de la Soc. de Chir.*, No. 21. 1903), in a report on a case communicated by Vanverts, stated that this surgeon in an endeavour to close a false anus in the upper portion of the jejunum, associated with firm and extensive adhesions of the small, and of a portion of the large, intestine, divided the small intestine above the fistulous opening and then first closed the lower end by sutures, and afterwards fixed the upper end by stitching to the free margin of the middle of the transverse colon. By this operation the faecal current was diverted from the region of the false anus. The portion of intestine taking part in the processes of digestion was thus reduced to the duodenum, about 20 in. of jejunum, about half the transverse colon, the descending colon, and the rectum. Notwithstanding this large degree of occlusion, intestinal absorption was carried on to a sufficient extent, the proportional amount of urea in the urine remained normal, and the general condition of the patient steadily improved in spite of metrorrhagia due to uterine fibroma. It is pointed out, however, that the intestinal functions were not absolutely normal, as the patient, after an interval of six months, still suffered from diarrhoea. From this clinical record it may be concluded that reduction of the extent of small intestine to 35 in. is not incompatible with life. Vanvert's case, it is asserted, represents at the present time the most extensive operation on the intestinal canal that has yet been carried out.

MIDWIFERY AND DISEASES OF WOMEN.

(36) Female Breasts and Genital Organs.

R. Temesvary (*Journal of Obstetrics and Gynaecology of the British Empire*, June, 1903) discusses the connexion between the female breasts and genital organs. To prove the existence of this connexion he gives instances first of genito-mammary and, secondly, of mammary-genital action. In the first group are included: (*a*) The mammary changes at puberty. That these changes depend on the genital organs is proved by their occurrence in nearly every case of precocious menstruation. (*b*) Mammary symptoms at the menstrual period, and occasionally mammary haemorrhage as a form of vicarious menstruation. (*c*) Mammary changes during gestation and the puerperium. Abnormal as well as normal breast phenomena occur during these periods. Thus new growth in the breast sometimes arises, or, if already present, develops with greater rapidity during pregnancy, and according to Naegele the site of a healed mastitis may become tender and painful at this period. While there is no change in the breast amongst women during and immediately after parturition, amongst animals the skin over the lacteal glands is already tense and reddened when parturition occurs, and the glands secrete colostrum more freely. (*d*) Mammary changes often accompany disease of the genital organs. In cases of uterine myomata the breasts often secrete colostrum, and hypertrophy of the breast has been cured by amputation of an accompanying hypertrophied cervix, while atrophy of the genital organs causes atrophy of the breasts. (*e*) Cases of inoperable cancer have been improved or even cured by removal of the ovaries combined with the administration of thyroidin. The instances given of mammary genital phenomena are: (*a*) Effects on the genital organs of sucking of the nipple. In some women this causes erection of the clitoris and contraction of the muscles of the pelvic floor. In pregnant women it leads to uterine contraction, and may induce premature labour. After parturition the involution of the uterus is completed in six weeks in the case of nursing women, but takes from seven to eight weeks in non-nursing women. Over-prolonged lactation sometimes causes hyperinvolution of the uterus. Lactation acts favourably on uterine myomata. (*b*) Irritation of the skin of the breasts sometimes causes uterine haemorrhage in amenorrhoea. Freund employs cupping of the nipple to produce uterine contraction, and warmly recommends the procedure as a preparatory measure before inducing labour. (*c*) Galactorrhoea is occasionally associated with amenorrhoea, and galactogogue drugs in large doses have usually a galactofugue action, but cause uterine haemorrhage. Temesvary next discusses the cause of this interaction between the breasts and genital organs. The connexion might be brought about through the nerves or through the circulation in the breasts or reversely. But it has been shown experimentally that the secretion of milk may take place in animals in a normal manner after section of the spinal cord at the level of the dorsal vertebrae, or when the breast has been entirely freed from the influence of nerves. Similarly cases are on record in which the breast changes of pregnancy and the puerperium developed normally in women after destruction of part of the spinal cord at the level of the dorsal vertebrae. None of the nerves are therefore unconditionally necessary to the milk secretion. That the circulation in the breasts is not the essential factor is shown by an experiment of Ribbert, who cut off the mammary gland of a young rabbit and transplanted it in the ear. Five months afterwards, on the rabbit bearing two young ones, this gland secreted milk freely. The only explanation left is that some substance is

secreted by the ovaries, which, circulating in the blood under certain circumstances, leads to the secretion of milk. During pregnancy this substance must be utilized in the circulation of the fetus, and only after the birth of the fetus accumulate in the mother's blood to cause the secretion. Experiments showing that healthy ovaries are necessary for lactation bear out this theory, though it is not proved until such a toxin or the blood serum containing it can be produced and its effects watched. Apart from experiment, it is undeniable that the circulation itself has some effect on the secretion of milk. In producing mammary-genital phenomena the sensory nerves of the nipple, probably a reflex centre in the cord, and the motor nerves of the uterus, play a part. The conclusion at which Temesvary arrives is that the stimuli going from the genitals to the breasts are produced by some product of the internal secretion of the ovaries, and that the blood circulation, influenced by the nervous system, plays only a secondary part. In the reverse direction the stimulus is chiefly produced by the nervous system, and the blood circulation here plays a secondary part in the form of reflex hyperaemia. This theory cannot be said to be unassailable. It scarcely explains the phenomena of imaginary pregnancy, the cases where fully developed breasts are found with defective or absent uterus and ovaries, or those conditions apart from pregnancy in which milk is found in the breasts.

(37) Puerperal Haematoma of Vulva.

LEPAGE (*Comptes Rendus de la Soc. d'Obst. de Gyn. et de Péd. de Paris*, April, 1903) opened a discussion on this subject based on a case of his own. A primipara, aged 21, was delivered spontaneously at term of a child weighing over 7 lb. A large vulvo-perineal thrombus began to develop a few hours later on the left side of the vulval cleft. It ruptured on the fourth day through yielding of the integument, which sloughed. There was some trouble afterwards. During discharge of slough the cavity was plugged and drained, and the patient was cured by the end of the week. The thrombus when at its largest extended to behind the anus, which gaped widely. Routier insisted that antiseptic measures allowed of incision, evacuation, and compression of a haematoma of the vulva, as there was no fear of causing the exposed parts to become septic. Champetier de Ribes warned us against opening a haematoma behind the deep perineal fascia, which mounted very high in the abdomen after detaching the peritoneum. When the bleeding was anterior to the fascia, surgical measures were needed about twenty-four or thirty-six hours after labour, when the haematoma ceased to increase in size. Schwartz agreed that early incision was best. Wallich suggested vaginal compression with a tampon to check the increase of the haematoma, but Lepage observed that it developed very insidiously in his case. He had been educated in the dread of active interference with a vulval haemotoma, but agreed with Routier that there was no danger in opening it with antiseptic precautions. In this case there were no varices of the labia.

(38) Insane Women and Gall Stones.

MANTON (*Amer. Journ. Obstet.*, June, 1903) states that while it is proved that the insane are peculiarly liable to cholelithiasis, symptoms of that disorder are rarely manifested during life, so that the frequency of the condition amongst this class of patients can only be determined after death. Between January, 1897, and January, 1903, 133 female patients died at the Eastern Michigan Asylum. Of this number necropsies in which the abdomen was opened were made in 23 instances. Gall stones were found six times in these 23 subjects, or in a little over 26 per cent. of those examined. The ages of the patients varied between 22 and 65 years, 5 of the number being over 30. Only 2 of the women had been pregnant. The cause of death was in 1 of the 6 cases infective cholangitis, in 1 ulcer of the duodenum, in 1 carcinoma of the liver. In the remaining 3 the disease was more general (tuberculosis, syphilis, nephritis). Beadles (1892) found gall stones in from 10 to 12 per cent. of cases examined at the Highgate Infirmary. Simpson (1896) placed the percentage of gall-stone disease in the West Riding asylum at 20 per cent., whilst at necropsies on female patients in the Jena Asylum Riedel found biliary calculi in 18 per cent. Stagnation of the bile current from bodily inactivity, more or less inevitable in asylum patients, seems to account for the frequency of cholelithiasis in the insane.

THERAPEUTICS.

(39) The X-Ray Treatment of Malignant Tumours.

IN the New York *Medical Record* of March 21st, 1903, W. B. Coley discusses the present status of the *x*-ray treatment of malignant tumours. After reviewing the recent literature on the subject he reports a number of fresh cases. Twenty-five cases of inoperable sarcoma were treated between February, 1902, and January, 1903. Anatomically classified, they are as follows; 6 of the neck; 3 of the thigh; 3 intra-abdominal cases; 3 of the parotid; 2 of the pectoral region, 2 of the testis; 1 each of the femur, back, frotal sinus, iliac fossa, chest wall, and superior maxilla. In 4 cases of inoperable round-celled sarcoma the tumours entirely disappeared, and up to November 17th, 1902, 3 had remained free from recurrence. On January 23rd, 1903, recurrence had taken place in every case. In one of these cases, an inoperable sarcoma of the neck and pectoral region, which disappeared in June, there was extensive metastatic development in both groins and the abdomen in September. The groin tumours had entirely disappeared under renewed *x*-ray treatment, and the abdominal tumour was slowly decreasing in size. Seven other cases have shown improvement. Three of these were round-celled, 1 melanotic and 2 spindle-celled. One of the latter is so recent that it is hardly fair to consider it. In another spindle-celled or fibro-sarcoma the toxins were used in addition to the *x* ray. In 13 cases no improvement whatever was noted: 1 of these was a round-celled sarcoma of the upper portion of the orbit, 1 an intra-abdominal sarcoma (retroperitoneal), 1 a lymphosarcoma of the neck, 1 a retroperitoneal round-celled sarcoma secondary to sarcoma of the testis, 1 a round-celled sarcoma of the muscles of the thigh, 1 a round-celled sarcoma of the parotid; 1 a sarcoma of the superior maxilla. In 2 cases the treatment has only been used about a week, and it is too early to state the result. In 1 case, a sarcoma of the neck, in which the treatment was used as a prophylactic, there has been no recurrance. He has, further, treated one case of advanced Hodgkin's disease with the *x* ray with remarkable improvement. Twenty-one cases of cancer of the breast were treated, in 14 of which the growth was recurrent and inoperable. In one of these disappearance of the growth was noted; in another it disappeared, but the patient died of lung involvement; in 8 there was improvement, mostly only slight and temporary; in 10 there was no improvement, and in 1 the result was unknown. There were 15 cases of epithelioma of the head and face, including 3 of recurrent cancer of the tongue, and 3 of the superior maxilla. In none of these had the growth entirely disappeared. Discussing the relative merits of the toxins and *x* rays in inoperable cancer, Coley says that in several cases of inoperable round-celled sarcoma in which the toxins had been tried and failed, the *x* ray caused entire disappearance of the tumours. Although all these cases are of recent date, yet in all there has been a speedy recurrence. On the other hand, in a much larger number of cases of inoperable sarcoma, the tumours have entirely disappeared under the toxins, and remained well from three to ten years after treatment. He has had 20 patients with inoperable sarcoma remain well from two to ten years after the disappearance of the tumour under the mixed toxin treatment. Of these, 15 patients were well from five to ten years. He had the opportunity of observing the effect of the *x* ray upon only three cases of spindle-celled sarcoma, and found it to be in all exceedingly slight. Yet it is just in this class of cases—the spindle-celled—that the result of the toxin treatment has been by far the most satisfactory, nearly 50 per cent. of the cases of inoperable spindle-celled sarcoma having disappeared under the treatment in his own experience. In the round-celled variety, however, upon which the influence of the toxins is much less pronounced, the immediate results from the *x*-ray treatment seem to have been the best. In deep-seated and inaccessible growths the results from the toxins will probably, he thinks, prove better than from the *x* rays. There is no objection to using both methods of treatment at the same time, and there is reason to believe that the combined treatment will give better results than either used alone. There are a large number of cases of inoperable sarcoma treated either with the *x* ray or the toxins, in which inhibitory action is almost, but not quite, sufficient to check the growth, and it seems but reasonable to suppose that the combined action of the *x* rays and toxins might be sufficient not only to check the growth, but to cause it to disappear. Summing up, he says there is abundant evidence that the *x* rays

have an inhibitory action on all forms of malignant tumours. Yet the number of cases is insufficient to enable us to state what particular varieties are most susceptible to this influence. So far it would seem that sarcomas primary in the lymph glands yield most readily to the treatment. Superficial epitheliomas might be placed in the same category. Several cases of recurrent carcinoma of the breast have been observed in which the growths have entirely disappeared after prolonged exposures to the *x* rays. Yet all these have been too recent to be classed as cured. In fact, sufficient time has not yet elapsed in a single case of cancer treated with the *x* ray to justify us in regarding it as cured. In the meantime, while the *x* ray has a legitimate place in the treatment of inoperable cancer, present data do not warrant us in advising the method in primary operable cases.

(40) The Prevention of Ague by Salts of Quinine.

J. Michon (*Arch. Gén. de Méd.*, June 23rd, 1903) gives an interesting account of the means he adopted to combat ague when spending the summers of 1901 and 1902 in the most infected area in Corsica, the Alerian plain. His observations were carried out during September and October, when malaria is very prevalent, upon vintagers. In 1901 the observations were carried out for three weeks on 38 individuals; each was given 0.80 gr. of hydrochloride of quinine every third day in doses of 0.40 gr. in the morning and evening. In 1902, observations on 35 vintagers were made for five weeks, each receiving 0.70 gr. every third day. No attack occurred during 1901; only one during 1902, in a woman, of slight severity. The method of living was favourable to infection, as, partly from the paucity of closed accommodation and partly from the stifling heat of this time of year, the vintagers slept in the open air. On the other hand, they willingly took the quinine given to them, so that a control experiment was impossible. However, in preceding years, one-third or one-half were attacked; and a further idea of the virulence of the infection may be judged from the fact that the inhabitants quit the district from June to December, and the postal and telegraph services are stopped. Michon prefers the hydrochloride salt for the following reasons: (1) It is more readily soluble and more easily absorbed, which is especially important in malaria, where a gastric catarrh is a frequent complication; (2) it is less irritating in itself to the gastric mucous membrane than the sulphate; (3) it contained a greater proportion of quinine than the other salts, when given in equal doses; (4) it is the cheapest of the soluble salts of quinine. Ross ascertained that the hydrochloride was almost universally used in Italy in the malarious districts. Michon observed no gastric irritation, but the occurrence of headache and buzzing in the ears in 1901 led him to modify the dose from 0.80 gr. to 0.70 gr. in 1902, when no such symptoms were observed. Celli has condemned the use of quinine salts as prophylactic agents on account of these nervous symptoms; but the experience of Michon in Corsica is opposed to this objection, if it is administered in the doses indicated. The question of dosage is still open. Koch recommending 2 gr. every ten days, whereas throughout Italy and Corsica doses of 20 to 40 cgr. thrice daily are most usually employed. Michon gives 0.70 gr. every day for the following reasons: Marchiafava, Le Monacho, and de Panizzi have shown that an inadequate dose of quinine is unable to arrest the movement, and in consequence, the evolution of the parasite; that the evolution may be prevented (1) after the access of fever by destruction of the parasite between the first and second schigozonia, (2) before the access of fever, of which the first schigozonia marks the occurrence. To do this sufficiently large doses must be given to kill the parasite. The interval between the doses can only be arrived at by experiment, but certain facts are known which help in estimating the interval. Grassi observed a period of incubation of six days in one case, fourteen days in another, of experimental inoculation by an infected mosquito in man. It would appear probable from this that if sufficient quinine is given every three, or even four, days, the parasite would encounter it at some period of its evolution prior to its first schigozonia and be destroyed before the access of fever; and the observations of Michon bear out the efficiency of this dose and interval as a prophylactic measure.

(41) Intravenous Injections of Collargol.

H. Schmidt, who writes from Credé's clinic in Dresden, deals with the action of intravenous injections of colloidal silver in the treatment of septic conditions. (*Deut. med. Woch.*, April 9th, 1903). The idea emanated from the wish to introduce some soluble form of silver or its salts, in order to allow its disinfecting action to take place internally. This internal disinfection proved to be possible in two ways; an ointment containing colloidal silver, otherwise called collargol, when rubbed into the skin has the effect of allowing the silver to pass into the tissues, under ordinary circumstances. Usually, a 15 per cent. ointment is employed, but the method is ineffective in cases when the skin is anaemic, either from advanced age or cachexia, or when it is too thin or leathery. The second way is by intravenous injection, and since this procedure has been shown to be absolutely free from danger, the rapidity and certainty of action render it preferable to the former. In recent times, the preparation has been improved and the new collargol appears in the form of shining particles, which are soluble in distilled water, in the proportion of 1 in 20. It is stable and does not decompose by keeping for a long time in either cold or warm temperatures. The solution is much less sensitive to chemical influences than the old preparation was, and even in great dilution it exercises an inhibitory action toward the growth of bacteria. Schmidt advises the injection to be carried out as follows: the syringe should have a capacity of 5 c.cm. or 10 c.cm. (approximately 85 to 170 minims), and should be boiled and then rinsed in sterile water. The needle is introduced horizontally into the vein, which is compressed by an assistant, and as a proof that it lies in the lumen, blood will issue from it. Before introducing the needle the arm should be constricted by a rubber tube until the veins protrude. The skin at the site chosen for injection is thoroughly disinfected. When the operator has satisfied himself that the needle is in the vein he adjusts the syringe to the needle and withdraws the piston (the syringe being nearly, but not quite filled) a little, and thus if there is any air in the needle or syringe, this will rise to the top and will not be injected. The needle is then slightly withdrawn, so that the coat of the vein is not damaged, and, lastly, after releasing the constriction the fluid is very slowly emptied. The new collargol can be used in either 2 per cent. or 5 per cent. solutions, and thus in severe cases a large quantity of silver can be introduced at a time. The injections have to be repeated in bad cases in twelve or twenty-four hours, as the silver rapidly passes out of the system. The doses which he has employed vary between 0.05 gram and 0.1 gram (about 0.77 gr. and 1.54 gr.). Schmidt relates the histories of 24 patients treated in this way with good results, and, in conclusion, briefly discusses the theories expounded of the method of action.

PATHOLOGY.

(42) Protective Bodies.

Ainley Walker (*Centralbl. f. Bakt.*, January 26th, 1903) publishes researches, relative more particularly to the origin and nature of the complement of immune sera. It is known that the complement rapidly disappears from shed blood or serum; this disappearance was studied in the case of rabbits immunized by typhoid cultures. The amount varied continuously from hour to hour, and underwent a steady increase during the first few hours if the serum was left in contact with the clot, but subsequently showed progressive diminution. Further conclusions drawn from experiment were that complement may be obtained from fresh blood clot as well as from fresh serum, and is formed by leucocytes, and becomes liberated into the plasma (or the serum by their disintegration); the immune body is also probably formed by leucocytes. The complement is not so special to the species but that a deficiency may be made good by means of complement from animals of other species. Deficiency of complement may be artificially produced by giving an excess of immune serum. On the question of the relation of bacterial virulence to protective substances, experiments consisting of passing a particular variety of typhoid bacillus through fresh (bacteriolytic) normal rabbits' blood for twenty to thirty passages showed that the virulence of the organism was increased thereby, and more rapidly than by simple cultivation in inactive immune serum. The natural bactericidal power of normal serum is removed by the addition of excess of immune body (consumption of the complement), and it therefore follows that it is of the same nature and dependent on the same substances as the acquired variety.

AN EPITOME

OF

CURRENT MEDICAL LITERATURE.

MEDICINE.

(43) The Mental Symptoms of Heart Disease.

T. D. GREENLEES (*Caledonian Med. Journ.*, April, 1903) has investigated and compared the mental symptoms and pathological appearances of a large number of cases that have died with cardiac lesions. He finds that in mitral disease the patients are usually excitable and impulsive; in some delusions and conduct pertain to the religious, while others believe that their food is being poisoned, or that they are being persecuted. Actual depression seldom exists, but the patient tends to become suspicious of his surroundings and friends. In aortic valvular disease the excitement at times amounts to violence. In cases of stenosis dementia rapidly supervenes, and is attributed by the author to defective cerebral blood supply. A period of depression is common between the excited and demented stages. Delusions of persecution, food being poisoned, and referred to the diseased organ, as well as hallucinations of any or all of the senses, especially of sight and hearing, and occasionally of taste, may exist. When both mitral and aortic valves are diseased the symptoms are those of great restlessness and violence, lapsing soon into dementia. The early stage may present delusions of persecution and poisoning of food; towards the termination of the disease the patient becomes dirty and depraved in his habits. Cardiac hypertrophy is generally associated with delusions of great physical strength, which shortly ends in simple, complacent, and childish dementia. In dilatation of the organ the patient was noted to be emotional, had a suspicious expression, and was dirty in his habits. The author agrees that the presence of atheroma in general paralysis, of which he distinguishes a syphilitic and a non-syphilitic form, shortens the course of the disease, but he is unable to attribute any definite mental symptom to it. He confirms Mickle's view that lesions affecting the right side of the heart give rise to symptoms of restlessness and excitement, and those of the left side to suspiciousness followed by depression and dementia. He points out that these mental phenomena are merely exaggerations of the frequently-observed mental symptoms of sane persons suffering from heart disease. Both are due either to infective blood supply to the brain or to the accumulation of impure blood within the cerebrum, hence the beneficial effect of digitalis as a sedative and hypnotic in asylum practice. Finally, the author holds that there are certain mental symptoms which are characteristic of cardiac disease, and that these symptoms are the result of the heart lesion. He maintains that an "insanity of heart disease" should be recognized as a definite group, comparable to that from phthisis or from ovarian disorders.

(44) Differences in the Pupil Reactions among Tabetics.

A. ROCHON-DUVIGNEAUD AND J. HEITZ (*Arch. Gén. de Méd.*, July 7th, 1903) have examined the eyes, with special reference to the pupil reactions, of 77 cases of tabes dorsalis, representing the most diverse forms and varying stages of the disease. The majority of the cases were hospital patients under the care of Déjerine, whose diagnosis was accepted. The examination was directed to (1) form of pupil, (2) size, (3) reaction to light, (4) reaction to convergence, (5) external muscles, (6) changes in fundus and field of vision, (7) action of atropine and pilocarpin in extreme myosis or mydriasis. The examination employed for light reflex was a slight modification of Cestan and Dupuy-Dutemps's method; the eye was placed at rest in a dark room for several minutes, and the light of a gas jet, suddenly raised, was thrown into the eye by means of the reflexion of a concave ophthalmoscopic mirror. The consensual reflex was excluded by covering the opposite eye. Forty-eight cases only were examined in the dark room; of these, 23 had lost all reaction, 2 were practically normal, and 15 showed slight contraction to light and slight dilatation to darkness. Of the two normal eyes, one occurred in a tabetic in the stage of inco-ordination, the other in a more advanced stage. Of the 15 cases of incomplete reaction, 2 showed marked differences in the two eyes; and 3 showed a rapid contraction to light, but a slow and imperfect dilatation in the dark. Twenty-nine other cases were examined by the ordinary methods; 4 only of these presented an incomplete Argyll-Robertson sign, and the authors ascribe this low percentage as compared with the cases examined in the dark room to the diminished sensibility of the ordinary methods. Of these 4 cases, 2 presented normal reactions; the third, when examined in May, 1902, showed a normal reaction, but in January, 1903, had lost all reaction; the fourth, though accustomed to lose light reflex only during a gastric crisis, lost it permanently after the fourth attack. From the study of these cases the authors assert that there is no relation between the condition of the light reflex and the stage of the disease. The pupil reaction to convergence is preferred to that of accommodation, because (1) the act of convergence can be seen, whereas the act of accommodation must always be objective; (2) the act of convergence is possible in the blind; (3) paralysis of convergence is much rarer than that of accommodation: it occurred in 3 cases only out of 77, and in these the effort of convergence, though ineffectual, produced clearly a pupil contraction. Of 77 cases examined, the pupil failed to react in 23 on both sides and 11 on one side. It is interesting to note that this complicated Argyll-Robertson sign was not present in any of the 21 cases in which the light reflex remained in a modified form. Referring to the size of the pupil in 77 cases, 31 were myotic in both eyes, 7 in one only. In 3 only of these was contraction on converging modified or incomplete. In 3 cases optic atrophy was advanced and in 3 others in the initial stage. Ophthalmoplegia externa was rare. More than half the cases of incomplete loss of light reflex belong to this group. Mydriasis occurred in 17 cases on both sides, in 9 cases on one side. These cases may be divided into three groups: (1) In which blindness was present, occurring in 7 bilateral and 2 unilateral cases. In all of these contraction on convergence was absent or diminished. It was obviously impossible to test the accommodation contraction. (2) In which an ophthalmoplegia interna was associated: it occurred twelve times. (3) In which neither of the preceding were present: it occurred five times. The pupil was normal in size thirteen times bilaterally, four times unilaterally. The Argyll Robertson sign was present in all. In 6 other cases, 3 bilaterally and 3 unilaterally, convergence contraction was absent and the pupil was irregular: but in 3 of these bilateral blindness was present and in 1 a paralysis of accommodation. The authors further observed a marked dilatation of a normal sized pupil during a gastric crisis: and they suggest that the long duration of the painful stimulus will produce this reflex notwithstanding the fact that Déjerine has shown that a short painful stimulus produces no change. In 7 cases of myosis atropine produced an incomplete dilatation, which persisted for ten days; in 4 cases of mydriasis, pilocarpin produced an incomplete contraction. It may be deduced that the muscles of the iris, though long immobile, are not completely atrophied. The following conclusions are drawn from these 77 cases: - (1) In 30 per cent. of cases examined by this special method in the dark chamber the Argyll-Robertson sign is incomplete; (2) 30 per cent. of cases present bilaterally, 13 per cent. unilaterally, a complicated Argyll-Robertson sign, namely, a diminution or abolition of reflex contraction upon convergence; (3) myosis is regularly present when the Argyll-Robertson sign is pure; optic atrophy rarely accompanies myosis; ophthalmoplegia externa or interna is even more rare; (4) mydriasis is present only when all light is lost, and often reflex contraction on convergence is diminished or absent; (5) when mydriasis accompanies a normal fundus, a total ophthalmoplegia interna is usually present; (6) mydriasis is most often present in those cases where the pupil reaction to accommodation and convergence is absent, the power of accommodation being preserved. The cause of this variation is unknown to the authors.

(45) Infectious Liver Simulating Abscess.

PATEL (*Lyon Méd.*, June 28th, 1903) records 2 cases of simple hepatic congestion of infectious origin, which closely simulated abscess of the liver. A child 8 years of age after complaining for some weeks of pains in the right side, suffered from pyrexia and rigors and was found to have an enlarged tender liver. On opening the abdominal cavity, the liver was found to be of unequal consistency, some parts of the surface being very soft. Multiple

punctures were made through the abdominal wound and between the ribs behind and gave issue to a mixture of blood and bile on aspiration. Although no pus was found, the child improved rapidly and made a good recovery. In the second case a man, 40 years old, after suffering from colic, diarrhoea, and feverish attacks for some weeks, entered hospital with a liver much enlarged, so soft as to be almost fluctuating, and tender on deep pressure. Jaboulay, under whose care the patient was, diagnosed infectious liver as probable owing to the general hypertrophy, the comparative slightness of tenderness, and some remissions shown by the temperature chart. He made a lumbar incision and aspirated blood through several punctures. The general condition improved immediately, the rigors gradually disappeared, and the patient left hospital practically cured within three weeks. In both cases there was a history of previous intestinal disturbance. The child had drunk water containing the bacillus coli communis, and the man's drinking water came from a suspected source. The explanation of the occurrence of general hyperaemia rather than purulent deposit is to be sought for in special resistance of the cells of the liver, or more probably in an attenuated virulence of the toxic products. The effect of multiple puncture in the recorded cases has been most successful, but in the event of the failure of this method cholecystostomy would secure a maximum of drainage, and should certainly be tried.

SURGERY.

(46) Retroduodenal Choledochotomy.

Berg (*Zentralbl. f. Chir.*, No. 27, 1903) points out that McBurney's method of removing an impacted calculus from the retroduodenal portion of the ductus communis through an incision made into the lumen of the duodenum is difficult and not free from danger. It is not always possible to find the duodenal papilla of the duct, and, beyond the slight risk of primary peritoneal infection, there is the serious and more likely one of the formation of an external duodenal fistula. The author describes the different steps of an operation which he has practised to his full satisfaction on the cadaver. This consists in making a vertical incision through the posterior parietal peritoneum on the right side of the descending portion of the duodenum, so as to mobilize this portion of the intestine, and to render it capable of being moved over towards the left side of the abdomen, and also of being rotated in the same direction. By this rotation the posterior surface of the intestine, together with the retroduodenal and papillary portions of the ductus communis may be brought forward and freely exposed to view. The duct, it is stated, can be readily recognized when thus exposed, and whilst retained between the surgeon's fingers be incised for the release of any impacted body.

(47) Tracheotomy in Tracheo-bronchial Syphilis.

Conner (*Amer. Journ. Med. Sci.*, July, 1903), in concluding an analysis of 128 collected cases, together with a recent case under his own care, of syphilis of the trachea and bronchi, states that in most instances of this affection tracheotomy is to be regarded as a futile and irrational method of treatment. In tracheo-bronchial syphilis it can serve only one of two purposes: first, to relieve urgent dyspnoea by admitting air into the trachea below the seat of obstruction; and, secondly, to aid in the mechanical treatment of stricture by the introduction of bougies or cannulas. Concerning the first use, it is evident that this must be restricted to lesions of the upper end of the trachea. As a means of furnishing an entrance for instruments for the dilatation of strictures its value is somewhat uncertain. It may be doubted, the author thinks, whether a stricture situated at the lower end of the trachea, or in a bronchus, can be approached more easily through a tracheotomy wound than through the larynx. In either case the operation will be found a difficult one, and demands the skill of an expert laryngologist. The latter method, it is held, has the certain advantage over tracheotomy in the diminished probability of a complicating inhalation pneumonia.

(48) Prevention of Secondary Echinococcosis in the Operative Treatment of Hydatid Cysts of the Liver.

Quénu (*Bull. et Mém. de la Soc. de Chir. de Paris*, No. 25, 1903), convinced by repeated clinical observation, and by the recorded results of experiments on animals of the possibility of secondary inoculation of the peritoneum by the discharged contents of a hydatid cyst of the liver, holds that it is necessary in the surgical treatment of such growths to take some steps to prevent this risk of auto-infection. Accepting the conclusion of Devé that the only prophylactic means against secondary post-operative echinococcosis would consist in killing the germs in the cyst by an injection of some tenicide solution, Quénu has considered the problem of introducing into the hydatid cavity a poisonous solution in sufficient quantity and of such strength as to destroy all the germs, whether free in the fluid contents of the cyst or attached to the cyst wall, without setting up such irritation as might interfere with good and speedy healing. Three cases are reported of removal of hydatid cyst of the liver, in each of which a preliminary injection of a 1 per cent. solution of formalin was made. The three patients recovered rapidly after removal of the cysts, in spite of some unfavourable conditions in two of these cases. The prolonged contact of the solution of formalin with the inner membrane of the cyst did not prevent in any instance complete and prompt healing, and an examination of the contents of the cyst in each case showed that their infective properties had been destroyed by the contact of the tenicide solution.

MIDWIFERY AND DISEASES OF WOMEN.

(49) Primary Carcinoma of the Vulva.

Peterson (*Amer. Journ. Obstet.*, June, 1903) reports 4 cases of this rare disease in his own practice. The youngest patient was 43 and the oldest 84. The situation of the growth was practically the same in three of the cases—namely, a little below one side of the clitoris, which was only involved in one case. In the fourth patient the cancer began on the left labium majus, swept round the perineum like a crescent, and had advanced on to the right labium, when it was removed. In 3 of the cases extreme pruritus was the first symptom of importance. Pain was very marked in the subject where the perineum was involved, the affected parts being much exposed to irritation. In that case, though the growth had existed for over seventeen months, and was extensive, the inguinal glands (which were removed and examined) were free from infection. In another case, where the clitoris was involved very speedily, the glands soon became enlarged, and the cancer recurred in them after radical extirpation of the growth. Complete removal of the labia majora and minora and the clitoris are necessary. The incisions must be elliptical and start well above the base of the clitoris, meeting halfway between the fourchette and the anus. A strip of mucosa must be left around the meatus when that orifice is not involved in the disease. The haemorrhage is free, but easily controlled. Peterson urges the cauterization of the ulcerated surfaces before the incisions into the adjacent healthy tissues are made. The parts are easily brought together by interrupted sutures. The disease is very malignant. In Peterson's cases one was only operated upon a few weeks before his report was read; one was lost sight of after discharge from hospital, and, being a bad case, recurrence seems most probable; one died a year after operation, refusing operative measures a second time for local recurrence, whilst the remaining case required a second operation within five months and died three months later.

(50) Metastasis of Melanotic Sarcoma of Ovary.

Amann (*Zentralbl. f. Gynäk.*, No. 28, 1903) follows up a case of melanosarcoma of the ovary; he had exhibited the tumour shortly after its removal, and the patient survived the ovariotomy for about a year and a-half, ultimately dying of general diffusion of the new growth. Metastases were detected in the flat bones of the cranium, in the petrous portion of the right temporal bone, the sphenoid, the inferior maxilla, the left clavicle and scapula, the manubrium of the sternum, and five ribs, all on the right side. In the liver were masses as big as potatoes; deposits were also found in the gall bladder, the iliac, lumbar, and mediastinal lymphatic glands, and, lastly, in the left optic, third, fourth, and sixth nerves. The metastatic deposits clearly proceeded along the blood vessels and so reached the marrow of the bones. In a discussion on this case it was suggested that the primary seat of the new growth might not have been in the ovary; but the patient survived the ovariotomy for eighteen months, whilst had metastases existed when the operation was performed, the fatal result would have occurred much earlier. Gossmann

related a case of enucleation of a small melanotic sarcoma of the iris; within a year and a-half general metastasis occurred.

(51) Metritis Dissecans.

PILKANOFF (*Rousk. Vratch*, No. 45, 1902) reports a case of circumscribed gangrene of the uterus where the slough was retained for over a month. Eclampsia occurred during labour, the forceps were applied and the perineum and sphincter ani were lacerated. High temperature occurred during the puerperium and it oscillated between 107° and 103° until a large piece of slough was discharged on the thirty-first day. Then all feverish symptoms disappeared and the patient recovered. The slough was remarkable for its size. It included the whole thickness of the uterine wall, the serous coat being covered with false membrane. Anatomically it consisted of a piece out of the fundus over 3¼ in. broad with part of the anterior wall nearly 5 in. long, and a corresponding strip of the posterior over 5 in. in length. Thus the remarkable size of the fragment, especially in its vertical measurement, shows that, as Garrigues has already detected in other cases of metritis dissecans or gangrene of the uterus, involution was arrested. The tissues of the slough contained the elements usually detected in perinecrotic inflammatory reaction. The streptococcus, but no other microbe, was found in vascular thrombi in the slough.

(52) Vaginal Operation for Extrauterine Pregnancy.

STRASSMANN (*Zentralbl. f. Gyn.*, No. 28, 1903) records 20 operations in his own practice where extrauterine pregnancy was treated by vaginal incision. The largest fetus measured 6¼ in. The tube was removed in 18 cases, resected in 1, and simply emptied in 1. In 10 cases the incision was anterior. In 4 cases disease of the opposite appendages was detected. Strassmann notes that the indication for operation in these cases was recent haemorrhage. As compared with patients treated expectantly, those in Strassmann's series had the advantage of speedier convalescence and more complete recovery, whilst pregnancy, presumably normal, occurred in one quarter of his patients. As contrasted with subjects where the affected parts are removed through an abdominal incision, his cases suffered from no indication of shock, whilst they did not go about with a ventral cicatrix liable to hernia. Strassmann admits that abdominal section is advisable when diagnosis is uncertain, and when a tumour or other complication is present.

(53) Rupture of Pyosalpinx during Palpation.

LEGUEU (*Comptes Rendus de la Soc. d'Obstét., de Gyn., et de Péd. de Paris*, May, 1903) reports two cases of pyosalpinx where rupture occurred when he was making a pelvic exploration. In both these there was the usual history of local inflammation. In the first case the uterus was pushed considerably forwards, and as Legueu was attempting to define the fundus, he noticed that the pelvic swelling yielded with a sensation of cracking. The patient felt pain. An operation was performed an hour and a-half later, the pelvis was not raised lest pus should trickle down over the superior parts of the peritoneal cavity. The left tube was found dilated and ruptured; about 200 grams of pus had escaped from it into the peritoneal cavity. It was removed with its ovary and the opposite appendages, which were suppurating. Mikulicz drainage was adopted in Douglas's pouch, replaced by a tube on the third day. The patient recovered. In the second case a characteristic tender cystic tumour occupied the left fornix and Douglas's pouch; there was a history of gonorrhoea. During bimanual palpation Legueu distinctly felt the tumour collapsing, as did the patient, who noticed very little pain at the time. But ten minutes later intense pain occurred, with bilious vomiting, very rapid pulse, and faintness. Within one hour after the operation the abdomen was opened without any elevation of the pelvis. A quantity of brown pus was found free in the peritoneal cavity mixed with small clots. This was cleared out, compresses applied to the intestine, and the pelvis elevated. The ruptured pyosalpinx developed from the left tube was very friable, detachment from adhesions proved difficult; it was removed with its fellow, a large pyosalpinx of the right tube which adhered strongly to intestine. Much gauze drainage was employed and operation proved lengthy. The patient did well, the gauze was removed on the fourth day and replaced by a tube, which was taken out twenty-four hours later. The patient soon recovered. There can be no doubt that immediate operation is demanded when a pelvic swelling is ruptured during palpation. Serous collections of fluid are sometimes burst under the same circumstances. Legueu once took an accident of this kind for a pyosalpinx and operated, but found that the fluid had developed in the peritoneum as the result of perimetritis and salpingitis. The fluid consisted of pure serum. Legueu also relates a case where he opened an abscess connected with the vermiform appendix. A few weeks later another abscess developed in its site, in palpating it he felt it give way. In the course of the succeeding night the pus was passed at stool; the abscess cavity, which of course communicated with intestine, was afterwards incised with the best results.

THERAPEUTICS.

(54) Thigenol.

IN spite of the opinion expressed by dermatologists of great repute that sulphur and its preparations are of no use in the treatment of skin diseases, recent workers have found some of the preparations of value, such as ichthyol. The chief disadvantage, however, of ichthyol lies in its disagreeable odour, and a second in the fact that it stains linen. E. Saalfeld (*Therap. Monatsh.*, April, 1903) reports on a substitution product in the place of this compound. Thigenol, which is a sodium combination of a sulphuric oil, and which contains 10 per cent. of organically bound sulphur, exists in the form of a concentrated solution, of dark brown colour and syrupy thickness, and possesses practically no smell or taste. It dries quickly on the skin, forming a non-adhesive covering, which is easily removed by water; it does not spoil linen, but the stain can be fully washed out. It is much less expensive than ichthyol. It acts by contracting the vessels, and thus renders the part anaemic, lessens inflammatory changes, hastens absorption, and dries up weeping surfaces. Saalfeld has employed it in 124 cases, and says that it is chiefly useful in eczema, for which he finds a 5 per cent. ointment or paste of much use. This strength, however, appeared to be somewhat irritating in some cases, but only exceptionally sensitive skins. He tells of a child of 1½ year, who was suffering from a papular eczema with some weeping portions and some desquamating portions. After three months' treatment with all sorts of remedies but little improvement was attained, and he then tried a ½ per cent. ointment of thigenol, which he was able to increase up to 1 per cent. after a short time; it succeeded in clearing up the trouble in a very short time. The same ointment was used by the mother of this patient for a 4 months old baby, also with good result. It answered well also in eczema lichenoides (lichen chronicus simplex), for which he uses a 10 or 15 per cent. paste. In seborrhoea, even when used in a concentrated form, it never irritates the skin, and he speaks highly of its action in these cases. Thigenol proved itself, as he expected, of value in rosacea, and he recommends a lotion for this condition—thigenol 5.0 to 10 grams dissolved in distilled water and spirit of each 12.5 grams. For more sensitive skins he finds a 10 or 15 per cent. ointment less irritating. He has tried it for sycosis vulgaris, and although he says that it does not act as a specific it does good, and one should bear this in mind for obstinate cases. It proved of no use in psoriasis, and although it is said to be an antiscabiotic, he did not find much value from its use while he was employing a 30 per cent. ointment. Later, however, he tried pure thigenol and obtained rapid results. Some cases did well with 70 per cent. thigenol, 20 per cent. spirit, and 10 per cent. water. In chronic phlebitis he found it of use in 2 cases. Lastly, he states that a 10 per cent. ointment did good service in impetigo contagiosa.

(55) The Serum Treatment of Acute and Chronic Joint Rheumatism.

MENZER (*Zeit. f. klin. Med.*, Bd. xlvii, p. 109), relying on the theory which has had much support of late, that joint rheumatism is caused by a streptococcus infection from the upper air passages, has made some clinical researches on the treatment of the affection with antistreptococcus serum. He isolated streptococci from the tonsils of patients in an acute stage of the disease, often in pure culture, and the immunization of animals was carried out by culture directly derived from these. The serum was administered to 30 patients. Twenty c.cm. of normal animal serum produced no reaction in these patients, nor had Marmorek's serum any effect in this direction. With

similar doses of the serum prepared as described above there occurred swelling, redness, and heat in the chronically affected joints from four to six hours after injection; such reaction did not occur in the case of healthy subjects or in gonorrhoeal rheumatism. The temperature chart of case is given which did not react to Marmorek's serum, but on injection with this described serum the temperature rose to 37.8°, with redness and swelling of the affected knee. With continuance of the treatment the stiffness and swelling disappeared, and ultimately complete recovery took place. Three other cases of chronic disease showed substantial improvement; this he ascribes to the activity of the serum in raising the resistance to the infection. The injections were followed by but slight constitutional disturbance, headache, and perspiration. In some cases there were skin eruptions, erythema, and urticaria, but these disappeared in from one to two days. With regard to the acute cases the serum appeared to hasten recovery. Relapses also appeared to be less frequent than in cases treated with salicylates, and endocarditis also seemed to be favourably influenced.

(56) The Paraganglin Treatment of Gastro-intestinal Atony.

Baccarani and Plessi (*Rif. Med.*, April 8th, 1903) describe the results of their treatment of atonic gastro-intestinal dyspepsia by an extract of the medullary substance of the suprarenal capsule. The idea of using this extract occurred to Vassale as a result of his experiments on the removal of the medullary substance of the suprarenal bodies. He found that when the medullary substance was removed, the cortex being left, death occurred very quickly with the same symptoms as after the removal of the whole of the suprarenal bodies, but when small parts of the medullary substance were left death occurred in three or four weeks with anorexia, asthenia, and great wasting. The dose of his extract (paraganglin Vassale) is 30 to 60 minims a day, best given in six or eight separate doses, so as to maintain a continuous action on the muscle fibres. In only two cases was its administration attended by unpleasant consequences. In one case there was sweating, a sense of heat all over the body, restlessness, and insomnia. In the other—a case of gastric carcinoma—there was very severe pain in the distended stomach, whose contour was distinctly marked through the thin abdominal walls. The treatment was applied in 14 cases of gastro-intestinal atony with well-marked symptoms—general weakness, sense of weight after food, constipation, headache, insomnia, etc. The result of the treatment was amelioration in every case, and sometimes a well-marked improvement, remaining after the remedy was discontinued. It was also shown that the motility of the stomach was increased. The cardio-vascular pressure was increased in every case, especially in the first few hours of treatment, the result being most marked when the pressure was low to begin with. The frequency of the pulse was usually a little but not much increased. The amount of urine was distinctly increased, and it contained an increased amount of phosphoric acid and of organic nitrogen. The inorganic nitrogen in the urine and the nitrogen excreted in the faeces were diminished. From these observations the authors conclude that the extract of the medullary substance of the suprarenal capsule, besides helping to maintain cardio-vascular tone, acts on the general metabolism of the body, promoting more complete oxidation, and they advance the hypothesis that atonic gastro-intestinal dyspepsia may be due simply to functional insufficiency of the suprarenal capsule.

PATHOLOGY.

(57) The Physiological and Pathological Action of Becquerel Rays.

E. S. London has been working with Becquerel or radium rays, and reports some new facts briefly in the *Berl. klin. Woch.* of June 8th, 1903. He carried out all his experiments with 30 mg. of radium bromide, which he enclosed in a box made of guttapercha and metal and protected with a mica cover. First, he points out that one has a very simple method at disposal which is capable of detecting the presence of any "radio-active" substance. If one rubs a stick of sealing-wax on a piece of flannel, the former is capable of attracting small pieces of thin paper; but if one passes the rubbed sealing-wax over the radium box it loses this capability. The second point with which he deals is the power of the rays to kill at a distance. He enclosed mice in shallow glass vessels covered over with zinc netting, on the lid he placed the radium box for one to three days. The control mice remained quite well, while the experimented mice died on the fourth or fifth day. The symptoms appeared on the third day, and consisted of reddening of the ears and blinking of the eyes. Then followed sleepiness, refusal of food, and general slackness of movements. On the fourth day coma set in, associated with paralysis of the extremities, chiefly the hind. The reflexes were often increased and the respiration slowed. Lastly, all the functions of the brain and cord ceased and death followed on paralysis of respiration. The chief lesions were found in the skin and subcutaneous tissue. Microscopically he found marked changes also in the cortex of the brain. Arterial blood is darkened by the rays. The third point of his paper deals with observations on blind individuals. Those persons who have a faint perception of light receive the impression of light when radium is brought close to one or other eye. This takes place even in bright light. Those who are so completely blind that they have never perceived the sensation of lightning do not respond to radium. Blind persons who have the capability of distinguishing between light and shadow, but who cannot perceive the form of objects when placed in a dark room in which there is a screen illuminated with radium, can see the outlines of objects either projected on the screen or interposed in front of it. He thinks that one will be able to teach blind persons, who have some perception of light, to write and draw by this means, and has worked out a method. The fourth point shows that Becquerel rays can be perceived normally when the eyes are covered, even by several strata of opaque objects. The position of the radium can be localized, and its movements determined with covered eyes, and when the box is held behind the head. The last point states that one can carry out microscopical examinations in a dark room, if the object field be illuminated by a good screen.

(58) Surra.

At a meeting of the Manila Medical Society, held at the Government Laboratory on April 7th, W. E. Musgrave presented a preliminary report on trypanosomiasis (surra) in horses in the Philippine islands (*Boston Med. and Surg. Journ.*, June 25th). Recent experiments show that surra can be transmitted by direct inoculation of the blood from a diseased animal, and by the bite of a horse fly which had previously bitten a surra horse. To determine whether food could convey the disease, grass and hay was smeared with surra blood and discharges, and fed to healthy animals without effect, none contracting the disease. A different result was obtained, however, after lesions were produced in the horses' mouths, and they were then fed on grass infected with the surra micro-organisms, as the disease is frequently acquired under such circumstances. Sore-mouthed horses are thus liable to contract the disease from infected fodder, and it may possibly be that that the mastication of rough, coarse *sacate* grass may induce minute lesions through which infection may occur. It is not probable that the surra parasite could long maintain an extra-corporeal existence on such grass, as sunlight seems soon to destroy its vitality. The biting fly, which has been found to transmit the disease, has been shown to be closely allied to the "tsetse fly" of South Africa. So far, experiments have not demonstrated an intra-corporeal existence of the surra parasite in the fly as an intermediate host. The life-history of this fly has not been worked out as yet. It is known that animals may be protected against surra infection by removing them to the hills during the rainy season, and the existence of "surra districts" is recognized. Some believe that the disease is dependent upon the use of water and grass from these districts, but animals fed on dry hay or fodder from other districts and given only pure water contract the disease while passing through the "surra district." The disease is fatal in horses, but it is said that in India camels recover from the infection if they are able to survive for three years. Opinion in the Philippines is divided with respect to the disease being indigenous. Many believe that it was introduced by some racé-horses brought in about four years ago; others think it has been in the Philippines always. As the Filipinos and Spaniards pay little attention to veterinary medicine, this point cannot be decided. So far, no treatment has been found which has any effect in curing or staying the progress of the disease, and for this reason once an animal has been shown to be infected, it should be promptly destroyed and the carcass cremated.

AN EPITOME

OF

CURRENT MEDICAL LITERATURE.

MEDICINE.

(59) Chronic Rheumatism.

At the annual meeting of the American Medical Association held in May, James J. Walsh, of New York, read a paper entitled The Passing of Chronic Rheumatism (*Boston Med. and Surg. Journ.*, May 21st, 1903). He said there were four different conditions, which were often called chronic rheumatism, but without any good reason. The most common form of pseudo-rheumatism was the relaxation of joints which occur in the ankle and which was known as flat-foot, or which followed the dislocation of joints producing tissue changes which made the patients very susceptible for all their after-life to changes in the weather. Just as there were relaxations of the ankle-joint, so could there be relaxations of other joints. A second form occurred in the so-called occupation neuroses. A third form of vague pains often attributed to rheumatism was neuritis. Persons who were exposed to the weather, and who used one set of muscles more than another, especially if there was an absorption into the system of such toxic substances as lead and alcohol, were especially prone to a neuritis in the nerves supplying the overworked muscles. Again, a certain number of cases of so-called chronic rheumatism in the United States presenting evidences of joint degeneration following acute attacks of arthritis were undoubtedly not genuinely rheumatic in character, but were of gouty nature. He said that according to recent statistics gout was only three-fourths as frequent in the States as in England. Acute gout was very difficult to differentiate from acute rheumatism. After considering briefly three forms of rheumatoid arthritis, he stated that it was easy to understand that but little space was left for the so-called chronic rheumatism. Certainly, cases of true chronic rheumatism with progressive pathological changes in joint tissues, for which no other cause except rheumatism could be found, were very rare, and he had confessed that he had never seen such a case.

(60) The Sources and Manner of Infection of Typhoid Fever.

At the annual meeting of the American Medical Association held in May, William H. Welch, of Baltimore (*Boston Med. and Surg. Journ.*, May 21st, 1903), said that there was no missing link in the chain of proof that the typhoid bacillus was the cause of typhoid fever. At present there was no positive or experimental proof that the origin of the disease could be through the respiratory tract: it could only arise from the injection of the typhoid bacillus into the alimentary canal. The bacillus was eliminated from the body through faeces and the urine, and in very rare instances it might be found in the sputum, but this was so rare as not to deserve consideration. He emphasized the importance of the knowledge of the bacillus being found in the urine of typhoid patients, even for a long time after convalescence had become established. This fact was a very important one from a prophylactic consideration. Another important factor in the causation of typhoid fever was the dosage. The source of the infection was the typhoid patient. If one could prevent the typhoid bacillus from gaining an exit from the typhoid patient, he believed that typhoid could be made to disappear from the world. He referred to the experimental work of Reed, Vaughan, Shakespeare, and others, in which it was shown that the majority of the cases were not attributable to drinking water, but to a direct transmission from one typhoid fever patient to another; in the cases of the soldiers, the disease was transmitted by things about the tents—articles of bedding, etc.—and they brought out the agency of flies and other insects in the transportation of the disease. The bacillus could be transmitted in various ways, but he believed that in many communities the solution of the prevention was likely to be found in the powdered filtration or sand filtration. He thought they were far behind Continental countries in this respect. Typhoid fever was occasionally traced through the ingestion of vegetables or raw foods, also through the dust in the air. He also took up the consideration of the contamination of milk occurring chiefly through the air or through the water used in washing out the cans. Milk, he said, was an excellent medium for the growth of the bacillus. Milk had been the cause of many epidemics.

(61) Post-vaccinal Anaemia.

Bellotti (*Gaz. degli Osped.*, May 10th, 1903) says that during the last fourteen years he has had occasion to observe not a few cases of more or less persistent anaemia due to vaccination. Other diseases, for example tubercle or syphilis, were carefully excluded. The author draws attention to these cases not with any idea of discrediting vaccination, of which he is an ardent supporter, but because as far as he is able to discover they are not generally known. He speaks entirely of early vaccination, that is, in the first few months or years of life. Curiously enough, this anaemia seems to attack by preference those children who are particularly rosy and healthy in appearance. They become peevish, lose appetite and colour, and are readily subject to slight fever after food if taken in abundance. They develop cardiac attacks such as occur in ordinary anaemia, do not like to be touched, and are tender in the bones. The spleen and liver do not become enlarged. Both sexes are affected. The anaemia lasts from six months to two years, and in some rare cases up to three or four years. It seems to have no relation to the time of the year in which the vaccination is performed. The author has observed no case in children over 10 years, but most of his vaccination practice has been in children under that age. As to the cause, it probably lies in some haemolytic action upon the blood corpuscles produced during the process of immunization, and due to the attenuated specific germs in the glycerinated calf lymph. No detailed examination of the blood was possible.

SURGERY.

(62) Two Distinct Cancers on the Same Breast.

H. Morestin (*Arch. Gén. de Méd.*, April 21st, 1903) describes an unequivocal case of an epithelioma of the nipple and a glandular carcinoma occurring simultaneously in the same mamma. The patient was 56, had borne five children, which she had suckled herself. A blow from a piece of wood had been experienced several months previous to the onset of a left-sided intercostal neuralgia which alone caused her to seek treatment. The exacerbations of pain occurred principally during the night and were almost intolerable. She was unaware of any mammary trouble. The left nipple was retracted but could be easily pulled forward when an ulcerated surface, the size of the little finger-nail, was exposed. The base was not indurated, and the surrounding tissue was not thickened; the skin adjacent to the ulcer was healthy. The depth of the mamma revealed no tumour formation after careful and repeated examinations; and the axillary glands were not enlarged. Pressure over the ulcerated surface was painless, but when exerted over the perforating branch of the left fourth intercostal nerve immediately excited a severe paroxysm. No discharge from the nipple was observed at any time. The diagnosis of epithelioma was made; the breast was removed, and the axillary glands dissected out, and, to relieve the intercostal neuralgia 3 cm. of the fourth intercostal nerve were resected. On cutting into the breast at the close of the operation a nodule of ordinary scirrhus, the size of a small nut, was found. It was situated 2½ cm. from the ulcerated surface, and separated from it by apparently healthy tissue. Histological examination was made by Brault, who reported that the superficial ulceration was a commencing squamous epithelioma, and that the mass in the breast was a glandular carcinoma. The majority of authors have adopted the opinion of Bard that, to establish the separate origin of two cancerous growths in the same body, they should present different histological characters; but the author points out that if two malignant tumours of different structure can develop at the same time in the same organism, there is no *a priori* reason why two tumours of similar structure should not also develop independently of each other. The occurrence of two tumours of different origin in this case is beyond doubt; but it is difficult to show any pathological tie between the two tumour formations. The glandular tumour was separated from the epithelioma by healthy tissue, and gave rise to no discharge, whereas the epithelioma showed no surrounding inflammatory reaction which could explain any alteration in the canal system, and so prepare the glandular epithelioma to undergo a malignant transformation.

(63) Does Ligature of the Vas Deferens cause Atrophy of the Testes?

Different answers have been given to this question, and chiefly in the affirmative. Spangaro (*Lo Sperimentale*, An. 57, F. 3) has examined the subject, and with certain reservations is inclined to believe that ligature does not cause atrophic changes in the testes. The changes that are seen are in his view chiefly senile in nature, and bear no causal relation to the operation. He has had the opportunity of thoroughly examining (microscopically as well as macroscopically) the testes of three men (aged 70, 64, and 69) who had previously had their vas deferens ligatured (twelve days, six months, and two and a-half years previously, respectively). In the first case, the calibre of the seminiferous canals was reduced and the parietes thickened; spermatogenesis was well preserved. Herniae and diverticula of the seminiferous canals were present. There was a slight degree of arteriosclerosis and a few spermatozoa in the rete testis. In the second case, the changes were much the same, but there was extensive increase in interstitial cells and marked dilatation of the whole lymphatic system — numerous spermatozoa in the rete, epididymis, and vas deferens. The left testis in this case was much atrophied, and showed a marked degree of arteriosclerosis. The third case showed much the same changes as the first. As far as three cases can teach anything, the author believes that they tend to show that ligature of the vas deferens does not cause destructive changes in the testicle.

(64) Operative Treatment of Abnormalities of the External Ear.

Morestin (*Rev. d'Orthop.*, No. 4, 1903) in a paper on cosmetic replacement and folding of the auricle, points out that abnormalities of this structure, although they may not interfere with the function of hearing, produce very unsightly and annoying disfigurement. The most frequent abnormality of the external ear, and that most amenable to surgical treatment, is transverse deviation or undue prominence of the auricle. This condition is often associated with irregularities in both the size and the form of the auricle. In simple abnormality of position reposition by removal of skin will suffice, whilst in a complicated condition of displacement and malformation a plastic operation and folding of the cartilage are indicated. In unsightly prominence of the auricle the application of a bandage soon after birth and during infancy may do some good in mild cases, but as a rule little reliance can be placed on a method of treatment so slow in its action and of such restricted efficacy. Every abnormality in the direction of the auricle, whether simple or associated with faults of configuration, may be justifiably submitted to operative treatment, with the exception of those cases in which the malformation is a very complicated one, and associated with other and more serious disturbances of development, and in which faulty general health is indicated by eruptions on the scalp and about the ear. An operation when not contraindicated should be performed as soon as possible after the child has been "weaned." In reposition of a prominent external ear the author removes an elliptical portion of skin from the mastoid region just behind the auricle, and also from the back of the cartilage itself, and brings the margins of the wound together by sutures. If the external ear be abnormally large he would also excise a portion of the cartilage of the pinna. In treating a misshaped auricle he would fold up the cartilage here and there, so as to restore its proper form and retain the folded portions in place by buried sutures.

MIDWIFERY AND DISEASES OF WOMEN.

(65) Use of the Cystoscope in Tuberculous Disease of the Female Urinary System.

W. Stoeckel (*Beit. zur Klinik der Tuberk.*, Band i, Heft 2) deals with the diagnosis and treatment of tuberculous disease of the bladder, ureters, and kidneys in females. Disease of the genital organs reacts so frequently on the urinary system that primary disease of the latter is often overlooked. The patient herself, when suffering from pain on passing water and frequency of micturition, remembers that such symptoms have often accompanied the menstrual periods, and goes to a gynaecologist for treatment. Some abnormality of the genital organs may be found, and treatment is directed to this, in the belief that the bladder symptoms are secondary. Should the symptoms still continue, the gynaecological treatment is carried out with greater vigour, different pessaries are tried, small myomata are operated upon, and so on. In acute tuberculous inflammation there is indeed no difficulty in locating the lesion, but tuberculous disease of the urinary organs is often of insidious origin and chronic course. Stoeckel makes it a rule to consider every urinary symptom as depending on disease of the urinary organs until these organs are proved to be normal. Two cases are given showing the importance of his rule. In one patient a retroflexed uterus was found, and the history corresponded exactly to this abnormality. A cystoscopic examination of the bladder was, however, made, because the urine had at one time been turbid, and the patient had been scrofulous as a child. The bladder wall was found to be studded with tubercles. The second case gave a history of menorrhagia, and a small myoma was found in the uterus, which was retroflexed. For a year and a-half, also, she had suffered from bladder symptoms, and on examination the urine was turbid and contained albumen. The cystoscope showed that the opening of the right ureter was of crater-like shape, with thick, irregularly indented walls, and that the action of the ureter was sluggish. Catheterization of the ureter showed the passage of urine containing pus. Nephrectomy was performed, and the kidney proved to be studded with tuberculous abscesses. The cystoscope is an invaluable aid in diagnosis. Other methods, though useful, are not final. Thus it is because of the indefinite clinical picture that the diagnosis is difficult, and the symptoms can at best only determine that there is tuberculosis of some part of the urinary system, without exactly defining its position. The use of silver nitrate is recommended as a method of diagnosis because tuberculous inflammation is the one form of inflammation of the bladder which is injured rather than improved by such treatment. But this statement does not invariably hold good, and moreover, with this method, coexistent disease of the kidney is unrecognized. Palpation of the kidneys and ureters gives uncertain results. Even bacteriological examination of the urine is not final. Where tuberculous nodules, without ulceration, are found in the bladder wall, and also in tuberculous disease of the kidney the urine is sometimes clear and free from tubercle bacilli. It cannot be denied that after unskilful use of the cystoscope at a wrong time, tuberculous lesions often become more marked, but this does not counterindicate its use at a right stage and under skilled hands. Where acute inflammation of the bladder is present, it is inadvisable and at the same time impossible to use the cystoscope. The first step is treatment of the bladder by washing out with 3 per cent. solution of boric acid and with solution of silver nitrate, and by local application of iodoform. The pain is relieved by belladonna or ichthyol suppositories in the rectum. Under such treatment the cystoscope can soon be usefully employed. On examination in cases of disease of the bladder tuberculous nodules are characteristic and not easily overlooked. Where the process has gone on to ulceration, inspection does not finally determine the nature of the infection. When considering the state of the kidneys the most obvious method is catheterization of the ureters. But the risk of carrying tuberculous material into a sound ureter by catheterization through an infected bladder makes it essential to decide that the ureter is affected before employing the catheter. Here again the cystoscope is of value. First the position in the bladder of tuberculous nodules if they exist is suggestive. If they are grouped about the opening of one of the ureters, or if they radiate downwards from it, little doubt that the kidney is involved can exist. Where no bladder affection is present, the shape of the mouth of the ureter is often decisive. If instead of being slit-like and projecting into the bladder, it is irregularly round and drawn in, some kidney lesion may be assumed. The cystoscope, moreover, will show if the action of either ureter is sluggish, and give some information as to the quality of the urine secreted by each kidney. Having decided that one or other of the ureters is involved, catheterization of that ureter is possible and exact information as to the quantity and quality of the urine secreted is obtained. Lastly, by comparing the amount secreted by the diseased kidney with the total amount of urine passed, information is gained as to the state of the other kidney, of great value when deciding upon operation. It is not possible to determine by qualitative examination of the urine secreted whether the second kidney is absolutely normal, because of the danger of catheterizing a healthy ureter. The principle of treatment in these cases has usually been that operation is the rule for tuberculous disease of the kidney, but is inadvisable

for disease of the bladder. Stoeckel suggests that if tuberculous nodules but no ulceration be found on the bladder wall, opening of this organ might act like the corresponding treatment for tuberculous peritonitis, but he has not himself tried the plan. Iodoform is the most useful local application in disease of the bladder. The most important treatment is, however, the operative treatment on the kidney when one is involved. After removal of a tuberculous kidney, the bladder will in all probability recover spontaneously, or at any rate under medical treatment.

(66) Haematosalpinx and Acquired Atresia.

Rauscher (*Monats. f. Geb. u. Gyn.*, May, 1903) reported at a meeting of the Leipzig Obstetrical Society two cases of sactosalpinx haemorrhagica or haematosalpinx, where there was atresia of the vagina known to be due to infective inflammation, not to congenital malformation. In one case the haematosalpinx was single, in the other bilateral. In both cases the diseased appendages were removed through the abdomen, the uterus opened and emptied, then a dressing forceps was passed into its cavity and pushed through the obstruction in the vagina. In one case it was clear that the same infective agency which had caused the closure of the vagina closed the tube, a fact which supported Veit and Nagel's theory.

(67) Telegony.

Cousin (De l'impregnation de la mère, télégonie d'après les données actuelles de la zootechnie, *Thèse de Paris*, 1903,) writes an important memoir, chiefly negative, as to its evidence and reasoning, on telegony. This term expresses the phenomenon which occurs when a female, after bearing young to a first male, bears other young to other males which exhibit characters peculiar to the first male. He quotes and discusses cases noted in domestic animals and birds, and others said to have occurred in man. He concludes that the possibility of a male exercising an influence on offspring of the same female begotten by other males has never been proved. Control experiments have entirely failed to substantiate a case of telegony.

(68) Myosarcoma of Uterus.

Cohn (*Monats. f. Geb. u. Gyn.*, May, 1903) amputated a fibroid uterus above the cervix. The patient was 48, and had borne one child twenty-three years before the operation. The menopause had occurred two years before the uterus was removed and the patient sought medical relief on account of spasmodic pains in the lower part of the abdomen on the right side. The tumour was as big as a man's head, and consisted of the body of the uterus infested with fibroid growths. Some subserous growths, chiefly springing from the back of the uterus, were softening down, and had opened up the folds of the peritoneum as far as the mesentery, reaching at one point to the intestine which was resected. Under the microscope the tumour proved to be a true myosarcoma. The sarcomatous elements consisted partly of round, partly of spindle cells. The result of the operation and the after-history are not given.

(69) Placenta Praevia and Fibroid.

Calmann (*Zentralbl. f. Gynäk.*, No. 14, 1903) attended a pregnant woman suffering from uterine fibroid disease. She was aged 39, and had been three times pregnant. On this occasion there was a show of blood during the fifth month, at the date of the menstrual period, and this show was repeated in the sixth month. The membranes ruptured spontaneously, whether at term or a little earlier is not stated, and severe flooding followed. The tampon was applied for a short time. Then the foot was brought down: it was a breech presentation. The child was extracted; the placenta adhered to a large myoma in the uterine wall on the right side. It is important to note that, owing to the presence of several small myomata in the fundus, expression of the placenta was impracticable. Manual extraction of that structure piecemeal was effected. In the puerperium pains were felt on the left side of the pelvis, probably caused by thrombosis of the veins. The temperature never exceeded 100°, and the patient recovered. Calmann finds only 2 cases of the presence of fibroid in 241 reports of placenta praevia.

THERAPEUTICS.

(70) Massage of the Heart as a Means of Resuscitation.

At a meeting of the Medical Association of the Greater City of New York held on May 11th a paper by Drs. Robert Coleman Kemp and A. W. Gardner on experimental researches on resuscitation after death from chloroform was read by Dr. Kemp (*Boston Med. and Surg. Jour.*, May 21st, 1903). The experiments were made upon dogs, and for the first time manometric and kymographic tracings were presented in massage of the heart. At the same time, what is claimed as the first practical method for performing cardiac massage was described in the paper. This method is as follows: The animal is placed in the Nélaton (inverted) position, which throws the heart forward against the chest and somewhat upward. An incision is made over, or slightly below, the apex. If necessary to secure more space, a small piece of the fifth and sixth ribs may be resected. The index and middle fingers are passed over the margin of the heart and behind it, near the apex, and pressure is made on the heart against the chest. Or, the opening being enlarged, the fingers may be placed behind, and the thumb between the apex and chest wall, when the heart is rapidly squeezed between them. It was found that a rapid intermittent (double action) pressure resuscitated more cases, and, in effect, imitated the dicrotism of the pulse, as was shown in the tracings. A rapid single action pressure was not as successful. This method, the authors believe, is the most rational and by far the safest that has as yet been devised. An important part of the procedure is the maintenance of artificial respiration, and this was accomplished by means of the Kemp-Gardner modified intubation tube and a new pump devised for the authors by Mr. Hoyt, of the Physiological Laboratory of the College of Physicians and Surgeons. Prolonged infusion of hot normal saline solution was also employed. Resuscitation was accomplished in eleven out of twenty-three animals, after absolute cessation of heart action to sight, touch, and compression, and this after the heart had remained in this condition for variable periods (3 to 16 minutes). The dogs lived from two to twenty-four hours, and in most of them the body functions returned to normal, and the animals became active and hard to control. The conviction was expressed that with a more perfect technique there was no reason whatever why death should occur at all. Kemp also reported the first employment in the United States of cardiac massage in a human subject. The case, however, was not one of chloroform syncope, and was unsuccessful. It was in every respect a most unfavourable one, as the patient was pyaemic, and, in addition, weakened by several previous operations. At the time the fatal collapse occurred Kemp had just done a simple operation not lasting over five minutes, for the opening of a large accumulation of pus in the left side of the abdomen, and nitrous oxide gas was the anaesthetic employed. In conclusion, it was stated by the authors that they believed the procedure of massage of the heart to be both sound therapeutics and perfectly justifiable in all cases of death from chloroform or any other anaesthetic, as well as from drowning and allied conditions, when all other means of resuscitation have failed.

(71) Hot-Air Treatment.

E. Rautenberg (*Zeit. f. diatet. u. physik. Therap.*, December, 1902, and January, 1903,) describes the apparatus used for hot-air treatment by J. Schreiber and the results obtained in his clinic. After many experiments Schreiber and Rautenberg decided that the most satisfactory form of apparatus was that in which the hot air was brought by a tube into a closed compartment, within which the part of the body to be treated lay. The difficulty of this method lies in securing a uniform diffusion of hot air throughout the compartment, and at the same time adequate ventilation without which the air becomes damp and irritating to the skin. In Bier's apparatus where only one ventilating outlet is provided, there is little diffusion of the hot air, which enters and leaves the enclosed space in a direct stream, and tends to heat only one side of the part needing treatment. Schreiber meets the difficulty in two ways. First, near to the circular opening at the end of the tube by which the hot air enters, but on the under side of it, he places a rectangular second opening. By means of a cap the former can be closed and the air made to enter the compartment through the lower one in a downward direction, with the result that it becomes to some extent diffused. Secondly, a closed compartment is formed by arching a piece of pasteboard over the part to be

treated, with an opening at one side for the hot-air tube, and covering the whole with a thin woollen cloth. The innumerable small openings of the cloth provide for ventilation, and, being at the sides of the hot-air current, lead to its further diffusion. Nor are these the only advantages claimed for the apparatus. The direction taken by the incoming air can be further modified by adjustment of the cap, and the treatment thus localized. The apparatus can be used without the employment of a closed compartment. By removing the cap a douche-like stream of hot air can be obtained. The patient can himself regulate the temperature, and does so in accordance with his sensations, no thermometer being employed. A spirit lamp supplies the necessary heat, and the whole apparatus is simple and comparatively inexpensive. Schreiber has employed the treatment for some years, most commonly for rheumatism and other affections of joints. The cases have usually been chronic in character, and very few permanent cures have been effected. Yet improvement has been the almost universal rule, and in most cases the relief from suffering has been well marked. In other diseases—as, for instance, myalgia, neuralgia, neurasthenia, and acute bursitis—cure has been obtained in some cases and improvement in others. Remarkable success has followed hot-air applications in cases of serous pleuritic exudate. Out of 20 cases thus treated 8 complete and 2 almost complete recoveries were recorded, 6 cases were lost sight of after great improvement had already been effected, and only 1 case was absolutely unbenefited. The completeness of recovery and the promptness with which the resorption of the exudate followed the applications show that they must have at least contributed to the favourable results.

(72) Zomotherapy in Tuberculosis.

Lawrason Brown (*Amer. Journ. Med. Sci.*, June, 1903) refers to the favourable results claimed by Richet and Héricourt in the treatment of tuberculosis with raw meat or its juice (Epitome of the British Medical Journal, August 10th, 1901, par. 101). The treatment is, in effect, really suralimentation, but suralimentation in such a form that the majority of patients can stand it. "When, under the pretext of recovering the albuminoids, one submits the tuberculous patient to an exclusive meat diet, when one declares the carbohydrates—vegetables, sugar, cereals, etc.—to be secondary, the patient is deprived of an element primordially essential to repair, is given only an insufficient diet of phosphates, has his hyperacidity increased, and in place of increasing the artificial arthritism, which would be of value, a state of affairs is favoured which would increase the susceptibility to the bacillus." On account of the great expense but few patients can carry out the raw-meat treatment as suggested by Héricourt, who advises that the juice of 6 lb. of rare beef, free from fat, bone, and cartilage, be taken daily. Smaller quantities can, however, be used advantageously. Two patients who took the full amount for several months made good recoveries. In one of these the disease was advancing quite rapidly. Many patients have been given beef-juice extracted from meat slightly browned, and it seemed to exert a very beneficial but no specific action. In reviewing the experimental work done on this subject one is struck, as Fraenkel remarks, by its meagreness. Chantemesse, Salmon, and Fraenkel are apparently the only observers to repeat Richet's work. Fraenkel obtained opposite results, Salmon's results were inconclusive, while Chantemesse, from experiments upon two dogs, upholds Richet. For this reason, at the suggestion of Trudeau, and largely under his guidance, Brown made a series of experiments on five dogs, from which he thinks the following conclusions may be drawn: (1) That raw meat has no perceptible effect on the duration of experimental tuberculosis in dogs if the bacilli are virulent and a sufficient number injected intravenously; (2) that raw meat has no effect on the prolongation of the duration of experimental tuberculosis in dogs, even if the bacilli are attentuated, provided a reasonable quantity be injected intravenously; (3) that under the same conditions dogs fed on a mixed diet with no raw meat may live a much longer time. Regarding the use of meat in pulmonary tuberculosis, Brown thinks it may be said: (1) That meat is highly essential in the dietetic treatment; (2) that much meat with a judicious admixture of carbohydrates, fats, etc., is essential to the treatment; (3) that rare meat is better than meat well cooked; (4) that meat-juice is of great value in suralimentation, as myosin albumin is easily digested by most patients—even the dyspeptic—and it affords a "maximum of nutrient for a minimum of effort" (in a few patients meat-juice causes diarrhoea and meteorism); (5) that meat-juice can be taken when patients can take no other form of meat—that is, when there exists a marked repugnance to all solids; (6) that the juice from raw meat seems slightly, if at all, more beneficial than the juice from meat slightly browned; (7) that the disadvantages of preparing and preserving raw meat-juice more than offset its advantages (patients who object to juice from raw meat will willingly take that from meat browned); (8) that meat-juice is of value, as it can be administered in the form of jellies, ices, etc.

(73) Picric Acid in Gonorrhoea.

F. Re (*Rif. Med.*, April 20th, 1903) speaks favourably of the above drug in the treatment of gonorrhoea. In the first place it is a powerful, speedy, and efficacious antiseptic, and in the doses used does not irritate the mucous membrane, does not cause scarring or abrasion of the epithelium. It readily insinuates itself into the tissues and lymphatic spaces. A careful bacteriological examination was made of the various cases under treatment. The drug was used in a water and glycerine solution ½ to 2 per cent., and as ointment (vaseline and lanolin)—1 to 2 per cent. In acute cases the watery solution of ½ to 1 per cent. was used four times a day. In 2 cases some temporary oedema of the penis, with much itching and burning, followed the injection, but this inconvenience disappeared in twenty-four hours. Cure followed in from fifteen to twenty-five days. In the more chronic cases the author injected the ointment into the ureters. No complications followed this method of treatment. The author publishes 12 cases.

(74) Treatment of Framboesia.

Diesing (*Archiv f. Schiffs- u. Tropen-Hygiene*, Bd. vii, Heft 4), during a residence of a year and a-half at Tanganyika, has treated about 30 cases of tropical framboesia, and in two of these has effected permanent cures. The treatment consisted in injecting a 30 per cent. emulsion of iodoform and olive oil into the subcutaneous tissue of the affected part, and in painting the place itself and the surrounding skin with tincture of iodine. The iodoform caused the raw surface to dry up rapidly, two to three injections of ½ c.cm. of the emulsion sufficing usually to bring about this result in four or five days. But unless the places were painted once or twice a day with tincture of iodine for at least a month, and the injections occasionally repeated, the tubercles were found to reappear in a week or two. In the two cases successfully treated, one had had no relapse after six weeks and the other after eight months.

PATHOLOGY.

(75) The Protective Action of the Great Omentum.

Experimenters have found that when the spleen is destroyed by ligaturing its blood supply, the great omentum forms a capsule round it and in various ways protects the organism from the results of septic absorption. Pirone (*La Rif. Med.*, July, 1903) has repeated these experiments and finds that when the spleen necroses after ligature of its blood supply, it is surrounded by the great omentum. The inflammatory process which sets in leads to a rapid formation of connective tissue which however is not merely limited to the formation of a capsule but invades the substance of the spleen. The endothelial cells of the serous coat of the omentum become transformed into macrophages, and carry away the splenic detritus. In virtue of this double action, plastic and phagocytic, the great omentum ends by destroying the spleen, behaving to it very much as the vasal endothelium does in the organization of a thrombus. This action of the omentum cannot be explained on the ground of vicarious lymphatic action on its part. Probably the great omentum exercises a strong and active protective action in the peritoneal cavity, which in given cases acquires the value of a true defence of that cavity and secondarily of the whole organism. Owing to its mobility one may think of it as a mobile column always ready to march to the weak spot.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(76) Acute Poisoning by a Solution of Methyl-di-sodic Arsenate.

Mehyl-di-sodic arsenate was first introduced into therapeutics by A. Gautier in 1902, and is largely prescribed by French physicians under the name of "arrhénal." It consists of white crystals having the formula $CH_3AsO_3Na_2H_4O_2$. It is freely soluble in water, sparingly soluble in alcohol, and insoluble in ether. Gautier recommends "arrhénal" in the place of the cacodylates which are apt to disturb the gastric and intestinal canals. The usual dose, for intestinal or subcutaneous administration varies between 0.025 gr. to 0.1 gr. per diem. A. Le Roy des Barres (*Arch. Gén. de Méd.*, June 30th, 1903) places on record a case of acute poisoning by "arrhénal." A patient, aged 40, was ordered a course of arsenic in the form of "arrhénal" in doses of 0.05 gr. per diem for a fortnight in each month, the cure lasting three months. At the same time Hunyadi János water was prescribed as an aperient. By a mistake on the part of the patient's attendant he was given the entire bottle of "arrhénal" containing 1 gram. Five minutes later vomiting without pain commenced, followed in a few minutes by diarrhoea. Within twenty-four hours the patient vomited twelve times and passed twenty liquid stools. During the second day no vomiting occurred, but five or six diarrhoeic stools were passed. No trouble was experienced after the fourth day, and the patient was observed for over a month to remain free from all secondary symptoms of poisoning. This case appears worthy of record for several reasons: First, cases of poisoning by this drug are extremely rare; secondly, they present marked differences from the ordinary cases of acute poisoning by other preparations of arsenic. In doses of 1 gram, vomiting, without hiccough, and diarrhoea only are present. There is an absence of burning acid sensation in the hypogastrium, of acute abdominal spasm, and of headache. The patient is free from loss of heat in the extremities, from muscular cramp, from collapse, and from cardiac syncope. Convalescence is uninterrupted, and the symptoms of reaction, such as fever, tympanites, jaundice, cutaneous eruptions, etc., which often herald a fatal termination in cases of acute arsenical poisoning, are completely absent. The author suggests that the benign course of the case recorded may be due to the exceedingly poisonous dose of the drug absorbed, producing vomiting and diarrhoea immediately; but he points out how different are the symptoms in non-fatal cases of acute poisoning by other arsenical preparations.

(77) Banti's Disease.

Kast (*Wien. med. Woch.*, March 7th, 1903) reports a case of Banti's disease, which, until recently, was classed together with several other conditions as splenic anaemia. A soldier, aged 21, with a good family history, was healthy until 13, when he suffered from a rheumatic affection of the knees, which rendered him bedridden for a year. Since then he had always been weakly and suffered frequently from enlarged cervical glands. On October 7th, 1902, he was admitted to hospital for a dislocation of the left patella, which was readily reduced. He then complained of enlargement of the abdomen, which had been increasing in size for about six months, and of frequent epistaxis. He had never had syphilis or malaria, and had never drank to excess. He was a slightly built man, pale and thin. The lips and conjunctivae were anaemic. There was no oedema or cutaneous petechiae. The cutaneous veins were dilated and tortuous over the lower part of the thorax. The pulse was 78, regular, and easily compressible. The nervous system, organs of special senses, and thoracic organs were normal. The thorax, however, at the left hypochondrium was bulged forwards, and this prominence was continued over the abdomen. It was due to an enlarged hard spleen, which extended to the umbilicus, and had a palpable notch. The liver extended two fingerbreadths below the costal arch in the nipple line. It was smooth, and had a thick rounded edge. Both liver and spleen were slightly tender. There was no demonstrable ascites. The patient was easily tired, and spent most of his time in bed, even after the dislocation was cured. Neither potassium iodide or arsenic had any influence on his condition. The urine was acid, normal in quantity, of specific gravity 1022, and contained traces of urobilin and urates, but no sugar, albumen, or indican. On November 3rd there were 2,500,000 red corpuscles and 5,000 leucocytes in a cubic millimetre. The haemoglobin was 60 to 65 per cent. There were poikilocytosis and an increase in the number of blood platelets and microcytes. The polynuclear eosinophile leucocytes were increased. This condition of blood may be described, according to Senator, as oligochromaemia, oligocythaemia, and leucopenia. It is characteristic of Banti's disease. Banti, in 1894 described the disease as splenomegaly with hepatic cirrhosis, and divided it into three stages: (1) that of primary splenic tumour and anaemia; (2) that of scanty urine, icterus, and urobilinuria; (3) that of atrophic cirrhosis of the liver, with ascites. Senator first drew attention to the frequency with which the disease is complicated by haemorrhages. (See Epitome of the British Medical Journal, vol. i, 1902, par. 210.)

(78) Adiposis Dolorosa.

Marcou (*Arch. Gén. de Méd.*, July 14th, 1903) describes a case. The records of this disease are not numerous, and he publishes these details with a view to establish more clearly the different clinical types. The series of symptoms are so characteristic that the sole difficulty in diagnosis lies in recalling the entity of the disease. Marcou observed this case for three months, and gives a detailed account of the condition. The patient was an unmarried woman, aged 68, was well educated, and for thirty years was head mistress of a *lycée*. Her mother committed suicide at the age of 46. The patient presented marked hysterical symptoms through life, such as functional paraplegia, pseudo-anginal attacks, and apoplectiform seizures. She dates the commencement of the disease from a fall during a seizure at the age of 57. Pain in the lumbar region on walking followed, and a rapid developement of fat ensued. Later, pains round the pelvis and down the thighs became constant, with severe exacerbations upon movement. Nine years after the commencement of the disease, she entered the clinic of Elena Pawlowna under the care of Motchoutowsky, who at that time regarded the case as one of generalized atrophic myositis. A year later, however, the nature of the disease was manifest. The head and neck were thin; the breasts and abdomen were enormous. Fatty tumours were suspended from the arms, and small lipomata covered the forearms as far as the wrists; the hands were thin. The legs formed two perfectly cylindrical columns, and presented a marked contrast with the arms on account of all absence of lobulation. The dorsum of the foot was enlarged. The external genitals were normal. Pain was limited to the shoulders and hips, and was increased by the least movement. The various forms of sensation were intact. Electrical reactions showed a marked muscular atrophy without reaction of degeneration. Feeble contractions were obtained in the muscles of the upper limb, but strong galvanic or faradic currents failed to provoke any contractions in the lower. Marcou suggests that this absence of motor response was due to the increased resistance to the current (1) either by the increase of fat, (2) or by the dryness of the skin. The viscera were normal, and the mental condition was in no way impaired. Morphine alone controlled the pain, in doses of 1 cg. subcutaneously once a week.

SURGERY.

(79) Operative Treatment of Gall Stones.

Having performed laparotomy for gall stone 720 times, H. Kehr is in a position to give a great deal of valuable information regarding the pathological anatomy of cholelithiasis and its surgical treatment. He discusses many points in connexion with this subject in a long paper (*Münch. med. Woch.*, Nos. 41, 42, and 43, 1902). He has come to the conclusion that the calculi in the gall bladder do not cause any symptoms, but that the symptoms are first appreciable when an infection has taken place and the gall bladder has become distended by the effusion, and the calculus is driven into the cystic or common bile duct. Stones, even large ones, may be in the bile ducts without producing the usual signs. Icterus may be entirely absent, not only when the stone has been in the common duct for weeks, but when it has been there for years. Jaundice will only occur, as is the case with the pain, when the infection takes place. As a rule, swelling of the liver is regarded as a cardinal symptom of gall stone. He finds that in a large number of cases of complete occlusion of the

common bile duct the liver is not enlarged, and in cases when the calculus is limited to the gall bladder and the cystic duct this symptom is rarely present. Dealing with the special diagnosis, he says that he has found that the more cases he has seen and operated on the smaller number of mistakes he makes. Only actual practice in palpation will enable one to form correct anatomical diagnoses of these conditions. Passing on to the consideration of the indications for operation, he attemps to bridge over the differences between the physician and surgeon by formulating certain conditions. In these conditions he admits that some cases, especially those of chronic recurrent cholecystitis, may well be treated at Carlsbad, Neuenahr or at home with alkalies rest, etc., but he disputes that internal forms of treatment can either dissolve or remove calculi, although the inflammatory process may be adequately dealt with by these means. He disapproves of systematic early operation as soon as the diagnosis is made. When the attacks of colic are mild and the intermediate periods are completely without symptoms he does not advise operation. Acute occlusion of the common bile duct should be treated medically, and only when the appearance of cholangitis become prominent and the patient wastes and is deeply jaundiced is there indication for operation. Serous and purulent effusion of the gall bladder belong to the surgeon, as do cases of frequently repeated colic, without jaundice and without the passage of the calculus. On the other hand, when stones are passed after each colic attack, the cases may be treated medically, but when the patient becomes much reduced in strength by frequent attacks an operation to clear out the remaining stone completely should be undertaken. Chronic occlusion of the common duct should be handed over to the surgeon when medical means fail to bring relief, before it is too late to hope for surgical success. Those patients who have acquired the morphine habit on account of their gall stones should always be operated on. He further adds some other less detailed conditions which should be agreed to by both physician and surgeon. But in the end, he finds that each case must be dealt with on its own merit. Kehr next turns to the particular operation which he has performed in each case, and deals in an able manner with the indications and advantages of each of the operations. In the majority of cases he prefers cystectomy and hepatic-duct drainage to cystostomy and choledochotomy with suture. By means of hepatic-duct drainage one is enabled to wash out the stones during the after-treatment, and he is convinced that it is far easier to remove all the stones in a case in this way. For acute processes of the gall bladder, however, he finds that cystostomy is the best operation. He goes into detail with regard to the more serious complications, such as carcinoma of the gall bladder and ducts, and various conditions of the stomach, intestine, and pancreas. After giving the results of his operations and discussing the mortality percentages he passes on to the consideration of recurrences after operation, and states that real recurrence—that is, the formation of a new stone—after complete removal of all calculi, is extremely rare, if it ever takes place. He had never met with such a case. The usual cases of so-called recurrence could be explained in different ways, as illustrated in 14 of his cases. In conclusion, he warns the general practitioner not to undertake the operative treatment, which is extremely difficult and requires much practice, but always to send the patient into some well-regulated hospital where an experienced surgeon can carry out the treatment.

(80) Laparotomy for Perforation of Intestine in Typhoid Fever.

HARTE (*Ann. of Surg.*, July, 1903,) reports three cases of perforation of the intestine following typhoid fever which were operated upon and recovered. In the first case the perforation occurred during the middle of the disease with the patient in good condition, and was immediately recognized and treated by operation. In the second case the perforation occurred suddenly in a patient who was not much exhausted from the effects of the fever, and presented many of the characteristic symptoms of acute appendicitis with perforation. This class, it is stated, is decidedly the most favourable for operation, and from it the greatest number of recoveries will be gathered. The third case was one of a class the conditions of which for surgical treatment are most unfavourable, as the vital energies are almost entirely exhausted as the result of a prolonged and debilitating disease. A case of this kind shows that recovery after operation may occur in spite of the most unfavourable circumstances. In a paper in the same number of the *Annals of Surgery*, on the Surgical Features of Perforation of the Intestine in Typhoid Fever in Children, Elsberg states that this lesion is very nearly as frequent in children between the ages of 6 and 15 years as in adults. The symptoms of perforation of the intestine in the course of typhoid fever are essentially the same in children as in adults. Although recovery may, in exceptional cases, take place without operation, the treatment, the author holds, should be a surgical one as soon as the diagnosis has been made. The prognosis after operation is shown by statistics to be more than twice as good in children as in adults, and very early operative interference offers the best chances of recovery.

(81) Intestinal Obstruction from Undue Flexion of the Splenic Angle of the Colon.

BÉRARD and PATEL (*Rev. de Chir.*, May, 1903), whilst recognizing the influence of bands in occlusion of the left or splenic flexure of the colon, direct attention to a special and truly "essential" form of obstruction that may occur in this portion of the large intestine. The splenic flexure of the colon, which, even under normal conditions, is a hindrance to the passage of faecal matter, may, the authors state, be exaggerated by ptosis of the intestine in this region. This ptosis, according to the anatomical and physiological investigations of the authors, is favoured by abnormal attenuation of the phreno-colic ligament, which is reduced to a thin cord attached to the extreme apex of the left angle of the colon. In such a condition as this obstruction may be directly caused by stercoral accumulation and intestinal spasm or paresis. Obstruction thus established in the region of the splenic flexure is usually indicated by pain over the seventh and eighth ribs. The diagnosis of the seat and the nature of the obstruction can, however, be only established after laparotomy. If on exploration neither band or thickening of the intestinal coats can be made out, the surgeon may assume that the obstruction is due to "essential" occlusion in the region of the splenic flexure. The nature of the obstacle having been determined, the surgeon should, as a rule, overcome it by performing lateral entero-anastomosis. Colopexy, by replacing the depressed portion of the colon in its normal position, may sometimes suffice to relieve the obstruction, but in most instances, and especially in those of fixed ptosis, it will be found necessary, in order to prevent recurrence, to associate this with the first-mentioned operation.

MIDWIFERY AND DISEASES OF WOMEN.

(82) Conservative Treatment of the Broad Ligament in Salpingo-oophorectomy.

J. WESLEY BOVEE (*Amer. Gynec.*, June, 1903) discusses salpingo-oöphorectomy under three heads: (1) The unnecessary destruction and weakening of the broad ligaments under present methods; (2) the complications arising from these methods; and (3) the proper plan to obviate such destruction of the broad ligaments. In considering the first of these propositions he recalls the position and relations of the tube and ovary—the tube lying along the top of the ligament, covered along nearly its whole length by the peritoneum of the broad ligament, and lightly attached along the connective tissue of the ligament; the ovary, technically located within the folds of the broad ligament, but practically attached to the posterior surface of it, floating freely in the peritoneal cavity. The customary removal of a V-shaped portion of the broad ligament from near the outer end of the infundibulo-pelvic ligament to the cornu of the uterus must be unnecessary. The complications arising are many. Portions of infected tube attached to the uterus are often left, and afterwards give rise to dangerous complications such as reaccumulation of infectious material and leakage into the peritoneal cavity. Secondary haemorrhage from slipping of the pedicle ligatures sometimes occurs. The ureter has been partly or completely severed when the ligature has been fastened round too much of the infundibulo-pelvic ligament and too near to the ileum. Perhaps the worst evil resulting from this method is the loss of a large part of the supporting function of the broad ligament and the tendency to retroversion of the uterus due to shortening of the ligaments. Every gynaecological surgeon has been obliged to operate on cases of prolapse or retroversion due to this cause. The method Boyée adopts is as follows: Three

clamps are placed, one on the infundibulo-pelvic ligament close to the fimbriated end of the tube, including only the part of the ligament containing the blood vessels; a second on the Fallopian tube close to the uterus, not including the trunk of the utero-ovarian vessels; and a third on the ovarian ligament. The tube is then dissected from the top of the broad ligament to the clamps at either end, and the wound closed by a continuous over-and-over catgut suture. The ovary is carefully separated from the broad ligament, and the ovarian ligament severed just outside the forceps. The short stump at the uterine end of the tube is next put on the stretch by traction on the clamp attached to it, and is cut off within the uterine tissue, and the wound closed.

(83) Treatment of Retroversion of Uterus.

Figuiera (*L'Obstétrique*, June, 1903) analyses 426 cases of retroversion under treatment for the last sixteen years in Doléris's wards; 98 were treated "expectantly," 50 "medically," whilst no less than 278, or over 65 per cent., were submitted to surgical procedures. He concludes that (1) curative treatment of retro-deviations favours impregnation in sterile women; (2) in recent backward displacements without impairment of mobility, the pessary may be employed with success. The period of genital involution is the true psychological moment for the pessary; (3) Alexander's operation is best in women with intact perineum without diseased appendages; no less than 100 of Doléris's cases underwent Alexander's operation, combined in most cases with plastic procedures; when there are adhesions and diseased appendages an abdominal operation, fixation of the uterus, and transfixion of the round ligaments is indicated; (4) in multiparae with ruptured perineum plastic operations on the cervix, vagina, and perineum should be added to fixation; (5) in retroversion of the gravid uterus manual reduction should first be practised. Should it fail the abdomen must be opened and the round ligaments shortened with a view to direct reduction and permanent cure of the displacement.

(84) Appendicitis: Vomiting: Pregnancy.

Choisier (*Comptes Rendus de la Soc. d'Obst., de Gynéc. de Péd. de Paris*, April, 1903) relates an operation upon a woman aged 34, with a history of sixteen years' date of pregnancies associated with inflamed appendix. When 18, uncontrollable vomiting occurred during the first pregnancy, with fixed pain in the right iliac fossa. She suckled her child for fifteen months, but the vomiting continued during the whole time, though not quite so severe for a short time after the labour. For four years the patient vomited daily, then came an attack of pleurisy which lasted for three months, and was cured without tapping. For eighteen months after convalescence health remained good, but vomiting occurred frequently. When 28, the patient had a second attack of pleurisy, very mild. Pains in the region of the appendix were then experienced, and a very bad acute attack occurred when the patient was 30. After convalescence attacks of local pain with vomiting became frequent, and a year before she came under Choisier abortion occurred in the middle of the second month, owing to a severe attack of appendicitis. Chronic colitis followed, mucous casts being passed; the vomiting, which had ceased for a short time after the abortion, caused much distress; there was also diarrhoea. The appendix could be felt, very tender and much enlarged. It was therefore excised. It measured over 4½ in., and was contracted near its tip, where it adhered, though loosely, to the peritoneum. The vomiting ceased on the day after the operation, and never returned; six months later the patient was very well and had gained flesh.

THERAPEUTICS.

(85) Pyramidon in Typhoid Fever.

Valentini (*Deut. med. Woch.*, April 16th, 1903) considers that at present the various methods of treating enteric fever are only capable of yielding very moderate results, and the most important items of every method consist in the careful nursing and dieting. He has therefore been induced to try the effect of pyramidon, and says that he can recommend the exhibition of continued doses, which have done more for his patients than Brandt's baths or any other treatment. The temperature can be reduced to or nearly to the normal line within twenty-four hours, and kept there during the whole course of the illness; the mind of the patient is most markedly improved, and delirium banished, and the pulse is reduced in frequency. In most cases he gives 0.3 or 0.4 gram doses regularly night and day, every two hours, until the temperature keeps down on its own account; in severe cases he gives 0.4 and in mild cases 0.2 gram. Children receive 0.1. Although he has often given it for four or five weeks without interruption, it has never produced any bad effect, and the patients liked their doses. He gives some accounts of the illness of patients treated in this way, as examples of the reduction of temperature, clearing away of delirium, and slowing of the pulse. A certain amount of difficulty is experienced in deciding when the preparation may be discontinued, but this must be done by trying if the temperature rises when it is discontinued, and if it does so by again giving it, and repeating the experiment after three or four days. He strongly advises the physician to wait until the diagnosis of typhoid fever is quite certain before he gives the drug, because once he has begun the clinical picture is so altered that a confirmation of diagnosis becomes a matter of almost impossibility. He regards the action as merely symptomatic, and not specific, and states that the course of illness is not shortened by pyramidon. Care must be taken that the patients do not make too free when the drug has reduced the temperature and made them feel quite well, for the usual typhoid nursing is just as needful as it would be if the temperature and other symptoms were present. His cases, which numbered 19, included 12 severe and 4 very severe cases, and he lost one boy of pyaemia and pneumonia, and a second case of cardiac failure in the third week. It is difficult to determine from this small number of cases, he says, whether the reduction of pyrexia lessens the mortality. At all events it has proved a very useful means in his hands.

(86) Endovenous Medication.

Since intravenous injection of various drugs has been properly carried out, it has been shown that this method possesses many advantages over other methods of medication, and in order to render it more popular, F. Mendel (*Therap. Monatsh.*, April, 1903) discusses several points of interest concerning the method and its results. With regard to the technique, he says that it is both simple and, when carefully employed, absolutely safe. First, one must boil a platinum-iridium needle in a test tube for three minutes, and then the injection syringe, which should be entirely made of glass, is sterilized by syringing out with sterile water. The drug in solution is then introduced into the syringe; the arm is then constricted by an elastic bandage or tube, so that the veins become dilated, without the arteries being compressed. A prominent vein at the flexure of the elbow is chosen, and after the skin has been sufficiently disinfected the vein is steadied by the thumb of the left hand, and the needle is introduced horizontally into the lumen of the vessel, care having been taken to see that there are no air bubbles in the syringe; the piston is then withdrawn a little, and if this sucks up blood one can be sure that the needle is in the vein. One should be careful not to wound the inner coat of the vessel. The fluid is then injected very slowly into the vessel. After the needle has been withdrawn a pad of cotton-wool is placed over the site of injection, and the elastic bandage removed. In this way Mendel has injected fluid over fifty times into the same spot in the same vein without causing any reaction. He next turns to the choice of drugs which are suitable for intravenous injection. These may not have the action of coagulating albumen, nor may they damage the constituents of the blood. They should not produce any changes in the endothelium of the vein, so that thrombosis may be avoided. He gives as an instance of this latter property sublamin, which occasionally produces thrombosis, without having the power of coagulating albumen. A very grateful field for intravenous injection is offered by various preparations of arsenic. One of the most useful preparations is an organic arsenic compound, atoxyl. This drug is used in a 15 per cent. solution, and 0.7 gr. (circa 1 gr.) is first injected. The dose is rapidly increased to 0.2 or 0.3 gram (circa 3 or 4½ gr.); at first he gives an injection every other day, during the first four weeks, then two injections each week, and lastly only one a week. He speaks of excellent results which he has obtained in chlorosis, neurasthenia, hysteria, Graves's disease, and in a variety of tuberculous affections. In skin diseases, too, the methods present many advantages over the more usual methods of employing arsenic,

and is followed by more constant action. In the treatment of tuberculosis, he thinks that a great deal can be accomplished by the combined arsenic and tuberculin treatment. He finds that the effect of intravenous injection of tuberculin is just what one aims at, namely, a small general and marked local reaction. Starting with $\frac{1}{2}$ mg. of tuberculin, with an ordinary dose of atoxyl, he injects atoxyl alone every second day, from three to five times according to the strength of the reaction, and then gives a combined injection, this time using 1 mg. of tuberculin. In this way he proceeds until he reaches 5 mg. He recites some of the results obtained by this method, which he considers very satisfactory. He deals, in conclusion, with the injection of sublamin, which he regards as a better mercurial preparation than hydrarg. perchlor. for the hypodermic, intramuscular or intravenous injection. The first mentioned is unsatisfactory, while of the two latter the intramuscular possesses distinct advantages over the intravenous inasmuch as the solution is rapidly absorbed from the muscular tissue, and causes but little local effect, but the intravenous application is apt to be followed by thrombosis, which, although it passes off after a short time completely, is a great disadvantage. His results, both by intramuscular and intravenous injections were very good.

(87) Ichthyol and Liquid Thyol in Small-pox.

J. S. Kolbassenke (*Die Heilkunde*, May, 1903) has used ichthyol since 1896 in the treatment of small-pox. He applies to the pustules and surrounding skin an ointment composed of 1 part of ichthyol to 1 of vaseline. The results obtained have been good. If the application is made early there is neither itching or suppuration of the spots, and no secondary fever. If the ointment is applied to already developed pustules, the suppuration quickly subsides, leaving very little scar. Kolbassenke at first believed that ichthyol acted as a vasoconstrictor and disinfecting agent, but after consideration of Finsen's red light treatment of small-pox he has modified this view, and now holds that the main factor in the result is the absorption by the black-coloured ichthyol of both the chemical and collective rays of light. These rays he believes to be necessary for the development of the pustules. The treatment by ichthyol has not spread quickly, the two main objections to its use being (1) that local treatment cannot affect a general constitutional disease, and (2) that ichthyol is too expensive to be used in a small-pox epidemic. As regards the first objection, the success of Finsen's treatment supports the present author. With respect to the second he recommends that liquid thyol should be substituted for ichthyol. Thyol is cheap, and dries quickly into the skin, leaving a black covering impenetrable by light rays.

(88) Abortive Treatment of Boils by Superheated Dry Air.

Nicolaus Reich (*Zeit. für diat. und phys. Therap.*, March, 1903) says the theoretical grounds for the treatment of boils by the application of heat are (1) that heat is directly injurious to the pathogenic organisms involved, (2) that active hyperaemia of the tissues, and consequently an increased resistance to bacterial invasion is induced, and (3) the skin is sterilized and reinfection rendered more difficult. A current of superheated dry air is an excellent method of applying heat to the skin, for the profuse sweating to which this form of heat gives rise prevents rapid increase of temperature in the deeper tissues. This property of superheated air, however, explains the absolute failure of the treatment in two cases of cellulitis—that is, cases in which the deeper as well as the superficial tissues were involved. Two forms of apparatus are recommended—the thermo-aërophor and the kalorisator of Vorstädter. The latter is less expensive and complex, and is therefore better suited for every-day practice, though the application can be more accurately localized when the former is employed. The hot air is first applied round the circumference of the affected part, giving rise to a circumscribing hyperaemic area (the so-called zona derivatoria) and then to the boil itself. Two or three applications of from three to eight minutes are given on the first day and one on each of the following days. The temperature of the air used is about 120°C. If there is only one boil and treatment is begun early one or two sittings usually suffice to prevent abscess formation and tissue destruction. If there is general boil formation more sittings are needed and a full bath of hot air is given occasionally. Reich gives four cases to illustrate the results of his treatment. In three of these the patients had suffered for some time from a succession of boils, and those which healed under hot-air applications with little or no tissue necrosis would certainly, according to previous experience, have gone on to abscess formation. In one case at the end of the second day's treatment, operation had been decided upon, but was not carried out because of the improvement visible next day. The disappearance of pain, often after the first sitting, was a marked feature of these cases. As a result of these experiments, Reich states: (1) That no case in which the treatment was begun early went on to suppuration or tissue necrosis: (2) that the infiltration of the tissues disappeared more quickly than is customary in abortive cases; (3) that reinfection of the tissues surrounding the boil never occurred; (4) that in cases of general infection the tendency to fresh boil formation was much diminished; (5) that the treatment in itself was scarcely painful, and the painful tension in the infiltrated tissue was much reduced after a five minutes' sitting. Experience is still lacking as to the results of this treatment where a constitutional disease, as for example diabetes, underlies the formation of boils.

(89) Mesotan.

K. Liepelt (*Berl. klin. Woch.*, April 20th, 1903) has employed mesotan—which is a metoxy-methyl-ester of salicylic acid—in Zinn's clinic for several months in rheumatic conditions, and reports favourably on its action as an antirheumatic. The greater number of his cases were severe ones, and many were complicated with cardiac mischief and affection of the pleura. On admission, the urine of the patients was tested for salicylic acid by the ferric chloride test, and, if none was found, each of the painful and swollen joints was carefully rubbed with a teaspoonful of equal parts of mesotan and olive oil. The joints were then wrapped up in cotton-wool or some other protective. The first urine voided after the application gave distinct salicylic reaction, and, after four hours, gave very considerable reaction. Nearly all the patients admitted that the pains were already lessened after the first rubbing. The mesotan was applied three times a day, and in most of the cases the treatment was completed in a few days. In the complicated cases he used $\frac{1}{2}$-gram doses of aspirin as well as mesotan, as well as other drugs, but he states that the application frequently sufficed to remove the pain, etc., alone. The cases of recurrent rheumatic arthritis were especially interesting. After many other methods had been tried, mesotan proved itself capable of effecting a rapid action. It appears to act best in polyarthritis, when many joints are affected, and in these cases it removed the pain rapidly and certainly. It failed in gonorrhoeal arthritis and in some chronic cases of muscular rheumatism, but Liepelt says that the number of cases in which it proved of no avail was small. He did not see many cases of obstinate eczema following on from its use. He warmly recommends it, not only for acute cases but also for some chronic cases of arthritic and muscular rheumatism.

PATHOLOGY.

(90) The Action of Arsenic on Bone Marrow.

Stockman and Charteris (*Journ. of Path.*, May, 1903) report researches on the changes in the bone marrow of animals and man under the action of arsenic. Under small doses in rabbits and dogs there occur hyperaemia, atrophy of fat cells, decrease in number or degeneration of giant cells, increase of the leucoblastic cells, and little or no increase of the erythroblastic cells. These changes are essentially similar to those produced under the action of many other foreign or poisonous substances, and constitute a reaction against these substances on the part of the marrow. The counting of blood cells and estimation of haemoglobin also supports the view that arsenic does not cause an increase in the number or quality of the red cells. The changes in human marrow in cases of chronic arsenical poisoning were found to be essentially of the same character, leucoblastic, and not erythroblastic, with diminution in fat cells. The researches show that arsenic has no direct effect in increasing the production of red cells by the marrow; its favourable influence in pernicious anaemia, malaria, lymphadenoma, leukaemia, and some other diseases, probably results from its effect on the parasites which cause these diseases, and not from any direct action on blood formation.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

(91) Hay Fever.

In the United States hay fever occurs in three periods, the early appearing in May, the middle appearing in July, and the late appearing in August, which latter is known as autumnal catarrh. Dunbar (*Berl. klin. Woch.*, July 13th, 1903) has studied some points in the etiology of autumnal catarrh. Since some observers regard goldenrod and ragweed as the cause of this form of hay fever, Dunbar obtained blossoms of both these plants. The goldenrod was an early blossoming variety of solidago, while the bloom of the Ambrosiaceae (ragweed) had been plucked eleven years previously, and had been preserved in a specimen book. With some difficulty and care he succeeded in separating the pollen of the goldenrod from other pollen, and applied a small quantity of them to the conjunctival sac of one of his own eyes. A burning sensation appeared at once at the point of entrance, and within a few minutes the eye became much injected, and was subjected to a very intense itching and smarting. The objective and subjective signs disappeared almost at once on the application of dried gramine pollen antitoxin. The application of the pollen did not produce any symptoms in the case of a colleague of Dunbar, while a third subject reacted well to them. He also obtained the same results with the pollen of the ragweed. Dunbar states that there can be no doubt that the toxin of goldenrod and that of ragweed pollen granules is different from the toxin of the pollen granules of the gramine, and not merely a weaker kind of the same poison. That the antitoxin of the last named is capable of neutralizing both of the autumnal catarrh pollen is explainable by analogy to certain bacteriolysin and bacterio-agglutin actions. The serum of typhoid patients, for instance, is capable of influencing bacteria like typhosus bacilli more readily than organisms which are not like it. He hopes to work further with the toxins of these two pollen when he can obtain more granules. In conclusion, he adds a few words on the treatment of hay fever generally by antitoxin. The results of this form of treatment are often very good, but in many cases, as soon as an improvement takes place, the patient goes out for long walks and sleeps with an open window, so that there is every chance for the condition to get worse. The patient should be careful not to attempt to expose himself to the harmful conditions until he has been able to satisfy himself that the antitoxin is protecting him completely.

(92) Tuberculous Ulcer of the Stomach.

Giorgi (*El Policlinico*, N. 40, F. 5, 1903) publishes the case of a patient, aged 15 years, admitted into hospital February, 1901, and dying in the following March from uncontrollable diarrhoea. At the necropsy the peribronchial glands were found tuberculous, also the oesophagus. There was chronic tuberculous peritonitis and tuberculous ulceration of the intestine. The stomach showed several ulcerations on the anterior wall. The macroscopic and microscopic appearances of these ulcerations demonstrated their tuberculous nature. In one of the sections tubercle bacilli were found, and in another a typical tubercle. Tuberculous ulcer of the stomach is a rare affection. The author gives a brief epitome of 42 cases which he has been able to collect. It is usually associated with pulmonary or intestinal tuberculosis. Amongst the reasons given for the rarity of gastric tuberculous ulcer are the scarcity of lymphatic follicles in the stomach, its active movement, the antiputrid power of the gastric juice and its acidity. The changes in the chemistry of gastric digestion which are so common in tuberculosis may act as a predisposing cause in favour of ulcer. In some cases ulceration may occur by extension from the intestines, or via the blood. But more commonly infection occurs through the lymphatic follicles. As differential points between tuberculous and simple gastric ulcer it should be noted that tuberculous ulcer occurs most frequently in the large curvature or pylorus and is almost always multiple. In size and shape it is variable, with thickened infiltrated edges. Its walls are usually covered with a granular, yellowish detritus, which also covers the submucosa forming the floor of the ulcer. Tubercles may also be seen.

(93) Eosinophilia in Pleural Effusions.

W. Barjon and Cade (*Arch. Gén. de Méd.*, July 28th) give details of 5 cases in which eosinophile corpuscles were present in large quantities in pleural effusions; 130 cases in all were examined. In the earliest researches in the characters of the white cells in effusions it was recognized that eosinophiles were present; but it was extremely rare to find them in greater proportion than 5 per cent.; it was especially in tuberculous pleurisy that this higher figure was reached. The authors limit the term pleural eosinophilia to effusions containing 10 per cent. or more of polynuclear eosinophile corpuscles. Ravaut, after examining a large number of effusions, found only 4 such cases, but failed to discover any common cause to explain their occurrence. The effusion in his cases occurred in the course of (1) secondary syphilis, (2) typhoid fever, (3) pulmonary tuberculosis, (4) in an effusion found *post mortem*. In the author's 5 cases eosinophiles were present in the proportion of 12, 10, 23, 74, and 35 per cent. respectively. Inoculation experiments into guinea-pigs failed in each case to produce tuberculosis. In 3 cases the effusion was blood-stained, and in 2 there was an increase of eosinophiles in the blood. The quantity of effusion in all 5 cases was markedly small, and in the 4 observations of Ravaut the same characteristic was noted. The authors, while admitting the possibility of tuberculosis, notwithstanding the negative results obtained by inoculation of guinea-pigs, consider the causes of the effusion to be in case (1) cold, (2) cardiac, (3) simple pachypleuritis in an alcoholic subject, (4) uncertain, (5) acute rheumatism. The question naturally arises if these eosinophile effusions are not mostly of rheumatic origin; the work of Castaigne, Rathery, and Dopter, however, clearly disproves this idea. The following conclusions are drawn: (1) Two forms of eosinophilia are met with in pleural effusions: (*a*) a relative one, in which eosinophile cells rarely exceed 2 to 5 per cent. It most often occurs in pleurisies, which prove by their clinical course, by inoculation experiments, by serum reaction, and by the blood count, to be tuberculous. The significance is small. (*b*) A true one, which, in the cases quoted, varies from 10 to 74 per cent., and bears a different clinical importance. It is found in effusions, usually acute, without tendency to recur, giving a mixed formula in the cell count, and not producing tuberculosis in the guinea-pig. (2) The prognosis is good.

(94) Intermittent Albuminuria in Children.

Theodor Frölich (*Norsk Mag. f. Laeger.*, 1903, p. 619) has examined 13 cases of intermittent albuminuria whose cases ranged from 7 to 14 years. Nine of these were boys and 4 girls. He divides the patients into two classes—namely, those exhibiting functional and those suffering from renal albuminuria. The cause is primarily mechanical, although the anaemia so common in young adults may play a preponderating rôle. Frölich distinguishes between a mechanical (orthostatic) and a cyclic albuminuria, although one may be simply a transitional form of the other, dependent upon the daily habits of the individual. Now and then it may happen that the urine passed first thing in the morning contains albumin, but this is a rare occurrence. Frölich found nucleo-albumin generally present as well as albumin and globulin. In 4 cases he found hyaline casts. He considers that neither a milk diet nor the presence of oxalates exerts any influence on albuminuria. The prognosis is generally good, but to this end the albuminuria should disappear at or soon after puberty has been reached.

SURGERY.

(95) Redressement of Scoliosis.

A. Schanz deals with the treatment of scoliosis (*Berl. klin. Woch.*, December 1st, 1902). He says the reason why the orthopaedic treatment of this condition has been so long looked on with distrust is that Sayre's plaster corset is often applied without any previous redressement, and hence the results of this method have been unsatisfactory. Schanz thinks that if one carries out a proper redressement one can obtain excellent results. In devising a treatment one must aim at removing the process which causes the scoliosis, and at the same time to remove those deformities which have been caused by these processes. He finds that the only practical way of proceeding is to "redress" the deformity first, and to remove the causal processes later. His programme is as follows: First, preparatory; any fixation of the spine must be loosened as far as possible, while when the spine is not fixed it must be rendered as flexible

as possible. The patient should be exercised for the redressement, but the "forced" position should not be adopted. Next, one proceeds to the redressement itself. Theoretically, one meets with a difficulty in that the component parts of the deformity should be over-corrected, but since scoliosis consists in curves and contra-curves, one is more than likely to improve one curve at the expense of another. In the next place, one can only effect the corrections by indirect and not by direct pressure. There are several apparatus for the redressement, and Schanz mentions Wullstein's and his own as two good ones. The patient is suspended by the head, so that he hangs free; he holds the side supports with his hands, and extension is applied to the feet. As the plaster-of-paris bandages are hardening the correction is improved by digital pressure. With regard to the plaster bandages, the padding should be as sparse as possible; a strip of thin felt is placed at the crests of the ilium, another at the free costal margin, and a small piece in each axilla. A strip of cotton wool is placed in front of the body from the neck of the symphysis, and another around the neck. The whole is then enveloped in some thin bandage, the turns of which are overlapping one another. During this part of the procedure the patient is allowed to touch the ground with the toes, but when the plaster bandages are being used he must be freely suspended. These are applied first to the pelvis, and work upward. After a certain thickness of plaster has been completed Schanz applies some six to eight strips of wood, which are then enveloped in further turns of the bandage. When the plaster has hardened the patient is cautiously allowed to touch the floor with his toes, the extension having first been loosened. The whole procedure takes from four to ten minutes between the time when the toes leave the ground to when they are again allowed to touch. The plaster bandages are applied very firmly around the pelvis, less firmly around the chest and neck, and loosely around the abdomen. The head is not included in the bandage. Schanz has never seen any serious results from this method. If the results are not as good as one would wish it to be the redressement is repeated after three or four days. At times it will be found wise to repeat this once or twice. The redressement bandages should only be left on until the spine has so far adapted itself to its new position, that one can maintain the correction by more comfortable means. As a rule, it is sufficient to allow three months for the redressement. Using the opportunity of changing the plaster bandages, a model is made in order to prepare the corset and the plaster "bed." These are employed after the plaster bandages are taken off. The patient is laid in the plaster bed as soon as the bandages are taken off until the corset is ready. At no time during this second stage of the treatment may the patient be without either the bed or corset. Massage and gymnastics are to be employed at this time. In conclusion, Schanz deals with his results, and with the indications for the treatment.

(96) Transperitoneal Nephrectomy.

JONNESCO (*Bull. et Mém. de la Soc. de Chir. de Bucarest*, No. 2, 1903) states that, in total disaccord with a large majority of surgeons, he prefers the transperitoneal to the lumbar method of removing the kidney. In his own practice he has performed lumbar nephrectomy in 4 cases, with 3 recoveries and 1 death; and transperitoneal or abdominal nephrectomy in 9 cases, with 8 recoveries and 1 death. In the 8 successful cases of the latter series, there were 2 of hydronephrosis, 1 of calculous pyelo-nephritis, 2 of ascending suppurative pyelo-nephritis, 2 of malignant growth, and 1 of tuberculosis. In an analysis of his cases of nephrectomy by both methods the author points out that the choice of operation does not affect the success of removing a suppurating kidney, a proof, in his opinion, that the abdominal method is applicable to any renal affection without presenting more danger than any other method. In summing up his views on this subject Jonnesco states that the transperitoneal is the simplest and least severe method of nephrectomy. It has the advantage of enabling the surgeon to examine the other kidney, and to assure himself of its integrity, other methods, it is pointed out, being less conclusive than direct exploration. The transperitoneal method, it is held, is also more simple than the lumbar operation, as it permits a much more ready extraction of the kidney, whatever may be its size and the extent of its adhesions, and enables the surgeon also to remove, if necessary, the whole of the ureter. In dealing with the only two objections that can be brought against this method—namely, the necessity of traversing the peritoneal cavity, and the risk in suppurative cases of a discharge of pus over the peritoneum—the author points out, with regard to the first, that his own statistics of nephrectomy and the actual results of all his laparotomies sufficiently prove the absolute safety of transperitoneal interventions; and, with regard to the second, that inoculation of the peritoneum with renal pus may be avoided. He points out that in operations for suppurative salpingitis pus is often discharged over the peritoneal surface without serious consequences. An operative method is described in which, by shutting out the general peritoneal cavity from the actual seat of operation, by enclosing the latter within flaps of peritoneum, the surgeon can readily prevent any dangers likely to arise from an intra-abdominal discharge of pus.

(97) Congenital Intestinal Occlusion.

SAVARIAUD (*Revue d'Orthopédie*, No. 4, 1903), in discussing the treatment of congenital occlusion of any portion of the intestinal canal between the ampulla of Vater and the upper part of the rectum, expresses a very unfavourable opinion of the prospects in such cases of operative intervention. Intestinal occlusion in the newborn infant, unlike a similar affection in the adult, has not, he states, derived any benefit from the progress of surgical therapeutics. It is held that in a very large proportion of cases it is beyond the sources of the surgeon's art. Such forms of occlusion, those, for instance, due to bands, flexure, etc., as can be dealt with by operation, are extremely rare in the infant. Operations such as those for entero-anastomosis, performed for establishing the normal course of faecal matter are seldom practicable in very young subjects in consequence of atrophy of the intestine below the seat of occlusion. The only practicable operation is the formation of an artificial anus, but as it is almost always necessary to make this opening high up in the intestinal canal, rapid failure of nutrition will as a rule cause death if the young and exhausted patient has not succumbed to the shock of the operation. Fortunately intestinal occlusion above the ano-rectal region is very rare in the infant, the proportion being 1 in about 16,000 necropsies performed in the course of fifteen years in the foundling hospital of St. Petersburg.

MIDWIFERY AND DISEASES OF WOMEN.

(98) Pregnancy with Dermoid of Pelvic Connective Tissue.

WEISSWANGE (*Centralbl. f. Gynäk.*, No. 19, 1903) was consulted by a woman, aged 34, in the third month of her third pregnancy. A tumour could be felt between the uterus and bladder, and the urine was fetid and full of pus. Dermoid opening into the bladder was diagnosed; the cystoscope proved unsatisfactory owing to the turbidity of the urine. The tumour increased in size and caused much suffering, so an operation was performed, the bladder being explored by the finger first, when it was found that a small perforation existed, which was valvular and opened from the bladder into the cavity behind. At the operation the tumour was found very firmly connected to the uterus and bladder, between which organs it was situated, as previously suspected. The detachment of its wall proved very difficult and could not be completed. The tumour burst, and as resection of the part of the bladder involved seemed inadvisable, the piece of the wall of the tumour which could not be detached was sewn over the perforation by a purse-string suture, and the gap between the bladder and uterus was drained. There was much rise of temperature after the operation but the patient recovered, and when the specimen was exhibited at a society she was nearing term. The adjacent tube and ovary were atrophied through the pressure of the tumour with which they were otherwise unconnected.

(99) Intestinal Obstruction due to Pregnant Uterus.

BRINDEAU (*L'Obstét.*, May, 1903) suspected appendicitis in a primipara near term. The usual incision was made, but the peritoneum was found intact and the intestine normal, not even distended. The abdomen was closed, but next day the patient was worse, with a pulse at 130, dry tongue, and cold extremities. Caesarean section was performed, and the fetus delivered. It weighed over 5½ lb., and was pale and difficult to revive. The large intestine was greatly distended, but not kinked, the pelvic part empty and contracted. There was no fluid in the peritoneal cavity. On the next day an enema was

given, and much fetid motion came away; recovery was then rapid, and the child was saved. In a discussion on this case Porak referred to another, where, however, peritonitis occurred. Bar spoke of another instance where there was also peritonitis, the effect of the obstruction. Bouilly opened the abdomen and moved the uterus, so that the obstructed portion of intestine was disengaged. The peritonitis disappeared, the obstruction being successfully relieved. Tissier expressed doubts as to the precise nature of Brindeau's case, for the first manipulation of obstruction was distension of the intestines which was not observed at the exploratory operation. Brindeau replied that it was greatly distended when he performed Caesarean section.

(100) Repeated Tubal Pregnancies.

Cohn (*Zentralbl. f. Gynak.*, No. 29, 1903) gives a short but clear report of two clearly authentic cases of that condition. In the first a fetus 3½ in. long was found in the peritoneum; its placenta lay in the ampulla of the left tube, which bore a laceration big enough to admit a finger; the funis hung out of it. It was reported that the right appendages were normal. Four years later a second operation was performed for ruptured tube: the fetus, 2¾ in. long, had been expelled with its placenta through a rent in the ampulla of the right tube. In the second case a fetal sac in the left tube was removed; it was noticed at the time that the right appendages were bound down by adhesions from which they were set free. One year and a-half later the patient underwent abdominal section for internal haemorrhage with rise of temperature. An incomplete tubal abortion was discovered. The patient made a good recovery.

(101) Removal of Glands Five Years after Hysterectomy for Cancer.

Pfannestiel (*Monats. f. Geburts. u. Gynäk.*, May, 1903) reported in March at a meeting of a German society two cases of operation for hard but widespread uterine cancer in relatively old subjects. In the first, where the patient was 50, the uterus was removed, after free separation of the ureters and great vessels, through an abdominal wound. No enlarged glands were found. The operation was too recent (February 21st) to judge of results. The second patient was 43 years old, and had undergone vaginal hysterectomy for cancer five years before she came under Pfannenstiel's care for pains in the left groin radiating down the thigh. A hard, irregular gland could be felt just above Poupart's ligament clearly adherent to the deeper structures and extending backwards. No other enlarged glands could be found, nor was there any evidence of metastases. The vaginal cicatrix and the parametric tissues were free from induration. Pfannenstiel, on March 7th, made an oblique incision above Poupart's ligament, pushed up the peritoneum, and then lay free the external iliac and common femoral vessels. The gland was as big as a walnut, and was dissected away from the artery and vein. A piece of a nerve, imbedded in the cancerous gland, was resected. The gland could not be thoroughly removed until the peritoneal cavity had been opened; numerous small vessels required ligature. The pelvic cavity was then explored manually; no more glands and no indurated structures could be felt. The separated nerve was united by a silk suture, and the wound closed. Recovery was speedy, nor was there any disturbance of innervation in the region of the crural nerve. Pfannenstiel observed that both operations were extremely difficult, but that there was no cachexia, although the disease was of wide extent in the first case, whilst the cancerous gland had reached a considerable size in the second. In both cases, too, the cancerous deposits were hard. Under such circumstances permanent cure is to be hoped for. In soft cancer occurring in young subjects no permanent benefit can be expected where the disease has extended beyond the limits which allow of a vaginal hysterectomy.

THERAPEUTICS.

(102) The Treatment of the Exanthemata by Beer Yeast.

Emile Boix (*Arch. Gen. de Med.*, May 12th, 1903) emphasises the importance of the work of Presta and Tarruella, who have directed their researches in the employment of the yeast of beer to the treatment of the sole etiological element common to these diseases—namely, the bacterial invasion—and have disregarded the clinical type of the disease and the pathological lesion. This is the true therapeutical aim of the modern clinician. He points out that the brilliant results obtained by yeast in the treatment of boils and carbuncles are due to its antiseptic, phagocytic, and immunizing action, and not to any specific action upon these particular pathological lesions. Applying these principles, they have employed beer yeast in the various staphylococcal and streptococcal infections, and the clinical results have fully confirmed the theoretical reasoning. They employ 3 to 4 coffeespoonfuls of dried yeast a day, diluted with sweetened water or beer. They have treated 43 cases of variola, 24 of erysipelas, 28 cases of measles, 17 of scarlatina; also staphylococcal infections of different clinical types, phlegmon lymphangitis, adenitis, and whitlow. Muntoriol has observed a pulmonary pyorrhoea cease in a week under the influence of yeast. Suney Molist has seen three cases of streptococcal mastoid abscess completely cured by its use. Falgar has cured a case of chronic appendicitis with recurrent exacerbations; and Guerra employed it with good results in association with antidiphtherial serum in four cases of diphtheria where streptococcal infection was added to that of the Klebs-Loeffler bacillus. In addition to the clinical evidence, Presta and Tarruella adduce experimental proof of the value of yeast, of which the following are their conclusions: (1) Beer-yeast exercises experimentally a manifest curative action upon streptococcal and staphylococcal infections in rabbits, both local and general, when administered hypodermically for 5 to 12 days in 10 c.cm. doses of well-grown culture; (2) similar injections repeated for four days consecutively render rabbits immune to these coccal infections; (3) the curative principles of yeast are intracellular, and act only after liberation by a leucocytic or humeral ingestion of the cell; (4) blood serum of rabbits treated by yeast has an agglutinating action upon streptococcus and staphylococcus aureus and albus. Yeast cultures in beef and barley medium show this same power after two days' growth, and lose it when heated to 55° C.; (5) mixed cultures of yeast and streptococcus and staphylococcus produce attenuation of the virulence of the latter; (6) in the pus of a subject treated by yeast the pyogenic organisms decrease in number and in virulence.

(103) Treatment of Chorea.

The results of the treatment of 180 cases of chorea minor by various methods brought before the Moscow Society for the Study of Children's Diseases (Tscherno-Schwarz, *Arch. f. Kinderheilkunde*, vol. 35, p. 454, 1903) confirm in the main the usual experience in this country. The cases (86 in number) treated with arsenic were of the shortest duration, but simple rest lying down, in new surroundings (29 cases) without medicament, proved to be little inferior as a method of cure. Antipyrin (20 cases) was less useful, and bromide (47 cases) and quinine (31 cases) quite useless. The average time of recovery with the arsenical treatment was 63 days. Stress is laid upon the great importance of treatment being commenced during the first three weeks of the disease.

(104) The Intravascular Use of Antiseptics.

Shaw (*Journ. Hyg.*, April, 1903) records experiments undertaken to estimate the value of intravascular injections of antiseptics in infective diseases. The antiseptics tested were chinosol, guaiacol, and formalin. Experiments were first made with animals infected with bacillus pyocyaneus. In all cases the injected animals died more quickly than the control animals injected with the bacillus pyocyaneus culture alone, and the organism was in each case recovered from the heart blood. Even in the case of administration of large doses of formalin solution, which, if they had been retained in the blood would have rendered it a 1 in 1,500 solution of the antiseptic, there was no retarding growth on cultures obtained from the heart blood at necropsy. The antiseptic appears to be rapidly taken up by the tissues, and such injections can have but the very smallest amount of therapeutic value in septicaemia. Injections of formalin were also tested in rabbits infected with tuberculosis. One animal which received a submaximal dose of formalin died in thirty minutes after injection, and the necropsy appeared to show that the death was due to acute miliary tuberculosis of the lungs impeding the blood flow through the lungs and preventing the rapid passage of the formalin through the pulmonary capillaries. The formalin thus concentrated in the lungs would interfere with their normal functional activity. This experiment indicates a probable danger in the use of these injections in pulmonary

tuberculosis; other experiments appeared to show the absence of any therapeutic effect on the disease. The experiments were somewhat few in number for a general statement.

(105) Food in Nephritis.

P. K. PEL (*Zeit. für Diatet. und Physik. Therap.*, April, 1903), in approaching the subject of diet in cases of nephritis, deals first with the imperfect state of knowledge of kidney disease as yet attained to, and instances the ignorance of the causes of chronic nephritis, and the doubt which still exists as to whether Bright's disease is a local lesion or the expression of a general constitutional disease. As far as treatment of nephritis by drugs is concerned, there is substantial agreement among doctors, though some have a belief not shared by the rest, in the power of drugs to directly influence the amount of albumen in the urine. The most important part of the treatment is, however, the diet, and here the only point generally accepted is the need for a diet of which milk forms a large share. Attempts have been made to regulate the diet in accordance with the results of elaborate estimates of the nitrogenous substances (urea, uric acid, alloxuric bodies, etc.) in the urine. Such attempts are of little value. The examinations of the urine are tedious, likely to be vitiated by defects in the present methods of investigation, and give no account of the compensatory elimination by other organs. Moreover, until the variations of these products in health are known, their significance in disease cannot be measured. Nor can much value be attached to attempts to regulate the food on theoretical principles as is shown by the different results arrived at, especially in the case of chronic nephritis. Thus Ortner forbids veal as a food because of the large amount of toxins it contains, but permits what his compatriot Kolisch expressly forbids—the eating of calf's brain. Some authorities forbid beef, while, at the opposite extreme, an American doctor lately in New York recommended a diet of meat only. The same difference of opinion exists as to the advisability of eating fish. It is expressly forbidden by Potain and Bouchard, while by Klemperer it is preferred to meat. Senator at one time recommended that eggs should never be allowed, on the ground that injection of white of eggs into animals causes a prolonged albuminuria, and that in man after a diet consisting only of raw eggs albuminuria could be demonstrated. This position he has, however, now surrendered. Pel holds that almost all attempts made have shown that a diet of ordinary foods in moderate amounts lessens rather than increases the amount of albuminuria, and is moreover beneficial to the general condition of the patient. It may be objected that the amount of albumen is not a safe index of the progress of the local inflammatory process, but it is at any rate the only objective symptom which can be readily measured, and in chronic cases it appears to correspond more exactly than in acute ones to the local condition. With healthy kidneys it is impossible that physiological nitrogenous end-products, even if existing in large quantities in the blood, can cause inflammation of the kidneys, or autointoxication when excretion is diminished. Even when chronic inflammation of the kidneys is present, considering the importance of the kidney functions to the organism, it is theoretically improbable that physiological end-products should have an irritating effect, and in these cases some intact epithelium remains to do, at any rate, a part of the work. But the question is one not of theory but of clinical experience, and it is on this ground that a varied diet is urged. While milk is of immense value to nephritic patients it is not without drawbacks if it is to be taken almost exclusively for a long time. The patient is in danger of becoming fat and anaemic, and digestive disturbances, which are of special danger in chronic nephritis, are sure sooner or later to supervene. So much fluid also increases the blood pressure and the tendency to haemorrhages, throws more work upon the heart, and acts harmfully upon cases with dropsy. The amount of milk taken daily should therefore be limited to 1 to 1½ litre (1¾ to 2½ pints) in chronic cases. Pel's diet in nephritis is roughly as follows: In acute cases for the first few days the patient is limited almost entirely to milk and milk foods, not taking more than 2 litres (3½ pints) a day. He is next allowed in addition chocolate, certain fruits, lemonade, well baked bread and biscuits, bouillon and meat extracts which contain large quantities of salts and extractives; stone fruit and green vegetables are not allowed. At the end of two or three weeks a gradual change is made to a mixed diet, in which moderate quantities of meat and eggs form part. The local condition is not harmed by this treatment and the general condition is improved by the more liberal diet.

PATHOLOGY.

(106) The Action of Diphtheria Toxin upon the Temperature and Circulation.

MINNE (*Arch. Internat. de Pharmacodyn. et de Therap.*, 1903, vol. xii) records the results of a number of experiments made with diphtheria toxin upon rabbits. Four successive effects upon the temperature were noted. There was, first, a latent period, usually very brief, which was followed by a steady rise of temperature, attaining its maximum about the sixth hour after injection of the toxin and persisting till about the fifteenth hour. This the author shows to be the result of increased combustion proceeding *pari passu* with the intoxication of the nervous system. The third phase consists in the gradual fall of the temperature to normal, and occupies about ten hours. Finally there is a rapid drop, even as low as 80°, associated with marked depression of the chemical processes of respiration and ending in death. The last two phases are much affected by variations in the external temperature. The effect of fatal doses of diphtheria toxin upon the circulation was not manifested till some 24 hours after their injection, when hypothermia was already established. Then the blood pressure gradually fell, while the amplitude and frequency of the cardiac beats diminished at the same time, without becoming irregular. In order to ascertain if the toxin had any influence upon special parts of the vascular system, the experiments were combined with asphyxiation, and the injections of suprarenal extract and other substances of known action upon the blood vessels. The author concludes that under the influence of the toxin the cardiac and vascular activity fades out equally in all parts without any region being more affected than another. The toxin has thus no selective action as regards the vascular system, but in addition to its special influence upon the nervous system it is a general protoplasmic poison, and in this respect the cells of the heart and blood vessels suffer like those of the rest of the body.

(107) The Bacillus Prodigiosus.

E. BERTARELLI (*Arch. par le Sci. Med.*, Fasc. 1, 1903) gives an extensive bibliography of previous works on the characteristics of the B. prodigiosus and an account of the views published, from which it appears that most previous authors have held that the bacillus either possesses no pathogenic power or, at the most, is capable of determining suppurative processes. Some, however, state that the B. prodigiosus while inactive alone has the property of exalting the action of other germs, and a few teach that in very large doses it sets up a local inflammation accompanied by transitory general symptoms and ending in suppuration. In the course of experiments made with the object of increasing the virulence of the meningococcus Bertarelli found that a moderate dose of B. prodigiosus inoculated into the vessels or under the skin caused the death of guinea-pigs, rats, and mice within twenty-four hours, with constant symptoms. After death there were found to be acute inflammation of the peritoneum with scanty serous secretion and distension of the intestines, and congestion of kidneys and suprarenal capsules. The spleen was brightly red with red-brown haemorrhagic spots and sometimes a little enlarged. Microscopic examination of the spleen showed very numerous cocco-bacilli disseminated throughout the organ. The same forms were met with in smaller numbers in the blood. A few germs were to be found in the kidneys, liver, and ovaries. Culture of these micro-organisms resembled in all respects cultivations of B. prodigiosus. Their most noteworthy feature is that they are almost always red. Although the animal may have been inoculated with an unpigmented strain of B. prodigiosus, and moreover by repeated passage through animals a strain of B. prodigiosus may be made capable of retaining its colour in spite of cultivation at 37° C., which usually puts a stop to the production of pigment, Bertarelli decides that the affection produced by inoculating an animal with B. prodigiosus is a septicaemia secondary to an acute intoxication, and that the toxic substances are not trimethylamine or any other waste product of the metabolism of the germ, but are intimately bound up with the body of the bacillus.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(108) Mosquitos and Malaria.

At the annual meeting of the Medical Society of New Jersey, held on June 23rd, 24th, and 25th, J. J. Kinyoun (*New York Med. Rec.*, August 1st, 1903) presented a paper entitled Mosquitos and Malaria. He reviewed the work of Ross and others, and pointed out the difference between the eggs of the *Culex* and the *Anopheles* mosquito. The eggs of the former were deposited in one adherent mass, while the latter were deposited separately, and were provided with air cells, which enabled them to float. Of the 61 varieties of *Anopheles* it had been found that only four or five in the United States were responsible for the dissemination of malaria. The period of incubation for the tertian form was five to fifteen days; that of the aestivo-autumnal and of the malignant tertian was five days, while that of the quartan had not yet been determined. The speaker said that he did not personally endorse the opinion of immunity from malaria. Many children did not appear to show any serious consequences from malarial infection, although an examination of their blood would show many malarial organisms therein. In 1890 he had had the good fortune to observe six cases of mixed infection of typhoid and malarial fever. In considering prophylaxis it should be remembered that the mere fact of the prevalence of *Anopheles* did not necessarily mean malaria. It had been observed that in certain districts largely given up to the cultivation of tomatos, the people were wholly free from malaria; also that when the *Anopheles* was fed upon tomatos, melons, and other substances containing fruit acids, these mosquitos could not be made the means of carrying malarial infection. Judson Daland, of Philadelphia, in discussing the paper, said that while he was convinced that the mosquito was the most important agent in the transmission of malaria he believed it was not the only one. He believed that the existence of a special form of the malarial plasmodium explained the malignant malarias found about the Black Sea and in the tropics. It was said that in the southern part of Russia malaria and typhoid fever present such a similar clinical picture that the differential diagnosis is hardly possible without a microscopical examination of the blood. He had seen a double infection with malaria and typhoid in the soldiers returning from Cuba. It was perfectly conceivable that when a typhoid infection occurred, the resulting changes in the blood interfered with the usual development of the malarial parasite. The reader of the paper had touched upon the interesting question of latency and immunity. It was undoubtedly true that the blood of many blacks living on the African coast showed the presence of the malarial parasite, unassociated with symptoms of malaria; but if these persons left this region and ascended the mountains, the usual phenomena of this disease became apparent. The disease was really latent, and these persons were not really immune. Not only should the *Anopheles* mosquito be destroyed as a prophylactic measure, but persons ill with malaria should be protected from mosquitos, because if the latter had access to such persons, they would convey the disease to others. B. D. Evans said that he had been assured that in "the black belt" of Alabama, where the most malignant forms of malaria were rife, no mosquitos were found—an interesting, but to him a very puzzling, fact. C. B. Noble of Philadelphia said that in early life he had lived in a low-lying part of the country, which was at the time very malarious. At present there was practically no malaria there, and this the physicians of the locality attributed to the fact that the old-fashioned wells had been superseded by driven wells. Marcy spoke of the commercial aspect of the movement for the destruction of mosquitos, and remarked that as this alone would mean the redemption of large tracts of valuable land, it was worthy of serious consideration wholly apart from its sanitary features. The mosquito was undoubtedly an intermediary host, but it was just as certain that there were other methods of propagating malaria. A short time ago he had observed that almost every patient in a military hospital near the Black Sea was suffering from a severe form of malaria, yet mosquitos were not prevalent, from which he inferred either that the mosquitos in that region were very much overworked, or else there was some other means of transmitting malaria. Kinyoun, in closing the discussion, said that malignant malarial fevers occurred not only in Alabama, but along the Atlantic coast from the Dismal Swamp to Galveston, Texas, and throughout this region the *Anopheles* mosquito had been found. He was disposed to believe that there was another kind of mosquito or other insect that was capable of transmitting the infection, particularly in those disputed forms of which "blackwater fever" might be taken as the type. He also believed that Cuban malaria, so-called, was due to a type of parasite not yet described.

(109) Late Effects of a Snakebite.

J. Bleyer (*Archiv f. Schiffs- und Tropen Hygiene*, Bd. vii. Heft 5) reports a case in which tertiary symptoms persisted for eleven years after a bite from a poisonous snake, a cuatiara, found in Brazil. The patient, an Italian immigrant, aged 40, gave the following history: In February, 1890, he was confined to bed for fourteen days as a result of a bite on the right thigh from one of another species of snake, a jararaca. Before he had fully recovered he was again bitten, this time by a cuatiara, which fastened two teeth in his left arm below the elbow and hung there for several seconds before being dislodged. The patient almost fainted five minutes after the bite. By the time he reached a house not far off he was bleeding from the nose, gums, and ears. There was no doctor in the district and only domestic remedies were employed. The patient, who denied ever having had syphilis nor any but childish ailments before the injury, had never been well and had become crippled after it. On examining the patient the left arm from the elbow to the wrist showed an ulcerating surface. The bones of the forearm were almost dislocated at the elbow, and there was fibrous ankylosis of the joint. Below the bend of the elbow there were two livid jagged patches covered by thin crusts, from which the patient reported splinters of bone to have been repeatedly taken. The arm could only be raised with the help of the other. There were scars over the left scapula, the cervical vertebrae, and on the forehead, and the bones beneath had probably been affected. The nose showed a saddle-like depression due to partial loss of the bone. Between the nose and the right eye there were signs of an old healed dacrocystitis. The right leg was shortened, and there was evidence of a healed ulcer, of a bone affection of earlier date and of phlebitis. The area of liver dullness was increased. The patient complained of headache, of pain in the injured arm and leg, and from time to time of swelling of arm and leg. He reported that the ulcers of which the scars gave evidence had healed two years before, after he had taken for some time an extract of the roots of two plants, the cipo milhomens (a variety of aristolochia) and the assutungu, a plant unknown to the author. He still took this extract. Under treatment the patient greatly improved. The arm was daily bathed with lukewarm water and perchloride of mercury, and later with an aromatic alcoholic solution of salicylic acid. Ointments containing salicylic acid and iodoform were also applied. As general treatment an aperient mixture was given, the alcoholic extract which the patient had been in the habit of taking was discontinued, the diet was regulated, and a milk diet recommended. By December the arm was healed and showed a red, glistening, uneven surface, and the patient was stronger and wished for light work. Bleyer describes the cuatiara from whose bite the patient suffered. It belongs to the family *Crotalidæ* and somewhat resembles the rattlesnake. It is found in Brazil, in Parana, parts of Santa Catharina, and Rio Grande do Sul, and is probably also found in the Mato Grosso and the Argentine Republic.

(110) Metabolism in Pernicious Anaemia.

E. Rosengrist (*Zeit. f. klin. Med.*, Bd. 49, 1903) has determined the variations in nitrogenous metabolism of 21 cases of bothriocephalus anaemia occurring at the Helsingfors medical klinik. In all cases there was a distinct nitrogen loss up to 8.8 grams per day before the worm was expelled. Afterwards the nitrogenous balance was at once or by degrees entirely regained. In some cases there was retention of nitrogen. The writer ascribes the increased nitrogen output to the action of a toxin produced by the worm upon albuminous matter. No parallel was found between the blood conditions and the nitrogenous excretion. With a purin-free diet the urinary purin excretion showed marked variations. During the toxic period, that is to say, whilst the worm was present in the intestine,

the endogenous purin excretion was very large. When the worm had been removed, the quantity of purin excreted sank rapidly to the normal. In some cases, however, it continued high for some days after the expulsion of the worm. The toxins secreted by the worm evidently incite leucocytosis to a high degree, and also extensive destruction of nuclear matter.

SURGERY.

(111) Actinomycosis of the Liver.

AUVRAY (*Rev. de Chir.*, No. 7, 1903) points out that hepatic actinomycosis, though rarely observed, is a subject of practical interest, as this affection has in some instances been brought within the range of surgical treatment. The author's paper is based on an analysis of 31 cases collected from medical literature. There are, it is stated, two forms of actinomycosis of the liver—one primary the other secondary. The latter is the usual and by far the most frequent form, but the occasional occurrence of the former has, the author believes, been well established. The secondary form may be due to direct propagation from the alimentary canal, the lung, or the kidney, or to remote infection from the primary seat of the disease, in most instances a metastasis by the way of the blood circulation. The most frequent instance of the latter is transmission by the portal vein from a primary growth in some part of the alimentary canal. The transmission may, it is thought, be effected also by the lymph vessels. The primary form of hepatic actinomycosis may, it is assumed, be the result either of introduction of the germ into the general circulation by a solution of continuity in the skin or mucous membrane, or of its more direct transmission through the portal system from a breach of the intestinal mucous membrane. The author, whilst admitting the existence of primary actinomycosis of the liver, recognizes the difficulty of determining in many cases whether the hepatic affection be primary or secondary. In the presence of multiple visceral lesions how can it be known, he states, which was the first in date? A like difficulty presents itself when there is an absolute continuity between the hepatic deposit and the lesion in the intestine or lung. Actinomycosis in the liver is usually manifested by one or more abscesses, each containing a thick, grumous, and sometimes ill-smelling pus, including the characteristic yellow corpuscles, and presenting under the microscope the specific mycelial forms, together with the usual microbes of secondary infection. As the disease develops the affected liver contracts close and extensive adhesions with the surrounding parts, and breaks down into numerous suppurating cavities, the fluid contents of which spread far and wide in the abdominal cavity amongst the adhesions, and make their way sometimes into the intestinal canal, sometimes through fistulous tracks formed in the anterior wall of the abdomen. The author recognizes and describes three clinical forms of hepatic actinomycosis; a hepatic form in which the predominant symptoms are localized in the right hypochondrium and indicate a primary affection of the liver; a gastric or intestinal form in which disturbances of the stomach or intestine are most marked; and a pyaemic form in which abscesses are disseminated over remote organs, and which is associated with a collection of general symptoms analogous to those of ordinary purulent infection. The disease invariably results in death due in most instances to exhaustion from prolonged suppuration, and occasionally to peritonitis, actinomycosis of other organs, and metastatic suppuration. The clinical diagnosis in most cases is very difficult if not impossible. A positive result may be attained by microscopical examination of pus withdrawn by aspiration but, it is pointed out, the absence of the "ray fungus" does not always justify the conclusion that the case is not one of actinomycosis. When a hepatic abscess has opened externally, the aspect presented by the invaded skin and the character of the discharged pus will remove all doubt as to the nature of the disease. In discussing the treatment of the disease the author holds that although iodide of potassium has hitherto failed to afford any good results in hepatic forms of actinomycosis, this medicinal agent should not be neglected in the future, but be given in large doses either as the sole remedy or concurrently with surgical measures. Six cases have been collected in which actinomycetic abscesses of the liver dealt with by surgical operation, the diseased part having been attacked four times by the abdomen, once from the lumbar region, and once through the pleural cavity. All these cases terminated fatally, but in every instance death occurred after a long interval, and was due, not to the operative treatment, but to some concomitant lesion either in the liver itself or in remote viscera, unrecognized at the time of the intervention. The author concludes that notwithstanding the bad results obtained in this small series of operations, surgical treatment should not be altogether condemned. It still remains to be proved, he holds, that an operation performed at an early stage of the disease, and when the hepatic lesion is isolated or predominant, is always likely to fail to give any good result. If it be possible to diagnose hepatic actinomycosis before the beginning of suppuration, and when the disease is manifested in the form of an actual tumour, and if the situation of this tumour and the degree of disturbance caused by it do not contraindicate surgical intervention, it is thought that resection would be just as much demanded for this as for other morbid growths of the liver.

(112) The Indications for Operative Intervention in Middle-Ear Suppuration.

POTTS (*Amer. Journ. Med. Sci.*, July, 1903) gives the following review of the symptoms indicating operation in cases of chronic suppurative otitis media. Profuse and long-continued discharge, he states, is suggestive, but not diagnostic, of extension of the suppuration to the antrum or mastoid process. A fluctuating swelling over the mastoid process is diagnostic of such extension, but its absence would not contraindicate operation. Oedema behind the auricle is often due to furuncle or some other inflammatory affection of the external ear. Tenderness over the mastoid process, especially in the region of the antrum, is of great significance, and the more so if it be persistent; but it may be doubtful or absent if the outer table be much sclerosed. Inflammation of the upper and posterior boundaries of the canal, marked by tenderness and bulging, is one of the most important signs, and its persistence, in spite of treatment, may be regarded as a sure indication for operation. A sinus, whatever its location, leading into the mastoid process, is a positive indication. Facial palsy is not regarded as an important or significant diagnostic symptom. Epileptiform attacks are unusual in cases of suppurative ear disease; when observed, they indicate possible cerebral pressure. Marked and rapid failure in health is more apt to occur in adults than in children. The temperature is usually higher in children than in adults. A slow and thready pulse out of proportion to the elevation of temperature, irregularity or sluggishness of the pupils, rapid failure of health, and rigors or convulsions, are to be regarded as signs of intracranial pressure. Tenderness and oedema over the occipital bone are very apt to be present when the lateral sinus is thrombosed.

MIDWIFERY AND DISEASES OF WOMEN.

(113) Hysterectomy in Acute Puerperal Infection.

PINARD (*Ann. de Gynéc. et d'Obstét.*, April, 1903) condems this operation on scientific grounds. First, he dwells on the mortality in the Baudelocque clinic from 1890 to 1903. The deaths from genuine puerperal septicaemia were 69 in 26,952 labours, or 0.25 per cent. In 2 cases hysterectomy was performed and both patients died. The first underwent operation on the tenth day and died four days later. It was believed when the uterus was removed that the symptoms indicated suppurative thrombo-phlebitis limited to the uterus: but at the necropsy pus with streptococci was found in the left pleura, a condition not diagnosed during life. In the second case supravaginal hysterectomy was performed, the cervix being left and the abdominal cavity drained. The patient died a fortnight later. Pinard lays great stress on the fact that in necropsies made on the majority of the 67 cases of fatal puerperal septicaemia, never once was the septic lesion found to be localized in the uterus. In two exceptional cases sloughing fibroids, overlooked during life, were detected on the *post-mortem* table. Again, bacteriological examination of the blood proved entirely unfavourable as an indication for hysterectomy. The presence of streptococci in the blood is not always followed by death. In Widal's case of coli-bacillus septicaemia hysterectomy would have been useless, as the woman died on the fourth day after the symptoms of infection set in, of cerebro-spinal meningitis. Lastly, in none of the fatal cases did the clinical symptoms show that the uterus was the only source of the infection, or that the

uterine lesions were such as to be unsuited for local therapeutic measures less radical than hysterectomy.

(114) Uterine Fibroid and Cystic Kidneys.

Dolléris and Algret (*La Gynéc.*, April, 1903) describe how death from acute uraemia and hemiplegia followed on the fourth day after the removal of a large uterine fibroid. The patient was a married woman, aged 44; fairly healthy; there was a trace of albumen in the urine, and the temporal arteries were firm and sinuous. A swelling was detected before operation in the left loin, but it was apparently part of the fibroid; there was no groove between it and the uterine tumour. Retroperitoneal hysterectomy above the cervix was performed. The patient ceased to breathe twice during the operation. Chloroform was the anaesthetic employed. Coma set in rapidly followed by hemiplegia, which did not involve the face. Urine and faeces continued to pass almost to the last. Both kidneys were found to be greatly enlarged, and transformed into cystic tumours of the polycystic type. The liver did not share in this degenerative process, as is sometimes the case. The authors note that it is difficult to diagnose enlargement of the kidneys due to general cystic degeneration when the abdomen is already distended by a big fibroid tumour; the urine often shows little morbid change. They consider that ether, or even local administration of cocaine, is safer than chloroform as an anaesthetic in cases of hysterectomy for large fibroids.

(115) Fibroid of Cervix Obstructing Labour.

Böhnke (*Monats. f. Geb. u. Gyn.*, May, 1903) writes of a 5-para, aged 28, who was sent into a lying-in hospital for flooding of a fortnight's duration. She was in the ninth month of pregnancy, and strong pains had set in. A soft, solid tumour as big as a man's head had dilated the cervix and projected into the vagina. The fetal head presented behind it, and, of course, delivery was impossible as long as the tumour occupied the pelvis. The tumour, however, had already loosened itself in part from its attachments but was still connected with the wall of the cervix on the left. Böhnke succeeded in enucleating it. So much haemorrhage was set up that delivery had to be hastened by turning and extraction. The child was born alive. The cavity in the uterus whence the fibroid was extracted was plugged; fourteen days later it was hardly large enough to lodge a hen's egg; the patient was in perfect health. The tumour weighed 2¾ lb. and measured over 7 in. in its longest diameter. It was a true myoma with necrotic changes in its centre.

(116) Pulmonary Embolism and Abscess following Operation for Appendicitis.

Stone (*Amer. Gynaec.*, May, 1903) relates a case of operation on a previously healthy woman who had exhibited the characteristic symptoms of appendicitis for less than forty-eight hours. The extremity of the appendix, which contained a large faecal concretion, lay in a small collection of pus. The wound was drained. Symptoms of embolism set in suddenly fifty hours after the operation: the patient rallied after intravenous injection of saline solution. For a few days the patient did well, but the temperature and pulse remained above normal, although there was no evidence of peritonitis, and some pain was felt over the lower lobe of the right lung. On the eighth day after the attack an abscess ruptured into the right bronchus, causing severe dyspnoea, collapse, and death within two hours. No necropsy was allowed. Miller, discussing this case, thought that it was an instance of septic embolism. Bovée considered that lymphatic invasion explained such cases. He had observed it in a few cases which had died under nearly similar circumstances, though usually a little longer after the operation; the continuance of general febrile symptoms after the removal of the appendix was significant. Bovée believed that the secondary focus was present at the time of operation.

(117) The Physiological Cholaemia of the New-Born.

Gilbert, Lereboullet, and Stein (*Ann. de Gyn. et d'Obstet.*, July, 1903) have made a series of experiments on the serum of the mother, the child, and the funis at delivery. All cases where the the infant was jaundiced at birth or became so shortly afterwards were rejected. Simple physical examination shows that as compared with the maternal serum the serum of the vessels in the cord is distinctly bilious. Gmelin's test confirms this appearance. The importance of ascertaining whether the fetal serum is also rich in bile is evident, but the experimenters found that it was difficult to make an accurate estimate by ordinary tests, because serum in the new-born child becomes discoloured by haemoglobin after removal. They evaded that source of fallacy by determining, with the assistance of distinguished chemists, the quantity of bilirubin in every sample of serum. The result was that they found that the blood in the cord contained about three times more bile-pigment than could be measured in the maternal blood. The blood of the new-born is one-third richer in bile-pigment than that of the cord. Thus there is a physiological cholaemia in the new-born very marked yet clearly normal. The experimenters insist that the maternal cholaemia is secondary, being derived from the fetus.

THERAPEUTICS.

(118) The Bactericidal Action of Radium Rays.

R. Pfeiffer and E. Friedberger obtained a small quantity of radium bromide, and tested the action on bacteria of the rays (*Berl. klin. Woch.*, July 13th, 1903). The substance, of which they had 25 mg., was enclosed in the central hollow of a vulcanite capsule. It was covered with a mica plate, and the whole was protected by a brass cover, provided with a central opening. The radium visible through the mica plate was therefore a round portion, and measured 6 mm. in diameter. The rays generated by this quantity were capable of penetrating a bronze plate of from 5 cm. to 6 cm. in thickness. The first experiment on cultures of typhosus and cholera bacilli at a distance of from 6 cm. to 10 cm. proved negative. Next they placed a plate culture of typhosus bacilli on the radium box, so that the surface of the gelatine was exactly 1 cm. distant from the radium. The gelatine had been thickly sown with bacilli, but after the plate had been exposed to the Becquerel rays in the dark chamber for forty-eight hours there was a central transparent bright round portion of about 2 cm. in diameter, while all round this clear circle the plate was markedly turbid from plentiful bacillary growth. They were able to prove that the rays had not produced any changes in the gelatine, which would prevent the growth of bacilli, by exposing the plate first to the rays and then inoculating the surface exposed. In this case plentiful growth appeared within twenty hours. They repeated their experiment with cholera bacilli, and found that if they exposed the central parts of sixteen hours' old cultures of cholera bacilli in which the colonies were already microscopically visible for twelve hours to radium bromide the central parts remained unaltered, while plentiful growth took place in the surrounding portions, and subcultures inoculated from the central parts on agar tubes could not be made, the tubes remaining sterile. Anthrax spores dried on silk threads were killed by exposure to the rays in the dark chamber for three days, two days proving not enough. The authors think that it may be possible to employ the rays in some infective conditions of the skin, such as lupus; but since it is already known that the rays are capable of damaging the tissue cells, care will have to be exercised in determining the therapeutic value.

(119) Ichthargan.

In the treatment of discharging conditions of the vagina and internal genital organs in the female, one wishes to employ some preparation which possesses resorbing, antiphlogistic, bactericidal, and astringent qualities, and a combination of ichthyol and silver appeared to K. Neuwirth (*Therap. Monats.*, June, 1903) to be likely to fulfil these requirements. This combination is known under the name of ichthargan. In colpitis, either in the acute or in the chronic form, irrigation with ichthargan and water, 1 in 1,000, produced very good results. The vagina was first cleaned with sterile cotton-wool plugs, then a cylindrical speculum was passed and the solution poured in, the speculum being slowly withdrawn, so that the whole mucous membrane was bathed in parts for one or two minutes with the fluid. After the solution had been got rid of a strip of gauze soaked in ichthargan (5 parts), water (5 parts), and glycerine (90 parts), was introduced, and a plug of wool inserted. This was removed after ten or twelve hours. He is not in a position to state yet whether ichthargan acts in killing the gonococci, and whether it attacks the cervical and uterine mucous membrane as it does the vaginal. In chronic gonorrhoeic urethritis it acted well when it was applied for a considerable time. In conclusion, he thinks that ichthargan ought to occupy a firm place among our therapeutic remedies.

(120) Anesthesine.

J. Noe (*Arch. Gén. de Méd.*, May 5th, 1903) gives the properties of this new local anaesthetic, based mainly upon a Thèse de Paris of L. Duplan. The soluble properties of cocaine, eucaine (*a*) and (*b*), and holocaine render their action more diffusible and transitory, and their ready absorption increases their toxic action. Anesthesine belongs to the group of insoluble anaesthetics of which orthoform is a well-known example, but has advantages over the latter in being more stable, less liable to reduction, and less susceptible of causing toxic symptoms. It was discovered in 1890 by Ritsert; it is the ethylic ether of para-amido-benzoic acid, and has the following formula:

$$C_6H_4{=}\frac{NH_2}{COO.C_2H_5}$$

It is a white powder, tasteless and odourless, almost insoluble in water, more soluble in 1 per cent. HCl or glycerine and water, but freely soluble in alcohol, ether, chloroform, acetone, fats, and oils. Acids and alkalies do not decompose it, and it retains its properties in all solvents. Dissolved in 10 per cent. alcohol, dilute glycerine, or sweet almond oil, it proves fatal when injected intraperitoneally into guinea-pigs in doses of 0.85 gr. to 0.90 gr. per kilo. Asphyxial lesions are present *post mortem*. Given by the mouth to rabbits the fatal dose is 1.15 gr. per kilo. In dogs, 0.4 gr. per kilo proves fatal intravenously; 0.75 gr. by the mouth. It is inactive upon the vasomotor nerves; neither vasodilatation nor vasoconstriction is observed at the site of injection, in this differing from cocaine. This drug has been administered by Von Noorden by the mouth in doses of 0.2 to 0.3 gr. ten to fifteen minutes after meals in cases of nervous dyspepsia and gastric ulcer. It compares favourably with chloral, chloroform, or even orthoform in these cases. In laryngeal hyperaesthesia it may be given as an insufflation or inhalation, and is less irritating than orthoform. It is also indicated in dyspepsia from laryngeal ulceration. In irritative cough and difficult deglutition, it may be given in the form of pastilles containing 0.2 to 0.4 gr. As a 10 per cent. ointment it relieves pruritus vulvae of diabetic origin, and the pain following burns. In the form of a suppository it is useful in anal fissures, haemorrhoids, and rectal tenesmus; further Von Noorden has checked vesical tenesmus by bougies containing 0.3 gr. In inoperable cancer it affords much relief to the pain. Blondel has shown that, by introducing the powder by means of a small pellet of cotton wool into the male urethra, at the end of two minutes cauterization with a 20 per cent. solution of silver nitrate is painless. Likewise, for curetting the endometrium, local insensibility is obtained by applying strips of gauze soaked in glycerine and dusted with anesthesine.

PATHOLOGY.

(121) Experimental Researches on Cancer in Mice.

Jensen (*Centralbl. f. Bakt.*, Bd. xxxiv, Nos. 1 and 2, 1903) expresses his conviction that it is from experimental work that the elucidation of the etiology of carcinoma is to be looked for. The work he records is in connexion with cancer of the mouse, especially the circumstances attending its successful transplantation. The original growth from which transplantations were made was a small tumour of the back of a white mouse, adherent to the skin, and about the size of a hazel-nut; its structure was that of a carcinoma. Pieces of this growth were broken up in a mortar with sterile physiological salt solution, and a small amount of the fluid injected subcutaneously into five mice: in three of these subcutaneous tumours developed exactly similar in structure to the original growth. About fourteen days after injection a small nodule appeared and increased in size with varying rapidity, in some cases developing to the size of half a hen's egg in the course of some months. No metastases were formed. From two of the three mice further transplantations were made, and up to the end of December, 1902, 844 mice had been thus inoculated. Of these, 232 died within fourteen days of the inoculation. Of the remainder, 274 were injected with material broken up in the mortar with salt solution, and in 121 tumours developed; in 338 a small piece of growth was inserted beneath the skin, and in 128 growths developed. Thus about half of the injected animals gave positive results; 19 generations were inoculated. In almost all cases the process of development of the tumour was the same; in the first few days after injection the material inoculated dwindled in size; in about a fortnight new nodules appeared and gradually grew until in some cases the new growth was greater in weight than the rest of the animal, and extended over the greater part of the back. The condition of the injected material influenced the result, the effect being greater when it was derived from the younger and smaller growths. Degenerative processes were often to be seen in the central cells of the alveoli, especially in the larger growths: in one case this was of a keratohyaline nature. The negative results are to be explained partly by circumstances attending the inoculations; for example, the inclusion of bacteria setting up inflammatory processes, but of greater importance appeared to be an immunity to the new growth possessed by the animal. Animals negative to first injections were also negative to further injections; this possession of immunity probably explains the negative results of many of the published transplantation researches. Immunity was in some cases shown by whole families of the mice. From the white mice Jensen inoculated the common grey mouse; out of ten injections, only one positive result was obtained; from this one case further transplantations to grey mice were more successful; of 84, in 27 a positive result eventuated. Negative results followed injection in four other species of mice, in white rats, guinea-pigs, rabbits, goats, and ducks. By a serial examination of the development of the growths from day to day it was shown that the new formation arose from the multiplication of certain of the transplanted cells which maintained their vitality; the new growth was therefore a true transplantation. A variety of cell inclusions and pseudo-parasitic forms were seen in the tumours, some resembling blastomycetes; no cultures of blastomycetes were obtained. The vitality of the tumour cells was studied under a variety of conditions—their resistance to heat and cold, intensive light, drying, and the action of antiseptics. It kept in isolated condition at the body temperature they retained their vitality for only twenty-four hours, particles kept longer than this gave negative results; summer heat and the low temperature of 1 to 3° C. increased their resistance. Five minutes' exposure to 47° C., and a few minutes to −20° C. killed the cells. Intensive light also killed them, but only acted superficially. Partial drying was also lethal, and a ¼ per cent. solution of carbolic acid destroyed their vitality in five minutes.

(122) Experimental Exophthalmic Goitre.

Tedeschi (*Giorn. d. R. Acad. di Med. di Torino*, Febbraio-Marzo, 1903) refers first to his own experiments showing that all the symptoms of exophthalmic goitre may be produced in dogs by lesions in the anterior portion of the rectiform bodies. He gives details of further experiments showing that in such cases the symptoms are accompanied by alterations in metabolism, the quantities of faeces and urine are increased, the nitrogen excreted in the urine, and especially that in the form of urea, is much increased; there is also an increase, both absolute and relative, in the urinary phosphates. That such deviations from normal metabolism are found also in human beings suffering from exophthalmic goître. So strong an analogy is thus made out between the two classes of cases that we are justified in concluding that the lesion of the rectiform bodies in dogs really produces exophthalmic goitre, and not merely a collection of symptoms simulating that disease. These alterations in metabolism are of the same nature as those produced by the administration of thyroid preparations, and they may be diminished or removed, both in dogs and men, by the partial removal of the thyroid gland. It may therefore be supposed that the altered metabolism in Graves's disease is connected with the thyroid function. In fact, the administration of thyroid gland facilitates the production of the symptoms in dogs which have undergone the injury to the rectiform bodies, and the removal of the gland, if performed before injury to the rectiform bodies prevents the appearance of the symptoms, and performed later causes their gradual disappearance. Tedeschi concludes that exophthalmic goitre is due to some anatomical or functional lesion of the rectiform bodies, probably connected with the origin of the vagus or sympathetic or with the vasomotor centre. This bulbar alteration is followed first by a hyperaemia and then by a hypersecretion of the thyroid gland, and this in turn produces other symptoms including the greater part of the changes in metabolism. Tedeschi also claims to have proved that the thyroid secretion exercises a special tonic influence on the bulbar centres, comparable to that exerted by cocaine, pilocarpine, and apomorphine. Thus a vicious circle is established and the disorder is maintained or accentuated.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(123) Asthma.

Basing his arguments on the experience of seven years' constant contact with asthmatics, M. Sihle (*Wien. klin. Woch.*, No. 4, 1903) deals very fully with the question of the pathology of asthma. He considers that in order to gain a clear knowledge of the condition, one must regard the patient during the attack and also during the interval. During the attack one meets with the expiratory dyspnoea, the dry whistling *râles*, the acute inflation of the lung with depression of the diaphragm, the increased rapidity of the heart's action, the low tension pulse (as a rule), and the tenderness of the liver, which is depressed. In the interval the dyspnoea and the rapid cardiac action are absent and the dry *râles* have become moist and have cleared up. The edge of the liver is still depressed and the organ is still tender on pressure. A moderate degree of inflation of the lung also persists. He has reason to believe that this tenderness of the liver is due to a chronic congestion. Turning his attention to the circulatory apparatus, he says that for three years he has taken blood-pressure measurements in all his cases of asthma, and finds that the pressure is diminished, not only during the attack, but also to a less degree during the interval. This diminished blood pressure, and the small soft pulse is not, as is often believed, the result of the bronchial asthma, that is of the obstruction in the lungs, but is the result of a vagus neurosis. This point is discussed minutely, and from this discussion he concludes that the disposition to asthma, as well as the asthma itself, is comprised of four components: (1) A tendency to spasm of the bronchi (increased tone of the bronchial muscle): (2) a tendency to vasomotor insufficiency (diminished tone of the circulatory muscle): (3) a tendency to fluxionary hyperaemia of the respiratory mucosa; and (4) a tendency to abnormal secretion of the respiratory and bronchial mucosa. He next deals with the reflex arch, on which the attack of asthma depends. The arch consists of a centripetal, a central, and a centrifugal limb. The latter is best known, and is represented by the motor, the secretory, and the vasomotor paths of the vagus. The centripetal limb is more complicated, and after discussion he finds that the olfactory, trigeminal, and vagus nerves at all events may be accepted as acting in this capacity, and leaves it an undecided question whether other cerebral nerves and the spinal nerves are capable of doing so too. The central limb cannot be localized with certainty, but one gains a fair insight into the complicated matter by physiological experiment especially when in association with degeneration experiments. He hazards that the central portion of the reflex is situated in the solitary bundle, to be directed to the solitary bundle nucleus, and thence the messages are distributed along the various paths. He again calls physiology into use in attempting to clear up the neurasthenic and hysterical forms of asthma, and based on a sound argument he concludes that one must recognize the important part which the brain, and especially the cortex, plays in the production of asthma. He classifies the disease into a peripheral, a haematogenous, and a psychogenic or cerebral form. With regard to the question of treatment, he deals with the component parts separately. The bronchial spasm is best dealt with by narcotics, such as morphine and its derivatives, but he considers that it is wiser not to use morphine itself as a rule, and suggests such derivatives as heroin, codeine, and dionin. The vasomotor insufficiency may be treated with good results by digitalis, and he especially recommends the infusion. He has not seen much good arise from strophanthus, convallaria, or adonis. The action of iodine on the bronchial mucosa has been long recognized, and although he doubts if the action depends, as is generally believed, on its resorbing power, he finds that it does undoubted good. The fourth component, the hyperaemia of the mucosa, cannot be dealt with medicinally. In the average case of bronchial asthma he gives the combination of infusion of digitalis, hydrochlorate of heroin and potassium iodide every four or six hours. In conclusion, after saying a few words in favour of atropine, he recites some examples of the value of the treatment by suggestion in certain forms of asthma which have defied all other attempts at cure.

(124) The Etiology of Acute Rheumatism.

Philipp (*Deut. Arch. f. klin. Med.*, lxxvi, part 1-3) records the result of his examination of 26 cases of acute rheumatism, of which 24 were quite typical, in Pribram's clinique. He calls attention to the need for accurate diagnosis, and holds that many of the cases upon which bacteriological reports have been written were really of a septic nature. He gives 2 examples within his own experience in which the septic cause was only detected after death. Of his own patients the blood was examined in 21, and the joint fluid in 6 cases. Cultures were made upon some twenty solid and liquid media, and inoculations into guinea-pigs, rabbits, dogs, and monkeys. In not a single instance was there any growth of micro-organisms, even when the joint exudation was full of fibrinous clot and leucocytes: nor did any of the animals suffer with the exception of a calf which for a day or so after the injection of fluid from a rheumatic knee had a little fever and some limping of the near hind leg. In this case no joint swelling occurred, and the animal soon recovered completely. Cultures and animal experiments from a fatal case of acute pericarditis complicating mitral regurgitation of rheumatic origin also failed, as did similar attempts with the fluid from joints attacked by chronic rheumatism. The author summarizes his results thus: In acute rhematism neither the circulation or the joint fluid contains any micro-organisms which are demonstrable by ordinary bacteriological methods, or can be successfully inoculated into guinea-pigs, rabbits, or monkeys. Calves, however, appear to be in some degree susceptible to the specific virus. The nature of this virus must, however, in the author's opinion, still be admitted to be unknown.

(125) Axillary Adenopathy in Incipient Phthisis.

Ceraulo (*Gazz. degli Osped.*, May 24th, 1903) quotes Fernet's observations (Epitome, March 28th, 1903, par. 198) as to the relative prevalence of enlargement of the axillary gland as a sign in early phthisis (according to Fernet it is present in a third of the cases), and records 11 cases of suspected early phthisis where observation was directed to this point—in none of these cases were the glands enlarged, except one, and here probably the cause of the enlargement was syphilis. On the other hand palpitation (perhaps due to reflex irritation from the diseased lung) was present in 7 out of the 11 cases, and phosphaturia in 9. Tubercle bacilli were only found in 2 of the cases. There were 8 females and 3 males in the author's cases. They are, however, too few in number to draw any safe conclusions from them.

SURGERY.

(126) Gunshot Wounds of the Lung in Time of Peace.

Koenig makes some aphoristic remarks on the course and treatment of gunshot wounds of the lung (*Berl. klin. Woch.*, August 10th, 1903). He speaks chiefly of revolver wounds, sustained either in the act of attempting to commit suicide, or murder. In the greater number, the bullet was discharged very close to the chest, and penetrated the pleura and lung. Shots of the heart are not dealt with. Emphysema and pneumothorax were common. Haemorrhage into the cavity of the chest was most constantly met with. Rarely is this bleeding so profuse that the patient dies quickly, but in one of his cases he has come across this; the patient was 17 years of age, was brought into hospital unconscious and blanched, and died two hours later. In the majority of cases, the haemorrhage continues until the second day and produces grave symptoms, and as the blood effused is being absorbed, but little respiratory distress is felt. Resorption may be extremely slow, and at times the accumulation has to be removed by operation. At times the difficulty of breathing is very severe during the first three days, during which time there is still bleeding going on, and the patient may die at the end of this stage, but Koenig says that this is uncommon. Another danger in the course of these gunshot wounds is that of infection, and he illustrates this danger by a case in which the lung became infected by pneumococci from the interior of the bronchi. The treatment of the cases requires some individualizing. Only rarely is one justified in operating within a short time after the shooting, in order to arrest the haemorrhage. When the distress in respiration increases two or three days after, when the pulse-rate becomes rapid, and when the temperature rises, one should not hesitate to

perform thoracctomy. The same applies to a rising of the temperature and dyspnoea appearing in a later stage, due to pneumococcic or other infection from the bronchi. The same operation may be performed, without the symptoms being severe, if there is a haemothorax on the second or third day, but one must be extremely careful to be absolutely aseptic, as there is a great risk of converting a haemothorax into an empyema. When the resorption is very slow, one may remove the blood by puncture, and if this proves unavailing (but only then) is one justified in opening the pleura.

(127) The Cause and Treatment of Hammer-toe.

A. Perassi (*Ann. d. Med. Nav.*, January, February, 1903) considers that the deformity depends on a paralytic contracture of the flexor muscle, due to some circumscribed cortical lesion. He supports this by reference to the common bilateral cases, and by two cases of his own in which the condition had begun in infancy and was accompanied by a slight but distinct stammer. He suggests the importance of more extensive observations. The operation which he advocates is as follows: By means of a semilunar incision on the convexity of the toe he cuts a cutaneo-tendinous flap, incises the capsular and lateral ligaments of the joint between the first and second phalanges, isolates the first phalanx, and cuts off a sufficient portion of its head. He then cuts the flexor tendon half through by an incision at right angles to the tendon near its insertion, and by a longitudinal incision creates a strong "tongue" of tendon, which is brought up between the first two phalanges and sutured to the extensor tendon. He thus brings about an equilibrium between the actions of the antagonistic tendons. Finally, before suturing the skin he removes what is superfluous, as well as any callosity that may have formed. The operation is described as a modification and completion of that of Terrier, and the author states that the result is a radical cure.

(128) Surgery of the Pancreas.

Von Mikulicz-Radecki (*Ann. of Surg.*, July, 1903) publishes his personal experience of operative interference for disease of the pancreas, which, he points out, is at the present time the most incomplete chapter in the realm of abdominal surgery. Besides 30 cases in which this surgeon has had the opportunity of operating upon the pancreas while resecting the stomach for cancer, he has operated directly on the pancreas thirty times. Ten of these latter cases were typical pancreatic cysts, of which two were removed and eight were incised and drained. Recovery was obtained in all these cases. A subacute pancreatitis occurred twice among these cases, once leading to suppuration, and the second time giving rise to fat necrosis. The abscess healed after incision, the second patient was restored to health after a preternatural anus had been established. A case of chronic pancreatis died of pneumonia ten days after a cystentero-anastomosis. In one case of contusion of the pancreas, the result of blunt force, an immense haematoma was opened and drained 24 days after the injury. This case recovered. The author has had under his care 15 cases of malignant growth involving the pancreas. In these exploratory laparotomy was done seven times, and cholecyst-enterostomy five times. Of the latter cases one was fatal in consequence of the operation. In one case gastro-enterostomy was done for stenosis of the duodenum due to a pancreatic tumour. In a second case, a softened tumour taken for a cyst was drained; and in a third a tumour in the head of the pancreas was extirpated. All these three cases ended fatally.

MIDWIFERY AND DISEASES OF WOMEN.

(129) Chronic Inversion of the Uterus.

Reposition of the chronically-inverted uterus is rendered difficult by the contraction of the parts in the neighbourhood of the cervix. Many methods of manipulation and forms of instrument have been devised for bringing about reposition, but in a majority of the more chronic cases the attempts have been unsuccessful, and injuries to the soft parts—occasionally fatal injuries—have been recorded. Under these circumstances Reuben Peterson (*Amer. Gynec.*, June, 1903) recommends that operative treatment should be the rule. Operations for chronic inversion may be divided into two classes, abdominal operation and operations per vaginam. T. Gaillard Thomas in 1869 reported a case of chronic inversion successfully treated by the abdominal method. After median laparotomy the cervical ring was dilated and the fundus replaced. A second case where the operation was performed on a patient already exhausted from loss of blood ended fatally. Against this operation it is urged that there is grave risk from shock and sepsis where the patient is exhausted, and also that there is great difficulty in satisfactorily carrying out dilatation; the soft parts are often injured, and the ring tends to recontract before the fundus can be replaced. Thomas himself only recommends the operation as a substitute for amputation. The points in favour of the method are that adhesions about the inversion ring can be more easily separated than in the vaginal operation, haemorrhage can be more readily controlled, and a suspension operation can be carried out as final step. These points are of little practical importance. Adhesions about the ring are exceedingly rare, haemorrhage is slight after colpohysterotomy, and suspension can be easily accomplished by vaginal fixation of the round ligaments. Fifteen cases are recorded in which Thomas's operation or a modification of it has been employed. Of these 8 were successful, although in 3 of them incision of the ring had to be resorted to; in 4 of the unsuccessful cases amputation of the uterus was necessary; in 2 the details were not given, and in 1 the result was fatal. The four principal methods of operation by the vagina are: (1) Partial posterior colpohysterotomy (Kustner's operation): incision through the posterior uterine wall from just above the external os to just below the fundus; 6 operations with 4 successes are recorded; (2) complete posterior colpohysterotomy (Piccoli's operation): incision through the posterior uterine wall from the external os to the fundus; 12 operations with 11 successes; (3) partial anterior colpohysterotomy (Kehrer's operation): incision through the anterior uterine wall from the external os to the centre of the fundus; 1 operation, successful; (4) complete anterior colpohysterotomy (Spinelli's operation): incision through the anterior uterine wall from the external os to the fundus; 6 operations with 6 successes. No fatal cases are recorded in any of the vaginal operations. The vaginal methods thus show 26 cases with only 3 failures—that is, 88 per cent. of successes as compared with 53 per cent. by the abdominal method. Partial colpohysterotomy, whether anterior or posterior, although successful in some cases, often fails where the fundus is thickened and hard, and complete incision of the cervix is found to be needful. Spinelli recommends the anterior rather than the posterior operation on the grounds of an alleged atrophy of the anterior wall in chronic inversion, and of the danger of the formation of adhesions in the posterior operation which would fix the uterus in a retroverted position. This danger appears to be a very real one. Peterson saw the first of his two cases of chronic inversion about ten years ago, and recommended Thomas's operation. The patient refused the treatment, and he has no record of her later history. In the second case he performed Spinelli's operation independently and with success, and this is the form of operation he especially recommends. In his case some difficulty was experienced in bringing together the edges of the peritoneum after reposition of the uterus. In such a difficulty he approves of Taylor's method of removing a wedge-shaped piece of the uterine wall on each side of the incision, so that both the muscular and peritoneal layers may be brought into accurate apposition.

(130) Ovarian Tumour of Bronchocele Type.

Meyer (*Zentralbl. f. Gynäk.*, No. 24, 1903) exhibited last spring before a German society an ovarian tumour removed by Mackenrodt which he described as struma ovarii colloides because of its absolute histological identity with bronchocele. In this case the thyroid gland was healthy. There were, however, pieces of bone in the tumour, so that Meyer considered that the new growth came under the head of teratomatous "struma," like Gottschalk's folliculoma ovarii malignum. Changes in the nuclei of plasmodial cells with ultimate breaking down into fluid were observed, and the tumour contained iodine.

(131) The Cervix in Ectopic Gestation.

Pinard (*Comptes Rendus de la Soc. d'Obstét. de Gyn. et de Péd.*, June, 1903) gives his valuable opinion on this subject. He finds that the modification of the cervix uteri in extrauterine pregnancy is not properly interpreted. In reports we read "Cervix small, firm, not softened." These words mislead

many students and gynaecologists. The cervix always becomes softer in pregnancy, whether normal or extrauterine, but it must not be forgotten that the softening process passes away when the ovum dies. Very often when ectopic gestation is diagnosed that condition exists, clinically speaking, but the fetus has been for some time dead. The cervix in such a case is firm, for, obstetrically speaking, there is no pregnancy, nothing but a fetal sac. Pinard notes that when an extrauterine pregnancy has gone on to term the cervix uteri may be so soft that an experienced obstetrician may suspect that the gestation must be normal after all.

(132) Pelvic Impaction of Movable Kidney in Pregnancy and in Ovarian Cystic Disease.

Von Guérard (*Monats. f. Geb. u. Gyn.*, Supplementary Number, vol. xvii, 1903) has written an important monograph on impaction of a movable kidney in the pelvis. The first patient was 30 years of age. She had been several times pregnant. In the fourth month of her sixth pregnancy she fell down on her nates, and felt great pain. A few days later, when her symptoms had become intense, she was examined, and a very tender tumour was detected impacted in the pelvis; it seemed to be ovarian. It was ultimately reduced under anaesthesia and the patient returned to her domestic duties. Two months later another violent attack of pain set in, and the tumour could again be detected impacted in the pelvis behind the uterus. Abdominal section was performed; then it was found that the tumour was the right kidney, a little enlarged, and somewhat firm, It was simply reduced, and both tubes were tied with a stout silk ligature for the purpose of sterilizing the patient. Uterine contractions set in during the operation, and the patient aborted three hours later: the placenta was expressed. A belt was afterwards constructed to keep the kidney in place. The second patient was 44 years old, and had a large fluctuating tumour in the right side of the abdomen. She believed that she had been swelling for six years, but for eight days violent pains set in, quite a new experience. Ovarian cyst with torsion of the pedicle was diagnosed and ovariotomy performed. A large ovarian cyst was found, with twisted pedicle, evidently of long standing, and firm adhesions. On emptying it another tumour was found. It was a movable kidney which had slipped down from its normal position. After removal of the ovarian cyst the kidney was simply replaced. Within eighteen months there was another attack of pain: the kidney was detected in the pelvis. It was pushed up, and the patient was confined to her bed for a week. Afterwards she did well, avoiding all violent muscular exertion.

(133) Infants that Refuse Breast or Bottle.

Le Gendre (*Comptes Rendus de la Soc. d'Obstét. de Gynéc. et de Péd. de Paris.* June, 1903) opened a discussion on infants born at term that cannot suckle. His own case was that of a child, aged four months. It was being successfully reared by artificial feeding, woman's milk being introduced into the stomach by means of a funnel and catheter. The mother was a primipara; she had an attack of measles during the pregnancy, but labour occurred at term and the child was externally well formed. As it would not take the mother's breast it was thought that the nipples were not long enough, so a wet nurse was tried, but without result. The bottle was absolutely refused. Then a few drops of milk were carefully poured on its tongue at the base, deglutition was then excited, but when any milk touched the tongue too near the edges or tip it ran out of the corners of the mouth. In short, the child could neither suckle, suck, nor drink. At four months it was fairly nourished. The anterior fontanelle was rather broad. The nerve centre for suction and voluntary deglutition was apparently ill-developed. Pinard reported a curious case where a very well-developed child began to refuse the breast when a fortnight old. A wet nurse with long nipples was then employed. At the end of a week the infant refused her. Pinard found that the reflex area for suction receded steadily from the tip towards the base. Nipples were made for the infant's bottle and had to be constructed longer and longer, till at last the longest did not excite suction and the child died with signs of hydrocephalus. The father had been under Fournier for syphilis five years before marriage. The mother had not been treated by any drug during her pregnancy; in later pregnancies she underwent antisyphilitic treatment, and gave birth to children that could take the breast. Lepage treated a neurotic primipara for diphtheria early in pregnancy. She gave birth at term to a child weighing 8 lb. It was very well nourished, but would not take the breast, though the introduction of the finger into the mouth excited suction. It also refused a wet nurse. Suddenly, on the sixteenth day, the child took its mother's breast, and henceforth there was no further difficulty in rearing it. There was no history of syphilis.

THERAPEUTICS.

(134) Influence of Alcohol on Muscular Capacity.

An enormous number of experiments have been made with the object of determining the effect, beneficial or otherwise, of alcohol upon the human body and its various systems. Unfortunately, few of these until late years have been carried out with exactness and absence of bias. The last decade, however, has furnished us with a number of carefully planned and executed researches which have demonstrated that alcohol is a food, that it can be made use of to furnish energy in the body, and indeed may replace to some extent other foods. Its energy value, weight for weight, is less than that of fat, but greater than that of proteid and carbohydrate. These facts, however, though well established, do not inform us how far these qualifications of alcohol as a food, which may be referred to its chemical constitution, are opposed in practice by its physiological action upon the body, and especially its paralytic action upon the nervous system. It is well known that in large doses poisoning effects may completely overpower any good done and death result, but it is of greater interest and importance to know what its effect is upon the capacity for muscular work in health with such quantities of alcohol as are usually taken. This has been investigated by Schnyder (*Pflug. Arch.*, vol. xciii, p. 451, 1903), with the assistance of Dubois, using a modification of Mosso's ergograph. With this instrument the muscular capacity is measured by recording the number of times a weight of 5 to 8 kilos. could be lifted by the forefinger, and the height to which it was raised before exhaustion set in, each effort being made at intervals of two seconds. The arm was fixed to a table and the weight attached to a string passing over a pulley, the extent of each movement being automatically recorded. When the weight could no longer be lifted a minute's rest was taken, and then another series of records made. Six to twelve such series were recorded in each experiment; the weight was lifted usually fifteen to thirty times before the muscle became exhausted. The product (weight × height to which raised) gives the amount of work done. The same weight was always used for the same subject. All the experiments were done at midday, four hours after a meal, in exactly the same way. The movements of the recording pencil were hidden from the subject during the experiment in order to avoid the effect of suggestion. One of the workers was an abstainer, the other accustomed to take regularly moderate quanties of alcohol. In the first series 150 c.cm. of Bordeaux containing 9.8 per cent. of alcohol was drunk fifteen minutes before the experiment. This corresponds to what is usually known as a good glass of wine. The effect was favourable, 10 per cent. and 5 per cent. more work being done than without alcohol, the higher figure being obtained from the abstainer. When, however, in a second series a quantity of tropon mixed with water containing the same food value as the alcohol was given a still more favourable result was obtained. Therefore alcohol under the above conditions improved the muscular capacity for work but not so much as an equivalent quantity of ordinary food. Further observations showed that alcohol immediately before the experiments did some good (3.6 per cent. more work), but if given half an hour before less work was done. Its action therefore was transitory and at its best fifteen minutes after ingestion. Tropon in every case gave a beneficial effect. Lastly, experiments were made upon the effect of a meal with and without alcohol; in this case twice the quantity of wine was taken, for example, two glasses: the result being that taken with food alcohol diminished the work done by 6 per cent. A full discussion may be found in the original. The observations, which seem to have been carried out with considerable care and in great number, were unfavourable to the action of alcohol on muscular strength. They do not, of course, touch on the use of the drug as an appetite producer. Schnyder explains the bad result of wine with meals by pointing out that when sufficient energy for the needs of the body is

present in the form of food only the harmful effects of the alcohol upon the nervous system come into play. It appears, then, that alcohol is a food and can increase the muscular capacity for work when taken on an empty stomach, but it is inferior in this respect to ordinary proteid and should only be used with this object when no other food is available.

(135) Treatment of Trigeminal Neuralgia.

C. Lilienfeld (*Deut. med. Woch.*, April 30th, 1903) considers that the usual treatment of neuralgia of the trigeminal area is not of much avail, the most which is usually done is to relieve the pain by narcotics. Electricity, in the form of galvanism or faradism, has not led to better results than other means, but it appears that treatment by alternating magnetism obtains lasting results. He therefore applied electro-magnetic treatment in 90 cases, and states that he succeeded in curing 11 completely and in materially improving 65 others. This represents about 83 per cent. of improvements, and since most of the cases were long-standing ones, he regards it as a satisfactory result. He recites the histories of some of his cases briefly, and states that commentary is unnecessary. As a rule, the pains diminished after the third, fourth, or fifth application of the electro-magnetism (15 ampères being the strength of current used), the sleep, which had been so freely disturbed before the treatment, was uninterrupted after a few applications, and after from sixteen to fifty applications the patients were able to discontinue the treatment. He claims that the good results were all obtained after the condition had been present for a long time, and had reached a stubborn and chronic character, and after very many different forms of treatment had been unsuccessfully carried out. Whether the results turn out to be real cures or only temporary ones is not decided, but it is certain that the patients will feel grateful for even a temporary relief from their sufferings.

(136) Styptol.

R. Katz (*Therap. Monats.*, June, 1903) calls attention to the fact that we have very few drugs which act in arresting uterine haemorrhage. Apart from ergot and hydrastis canadensis, there is only stypticin. Since there are numerous cases in which it is advisable to attempt to control the bleeding by means of medicine he has been induced to try a new preparation called styptol. This is a neutral phthalate of cotarnine. Cotarnine is a base which has been obtained by the oxidation of the alkaloid of opium narkotine. Theoretically the preparation should have considerable haemostatic power, since cotarnine is well known to possess this action, and the same action is accredited to the phthalates. It occurs in the form of a micro-crystalline powder, and is freely soluble in water. It can be given in powder form or in tablets. The latter are dispensed to contain 0.05 gram (about ¾ gr.) Apart from the haemostatic action it has a mild sedative effect which is dependent on its relationship to the opium groups. Katz has employed it in a considerable number of cases of different origin, and in only two cases did it fail to arrest the bleeding. The first was one of haemorrhage *post partum*, and the second was subinvolution of the uterus *post abortum* with haemorrhage. He found 0.05 gram given three times a day sufficient in cases where there was irregular bloody discharge, especially after such interferences as curretting, in severe menorrhagia, in climateric haemorrhages, in menorrhagia and metrorrhagia accompanying myomata, in haemorrhages in connexion with disease of the appendages, and other pelvic tissue, and lastly in haemorrhages during pregnancy. As far as his experience goes the drug acts as a sedative in haemorrhage during pregnancy, and does not produce uterine contractions.

PATHOLOGY.

(137) The Pathogenesis of Malignant Neoplasms.

Hemmeter (*Amer. Jour. Med. Sci.*, April, 1903) considers the pathogenesis of cancer in its chemical and physiological aspect rather than from a bacteriological point of view. After reference to the principal theories already existent and to the changes which may take place in cells under normal and abnormal conditions, the difficulties attending the parasitic theory of cancer are pointed out. Investigations were limited to adeno-carcinoma of the stomach, with which the author had the greatest familiarity and experience. Attempts in 42 instances at transplantation of pieces of adeno-carcinoma of the human stomach into the stomachs of dogs, cats, and guinea-pigs were unsuccessful, thus agreeing with the experience of other investigators that the results of transplantation of cancer cells into animals of different species are usually negative. Experiments in the artificial production of gastric ulcer were successfully carried out, and in eight dogs the edges of the ulcers were injected with a suspension of the tumour cells of a gastric adeno-carcinoma from another dog. Of three that recovered from the operation two showed adenomatous proliferations at the pyloric edge of the ulcer. In order to determine whether cancer formation at the edges of gastric ulcers could be induced by the injection of a sterile and cell-free extract of canine gastric carcinoma ten animals afflicted with experimental gastric ulcer were injected with a specially-prepared filtrate, with a result that in four instances the edges of the ulcer presented an adenomatous proliferation closely resembling an adeno-carcinoma. Thus it is concluded that gastric ulcers can be experimentally produced; and, further, that the edges of such ulcers may undergo adenomatous transformation by the injection of a cell-free and sterile fluid from a cancer of the same organ from the same species of animal. These changes appear to be due to a catalytic agent contained and produced within the cell, since heating the filtrate to 60° C. destroyed its action, and the fact that albumen can be synthetically constructed by enzymes, and that they act merely as inhibitors or accelerators of processes that can occur without them, suggests the possibility of the marvellous cell proliferation of malignant tumours being associated with the action of an enzyme. The possibility of autonomous development of neoplasms being due to irritant or traumatic causes is shown, such causes being largely needed to bring about the necessary derangement of catalytic action. Studies upon the relative osmotic pressures of normal and cancer cells pointed to the existence of a deep-seated disturbance between the osmotic tension of the living cells of a cancer and the surrounding juices, suggesting the influence of physical energies upon normal and abnormal cell growth. The theories as to the immediate and specific causes of cell growth lead to a conclusion that the stimulus thereto is of a chemical nature. The influence of physical laws upon cell growth and their effects upon cancer cells strongly favour the view that some at least of the causes for the excessive growth of malignant cells reside within the cell protoplasm itself, and the means by which the cell carries on the synthesis of its own substance point to the agency of intracellular catalyzers. In considering the structure and chemical organization of protoplasm the hepatic cell with its ten different ferments is instanced as an example of the numerous chemical processes which may take place, probably simultaneously, in an individual cell, the bearers of such chemical energy being catalyzers of a colloidal consistency. In addition, a special catalyzer regulates the synthetic construction of the protoplasm, and it is this ferment which has the power of accelerating or inhibiting cell growth. The cell is thus conceived as being composed of numerous ultra-microscopic compartments, each containing its own enzyme, which, with the addition of chemical, electrical, and other specific forms of energy, go to bring about the normal function of the cell. It is thus probable that abnormal cell growth may be due to other agencies than bacteria, though the possibility that such, when present, may exert a deleterious influence favourable to the development of malignant neoplasms is not denied. The theory of enzyme reversibility renders it unnecessary to assume the existence of distinct synthetic and analytic enzymes, since the same enzyme may exert opposite chemical effects if needed. It follows, on the assumption that the different agents work separately in different compartments of the cell to produce an ordered sequence of reactions, that there cannot be a ubiquitous chemical equivalence of protoplasm, and in the pathogenesis of neoplasms the possibility of a damage to the ferment controlling the upbuilding of protoplasm suggests itself as a cause. In considering metastases and the rarity of their extension by way of the blood circulation, it is conceivable that cancer cells are so far alienated from the general physiological laws of the body as to become acted upon by the serum as cells foreign to the body. That the serum may contain defensive substances effective in destroying cancer cells gives hope for investigations as to prospective prophylaxis or treatment.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(138) Tsetse Fly Disease.

THE tsetse fly disease has acquired new interest since the trypanosoma has been discovered in the blood of man. C. Schilling (*Archiv f. Schiffs- und Tropen-Hygiene*, Bd. vii, Heft 6) has studied the diseases of animals caused by trypanosoma both in the laboratory and during an eighteen months' residence in West Africa. He describes five poisonous varieties of the parasite. Nagana, caused by the trypanosoma Brucei, is the best known disease of the group, thanks to the work of Bruce, and a description of it both as attacking the horse and cattle is here given. In the horse the most prominent symptoms are progressive emaciation, swelling of the legs and the skin on the under side of the belly; in the male oedema of the scrotum and prepuce, and increasing weakness, in most cases proving fatal in a few weeks. There is also anaemia, interference with the functions of the heart, and small haemorrhages under the serous membranes. The fever resembles that of malaria in being remittent, but it is less regular in type and the remissions are longer. Trypanosomes are found in the blood during the fever, but not during remissions, when, however, they can still be found in the bone marrow, often in process of division. Sometimes the case takes a more chronic course, and during a prolonged remission the horse regains its strength to a large extent, but injection of its blood into a susceptible animal shows it to be still infectious. Two cases of recovery reported by Lingard are probably of this nature. No undoubted recovery has come to the author's notice. In the case of cattle the chronic form of the disease is the more common, and recovery in some instances is a recognized fact. Among smaller animals, dogs, mice, and rats are susceptible, and the virulence of the parasite is found to vary according to the animals through which it is passed. The attempts made to immunize cattle against the disease have been based on the two facts that the strength of the poison can be varied, and that cattle artificially infected are able to recover. In December, 1901, Robert Koch succeeded in rendering a cow immune to the disease. Schilling cannot as yet speak with certainty as to the results of his own experiments in this direction carried out in 1902 because of the chronic nature of the disease, but he believes that the principle of immunization has been secured, although more work is still needed to determine the most reliable methods, and to extend the treatment to horses and donkeys. Of the other forms of trypanosoma, Tr. Evansi corresponds in every important particular with Tr. Brucei. Tr. Rougeti differs chiefly in its method of transference. The parasite causing mal de Caderas shows only insignificant morphological differences, and even the more distinctive feature of the disease, it leads to paralysis of the hind legs of the animal attacked, and has been met with in another form of trypanosoma infection in West Africa. Tr. Theileri is twice as large as any other variety, and only affects cattle. The manner of infection with trypanosoma under natural conditions is only known in the case of nagana and dourine. Bruce infected sound cattle with nagana by allowing them to be bitten with a tsetse fly which had previously fed on infected blood. Buffard and Schneider have experimentally proved the conveyance of dourine by copulation in animals. The tsetse fly is usually found near to water in thick underwood. Its thirst for blood is such as to render ineffectual attempts to protect animals from its bite.

(139) The Diagnosis of Carcinoma of the Stomach.

IN seeking for some means of early diagnosis of cancer of the stomach H. Salomon (*Deut. med. Woch.*, July 30th, 1903) found that not much could be gained by estimating the number of micro-organisms in the stomach, nor did he have any success with serum diagnosis. He attempted to obtain a serum which would act specifically with the serum of cancer patients, but without success. The supposition that wherever there is an ulcerating surface a certain amount of serum will be exuded led him to see if the amount of albumen gained from the stomach would lead to better results. He proceeded as follows: The patient received milk and like fluid diet in the morning, and at about 2 o'clock a fluid meal, which was free from albumen, such as bouillon, tea, coffee or wine. The stomach was washed out at 9 p.m., with a large quantity of water, and was kept without any intake overnight. In the morning the stomach was washed out several times with 400 c.cm of physiological saline fluid. The returned fluid was tested for albumen, by Esbach's test, and the quantity of nitrogen was estimated by Kjeldahl's method. In the majority of cases of nervous dyspepsia, chronic catarrh of the stomach, gastroptosis, etc., there was either no albumen at all, or at most a slight clouding of the fluid. The nitrogen varied between 0 mgr. and 16 mgr. in 100 c.cm. of fluid. The same results were obtained in cases of chronic ulceration of the stomach, but for obvious reasons he did not test cases of painful gastric ulcer. In all cases of cancer of the stomach which he examined the amount of albumen varied between $\frac{1}{5}$ and $\frac{1}{2}$ per cent. The nitrogen value was corresponding, and lay between 10 mgr. and 70 mgr. per 100 c.cm. of fluid. He states that according to his present experience when there is a doubt as to the nature of a chronic disease of the stomach, carcinoma is probable if the washing out fluid shows a flocculant precipitate with Esbach, or when the nitrogen value exceeds 20 mgr. per 100 c.cm. of fluid. It is, however, he says, probable that an intense catarrh of the stomach may give the same results as carcinoma, but he has not yet come across such a case. He gives some details of cases in which his method was capable of correcting a wrong diagnosis.

(140) A Clinical Test for Urobilin.

W. SCHLESINGER (*Deut. med. Woch.*, August 6th, 1903) finds that the Jaffé and Neubauer-Vogel methods of detecting urobilin in the urine are not free from disadvantages, and do not always lead to clear results. Jaffé adds a few drops of an alcoholic solution of zinc chloride, and then sufficient ammonia, until the gelatinous precipitate of the hydrate of zinc has become dissolved. Neubauer and Vogel first add an excess of ammonia, and then the solution of zinc chloride. If there is a large quantity of urobilin present, one can detect the green fluorescence and the characteristic absorption bands in the spectroscopic plane. If there are other pigments in considerable quantities present, the fluorescence is obscured. Schlesinger finds that if one takes a measured quantity of urine, and adds the same quantity of a 10 per cent. solution of zinc acetate in alcohol, and then filters the mixture, the clear filtrate shows a very clear green fluorescence, even when there is as little urobilin as 0.002 per cent. present. The fluorescence is best seen through a convex lens, and if the test is carried out by artificial light a small portable electric lamp provided with a convex lens will be found useful. The filtrate shows the spectroscopic bands clearly. He further suggests a modification, to be applied when testing the faeces for urobolin, which consists in shaking a portion of the faeces up with ether to get rid of the fats; the residue is then extracted with acidified alcohol next neutralized with ammonia, and then tested as in the case of urine. With regard to testing blood and blood serum, he finds many difficulties, but describes his researches in this direction. This appears to be of greater theoretical than clinical importance.

(141) Acute Optic Neuromyelitis.

WEILL AND GALLAVARDIN (*Lyon Méd.*, August 9th, 1903) record a case of acute diffuse myelitis with double optic neuritis. Their patient, a child 14 years of age, first suffered from paralysis of the right leg. Eight days later the left leg became paralysed, and three weeks after the onset of the illness incontinence of urine and faeces and a sacral bedsore appeared. The paraplegia was complete, and there was in addition absolute anaesthesia—tactile, painful, and thermic—which extended above the level of the umbilicus. The cutaneous and deep reflexes were abolished. Bilateral amaurosis, which became total in a few days, came on about six weeks after the onset of the illness. The ophthalmoscope showed it to be due to active optic neuritis without haemorrhage or retinal exudation. The vision improved a little before death, which resulted from broncho-pneumonia. At the necropsy the spinal cord was found to be flattened, yellow, and anaemic in the lower dorsal and lumbar regions. Examined microscopically the cord was seen to be infiltrated with round cells; the cells of the anterior horns showed various degrees of chromatolysis or complete atrophy, and in places cavities were found containing softened débris of nerve fibres. Sections of the brain showed an abundant infiltration of round cells, more marked in the white

than in the grey matter. The optic nerve and also the sciatic nerves were also infiltrated with small granular cells which interrupted the nerve fibres. The involvement of the white matter of the brain has not been recorded before, and in the only other case in which the brain was examined histologically, Dreschfeld found no cerebral lesion. The explanation of the occurrence of optic neuritis together with acute myelitis is not easy. The etiology of the case recorded above was unknown. It seems reasonable to suppose that in acute inflammatory lesions attacking the nervous system, just as in chronic nervous diseases like locomotor ataxia the spinal cord and the optic nerves are especially the seats of election.

SURGERY.

(142) Operation for Old Fracture of the Patella.

NOT a small number of cases of fracture of the patella terminate in non-osseous union, and a certain number of these cases get good functional results. Of the remaining cases, which show more or less severe functional disturbances, some require late treatment. A. Schanz (*Münch. med. Woch.*, July 28th, 1903) describes a new operation which he has carried out on such patellae, and which he finds gives good functional results. The older methods of dealing with these cases all aim at the reproduction of normal anatomical conditions, and consist in simple suture of the patella, suture combined with elongation of the tendon of the quadriceps extensor, or with removal of the tuberosity of the tibia, and bridging over the defect in the bone by laying on chiselled-off pieces of bone. Each of these methods is capable of attaining good results if the gap is not large, but not ideal ones, and when the gap measures over 6 cm. the condition cannot be dealt at all in these ways. The operation which Schanz suggests is detailed in the history of a case. The patient, who was 25 years of age, had broken his knee-cap five years previously, and stated that the fragments had not united. Three years before—that is, two years after the fracture—he had been told at a surgical clinic of a celebrated university that an operation could not help him, and since he suffered much from the functional disturbance in the leg he applied to Schanz for some form of splint. The fragments were about 12 cm. (3 in.) apart, and could not be brought nearer than 10 cm. The reserve extensor apparatus was almost completely torn through, only a band of the tensor vaginae femoris being left. Extension was only possible automatically and passively, and not actively. Since the condition had so much likeness with paralysis of the quadriceps extensor, it occurred to Schanz that transplantation of muscle, which had proved of use in the latter, might be tried. He therefore made an incision from the insertion of the sartorius, by the side of the patella, to the centre of the thigh, and, after having dissected out the muscle without dividing its insertion, he dissected the skin outwards till beyond the fractured patella. Then he chiselled the anterior two-thirds from the fragments' forming thereby a flat longitudinal ridge. The sartorius was laid into this ridge, the upper fragment pulled down as far as possible, and the muscle sutured to it by means of wire sutures. The muscle was further sutured in the same way to the fibrous callus. The skin was then replaced, the wound completely closed, and a plaster-of-paris bandage applied. Healing took place smoothly, and after fourteen days the sutures were removed. At the end of three weeks the patient was allowed to stand with the help of a small splint, which was discarded in a few days. Six weeks after the operation the patient was able to extend the leg, to flex it to a right angle, to walk even down a steep incline, and up and down stairs, and a little later he was able to run. In other words, the result was as good as one could wish. Schanz says that the quadriceps extensor commenced to become active again shortly after the operation, but the transplantation of the sartorius was the actual cause of the improved functional result. He thinks that others should try the operation.

(143) Synovitis of the Sheath of the Abductor Pollicis.

G. MARION (*Arch. Gén. de Méd.*, August 4th, 1903) finds no mention of this affection in any treatise on pathology, notwithstanding its relative frequency: and deems the 6 cases observed by him in consultation at the Hôtel Dieu within seven months worthy of attention. Previous to his seeing these cases, an error in diagnosis had been committed and an unfavourable prognosis had been given, whereas the course of the affection is of short duration if appropriate treatment be adopted without delay. Each of the 6 cases occurred between the age of 20 and 30; 5 of them occurred in women, and all presented similar signs. (1) Pain was evoked by movements of the thumb, especially in abduction of the metacarpal bone, and was referred to the outer side of the wrist. The point of maximal tenderness was localized to the external surface of the styloid process of the radius. The intensity of the pain varied in degree from slight discomfort to such as caused complete functional disuse. (2) Swelling was present on the external surface of the styloid process, nearer the anterior and inferior borders: it varied in size up to a large nut, and usually was elongated in the direction of the tendon. Its consistence was very hard, resembling bone, and careful examination failed to elicit fluctuation. Further, the swelling was fixed and appeared to be welded to the underlying bone. From this physical property errors in diagnosis are particularly apt to occur. The history of the cases offers little help; at most some fatigue is recorded, and the affection develops slowly and is progressive. He points out that the sheath of the short extensor of the thumb communicates with that of the long abductor at the point of swelling and pain, but he considers that the sheath of the long abductor is particularly involved, on account of the exact position of the swelling: he has, however, no anatomical proofs for this opinion. The swelling is due to a serous effusion, and he explains the sense of bony hardness by the resistance of the superimposed fibrous sheath. In differentiating this affection from tuberculous disease of the radius, he depends upon the elongated shape of the swelling localized to the outer side of the radius, attended with pain upon movement of the thumb. In tuberculous disease, the swelling is more extensive and rarely elongated in the axis of the limb; further, it is of longer duration before the movements of the tendons over it are attended by pain. The treatment is especially satisfactory: by blisters and compression, a cure was always obtained in eight to ten days. He concludes (1) a painful swelling at the lower end of radius may occur, characterized by stony hardness and apparent fixity. (2) It consists of a synovitis of the sheath of the abductor pollicis. (3) It is distinguished from an osteitis of the radius by its elongated shape and by pain evoked by movements of the thumb. (4) Serous effusion is always present and is caused by overuse of the muscle. (5) Treatment leads to a satisfactory result, and consists of blisters and pressure.

(144) Tumours of the Retro-carotid Corpuscle.

RECLUS AND CHEVASSU (*Bull. et Mém. de la Soc. de Chir. de Paris*, No. 18, 1903) report a case of tumour developed in the retro-carotid corpuscle, which after a long and careful dissection was removed from a living patient, a woman, aged 49 years, without any injury to the common carotid artery and its two main divisions, with which the growth was closely connected. In some comments on this case Reclus points out that modern histologists hold that the retro-carotid corpuscle is not an epithelial but an endothelial structure, and that tumours such as that removed in this case are endotheliomata and homologous growths. From an analysis of 10 recorded cases, Reclus finds that this form of tumour does not occur more frequently on one side of the neck than on the other, and that it occurs in middle-aged subjects, a large majority of these being females. The characteristic clinical signs of this tumour are a soft and compressible swelling of the size of a small hen's egg, moving freely with the pulsations of the carotid arteries but without expansile impulse or *bruit*, a constant situation above the superior margin of the thyroid cartilage and below the parotid gland; and a somewhat peculiar evolution, growing steadily but very slowly at first, and after a time being subject to repeated stages of rapid development. These three clinical signs occurring in a young or middle-aged female may be regarded as sure diagnostic indications of retro-carotid perithelioma. In discussing the question of operative interference for the removal of tumours of this kind, Reclus states that the results of such treatment have not on the whole been good. In 2 out of 10 cases death was directly due to the operation; in 1 case an apoplectic attack with aphasia followed as a result of ligature of the common carotid, and in 5 other instances disturbances more or less severe were caused by injury of the

laryngeal and facial nerves. In 2 cases only were the results of the operation perfect. Removal of a retro-carotid endothelioma is regarded as a very difficult and dangerous operation, as the growth is usually adherent not only to the carotid arteries, but also to the internal jugular vein, the vagus, and the sympathetic. In 2 cases only, including that reported and treated by Reclus, was it possible to remove the growth without dividing the common carotid and its two main divisions. Taking into consideration the dangers of operative treatment on the one hand and the slow growth and the benign nature of the growth on the other, Reclus holds that the surgeon should seriously reflect before undertaking any operation for the removal of retro-carotid endothelioma, and, when such tumour is of small size and slow growth, should abstain altogether.

MIDWIFERY AND DISEASES OF WOMEN.

(145) Congenital Cystic Disease of Kidney in Pregnancy.

EHRENFREUND (*Monats. f. Geb. u. Gyn.*, Supplement, vol. xvii, 1903, p. 1171) in a valuable contribution which includes a general review of the subject, publishes two new cases of congenital cystic disease of the kidney. In the first instance the subject was a stillborn female infant; the right kidney was cystic, the left hypertrophied; both ureters were dilated, and whilst the left opened into a dilated and hypertrophied bladder the right ended in a blind cystic dilatation. The urethra was normal. The second patient was a woman aged 33. She had borne six children all to term, and all were delivered spontaneously. The youngest child was 9 months old; the patient was in the third month of pregnancy. During her last three gestations she had felt radiating pains in the right flank and hypogastrium; during this pregnancy they were worse than before. The tumour occupied the right side of the abdomen; it was movable and tense; it fluctuated, and there was resonance along its anterior aspect; on that account it was diagnosed as a renal cyst, probably a hydronephrosis. Leopold operated. The pregnant uterus and its appendages were normal. The tumour was easily raised out of the abdominal wound when it had been enucleated through an incision made in the posterior parietal peritoneum. It was tapped, and 2½ pints of urine came away. The ureter was sharply bent as it issued from the kidney. The tumour consisted of a mass of cysts, the fetal lobulation of the kidney was preserved, each lobule was dilated into a large cyst which opened into a yet bigger cystic dilatation, the renal pelvis. No glandular tissue could be detected until sections were examined under the microscope. The patient made a good recovery without aborting. Ehrenfreund compares this case with the first and with other published examples of general cystic disease of the kidney, discusses their origin and considers whether such a case in the adult may be reckoned as representing congenital disease.

(146) Albuminuria in Pregnancy: Fatal Hemiplegia.

THEUVENY AND DANIEL (*L'Obstétrique*, July, 1903) relate a case of interest in respect to the question of eclampsia, of the nephritis of pregnancy, and of pregnancy in a subject suffering from nephritis. A woman was admitted into Porak's wards on March 28th last with albuminuria and considerable oedema of the lower extremities. The patient complained of violent headaches; the left arm and then the left leg became paralysed. Her parents were tuberculous, the father drank ether, and a sister had chorea. The patient herself had never been subject to any grave malady. There had been severe flooding at the second and fourth labours; both were premature. The present pregnancy was the fifth. On the day after admission the patient became violently excited, then right facial palsy developed, followed by paralysis of the left leg. On the next day the urine was very albuminous and severe vomiting set in. On April 1st the fetal heart sounds ceased, on the 5th coma became complete, and death occurred on the 6th, none of the paralytic symptoms having abated. The lateral ventricles were full of blood, coming from the external capsule. There was advanced interstitial nephritis. Diagnosis was correct, for the symptoms on admission clearly indicated the cause of the cerebral haemorrhage, and the latter was evident when the later symptoms developed. Had they been milder, diagnosis from severe eclampsia might have been more difficult at first.

(147) Obstetrical Traumatism and Alopecia in an Infant.

RACLOT (*Thèse de Paris*, 1903) notes that there are a considerable number of different forms of alopecia in the newborn child, besides such as are caused by compression of the fetal head against the bony pelvis, and by damage from the forceps, both examples of genuine obstetrical traumatism. There is a true essential alopecia general or local, a congenital variety due to hereditary trophoneurosis, several forms simply secondary to skin diseases, including sclerosis and keratosis, and all cases caused by neglect and dirt soon after birth; and lastly, alopecia due to adhesions and amniotic bands, three cases of which have been reported by Bonnaire; this variety would be teratological rather than traumatic.

(148) Adenoma and Carcinoma of Gaertner's Duct.

MEYER (*Zentralbl. f. Gynäk*, No. 24, 1903) recently exhibited before the Berlin Obstetrical Society a specimen of a large tumour developed from Gaertner's duct in an eight months fetus. He defined it as a congenital adenoma. Adenoma and adeno-myoma in the substance of the cervix which could be traced to Gaertner's duct have been observed in adults. They could not have arisen from the Wolffian body, as has already been demonstrated. Meyer also brought forward a uterus unicornis in a newborn child showing bifurcation of Gaertner's duct, and a specimen of bilateral adenoma of Gaertner's ducts, themselves highly developed, from an adult. The adenoma was very exuberant, and at several points transition into papillomatous cancer was detected; there were already metastatic deposits in the vagina.

(149) Cancer of Vulvo-vaginal Gland.

SCHAEFFER (*Zentralbl. f. Gynäk.*, No. 31, 1903) published a case of primary cancer of the vulvo-vaginal, Bartholini's, or Cowper's gland, four years after he operated. At first there seemed to be an ordinary through severe abscess of the gland, but it was noted that there was deep infiltration of the abscess wall. A piece of tissue was excised and examined, and found to be cancerous of the glandular type. The growth was therefore excised, it was of the size of a hen's egg. Two years and three months later local recurrence was detected, too advanced to allow of excision. Injection of alcohol was tried, with temporarily good results. Nine months later the patient died suddenly of heart failure. Schaeffer considers that cases of primary cancer of the vulvo-vaginal gland are extremely rare. His case was in a multipara, aged 73. She suffered great pain, and there was free discharge from the cancerous gland. The same author reports two cases of primary cancer of the labia in aged women, both typical cancroids, starting as an ulcer on the labium, and in no way connected with any disease of the vulvo-vaginal gland.

THERAPEUTICS.

(150) The Action of Theocin.

K. W. HESS (*Therap. Monats.*, April, 1903) relates the details of a case which he considers exemplifies the action of theocin very clearly. The patient was 67 years of age and was suffering from arterio-sclerosis and uncompensated valvular disease. There was oedema of the feet and legs, but no general anasarca; the chief complaint made by the patient being the extreme asthma, which disturbed his night rest. Digitalis failed to relieve him at all, and a number of other remedies were tried without any good resulting. The quantity of urine, which was free from albumen, was very small. The condition gradually became worse and the dropsy spread all over the body. The pulse, however, remained fairly good. Aguria was then tried, and relieved him somewhat, but the patient found this drug so nauseous that he became very impatient in taking it. Some albuminuria appeared and the anasarca only diminished a little. After about five or six months the condition of the patient was extremely bad, his dropsy was extreme, and he began at times to show signs of auto-intoxication in the form of delirium. As a last resort Hess tried theocin. The effect was marvellous. The quantity of urine excreted on the day previous was measured at 150 grams (about 5½ oz.); after 0.3 gram of theocin, given three times during the next day, it increased to 2,500 grams (about 87½ oz), while, on the following day, when a single dose was given, it measured 3,000 grams (about 105 oz.). From this time onwards, the patient continued to improve, the oedema disappeared, save for a little in the feet, and the quantity of urine

remained sufficient. The patient continues to take one powder of 0.25 gram of theocin daily, and is again able to enjoy his life. Hess thinks that the action of the drug is only to be expected when the condition of the heart is fairly good.

(151) New Thymian Preparations.

E. Fischer (*Deut. med. Woch.*, June 18th, 1903) finds that extracts of thyme was used in olden times in "herbal treatment," and after a time, during which it appears to have been forgotten, it has again been brought into use. In the first place, Taechner introduced a preparation which he called extractum thymi saccharatum, or "pertussin," and which he (Fischer) has found to act rapidly in whooping-cough, causing the attacks to become mild in a very few days, and to loosen the mucus and promote expectoration. Further, he found that it acts well as an expectorant in all acute and chronic catarrhs of the air passages, loosening the mucus and allaying the tendency of coughing. It is used also in emphysema, croup, laryngitis, and other conditions with good results. Schanté introduced another extract of thyme made with honey, the action of which is about on a par with pertussin. Fischer got Saur to make a concentrated alcoholic extract, which acts from seven to ten times as powerfully as the two mentioned preparations. It contains about 19 per cent. of alcohol. Solvin is another thymian extract, and contains bromides and much sugar. It acts extremely well in whooping-cough. Serothymin is an alcoholic extract of thyme, and does not contain bromides or iodides. It possesses a mild and pleasant taste. Extractum thymi (Kern) is a recent preparation and is made in three strengths. The first is as concentrated as it is possible to get it, and has a tart taste. It is not sweetened, nor does it contain any addition in the way of bromides, etc. The second strength contains 75 per cent. of the first and is pleasant to take. The third is between three and four times as strong as pertussin. Besides these preparations, Fischer mentions six other formulae of thymian preparations, of which five contain bromides. He considers it a mistake to manufacture the extract with such an addition, and prefers to use pure thymian extracts. In certain cases the physician can prescribe bromides, iodides, or any other drug with the extract of thyme at will. Ordinary so-called extracts are no good, as they are not nearly concentrated enough, and the same may be said of the thymian bonbons. The above-named preparations are so arranged that a child can take a teaspoonful four to six times a day, either pure or in syrup. Adults take larger quantities, which vary according to the case. Thyme is absolutely free from danger, and the only care needed in the dosage of the various preparations of the extracts of thyme is with regard to its alcohol contents.

(152) The Local Injection of Potassium Iodide in Syphilitic Ulceration.

H. Duclaux (*Arch. Gén. de Méd.*, June 2nd, 1903) adds a further case of syphilitic ulceration of the leg with osteo-periostitis of the tibia cured by the local injection of potassium iodide to those already published by Labadie-Lagrave and Rollin in the *Bull. Méd.* of January 24th, 1903. A child of 12 had undoubted syphilitic ulceration of the leg, and had undergone previous treatments for five months with little change. Duclaux, at the suggestion of Kirmisson, under whose care the child was, administered eighteen injections, and at the end of a month cicatrization was complete. Each injection consisted of 2 c.cm. of a 3 per cent. solution of potassium iodide, and was given on alternate days. The pain following the injection was considerable, but only lasted from five to ten minutes. The thickening of the tibia slowly diminished, and the pain accompanying it ceased after the first few injections. A month after discharge from the hospital the cicatrix was firm and the tibia had nearly resumed its normal size.

PATHOLOGY.

(153) The Bacteriology of Cystitis, Pyelitis, and Pyelonephritis in Women.

T. R. Brown (*Johns Hopkins Hospital Reports*, vol. x, Nos. 1-2) reports bacteriological examinations of 100 cases of cystitis, pyelitis, and pyelonephritis. In all cases the urine was obtained aseptically from the bladder by sterile glass catheter after careful cleansing of the parts about the urethra from the kidney by catheterization of the ureters. The urine was examined first chemically and microscopically, and the observation confirmed that in pure cystitis the amount of albumen is small even if the pyuria is of high degree, while in pyelitis the albumen is always in large quantity even if the pyuria is but slight. For bacteriological purposes the cases were grouped clinically into acute, chronic, and tuberculous; in the great majority of examinations pure cultures were obtained. The commonest cause of the infections of the urinary tract was found to be the B. coli communis; this organism can and does set up a true infection without the aid of any other. This organism shows marked variations in virulence and pyogenic properties. Other micro-organisms frequently the cause of infections are the tubercle bacillus, various staphylococci, and the B. proteus vulgaris; others less common, the B. pyocyaneus and the B. typhosus. The proportion of B. coli infection is greater in women than in men, probably due to the proximity of the female urethra to the anus; other factors are essential in the development of cystitis, the chief being anaemia, malnutrition, trauma of and pressure upon the bladder, congestion of the bladder and urinary retention. In cystitis the chief mode of infection is by the urethra, although one must also consider as possibilities a descending ureteral infection from an infected kidney, pyogenic metastasis by means of the blood and lymph currents, and direct transmission of the micro-organisms from the intestinal tract or some adjacent focus of infection. In pyelitis and pyelonephritis the usual modes of infection are along the ureter from an infected bladder and by means of the blood and lymph currents; in the cases examined these modes were about equally represented. In the great majority of cases of cystitis, acute and chronic, and in the majority of cases of pyelitis and pyelonephritis, the urine is acid; in cases in which the urine is ammoniacal, the infection can be produced without the aid of any of the accessory etiological factors mentioned above, the irritation of the ammoniacal urine apparently being sufficient to render the bladder susceptible to infection. In cases of infections of the kidney due to a urea-decomposing micro-organism, a stone is very likely to be present if the case is at all chronic. There are certain conditions which present most of the symptoms of cystitis, but no infection; that most difficult of diagnosis is urinary hyperacidity of neuropathic origin, the successful treatment of which depends upon the successful recognition both of its urinary features and its general basis. Although the diagnosis of renal infection can be made with absolute certainty only by ureteral catheterization, a probable differentiation between renal and vesical infections can be made by a careful study of the urine alone. Tuberculous infections of the urinary tract frequently occur with no other demonstrable tuberculous lesions elsewhere. The urine of all cases of infection of the urinary tract should be examined chemically, microscopically, and bacteriologically. Apart from topical treatment, the following indications are suggested by the bacteriology of the conditions: the urine should be diluted by water administration; certain substances which render the urine antiseptic may be given—urotropin, cystogen, salol, etc.; in alkalinity of the urine acids are of value; disorders of digestion and nutrition should be attended to.

(154) Pseudotubercle Bacilli.

R. Milchner (*Berl. klin. Woch.*, July 20th, 1903) reports an instructive case of pseudotubercle bacilli appearing in the bronchial system. The patient was a strongly-built man aged 52 years, who gave the history of having had an apical catarrh at the age of 16. Some nineteen years previously he had been attacked by haemoptysis, but as he increased in weight, and only suffered from cough and some expectoration during the following thirteen years, he was considered quite healthy. During the next four years, up to his death, he was attacked from time to time with renewed haemoptysis. The physical signs revealed a largish patch of dullness at the base of the left lung, with bronchial breathing and *râles*. In his sputum were found bacilli which were acid fast. Some doubt was raised as to the correctness of the diagnosis of tuberculosis, on account of his good objective and subjective condition during the intervals between the haemorrhages, and the bacilli were therefore tested on animals and found to be pseudotubercle bacilli, and not true tubercle bacilli. He died as the result of the repeated haemorrhages. The necropsy revealed enormous bronchiectasis and no tuberculosis. No pseudotubercle bacilli could be found in the microscopical sections, but this Milchner explains as being due to the fixing in alcohol and formalin, which appears to prevent the bacilli from taking the stains.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

(155) The Value of Agglutination in the Diagnosis of Typhoid.

The result of the last six years' work on the subject has led most physicians to regard Widal's agglutination reaction as a certain diagnostic means in typhoid fever, as long as the test is employed in a dilution of at least 1 in 50. R. Stern (*Berl. klin. Woch.*, July 27th and August 3rd, 1903) shows that the absolute diagnostic value cannot be relied on, and that the conditions on which the agglutination phenomenon rests are much more complicated than was at first supposed. Stern first of all deals in detail with the method of carrying out the test, and demonstrates very clearly that it is of the highest importance to employ the most delicate test, and this he considers to be the following: The culture must not be older than twelve hours on agar, is emulsified in bouillon, and the serum is allowed to act on this for two hours in the incubator; after the two hours have elapsed, microscopical preparations are made, and that dilution with which there is the smallest agglutination—of three or four bacilli—is noted. In describing the agglutinating power of a serum, he states the dilution at which the least clumping occurs and the dilution at which no clumping can be found. It is unreliable to use macroscopical or lense examination for agglutination. He next deals with some of the irregularities of cultures of B. typhosus and other micro-organisms, and of various sera with regard to agglutination, and shows that the same cultures of B. typhosus can yield different results under certain conditions, that different cultures of the bacillus of typhoid fever give varying agglutinations; these conditions may lead to false results in diagnosis. The same may be said of various sera of typhoid patients, and many a negative Widal reaction may be due to the accidental incapability of the culture used of agglutinating, or to the peculiarity of the serum. The majority of persons who have not had typhoid fever yield a serum which will agglutinate homogeneous bouillon emulsions of B. typhosus up to a dilution of 1 in 20. Some normal persons give it up to 1 in 40, while during typhoid fever the serum of patients generally give an agglutination over 1 in 50, and often up to 1 in 1,000. On the other hand, several cases have yielded a serum capable of agglutinating up to 1 in 50 where the diagnosis of typhoid fever has been excluded, and this fact complicates matters greatly. In the case of paratyphoid infection the serum at times has agglutinated true Eberth bacilli up to 1 in 600, and since the symptoms of paratyphoid are like those of real typhoid fever, the diagnosis is only to be made by testing the agglutination power towards cultures of paratyphoid bacilli and by actual culturing of the causal organism. In speaking of the agglutinability of bacilli related to Eberth's organism, he is inclined to differ with Pfaundler, who calls this "group agglutination." Stern explains the occurrence by supposing, with Ehrlich, that the agglutinable substance consists of various components, each of which, when it comes across suitable haptophoric groups in the infected organism, joins with the same to form an agglutinin. The agglutin action of a serum depends on the sum total of these single agglutinins. When the serum of an organism infected with one form of bacilli A. can also agglutinate bacilli B., there must be common agglutinin receptors in both micro-organisms, and these common receptors must find a possibility in the organism of forming suitable single agglutinins. The single agglutinin acts specifically toward the corresponding receptor of the bacteria cell, but the agglutinating action of a serum is not strictly specific toward the infecting bacillus. In certain cases Stern describes the condition, when the serum agglutinates a second bacillus more strongly than it does the infecting organism, and the second organism may not even be related to Eberth's bacillus. It appears thus that the reaction does not take place by means of a definite kind of bacterium, but by means of a certain definite part of a bacterial cell, the agglutinin receptor. It is useless to attempt to render the reaction specific in a diagnostic sense by raising the required dilution value, for even in low dilutions the reaction is based on the same conditions. Stern likens this to the detection of albumin in the urine; in itself one cannot diagnose the kidney mischief by the amount of albumin, but even small quantities are sometimes taken with other signs and symptoms of great importance. It is further impossible to determine in a given case whether the agglutination is direct, that is, due to the organism infecting the patient or indirect, that is, due to another micro-organism which possesses common receptors. In conclusion, he states that agglutination cannot be accepted any longer as diagnostic proof of an infection by a certain bacterium, but only points to the probability of this, which probability is the more likely, the higher the dilution of the agglutinating serum. In many cases it is still necessary to culture the infecting organism, to prove the diagnosis, but the clinician must not lose sight of agglutination, which is often an important symptom.

(156) Banti's Disease.

Field (*Amer. Jour. Med. Sci.*, March, 1903) quotes the following case of Banti's disease as characterized by the gradual enlargement of the spleen, secondary anaemia becoming progressively worse, and the later development of a cirrhotic process in the liver. A woman, aged 32, with a negative family history, had measles and scarlet fever in childhood. Has had one child; no miscarriages or history or signs of syphilis. "Gastric ulcer" three years ago, for the pain from which she was given morphine, and has continued the drug since. Persistent oedema of the lower limbs has been present for the last year. Alcohol only at meals. Examination showed marked pallor of the skin and puffiness under the eyes and considerable pulsation of the vessels of the neck. The heart was displaced upwards, and on auscultation there was a systolic murmur at the apex and at the second left interspace with transmission upwards, and also a systolic murmur, differing in character from the above, heard over the vessels of the neck. Liver dullness was increased downwards, and vocal fremitus was absent at the bases of the lungs. The spleen, smooth and tender on palpation, filled the left half of the abdomen, which latter was distended with fluid, and showed marked oedema of its walls. Examination of the blood showed considerable secondary anaemia. The temperature was slightly raised, becoming higher just before death. At the necropsy the spleen weighed 1,470 grams, with a thickened capsule, firm adhesions, and marked increase of connective tissue throughout. Diffuse hypertrophic cirrhosis of the liver of comparatively recent origin and a general productive interstitial nephritis were also found. The heart showed thickening of the mitral valve and dilatation and hypertrophy of the left auricle, while the stomach appeared to be normal and free from scars. According to Banti the disease presents three stages, the first of which commences with signs of splenic enlargement, and may last for some time before secondary anaemia is developed. The appearance of gastro-intestinal disturbances with increasing anaemia and diminished excretion of uratic urine marks the second stage, while the third is marked by the appearance of ascites. Cirrhosis of the liver with secondary splenic enlargement may be differentiated from Banti's disease, splenic anaemia, and primary splenomegaly by the fact that the spleen never attains the size that it does in the three latter conditions; the anaemia is less severe and the splenic enlargement is secondary, while in the other diseases it is the primary lesion. Microscopic examination can alone determine the diagnosis between splenic anaemia and primary splenomegaly, the splenic enlargement in the former being due to a general hyperplasia, especially of connective tissue, while in the latter there is only a moderate connective tissue increase, the enlargement being mainly due to great proliferation of the endothelial cells. Banti's disease differs from splenic anaemia only in there being an absence of hepatic cirrhosis in the latter, Banti's disease thus being splenic anaemia *plus* hepatic cirrhosis. The above case is reported as a case of Banti's disease on account of the very great splenic enlargement from a general hyperplasia, especially of the connective tissue, and the presence of hepatic cirrhosis. The case is of interest also as showing advanced chronic productive nephritis. Etiology is speculative, though the evidence seems to be in favour of a cause emanating from the gastro-intestinal tract.

SURGERY.

(157) The Frequency of Joint Affections in Congenital Syphilis.

E. von Hippel (*Münch. med. Woch.*, August 4th, 1903) deals with the actual frequency of joint affection in congenital

syphilis, basing his results on his experience as an ophthalmic surgeon, an experience which, he says, offers more chance of collecting large numbers of cases of congenital syphilis than the practice of other specialists. In a large number of cases he found keratitis parenchymatosa, but did not allow this alone to be the proof of the congenital disease, although it is most frequently caused by the congenital syphilis. There were other signs, such as characteristic history, scars about the mouth and nose, ozaena, Hutchinson's teeth, labyrinthine deafness, painless otitis media, periostitis of the tibia, swelling of lymphatic glands, etc., in all the cases, before he allowed them to be entered into his statistics. In all he reports on 77 cases, of which 9 had no joint trouble, and 68 showed more or less distinct joint changes; some, however, were not seen by von Hippel himself, but only reported to him. He has been able to determine joint changes in 43 cases, so that if one accepts the reports, the percentage would be 63 per cent., but if one limits it to his personal observations, it would be 56 per cent. Males were as frequently affected as females. Five of the cases had no keratitis parenchymatosa, 2 of whom had other forms of eye troubles, and 3 had no eye troubles at all. Of the 43 cases 41 showed knee, joint affection—35 times alone, 6 times with trouble in other joints as well—while in 1 case only the elbow was affected, and in 1 case there was "rheumatism" in several joints. In the 6 cases in which other joints beside the knee were affected, the elbow was affected 4 times, the carpal joints twice, and the finger-joints once. In 3 cases there was severe pain in the knee-joint, in one there was loud cracking in the joint, and in one there were multiple scars adherent to the bone; 36 times there was considerable swelling due to effusion into the joint, but in none save 3 cases was there any marked thickening of the bone. Of these 36 cases 33 showed both knees affected, and in only 3 one knee was attacked. In the elbow case there was ankylosis. He emphasizes the fact that in a large majority of the cases there was effusion into the knee-joint. The affection of the joint set in most frequently between the ages of 6 and 10 years, but up to 20 years it appeared not to be uncommon. Of the 35 cases in which keratitis parenchymatosa and joint affection were both present the joint affection preceded the other in 32 cases. In 10 of these the interval varied between 2 and 15 years. Von Hippel points out that the diagnosis of the nature of the joint affection is rendered difficult, inasmuch as the eye trouble so frequently follows it, and unless the practitioner keeps in mind the possibility of a joint trouble, an effusion into a joint being syphilitic, many of the cases will be incorrectly diagnosed. Since the knee-joint effusion is much more common than any other signs of congenital syphilis, for example, Hutchinson's teeth or labyrinthine deafness, it appears to him that in all cases of suspected congenital syphilis one should inquire if there has been any knee-joint trouble, and if there has the diagnosis will be more probable.

(158) Late Congenital Syphilis.

By "late congenital syphilis" one means cases in which symptoms of tertiary syphilis appear after the 4th year of life, and even as late as the 20th. Two classes are described: (1) Lues hered. tarda, "in the wider sense," in which case the patient shows signs of disease at puberty or later, after having had signs in infancy; this merely implies a long period of latency. (2) Lues hered. tarda, "in the strict sense," in which case the first signs of congenital tertiary disease appear in late childhood or puberty, without any symptoms having been present in infancy. Jordan (*Münch. med. Woch.*, August 4th, 1903) reports a case illustrating the second variety. He saw the patient in April, 1902, at the age of 22 years. The patient was an officer, and had served since 1898. He had not acquired syphilis. In April, 1901, he first noticed pain in both knees, especially on walking upstairs. In June the pain in the right knee disappeared completely, but got worse on the left side. He was treated by the regimental surgeon, and later on in a surgical clinic, by applications, painting with iodine, etc. An incision was made into the joint, as tuberculosis was suspected; but only a little serous fluid without shreds was let out, and the capsule was found to be thickened and hyperaemic. In March the swelling began to increase. On admission, Jordan found effusion into the joint (left), and the right knee was also swollen. There were absolutely no signs of past syphilis nor of gonorrhoea; but in spite of rest and various applications the effusion increased and became obvious on the right side as well as on the left. Jordan came to the conclusion by a process of exclusion that the condition was due to congenital syphilis, and therefore treated the patient with mercurial ointment and potassium iodide internally. Within six to eight weeks the effusion had disappeared on both sides and the pain was also removed. The muscles soon resumed their original strength. He found that the father of the patient had been a doctor, and had become infected with syphilis at a confinement; he had often suffered later from rashes, and had been in the habit of taking potassium iodide. His mother had had three abortions. The curious points of the case lie in the fact that the gonitis was the only manifestation of the late congenital syphilis, as well as that the first symptom appeared in the 21st year of life. Jordan also reports a case in which the late symptoms, including keratitis parenchymatosa and effusive gonitis of both knee-joints, appeared after a period of five years' latency, and were successfully treated by antisyphilitic remedies.

(159) Gastroenterostomy with Gastrostomy.

HAMMESFAHR (*Zentralbl. f. Chir.*, 23, 1903) advocates a method devised by Rutkowsky in which gastroenterostomy is associated with the formation of a temporary external gastric fistula. This operative treatment has been applied by the author in 12 cases of pyloric stenosis, and its results in his hands have convinced him of the advantages of Rutkowsky's method, and led to the conviction that it merits wide recognition. Anterior gastroenterostomy having been practised near the lower border of the stomach, a small opening is made in the gastric wall about 1½ in. above and a little of the left of the seat of the anastomosis, through which opening a soft rubber catheter is passed onwards to the opening established between the stomach and intestine, and thence into the descending or caecal limb of the attached intestinal loop. The outer portion of the catheter is then enclosed in a canal formed by stitching over it a portion of the anterior gastric wall as in Witzel's operation, and its end is fixed to the upper part of the external wound, the serous coat of the surrounding portion of stomach being attached by sutures to the parietal peritoneum. The advantages claimed for this method are: That it allows prompt feeding of the patient without any risk of disturbing the adhesions between the stomach and the intestine; that abundant nourishment may be given without causing irritation of the stomach and vomiting; and that the occurrence of the circulus vitiosus is prevented. The tube is removed in the course of the third week after the date of operation, after which, it is stated, the gastric fistula very soon closes.

MIDWIFERY AND DISEASES OF WOMEN.

(160) Labour Obstructed by a Cystic Tumour.

M. HAAGEN (*Deut. med. Woch.*, July 16th, 1903) reports the history of a women, aged 30, who had her first baby on December, 1896. On examining her, he found that the posterior vaginal wall was pushed forward by a large tumour. With some difficulty, an anaesthetic having been administered, he succeeded in passing the finger past the tumour, and found that the vertex of the fetus was presenting. The tumour appeared to be of about the size of a fetal head, was densely hard, and did not reveal any fluctuation. Before having any recourse to abdominal section, an attempt was made to decrease the size of the growth, and, on puncturing it, a quantity of fluid escaped. An incision of about 2¾ in. was made into the tumour, which proved to be multilocular, and through this incision the finger was passed and the septa broken down. Some ¾ litre of dark brown, turbid, odourless fluid was evacuated. As the pains did not come after waiting for three hours, Haagen applied the forceps and delivered a full-time child, which, however, was deeply asphyxiated, and could not be resusciated. The perineum was ruptured to the second degree. This was sutured. The lying-in was complicated with fever, *post-partum* haemorrhage, suppuration of the cavity of the cyst, retention of urine, and general weakness, and the patient was not well for three months. In the beginning of 1899 she again consulted Haagen, and he found that there was a truncated hypertrophy of the cervix, with deep tears on each side of it. Retroversion and flexion of the uterus, and non-union of the perineal rupture. The cervix was therefore amputated,

and colporrhaphy, anterior and posterior, and Alexander-Adams's operation were performed by Professor Winter. She became pregnant in the following year, and on October 6th, 1900, the pains set in. On arriving Haagen found that the waters had already escaped, the fundus reached a hand's breadth above the umbilicus, and the fetal head could be felt above the pubes. She was probably in the seventh month of pregnancy. On examination per vaginam a tumour of the same size and in the same position as at the first labour was felt. This time it was not so hard. With difficulty he succeeded, without anaesthetising the patient, in palpating the external opening of the uterus. This opening was round, of about the size of a sixpenny bit, and felt densely hard and fibrous. The head could be felt through the opening. As the patient was in good condition he delayed interference for a time, but on the morning of the 8th, as the patient's temperature was rising and the os was not dilating, and as no fetal movements could be felt and no fetal heart sounds heard, he punctured the cyst and let out about ½ litre of fluid. Two vaginal specula were then introduced and as the os had not enlarged from the size mentioned, he made three small incisions into the fibrous tissue without causing any haemorrhage. The labour did not progress, and he therefore perforated the fetal head and delivered by means of the cranioclast. The mother did well. Haagen points out the importance of making an exploratory puncture into a vaginal tumour which is obstructing labour, even if it feels densely hard, before proceeding to operate.

(161) Collargol in Puerperal Septicaemia.

Rosenstein (*Therap. Monats.*, July, 1903) finds that the means at hand for treating puerperal septicaemia in private practice are unsatisfactory, and after mentioning some of the newer methods which have been recommended, such as nuclein and common salt, antistreptococcus serum, and the intravenous injection of corrosive sublimate and of formalin, deals with the injection of soluble silver into the veins, according to Credé. Collargol exhibits a considerable bactericidal action, and is said to be capable of being absorbed from the skin in the form of an ointment. Rosenstein met with some difficulty in injecting collargol intravenously at first, and therefore injected it subcutaneously instead. This procedure, however, produced so much pain that, in spite of good results, he again tried the intravenous injections, and found the following method satisfactory. The skin of the flexure of the elbow is disinfected with ether or benzene, and a few turns of a bandage is applied to the upper arm, until the cephalic vein becomes visible and palpable. The syringe must have a special arrangement that the needle is held tightly on to the main part, and is filled with 10 grams of a 1 per cent. solution of collargol; the needle is then driven into the vein. There must be no air in the syringe. One can tell that the needle is in the vein by the appearance of a few drops of dark blood, and by the fact that, on emptying the syringe, no pain is produced and no tumour appears. He uses a needle which has a small stop about 4 to 5 mm. from the point, which prevents the needle from entering further into the vein and damaging its coats when the patient moves her arm, or when the bandage is removed. Rosenstein states that he has obtained very good results with this method of treatment and exemplifies this by relating the history of one of his cases.

(162) Tuberculous Meningitis after Sounding of Uterus.

The sound, like every other appliance necessary for clinical research, must be used with caution. It may perforate the uterus or pass up the canal of one tube, a subject which has occasionally come under notice in our columns. That it may transfer septic and specific germs from one patient to another there can be no doubt. It is not only the gonococcus, streptococcus, and staphylococcus which may be introduced into a healthy uterine cavity and cause local disease. In a case recently reported by Henkel (report of a meeting of the Gesellschaft für Geburtshilfe und Gynäkologie zu Berlin, *Zentralbl. f. Gynäk.*, July 25th, 1903) a girl aged 20 who had never menstruated was admitted into the Berlin University Clinique. She suffered from regular monthly pains in the sacral region without any show of blood. The sound had been repeatedly used, never with success. Stenosis of the os internum, retroflexion, and haematometra were suspected. A thorough examination was conducted under an anaesthetic, an attack of very acute tuberculous cerebro-spinal meningitis followed and proved fatal. The uterus was found retroverted; its fundus contained a mass of calcified tubercle: the sound appears to have reached it, making a false passage. Besides other local lesions there was tuberculous disease of the left Fallopian tube. The general diffusion of tubercle was quite recent and appeared undoubtedly due to local injury from the sound.

(163) Interstitial or Tubo-uterine Pregnancy: Conservative Operation.

Mainzer (*Monats. f Geb. u. Gyn.*, July, 1903) recently exhibited before the Berlin Obstetrical Society a ruptured interstitial pregnancy, excised from the left side of the uterine fundus; the uterus and also the tube were preserved. The clinical history was very remarkable. A month before the operation the patient underwent emptying of the uterine cavity for abortion.

THERAPEUTICS.

(164) The Influence of Menthol on the Cutaneous Nerves.

Ioteyko (*Journ. de Neurol.*, May 20th, 1903) records the results of a careful investigation of the action of menthol on the various kinds of cutaneous sensibility. He finds that the analgesic action, which is quite definite, is more pronounced the longer and more vigorously the drug is rubbed on. No increased susceptibility to pain was ever observed at any period of the experiments. The diminished algesia preceded the sensation of cold, and it is inferred that menthol acts first as a paralytic agent upon the nerves of pain and later as an excitant to those of cold. The analgesia and sensation of cold attain their maximum at the same time, and disappear almost *pari passu* except that when the sensibility to pain has returned there is still a slight feeling of cold. But while the disappearance of analgesia is a return to normal conditions, that of the cold feeling is, as Goldscheider pointed out, followed by a phase of paralysis of the heat-conducting nerves. It may be said, therefore, that the action of menthol upon the nerves of pain commences and ceases sooner than that upon those of temperature. A prickling sensation, when present, does not interfere with the analgesia. Menthol was found to act also on the nerves of tactile sensibility, which lost their acuteness, but not so clearly or regularly as on those of pain. When present—which was not constantly, and only after prolonged rubbing—this anaesthesia came on after the analgesia and the sensation of cold. Sometimes the contact of instruments with the skin gave the sensation of cold instead of that of touch. Menthol anaesthesia was not hindered by its irritant effects (pricking, etc.). The subjects were not conscious of the change in tactile sensibility in the same way as they were of the analgesia. Thus the action of menthol, according to the author, dissociates four kinds of sensibility, to cold, heat, contact, and pain respectively. The influence upon the nerves of pain is the earliest, then follows an excitation of those of cold; next those of touch are paralysed, and finally if the drug is very vigorously used, the heat nerves are acted upon, and the sensation of prickly heat results. Ioteyko considers that these results point to the specific origin of the four kinds of nerves, those of heat and cold being stimulated, while those of touch and pain are depressed by menthol. This is in harmony with the view of von Frey and Thunberg that the latter sets are the most superficially arranged, the nerves for cold coming next and those for heat lying deepest.

(165) Subcutaneous Alimentation and Bile Formation.

A. G. Barbera (*Arch. Ital. de Biol.*, March 28th, 1903) has worked out the influence of certain foodstuffs, administered subcutaneously, upon the formation of bile. In a previous research, conducted upon dogs by mouth feeding, he has shown that the elimination of bile is enormously increased by proteids, much by fats, little by carbohydrates; that this elimination lasts the longest time after a fatty meal, the shortest after a carbohydrate one, the effect of a proteid one being intermediate. The maximum velocity is arrived at in two to three hours after carbohydrates, three to four hours after proteids, five to seven hours after fats. Water does not influence the elimination of bile. In mixed dietaries the foregoing results are modified by the relative proportion of the constituents. Carrying his researches further, still employing dogs, he determined the influence of rectal feeding upon the bile, and showed that amongst the various

foodstuffs given as clysters, proteids alone increased the elimination of bile to a slight degree only, and after an interval of three to six hours; thenitrogen of the urine was at the same time increased. The observations of the present research were carried out upon a healthy young dog weighing 20 kilos., upon whom a permanent biliary fistula had been established four months previously. The substances chosen for experiment were those which have recently been employed upon man; somatose, glucose, and olive oil. The injections were made in several parts of the body, and massage was employed afterwards. On no occasion did abscess occur. Control observations were made by injecting distilled water only, and during fasting. An interval of four to five days elapsed between each observation. The following are the conclusions he arrives at: (1) After twenty-four hours' fasting the hourly excretion of bile remains constant; (2) 100 c.cm. of distilled water, injected subcutaneously, produces no change in the elimination of bile, nor in the urea excretion; (3) 10 per cent. glucose injections produce no change in bile or urea excretion, whereas 20 per cent. of glucose increases both, causing at the same time a hard and painful swelling; now it requires enormous quantities of sugar by the mouth to produce a slight increase in the bile, and there is no accompanying increase of urea; the author, therefore, regards the increase of urea after the 20 per cent. glucose injection as due to the local reactionary process involving a destruction of body proteids; (4) 25 c.cm. of sterilized olive oil produce no increase in bile or urea elimination, whereas 50 c.cm. non-sterilized olive oil increase both and cause a painful swelling; the author attributes the increase to the same cause as in the preceding, namely, destruction of body proteids; (5) 7 gr. of somatose produces no increase of bile or urea if injected in dilute solution, but a 10 per cent. or stronger solution may cause a local reaction, when the bile and urea are both increased. The author argues from these data that the subcutaneous administration of nutritive material is of little value to the animal economy and scarcely likely to pass out of the experimental stage, and compares most disadvantageously with the results obtained by rectal feeding.

PATHOLOGY.

(166) Bovine and Human Tuberculosis. H. Kossel reports the results of the investigations undertaken by the German Imperial Board of Health (Kaiserlicher Gesundheitsamt) in order to clear up the question raised by R. Koch as to the identity of bovine and human tuberculosis. (*Berl. klin. Woch.*, July 20th, 1903.) They worked with bacilli which had been freed from other organisms by passing through guinea-pigs, and afterwards cultured on serum and lastly on bouillon. The skin which appeared on the surface of the bouillon was separated, weighed, emulsified in a definite quantity of water, and pounded in a mortar. In this way, they were able to inject exactly 5 cgr. of tubercle bacilli. Kossel describes the changes which were noted after injecting into cattle cultures of *Perlsucht* bacilli or of tubercle bacilli of the pig. These consisted in swelling and infiltration of the site of injection, which increased in size in the course of a few days while after from eight to ten days, the corresponding lymphatic glands began to enlarge and often attained the size of a fetal head. At the same time pyrexia appeared, and mostly remained until death. The necropsy revealed general tuberculosis. At times the infection with *Perlsucht* bacilli did not run an acute fatal course. They then cultured bacilli from 19 different cases of human tuberculosis of the lungs—which were chosen on account of the impression of being severe or acute cases. When the bacilli from these cases were injected subcutaneously into cattle, a local infiltration appeared at the site of injection on the next day. In the course of a week or two the lymphatic glands became enlarged, but neither the infiltration nor the glands reached the size of those when *Perlsucht* bacilli had been used. As a rule there was no rise of temperature. After about four weeks the glands reduced in size, and on killing the animal some tubercle bacilli in an encapsuled caseating abscess cavity were found at the site of injection. The bacilli were found to be still alive. In no single culture from the 19 cases of phthisis produced the same sort of spreading of the tuberculous process as was the case with the *Perlsucht* bacilli. They next used cultures from tuberculosis of bone and received the same results. The same results were obtained from cultures of bacilli derived from tuberculosis of the glands of the neck and of the urogenital tract. Dealing with culture from cases of miliary tuberculosis, Kossel says that they used 6 different cases, 5 of children and 1 of an adult. In one case the site of injection in the cattle swelled up more than they had seen in other cases, and did not show any tendency to become reduced. The glands also became considerably infiltrated and enlarged. There was no marked pyrexia. When the animal was killed after 125 days it was found to have a generalized tuberculosis of the whole body. In a second case the subcutaneous injection produced a progressive general tuberculosis, and an intravenous injection killed the animal in 20 days with typical signs of an acute tuberculosis. The next series dealt with primary tuberculosis of the intestinal tract, of which they were able to find 7 cases. In one case of a woman who was apparently suffering from early disease, the bacilli only produced changes in the site of injection and the neighbouring glands. In a second case of an adult the effect produced was a number of caseating glands, but no general signs of tuberculosis. The third case of adult disease proved to be non-pathogenic to cattle. In the first case of a child suffering from primary intestinal tuberculosis, the injection produced no changes in 112 days. The same result was met with in a second case. In a third case, one of a child who had died of scarlatinal sepsis, and in whose intestines were found caseating and calcareous mesenteric glands, the bacilli appeared to be pathological to cattle, and in a case of another child who had died of peritonitis and fibrinous pleurisy, on injecting the bacilli in pure culture gained from a caseating gland in the mesentery, a small number of miliary tubercles appeared in the pleura and in the capsule of the spleen. The culture injected into the veins of cattle killed it in a short time. In summing up the results, he says that of the 39 cultures, of which 23 were derived from adults and 16 from children, 19 proved to be absolutely non-pathogenic to cattle; 9 of the cattle showed minimal deposits in the glands, and these were mostly encapsuled; in 7 there were slightly more changes in the glands, but did not amount to important changes. Only in 4 cultures of the 39 were the bacilli capable of producing general tuberculosis. Kossel finds that these cultures were not so virulent as the more virulent tubercle bacilli cultures of animals. He makes a special point of the fact that of the 4 cases which gave the cultures which were pathogenic to cattle, in 2 the tubercle bacilli were not the cause of death in the children. He raises some questions as to how these 4 results can be taken, and promises to report on the feeding and inhalation experiments which are being conducted at some future date. In criticizing the various opinions expressed as to the identity of human and bovine tuberculosis, J. Orth (*Berl. klin. Woch.*, July 20th, 1903) touches on the question of skin infection at necropsies, and points out that an infection in this way must offer considerable difficulties, since even when dealing with human bodies one does not often acquire tuberculous disease. He follows up the arguments used by Schuetz (who worked with R. Koch, in their celebrated experiments on cattle), and subjects his remarks to severe criticism. He then deals with the results of his own experiments and shows that of 5 calves, which he infected with tuberculous masses derived from sources other than cattle, 2 sickened with progressive tuberculosis. Baumgarten disputed the progressive character of the tuberculosis, but he establishes the point beyond dispute. The bacilli were derived from a cavity in the lung of an adult man, and were first passed through a guinea-pig, then cultured on brain substance, and then injected into a rabbit. A portion of the kidney of this rabbit was used to infect the calf. Orth next discusses the results of the German Imperial Board of Health, who have just published some of their experiments. He says that in spite of the intention of using unfavourable means of infection, four of the sources, that is, 10 per cent. of the tubercle bacilli cultures of human subjects proved capable of producing general progressive tuberculosis in cattle. Besides these four cases 7 others proved capable of producing severe tuberculous changes in spite of the unfavourable means of entrance, by subcutaneous injection, and that after four months, the bacilli were found to be still alive. He regards these results, taken with the results of other observers, as proving that human bacilli are capable of producing progressive tuberculosis in calves when injected subcutaneously, and that the subcutaneous injection of bacilli is not a means of distinguishing bovine from human tubercle bacilli.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(167) Haemoptysis in Phthisis.

H. CYBULSKI (*Zeit. für Tuberk. und Heilst.*, Band iv, Heft 4) in discussing haemoptysis in phthisis deals first with the premonitory symptoms. A feeling of oppression in the chest often warns a patient half-an-hour or an hour before the appearance of blood that an attack is imminent. Such a premonition is specially characteristic of a small haemorrhage and is explained by the hypothesis that bleeding has already commenced but that the blood is not expelled until it reaches the neighbourhood of the vocal cords. The sense of oppression is not felt or felt for a few minutes only before a large haemorrhage in which the blood quickly reaches the larynx. A second premonitory symptom is sharp pleuritic pain, caused by inflammation of the pleura covering a portion of lung attacked by a rapidly destructive process. If the part of the lung attacked is not near the surface a rise of temperature may be the only premonitory sign. In estimating the amount of blood lost it is to be remembered that the actual quantity is always in excess of the amount coughed up. Much blood is often swallowed, as in a case described in which the stomach of a patient who died after an attack was found to be full of blood, or in another in which an hour after coughing up 100 c.cm. of blood the patient vomited 250 c.cm. of a fluid chiefly composed of blood. The presence of blood in the sputum for some time after an attack of haemoptysis proves that some blood remains extravasated in the lung tissue and some also remains in the naso-pharynx and the nose. A large flow of blood is usually held to denote a cavity, but other points characteristic of a cavity may be mentioned. One is the presence of blood in the sputum for several days after the haemoptysis, the blood being usually black and intimately mingled with the sputum. The case of a patient presenting none of the signs of a cavity, who lost 100 c.cm. of blood at midday, but whose sputum was no longer blood-stained by 6 o'clock the same evening, shows how quickly the blood disappears where no cavity exists. When at the beginning of a haemorrhage the blood is dark and partially clotted, and later becomes bright red and fluid, the presence of a cavity is also suggested. No constant temperature changes accompany haemoptysis. Sometimes, even with profuse haemorrhage, little change of temperature is found. In a majority of cases, however, there is a rise of temperature almost immediately after the attack, although in a few there may be a fall. The effect of haemoptysis on the course of the disease is of interest. It occasionally appears to exert a favourable influence. Thus a patient suffering from chronic phthisis, who had on a previous occasion been treated at the sanatorium with little effect, during his second stay there had an attack of haemoptysis, and immediately after it began to improve steadily, both as regarded general condition and physical signs. In the most chronic cases haemoptysis appears to have little effect, but in the great majority of the other cases it is harmful. Constitutionally the loss of blood is not beneficial, while the increase of temperature and the psychical effect on the patient are harmful. Haemoptysis may also prove the starting point of an attack of general tuberculosis. Locally the blood may carry tubercle bacilli to parts of the lung not previously infected, and at the site of the haemorrhage the clot left forms a suitable nutritive medium for the bacilli.

(168) A Rare Complication in Mumps.

CAMPANI (*Gazz. degli Osped.*, August 30th, 1903) reports the case of a well-nourished girl, aged 16, who during an attack of mumps developed nyctalopia. On January 6th the parotitis began on the right side; this was treated externally with a guaiacol pomade, and subsided in two days. The left side then began to swell, and at this time the sight became dim towards evening and gradually got worse, until absolute night blindness came on. During the day, save for some slight pre-existing myopia, the vision was good. Internal and external examination of the eye revealed no objective changes. The left pupil was a little dilated. Both pupils reacted well to solar light and slightly to strong artificial light. This nyctalopia lasted the whole time during which the left parotid was swollen—that is, about five days, and then returned slowly to the normal. There seemed no relation between the temperature and the visual phenomena. No internal treatment was given.

(169) Radioscopy of the Cardio-vascular Fascia.

ARCARISI (*Rif. Med.*, August 19th, 1903) gives the results of his study of this question in health and disease and at various ages. In physiological conditions the right edge of the shadow shows faint, rises regularly in an upward direction, and does not pulsate. It is due to the vena cava. The left edge rises obliquely upwards and inwards, and in the second intercostal space bulges out and pulsates. This pouching is due to two vessels, superimposed on each other so as to give one shadow—namely, the pulmonary and aorta. In old people and in cardioptosis, owing to the loss of elasticity in the fascia, causing a slight lengthening or stretching, these two vessels show as separate pouches and not as one. The displacement downwards of the fascia in rising from the supine to the erect position is much more marked in old people than in young. In advanced pregnancy and in increased abdominal tension the fascia is somewhat shortened. In typical cases of cardioptosis the changes in the shadow in rising from the supine to the erect position are very marked, the upper level descending from the third to the fourth space. In slight degrees of aortic ectasia the vascular fascia appears a little enlarged and presents two pulsating swellings in the second and third left space respectively. All this becomes more marked as the ectasia increases. In aneurysm the fascia is altered, not only in volume, but also morphologically; the pulsation is expansile and the edges of the shadow much more definite. In mediastinal tumours the shadow is median, with rather irregular edges, and shows no alteration in shape in relation to the cardiac movements.

SURGERY.

(170) The Surgical Treatment of Anterior Adhesive Perigastritis.

DUPLANT (*Rev. de Méd.*, No. 8, 1903), in concluding a clinical study of anterior adhesive perigastritis, discusses the surgical treatment of this complication of gastric ulcer. Surgical intervention, it is held, is indicated in cases of this association when local discomfort, frequently repeated attacks of pain, gastric intolerance, and general debility have led to serious disturbance of nutrition. The patient under these circumstances is threatened by the dangers of perforation and of intense cachexia. The surgeon should deal with the adhesions at once and set free the anterior surface of the stomach, if this can be done without dangerous haemorrhage, and if the wall of the stomach which it is proposed to set free is sufficiently sound to resist any tendency to perforation and the formation of a fistula which might expose the peritoneal cavity to the risk of infection. If there be any doubt as to the condition of the gastric wall, the surgeon should resect as much as possible of the ulcer and close the opening securely by sutures. After division of the perigastric adhesions the seat of operation should be packed with gauze with the aim of preventing haemorrhage and of protecting the peritoneal cavity from the contact of serous or sero-purulent discharge. Gastro-enterostomy, which is to be regarded as the necessary complement of the operation for division of perigastric adhesions, should be practised alone when the liberation of the adherent stomach seems likely to be attended by risk. Gastro-enterostomy, the author states, is the best and most effectual operation in cases of gastric ulcer, as it enables the stomach to gain beneficial rest in a far more satisfactory manner than the overrated dietetic treatment. It facilitates the evacuation of the stomach and prevents the stagnation of hyperacid fluid in its cavity. When adhesions have been divided gastro-enterostomy should be performed in the same operation. The author is opposed to any interval between the two stages of surgical treatment, as a simple division of adhesions is likely to be followed by the formation of closer and more extensive adhesions which may render a gastro-enterostomy impossible. Gastro-enterostomy in cases of gastric ulcer is regarded not only as less severe than excision, but also as a more effectual and more durably beneficial operation.

(171) Branchioma.

RECLUS (*Bull. et Mém. de la Soc. de Chir.*, No. 28, 1903) in commenting on three cases of branchioma under his own care, discusses the pathogeny and the surgical treatment of this variety of tumour. Reference is made to the researches of

Volkmann who was the first to point out that the growths now known as branchiomata are not, as had been previously supposed, instances of primary cancer of gland structure, but neoplasms developed at the expense of epithelial masses retained within the tissues in consequence of the incomplete absorption of the branchial arches. The later investigations of French pathologists have shown that in accordance with the histological fact that each branchial arch is composed of a skeleton of connective tissue and an external layer of epithelium, there are two forms of branchioma, one a pure epithelial tumour, the other a mixed tumour. In either of these forms, a branchioma, the author states, can be readily diagnosed. Whether it be an epithelioma or a mixed tumour it is seldom met with except in the adult male, and is always developed at some point in the line of one of the obliterated branchial arches, as for instance in the course of the depression corresponding to the first arch, which passes across the front of the neck between the mandible and the hyoid bone, or of that which passes from the parotid to the sternum over the course of the large vessels and nerves, and corresponds to the lines of the second and two following arches. The tumour is at first deeply seated but after a time pushes its way between the superjacent muscles to the surface. It is firm, slightly nodulated, mobile in its early stage and subsequently fixed. It increases rapidly in size and finally involves the skin and infiltrates the adjacent glands. The mixed form of tumour is more mobile than the epitheliomatous variety, and does not grow so quickly. Prompt removal is indicated in cases of branchioma. In the mixed form the operation is a comparatively simple one if it be performed in good time, and the prognosis of the surgical treatment is favourable. In cases of epithelial branchioma, however, removal is often attended with much risk especially if the growth be situated in the carotid region. In one case, which is reported in this paper, the author in the course of the operation for removal of a large epithelial branchioma wounded the common carotid and its two main divisions and the internal jugular vein, and severed the vagus, the great sympathetic, and the hypoglossal nerves, the results of which lesions were slight facial paralysis, atrophy of half the tongue, contraction of the corresponding pupil, hoarseness, an apoplectic attack with aphasia and temporary hemiplegia, and, finally, Jacksonian epilepsy. In spite of these serious consequences the patient at the date of this communication was living and satisfied with the results of the operation.

(172) A New Operative Method for Facilitating Access to the Hypochondriac Regions of the Abdomen.

Marwedel (*Zentralbl. f. Chir.*, No. 35, 1903) points out that, notwithstanding the great progress made by abdominal surgery in the course of the last thirty years, there are still portions of the peritoneal cavity which it is very difficult, if not impossible, to reach by the hitherto recognized methods of operative technique. The regions to which this statement is mainly applicable are those situated on both sides immediately below the diaphragm, which the surgeon may find it necessary to explore in cases of injury or disease of the convex portion of the right hepatic lobe, of the diaphragm itself, and of the oesophagus and the cardiac portion of the stomach. The cause of the difficulty experienced in such exploratory operations is the rigidity of the thoracic wall, the lower part of which, enclosing so much of the intra-abdominal space situated immediately below the diaphragm, prevents an adequate exposure of the diseased or injured organ. The author, after a brief reference to previous methods of overcoming this difficulty by extensive resection of rib and costal cartilage, which methods he regards as very formidable, describes an operation devised by himself which he has frequently practised on the cadaver, and has also recently applied in actual practice to the living subject with good results. This operation which, it is held, does not cause so much mutilation as those devised by Lannelongue and von Mikulicz, consists in a long, curved skin incision carried about 2 in. below the inferior margin of the thorax from the apex of the ensiform process to a line corresponding to the anterior end of the tenth rib. After exposure of the lower ribs and their costal cartilages, the cartilage of the seventh rib is divided near the sternum, and the cartilages of the eighth and two following ribs are also cut through close to their costal attachments. The flap thus formed together with the musculocutaneous flap is next turned upwards and outwards, and after division of the peritoneum the hypochondriac region on the side of the operation is very fully exposed. In the division of the seventh costal cartilage there is some risk of wounding the pleura, but this accident, it is stated, may be avoided by the exercise of caution. This operation permits on the right side free access to the anterior surface of the right lobe of the liver, and also, after division of the suspensory ligaments to the whole of the superior and posterior parts of this organ. The author reports a case in which by performing a similar operation on the left side he was able to expose freely the cardiac end of the stomach and the lower part of a stenosed oesophagus.

(173) Operative Treatment of Tic Douloureux.

Poirier (*Bull. et Mém. de la Soc. de Chir.*, No. 26, 1903) reports a case of severe facial neuralgia in a man aged 53, in which he, holding in reserve the difficult and delicate operation of removal of the Gasserian ganglion, performed resection of the superior sympathetic ganglion of the neck on the affected side. This comparatively safe and simple operation has, it is stated, been followed in this case by very satisfactory results; the patient, who previously threatened to put an end to his sufferings by suicide, having been so much relieved as now really to enjoy life. Poirier, however, hesitates to speak of a durable cure, as but a brief interval of six months has transpired since the date of operation. In the course of a discussion of this report Delbet alluded to a case under his own care in which between two and three years ago he resected the Gasserian ganglion for tic douloureux. At first the results of the operation in this instance were perfect, but after an interval of about six months the pains returned, and in course of time progressively increased in intensity, and soon became as severe as they had been before the operation. Resection of the superior cervical ganglion was then performed at the urgent request of the patient, with no good results at first, but, after a brief interval, with decided success, the crises of pain becoming less frequent and of shorter duration, and after a time ceasing altogether. In this, however, as in the first operation, the good results were not permanent, as the pains again returned, and soon acquired their former violence and intensity.

MIDWIFERY AND DISEASES OF WOMEN.

(174) Treatment of Rupture of Uterus in Labour.

Labusquière (*Ann. de Gyn. et d'Obst.*, July, 1903) has prepared an important monograph on this subject based upon the experience of different authorities since antiseptic midwifery was established. Altogether, surgical treatment offers the patient the best chance of recovery, whilst expectant measures involve the most peril. This treatment includes several methods, from panhysterectomy to "exclusive suture." By the latter term is understood Zweifel's method of applying sutures to the serous coat alone, so as to convert a total into an incomplete rupture. The uterus is exposed by an abdominal incision; the pelvis must not be elevated lest blood and lochia should run up into the upper portion of the peritoneal cavity; lastly, all blood is removed "to the very last drop"; then the sutures are applied to the serous coat on each side of the laceration and tied. This "exclusive suture" method was first tried on a patient so collapsed that panhysterectomy was out of the question. The thorough drying of the peritoneal cavity is essential in this operation. Labusquière admits that any form of major surgery must be out of the question in many cases of rupture during labour owing to surrounding circumstances, then conservative or obstetrical measures can alone be employed. Labusquière notes the great success of packing and draining the uterus in Pajot's wards nearly twenty years ago, and then compares, as others have done, Varnier's statistics, where the mortality after simple packing and drainage was very high, operations being far more successful. Abdominal section, followed by complete suture of the laceration, so as to unite the muscular coats and spare the patient the perils of a weak cicatrix in the uterine walls, has been followed by successful results. It is, however, bad surgery as a rule, since the edges of the wound are probably septic before suture; and so complete suture should not be attempted save where the rupture is small and non-infection practically certain. Zweifel's "exclusive suture" therefore seems the best conservative surgical method.

Klein still supports packing and drainage, and Franqué of Würzburg, in a recent work on the subject, advises the practitioner when rupture of the uterus occurs in private practice, to deliver through the vagina if possible, to apply a pad and bandage to the abdomen, and to insert a drainage tube or a strand of iodoform gauze into the uterus.

(175) Estimation of Leucocytes in Gynaecology.

DÜTZMANN (*Monats. f. Geb. u. Gyn.*, July, 1903), on the ground of long clinical experience, lays great stress on the estimation of leucocytes in diseases of women. Where inflammatory exudation is present it is a valuable aid to diagnosis, supporting indications for incision when suppuration is suspected. The iodine reaction in colourless blood corpuscles is of great value in this respect. Calculation of leucocytes is also of value in cases of chronic disease of the appendages, not only for estimating the chances of suppuration but also for diagnostic purposes, and for deciding whether a vaginal or an abdominal operation be the more preferable. In regard to diagnosis, it must be remembered when researches of this kind are being made that there is no increase of leucocytes where tuberculous pus is present, and but little diminution when the pus is gonorrhoeal. This phenomenon is explained by the greater toleration and the low absorptive power of the peritoneum for these bacteria and their toxin. Dützmann discovered that when a large ovarian tumour sets up peritoneal inflammation, especially where torsion of the pedicle has occurred, marked leucocytosis occurs, whilst the iodine reaction gives negative results. In gynaecological disorders—in no sense essentially suppurative, such as myoma, carcinoma, and tubal gestation—leucocytosis is often the only method for detecting suppuration in the appendages, uterine cavity, or haematocele. It is in septic pelvic inflammations that estimation of colourless blood corpuscles is of the highest value. Hyperleucocytosis is favourable, diminution unfavourable. This fact may prove a valuable guide in a case of puerperal fever when we have to decide between expectant and operative treatment. In eclampsia the proportion of leucocytes signifies the same as in sepsis. Where there is hyperleucocytosis the fits will probably abate, whilst when the leucocytes diminish in proportion they will increase. Thus Dützmann's researches support the opinion that eclampsia is an infective disease.

(176) Operative Treatment of Uterine Cancer.

OLSHAUSEN (*Zentralbl. f. Gynäk.*, No. 29, 1903) considers that those who insist on removal of the cancerous uterus by an abdominal operation overshoot the mark. He claims 18 per cent. of permanent results in his vaginal operations for that disease. During the past two or three years he has operated on 50 per cent. of all cases of uterine cancer; 341 cases have been under his care during the last twenty-four months; of these, 210 underwent hysterectomy. In 206 the vaginal operation was performed, with a mortality of 17 per cent.; in 4 the uterus was removed by abdominal section, with 1 death. The pelvic connective tissue cannot be thoroughly dissected away; it is certainly not possible to remove all the glands. Olshausen, when he operates through the abdomen, does not choose that method, so that he may clear away the glands and connective tissue. He prefers the abdominal route solely when on examination it seems probable that a ureter is imbedded in the cancerous growth. In such a case the vaginal method involves an obvious danger.

(177) Intussusception of Gravid Tube.

MAINZER (*Zentralbl. f. Gynäk.*, No. 30, 1903) reports a case where a woman aged 38 had suffered from several attacks of pelvic inflammation, and had recently been seized with violent pain and signs of internal haemorrhage. Abdominal section was performed. The seat of haemorrhage was traced to one Fallopian tube. Its ostium was very patulous, and from it protruded a coagulum as big as a goose's egg, bearing a stout pedicle, which was over an inch long externally, and ran into the tubal canal. A deep infundibuliform depression lay close to the uterine end of the tube. After removal it was found that the pedicle consisted of tubal wall, which had been dragged out of the ostium by the mole firmly attached to its tissues. Probably, according to Mainzer, the tube had contracted firmly on the clot, which, as it was extruded, pulled strongly on its insertion; thus true intussusception had occurred.

(178) Vaginal Cysts and Pregnancy.

CHEVALLIER (*L'Obstét.*, July, 1903) reported a case before the Société d'Obstétrique de Paris as a question for consultation. A woman was under his care in her second pregnancy. A large cyst filled the vaginal canal. It had developed in the antero-lateral regions of the vaginal wall. After the patient's first labour the cyst, which had opened spontaneously, disappeared. Six months later it had formed again. Chevallier discussed the probabilities of complication at the ensuing labour. It would probably burst as before, yet it might be pushed forwards owing to its mobility in the submucous connective tissue. Should it burst, a space would be left liable to become a focus of infection.

THERAPEUTICS.

(179) The Effects on the Nervous System of Electric Currents of High Potential.

MILLS AND WEISENBURG (*Univ. Penn. Med. Bull.*, April, 1903) give the notes of a previously-reported case of bulbospinal paralysis apparently due to frequently-repeated small electric shocks. A robust man, aged 30, with good previous history, had been in the habit during the testing of electric wires of receiving through his body several hundred times a day the current from a battery of four dry cells. He was temperate and had not had syphilis. One day the current seemed stronger and had to be broken before he could let go the wires, but there were no after-effects. A fortnight later while at work gradually-increasing weakness, beginning in his hands and arms, developed, till on the third day he was unable to lift his head from a pillow and experienced some difficulty in swallowing. Twelve days later all movements in the distribution of the seventh nerves were greatly impaired, and to a lesser degree those of the fifth, while motor impairment was present in all parts of the upper extremities, though resistance to passive movement was less marked than in the lower limbs. The patellar, Achilles, and Babinski reflexes were absent. There was some power of rotation in the thighs and of dorsal flexion of the feet on the legs. Farado-contractility was preserved to strong currents and prolonged examination did not produce any rapid exhaustion. A week later some signs of improvement were present. Rest, calomel, and potassium iodide constituted the treatment, followed by strychnine, arsenious acid, and peptomangen, but without any appreciable effect. The pathology as studied in cases of death from currents of high potentiality is unsatisfactory, in many instances nothing being discovered *post mortem*. Minute haemorrhages into the floor of the fourth ventricle have been found in a few cases, while some experiments have shown a vacuolation and shrinkage of the ganglion cells and a greater reduction in the size of the nucleus as a result of the prolonged action of weak currents. Cunningham's experiments upon dogs point to a disturbance of the co-ordinating centre of the heart as being the cause of death, while Peterson thinks that no pathognomonic lesions are produced, the current rather dividing and disintegrating the finer molecular structures of the body. In the medico-legal aspect occasional deaths from lightning have occurred in which there have been no distinctive external or internal signs, though usually burns, scars, or arborescent markings will be present. Several recorded cases, fatal and otherwise, are quoted, and it is pointed out that where death occurs from electric shock it is important to discover the actual cause, though this may be difficult if the body is found at some distance from the scene of the accident with only some superficial burn from contact. Every other cause must be excluded, and the physician must be familiar with the proper pathological conditions which such cases may present. Among non-fatal cases must be considered those in which the current has an indirect effect through causing nervous and bodily injuries from falls due to shock; those in which burns and nervous affections are the direct result of the current; and cases of hysteria or other traumatic neuroses. In all cases the physician has merely to determine the nature and extent of the injuries and how far they are directly or indirectly due to the electric current, the placing of blame or contributory negligence being outside his province.

(180) The Action of Quinine on the Sulphur and Nitrogen of the Bile.

A. BENEDICENTI (*Arch. Ital. de Biol.*, March 28th, 1903), as a preliminary contribution to this subject, has estimated, as the principal index of any

change, the sulphur and nitrogen of bile under normal conditions and after the administration of quinine. Referring to previous results with this alkaloid, he quotes Buchheim and Engel, who maintained that it diminished the quantity of bile secreted; Mösler, who was unable to demonstrate its presence in bile; Albertoni, who by using very accurate analytical methods proved its elimination in gall-bladder bile; Prevost and Binet, whose search (for the alkaloid) was always negative, and whose estimations of quantity of bile gave varying results. The author's observations were made on a dog weighing 14,900 kilograms, on whom a biliary fistula had been established several months previously. He was in good health at the time of the observations and accustomed to remain quiet for long periods in Ajon's apparatus. The daily diet remained constant during the experiments and consisted of 300 grams of meat, 200 grams of milk and 150 grams of bread, given in equal quantities morning and evening. The bile was collected for twelve hours from 6 a.m., and, to avoid trouble to the animal, on alternate days or at longer intervals. Kjeldahl's method for estimating the nitrogen was employed. The sulphur was determined by mixing the dried bile with potassium nitrate and sodium carbonate, exposing the mixture to great heat, dissolving the residue in hydrochloric acid, and precipitating with barium chloride; after incineration, the quantity of sulphur was calculated from the ashes. The water was determined by the loss of weight on evaporation. In the first two observations, 20 to 25 cgr. of the hydrochloride of quinine were given by the mouth; in the others, the same quantity dissolved in water, was introduced into the stomach by a catheter. The urine was examined after the removal of the apparatus and the alkaloid recovered from it, showing that the drug had been absorbed from the stomach. A record of the rectal temperature was taken, and showed a fall of only a few tenths of a degree. The data obtained from eight observations, which he tabulates in full, agree with such accuracy that any discussion is useless, and he draws the conclusions that the quantity of sulphur and nitrogen eliminated in the bile in twelve hours, as well as the quantity of bile secreted and its dried residue, are not appreciably altered by the action of quinine even in large doses.

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(181) Treatment of Chronic Catarrh of the Large Intestine.

L. von Aldor (*Berl. klin. Woch.*, May 11th, 1903) speaks of the treatment of chronic catarrh of the large intestine, which is, to his mind, as a rule highly unsatisfactory. He thinks that the fact that at times spontaneous recovery takes place is in itself sufficient to show that the usual pessimistic prognosis is not well founded. For more than five years he has been in the habit of treating these cases with high rectal injections and claims to have got excellent results. He carries the injections out as follows: First he gives an enema to clean out the bowel; then he injects from 1 to 3 litres of Carlsbader Sprudel water at from 45° to 50° C., at a height of 85 cm. The patient lies on his side, and a soft rubber tube having a breadth of 8 mm. and length of 85 cm. is oiled, and by means of a slight twisting movement passed its whole length into the bowel. He states that with a little practice it is easy to do this. Attached to the outer end of the tube is about 1½ metre of rubber tubing, ending in a funnel. He gives one such injection each day, repeating it twenty, or at most twenty-five, times. On the first day he only uses 1 litre, on the second 2, on the third 2½, and at times he increases this to 3 litres. After all the fluid has been injected a thermophore or some other warming apparatus is laid on the patient's abdomen, the patient lying the while on his back. He says that the patients can retain the injection at first for about three-quarters of an hour without difficulty, and later on they learn to retain it for two to three hours. He goes into details with regard to the *rationale* of the quantity, temperature, and height of the injection. Illustrative to the description he recites the histories of a number of cases treated in this way, with good results. He calls particular attention to one case in which he carried out twelve injections of 1½ to 2 litres in a child of 9 years, and succeeded in curing a troublesome chronic affection of the intestine.

PATHOLOGY.

(182) The Tuberculin Reaction.

Zupnik (*Deut. Arch. f. klin. Med.*, lxxxvi, 1-3) points out that the future progress of bacteriology must largely be upon botanical lines, and will concern itself with generic rather than individual differences between various microbes. He calls attention to the fact that allied micro-organisms produce similar morbid processes; thus, for instance, the infective granulomata, with the exception of syphilis, the etiology of which is unknown, are due to germs which are intimately related to each other. It is, indeed, a well-known fact that the bacilli of tuberculosis and leprosy are closely related to the streptothrix group, to which actinomyces belongs; a like parallelism between organisms and diseases is seen in the case of typhoid and parotyphoid fevers. The author lays down as an axiom that members of the same germs of bacteria excite both in man and lower animals diseases which resemble one another both clinically and pathologically; as a corollary to this he states that such bacteria form metabolic products which are chemically and physiologically similar. Thus, under the name of Loeffler's bacilli, have been grouped several allied forms; the products of all of these are neutralized by antitoxic serum, because they are all of a similar chemical nature; on the other hand, experimental evidence of this kind shows that the colon bacillus belongs to a different genus from the typhoid micro-organism and its allies. The author has essayed a further demonstration of this theory in connexion with the group to which the tubercle bacillus belongs; if his view is correct, infection of an animal by any member of the group should cause it to give a specific tuberculin reaction. To this end he performed a large number of experiments on guinea-pigs, using the bacilli of various forms of tuberculosis—for example, in fish, birds, and man—and also some of the principal members of the streptothrix group. Out of twelve varieties of acid-fast bacteria, six gave a positive reaction; the remaining ones, with two of which a doubtful reaction was obtained, belonged to the groups producing pseudo-tuberculosis in cattle. Of the streptothrix forms, three out of four gave a reaction. Zupnik proceeds further to show that the tuberculin reaction is not dependent upon the presence of certain proteids, such as albumoses, nor is it bound up with the development of tubercles; he maintains that it is to be regarded as a definite reaction affording a test for a particular genus of microbe organisms. He finds some corroboration of this in the fact that other acid-fast bacilli—for example, the smegma bacillus—are capable of evoking symptoms in man similar to those of tuberculosis. A further point which he elicited is that a tuberculous man is a hundred times as susceptible to Koch's tuberculin as an infected guinea-pig—that is, that he will give a reaction upon the injection of one-hundredth part the dose of tuberculin.

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(183) The Cultivation of Trypanosomes.

McNeal and Novy (*Contributions to Medical Research: Michigan Laboratories*, June, 1903) have succeeded in cultivating the rat trypanosome, or trypanosoma Lewisii. They prepared their culture medium by melting ordinary nutrient agar, cooling it to 50°, and then mixing it, in the proportion of 3 to 1, with sterile defibrinated blood. The tubes were then slanted and allowed to solidify. After solidification the tubes were placed upright so as to allow as much water of condensation as possible to collect at the bottom. In this fluid, trypanosome blood, free from bacterial contamination, was inoculated. Cultures were obtained both at room temperature and in the incubator. The former, though slower, were surer than the latter, and retained their vitality for months, whereas the latter tended to die out in two or three weeks. In the cultures made at room temperature the virulence was maintained through several generations; in one instance a culture of the tenth generation, of a series which had been under cultivation for an entire year, was proved to be virulent.

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(184) Gonorrhœa.

Schlasberg (*Nord. Med. Arkiv*, Afd. ii, Heft. 2, No. 7, 1903) as a result of extensive clinical studies draws attention to the following points. Folliculitis is a very frequent complication of gonorrhœal urethritis and markedly retards recovery. The prostate, without exhibiting any palpable changes, may be a lurking-place for the gonococci and so provide a source for reinfection. The occurrence of epididymitis appears to hasten the resolution of the urethritis, especially when there is an accompanying folliculitis. Inguinal adenitis apparently has the same effect.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(185) Typhoid and Paratyphoid.

Zupnik and Posner (*Prag. med. Woch.*, 1903, No. 18) discuss the diagnosis of these diseases from the bacteriological point of view. They have devoted particular attention to the agglutination reaction, and believe that in all in which this reaction is obtained careful bacteriological examination, particularly of the contents of the gall bladder, will reveal the presence of the typhoid bacillus. They themselves have investigated in this way some 500 cases, of which 80 were examined also *post mortem*, and have found entire agreement between the agglutination results and the pathological findings. They hold, therefore, that this reaction invariably betokens a present or past attack of typhoid. They further analyse the agglutination results in 104 cases, of which 64 were typhoid, 9 paratyphoid, and 31 other diseases. The serum of each of these cases was tested with typhoid bacilli, paratyphoid bacilli, allied bacteria, such as Gaertner's B. enteritidis, and, lastly, with colon bacilli. All the 64 typhoid cases agreed in two points: first, the serum agglutinated typhoid bacilli, and also various kinds of paratyphoid bacilli, and one or other of the allied forms; secondly, in every one of these cases the agglutination reaction was most powerful in the case of typhoid bacilli. From the 31 cases which were suffering neither from typhoid or paratyphoid the serum did not agglutinate either of the first three varieties of bacilli mentioned, but in a large proportion of them it had this effect upon the colon bacillus. The authors consider, however, that this result did not exceed the normal property possessed by the serum of an adult in agglutinating colon bacilli, and, in other words, that this is not a specific reaction. The sera of the 9 cases of paratyphoid agglutinated paratyphoid bacilli, typhoid bacilli, and the allied forms, but the action in every case was most powerfully exerted upon the paratyphoid microbes. The authors conclude, therefore, that agglutination is a generic rather than a specific reaction; and that, for example, a positive Widal's reaction indicates not necessarily typhoid, but one of the group of allied diseases to which it belongs. They further maintain that this reaction is more accurate than any other test for the disease, and they lay down as a general law that the cause of a particular disease must be sought in the microbe with which the serum of the patient gives the strongest agglutination reaction. They hold, therefore, that in a doubtful case the diagnosis of typhoid from similar conditions can be made by testing the serum of the patient first with typhoid bacilli, and then with the other bacilli of the typhoid-paratyphoid group.

(186) Clinical Forms of Pneumothorax.

F. Parkes Weber (*Zeit. f. Tuberk. u. Heilstw.*, vol. iv, No. 6) deals with the various forms of pneumothorax met with in actual practice, and describes each form more or less in detail. He gives seven different methods of classifying this condition, but for reasons which he elaborates he chooses the following: (*a*) Cases obviously connected with pulmonary tuberculosis; (*b*) cases obviously due to other causes, such as traumatism, empyema, etc.; (*c*) cases arising in apparently healthy persons, some of which, however, are probably in reality due to slight and latent forms of tuberculosis. In a large majority of cases—perhaps in 80 or 90 per cent.—pneumothorax is due to pulmonary tuberculosis. It is said to occur in from 3½ to 10 per cent. of all cases of phthisis. The physical signs will depend on whether the pneumothorax is complete or limited by pleuritic adhesions. Displacement of the heart is one of the most important signs, but may be absent when the adhesions are situated in front of the lung. Other physical signs may also be absent—for example, amphoric breathing, bell sound, etc., the breath sounds may not be heard over the affected area, and at times the respiratory movements may be as free on the affected side as on the sound side. The onset may be so insidious as to escape attention if the patient is in bed and is debilitated by disease. In relatively vigorous patients, especially if the other side of the chest contains a lung much affected, there may be extreme distress and pain on movement. This is likely to be increased if the opening into the pleura is very minute and acts as a valve. At times the patient will die at the onset, but more frequently they survive the early stage. In a few days fluid is found in the pleura, and can be detected by the presence of a succussion splash, etc. At first the effusion is serous, but in most cases it becomes purulent sooner or later. The initial distress soon lessens in most cases, and the organism becomes accommodated to the new conditions. At times the pneumothorax disappears without any effusion taking place in the pleura, but there is a question whether the original pneumothorax is not due to emphysema and not to the tuberculosis. Patients suffering from hydro-pneumothorax occasionally recover, either with or without surgical interference, but as a rule these patients soon succumb to their phthisis. In dealing with the treatment Weber says that in the initial stage, when there is much collapse, special cardiac stimulants, such as digitalis or strophanthus, are to be given. Sedatives, such as codeine or small hypodermic injections of morphine, sometimes relieve pain and excitement, but great caution must be exercised, as a decided narcotic action may be very harmful. If the distress be due to the interpleural tension the air may be let out by means of a cannula. When effusion of serous or purulent fluid occurs the surgical interference will depend on the amount of the pulmonary disease, and at times simple paracentesis or resection of a rib may lead to complete cure. In describing the class of pneumothorax due to causes other than pulmonary tuberculosis, Weber enumerates the following causes: (1) Wounds of the pleura (including operation wounds) and other traumatic causes, for example, fractured ribs; (2) the bursting of an empyema through the lung; (3) destructive disease of the lung, such as gangrene, abscess, etc.; (4) abscess ulceration, cancer, etc., in parts outside the pleura; (5) emphysema and violent respiratory efforts; (6) gas given off from an effusion of blood, or from decomposing material in the pleura. Weber deals briefly with each of these conditions. Turning to pneumothorax arising in apparently healthy persons, he believes that this occurs more frequently than is usually supposed, and offers some points of special interest. He objects to the terms "idiopathic" and "non-tuberculous spontaneous" pneumothorax, because as the patients nearly always recover, the exact etiology is generally a matter of conjecture. Several cases are undoubtedly in some way connected with slight tuberculous lesions; at times subserous tubercles have been known to rupture, and thus give rise to the pneumothorax. More common are emphysema bullae, which may rupture and contribute to the number of cases described under this heading. The third suggestion is that some air cells are torn in the neighbourhood of an old pleuritic adhesion. A number of movements are said to be responsible for the onset, such as dancing, jumping, and the like, and sometimes the onset takes place during sleep. The physical signs correspond to those of pneumothorax due to phthisis, but Weber says that metallic tinkling may be present even if there is no fluid in the pleura. Nearly all the cases reported which come under the category of the third class recover, even if there is an excessive pressure due to the valve-like action of a minute opening in the pleura. The abnormal signs last on an average for four or five weeks. One must, however, be careful in the treatment of the cases, avoiding unnecessary use of instruments, since this may lead to septic infection, and insisting on complete rest, in order to prevent relapses as far as possible. In persons of a tuberculous predisposition, one should pay especial attention to those rules for maintaining the general health.

SURGERY.

(187) Coexistence of Cholecystitis and Appendicitis.

Dieulafoy (*Rev. de Chir.*, No. 8, 1903) has directed the attention of the Academy of Medicine of Paris to the frequent coexistence of cholecystitis and appendicitis. It rarely occurs that in cases of this kind the former affection precedes the latter; in most instances the cholecystitis is the initial lesion, and the appendicitis, which may be either acute or subacute, presents itself as a complication. The view that such association may be due to a tendency in the appendix to calculous deposit analogous to vesicular lithiasis is opposed by the fact that calculi are usually absent in both organs. Against the supposition of an ascending infection starting in the appendix and transmitted to the gall bladder being the cause of this association of appendicitis and cholecystitis, the objection is raised that such ascending infection from ap-

pendix to liver is usually manifested by multiple hepatic abscesses, whilst the gall bladder remains in a healthy condition. It is more probable, Dieulafoy thinks, that the mischief starts in the gall bladder. The appendicitis is usually long preceded by well-marked symptoms of hepatic and biliary disturbances. It should, therefore, it is held, be always remembered that cholecystitis may be complicated by acute appendicitis. As the symptoms of the latter may mask those of the former the surgeon should, in every case of appendicitis, direct his attention to the state of the biliary organs, and in operating should not rest content with the surgical treatment of the appendicular affection alone, but also carefully examine the gall bladder and open this if it be found to contain pus.

(188) Colopexis for Prolapse of the Rectum.

Rotter (*Deut. med. Woch.*, August 6th, 1903) says that the treatment of considerable prolapse of the rectum lies between resection and colopexis. The former is not free from danger, and Ludloff found that out of 47 cases, 6 ended fatally. Stricture at the level of the sutures is not uncommon, and lastly, the operation does not offer a safeguard against recurrence of the trouble. On the other hand, colopexis is practically free from danger, and recurrences are not frequent, at all events, as compared with resection. The operation is carried out as follows: Incision on the left side in the hypogastrium; the lower bend of the sigmoid flexure is then drawn up, and the lowest end of this portion of gut is then sutured to the peritoneum at the wound. This is done with two or three rows of silk sutures, and in this way an adhesion between the serosa of the bowel and the parietal peritoneum is established. Rotter finds, however, that the union between peritoneum and peritoneum is not, as a rule, firm, and therefore prefers to modify this portion of the operation. In one case he helped himself by using the level of his sutures, which he applied in performing entero-anastomosis (for a very long sigmoid flexure), and both sides of the same, which he stripped of the peritoneal covering; while in another case he stripped the peritoneum off from the lateral edges of the parietal wound, baring the retroperitoneal connective tissue for the extent of three-finger-breadths. To this site he sutured the sigmoid flexure. He prefers the latter method, and recommends it to others, since he has satisfied himself that the fixation of the bowel is absolutely firm and trustworthy.

(189) The Gradual Surgical Occlusion of Large Arteries.

Stratton (*Annals of Surgery*, August, 1903) holds that the dangerous results which attend the ordinary methods of ligation of the largest arteries call for improvement. While in a large proportion of individuals abrupt surgical closure of large arteries is unattended with alarming symptoms, yet in some patients the same procedure causes grave dangers. These dangers are convulsions or paralysis after ligation of the carotid, and gangrene after ligation of other large arteries—such, for instance, as the iliac femoral and subclavian, which are less closely associated with vital organs and processes. These effects are in large part, if not entirely, due to the suddenness of the arterial closure. It is a question yet to be clinically decided whether the collateral circulation in cases of surgical closure would be more surely established if the arterial occlusion were gradually accomplished than it is by the present abrupt method. The author gives the results of experiments made to test the practicability of gradual occlusion with an instrument operating on the principle of the écraseur. These experiments, made on the abdominal aorta of the dog, demonstrate, it is asserted, the fact that, at least in dogs, a large artery can be gradually constricted without undue violence to its walls. Further investigation, the author states, is required to note the effect of gradual and partial occlusion carried on for prolonged periods. Gradual surgical occlusion of arteries, if found applicable in surgical practice, would seem to have its most pronounced opportunity for usefulness in the relief of aneurysm, the natural and surgical cure of this disease being best brought about by the gradual deposition of the coagulum within the sac. The suggested method, it is thought, might prove serviceable in cases in which closure of the abdominal aorta is indicated.

MIDWIFERY AND DISEASES OF WOMEN.

(190) Sarcoma of the Uterus.

W. Evelt (*Münch. med. Woch.*, August 18th, 1903) reports three cases of sarcoma of the uterus, which offer several points of interest. The first case was that of woman, aged 51 years, who sought treatment on account of profuse bleeding. She had consulted several gynaecologists during the previous ten years, and had been told by them that she was suffering from a uterine myoma. On examination Evelt found a tumour in the body of the uterus, which reached till the level of the epigastrium: the external os contained broken-down masses, which proved microscopically to be sarcoma. The patient was extremely anaemic. On July 10th, 1899, laparotomy was performed, and the whole uterus with the appendages were removed, as well as portion of the vagina and the right lateral ligament, which contained numerous secondary growths. The patient died on March 7th, 1900, of secondary growths in the brain. The second case was that of a woman, aged 42 years, who complained of menorrhagia, pain in the loins, and sickness. The circumference of the abdomen had been increasing for the last nine months. She was a very anaemic woman, and was very thin. A tumour of the size of a man's fist was found situated behind and to the right of the uterus, and fixed in the true pelvis. It was densely hard. The diagnosis of a myoma of the uterus (probably subserous) was made. On February 13th, 1902, the uterus was removed abdominally, without the appendages. The tumour proved to be a melanotic sarcoma. The further course was uneventful. The patient was discharged from the hospital, free from symptoms, on March 7th. The third case was that of a woman, aged 30 years, who complained of irregular menses up to a year ago, since which time she had strong fits at each period and great loss. On examination a tumour of the size of a fist was found corresponding to the body of the uterus. It was anteflexed, soft, movable, and slightly tender. The appendages were somewhat enlarged. On March 5th, 1903, the os was dilated by laminaria tents, and on passing the finger into the uterus, a moderately hard tumour of the size of a walnut, attached to the right tube, was felt. An attempt to remove it by means of the finger and forceps failed, but portions gained in this way proved under the microscope to be parts of a myoma, probably undergoing early sarcomatous degeneration. A month later it was found that the tumour had increased in size, and the uterus and appendages were removed per abdomen. The ovaries were cystic. The tumour proved to be sarcoma. The points of interest in these cases lay in the comparative rareness of sarcoma of the uterus, in the difficulty of diagnosis, especially of the last two cases, in the ages of the patients, in the fact that all the sarcomata arose in uterine myomata, and in the fact that in the second and third cases there appeared to be little tendency to the formation of secondary growths. In one case laparotomy was again performed thirteen months after the extirpation of the uterus, but no growths were found.

(191) Abdominal Section for Puerperal Peritonitis.

Brindeau and Lequeux (*L'Obstét.*, July, 1903) reported at the May meeting of the Société d'Obstétrique de Paris a case which shows that free incision and drainage of the peritoneum may be quite useless even when pus is found and allowed to escape freely. The patient in their case had a normal labour. On the second day there was vomiting and a pain was felt on the left side of the abdomen; the temperature rose on the fourth day to 104°, the pulse to over 144. In the evening an abdominal incision was made. A great quantity of thick pus escaped; it had a faint, but not a faecal odour. It was probably of uterine origin, but the uterus seemed normal. For two days the patient appeared to be in better health, but on the third day the temperature and pulse rose again. On the sixth there was an extensive erysipelatous rash around the abdominal wound; by the eighth it had reached the face, and there were unfavourable pulmonary symptoms. Death occurred on the twelfth day. Long chains of streptococcus were found in the pus; when a rabbit was inoculated in the peritoneum it died in twenty-two hours. The patient's great omentum was found to be sloughy. Brindeau and Lequeux observed that in this case the only symptoms at the beginning were rise of temperature, pulse, and respiration. Vomiting was slight, never free; the local pain was trifling and the facial aspect not what is seen in septic peritoneal infection. In a discussion on this case Blondel advocated Jacobs's free incision in the posterior vaginal fornix, opening Douglas's pouch, followed

by vertical drainage. Several successful results have been recorded. Porak stated that he had altogether given up abdominal section for general puerperal peritonitis.

(192) Phosphorus Poisoning and Decidua Formation.

Hitschmann and Lindenthal (*Arch. f. Gynäk.*, vol. lxix, Pt. 3, 1903) have published the result of a series of researches to test a theory propounded by Overlach. It appears that in Vienna phosphorus is the commonest drug employed for criminal abortion. Overlach made out that one effect of the poison was to stimulate the endometrium, so that decidual formation occurred, a pseudo-menstruation independent of impregnation. Hitschmann and Lindenthal examined 9 cases where pregnancy could be excluded, and where in some death had occurred within a few hours, in others not for several days. In none of these 9 cases could the least trace of decidua formation be detected in the endometrium. Certain collections of swollen, partly necrotic cells, desquamating and filling glandular spaces simulate decidual cells." The matter is of importance for medico-legal reasons.

(193) The Operative Treatment of Puerperal Mastitis.

Hopmann (*Zentralbl. f. Chir.*, No. 31, 1903) describes a new method of dealing with puerperal abscess of the breast, which is advocated and practised by Bardenheuer. The usual operative treatment of this affection by free incision and drainage is open, it is held, to the objections of prolonged after-treatment and of superficial and unsightly scarring of the exposed surface of the breast. In the method described by the author, a free semicircular incision is made along the lower margin of the breast, which structure, together with its surrounding fat, is detached from the fascia of the pectoralis major, and held upwards by blunt hooks. The abscess is then attacked from behind, and after it has been opened by a free incision made in the usual radial direction from the nipple is drained by one or more tubes brought out at the external angle of the wound, the inner and middle thirds of which are closed by sutures. This method, Bardenheuer teaches, is indicated in cases of submammary abscess and of large abscess in the parenchyma of the gland, and also for the removal of circumscribed non-malignant tumours of the breast. A somewhat similar operation is recommended for prepatellar bursitis. A semilunar incision parallel to the lower margin of the patella is made below the inflamed and swollen sac, which after the flap of skin thus formed has been dissected upwards is "shelled out." The flap is finally replaced and secured by sutures.

(194) Lithopaedion: Recent and Old.

Amann (*L'Obstét.*, July, 1903) recently exhibited three instructive specimens before a German medical society. (1) Full-term extrauterine fetus, five years in the abdominal cavity. It was rolled into a ball, and showed several malformations. Its cyst wall was calcified and its tissues were in parts full of lime salts. (2) Five-months fetus with no cyst walls or membranes, nine years in the abdominal cavity, fetus completely calcified. (3) Extrauterine fetus nearly at term, malformed, extreme hydramnion. This specimen was the most important, for the fetus had only died two months before it was removed, yet its membranes already contained deposits of lime salts. The head and extremities were adherent to the membranes through which the hair of the fetal scalp had grown. The corresponding Fallopian tube showed salpingitis isthmica nodosa.

THERAPEUTICS.

(195) Veronal.

A. Lilienfeld (*Berl. klin. Woch.*, May 25th, 1903) has tried veronal as a hypnotic in some 60 cases, and compares the results with those obtained with other drugs. The preparation was compounded synthetically by E. Fischer and von Mehring, on a theoretical basis, and proved itself particularly adapted for clinical uses. These investigators found that the combination of CO radicals with a urea "rest," on the one hand, and an aethyl group on the other, yield substances which act hypnotically. Veronal is a diaethyl-malonyl urea, and occurs in colourless and odourless crystals, which liquefy at 191° C., and one part is soluble in 12 parts of boiling and 145 parts of cold water (20° C.). It is freely soluble in alkaline solutions, which makes it probable that it would be easily absorbed from the intestinal tract. The drug produced a sleep, lasting from seven to nine hours, in doses of 7½ gr., and Lilienfeld only rarely found it necessary to give larger quantities. After 15 gr. the patients were drowsy and sleepy on the following day. The only side-effect which he was able to observe was the occurrence of an antipyrin-like rash, which disappeared without any trouble. In some cases he continued the drug for a considerable time, and found that the kidneys were not affected, and that the hynotic action was not weakened by the continuance. It gave him excellent results in cardiac disease. In breaking patients of the morphine habit he found it very valuable, the sleep following the exhibition of veronal being constant and sufficient. Lastly, he points out that it has an advantage over other hypnotics with regard to its price. A single hypnotic dose of hedonal which he puts at 30 gr. is 50 pfg. (about 6d.), of trional, 22½ gr. is 37½ pfg. (about 4d.), of paraldehyde 1¾ dr. is 25 pfg. (about 3d.), and so on, while veronal, taking the dose at 7½ gr., only costs 17½ pfg. (about 2d.); the only hypnotic which is cheaper is chloral hydrate, which costs 10 pfg. for 30 gr. In summing up his results he comes to the conclusion that veronal is one of the best hypnotics which we have at our disposal.—W. Berent has also studied the action of veronal and reports in the June number of the *Therap. Monats.* First of all, he tested the drug on dogs, and found that 0.75 gram given to a terrier weighing about 12 lb. produced sleep in one hour which lasted for several hours, but which left him quite normal on the next morning; 1½ gram produced sleep in forty minutes, and on the following day the dog was at first somewhat uncertain in his gait; 2 grams produced sleep in about three-quarters of an hour, which deepened after four hours to coma; four hours later the conjunctival reflexes, which had disappeared, returned; on the following day he slept quietly at first, and on the second day he had quite recovered. Dealing with patients, he says that 0.25 gram (about 3¾ gr.) induced a short sleep only in one case; in all others it remained absolutely inert. With patients in bed 0.5 gram (about 7½ gr.) induced sleep generally after half to one hour, and this sleep lasted from one and a-half to four hours. The sleep was light, and in no case was there any confusion or giddiness; 1 gram (about 15½ gr.) produced sleep in about forty minutes, and this lasted for from five to seven hours. The sleep was light and was not followed by uncomfortable symptoms. The same dose produced sleepiness in patients who were allowed to be out of bed, but no side-effects were noticed. As a hypnotic in disease, he employed it in 80 cases, and compared his results by substituting some indifferent substance, such as starch occasionally. In nervous sleeplessness 0.25 gram had the desired effect, but this was probably due to suggestion, as starch had the same action; 0.5 gram and 0.75 gram always produced good sleep in neurasthenic insomnia, as well as in sleeplessness following mild pain, cough, and the like. In acute infective illnesses, moderate bodily pain, and marked mental excitability, he found it necessary to give from 1 to 1½ gram. The results were good. When there is great pain, however, as in sciatica, or when there is dyspnoea, veronal does not do any good. In cases of great restlessness and excitability occurring in alcoholism, delirium tremens, etc., he succeeded in producing the desired result by giving from 2 to 3½ grams (the latter dose only for strong men). Berent finds that the drug loses its effect after it has been given for a time, and it is then necessary either to give larger doses or to substitute some other hypnotic in its place for a time. He considers that veronal is like trional in its action, but it has proved itself to be about twice as powerful. It has one great advantage over trional in that the dose can be greatly increased without danger. Its action is prompt, and the absence of after-effects is greatly in its favour.

(196) The Salts of Atropine and their Indications in Ocular Therapeutics.

A. Darier (*Rev. de Therap.*, March 1st, 1903) discusses the uses of the various salts of atropine. The sulphate is indicated (1) where posterior synechiae are found in cases of iritis, for the dilatation must be continuous and well marked; (2) where in children hypermetropia and astigmatism are simulated by myopia and a course of atropine lasting eight to fifteen days is necessary to allay the spasm before correction of the ametropia is possible. In phlyctenular keratitis adrenalin and yellow ointment is replacing atropine; but this is still indicated where the ulcer is deep and central. If atropine fails to dilate the pupil sufficiently, the hydriodide of scopolamine is indicated. A solution of 0.25 per cent. of the latter is more pow-

erful than one of 0.5 per cent. of the former. As an adjuvant to atropine diconine is useful in its rôle of analgesic and lymphagogue; by their combined action it is possible to break down synechiae which are unaffected by atropine or even scopolamine. For refraction cases, where the continued action of atropine is inconvenient, homatropine has been used; but its action is inconstant, at times insufficient, and its cost very great. A new organic compound, methylatropine, possesses similar properties to atropine, but in a less marked degree; further, it is less toxic and dangerous. In an emmetropic eye one drop of a 1 per cent. solution produces a maximal dilatation of the pupil in thirty to forty-five minutes; after twelve hours this begins to decrease, and after twenty-four hours only a slight dilatation remains. Cocaine intensifies the dilatation. The drug shows marked difference in its action in different individuals, as is the case with all drugs of the mydriatic class. Paralysis of accommodation is produced by two drops of this solution and passes off after 24 hours. A remarkable fact of great clinical importance lies in the action of eserine in quickly diminishing or neutralizing the pupillary dilatation produced by the above doses, whereas the dilatation of atropine is not effected by eserine. Although the action of methylatropine is variable, yet its duration is always less than that of atropine. In cases where the diagnosis can only be cleared up by the use of mydriatics, or where an examination of the fundus is desired, the maximal dilatation of the pupil with the minimal interference with accommodation can be obtained by a solution of 0.5 per cent. of bromide of methylatropine combined with 1 per cent. of cocaine. This dilatation can be overcome by eserine. The paralysis of accommodation by this solution is scarcely noticed by myopes and emmetropes, but it gives a slight short inconvenience to hypermetropes and presbyopes. Further, the results obtained by euphthalmine for ophthalmological examination can be equally well obtained by methylatropine, and thus the advantage is apparent that, whereas formerly three drugs were necessary in practice, we can now obtain the same results with one.

(197) Salocreol.

In a note in the July number of the *Therap. Monats.*, salocreol is described as being obtained by allowing salicylic acid to be acted on by creosote. It is an almost odourless brown oily, neutral fluid, and is insoluble in water and easily soluble in alcohol, ether, and chloroform. It is absorbed from the surface of the skin, without discolouring or irritating it, and is split up in the organism, salicyluric acid appearing in the urine. The absorption takes place more quickly in regions which are well supplied with fat than in the leaner situations. The indications for its use are given for rheumatic swelling of joints, erysipelas, and arthritis deformans (rheumatoid arthritis). Acute and chronic lymphadenitis are markedly affected by the application. From 6 to 20 grams of salocreol may be rubbed into the skin, care being taken that the latter is quite dry, as a moist surface causes an emulsion, which will not be absorbed.

(198) Disinfection with Formaldehyde Gas. Ravenel and Gilliland (*Univ. of Pennsylvania Med. Bulletin*, April, 1903), while recognizing the efficiency of formaldehyde gas as a germicide, point out the imperfection of our knowledge as to the part played by temperature and moisture in producing an ideal method of its application. Twenty-two experiments were performed by them on conditions such as may be met with in actual work, without any previous special preparation of buildings or rooms. Four methods for the production of the gas were employed: (1) Generation from methyl-alcohol by a specially-devised apparatus; (2) evolution from 40 per cent. solution by means of a retort without pressure; (3) evolution by evaporation from large surfaces saturated with 40 per cent. solution; and (4) a combination of the two latter methods. The retort used in the second method was designed specially to facilitate the rapid disengagement of the gas without any possibility of priming or ejection of liquid into the room. If needed, the apparatus could be used from the outside by passing the nozzle through the keyhole. Freshly-prepared strips of sterile filter paper dipped in suspensions of various cultures were distributed about the room, and, after exposure to the gas for a stated time, were transferred to tubes of bouillon and observed for seventy-two hours. Control cultures were also used, and the mean temperature and humidity of the day of exposure recorded. The time of exposure varied from six to thirty-six hours, the majority of instances being between seventeen and twenty-four hours. The cultures were placed in various positions about the room, either openly, exposed, or between blankets, in envelopes, etc. In 11 of the experiments the gas was generated from methyl-alcohol, while in 8 the second method was employed of evolution of the gas from 40 per cent. solution. In 1 a combination of the latter, together with evaporation from suspended blankets, was the method used; while in 2 evaporation from blankets was the only method feasible owing to the large size of the buildings. In these last blankets were alone available, but thinner material, such as sheets, affords a better medium for evaporation. From these and other experiments by the same authors, as well as from the recorded results by numerous observers elsewhere, it is concluded that formaldehyde gas is an excellent germicide, its action being largely controlled by moisture and temperature. By the method of evaporation from large surfaces special apparatus is not a necessity, thus rendering it easy of application in large spaces where a sufficient number of generators are unattainable. In order that the success of any disinfection may be proved, test cultures should be distributed in the room and their destruction demonstrated.

PATHOLOGY.

(199) Infection with Plague Bacteria. In a paper read before the Berlin Medical Society and reported in the *Berl. klin. Woch.*, July 6th, 1903, W. Doenitz relates the circumstances in connexion with the fatal plague infection of a young Austrian practitioner, Dr. Milan Sachs. He had been studying plague bacteriology in Berlin, but had not worked in laboratory for five days, when he was taken ill. The signs consisted of a slight sore throat, a small patch of dullness below the right scapula with some *râles*, but were out of all proportion with the severe general symptoms. The condition was then regarded as some severe infection, and on the following day, plague was suspected. The patient was removed into isolation, but came by accident into contact with a number of persons. The expectoration was subjected to a bacteriological examination, and was found to contain bacteria which showed pole staining and general form like plague bacilli. The case appeared to be one of primary lung plague, and it was considered unusual that the incubation period should be as long as five days, and therefore the patient was seen by several experienced observers and further cultures were made. There proved, however, to be no doubt at all as to the correctness of the diagnosis; the clinical appearances showed great restlessness, in spite of marked wandering of mind, high fever, and a very soft pulse; the patient lay on his side with his body half raised and his knees bent, and his eyes were noted to present a glassy look. There was a diffuse swelling in the right side of the neck, which was taken to be a bubo. Dr. Sachs died on the third day of illness. The necropsy was conducted on the following day, and revealed infiltration of the lower lobe, which felt like a sponge, and bloody oedema of the whole lung, on the right side. There was a scar at the right apex, and dense old pleural adhesions. The spleen was slightly enlarged, and only a few petechiae were found on the serous membranes. Microscopical preparations made from the blood and juices of the lung and spleen showed large numbers of plague bacilli. A complete necropsy was considered unnecessary. Much concern had been felt on account of those who had come in contact with Dr. Sachs during his illness, and each person was injected prophylactically with antiplague serum. The male nurse, Markgraf, who had attended to Dr. Sachs during his isolation, developed the illness, but recovered very easily. He, too, spat up sputum which contained plague bacilli, and therefore was suffering from lung plague; and the mild course, according to Doenitz, must be ascribed to the protective injections. He was injected with 30 c.cm. on the same day as the patient was admitted, and again with 20 c.cm. on the following day. The injections were continued during the illness, since it is known that the active principle of the serum can be got rid of rapidly out of the body. Doenitz points out that an epidemic was prevented by rigorous isolation of all persons who had come into contact with the infected patient, and by careful watching and daily examination of all those whom it appeared not necessary to isolate, but who might possibly have been infected, beside the prophylactic injections.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

(200) Suppuration of the Kidney.

W. Alter reports the clinical history of a case (*Deut. med. Woch.*, July 23rd, 1903). An engineer of the Leubus Asylum complained of difficulty in micturition, pain in the region of the bladder, general feeling unwell, and severe headache. He had suffered some years previously from a catarrh of the bladder, which he believed had become well rapidly. The urine contained pus cells, epithelium, and many bacteria, showed a slight trace of albumen and had an acid reaction. Cystitis of unknown origin was diagnosed, and urotropine, poultices, and rest were prescribed. On the next day, October 22nd, the temperature rose somewhat and the patient was perceptibly worse. The bacteria in the urine proved to be pneumococci. The spleen was found to be enlarged. On October 24th the temperature registered over 104° and the condition of the patient indicated a severe septic infection. There was a diffuse roseola-like rash all over the trunk, and the spleen was considerably increased in size: 0.1 gram of Credé's collargol was injected into a vein of the arm. This was followed after three minutes by a rigor and the temperature sank rapidly to subnormal. The general condition improved greatly. On October 30th and 31st the temperature again reached a considerable height, and the urine was found to contain 0.6 per cent. of albumen, blood, hyaline, blood, and fibrin casts. His sensorium became clouded, and the signs of sepsis again were perceptible. A subcutaneous injection of collargol, 0.1 gram, was given after salicylates had been tried, as well as other means. The temperature fell again, without a preliminary rigor. On the following day the bronchitis, which had been present for some days became worse, and an intravenous injection was carried out. The general condition of the patient was very bad, but improved as the temperature again fell to subnormal. On November 4th Alter started washing out the bladder with a 1 per cent. solution of Merck's peroxide of hydrogen. On October 9th the kidney elements, which were plentiful in the urine of October 8th, were absent. The general condition was much better, but in the evening there was some elevation of the temperature and complaints of pain in the right loin. On the following day the urine was unchanged, and the heart showed marked arrhythmic action. There were signs of pleurisy. Digitalis improved the action of the heart, but the septic condition returned, including the rash, and the patient became delirious. An indolent tumour was felt in the right hypochondriac region. On the 12th another intravenous injection of collargol was given, this time 0.2 gram. This was followed by a rigor, then fall of temperature and rapid improvement in general condition. Next day the urine contained a large quantity of pus cells and débris, many fatty and degenerate epithelial cells of the kidney, blood but no casts. The tumour disappeared. On the 14th the patient passed one piece of tissue of the size of a lentil and two smaller pieces with his urine, complaining of great pain. General condition improving. From this time he gradually made a steady recovery. On March 8th a cystoscopic examination was made and revealed the presence of patches of intensely reddened granulation-like knobs chiefly around the wide opening of the right ureter. No urine could be seen issuing from the right ureter, while the natural quantity of clear urine was seen coming from the left ureter at regular intervals. On microscopic examination the pieces of tissue passed in the urine proved to be renal tissue from the medulla of the organ, and in one place one could detect part of the wall of an abscess. A second piece was from the cortex. It appears, therefore, that the patient had been infected in the upper portion of his urinary system on the right side by pneumococci, which had led to an abscess of the right kidney. The particles of kidney tissue which had been passed obstructed the flow of urine in the ureter and had been forced out by pressure from behind. The case well exemplifies the action of intravenous injections of collargol, and leaves little doubt that the patient owes his life, which was in serious danger from septic poisoning, to this means of treatment.

(201) Meningeal Symptoms in Childhood.

Lumbar puncture, which is now performed almost as a matter of routine, has thrown considerable light on the history of meningitis. In studying the symptoms of meningeal disease, Adrien Monod shows as the result of 100 observations (*Thèse de Paris*, 1903) that meningitis is more frequently present than is supposed. The custom of only considering those cases which end fatally as meningitis is not correct, while the term pseudomeningitis applied to those instances in which recovery takes place is inaccurate. It is to the symptomatology of such cases that the term meningism has been applied by Dupré. By this is understood the series of symptoms evoked by meningo-cortical irritation, and which may, as a matter of fact, show little change *post mortem*. Monod, however, considers that this term has been too widely applied, and that there are cases which resemble meningitis but which are hysterical in nature. On the other hand, meningeal symptoms occur in the course of infective diseases, though usually they are very slight, and to them the term meningism has been applied. They are in reality due to slight inflammatory changes in the meninges. Monod considers that there are many stages or forms in which meningitis may occur. In the least severe the cerebro-spinal fluid may be absolutely healthy in appearance; in the most severe there is actual pus. What has given rise to confusion is the idea that meningitis is necessarily demonstrable *post mortem*. According to the author there is little doubt that many of the milder forms of meningitis are probably unaccompanied by changes sufficiently severe to give rise to macroscopic appearances. Valuable information is furnished in such instances by examination of the cerebro-spinal fluid. Certain changes are present, of which the principal are the presence of specific cellular elements and of alteration in the amount of albumen. In these cases not only is lumbar puncture the chief means of diagnosis, but it is also a useful method of treatment. Evacuation of a quantity of cerebro-spinal fluid is followed in general by improvement in the symptoms. Contractures and convulsions diminish or disappear, and the general condition of the patient shows improvement. This is true even in cases of tuberculous meningitis. Improvement in symptoms depends not only upon the alteration in tension of the cerebro-spinal fluid, but also on the fact that this latter, as recent investigations have shown, may be toxic.

(202) Vasomotor Right-handedness.

Cavani (*Arch. Ital. de Biol.*, vol. xxxix., No. 1, 1903) gives results of a number of experiments which he has conducted with the volumetric glove in order to ascertain whether there exists a right and left-handedness of the vasomotor system comparable to that observed in the muscles. Both hands were placed in the gloves, which acted as plethysmographs, and the curves obtained as the result of various stimulants recorded. The author finds that there is in man a right-handedness of the vasomotor system signalized by a shorter latent period and a larger curve, and that this mancinism corresponds in general to that of the body. The difference in the length of the latent period may amount to almost a second; this vasomotor asymmetry is most probably due to the existence of more highly-trained nervous channels in the limb which is more habitually exercised. There may, however, be also a sensory influence at work, since it has been shown by other observers that a sensory right-handedness also exists, and appears to extend to all the special senses.

SURGERY.

(203) Gastro-enterostomy.

Monprofit (*Arch. Prov. de Chir.*, No. 8, 1903) whilst, with most surgeons, preferring posterior to anterior gastro-enterostomy, recognizes the fact that in a certain number of cases the former operation will be found difficult, laborious, or even quite impossible. The presence of a growth occupying almost exclusively the posterior wall of the stomach, and extensive adhesions of this organ, are the most frequent sources of difficulty in the posterior operation. In some cases the author has had to deal with a dilated and over-distended stomach which he found it quite impossible to raise and turn over, and was thus prevented from attaching the small intestine to the posterior gastric wall, although the disease was restricted to the pylorus or the upper part of the stomach and its posterior surface was quite free. In cases of this kind in which it becomes necessary to perform the anterior or Wölfler's operation, the author, with the aim of obtaining as perfect a result as possible, makes a complete section of the jeju-

num at a distance of about 6 in. from its fixed attachment to the duodenum, and then stitches the distal or caecal end of the divided intestine to an opening made in the anterior wall of the stomach, the proximal or duodenal end being finally attached to the margins of an incision made through the wall of the jejunum about 4 in. below the gastro-intestinal anastomosis. The author, after division of the small intestine, brings the distal end around the lower margin of the great omentum and in front of the transverse colon, and, with the aim of allowing a free range of mobility of this portion of the jejunum, attaches much importance to an incision of the whole length of the mesentery in a line corresponding to the line of section of the small intestine. This method of anterior gastro-enterostomy, suggested by somewhat similar methods proposed by Wölfler, and practised by Rotgans, Roux, and some French surgeons, has been practised by the author on four patients with perfect immediate results. These patients, all suffering from cancerous cachexia, and presenting extensive and adherent growths, were enabled at once to take food without being troubled by regurgitation or bilious vomiting, or by any intestinal troubles indicative of compression of the colon. The author states that in both anterior and posterior gastro-enterostomy he has discontinued the method of lateral anastomosis between the stomach and the small attachment, and always, as in the method described in this paper, divides the jejunum and stitches the distal end to the gastric opening and the proximal end to the small intestine below the gastro-intestinal attachment, thus forming what is known as a Y-shaped anastomosis.

(204) Anaesthesia with Schleich's Mixture.

F. v. Winckel (*Münch. med. Woch.*, January 6th, 1903) compares the effects of Schleich's No. 1 mixture, which consists of 2 parts of ethyl chloride, 4 parts of chloroform, and 12 parts of sulphuric ether, with those of pure ether anaesthesia and ether-morphine anaesthesia. The number of cases anaesthetised by the first-named method was 100. He found that the quantity of fluid used, both until complete anaesthesia was obtained and during the whole operation, was less with Schleich's mixture (75 grams producing anaesthesia in labour and 82 for operations, while 140 grams sufficed for the labour anaesthesia and 157 grams for the operations) than ether (115 grams producing complete anaesthesia in labour and 230 grams sufficing, while 120 grams produced anaesthesia for operations, 234 grams being used in all). The length of time until complete anaesthesia was obtained was shorter with Schleich's mixture, in the labour cases averaging 8.8 minutes, against 10 to 12 minutes with ether, and in the other operations, 9 minutes for Schleich and 11 minutes for ether. The whole duration of the labour as well as the operation anaesthesias was longer in the cases when Schleich's mixture was used. In 85 per cent. of the cases put to sleep by ether, the temperature was depressed after the operation, while only 67 per cent. of the cases dealt with by Schleich's mixture showed a similar depression of temperature. Vomiting occurred in 86.6 per cent. of the ether-morphine cases, in 57.7 per cent. of the ether cases, and in 67 per cent. of the Schleich cases. Suppression of urine occurred in 20 per cent. of the ether cases, and in from 4.5 to 29 per cent. of the Schleich cases. Bronchitis followed in 10 per cent. of the ether cases and in 2 per cent. of the Schleich cases. These results appear to be in the favour of Schleich's mixture, but he adds that in 10 cases untoward symptoms occurred, which made it necessary to have recourse to other means of anaesthesia. In 2 cases apnoea occurred after the operation, in 5 cases during the operation. Collapse took place three times during the operation, and cyanosis twice before complete narcosis and once during the operation. These dangerous symptoms lead him to regard anaesthesia with Schleich's No. 1 mixture as less safe than ether anaesthesia.

(205) A New Method of Reaching a Hepatic Abscess.

Mendes (*Rev. de Chir.*, No. 6, 1903) describes a new procedure for exposing a subdiaphragmatic or postero-superior abscess of the liver, by which it is possible to reach and evacuate the cavity without free opening of the abdomen and disturbance of the abdominal contents, and also without laying open the right pleural sac. In a case in which this method was applied with very satisfactory results, the author made an incision about 5 in. in length over the ninth rib, extending outwards from the attachment of this bone to its costal cartilage. From each extremity of this incision a short incision was carried vertically upwards, a rectangular flap being thus formed which, when dissected from the subjacent parts, left the seventh, eighth, and ninth ribs exposed. Portions of the two lower ribs, 4 in. of the ninth, and a little less of the eighth were then carefully resected. The parietal pleura was next detached by blunt dissection from the posterior surfaces of the ribs below the wound as far as the reflexion of this membrane on to the diaphragm, and, after the pleural *cul-de-sac* had been raised and pushed inwards, an incision about 1 in. in extent was made through this muscle into the cavity of the abscess. This, which is designated the parapleural transdiaphragmatic method, has, it is stated, the advantages of permitting free and perfect drainage, and of avoiding pneumothorax and pleural infection. If there should be an absence of adhesions between the under surface of the diaphragm and the liver, or any doubt as to the extent of any adhesions, it would be advisable, the author holds, to suture the hepatic peritoneum to the margins of the incision in the muscle.

MIDWIFERY AND DISEASES OF WOMEN.

(206) The Prophylaxis and Treatment of Puerperal Fever.

H. Fehling says that puerperal affections should be a thing of the past, but unfortunately one still meets with them in practice (*Münch. med. Woch.*, August 18th, 1903). In his clinic in Strassburg, 377 cases of infective puerperal conditions have been treated during the last ten years; 17.7 per cent. of these have terminated fatally. The majority of the cases were already suffering from the condition on admission, while only a small proportion were transferred from the maternity department to the isolation block; 25.8 per cent. of the cases had been delivered with some form of assistance, which included manual extraction of the placenta, forceps, version, breech delivery, and perforation, in the given order of frequency; 11 per cent. of the spontaneous deliveries ended fatally, while 29 per cent. of the operatively delivered women died. Of the form of infective trouble, in the fatal cases, pyaemia was responsible for 38.8 per cent., sepsis for 26.9 per cent., septicopyaemia for 14.9 per cent., peritonitis for 8.9 per cent., parametritis for 4.5 per cent., tumour of the appendages for 3 per cent., endometritis for 1.5 per cent., and suppurating ovarian cystoma for 1.5 per cent. All the cases of septicopyaemia ended fatally, 85.7 per cent. of the sepsis cases and 85.5 per cent. of the peritonitis and 72 per cent. of the pyaemia cases ended fatally. Fehling says that these figures speak eloquently as a warning to the practitioner to practise manual separation of the placenta as rarely as possible. In his maternity department, it has been found necessary in only 0.5 per cent. One should always adopt an expective treatment, and he points out that proper management of the afterbirth period calls for much greater care and skill than is usually manifested. If severe atonic bleeding takes place, one should massage the uterus, and if this does not arrest it, one can apply premature expression. When the pains are very weak, and always in placenta praevia, one should express according to Credé. Should expression in this way fail, one should narcotize the patient and then apply expression, which will deliver the afterbirth in many cases. However, in a certain number of cases, it will be found necessary to remove the placenta manually, and before doing this he considers that it is absolutely essential to disinfect the vulva, thighs, mons veneris, vagina, and uterus as far as possible. On introducing the hand, a piece of iodoform or sterile gauze should be placed over the anal region. Fehling next deals with the question of disinfecting of hands. Although it has been shown that after careful disinfection the hands are still not sterile in a large proportion of cases, in not a single instance have streptococci been found. The germs were mostly of a harmless kind. He found, by making his students wear sterile indiarubber gloves in every alternate case, and comparing the results at the end of a year, that there was no material difference between the number of infected cases with or without gloves. But he is of opinion that in the operations of forceps, version, perforation, etc., as well as in manual separation of the placenta, gloves are liable to tear, and in the last mentioned render the sense of touch less delicate. He therefore advises that all examinations, save in actual labour, be they gynaecological or otherwise, and especially if there is any purulent secretion, shall be carried out with gloves, so that one may be sure that

there will be no pyogenic organisms on the hands when one has to attend a labour. Only when one knows that the hands have been in actual contact with infecting discharges, should one wear the gloves at a labour. Every practitioner should possess two pairs of india-rubber gloves, which he should take with him, and use in all dirty or suspicious examinations. The disinfection of the gloves is very easy. As far as treatment of puerperal affections is concerned, he says that there is little to be said in severe cases. If the local affection is prominent one should be careful to watch the parts closely and to open any abscess very early. The most common site for opening parametric abscesses is above Poupart's ligament. Fehling passes over the subject of general treatment, as he has nothing new to add. He expresses himself very reservedly with regard to the clearing out of thrombosed vessels in pyaemic conditions. In severe sepsis it is useless to remove the uterus as the micro-organisms and their toxins have spread far beyond the limits of this organ when severe symptoms are present. The results of hysterectomy for puerperal infection or rupture of the puerperal uterus have been very disappointing up to the present time. With regard to treatment with Credé's colloidal silver, he has not been able to convince himself of a beneficial action.

(207) Double Extrauterine Pregnancy.

Chandler (*New York Med. Journ.*, August 15th, 1903) reports this case, which occurred in a woman aged 26. She married at 20, and then contracted gonorrhoea. The period continued perfectly regular until her 25th year, when, in July, 1902, the period ceased. In October something resembling a miscarriage occurred after an attack resembling peritonitis. Then the period was seen again on October 30th. It never reappeared. A severe attack of pain in the left side of the pelvis, followed by syncope, came on in January, 1903. Then Chandler examined her, and detected two pelvic tumours placed laterally; the left was the larger. He operated at once. In the right tube were parts of a fetus and membranes, which gave indications of the first impregnation occurring in July. It was in the tube which had probably been the seat of gonorrhoea. On the left side the tube was occupied by a fetus in perfect condition, which died either during or just before the operation. The patient quickly recovered. In a case with a somewhat similar history the pelvic tumours proved to be blood cysts of the ovaries.

(208) Perforation of Rectum in Hysterectomy.

Chaput (*Rev. de Gynéc. et de Chir. Abd.*, July-August, 1903) recently spoke before the Société de Chirurgie de Paris on damage to the rectum during hysterectomy where a perforation was too deeply placed to allow of suture. He advises vaginal drainage in such a case; the vesico-uterine fold of peritoneum and the anterior layers of the broad ligaments are then drawn back and sutured to the peritoneum of the rectum and of the posterior part of the pelvic cavity. The perforation is in this manner completely cut off from the peritoneal cavity and the dangers of sepsis avoided.

(209) Relation of Fetus to Nephritis of Pregnancy.

Klein (*Monats. f. Geb. u. Gyn.*, August, 1903) reported before the Obstetrical Society of Cologne in March a case of severe nephritis gravidarum in a woman aged 47. The urine contained 10 per cent. albumen. The fetus died, then the patient's general condition improved and the excretion of albumen diminished. At the end of ten days hardly a trace of albumen could be detected; fourteen days later, or twenty-four after the death of the fetus, it was expelled, putrid and much macerated. Ten days afterwards the patient's urine was quite free from albumen. Klein considers that this case proves that it is only the living fetus that can produce a material which, when absorbed by the mother, can prove prejudicial to the kidneys.

THERAPEUTICS.

(210) The Prophylaxis of Tuberculosis.

E. v. Behring (*Berl. klin. Woch.*, March 16th, 1903) points out that the means of combating tuberculosis as a disease of the human race, or even of preventing it and dealing with it in individual cases, have proved up to the present inadequate, and any suggestion of a new means of preventing the disease, or dealing prophylactically with unaffected persons should be welcomed. He has carried out immunizing experiments in cattle, which have led to certain results which may be of great importance for the human subject. The details of these experiments have already been published, and he refers his audience (and readers) to this article. The inoculation material is gained from an eight-year-old culture of human tubercle bacilli, which was dried at room temperature *in vacuo*, and which retains its full virulence for about four weeks in this condition. An emulsion of 0.004 gram in 4 c.cm. of water is injected into the neck veins of the animal to be immunized. He says that none of the many hundred animals treated in this way suffered any harm from the injections. Not infrequently, however, in cattle of about 7 months there was fever for several days and a loss of appetite. This proved to be more often the case in cattle fed on tuberculous milk than with those fed on sterile milk. Large doses produced threatening symptoms in cattle of over a year of age, and the animal was not seldom attacked with pleural effusion, and later pneumonia, from which it, however, completely recovered. The autopsy carried out after recovery did not reveal the least sign of an inflammatory condition. This over-susceptibility to the venous injections of the bacilli appears to be coincident with the power of the blood to agglutinate the bacilli and with over-susceptibility towards tuberculin. He thinks that the three factors stand in some causal relationship to one another. A marked reaction to the injection of his material may be translated into a bad prognosis in cattle of over 1 year of age. Since strong reactions only take place in animals who have been infected for some time, the injections will be proportionately safer the younger the animal, and in quite young cattle a harmful reaction should be absent. For prophylactic injections he chooses calves of between 4 weeks and 3 months. Behring considers that it will hardly be possible to treat young children by intravenous injections of live, albeit relatively weakened, tubercle virus, and he therefore suggests that one may be able to substitute an immunizing with antibodies derived from immunized animals. The chief objection to this method is that this form of immunizing only lasts for a very short time, and the tubercle bacillus is a very resistant organism. His experience, on the other hand, has led him to accept the view that the chief danger of tuberculous infection is to be sought in infantile infection. That this is so is rendered more likely by the fact that in the early weeks the intestinal mucosa does not possess a continuous layer of mucous cells which would give a good chance for the resorption of corpuscular elements, and the antibacterial ferments have not been produced at this early time. Whether one will be able to immunize children in this way must be decided later on; but he says that he would not test it experimentally before he had assured himself that it is feasible with cattle first, and for this purpose he is now carrying out some experiments. He has caused calves to be immunized at the age of three weeks, and has found that the method has given very promising results so far, although he points out that one must observe the effects for some years before one can conclude that the injections are capable of keeping the destructive effects of the epizootic tuberculous infection in abeyance. He believes that it will prove to be so: first, because a number of his immunized animals have been killed one year and a-half after they had been infected with bovine tubercle bacillus, as well as been kept together with other cattle, which showed marked signs of advanced tuberculous disease, without showing the slightest signs of tuberculous changes *post mortem*; secondly, he has received a number of reports from farm practice of the *post-mortem* appearances of cattle which had been immunized by his method without a single one being tuberculous; thirdly, three immunized animals were kept for one year in the same stalls with eleven other oxen, and were tested with tuberculin; the immunized cattle did not react, while all the others did. The difficulty of preventing an infection before the immunizing is overcome by feeding the young calves with sterile milk. Fourthly, the observations of Thomassen go to show the same kind of results. Behring says that the public appears to have obtained an entirely wrong conception of his work by means of the public press. In conclusion, he deals briefly with some of the present means of coping with tuberculosis in sanatoria, and by improved dwellings for the poor, etc., with all of which he deals with openly. We must refer our readers to the original article for his remark on the last-named points.

(211) The Action of Formic Acid on the Muscular System.

In a paper recently read before the National Society of Medicine of France Clément related the results of some experiments which he had made with formic acid. (*Lyon Méd.*, August 2nd, 1903.) He first tried its action upon himself, taking 8 to 10 drops of the acid in a little alkaline water, such as Vichy, four times a day. In 24 hours the first effects of the acid were perceptible and consisted in a muscular excitation, which induced movement. Muscular work, such as climbing, became much easier of accomplishment and caused noticeably less fatigue. Measured by Colins's dynamometer, the muscular force increased from 40 to 48. Four healthy subjects together registered 169 before taking the acid, and 188 after a few days' use. The drug was afterwards administered to six people who were seriously ill, one suffering from multiple neuritis, one from exophthalmic goitre, one from malignant liver, and three from various stages of pulmonary tuberculosis. Before the administration, the addition of the numbers registered by the dynamometer made a total of 121; after the use of the acid for a few days the total became 147. The muscular improvement was not transitory, but persisted at least as long as the acid was used. The action upon arterial tension was not constant, decrease being a commoner result than increase. The ergograph showed even more strikingly than the dynamometer the effects of the acid. A weight of 2.5 kilog. caused complete muscular fatigue in 47 movements in a healthy subject before the acid was given. After its use for three or four days 94 more ample movements were accomplished. Clément thinks himself justified in concluding that formic acid increases muscular energy and retards fatigue.

(212) Theocin as a Diuretic.

K. Thienger (*Münch. med. Woch.*, July 28th, 1903) says that many valuable diuretic drugs have been obtained from the xanthin derivatives. Caffeine was the first one, which has been largely used; then one employed theobromine, which has been freely used in the form of its double salt, diuretin and agurin. More recently another compound having a purin nucleus in common with xanthin, theocin, or theophyllin has been introduced. There are three isomeric dimethyl xanthins, paraxanthin, theophyllin, and theobromine. The first of these has the strongest diuretic action, while theocin or theophyllin is not much weaker. Their relative action values are as 7.8 is to 6.3. Theobromine is much less diuretic. The preparation is now prepared synthetically. Thienger has tried theocin in 17 cases, including 6 cases of cardiac diseases with dropsy, 2 cases of general dropsy due to arteriosclerosis, 2 cases of dropsy of chronic nephritis, 6 cases of pleuritic effusion, and 1 case of ascites following cirrhosis of the liver. As a rule he gave three powders in wafers, each containing 0.3 gram, a day. Mostly it was well borne, but in a few cases it produced loss of appetite, sickness, increased secretion of saliva, and headache. In one case symptoms of excitability of the nervous system occurred; in a second there was extreme psychical excitability, giddiness, feeling of being uncertain, and sickness without vomiting; while in a third, beside headache, there was vomiting and an epileptic fit. The kidneys did not appear to be affected by the drug. Theocin produced the most marked diuresis, which began within two or three hours after giving the powder. The maximum effect was reached on the second day, and repeated doses of the drug only produced moderate increase in the quantity of the urine. After a longish pause the effect of a fresh dose was nothing like as marked as the initial dose. Thienger illustrates this effect by short histories of cases and charts. In one case there was no diuretic action, and no increase in the quantity of urine is seen when exhibited in normal conditions. The blood pressure is not altered, and the heart action is improved in cases of failing compensation. Rarely he found that cases responded for a considerable time to the drug. The best results are obtained in congestive conditions dependent on disease of the heart, kidneys, or blood vessels, as long as the power of action of the organ has not sunk below a certain level. In conclusion, he says that when theocin produces unpleasant effects it is generally possible, by modifying the means of giving the drug, or by combining it with correctives, to continue its use without harm.

(213) Antiseptics for the Alimentary Tract.

Freer and Novy (*Contributions to Medical Research, Michigan Laboratories*, June, 1903) have been working on the chemistry and bactericidal properties of the organic peroxides, and advocate the practical application of benzoyl acetyl peroxide for therapeutic purposes. They think it will be found useful for disinfecting the mouth, spraying the air passages, and for the suppression of the growth of organisms in the stomach and intestines, particularly in cases of cholera, dysentery, and typhoid fever. They believe it will also be serviceable for the purification of waters infected with typhoid or cholera germs, and find that the hydrolysed solution is not only destructive to bacteria but also to toxins and to enzymes.

(214) Localization of Mercury in Mercurial Intoxication.

Almkvist (*Nord. Med. Arkiv*, Afd. 2, No. 6, 1903) has conducted a number of experiments on rabbits in order to determine the localization of mercury when large quantities are given in syphilis, etc. He finds that for the most part the mercury is dissolved in the blood, lymph, and tissue fluids. In the alimentary tract, however, the presence of H_2S leads to the precipitation of Hg. in the intestinal wall. The appearance is that of fine, yellow granules within leucocytes or the cells of the blood capillaries. In the former case the leucocytes carry the granules between the columnar cells, and they are thus excreted with the faeces. When the walls of the blood vessels are richly impregnated with mercury, circulatory disturbances ensue, and these are followed by necrosis and ulceration of the mucous membrane. The deposition of mercurial sulphide is most marked in the lower part of the intestine and in rabbits, especially in the long vermiform appendix. The quantity depends not so much upon the amount of mercury injected as upon the extent of H_2S development. It may be supposed that mercurial stomatitis arises from similar causes, and depends rather upon the presence of sulphides in the buccal cavity than upon the quantity of mercury taken. In the kidney the mercurial granules were found within the cells of the convoluted tubules and the ascending tubules of Henle, and it would appear that the mercury within the renal cells is due to secretory activity and is one of the general routes for its excretion. Whether its elimination by the saliva is due to a similar process or the result of leucocytic migration, as in the case of the intestine, is not quite clear. Almkvist placed small pieces of the tissues in a solution containing 15 c.cm. HNO_3. (specific gravity 1153) and 85 c.cm. saturated H_2S water for 8 to 48 hours, and then passed them through 30, 40, 50, 60, 75, and 90 per cent. alcohol, finally embedding them in paraffin. In some cases he used saturated picric acid solution containing 3 c.cm. 25 per cent. HNO_3, and then passed H_2S into this mixture. The tissues were allowed to remain in this for 8 to 24 hours, hardened in 70 per cent., 80 per cent., 95 per cent. alcohol, and then embedded in paraffin.

PATHOLOGY.

(215) Fermentative Processes in the Liver.

Ducceschi and Amalgia (*Arch. Ital. de Biol.*, xxxix, 1. 1903) have made a number of experiments with the view of comparing the effects of phosphorus poisoning upon the fermentative activity of the liver with the action of phosphorus upon the isolated ferments *in vitro*. They have investigated both the oxydizing ferments, oxydases, and the fat-splitting ferment lipase. They find that the addition of phosphorus impedes the action of oxydase in test tubes mainly though its influence upon the reaction of the liver infusion. The oxydising power of the livers of old animals is much less than that of young or adult members of the same species, but there is no appreciable difference between the oxydizing power of a normal liver and that of one which had undergone fatty degeneration. In other words, in a liver which has undergone extreme fatty degeneration as a result of phosphorus poisoning there is no diminution in the activity of the oxydases. It cannot, therefore, be admitted that the diminution in the oxydizing power of the body which certain authors regard as the result of phosphorus poisoning is due to the direct action of the phosphorus upon the oxydizing ferments. The authors find further that there is no appreciable difference between the amount of lipase contained in a normal liver and in one that has undergone fatty degeneration. They also state that the proteolytic ferments of the liver do not exercise any apparent action upon potency of the oxydases.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(216) Blood Pressure in Phthisis.

Hans Naumann (*Zeit. f. Tuberk. u. Heilst.*, 1903) reviews the literature relating to the blood pressure in cases of phthisis, adding his own observations. It is usually stated that the blood pressure in phthisis is low, but statistics bearing on the point are seldom given. Marfan investigated 100 cases, and found the blood pressure always low except in 3 cases complicated by arteriosclerosis. Hensen found in 12 early cases of phthisis that the pressure was between 105 mm. and 150 mm., with a decided tendency towards the lower limit. In 20 severe cases he found an average pressure of 115 mm. Reynaud states that, "speaking generally, low tension of different degrees exists in all cases of tuberculous infection," and he attaches so much weight to the blood pressure as to make it an important diagnostic sign in doubtful cases. Potain also states that the tension is low in all stages of pulmonary tuberculosis. Burckhardt, examining minutely 9 cases in the first stage of phthisis, 6 in the second, and 5 in the third, found the blood pressure normal in the first and second stages, and 20 mm. below normal in the third stage. John found that in 35 patients with early phthisis the blood pressure varied between 90 and 100 mm. He considered the pressure to be independent of methods of treatment and unaffected by the presence or absence of fever, but found the rise and fall of blood pressure go hand in hand with improvement and deterioration in the general condition. He therefore attaches great prognostic value to the blood pressure. Naumann's own investigations relate to 100 cases in all stages of the disease. In every case the urine was free from albumen and sugar. He used Gaertner's apparatus, and satisfied himself to begin with by a large number of control experiments, that in healthy people the blood pressure varied between 115 mm. and 130 mm. Of his 100 cases of phthisis 13 had blood pressures within these limits. 18 had lower blood pressures, and 69 had higher blood pressure. His results are therefore diametrically opposed to those of the French writers mentioned above, approximating more nearly to those obtained by Burckhardt. Of these 69 patients with high blood pressures, 28 were in the first stage, 22 in the second, and 19 in the third. Naumann explains, however, that most of his patients in the third stage were free from active symptoms, though they still showed physical signs of disease. Probably Burckhardt's third stage cases were observed while the disease was actively progressing. The division of the cases into first, second, and third stages is probably not calculated to throw light on the point here in question. Such a division is purely anatomical, and neglects the influence of soil. Naumann also states that the blood pressure gives no valuable prognostic indications, but he thinks it possible that it may furnish a subsidiary means of distinguishing between cases which are or are not suitable for sanatorium treatment. The after-history of cases admitted into sanatoria, as compared with that of cases refused admission, shows that some fresh means of distinction is needed. It is natural to inquire whether haemoptysis depends directly on blood pressure. Naumann puts aside the suggestion that there are seasonal variations in haemoptysis, and the further suggestion that it is dependent on body weight. He states that where haemoptysis is a marked feature of the case the patient's condition is often fairly good; and that in the cases where poisoning by the products of the tubercle bacillus or other secondary bacilli is well marked from the first, haemoptysis is usually slight or absent. In his own 100 cases previously referred to, haemoptysis was most common in the first stage and in cases with a high blood pressure, but he does not regard the high blood pressure as the direct cause of the haemoptysis. Probably the strict localization of tuberculous lesions prevents the absorption of large quantities of toxins, but is attended by increased risk of injury to the vessel walls in the lung tissue.

(217) Syphilis of the Lungs.

Stengel (*Reprint from Univ. of Pennsylv. Med. Bull.*, May, 1903) discusses the simulation of pulmonary tuberculosis by syphilitic lesions which take the form of (1) gummata, (2) changes in the connective tissues, (3) changes in the parenchyma. He holds that our present knowledge of pulmonary lesions of syphilis does not warrant any more positive statement than that when the history of infection is certain, and specific lesions are met with in other organs, any evidences of pulmonary disease should be thought of as indications of a possible syphilitic disease of the lungs, especially if upon repeated examination tubercle bacilli are absent from the sputum. One of the most suspicious symptoms is intense dyspnoea of more or less spasmodic type with a tendency to stridor and cyanosis, all of these being indicative of laryngeal or bronchial obstruction. Cough is a symptom of variable intensity, sometimes it is entirely wanting, though there may be extensive disease of the lungs. At other times it is out of proportion to the amount of the disease and may be incessant but unaccompanied by expectoration. The latter is usually present but may be scanty; it is for the most part more offensive than in ordinary cases of phthisis. Tubercle bacilli are of course wanting. Haemoptysis is rare in syphilis of the lung, though cases are recorded of expectoration of large quantities of blood. Pain in the chest is much less frequent than is oppression and a feeling of constriction. When the pleura or bony structures are involved the pain has a dull boring character. Fever is nearly always found at some period of the disease, and may assume a hectic type when there is an extensive gummatous involvement of the lung. Emaciation is less pronounced in syphilis of the lungs than in tuberculosis, but is nearly always found in greater or less degree. Indications of consolidation of some part of the lung are usually discovered, but are not so frequently confined to the right middle lobe as some authors have asserted. A character of peculiar significance in the physical signs is the occurrence of dense consolidation with great feebleness of the respiratory sounds indicating a lack of aëration of the involved areas: this may occur in tuberculosis, but is more pronounced in syphilis. There are sometimes well marked signs of stenosis of the trachea or of a main bronchus. Associated signs of syphilis in other organs may help the diagnosis, though there is of course no reason why a syphilitic patient should not contract tubercle. Though the diagnosis of pulmonary syphilis cannot be made with certainty, it is important to bear its possibility in mind in cases in which tubercle bacilli are absent on repeated examination, while there are luetic lesions in other organs; in such cases vigorous antisyphilitic treatment should be instituted with the hope of an occasional success.

(218) Kernig's Sign in Typhoid Fever.

G. Carrière points out (*Journ. de Med. et de Chir. Prat.*, March 25th, 1903) that the value of Kernig's sign as an aid to diagnosis has considerably diminished since it was first described. When Kernig drew attention to this phenomenon he considered it was pathognomonic of spinal lesions, and that it was not found in any other conditions. For some time after his original note on the subject many observations were recorded in support of his statement, but before long there was a reaction, and Kernig's sign has ceased to occupy the position first assigned to it. It has on several occasions been noted in typhoid, and was very marked in 22 out of 50 cases examined by Carrière. In 15 others it was present, but not to the same extent, and in 7 it was difficult to obtain, and absent in the remainder. Forty-five per cent. of the author's cases of typhoid showed Kernig's sign. In all of these cytoscopic examination was made of the cerebro spinal fluid. In one case there was polynucleosis, but all the others showed absence of any cellular elements. There was no increased tension of fluid. Culture tubes inoculated with the fluid remained sterile. We may therefore conclude that the presence of Kernig's sign in typhoid fever does not point to spinal meningitis. Kernig's sign, according to the author, may be present from the third to the sixteenth day of the disease, but it is exceptional to find it either before or after these dates. It usually disappears towards the end of the second week, but may reappear in cases that relapse. Although in itself Kernig's sign does not seem to have any bearing on prognosis, Carrière found that in all his fatal cases of typhoid the sign had been observed. He concludes, therefore, that in the differential diagnosis between typhoid, cerebro-spinal and tuberculous meningitis, and other forms of meningeal disease Kernig's sign is of no assistance.

SURGERY.

(219) Bottini's Treatment of Hypertrophy of the Prostate.

K. Vogel exemplifies the difficulties and dangers of Bottini's method of treating hypertrophy of the prostate by galvano-cautery incisions (*Deut. med. Woch.*, March 19th, 1903). He records the history of a case of a man of 71, who was operated on without an anaesthetic, the incisions being made one on either side and one in the middle lobe, the bladder being filled with a solution of boric acid. He was quite well after the operation, and spent the first half-hour in telling his ward comrades about the operation. He then said that he was going to sleep for a while, and a quarter of an hour later he was found dead. The necropsy did not give a clue to the cause of death. The incisions were not deep and had not caused a great destruction of tissue. As the incisors had been tried before the operation, he concludes that the fluid in the bladder had cooled the glowing point considerably. A second case was treated shortly after. The patient, who was 74 years of age, could pass his water, but did so in very small quantities at a time and frequently. He was suffering from senile dementia. The operation was carried out as in the first case, but failed to relieve, and after several weeks the patient could not pass a drop of urine by himself. The operation was therefore repeated, but this time with an empty bladder. The incisor was felt to go more deeply into the tissues of the prostate than in the operations with filled bladder. He did not complain of pain or discomfort, but this may have been due to his dementia, which had been getting worse during the last weeks. About six hours after the operation he had only passed about 20 c.cm. of bloody urine through the retention catheter. After twenty-four hours he passed about 50 c.cm., and on testing the permeability of the catheter, Vogel found that boric acid flowed freely into the bladder, which was not filled. The temperature rose on the evening of the first day, vomiting set in, the abdomen began to be tympanitic, and after the course of forty-eight hours the patient died with all the signs of acute peritonitis. The necropsy revealed that the bladder had been perforated in the upper and posterior wall somewhat above the trigone. Vogel explains that the incisor must have caught up a fold of the bladder while it was still closed, and in the necessary turning to get round the prostate had carried it in front of the gland. The result of this accident was a fatal peritonitis. He discusses the difficulties of operating with a bladder which is filled with fluid, in which case the incisor is cooled down, or with an empty bladder, in which case the bladder wall appears to be in danger. The suggestion of distending the organ with air would overcome the difficulty but might be objected to by most surgeons.

(220) Surgical Treatment of Exophthalmic Goitre.

Farquhar Curtis (*Ann. of Surg.*, August, 1903) states that surgical treatment is capable of curing many cases of exophthalmic goitre which have not yielded to medicine, but has very serious dangers of its own, especially that of acute exacerbation of the symptoms known as thyroidism or thyroid poisoning, which may follow any operation in these patients, whether the operation be performed on the thyroid gland itself or on other parts of the body. Exophthalmic goitre, it is held, can be cured both by thyroidectomy and by sympathectomy, or removal of some or all of the sympathetic ganglia in the neck. A perfect result, the author asserts, can be expected in about 60 per cent of the cases of thyroidectomy, An immediately good result appears to be the rule in sympathectomy, but sufficient time has not elapsed to judge of the permanence of the cure after this operation, The relative mortality of the two methods would seem to favour sympathectomy. The author's experience of thyroidectomy has consisted of 11 cases with 3 deaths from acute thyroidism and 6 cures. Of the remaining two patients one was improved and the other lost sight of. Of the operation of sympathectomy which the author has performed in 7 cases the results have not been much better than those of thyroidectomy, as there were two deaths from acute thyroid poisoning, and a third probably due to the anaesthetic. The author thinks that it is advisable to use local cocaine anaesthesia for thyroidectomy, and to give this method a trial also in sympathectomy. The latter operation should, he holds, be performed on one side at a time, with an interval between the operations sufficiently prolonged to permit the patient to recover from the effects of the first. The author considers at length the different theories that have been advanced to account for thyroid poisoning after operations for goitre. No definite conclusions are derived from this review, but it is suggested that the frequency of thyroidismus after sympathectomy and in operations not directly involving the thyroid gland, is in favour of a nervous origin of this condition. Deaver, in the same number of the *Annals of Surgery*, draws the following conclusion from the result of a single case of exophthalmic goitre under his own observation and from a study of the works of those whose experience of the operative treatment of this affection has been extensive: (1) That as surgical treatment is recognized as the most satisfactory in exophthalmic goitre, so is complete bilateral cervical sympathectomy to be considered the operation of choice; (2) the operation should not be performed during the height of psychical irritation or tachycardia, nor by an inexperienced surgeon; (3) the results of this operation are far better than those of the other procedures, the mortality is much lower, and in the cases of recovery and improvement the cure is permanent.

(221) The Treatment of Naevi without Operation.

A. Frattini (*Gazz. degli Osped.*, July 19th, 1903) describes his method, based on the principle of Monteggia (1857) and resuscitated by Piorani (1882). He employs a 6 per cent. solution of corrosive sublimate in flexile collodion and, after shaking the solution, applies it so that it just encroaches upon the healthy skin surrounding the naevus: a current of air is blown over the collodion to accelerate its evaporation and prevent spreading. The application is repeated every third day until the eschar is separated, and the raw surface is then covered with an antiseptic dressing. The author has treated over 30 cases of various forms of naevoid growth by this method with success. A similar treatment has often been employed in dealing with anatomical tubercle of the skin.

MIDWIFERY AND DISEASES OF WOMEN.

(222) Obturator Hernia: Tube and Ovary in Sac.

Schopf (*Wien. klin. Woch.*, No. 8, 1903) reports a case where the tube and ovary were found in the sac of a left obturator hernia, adding some statistics of this rare form of rupture. His patient was a workwoman, aged 68. Three years before he saw her she suffered from violent pains in the left iliac fossa, radiating along the thigh to the knee, with vomiting without constipation. The thigh was kept flexed. The attack subsided in a fortnight. Later on similar attacks occurred with much frequency but lasted for a day only, or even for a few hours. At length the patient was seized with vomiting and constipation, which could not be relieved either by purgatives or by enemata. Schopf detected tympanitic distension, and slight pain on pressure on the left side of the abdomen inferiorly, radiating down the thigh, but no tumour could be detected either in the pelvis or abdomen. Abdominal section was decided upon as no diagnosis could be made. Schleich's local anaesthesia was employed. A loop of small intestine, 4 in. long, was found incarcerated between the pelvic walls and the left tube, which ran into the obturator canal. It was easily set free. The ovary as well as the tube were found to lie in the sac of an obturator hernia, whence they could not be drawn out. On that account herniotomy was performed, but when the sac was exposed and opened the ovary could not be reduced; it was amputated and the tube pushed back. The obturator membrane was closed by means of three sutures. The patient died on the evening of the operation. Nothing more than might be expected was discovered at the necropsy. The Howship-Romberg symptom, pain running down the inner side of the thigh to the knee, was marked in this case, and is present in about two-thirds of all cases of obturator hernia. But pain along the course of the obturator nerve is observed in many cases of pelvic disease common in women, especially when inflammatory exudation is present and presses on the nerve. Even in metritis the pain may radiate along the same course. On three recorded occasions Romberg's symptom led to an operation where it was proved that the diagnosis of obturator hernia was incorrect. The results of operation on strangulated obturator hernia are bad—Rose makes out only 10 cures in 118 operations. Schopf in twenty years' association with one hospital registered 393 cases of strangulated hernia in a total of 95,349 patients. In only 3 cases was the hernia of the obturator

variety, that is, in 1 out of 131 of all cases of strangulation. Altogether 144 cases of obturator hernia are recorded in medical literature; very few were rightly diagnosed. Sloughing of the gut occurs early, hence taxis is dangerous. Recent results show improvement on old statistics. English collected 9 successful herniotomies out of 22; and 3 recorded abdominal sections for this condition, all ending fatally. Schopf adds 15 more recent operations, including 8 which were successful, 4 of the latter being abdominal sections. Radical cure is necessary, as mere reduction of the hernia has often been followed by recurrence of the strangulation fatal in at least 2 cases (Meer and Spengel). Every hernia of this kind demands radical cure as it cannot be kept back by a truss. The obturator membrane must be sewn over the foramen, and it is necessary to resect the obturator nerve, else the pressure of the threads will cause severe pain. When abdominal section has been performed the obturator membrane has been closed by a periosteal flap (Bardenheuer). It appears that in only 5 of the 144 recorded cases of obturator hernia was any part of the female genital tract found in the sac.

(223) The Treatment of the After-coming Head.

Steffeck (*Deut. med. Woch.*, January 15th, 1903) finds that among the 21 different methods of treating the after-coming head the Veit-Smellie and the Martin methods are the only reliable ones. These, however, have the disadvantage that the infant is often so deeply asphyxiated that it cannot be brought to life, or that it succumbs to the effects of injuries some days later. The risk of injury is to a great extent avoided by the method of Martin, but not so that of asphyxia. Both methods are based on the principle that by artificially turning the chin backwards and flexing the head one can obtain the best engagement of the head in the pelvis, and that by passing two fingers into the mouth one creates the possibility of breathing. Steffeck thinks that in actual practice these considerations lead to an irreparable loss of time. The chin has first to be found, and then, often with great difficulty, made to rotate, and if the child has not made an effort to breathe by the time this has been accomplished, it will mostly do so as soon as the finger is introduced into the mouth. He therefore questions whether it is necessary to bring about this engagement of the head artificially, and comes to the conclusion that it is better not to attempt this at all. Without any preliminary rotation of the chin or flexion of the head, and without any introduction into the mouth (of a finger), he applies, as soon as the arms are freed, pressure with both fists doubled up, directly on the fetal head in the direction of backwards and downwards. He finds that Walcher's hanging position is of considerable assistance in this manipulation. As soon as the head has entered the pelvis clearly he delivers by the Veit-Smellie method. He says that during the last seven years he has used this method and finds that it is much to be preferred to any other, and by its means he has succeeded in bringing 35 living children into the world, which children have remained alive, and has only lost one fetus, in a very difficult case, in which he found that both the methods of Veit-Smellie and Martin failed to deliver. He strongly recommends the method to other gynaecologists, and is sure that a trial will induce them to adopt it.

(224) Calcium Chloride in Metrorrhagia, etc.

Gobinet (*Thèse de Paris*, 1902) writes on the haemostatic properties of this salt, which is valuable when ergotin and other drugs have failed. It may be given, according to circumstances, as a vaginal injection or as a draught or in an enema. When administered by the mouth or rectum from 15 gr. to a drachm and a half should be given. The larger doses should not be continued for over three or four days, but half-drachm doses may be taken for a week or ten days. Calcium chloride is of little service when the tendency to haemorrhage is due to septic changes, but it is of great value when the bleeding is caused by defective coagulating power. This deterioration in the blood is marked in the metrorrhagia of puberty and the menopause.

(225) Ovarian Cyst Weighing 72 Pounds.

Liell (*New York Medical News*, August 29th, 1903) reports a case of some interest as the patient was an extremely stout young woman, aged 27. She had been married seven years and was sterile, soon after marriage a tumour began to develop and when Liell examined her, she was unable to lie down. The uterus was anteverted and but slightly enlarged. The tumour proved to be a unilocular cyst of the left ovary, the fluid was turbid and syrupy, measuring 6¾ galls. and weighing with the removed sac 72 lb. Twenty-five minutes were allowed for the evacuation of the fluid, and there was but little shock. Adhesions were free and the pedicle broad. As the adipose tissue of the abdomen was 1½ in. in thickness, the peritoneum and then the fascia and muscle were united separately and the remaining wound allowed to close by granulation tissue, with dressings and iodoform gauze. The wound was entirely and firmly closed at the end of six weeks. Five months after the operation the cicatrix was firm.

THERAPEUTICS.

(226) Gelatine in Infantile Diarrhoea.

During the last twelve months Weill, Lumière, and Péhu have treated many cases of infantile diarrhoea by mixing solutions of gelatine with the food (*Lyon Médicale*, August 23rd, 1903). Care was taken to obtain the gelatine pure by mixing with boiling water, filtering, and sterilizing. A 10 per cent. solution was kept in test tubes, which were held in warm water for a minute or two before use. At first 1 gram of gelatine was given at each feeding—that is, 6 or 8 grams during the day; the daily quantity was then increased gradually to 12 or 14 grams till the cessation of the diarrhoea. The administration was followed by a diminution in the number of stools—which fell gradually from 8 or 10 to 3 and 2 per diem—and by a rapid modification in their character. The consistency was soon increased: the green colour became at first dark yellow and then bright yellow, the offensive odour disappeared, and the acid reaction became less and less marked, the stools on an average becoming normal in four or five days. It is not claimed that gelatine is a specific for all the alimentary troubles of children. Its beneficial action is best obtained in cases of simple localized enteritis with vomiting, but without serious general disturbance. In digestive infections, such as the so-called infantile cholera, with pyrexia, pulmonary *râles*, and enlargement of the liver and spleen, the stools are modified, but the gelatine has no influence upon the general condition. Experimentally it was found that coagula of cow's milk treated by acid diminished rapidly in size as the solution of gelatine added was more and more concentrated. For the purpose of clinical demonstration children were fed on cow's milk with and without gelatine, and with human milk, and the stomachs were emptied by catheter at various times after the feeding; but no fixed relation was found between the fineness of the coagula and the amount of gelatine added. The beneficial effects obtained by the treatment could not, therefore, be due solely to the influence exercised upon the formation of casein, but must have been caused by a modification of the intestinal secretions. Various purgatives were given to dogs, and gelatine solution an hour afterwards, and diarrhoeic stools resulted. When the gelatine had been given an hour before the drug the same purgatives caused only soft, non-diarrhoeic stools. It is probable that gelatine acts mechanically upon the ferments as well as upon acids and salts, and neutralizes their action by a purely physical process of isolation; but digestion is not arrested, so that it may be supposed that the quantity of gelatine taken, though sufficient to prevent bacterial fermentation, is too small to interfere with the ferments derived from animal cells.

(227) Veronal.

During the winter of 1902-3 W. Fischer (*Therapeutische Monatschefte*, August, 1903) has employed veronal at his psychical clinic, with excellent results in 60 of 83 cases. Among the diseases from which the patients suffered were trophic neurosis of the skin, with itching, morphine habit, disseminated sclerosis, chronic alcoholism, epilepsy, hysteria, neurasthenia, acute mania, and paralytic and senile dementia. In almost all the 60 cases a dose of 0.5 or 0.1 gram of veronal induced a quiet and usually dreamless sleep lasting from 6 to 10 hours, and the patients woke up refreshed. When a prolonged use of the drug was needed it was usually given not oftener than every fourth day. In one case where veronal was administered on four consecutive nights a cumulative effect was observed, which disappeared when the dose was diminished. The cases are next considered more in detail. In one of the hysterical patients veronal gave no result, while another obtained six

hours' sleep after taking it, but vomited the next morning. In 8 out of 11 cases of hysterical psychosis the results were good. Of the remaining three, one suffered from *malaise* on the following day, the second ceased after a time to react to the drug, and in the third case the results obtained were uncertain. In 1 out of 10 neurasthenical patients veronal was of little service. In acute mania a dose of 1.5 gram was often needed. The drug failed to cause sleep in 1 out of 12 cases of acute melancholia, and in 2 out of 5 of paralytic dementia. The unsuccessful cases are thus seen to be isolated ones, and the absence of serious after-effects is an excellent feature in all the cases. The veronal was given about an hour before bedtime in milk, tea, etc., or as a capsule.—K. Mendel and J. Kron (*Deut. med. Woch.*, August 20th, 1903) employed veronal in 68 cases, giving 437 single doses. The doses used lay between 0.3 and 2 grams (= about 4½ gr. and 30 gr.). The greater number of cases received between 0.5 and 1 gram. The patients took the powder either pure or in wafers, and in order to obviate all suggestion various indifferent hypnotics were substituted for it from time to time. The cases are divided into three groups: (1) Functional diseases of the nervous system; (2) organic diseases of the nervous system; and (3) psychosis. Veronal proved to be a good hypnotic in cases where there was depression, and mostly in conditions of excitability; in the latter, when it did not produce sleep, it acted as a sedative. It was found to be useless as an antineuralgic. As a rule, the sleep was induced after from a quarter to half and hour, but at times this did not take place until after from one to three hours. The sleep was pleasant and like natural sleep; 0.5 gram (about 7 gr.) gave on an average five to seven hours' sleep. No after-effect was noticed. None of the patients acquired a craving for the drug, as is so often the case with morphine. In typical melancholia, with marked depression, for which paraldehyde, hyoscine, trional, dormiol, etc., have been tried without result; veronal was able to produce a quiet sleep, lasting for from six and a-half to ten hours, when given in doses of from ½ to 1 gram. The authors come to the conclusion that it is unnecessary to employ larger doses than 1 gram, as they found that when 1 gram did not act larger doses failed too. Among the unpleasant side-effects they mention giddiness, headache, etc., and, on one occasion, sweating; these side-effects, however, were infrequent. At times it was found necessary to increase the dose when the drug was given on successive nights, but they consider that it is wiser to vary it with other hypnotics from time to time. Their experience, which is limited to two cases only, tends to show that veronal is not capable of being used as a substitute for morphine in the breaking of the morphine habit.

(228) Adrenalin and Cocaine as Analgesics in General Surgery.

Ganoitans (*Rif. Med.*, September 9th, 1903) speaks favourably of a mixture of adrenalin and cocaine as a local anaesthetic given hypodermically. He uses the 1 in 1,000 solution of adrenalin prepared by Parke Davis and Co. and ½ to 1 per cent. solution of cocaine chlorhydrate. The syringe used held 10 c.cm., and in using it 9 c.cm. of cocaine solution were mixed with 1 c.cm. of the adrenalin. After injection it is advisable to wait seven to eight minutes in order to establish complete anaesthesia. The author gives short details of 100 cases of general surgery where this mixture was used with distinct success; 31 of these were operations for hernia. The advantages of adding adrenalin are: (1) Smaller quantities of solution are required to produce good anaesthesia; (2) the vaso-constrictor action of the adrenalin considerably lessens the haemorrhage; this was well shown in operations for the removal of the upper jaw, gastro-enterostomy and a total laryngectomy. The mixture also seemed to be of conspicuous value in operating on the urinary tract, especially in stricture of the urethra. The contra-indications are not well known, but caution seems advisable in nephritics and in marked arterio-sclerosis. No post-operative haemorrhage was observed in the author's cases, although some writers have feared danger from secondary vaso-dilatation.

(229) Gonosan.

Gonosan, according to the *Deut. med. Woch.*, March 19th, 1903, is a resinous body of the root of the piper methysticum (kawa-kawa), which is dissolved in santal oil, and is employed in the treatment of gonorrhoea, together with injections of protargol. Its action is to remove the penile pain on micturition and the chordee. On the second day already the urethra is no longer tender. It is said to act by paralysing the nerve endings in the urinary passages, and by increasing diuresis. It is given in capsules of 0.3 gram, two four times a day. The intake of fluid should be reduced to a minimum, so that the active drug as it is passed through the kidneys is not diluted too much. It gives good results in the majority of acute cases, limiting the inflammation to the anterior portion of the urethra and shortening the attack. In acute cystitis following gonorrhoea it acts rapidly in clearing up the urine and soothing the bladder wall.

PATHOLOGY.

(230) Renal and Portal Venous Anastomosis.

Oelsnitz and Rouillier (*Bull. et Mém. de la Soc. Anat. de Paris*, June, 1903) reports an interesting condition noted in a necropsy on a man who had died of tuberculous meningitis. The left kidney was normally placed, and its vessels showed no anomaly. The right kidney lay in the median line in front of the bifurcation of the aorta. Its posterior aspect was convex, its anterior represented the hilum, the vessels running into it and the pelvis and ureter presenting forwards. The ureter ran downwards to the right and then turned inwards and descended along the usual course to the bladder. Two right renal arteries proceeded from the aorta just above the bifurcation and ran on to the kidney in opposite directions, making an anastomotic circle around the renal pelvis. There was a larger renal vein which ran upwards and inwards with the artery, joining the vena cava. But a second vein, very conspicuous for its course, ran with the lower renal artery and further on to the left, opening or rather becoming continuous with a vein which communicated with the vena cava below and the vena porta above, passing behind the aorta. Thus there was a combined hepatic portal and renal portal system, the latter recalling a condition observed in some of the lower vertebrata.

(231) The Action of Human Gastric Juice on Tubercle Bacilli.

Terrannini (*Rif. Med.*, June 24th, 1903) took specimens of normal gastric juice from patients in the wards, determined its total acidity and the amount of free hydrochloric acid. In a series of test tubes, 5 c.cm. of the gastric juice was treated (1) by boiling, (2) by neutralizing the free acid, (3) by raising the percentage of HCl to 2 per cent. One or two fatal doses of a culture of human tubercle were added to each test tube, and the whole put in the stove at 37°, and left for periods of an hour or two hours. On removal the contents of the tubes were neutralized, and thence inoculated into the peritoneum of guinea-pigs. None of the animals escaped tuberculous infection. Those injected with the gastric juice containing 2 per cent. of free HCl and left for two hours in the stove in contact with tubercle bacilli died later than the other animals, and presented less serious lesions at the necropsy. However these experiments seem to show clearly that the gastric juice is not germicidal as regards tubercle bacilli.

(232) The Preparation of Collodion Sacs.

Gorsline (*Contributions to Medical Research, Michigan Laboratories*, June, 1903) suggests an improved method of preparing collodion sacs which is designed to obviate the risk of tearing when the sac is detached from the glass tube on which it is moulded. He uses roll tubes with a perforated end about 2 mm. wide, and first closes this opening with a thin film of thick collodion, taking especial care to prevent the collodion from entering inside the tube. The film is then allowed to dry in the air for about a minute. The vessel containing the collodion is inclined as much as possible without spilling, and the tube is inserted in a horizontal position, and applied to the surface of the liquid, but not immersed. The tube is then rotated so that about three-quarters of the circumference of the tube with its coating of collodion is exposed to the air. When sufficient collodion has been deposited on it the tube is withdrawn and rotated in the air until the collodion has set. To remove the sac, the tube is filled with water, which, by steady blowing, is forced through the opening, and, following the line of least resistance, creeps up between the sac and the tube. While still blowing, the operator gently twists the sac backwards and forwards until the water has separated it from the tube on all sides. The neck of the sac is then cut loose, and the sac will slide off with ease.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(233) Latent Scarlatina.

Caziot (*Sem. Méd.*, June 24th, 1903) gives an account of a case of latent scarlet fever which was the cause of a small epidemic in an orphanage of which he is the medical officer. On October 24th a child developed suddenly the symptoms of a mild attack of scarlet fever, the next day two others were attacked, and eventually there were in all 18 cases. The problem was to explain the origin of the first case. There had been no previous outbreak in the orphanage for thirty-two months, so that it was to all intents and purposes impossible that any germs should have remained active since that period. The children in the institution were carefully isolated from contact with the inhabitants of the surrounding country, where also there had been no case for six months. Moreover, during the epidemic in the neighbourhood, the orphans escaped, while the outbreak among them did not spread outside. The children had returned from their holidays on October 8th, and the possibility of infection from their families might be excluded, particularly as one of the three cases referred to had not been away during vacation. The logical conclusion was, therefore, that a child must have returned with unrecognized scarlet fever, which he communicated to his companions. A further investigation revealed the following facts. On October 13th a new pupil, aged 10½ years, had a fit of coughing while being examined. He was carefully investigated, and nothing abnormal was noticed except a slight redness of the chest; there was nothing wrong with the throat. From October 15th to 17th two of the children had a little sore throat, one of them being the immediate neighbour, both in class and dormitory, of the one last mentioned; none of these three children ever showed any desquamation. On inquiry it was ascertained that the child first mentioned had on October 7th been exposed to the possibility of contagion in a town wherein he had passed the day and night, it was also found that he had had a slight headache on October 11th and 12th. This then may be considered to have been a case of latent, or, to be more accurate, masked scarlatina, and an example of an ambulatory form of the disease which is closely allied to the milder recognizable varieties, and is of great epidemiological importance. Of the milder forms the author calls attention to two—namely, scarlatinella and apyretic scarlatina. In the first the rash is faint, and the peeling insignificant, the sore throat may be represented merely by a little difficulty in swallowing or by a slight swelling of the tonsils, and the fever does not exceed about 102°. In the second, of which 3 cases occurred during the epidemic under notice, all the symptoms are present except the fever. The scarlatinal poison appears to possess two essential properties—that of acting powerfully upon the thermotaxic centres and that of influencing with equal force the vasomotor centres, and the two mild forms just described differ from the typical disease in the more or less complete suppression of one or other of these influences. When, however, the toxin passes through one or more human subjects, its virulence may be exhalted to such an extent as to produce even the severest form of the disease.

(234) Lupus Erythematodes.

E. Hollaender (*Berl. klin. Woch.*, July 28th, 1902) says that since he introduced his method of hot-air cauterization for lupus vulgaris he has come across a number of cases of lupus erythematodes, which he thought should respond to the treatment, if this form of skin affection was in reality a tuberculous process. They were, however, not in the least degree improved by the cauterization, and therefore he reports fully his observations with regard to this disease. Before doing so he gives a short summary of the names which various authors have given to this disease, and the arguments which have been used for and against the suggestion that it is a tuberculous affection. For this assumption is urged: (1) Lupus erythematodes occurs chiefly or only in individuals who are suffering from tuberculosis, or who are predisposed to this illness; (2) the patients often become affected with tuberculosis, especially of the lymphatic glands, and frequently die of this disease; (3) the clinical appearances of lupus erythematodes and lupus vulgaris are very similar; (4) transition from the one to the other disease at times occurs; (5) lupus erythematodes may react to tuberculin; and (6) the statistics of Roth and the arguments of Boeck are in favour of the assumption. Against it he says that the following statements have been put forward: (1) Tuberculous disease and taint does not occur more frequently in patients suffering from lupus erythematodes than in other patients; (2) such patients may be attacked by tuberculosis, but this is partly accidental and partly to be regarded as a complication caused by a severe disturbance of the whole organism; (3) cases of lupus erythematodes and lupus vulgaris cannot be mistaken for one another; (4) a transition from the one to the other disease does not take place; (5) reactions to tuberculin have not been observed in the majority of cases; (6) the histological structure of lupus erythematodes and of lupus vulgaris is totally different, and Koch's bacillus has never been found either by microscopical, cultural, or inoculatory experiment in the latter. Since the affection is a superficial one, Hollaender considers that it is very unlikely that all attempts to find the bacillus should prove fruitless, and, further, that the hot-air cauterization would be sure to destroy these if they were present. The statistical evidence is to his mind based on weak grounds. In the same communication he states that he is in a position to recommend a method of treatment which is able to bring about a cure even in the most obstinate cases. The method consists in the internal administration of quinine and the external application of iodine. He first determines if the patient can take quinine by giving small doses (¾ gr.) of the hydrochlorate or sulphate, and then gives 7½ gr. three times a day, and five or ten minutes after the dose, he paints the affected area freely with iodine. This is continued for five or six days, and after a pause of the same duration he repeats the procedure. At times the quinine produced temporary disagreeable effects, but in all cases he was able to continue the treatment without any permanent bad effects ensuing, and always with ultimate success,

(235) The Value of Calorimetric Examination.

A. Schlossmann (*Berl. klin. Woch.*, March 23rd, 1903) states that the examination by calorimetry has found little favour for two reasons; first, because it is believed that the technical difficulties are great; and secondly, because the value for clinical uses is much undervalued. Theoretically as well as in practice this method throws much more light on certain conditions than chemical examination, because by its means the total energy in the form of latent heat of any material can be measured. We realize that all food is taken with the object of supplying energy, and if one knows how much energy (heat) is wasted by being excreted in the faeces and urine, one can form a good idea as to the suitability of the diet. Schlossmann says that he values this method very highly in the feeding of infants. The estimation of nitrogen in the faeces and urine is fraught with difficulties, since there are several sources for the nitrogen besides the energy-supplying food. Bacteria contain not inconsiderable amounts of nitrogen, and in certain cases the nitrogen estimation would only lead to erroneous results. Not so, however, the results of burning up the material in an excess of oxygen, and therefrom estimating its calorimetric value. The urine of diabetics is generally examined and expressed according to the percentage of sugar excreted, while Schlossmann thinks that it would be more comparative and more useful if one expressed and measured the diabetes in calories, that is, by determing how many calories the patient wasted in his urine *pro die*. The same can be said of gout patients and of those suffering from nephritis. With regard to the estimation itself, he points out that Hempel's apparatus is not difficult to work, and that it can be reasonably expected of a modern practitioner that he will be capable of employing it correctly. The apparatus is not dear; it is comparatively simple and is exact.

SURGERY.

(236) The Value of Ear Symptoms in the Diagnosis of Injuries of the Skull.

In dealing with the importance of ear symptoms in the diagnosis of fracture of the base and other cranial injuries Stenger (*Berl. klin. Woch.*, February 2nd, 1903) distinguishes between fresh and old injuries. In the case of the former the symptoms of concussion are most prominent, and those of ear trouble can only be utilized as diagnostic helps. Discharge of blood and cerebro-spinal fluid deserves attention. When the

cerebro-spinal fluid is found in the discharge, it may be taken as comparatively certain that there is a fracture of the base, but when only blood is seen one must realize that the bleeding point may be sought in different places. Bleeding from the ear is far more important in this respect if one can find a fissure in the bony canal. The same may be said of rupture of the tympanum. The functional symptoms are of greater value, and if in fresh cases these are at times covered by the other symptoms, a careful consideration of them will usually be found useful in making the diagnosis. These symptoms are evidenced by (1) disturbances of hearing and tinnitus, (2) giddiness, and (3) signs of paralysis of nerves. Stenger says that the disturbances of hearing, which are the most important symptoms, are due either to injury of the auditory nucleus or of the nerve itself or of its peripheral distribution. When the nucleus is attacked, total deafness on that side will necessarily follow and the cerebral symptoms will be marked; when the nerve is injured in its course one generally finds implication of the facial nerve. In the last place, when the nerve is injured in its distribution one meets with the so-called labyrinthine symptoms. These may be recognized by the shortening of the perception of sound conducted through the mastoid process; this is ascertained by measuring the length of time in which the patient can still hear the tuning-fork after it is applied to the process, but care must be taken to avoid false conclusions. The next symptom in this category is the failure to perceive high notes. Stenger looks on this as absolutely diagnostic of disturbance of the labyrinth. He deals with the giddiness which is due to injury to the semicircular canals, and points out that the type of the giddiness is definite. Unilateral nystagmus is frequently seen in connexion with injuries of the head, and may point to direct implication of the canals. In this case the movements are directed towards the unaffected side, and may be described as a tetany of the muscles of the eye. The only nerve paralysis which points to direct injury of the ear is that of the facial; but when other nerves are affected, such as the optic, and the organ of hearing is also affected, one can form a good idea of the direction of the bony injury. By attending carefully to the functional condition of the hearing apparatus one can distinguish between true injury of the skull and malingering.

(237) Foreign Body in the Respiratory Tract.

Courmont and André (*Lyon Méd.*, June, 1903) had under their care a man who died from the sepsis caused by the lodgement of a large pin at the bifurcation of the trachea. The pin, which was 8 cm. in length and which had a glass head, at first lodged at the level of the hyoid bone. Five days later it fell during an operation for its removal, and on the following day the symptoms of infection—pyrexia, sweating, jaundice, etc.—were already observed. The left base became dull up to the angle of the scapula, and after 300 c.cm. of blood-stained serum had been removed, multiple *râles* were heard, and bronchial, with occasionally cavernous, breathing. The sputum was purulent and mixed with blood. Muscular and articular rheumatism appeared, the jaundice increased, and the patient died from sepsis a little more than a month after the accident. At the necropsy, the head of the pin was found obstructing the bronchi leading to the lower half of the left lung. The lower lobe of the left lung was solid, the septic broncho-pneumonia being extensive and intense enough to simulate lobar pneumonia. The upper lobe, the bronchi of which were not obstructed, was merely engorged with hyperaemia. The head of the pin was encysted and had to be removed forcibly at the necropsy; but at one stage during life it had evidently acted as a ball and socket valve, allowing the escape of sputum but not the entrance of air. The patient had complained of a sharp pricking pain after coughing, and on the lower end of the right wall of the trachea was a row of small punctures, one of which formed a purulent fistulous track, leading to an abscess, the size of a small nut, situated in the upper lobe of the right lung. The ball and socket action might account for the cavernous breathing occasionally heard. The pathogenic germs were multiple; the sputum contained typical pneumococci and some other cocci; blood obtained from the veins of the forearm about the fifteenth day after infection contained the staphylococcus albus, which was, however, harmless to both guinea-pigs and rabbits.

(238) Accidental Inclusion of a Vesical Calculus in a Suture during Bassini's Operation.

Nossal (*Wien. med. Woch.*, August 1st, 1903) performed suprapubic lithotomy on a man, aged 68. For a year there had been strangury, frequent micturition, and haematuria, which were aggravated by jolting. A year before the lithotomy he had been operated on for strangulated right inguinal hernia. After incision of the bladder the stone, which was of the size of a walnut, was seized with forceps, but could not be moved. The vesical wall was everted for purposes of inspection. It was then found that the upper end of the calculus was firmly fixed to the bladder by a loop of suture which surrounded it. This was divided and the calculus was removed without further difficulty. The man afterwards stated that a radical cure had been performed for the hernia, and that for several days after the operation the urine contained blood. Obviously one of the sutures, which in Bassini's operation fix the muscular layers to Poupart's ligament, had accidentally included the wall of the bladder, and when tightened had anchored the calculus to it. Cases of inclusion of the vesical wall in Bassini's operation were not uncommon, but the accident is easily avoided if the bladder is emptied immediately before the operation. In several cases subsequent operations have been undertaken for the removal of the sutures. In one case the suture had become loose in the bladder and had served as the nucleus of a calculus; but Nossal's experience is probably unique.

(239) Horseshoe Kidney.

Voisin and Galippe (*Bulletins et Mém. de la Soc. Anat. de Paris*, June, 1903) dissected a case of this important anomaly. The patient was a man aged 46, of intemperate habits, who died of pneumonia, with albuminuria. The left kidney, larger than its fellow, lay in its normal situation; the right was situated lower, and its inferior extremity was rotated inward over the vertebral column, and fused to the corresponding part of the left kidney. There were two ureters, which opened separately into the bladder. They crossed the anterior aspect of the horseshoe in their downward course. The combined renal pelvis lay anterior to the renal artery and vein, only a few branches of the latter lying in front of it. An artery—not from the aorta, but from the left common iliac—ran up to the lower border of the horseshoe, and, divided into two branches, distributed one to each kidney.

MIDWIFERY AND DISEASES OF WOMEN.

(240) Pubiotomy.

Pubiotomy, or more correctly hebotomy, was introduced as an alternative to Caesarean section or perforation more than 80 years ago; but it is only recently that good results have been reported. H. Van de Velde (*Wien. klin. Woch.*, July 15th, 1903) describes the operation as now performed: A cutaneous incision is made from the left spine of the pubes downwards and inwards to the outer surface of the left labium majus opposite the vestibule. The left index finger then burrows in the lower angle of the wound until it reaches the inferior and posterior surfaces of the pubic bone. A specially-constructed needle, curved to suit the posterior outline of the pubic bone and with a bluntish point, in the side of which is a slot eye, is introduced into the lower angle of the wound and, guided by the left forefinger, is passed upwards behind the pubic bone until it emerges in the upper angle of the wound. The ring of a Gigli's saw is hooked into the eye of the needle, which is then withdrawn so that the saw comes to lie behind the pubic bone. This is divided in a few seconds. The saw is withdrawn from the lower angle of the wound. Haemorrhage, which is usually slight, is arrested by tampons and the wound is dressed antiseptically. The inner surface of the labium majus should be everted over the wound by pressure forceps. This prevents infection of the wound by vaginal discharges. The wound may be closed immediately if there is no haemorrhage, otherwise it is left until delivery is effected. The advantages of hebotomy over symphysiotomy are: (1) It is easier and more rapidly performed; (2) the bladder and urethra and a part of the anterior vaginal wall retain their natural support; (3) extension of the wound into the vagina is less probable, as the soft parts are thicker laterally than in the centre; (4) for this reason and because the clitoris is avoided there

is less haemorrhage; (5) the wound does not communicate with the vagina or vulva; this is a great advantage in septic cases: (6) union is more rapid and effectual between bony surfaces than in the case of a joint such as the symphysis, and there is less danger of suppuration; (7) in a subsequent labour hebotomy may be performed on the other side, while a second symphysiotomy is difficult and dangerous on account of adhesions between the bladder and the posterior surface of the symphysis. The results of this operation have been brilliant. In the 12 reported cases all the children have been born alive, and all the mothers have recovered without any disturbance of gait. In one case the operation was performed in a hovel, and in several after the onset of septic infection. In one case the true conjugate was only 3 in. But perhaps the greatest advantage of hebotomy is that if after the operation the pelvis is not too tightly bandaged, a permanent increase in its capacity may result. The gap between the severed ends of the os pubis becomes filled with callus. The pelvis is larger, though somewhat asymmetrical, the clitoris and urethra being displaced to the right. Thus in one of the writer's cases the distance between the anterior superior spine of the ilium was 2 cm. more on the left side than on the right, though before the operation the pelvis was symmetrical. If in attempting to obtain permanent pelvic enlargement union appears to be endangered, the bandages should be tightened, and the duration of treatment is but little lengthened. In some of the writer's cases the patients were up and about three weeks after the operation.

(241) Vulvo-vaginitis in Infancy and Childhood.

Berkenheim (*Dietskaia Medicina*, No. 3, 1902) observed cases of vulvo-vaginitis in children in a Moscow hospital for ten years. He concludes that the etiology of this disease is the same in childhood as in adults. In 75 per cent. of the cases there is gonorrhoeal infection. The reasons why vulvo-vaginitis is so much milder in children seem clear; the vagina before puberty is short, there are few rugae which might conceal and foster the infective matter, the vessels of the mucosa are ill-developed, and there are but few glands. Menstruation, pregnancy, and parturition, as well as coitus—factors prejudicial to the cure of vulvo-vaginitis—are absent in such cases. Vulvo-vaginitis is most common in very little girls, often well nourished and in good health; its average duration under treatment is $7\frac{1}{2}$ weeks; one-third of all cases become chronic. All the well-known local complications were observed in the Moscow hospital, and also conjunctivitis, peritonitis, and arthritis. The cases of peritoneal inflammation were mild, as were those of arthritis, usually limited to one joint. Rest and general treatment are necessary. Berkenheim found that no medicament used for injections had any specific action; indeed permanganate of potash, protargol, icthyol, sulphate of zinc, and boracic acid were found by him to have no influence in shortening the course of the malady. The pus must be removed, and for this purpose free douching is necessary. A special basin and napkin must be reserved for each patient.

(242) Torsion of Fibroid Uterus.

Faure (*Rev. de Gynéc. et de Chir. Abd.*, July-August, 1903) removed a fibroid weighing over 24 lb. by abdominal hysterectomy. Two years previously the patient had suffered from severe attacks of abdominal pain. The torsion had reduced the lower part of the uterus and the vessels of the broad ligament and appendages to a short cord hardly as thick as a man's little finger. The veins in the tumour were enormous, and there were intimate adhesions to the great omentum. Faure first divided the pedicle and secured it; then he turned down the tumour and separated adhesions at leisure with facility.

(243) Protracted Pregnancy and Heavy Fetus.

Fuchs (*Monats. f. Geb. und Gyn.*, August, 1903), having examined two cases of giant fetus, one 6,700 grams ($14\frac{3}{4}$ lb.) and the other 7,550 grams (over $16\frac{1}{2}$ lb.), scrutinized the reports of labours in a public institution at Kiel. In 183 out of 2,200 labours, or 8.31 per cent., the child weighed over 4,000 grams (over $8\frac{3}{4}$ lbs.). It was found that in at least 100 of the 183 cases pregnancy had been protracted beyond the normal term; in fact it was the most frequent and most evident condition associated with abnormally heavy fetus.

(244) Cancerous Degeneration of Wart on Labium.

Flatau (*Zentralbl. f. Gyn.*, No. 32, 1903) recently exhibited before a society a specimen of cancer of the labium majus. He had removed together with this growth a mass of glands in each groin, enlarged to the size of a small fist. The disease had arisen from a small papillary growth on the labium, which had been noticed by the patient for several years. It suddenly took on malignant growth at a time when the patient suffered from severe mental worry.

THERAPEUTICS.

(245) The Method of Action of Crede's Collargol.

J. Bamberger has studied the method of action of collargol in septic conditions, and in describing these he states that he does not intend to publish cases which shall speak for or against the treatment, but merely wishes to show how the effect on septic infection is attained (*Berl. klin. Woch.*, August 24th, 1903). Credé regards the action as a purely bactericidal one, but Brunner showed that this was not so, since collargol exerts only a marked inhibitory action on the growth of bacteria and no destructive action. He found that the number of leucocytes, and especially of eosinophile cells and lymphocytes, is greatly increased during the first and second day after the injection. Bamberger added some collargol to horse's serum, and found that silver particles were thrown down from the solution. In the course of eight days the serum tubes, which had been exposed to the air, were simply crowded with bacteria. Experiments with injections show that the silver is deposited in the blood current as very finely divided particles, and is not kept in solution. The deposited silver particles cause enormous numbers of leucocytes to be attracted to them, and the latter absorb these particles. In doing this they fall a prey, and the body seeks to cover this defect by producing more leucocytes. As a rule, the toxins of septic bacteria call forth an increased manufacture of leucocytes, but the stimulus is greatly increased by injections of collargol. He was able to show in some experiments on rabbits that certain tissues, for example, kidney, spleen, contained an increased amount of iron, mostly in the form of haemosiderin, which is due to the destruction of red blood corpuscles. Experimenting on himself by rubbing in Credé's ointment, he found that during the first two hours, the number of leucocytes diminish, but five hours after the rubbing in, the number is markedly increased. Bamberger next discusses the question whether part of the action may not be due to the colloidal properties of the preparation, and tends to support this argument by a simple experiment. If one adds a few drops of a 2 per cent. solution of collargol to peroxide of hydrogen, the drops fall at first to the bottom of the test tube, and then rise suddenly, as oxygen is liberated, and at last get split up into fine granules. These granules are blackish-brown, and have the same appearance as the silver particles found in the organs of frogs after collargol injection. It may be that the catalytic action of colloidal silver is the reason why collargol is not kept in solution in the blood. He thinks that further investigation is necessary before one can decide how far this property of collargol affects an infection, or if the whole action is dependent on the increased leucocyte formation.

(246) Urotropin in Typhoid Fever.

Ernst Fuchs (*Deut. Arch. f. klin. Med.*, lxxvi, 1-3) records the results of experiments undertaken with a view to ascertaining the value of urotropin in preventing bacteriuria in typhoid. Two points to which he devoted his attention were, first, how early the treatment was to be begun; and secondly, for how long the drug should be continued in order certainly to prevent the symptom. He found that out of 115 typhoid patients the bacteriuria only began twice during the febrile period; in other words, that it was, strictly speaking, a phenomenon associated with convalescence. It was inferred therefore that administration of urotropin should be commenced in the fastigium and continued well on through the convalescent period. The author compares two sets of cases. In the first series, 53 in number, urotropin was not administered: 15 of them suffered from bacteriuria. To these may be added 22 previous cases, in all of which this symptom was present, making a total of 26 out of 75; of these 26, in 12 the bacteriuria was due to the typhoid bacillus. The second

series was 40 in number; all received the prophylactic treatment with urotropin; in only one case did bacteriuria appear. The dose of urotropin employed was 2 grams per diem. The author concludes that the administration of urotropin in typhoid fever will certainly impede the appearance of bacteriuria.

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(247) Epidural Injections.

A. Strauss gives a short summary of the epidural method of introducing various medicaments into the spinal canal without touching the cord (*Berl. klin. Woch.*, August 17th, 1903). His method was first introduced by Cathelin in 1901, but in 1885 Corning had already described his attempts to inject solutions into the spinal canal. Several other investigators attacked the subject, but none succeeded in entering the epidural space. The advantages of Cathelin's method, as compared with other forms of medication, for example, hypodermic injection, lies in the fact that drugs are absorbed much more rapidly. This was proved by experiments with methylene blue. The injections are carried out by means of a needle, preferably about 6 cm. in length and 3 mm. in thickness. Strauss finds that a platinum-iridium needle is the best, since this can be sterilized in the flame. Although almost any good syringe can be used, he strongly recommends an automatic metallic syringe of his own design, which can be refilled without being removed from the needle when this has been introduced. As a rule, solutions of the hydrochlorate of cocaine (½ to 4 per cent.) are used for anaesthetising, but it has been shown that physiological salt solution is capable of replacing this, even in painful affections. Orthoform, eucaine, dionine, acoine, antipyrin, aconitine, atropine, and other drugs are also used. For syphilis Strauss has used epidural injections of corrosive sublimate (2 per cent.); but although, as a rule, the injections are well tolerated and do not produce any serious side effects, he still prefers the intramuscular injections of 10 per cent. hydrarg. salicyl. Physiological saline solution has further been employed for uraemia, cardiac failure, and collapse, while the method is suggested for introducing drugs such as guaiacol, etc., in tuberculosis, bromides in epilepsy, chloral in tetanus, artificial serum in meningitis, etc. The injections are best carried out with the patient in the left lateral position, with the thighs flexed and the knees well drawn up on the abdomen. Three points, of which two are constant, must be sought. These two are the fifth posterior and inferior sacral processes. They can be readily felt in all but very fat persons, and are mostly visible. The third point lies above and between the first two; it is the apex of the sacral apophysis. Joined together, these three points enclose a triangular or U-shaped space, having its base downwards. It usually measures about 1 cm. in breadth, and 2 cm. in height. The index finger of the left hand is passed over the spinous processes downwards, until it feels this triangular space. It is wiser to allow the left forearm to rest on the patient's back. The skin has been previously disinfected and cleaned; the needle is then introduced obliquely upwards, beneath the left index finger, which presses on the membrane, in order to render it tense. As soon as one feels that the membrane is perforated, the syringe is depressed and the needle is slowly pushed upwards in the middle line. If one strikes bone, the needle must be withdrawn somewhat and the syringe lowered. The puncture is not painful, and with a little practice is easy. If any oedema occurs, it is a sign that the needle has not entered the epidural space. Strauss states that apart from one case, of a fat individual, in whom the solution was injected beneath the skin, and not into the spinal canal, he has not met with any unpleasant effects of the method. He next deals with clinical results obtained by those who had taken up the method. The results in sciatica vary considerably, but those in neuralgia and painful conditions of the bladder are very satisfactory. In tuberculous cystitis, gonorrhoeal cystitis, pyonephrosis, and carcinomatous infiltration of the urinary track, it is only of temporary value, but in both retention and incontinence of urine it gives excellent results. The best results were included in cases of enuresis nocturna in infants, and children. This method of employing drugs deserves careful study, and Strauss warns investigators not to expect too much, but at the same time to have a reasonable amount of confidence in trying the method.

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(248) Burns treated locally with Glycerine of Tannin.

Capullano (*Gazz. degli Osped.*, September 13th, 1903) speaks highly of the above method of treatment which he and his colleagues have practised for some time. It is applicable to burns of all degrees. The author uses a 50 per cent (or less) solution, using the purest glycerine he can procure. If the burn is of the second degree he punctures the bullae, then applies the glycerine of tannin and covered with gauze and cotton-wool. The application is repeated several times a day without removing the gauze, which is allowed to remain *in situ* until it separates itself. By this simple treatment the author says he gets far better results than with any other of the numerous remedies in vogue. The tannin is slightly antiseptic, and by coagulating the albumen forms a sort of protective varnish over the tissues, whilst the glycerine also exercises a certain antiseptic power.

PATHOLOGY.

(249) Bacillus Subtilis as the Cause of Panophthalmia.

Panophthalmia usually presents itself as an extremely acute inflammatory condition following a wound by some foreign body, such as a piece of metal. Silberschmidt (*Ann. de l'Inst. Pasteur*, April, 1903) has examined the vitreous in two cases of panophthalmia. From the first an organism was isolated in pure culture and caused typical panophthalmia when inoculated into the vitreous of rabbits. In the second case an organism of similar characters was isolated also in pure culture; both organisms belonged to the group of bacillus subtilis. A description of an organism of similar characters has been given by Poplawska from 6 cases of panophthalmia, and Kayser has also recorded 2 cases, in one of which B. subtilis was found in pure culture, in the other it was associated with staphylococcus aureus and albus. Special danger appears to attach to wounds received during agricultural labour. Silberschmidt produced panophthalmia experimentally by the inoculation of emulsion of soil into the vitreous, and from two such cases isolated B. subtilis. It is not probable that this organism is by any means the sole cause of panophthalmia, and the types described by various authors, while apparently belonging to the group, exhibit differences. There are many questions still to be elucidated in the etiology of panophthalmia, one of the most interesting being its geographical distribution; in some districts it is unknown. The inflammatory reaction produced experimentally by B. subtilis in the vitreous is strictly localized to the eye, and progresses very rapidly; it resembles clinically panophthalmia of man; B. subtilis is usually considered non-pathogenic to man, but researches have at least shown that it is concerned in a considerable proportion of cases of panophthalmia, and experimental observations would seem also to show that the eye, and especially the vitreous, is a specially favourable field for its activity.

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(250) Action of Human, Bovine, and Avian Tubercle Bacilli on Cattle and Sheep.

Maffucci (*Clin. Modern.* an 9., n. 34) publishes a full account of his experiments on this subject. His conclusions are as follow: The bacillus of bovine tuberculosis is widely pathogenic for the same species of animal. Human tubercle bacillus causes in cattle a transitory lesion which heals, causing, however, trophic disturbances which may slowly disappear. The ox is capable of becoming habituated to strong doses of virulent human tubercle bacilli injected into the veins. Tuberculous products derived from the corpses of human beings and subcutaneously injected into calves have determined a lesion, which, however, remains strictly local and slowly heals. The reverse of this occurs with bovine tuberculous products. Calves intravenously injected with human tubercle have shown no trace of infection after eight months, and yet 50 days later, after a strong injection, develop grey tubercles in the lung. The bacillus of human tuberculosis may remain alive in the tissues of the calf if the resulting abscess is encapsulated. Avian tubercle is powerfully toxic for calves when intravenously injected. The tuberculin reaction (practised with human tubercle bacilli) is positive in oxen and sheep. Sheep resist human tuberculosis less than calves if the bacilli are injected into the veins. It is possible to induce in cows a certain amount of immunity against pearl tubercle if they are previously treated with strong cultures of human tubercle.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(251) Hypertrophy of the Heart in Nephritis.

Senator reviews the state of our knowledge on the mechanism of hypertrophy of the heart in diseases of the kidneys, and offers a new theory (*Deut. med. Woch.*, January 1st, 1903). He suggests that the occurrence of hypertrophy, which Bright put at 23 per cent. of all cases of nephritis, and Traube at 93 per cent., represent the extreme limits. The work of W. Mueller is of great value in clearing up the matter. He has found that the right ventricle is often not hypertrophied when the left ventricle is enormously enlarged. The increase of weight of the left ventricle is represented by 61 per cent. as against 26 per cent. of the right side. Traube has offered a purely mechanical explanation, but this has been shown to be false. Senator finds, too, that Cohnheim's modification must be rejected. Ewald introduced a theory, based on the assumption that the viscosity of the blood increased in disturbances of the function of the kidney. Hirsch, however, has shown that in true granular kidney, with hypertrophy of the heart, the viscosity is rather diminished than increased. Strauss has recently found that in chronic parenchymatous nephritis the molecular concentration of the blood is normal, while in granular kidney it is heightened. The specific gravity of and amount of albumen in the blood are diminished in the first-named condition and normal in the latter. The residual nitrogen, that is all bodies containing nitrogen which are not albumen, is not increased in chronic tubal nephritis, but is usually increased in granular kidney. From this it appears that the toxicity of the blood is rather diminished in the former and increased in the latter. Senator argues that in chronic parenchymatous or subacute nephritis the deficient action of the kidney gives rise to a faulty constitution of the blood, and this acts on the different portions of the vascular system, including both general and small circulation and the various cavities of the heart, as an irritant. The main source of the irritation is derived from the nitrogenous extractives, the residual bodies. In acute nephritis, it appears from the nature of things, the irritant action must be strongest, and the vessels have their nutrition and permeability interfered with. They are the more capable of passing fluid through their walls, and the result is dropsy. In this process the body finds a safety valve, inasmuch as the effusions free the circulation of a certain amount of the nitrogenous extractives. When the course of the nephritis is favourable, and the kidneys regain their normal function, complete recovery takes place, when the effusion disappears. In chronic parenchymatous nephritis the conditions are similar, but the processes are not so stormy. The irritation on the vascular wall is not so severe as to materially interfere with the permeability of the walls to fluid, and thus the greater part of the residual extractives remain in the circulation. The development of hypertrophy depends on the duration and strength of the irritation. The effect on the left ventricle is produced not only by the local action of the irritant, but also by remote causes. Long-continued stimulation of the vessels will lead to a contraction of their lumen, thickening of the muscular coat, and inflammatory thickening of other coats of the vessels. It is chiefly but not entirely the general circulation which suffers in this way, since the vessels of the lungs admittedly possess much less tone than those of the other parts of the body. The dropsical effusions, further, can exercise a pressure on the vessels of the general circulation, while oedema of the lung is so rare in this condition that it need not be taken into account. In this way the left side of the heart is subjected to much harder work than the right side. In the case of chronic interstitial nephritis the chief factor at work is the thickening of the arterial walls, which is practically limited to the general circulation, and therefore the left ventricle is hypertrophied almost alone in this form of nephritis. It is further possible that in very early cases of chronic interstitial nephritis there are harmful influences at work which are not produced in the kidneys, but act on them and on the vascular system, producing changes quietly, now in the one and now in the other. Lastly, Senator says that in cases of arterio-sclerosis, it is easy to understand why when there are coincident nephritic changes the left side of the heart is peculiarly affected. In propounding this theory, he says that if facts which cannot be reconciled with it be discovered, like many another theory it will have to give way to a better one.

(252) Recovery from Tuberculous Meningitis.

Avanzino (*Rif. Med.*, August 20th, 1903) publishes the following interesting case: A boy, aged 14, was admitted into hospital on February 3rd, 1902, with a history of twelve days' illness, beginning with general *malaise*, wandering pains, headache, constipation, and fever. On admission his temperature was 38.2° C., pulse 90, respirations 28, belly slightly tympanitic, spleen somewhat enlarged, no spots, no respiratory or cardiac disease. On the seventeenth day of the disease there was marked opisthotonos, slight photophobia, intense headache; the temperature showed large morning remissions and evening rises. The pulse dropped to 74. On the twenty-second day there was oliguria and still obstinate constipation, repeated vomiting, and strabismus. The patient was almost unconscious and resented the least touch, uttering a characteristic hydrocephalic cry. The abdomen became hollow, and there was marked wasting. Double optic neuritis and Kernig's sign were present. On the twenty-sixth day lumbar puncture was performed: 30 c.cm. of fluid withdrawn under strong pressure, turbid, specific gravity 1012, traces of albumen, no glucose, no micro-organisms, numerous leucocytes, scarce polynuclear leucocytes, cultures negative, but injection into a guinea-pig caused tubercle in that animal. After puncture the boy improved slightly, and went on improving, and finally left the hospital well on April 20th, and remained well. The optic neuritis gradually cleared up. There was no paralysis throughout. No family history of tubercle. Both mother and father suffered from chronic conjunctivitis, one brother from adenitis. In the author's opinion there is little doubt that this was a case of true meningitis, and not meningism, and that the meningitis was of a tuberculous nature.

(253) A Premonitory Symptom of Mumps.

Miechamp describes an early symptom of mumps (*Journ. de Méd. et de Chir. Pratiques*, April 25, 1903) which he considers of value as enabling a case to be isolated with a view to preventing an epidemic. Patients frequently complain of preauricular pain when some sapid substance comes in contact with the mucous membrane of the tongue. The writer employs the following method: Some substance, such as vinegar or dilute acetic acid, is applied to the tongue. This causes a painful reflex secretion of saliva, which is most marked on the side which first shows the swelling. This symptom is present in all cases, including those which do not begin with parotid inflammation, those attended with simple angina, and in cases beginning with orchitis, whether followed or not by parotitis. On the other hand, in a case of facial erysipelas, with swelling in the neighbourhood of the parotid, and in 2 cases of preauricular adenoids there was no painful reflex secretion of saliva on stimulating the tongue. It is necessary that the patient should swallow after the application of the vinegar, as then the reflex is much more marked. The writer is of opinion that this symptom will allow a diagnosis to be made in many cases that would otherwise remain uncertain; and even should it not actually demonstrate the nature of the disease, it is sufficient to warrant the isolation of all cases that show painful secretion.

(254) New Method of Detecting Albumen in the Urine.

Introna (*Gazz. degli Osped.*, September 13th, 1903) states that by adding formaldehyde to urine either cold or boiled, albumen is precipitated if present. This applies only to serum albumen and sero-globulin, but not to egg-albumen, which is not precipitated. In practice 1 c.cm. of formaldehyde is added to 5 to 6 c.cm. of urine—for quantitative analysis 20 c.cm. are added to 100 c.cm. of urine, and boiled for half an hour in a water bath. The quantity is estimated in the usual way by Scherer's method. The results are said to be better than by ordinary methods, and the possibility of differentiating the kinds of albumen is of considerable advantage.

SURGERY.

(255) Fractures of the Upper Extremity of the Radius in Adults.

Latarjet and Gazet have seen 2 cases of fracture of the upper end of the radius

in adults in less than twelve months (*Lyon Méd.*, September 13th, 1903). They have collected in all the reports of 9 such cases, and have experimented upon the cadaver in order to determine the method of causation. They find that these fractures may be caused by direct violence, by shock either perpendicular to, or parallel with, the axis of the radius; or by indirect violence, either by torsion or by muscular action. An amputated arm, including the forearm and the lower third of the humerus, was seized by the hand and lower forearm, and struck sharply at the level of the neck of the radius against the edge of a marble table; no fracture of the radius resulted, but the upper third of the ulna was broken. On fixing the forearm, the upper part of the radius covered by the soft parts resisted the blows of a hammer. When the strokes of the hammer were applied to the top of the radius the shaft was driven into the head, which splintered vertically. When the violence was applied to the radial side of the palm of the hand no fracture resulted, although in 2 of the cases recorded this causation admitted no doubt. The strongest torsion of the arm in the cadaver produced fracture of the middle of the ulna, but no radial lesion, and this means of causation, the commonest in children, is very rare in adults. Muscular action is an uncommon cause of the fracture, but in 1 case of the 9 collected the lesion was due to a sudden action of the biceps, the arm being called upon to support the whole weight of the body. The osseous lesions resulting may be fissure, or comminution, or when the violence has been perpendicular to the axis of the bone (the commonest cause, although the experimental efforts to produce the fracture by this means failed) simple decapitation. The diagnosis is difficult if, as often happens, no displacement occurs. The slight localized ecchymosis, the pain upon pressure and especially upon forced pronation are practically the only signs. When displacement occurs the fracture is comparatively easy to recognize, the fact that the upper part of the radius remains stationary on pronation of the arm being a pathognomonic sign. Crepitus is not, as a rule, a sign of much value here, as it is easy to confound the rubbing of the head of the bone against an injured orbicular ligament with true bony crepitus. As regards treatment, immobilization in splints or a plaster case is not always necessary. If either is used it should be discarded early in 10 or 15 days. Massage should be begun early. In old cases with loss of movement resection of the head of the radius gives good results. Haemarthrosis of the elbow-joint is not uncommon and may call for surgical interference.

(256) Surgical Treatment of Chronic Dysentery.

STEINER (*Zentralbl. f. Chir.*, No. 36, 1903) at a recent meeting of the German Surgical Society advocated an operative treatment of dysentery and other forms of chronic ulcerative colitis. A case is reported in which a young woman much emaciated and exhausted by chronic ulceration of the large intestine, was restored to health by the following treatment: (1) Occlusion of the diseased portion of intestine from the passage of faecal matter by establishing a false anus in the caecum; (2) frequent and copious injections of cleansing and medicated solutions at the temperature of the body, forced along the diseased intestine from the caecum to the rectum; the agents used in these solutions being chiefly protargol and tincture of iodine; (3) after cicatrization of the ulcers and restoration of the functional capacity of the large intestine, proved by careful microscopical examination of the returned injection, artificial closure of the caecal anus and renewal of the flow of faeces along the whole course of the intestine; (4) operative closure of the caecal opening.

(257) Pancreatic Cyst Removed with Spleen and Tail of Pancreas.

MONPROFIT AND MOREL (*Bull. et Mém. de la Soc. Anat. de Paris*, May, 1903) describe an operation for what they term "retroperitoneal pancreatic cyst." The patient was a woman aged 43. Seven years before the operation she noticed a small painless swelling a little above and internal to the left anterior superior iliac spine. It suddenly began to grow larger in November, 1902; two months later sharp pains set in. In May, 1903, a rounded, movable, obscurely fluctuating tumour was detected on examination. It lay chiefly to the left of the middle line, reaching the left iliac fossa, above it extended four fingerbreadths above the umbilical level. No part of the tumour entered the pelvic cavity. The flanks were resonant on percussion in any position. On May 12th abdominal section was performed; on opening the peritoneal cavity a smooth white tumour was exposed. On puncture with the trocar 8½ pints of a brownish, viscid, syrupy fluid came away. The posterior parietal peritoneum which invested the cyst was incised circularly and the cyst enucleated. Then it was seen that the new growth was closely associated with the spleen and tail of the pancreas; in fact, they were inseparable. It was found that the splenic artery ran for nearly 8 in. in the wall of the cyst; that vessel was ligatured in two places and divided. Then the tail of the pancreas was ligatured close to where it was lost on the surface of the cyst and divided; the cyst came away with the adherent spleen and the excised end of the pancreas after the securing and dividing of some strong adhesions on the upper end of the spleen; this proved very lengthy and difficult. Three days after the operation, when the report was read, flatus was passing freely and the patient was doing well. The cyst wall contained numerous tubular glands lined with cylindrical epithelium.

(258) Epithelioma of the Male Urethra.

SEEING the rarity of such cases (barely forty have been collected) Bolbio (*Il Policlin.*, No. 58, f. 8, 1903) reports the following example: A man, aged 53, was admitted into hospital May 5th, 1901, suffering from acute retention of urine due to uretero-bulbar stenosis, the result of an uncured gonorrhoea thirty years ago. After three days' gradual dilatation he left the hospital. Two days later he returned with retention, fever and swelling in the perineo-bulbar region. May 21st. Internal urethrotomy was performed, and the perineal swelling incised and a little thick pus let out. June 5th. Granulation tissue removed; and June 28th edges of wound sewn up, and patient discharged well July 20th. September 22nd. Patient returned with perineal fistula, and after another operation left the hospital on November 19th with the perineal wound completely healed. On January 10th, 1902, he returned much emaciated, with a hard, painful swelling in the perineum, and several fistulous openings. This was examined, and found to be of an epitheliomatous nature. No further operation was deemed advisable. On March 20th the tumour was the size of an orange, covered with dark, bluish, adherent skin, and in parts ulcerated. In July the patient had two copious haemorrhages from the growths, and finally died on September 10th from exhaustion. There were no metastatic growths. On examination of the growth it was seen to be a tubular, lobulated epithelioma of the perineo-bulbar region growing in the seat of an old chronic urethritis, and almost certainly of urethral origin, although it was impossible to absolutely exclude a peri-urethral origin. There was no family history of cancer.

MIDWIFERY AND DISEASES OF WOMEN.

(259) Cystic Fibromyoma of Uterus.

J. C. WEBSTER (*Journal of Obstetrics and Gynaecology of the British Empire*, August, 1903) describes the successful removal of a cystic fibromyoma of the uterus weighing (with its fluid contents) 87 lb. The patient, a married woman aged 41, was admitted to the Presbyterian Hospital, Chicago, in December, 1902, complaining of great enlargement of the abdomen, with discomfort and occasional shortness of breath. About ten years ago she first noticed a lump the size of a hen's egg in the left iliac fossa. Seven years ago an examination showed a uterine tumour as large as a fetal head, and an attempt said to have been successful was then made to ligature the uterine arteries by the vaginal route. This operation did not lead to any diminution of the tumour, which gradually increased in size. The patient had suffered latterly from menorrhagia. After the menstrual period the size of the tumour decreased. On examination, the thyroid was found to be uniformly moderately enlarged, the heart displaced upwards and to the right and the lower part of the thorax pushed out. The abdomen was enormously distended, the length from the tip of the ensiform cartilage to the symphysis pubis being 35¾ in., and the greatest girth of the abdomen 5 ft. The navel formed a distinct local protuberance 2 in. in transverse diameter. Before operation the patient was kept in bed, iron, strychnine, and diuretics were administered and the diet carefully regulated. At the operation an incision was made below the umbilicus 5 in. in length, and the anterior surface of the tumour was exposed. Adhesions between the tumour and abdominal wal

were divided. A large cyst occupied the upper part of the tumour, and this, with other smaller cysts, was emptied. The abdominal incision was then extended, and the entire tumour lifted out of the abdomen. The ovaries and tubes were found to be enormously hypertrophied and covered with adhesions. The uterus and appendages were removed. For the first part of the operation no general anaesthetic was employed, Schleich's mixture being injected into the skin. Only ℥vj of chloroform was used during the whole operation, and loss of consciousness was not induced. The patient made an uninterrupted recovery. The case is of interest because of the size of the tumour. Very few cases have been described of tumours weighing more than 75 lb., and hysterectomy under such conditions has been almost invariably fatal. Webster ascribes the success of his operation to several factors—to the careful preparation of the patient before operation, to the slight loss of blood, and especially to the small amount of chloroform used and to the application of heat to the body during operation by means of an electric pad.

(260) Vagitus Uterinus.

Peiser (*Monats. f. Geb. u. Gyn.*, August, 1903) reports a case where a fetus was distinctly heard to cry *in utero* for several seconds after an exploration during labour. Air certainly entered at the time, and meconium and stained liquor amnii came away. An anaesthetic was administered, and a fresh examination made; then the child's cries were heard again. The forceps was applied, and a well-developed fetus delivered; it cried out vigorously after birth. Peiser referred to 15 authentic cases of vagitus uterinus. Several factors are necessary for the production of this phenomenon, especially disturbance of the placental circulation and entrance of air into the uterine cavity. Stimulation of the integument may take a part in causing vagitus. Contrary to what might be expected without clinical evidence, the prognosis, when a fetal cry is heard, is by no means unfavourable to the fetus. There was a discussion on Peiser's case when submitted to the consideration of a medical society. The question of disturbance of placental circulation was debated. Küstner remarked that a volume of air passing the mouth of the fetus during manual exploration of the uterus could in part enter its air passages, and would then be expired, the expiratory effort producing a note.

(261) Giant Fetus.

Thoyer-Rozat and Schwab (*L'Obstét.*, July, 1903) report two cases in addition Mario Vecchi's noted in the British Medical Journal of July 4th, p. 36. Schwab's fetus weighed 22½ lb., it had been dead eight days, and was macerated at birth. It was 22 in. long, the biparietal diameter was a little over 4 in., the bisacromial 7¾ in. The thorax was very well developed. Thoyer-Rozat's case is described more completely. The mother had borne nine children; all her labours were normal. When the first pains set in dilatation was found to be complete, the head was very voluminous, the pains grew feeble. Delcamp (St. Jean-de-Luz) applied the forceps, and after great difficulty delivered the head and shoulders. The child died during delivery, it weighed 19¾ lb.; this was carefully verified by three persons. It measured nearly 24 in. in length. The occipito-frontal measurement was 5⅜ in., the occipito-mental 6 in., the bisacromial 7⅜ in. The afterbirth was delivered without trouble; the placenta weighed nearly 1¾ lb., and was over 1¼ in. thick; it was of the battledore type, and its cord was very thick and long.

(262) Prolapse and Pessaries in Age.

Noef (*Centralbl. f. Schweiz. Aerzte*, May 15th, 1903) was consulted by a woman, aged 72, suffering from complete procidentia. As she was old, a Braun's pessary was applied, and it afforded effective support. The patient neglected to come three months later in order to have the instrument replaced, and Noef did not see her till a year later, when she consulted him for another affection. He then attempted to extract it entire, but was obliged to take it away piecemeal, as the vaginal orifice was extremely contracted. The patient declined to have another pessary applied. A few days later the procidentia returned. Noef then applied an elastic pessary, which acted perfectly. He thinks that the contraction of the tissues after introduction of the pessary is an essential feature in the cure of the prolapse, being the return of their tonicity after the weight of the upper structures is taken off by the instrument; the latter, of course, should be elastic, to allow of its periodical removal and replacement.

(263) Acardiacus, Fetus Papyraceus, and Normal Fetus: Triplet Placenta.

Bretschneider (*Monats. f. Geb. u. Gyn.*, July, 1903) reports a remarkable case of triplet pregnancy. One of the triplets was a female, weighing 2¾ lb., and measuring nearly 14 in. in length. It was alive at birth, but soon died. The second was an acardiac monster, the third a fetus papyraceus of the second month. All three had a common placenta.

THERAPEUTICS.

(264) Epidural Injections in Enuresis.

In 1901 Cathelin published a new method of treatment of enuresis by epidural injections, the discovery of which he made accidentally. Acting on the theory of Hallion that in subdural or intra-arachnoid injections the cocaine solutions act on the nerves of the cauda equina rather than on the spinal cord itself, he attempted to produce analgesia by injecting cocaine into the sacral canal. The result was not analgesia, but retention of urine. Thus in a woman who suffered from great vesical pain and frequent strangury, 5 c.cm. of ½ per. cent. solution of cocaine injected epidurally produced complete retention of urine. Cathelin and Albarran then applied epidural injections to cases of abnormal frequency of micturition and enuresis. Fifteen cases of incontinence of urine of varying etiology were treated by injections of 1 c.cm. of a 2 per cent. solution, or 15 to 20 c.cm. of normal saline solution. In 3 in which the incontinence was due to vesical tuberculosis there was no result. Of 5 cases of nocturnal enuresis in children recovery occurred in 3 immediately after the first injection, and improvement after two or three injections in the remainder. Kapsammer (*Wien. klin. Woch.*, July 16th and July 23rd, 1903) has treated 37 cases by this method. The course of treatment was completed in 25, in 6 was for various reasons interrupted, and in 6 was still in progress at the time of writing. In every one of the 25 completed cases the treatment was eminently successful. The technique is simple. A needle, 6 cm. in length for adults, is inserted between the cornua of the coccyx and directed upwards into the sacral canal through the membrane which closes its lower end. The injected fluid surrounds the nerves of the canda equina and does not enter the dural sac. In many cases nocturnal enuresis had existed for years, and there had been difficulty in retaining the urine also by day. Thus a man, aged 25, had micturated every two hours in the daytime and had had nocturnal enuresis whenever he drank anything in the evening since childhood. On January 14th, 1903, 6 c.cm. of a ½ per cent. solution of cocaine were injected epidurally. For the first time for years he retained his water for four hours, and though he drank much there was no enuresis. On January 19th, 7 c.cm. of the same solution were injected. Since then micturition has been absolutely normal. The writer found normal saline solution to be as efficacious as cocaine. In more than 300 injections made in the out-patient room unpleasant after-effects were seen only twice. Once there was vomiting immediately after the injection. A considerable quantity of fluid had been introduced somewhat hastily. In the second case there was vomiting during the following day. It is advisable to make two or three injections at short intervals, even when cure may appear to be complete after the first, and not to watch the effect of the first injection. In this way relapses may often be prevented and the treatment is shortened. Albarran and Cathelin have recommended the method also for increased frequency of micturition in morbid conditions of the bladder, such as enlarged prostate, for impotence and sexual neurasthenia. The writer obtained no important results in such cases and thinks the reputation of a useful method has suffered by these claims. Cathelin has given over one thousand epidural injections without accident. He refers the therapeutic effect to shock of the nerves of the cauda equina.

(265) Treatment of Migraine.

R. Fuchs (*Die Heilkunde Rai*, 1903) discusses migraine and its treatment. Migraine, an inherited nervous affection, occurs in families in which other nervous affections are also found. Thus Ferré records that in 232 out of 308 cases of epilepsy there was a history of migraine in one of the parents. Migraine is also found in combination with other nervous affections, such as neurasthenia, hysteria, and epilepsy. Most males suffering from migraine are in addition neurasthenics. Attacks of migraine are often indistinguishable

from hysteria except by a careful consideration of the whole case, and attacks of true migraine seem to occur in hysteria. The connexion between migraine and epilepsy is still more close. Both are hereditary in origin and often start in early life. The attack in both has a preliminary aura. In epileptic patients an attack of migraine is not uncommon, while cases are recorded in which once or twice in a lifetime an attack of migraine has terminated in a general convulsion with loss of consciousness. The details of treatment should be carefully chosen to suit the individual peculiarities of each case. The most important general indication is the lessening of the nervous irritability, and for this end Fuchs employs a systematic bromine treatment. Should this be unsuccessful, nerve sedatives are given during the attack, and Fuchs strongly recommends a combination of phenacetin 0.5 gram, caffein 0.06 gram, codeine 0.02 gram, guerana 0.2 gram as being the most effectual preparation and the least tonic in its effect. The unpleasant taste of this mixture is a disadvantage in the treatment of nervous women; but tablets are prepared under Fuchs's direction by a firm in Munich in which this defect is avoided. Morphine, if ever given, should be reserved for the most severe cases.

(266) The Therapeutic Value of Rheumatin.

J. Sigel (*Berl. klin. Woch.*, August 3rd, 1903), hearing a very good account of the action of rheumatin, tried it in about 40 cases in Ewald's clinic. Rheumatin, which is the salicylate of salicyl-quinine, is given in powder form in doses varying according to the severity of the case and the age of the patient. The daily dose ranged between 2 and 6 grams. In mild and moderately severe acute joint rheumatism it acts specifically, causing the temperature to fall quickly, relieving the pain in a short time, and diminishing the swelling. At times Sigel found that it acted well after other salicylate preparations had been given for several weeks without effect. In other cases the antipyretic action was so weak that it had to be replaced by aspirin. As Ewald had always been in the habit of emphasizing, it appears wise in severe cases, in which the course is subacute, to change the salicylate preparation frequently if one aims at a rapid and complete result. In this way rheumatin plays an important part, for Sigel has satisfied himself that its action in relieving pain and reducing fever is certainly not less marked than that of the other salicylate preparations. The majority of salicylates are rendered less useful by the occasional appearance of unpleasant side symptoms. Sigel reports that in his 40 cases he has not come across any ill-effects on the heart or kidneys. Disturbances of digestion also were not noticed, while singing in in the ears and giddiness appear to be very rare. He says that rheumatin is of service in the treatment of chronic rheumatism, both of muscle and of joint.

(267) Alsol.

After having used alsol for about a year and a half in his ophthalmic practice, L. Pick (*Therap. Monatsh.*, July, 1903) reports on its action. Alsol is an acetic tartrate of aluminium, and exerts an action similar to the acetate of aluminium. It is soluble in its own weight of cold water, forming a clear solution both cold and hot. It is said to possess a somewhat stronger disinfectant action than the same strength solution of carbolic acid, and it is mildly astringent at the same time. Pick has employed it in a concentration of from $\frac{1}{4}$ to $\frac{1}{2}$ per cent. Finding that warm and cold compresses are of value in the treatment of certain eye affections, he attempted to extend their use by employing alsol. In blennorrhoea neonatorum he washes the eyes out every half an hour, both during the day and night, and obtained excellent results. He mentions both in connexion with this condition as well as in others, that the direct forms of treatment, for example, painting with silver nitrate, etc., must be carried out as well, the alsol solution only acting as a disinfectant and mild astringent. In acute conjunctivitis and acute granuloma he found cold compresses applied for ten to twenty minutes three or four times a day of value. The same results were obtained in chronic conjunctivitis and chronic trachoma. In scrofulous ophthalmia, he applies warm compresses three times a day for about half an hour. For hordeola, and for ulcers of the cornea, iritis, etc., he met with satisfactory results from its application, and comes to the conclusion that he is justified in advising other surgeons to employ alsol in the treatment of the above-mentioned eye affections.

PATHOLOGY.

(268) The Cytology and Infectivity of Hydrocele Fluid.

Barjon and Cade (*Arch. Gén. de Méd.*, September 1st, 1903) add a series of 33 further observations to those already presented to the Medical Society of Lyons in June, 1902. They then drew attention to the frequent presence of spermatozoa in the fluid of idiopathic or essential hydroceles, and their further researches confirm this observation. The present paper deals with 44 cases, and two interesting points are made clear: (1) the frequency of spermatozoa in the fluid of essential hydroceles, the practical importance of the recognition of this fact and its interpretation: (2) the nature of these hydroceles and the part played by tuberculosis in their production. Of the 44 cases recorded, 25 were essential, 16 symptomatic, and 2 were cysts of the spermatic cord. Of the 25 essential hydroceles, 13 contained spermatozoa (52 per cent.). Of the 16 symptomatic hydroceles, spermatozoa were absent in all. This class included hydroceles secondary to trauma, tubercle, syphilis, new growth, gout, and pachyvaginitis. The cytological examination affords a certain diagnostic aid from the presence or absence of these organisms. Their presence is due to the rupture of minute cysts, especially of the epididymis, into the vaginal cavity, and this rupture appears to be, in a large number of cases, the sole and unique cause of the hydrocele. The authors answer the objection that may be raised that the presence of the spermatozoa may be due to a wound of the seminal tube in some part of its course while withdrawing the fluid by the facts that: (1) In twelve out of thirteen positive results, the vaginal cavity was incised layer by layer; (2) the spermatozoa presented varying stages of degeneration and digestion by endothelial cells, instead of being living specimens free in the fluid: (3) they should be also present in symptomatic hydroceles, if their presence is due to this cause. Of the essential hydroceles, where spermatozoa were absent, no pathological explanation is given. The second question, the causal influence of tubercle, was first dealt with by Poncet, who maintains the tuberculous origin of essential hydroceles. Later, Tuffier and Jousset published two confirmatory observations. The authors maintain, however, that the methods employed are open to serious criticism; and particularly the identity of the organism found and regarded as Koch's bacillus. They themselves employed the method of inoculation in 17 cases out of the series of 44, and their results are interesting. Of the 2 spermatic cysts, 1 gave a positive result. Of the 15 hydroceles all the inoculations were negative; 5 were symptomatic (2 pachyvaginitis, 1 chronic syphilitic, 1 gouty, 1 new growth), 10 were essential. In confirmation of this, Widal, in conjunction with Ravaut and Lemière, has during the last three years inoculated the fluid of 10 essential hydroceles with negative results; and Courmont has obtained negative results in 7 similar cases. They conclude by asserting that, in the present state of our knowledge, we are not justified in attributing to tuberculosis the formation of essential hydroceles.

(269) Phagocytic Action of Endothelium of Tunica Vaginalis on Spermatozoa.

Widal and Ravant (*Bull. et Mém. de la Soc. Anat. de Paris*, June, 1902) have already published researches, demonstrated in December, 1900, before the Société de Biologie, on the action of the cells in the tunica vaginalis on fluids effused into its cavity. In a recent case some fluid was removed from the tunica vaginalis from an ordinary case of hydrocele which had been tapped ten days previously. The fluid contained endothelial cells loosened from the inner wall of the tunica. The majority of these free cells contained inside their protoplasm small oval bodies which stained like nuclei; some bore a filament which was coloured red by eosin, and was long enough to hang out of the cells. Some of the cells were stuffed with these bodies, which undoubtedly were spermatozoa: as many as ten of the latter were counted in one cell. The sperm cells probably indicated a slight wound of a seminal duct during the last tapping. Widal and Ravant added to some of the serum sperm cells from other subjects, but they were not digested by the free endothelium. It is clear, however, that endothelium has a phagocytic action on spermatozoa, a fact to be remembered in studying the pathology of fluid effusions and other morbid conditions in parts adjacent to the testes and their ducts.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(270) Acute Glanders in Man.

Gutowski (*Arch. Gén. de Méd.*, September 1st, 1903) describes in detail a case giving the clinical symptoms and the bacteriological confirmation of the diagnosis. In the absence of any clear etiological indication glanders was not suspected until late in the course of the disease. The patient was aged 33 and worked in a foundry; had contracted syphilis ten years previously and had undergone two courses of treatment. The attack commenced with symptoms of influenza, and on the sixth day a right-sided pleural effusion was detected. On the eleventh day a patch of erythema with subcutaneous infiltration appeared over the right ankle-joint. On the twelfth a rhinological examination revealed no changes in the upper respiratory passages. In the evening of this day consciousness was lost and urine and faeces were passed involuntarily. Half a gram of Marmorek's antistreptococcus serum was injected. On the thirteenth two small pustules appeared on the forearm resembling varicella. Microscopic preparations of the pus revealed bacillus mallei, and the same organism was recovered in pure culture from the pleural fluid removed by exploratory puncture. No organism was recovered from the blood; leucocytosis was inconsiderable. The subcutaneous infiltration was diminished after the first injection of serum, and in view of the possibility of a mixed infection 20 grams were injected on the thirteenth and fourteenth days of the disease, 10 grams on the fifteenth. Fresh pustules continued to form on the limbs, trunk, and face, and the patient died on the seventeenth day. No necropsy was obtained. A culture of the organism on potato was characteristic. Animal inoculations confirmed the diagnosis of glanders. The testicular abscesses in the guinea-pig contained pure cultures of bacillus mallei. The case is interesting from the fact that the patient had no contact with horses, that no indication as to the mode of infection could be given by the patient or inferred from his surroundings, and that no point of inoculation was found. Referring to the contagiousness of glanders from man to man, the author points out that its recognition dates from the sixth century, but is of opinion that the degree has been much exaggerated: and he classes it after measles, scarlatina, small-pox, and typhus. Numerous cases are quoted in support of this opinion. He attributes this to the fact that the bacillus mallei will grow upon certain soils and under certain biological, chemical, and physical conditions. It is not inoculable in the ox, white mouse, rat, or old dog: it will not grow at the temperature of the room; it dies in a few days if grown on potato at 37° C. Further, there is no spore formation. He points out that glanders in man occurs almost exclusively in those intimately connected with horses, whereas we are all more or less exposed to the sniffling and snorting of glandered horses in the street. Giuseppe Cao has shown that bacillus mallei passes through the digestive tract of the cockchafer, and retains its virulence; and the author suggests that flies and insects may convey the infection from stables to neighbouring living quarters. With regard to malignity he has never seen a case of acute glanders at the Hospital St. Stanislas recover: and regards the published cases with doubt, as they lack a precise bacteriological diagnosis. He advocates strict isolation, and long inspection of apparently cured chronic cases. For a rapid diagnosis he injects several male guinea-pigs subcutaneously with at least a demigram of the sussuspected material; and others intraperitoneally with 2 to 4 decigrams. Pus from the most recent infiltrations is employed. The classical testicular swelling may occur from other organisms, especially if the injection deviate from the median line, and may be altogether absent, as Leroy and Steinmetz first showed. The author has used a modification of Mari's method with good results. Kittens are inoculated with the pus; after forty-eight hours they are killed, and the blood from the spleen is grown upon glycerine agar in Petri dishes, and after forty-eight hours' growth isolated colonies are transferred to potato, when the characteristic growth is obtained. Six days are required for this process. He regards mallein as useless as a diagnostic agent; for a rise of temperature may occur in the healthy subject, and no rise in undoubted cases of glanders in horses. As a therapeutic agent it is harmful, exercising a haemolytic action, a fact first pointed out by Prouss.

(271) Acute Myelogenic Leukaemia.

Frank Billings and Capps (*Amer. Journ. Med. Sci.*, September, 1903) describe a case of this rare disease occurring in a man of 68 years, and proving fatal within two months. The blood was in a condition of intense leukaemia; of the white cells, myelocytes formed 54 per cent. at the last blood count. Acute leukaemia was not recognized till Ebstein called attention to it a few years ago; in 1895 Fraenkel published an exhaustive study of the disease, in which he came to the conclusion that all cases of acute leukaemia are lymphaemias in which the increase of white cells chiefly or almost exclusively consists of large or small lymphocytes. During the last few years, however, the authors have been able to collect from the literature eight clear cases including their own; a ninth came to their notice while their paper was passing through the press. Most of them began abruptly in the manner of an infection; four cases had a throat inflammation, and in three there was a necrosis of the jaw or palate. With two exceptions the glands were small or moderately enlarged, the cervical group being usually affected. The spleen was also palpable, but rarely much enlarged. Haemorrhage was a constant symptom, and irregular low fever was present in most cases. The anaemia was always severe and rapid, yet poikilocytosis was usually less marked than in a correspondingly severe case of pernicious anaemia. The white cells varied from 16,000 to 540,000, the average count being much lower than ordinarily found in the chronic myelogenic leukaemia. The only real practical difficulty in diagnosis arose from the fact that it is sometimes very difficult to say whether a large mononuclear cell is to be classed among the large lymphocytes or the unripe myelocytes. The authors suggest as a safe rule that when large mononuclears are seen with a considerable number of myelocytes of the same size, and when many of the mononuclears show indistinct granulation, then they may be considered as myeloid cells. They sum up the blood picture of acute myelogenic leukaemia as follows: (1) Anaemia, progressive and severe; (2) a large increase of white blood corpuscles; (3) a large proportion (25 to 96 per cent.) of the white cells made up of myelocytes, large mononuclear cells of the same size, and faintly granular large mononuclear cells (transitional cells); (4) eosinophiles, mast cells, and nucleated red blood corpuscles may be absent or present in varying quantities.

(272) Carcinoma and Diabetes.

J. Boas (*Berl. klin. Woch.*, March 16th, 1903) discusses the behaviour of both the carcinoma and the diabetes when the two diseases occur simultaneously in one patient. Among 366 cases of intestinal carcinoma he has met with the coincidence in 12 cases. Of these 12 patients the diabetes was still manifest in 5, while in the rest it was no longer ascertainable at the time of his observations. As far as he could ascertain, the diabetes had lasted for periods varying between two months and seven years to the patients' knowledge. The amount of sugar varied between 1.2 per cent. and 5.3 per cent., and the ages of the patients, who were all males, varied between 39 and 65 years. Three of the patients were operated on, twice by extirpation of the rectum and once by gastro-enterostomy. Of the first two, the one was free from sugar at the time and made a good recovery. The second, who showed a moderate amount of acetone, died of coma a few days after the operation. The third case stood the operation well and was free from sugar, but died with increasing cachexia three-quarters of a year later. The course of the carcinoma appears to be affected by the presence of the diabetes in the active stages, and the patients succumbed to the disease in a comparatively short time. When the diabetes is more or less latent the carcinoma appears to be rendered less rapid and malignant than usual. As far as the diabetes is concerned, it appears that there are two classes of cases, one in which the glycosuria diminishes as soon as the carcinoma sets in, and the second in which the diabetes does not seem to be affected by the second disease. Boas speaks of the risk of operating on carcinoma in cases of latent as well as progressive diabetes, although it may turn out that in the former the operation is well stood. One should be very careful in not giving a too hopeful prognosis in these cases. In dealing with the treatment of the diabetes, he points out that one must not attempt to render the patient free from sugar at all costs, but a more

moderate regime must be adopted, which is best varied in each case according to its requirements. He finds that cancer patients often have a strong dislike to animal food, and thinks that a moderate amount of carbohydrates may be allowed, and a large amount of fat food in suitable form will give the best results.

SURGERY.

(273) Surgery of the Heart.

Schwerin (*Zentralbl. f. Chir.*, No. 36, 1903) at the last Congress of the German Surgical Society presented the subject of a successful operation for punctured wound of the right cardiac auricle. The patient when first seen by Schwerin about three-quarters of an hour after the receipt of the injury, was pulseless and intensely collapsed. There was a wound in the fourth intercostal space on the left side. The fourth costal cartilage and a portion of the fifth having been resected, the left lung, which was adherent to the back of the sternum, was found to have been wounded. After this had been detached and the pericardium incised, the existence of a cardiac wound was indicated by the issue of a large and forcible jet of blood. The heart having been brought near the external wound by means of a suture passed through the apex of the organ, the freely exposed wound through the anterior wall of the right auricle was closed by three sutures of silk. In spite of subsequent pyopericarditis, empyema, and pneumonia, the patient ultimately made a good recovery, and at the time of this report was able without any trouble to follow his occupation as a butcher. This communication was followed by one from Noll of a case of gunshot wound of the heart which was treated with good results by suture of a perforation of the anterior wall of the left ventricle. No details are given in the abstract of this paper concerning the mode in which the heart was exposed, but the surgeon seems to have followed and enlarged the original wound, which had penetrated through the fifth intercostal space on the left side into the pericardiac sac. Noll holds that any rules for a definite and typical operation in cases of cardiac injury are quite unnecessary, and he objects to extensive resection of the sternum on account of the risks from such procedure of bilateral pneumothorax. He is of opinion that resection of portions of one, two, or, at the most three, ribs, and traction of the margins of incised pericardium towards the opening thus made in the anterior wall of the thorax permit a sufficient exposure of the front of the heart. In the discussion of these papers Barth stated that in the course of last year he had practised cardiac suturing in three cases of punctured wound of the heart, in one of the right and in two of the left ventricle. The subject of one case died on the fourth day from pericarditis and bilateral pleurisy, and the other two patients recovered. This surgeon also holds that it is not advisable to observe any definite plan of preliminary operation for exposure of a wounded heart, and that it is a waste of time to attempt to avoid the pleura, as this membrane is almost always wounded. The best method, Barth states, in cases of suspected wounding of the heart, is to follow the external wound, and at the end of this exploration to be guided by circumstances. In one of his cases he resected a piece of one rib only, in another case he found it necessary to make an osteoplastic resection of the whole width of the sternum. Whether in the treatment of wound of the heart the incision in the pericardium should be at once completely closed, or be left open for the purpose of promoting drainage of the cavity, is still a disputed question. Barth is of opinion that the pericardiac wound should be closed by sutures, as such treatment affords the best means of preventing close and extensive adhesions of the heart to its fibrous sac. In the cases reported by Schwerin and Noll the sac was drained by sterilized gauze. Barth advocates direct suturing in every case of suspected wound, even though there be no immediate danger to life. It is pointed out that although 10 per cent. of the subjects of wounding of the heart may recover without any operation, there is still a risk in such cases of early death from cardiac aneurym. In the same number of the *Zentralbl. f. Chir.* Sick reports a remarkable instance of the results of exposure and massage of the heart in poisoning by chloroform in the course of an operation. The patient, the author states, was brought round after apparent death during one hour, and survived for twenty-seven hours afterwards.

(274) Hernial Appendicitis.

Bichat (*Arch. Gén. de Méd.*, February 10th, 1903) records a case in which the inflammation of an appendix situated within the abdomen caused enlargement and tenderness of an inguinal hernia so as to simulate strangulation. His patient, a woman 73 years of age, gave a confused and unsatisfactory history of her illness. The day before admission into hospital, there had been slight diarrhoea, but afterwards neither faeces nor gas were passed. On examination a tense right inguinal hernia was found, with pain and distension of the right side of the abdomen. The general condition was very bad, and no taxis was attempted, but the sac was opened at once and gave exit to a small quantity of fetid pus. It contained some omentum, but no bowel or appendix. The operation wound was extended upwards and a badly limited collection of pus was found occupying the right flank. There was very little evidence of peritoneal reaction. The appendix, which was enlarged and congested, was resected. The patient died from shock. At the necropsy no other collection of pus was present. The adhesions were very few in number, and there was no actual false membrane. The heart was fatty. The appendix contained a drop of pus and two small oxyures vermiculares. Microscopical examination showed an intense peri-appendicitis and a follicular inflammation. Körte had recorded a similar case in which the hernia was easily reduced, but as the symptoms persisted it was thought that a reduction *en masse* had occurred. A hernio-laparotomy discovered nothing but epiploon in the sac, but on opening the abdomen fetid pus was evacuated, and after the removal of an inflamed appendix the patient made a good recovery. These cases cannot strictly be classed as examples of hernial appendicitis, but as the symptoms are almost identical, and there are connecting links between them and the extreme case in which not only the appendix but a part of the caecum is contained in the sac—such as the occurrence of the tip of the appendix only in the sac, or its presence not in the sac but at the ring—it seems advisable to group them all together. In the ordinary hernial appendicitis, as well as in this rare form, the patients are generally past middle life, the ages varying from 50 to 70. The explanation of the distension of the sac which contains no bowel is not easy. The most probable reason is the increase of intra-abdominal pressure by the purulent collection, so that the hernial sac will not only enlarge as a result of appendicitis, but of other conditions, such as intra-abdominal obstruction.

MIDWIFERY AND DISEASES OF WOMEN.

(275) Vaginal Caesarean Section in Eclampsia.

The following case is reported by H. Saft (*Deut. med. Woch.*, July 23rd, 1903) to demonstrate that the proper method of treating severe eclampsia during pregnancy is by Duehrssen's vaginal Caesarean section. He first saw a woman, aged 42 years, 2-para, who was in a state of deep coma, on January 19th. The patient was in the seventh month of her pregnancy, and had suffered from swelling of the legs and headache during the pregnancy. She noticed on the morning of the 19th that she was blind on awakening, and very shortly after lost consciousness, and was taken with severe eclamptic fits. The coma was very deep, the face cyanotic, and the respiration stertorous. The external and internal os uteri were completely contracted, and there were no labour pains. The urine contained ¾-volume albumen. During the three hours after admission she had five strong fits, but no dilatation of the cervix took place. Saft therefore, after giving an injection of morphine, proceeded to perform the vaginal Caesarean section. The cervix was seized at each side by vulsella, and the vaginal wall was incised in its anterior portion from the orifice of the urethra to the cervix. The bladder was then separated from the anterior vaginal wall and from the cervix, and the anterior uterine wall was then cut through from the vaginal portion of the cervix to the point where the bladder had been separated from the cervix. The edges of the wound were then seized by the forceps, and after the fold of peritoneum had been pushed upwards, the incision in the uterus was enlarged until the hand could be passed into the cavity of the organ. The fetus was turned and extracted by the foot. After waiting for fifteen minutes for the placenta this was removed manually, the cavity of the uterus was packed with iodoform gauze, and the wound in the anterior wall sutured. The vagina was then sutured, leaving a space in the fornix for a strip of gauze between the cervix and bladder. The patient ap-

peared a little better after emptying the uterus, but still remained in a comatose condition. On the following day she had eight eclamptic attacks, and on the twenty-second the coma passed off. She was found to be suffering from a puerperal psychosis, with maniacal attacks, which gradually also passed off. The packing was removed from the uterus on the second day, and on the twenty-fourth day after the operation she was discharged well. The wound had healed by first intention. Saft points out that this operation is far less dangerous than attempting to deliver either by version or by forceps when the os is not fully dilated; and when it is tightly contracted, as in this case, dilatation would have lost too much time. He finds that it is easily and quickly performed, and since it is entirely an extraperitoneal operation, is obviously much to be preferred to ordinary Caesarean section, which has proved a great danger to eclampsia patients especially. The chief danger of opening the abdomen in eclampsia lies in the cooling down of the intestines and the chances of infection, in response to damage to the kidneys which already exists in these cases, also makes the prognosis after laparotomy very bad. On the other hand, the vaginal operation does not expose the intestines and is accompanied by little shock.

(276) Treatment of Retroflexion of the Uterus.

Winternitz (*Therap. Monats.*, August, 1903) in discussing the methods of treatment of retroflexion of the uterus divides cases presenting this anomaly into four groups. The first group consists of nulliparous women married or unmarried, who complain of pain in the back and who are found to have a small movable retroflexed uterus, with no further pelvic complications. These patients have probably been already treated by a gynaecologist, and are aware that misplacement of the uterus is present. They often complain of many other symptoms of nervous origin. In these cases it can be demonstrated that the symptoms are not dependent on the local condition, for when the uterus is put into good position, after operation or pessary treatment, the symptoms often do not disappear, or if they do disappear it is often found on examination that the uterus is again retroflexed. Treatment should therefore be directed to the general not to the local condition. If the patient does not know of the displacement she should not be told of it, and in any case she should not be allowed to concentrate her attention on the pelvic condition. A doctor who is not a gynaecologist is often of most service. If this line of action is to be followed it must, however, be remembered that it is essential that the diagnosis should be made with certainty by a skilled gynaecologist. The second group consists of patients who have borne children and in whom retroflexion of the uterus is the only abnormality discoverable. Here we are forced to conclude that the symptoms depend on the misplacement, for after reposition of the uterus a complete and lasting cure of the symptoms results. This is especially the case where the uterus is somewhat enlarged as well as retroflexed. The third group is that of patients complaining of pressure and of falling of the womb, and where on examination there is retroflexion of the uterus, with some slight degree of prolapse of the vaginal walls. Here the lesion to be treated is the prolapse. A celluloid ring often removes all symptoms, although the uterus remains retroflexed. The ring pessary is more successful than Hodge's pessary. The last group is that of the patients in whom retroflexion of the uterus is complicated by some other pelvic lesion, as for instance endometritis, pelvic peritonitis, or disease of the adnexa. Here the symptoms depend on the complications, and these are to be treated rather than the misplacement. The chief point dwelt upon in the article is that in cases of retroflexion of uterus the subjective symptoms often do not depend on the misplacement.

(277) Prolapse of Cystic Ureter through Female Bladder.

Hibler (*Wien. klin. Woch.*, No. 17, 1903) reports this remarkable condition in an infant aged 6 weeks. The mother noticed something projecting at the vulva, it was clearly pedunculated, and came out of the ureter. It was quite as big as a hen's egg, cystic, and filled with a clear fluid. The cyst was emptied, but it showed no tendency to reduce itself spontaneously and soon became sloughy. On that account it was excised, but the child died with uraemic symptoms. The left kidney had two ureters, one had become closed at its vesical end and greatly dilated forming a cyst. The bladder became distended, cystitis set in, the right and left ureters then underwent dilatation, and the kidney were infected; the right was pyonephrotic. The vesical walls were very thick, the original cause of the obstruction to the supernumerary ureter appeared to be its position in relation to the normal ducts as they entered the bladder.

(278) Retro-placental Haemorrhage in Fifth Month.

Lop (*Bull. de la Soc. Obst. de Paris*, May, 1903) attended a woman, aged 28, who had been married when 18 and borne three children, all to term. None of the three pregnancies were marked by any complication. The patient now believed herself to be in the fifth month of pregnancy. About three weeks before she came under observation haemorrhages set in, at first moderate, then severe, so that she grew very anaemic, without oedema, cardiac complications, or albuminuria. Lop found the cervix patulous; the os admitted the tip of the finger, which brought away little clots; larger coagula then issued from the cervical canal. The haemorrhage was scanty, yet persistent. Rest, milk diet, and alcoholic stimulants in moderation were prescribed; 200 grams of artificial serum were injected daily, whilst every four hours the vagina was douched with water at 104°. Viburnum prunifolium was administered. A few days later a sudden rise of temperature to 101° occurred. Labour was therefore induced by two tampons of gauze soaked in glycerine of carbolic acid, after the usual precautions. Within four hours the patient was spontaneously delivered of a living child, the breech presenting. The placenta, small, and three-quarters of a pound in weight, followed immediately, with some small clots; a large clot lay adherent to its uterine aspect. The fetus was well formed, weighing over 2 lb., and measuring 12 in. Shortly after delivery the patient's temperature rose to over 103°; aniodol was injected into the uterus, the temperature fell, and the patient soon recovered. Lop decided on inducing labour directly the temperature rose, as that symptom implied incipient infection, against which the resisting power of a system debilitated by acute anaemia would be very feeble. The cause of the partial detachment of the placenta was not determined in this case. Its diagnosis was based on the size of the uterus, which corresponded to the seventh month, when, according to the catamenial evidence, the pregnancy had not gone beyond the fifth. At the same time the uterus felt abnormally hard, a symptom which has long been noted in cases of retroplacental haemorrhage.

THERAPEUTICS.

(279) Carbonic Acid in Phthisis.

The usual methods of attempting to battle with tuberculosis of the lung depend on an attack on the bacilli, but in bringing his carbonic-acid treatment forward, Hugo Weber (*Zeit. f. Tuberc. u. Heilstättenwesen*, vol. iv. No. 6) says that he has attempted to influence the disposition, and thus indirectly render the life of the bacilli impossible. The sanatorial treatment aims in the same direction, and he points out that if one speaks of improving the nutrition and raising the general body strength, or of producing an increased production of carbonic acid, one implies the same thing. That his method of attaining this end is an improvement on the sanatorium treatment he tries to show on the ground of 60 per cent. of cures. He states that he is careful to take the term "cure" in its strictest sense, and is prepared to demonstrate his cases. The principle depends on the assumption of an antagonism between CO_2 and phthisis. This he considers to be the case since patients suffering from emphysema and cardiac diseases who suffer from venous stagnation enjoy a large immunity against phthisis. On the other hand, all those children who have been born with stenosis of the tricuspid orifice, in whose lungs there is a want of CO_2, die without exception of pulmary tuberculosis. Weber adds a number of other arguments, which he considers strengthen his contention. Turning to the method, he finds that there is no better sourc of CO_2 than laevulose, which, as he says, can even be oxydised by diabetics. He found that it is not rare to obtain an increase of weight in weakly children of 300 or 400 grams in a week by giving laevulose. He describes several cases of tuberculosis in which laevulose acted almost magically, especially one of a child of 8 years, to whom he gave four teaspoonfuls of laevulose a day, and succeeded in arresting and curing a seemingly hopeless case. One can mostly effect a cure with laevulose alone in

adults, but in some cases, if no improvement takes place, after a few weeks he has devised another means of still further increasing the quantity of CO_2. He injects a perfectly pure liquid paraffin, called antiphthisicum, subcutaneously, in doses of 10 c.cm. twice a day. Sometimes it is necessary to give as many as 200 injections before the course is ended. The injections must be made beneath subcutaneous adipose layer and not merely beneath the skin. He hopes soon to be able to report on 50 further cases which have been treated in this way, and which will give the same percentage of cures as his first 53 cases did.

(280) Substitutes for Quinine in the Treatment of Malaria.

Muehlens says that although quinine is undoubtedly a specific in malaria, there are certain disadvantages in its use, which have caused investigators to seek some substitute (*Deut. med. Woch.*, August 27th, 1903). These disadvantages consist in the bitter taste, the disagreeable after-effects, such as singing in the ears, deafness, sickness, etc., and the fact that in certain cases, quinine may determine a fatal attack of blackwater fever. He reviews the various substitutes. First he deals with salochinin. This drug is tasteless and does not produce any of the above-mentioned after-effects, but he has found that it is not easily absorbed, and must be regarded as a very poor and uncertain substitute for quinine. He mentions cases in which after a reasonable exhibition of salochinin the parasites still persisted in the blood and in which it was found necessary to return later to quinine in the interests of the patient. The next drug is neochinin. The results of his trials with this preparation were but little better than with salochinin. Aristochin, too, was unable to cause the parasites to disappear from the blood when given in doses corresponding to the usual doses of quinine, and only succeeded in producing this result when given in very large quantities. In one case it produced some singing in the ears. His experiment with euchinin are still in progress. In not a single case could he get rid of the parasites by means of rubbing in Credé's colloidal silver ointment, and the same remark applies to the ordinary grey ointment. He next tried the effect of kola, both in the fresh condition and in the form of an extract, as well as the so-called "kalobion-lemonade essence," which is said to be a protective against malaria. None of these were capable of influencing either the fever or the number of parasites in the blood. Simabae extract, too, was found to be useless. As Gautier and others have strongly advised treatment of malaria by arsenic (which had fallen into disuse for a long time). Muehlens next studied the action of this metal, and chose the form of cacodylates. Seven cases were treated according to the methods elaborated by Gautier and Billet, but in no instance could a distinct result be found; quinine had to be given later on in all the cases; methylene blue was tried in four cases, and methylene azure in another four. The latter had no action on the parasites, but the methylene blue certainly was capable of removing the fever, and causing the parasites to disappear from the blood. In one case the drug produced an attack of blackwater fever. The action of methylene blue is not complete until after several days, and is not always certain, but it is of use. Finally, Muehlens tried the effect of the serum treatment of malaria, but without good result. He thus comes to the conclusion that at present we have no satisfactory substitute for quinine in the treatment of malaria, and that methylene blue possesses an action which is nearer to quinine than any other of the suggested preparations.

(281) Gelatine Injections as a Haemostatic in Typhoid.

Hugo Pribram (*Prag. med. Woch.*, 1903, No. 20) records his experiences in six cases of haemorrhage in typhoid fever treated by means of injections of gelatine. These have been used for some time past for haemostatic purposes with good results, but with two sets of drawbacks, the one being a liability to infection with tetanus, the other the production of local symptoms and of fever. To avoid the former danger the gelatine was prepared in a special manner, a 20 per cent. solution being made, filtered, and sterilized three times on three successive days; the greatest care was also used in transferring the gelatine from its tube to the sterilized syringe, and the patient's skin was of course rendered absolutely aseptic. To avoid local complications the gelatine was not used in greater concentration than 20 per cent.; the habitual dose was 2 grams. No infective phenomena followed in any of the author's cases. There was a certain amount of local swelling which always disappeared within twenty-four hours, and in one case a definite attack of fever followed the injection, in four instances out of five. The results in cases of typhoid haemorrhage were as follow: In two cases the haemorrhage stopped immediately after the injections and never returned; in one case it stopped at once, but recurred a month later. In the other three cases the haemorrhage continued; in one of them it ceased after repeated injections, in another it stopped spontaneously after a short while, while the remaining one died next day. Comparing these results with those obtained in the same hospital by other methods it was found that of 16 cases treated by means of tannic acid or ergotine, in 8 the haemorrhage was stopped, in 4 it continued, and in 4 the patient died.

PATHOLOGY.

(282) The Paternal Heredity of Syphilis.

R. Matzenauer (*Wien. klin. Woch.*, No. 7, 1903) discusses the arguments put forward in favour of the assumption that congenital syphilis can be derived from the father of the child, without the mother being affected. Dealing first with congenital disease arising from disease in the mother, he says that it is conceivable that this could take place either as a germinative condition, through infection of the original ovum, or by intrauterine infection through the placenta. The second possibility has been proved beyond all dispute, it being by no means rare to find definite syphilitic changes in the placenta. It may take place if the mother has been infected during, as well as previously to, pregnancy, and although it must be recognized that such an infection in the mother does not necessitate infection of the placenta and of the child, yet when the infection does take place early in pregnancy, the chances that the fetus will be likewise infected are greater. Intrauterine infection through the placenta is recognized in other diseases beside syphilis. The severity of the disease in the mother does not always correspond to the severity of the inherited disease; but as a rule the earlier the child is infected intrauterine, the severer the disease. Matzenauer goes on to describe how the virulence of the disease in the mother may diminish as time goes on, and notwithstanding when the disease is passed on to the fetus, the virus gains its full strength again. The conditions for infection of the original ovum are different. In no other disease is this known to take place, and the arguments brought forward in favour of its existence in syphilis are not strong. The chief of these is that it is said that a mother may remain uninfected and yet bear a syphilitic child. This is based on grounds which are by no means certain. The greater number of such cases have been reported by general practitioners, who have obvious difficulties in carrying out systematic examinations of the genitals, by women's and children's specialists, who also appear to neglect a search for primary lesions. On the other hand, syphilologists have rarely described such a condition. Matzanauer comes to the conclusion, after careful argument, that an infection of the ovum has not been observed. The same applies to infection directly by the spermatic fluid. He finds that the cases described as syphilis arising in the fetus without the mother being affected are in reality cases in which the maternal syphilis is latent, and in support of this contention he points out that between 30 and 40 per cent. of certain tertiary affections, primary and secondary signs cannot be traced. Paternal infection is only claimed for about 20 to 38 per cent. Dealing with the reputed exceptions of Colles's law, he says that there is not a single reliable instance of this, and therefore claims that exceptions do not occur. Every mother of an hereditary syphilitic child is without exception immune. As far as Profeta's law is concerned, there are many instances in which the child of a syphilitic mother has become infected, so this law does not hold good. The child only receives immunity from its mother when it has been infected by her. In conclusion, he draws some practical inferences: (1) The mother of a syphilitic child must be treated with mercury, even when she does not show any signs of syphilis; (2) the mother of a syphilitic child may nurse her child, without fear of infecting herself; (3) syphilitic parents of a healthy child can infect it; (4) a syphilitic man should not marry for many years after all traces of his infection have disappeared, and after he has been treated several times with mercury.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

(283) Rapid Atrophy of Hypertrophic Cirrhotic Livers.

Marcou (*Arch. Gén. de Méd.*, September 8th, 1903) has had the opportunity of observing 5 such cases in private practice during the periods of hypertrophy, rapid diminution, and final atrophy. The exciting cause in each case was some infective disease. He has observed 20 cases of hypertrophic livers in St. Petersburg amongst the well-to-do, occurring in a similar class of men, free drinkers and eaters, who habitually take no outdoor exercise, and who drink vodka before, and cognac after, meals in free quantity. The degree of hypertrophy varied, extending usually from the third interspace to one to four finger-breadths below the costal margins. He is of opinion that they result from a combination of causes, stimulating dietary, alcohol, and want of fresh air and exercise: and that the affection should be styled toxi-alimentary cirrhosis. The course of the affection is slow, and no inconvenience arises until some intercurrent infection disturbs the altered metabolism. In Russia this is usually influenza. Five cases are quoted in full: (1) In which the liver extended from the third interspace to 8 cm. below costal margins at commencement of an attack of typhus, with rapid diminution to normal size at time of death on the fifteenth day: at necropsy a hob-nailed liver, weighing 1,570 grams, was found. (2) In which the liver was irregular and extended from third interspace to 1 cm. below costal margin; death resulted two months after a severe attack of influenza, and at necropsy an atrophic cirrhosed liver, weighing 1,650 grams, was found. (3) In which the liver extended from the third interspace in the mammary line to 12 cm. below the costal margins. After being confined to bed for fourteen days with influenza, the liver began to diminish rapidly, being only 2 cm. below the costal margins at the end of one month. Death ensued four months later after repeated tappings for ascites; no necropsy. (4) In which the commencement of atrophy was determined by an attack of pneumonia three years previously. (5) In which a slight attack of influenza determined the commencement of chronic atrophy. From these observations he argues that hypertrophic livers may pass into the atrophic varieties, agreeing with the current opinion in Russia, and in opposition to that held in France: that this more frequently occurs in the well-to-do and less so in the poorer classes, whose resistance is diminished; that the hypertrophy represents an active cellular defence, and is, in fact, a compensatory change which may last indefinitely in well-cared-for patients; that the resistance of the liver may yield rapidly to infection, just as a compensated hypertrophied heart may dilate under similar circumstances. He draws two practical conclusions: (1) If a rapid diminution in the size of an enlarged cirrhotic liver takes place during the course of some infectious disease, the prognosis is grave; (2) if, however, no diminution has taken place during the infection, the prognosis should be guarded, for rapid atrophy may occur after a short interval.

(284) The Excretion of Volatile Fatty Acids in Urine.

In working at the excretion of volatile fatty acid in urine, F. Rosenfeld (*Deut. med. Woch.*, March 26th, 1903) starts on the basis of v. Jaksch's studies, which go to show that traces of these volatile fatty acids are present in every normal urine; but the same acids are not found in each urine, and in certain diseases of the liver and in fevers the acids are increased. Since Rosenfeld finds that the increase and diminution of the volatile fatty acids is of diagnostic and prognostic importance, he desires to induce others to turn their attention to them. The method of determining the quantity of the acids is as follows: A certain quantity of urine is distilled (according to Liebig) with sulphuric acid, and the distillate is titrated with a one tenth normal soda solution. The only source of error lies in traces of benzoic acid, which, however, may be discarded, as they only occur very rarely in human urine. The urine must be fresh, and the distillation must not be carried too far, as the HCl could then go over into the distillate. He determined the normal acid value for patients taking full hospital diet. This value is found to vary with the diet, and theoretically, the volatile fatty acids may be derived from albumen, carbohydrates, or fats. Rosenfeld describes some experiments which lead him to believe that the volatile fatty acids are the result of disintegration chiefly of albumen, largely taking place in the intestines. He found that they were diminished in febrile erysipelas, slightly dimished in scarlatina, morbilli and diphtheria, and in pneumonia. They were increased in all febrile conditions in which disintegration products are absorbed, as in suppurative tonsillitis, septic diphtheria, purulent empyema, and in suppuration and effusion of blood. In the early convalescence of pneumonia and in icterus they are increased in urine. He recites the details of a case in which a high value of the volatile fatty acids in pneumonia pointed to suppuration, and this was found to be correct, when, on the fourteenth day, puncture into the pleura disclosed an empyema. The same diagnostic import was met with in a case of subphrenic abscess, and he says that he has met with many other such examples. Dealing with diseases of the stomach, he found that in carcinoma the volatile fatty acids stood at at least the top value of the normal, which he regards as due to ulceration, breaking down, and haemorrhages. In ulcer of the stomach and gastrectasis, either with hyperacidity or normal acidity, the value is considerably increased: in congestive conditions depending on carcinoma, with subacidity or anacidity, the value was either high or heightened; and in conditions depending on old scars of the pylorus or gastroptosis, with subacidity or anacidity, the value was much diminished. The test may be found as a valuable assistance in early cases of carcinoma ventriculi.

(285) Diastolic Cardio-pulmonary Murmur.

De Vivo (*Rif. Med.*, September 2nd, 1903) describes a cardio-pulmonary murmur that was diastolic. It was observed in a woman, aged 66, who died from chronic interstitial nephritis. The heart's apex beat was in the fifth space, and near the anterior axillary line (the chest was narrow) there was no thrill. The upper limit of cardiac dullness reached the lower margin of the fourth rib, the lower limit, the upper margin of the sixth; the lower margin reached to within 2 cm. of the anterior axillary line, the right to the left edge of the sternum. In the mitral area a soft superficial diastolic murmur was heard with maximum intensity above and a little inside the apex beat. This murmur was not conducted into the axilla or behind, nor in the pulmonary or aortic areas. It was constant but of varying intensity; not changed by position, by respiration, or by pressure with the stethoscope. There was no accentuation or reduplication of the second pulmonary sound. The murmur ceased shortly after the closure of the aortic and pulmonary valves. It was diagnosed as cardio-pulmonary. At the necropsy, except that the heart was rather wasted; it was otherwise quite sound, and there was no valvular disease. The linguiform process of the left lung was elongated and slightly emphysematous, and part of the lower lobe was ateletaxic and fixed to the diaphragm. As to the pathology of these cardio-pulmonary murmurs the author believes that they are always of inspiratory origin (whether systolic or diastolic). For him the production of a murmur by pressure on a piece of lung, that is, a murmur of expiratory origin, is contrary to the laws of physiology, and impossible. The partial emphysema is a result of the aspiration into the portion of lung, which happens at each systole. The conditions for producing a diastolic cardio-pulmonary murmur are adhesion of a part of the lung to the anterior surface of the heart; when the lung is free the murmur is systolic: another condition is a small-sized heart. Advanced emphysema is an unfavourable condition.

SURGERY.

(286) Linear Electrolysis in Urethral Stricture.

Rafin (*Lyon Méd.*, September 20th, 1903) records a series of clinical observations of the results of linear electrolysis of strictures of the urethra. In the first 4 cases the operation was performed by other surgeons, and each of the patients applied for treatment on account of a return of the stricture. It would seem that linear electrolysis is a less dangerous operation than internal urethrotomy, since a cauterized surface is less likely to absorb septic material than the wound made by a knife. Noguës has published 980 cases of internal urethrotomy, with 11 deaths. Rafin records 1 death after internal urethrotomy and 1 after linear electrolysis. In both cases the necropsy showed old-standing double pyelonephritis, so that the operation in each instance was not wholly responsible for the result. After the electrolysis the patient's general condition improved,

the terminal attack dating from an attempt to pass a catheter ten days after the operation. It is generally advised not to exceed an intensity of 20 milliampères for electrolysis, and it was found that this failed to divide hard strictures. Of course, if pressure had been used, the operation would have become forcible dilatation. Internal urethrotomy is safer here than increasing the current to 40 or 45, as practised by Guyon. Electrolysis is not a method applicable to the treatment of all urethral strictures. For instance, when, as in 1 case of the series recorded, the stricture is primarily periurethral, a perineal mass causing constriction by pressure, little benefit could be anticipated from electrolysis, whereas a perineal dissection to free the urethra gave an excellent result. In all cases of linear electrolysis catheterism was found necessary both to complete and to maintain the dilatation.

(287) Prostatitis due to Intestinal Lesions.

IT is usual to regard prostatitis as related to some affection of the urethra or bladder. There are cases notwithstanding which can be traced to intestinal absorption, and it is important to recognize them, as the treatment differs considerably. Le Clech has investigated this variety of prostatitis (*Thèse de Paris*, 1903) of which he has collected a considerable number. Prostatitis of intestinal origin in common with chronic forms of the disease sets in gradually; in fact it is uncommon for the patient to complain of any inconvenience until an acute exacerbation sets in, accompanied by feeling of weight, pain, and difficulty in micturition. Treatment consists in relieving constipation, haemorrhoids, or any anal lesion which may be present, and the daily administration of a glass of one of the usual waters may prove of considerable use. In some cases the dilatation of the anal sphincter may afford immediate relief, as spasmodic contracture is very frequently present. Should there be a more general lesion of the intestinal tract, purgatives, copious injections, and milk diet are indicated, and at the same time protargol (1 to 7 per cent.), or silver nitrate (1 to 5 per cent.) may be injected into the bladder. Local massage to the prostate will be of benefit, and the administration of a suppository containing extract of belladonna. On the authority of Guyon, massage is one of the most valuable methods of dealing with chronic prostatitis. In the majority of cases patients recover completely, though the time which is required varies from four weeks to three months. Frequently this form of prostatitis is met with in elderly persons who suffer from habitual constipation, sometimes as the result of dysentery, haemorrhoids, or any condition which may cause intestinal infection.

(288) Operative Treatment of Cancer of the Stomach.

PETERSEN (*Zentralbl. f. Chir.*, No. 36, 1903) in a communication to the German Surgical Society reports that the results of recent clinical experience at the Heidelberg clinic are in favour of resection as opposed to gastro-enterostomy. The former operation, he states, is not more dangerous than the latter. In the last 100 cases of gastro-enterostomy for cancer of the stomach the mortality was 18 per cent. The average duration of life after this operation, which resulted in considerable relief of gastric pain and disturbance, was from 4 to 5 months. In the last 33 cases of resection the immediate mortality had been reduced from 35 to 17 per cent. The chief danger of gastro-enterostomy, the author states, is pneumonia, which occurs much more frequently after this operation than after resection. The prospects of the radical method of treatment have of late greatly improved. Care must be taken, however, in resection to remove the gastric and duodenal walls far beyond the seat of disease. Even in cases of recurrence after resection the average duration of life is as long again as that after gastro-enterostomy.

(289) Veld Sore.

HARMAN (*Journ. of Path.*, August, 1903) describes the general clinical manifestations of the veld sore. It follows usually slight abrasions, a blister forms, and a superficial ulcer results of extremely chronic type; in some cases the first manifestation is a group of minute herpetiform blisters. By far the greater number occur on the backs of the hands or wrists, they may extend from this on to the forearm or the forearm may be alone affected; on the leg they are found on the extensor surface from ankle to knee. The whites, British and Boers, were alone affected, and those in contact with horses more commonly than infantry. The history of the occurrence of the sore points to its connexion with a kind of scorbutic condition due to dietetic causes. The most efficacious treatment was found to be a thorough cleansing with mercuric chloride (1 in 1,000) and the removal of all loose epithelium, dusting with calomel and dressing with dry absorbent wool fixed with strapping. The bacteriological investigation of the sore is described, the material used being for the most part unbroken blisters. In 8 cases a coccus was found producing smooth circular colonies rapidly colouring yellow; in one of these there were in addition a few white colonies of staphylococcus and in another a few streptococcus colonies; the organism was compared with staphylococcus pyogenes aureus and the chief difference was found to be that the latter grew less luxuriantly and produced liquefaction more slowly. The characteristic organism showed great resistance to heat, drying, and antiseptics, considerably superior to that shown by the staphylococcus pyogenes aureus. A personal experiment showed that the condition could be typically produced by rubbing some of the blister fluid into an abrasion, and from the lesion characteristic cultures were obtained. That the organism is causatively related to the sore and also that it is not a form of the staphylococcus aureus there are the facts that the sore is quite different from any lesion at present recognized as a result of an infection with the latter, that its growth is more luxuriant, that it is always disposed as a diplococcus, and that it is more highly resistant than the common organism. The "Natal sore" would appear to be of the type of the local skin abscesses common in hot moist climates.

MIDWIFERY AND DISEASES OF WOMEN.

(290) Conservative Operations on the Uterus and its Appendages.

W. P. MANTON (*Amer. Gyn.*, August, 1903) has during the last five years performed 62 conservative operations on the uterus and its appendages in 53 patients. Of the 53 patients, 37 were married and 16 single. The operations were: myomectomy, 10 cases; resection of one ovary, 20; resection of both ovaries, 6; puncture of an ovary with destruction of cysts, 8; puncture of both ovaries with destruction of cysts, 6; resection of a tube, 8; resection of a tube and ovary, 2; resection of both tubes and ovaries, 2. Of the 53 patients, 50 were relieved symptomatically and have remained well. In one case the resected ovary subsequently developed a cyst, and was removed. In two other women the symptoms were only partially relieved, and in both cases the reconstructed ovaries had to be removed. Three of the women are known to have subsequently become pregnant; of these, one miscarried at the third month, the other two were delivered of living children. Thus the record of the operations is: 94.3 per cent. of symptomatic cures, 5.6 per cent. of failures, 5.6 per cent. of pregnancies, and no deaths. Comparing conservative and radical operations, the mortality of the former at the highest computation is only at the rate of 2 per cent., while of the latter, even under the best operators, the mortality is from 5 to 6 per cent. The percentage of the symptomatic cures under the two methods is more difficult to estimate, but the advantage appears to lie on the side of conservative treatment. On this side, also, must be noted the more rapid convalescence, the more satisfactory improvement in general health, the maintenance of the normal functions of the reproductive organs, with the continued possibility of pregnancy.

(291) Acute Appendicitis, Pyosalpinx, and Parovarian Cyst.

CHAVANNAZ (*Rev. Mens. de Gyn., Obstét., et Péd. de Bordeaux*, November, 1902) reports a case of clinical interest. The patient was a robust countrywoman, aged 28, said never to have been ill. Pregnancy had never occurred, but the vagina was capacious. She had an attack of vomiting and abdominal pain a fortnight before she came under Chavannaz in a hospital. The sickness rapidly ceased, but tympanites developed and was followed by fever. On the thirteenth day the patient appeared exhausted, but had not the facial expression of peritonitis. There was a visible swelling in the right iliac fossa and hypogastrium, resonant excepting in its centre where a vague sensation of fluctuation could be detected. A fluctuating convex swelling occupied the right fornix, extending forwards and also into Douglas's pouch. The uterus was fixed and lost in the mass, the cervix alone being distinct. Diagnosis was doubtful, suppurating appendicitis, with pus in the pelvis or

else twisting of the pedicle of a small ovarian cyst was suspected. At the operation a thin-walled parovarian cyst was discovered under adherent omentum. It was tapped and clear fluid came away. Behind it adhered an enlarged vermiform appendix as big as a little finger; on detaching it some pus escaped. The appendix was amputated after ligature of its base with catgut, the stump was touched with the thermo-cautery and closed by three catgut sutures. The appendix, 4 in. long, contained a faecal mass as big as a cobnut; a second lay in a collection of pus around the inflamed structure. When the parovarian cyst was removed another cystic tumour was discovered; it was a pyosalpinx adherent to the bladder, rectum, sigmoid flexure, uterus, and pelvic walls. Separation of the adhesions and removal of the pyosalpinx proved very difficult; a Mikulicz drain with a large rubber tube was passed into the pelvis and removed the third day. The patient recovered.

(292) Sponge Retained in Uterine Cavity.

Morestin (*Ann. de Gyn. et d'Obstét.*, July, 1902) exhibited before the Société Anatomique de Paris a piece of sponge, of inferior quality, about as big as a pigeon's egg, which had been introduced a week previously into the vagina and missed after coitus. Pain and free mucopurulent fetid discharge set in. The os was wide, the cervical canal admitted the tip of the forefinger, and the sponge was detected and removed with perfect ease. The patient, aged 40, had for many years used the sponge without any ill-effect. The possibility that the foreign body had been introduced by an abortionist into the uterine cavity or had been passed into the vagina by the patient, a prostitute, to conceal menstruation, was raised, yet her own explanation seemed trustworthy. For medico-legal reasons it is advisable to bear in mind that a small sponge may possibly be forced into the uterine cavity during coitus. Morestin notes that whilst foreign bodies are so often retained in the vagina, the uterine cavity is very rarely the receptacle of such bodies, probably because they are rapidly expelled if introduced. He himself once exhibited a hairpin removed from the uterus of a young woman, and for the literature of the subject refers to Neugebauer, to Caraès (*Thèse de Paris*, 1894), and to Picque's report presented to the Société de Chirurgie, January 12th, 1898.

(293) Fibroid and Haematometra in Adult.

Rosenthal (*Monats. f. Geb. u. Gyn.*, December, 1903) met with a remarkable complication in a woman, aged 39. She had typhoid with cerebral mischief when 12; at 18 the period appeared, and was seen once more, after which occasion it ceased altogether. She married when 21, but left her husband two months later, and never had connexion afterwards. When 38, haemorrhages set in, and lasted for two or three weeks; the abdomen had been increasing in girth for a year or two. Rosenthal found that she was very emaciated, and a tumour of about the size of the uterus at term lay in the abdomen; a smaller body was detected anterior to it. The cervix was small, and no os could be detected either by sight or touch; diagnosis was impossible before an abdominal incision was made. Then the tumour was found to be a fibromyoma 12 lb. in weight, springing from the lowest part of the cervix above the vagina; it had pushed the uterus upwards. The uterus weighed 1¾ lb., and contained 4 oz. of thick, dark blood. The uterine wall was over 1 in. thick and continuous inferiorly, where it was thinnest, with the capsule of the tumour. No canal or opening could be traced between the cervix and the uterine cavity. The ovaries were atrophied. There was some difficulty in removing the tumour and uterus. Peritoneal flaps were cut and sutured together, so that the wound was made extraperitoneal and drained from the vagina. The patient recovered.

(294) Haemorrhage from one Nipple: Haemophilia (?).

Krukowski (*Monats. f. Geb. u. Gyn.*, December, 1903) attended a Jewish multipara, aged 54, for pains in the ankles and left elbow-joint. She was also much alarmed on account of occasional haemorrhage from the left nipple, which was sometimes very free. It had continued for two years, and prevailed more in summer than in winter. The patient had borne ten children, nine were living. The first bled freely when circumcised and died of smallpox when an infant. The second had been subject for two years to epsistaxis; he also suffered from dangerous haemorrhage after circumcision. The patient's menopause was complete at 48. She had suckled all her children. Krukowski suggests that perhaps the fact that she had been continually bearing or suckling children for 20 years might account for the bleeding through the medium of a profound neurosis, but the fact that only one nipple bled is against this theory and against the probability of an alteration of the constituents of the blood. The patient's relatives were healthy, but it appeared that there was a tendency to bleed in the male line, though not in her mother's family. The elbow was fixed with atrophied muscles, the ankle-joints stiff, their integuments red and swollen; there were many varicose veins in the lower extremity. Both mammae were free from evidence of any new growth; blood flowed rapidly from the left nipple on pressure.

THERAPEUTICS.

(295) Heroin.

A. Crha (*Die Heilkunde*, May, 1903) describes the action of heroin. Heroin is specially beneficial in the treatment of phthisis. A dose of 0.003 gram given at night to patients kept awake by cough ensures ease for from four to eight hours, and the cough next day is found to be looser than before. In advanced cases the subjective symptoms of distressed breathing and pressure on the chest are relieved as effectually as by morphine, and in some cases the breathing becomes slower and inspiration more prolonged. No effect is produced on night sweats. In laryngeal tuberculosis the drug is of great benefit. The troublesome cough disappears after its prolonged use. In one case where the pain in swallowing was such that cocaine had to be applied several times a day applications twice a day of a 1 in 30 solution of heroin afforded relief. In haemoptysis heroin replaces morphine, and in no case causes the vomiting which is so frequent after morphine. The drug has no harmful effect on the alimentary tract, and, indeed, the dyspepsia of phthisical patients has often improved rapidly when heroin was given for the cough. Crha has employed heroin in acute and chronic bronchitis, and has found it a good substitute for the usual narcotics. It diminishes the cough and lessens the pain on breathing. The distressed breathing of emphysematous patients when dependent on heart disease is relieved even before rest and heart stimulants have had time to act. In one case of cardiac asthma the customary nightly attack was prevented by a dose of 0.005 gram of heroin. There is no effect on the heart's rhythm. As an analgesic heroin is not of much benefit except in diseases of the genital organs. Thus tampons steeped in glycerinated solution of heroin (1.5 in 1000) quickly relieve the pain of an early perimetritis. They have less effect in chronic perimetritis. As a hypnotic heroin has no direct action. It may be injected instead of morphine before giving ether as a general anaesthetic. It will then lessen the stage of excitement, hasten the narcosis, and prevent post-narcotic vomiting. A great advantage which heroin possesses over earlier narcotics is that only small doses are needed. Six to 8 drops of a 1 per cent. solution of heroin operate as effectually as 15 drops of 2 per cent. codeine, and 3 to 5 mg. of heroin as 0.01 gram morphine. Moreover, it is only after long use that the dose of heroin needs to be increased to any appreciable extent. Heroin can be safely given to old people when morphine would be dangerous from its effect on the heart.

(296) Adrenalin for Intestinal Haemorrhage in Typhoid Fever.

Graeser (*Münch. med. Woch.*, July 28th, 1903) has had a good experience with adrenalin in the treatment of haemorrhage in typhoid fever, and reports the case. The patient was a female of 36 years, and stated that she had been taken ill during the second week in April with an influenza-like cold; fever appeared later, and "crampy" vomiting and attacks of coughing also were noted. On the 26th she was brought into hospital. There were signs of diffuse bronchitis, with little stringy viscid sputum, fever, and slight traces of albumen in the urine. The next day a red punctate erythema appeared, accompanied with swelling of the face. The rash was distributed over the face, arms, legs, and body. On the 22nd a patch of dullness was noted at the left base, with bronchial breathing; the sputum became mucopurulent and bloody, and on the 24th distinctly rusty. On the 29th the patient had some shivering and sweating, and the temperature fell to normal on the following day. The pulmonary signs, save the bronchitis, disappeared on the same day, but there remained vomiting and

diarrhoea. On May 6th the temperature rose again, and the patient became slightly delirious. On the 15th a roseola rash appeared on the chest and abdomen and for the first time swelling of the spleen was made out. The typhoid condition continued little altered until the 21st, when a copious intestinal haemorrhage set in. The temperature sank to 99·8° from 104°, and the pulse-rate was 108. In spite of the application of ice, opium, bismuth in large doses, and injections of ergotin, the haemorrhage recurred during the following night and day. The patient had become extremely anaemic, and the pulse was scarcely perceptible. Fearing that the next bleeding would kill the patient, Graeser tried as a last refuge adrenalin hydrochlorate. He gave 30 drops in some saline solution every three hours. The preparation did not produce any untoward symptoms, the bleeding ceased and did not recur. She was extremely anaemic, but, as the infection appeared to be less severe after the haemorrhage, she gradually improved and ultimately recovered. Graeser says that he is not in a position to decide whether adrenalin given internally acts by stimulating the peripheral vasomotor nerves, or by stimulating the vagus centrally, but he is convinced that it is capable of arresting intestinal haemorrhage. He is also satisfied that it can be given internally with safety.

(297) Clinical Experiences of Electro-magnetic Treatment.

A. V. SARBO (*Deut. med. Woch.*, January 8th, 1903) has treated 78 of his patients with the electro-magnetic (E. C. Müller's) apparatus, which as he points out gives a low tension current (100 to 110 volts), with infrequent alternations, of high intensity (10 to 40 ampères). Of the 78 patients, 55 were improved, as will be seen below. Among those suffering from various forms of neuralgia, he records the trigeminal, intercostal, and brachial cases together. Their number was 17, and of these 5 were cured, 6 were considerably improved and only 6 were uninfluenced. The smallest number of applications was 10 and the largest 31. In one of the improved cases, a recurrence took place; 13 cases of sciatica were treated in this way, and 2 were cured, 4 considerably improved, and 4 uninfluenced. The number of applications varied between 25 and 66. Lumbago and muscular rheumatism were cured in all of the 6 cases. These cases stood the strongest currents. Considerable improvement was obtained in a case of locomotor ataxy, with paraesthesiae, for which latter the treatment was undertaken. In another case of the same disease, gastric crises were successfully dealt with. The third case with heart symptoms was also cured of them. In a number (19) of sleeplessness, some of which were uncomplicated cases, and others were depending on some other condition, for example, neurasthenia, hysteria, Graves's disease, etc., 2 cases were not improved, while the rest derived benefit from the treatment. The length of the treatment varied considerably in these cases, but as a rule, patients could do without sleeping draughts after from four to five sittings. Although the time since the treatment was conducted does not exceed six months, v. Sarbo considers that the effects are probably lasting. He has not had any case of recurrence of symptoms. He adds some remarks on the application of the currents and on the possible method of action.

PATHOLOGY.

(298) The Mode of Action of Antitoxins on Toxins.

BORDET (*Ann. de l'Inst. Pasteur*, November 3rd, 1903) considers that the fact that antitoxin counteracts toxin in virtue of direct combination is settled, but that the exact nature of the reaction remains to be defined. It has been shown that the absorption of an active principle of the serum by the attracting substance of cells does not obey a law of constant proportion, varying with the conditions of experiment, and the process has been compared to the absorption of colours. Some have considered the process purely mechanical (surface adhesion, etc.), but this is not justified; that in the case of sera and sensitive elements true affinities come into play is indicated by the principle of specificity. What are the conditions of combination of toxin and antitoxin? It is known that an exact quantity of antitoxin is necessary to neutralize completely a given quantity of toxin. To those who admit the direct action of toxin and antitoxin this is not a matter of surprise. Ehrlich has, however, drawn attention to a certain phenomenon. Supposing a given quantity of antitoxin is necessary to neutralize 100 lethal doses of toxin, if 101 lethal doses are employed in the mixture, the animal should die: but this does not occur, and, in fact, the quantity of toxin may be greatly superior without the mixture being lethal. This seems to point to the possibility of toxin and antitoxin being combined in variable proportions. It is evident that, according as one adopts the view of the combination of toxin and antitoxin in fixed proportions, or that of the union of the two in variable proportions, one will be led to attribute to the mixture of toxin and antitoxin distinct compositions. In the first case we should have to consider that the mixture contains two substances—toxin free and active and toxin saturated and harmless; in the second case we should have to suppose that the mixture contains only one substance—toxin incompletely saturated and simply attenuated. The phenomenon of Ehrlich is quite explainable if the idea of the combination in variable proportions is accepted. Ehrlich explains the phenomenon differently; he supposes that a toxic bouillon is complex, and contains several poisons, some very active, the toxins properly speaking and some less active, the toxones. The molecules of toxin and toxone absorb equal quantities of antitoxin, but the toxin attracts more antitoxin than the toxone; if to a completely neutralized toxic bouillon more toxin is added he supposes that the new toxin seizes on the antitoxin which is in combination with the toxone, and in the new mixture any free toxic material is of the nature of toxone, and relatively inoffensive. In this explanation the existence of several factors—for example, the toxones—is hypothetical. Bordet has studied the question in relation to the mode of action of antialexin on alexin: his experiments have been carried out by the admixture of sera containing these two bodies, using red cells mixed with alexin-free haemolytic serum as an indicator. These antagonistic sera exhibit the phenomenon of Ehrlich, but the haemolytic test showed that the antialexin is distributed over the whole of the alexin present in a mixture of the two sera; it does not neutralize completely part of the latter without affecting the excess, and the explanation of Ehrlich does not offer a proper interpretation of the phenomenon. In each mixture of alexin and anti-alexin a new body is formed, a complex of two antagonistic substances whose composition depends on the proportion of the two elements. The anti-alexin attenuates the alexin, and if the dose of the former is increased this attenuation progresses up to complete abolition of toxic activity. There is no fixed relation of combination, and the proportions are variable. If this view be grasped, certain known but enigmatic matters become intelligible; for example, a mixture of toxin and antitoxin inoffensive to one species may manifest a definite toxicity to another species. According to the view of variable combination, a mixture of toxin and even a small dose of antitoxin does not contain any toxin in its primitive condition, but is a complex (attenuated toxin), which is a new body with characteristic properties. It is natural to suppose that its toxic power may be sufficiently attenuated to produce no effect on some species, while other species will show a real sensibility to its action. It is also possible to suppose that a toxin, even if entirely saturated with antitoxin, may still be poisonous to some species and some individuals; in fact, according to this view there is no radical difference between attenuation and neutralization of toxin except one of degree.

(299) Tetanus Spores in Gelatine.

TUCK (*Journ. Path.*) examined fifteen specimens of gelatine; in six specimens of French gelatine one contained tetanus spores, in four of German gelatine one contained the spores, of five English specimens they were present in four. The process of manufacture, the treatment of hides and bone with lime and hydrochloric acid and the extraction with warm water (60° to 80° C.) account for the presence of the organism. Tetanus cultures, whether pure or mixed with B. subtilis, were always killed by ten minutes' boiling; out of fifteen specimens of gelatine examined three containing tetanus spores were not sterilized after the third boiling of thirty minutes on consecutive days; eight were completely sterilized after the second boiling of thirty minutes, and five after the first boiling of thirty minutes. Only one exposure of ten minutes at 120° in the autoclave was needed for complete sterilization of all samples. According to the writer no fear of tetanus infection need be entertained if the solutions used be subjected to the action of circulating steam for half an hour.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

(300) Orthostatic Albuminuria and Movable Kidney.

Sutherland (*Amer. Journ. Med. Sci.*, August, 1903) holds that orthostatic or, as it used to be called, postural albuminuria is the commonest form of albuminuria of adolescence. It is distinguished from other allied conditions by the fact that the pulse tension is normal or lowered, and there is a characteristic want of tone in the whole vascular system. Orthostatic albuminuria is a symptom and not a disease, and is most commonly attributed to a disturbance in the central nervous system which produces vasomotor weakness in different parts of the body and more especially in the kidneys. In the present paper the author points out a curious association between this condition and movable kidney. He has studied 40 cases of the symptom in adolescence, in which 10 were males and 30 females; of these 15, or 35 per cent., had movable kidney, 2 being males and 13 females. Of these 15 cases in 5 both kidneys were movable, in 10 the right kidney was alone movable, while in none was the left kidney alone movable. Of associated symptoms abnormal pulsation of the abdominal aorta was noted in 9 cases, and abdominal pain in 10. The average age of the patients when first seen was 10½ years; the youngest being 7 and the oldest 14 years. It may be noted that Sutherland finds that the only affection of adult life in which pure orthostatic albuminuria is present is Graves's disease, in which abnormal pulsation of the abdominal aorta and movable kidney are frequently observed. He further states that he has met with more cases of movable kidney among 40 cases of orthostatic albuminuria than among all the other patients examined at a children's hospital during a period of 15 years. The abdominal pain was in some cases definitely associated with the kidney condition. It simulated at times a characteristic pain of a renal crisis, while at others it could be evoked by compressing the kidney between the hands. With regard to the causation of this condition the writer points out that, apart from traumatism, the production of mobility of the kidney occurs either when the supporting tissues have been weakened or the weight of the kidney increased. In the cases recorded he considers the latter factor responsible, the vascular tone being lowered and the weight of the kidney increased by its surcharge with venous blood upon the assumption of the erect posture. Abnormal pulsation of the abdominal aorta is a further evidence of lowered vascular tone, and it is suggested that a similar pulsation may occur in the renal arteries. With regard to treatment the author has found the use of an abdominal bandage of very little service. The question as to whether the amount of albuminuria is dependent upon the mobility of the kidney could only be decided by performing the operation of nephropexy, which was not indicated in any of the writer's cases.

(301) Myopia in Diabetes Mellitus.

Among the disturbances of the organ of vision which accompany diabetes mellitus, short-sightedness is one which has attracted the least notice. S. Neuburger (*Münch. med. Woch.*, March 24th, 1903) considers that it is important that this disturbance should be more widely recognized, since it is frequently the means of indicating the diagnosis of the diabetes. He reports two cases which exemplify this well. The first patient was a woman of 50 years, who first came under his treatment on account of suppuration of the lachrymal sac, of unknown origin. On curing this condition, he determined that the vision was presbyopic, the smallest Snellen type being read easily with + 2D. Three months later she again consulted him, this time on account of indistinct vision, which had lasted some ten days. The history was so suggestive that he at once thought of diabetic myopia, and on questioning the patient learned that she had lately been losing flesh and had been told that she looked bad. The refraction examination with the ophthalmoscope showed that the right eye had myopia − 1D, and the left − 2D. The vision on the right side was $\frac{6}{9}$ with − 1.5D, and on the left side $\frac{6}{9}$ with − 2D. There was no opacity of any of the media, and especially of the lens. The urine contained 3.5 per cent. sugar. There were no other signs of diabetes. During the subsequent course of the disease the diabetes got worse, notwithstanding a strict diet; but the myopia passed off. In this case the myopia therefore attracted his attention to the glycosuria. The second case was that of a woman of 48 years, who had required glasses for slight presbyopia in June of 1899. Two years later she came with the complaint that she could see to read better without her glasses, but that her distant vision was becoming indistinct. The vision on the right side proved to be $\frac{6}{9}$ with − 1D, and on the left side $\frac{6}{9}$ with − 2.5D. There was therefore some myopia. The lens was absolutely clear. He examined her urine and found considerable quantities of sugar. Later on the sight got worse, and a clouding of the lens, which did not get rapidly worse, appeared. Both cases thus were first diagnosed after the myopia had aroused the suspicion in this direction.

(302) Double Heart Beat.

K. Doll (*Berl. klin. Woch.*, March 9th, 1903) deals with a case of bigeminal heart, with double apex beat. The patient was a man of 43 years, and had first suffered eight years previously from his heart while bathing. This attack took the form of a cardiac failure, and the patient was only restored after prolonged artificial respiration and other means. It left a considerable amount of dilatation behind, which eventually disappeared. In the spring of 1900 the patient was taken with a severe croupous pneumonia, and the heart remained surprisingly well during the illness; a transient albuminuria, however, was noted. In the summer of the same year he began to complain of dyspnoea and feeling weak. His urine was then found to contain traces of albumen and some casts, and the heart was hypertrophied and the palpable arteries rigid and tortuous. The diagnosis of interstitial nephritis (arterio-sclerotic) was made. In August of 1901 he got oedema of the legs and ascites, which disappeared under treatment with digitalis and diuretin. The oedema came and went after this time, and the patient gradually wasted. Uraemic vomiting and galloping heart beat also appeared frequently. On October 2nd, after he had been taking infusion of digitalis for two days, the pulse was found to have suddenly decreased in rate to 44 beats in the minute, whilst a slight weak wave could be just felt after each pulse; about ⅜ in. outside the nipple line 88 heart beats in the minute were felt. The heart beats occurred in pairs, the second being somewhat weaker than the first, and these were followed by a pause. On auscultation two, and at times three, pairs of sounds to each pause were heard. The radial pulse took place immediately after the first of the apex beats. During the course of the next few days the double beat was sometimes present and sometimes absent, while it was not infrequent to observe the change into the double beat. The patient died on the 18th of coma and other signs of uraemia. The necropsy revealed dilatation and hypertrophy of both ventricles and left auricle. Doll argues that the over-action of the digitalis caused this peculiar action of the heart, and seeks to strengthen this view by adding the history of a second patient who showed the same double beat; she was also in the last stages of cardiac affection, and the bigeminal heart was noticed after full doses of digitalis.

SURGERY.

(303) Appendiculo-vesical Fistula.

Michel and Gross (*Arch. Gén. de Méd.*, August 25th, 1903) describe a case of this rare condition, and discuss the sequence of events in its formation. The patient was aged 20, was delivered at term of a stillborn child on December 23rd, 1902. The puerperium was attended with fever and shiverings, but at the end of one month she appeared well. On February 1st sudden sharp pain in the right iliac fossa compelled her to take to bed again. Some days after, the urine became yellow and of repulsive odour; and a mass, the size of the fist, was felt in the right iliac fossa. On admission into hospital on March 24th, the general condition was fairly good; on abdominal palpation the right iliac fossa was painful and presented a hard mass whose limits were obscured by the thickness of the abdominal wall. On vaginal examination, the anterior, posterior, and left lateral *cul-de-sacs* were free: the right bulged into the vagina; bimanually, a hard swelling, the size of the fist, was felt in the region of the right appendages. Movements of the uterus excited pain. The urine contained 1.5 gram. of albumen per litre, a large quantity of pus cells, with some flattened epithelial cells. A diagnosis of inflammation of the right appendages was made and appropriate treatment carried out. As no improvement

resulted laparotomy was performed on April 24th. The appendix was found much elongated, passing across the lower segment of the uterus, within the right uterine appendages, and fixed to the bladder by a firm adhesion. The appendix was free from all adhesions except that to the bladder, and the right and left appendages were normal; but the whole of the anterior surface of the uterus was adherent to the bladder. The broad ligaments were slightly thickened, especially the right. A ligature was placed round the adhesion of the appendix to the bladder as near to the bladder wall as possible and the adhesion divided with scissors. Convalescence was uninterrupted. On May 20th the uterus was freely movable and no longer tender, and the vaginal *cul-de-sacs* were soft and supple. On July 10th no sign of cystitis was present. The appendix removed was shown at the Medical Society of Nancy; it measured 8 cm.; the walls were thickened and sclerosed: at the vesical end, a small orifice admitted a probe. In discussing the case the authors admitted that they regarded the swelling in the right iliac fossa as due to inflammation of the uterine appendage with subsequent abscess opening into the bladder; but the normal appearance of the appendage at the time of operation negatived this view. The question arises whether (1) a peri-appendicular abscess opened into the bladder, or (2) a primary adhesion of the appendix to the bladder permitted infection to the bladder wall with consecutive ulceration and fistula. The authors incline to the latter view on account of the firm adhesion between the appendix and the bladder and the absence of all other adhesions along its course. Another question was whether the cystitis arose (1) by a direct communication between the appendix and the bladder (2) or by means of the lymphatic vessels. The authors adduce the repulsive odour of the urine and the orifice at the tip of the resected appendix as evidence of the latter. They regard the sequence of events in this case as follows: (1) Accouchment at term with slight puerperal infection; (2) an attack of appendicitis with adhesion of appendix to bladder; (3) appendiculo-vesical fistula; (4) purulent cystitis and pericystitis; (5) adhesion of bladder to uterus; (6) resolution of inflammatory trouble upon removal of appendix and course of infection. The interest of the observation lies in the rarity of the condition. It is possible only when the appendix assumes the pelvic position. Fergusson found this position 11 times in 200 cadavers examined, Biggs 21 times in 150, Tuffier and Jeaune 32 times in 118. Yet the last named found the appendix in contact with the bladder in 4 cases only of the 32 which assumed the pelvic position.

(304) Syphilitic Mastoid Periostitis.

Collet and Beutter (*Lyon Médical*, May 10th, 1903) have observed a case of mastoid disease in which the diagnosis was assisted by an interesting physical sign. Their patient, a woman 53 years of age, was first treated for a painful swelling of the right tibia, which subsided after the use of iodide internally and mercurial inunction. Five weeks later she complained of headache, chiefly nocturnal, pain over the left mastoid, and a tender swelling of the left thigh. On examination the posterior part of the left mastoid was found swollen and exquisitely tender. The retro-articular groove was intact. There was no redness of the skin or rise of temperature. The tympanum showed no trace of perforation or cicatrix. The transparency of the two mastoid processes was treated in a dark room by Urbantschitsch's method, a concentrated electric light being directed upon the back of the process while the ear was examined by a speculum. In both cases the light was well transmitted through the mastoid cells, thus showing them to be free from purulent accumulation, although the illumination of the left ear was distinctly less than that of the right. A positive result of this test is proof of the absence of pus. A negative result has a less absolute value, since a very dense compact bone may arrest the luminous rays. In the case recorded above, although there was no history or old sign of syphilis, the multiple swellings, the subacute character of the inflammation, the nocturnal headache, and the rapid benefit gained from the use of mercury and iodide, proved the syphilitic nature of the disease. But syphilitic mastoiditis at times may be much more acute, and may simulate the mastoiditis secondary to middle-ear disease, and here the use of the light test as described may save the patient from an unnecessary operation.

MIDWIFERY AND DISEASES OF WOMEN.

(305) Racemose Sarcoma of Cervix and of Body of Uterus.

Peham and Keitler (*Monats. f. Geb. u. Gyn.*, August, 1903) contribute to medical literature two instructive monographs. Peham confines himself to cervical "cluster sarcoma," Keitler to racemose sarcomatous growths in the body of the uterus. Peham reports a very malignant case occurring in a girl, aged 19, who ultimately died with cerebral symptoms after repeated local operations. Some parts of the tumour showed on microscopic examination well-marked striated muscular tissue, as first detected by Pernice in racemose sarcoma of the vagina. Haüser and Kolisko have discovered striped muscular fibres in the racemose sarcoma of the vagina of infants and children. Peham includes uterine and vaginal racemose tumours as a single distinct clinical and anatomical type of new growth in the female genital tract, pathologically malignant mixed sarcoma, derived from fetal relics. Keitler collects six cases of racemose sarcoma of the body of the uterus, including one new case where the patient was 54 years of age, and had been quite healthy until uterine haemorrhages set in six months before she consulted a physician, who removed seventeen polypi at one sitting. As the bleeding soon returned, Chrobak removed the uterus in May, 1900. In December, 1902, the patient was free from recurrence. The tumour substance showed the characters of a mixed sarcoma; it proved clinically far less malignant than the racemose cervical and vaginal tumours. Keitler considers at length whether the latter be identical with the uterine type, and concludes that this is the case with several reported cases of racemose sarcoma of the uterus, whilst there is strong evidence that in other cases the sarcoma was of a commoner or more general type, and assumed secondarily a racemose or pedunculated type through mechanical causes, chiefly congestion, pressure of the uterine walls, and free growth out of the cervical canal into the vagina. To this change a myo-sarcoma, containing smooth muscle cells, is specially liable. Keitler notes how, just as in the case of carcinoma, this form of sarcoma seems to be less malignant clinically when uterine than when vaginal.

(306) Estimation of Internal Dimensions of Female Pelvis.

H. Ehrenfest (*Amer. Journ. of Obstet.*, May, 1903) describes a method of estimating the internal dimensions, the configuration, and inclination of the female pelvis. Two instruments for this purpose have been invented by the author and J. Neumann, called by them the pelvigraph and the kliseometer respectively. The construction of the pelvigraph is based on the fact that when a rigid rod is moved parallel to itself the curves traced out by its two ends will be parallel and similar, and the distance between any two positions of one end of the rod will equal the distance between the corresponding positions of the other end. The pelvigraph consists of two parts, fitting in to one another—a registering part and an exploring part. The registering arm carries a rotatory disc to which a spirit level is attached, and by this means the instrument can always be placed at any given inclination to the horizon—that is, it can be ensured that the instrument is moved, as it were, parallel to itself. The size and shape of the vagina make any movement within it of a straight rod parallel to itself an impossibility for practical purposes. Five rigid exploring arms of different curvatures are therefore supplied, the knob at the end of each being at the same distance from the registering end and in the axis of the instrument. These rods thus do the work of straight rigid rods, and are interchangeable at will, since the direction of the axis of the instrument can be regulated with exactitude. As an example of the use of the pelvigraph, the method of determining the length of the true conjugate is described. The patient lies on her back on a table, to which a vertical draughting board is attached. By means of two fingers in the vagina the end button of a suitable exploring arm is brought into contact with the middle of the upper edge of the posterior surface of the symphysis. The disc carrying the spirit-level is fixed at a suitable angle, the instrument placed flat against the draughting board, and the spirit-level brought to the horizontal by raising or lowering the free end of the instrument. The point at which the free end lies is now registered on the draughting board. The exploring arm is next withdrawn, and the arm suitable for touching the middle of the promontory substituted. The point on the

draughting board corresponding to the middle of the promontory is registered as before. The distance between these two points gives the length of the true conjugate. Similarly, any number of points may be projected on to the draughting board, and an accurate likeness, in natural size, of the vertical median section through the pelvis obtained. In measuring transverse diameters the patient must be in the lateral position in order to bring the diameters vertical to the table. For exact measurements the three necessary factors are the possibility of manual exploration of the pelvis, an exact instrument, and absolute quietude on the part of the patient. The second instrument, the kliseometer, is of simpler construction, and is used to determine the inclination of the pelvis. It consists of a rigid arch terminating at one end in a cylindrical carrier. A rod sliding through the carrier runs on an axis passing through both ends of the rigid arch. At the outer end of the rod is a rotatory disc, whose circumference is divided into degrees, and to which a spirit level is attached. A small pointer overlaps the disc, and marks zero if the axis of the instrument is horizontal. To find the angle at which the instrument is inclined to the horizon, it is only necessary to turn the disc until the spirit level registers horizontal, and the pointer will then indicate the required angle of inclination. A description is given of the manner in which the kliseometer determines the inclination of the external conjugate. By means of both instruments together the inclination of the true conjugate can for the first time be accurately determined. To do this the lines in a diagram representing the conjugates of the inlet and outlet are produced to meet. At the point of intersection the angle determined by the kliseomotor as that of the inclination of the conjugate of the obstetrical outlet is constructed, and the line thus found constitutes a base line representing the horizon. The angle of inclination of the true conjugate is then found by measuring the angle between the base line and the line representing the true conjugate. In conclusion, the author states that the two instruments afford the possibility of graphically reproducing the form and exact dimensions of the most important sections through the pelvis, and of permitting measurement of its true inclination.

(307) Cancer Simulated by Effects of Foreign Bodies in the Genital Canal.

Frank (*Monats. f. Geb. u. Gyn.*, August, 1903) was consulted by a maiden lady, aged 43, for fetid discharge from the vagina. On examination a mass of granulations was detected; it filled the entire posterior fornix and hard masses could be felt in Douglas's pouch. An anaesthetic was given, and then a metallic body was felt in the midst of the exuberant granulations. It proved to be the blunt end of a hairpin, and one point had perforated the fornix so that it lay in Douglas's pouch. The other point projected backwards into the vagina. The removal of the hairpin, which was much twisted, proved difficult. It was 2½ in. long, and encrusted with phosphates. Frank admits that the masses of granulation at first gave the impression of cancer. At the end of a week the patient was quite well. There had been no rise of temperature before or after the removal of the foreign body. How it had entered the vagina remained unexplained. The patient was of weak intellect.

(308) Peritoneal Bands after Abdominal Hysteropexy.

Lucksch (*Prag. med. Woch.*, No. 4, 1903) reports a necropsy which is of interest in relation to certain objections raised to ventrifixation of the uterus or abdominal hysteropexy (*Zentralbl. f. Gynak.*, No. 50, 1902, and No. 5, 1903). The patient in this case was operated upon by Rosthorn in March, 1898; two catgut sutures were employed, and seven months later the uterus remained in its normal position. The patient died of emphysema in 1902 at the age of 35. Lucksch found three bands 3 in. long running free between the right cornu of the uterus and the parietal peritoneum in the neighbourhood of the inner end of Poupart's ligament. No trouble had been caused by these bands, but it is clear that they might easily have come into unfavourable relations with intestine. One band was ⅛ in. thick, the others as stout as linen thread. The uterus lay in its normal position as in October, 1898; thus the operation had cured a displacement at the risk of graver evils.

THERAPEUTICS.

(309) Treatment of Acute Infectious Diseases.

J. Wernitz (*Therap. Monats.*, January, 1903) describes a method which he has devised for the treatment of acute septic conditions, especially puerperal sepsis, and which he proposes to be employed in other infective diseases. The method is based on the idea that if one supplies large quantities of water to the body, in the easiest and most careful way, one will not only prevent those distressing symptoms which occur as the result of a diminished supply of fluid to the tissues, but one will increase the secretions, and thereby assist the body to get rid of bacteria and toxins. He thinks that although the organism will only be temporarily and imperfectly freed from the poison, the action of the toxins will be weakened and the body will have more time to manufacture antitoxins. Subcutaneous and intravenous injections of saline fluid are, in his opinion, not to be recommended for this purpose, since these methods are not simple, are painful, and not free from danger. Repeated small injections into the bowel have the disadvantage of irritating the patient, inducing straining each time, and often involuntary passage of stools. He therefore employed Hegar's enemata. These are carried out with a rectal tube of moderate length, which is introduced as far as it will go without producing pain. The tube is attached to an irrigator containing a 1 per cent. solution of common salt. By holding the irrigator low one can introduce fairly large quantities of fluid slowly, especially if the injection be interrupted from time to time. As soon as the patient begins to strain the irrigator is depressed, and the water, together with some softened faeces, returns into it, and if the water is much soiled, it must then be changed. This process is repeated several times, until the rectum is quite cleaned, which takes about an hour. After a pause the process is again repeated, and this time the greater part of the litre injected will be absorbed. This must be done with great care and very slowly, and should be repeated after a second pause of about one or two hours. The fluid is resorbed more quickly later than at first. The results of the injections are that the pulse becomes fuller, the dry mucous membranes become moist, the patient looks better, and headache and delirium disappear. Then the urine is increased in quantity, and the skin acts freely, while the temperature sinks steadily, if slowly, to normal. If the injections are interrupted the temperature again rises, but can be again reduced by fresh injections. He states that he has obtained excellent results by this method, and considers it quicker, safer, and more certain in action than any antipyretic. He has been able to battle successfully with severe and dangerous infections in this way, and strongly recommends it for trial in the acute infective processes

(310) Helmitol.

The action of urotropin as an antiseptic for the urinary passages depends on the capability of the tissues splitting off formaldehyde. Formaldehyde, however, cannot always be found in the urine, especially if it be ammoniacal. It therefore appeared to be of use to obtain a body which would allow of formaldehyde being liberated in alkaline media. S. Goldschmidt (*Therap. Monats.*, January, 1903) reports on such a combination, which bears the name of helmitol. It is obtained by allowing methyl-citric acid to act on urotropin, and is chemically a methyl-citric acid hexa-methyl-tetramine. One gram of the salt contains 0.425 gram of hexa-methyl-tetramine. Its action is like that of urotropin, but more powerful. It is more freely soluble in water than the original preparation, and is decidedly cheaper. In the test tube it is capable of splitting up, liberating formaldehyde in the presence of ammonia. The drug has been tested clinically, and the results are, like those of urotropin, satisfactory. In cases of phosphatic urine, and also of infective processes of the posterior urinary passages, however, it had not the least effect. The dose usually employed is 1 gram (about 15½ gr.) twice or three times a day. The preparation is by no means objectionable, is usually willingly taken, and has not been accompanied by any unpleasant side-effects.

(311) Pyramidon in Typhoid Fever.

L. Byk (*Deut. med. Woch.*, January 15th, 1903) says that although the sovereign treatment of typhoid fever is the bath treatment there are times in private practice when this cannot be carried out. Having heard a good account of pyramidon he proceeded to employ it in a case which he and the nurse were able to observe very closely. The temperature had resisted the action of anti-

pyrin, and so on the tenth day of illness he gave 0.3 gram (=circa 4 gr.) of pyramidon and repeated it in half-an-hour. The temperature sank 4 degrees centigrade. With this depression of temperature there were no unpleasant side-effects and no signs of collapse. The pulse remained full and strong, and a moderate secretion of sweat took place. On the following morning he says that the patient had the appearance of a convalescent, but in the afternoon the temperature again rose. He regards the gradual depression of temperature and the gradual rise as a gain to the patient, and points out that the fresh rise was not accompanied by a rigor either on the first or on any other occasion when he used the preparation. The action proved itself to be equally prompt for moderate pyrexia as for very high degrees. He appends the chart which shows the falls and rises of temperature after the exhibition of pyramidon.

(312) Treatment of Tetanus by Antitoxin.

V. SCHUCKMANN (*Deut. med. Woch.*, March 5th, 1903) discusses the value of antitoxin treatment of tetanus, after giving the clinical history of a case which was treated in this way on the first day of the tetanus, and on the tenth day after he had received the wound. The patient died within forty-eight hours of the onset, thus before a third injection could be carried out. Behring believes that the mortality of this disease can be reduced to 18 per cent if one follows the instruction which he has set down, and in order to control whether there is any justification for this belief, v. Schuckmann has gathered the clinical records of 92 cases, on which he gives his report. In 36 cases he finds the incubation period was determined, and with 5 exceptions it varied between six and fourteen days, the average being ten days. In one case the symptoms of a rapidly fatal tetanus appeared within twelve hours after an injection of gelatine. The cases with short incubation periods (up to the end of nine days) gave a mortality-rate of 71 per cent., while in those with longer incubation it was 36 per cent. This supports the axiom that the longer the incubation period the better the prognosis. In 2 cases there were no details as to treatment, and of the remaining 90 cases 14 were treated without antitoxin, with 57 per cent. of recoveries, while 76 were treated with antitoxin, with 47 per cent. of recoveries. The serum was injected either intracerebrally, subdurally, intravenously, or subcutaneously. The intracerebral method only obtained 25 per cent. of recoveries, and may be regarded as an unreliable method, and the best results were gained by the subdural method, which gave 80 per cent. of recoveries. In 36 cases no mention is made of the day of illness on which the treatment was begun; in the remaining 40 cases 1 case was injected before the onset of symptoms and recovered; 16 were injected on the first day of illness, and all died; 13 were injected on the second to fifth days, and 6 recovered (that is, 46 per cent.); while 10 were injected after the fifth day; and 8 (80 per cent.) recovered. Behring stipulated that the injection should be carried out before the end of the first thirty hours, but none of the cases so treated were saved. V. Schuckmann thinks that one can explain the matter by assuming that it is always those cases which develop the symptoms very rapidly, and which in themselves offer a very bad prognosis, which are recognized and treated on the first day, while the casee with more hopeful prognoses are not diagnosed until later, and therefore ars not injected until the second or a later day. How far the serum is capable of decreasing the mortality of the second class is impossible to determine, but since it is more common for practitioners to publish their lucky cases than their fatal cases, he fears that his collected cases, treated later than the first day, give a more favourable death-rate (= 20 per cent.) than is strictly true. He comes thus to the conclusion that treatment by antitoxin does not improve the chances of the patient suffering from tetanus.

(313) Therapeutic Results of Mesotan.

A. FRANKENBURGER (*Deut. med. Woch.*, July 28th, 1903) has tried the action of mesotan in 43 cases, including 2 experiments on himself, and compares his results with those of other observers. He used mesotan mixed with an equal part of olive oil, and applied this mixture 65 times, 10 times using 50 grams, and 55 times using 30 grams. The mixture is a yellow, clear, oily fluid, with a very faint smell. This odour is somewhat increased on rubbing it into the skin, and adheres for a considerable time to clothes. When rubbed on the skin for a short time it produces a mild reddening of the skin, which does not last long, and a pleasant sensation of warmth. After rubbing the preparation well in, salicylic acid is detected in the urine. He states that one must be very cautious in estimating the value of mesotan, since in the majority of the cases the results aimed at were absolutely subjective, and patients are very prone to have a high opinion of anything which can be rubbed into the skin, besides which, the actual effect of the massage must not be forgotten. The cases for which it was applied were: (1) Acute muscle and joint rheumatism; (2) subacute muscle and joint rheumatism; (3) sciatica; (4) chronic joint rheumatism; (5) facial neuralgia; (6) brachial neuralgia; (7) dry pleurisy; and (8) a case of uncertain joint affection, which turned out later to be "fungus." Three of the cases did not come again, so that the results were not known, and of the remaining 40, 22 reacted extremely well, 9 showed only partial improvement, either in improvement of the subjective without any corresponding alteration of the objective symptoms, or by only temporary lessening of symptoms, and in 9 cases the result was negative. It is necessary to apply the mixture lightly over the affected part, using from ½ to 1 teaspoonful of it, and repeating this three times within the twenty-four hours. Frankenburger is very pleased with his results, both in acute as well as in chronic rheumatic affections. It has one great objection which will stand in the way of its free use. The drug is very dear, and he estimates that each dose costs between 3s. and 4s. If the manufacturers succeed in producing it at a reasonable rate, he believes that it will be largely used.

PATHOLOGY.

(314) The Identity of Human and Bovine Tuberculosis.

TRONJE (*Deut. med. Woch.*, March 12th, 1903) reports a case which he considers to prove that man is capable of acquiring tuberculosis from a bovine source. The patient was employed at a slaughter-house, and had to draw out the pleura of a tuberculous cow for veterinary purposes. The man grasped the left arm against the sharp edge of the sternum, which had been sawn through. The wound was washed with carbolic lotion and properly dressed. It healed by first intention, but six weeks later the site of the graze became inflamed, and on the inner side of the left elbow there was a lump. He consulted a medical man, and the latter, in his report, stated that the scar situated on the extensor surface of the left forearm, ¼ in. in length, showed two small red pustules, and that the cubital and axillary glands were swollen and tender. The condition remained unchanged after the glands had become painless, and a month later the scar had broken down to a small extent, and showed a wound which had a tendency to enlarge. Later the wound healed up, and the glands became smaller, and at the site of the healed ulcer a border of lupus nodules made their appearance. Admitted into hospital the condition was diagnosed as tuberculosis of the skin and of the lymphatic glands of the elbow. The nodules and the glands were excised and the defect was covered by a skin graft (Thiersch). This healed smoothly. Eighteen months later the patient complained of a dull pain in the arm whenever he laid hold of anything with the left hand. The skin at the site of the grafting was reddened, and there were three distinct lupus nodules. Above these the skin protruded slightly over an area of about the size of a shilling, and a careful palpation revealed a defect of tissue under the skin and distinct fluctuation. A gland in the axilla was swollen and slightly tender. The affected skin was excised, and Tronje reached a subcutaneous abscess, which lay in the sheath between the ext. carpi radialis brevis and ext. digitor. commun., and dipped down nearly as far as the interosseous ligament. The wall of the abscess was examined microscopically and showed typical tubercles with few bacilli. The wound was covered by a Thiersch's graft. Three months later some glands had to be removed from the left axilla and from the left infraclavicular fossa. These glands were examined carefully and showed an unmistakable picture of miliary tubercles, tuberculous granulation tissue, and tuberculous caseation without any calcareous deposits. The microscopical appearance did not show any certain changes which could be regarded as typical of bovine tuberculosis, although it had some peculiar characters. Tronje believes that the two bacilli are actually identical and only display a difference of virulence.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

(315) The Thermometer in Tuberculosis.

COSTE DE LAGRAVE (Reprint from *Rev. Int. de la Tub.*, 1903, No. 5) discusses fully the use of the thermometer in tuberculosis, both as an aid to prognosis and as a guide to treatment. He recommends that the temperature should be taken under the tongue, though he admits that the procedure of choice scientifically is to take it in rectum or vagina. He states that the maximum daily temperature is usually found between two and three in the afternoon, the minimal between seven and nine in the morning. The best time for taking the evening temperature is, according to him, between half-past five and six. He lays down the law that for prognosis the minimal temperature must be taken, this being the indication of the success of the organism in its struggle against the disease; in other words the maximum temperature is the sign of defeat, the minimum the emblem of victory. He recommends that the latter temperature should be taken in the morning and the former in the evening, and considers three times a day, at 7, 3, and 6, will suffice for all ordinary purposes. With regard to the therapeutic indications to be drawn from the temperature, the author maintains that when it rises above 98.4° F. the patient should rest; when it is below he may take exercise. If the morning temperature is above this point he must remain in bed; if it is below he may get up on a long chair and indulge in such exercise and amusement as may interest his mind, and at the same time prevent him from getting fat. If the temperature oscillates round 100 2° it is best to keep the patient in bed altogether, but if it only reaches this point in the evening, being normal in the morning, he may be permitted slight occupation, involving rising in bed, in order to prevent ennui; above this level strict rest in bed must be enforced. If the temperature is continuously subnormal, systematic walking exercise should be commenced. The patient walks half a mile at a time, and at first 2½ to 3 miles in the course of the day; the amount is gradually augmented at the rate of a mile or so a week, until the patient can at length manage 9 to 12 miles a day. As a rule, however, it is not advisable for him to walk more than five or six. The extent and duration of the cure by rest are also regulated by the condition of the temperature. Every tuberculous patient is expected to rest for six hours during the day and ten hours at night. For every tenth of a degree Centigrade above 36.6° (equals 99.5° F.) he must spend an extra hour a day in the long chair, so that when his temperature reaches 100° he will only be allowed up for about two hours out of the twenty-four. The author points out that after a prolonged journey a tuberculous patient very often exhibits a marked fall in temperature. This is apt to be attributed to the health-giving properties of his new abode, but as a matter of fact it very soon passes off, and the normal condition of fever is re-established. With regard to the use of antipyretics the author permits small doses, particularly of sulphate of quinine combined with antipyrin, or of cryogenin; these are, of course, to be used only as temporary palliatives. Finally, he inveighs strongly against exposing tuberculous patients to cold, which he says is their mortal enemy, and has killed far more of them than it has cured.

(316) Peripheral Neuritis of Alcoholic Type.

L. WILLIAMS (*Practitioner*, August, 1903) discusses the alcoholic type of peripheral neuritis. Since the outbreak of the Manchester epidemic the belief in arsenic as the chief cause of the disease has widely spread, and indeed it is now considered doubtful by many whether alcohol alone can give rise to an attack. It is pointed out that intemperance is very common while multiple neuritis is very rare, and that in many places where the consumption of whisky is especially great, as for example in Glasgow, the disease is especially infrequent. The first of these arguments would apply with equal force to the causation of cirrhosis of the liver, where the sufficiency of alcohol as a sole cause cannot be doubted. There must therefore be some physical factor which determines the immunity of a majority of excessive drinkers, and the fact that the disease is rare in those parts of the kingdom where most whisky is consumed would appear to suggest that climatic influence may increase the power of resistance to the disease. In the first of the two cases of peripheral neuritis described in the article, arsenic as a cause could be definitely excluded, while in the second none of the causes at present considered adequate could after careful investigation be assigned. The first was that of a lady who had previously suffered from an attack of alcoholic neuritis with extensor paralysis of both feet, from which she recovered. She reverted to her former habits and for more than a year drank six bottles of whisky a week and an occasional bottle of stout. As she seldom went out of doors and never unaccompanied it is certain that she was not supplied with alcohol from any other source. The whisky and the stout in question were both examined for arsenic with a negative result. A severe attack of neuritis developed with loss of memory and loss of control over the sphincters. The case presented the following points of interest: the presence of nystagmus, the retention of power in the supinator longus, the persistence of rectal incontinence long after the return of control over the bladder, and especially the absence of foot drop. The author has found no other case in the literature where foot drop was thus absent, although in a case recorded by Leslie H. Jones foot drop was well marked in a first attack and present to only a slight degree in a later attack of alcoholic neuritis. The next case was that of a man, 46 years of age, a baker by trade, who appeared on reliable evidence to have been a teetotaller for two years before the onset of symptoms. The bakery in which he worked was above ground and he was not exposed to fumes from the oven. He had not suffered from influenza or other serious disease, had never resided out of England, had not been taking medicine and had never to his knowledge contracted syphilis. He had been exposed to all weathers, but he could recall no special carelessness in this respect before the attack. The symptoms were those of the ordinary alcoholic type and progressed after his admission to the hospital. The case is a good example of the occasional impossibility of discovering any definite cause of this form of neuritis.

SURGERY.

(317) Treatment of Varicose Ulcers.

DIEHL (*Zeits. für diät. und phys. Therap.* October, 1903) advocates conservative treatment of varicose ulcers of the leg as opposed to the removal of the saphena vein. Varicose ulceration is divided into three stages: (1) That of infiltration, where but for infiltration of the base of the ulcer and the presence of varicose veins the leg is normal; (2) a stage of general infiltration of the lower half of the leg; (3) the stage of induration. Practically accurate distinctions of this nature may not be possible, and the treatment recommended for any one stage must be modified to suit the individual case. The treatment for the first stage is simple. For a day or two the leg is kept raised and at rest. Pressure is next obtained by means of an elastic bandage and compresses are applied to the ulcer below the bandage. The ulcers rapidly disappear. To prevent relapse the leg is frequently bathed with cold water and an elastic bandage is constantly worn. For ulcers in the second stage venesection is the most successful treatment; 600 grams of blood may be safely abstracted, and up to this amount bleeding may continue until the dark "varicose" blood ceases to flow. Two precautions should be taken, one to let the patient drink freely during and after the operation, the other to check the bleeding for three to four minutes by means of digital pressure after about 100 grams of blood has been lost. The taking of too little blood is specially to be avoided. An uninterrupted recovery often follows the first venesection, but in other cases the improvement comes to a standstill after a few days and a second venesection is needed. The pulse tension and the patient's general condition show whether this can be undertaken. In some cases a third operation may be necessary, but it should not be performed until three or four weeks have elapsed. After the second bleeding a day's rest in bed is needed and milk should be given in large quantities between the operations. The danger of this treatment lies not in the amount of blood lost but in the possibility of embolism, and while acute inflammation of the ulcer is no reason against bleeding, phlebitis and still more thrombosis contraindicate the operation. When thrombosis is present venesection should be delayed for at least two to three weeks. If the ulcer be of long standing the power of epithelium formation seems exhausted and the ulcer refuses to heal although it is covered with healthy granulation

on a level with the surrounding skin. Here applications of cooled, concentrated dark blue light produce a speedy effect, the ulcer diminishing in size with each sitting. Very different conditions are present in the third stage. The skin is tough, dry, and in places glistening and transparent. Varicose veins can no longer be seen, but with the finger small knots of veins may sometimes be felt. In such a case infiltration as well as induration is present, and bleeding will still do good. Where the condition is one wholly of induration bleeding is of no benefit. By the use of compresses the ulcer can be cleaned in so far that the discharge becomes less and is no longer offensive, but healthy granulations do not appear. A tough yellow layer probably composed of fibrin covers the surface and cannot be mechanically separated. The treatment consists, first, in increasing the flow of arterial blood to the part by warm baths and douches, by vibration massage, and by encouraging free movements of the limb: secondly, in applications of cooled concentrated red light. A few sittings of from twenty-five or thirty minutes suffice to loosen the layer of fibrin, but the granulations below are still yellowish and the treatment must be continued. Usually after eight to ten sittings the ulcer is filled up to the level of the skin, and at this stage alternate applications of red and blue light are employed. The applications should not be made more than three times a week, nor should the light fall on the patches of glistening transparent skin surrounding the ulcer.

(318) Haemorrhage in Jaundiced Patients.

Berg (*Ann. of Surg.*, September, 1903), in an article on the surgical treatment of cholelithiasis, states that the persistent and uncontrollable capillary haemorrhage so often occurring in operations on deeply jaundiced subjects is especially apt to follow when the cause of the jaundice lies in malignant obstruction of the bile ducts. During the past year two of the author's patients have succumbed from bleeding, in spite of a systematic administration of calcium chloride in both small and large doses, given at least five days before the operation. In the author's opinion the cause of this serious oozing lies not so much in the retarded coagulation of the blood as in a fatty degeneration of the walls of the arterioles, interfering with their retraction and contraction. It is hardly possible, it is held, that a retardation in the coagulation of the blood should be responsible for the persistent bleeding that occurs in these cases. Were this alone the cause, the rapid induction of coagulation by cautery or styptics would arrest the haemorrhage. On the other hand, it is well known that chronic jaundice causes a marked atrophy of all muscular tissue. Such atrophy of the muscular tissue of the blood vessels interferes materially with their contracting power. This view, it is stated, is supported by the results of experience. The longer the duration of the jaundice the greater the tendency to bleeding. Further, it might be expected that as cancerous cachexia, chronic sepsis, and other debilitating influences give rise to a fatty or waxy degeneration of the tissues, patients suffering from these associated diseases would be more apt to bleed than those who suffer from chronic jaundice alone. This is substantiated by experience.

(319) Rectal Incision of Pelvic Abscess due to Appendicitis.

Bérard and Patel (*Rev. de Gyn. et de Chir. Abd.*, September-October, 1903) have published an important monograph on the treatment of pelvic abscess of appendicular origin, especially by rectal incision. These abscesses are now known to be frequent, or rather their origin is recognized more accurately than was once the case. Rotter detected 41 pelvic abscesses out of 132 cases of inflammatory deposits associated with appendicitis. Incision through the abdomen, vagina, or perineum, or by the parasacral method is unsatisfactory for this kind of abscess. When the abscess is large and bulges both into the rectum and above the groin, an iliac incision may also be made and abdomino-pelvic drainage established. In general peritonitis associated with appendicitis, a rectal counter-opening has been made, and served its object of allowing the complete evacuation of septic fluids (two recoveries, one death). In the female rectal incision avoids the danger of infection of the uterus which may occur when pus is allowed to enter the vagina. Altogether 44 cases of rectal incision of pelvic appendicular abscess have been recorded, including Bérard and Patel's cases, all successful. The rectum should be disinfected, then the patient is placed in the lithotomy position. Dilatation of the sphincter is not always necessary. The left forefinger is introduced into the rectum, a soft mass can then be felt, and with the right hand pressed gently on the abdomen the limits of the abscess can be defined. The incision is made transversely with curved scissors guided by the left forefinger, the coats of the bowel itself are divided successively and obliquely, then the finger is pushed into the abscess cavity and the pus will escape freely. Pressure should not be made on the abdominal parietes as adhesions protecting the peritoneum from the septic contents of the abscess might be torn; besides it is unnecessary, because the pus can easily escape by the rectum, as the incision lies in the lowest part of the abscess. A rubber drainage tube of medium or large calibre must be passed into the abscess cavity, which should not be washed out except when the suppuration is very chronic or the pus fetid. The drainage tube may be removed on the third or fourth day in favourable cases: the temperature must be carefully watched, and after the least rise the tube must be replaced. In several published cases this step was found necessary, and in some instances drainage was maintained for three weeks without any bad effects. The bowels should not be opened for a few days.

(320) Wound of the Thoracic Duct.

Faure (*Bull. et Mém. de la Soc. de Chir.*, No. 33, 1903) reports a case of accidental wounding of the thoracic duct in the course of an extensive operation for the removal of a malignant growth from the anterior mediastinum, and of secondarily affected glands in the neck. The opening, which was a small one, was closed by lateral suture. The patient made a good recovery, but the complete healing of the large wound in the neck was retarded by extravasation of lymph and by the formation of a small lymphatic fistula, which closed at the end of ten days. This case, the author points out, shows that wounding of the thoracic duct is not very serious. The researches of Ferrier on animals prove that although the discharge of lymph from a wound in the thoracic duct is usually very profuse, there is always a tendency to spontaneous closure of the fistula. That the same tendency occurs also in man is indicated by Faure's report, and also by a case referred to in the discussion by Recard, who wounded the duct whilst extirpating a tumour of the thyroid body. This accident was followed by a very abundant discharge of lymph, which ceased in the course of a few days after firm compression of the wound in the neck.

MIDWIFERY AND DISEASES OF WOMEN.

(321) Urine Changes of Puerperal Eclampsia.

E. L. Whitney and C. A. Clapp (*Amer. Gyn.*, August, 1903) in giving their analyses of the urine of patients suffering from puerperal eclampsia suggest that theories rather than experimental facts have formed the basis of most of the publications on this subject. They review some of the different theories suggested to explain the onset of the disease. When albumen was first discovered in the urine of patients with eclampsia, inefficiency of the kidneys was believed to cause the symptoms, but this theory lost credit when it was found that albumen was not invariably present, was only in small quantities when present, and that elampsia rarely occurred in cases of chronic nephritis. Great importance again was at one time attached to the retention of nitrogen within the body during pregnancy. This was, however, found to be in great part a normal phenomenon, and the extent to which it occurs normally in different individuals varies so greatly as to make it difficult to discover whether retention in any given case is excessive. The question of the fetal or maternal origin of the toxic substances causing eclampsia is still undecided. Bouchard and others have tried to show that toxic materials are retained in the maternal organism by proving that an injection of a patient's urine into an animal is less toxic than a similar injection of the blood serum. But faulty methods and varying results have alike prevented them from demonstrating their theory practically. Massin believed eclampsia to be an autointoxication resulting from imperfect oxygenation of nitrogenous materials within the body, and that its severity could be approximately estimated from the decrease in the nitrogen eliminated as urea, as compared with the total amount of nitrogen in the urine; he did not supply his analytical data. Schrader on the other hand concluded that no characteristic change in the amount of urea nitrogen could be detected either in normal pregnancy or in eclampsia. But his

results are vitiated by faulty methods of investigation. A few years ago the present authors were struck by the similarity between the premonitory symptoms of puerperal eclampsia and the symptoms resulting from large quantities of proteid food in animals having a Pawlow-Eck fistula. Considering this fact, and more especially considering the improvements recently effected in the determination of the various nitrogenous constituents of urine, they decided to discover what changes, if any, could be detected in these substances in eclampsia. The method adopted was that of Pfaundler as modified by Krüger and Schmidt. Here the nitrogenous substances are divided into two classes, according as they are or are not precipitated by phosphotungstic acid, and these classes again divided according as they give up the whole, a part, or none of their nitrogen when treated with sulphuric acid at a temperature of 160° C. to 170° C. The nitrogen given up under the treatment is said to be loosely combined, and that retained to be firmly combined. The addition of the phosphotungstic acid is a matter of some difficulty, for an excess of acid redissolves the precipitate wholly or in part, and three or four preliminary trials are needed to determine what amount of acid to use. As well as these calculations, the amounts of nitrogen present as ammonia and as uric acid were separately determined, the former by Folin's older and the latter by his more recent method. The total quantity of nitrogen present was also found by the indirect method. The determinations made were therefore as follows: (*a*) Total nitrogen of entire urine; (*b*) total nitrogen of the phosphotungstic acid filtrate; (*c*) total loosely combined nitrogen; (*d*) loosely combined nitrogen of the phosphotungstic acid filtrate. With these data the divisions of the various nitrogenous constituents of the urine may be calculated as follows: (1) Total nitrogen of the phosphotungstic acid precipitate, by extracting (*b*) from (*a*); (2) loosely combined nitrogen of the phosphotungstic acid precipitate by subtracting (*d*) from (*c*); (3) firmly combined nitrogen of the phosphotungstic acid preparation by subtracting 2 from 1; (4) total nitrogen of the phosphotungstic acid filtrate; (5) loosely combined nitrogen of the phosphotungstic acid filtrate as already determined; (6) firmly combined nitrogen of the phosphotungstic acid filtrate by subtracting *d* from *b*. Analyses are given under these headings of the urine of normal non-pregnant women, of normal pregnant women, of a case of toxaemia in pregnancy, and of cases of eclampsia in pregnancy. A study of the results shows that the essential change in the urine of the eclamptic women is a decrease in amount of Group 5, together with an increase in amount of Group 3. Thus in a normal pregnant woman 84.28 per cent. of the total nitrogen of the urine belonged to Group 5, as compared with 69 per cent. and 63.43 per cent. respectively in two cases of eclampsia. In the first case, also, Group 2 contained 11.12 per cent. of the total nitrogen as compared with 19.42 per cent. and 19.45 per cent. in the other 10 cases. For practical purposes Group 5 may be considered to be derived from the urea, and be designated the "urea group," although it includes other nitrogenous elements, as, for example, the allantoin and oxaluric acid. Our knowledge of Group 2 is unfortunately as yet very incomplete. It is undoubtedly in some cases derived from ammonia, in others it is to be attributed to some as yet undetermined antecedent of urea. Further study is needed to show how far the urinary changes described are found in all cases of eclampsia, and whether they can be used to predict the occurrence of the disease. As possible causes of the altered metabolism the authors suggest a relative inefficiency of the liver, a digestive anomaly of the placenta or uterine wall, and some abnormality in the metabolism of the fetus.

(322) Tubal Pregnancy: Obstruction by Polypus.

Luksch (*Prag. med. Woch.*, No. 31, 1902) reports a case where a definite cause for arrest of the ovum in the tube seemed to exist. A woman fainted during defaecation and died about a day later without having regained consciousness. The necropsy was fortunately undertaken by Professor Chiari, who has already detected in one other instance the condition observed in this case. He found a ruptured sac, of about the end of the second month, developed in the isthmus of the left Fallopian tube. In the left cornu of the uterus lay a glandular polypus nearly an inch long, covered with a mucosa which was of the decidual type. The pedicle of this polypus, about one quarter of an inch broad, was attached to the uterine orifice of the left tube. There was a corpus luteum of pregnancy in the left ovary. The polypus, as proved by the sound, had blocked the canal of the tube probably when swollen at a menstrual period. The cornu must have been fertilized by external migration of a sperm cell. The walls of the tube involved possessed a true decidua, and the walls of the fetal sac had been weakened as usual by the ingrowth of chorionic villi as far at one point as the thickened peritoneum. The increase of intra-abdominal pressure caused by straining during defaecation had determined the rupture of the sac.

(323) Acute Torsion of Ovarian Pedicle in a Girl aged 11 Years.

Winternitz (*Budapesti Orvosegyesület*, No. 3, 1902) writes of a case where a girl, aged 11, had ascites following abdominal pain. He found that an ovarian tumour also existed and operated. The tumour was a dermoid cyst of relatively small dimensions, with a firmly twisted pedicle. The patient made a good recovery.

THERAPEUTICS.

(324) The Action of Strychnine in Polyuria and in Diabetes Insipidus.

L. Feilchenfeld (*Deut. med. Woch.* July 30th, 1903) had occasion to treat an old gentleman who was suffering from polyuria and complete paralysis of the bladder, due to overdistension and slight hypertrophy of the prostate. After prolonged treatment with catheterization, washing out the bladder, etc., little or no improvement was gained. The amount of urine measured over 3 litres, and the specific gravity varied between 1010 and 1012. Feilchenfeld then tried the effect of strychnine nitrate for the paralysis of the bladder. He started with a single injection of 0.0025 gram (about $\frac{1}{25}$ g.), and although no appreciable effect could be noted on the bladder, the amount of urine was considerably diminished on the following day. He continued the strychnine, giving a daily injection, which he eventually increased up to 0.01 gram (about $\frac{1}{6}$ gr.), and on the fifth day the amount had decreased to 1,400 c.cm. The thirst was lessened, and the dryness of the tongue diminished. He next tried the strychnine on a case of diabetes insipidus in a woman aged 52. The amount of urine daily was about 4,000 c.cm., and it had a specific gravity of 1002. He started the treatment with injections of 0.005 gram (about $\frac{1}{12}$ gr.). On the eighth day she was passing 2,500 c.cm., and the thirst, dryness, and other symptoms lessened, and she gained in strength. The specific gravity, however, had not altered. That the strychnine acted directly on the central nervous system, and not on the vessels in the kidney, is shown by this maintained low specific gravity. He regards the results as important enough to justify further observation, and possibly trial in cases of diabetes mellitus with polyuria.

(325) Guaiacol in Parotitis.

Ragazzi (*Gazz. degli Osped.*, April 20th, 1903) speaks very favourably of a guaiacol ointment in the treatment of mumps. The preparation used contained 1 part of guaiacol to 10 parts each of vaseline and lanoline and was smeared on the parts twice a day which were covered with oiled silk afterwards. After the first dressing the pain is diminished and totally disappears on the second or third day; fever is also decreased. The drug, moreover, seems to have a certain amount of resolvent action. It has been used with considerable success in orchitis whether simple or secondary to parotitis. The guaiacol is absorbed for it has been detected in the saliva in 15 to 30 minutes after external application. Its beneficent action is possibly due to the neutralizing power on the toxins circulating in the blood, which it possesses. The author gives brief notes of 20 cases where he has used guaiacol in the above manner.

(326) Active Immunization by Means of Attenuated Plague Cultures.

Kolle and Otto (*Deut. med. Woch.*, July 9th, 1903) find that of the four methods of immunizing against plague Haffkine's method must be regarded as by no means ideal, as even in the animal experiments only a comparatively small protection is obtained. The same may be said of the serum of the German Plague Commission, which is certainly not so strong as the first mentioned, although it is more potent than Lustig's serum. The fourth, that of Terni-Bandi, is practically inert. They therefore sought to improve on these immunization sera, and based their experiments on observations which they had made when dealing with an old culture of plague bacilli. Guinea-pigs which

received injections of this culture got bubos, which began to decrease in size after about eight or nine days. The general condition of the guinea-pigs was not materially affected, and after the lapse of two, three, and eight months the animals, 18 in number, were found to be immune toward plague injection. They have succeeded lately in attenuating another culture artificially so far that no illness was produced by cutaneous infection, while even by subcutaneous and intraperitoneal infection of a half of a loop of an agar culture only some of the guinea-pigs died of chronic plague while the others recovered. Eventually they further weakened the culture, and three loops proved non-pathogenic, that is more than 3,000 times the lethal dose of a virulent culture. By means of this culture they have immunized guinea-pigs, rats, and mice with certainty completely. They intend continuing their researches in this direction in order to determine the length of time that the immunity will last and what doses it should be given in.

(327) The Treatment of Facial Erysipelas.

Sarcinelli (*Rif. Med.*, September 16th, 1903), as the result of practical experience, recommends the following treatment: The face is covered with rather a thin mask of absorbent wool soaked in sublimate solution, 0.25 to 0.50 per cent. This mask is kept on for about two hours, and then replaced by another soaked in a 3 per cent. solution of salicylic acid. These masks are changed alternately. Sublimate alone was not so satisfactory, as it tended to macerate the skin; moreover, continuous application might cause poisoning. If bullae are present, these are coated with equal parts of ung. ichthyol and vaseline. During the night the wet packs were suspended, and the ichthyol preparation substituted. Under this treatment fever is said to disappear in twenty-four to thirty-six hours.

(328) Urosanol in the Treatment of Gonorrhoea.

Although he has not been satisfied with the results which he obtained in treating gonorrhoea by protargol, P. Scharff was induced to try a new preparation of this drug, and reports favourably on its action (*Therap. Monats.*, July, 1903). Urosanol is a combination of protargol with gelatine, and is made in three strengths, viz., 1, 3, and 5 per cent. The mass is fluidified at body temperature, and is enclosed in small tubes, from which a dose of 2½ c.cm. can be injected into the urethra. Scharff finds that the possibility of injecting concentrated solutions of protargol, without fear of damaging the urethral mucous membrane, is a great advance on the ordinary treatment with protargol, and considers further that the handiness of the apparatus, the cleanliness of its application, and the small cost, all speak in its favour. The antiseptic action of the protargol in combination with gelatine, unlike that of formalin, is not impaired, but rather enhanced. It covers the mucous membrane with a semi-fluid soft layer when injected, and acts partly as an antiseptic, partly as an astringent, and partly as an anticatarrhal agent. The suppuration is rapidly lessened, which Scharff regards as desirable, in opposition to some other observers, and the pain is also lessened, and soon removed. In all he treated 30 cases, and used for the greater number the 3 and the 5 per cent. strengths. In his first cases the discharge ceased after three or four days, but on discontinuing the treatment it again appeared on the sixth day. Later he avoided breaking off the treatment too early. He found that the rapidity of the action depended largely on the constitution of the patients, and quotes some cases to show that in some robust patients the attack very soon gave way to the treatment, while in more weakly subjects, such as a tailor, it took twelve days before the discharge could be removed and a further like period before the patient could be considered well. In some cases he found it advisable to complement the treatment by employing some astringents as well. Even in old-standing cases he succeeded in killing off the gonococci in a very short time. In very acute inflammation he first removes the initial stormy and painful symptoms by cold applications and internal medication, and begins the injections with very weak solutions of potassium permanganate before using the 1 per cent. solution of urosanol. He never continues the treatment for more than three weeks, and if the cocci and discharge have not disappeared by that time he adopts other measures. In all he regards that he has received better results from the use of urosanol than from the use of any other preparation.

PATHOLOGY.

(329) Identification of Cholera Bacillus.

J. Tsuzuki and K. Miyasaki (*Archiv für Schiffs- und Tropen-hygiene*, July, 1903) describe their experiments for the differentiation of the cholera bacillus, the culture medium they employed being the peptone solution of Carl Rohde. This peptone they speak of as R. peptone, the Gehe peptone as G. peptone, and the Witte peptone as W. peptone. A supply of R. peptone happened to be sent to Tsuzuki instead of G. peptone during a cholera epidemic in China in 1902. He inoculated from the same source two tubes, one containing R. peptone and the other G. peptone, and on examining the tubes twelve hours later found that a pellicle had formed on the former only. Further experiments with the different culture media led him to the following conclusions: (1) Cholera bacillus almost invariably grows on the surface of R. peptone solution, with the formation of a pellicle; (2) it grows within as well as on the surface of G. peptone solution, a pellicle being not so uniformly produced; (3) the addition of grape sugar to the solution has no influence on the development of the bacillus; (4) in a bouillon medium the bacillus grows within the fluid, irrespective of the sort of peptone used. Experience in other epidemics showed that W. and G. peptone solutions are alike as far as the cholera bacillus is concerned. The authors have investigated the behaviour of seven species of vibrio in R. peptone solution so as to be able to differentiate the cholera bacillus from the others. With three of these species—vibrio Denerke, Finkler-Prior, and Wernick—no pellicle was formed on the surface of the solution, and they therefore need not further be considered. The remaining five—the cholera vibrio, the vibrio Dunbar, Metchnikoff, Danubicus and Berolinensis—all form pellicles, the pellicle formed by V. Metchnikoff and Dunbar being smoother than that by the others. The pellicle appears slightly later in the case of the vibrio Berolinensis and Danubicus than of the other three. All grow in an alkaline medium, though the vibrio Metchnikoff can grow in a more strongly alkaline medium than the rest. The same temperature is suitable for all. The differentiation between the species thus presents considerable difficulty. To meet this, five rabbits were inoculated with the five different species of vibrio respectively and the immunization serum of each obtained. It was found that when a sufficiently strongly immunized serum was used the corresponding species of bacillus, and it only, was agglutinated into clumps, and thus an exact method of differentiation was obtained. The next subject of investigation was whether, when different species of these allied forms of bacillus were cultivated together in R. peptone solution, the cholera bacillus was overpowdered by the others. This was not found to occur, for when equal amounts of cultures of the cholera bacillus and each of the other five bacilli in turn were grown in R. peptone solution, after 144 hours, 91.7 per cent., of the colonies were cholera bacillus when V. Dunbar was the second species, 54.5 per cent. with V. Metchnikoff as second, 76.2 per cent. with V. Danubicus, and 84.2 per cent. with V. Berolinensis. Thus the cholera bacillus is not overpowered, and can be easily isolated from a mixed pellicle. To prove the use of R. peptone solution, the cholera bacillus was cultivated in it first with the addition of a small quantity of faecal matter; next of drinking water, and lastly of river water. In all three cases cholera colonies could be identified 12, 24, and 48 hours afterwards.

(330) The Pancreas in Cirrhosis of the Liver.

D'Amato (*Rif. Med.*, September 16th, 1903) has found certain changes in the pancreas in the subjects of ordinary hepatic cirrhosis. In the six cases examined an increase in the perilobular interstitial connective tissue was constantly observed, action varying in intensity and distribution in different cases. The vessels were sometimes normal and sometimes showed a small-celled infiltration of the intima and around the vasa vasorum. Hyperaemia from stasis, haemorrhagic infarcts, and sometimes diffuse necrosis were noticed. Fatty degeneration was not constant, but fairly frequent. The chronic inflammatory changes in the pancreas are not simply the effect of chronic stasis, but probably due to the same cause which produces the hepatic cirrhosis. The possibility of pancreatic changes in hepatic cirrhosis helps to account for the diabetes which sometimes complicates cirrhosis.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(331) Tropical Haemoglobinuria.

A. Lübbert (*Arch. f. Schiffs- und Tropen-Hygiene*, October, 1903) discusses the causes of tropical haemoglobinuria. As a result of his experience in German South-West Africa he divides the cases into three groups. In the first groups are the cases due to climatic influences on patients with livers already affected. The patients are usually recent settlers with no previous history of malaria and in whose blood the malarial parasite cannot be found. The attack begins with pain in the right shoulder, at first thought to be rheumatism; sharp stabbing pain in the right side follows, and on examination the patient is found to be slightly jaundiced and the liver swollen, painful, and tender. The temperature rises after preliminary chills, and on the second day of the fever haemoglobin is present in the urine. The fever begins to fall as a rule on the third day, and during the following eight days the haemoglobin diminishes and finally disappears. Little or no increase of bile pigment is found in the urine, nor are kidney elements present. The blood shows great destruction of the red corpuscles and active regeneration in process. Such cases may go on to a true parenchymatous nephritis and sometimes to abscess of the liver. Malarial parasites are not found in the abscess contents. The second group of cases is dependent on malaria, and as before the liver is already affected either from the malaria or some other cause. If the patient survive the first attack the haemoglobin diminishes, one or at most two abortive attacks only of fever following. This is ascribed to the active destruction of red cells, the hosts of the parasites in the first attacks, and the consequent diminution in the number of parasites. As the cell destruction diminishes, the liver is able to deal with the products, and the haemoglobinuria disappears. That this explanation is correct is rendered more probable because of the effects of quinine in cases of malarial fever with haemoglobinuria. In two such cases where Lübbert administered quinine there was at first a marked increase in the amount of haemoglobin, showing an increased preliminary destruction of cells, but no second attack followed. The third group comprises the cases of haemoglobinuria caused merely by quinine poisoning. It is doubtful whether quinine can cause a destruction of cells sufficiently great as to lead to haemoglobinuria with a normal liver, but where the liver is not normal quinine is undoubtedly an adequate cause. There is no history of malaria, nor can the parasite be found in the blood. The haemoglobinuria is spasmodic, quinine being at times well borne. Indeed, such patients have been known to pass without haemoglobinuria through a subsequent attack of malaria for which quinine has been administered, the explanation resting on the healthy state of the liver at the later date. The fact that in all these cases the liver is affected is shown by the lack of any appreciable increase in the amount of bile pigment in the liver, and confirmation of this is the predisposition of alcoholics to blackwater fever. Tropical haemoglobinuria cannot be considered to be a disease *sui generis*. Wherever there is destruction of red blood corpuscles and a liver which is unable to deal with the resulting products, haemoglobinuria may be expected. Its frequency in the tropics may thus be ascribed to the effect of climate in causing destruction of the red corpuscles, to malaria, the use of quinine, and the tendency to diseases of the liver. That it may be due to several independent factors is shown from the absence of blackwater fever in some regions where malaria is widespread, from the lack of any constant proportion between the intensity of the two diseases when both are present, and from the opposite effects of quinine in different cases. Moreover, the reports of other observers show that haemoglobinuria is found where the liver is normal, and Lübbert inclines to the view that a diseased spleen may lead to haemoglobinuria even where the liver is normal. Some cases, again, are probably of infectious origin. In each case a careful examination should be made to find what organ is affected.

(332) Treatment of Chronic Constipation.

August v. Luzenberger (*Zeits. f. diät. u. phys. Therap.*, September, 1903) reviews the different forms of treatment of chronic constipation. By chronic constipation absolute absence of the daily motion is not necessarily implied, but more often the passage of a scanty and hard motion. Nothnagel has made a useful division of the cases into three groups: (1) Those depending on some physiological factor, as, for instance a diet deficient in fluids; (2) those due to some other disease—for example, carcinoma of the rectum, and accompanied by other grave symptoms; (3) those in which constipation is the main symptom. The treatment of the second group of cases is not considered in the article, and those of the first group need only the recognition and change of the underlying factor. The constipation of the third group is explained in several different ways. By some it is held to be a symptom of nervous weakness. Herz ascribes it to insufficiency of the ileo-caecal valve, and a consequent backward flow of the intestinal gases, by whose action he believes the intestinal contents are driven forwards. Usually it is considered to be due to weakness of the intestinal muscle, but it is often caused by spasm of the muscle, especially in the cases where constipation alternates with diarrhœa. The most important treatment is often the regulation of the diet. As long ago as 1750 Cocchi recognized that the intestinal pain of neurasthenics grew worse rather than better under any form of drug treatment, and could only be remedied by dietetic and mechanical measures. In choosing a diet the patient's individual peculiarities, his general condition, and the state of his digestive apparatus as a whole, must all be considered. In every case the diet should be a mixed one. Luzenberger finds that in many cases quite small changes in the habits of the patients bring about cure—for example, lengthening the time between the midday and evening meals, drinking cold water, followed by a cup of coffee, before breakfast, drinking goat's milk instead of cow's milk where the latter has a constipating effect. Fruit, such as sweet, juicy oranges, and especially grapes, should be eaten before breakfast, and certain vegetables taken. The writers agree that fruit of different kinds and food yielding a large residue after digestion should be included; while lettuce, melons, asparagus, cucumbers, tomatoes, spinach, cabbages, onions, and celery are amongst the vegetables specially recommended. The next form of treatment is mechanical. Injections into the rectum are useful, but should not be given daily, as is sometimes advised, and, if frequently given, the form of injection should be constantly varied. Jaksch especially recommends injections of olive oil. It may be used in addition to water injections, or still better results are obtained if a small quantity of olive oil be injected and retained for an hour in the rectum. Massage has long been acknowledged to be a useful treatment. The methods employed vary; thus Jaksch urges that no one scheme of massage should be adopted, but the method adapted to the individual case; Piorry relies on pressure applied so as to further the advance of the intestinal contents; Norström recommends Swedish massage. Luzenberger has found Swedish massage to give the best and most lasting results. When combined with the use of electricity the effect is more speedily obtained, but of shorter duration, perhaps because the patients tend to more quickly break off the treatment. Amongst other mechanical measures may be mentioned the pumping of gas from the rectum, the use of rectal bougies, and gymnasium treatment, which probably acts mainly through an improvement of the general condition. There is endless variety of hydropathic treatment, but two main forms may be mentioned, the first relying on differences of temperature in the water used rather than on force of stream, the second on the force with which the water is applied. An example of the first is the method of Beni Barde, who gives in order a long-continued douche of the loins, a foot bath with running water, an anal douche, a douch of the side, and last, a quite cold abdominal douche. An example of the second is that of Winternitz, who places the patient in a Sitz-bath of lukewarm water, and then pours water from a height on to the abdomen. The treatment by electricity is last considered, and is especially useful in nervous cases. The faradic current was first employed, but Schillbach's experiments on animals proved that while the abdominal muscles are strengthened by the current, no effect is produced on the intestinal muscle. With the galvanic current, however, constant forward contraction of the intestinal muscle results. A convenient form of applying the galvanic current is by filling the rectum with warm salt solution in which the anal sound attached to the positive pole

rests, while the negative pole is on the abdomen. The water forms a cylindrical electrode, and a strong current may be used without producing irritation. Other ways of applying electricity might be mentioned, such as the combination of the faradic and galvanic currents, and the use of statical electricity.

SURGERY.

(333) Removal of Foreign Body from the Cardiac Region.

Tuffier (*Bull. et Mém. de la Soc. de Chir. de Paris*, No. 32, 1903) in support of the proposition that surgical extraction of a foreign body in or near the heart is indicated when such body causes life-threatening troubles and can be precisely localized, reports an interesting case under the heading of extraction of a bullet implanted in the wall of the left auricle of the heart. The patient, a soldier aged 24, was wounded in the left side of the chest by a ball from a pistol in the engagement at Figuig on March 15th. The absence of serious symptoms at the time of the injury and for some weeks afterwards led to the assumption that the projectile had not penetrated deeply, but after a brief interval the patient suffered from persistent palpitation and attacks of dyspnoea, which in the course of a few months increased in intensity, and caused much discomfort, especially after exercise, and also after each meal. When the case came under Tuffier's notice in October the wound of entrance was indicated by a small cicatrix in the second intercostal space on the left side at a distance of a fingerbreadth from the margin of the sternum. On radioscopic examination the foreign body was seen on the left side of the base of the heart. It was fixed, the author states, by its point in the wall of the auricle, and followed all the cardiac movements. The shadow of the foreign body was seen in the third intercostal space, and, consequently, below the level of the wound of entrance. In face of the grave and progressive functional disturbances in this case, and of the dependence of these symptoms on the relatively superficial presence of a foreign body in the left auricle of the heart, and in reliance on the help afforded by a magnetic instrument devized by Contremoulin permitting a very precise localization of the bullet, Tuffier decided to operate. An incision about 7 cm. in length having been made in the skin and pectoral muscle, from the lower margin of the rib downwards over the second intercostal space, and a portion of the second rib, together with its costal cartilage resected, Tuffier, guided from time to time by Contremoulin's magnetic indicator, made a cautious and "blunt" dissection of the left auricle, and was thus enabled to feel, denude, and finally to extract the bullet. There was no bleeding from the wound at the moment of the extraction. The patient made a speedy and complete recovery, and when presented at the meeting of the Société de Chirurgie on October 28th was able to walk without any functional trouble. In a discussion on this report doubts were expressed by Poirier and Bazy as to a definite cardiac lesion, the fact that the projectile had remained near the base of the heart, and had not fallen to the lower part of the sac, and also the absence of signs of inflammatory reaction and of effusion within the sac, suggesting to these surgeons that the projectile, though it had struck and adhered to the pericardium, had not penetrated into the pericardial cavity or wounded the heart.

(334) Paraffin in Mastoid Operations.

Politzer (*Wien. med. Woch.*, July 25th, 1903) shows that most attempts to shorten the after-treatment of mastoid operations have failed. Thus Gruber advocated immediate closure of the skin incision after thorough removal of the disease in the bone. But with the greatest care some fragments of diseased bone may be overlooked, in which case the cavity left in the bone refills with pus and a further operation is required. Politzer waits until the cavity in the mastoid process has become uniformly lined with healthy granulations and there is no further discharge. He then fills it with solid paraffin, which has previously been sterilized by boiling and has cooled to a suitable temperature. This completely fills the interstices of the cavity and then sets to a solid mass. The wound is closed over it by sutures or Michel's clamps. In one case the conditions warranted the assumption that nothing had been left behind, and the paraffin was poured in immediately after the operation. It is usually, however, advisable to wait until the discharge has ceased. The cases of acute mastoiditis which are most suitable for the application of the method are those in which a bridge of healthy bone intervenes between the abscess in the mastoid process and the pus in the tympanum and antrum. If this is present it is usually unnecessary to open the antrum. In 56 consecutive cases of operation for acute mastoiditis in the writer's clinic the mastoid cells alone were opened and gouged out in 33, and the antrum was opened with the cells in 23. The duration of treatment was less and the ultimate results were superior in the former cases. If the absence of healthy bone makes an opening into the antrum unavoidable, the paraffin method is seldon applicable. The molten paraffin penetrates into the antrum and thence into the tympanum, from which it may be impossible to dislodge it. In only one case was it employed successfully; the orifice of the antrum had become completely blocked with granulations. The following is one of 5 cases reported: A man, aged 26, had acute otitis media about the end of October, and was admitted to hospital on November 14th. There was a perforation of the anterior portion of the tympanic membrane and copious otorrhoea. The pulse was 103 and the temperature 102.6° F. There was tenderness over the mastoid process. On November 17th the mastoid process was opened up. It contained granulations as far as the apex and scattered points of suppuration. The diseased material was removed with the sharp spoon. The antrum was surrounded by hard and healthy bone, and was not exposed. The resulting cavity, which was of the size of a walnut, was packed with iodoform gauze, and the upper and lower angles of the cutaneous incision were brought together with Michel's clamps. A week later the otorrhoea had ceased and the cavity in the mastoid was lined with smooth, healthy granulations. It was filled with warm molten paraffin, which had previously been boiled. After this had solidified the skin incision was completely closed over it with Michel's clamps. Three days later healing was complete and the clamps were removed. Seven months later there had been no relapse.

(335) The Technique of Appendectomy.

Zeller (*Zentralb. f. Chir.*, No. 45, 1903) holds that the frequent practice in removal of the appendix of dividing the caecal attachment of the process after ligature, and of covering the stump by a dissected cuff of serous membrane is not free from grave risk. A portion of the appendix containing septic matter is thus left, and suppuration might result, and on perforation set up acute peritonitis. Such an event, it is acknowledged, is of rare occurrence, but a case is referred to in which death was due to the rupture of a small abscess on the fifth day after the removal during a quiet interval of a diseased appendix. A further objection to the usual method of dealing with the stump of the removed process is the fact that the intestinal wall at the appendicular attachment may be so disorganized as the result of acute inflammation as to afford but very faulty support to the sutures. With the view of overcoming these objections the author practises total extirpation instead of simple resection of the appendix. After the process has been set free from its adhesions and detached from its mesentery, its attached portion is entirely removed by an elliptical excision made through the wall of the adjacent portion of caecum, the margins of this incision being afterwards carefully and closely brought together by sutures. There is very slight risk, it is stated, of troublesome faecal discharge from this opening during the operation, as the peristaltic action of the caecum has very probably been abolished for a time by previous administration of opium, and also by the results of the inflammatory process. The author, who has frequently performed this modification in cases of appendectomy during a calm interval, claims for it a further advantage of preventing the formation of a stercoral fistula, which, it is pointed out, is a frequent result of the method that has hitherto been usually followed.

MIDWIFERY AND DISEASES OF WOMEN.

(336) Entry of Air into Veins in Gynaecological Operations.

Delore (*Rev. de Chir.*, No. 10, 1903) has been led by recent experience of an instance of sudden death from entry of air into the veins during an operation for hysterectomy, to study other records of this accident, especially those in which the air was admitted by the veins of the pelvic cavity, to determine the predisposing causes, and to draw from his investigations some conclusions as to the most suitable method of treatment. There can be no doubt, the author holds, of the occasional occur-

rence of death from the forcible introduction of air into large veins in the course of a surgical operation, the seat of operation in such cases being usually the neck or thorax, and very rarely the pelvis. The predisposing causes of the accident during gynaecological operations are: (1) Abnormal dilatation of the veins, often very marked around uterine fibromata; (2) intense anaemia due to repeated and profuse haemorrhage; and (3) the influence of the Trendelenburg position on the circulation in the pelvic veins. The determining cause, the author states, is undoubtedly thoracic aspiration. The distance from the divided veins of the pelvis to the right side of the heart is short, and the admission of air into these veins may be thus readily explained. There is good evidence for the conclusion that the prognosis of this accident, whether occurring in the pelvis or neck, is not absolutely fatal. In considering the prophylaxis of this accident in gynaecological practice, the author states with regard to the Trendelenburg position that its advantages are too great to justify its rejection on the score of its very doubtful influence in the rare cases of entry of air into veins during pelvic operations. The presence of marked anaemia and dilatation of the veins in the seat of operation, should, it is pointed out, indicate great care in securing these vessels before they are divided. In such cases preliminary haemostasis will ward off the two dangers of dangerous bleeding and the entry of air into veins. With regard to the direct treatment of the accident, the author has very little to suggest beyond immediate closure of the opening in the vein. He thinks, however, that when the symptoms are very grave and the right side of the heart is distended, it might be justifiable to pass a needle into the right ventricle, and to remove the air by aspiration into a vessel containing water which is held above the body of the patient. This method, it is stated, has given good results in experiments made by Bégonin.

(337) Pregnancy in Double Uterus.

Fraenkel (*Zentralbl. f. Gynäk.*, No. 43, 1903) reports a case, without a clinical history, of pregnancy over term in a closed cornu, chiefly of interest in respect to the relations of the bladder to the abnormal uterus. A fetal sac was found, intraligamentary and in part retroperitoneal and subperitoneal, lying on the left side of a dextroverted uterus. It rose above the level of the fundus as much as it passed below that of the cervix, and was continuous with both by muscular tissue and not by a mere ligamentous band. The left round ligament was attached to the fetal sac, a relation which settled the nature of the anomaly. The bladder lay superiorily in front of the fetal sac, and entirely to the right of the normal cervix. Fraenkel reckoned the abnormality as coming under uterus bicornis bicollis, as the sac was continuous with the cervix as well as with the body of the right half of the uterus. The position of the bladder was not in accordance with prevalent experience so that Fraenkel, after a discussion on this case, admitted that the displacement of that organ to the left was probably due to a secondary and pathological change in relation to parts teratologically abnormal. Jurinka (ibid., No. 45) relates a case of much clinical interest where pregnancy occurred in the right half of a uterus bilocularis unicollis, and intense pain was caused by distension of the gravid cornu, although that cornu was in free communication with the os externum and vagina. The patient was a married woman, aged 32. Six years before observation she bore a male child, though in which cornu it developed remained uncertain. Delivery occurred in the eighth month, after a strain, but the child was reared and is living still. The last period occurred at the end of October, 1902. Severe shooting pains were felt about Christmas in the right iliac fossa. In January, 1903, Jurinka detected an enlarged uterus, anteflexed, and pushed to the left by an almost spherical, soft, doughy tumour quite continuous with it. The tumour was very tender to touch. The left appendages felt normal; the right tube and ovary could be traced proceeding from the tumour. The vagina and vaginal portion of the cervix were normal; nor could the least trace of a septum be detected in either. Interstitial or tubo-uterine gestation was suspected. On January 19th the uterus and the gravid tumour, or rather cornu, were successfully removed, together with the right ovaries, by supravaginal amputation. The gravid and not obstructed right cornu contained a well-developed male fetus $4\frac{3}{4}$ in. long. The septum between the cornu and its fellow was $2\frac{3}{4}$ in. long, and ended at the level of the os internum, there being one cervical canal, ending in a single os externum. The empty left cornu had walls almost uniformly $\frac{3}{4}$ in. thick, but the walls of the left cornu were hardly $\frac{1}{2}$ in. thick near the internal os, whilst near the origin of the right tube the thickness was reduced to about $\frac{1}{8}$ in. Thus the cornu had developed too rapidly to allow of a safe and normal increase in the thickness of the cornual walls. The pain was thus explained; it was very remarkable that no true contractions nor any other symptoms associated with abortion set in, though the tension must have been severe for at least a month. The right round ligament was attached to the outer pole of the gravid cornu and the placenta to the posterior part of its inner wall.

(338) Gonorrhoeal Endometritis Treated with Picric Acid.

Serra (*Rif. Med.*, June 24th, 1903) has treated 21 cases by this method. The vagina is first well douched with 1 per cent. sublimate solution, then 5 c.cm. of a solution of picric acid containing 12 gr. in 1,000 aq. distill. is injected into the uterine cavity, and a vaginal plug saturated in the same solution left *in situ* for twenty-four hours. This treatment was continued daily. In 17 cases treatment began from five to twenty-five days after infection, in 4 cases from one to two months. In one case of vulvo-vaginitis treatment was continued for ninety days, the gonococcus completely disappearing after the sixty-fourth day. In the other cases treatment lasted from ten to forty-five days, the gonococcus sometimes disappearing after a week's treatment. No unpleasant symptoms were noted; on the contrary the dull pains in the lower abdomen often complained of diminished and disappeared. No caustic effects were observed.

THERAPEUTICS.

(339) Sanoform, a Substitute for Iodoform.

Iodoform has many disadvantages which render it advisable to seek for a substitute. It is a powerful poison, is easily decomposed, is not sterilizable on account of this instability, and lastly has a very penetrating, disagreeable odour. G. Bamberg (*Berl. klin. Woch.*, September 21st, 1903) first deals with the toxic action of iodoform, and points out that although one has long ago given up using great excess of the drug in wounds, every now and again one comes across cases of poisoning from small doses, and one meets with a certain number of persons who have an idiosyncrasy against the preparation. Next he points out that as iodoform has no bactericidal action but only an inhibitory action, iodoform gauze cannot behave otherwise towards bacteria than unimpregnated gauze, and as iodoform is very volatile and cannot withstand the action of heat one cannot procure a sterile iodoform gauze. In reporting on a new substitute called sanoform he says that it was first produced by Gallinek and Courant, and is a di-iod. salicylate methyl-ester, having the formula:

$$C_6H_2(OH)(COOCH_3)(I_2)$$

It is a white, tasteless, and odourless powder which is not decomposed by light. It contains 62.7 per cent. of iodine. It melts at 110.5° C., but on cooling again solidifies into unaltered sanoform. It is only decomposed by a temperature of 200° C. When brought into contact with the living tissue it is very slowly dissolved and free iodine and salicylic acid are liberated in traces. Both these bodies act in a nascent state strongly bactericidally. This splitting up of sanoform is shown by some experiments which Bamberg carried out on rabbits. In testing its action on bacteria he found that sanoform exerted an inhibitory action which was not less marked than that of iodoform. In testing the preparation in practice he used both the powder and a sterilized sanoform gauze. In two-thirds of his 225 cases the two were used in vaginal operations, and in the case of abdominal operations the wounds were covered with powder and over that a layer of gauze was placed. In no case did he meet with any undesired effect, and he reports that the wounds all did well, mostly healing well; in the case of the gauze being used as a vaginal plug he found that it acted much better than iodoform gauze in deodorizing. He therefore thinks that sanoform should be able to replace iodoform in all those cases in which the latter has hitherto been employed.

(340) Theobromine as a Hypnotic in Arterial Cardiopathies.

For several years theobromine has been recognized as a diuretic, acting directly

upon the renal epithelium, as Schroeder has demonstrated. It has also been claimed as a cardiac tonic, and in using it as such Gallavardin and Péhu (*Lyon Méd.*, November 8th, 1903) have observed a special hypnotic action. They have found that the administration of even small doses of theobromine (½ to 2 grams) in the distressing cardiac restlessness and insomnia is frequently followed by natural and refreshing sleep. This hypnotic effect is not equally well marked in all varieties of cardiac affection, and though the result was manifest in certain cases of sclerous myocarditis with cardiac hypertrophy, it was especially evident in syphilitic aortitis and aortic atheroma. The effect upon the agitation of patients suffering from such lesions was such that they almost without exception asked for the drug again. Even centigram doses were found to be noticeably calmative. Considering that theobromine has been shown to have a direct cellular action in the case of the kidneys, and that it is closely allied to xanthine and caffeine, whose action upon the nervous system is incontestable, and, lastly, that it has been proved itself by experimental intoxication to cause convulsions and coma, it may be concluded to have a direct action upon the cells of the nervous system.

(341) Urotropin as a Prophylactic against Scarlatinal Nephritis.

Scarlatinal nephritis is probably due to the action of an unknown micro-organism or its toxins. Urotropin is excreted as formaldehyde, and disinfects the urinary tract. For this reason it was given by J. Widowitz (*Wien. med. Woch.*, October 1st, 1903) in 102 cases of scarlet fever. It was administered to patients varying in age from 1 to 21 in doses of ¾ gr. (0.05 gram) to 7½ gr. (0.5 gram) three times daily during the first three days of the disease. It was then discontinued until the beginning of the third week, at which stage the onset of nephritis is most frequently observed, when it was given during a second three days. Not a single case of nephritis occurred, though according to the various estimates it complicates scarlet fever in 16 to 90 per cent. of all cases. Traces of albumen were found in the most severe cases early in the disease, but true nephritis never occurred.

(342) Iodides and Iodipin.

Lesser (*Arch. f. Derm. u. Syph.*, t. lxiv, 1903) has studied the action of iodides and iodipin. He concludes that potassium iodide circulates not only in the plasma, but also in the corpuscles. Potassium iodide is unchanged, and does not form albuminous compounds. The greatest quantity is found in the lungs. Lesser thinks that the iodide acts as itself, and not in virtue of its iodine. In the case of iodipin, when injected, iodine is found in the urine for a long time afterwards; but when taken by the mouth it forms a fatty substance which is not excreted by the kidney. The absence of iodism is due to the small amount of iodine in the circulation. As regards the value of iodipin, Lesser thinks it cannot replace iodides, but may be useful in maintaining iodine in the body for a prolonged time.

(343) Treatment of Local Hyperidrosis.

In the *Journ. des Prat.*, 1903, the following treatment is given for local sweating. Bathing with formol (one tablespoonful in a litre of water) and permanganate (1 in 4,000) removes the fetid odour. Brocq recommends the two following lotions: Naphthol 5, glycerine 10, alcohol 100 parts; or thymol 1, tannin 5, camphorated alcohol 200 parts. After the application of these the parts should be powdered with talc, starch, or bismuth, or with a mixture of salicylic acid 3, starch 10, talc 87 parts. This is used in the German army. Afterwards if the feet are the part affected a few drops of red oxide of lead 1 part, and subacetate of lead 29 parts may be applied occasionally between the toes.

PATHOLOGY.

(344) Lesions of the Pancreas in Diabetes.

Jean Lépine (*Lyon Méd.*, October 25th, 1903) has had occasion to examine the pancreas histologically in many cases of diabetes, and in two cases has found remarkable lesions of the islands of Langerhans. In both instances the patients died from coma. The first pancreas was of normal volume, but very hard. There was marked sclerosis of the interstitial tissue, the new formed fibres being especially situated around the blood vessels and penetrating into the interior of the lobes. Around the islands the sclerosed tissue ran circularly so as to form a fibrous capsule, from which trabeculae were continued inwards to separate the cells into groups of three or four. The cells were pale, not granular. The nuclei varied; some were increased in size and stained deeply; others were of normal size and contained nucleoli; others, again, especially where the fibrous growth was greatest, were indistinct, and evidently disappearing. In the second case, where the diabetes had been known to be present for six years, the pancreas weighed 75 grams, and was elastic but not hard. Considerable arterial and periarterial sclerosis was noted, with great embryonic infiltration throughout the whole organ, but instead of the bands of formed connective tissue seen in the first case there were present tracts of round cells, in which fine trabeculae could be distinguished. These fine fibrillae separated the cells of the islands of Langerhans into groups. Some of these cells were enlarged and proliferating, while other masses had lost their cellular organization, and had undergone hyaline degeneration staining with acid fuchsine. Here the process of degeneration was seen in an earlier stage than in the organ first described.

(345) The Mechanism of Phloridzin Glycosuria.

Pavy, Brodie, and Siau (*Journ. of Phys.*, June 16th, 1903) have investigated experimentally the mechanism of the glycosuria which follows phloridzin administration. In this form of glycosuria the amount of blood sugar is not raised to more than a comparatively insignificant extent; the glycosuria has been explained as due to phloridzin creating an increased permeability of the kidney for sugar. Another suggestion is that the phloridzin itself is split up in the kidney into sugar, which is eliminated, and phloretin. In forms of experimental glycosuria other than that produced by phloridzin, sugar production continues and rises after ablation of the kidneys; with phloridzin, however, under these conditions no rise in blood sugar occurs. The experiments of Junz were confirmed, it being found that injection of phloridzin into the renal artery of one kidney produced glycosuria from that kidney prior to, and to a greater extent than from the other. Perfusion of a surviving kidney with defibrinated blood containing phloridzin produces a diuresis accompanied with the presence in the urine of a notable amount of sugar which is not to be accounted for by the disappearance of sugar that occurs from the blood, the amount of the latter being entirely insufficient. Intravenous injection of phloridzin produces glycosuria after ablation of the abdominal viscera, and the elimination of sugar persists after the blood sugar has fallen to the lowest level that is noticed to occur. It was shown that the eliminated sugar could not be derived from the phloridzin injected, nor did the observations fit in with the theory of increased permeability produced by the phloridzin, the sugar excreted may far exceed that existing in the circulating blood. The hitherto proposed theories of phloridzin action fail to meet the requirements of the conditions found. Under the view propounded by the writers the glycosuric effect of phloridzin is attributable to a specific action exerted upon the cells of the renal tubules by which they acquire the power of producing sugar. They consider that under the influence of phloridzin these cells exert a katabolizing action upon something reaching them from the blood, resulting in the liberation of dextrose in a manner comparable to that by which lactose is set free by the cells of the mammary gland. The source of this eliminated sugar is probably proteid; the first effect of phloridzin is apparently the breaking off of loosely combined carbohydrate as long as such is at hand, and when this ceases to be available the proteid molecule is itself attacked, the production of suguar being one result of its disruption.

(346) Multiple Swellings of Bone.

Harbitz (*Norsk. Mag. f. Laege.*, page 1, 1903) relates the case of a female, aged 55, who on admission to hospital showed kyphosis and enlargement of the axillary and inguinal glands. There was a history of three years' rheumatism in the back and arms and legs. At the necropsy the swellings were found extensively diffused. There were masses of tumour growth in the sternum, the clavicle, and many of the vertebrae. Both the femur and the humerus were free. The cranium was large, thickened, and contained a large number of small growths. These masses consist of small round or oval cells, apparently due to the proliferation of the medullary cells. The etiology of this lesion is quite unknown; it is supposed to be of infectious origin, but no parasite has yet been found. The condition occurs most frequently in old people, and is sometimes associated with certain blood diseases.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

(347) Chronic Pneumonias.

Hans Kohn (*Berl. Klin.*, November, 1903) defines chronic pneumonia as an inflammation of the lung which exhibits, in addition to the exudative processes, a proliferation of the connective tissue, and has in consequence lasting effects upon tissue structure. He distinguishes two main classes, according to whether the inflammation begins in the alveolar or interstitial tissue of the lungs. The first group may begin as a lobar or as a lobular pneumonia. When a lobar pneumonia passes into the chronic form it rarely exhibits a crisis; when this occurs it is followed by irregular oscillations, which may last for weeks, at the end of which time the affected side is more or less markedly flattened. After weeks or months the temperature has become normal, the pulse quiet, and the general condition better, but dullness and bronchial breathing persist. By this time the cough has become rare, and the patient may appear, until examined, in normal health; eventually some part of the damaged lung may recover its capacity, but complete restoration does not occur. The anatomical change consists in the formation of an exudate, which after a while becomes organized by the formation of new blood vessels. Cells pour into the alveoli from various sources, by means of the pore canals, first described by the author, by breaking through of the connective tissue and detachment of the bronchial cells, and by direct multiplication of the cells of the alveolar walls, both within the walls and as a part of the exudation. In this way the induration process is completed: this may not, however, end so simply, but may be complicated by the development of an abscess or of gangrene. If an abscess is formed unfavourable symptoms develop, and there is usually expectorated an abundant purulent sputum having a peculiar faint sweetish odour: if the abscess is large there will be the physical signs of excavation; if not, there will merely be coarse *râles* in the dull area. In the sputum pus cocci will be found in addition to the microbes of pneumonia or influenza. If gangrene occurs there are usually the well-known subjective symptoms, together with characteristic sputum containing elastic fibres; in both cases there may after a time be severe pulmonary haemorrhage, and both complications are very apt to relapse after appearing to get well. It is said that lobar pneumonia may go on into caseous pneumonia, but the author believes that this is only effected by the intervention of the tubercle bacillus. In the diagnosis of difficult cases he strongly advocates repeated and systematic exploratory puncture. In the matter of treatment he believes that much can be done to prevent a pneumonia from becoming chronic by vigorously assisting the absorption of the exudation through weakened blood and disturbed lymph circulations, and it is accordingly recommended in dangerous cases to stimulate these by good nutrition, the administration of alcohol, digitalis, and camphor, and eventually by helping absorption by the administration of sodium iodide and the use of respiratory gymnastics and baths, or, better still, cold packing. Should consolidation persist in spite of all this, the author recommends the administration of considerable doses of sodium iodide, systematic respiratory exercises, and, if the patient's condition will permit it, tepid baths with cold douches. Later on, in order to prevent contraction, more extensive respiratory gymnastics should be undertaken, followed by general gymnastics and perhaps some mountaineering. The medical treatment of abscess or gangrene of the lung, as laid down by Kohn, consists in the inhalation of turpentine or carbolic acid and the internal use of myrthol, which is given in 2½-gr. capsules in increasing doses up to ten a day; for this last remedy the author claims almost specific properties. In relapses operation is particularly indicated; it is necessary to insure the apposition of the pleural layers by mechanical or chemical means, or both combined. All broncho-pneumonias exhibit a marked tendency to induration, and this, the author says, is particularly seen in those which complicate chronic renal disease. It is, however, in general not the specific nature of the infection but the length of time during which the exudation persists which is the main factor in producing induration, and this in its turn depends largely upon the particular resisting power of the patient. In connexion with this part of the subject it is mentioned that infarcts, atelectases, and injuries of the lung may also lead to some amount of induration. The second great group of chronic pneumonias—the interstitial—is divided by the author into four classes, the pleurogenous, the pneumonokonioses, the pneumonomycoses, and the pneumonozoöses. The pleurogenous form arises by invasion from chronic pleural thickening; a similar condition may also extend from the connective tissue at the root of the lung. The pneumonokonioses, as is well known, form little nodules of connective tissue, each one of which may set up, first a catarrh, and then pulmonary induration, later on local softening or gangrene, or very commonly tuberculous infection. Clinically these forms appear first as chronic catarrh and eventually give rise to the symptoms of fibroid contraction of the pneumonomycoses. Special stress is laid upon caseous pneumonia as a form of tuberculosis. The symptoms of this may at first suggest true pneumonia, but are not usually strictly confined to a single lobe: the sputum may be absent altogether, or rusty or green. Fine crepitations appear and are present not only at the beginning and the end of the affection, but throughout; the temperature tends to be intermittent. In doubtful cases one has to go by associated symptoms, such as pallor, rapid loss of strength, haemoptysis, and the signs of excavation. The usual history of such a case is that the patient has been suffering for some time from tubercle, often latent, and then develops pneumonia as the result either of aspiration of the contents of the cavity or from some intercurrent disease, such as measles or whooping-cough, or through injury. The process of caseation is preceded by an inflammatory stage characterized by an exudation containing a very large number of cells and giving to the lung the appearance described by Laënnec as gelatinous infiltration: if recovery takes place the fibrotic process becomes more and more evident and the pneumonic patch is shut off from connexion with the rest of the organ. With regard to the occurrence of fungi, such as aspergillus and mucor, in the lung, the author considers that it is now established that these organisms are actually the cause of certain pulmonary diseases and not merely secondary growths in pulmonary cavities. He records a case of a remarkably pure aspergillus infection of the lungs which started apparently from the nose; the patient had some emphysema and chronic bronchitis, which no doubt conduced to the settling of the fungus, the subsequent growth of which led to excavation. This form of disease is extremely chronic and sometimes ends in recovery. Treatment resolves itself into maintaining the general strength and giving pulmonary antiseptics. The thrush fungus also occurs sometimes in the lungs, and, like the other fungi, especially in the subjects of diabetes. It has been suggested that it is only in the lungs that these organisms can get any oxygen to enable them to grow. Actinomycosis is comparatively common in the lungs, and gives rise to a clinical combination of great induration with scattered areas of suppuration, which is quite characteristic, even if the typical yellow granules are not expectorated. It is noteworthy that in actinomycosis lungs the apices are usually not attacked, though the pleura is often extensively involved; operation and the administration of potassium iodide afford the only hope of relief. Animal parasites are extremely rare in the lung, and can only be detected by the presence of hooklets or other characteristic structures in the sputum.

SURGERY.

(348) Surgical Intervention in Medical Nephritis.

Maragliano (*Gazz. degli Osped.*, April 26th, 1903) discusses this question. Surgical intervention has now been practised in many cases of renal pain coupled with haematuria with success. Frequently the operation has been performed on the idea that a calculus was present, whereas nothing has been found at the time. Nephrectomy, nephrotomy, and nephrolysis are the chief modes of operation. This distension of the inflamed kidney enclosed in a comparatively inelastic corpuscle sufficiently explains the relief which follows nephrotomy. This congestion may cause anuria either by pressure on the glomerular arteries or on the ducts. Nephrolysis or decapsulation may accomplish the same result as nephrotomy. Of the 47 cases thus operated upon for renal colic and haematuria 73 per cent. were cured and 16.5 per cent. died. It is doubtful whether surgical intervention is likely to do any good in

true Bright's disease. In a chronic nephritis where the chronic inflammation of the renal parenchyma represents the basis of the disease (a local rather than a general disease like Bright's) decapsulation may be useful. In acute nephritis the indications for operation are severe haematuria, constant, severe, fixed pain, and above all threatening anuria. If the fluid which flows from the renal wound immediately after incision is urinous this points to blockage of the excretory ducts rather than to pressure on the glomerular arteries, and theoretically these are the cases in which nephrotomy is likely to give the best result *qua* anuria.

(349) Comparative Value of Dry and Moist Dressings.

GOUTERMANN (*Arch. f. klin. Chir.*, Bd. lxx, Heft 2, 1903) carried out investigations on the comparison of moist and dry methods of dressing wounds. Daily cultures were taken from wounds, sown in gelatine, and the colonies counted the next day. The dressings used were dry antiseptic gauze, iodoform gauze, moist sublimate gauze (1 in 2,000), and carbolic, 3 per cent. The organism found was usually the staphylococcus albus. The author concludes as follows: (1) No continued bactericidal aftereffect of antiseptics with which wounds have been washed can be shown; (2) the number of micro-organisms in non-suppurating accidental wounds is increased to a greater degree by the use of impervious moist dressings than by dry dressings; (3) iodoform gauze is to be preferred in the dressing of accidental wounds because, besides its drainage properties and haemostasis, it has a decided inhibitive action on bacteria; (4) moist dressings readily induce eczema and folliculitis near the wound owing to maceration of the skin; (5) moist dressings form no certain preventive of suppurations in accidental wounds; (6) in suppurating wounds dry dressings bring about a more rapid disappearance of bacteria than moist ones; (7) many accidental wounds heal without the least clinical sign of inflammation, in spite of the presence of large numbers of bacteria.

(350) The Combined Use of Rubber and Woven Gloves in Surgical Operations.

GOEPEL (*Zentralbl. f. Chir.*, No. 42, 1903) states that the disadvantages of rubber gloves on account of their lacerability, and of woven gloves on account of their loose texture and consequent permeability, may be overcome by using both forms of gloves together, the latter drawn over the first. The thick woven material affords a good hold of the surgical instruments, which are so apt to slip from the smooth rubber, and the permeability of the woven material is neutralized by the impenetrable nature of the rubber stuff, the possibility of the passage of germs from the skin of the operator's fingers being thus prevented. This combination, which overcomes a difficulty in aseptic technique, can, it is stated, be readily put into practice. The possible objection that the use of so thick a covering over the hands might hamper the surgeon in the performance of his operation is not justified by the results of practical experience. By this associated use of smooth and woven gloves, it is asserted, the advantages of simple gloves on the one hand and of the uncovered fingers on the other are combined, and the evils attending each are eliminated.

(351) Retroduodenal Choledochotomy.

F. DE QUERVAIN (*Zentralbl. f. Chir.*, No. 40), alluding to a communication in a previous number of the *Zentralblätt* (see No. 46 in EPITOME of July 25th), in which Berg was led, by the results of experimental work on the cadaver, to advocate retroduodenal choledochotomy as a practicable and useful operation on the living subject, states that this method has been practised with success by several surgeons, and can by no means be regarded as a novel procedure. The author agrees with Berg that exposure of the retroduodenal and papillary portions of the common duct by incision of the parietal peritoneum on the right side of the duodenum, and rotation of this portion of the intestine, is a valuable resource in those difficult cases which McBurney thought might be best dealt with by incision of the intestinal wall. A case is reported by F. de Quervain in which a large calculus impacted in the terminal portion of the common duct, and also in the pancreas, was readily removed by retroduodenal choledochotomy. The operation in this case was performed under rather unfavourable conditions, as there were firm and extensive adhesions between the gall bladder and the small intestine. The success of the treatment, notwithstanding this apparent contraindication, is a proof, the author concludes, that retroduodenal choledochotomy is likely to be of great service in less complicated cases, and that it claims a prominent place in the list of typical and recognized operations for the removal of calculus from the biliary ducts. In the performance of the operation great care should be taken to detach as small a portion as possible of the duodenum from the parietal peritoneum, and also to secure all bleeding points. The common duct when exposed on displacement of the intestine should, if it be practicable, be excised at a part which is not covered by pancreas. In discussing the relative indications of retroduodenal and transduodenal choledochotomy the author holds that the former method is applicable when the duodenum is free from inflammatory adhesions and its attachments are in a normal condition. When, on the other hand, the pancreas and common duct are fused together into a tough mass, so that it would be very difficult to avoid damage to the intestine and serious bleeding, it would be better, he holds, to resort to McBurney's operation of opening the duodenum.

(352) Cancer of Liver Simulating Movable Kidney.

TUFFIER (*Rev. de Gynéc. et de Chir. Abd.*, September-October, 1903) exhibited before a society in Paris last summer a woman who was admitted into his wards with all the signs of a movable kidney. When the abdomen was opened, instead of a kidney a pedunculated tumour was discovered; it was attached by a pedicle to the anterior border of the liver, which appeared to be healthy. Tuffier removed the tumour without difficulty, securing the vessels of the pedicle. The new growth was described as an epithelioma of an aberrant lobe.

MIDWIFERY AND DISEASES OF WOMEN.

(353) Operative Treatment of Cancer of the Cervix Uteri.

W. F. B. WAKEFIELD (*Amer. Journ. of Obstet.*, October, 1903) describes the abdominal and pelvic lymphatics draining the uterus, in order to determine the extent of the operation demanded for cancer of the uterus. The lymphatics of the different parts of the uterus pass through the parametrium to separate groups of lymph nodes. Of these groups the iliac lymph nodes drain the upper part of the vagina, the cervix, and bladder, and occasionally help to drain the fundus; the sacral nodes drain the rectum and in part the cervix; the median lumbar nodes, the fundus and ovary; the inguinal nodes, the uterine horn and Fallopian tube. The removal of the lumbar nodes has never yet been attempted, and thus the extent of operation for cancer of the cervix only is under consideration. The most opposite views are held as to the involvement of the parametrium and lymph nodes in cancer of the cervix. These differences are better understood when it is remembered that (1) invasion of the parametrium usually precedes invasion of lymph nodes, and the parametrium may be considerably infiltrated by carcinomatous deposit without giving palpable or ocular evidence of the same, while on the other hand thickening and induration of the parametric structures does not necessarily imply malignant involvement; (2) enlarged lymph nodes are not always cancerous, nor cancerous nodes always enlarged; (3) cursory microscopic examination of lymph nodes often fails to reveal an existent carcinomatous deposit. It has been stated in connexion with the second point that a carcinomatous lymph node can be readily diagnosed by its peculiar hardness, but there are few surgeons who can do this with certainty. That microscopic examination is often insufficient is obvious, if it be remembered that most investigators are content with examining one or two sections only of an extirpated lymph node. Further differences are due to the fact that in about 12 per cent. of the cases of carcinoma of the cervix the lymph nodes show an anomalous epithelial formation. Many authors deny any relationship between these structures and carcinoma because of the regularity of their structure, the presence often of a sort of connective-tissue membrane, the occasional presence of ciliated epithelium, and the fact that their epithelium sometimes differs from that of the original tumour. None of these reasons, however, are conclusive, and sections which the author has examined have led him to the conclusion that these formations are a primary transitional stage of a real carcinomatous growth. This view is strengthened by the absence of any such bastard epithelial growths in 80 bodies examined in Vienna which presented no sign of cancer. Speaking generally, the lymph nodes are affected

in 25 per cent. of the cases of cancer of the cervix uteri, and their removal is therefore a necessity whenever it is a surgical possibility. The author makes the following statements with regard to operative procedure: (1) The desiderata in order of relative importance are removal of the uterus, the parametric connective tissue, the upper part of the vagina and the regional lymphatics: no operation is worthy of consideration which does not at least accomplish the first three. (2) Vaginal hysterectomy has no place as a curative operation, the abdominal route, which includes the combined abdominal and vaginal, being the only method radical enough to give hope of a permanent cure. (3) That operation will outlive all others which permits the accomplishment of the previously mentioned desiderata with least injury to peritoneal structures, and at the same time affords the greatest protection to the ureters and important vessels.

(354) Peritoneal Closure of Pelvis after Damage to Rectum in Abdominal Section.

Quénu (*Rev. de Gyn. et de Chir. Abd.*, September-October, 1903) dwells on what he terms Chaput's method for the treatment of damage to the rectum, especially during abdominal hysterectomy. The edges of the divided peritoneum are sewn across above the injury. Quénu considers that it was originally derived from Chrobak's principle, advocated some fifteen years ago, that instead of fixing the stump of the uterus in the old supravaginal operation to the lower end of the wound, treating it externally, the stump should be sunk, after its vessels have been secured and the peritoneum sewn over it. This is practically the newer retroperitoneal operation. Others sew peritoneum over the stump of an ovarian pedicle, and now the serous membrane is often made to cover the pelvis above the level of a damage in the rectal wall. The practice is known as "peritoneization," and is applicable to many conditions met with in abdomino-pelvic surgery.

(355) Premature Detachment of Normally-placed Placenta in Abortion.

Lourich (*Zentralbl. f. Gyn.*, No. 6, 1903) publishes the case of a woman, aged 29, admitted into a maternity for extreme anaemia during her fifth pregnancy. The fundus reached as high as the umbilicus, and a prominent swelling as big as a fist projected from the right side of the uterus, which felt soft. The vagina was full of clot. The os admitted the tips of two fingers, and the fetal cranium could be felt behind the membranes, which were tense; no trace of a placenta could be found. A week later the waters escaped, and the ovum was discharged with the placenta, followed by a mass of clot of the size of a fist. The patient did well. The detachment of the placenta was clearly the cause of the abortion, but what caused it to become detached was not determined by the history of the case.

(356) Spontaneous Rupture of Funis in Labour.

Merkel (*Monats. f. Geb. u. Gyn.*, August, 1903) reports a labour in a patient, aged 35. She had been eight times pregnant. The fetal heart sounds ceased suddenly, therefore the child was delivered by the forceps. The umbilical cord was torn through 1 in. from the umbilicus, the torn ends were much frayed. The cord was also wound round the neck of the fetus for two and a-half turns. There were clots in the uterine cavity. The cord had evidently been torn through before the forceps were applied.

(357) Movable Spleen diagnosed as Uterine Fibroid.

Walther (*Rev. de Gyn. et de Chir. Abd.*, September-October, 1903) reports a case of movable "ague-cake" kidney from a patient subject to attacks of intermittent fever. Yet as it adhered to the anterior surface of the uterus and gave rise to all the general symptoms of a fibroid, including metrorrhagia, it was diagnosed as a pedunculated uterine tumour. It was removed with the uterus, and weighed over 1 lb. 4 oz. Potherat, in discussing the case, admitted that he once diagnosed as an ovarian cyst a bulky spleen displaced into the pelvic cavity.

THERAPEUTICS.

(358) Action of Radium on the Skin.

Halkin (*Arch. f. Derm. und Syph.*, May, 1903) mentions the discovery of radium and polonium from the ore of uranium or pitchblende by M. Curie. The rays from these bodies have the same power of penetration as the *x* rays and a similar action on a photographic plate and fluorescent screen. The physiological action of these rays is to exert an inhibitory action on the growth of tissues. From radium are obtained two kinds of rays, one with great penetrating power, another with slight power of penetration but great power of being absorbed. The rays with feeble penetration have a strong bactericidal action, while the other kind have no effect on bacteria. Curie subjected his arm to the action of the rays for ten hours and in fifty-two days an ulcer developed. From handling radium he developed a dermatitis of the fingers, accompanied by pain and scaling, which lasted over two months. The histological action of these rays was studied on the skin of a pig; 0·13 gram of radium enclosed in a thin aluminium capsule was placed in contact with the skin for two hours. After thirty-eight days the skin was examined. The chief changes were in the blood vessels, the walls of which were degenerated. The epithelium was also affected.

(359) Viscinum Depuratum.

Three years ago Riehl made an attempt to introduce the sticky material known as bird lime into therapeutic use in the place of indiarubber. The bird lime (viscum aucuparium) is obtained from the mistletoe. It was supposed that as the raw material was only worth one-tenth of the price of rubber the prepared viscum would be considerably cheaper than the latter, but this has proved not to be the case, since the manufacture entails much time and work, and therefore the price of the article is scarcely less than that of indiarubber. On the other hand, it has been found that viscum is much less irritating that rubber, and that plasters containing viscum as the sticking substance can be used for chronic eczema, dermatitis, etc., where rubber cannot be tolerated. H. Voerner (*Deut. med. Woch.*, October 8th, 1903) points out that Riehl's preparation, however, has two very great disadvantages which prevent its free use in private practice, while its fairly high price forbids it for club practice. The first disadvantage is that it possesses a highly objectionable odour, and the second that it has an intense green colour which soils everything which it touches. He has attempted to prepare the sticking substance freed from odour and colour, and has succeeded. The odour is got rid of by passing the raw bird lime through a hair sieve when warm, and washing the insoluble residue as far as possible. The filtrate is then stirred in warm water until the water remains clear, and has a neutral reaction. The fluid is then poured off, and the glutinous material is transferred to a flat dish, preferably such as is used for developing photographs, in a thin layer. This dish is kept in a temperature of from 40° to 80° C. for some time; the smell gradually gets less, until it disappears altogether. It is advisable to dissolve the viscinum in benzene every now and then, and to filter off the insoluble deposit. To remove the green colour, which is due to chlorophyll, a mixture of starch, talc, or clay, and at times some permanganate of potash is added to the solution of the viscinum in the proportion of 1 in 20. This is shaken up and allowed to stand for some time. If the viscinum is not cleared in from four to six weeks more of the powder should be added. Viscinum, freed of odour and colour in this way, bears the name of viscinum depuratum, and Voerner recommends it for use in practice. He states that one must not confuse the property of stickiness with adhesiveness. Viscinum is essentially a sticky substance, and lends itself admirably in the form of a plaster as a good protective which will not irritate the surface it covers. It can be used by itself, or with the addition of different medicaments. For some skin affections, it is preferable to paint the affected part with viscinum containing the drug required for the treatment. Since it is transparent and colourless, viscinum can be applied as a thin protection to the skin, even during the day; and when its stickiness is undesirable, one can apply a skin-coloured powder under it. Voerner believes that viscinum depuratum will find its way into the armament of dermatologists as soon as it is well known.

(360) Lygosin-Quinine (Chininum Lygosinatum).

Recently a new antiseptic and dusting powder has given J. v. Török (*Deut. med. Woch.*, October 29th, 1903) excellent results. This is a combination of quinine and di-o-oxy dibenzol acetone, and is known as lygosin-quinine. It is a very fine, soft, amorphous powder, having no odour, and in spite its orange colour but little staining property. It can be readily removed from the skin or other surfaces by lukewarm water. Török uses it as a dusting powder, and also impregnated in gauze. At times he further employs it as an ointment and as a plaster. In varicose ulcer of

the leg, in traumatic ulcers, in incised wounds, both fresh and old, and in contused wounds; in phlegmonous conditions, and lastly in parenchymatous haemorrhage he has found it of the utmost service. When applied to ulcers of the leg, and he advises a daily changing of the dressing, the surface soon shows abundant granulations, and the epithelium of the edges rapidly grow on to their surface In a very short space of time the ulcers heal up completely. Clean wounds, incised and stabbed, usually heal up by first intention under a covering of lygosin-quinine, and sometimes do so within three days It has further a marked haemostatic action, and is therefore particularly valuable in parenchymatous bleeding from contused or incised wounds; these heal without any inflammatory or suppurative changes under the powder. The author cites a case of severe contused wounds of the scalp which did very well with treatment of dusting with the powder and covering with a 30 per cent. gauze. He recommends his colleagues to test this preparation, and predicts a permanent place for it in the medicaments of the surgeon.

(361) Treatment of Naevi with Boiling Water.

Wyeth (*Bull. Méd.*, No. 63, 1903) has tried injections of boiling water in naevi. Under an anaesthetic, injections of 5 to 15 drops are made through the sound skin near the tumour. This is said to cause coagulation and vascular obliteration. Several sittings are necessary to effect a cure. During injections a cold sponge is held over the needle to prevent burning.

(362) Formol in Hyperidrosis Plantaris.

Vaillard (*Gazz. des Hop.*, p. 201, 1903) recommends formol in this affection owing to its power of forming insoluble compounds with albuminoids. Formol diminishes the excretion of sweat by acting on the epithelium of the sweat glands. The effects are only temporary, and fresh applications are necessary. Folliasson has tried this remedy in the French army during long marches, and regards it as the best remedy.

(363) Treatment of Acute Eczema.

Brodier (*Arch. Gén. de Méd.*, No. 22, 1903) recommends internal treatment in gouty or rheumatic cases, for example, quinine, colchicum, digitalis, ergot and belladonna. Brocq uses pills containing: bromohydrate of quinine, 0.05; extract of colchicum, 0.01; powdered digitalis, 0.02 gram; two or three daily. Belladonna is indicated when there is much exudation. Pills containing bromohydrate of quinine, 0.05; extract of belladonna, 0.001; extract of gentian, 0.05 gram may be given four or eight times a day. In itching chloral hydrate should be avoided. The author advises valerian as a sedative. In young children potassium bromide is good. Arsenic and sulphur are to be avoided in all acute eczemas. A milk diet for several days is advisable. Local treatment should begin with starch cataplasms applied on muslin and removed every two or three hours if possible. Camomile lotion is also of use. In old arthritic patients powders are better tolerated than cataplasms; the best are starch and lycopodium, which may be mixed with zinc oxide, bismuth or talc. Camphor is a useful addition. If improvement is slow, ointments may be tried and covered with powder. Glycerole of starch, cold cream, or a mixture of zinc oxide, starch, lanoline and vaseline are useful. Picric acid, 1 in 200, is good in cases of acute eczema without much inflammation, to relieve itching.

PATHOLOGY.

(364) The Transmission of Tubercle Bacilli from Mother to Fetus.

Borsi (*Il Policlin.*, October 3rd, 1903) has carried out a series of experiments on gravid rabbits and guinea-pigs with reference to the above question. As soon as it was certainly known that the animal was pregnant, injections (endovenous, subcutaneous, or intraperitoneal) of tubercle bacilli were given, and the results watched. In no single instance were tubercle bacilli found in the viscera or blood of the fetus. Bacilli were found in the placenta only three times, and in each case the fetus was born dead. The bacilli were never discovered in the milk. All the mother animals died in the puerperium at periods more or less remote from the labour. Abortion was a frequent result of the injections. In the cases where early abortion occurred the mothers survived longer than when pregnancy had advanced further. This raises the question of the advisability or otherwise of producing abortion in human subjects if suffering from phthisis.

(365) Tumours of the Hypophysis without Acromegaly.

Minelli (*Gazz. Med. Ital.*, July, 1903), in view of the fact that most cases of acromegaly are associated with new growths in the hypophysis, reports a case of hypophysial tumour occurring in an old man who during life showed no signs of acromegaly. At the necropsy a tumour was found filling the sella turcica, measuring 30 mm. in the transverse, 20 mm. in the antero-posterior and 20 mm. in the sagittal diameter. There were no adhesions to neighbouring parts and it was easily enucleated from its thick capsule. The thyroid gland, spleen, and suprarenal capsule were normal. The cells forming the tumour were small—no granulations and no colloid substance were observed. In all tumours of the hypophysis which have been associated with acromegaly, the chromophile cells containing granules have been increased, so that most probably it is these cells which play an important part in the symptomatology of acromegaly and on the negative side the author's case affords corroboration of this view.

(366) Bactericidal Value of the Serum of Typhoid Convalescents.

Laming Evans (*Journ. of Pathol.*, August, 1903) has conducted a series of observations on the variations of bactericidal value of the serum of patients convalescent from the typhoid fever of South Africa, and the application of serum-valency to serum-therapeutics. The conclusions which are drawn from these observations are as follows: No satisfactory data can be arrived at in the quantitative estimation of bactericidal value by the use of solid media. The serum of typhoid convalescents presents no constant bactericidal value, and the strength varies within very wide limits, there being no relation between the age of the patient and the strength of the serum during convalescence. The variations in strength up to nine months after an attack are extreme; after this period the variations are less, and the serum has a greater average number of units than in the previous nine months. Inoculation previous to the attack does not appear to influence the bactericidal value of the serum during convalescence. There is no quantitative relationship between bactericidal and agglutinative properties; agglutination persists in greater strength during the convalescence of the inoculated than of the uninoculated: there is no constant relationship between the strength of agglutination and the interval of time after attack. The shortest time taken to kill B. typhosus is two and a-half hours, and this time varies directly with the relation between the number of bactericidal and bacterial units. During artificial immunization the bactericidal value of the serum of a horse undergoes a marked fall which persists for four months; a mixture of immune and non-immune sera raises the bacterial value of the constituents. The so-called bactericidal antityphoid serum exerts no bactericidal influence on account of the absence of complement, and may exert a fatal influence when injected during an attack of typhoid fever on account of the presence of immune bodies.

(367) Antenatal Rigor Mortis.

Paddock (*Amer. Journ. of Obstet.*, August, 1903) reports two cases of this condition, and refers to several others recorded since that of Chowne published in the *Lancet*, 1840. The author's first case occurred in a quadripara, aged 35, in labour near term with a history of twelve hours' haemorrhage. The child was transverse with the hand prolapsed. Version was performed as soon as possible, and was rather difficult owing to the rigidity of the child. When extracted the lower limbs were still slightly stiff and the arms markedly flexed and rigid. The rigidity did not return. Fetal movements had ceased for ten hours. No attempt had been made to hear the fetal heart. The second case occurred in a primipara, aged 30, in labour at term. The labour was slow and the membranes ruptured early, and five hours later the fetal heart could not be heard. The fetus was extracted by forceps later on and was in pronounced rigor mortis. The sensation is described as like extracting a half-frozen fetus from a mannikin. The child was large, very muscular, and well nourished. Rigor was in the second stage and remained so for at least two hours. When present there is no doubt that rigidity does interfere with delivery in spite of statements to the contrary. Of the various conditions associated with antenatal rigidity haemorrhage seems the commonest. The importance of the possibility of antenatal rigor mortis from the medico-legal standpoint is so obvious as hardly to require mentioning.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

(368) Heart Complications in Dysentery.

NENNINGER (*Arch. f. Schiffs- und Tropen-Hygiene*, November, 1903) has analysed the cardiac complications of a number of cases of dysentery which came under his care on their return from China. Most of the patients were suffering from the chronic form; a few were seen under the influence of relapses. In many instances the first sign of cardiac involvement appeared during convalescence, and was a marked acceleration of the pulse-rate on rising from bed; in two out of three of these there was some increase of cardiac dullness to the left. From these slight affections all stages could be followed of severer heart disease. Among more serious examples were enlargement of the heart to both right and left, and mitral systolic murmurs with accentuation of the pulmonary second sound, all accompanied by increase in the pulse-rate. Most cases recovered entirely, but in two the dilatation of the heart persisted, and the patients had to be invalided out of the service. The author holds that there can be no doubt that the heart condition is here due to a specific action of the dysenteric toxin upon the heart muscle, for which it has a particular predilection. It is not so easy, however, to account for those instances in which the brunt of the disease is borne by the valves; of these the author quotes two cases coming under his own observation. He leaves the question open as to whether the complication is due simply to dysentery or to mixed infection. He moreover records 4 cases in which the disease exercised a deleterious influence upon the nervous mechanism of the heart; 2 of these suffered from such extreme tachycardia that they had to be invalided out of the service. In all, Nenninger found that out of 47 cases of dysentery, in 14 at least, or 29.7 per cent., there was a cardiac complication, and of these 6, or, in in other words, 12.7 per cent., of all the cases of dysentery had to be invalided out of the service on account of the condition of their hearts. He furthermore finds that out of 88 deaths from dysentery in the marines, in 17 the lethal factor was cardiac failure. He hence infers that in all cases of this disease the state of the circulation must be particularly observed, and that proper attention to its disorders may be of the greatest help in treatment.

(369) Bradycardia in Measles.

BURZI (*Gazz. degli Osped.*, October 4th, 1903) relates the case of a healthy well-developed girl, aged 16, who had a severe attack of measles in February last. At the onset of the attack she complained of precordial pain, dyspnœa worse on the least exertion, languor, and dull pain in the heart. When first seen on February 25th she was very anæmic, the heart's apex was a little inside the nipple line and on palpation gave the idea of two beats; there was no thrill or fremitus. On pressure in the third and fourth left intercostal space deep-seated pain was complained of by the patient. There were no murmurs, but the heart sounds were weakened and prolonged. The rate of the pulse varied from 38 to 32 per minute. The blood pressure was diminished. The liver was enlarged and there was some pretibial oedema and a trace of albumen. This condition lasted a month unchanged and then slowly improved, and eventually the pulse came back to a rate of 64 to 68 per minute. The oedema and slight albuminuria disappeared. During the period of bradycardia the patient also suffered from fainting attacks.

(370) Effect of Work on Temperature in Tuberculous Patients.

T. NEUMANN (*Norsk. Mag. for Laegevidenskaben*, p. 1061, 1903) says Penzoldt was the first to show that bodily exertion produced among tuberculous patients an increase of temperature which was insufficient to produce a rise of temperature in healthy subjects, and he considered such a rise to be of diagnostic importance. Hochsteter, Birgelen, and others have made special researches, and record the same results. The investigations of Ott in regard to this point were made in order to observe if this elevation was associated with any distinct causes. He considered that such was the case, as he frequently found albumose in the urine of patients in which it had been absent before the commencement of the work. He investigated 25 cases, of which 22 had a temperature of 38° C. before a quiet walk, but whose temperature rose to 38.8° C. immediately afterwards. Neumann considers that the rise of temperature is a distinct febrile phenomenon, as he found albumose in six cases where it was entirely absent before the walk commenced. In 11 cases, however, the rise of temperature was only slight.

(371) Tuberculosis of Childhood.

F. M. POTTENGER (*Zeit. f. Tuberk. und Heitstättenwesen*, Bd. iv, Heft 5, 1903) discusses tuberculosis in children, with special reference to infection. In some form the disease is present in about half the total number of children, and according to Thorne-Thorne it has increased 20 per cent. in London amongst children during the last fifty years. Statistics prove that children free from tuberculosis at birth show an increasing tendency to contract it up to the end of the first year of life, and that this tendency then gradually diminishes. In considering the causation of phthisis, it was for years assumed that the bacilli were directly inspired into the lungs, but it is now believed that they are as a rule deposited on the mucous membranes of the upper air passages, and if not expelled are from there absorbed by the lymphatics and carried to the cervical and bronchial galnds. They may there be encased and do no further harm, may be latent for an indefinite time, but finally again become active, or they may be set free at once by the breaking down of the gland and carried elsewhere, usually to the apex of a lung. The length of time for which tubercle bacilli can retain their virulence when encased in a gland is unknown, but Bollinger claims to have proved that it is possible for twenty years, and has thus shown that tuberculous inflammation of the lymphatic glands is a constant source of danger to the system. The causes of tuberculosis in childhood are similar to those in later life. Among predisposing causes bad hygiene is prominent. Babies are often coddled by being kept in hot close air, being too warmly clad and too seldom bathed. A steadily diminishing number of mothers are able and willing to nurse their own babies, many of the children are fed on unsuitable food, and are weakened by digestive troubles. Moreover, a large proportion of weakly children suffer from interference with normal respiration caused by enlargement of the lymphoid tissue of the pharynx. It must also be remembered that children's power of resistance to infection is less than that of adults, and that the lymphatic system is peculiarly susceptible in early life both from its greater activity at that period and the penetrability of the mucous membranes. There are possibilities of direct infection peculiar to a large extent to childhood. The question of infection by milk is still an open one. The experiments of Koch have not demonstrated its impossibility. The virulence of the bovine bacillus is admitted to be greater than that of the human bacillus; and, therefore, even if cattle were proved to be impervious to the human bacillus, the converse proposition would not follow. Koch's theory that a direct milk infection would necessarily be accompanied by disease in the intestinal tract is also not supported by other observers. For the present, at any rate, possible danger from infected milk must not be disregarded. In many other ways children are particularly liable to infection. They often play in the same room with and are kissed by tuberculous patients; they may be infected by pet animals suffering from the disease, and creeping on the floor is a great source of danger in the absence of special precautions. The extent to which tuberculosis of later life results from infection in childhood is not exactly known, but the question is worthy of serious consideration. Blos followed for from three to twelve years the after-history of 160 cases of tuberculous lymph glands, and found that 40 per cent. developed secondary tuberculosis. Most of the preventive measures against tuberculosis in childhood follow on the causes and need not be detailed. The importance to children of a bright sunny nursery whose floor is flooded with sunlight may be mentioned. The floor should be of material which can be washed with antiseptics. Mothers should never come into the nursery with long skirts which have trailed in the streets and probably gathered bacilli. Where a separate room cannot be set aside as a nursery a box 4 or 5 ft. square can be fixed up, padded and lined with some washable material, and in this the child can be left to play.

(372) The Influence of the Amount of Fluid Ingested upon the Functions of Diseased Kidneys.

MOHR AND DAPPER (*Sonderabdr. aus dem Zeit. f. klin. Med.*, vol. l, parts 5 and 6) record the results of investigations into this point conducted upon nine patients in von Noorden's hospital.

They give fifteen very complete tables of the daily variations in the amount of urine, its specific gravity, its amount of phosphoric acid, of uric acid, and of albumen, together with details as to the weight of the patient of his diet. Their conclusions may be summarized as follows. Both in acute and chronic nephritis the relation between the intake and output of water is often more favourable with moderate restriction (down to 3 pints) of the fluid consumed, than with free drinking; in such cases oedema may be relieved by limiting the amount of fluid given. The generally favourable influence of this limitation is, as a rule, equally marked in renal as in cardiac patients. Neither in acute nephritis nor in the granular contracted kidney does this moderate limitation produce any marked influence upon the elimination of nitrogenous substances or of phosphoric acid. When the amount of fluid is still further reduced, the excretion of these bodies is diminished. When on account of oedema or the condition of the heart this further restriction is indicated, it is necessary every now and then to allow free drinking for a day in order to flush out the accumulated materials. In granular contracted kidney, the albuminuria increases slightly with the limitation in the fluid consumed, but when this is continued for some time, the amount of albumen gradually sinks. At present the authors' experiments have not lasted sufficiently long to establish final results on this point. The effect of reducing the fluid upon the latter stages of acute nephritis is not to produce such a marked increase in the albuminuria. Further researches are in progress in connexion with parenchymatous nephritis with marked oedema, as well as upon the granular contracted kidney.

SURGERY.

(373) The Treatment of Double Congenital Luxation of the Hip.

Froelich (*Rev. d'Orthop.*, No. 5, 1903) states that while it is admitted by most surgeons that the best treatment of congenital luxation of the hip in children under the age of eight years consists in bloodless reduction of this displacement by Lorenz's method, there are cases in which this resource of surgical therapeutics is insufficient. In the subjects of bilateral luxation the upward displacement of the head of the femur on the dorsum of the ilium is usually considerable, and the consequent excessive adduction and lordosis cause fatigue when the patient is erect and render locomotion very painful and, it may be, quite impossible. In such cases intratrochanteric osteotomy, a method proposed and performed by Kirmisson, is strongly advocated by the author of this paper, who publishes two striking instances of the good results of such treatment in his own practice. This operation, he states, when applied to both sides in cases of double congenital luxation of the hip corrects the lordosis and abolishes the forward tilting movement of the pelvis. It also corrects the adduction of the lower limb, and consequently removes serious impediments to proper cleanliness of the genital organs, and at the same time facilitates locomotion by improving the mutual relations of the knees, which are no longer in close contact or crossed. With the object of more effectually overcoming fixed adduction the author thinks it advisable to practise as a preliminary step subcutaneous rupture of the adductor muscles. Osteotomy arrests the progressive ascent of the head of the femur on the external iliac fossa, and thus relieves the patient of the distressing pain caused by traction on the sciatic nerve and the articular capsule. The author, in concluding this paper, subscribes to the opinion held by Kirmisson that infratrochanteric osteotomy will in future acquire increasing favour in the treatment of congenital luxation of the hip.

(374) A Method of Performing Perineal Section without a Guide.

Gibson (*Ann. of Surg.*, October, 1903) has found by repeated trial on the cadaver that by exercising sharp traction on the prostate the deep urethra is made taut to a degree that renders its recognition unmistakable. The operation for opening the deep urethra in a case of impassable stricture complicated by the results of urinary extravasation is thus performed. The patient having been placed in the lithotomy position, and the rectum thoroughly irrigated and cleansed, a suitable rectal speculum is introduced, and the prostate is transfixed laterally from the rectum by a large sharp hook driven firmly through the prostatic tissue. Median perineal section is then performed, the incision being extended down to the ordinary depth of the situation of the urethra. The left forefinger of the surgeon is now introduced into the wound, and as the assistant executes a series of gentle tugs on the hook, the intermittent tension of the urethra in response to this traction can be readily felt. Keeping the forefinger in place, the surgeon with the right hand directs his bistoury into that portion of the deep urethra which is thus rendered prominent. The author states that in the course of the past two years he has performed this operation in both simple and complicated cases with a uniform success. He thinks that the danger of infection of the prostate is more presumable than real. With this possible drawback in mind, however, he would not recommend a routine or indiscriminate employment of this method, recourse to which should therefore be reserved for cases attended with unusual difficulties. In feeble patients, especially those suffering from renal disease or other complications, and particularly in the septic states, due to urinary extravasation, the very slight risk of an infection might wisely be taken in order to increase the chances of saving the the patient's life.

(375) Tuberculosis of Breast and Axillary Glands.

Morestin (*Bull. et Mém. de la Soc. Anat. de Paris*, June, 1903) observes this condition in a woman aged 27, with a family history of tubercle, but no signs of phthisis. A swelling developed in the left breast and was examined two months after it had been first detected; two years previously, when she came to Paris from the country, a cervical gland inflamed and suppurated, leaving a puckered cicatrix in the left infraclavicular fossa. The patient had aborted twice, without any mammary complications. The swelling was of the size of a hen's egg, somewhat tuberous, slightly tender, but not adherent to the integuments, nor was there any retraction of the nipple; it occupied the upper and outer part of the breast. It was not circumscribed, its tissues clearly merging into the normal structures of the gland. At first it was uniformly firm, but in a few days it grew tender and soft internally, a few ounces of green pus were evacuated; they contained no germs, so it was thought that, under the circumstances, the fluid was probably tuberculous. An axillary gland was found enlarged already before the suppuration began. A new abscess formed, and the swelling became adherent to the pectoralis major. The breast was then amputated, and the glands removed from the left axilla; several had become completely caseous. The morbid growth in the mammary gland was carefully examined by Cornil, tuberculous changes seem to have originally developed in the acini, giant cells were unusually abundant, a few Koch's bacilli were detected in sections stained by Ziehl's method. The patient made a good recovery.

(376) Treatment of Carcinoma of the Gall Bladder.

C. A. Ljunggren (*Nordsk. med. Arkiv.*, No. 10, 1903) calls attention to the necessity for the recognition of cholelithiasis as an important etiological factor in carcinoma of the gall bladder. He found gall stones present in 221 cases out of 285 cases of carcinoma of the gall bladder. In almost all the cases there was a distinct history of frequent attacks of biliary colic, and in many cases there was a distinct history of gall stones. If the condition is diagnosed early, Ljunggren considers that entire removal of the carcinomatous tissue with the neighbouring liver substance gives hopeful results.

(377) Fibroma of the Abdominal Wall.

Faenrich (*Thesis. Breslau*, 1901) reports seven new cases all successfully operated upon in Breslau, and adds (according to the *Zentralbl. f. Gynäk.*, No. 41, 1903) an exhaustive summary of the literature of this form of tumour. In the new cases the seat of origin of the new growth was: Anterior sheath of rectus 2, posterior sheath 1, superficial fascia 1, internal oblique muscle 1, and fascia transversalis 1. These tumours were most probably due to rupture of muscle or tendon, infection as well as traumatism playing a share in some cases.

MIDWIFERY AND DISEASES OF WOMEN.

(378) Diabetes in Pregnancy.

Alfred Stengel (*Univ. of Penn. Med. Bull.*, vol. xvi. No. 8) discusses diabetes developing during pregnancy. A reducing substance, now known to be lactose, has long been recognized, both in the mother's urine during pregnancy and the puerperium and in that of the newborn infant. This lactosuria is not

accompanied by any symptoms, and neither constitutes nor predisposes to true diabetes. The histories of the 22 cases of diabetes in pregnancy described by Matthews Duncan show that: (1) Diabetes may come on during pregnancy; (2) may occur only during pregnancy, being absent at other times; (3) may cease with the termination of pregnancy, recurring some time afterwards; (4) may come on soon after parturition; (5) may not return in a pregnancy occurring after its cure; (6) pregnancy may occur during diabetes; (7) pregnancy and parturition may be apparently unaffected by diabetes; (8) pregnancy is very liable to interrupted in its course, and probably always by the death of the fetus. Stengel has tabulated the clinical data of 27 cases of diabetes occurring in 19 women during pregnancy, but has not included those of Duncan's cases, where pregnancy complicated an already established diabetes. His table shows that diabetes occurred with slightly greater frequency in second pregnancies, but also occurred in first and any other later pregnancies. Advancing age did not appear to be a predisposing cause. The symptoms, which were practically those of ordinary diabetes, were prominent in 14 out of the 19 women, and indefinite in the remaining 5. They appeared for the most part during the early month of pregnancy. When diabetes occurred in any one pregnancy it tended to recur in later ones. The results of the pregnancies were as follows: Thirteen out of 27 terminated normally as far as the child was concerned, at least 6 ended in abortion or miscarriage, in 7 cases the fetus was born dead, and in 1 a living child was born, but died shortly after birth. The mothers made normal recoveries in 17 cases, died soon after labour in 5, and in the remaining 5 died some weeks or months after delivery from diabetes or other causes. On the whole the results for both mother and child were less frequently disastrous than has been generally supposed, and Stengel believes that, while prompt intervention is needed where there is increasing glycosuria, diaceturia, grave weakness, or rapidly-increasing emaciation, careful hygienic, dietetic, and medicinal treatment should be first tried in every case. In the one case he personally attended the symptoms of diabetes were well marked and occurred in the second pregnancy of a woman 33 years of age. The treatment consisted mainly in a moderate reduction of the diet, the sugars being almost entirely cut off but starches only partially. Vichy water was given and 10 gr. of sodium salicylate four times daily. Pruritus vulvae, which had been present, quickly disappeared, and the general condition improved. A normal child was born at term, and both mother and child are now in perfect health. Sugar disappeared from the urine eleven days after labour.

(379) The Natural Feeding of Children at Term.

Perret (*L'Obstét.*, September, 1903) shows how infant mortality is largely caused by gastro-enteritis due to artificial feeding, or, not rarely, to feeding at the maternal breast mismanaged by the mother. Budin's success in "mothers' schools," where the children are examined and weighed regularly and the parents instructed, has been most encouraging in the Tarnier clinic; not one child has died of diarrhoea since 1898. Perret has weighed a large number of children born at term and reared by the mothers in the clinic. Each infant was suckled every two hours daily, but only twice during the night. The cases specially selected were infants about 6½ lb. in weight, free from digestive troubles. On the first day the child took nothing; on the second 160 grams, or 15 to 20 grams (over ½ oz.) at each meal; on the third 285 grams, or 25 to 30 grams at a meal; on the fourth 360 grams, or 35 to 40 grams at each meal. In all cases the increase in the infant's weight was steady. The most uncertain factor of importance in these calculations is the percentage of butter in the milk. An examination of the excreta is necessary. If frequent and liquid, the child is taking too much: the same is the case if they contain white lumps—that is to say, undigested milk. If they are scanty and hard the child is taking too little, especially if it does not gain weight. Then it should be fed a little more. It is in less peril than an overfed child, which is always in danger of grave disease of the alimentary tract, even if it gains weight for a while.

(380) Multiple Cysts of Vagina.

François-Dainville (*Bull et Mém. de la Soc. Anat. de Paris*, June, 1903) reports a case where a woman aged 27 came under his notice for a vaginal swelling which had been detected during a normal labour seven months previously. The swelling remained stationary in size, but caused local pains which radiated in several directions, and also caused inconvenience by projecting from the vulva. On examination two tumours were detected arising from the posterior wall of the vagina half-way between the fornix and the vulva. They could easily be drawn down out of the vagina; one was of the size of a pigeon's egg, the other as big as a cobnut. They were painless on pressure, and invested with healthy, non-adherent mucous membrane. The cysts were dissected out under cocaine anaesthesia; the fluid was colourless, transparent, and viscid; both were unilocular. The inner wall was lined with cylindrical, non-ciliated epithelium. According to Poupinel only 32 out of 149 cases of vaginal cyst were found to be multiple.

(381) Cancer of Body of Uterus.

Boursier and Venot (*Rev. Mens. de Gynéc. de Bordeaux*, June, 1903) analyse 65 cases, 8 under their own observation. The majority occurred between 40 and 70. No fewer than 26 patients were still regular or passing through a not yet completed menopause. In most cases there was no previous history of local disease; in a few it seemed as though glandular metritis had become transformed into epithelioma. Heredity could not be well established. Bleeding is the first symptom; it was noted in 44 cases; in 4 no mention was made of the symptom. Pain was noted in 27 cases and appears late; it varies greatly in type, but is most characteristic when paroxysmal and intermittent. The discharge is serous and clear at first, becoming pink, sanious, thick, sero-purulent and ultimately fetid. This last condition and also cachexia are very late and hence useless as aids to early diagnosis. A simple clinical examination is never sufficient. Dilatation and examination of the interior of the uterus with the finger and the use of the curette are always necessary but the examination of scrapings cannot always make diagnosis decisive. Rapid return of bleeding after the application of the curette implies cancer rather than metritis; if haemorrhage ceases after short treatment with the continuous current there can hardly be malignancy. When diagnosis is assured abdominal hysterectomy is preferable to the vaginal operation as in the latter procedure the uterus may have to be divided and thus cancerous germs may be implanted in neighbouring tissues. It is only allowable when the uterus is still small and the vagina wide. The curette is of use in inoperable cases.

THERAPEUTICS.

(382) Modification of the Toxicity of Poisons by the Addition of Non-toxic Salts.

Lesné and Richet (*Arch. Internat. de Pharmacodyn. et de Thérap.*, xii, 3 and 4) have investigated the influence of certain non-poisonous soluble salts upon the effects of various poisons. For instance, they administered to a dog a daily dose of potassium bromide, which killed it in twenty-three days; to a second dog they administered the same dose, and when it was apparently dying they replaced the potassium bromide by sodium chloride, with the result that the animal recovered in a few days. To a third dog they gave the same dose of potassium bromide, but with the addition of sodium chloride, and found that, beyond a slight loss of body weight, it was not in any way affected. As the result of a number of similar experiments they conclude that when swallowed or injected into the veins sodium chloride diminishes the toxicity of certain poisons particularly iodide of potassium, bromide of potassium, chloride of ammonium and cocaine; urea and sugar act similarly but less powerfully. In mice the subcutaneous injection of sodium chloride half an hour before that of sulphate of strychnine, lessens the toxicity of the latter; chloride of sodium has a marked action upon the toxicity of the urine, diminishing that of the whole urine and of the aqueous extract, but increasing, on the other hand, that of the alcoholic extract. These effects are not due to the diuretic action of the sodium chloride as they can be demonstrated in animals whose kidneys have been removed. It seems more likely to the authors that the phenomenon is one of cellular saturation, the cells being, so to speak, gorged with chloride of sodium, and hence less apt to absorb toxic substances. The authors point out that Widal and others have suggested that renal oedema is associated with the retention of chlorides in the body, and is in this way a protective against uraemia. This theory would accord well with the results of their own researches.

(383) Localization of Mercury in the Tissues.

Almkwist (*Nord. med. Arch.*, 1903, No. 6) has studied the histo-chemistry of mercury in the tissues, after poisoning a rabbit with the drug. Mercury as a sulphide was found in the blood, lymph, and walls of the intestine. Also in the walls of the blood vessels and in the convoluted tubules of the kidney. The author states that the sulphide is formed by the action of sulphuretted hydrogen in the intestine, and that mercurial stomatitis may be due to a similar cause. The amount of sulphide is not proportional to the amount of mercury introduced, but to the amount of sulphuretted hydrogen in the intestine. The granules of sulphide are carried by the leucocytes between the epithelial cells of the intestine. If the granules in the blood vessels are enough to cause obstruction to circulation, necrosis and ulceration may result.

(384) Treatment of Naevi with Collodion Sublimate.

Frattini (*Bull. Med.*, No. 63, 1903) uses a collodion containing 6 per cent. of bichloride of mercury as an application to naevi. This is applied in two or three layers, and covered with antiseptic wool. After two days the pellicle is removed, and the application renewed and again removed in three days. A superficial scar is then detached, under which is a fine cicatrix.

(385) Colloidal Silver in Syphilis.

Audry and Dalrus (*Journ. des Mal. Cut. et Syph.*, July, 1903) have tried colloidal silver in two cases of late secondary syphilis, both as a 1 per cent. intravenous injection, and as a 5 per cent. ointment. The injections were made daily for six days, starting with 0.03, and increased to 0.05 centigramme. After this inunction was done for six days. The results were disappointing, and inferior to those obtained by the usual mercurial treatment.

(386) Gonosan in Gonorrhoea.

Benninghoven (*Berl. klin. Woch.*, July 13th, 1903) reports that he has followed Boss's method of treating gonorrhoea, which consists in ussng a 1 per cent. protargol injection, and giving four or five times a day two gonosan capsules daily. The pain in acute cases, he says, is removed on the second day, and the chordae disappears. The discharge is lessened in a most striking way. The patients soon realize the value of the preparation, and are very anxious not to discontinue the capsules early. In cystitis he found it work well. Perhaps the most marked result of its use consists in the fact that very strong injections are stood without any swelling being produced, and without any pain. Benninghoven says that gonosan should be prescribed to every gonorrhoea patient. Unfortunately, so far, the price of the capsules is high, but he hopes that this will soon be remedied, and, indeed, he finds that recently the cost of a box of fifty capsules has been reduced from 3s. 6d. to 3s. He refers those interested in the drug to Boss's article in the *Deut. med. Zeit.*, No. 98, 1903.

PATHOLOGY.

(387) Epithelioma of Parasitic Origin.

Bosc (*Centralb. f. Bakt.*, August 22nd, 1903) describes researches on the lesions of small-pox in the sheep (*la clavelée*), from which he deduces that these must histologically be considered of a neoplasmic nature and comparable to the carcinomatous epithelioma. He describes first the epithelial proliferation which is seen in the lesions of the skin, cornea, stomach, kidney, and other glandular organs, and finds that in all these situations they present macroscopically a close likeness to the true neoplasmic growths, and microscopically are characterized by an epithelial proliferation which is capable of building up new growth of considerable size, disorientated, atypical and invading. He finds certain inclusions in the cells thus produced, which are stated to be neither due to cell degeneration nor to englobed leucocytes, but to resemble the various stages of a sporozoon. The various lesions are all produced by proliferation of the local epithelium; Bosc finds in this, however, no final distinction between this process of parasitic epithelioma and cancer. In the latter case he considers that the parasite concerned is limited to an existence in the epithelial cell, and incapable of transference in the blood stream, the metastases being simply groups of the epithelial cells themselves. He compares the lesions of *la clavelée* to those of vaccinia, variola, syphilis, and to those of acknowledged carcinoma and concludes that all belong to a group of "*maladies à sporozoaires.*"

(388) Disadvantages in the Diagnostic Use of Tuberculin.

Schüle (*Beit. zur Klin. der Tuberculose* II, i) records a series of experiences which have caused him to give up injecting tuberculin for diagnostic purposes. In one case the injection into a lady who was suspected of tuberculosis produced not only a temperature of 103°, but also extraordinarily severe general symptoms, including vomiting, headache, sacral pain, and prostration. In order to ascertain the cause of this the author's assistant, a perfectly healthy man, injected a similar dose, $\frac{1}{1000}$ gram, into himself, with the result that although there was no fever he suffered severely from the same symptoms. A more serious case was that of a young man aged 25, who was admitted into hospital with what appeared at first to be enteric fever, Widal's and the diazo reactions being positive; after six weeks the case assumed the aspect of tubercle and a tubercular injection of $\frac{1}{1000}$ gram of tuberculin was given, with the result merely of a slight rise of temperature. Two days later double the quantity was injected; severe general symptoms now set in, the spleen rapidly increased in size, and the signs of pneumonia in the left lung appeared; the patient rapidly went down hill, and died within a month. At the necropsy there were tuberculosis of the bronchial glands, tuberculous pneumonia of the left lung, and miliary tuberculosis of the lungs, spleen, etc. The author considers that the tuberculin injection lighted up the process, which was at first apparently confined to the glands, and caused it to become general. In yet another case the injection appeared to be useless, as although several times repeated in an undoubtedly tuberculous individual it produced no rise of temperature. In consequence of these results the author has now considered it advisable to fall back upon Penzoldt's diagnostic method, namely, to take the temperature in the rectum before and after bodily exercise.

(389) Primary Tuberculosis of the Mamma.

Caminiti (*Rif. Med.*, August 19th, 1903) reports a case of the above rare condition and discusses the subject generally. Probably not more than 50 clear cases have as yet been published. The bulk of the cases have occurred in women and in early life. Traumatism, suckling, and pregnancy play a certain part as predisposing causes. Occasionally infection takes place into the nipple via the milk ducts, but more commonly via the lymphatics and blood vessels, not infrequently starting in the axillary glands and so on to the breast, and in these cases a rosary of glands may be felt passing from the axilla to the breast; if this is present it affords valuable help in differential diagnosis. The disease may begin as an isolated nodule, as scattered nodules, or rarely in a miliary form. Usually the affected breast is smaller and harder than the healthy one. At first the disease is painless, gradually as the nodule increases and breaks down, cold abscess forms and pain occurs. Later intractable sinuses form. The nipple is usually retracted. The axillary glands are enlarged, but not so hard or so isolated as in malignant disease. The skin over the nodules is generally delicate; the outline of the tumour is not very well defined, and it is usually situated in the upper or outer quadrant of the breast. The prognosis whilst the nodule is still limited to the breast and axillary glands is good. Complete removal of the breast and glands is indicated, coupled with general strengthening treatment.

(390) The Passage of Immunizing Substances across Granulation Tissues.

A. Capaldi (*Memor. Chirurg. Palermo*, Ann. 25), in common with previous observers, finds that granulation tissue is impervious to bacteria. But some substance passes through, for the author found that after using cultures of pyocyanus agglutination occurred in the blood of animals which previously gave no reaction in this place. The *modus operandi* was to smear the granulation surface following a burn with cultures of pyocyanus, and then note the result. No bacilli were ever found in the blood; still some change occurred, for whereas it was not agglutinative before it afterwards became so in dilutions of 1 in 50 to 1 in 400. Since there was no invasion of the organism by the bacilli this acquired agglutinative power cannot be looked upon as a reaction of the organism to infection. Probably these antibodies are set free in the destruction of the bacilli which occurs in the granulation tissue.

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Scientific Grants Committee

OF THE

British Medical Association.

REPORTS ON PROGRESS OF RESEARCHES.

The Scientific Grants Committee has received the following interim reports from the investigators to whom grants were made:

ANATOMY.

SURFACE ANATOMY OF SUPERFICIAL ABDOMINAL VISCERA.

Dr. R. J. A. BERRY states that during the past year he has made observations upon 31 cadavera, all of which have been hardened in formalin prior to the examination. The surface anatomy of the superficial abdominal viscera has been recorded by Addison's method of delimiting the abdominal cavity. In every instance photographs, both stereoscopic and ordinary, as well as drawings, have been made of the different subjects, and in this way a very valuable series of illustrations has been obtained. It is as yet too soon to make any remarks upon the results which have accrued, but all those who have seen the results have agreed that these results are likely to be important and of real value to the clinician. Messrs. William Green and Sons, of Edinburgh and London, having seen the work, at once preferred to publish these results in the form of an atlas at their own expense, and this offer has been accepted. During the forthcoming year—or, at all events, as soon as possible—the results are to be published in the manner just indicated. Dr. Berry intends, therefore, now to devote himself to the production of this work, and at the same time to continue his observations as material comes to hand. In this way his series of 31 cases will be continually increasing.

PHYSIOLOGY.

THE FERMENTS OF THE PANCREAS.

Dr. F. A. BAINBRIDGE (Research Scholar) reports that his investigations has been made with two objects in view.

1. To determine whether the nature and amount of the ferments secreted by the pancreas varies in response to differences in the nature of the food entering the alimentary canal.

2. If the pancreas does thus adapt itself to different food stuffs, to determine in what way this adaptation is carried out.

Methods.—The foodstuff employed was milk, which can be readily added to or excluded from a dog's diet, and the ferment studied was lactase, which converts lactose into galactose and dextrose. Pavy's method was employed in the estimation of the sugars. Pancreatic juice was collected from dogs by means of secretin, and a known volume of juice was added to a lactose solution of known strength and a drop of chloroform was added, and the whole was incubated at 37° for twenty-four hours; the solution was then boiled, filtered and titrated with Pavy's solution, and the degree of inversion estimated.

Results.—It was found that in adult dogs which had not been fed on milk the pancreatic juice contained no lactase. But after feeding dogs on milk for two or more weeks their pancreatic juice contained lactase; such juice, added to a lactose solution, caused an inversion of 15 to 30 per cent. of the lactose in twenty-four hours. It was further found that a watery extract of the pancreas of young milk-fed kittens contained lactase. It seemed clear, therefore, that the pancreas responded to milk feeding by secreting a ferment capable of inverting lactose, thereby adapting itself to the food taken by the animals. The problem as to how the pancreas adapted itself proved much more complex, but eventually it was found that if a watery extract of the intestinal mucous membrane of a milk-fed dog was filtered through muslin, and injected subcutaneously into a dog not fed on milk, the pancreatic juice of the latter contained lactase. Pure lactose injected subcutaneously for several days does not give rise to the formation of lactase in the pancreas. It seems possible, therefore, that as a result of the action of lactose on the intestinal mucous membrane, some substance is formed which reaches the pancreas (by the blood stream presumably) and stimulates it to manufacture a lactose-destroying ferment, namely lactase. The question, however, is still under investigation.

BLOOD GASES AND RESPIRATORY EXCHANGES.

Dr. J. J. R. MACLEOD reports that he has been engaged in an investigation of the composition of the blood gases and of the respiratory exchanges in animals subjected to high pressures of air and oxygen (in collaboration with LEONARD HILL, F.R.S.).

I. *The Blood Gases.*—Dogs and cats anaesthetised with morphine and chloroform were placed in a large steel chamber (of over 20 cubic feet capacity), capable of standing an air pressure of over 100 lb. to the square inch. The interior was lighted by an electric lamp, and could be seen through a window. The chamber was provided with several taps of varying size, one being connected with a cannula in the carotid artery of the animal under observation, and a large one with a powerful diver's air pump. By another tap an oxygen cylinder (Brins) could be attached, and its contents delivered into the chamber. The chamber and

accessories were made by Messrs. Siebe, Gorman, and Co., diving engineers. The blood gas analysis was made by means of Hill's blood pump. The results were briefly as follows: (1) The nitrogen becomes dissolved in the plasma according to Dalton's law of pressure—that is, as the air pressure rises the nitrogen contents of the plasma increases in direct proportion. (2) The blood takes an hour and a half to become saturated with the nitrogen. (3) The dissolved gas (N) very quickly disappears from the arterial blood on decompression, although they believe that in the tissues and small venules it remains much longer. (4) The evidence of a similar behaviour with regard to oxygen is not so convincing. (5) The amount of carbon dioxide gas falls markedly after exposure for an hour to positive pressures of oxygen. This fact would tend to indicate that it is in the tissues themselves (and not in the excretion which takes place in the lungs) that diminished oxidation is located, evidence of which they had previously obtained in examining the composition of expired air in mice subjected to a pure atmosphere of oxygen (*Proc. Roy. Soc.*, June, 1902). Details of this research appear in the *Journal of Physiology*.

II. *The Composition of the Expired Air in Animals subjected to High Pressures of Oxygen and Air.*—The air leaving a small pressure chamber was analysed by the gravimetric method. The results confirm their previous work, and show further that the increased heat conductivity of compressed air—due partly to its being saturated with aqueous vapour—affects the heat-regulating mechanism, so that, if exposed for any length of time, heat production cannot keep pace with heat loss, the rectal temperature falls, and the CO_2 and H_2O output markedly falls. This fall is beyond what could be explained by the toxic effect of the partial pressure of oxygen present in the air. Details of this research will also appear in the *Journal of Physiology*.

GASES OF THE BLOOD.

Dr. W. A. OSBORNE reports that his research on the gases of the blood is not yet completed. A large number of quantitative estimations of the phosphates held in true solution in the plasma, under varying conditions of the blood, has been made in order to throw some light on the problem of the fixation and liberation of carbonic acid. Experiments have also been carried out successfully supporting a new theory of oxyhaemoglobin, which he hopes to embody in a paper during the course of the present year.

EFFECTS OF INTRAVASCULAR INJECTIONS OF EXTRACTS OF ANIMAL TISSUES.[1]

[From the Physiological Laboratory, University College, Cardiff.]

MR. WILLIAM SHEEN (who has worked in conjunction with Mr. SWALE VINCENT, M.B.) reports as follows:

Extracts were made from the tissues of various animals. These extracts were of four kinds: (1) Saline decoction (the form most often employed), made by boiling the fresh tissue with acidulated normal saline and filtering. (2) Proteid extract, made from the fresh tissue with normal saline without boiling. (3) Alcoholic extract made with alcohol, the alcohol evaporated and the residue taken up with normal saline. (4) Ether extract, made in a similar way, but with methylated ether. Experiments were performed with dogs, cats, and rabbits. The extracts were of the strength of 1 in 3 and the usual dose was 5 c.cm.

Nervous Tissues.—Intravascular injections of saline decoctions of nervous tissues were found to produce marked lowering of the carotid blood pressure. This effect was constant and persisted after section of the vagi and after doses of atropine sufficient to abolish vagus action. The effect was contrasted with that produced by the injection of a solution of cholin, and it was found that after atropine administration the fall of blood pressure produced by cholin was replaced by a rise, showing that the depressor substance in the nervous tissue extracts could not be cholin. In this respect, therefore, these experiments were confirmatory of those of Osborne and Vincent,[2] and contrary to those of Halliburton.[3] The depressor substance was also found in alcoholic extracts and in ether extracts (dissolved in normal saline) of the alcoholic extracts; it was not, however, extracted direct from the moist tissues by ether. The injection of an extract made with normal saline at ordinary temperatures (proteid extract) usually produced a rise of blood pressure, indicating the presence of a second active principle. The contrast between the unboiled and boiled extract was often noted in the same experiment.

Muscular Tissues.—All kinds of muscular tissues were found to contain a depressor substance, not usually so marked in its effects as that contained in nervous tissues, but, like it, equally active after the administration of atropine. A pressor substance was also present, best extracted by normal saline at ordinary temperatures. The depressor substance was extracted by alcohol, but not by ether.

Kidney Extracts.[4]—Saline decoctions of kidney produced as a rule a marked temporary fall of blood pressure. Occasionally a double effect was produced, a rise followed by a fall; and with extracts made with normal saline at ordinary temperatures this was the usual effect, a pure rise occasionally occurring. Alcohol was found to extract the depressor substance; its effect persisted after section of the vagi and after the administration of atropine.

Other Tissue Extracts.—The presence of a depressor substance was also shown in extracts of liver, spleen,[5] testis,[6] pancreas, ovary, and lung. It is to be noted that other observers have found a depressor substance in thyroid,[7] thymus,[8] suprarenal,[9] and pituitary.[10] With many of these tissues there was evidence more or less marked of the presence of a pressor substance. A depressor substance was found in extracts made from intestinal mucous membrane and from the whole thickness of the gut.[11] The conclusions come to were that probably all animal tissues contained a depressor substance and possibly also a pressor substance. The depressor effects were found to be due to vaso-dilatation of various vascular areas throughout the body: the limb and intestine were the areas particularly experimented upon. Possibly also the pressor effects were accompanied by vaso-constriction in certain areas. No specific effect of a particular extract upon the tissue from which it arises was found, as described by Bayliss and Starling[12] for intestine extracts, but further investigations are required on this point.[13]

THE EFFECT OF MUSCULAR WORK ON THE TEMPERATURE.

DR. PEMBREY reports that he has, in conjunction with the late Dr. Arkle, Mr. Bolus, and Mr. Lecky carried out the research upon "The Effect of Muscular Work upon the Temperature of Man." The paper was published in *Guy's Hospital Reports*, vol. lvii. 1902.

The chief results and conclusions are as follows: (1) The determination of the temperature of healthy men by means of a thermometer inserted under the tongue in the closed mouth does not give accurate or comparable values for the internal heat of the body, even if the thermometer be retained for five minutes. If the time of retention be increased, as some observers have suggested, to ten or twenty minutes, the result is still inaccurate, for, as Vernet has shown, the temperature may fall in the rectum and rise in the mouth during that period. (2) The rectal temperature is the only accurate measure of the internal heat. (3) The method used by Stephen Hales, namely, to observe the temperature in the stream of urine, gives results which in point of accuracy come next to rectal determinations. (4) Comparative determinations of the temperature of the rectum and mouth before exercise show that the former may be one or even two degrees Centigrade (1.8° or 3.6° F.) above the latter; the difference depends chiefly upon the cooling of the tissues surrounding the buccal cavity. This is naturally more marked in cold weather, but even in warm weather there is a loss of heat from the boundaries of the mouth by the evaporation of sweat externally, and of moisture in the respiratory tract. (5) Comparative determinations of the temperature of the rectum and urine before exercise show that the former is always greater than the latter; the average excess in 47 comparative observations was 0.34° (0.61° F.). This difference is due in many cases to a small quantity of urine, insufficient to raise properly the temperature of the mercury in the bulb of

[1] A full account of the research will be found in the *Journal of Physiology*, vol. xxix. No. 3, April 28th, 1903.

[2] *Journal of Physiology*, xxv, p. 283. 1900.

[3] *Journal of Physiology* xxvi, p. 229. 1901. Preliminary communications on the same subject had, however, appeared both by Halliburton and by Osborne and Vincent in the *Proc. Physiol. Soc.*, February 19th, 1899.

[4] Cf. Tigerstedt and Bergman, *Stand. Archiv fur Physiologie*, viii, s. 223, 18.

[5] Cf. Oliver and Schäfer, *Journ. of Physiol.*, xviii, 3, p. 227, 1895.

[6] Cf. Dixon, Ibid, xxvi, p. 244, 1901.

[7] Schäfer, BRITISH MEDICAL JOURNAL, 1895, p. 343.

[8] Svehla, *Wiener med. Blätter*, 1896, p. 919.

[9] Moore and Purinton, *Pflüger's Archiv*, 81, 1900, s. 483.

[10] Schäfer and Vincent, *Journ. of Physiol.*, xxv, p. 87.

[11] Cf. Bayliss and Starling, Ibid., xxviii, p. 330, 1902.

[12] Loc cit.

[13] Some experiments were also made with commercial animal tissue extracts, but their results were inconclusive.

the thermometer. It is obvious also that the urine begins to cool, chiefly by evaporation, directly it leaves the body. (6) Muscular exercise in the case of each observer caused a rise in the temperature of the rectum and urine; the temperature of the mouth showed sometimes a slight rise, sometimes a fall. (7) The rectal temperature of healthy men doing muscular work may rise to 38.5° (101.3° F.), without causing distress or any pathological effects. (8) The average urinary temperature of 83 soldiers was 37.58° (99.65°); the maximum 38.22° (100.8°), and the minimum 36.78° (98.2°). The men were at rest, and the time was between three and half-past four o'clock in the afternoon. (This series of observations was made in conjunction with Dr. Haldane).

The research upon the "Influence of Fasting and Food upon the Total Exchange of Material in the Body" has been carried out in conjunction with Dr. Spriggs. The work is not finished, but a preliminary communication will be made to the Physiological Society.

NEUROLOGY.

The Relation of Stimulus to the Healing of Nerves.

Dr. F. W. Mott, F.R.S., has been engaged in an investigation of the relation of stimulus to the healing of nerves.

(A.) Comparative observations have been made of the rate of healing of the median and ulnar nerves in monkeys after section and suture on both sides: on one side a sufficient number of posterior roots supplying the limb with sensation having been divided to cause inability of movement of the limb. A complete histological examination of the nerves and spinal cords has not yet been made in all the cases, but so far as the research has yet been proceeded with, it tends to show the following results: (1) The cutting off stimulus by way of the posterior roots, although producing very marked loss of reflex tonus, does not (in satisfactory uncomplicated cases) seem to have much influence in preventing regeneration of the motor nerves, nor does it apparently affect regeneration of the sensory nerves. This was shown by the histological examination of the nerves as regards (*a*) number of myelinated fibres in the regenerated nerves of the two sides: (*b*) thickness of myelin sheath of the regenerated fibres; (*c*) effects of electrical stimulation of the nerves above the seat of injury; (*d*) effects of electrical stimulation of the cortex and the production of movements on the two sides. The observations made refer mainly to periods of 80 to 100 days. Necessarily a large number of observations involving a series of experiments in which varying shorter intervals of time are allowed to elapse between the operation and the histological and physiological examination of the nervous tissues are required before any positive statement can be made upon the influence of stimulus on the regeneration of nerves.

(B.) Observations relative to the changes in the grey matter of the spinal cord, degeneration of endogenous fibres and neuroglia proliferation, resulting from unilateral section of posterior roots. The results are variable, because when a very extensive fibre atrophy takes place in the grey matter of the posterior horn, consequent upon a very extensive unilateral destruction of the exogenous fibres of the posterior roots, dilatation of the small vessels, with rupture and haemorrhagic extravasation, is liable to occur. This complicating lesion may obviously be variable as regards its segmental extent and localization, and a variable number of neurones of the grey matter of the posterior horn may in consequence be destroyed. These neurones may belong to (*a*) Clarke's column, causing degeneration of the ascending cerebellar fibres of the same side; (*b*) association neurones, the fibres of which enter the lateral columns; (*c*) association neurones, fibres of which enter the posterior columns; (*d*) association neurones of second type of Golgi, the axons of which do not leave the grey matter. Again running into the posterior roots are small arteries, sections of which may interfere with the blood supply of the posterior grey matter on that side, and this may likewise account for the variable destruction of neurones and endogenous fibres in different cases. So far as Dr. Mott has been able to judge he does not think any of the secondary degenerative changes of the cord produced by section of the posterior roots in any way militate against the doctrine of the anatomical and nutritional independence of the neurone. For the secondary changes were variable when the same roots were cut, sometimes excessive, at other times very slight, in this respect entirely differing from the posterior column degeneration, which is always proportional to the seat, the size, and number of the posterior roots divided. Again, as he has shown in previous observations, these cases showed no degeneration extending from the posterior column nuclei into the fillet, neither was he able to detect any well-defined difference in the chromipholous appearance of the anterior horn cells of the two sides, such as Warrington has described; it may, however, be that the changes had disappeared with time, for the animals he is referring to were kept for a considerably longer time alive than those of Warrington.

(C.) A third question which has occupied his attention is that of nerve regeneration—is it central or peripheral? Yet, so far as his observations go, he is inclined to adopt the old view that the axis cylinder process grows down from the central end, but he thinks it probable that the neurilemmal cells play an important part not only in the removal of the products of degeneration, but in the regeneration of the new nerve by the laying down of a protoplasmic basis into which the sprouting central axon grows. One experiment suggested by Professor Gotch supports this view. A nerve was cut and sutured. After healing and restoration of function had occurred a small portion was excised just below the lesion and examined microscopically; it was found to contain myelinated nerves. The animal was killed ten days later, and degeneration of the myelinated sheath of the regenerated nerves was found but only in the peripheral segment. This experiment has been repeated in a slightly modified form but the material has not yet been examined.

The whole of the experimental portion of this research has been conducted by Professor Halliburton, F.R.S., at the Physiological Laboratory, King's College. Dr. Mott is responsible for the histological investigation.

The Reflexes in Lesions of the Spinal Cord.

Dr. Purves Stewart states that he has made a number of experiments in conjunction with Dr. Aldren Turner upon monkeys, with the object of determining the condition of certain reflexes after transverse lesions of the spinal cord.

Methods of Operation.—In some cases the cord was crushed by means of a tight silken ligature applied extradurally; in others the dura was opened and the cord trans-sected with a scalpel, the two ends being allowed to retract. In others, again, a hemisection of the cord was performed on one side, the condition of the reflexes was observed, the animal reanaesthetised, and the trans-section rendered complete. The animals survived for periods varying from five days downwards. The amount of shock in the first few hours after operation was considerable.

Results.—In every instance flaccid paraplegia of the lower limbs and tail was present from the first. (1) *Knee-jerks.*—In all cases of translesion from the fourth to the ninth dorsal segments inclusive, the knee-jerks were increased from the outset. Preliminary hemisection, though producing hemiparaplegia, did not appear to affect the jerks. A lesion at the level of the third dorsal segment produced diminution of the knee-jerks. Lesions through the eighth cervical or first dorsal segments produced loss of the knee-jerks. (2) *Crossed Adductor Jerks.*—At whatever level, from eighth cervical to ninth dorsal segments inclusive, the cord was divided, crossed adductor jerks appeared immediately after the lesion, not having been present before. Preliminary hemisection also produced crossed adductor jerks on both sides. (3) *Superficial Anal Reflex.*—At whatever level the cord was divided, from eighth cervical to ninth dorsal inclusive, the superficial anal reflex remained brisk from the outset. In several cases, in addition to the anal reflex, there was produced a peculiar rhythmic lateral movement of the tail on pricking the skin behind the anus. This tail movement had a rate of about 140 per minute, and lasted for several minutes at a time.

The Functions of the Caudate Nucleus.

Dr. Warrington reports that during the past year he has published in *Brain* an account of the anatomy of the central nervous system in a child in which the cerebellum was completely absent. Since last November he has attempted a research on the caudate nucleus. An instrument has been obtained of the nature of a trocar containing a fine stilette, which can be protruded to any given distance. Experiment has so far been successful that the whole caudate nucleus has been destroyed, with very limited destruction to any other part of brain substance; so far, however, the lesions produced have not been perfect. Better results, however, are hoped to be soon obtained. The anatomical connexions, symptoms of

bilateral lesions, and stimulation observations will be recorded. Additional observations of the posterior ganglia in fetal life are being slowly made.

PATHOLOGY.

Uncompensated Heart Disease and Dropsy.

Dr. C. Bolton makes the following report:

It is very generally held that the venous pressure in uncompensated heart disease is raised; this, however, is not universally believed, and there is another opinion to the effect that the venous pressure is raised in the trunk only and lowered in the more peripheral parts of the body. The object of this research, therefore, was to produce uncompensated heart disease experimentally, in order to determine, if possible, what pressures obtain in the arteries, veins, and capillaries respectively in this condition, as this is the first step which must be taken in endeavouring to solve the much-debated pathology of cardiac dropsy. A method involving constriction of the pericardium was devised whereby the symptoms of an uncompensated heart lesion were produced, namely, dropsy, diminished amount of urine and dyspnoea. It was observed that the dropsy invariably commenced in the serous cavities and mediastinum, and subsequently invaded the subcutaneous tissues. With regard to the blood pressures, it was found that there was a rise of pressure throughout the whole venous system, trunk, and peripheral parts of the body, and a fall of arterial pressure as an immediate result of the operation. Soon, however—in the space of one or two hours—the venous pressure invariably fell to its normal level, the arterial pressure remaining low. From this it follows that the pressure in the capillaries is below normal and that the velocity of the blood stream is diminished.

It is argued that the reason of the fall of venous pressure to normal is to be sought in the fact that normally the veins are not filled to distension, and that they will hold a much larger quantity of blood than they already contain without the venous pressure being appreciably raised. It is thus seen that the dropsy of heart disease is produced whilst the capillary pressure is low and the velocity of the blood stream lessened, and that it does not depend upon increased capillary pressure as one of the factors which are necessary for its production. A paper on the subject will be published in the *Journal of Pathology and Bacteriology*.

Precipitins in Blood.

Dr. W. Langdon Brown reports as follows:

The development of a precipitin for milk has been observed by Bordet and others, after injections of milk into the peritoneal cavity and a precipitin for egg-albumin has been observed by Uhlenhuth after merely feeding a rabbit on egg-albumin for twenty-four days. He therefore investigated the effect of diet on the precipitins of cats' blood by feeding cats on cow's milk only, while another cat for control purposes was fed on meat principally, being allowed no milk whatever. After three months the serum of both cats was tested against cow's milk by Bordet's method (6 to 15 drops of milk added to 3 c.cm. of serum) and Wassermann and Schütze's method (diluted milk and serum mixed in proportions varying from 1.1 to 1.5 and kept at the temperature of the room for several hours). Further, a solution of caseinogen from cow's milk was employed, a solution of caseinogen separated from asses' milk being employed as a control. In no case was any difference noted between the behaviour of the serum of cats fed on milk and of those fed on meat. So far then even prolonged feeding experiments have failed to develop a "lactoserum" in cat's blood. Possibly this might succeed with animals in whose normal diet milk finds no place. Thus it was a herbivorous animal that Uhlenhuth fed with egg-albumin and succeeded in obtaining a precipitin.

Dr. Langdon Brown now proposes to return to the questions raised in his former report as to the changes in the corpuscles of the blood noticed during the development of a precipitin.

The Coagulability of the Blood of Pregnant and Puerperal Women Suffering from Eclampsia and Albuminuria.

Dr. Carstairs Douglas reports that he has practically completed his research on the coagulation time of the blood in pregnant and puerperal woman, the subjects of eclampsia and albuminuria. Over 300 observations have been made on healthy non-pregnant women, healthy pregnant women, normal puerperae, albuminurics (pregnant and puerperal), and eclamptics (pregnant and puerperal).

The object aimed at was to determine whether there was anything in the coagulability of the blood in eclamptics to support the theory that the symptoms in the disease depended on the formation of small thrombi in the brain, liver, or kidneys.

Methods and Results.—The coagulation time was determined with the latest pattern of Wright's coagulometer. (*a*) In 10 healthy non-parous women the coagulation time averaged 7.75 minutes, the lowest being 5 and the highest 10. (*b*) In 7 healthy pregnant women the average time was 7.4 minutes, the limits varying from 5 to 9. (*c*) In 83 healthy puerperae the average time was 7.3 minutes, the shortest being 4.7, and the longest 9.5. Of three cases showing this somewhat prolonged time, one was a case of accidental haemorrhage, one had had severe bleeding at labour, and the third was a normal case. (*d*) Of albuminurics (non-eclamptic) 16 cases were examined. Of these, 6 (pregnant) showed a coagulation time of 6.5 minutes on the average, the limits being 4.7 and 7.5; while of 10 others examined in the puerperium, the average time was 7.0, the shortest being 5.6, and the longest 10. (*e*) Lastly, no fewer than 22 cases of eclampsia were investigated, many of them very severe, and several fatal. Of 5 cases examined before delivery the coagulation time averaged 7.4 minutes, the variations being from 4½ to 9, while in 17 cases with eclampsia in the puerperium, the average time was 7.0, the limits being 4½ and 9½; the latter figure was met with in a severe eclampsia with jaundice. It will be observed that there is practically no difference in the time of blood coagulation between healthy non-pregnant women, healthy pregnant women, normal puerpurae, eclamptics before and after delivery, and albuminurics in the puerperium, the figures for these six groups being respectively 7.7, 7.4, 7.3, 7.0, 7.4, and 7.0 minutes. The albuminurics before delivery had certainly a shorter time (average 5.6), but of these six, three were cardiac cases and one a hemiplegic, leaving only two as possible pre-eclamptic subjects.

Conclusions.—It may be concluded, then, from these observations that there is nothing to support any theory of the etiology of eclampsia based on the supposition that in the subjects of that disease blood clots more quickly than in normal pregnant and puerperal women. It may be of interest to note that on one occasion a patient was examined who gave a coagulation time of nearly 11 minutes. She was suffering from purpura haemorrhagica, which proved fatal.

Anaemia, Lymphocytosis, and Pernicious Anaemia.

Dr. Thomas Houston (Research Scholar) reports that the research on the relation of oedema and anaemia, on which a paper has been published in the British Medical Journal, has been continued. The subject naturally introduces that of lymphocytosis. The relative increase of lymphocytes may be due to the dilution of the blood with excessive plasma as has been shown to occur in chlorosis, splenic anaemia, and the anaemia following typhoid fever, or to the active production of these cells by the lymphatic tissue; hence it is important to observe the effect on lymphocytosis of glandular enlargement. This has been done in a series of cases including lymphatic leukaemia, Hodgkin's disease, syphilitic and tuberculous adenitis, etc. The results of this research are not yet ready for publication. Dr. Houston has at the same time carried out a series of observations on the histology of the blood in pernicious anaemia and other severe anaemias simulating this disease. An account of this work is ready for publication.

The Relation of Purin Bodies to Metabolic Disorders.

Dr. I. Walker Hall has continued his research on the relation of purin bodies to certain metabolic disorders. In addition to following up the researches previously reported, he has investigated a case of chronic rheumatism during subacute attacks and also during the intervals. A comparison of the results obtained shows marked deficiency in the metabolism of exogenous purins. The purin bodies of the faeces have been estimated systematically in periods of six days each, and the total purin nitrogen, and also the individual bases, separated and quantitatively determined. A somewhat definite average has been obtained with a prescribed diet, and experiments are now in progress upon the effect of the ingestion of definite quantities of the purin bases on the faecal output. Hypoxanthin appears to be almost entirely absorbed, but guanin reappears almost *in toto* in the faeces. The results are not yet quite ready for publication.

OXALURIA AND DIABETES.

Dr. JAMES SCOTT reports as follows:

General Plan of Investigation.—A female dog weighing about 30 kilos. was used, and as a preparation the perineum was split under full anaesthesia to allow of catheterization. Before each experiment she was fed for some days on a fixed diet of oatmeal porridge and milk, oatmeal, milk, salt, water. The urine was collected by keeping the animal in a cage with a sloping zinc floor under which a suitable vessel was placed. The floor was kept scrupulously clean, and faeces were removed as soon as possible after they were passed. During these operations the urine was never contaminated with faeces. When the animal came into nitrogenous equilibrium it was deprived of food and water on the day on which the injection of glucose or potassium oxalate was given. The urine was collected daily. At 10 a.m. every day the bladder was emptied by the catheter.

Methods.—Urine: The reaction and specific gravity were taken, the quantity collected noted and then diluted to a convenient volume. The amounts of the following ingredients were determined by the methods enumerated, duplicate analysis being made in all cases and the mean of these taken: (1) Total nitrogen by Argutinsky's modifications of Kjeldahl's method; (2) urea nitrogen by Bohland's method of precipitating all nitrogen not urea with phosphotungstic and hydrochloric acids; (3) nitrogen of ammonia by Schlössing's method; (4) total sulphur as SO_3 by igniting with caustic potash and nitre and precipitating with barium chloride; (5) oxidized sulphur as SO_3 by heating with weak hydrochloric acid, precipitating with barium chloride; (6) phosphoric acid, P_2O_5, by titrating with nitrate of uranium; the nitrate not in urea was calculated by difference; the percentage of nitrogen in urea and not in urea, the percentage of sulphur fully oxidized and not fully oxidized, the proportion of phosphorus as P_2O_5 to the total nitrogen were calculated; (7) albumen was tested for by nitric acid and acetic acid; (8) sugar was tested for by Fehling's solution (phenylhydrazin and fermentations by yeast). Examination of faeces.—Faeces were treated with dilute sulphuric acid and the nitrogen estimated by Argutinsky's modification of Kjeldahl's method. Food analyses.—Analyses of the food given to the dogs showed the amount of nitrogen to be: Milk, 0.366 per cent. nitrogen; oatmeal, 2.15 per cent. nitrogen. Daily diet: 700 c.cm milk = 2.56 grams nitrogen, 400 grams meal = 8.60 grams nitrogen, 1,300 c.cm. water, 15 grams salt; total intake of nitrogen = 11.16.

Results.—A number of experiments were carried out by injecting subcutaneously quantities of potassium oxalate dissolved in water and sterilized by heat, with a view to ascertaining its effects upon the general metabolism and the relation of oxaluria to diabetes. The quantities of potassium oxalate varied from 0.25 to 0.75 gram. With quantities up to 0.5 gram very little alteration in the general metabolism and distribution was obtained. With 0.75 gram potassium oxalate the dog seemed to be much depressed, and lay very quiet in the cage and took little notice of anything or any person. On examination of the urine the total nitrogen was found to be increased from 0.470 per cent. to 0.826 per cent. The nitrogen in urea was increased from 0.407 per cent. to 0.703 per cent. The nitrogen not as urea was increased from 0.063 per cent. to 0.123 per cent. The nitrogen in ammonia was increased from 0.0210 per cent. to 0.0343 per cent. In his other experiments similar results were obtained with quantities above 0.75 gram. In one case the injection was followed by localized suppuration and the dog was destroyed. After injection of the potassium oxalate the urine was of a port-wine colour. Dr. Scott was anxious to determine if any of the potassium oxalate was excreted by the kidneys, and the urine was examined for oxalic acid by Salkowski's method. The amount of oxalic acid determined in the urine after the injection of potassium oxalate varied from 0.280 to 0.340.

Conclusions.—The conclusions which he feels inclined to draw from those experiments are that the potassium oxalate is a depressant drug even in small doses, and when larger doses are given it increases the nitrogenous metabolism. No sugar was found in the urine at any time. But he would like to give the potassium oxalate for prolonged periods to determine if it would cause diabetes, because diabetes has been known to follow where oxaluria had continued for a long time. He intends continuing these investigations.

THE EFFECTS OF RICIN AND ABRIN IN ANIMALS.

Dr. G. A. WATSON (Research Scholar) in an interim report states that the following indicates the lines on which the research is being conducted and the progress made:

1. *Immunization and the Transmission of Immunity.*—The immunization of rabbits and guinea-pigs with attempts to obtain evidence of the transmission of the immunity to the offspring of these animals. A number of animals have been rendered very highly immune by increasing doses of the poison given for periods extending over several months, but the rearing of the offspring of these animals has been on the whole very disappointing, and has caused much delay in the progress of the work. The few successful results so far obtained would seem to show: (1) That no immunity whatever is transmitted through the male parent, even though the latter possesses a very high degree of immunity; (2) that a certain amount of immunity comes through the maternal milk, although the relative proportion of this to the amount of immunity which is transmitted through the maternal blood is not yet determined. The breeding experiments with immunized animals are being continued. Some facts as to vicarious immunity have been elicited.

2. *The Effects especially on the Nervous System.*—(1) The effects of acute poisoning on the nervous system are being carefully studied, and the results compared with other known acute affections; as some of the changes found might appear to be of vascular origin, the investigation has also included an attempt to determine the direct effect upon fresh nerve cells (vertebrate and invertebrate), both of ricin and abrin alone, and of these bodies in conjunction with choline. (2) The effects of chronic poisoning are being investigated in animals which have been kept almost continuously under the influence of the toxin for various periods up to over a year.

VIRULENCE AND PROTECTIVE BODIES.

Dr. AINLEY WALKER reports that he has been engaged in investigating the effects upon bacterial virulence of repeated "passages" of the micro-organism concerned through living blood outside the animal body. The virulence of the bacillus typhosus could be considerably exalted by such passages. An account of the experiments and the conclusions which follow was published in the BRITISH MEDICAL JOURNAL for October 18th, 1902. The experiments are being repeated and extended with another micro-organism.

He has also been engaged in observations on the "protective bodies," the results of which have appeared in the *Centralblatt für Bakteriologie*, 1903, vol. xxxiii, No. 4.

With Dr. R. M. Beaton he has investigated the etiology of acute rheumatism. Upon this question a joint communication appeared in the JOURNAL for January 31st, 1903, and an article in the *Practitioner* for February, 1903, tending to support the view that the disease concerned is due to the action of the micrococcus first isolated in this country by Paine and Poynton. Further experiments are in progress on this question.

He has also been occupied with Mr. T. E. Holmes in an examination of experimental leucocytosis and its relation to the production of "protective substances." The observations, which were of an extended nature, have not yet been published.

CHANNELS OF INFECTION IN TUBERCULOSIS.

Dr. JOBSON HORNE (Ernest Hart Memorial Scholar) reports that he is engaged upon a research into the channels of infection in tuberculosis and the part played by the lymphatic glands in arresting, modifying, or disseminating infection, and in preventing recurrence of the disease.

The channels of infection in the human subject, which so far have been specially selected for research are the ear, the mouth, and the upper respiratory passages. The reason for specially selecting these is twofold; in the first place they lend themselves to direct ocular observation of the site of infection, and secondly to studying the development and progress of a tuberculous infection together with the behaviour of the adjacent lymphatic glands towards infection. There is a further reason for selecting the ear. The research is to be conducted with reference to State medicine. Tuberculosis of the ear, whether regarded as a factor in the destruction of health and of child-life, or as a factor in the spread of infection to others, has not received the attention it deserves from a public health standpoint. On these grounds statistics are being obtained of cases in which the scientific proof of the nature of the disease can be established, with a view of ascertaining (1) the frequency of disease; (2) the conditions under which it occurs: and (3) its prevention and treatment.

The information so far obtained appears to justify the

following conclusions: (1) That the ear is a site of primary infection and especially in children; (2) that the ear is far more frequently infected with tubercle than is commonly known; (3) that unlike other forms of suppurative disease of the middle ear, its onset is usually unattended with pain, and on that account is overlooked and not treated; (4) that in the particular class referred to it is prone to lead to a disseminated tuberculosis and to a fatal termination by meningitis; (5) that there is a natural tendency for the disease to become localized and arrested in a manner which will be described when the part played by the lymphatic glands is discussed, this natural tendency can be assisted by treatment.

A question incidentally arising out of the above, but really forming a research in itself, is whether the absence of pain in this and other forms of tuberculosis is to be attributed to bacteria and their products, apart from physical conditions. This matter has already been dealt with in a previous report and is receiving further attention.

The results of an investigation into tuberculosis of the larynx will be tabulated and form a separate report. The part played by the lymphatic glands in tuberculosis is being studied with reference to three points: (1) The local effect upon the glands immediately adjacent to the site of infection; (2) the effect upon the lymphatic system generally; (3) the personal factor in tuberculosis.

The following observations have been deduced from pathological changes met with in tuberculosis of the larynx and the ear. They are, perhaps, in this early stage of the research, to be regarded rather as hypotheses upon which to base further research than as conclusions definitely arrived at for general application. (1) That in tuberculosis the amount of glandular activity as evidenced by the increase in the size of the glands corresponding to the site of the infection is in direct proportion to the power and effort to resist a general infection, and is in inverse proportion to the susceptibility of the subject to tuberculosis other than the glandular form; (2) that when the same region becomes secondarily infected there is proportionately an absence of activity in the corresponding glands; (3) that the glandular condition is a criterion not only of the susceptibility of the subject, but also of the lesion being a primary or a secondary one; (4) that when tuberculosis has become generally quiescent or arrested, in the event of a recrudescence of the disease in an old focus the active enlargement of the glands corresponding to the site of recrudescence will occur, irrespective of the fact whether the site of recrudescence be the site of the primary or of a secondary infection from the original infection.

Hodgkin's Disease.

Dr. Jobson Horne reports also that he has investigated the morbid processes occurring in the lymphatic glands which are grouped under the term "Hodgkin's disease."

Methods and Results.—The investigation has been conducted more particularly with a view of ascertaining the ideality or relationship, if any, of the disease with tuberculosis. His own observations on the material so far examined will not allow him to arrive at the same conclusions as a good many authors on the subject—namely, that Hodgkin's disease is a pathological entity, and that its relation with tuberculosis is coincidental and not causal. Dr. Horne agrees that Hodgkin's disease has a histological entity; he also considers that the large epithelioid cells which form one of the features of the growth, and which are commonly termed "giant cells," are altogether different from the giant cells which characterize a tuberculous process; and that the application of the term "giant cells," although literally correct, may have had a prejudicial effect upon the conception of the nature of Hodgkin's disease. He has met with the two varieties of giant cells in one section. This is exceptional. The reason it is exceptional will be discussed in a further report. As regards animal experiments, he considers too much significance may be attached to negative results. Failure to reproduce from a given case histological Hodgkin's disease or tuberculosis in an animal does not prove the entity of the former nor disprove its relationship with the latter.

Conclusions.—The conclusions to be drawn from the negative results are either that the material inoculated did not contain the original irritant (whatever that hereafter may be found to be) in its original pathogenetic form, or else that the lymphatic glands in the animal experimented upon were differently constituted and behaved in a manner differing from the glands in the human subject; in a word, that there is a personal factor to be reckoned with. So far the investigation has rather supported than negatived the view that the tubercle bacillus is a factor in the production of Hodgkin's disease; and until further research has demonstrated the existence of other irritants Dr. Horne considers it would be as well not to regard Hodgkin's disease as a pathological entity, but to retain the term as a comprehensive and clinical one, to the exclusion of the many other terms which have been introduced and based upon histological and cellular changes, without sufficient regard for the possibility of these changes being due to one and the same cause.

The Characters of the Tubercle Bacillus from Various Sources.

Mr. A. G. R. Foulerton, F.R.C.S., and Mr. Leslie Milburn report that the experiments which they have carried out with the grant were commenced in August of last year and are still in progress. In the course of these experiments they have tested the virulence on various animals of strains of bacillus tuberculosis, as derived from human and other sources. They have also studied any variation in other characteristics which they have found with these different strains. They do not feel, however, that the results of their experiments are thus far sufficiently definite to justify them in any attempt to draw conclusions founded on them; they feel that very much more remains to be done before they can profitably formulate their results.

The Pseudo-diphtheria Bacillus.

Professor R. T. Hewlett, M.D., has carried on his investigations into the nature of the pseudo-diphtheria (Hoffmann) bacillus and its possible relation to the true diphtheria bacillus in three directions: (1) The attempted transformation of the pseudo-bacillus into a virulent form by passage through certain wild birds, for example, the chaffinch. No positive results have yet been obtained, and this portion of the work has now been interrupted for some time owing to the close season for wild birds rendering it impossible to obtain them. (2) Does the pseudo-bacillus produce a "substance sensibilatrice" in relation to the diphtheria bacillus? No positive results have as yet been obtained. (3) Does the broth culture of the pseudo-bacillus contain substances of the nature of toxoids which will combine with diphtheria antitoxin? The experiments that have been made indicate that such is the case, but further work must be done to confirm the results obtained.

Chemistry of Aniline Stains.

Dr. J. W. H. Eyre reports that his examination of the aniline dyes with reference to their respective solubilities is not yet completed. An aniline dye as sold for histological and bacteriological purposes appears to consist of the colouring matter mixed with a varying quantity of a more or less soluble vehicle. The first point requiring investigation, therefore, was the amount of commercial dye required to saturate a given volume of distilled water, of methylated spirit, of rectified spirit, and of absolute alcohol respectively, and the method adopted is best explained by describing the preparation of a 1 per cent. solution of basic fuchsin in water. One gram of the powdered dye was accurately weighed in a counterpoised watch crystal, then brushed by means of a dry camel's-hair brush into a standard measuring flask containing 100 c.cm. of distilled water—the capacity of the flask having been previously controlled by weighing. Solution was effected by allowing the dye to remain in contact with the water, in the flask, for one week, shaking the flask and contents vigorously at intervals every day. At the end of this time the solution was filtered into a dry Nessler's tube and tightly corked with a well-fitting rubber stopper. The specific gravity of the solution was then taken by means of Westphal's balance, and also by weighing in a specific gravity bottle: 25 c.cm. of the solution were then delivered into an evaporating basin of known weight and evaporated over a water bath, dried in a desiccator, heated to 105° C. for 60 minutes in a drying oven and weighed—the difference then representing the amount of dye stuff actually taken up per 25 c.cm. by the solvent. By examining a series of solutions containing gradually increasing percentages of the commercial dye the saturation point is found. Fuchsin, for example, is shown to be in a practically saturated solution when the commercial dye is added to water to the extent of 1.5 per cent. On the other hand, water is not saturated by the addition of 2 per cent. commercial gentian violet. Many interesting and valuable data have already

been obtained which will shortly be embodied in a further communication.

FILARIA AND MOSQUITOS.

Dr. T. L. BANCROFT (Queensland), continuing his investigation into the life-history of filaria immitis, finds that dogs can be infected through being bitten by mosquitos (*Culex fatigans*) bearing the young filariae. Nine months appears to be the shortest time taken for the filariae to grow to sexual maturity and bear young; further experiments are being made to fix the time more exactly. In seven months the female filariae are 10 *u* long, which is full size, and are to be found in the right ventricle of the heart and in branches of the pulmonary artery; their uterine tubes, however, are devoid of ova and embryos. Three more dogs have been infected this year. Two "control" dogs remain free from the parasite.

Culex annulirostris (Skuse), an abundant and troublesome mosquito, will occasionally act as filarial host. Out of fifty or more that had imbibed filariated blood, two were found to harbour filariae in their labia three weeks later.

Mucidus alternans (Westwood), *Anopheles annulipes* (Walker), and *Stegomyia notoscripta* (Skuse) were experimented with but none of them appeared to be hosts.

One dog that had been bitten on February 6th and 11th by 103 filariated mosquitos died three months afterwards from worm growths in the trachea and bronchi occasioned by filaria osleri (Cobb). Search was made for young filaria immitis but none were found.

It was ascertained definitely that the mosquito sucks blood through its labrum-epipharynx: the epipharynx, when examined under the microscope, always contains air, but if certain precautions are taken blood corpuscles may be seen in it; crush a mosquito whilst imbibing blood with the finger, and keep the finger pressed hard for a minute so as to crush the life out of the suctorial bulb, now examine the mouth organs mounted in water with a cover glass. Contrary to the general opinion, the hypopharynx is a large distensible tube, normally two or three times larger than the epipharynx; it is always full of a saliva-like fluid containing fatty particles. It was also ascertained that in the male mosquito the maxillae and mandibles are absent; this will account for the male not biting.

Mosquitos, in imbibing the juices of fruit, do not bend the labium as when sucking blood. Grassi thought it probable that the young filariae were released from the labium whilst the mosquito fed on fruit, through a rupture caused by the labium, stuffed with filariae, being bent upon itself.

Sixty per cent. of the mosquitos (*Culex fatigans*) harbour one or more young filariae three weeks after feeding on filariated blood, but only a third of these can be induced to bite again.

Reports of Branch Meetings.

BATH AND BRISTOL BRANCH.

THE annual meeting of this Branch was held at University College, Bristol, on June 17th, Dr. H. WALDO, President, in the chair. Twenty-nine members were present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Installation of New President.—The Chairman then resigned the chair to the incoming PRESIDENT, Dr. Barclay J. Baron, who delivered the Presidential address, his subject being The Influence of Certain Habits on the Voice.—A vote of thanks to the President for his interesting and valuable address was proposed by Mr. N. C. DOBSON, seconded by Mr. F. RICHARDSON CROSS, and carried unanimously.

Report of Council.—Dr. MICHELL CLARKE, Honorary Secretary for the Bristol District, read the report of the Council for 1902, which stated that the financial position of the Branch was sound, and that the meetings had been well attended. The Council had to deplore the loss by death of Dr. T. J. Colman, Mr. Henry Ormerod, Mr. H. T. Rudge, and Mr. W. M. Barclay. Mr. W. M. Barclay, after a distinguished career at the Bristol Medical School, was elected on the surgical staff of the Bristol General Hospital, and at the time of his death had held the position of Senior Surgeon. Mr. Barclay was a surgeon of great ability, and had for many years done a large amount of useful work at the hospital. His death at so early an age was deeply lamented by his colleagues, who were much attached to him, and by a large circle of friends. Mr. Barclay throughout his whole career was distinguished by his uprightness, honesty of purpose, and singleness of mind, whilst his uniform courtesy and kindness to all with whom he was brought into contact would be long remembered by them. Dr. Coleman, an old student and former House-Surgeon at the Bristol General Hospital, had for many years conducted a very large practice in Cotham and Redland: indeed the exacting demands of his practice eventually told upon his health, and for some time past his life had been a constant struggle with ill-health. He was a man greatly beloved by his patients, who knew that they could always rely upon his help and sympathy. Mr. Henry Ormerod had practised for about forty years at Westbury-on-Trym, and in the course of that time had seen the country village in which he started develop into a large suburban district. He was a most able practitioner, and was held in great esteem by all his neighbourhood. His practice was a very large one, and his reputation extended over a wide district. He was a good representative of the best type of country practitioner, and kept himself well abreast of the advances made in medicine and surgery. The Council could truthfully say that Mr. Ormerod was an honour to the profession to which he was proud to belong. Mr. H. T. Rudge, like Dr. Colman and Mr. Barclay, was an old student of the Bristol Medical School, and a resident at the Bristol General Hospital, and also, like them, laid the foundations of his future success by his excellent work as a student and a resident. Mr. Rudge died a comparatively young man, although he had been for many years in the enjoyment of a very large practice. He had a thorough knowledge of his work, and this, combined with his invariable cheerfulness and thorough kindness of heart, endeared him to a wide circle of patients and friends. The best testimony to the esteem and affection in which he was held was afforded by the feeling shown by the enormous concourse of both rich and poor who were present at his funeral at Redcliff Church. It was fortunately rare that in so short a time the Council had to regret the loss of so many well-known and highly-esteemed members of the Branch. The balance sheet for the year was as follows: Total receipts, £85 15s. 4d.; total expenditure, £41 19s. 1d.; balance, £43 16s. 3d. The Council recommended that a sum of £10 10s. should be given to the Medical Benevolent Fund, and one of £10 10s. to Epsom College. The most important business during the past year was connected with the management of the Branch in accordance with the reorganization of the Association. The Honorary Secretaries and Dr. Markham Skerritt met the Honorary Secretaries of the neighbouring Branches in the South and West of England at a meeting in October, and discussed the boundaries of the Branch. These boundaries were now settled, and resulted in the area of the Branch being extended in Somersetshire and Wiltshire. The Branch had been formed into three Divisions, (1) a Bath Division, comprising the present Bath Section of the Branch minus the area of the Trowbridge Division, (2) a Bristol Division corresponding in area with the present Bristol section, and (3) a Trowbridge Division. During the past year the supply of clinical cases and pathological material had been abundant, and the papers read at the meetings had been of interest and value. It was decided instead of the usual Branch meeting in May to hold the first annual meetings of the Divisions on that day. A few members had resigned owing to removal from the district, and in addition to the large accession of members due to inclusion in the Branch of those members of the Association residing in the district who were formally unattached, thirteen new members had been elected. Dr. E. J. Cave and Mr. C. E. S. Flemming were elected the Representatives of the Branch on the Central Council of the Association. The Honorary Secretaries reported that meetings of the Bath, Bristol and Trowbridge Divisions were held on May 29th. For the Divisions the following officials were elected.

BATH: *Chairman*, R. J. H. Scott: *Vice-Chairman*, E. Field, M.D.; *Secretary and Treasurer*, W. M. Beaumont; *Members of Council*, F. Lace, R. S. Fowler, T. B. Goss, T. D. Ransford, W. D. McD. Ellis, M.D., G. S. Pollard, G. A. Bannatyne, M.D., C. Curd, T. Wilson Smith, M.D. *For Divisional Executive Committee*, E. J. Cave, M.D., A. Waugh, M.D.

BRISTOL: *Chairman*, E. Markham Skerritt, M.D.: *Vice-Chairman*, Barclay J. Baron, M.D.; *Secretary and Treasurer*, J. Michell Clarke, M.D.; *Members of Council* (two vacancies), E. Markham Skerritt, M.D., Hedley Hill, M.D.

TROWBRIDGE: *Chairman*, G. C. Tayler, M.D.; *Vice-Chairman*, J. B. Maurice, M.D.; *Secretary and Treasurer*, J. Tubb Thomas; *Members of Council*, C. E. S. Flemming, E. T. Shorland,

J. Tubb Thomas. *For Divisional Executive Committee*, G. S. A. Waylen, C. R. Wood, M.D., T. W. Locket, M.B.

Representatives for the Annual Representatives Meeting of the Association.—Bath and Trowbridge Divisions: W. M. Beaumont. Bristol Division: J. Michell Clarke, M.D.

It was proposed by Mr. PAUL BUSH, C.M.G., seconded by Dr. B. M. ROGERS, M.D., and carried unanimously, that the report of the Council be received and adopted.

President-elect.—Mr. C. E. S. FLEMMING proposed, and Dr. SHINGLETON SMITH seconded, the appointment of Mr. R. J. H. Scott (Bath) as President-elect. This was carried unanimously.

Votes of Thanks.—A vote of thanks to the retiring President (Dr. H. Waldo) for his courteous and able conduct in the chair during the past year was moved by Dr. E. MARKHAM SKERRITT, seconded by Mr. G. MUNRO SMITH, and carried by acclamation.—A vote of thanks to the Council and Honorary Secretaries for their services during the past year, with a request to the latter to continue in office, was proposed by Dr. CHAS. HAYMAN, seconded by Dr. ELIZA W. DUNBAR, and carried unanimously.

Annual Dinner.—Forty-four members and visitors afterwards dined together at the Clifton Down Hotel, when a very enjoyable evening was spent.

BERMUDA BRANCH.

A MEETING was held on May 20th for the purpose of electing a new President in the place of Dr. T. A. Outerbridge, who resigned on account of advanced age. Dr. Charles H. Butterfield was duly elected to succeed him in the presidential chair.

New Members.—At a meeting held on May 28th the following new members were elected: Captain Alex. J. Chambers, R.A.M.C., Harry Blackburn Smith, M.D., John William Cann, M.D., John Byvancke Dickinson, M.D., John Thomas Gilbert, M.D., William Eldon Tucker, M.B., M.R.C.S., L.R.C.P.

BORDER COUNTIES BRANCH:

NORTH CUMBERLAND DIVISION.

THE inaugural meeting of this Division was held in the County Hotel, Carlisle, on Tuesday, June 9th, Dr. MACLAREN (Carlisle) in the chair. There were seven members present.

Model Rules.—The model rules for a Division not itself a Branch were adopted with slight alterations and additions.

Election of Officers.—The following officers were elected for the ensuing year: *Chairman*, Dr. Maclaren (Carlisle); *Vice-Chairman*, Dr. Macdonald (Carlisle); *Secretary*, Mr. Norman Maclaren (Carlisle); *Representative in Branch Council*, Dr. Barnes (Carlisle); *Ordinary Members of the Executive Committee of the Division*: Dr. Arnott (Brampton), Dr. Hill (Carlisle), Dr. Maclachlan (Longtown), Dr. Palm (Wigton).

Ethical Rules.—These were adopted *en masse*.

EDINBURGH BRANCH.

THE annual meeting of this Branch was held in the Hall of the Royal College of Physicians on Friday, June 19th, Dr. ARGYLL ROBERTSON, President, in the chair.

Confirmation of Minutes.—The minutes of the last annual meeting and of an extraordinary meeting were read and approved.

Funds.—The TREASURER reported that the funds of the Branch were in a satisfactory condition, there being a small profit on the year's working.

Adoption of Rules.—The draft model rules were considered, and, with some modifications, were adopted by the Branch.

Election of Officers.—The following were elected office-bearers for the ensuing year:—*President:* Dr. A. Ballantyne (Dalkeith). *President-elect:* Dr. C. E. Underhill. *Vice-Presidents:* Drs. Argyll Robertson and Blair (Jedburgh). *Treasurer:* Dr. James Ritchie. *Secretaries:* Drs. Norman Walker and Logan Turner.

SOUTH-EASTERN COUNTIES DIVISION.

THE annual meeting of this Division was held in the Railway Hotel, Newtown St. Boswells, on Friday, June 5th.

Confirmation of Minutes.—The SECRETARY read the minute of last meeting, which was approved.

Representative at Representative Association Meetings.—As no limit had been placed on the term of office of the representative in representative meetings of the Association, it was agreed that he should not be allowed to hold office continuously for a longer period than three years.

Election of Office-bearers.—The following were elected unanimously: *Chairman*, Dr. Blair; *Vice-Chairman*, Dr. Carlyle Johnstone; *Secretary and Treasurer*, Dr. Calvert; *Executive Committee*, Drs. Young, Cullen, Rutherford, Muir, and McVie were re-elected. Dr. Haddon was chosen to fill the vacancy which existed. *Representative of Division on the Branch Council*, Dr. Hamilton was unanimously elected. *Representative in Representative Meetings of the Association*, Dr. Somerville was unanimously elected.

Report of Executive Committee.—The SECRETARY read the report of the Executive Committee, which was approved.

Business at Annual Meeting of Association.—The CHAIRMAN read a letter from the General Secretary of the Association in regard to the business at the annual meeting at Swansea, and requesting the Division to give instructions to its representative as to the lines the members desire him to follow upon the various questions which would come under discussion. This was done, and the Secretary was instructed to forward these to Dr. Somerville, who was unable to be present.

LANCASHIRE AND CHESHIRE BRANCH.

Honorary Members.—Dr. G. E. Shuttleworth, of Ancaster House, Richmond Hill, Surrey, and Dr. D. A. O'Sullivan, of 56, Charleville Road, West Kensington, have been elected honorary members of the Lancashire and Cheshire Branch.

SYDNEY AND NEW SOUTH WALES BRANCH.

The annual meeting of this Branch was held at the Association Rooms, 121, Bathurst Street, Sydney, on March 28th, at 8.30 o'clock, Dr. G. E. RENNIE, President, in the chair. There were fifteen members present.

Appointment of Scrutineers.—The PRESIDENT explained that the meeting had been convened for the purpose of appointing scrutineers, so that the work might be done before the regular business of the annual meeting was entered upon. The President appointed Drs. Hall and Sawkins as scrutineers, and Drs. Stacy and Palmer as assistants. The ballot papers were then handed to the scrutineers and the meeting adjourned until the following evening.

The adjourned annual meeting was held at the Royal Society's Room on March 29th, Dr. RENNIE, President, in the chair. There were fifty-four members present.

New Members.—The PRESIDENT announced the election of Drs. Barton, Kirkwood, Tudor-Jones, Kennedy, Little, Brandon, Blue, Lees, Willis, Dight, Marsden, Halcomb, and Muscio.

Report of Council.—The HONORARY SECRETARY (Dr. Hankins) read the report of the Council, and moved its adoption. This was seconded by Dr. CARRUTHERS, and carried.

Statement of Accounts.—The HONORARY TREASURER (Dr. Crago) read the statement of accounts of the Branch and the balance sheet of the *Australasian Medical Gazette*, and moved their adoption. This was seconded by Dr. HANKINS, and carried.

President's Address.—The PRESIDENT then read his address on the Physiology of Voluntary Movements.—Professor STUART moved a hearty vote of thanks to Dr. Rennie for his address. Carried unanimously.

Election of Officers.—The following were elected the office-bearers for the ensuing year:—*President:* Dr. Brady. *Vice-President:* Dr. MacCormick. *Councillors:* Drs. Hankins, Crago, Rennie, Dick, Beeston, Worrall, Fiaschi, Hinder, Abbott, Pockley, Newmarch, and Foreman. *Auditors:* Drs. F. W. Hall and Sawkins.

New South Wales Lodge Practitioners' Fund.—The HONORARY SECRETARY read the rules of the New South Wales Lodge Practitioners' Fund, which had been passed by the Committee.—Dr. HANKINS proposed, and Dr. BRADY seconded, that Drs. Thomas Furnival and Crago be the Trustees of the Fund. Carried.

Presentation to the Honorary Secretary.—The PRESIDENT made a presentation to the Honorary Secretary (Dr. Hankins) on behalf of the members of the Branch.

Introduction of New President.—Dr. RENNIE then introduced the newly-elected President, Dr. Brady, who thanked the members for having elected him President.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

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British Medical Association.

SEVENTY-FIRST ANNUAL MEETING.

THE seventy-first annual meeting of the British Medical Association will be held at Swansea on Tuesday, Wednesday, Thursday, and Friday, July 28th, 29th, 30th, and 31st, 1903.

PROGRAMME.

President: WALTER WHITEHEAD, F.R.C.S.Edin., F.R.S.E., Consulting Surgeon, Manchester Royal Infirmary, Manchester.

President-Elect: THOMAS DRYSLWYN GRIFFITHS, M.D.Lond., M.R.C.S., Swansea.

Chairman of Council: ANDREW CLARK, F.R.C.S., Surgeon to the Middlesex Hospital and Lecturer on the Principles and Practice of Surgery.

Treasurer: EDWARD MARKHAM SKERRITT, M.D., F.R.C.P. Lond., Senior Physician to the Bristol General Hospital; Professor of Medicine, University College, Bristol.

An Address in Medicine will be delivered by FREDERICK T. ROBERTS, M.D.

An Address in Surgery will be delivered by A. W. MAYO ROBSON, F.R.C.S.

The Scientific Business of the Meeting will be conducted in eleven Sections, as follow, namely:

A.—MEDICINE.

President: Sir ISAMBARD OWEN, M.D., London. *Vice-Presidents:* CHAS. TANFIELD VACHELL, M.D., Cardiff; DAVID ARTHUR DAVIES, M.B., Swansea; JAMES KINGSTON FOWLER, M.D., London. *Honorary Secretaries:* ERNEST LE CRONIER, LANCASTER, M.B., Winchester House, Swansea; FRANCIS DARBY BOYD, C.M.G., M.D., 22, Manor Place, Edinburgh.

The following subjects have been selected for discussion:

1. The Medical Treatment of Inflammations in the Cæcal Region.
2. Susceptibility and Infection.
3. The Treatment of Gastric Ulcer.

(Synopses not received.)

B.—SURGERY.

President: EDMUND OWEN, F.R.C.S., London. *Vice-Presidents:* ALFRED SHEEN, M.D., Cardiff; HENRY ARTHUR LATIMER, M.D., Swansea; JORDAN LLOYD, F.R.C.S., Birmingham. *Honorary Secretaries:* HENRY BETHAM ROBINSON, M.S., 1, Upper Wimpole Street, W.; RICHARD COGSWELL ELSWORTH, F.R.C.S., 203, St. Helen's Road, Swansea.

Special discussions have been arranged to take place on the following subjects:

1. *Practical Experience regarding the most Satisfactory Methods of performing Intra-abdominal Anastomosis.*

Mr. G. H. Makins, who will introduce this discussion, has forwarded the following synopsis:

A. Which variety of anastomosis is the safer and to be generally preferred?

a. Axial, or end-to-end.
b. Lateral anastomosis.
c. Lateral implantation.

Special applicability of the different methods to various conditions.

Some statistical results of the different methods.

B. General considerations affecting any method of operation:

Preliminary preparation.—Treatment of the peritoneal cavity.—Temporary treatment of the opened bowel with the view of preventing infection.—Omental grafts.—Drainage.—After-treatment.

C. What method of union should be chosen?

a. Simple suture: Form of stitch; method of dealing with the mesentery; method of dealing with the mucous membrane; methods of closing bowel ends in lateral anastomoses; avoidance of a diaphragm.

b. Suture aided by the use of some means of mechanical support.

c. Coaptation by mechanical devices.

Mr. E. Stanmore Bishop, who will illustrate his remarks by diagrams, instruments, and specimens, has supplied the following synopsis:

Suggestion of new term for point of intestine opposite to mesentery.

Twenty cases of intestinal anastomosis.

Experience only of end-to-end or end-to-side union.

Three main points for discussion.

Three cases ending fatally illustrating first question as to use of decalcified bone bobbins.

Advantages and limitations of such appliances.

Some novel forms.

Cases illustrating second question as to the diaphragm formed by suture with or without supporting forceps.

Various forms of such forceps.

Various methods of suture.

Cases and specimens illustrating certain sutures.

Cases illustrating third question as to advisability or otherwise of diverting the faecal circulation before excision of portions of the large intestine.

Conclusions.

Remarks illustrated by diagrams, instruments, and specimens.

The following have signified their intention of taking part in the discussion: Messrs. J. Paul Bush, Harrison Cripps, E. Deanesly, R. C. Elsworth, J. Basil Hall, George G. Hamilton, M. B. Mitchell, B. G. A. Moynihan, James Murphy, Mayo Robson, F. C. Wallis, Sinclair White, and W. Woollcombe.

2. *The Treatment of Advanced Tuberculous Disease of the Knee-joint.*

(By "advanced" is implied the stage where operative interference of some kind is imperative.)

Mr. G. A. Wright and Mr. W. F. Haslam, who will introduce this discussion, have forwarded the following synopsis:

This paper will be based upon an analysis of a large number of replies received from hospital surgeons to a series of questions sent to them by the authors. The points under consideration are:

1. The indications for operation in a case of tuberculous knee.
2. The nature of the operation selected.
3. If erasion is performed—(*a*) incision; (*b*) treatment of patella, crucial ligaments, and superficial and deep bone lesions.
4. If excision—(*a*) treatment of patella; (*b*) question of fixation of ends of bones.
5. Arrest of haemorrhage.
6. Drainage.
7. Dressings.
8. Splint.
9. Tendency to flexion after operation.
10. Where flexion has occurred how is it dealt with?
11. Is a mobile joint to be obtained after erasion?
12. As to result in shortening in excision and erasion.
13. The influence of age in deciding as to which operation to perform.
14. The seat of origin of the disease.

The following intend to take part in the discussion: Messrs. J. Paul Bush, Jackson Clarke, Ward Cousins, R. C. Elsworth, Robert Jones, C. B. Keetley, K. Monsarrat, James Murphy, W. Sheen, Noble Smith, A. H. Tubby, F. C. Wallis, and Sinclair White.

The following is a list of papers which it has been arranged shall be read:

DEANESLY, E., M.D., F.R.C.S. (Wolverhampton). The Open-air Treatment of Surgical Tuberculosis.

ECCLES, W. McAdam, M.S. (London). One Danger of Gastro-enterostomy.

FREYER, P. J., M.D., M.Ch. (London). A further series of 28 cases of Total Extirpation of the Prostate for Radical Cure of Enlargement of that Organ.

HALL, J. Basil, M.C.Cantab., F.R.C.S. (Bradford). A new Route for Posterior Gastro-jejunostomy.

LITTLE, E. Muirhead, F.R.C.S. (London). Phelps's Operation for Clubfoot.

MOULLIN, C. Mansell, M.D., F.R.C.S. (London). The Surgical Treatment of Chronic Gastric Ulcer.

MURRAY, R. W., F.R.C.S. (Liverpool). The Ultimate Results in a series of 88 cases of Fracture of the Tibia and Fibula.

ROBINSON, H. Betham, M.S., F.R.C.S. (London). Separation of the Acetabular Epiphysis of the Femur.

SHEEN, William, M.S., F.R.C.S. (Cardiff). A case of Operative Treatment for Cirrhosis of Liver.

SNOW, Herbert, M.D. (London). Cystic Tumours of the Mamma: their removal by "forcible massage" without incision.

TUBBY, A. H., M.S., F.R.C.S. (London). (1) On a Method of Treating by Operation Paralysis of the Upper Root of the Brachial Plexus (Erb-Duchenne type). (2) The Pathology and Treatment of Hallux Rigidus, Hallux Flexus, and Hallux Extensus.

WHITE, Sinclair, F.R.C.S. (Sheffield). Two cases of Ascites secondary to Alcoholic Hepatitis treated successfully by operation.

WHITELOCKE, R. H. Anglin, F.R.C.S. (Oxford). The Substitution of Temporary and Absorbable for Permanent and Unabsorbable Sutures in the Operations on Bone.

C.—OBSTETRICS AND GYNAECOLOGY.

President: Professor WILLIAM STEPHENSON, M.D., Aberdeen. *Vice-Presidents:* JOHN ADAMS RAWLINGS, M.R.C.P., Swansea; ANDREW JOHN HORNE, F.R.C.P.I., Dublin; RICHARD NELSON JONES, M.R.C.S., Swansea. *Honorary Secretaries:* THOMAS WATTS EDEN, M.D., 26, Queen Anne Street, Cavendish Square, W.; EWEN JOHN MACLEAN, M.D., 12, Park Place, Cardiff.

It has been arranged that on July 29th and July 31st the first part of the meeting of this Section will be occupied by a discussion on the following subjects:

1. WEDNESDAY, JULY 29TH.—*The Management of Pregnancy complicated with Uterine Fibroids.*

Dr. Amand Routh who will open this discussion has forwarded the following synopsis:

After an introduction, the *danger* of the complication is discussed, and it is shown that with modern methods the maternal mortality has been greatly diminished.

1.—(*a*) *The Effect of Pregnancy upon the Fibroids.*

It is doubted whether *individual* fibroids rapidly enlarge during pregnancy, and also whether marked atrophy usually takes place during involution.

The tendency to degeneration of the fibroids, and the danger arising therefrom, especially as regards infection during the puerperium is dwelt on, as well as the tendency of submucous fibroid to become extruded and necrotic.

(*b*) *Effect of Fibroids upon the Pregnancy.*

The view is taken that *sterility* is not often caused by fibroids and if present is due to changes in the endometrium and to altered relation of tube and ovary.

It is further shown that *abortion* is not often induced by fibroids unless they are submucous.

Fetal malpresentations and placenta praevia are shown to be frequent.

Uterine inertia is not usual, but delay in labour is the rule.

Post partum haemorrhage is frequent.

Obstruction to the birth of the child often threatens, but is almost consistently absent at labour owing to spontaneous elevation of the pelvic fibroids during the last few weeks or days of pregnancy.

Sepsis with secondary infection of the fibroids, is a great danger in the puerperium.

2.—*Treatment.*

In all cases an expectant treatment is indicated unless there are urgent symptoms.

(*a*) *Before Fetal Viability.*

Gentle attempts may be made to replace a pelvic fibroid.

Induction of abortion should be abandoned.

If urgent pressure symptoms supervene, myomectomy becomes the ideal operation for subserous fibroids, and failing that, hysterectomy. The indications for the two operations are discussed.

(*b*) *After Fetal Viability.*

Reposition of an obstructing fibroid may be tried, leaving radical treatment for a later date.

The danger to the mother of delivering a child by forceps, version, or embryotomy is insisted upon.

If a cervical fibroid be present, it may be dealt with by vaginal enucleation as an alternative to panhysterectomy.

In all other cases of obstructing fibroid, abdominal section is required, and as a first step the child must be delivered by Caesarean section.

Subsequent alternative procedures may be enumerated as follows:

1. *Caesarean Section alone.*—This would rarely be the right treatment.

2. *Sterilization* of the patient by oöphorectomy, with the hope that atrophy of the fibroids would follow. This would now rarely be considered a satisfactory operation.

3. *Myomectomy.*—Sometimes this operation is indicated, but should always be preceded by Caesarean section.

4. *Abdominal Hysterectomy.*—Preference is given to the supravaginal operation, with retroperitoneal treatment of the stump by Baer's or Chrobak's methods, and to panhysterectomy by Doyen's method. One ovary at least (if healthy) should be retained.

Two successful cases at full term of supravaginal hysterectomy with retroperitoneal treatment of the stump are given.

(c) During the Puerperium.

If fibroids become infected from uterine sepsis, a prompt panhysterectomy may save the patient's life.

The following have signified their intention to take part in the discussion: Professor J. W. Byers, J. H. Dauber, M.D., T. Davies, M.D., T. W. Eden, M.D., T. Arthur Helme, M.D., J. Bowreman Jessett, F.R.C.S., A. H. N. Lewers, M.D., J. Dysart McCaw, M.D., E. J. Maclean, M.D., W. H. C. Newnham, M.D., Mary Scharlieb, M.S., Heywood Smith, M.D.

2. FRIDAY, JULY 31ST.—*The Diagnosis and Treatment of Tuberculosis of the Uterus and Adnexa.*—Mr. J. H. Targett will introduce this debate with a short account of the present teaching as to the frequency and importance of the disease, as well as the probable modes of infection.

This will be followed by a lantern demonstration of the more common morbid appearances of tuberculosis when it affects the uterus and Fallopian tubes. Reference will then be made to the clinical symptoms and the difficulties in diagnosis.

The following have signified their intention to take part in the discussion: E. T. Davies, M.D., F. W. N. Haultain, M.D., J. A. C. Kynoch, M.D., Arnold W. W. Lea, M.D., A. H. N. Lewers, M.D., Cuthbert Lockyer, M.D., E. J. Maclean, M.D., Stuart Nairne, M.D., J. Heywood Smith, M.D., Herbert Snow, M.D.

The following is a list of papers received for reading in the Section:

CAMERON, Professor Murdoch, M.D.Glasg. The Diagnosis and Treatment of Uterine Fibroids.

KYNOCH, Professor J. A. C., M.D., F.R.C.P.Edin. Primary Tuberculosis of the Uterus (Cervix).

LEA, Arnold W. W., M.D.Lond., F.R.C.S.Eng. Five Cases of Tuberculous Disease of the Fallopian Tube treated by Operation.

LEWERS, A. H. N., M.D., F.R.C.P.Lond. A Case of Hairpin in the Uterus discovered by X Rays.

MACLEAN, E. J., M.D.Edin. Two Successful Cases of Caesarean Section for Contracted Pelvis in Dwarfs.

OLIVER, James, M.D.Edin. A Clinical Study of Internal Haemorrhage in association with Ectopic Pregnancy.

PURSLOW, C. E., M.D.Lond. Notes of a Case of Persistent Uro-genital Sinus, with especial reference to the later theories of the mode of development of the female genital tract.

D.—STATE MEDICINE.

President: JOHN C. MCVAIL, M.D., Glasgow. *Vice-Presidents:* EBENEZER DAVIES, M.R.C.S., Swansea; Major ROBERT HAMMILL FIRTH, R.A.M.C., F.R.C.S., London; THOMAS JOSEPH STAFFORD, F.R.C.S.I., Dublin. *Honorary Secretaries:* ARTHUR LLOYD JONES, D.P.H., Rotherslade House, Glyncerrig, Oystermouth, Mumbles, Glam.; JOHN ROBERTSON, M.D., 76, Clarke Grove Road, Sheffield.

The following subjects have been selected, and it is proposed that as far as possible they shall be taken at the beginning of each of the three days of meeting, and that other subjects should be subsequently discussed as far as time may permit:

1. *The Vaccination Acts and Small-pox Prevention.*

Dr. McVail, who will introduce this discussion, has forwarded the following synopsis:

The attitude of the medical profession to the subject. Responsibility of Government and Parliament. The limits of persuasion towards vaccination. Lessons from recent prevalence of small-pox. Need for epidemic regulations. The part played by tramps and vagrants. The "Conscience" Clause as applied to them. Their vaccination or detention. Inspection of lodging-houses and compulsory examination of inmates.

The law as to vaccination and revaccination. The Exemption Clause and its defects. Standard of efficiency of vaccination. Vaccination certificates. Calf lymph supply. Administrative authorities, central and local. Concurrent powers of sanitary authorities. Public prosecution for default. Tenure of office of public vaccinators. The private practitioner. Payment for certificates. Whole-time public vaccinators.

The other subjects proposed for discussion are:

2. *Rivers Pollution Prevention, especially in Industrial Districts.*

3. *Seashore Pollution as it affects Oysters and other Shellfish and the Pisciculture of our Estuaries.*

4. *Food Poisoning and Adulteration.*

E.—PSYCHOLOGY.

President: ROBERT JONES, M.D., Claybury. *Vice-Presidents:* JAMES GLENDINNING, M.D., Abergavenny; EDWIN GOODALL, M.D., Carmarthen. *Honorary Secretaries:* ROBERT SLOSS STEWART, M.D., Glamorgan County Asylum, Bridgend; ROBERT HENRY COLE, M.D., 48, Upper Berkeley Street, W.

The following discussions have been already arranged:

WEDNESDAY, JULY 29TH.—*The Pathology of General Paralysis.*

Dr. W. Ford Robertson, who will open this discussion, has forwarded the following synopsis:

Dr. Robertson, in opening the discussion, will support the hypothesis recently enunciated by Drs. M'Rae and Jeffrey and himself, on the ground of bacteriological and other evidence, that general paralysis is the result of chronic toxic infection from the respiratory and alimentary tracts, permitted by general and local impairment of the defences against bacteria, and dependent upon the excessive development of various bacterial forms, but especially upon the abundant growth of a diphtheroid bacillus which gives the disease its special paralytic character. The widely-accepted view that general paralysis is dependent upon a syphilitic toxaemia will be controverted. It will be maintained that syphilis only predisposes to the disease by impairing the general and local defensive mechanisms, and that it is merely one of many known agents that contribute to this weakening of the natural immunity. The possibility of the occurrence of a bacterial invasion of certain tissues as an essential part of the morbid process will also be considered, and some evidence bearing upon the question will be brought forward. A lantern demonstration will be given illustrating especially (1) certain features in the pathological anatomy of general paralysis of the insane, which, it is maintained, afford support to the above hypothesis; and (2) some of the results already obtained in the course of an experimental inquiry that is being made along with Dr. Theodore Shennan. Those who propose to take part in the discussion will be invited to bring forward evidence that tends to disprove or to support the views advanced, and to cite any special cases that have occurred in their experience which seem to be capable of explanation upon the above hypothesis.

The following have signified their intention of taking part in the discussion: Dr. Maule Smith, Dr. David Orr, and Dr. Mercier.

THURSDAY, JULY 30TH.—*Alcohol in its Relation to Mental Diseases.*

Dr. Theo. B. Hyslop who will introduce this discussion has forwarded the following synopsis.

Alcohol is considered in its economical aspects in relation to physical and mental processes. The rôle of alcohol in the physical economy of the healthy body is more evil than good, and its use is abuse; in the unhealthy body its use may be compared to a loan—at heavy interest—to cope with immediate necessity, and to enable the bodily processes to recuperate.

In the degenerative processes due to chronic alcoholism the nuclear proliferation and overgrowth of the connective tissue cells appear to be closely related to the continued dilatation of the vessels and the consequent increase of exudation of lymph into the tissues. In ordinary inflammation the exudate contains a relatively smaller quantity of proteids than does the blood plasma—owing possibly to the selective activity of the endothelial cells. In this case the extravasated leucocytes tend to undergo rapid destruction and dissolution.

When alcohol is conveyed to the plasma, the metabolism of the leucocytes is retarded—owing to deprivation of the tissues of some of its oxygen; and there is retention and proliferation of the exuded material.

An explanation of the mnemonic defects and perversions due to alcohol is suggested; and it is contended that alcohol *per se* does not cause general paralysis.

The following have expressed their intention to take part in the discussion: Sir Victor Horsley, Drs. Sims Woodhead, Kelynack, Jones Morris, and Archdall Reid.

FRIDAY, JULY 31ST.—*The Care and Treatment of Incipient Insanity.*

Dr. Yellowlees, who will open this discussion, has forwarded the following synopsis:

The subject is much wider than the title may seem to imply, and it has many aspects, medical, personal, social, and legal, all of which demand consideration.

Insanity begins in ways so various that no one method of care and treatment can be the best for all cases. Even when the best method has been decided upon in any case, practical difficulties constantly occur in carrying it out. These diffi-

culties are none the less real that they may be non-medical, and they often so restrict the treatment that the ideal best is unattainable, and we have to accept the best practicable in the circumstances of each case.

The various manifestations of incipient insanity, their proper treatment, and the difficulties which hamper it, will receive full discussion.

The following have expressed their intention of taking part in the discussion: Drs. Conolly Norman, Rayner, Mercier, N. Raw, Weatherly, Savill, James Shaw, Helen Boyle.

Professor Nieben (Utrecht), Professor Benedikt (Vienna) will attend the Section and take part in the discussions.

The following papers are also announced:

MERCIER, C., M.B. The Classification of Insanity.
NORMAN, Conolly, F.R.C.P.I. Freund's Theory of the Origin of Obsession.
RAW, Nathan, M.D., F.R.S.E. The Relation of Mental Symptoms to Bodily Diseases and their Treatment.
REID, G. Archdall, M.B. Human Evolution with Special Reference to Alcohol.
SHUTTLEWORTH, G. E., M.D. On the Slighter Forms of Mental Defect in Children and their Treatment.
STEWART, R. S., M.D. The Relationship of Wage, Lunacy, and Crime in South Wales.
JOHNSON, Alice V., F.R.C.S.I., D.P.H., and GOODALL, E., M.D., F.R.C.P. The Action of the Blood Serum from Cases of Mental Disease upon the Bacillus Coli Communis.
PUGH, R., M.D. Syphilis in the Insane (apart from General Paralysis).
SMITH, W. Maule, M.B. Some Remarks on the Nature of Fragilitas Ossium.
ROWS, R. S., M.D. Demonstration of Cavities in the Spinal Cord.
ANDRIEZEN, W. L., M.D. The Premature Dementia of Puberty and Adolescence.
EDRIDGE-GREEN, F. W., M.D. The Relation of Hysteria to Insanity.
OLDFIELD, Josiah, M.D. Dietary in the Causation of Insanity.
HALL, W. Hamilton, L.R.C.P. Remarks Refuting the Toxic Theory of Epilepsy.

F.—PATHOLOGY.

President: DAVID JAMES HAMILTON, M.B., Aberdeen. *Vice-Presidents:* JOHN MICHELL CLARKE, M.D., Clifton, Bristol; ALEX. CHARLES O'SULLIVAN, M.B., Dublin. *Honorary Secretaries:* GEORGE LESLIE EASTES, M.B., 62, Queen Anne Street, W.; DANIEL EDWARD EVANS, M.B., Picton House, Swansea.

The following subjects have been arranged for general discussions:

The Pathology of Splenic Anaemia.

Dr. H. D. Rolleston, who will introduce this discussion, has supplied the following synopsis:

The term splenic anaemia is still often used in a vague sense to describe the clinical association of anaemia with splenic enlargement not manifestly due to any definite cause. The relation between anaemia and splenic enlargement is a wide subject, and it is therefore proposed to limit this discussion to chronic splenic anaemia (primary splenomegaly of Brühl), recently described in greater clinical detail by Osler. The clinical characters of this condition are fairly definite—namely:

(1) Splenic enlargement which cannot be connected with any recognized cause.

(2) Absence of any enlargement of the lymphatic glands.

(3) Anaemia of a type midway between secondary anaemia and chlorosis.

(4) Leucopenia, or at most no leucocytosis.

(5) An extremely prolonged course lasting years; and

(6) A tendency to haemorrhages, especially gastro-intestinal, from time to time.

The main question for discussion is whether this clinical entity is a pathological entity or whether it is merely a combination of symptoms which, under certain circumstances, may be due to a number of different conditions. No doubt some cases regarded clinically as chronic splenic anaemia turn out after death to be due to syphilis, thrombosis of the portal vein, cirrhosis, etc., but in other cases there is no morbid lesion except a chronic change in the spleen, which may reasonably be explained as the effect of long-continued toxaemic or infective processes. Further investigations—especially blood reactions—are required to show whether these two groups of cases can be separated clinically. Differential blood counts usually show a relative increase in the mononuclear and decrease in the polymorphonuclear leucocytes, but there is nothing pathognomonic. The spleen may show: (1) Increased fibrosis, with atrophy of the Malpighian bodies either alone, or (2) in addition to varying degrees of endothelial proliferation; when the latter is very extreme it has been described as a primary malignant growth (Gaucher, Ramond, and Picou). Are these appearances different stages in the same process, or are they manifestations of different causes? and to what extent are they pathognomic or splenic anaemia? In some cases hepatic cirrhosis supervenes as a terminal stage (Banti's disease), in other cases slight and latent fibrosis of old date is found in the liver. Is the splenomegaly due to processes originating in the intestinal tract, and so an allied condition to cirrhosis of the liver? Bacteriological examination of the spleen has not yet given any help. Further knowledge as to the state of the bone marrow, and of the factors inhibiting its haemopoietic activity in splenic anaemia is wanted. In conclusion, although chronic splenic anaemia may be regarded as a clinical entity its causation is unknown, and at present, therefore, there is not sufficient evidence to consider it a definite pathological entity.

The Pathology of Miners' Diseases.

Professor T. Oliver, M.D., who will introduce this discussion, has forwarded the following synopsis:

(1) Miners' Phthisis, (2) Anaemia.

Definition of the malady, diminution of anthracosis since improved ventilation of coal mines, pneumokoniosis in general, description of pathological conditions present in the lungs, probable causes and means adopted by Nature to prevent the disease, gases, dust, and the tubercle bacillus, experimental production of the disease, conflicting opinions of authors, symptomatology, summary.

Miners' anaemia and anchylostoma duodenalis.

G.—OPHTHALOLOGY.

President: HENRY EDWARD JULER, F.R.C.S., London. *Vice-Presidents:* JABEZ THOMAS, F.R.C.S., Swansea; THOMAS HERBERT BICKERTON, M.R.C.S., Liverpool; A. FREELAND FERGUS, M.D., Glasgow. *Honorary Secretaries:* HENRY COLLEN ENSOR, M.R.C.S., 23, Windsor Place, Cardiff; WILLIAM TINDALL LISTER, F.R.C.S., 30, Queen Anne Street, W.

The following subjects have been chosen for discussion:

1. *Eye Changes in Relation to Renal Disease.*

Mr. Edward Nettleship, F.R.C.S., who will open this discussion, has provided the following synopsis:

Although much is already known about the eye changes in renal disease, information is still needed, both from ophthalmologists and physicians upon several points, and the following heads are suggested as furnishing matter suitable for discussion.

1. Does albuminuric retinitis ever occur in primary acute nephritis other than the kidney affection of pregnancy?

2. Cases of retinitis from lardaceous disease of the kidneys and from nephritis due to inflammation of the bladder, ureter, or pelvis of the kidney should be recorded.

3. The retinitis of pregnancy. Cases of this are desired: (*a*) In which it is known that the kidneys were diseased before the first pregnancy, (*b*) in which there is positive evidence that they were sound. It seems that most of the cases of pregnancy retinitis occur between the ages of 30 and 40, after several pregnancies and several attacks of pregnancy dropsy, and that the prognosis for life is better than in ordinary renal retinitis. These facts harmonize with the other evidences that the kidney disease induced by pregnancy is a peculiar and often recoverable affection. All cases of pregnancy retinitis should be examined for signs of established chronic nephritis. The propriety of inducing premature labour may depend partly upon the diagnosis in this respect.

4. Age and sex. If all cases of renal retinitis (except those due to pregnancy) are counted together without reference to age the males are found to be nearly twice as numerous as the females, the proportions being about the same as for chronic nephritis. But when the retinitis occurs early in life the sex proportions seem, from the scanty material available for comparison, to be almost reversed. All cases of renal retinitis in young subjects should be recorded.

5. Recognizing two chief factors in the production of renal retinitis—the state of the blood and the state of the retinal blood-vessels—all cases are asked for in which a condition of visible disease in the retinal arteries without evidence of kidney disease has been followed sooner or later by unequivocal signs of chronic nephritis.

6. Do the characters of the retinitis in different cases, as has been recently asserted, justify any inference as to the kind of nephritis (chronic interstitial, or chronic parenchymatous) from which the patient is suffering? Attention is here called to the importance of watching the course of the retinal disease from beginning to end, and of distinguishing between the two kinds of white opacities: the soft-edged, white, or greyish white, patches in the nerve-fibre layer, and the brilliant, intensely white, sharply defined patches com-

posed of confluent dots situated in the deeper layers and often arranged in the familiar radiating pattern around the yellow-spot.

7. When retinitis occurs with both glycosuria and albuminuria, to which of these is it due? Retinitis in diabetic persons, whether their urine contains albumen or not, occurs later in life than albuminuric retinitis, but the relative liability of the sexes is about the same as in the ordinary albuminuric retinitis (excluding pregnancy cases).

8. Other points needing elucidation: The influence (*a*) of scarlet fever and (*b*) inherited syphilis in producing the chronic renal disease leading to retinitis; (*c*) the occurrence of renal retinitis in only one eye; (*d*) cases in which more than one attack of retinitis has been seen and watched through, with special reference to the changes left by the first attack, and to the effect of retinal atrophy, upon the characters of a second attack; (*e*) when pigment spots are left by renal retinitis, why are they so often found at the periphery of the fundus? (*f*) the cause of the night blindness occasionally met with in renal retinitis; (*g*) the nature and ophthalmoscopic appearances of the choroiditis said to occur in some cases of albuminuria; (*h*) the nature of the white, opaque thickening of the coats of arteries and veins seen after some cases, and of the appearances resembling retinitis pigmentosa after others.

2. *Operative Treatment of Conical Cornea.*

Mr. Stanford Morton, F.R.C.S., who will open this discussion, has supplied the following synopsis:

It is intended that the discussion on this subject should deal only with such cases as are incapable of being sufficiently improved by other means. The points proposed for discussion will be:

(*a*) The amount of defective vision indicating operation.

(*b*) A consideration of the following operations, namely:

1. Cauterization of the cone.
2. Excision of an elliptical piece from the cone.
3. Any other operations which have been performed.

The above operations to be discussed from the following points of view:

(i) Any condition of the eye (such as position, prominence, or flatness of the cone) which indicates the advisability of one or other operation.

(ii) Relative advantages or risks of the several methods.

(iii) Advisability or otherwise of perforation when cautery is used.

(iv) Direction in which excision of apex should be performed, and the indications for the choice.

(v) Complications likely to occur in the various operations and the methods of avoiding and dealing with them.

(vi) Relative results of the different operations. Can any one method be shown to give both results?

3. *The Treatment of Strabismus.*—Mr. Gustavus Hartridge will open this discussion and has forwarded the following synopsis:

The treatment of convergent concomitant strabismus in a scientific manner can only be approached by the consideration of the various factors which help to produce the disorder, and by a careful examination of every case, so that the value and importance of each factor may be ascertained.

We all know that concomitant convergent strabismus is a condition affecting both eyes—it is a binocular defect, and is the result of excessive innervation of the internal recti muscles excited by the associated act of accomodation. The factors which may assist in the production of squint are;

1. Hypermetropia.
2. Imperfect development of the fusion faculty.
3. Defective visual acuity in one eye.
4. The anatomical position of rest of the eyes.

These various factors do not play the same part in every case: they may not all be present, hence a careful and systematic examination of each case is essential. The objects to be obtained by treatment:

1. The correction of the deformity.
2. Establishment of binocular vision for all distances.

The treatment may be divided into:

Optical.
Orthoptic.
Operative.

The importance of an exact optical correction is beyond all question, and in many cases results in a complete cure. Orthoptic exercises are of great value in many cases, but must be commenced early. They consist of:

1. Covering up the fixing eye for a certain time daily.
2. Practice with a stereoscope.
3. Bar reading.

The optical and orthoptic treatment must be faithfully carried out for twelve months before any operative treatment can be entertained. When an operation has been decided upon we have to decide, What operation shall be undertaken? We have at our disposal four operations:

(1) Simple tenotomy of one or both eyes.
(2) Simple advancement.
(3) Tenotomy with advance of the opponent muscle.
(4) Stretching of one of the muscles.

The chief points on which I would invite discussion are:

1. When is an operation necessary or justifiable?
2. What operation gives the best results?

Arrangements will be made for the exhibition of rare ophthalmoscopic and other cases in the Section. It is proposed, also, to have a special ophthalmological museum for specimens, drawings, instruments, etc.

H. DISEASES OF CHILDREN.

President: WILLIAM ARBUTHNOT LANE, F.R.C.S., London. *Vice-Presidents:* ABRAHAM GARROD THOMAS, M.D., Newport; PHILIP RHYS GRIFFITHS, M.B., Cardiff; ROBERT WM. MURRAY, F.R.C.S., Liverpool. *Honorary Secretaries:* FREDERICK KNIGHT, M.D., 10, Walter Terrace, Swansea; WILLIAM LANGFORD SYMES, F.R.C.P.I., 74, Merrion Square, Dublin.

The following subjects have been selected for discussion at the forthcoming meeting:

WEDNESDAY, JULY 29TH.—*The Pathology and Treatment of Chorea.*

Dr. D. B. Lees will open this discussion. The following is a synopsis of the remarks he intends to make:

The chorea of childhood alone to be considered. Absurdity of the name. Chorea not merely a disorder of muscular movement. Clinical evidence of an abnormal state of the Rolandic cortex, but also of other parts of the brain. Implication of speech, of memory, and of the mental and moral faculties. Emotional attacks: mania. Possible affection also of the spinal cord and of the nerves.

The morbid state in chorea sometimes intense, often very chronic, yet not destructive, and usually ending in complete recovery. This suggests that the cause is probably a toxaemia.

Pathological and histological results in fatal cases. Clinical evidence of a morbid blood-state in chorea; any of the manifestations of rheumatism may occur along with it. Strength of the evidence of the connexion between the two can be appreciated only by keeping all these manifestations in mind. Chorea often the first rheumatic symptom. Bacteriological evidence as yet scanty, but suggestive.

Conclusion: That chorea is in the great majority of cases essentially a rheumatic symptom; other causes possible, but rheumatism should be suspected in every case.

Antirheumatic treatment, if sufficiently vigorous, produces very satisfactory improvement in acute chorea. Large and frequent doses of salicylate are required: other measures also employed. Insufficient doses usually given because of the tradition that salicylate is a cardiac depressant; this action really due to acute rheumatic dilatation of the heart, and not to the remedy.

Chronic cases naturally less influenced by the drug because motor centres may remain abnormally excitable after action of micro-organisms has ceased; yet here also salicylate of service if used freely: other remedies arsenic, antipyrin, ergot. Aids to convalescence.

Conclusion: That every case of chorea, however mild, should be kept in bed at first, and treated vigorously as for rheumatism.

The following gentlemen intend to take part in the discussion: Professor J. W. Byers (Belfast); Drs. H. Ashby, Theodore Fisher, R. Hutchinson, Alexander Morison, F. J. Poynton, and G. A. Sutherland.

THURSDAY, JULY 30TH.—*Congenital Dislocation of Hip.*

Mr. F. F. Burghard, who will open this discussion, has forwarded the following synopsis:

A prefatory account of the changes usually met with in cases of congenital dislocation at various periods of life, with special reference to the rôle of each in preventing the reduction of the dislocation; the deficiency in the acetabulum and its influence in favouring reluxation; the changes in the capsule—especially the anterior portion—and their effect in opposing the return of the head of the bone into the acetabulum; the alteration in the angle of inclination of the

neck to the shaft of the femur and the rotation of the long axis of the neck upon the vertical axis of the shaft and the practical importance of these changes; the absence of any marked alteration in the head of the femur in early life; the changes in the ligamentum teres. The progressive alterations in the component parts of the joint that are noticed as the patient grows older. The different forms of congenital dislocation met with clinically.

A short description of the methods at present in vogue for the treatment of this affection. Reduction of the dislocation by the method termed the "Hoffa-Lorenz operation;" the steps of the operation and the after-treatment. The risk of ankylosis following the extensive alterations produced in the articular surfaces by this operation; the importance of never denuding either the head of the bone or the acetabulum of its cartilage. The steps of the operation followed by the author in order to avoid this objection to the Hoffa-Lorenz method: the treatment of the capsule, the ligamentum teres and the ilio-psoas tendon.

The "bloodless method" of Lorenz. The steps of the procedure and the difficulties and dangers attending it. The after-treatment.

A discussion of the relative value of the foregoing methods, and an attempt to define the cases most suited for each. The difficulty of obtaining a true radical or anatomical cure—as demonstrated by radiography—by Lorenz's bloodless method and the greater chance of doing so by an open operation that does not involve interference with the conformation of the articular surfaces. The reasons for the increasing difficulty in obtaining a radical cure by the bloodless method as the age of the patient advances. The conflict of opinion among different writers as to the proportion of true cures that can be obtained by this method. The nature of the improvement that follows this treatment in the great majority of cases, even when a true cure does not result; the question as to the permanence of this improvement. The age at which the bloodless method is most likely to succeed, and the best procedure should it fail. A plea for a more frequent resort to operative interference as a safe and more scientific method of obtaining a true anatomical cure. A comparison of the risks in the bloodless and the operative methods and an estimate of the comparative chances of a true cure, (*a*) in children under the age of 5 years, and (*b*) in those over that age. The difference in the prognosis between unilateral and bilateral cases. The limits of age at which either method is applicable.

General conclusions drawn from the author's personal experience.

The following papers have been presented for reading:

DARIER, Dr. (Paris). Some New Dental Signs of Hereditary Syphilis.
RUHRAH, Professor (Baltimore, U.S.A.). The Relation of the Thymus Gland to Marasmus.
MURRAY, R. W., F.R.C.S. Note on the Age for Operating in Cleft Palate.
CARPENTER, Geo., M.D. (1) Splenomegaly in Infants and Young Children. (2) A Case of Syphilitic Nephritis in an Infant aged 5 months.
MONTGOMERY, W. P., F.R.C.S. A Case of Congenital Hydrocephalus in which both the Ventriculo-meningeal and Meningo-peritoneal Methods of Drainage were adopted.
LISTER, T. D., M.D. On the Utilization of Infants' Milk Dépôts.
DUN, R. C., F.R.C.S. Adenoid Vegetations in Infancy.
O'SULLIVAN, Michael, M.B., F.R.C.S.I. Chorea: Its Complications, Course, and Treatment.

FRIDAY, JULY 31ST.—*Tuberculosis in Children—its Relation to Bovine Tuberculosis.*

Dr. Nathan Raw will open this discussion. The following is a synopsis of the remarks he intends to make:

The general distribution of tubercle in children and its various forms and manifestations. The increase of tuberculosis in cattle, especially in milch cows. The comparison between the pure cultures of human and bovine tubercle, and the differences to be noted in the cultures and the microscopical appearances of the bacilli. Experimental transmission of human tubercle to cattle and the appearances noted. Deductions from experiments.

Tabes Mesenterica.—Distribution amongst infants. The milk-drinking period of children. The part played by tuberculous milk in the production of tabes mesenterica.

Scrofula.—Enlargement of the lymph glands; cause, distribution in relation to milk drinking.

Tuberculous Meningitis.—Incidence, symptoms, fatality.

General Conclusions.—The human system may be affected by two varieties of tubercle, one conveyed by infection from one person to another, the other bovine tuberculosis by milk from tuberculous cattle. Suggestions for prevention, remedy, legislation, opinions of Professor Koch.

I.—LARYNGOLOGY AND OTOLOGY.

President:—PATRICK WATSON WILLIAMS, M.D., Clifton, Bristol. *Vice-Presidents:* DONALD ROSE PATERSON, M.D., Cardiff; WM. PERMEWAN, M.D., Liverpool; ARTHUR LOGAN TURNER, M.D., Edinburgh. *Honorary Secretaries:* JOHN LACY FIRTH, M.D., 20, Richmond Park Road, Clifton, Bristol; ALBERT FRANCIS BLAGDON RICHARDS, M.D., 5, Clevedon Terrace, Walter Road, Swansea.

The following subjects have been selected for special discussion:

1. WEDNESDAY, JULY 29TH.—*The Operative Treatment for Malignant Disease of the Larynx*, will be introduced by Sir Felix Semon and Dr. E. J. Moure (Bordeaux). The following synopses have been received:—

(A). Sir Felix Semon:

Introduction.—Historical Retrospect. Period of therapeutic nihilism. Czerny's experiments. First operations. Paul Bruns's destructive criticism. Influence of the Emperor Frederick's illness. Improvement of diagnosis and greater operative activity. Different development in Great Britain, on the European Continent, and in the United States. Its causes. Statistics and their dangers.

At present five different operations at our disposal. Under what circumstances and when shall we operate, and what method shall we select?

1. *Intralaryngeal Method.*—Its extremely limited indications, its drawbacks, and general unsuitability in malignant disease.

2. *Thyrotomy, with or without Removal of Smaller Fragments of Cartilages.*—Its indications and results. In the speaker's opinion and experience in suitable cases a perfectly ideal operation. Some remarks about its technique.

3. *Partial Extirpation of Larynx.*—Its indications and results.

4. *Total Extirpation of Larynx.*—Its legitimacy in desperate cases. Recent improvements in its technique. Its results.

5. *Subhyoid Pharyngotomy.*—Its limited applicability and its risks.

6. *Palliative Tracheotomy.*—Its effects on the retardation of the fatal issue.

Conclusion.—Difficulties of diagnosis. The rôle of the microscope. Ethical questions in connexion with the subject. Outlook into the future.

(B).—Dr. E. J. Moure:

1. Après quelques considérations sur le traitement du cancer en général, l'auteur aborde le sujet et envisage d'abord les traitements médicaux variés employés contre cette terrible affection. Il en rappelle l'inefficacité.

2. Viennent ensuite quelques considérations sur la trachéotomie palliative, ses indications et ses résultats.

3. Division des tumeurs du larynx en extra-laryngées et endo-laryngées.

A. Tumeurs Extralaryngées.—Elles occupent les replis ary-épiglottiques, les aryténoïdes, ou l'épiglotte. Dans les deux premiers cas elles peuvent être assimilées aux néoplasies de l'intérieur de l'organe vocal.

Les tumeurs de l'épiglotte limitées au bord libre peuvent être justiciables d'un traitement par les voies naturelles. Celles qui ont envahi tout l'opercule glottique et même s'étendent un peu sur la base de la langue, doivent être opérées par la voie externe.

Considération sur *les méthodes de choix:* voie sus-hyoïdienne et surtout transhoïdienne. Discussion de ce dernier procédé; sa valeur thérapeutique.

B. Tumeurs Endolaryngées. Variabilité de leur siège. 1. Lorsque la tumeur est *très limitée* aux cordes vocales, elle peut être justiciable de l'opération par les voies naturelles. Inefficacité habituelle de ces procédés. Leurs dangers.

Considérations sur les méthodes sus et sous-thyroïdiennes.

Thyrotomie. Laryngo-fissure. Sa valeur opératoire. Ses indications. Application de ce procédé. De l'utilité de faire la réunion immédiate du conduit tracheal. Avantages pour l'opéré (méthode de l'auteur).

2. *La tumeur est diffuse, limitée à un côte.* Résection partielle du thyroïde.

3. Les deux côtés sont envahis. L'extirpation totale du larynx s'impose. Considérations sur la valeur de ce procédé et sur ses résultats immédiats et éloignés.

Conclusions.

2. THURSDAY, JULY 30TH. —*The Technique of Operations on the Temporal Bone in Suppurative Middle-ear Disease.*

This discussion will be introduced by Dr. P. McBride (Edinburgh) and Dr. Arthur Hartmann. The synopses received are as follows:

(A).—Dr. P. McBride:

Early operations on the mastoid by Riolanus, Petel, Morand, Jasser. The case of Berger.—Indications as suggested by Arnemann in 1792. Attempt to revive operation by Dezameris. Views of Wilde and Toynbee, of Itard, Bonnefont, Rau, and Dieffenbach.—Revival of operation by Forget and von Troeltsch, Pagenstecker, Follin, Lücke, Hinton, Mayer, Crosby, Triquet, Jacoby.—Evolution of the mastoid operation undoubtedly due to Schwartze.

Methods employed by early operators.—Technique of Schwartze's operation.—The lead nail.—Modifications of Schwartze's operation by Macewen, Blake.—Method employed by the writer in so-called Bezold's mastoiditis.—Suggestion to open mastoid in non-suppurative disease by Mallherbe.

Radical operations.—Wolf (1877), Küster, von Bergmann, Zaufal, whose method was the first to fulfil indications as recognized to-day, Hartmann, Jansen, Heisler, and Stacke, who, independently of Zaufal, originated his own method.—The claims of Zaufal and Stacke, with brief notes of their methods.—Modifications of Stacke's flaps by Pause, Körner, and Lebenmann.—Suggestion by Lebenmann for producing permanent post-auricular opening and skin grafting.—Stacke's method of doing the same.—Trautmann's radical method of operating on the mastoid, which involved the production of a fistula which was closed after suppuration had ceased.

The closure of post-auricular opening.—Methods of (1) Mosetig-Moorhof, (2) Trautmann, (3) Passow, (4) Lermoyez, (5) The writer's suggestion for large openings, (6) Paraffin method.

General remarks on tecknique of mastoid operations.—Ballance's modification of skin-grafting, which was first suggested and carried out by Liebenmann.

General remarks on technique.—Extradural abscess.—Cerebral abscess.—Morand (1768), Roux (1848), Schordorff (1884), Schede (1886), in all of which there was a guiding fistula.—Hulke (1886), Barker, Caird, Macewen, Horsley, Cathcart.—Observation by writer that abscesses are generally in contact with tegumen, and suggesting that this spot be sought in trephining (1887).—Similar suggestion by Körner (1889).—Method suggested by each.—Cerebellar abscess.—Hulke.—Macewen.

Operations on lateral sinus.—Zaufel, Arbuthnot Lane, Ballance.—The first-named suggested opening sinus and tying jugular in 1880, and performed the second part of his proposition in 1884 without, I believe, tying the jugular. This was first done by Lane and Ballance (1889), and only in 1890 by Salzer, the first German to follow Zaufal.—The technique of the operation.—Methods of opening the jugular bulb by Grunert and Piffl.

Brief reference to a few cases illustrating points touched upon in the preceding remarks.

(B).—Dr. Arthur Hartmann (Berlin):

The operations on the temporal bone for otitis media purulenta.

1. Acute inflammation.

As a rule in opening the mastoid in acute inflammation the antrum should be opened in order to have free communication with the tympanic cavity.

Only in cases of abscess in the mastoid, if the internal wall of the abscess seems to be healthy, and if there is no swelling in the meatus and on the upper part of the membrane, we need not open the antrum.

In order to effect a rapid and lasting cure the entrance to the cavity must be made very wide. All the bone over the diseased part and the external part of the posterior wall of the meatus must be removed. After this the soft integuments fill the cavity.

2. Chronic inflammation.

The operation on the temporal bone in chronic purulent inflammation of the middle ear when it cannot be cured by other treatment, including that by the tympanic tube and by excision of the ossicles, consists in the radical operation.

The radical operation must be so performed that all affected parts of the cavities are rendered accessible and visible.

For this purpose:

1. All the bone outwards of the affected parts must be removed.

2. The external meatus must be much enlarged.

This enlargement can be effected:

(*a*) If the destructions are not very great by means of Körner's flap.

(*b*) In cases of large destructions, as in cholesteatoma, by the Y cut of Liebenmann, combined with the excision of a part of the cartilage of the concha.

For cases of labyrinthine suppuration the labyrinth can be opened without injuring the facial nerve either from the semicircular canals or from the promontorium according to the seat of the disease.

3. FRIDAY, JULY 31ST. —*On the Upper Respiratory Tract as a source of Systemic Infections.*

Dr. de Havilland Hall, who will open this discussion, has forwarded the following synopsis:

Dr. de Havilland Hall brings forward cases to show that typhoid fever may start in the larynx. He points to the initiatory symptoms of measles, influenza, and whooping-cough as clearly indicating that the virus of these diseases enters the system through the upper respiratory tract. Diphtheria is essentially a local disease at its commencement, and the specific bacilli may enter at the nose, naso-pharynx, pharynx (the usual situation) or larynx; the secondary symptoms are due to the absorption of toxic materials secreted by the bacilli during their growth. Cases are brought forward to show that the virus of scarlet fever may enter the system through a wound of the nasal mucous membrane. He is opinion that there is much to be said in favour of the view that tonsillitis is a primary infective disease of the lacunae, and that rheumatic fever is a secondary disease arising from the absorption of microbes or their products into the system. He emphasizes the importance of the careful treatment of even slight tonsillar affections in view of the danger of systemic infection. Septicaemia, pyaemia, and erysipelas are shown to be diseases which certainly enter the system in many cases through the upper respiratory tract. The occurrence of primary tuberculosis of the nose, pharynx, and larynx, and the recognition of latent tuberculosis of the tonsils, both faucial and pharyngeal, point to the possibility of the tubercle bacillus entering the system viâ the upper respiratory tract. Cases of syphilitic infection through primary sores in nose, naso-pharynx, pharynx, and larynx are mentioned. Dr. Hall's paper is devoted to the consideration of the clinical aspect of the question.

Mr. H. T. Butlin, Dr. Urban Pritchard, Dr. Dundas Grant and others will take part in the discussions.

J.—NAVY, ARMY, AND AMBULANCE.

President: Inspector-General HENRY CHARLES WOODS, R.N., M.D., C.B., C.V.O., London. *Vice-Presidents:* Brigade-Surgeon-Lieutenant-Colonel EVAN JONES, V.D., M.R.C.S., Welsh Brigade, Aberdare; Major FREDERIC SAMUEL HEUSTON, R.A.M.C., C.M.G., F.R.C.S.I., Dublin. *Honorary Secretaries:* Fleet-Surgeon JOHN LLOYD THOMAS R.N., M.R.C.S., H.M.S. *Excellent*, Portsmouth; Lieutenant-Colonel M. W. H. RUSSELL, R.A.M.C., M.R.C.S., 48, Cheyne Court, Chelsea, S.W.; Surgeon-Major JOHN ARNALLT JONES, M.D., 2nd V.B. Welsh Regiment, Aberavon.

A discussion on Mediterranean Fever will be opened by Staff-Surgeon F. J. A. Dalton, R.N., who has supplied the following synopsis:

This paper treats of the prophylactic, hygienic and sanitary, and the medicinal and dietetic treatment. The period of pyrexia receives especial notice as also do the sequelae, namely, anaemia, cardiac weakness and neuritis. As almost every drug has been given in this disease without any lasting benefit the paper, which deals chiefly with a method of rational treatment, merits discussion.

A discussion on the subject of *Personnel*, Equipment, and Training of Medical Units attached to Volunteer Infantry Brigades will be opened by Mr. William Sheen, B.S., F.R.C.S., Captain R.A.M.C.Vol. He will advocate a combined unit with the title of Field Medical Company, and having a transport section. Only men of good intelligence should be recruited. Cyclists and signallers are advisable. For equipment a combined wagon and tortoise tent should be obtained constructed to carry four patients lying down. A wagon might be made to partly pay for itself by hiring it out as a civil ambulance. A field filter is useful. A short course of training in civil hospitals is advocated for the men. Various items of training additional to those in the 1899 *Manual* are detailed, particular stress being laid upon water purification. The too frequent use of tourniquets is discussed. There is

an opening for a comprehensive *Manual for Training Men of the R.A.M.C. Vol.* In conclusion, an outline of a typical field day for the "Field Medical Company" is given. Practice "first field dressings," which could be put together again afterwards, are suggested. Special lectures dealing with it should precede and follow the field day. Other suggestions dealt with ceremonial, a *Company Year Book*, medical training of the transport section, cycle, stretchers, ambulance dogs, umbrella shelters.

A discussion on the subject of Poverty of Attraction for Men to become Regimental Bearers and the Consequent Insufficiency of that Section will be opened by Surgeon-Captain G. A. Stephens, M.D., 3rd Glamorgan R.V., who will discuss the necessary standard of efficiency (1) for the regulars; (2) for the volunteers (R.A.M.C.V. regimental) in first aid, nursing, drill, company drill, and shooting. He will also deal with cyclist ambulances, and with the question of pay and other rewards.

A discussion on the subject of the Training of Volunteer Bearers and the Position of Regimental Medical Officers will be opened by Brigade-Surgeon Lieutenant-Colonel P. B. Giles (Welsh Border Brigade), who will bring forward some suggestions.

The following papers have been presented for reading in the Section:

THOMAS, Fleet-Surgeon Lloyd, M.R.C.S., R.N. A Surgeon's Notes with the Naval Brigade—China, 1900.

HALL, Staff-Surgeon Falconer, M.B., R.N. The Water Supply for Landing Parties and Naval Brigades.

K.—TROPICAL DISEASES.

President: GEORGE H. T. NUTTALL, M.D., Ph.D., Cambridge. *Vice-Presidents:* Sir FRANCIS LOVELL, C.M.G., 18, Clifton Villas, Maida Vale, W.; Staff Surgeon PERCY WILLIAM BASSETT-SMITH, M.R.C.S., Royal Naval Hospital, Haslar, Gosport. *Honorary Secretaries:* G. C. LOW, M.B., London School of Tropical Medicine, Albert Docks, E.; Captain LEONARD ROGERS, I.M.S., M.D., Hartley, Plymouth.

The following subjects have been selected for discussion:

TUESDAY, JULY 28TH.—*The Disposal of Excreta in the Tropics.* The discussion will be opened by Professor W. J. Simpson.

WEDNESDAY, JULY 29TH.—*Trypanosomiasis.* The discussion will be opened by Sir Patrick Manson, K.C.M.G., who has supplied the following synopsis:

After reference to the history of the subject and its importance, the following points are discussed:

1. *Examination of Blood for Tropical Micro-organisms.*—For an exhaustive examination of the blood in the tropics, in addition to enumeration of the different kinds of blood corpuscles, three classes of micro-organisms have to be kept in view. Each of these demands its special method of preparation of the blood film and special magnifying power. The search for (*a*) filariae is best conducted in thick, unfixed, dehaemoglobinized, aniline-dye stained films with a low magnification —$\frac{1}{2}$ in. to $\frac{3}{4}$ in. objective; for (*b*) trypanosomes a thinnish, fixed aniline-dye stained film with an $\frac{1}{2}$ in. to a $\frac{1}{4}$ in. objective; for (*c*) malaria parasites and bacteria a very thin, fixed, and stained film with a $\frac{1}{12}$ in. immersion lens.

2. *The Clinical Features of Trypanosomiasis.*—In the European (*a*) irregular fever, (*b*) fugitive patches of erythema, (*c*) irregularly distributed cutaneous and subcutaneous oedema, (*d*) muscular debility, (*e*) rapid pulse, (*f*) history of painful inflamed bite. These seem to be constant. Additional but apparently not invariable or absolutely characteristic features are enlargement of the spleen, monocular leucocytosis and affections of the eye.

In the native, judging from some of Dutton's cases, the trypanosome may give rise to no obvious clinical symptoms.

3. *Possible Relationship to other Diseases.*—An association with sleeping sickness has been pointed out by Castellani and confirmed by Bruce. Castellani by indicating the frequent presence of the parasite in the cerebro-spinal fluid and blood, and Bruce by showing their invariable presence in all the considerable number of cases which he has examined at Entebbe, have adduced presumptive evidence in favour of regarding the trypanosome as the cause of this disease. Although such evidence points to such an inference, it cannot be said to be conclusive. The occurrence of the parasite in the cerebro-spinal fluid, that is, in close relationship with the seat of sleeping sickness—the nervous system—is a strong argument for the hypothesis; but the mere concurrence of the parasite and the disease in a limited number of cases coming from a very limited district must not be given too much weight to.

I have shown for the Congo, and Low and Castellani for Entebbe, that a similar concurrence obtains in the case of filaria perstans, but we now know that there are districts where filaria perstans is rare and sleeping sickness common and vice versa; it is possible that when fuller investigation has been made into the distribution of the trypanosome we shall learn that a similar non-correspondence in the distribution of the latter parasite and this disease may obtain. Against a specific relationship of the trypanosome to sleeping sickness are the facts that the parasite has not given rise to the disease in Europeans, and that the parasite has not been found in sleeping sickness on the Congo or in West Africa. The former objection might be explained by the assumption suggested by Castellani that the trypanosome hitherto found in Europeans is a different species to that found in sleeping sickness; the latter objection, and it is one which is quite entertainable, might be explained by the probability that so far the blood in Congo sleeping sickness has not been critically examined for trypanosomes in a sufficient number of cases.

On the other hand, it is quite conceivable that the trypanosome of the African bears the same pathogenic relationship to the European that the trypanosome of the African wild game bears to exotic domestic animals: that is to say, that whereas the native man and beast are immune in a pathogenic sense to the native trypanosome, the exotic European and European domestic animals are not so. Such a theory seems to be more in harmony with the epidemiology, symptoms, and pathology of sleeping sickness than that enunciated by Castellani and endorsed by Bruce.

Certain obscure tropical fevers should be studied with an eye to a possible trypanosoma etiology, notably hyperpyrexial fever of West Africa and kala-azar of India and elsewhere.

Before much progress in this direction can be made, better and surer methods must be devised for determining the presence or absence of trypanosomes. We must have more easily applied microscopical methods, and, above all, we must find some easily available susceptible animal.

4. *The prognosis* of trypanosomiasis is not necessarily bad: that of sleeping sickness is always so. This is another argument against regarding sleeping sickness as a trypanosoma disease.

5. *Treatment* as yet must be conducted on general principles—rest and tonic influences.

6. *The prophylaxis* will be surely indicated so soon as we know what animal probably, judging by analogy and a small number of facts, one of the *Tabanidae* is of the inoculating agent.

THURSDAY, JULY 30TH.—*Leprosy: its Etiology, Histology, and Treatment.*

Mr. Jonathan Hutchinson, who will open this discussion, has supplied the following synopsis:

The following propositions will be advanced:

That an overwhelming body of evidence is opposed to the belief that leprosy spreads by any ordinary mode of contagion (the breath, touch, clothes, bites of insects, wounds, etc.).

That hereditary transmission, if it ever occurs, is a rare event.

That commensal communication—that is, by eating food contaminated by a leper's hands—occurs occasionally, but is by no means frequent.

That in all countries where leprosy is not common a great majority of the cases are *de novo*, in the sense that there has been neither inheritance nor any exposure to risk of contagion.

That the facts as regard leprosy point to its being caused by some article of food.

That there is no other article of food which can be reasonably suspected excepting fish.

That the very excessive prevalence of leprosy in certain fishing districts is a fact strongly in favour of the fish hypothesis, and that its excessive incidence in Roman Catholic communities supports the same conclusion.

Various supposed objections to the fish hypothesis will be answered, and it will be urged that the amount of circumstantial evidence now accumulated is sufficient not only to justify but to demand that measures based upon it should be adopted.

PATHOLOGICAL MUSEUM.

An exhibition of macroscopic and microscopic specimens, drawings, photographs, diagrams, radiographs, plaster casts, and apparatus for pathological inquiry will be held during the meeting. The arrangements are in the hands of a Committee, consisting of Dr. Daniel E. Evans, Mr. C. H. Fagge, 22, St. Thomas Street, London, S.E., and Dr. Newman Neild, Richmond Hill, Clifton, Bristol, and further particulars can be obtained from Dr. Daniel E. Evans, Swansea Hospital, Swansea.

Specimens, which must be mounted ready for exhibition, should be sent in not later than the third week in July, to Dr. Daniel E. Evans, Swansea Hospital, Swansea.

Every care will be taken of all specimens, and the cost of carriage will be defrayed, if desired, by the Local Executive Committee.

ANNUAL EXHIBITION.

Chairman: Mr. E. B. Evans.

Secretaries: Mr. J. Kynaston Couch, Mansel House, Swansea; Dr. J. D. Davies, 1, Trinity Place, Swansea.

Telegraphic Address: Annually, Swansea.

Telephone No.: 0539 National.

The annual Exhibition in connexion with the above meeting will be held on July 28th, 29th, 30th, and 31st in the First and Second Floors of the Free Library, Swansea. The building includes the School of Art and Art Gallery of Engravings, and provides excellent accommodation, and will comprise the following Sections:

SECTION A.—Foods and Drugs, including Prepared Foods, Chemical and Pharmaceutical Preparations, Antiseptic Dressings, etc.

SECTION B.—Medical and Surgical Instruments and Appliances, Books, Diagrams, Charts, etc.

SECTION C.—Sanitary and Ambulance Appliances.

SECTION D.—Carriages, Automobiles, etc.

The Reception Rooms occupy the Ground Floor.

Luncheons will be provided in the building.

A catalogue, giving short description of exhibits, will be distributed free to members of the Association attending the meeting.

Communications on all general matters connected with the Exhibition should be addressed to Mr. J. Kynaston Couch, Mansel House, Swansea.

Proceedings of Standing Committees.

MEDICO-POLITICAL COMMITTEE.

A MEETING of the Medico-Political Committee was held at the office of the Association on Wednesday, June 10th, at 3.30 p.m., when there were present: Sir Victor Horsley, F.R.S. (in the chair), Mr. Andrew Clark (Chairman of Council), Dr. E. Markham Skerritt (Treasurer), Dr. H. Langley Browne, Dr. Major Greenwood, Dr. G. A. Heron, Mr. M. A. Messiter, Dr. A. Brown Ritchie, Dr. S. Woodcock.

Letters of apology for non-attendance were read from Dr. A. Cox, Dr. W. Gordon, Dr. C. H. Milburn, and Dr. Norman Walker.

Scottish Local Government Act Amendment Bill.

A letter was read from the Secretary of the Scottish Society of Medical Officers of Health, stating in reply to an inquiry of the Committee that in the opinion of the Society no action was necessary in the interests of medical officers of health as to the Scottish Local Government Act Amendment Bill.

Coroners' Bill.

The following letter received from the Honorary Secretary of the Coroners' Society was directed to be entered on the minutes:

The Coroners' Society of England and Wales,
20, Brunswick Square, W.C.,
26th March, 1903.

Dear Sir,

Coroners' Bill, 1902.

With further reference to this matter, I beg to inform you that, following upon my promise, I duly forwarded to each member of the Council of the Coroners' Society a copy of the Bill, and in due course I received comments upon the same from those councillors who were unable to attend our last Council meeting, when the Bill formed one of the subjects of the agenda.

At the meeting there was a full discussion on the Bill, and the views of the absent members were duly considered, and finally it was agreed "that the secretary inform the British Medical Association that after due consideration of the matter and careful perusal of the Bill, the Council as representing the Coroners' Society is of opinion that any alteration of coroners' law should be undertaken by the Lord Chancellor or the Secretary of State for the Home Department, and therefore the Council regrets it cannot co-operate with the Association in reference to the Bill submitted.

I am, dear Sir,
Yours faithfully,
(Signed) WALTER SCHRÖDER.

J. Smith Whitaker, Esq.,
Organizing Secretary,
429, Strand, W.C.

Death Certification.

The following memorandum prepared by the Emergency Subcommittee on Death Registration, at meetings on April 7th and 13th, was read and approved:

Draft Memorandum of Matters relating to Registration and Certification of Deaths proposed to be laid before the Registrar-General.

The attention of the British Medical Association has been drawn in several instances to dangers to the public arising out of the system of death registration, as at present conducted in many districts in the United Kingdom namely, those which result from want of proper investigation of cases in which the cause of death is not certified by a registered medical practitioner, particularly where documents purporting to be "certificates" of death are given by persons whose names are not on the *Medical Register*. Instances have been brought under the notice of the Association in which an unregistered practitioner has taken advantage of the present practice of registrars, in accepting such certificates as "information as to the cause of death," to advertise to the public that his certificates are so accepted, and to declare in one case that the advertised "takes full responsibility over all cases," clearly meaning that he claims to be in a position to certify if death should occur.

While recognizing that the acceptance of such "certificates" as "information" is not prohibited by the existing law, the British Medical Association would urge that the present practice not only vitiates the statistics of deaths from disease, but facilitates the concealment of crime and tends to encourage and assist quack practitioners in their impositions upon the public. The British Medical Association would therefore most respectfully submit the following proposals for the consideration of the Registrar-General:

1. That steps should be taken with a view to the introduction by the Government in the next session of Parliament of a Bill for the amendment of the law as to death certification and registration, the report of the Select Committee of the House of Commons of 1894 being taken as the basis.

2. That, pending such further legislation on the subject, the Registrar-General will consider the propriety of issuing to the registrars a general instruction to refer to the coroner for investigation all cases in which the information as to the cause of death is obtained from any person other than a registered medical practitioner.

It was resolved that the Council should be recommended to appoint a deputation to present the memorandum to the Registrar-General, and also that the Life Assurance Medical Officers' Association should be invited to co-operate with the British Medical Association on the question of the registration and certification of deaths.

Notification of Industrial Accidents.

Dr. Dearden, Honorary Secretary of the Factory Surgeons' Association, attended as a deputation from that Association, and submitted a memorandum, which was considered clause by clause; certain amendments made, with the concurrence of Dr. Dearden, and it was resolved that the suggestions as to notifications contained in the memorandum should be approved, and, subject to the addition of a schedule of accidents notifiable to the factory surgeons, it was recommended that it should be supported by the British Medical Association. Further, it was resolved to recommend the Council to appoint a deputation to wait upon the Home Secretary in conjunction with a deputation from the Association of Certifying Factory Surgeons to lay before him the opinions of the two Associations as to the suggested modifications of the law relating to the notification of industrial accidents.

Medical Referees and the Workmen's Compensation Act.

It was resolved that the Council should be recommended to appoint a deputation to present the following memorial to the Home Secretary.

Draft of Memorial proposed to be sent to the Home Secretary concerning the Working of the Workmen's Compensation Act in Relation to the Employment of Medical Referees.

The attention of the British Medical Association has been drawn to certain matters in respect of which it would appear that the operation of the Workmen's Compensation Act, 1897 (60 and 61 Vict., cap. 37), has not been in accord with the apparent intention of the Act. The Act provided for the appointment of certain medical referees, in order that the medical aspects of cases arising under the Act should be satisfactorily considered and adjudicated upon. Three hundred medical practitioners of high standing were appointed under the Act.

The Association, having inquired of these referees as to the working of the Act, has received replies from 230. Of these 230, no less than 144 reply that they have never acted. Of the remainder the large majority have only been consulted in a few instances. Thus, but 26 referees report having given certificates under Schedule I, Sec. XI; 51 referees have furnished reports under Schedule II, Sec. XIII; and 7 have served as assessors with the judge.

I.—*Re* Schedule I, Sec. XI.

The causes which appear to the Association to tend to prevent employment of referees under Schedule I, Clause XI, are:

1. That the workman if he calls in the referee under this clause is required to pay his fee.
2. That the employer has no power to call in the referee under this clause.
3. That the workman cannot call in the referee at a sufficiently early stage, only being able to do so when he objects to being examined by the employer's medical adviser, or appeals from the opinion of such medical adviser.

II.—*Re* Schedule II, Sec. XIII.

The cause of the non-employment of the referees under Schedule II, Sec. XIII, appears to be the disinclination of the majority of the county court judges to avail themselves of the services of the referees. This inference is grounded on the fact that in a few circuits the referees are freely employed, in others the judge clearly intimated at the time of their appointment his opinion that no occasion for their services would probably arise, and in the large majority the judges have never employed the referees.

Finally, under either Schedule of the Act a general cause militating against the employment of the medical referees is that where insurance schemes are adopted by the employers and workmen there is a growing tendency to substitute the opinion of the medical officer employed by the insurance company for that of the referee appointed under the Act.

The foregoing considerations relate to matters which appear to the Association seriously to affect the public interest.

The Association, moving on behalf of the medical profession, desires also to draw the attention of His Majesty's Secretary of State for the Home Department to the fact that general dissatisfaction exists among the referees in regard to their position under the Act. In many cases they resigned valuable appointments in order that they might be in a position to accept the office of referee. The result has been serious loss of income to such referees, and consequently some of them have stated that in future they can no longer refuse to accept private work in compensation cases.

If there is no likelihood that the duties of the office will in future be greater than in the past, it will become necessary to grant retaining salaries to the referees, or the appointments will be declined by men of good professional standing.

The British Medical Association, in laying this memorandum before His Majesty's Secretary of State, hopes that he will give it his favourable consideration.

The ORGANIZING SECRETARY reported that in pursuance of instructions received from the Committee at its last meeting he had communicated with, and also interviewed, the Secretary of the Parliamentary Committee of the Trades Union Congress as to certain defects in the working of the Workmen's Compensation Act, as regards the employment of medical referees, which appeared to the Committee to be prejudicial to the interests of workmen. Mr. Woods undertook to lay the matter before his Committee and report the result, but stated that in certain districts agreements between employers and workmen were in force by which the interests of the workmen appeared to be sufficiently protected, and that before any action could be taken by his Committee it would be necessary for them to undertake an investigation, which would be expensive and for which a sufficient prima-facie case might not be thought to be established. No further communication had been received from the Trades Union Congress Committee.

It was resolved:

That no further action be taken for co-operation with the Trades Union Congress in the matter.

Medical Acts Amendment Bill

The Medical Acts Amendment Bill as revised by the Chairman was considered clause by clause, certain amendments introduced and the Bill as amended approved by the Committee for presentation to the Council.

ORGANIZATION COMMITTEE.

A MEETING of the Organization Committee was held at the office of the Association on May 12th, when there were present Mr. T. Jenner Verrall (in the Chair), Mr. Andrew Clark (Chairman of Council), Dr. E. Markham Skerritt (Treasurer), Mr. H. A. Ballance, Mr. George Eastes, Professor J. T. J. Morrison, Dr. J. Roberts Thomson.

The minutes of the last meeting having been printed and circulated were taken as read, and with certain emendations confirmed.

A letter of apology for nonattendance from Dr. J. C. McVail was read.

Organization and Delimitation of Branches and Divisions.

The ORGANIZING SECRETARY reported on his visit to Ireland, where he had attended meetings of the Leinster, South-Eastern, and Cork Branches. Also as to the inaugural meetings of the Hampstead, Stratford, St. Pancras, Weybridge, and Central Divisions of the Metropolitan Counties Branch, which he had attended. Also as to a meeting of the East Kent District of the South-Eastern Branch at Canterbury, at which a resolution was adopted asking that the six Divisions in East Kent might be grouped in two groups for representative purposes, instead of as set forth in the scheme approved by the Council.

The following resolutions were adopted:

1. That the Committee approve such re-grouping of the Divisions in the South-Eastern Branch as will satisfy local wishes, and that the Chairman be authorized to express such approval.
2. That Stourbridge be included in the Dudley Division, in accordance with local wishes, instead of in the Bromsgrove Division as previously stated.

Grouping of Branches.

Questions of grouping Branches for electing members of Council, referred back to the Committee by the Council were considered, and the following resolution was adopted:

That the West Somerset Branch be grouped with the Dorset and West Hants Branch for the election of a member of Council.

That the Aberdeen Branch be accorded separate representation, because there appears to be no other Branch with which it can conveniently be grouped.

A decision as to the grouping of the East York and North Lincoln, and the Cambridge and Huntingdon Branches was deferred for further information.

Rules of Branches and Divisions.

The Committee then considered at length rules adopted by Branches and Divisions referred to the Committee by the Council for report. The Committee recommended that the rules of the following Divisions: City, Hampstead, Richmond, St. Pancras, Stratford, Walthamstow, Wandsworth, Chelmsford, Colchester, Southend, and Coventry, and of the following Branches: Dorset and West Hants, and Gloucestershire, be approved. With regard to the rules of certain other Branches and Divisions certain suggestions and observations were directed to be communicated to the Councils.

A further meeting of the Organization Committee was held at the office of the Association on June 9th, 1903, when there was present Mr. T. Jenner Verrall, in the chair; Mr. Andrew Clark, Chairman of Council; Dr. E. Markham Skerritt, Treasurer; Mr. H. A. Ballance, Mr. G. Eastes, Dr. J. C. McVail, Professor J. T. J. Morrison.

Letters of apology for non-attendance from Dr. W. Calwell, Dr. S. Crawshaw, and Dr. J. Roberts Thomson were read.

Expenditure of Divisions.

Correspondence with Dr. Norman Porritt, Honorary Secretary of the Huddersfield Division, was read, and the Organizing Secretary was instructed to collect data bearing on the question of the expenditure necessary for the efficient working of Divisions, and prepare a report on the subject.

Grouping of Branches.

The grouping of the Cambridge and Huntingdon Branch and of the East York and North Lincoln Branch for electing members of Council was considered, and the following resolution was adopted:

That the Cambridge and Huntingdon and the East York and North Lincoln Branches be grouped together for this year for the election of a member of Council.

Modifications of grouping of Divisions for representative purposes, rendered necessary by changes in number of members or desired by Divisions, were considered, and the following resolutions were adopted:

1. That the Lincoln Division having over 50 members, have separate representation from the Boston and Stamford Divisions.

2. That the Barnstaple Division having now fewer than 50 members, be grouped with the Exeter Division to elect a representative.

A letter from Dr. A. Cox, Honorary Secretary of the North of England Branch, was read, stating that it was desired by all concerned that the Sunderland Division should have independent representation, and that the Hartlepool Division should be grouped with the Stockton, Darlington, and Cleveland Divisions, and this arrangement was approved.

Boundaries of Divisions.

It was resolved:

That in accordance with the wishes of those locally concerned Amble be transferred from the Morpeth Division to the Alnwick Division, and that Barnard Castle Division be absorbed in the Bishop Auckland Division, except Gainford, to be included in the Darlington Division.

Rules of Branches and Divisions.

It was resolved:

That the Council be recommended to approve the rules of the following Branches and Divisions: Bath and Bristol, North of England, Northern Counties of Scotland, Stirling, and Malta and Mediterranean Branches: Bath, Bishop Auckland, Bournemouth, Brixton, Central, Halifax, Isle of Wight, Kensington, Lambeth, Leeds, Lincoln, Nottingham, Portsmouth, Watford, and West Dorset Divisions; also an additional rule of the Wandsworth Division.

Rules 8 and 17, proposed by the Staffordshire Branch, were then considered, together with the opinion of the Solicitor to the Association thereon. Mr. Hempson's opinion was read as follows:

Touching the question upon the proposed rules of the Staffordshire Branch. The first question which arises is under the interpolated Rule 8, and my opinion is asked upon the introduction into this rule of the passage which reads as follows:

> If three-fourths of the members of the Branch Council at its meeting vote in favour of the candidate so proposed he shall be considered duly elected.

The adoption of the rule as thus framed would inhibit the election of a candidate for membership of the Association unless he secured a majority of three-fourths at the meeting at which his election came forward.

By-law 2 of the By-laws of the Association provides for election by a Branch Council, and in my opinion this by-law contemplates that a member shall be elected by a simple majority of the members of the Branch Council present and voting at the meeting at which such election takes place. Had it been within the contemplation of this by-law that election should be made other than by a simple majority it would, in my opinion, have been so provided.

I am therefore of opinion that the provision to which I have referred imposes a condition which is *ultra vires* of the by-law and opposed to the general spirit of the Association's regulations and by-laws. For these reasons I cannot advise the Council to approve its adoption.

The second question which arises is under the proposed Rule 17, which reads as follows:

> When the funds of the Branch will allow, the President with the approval of the Council shall be empowered to invite the Chief Magistrate and any other gentlemen residing in the town at which the annual meeting is to be held to the dinner.

This rule as framed by the user of the article "the" immediately before the noun "dinner" makes definite reference to a specific function to which the President of the Branch is to be empowered to invite certain local people. The rule does not however provide, nor is it otherwise provided in the rules, for the holding of a dinner at all. This occurs to me as being somewhat illogical and if, as I gather to be the case, the desire and intention of the Branch is to raise a fund for a dinner to be held on the day of the annual meeting of the Branch, then I venture to suggest that in substitution for the proposed rule the following might with advantage be adopted as sufficiently meeting the circumstances and providing for that which is intended, namely:

> "It shall be competent for the Treasurer of the Branch to receive from those members of the Branch who desire to contribute thereto subscriptions for the purpose of providing a fund for defraying the expenses of and incident to, a dinner to be held on the day of the annual meeting of the Branch, and to be known as the 'Branch Annual Dinner,' and the President of the Branch, with the approval of the Branch Council, shall be empowered to invite the Chief Magistrate and any other gentlemen residing in the town as guests to such dinner."

By the adoption of the rule thus suggested in substitution for that which is proposed, contributions to the expenses of the dinner will be exclusively borne by those members who desire to subscribe to it, thereby avoiding any possibility of the rule being held to be in conflict with or infringe upon By-laws 14 or 15.

The Committee adopted the following resolutions:

1. That the Secretary of the Staffordshire Branch be informed of the opinion of the Solicitor to the Association, that the proposed rule is *ultra vires*, and that the Committee recommends the Council accordingly not to approve the rule.

2. That the Committee considers that Rule 17 of the Staffordshire Branch is *ultra vires*, and having regard to By-law 14, it does not consider any rule on the subject necessary; but if the Staffordshire Branch desires to have such a rule, the Committee recommends the Branch to accept the rule suggested by the Association.

Rule 15 of the British Guiana Branch was considered, together with Mr. Hempson's opinion thereon, as follows:

The question which arises under the proposed rules of the British Guiana Branch has reference to Rule 18 in the print which is before me, and which reads as follows:

> There shall not at any meeting of the Branch be discussed any questions affecting the conduct of the Medical Service of the Colony of British Guiana or its individual officers.

I am of opinion that this rule is *ultra vires*, and that the Council should not accord their approval to its adoption under By-law 11.

Articles XLIII and XLIV (*a*) and (*b*) are general in their application to members of the Association, and By-law 10, which regulates the autonomy of Divisions and Branches, renders the powers thereby conferred upon them in connexion with the making of rules for their own self-government subject in all respects to the regulations and by-laws of the Association.

To except from the operation of Articles XLIII and XLIV officers of the Medical Service of the Colony of British Guiana would be to create an invidious class distinction neither authorized nor contemplated.

It was resolved:

That, in accordance with the Solicitor's opinion, the Council be recommended not to approve the rule in question of the British Guiana Branch.

Alteration of By-laws.

Arising out of the consideration of a notice of motion given by a Branch for consideration at the annual representative meeting, the General Secretary reported that, in accordance with the instructions of the Committee, he had communicated with the Solicitor to the Association, and, in the opinion of Mr. Hempson, a Branch not in itself a Division is possessed of the same powers as a Division to move for an alteration of the By-laws of the Association.

ETHICAL COMMITTEE.

A MEETING of the Ethical Committee was held at the office of the Association on June 19th, 1903, when there were present Mr. Andrew Clark (Chairman of the Council in the chair), Dr. A. G. Bateman, Dr. W. A. Elliston, Dr. E. Jepson, and Sir Isambard Owen.

Letters of apology for non-attendance were read from the Chairman of the Committee, Dr. P. Maury Deas, Mr. R. H. Kinsey, and Dr. R. W. Philip.

Trade Advertisements Containing Names of Medical Men.

The Secretary reported the result of action taken in pursuance of instructions of the Committee as to trade advertisements containing the names of medical men as follows: (1) In the case of advertisements enclosed in packets of tea the medical man whose name was quoted therein had undertaken to secure its withdrawal: (2) In the matter of the advertisement of certain pills one of those whose testimonials were quoted had not replied, and there was reason to think that he was abroad; the other testimonial had been given, it was found, by a medical man whose name had been removed from the *Medical Register*: (3) in the case of a medicated snuff the medical man concerned had not replied to the Secretary's communication; (4) in the case of an advertisement of an Electro-therapeutic Hospital, it was ascertained that the Medical Defence Union was bringing the matter before the General Medical Council, and Dr. Bateman informed the Committee that the General Medical Council had found the case "not proved."

It was resolved:

(1) That the cases of the two medical men above referred to, who are not members of the Association and have not replied, should be referred to the licensing bodies from whom they obtained their diplomas.

(2) That no further action be taken in the matter of the Electro-therapeutic Hospital.

The Secretary also reported that he had written to the consultants whose names appeared in Parke's Drug List, 400 in number, of whom over 300 had replied. Nearly all stated that they had written to Parke's Drug Stores, Limited, asking that their names might be withdrawn, and the firm had at first replied to each agreeing to withdraw his name in future. The Company also, in reply to a letter which the General Secretary, by instruction of the Council, had addressed direct to it on behalf of the Association, had undertaken to withdraw the list entirely. The Company had subsequently withdrawn this undertaking on account of one medical man having put the matter in the hands of his solicitor, who had demanded that his name should be removed from the current price lists, and had commenced an action to enforce this. There was reason, however, to believe that the action would be withdrawn, and that Parke's would in that case renew their original undertaking to suppress the list.

Ethical Rules.

Rules adopted by Divisions and Branches relative to procedure in ethical matters were considered, and it was resolved:

That the rules as to ethical procedure of the following Branches and Divisions be recommended to the Council for approval:

Dorset and West Hants, East York and North Lincoln, Gloucestershire, North of England, North Lancashire and South Westmorland, South Midland, South Wales and Monmouthshire, Stirling, West Somerset, and Yorkshire Branches.

Ashford, Bournemouth, Bishop Auckland, Bromley, Central London, Coventry, Dover, Guildford, Hampstead, Halifax, Isle of Wight, Kensington, Lambeth, Lancaster, Morpeth, Portsmouth, Richmond, St. Pancras, Stratford, Walthamstow, and Wandsworth Divisions.

The following rules adopted by the Norwich Division and submitted for the approval of the Council were considered:

A member of the Division shall not oppose another member in any course of action which, with the previously expressed sanction of the Division, he may take for the general good of the profession.

A member of the Division shall not undertake in future any fresh contract practice, directly or indirectly, at a lower rate than that adopted by the Public Medical Service, or have any professional intercourse whatsoever with any medical man who associates himself with any of the companies known as medical aid societies or similar institutions, so long as the methods adopted by these societies include canvassing for members in the interests of individual practitioners, or the virtual sweating of their medical officers by the inadequate remuneration offered for the work done.

The Secretary reported that he had been informed by the Secretary of the Norwich Division that these rules were unanimously approved by a meeting of the Division, and that over five-sixths of the practitioners had already signed an agreement embodying the second rule, also that the Division would be prepared to accept any slight modification suggested in the form of the rule suggested by the Ethical Committee.

It was resolved:

That it be suggested to the Norwich Division that the second rule be modified to read as follows:

A member of the Division shall not undertake in future any fresh contract practice, directly or indirectly, at a lower rate than that adopted by the Public Medical Service, or accept any appointment in any medical aid or similar society, or have any professional intercourse, except under circumstances of great urgency, with any medical man who associates himself with any of the companies known as medical aid societies or similar institutions whose methods are held by the Division to include touting or canvassing for members in the interests of individual practitioners, or the sweating of their medical officers by inadequate remuneration,

and that, subject to this modification, the Council be recommended to approve the rules submitted by the Norwich Division.

The following rules adopted by the Gateshead Division, and submitted for the approval of the Council, were considered:

In the event of the Division agreeing to take combined action, any member found guilty (after discussion and ballot) of gross breach of faith shall be reported to the Branch Council (if the first instance) for expulsion. If this report shall lead eventually to the expulsion of the member from the British Medical Association, he shall be pro tanto ostracized by the other members of the Division.

No member shall be reported to the Branch Council (as per previous rule) except on the vote of a clear majority of the whole of the members of the Division.

It was resolved:

That it be suggested to the Gateshead Division that the first rule be modified to read as follows:

In the event of the Division agreeing to take combined action, any member found guilty (after discussion and ballot) of gross breach of faith shall be reported to the Branch Council for reference to the Council of the Association,

and that, subject to such modification, the Council be recommended to approve the rules submitted by the Gateshead Division.

Press Notices and Paragraphs.

A detailed notice appearing in a Glasgow paper of an operation on cataract by a Glasgow surgeon was considered, and it was resolved:

That the case be referred to the Glasgow and West of Scotland Branch.

A detailed notice appearing in the *Daily Express* of a case of anæsthesia by hypnotism in London, was considered. As the practitioner referred to was not a member of the Association, it was resolved:

That the case be referred to the licensing body from whom the practitioner in question obtained his diploma.

Bulletins.

A letter was read from Sir Victor Horsley informing the Chairman of the Committee that he had written to the editor of the *Times* objecting to a paragraph which had appeared in that paper giving his name as in attendance on a case. It was resolved:

That it be recommended that a circular letter be sent to the principal London papers deprecating the mention in paragraphs relating to the illnesses of persons other than members of the Royal Family, of the names of medical men in attendance, and that it be suggested to Branch Councils that they should take similar action as regards the leading provincial papers.

Medical Testimonials.

The question of advertisements by Mr. Beasley of his school for stammering, containing a testimonial from Mr. Luke Freer, was considered, and read letter to the Chairman of the Ethical Committee from Dr. Whitcombe, Honorary Secretary of the Ethical Committee, Birmingham and Midland Counties Branch, stating the action taken by that Committee in connexion with the case, read together with correspondence between Mr. Luke Freer and Mr. Beasley, from which it appeared that Mr. Freer, in conjunction with the Birmingham Ethical Committee, had endeavoured to obtain the withdrawal of his name from Mr. Beasley's advertisement, and that Mr. Beasley had declined to comply with the requests made to him. It was resolved:

That no further action be taken.

"Discounts" and "Commissions."

The question of "discounts" or "commissions" offered to members of the profession by dealers in medical and surgical articles was considered, with special reference to a case in which a London instrument maker had offered to a surgeon at the Cape a "medical discount" of 10 per cent. on all goods supplied to patients sent by the latter. A letter was read from the instrument maker to the Organizing Secretary, maintaining that the "discount" offered by him was not a commission but a wholesale trade allowance. The following resolution was adopted:

That the Committee fails to perceive any difference between the "discounts" offered by the instrument maker named and secret commissions.

The question of trade advertisements sent apparently only to members of the medical profession was discussed, and a correspondence between the Organizing Secretary and the London agents of an American manufacturing drug company was read with reference to advertisements of a proprietary preparation. The London agents undertook on behalf of their clients that such advertisements should be discontinued, and the Committee approved the action taken.

PUBLIC HEALTH COMMITTEE.

A meeting of the Public Health Committee was held at the office of the Association, on June 10th, when there were present: Dr. J. Groves (Chairman), Mr. Andrew Clark (Chairman of Council), Dr. Arthur Newsholme. Letters of apology for non-attendance were read from Dr. Edgar Barnes, Dr. J. C. McVail and Mr. W. Jones Morris.

Vaccination.

Dr. McVail urged upon the Committee the desirability of referring the question of future vaccination legislation to the Divisions, in order that the Divisions may in their turn ac-

centuate the importance of securing legislation upon their local member of Parliament, and it was resolved:

That in the opinion of this Committee it is important that the six resolutions passed and approved by the Council on January 21st and February 25th, 1903, should be forthwith circulated to the Divisions with a view to members of Divisions of the British Medical Association making representations to the members of Parliament in their districts so as to assure improved vaccination legislation at an early date.

Other business before the Committee was not concluded and its findings will be reported in a subsequent issue.

ROYAL NAVAL AND MILITARY COMMITTEE.

A MEETING of the Royal Naval and Military Committee was held at the office of the Association on May 15th, when there were present Mr. Andrew Clark (Chairman of Council), Surgeon-Major Valentine Matthews, Surgeon-Lieutenant-Colonel R. H. Coombs, and Inspector-General A. Turnbull, M.D., R.N.

Chairman.

Mr. Andrew Clark was elected Chairman of the Committee.

The Treatment of Wounded on Board Ship.

The following resolution, passed in the Navy, Army, and Ambulance Section at the annual meeting at Manchester, and referred to the Committee by the Council, was considered:

That it be recommended to the British Medical Association to suggest to the naval authorities the desirability of improving the accommodation and arrangements for the treatment of wounded on board ship in action, until they can be transferred to a hospital ship or a suitable hospital on shore.

And it was resolved:

That owing to the statement of the First Lord of the Admiralty explanatory of the Navy Estimates, 1903-4, Part II, that the question of the accommodation, transport, etc., of the wounded in action on board ship was under the consideration of the Admiralty, the Committee recommends that the Council take no step at present in relation to the resolution on this subject passed in the Navy, Army, and Ambulance Section at Manchester.

Representatives of the Services.

The question of appointing representatives of the services on the Council of the Association was then considered, and after discussion it was resolved:

That, in the opinion of this Committee, By-law 20, Section (c) is unworkable so far as the allotting of a Representative to those members of the Association attached to the Royal Naval Medical Service, the Army Medical Service, and the Indian Medical Service respectively. That recommendation be made to the Council to take steps to so amend the By-law that power may be conferred on the Council to co-opt one representative from each of the services named.

SCIENTIFIC GRANTS COMMITTEE.

A MEETING of the Scientific Grants Committee was held at the office of the Association on June 15th, 1903, when there was present Mr. Andrew Clark, Chairman of Council, in the chair; Dr. James Barr, Professor W. D. Halliburton, F.R.S., Sir Victor Horsley, F.R.S., Mr. H. Betham Robinson, M.S., Professor R. Saundby, M.D., Professor J. Lorrain Smith, M.D., Professor E. H. Starling, F.R.S., Dr. Norman Walker, Dr. Dawson Williams.

Letters of apology for non-attendance from the Treasurer, Dr. R. W. Philip, Dr. Roberts Thomson, and Professor G. Sims Woodhead were read.

Chairman.

It was resolved:

That the Chairman of Council be appointed Chairman for the ensuing twelve months.

Research Scholars.

The Committee had before it applications for research scholarships, and recommended that Dr. F. A. Bainbridge and Dr. G. A. Watson should be re-elected Research Scholars for a further period of one year; that Dr. J. O. Wakelin Barrett should be appointed a Research Scholar; and that Dr. W. Jobson Horne should be reappointed Ernest Hart Memorial Scholar.

Grants in 1902-3.

The Committee had before it a statement showing that the amount voted in grants for the year 1902-3 was £356, and the amount returned unused by various recipients £66 1s., leaving a balance expended of £289 19s. The reports made to the Committee by the Research Scholars and the recipients of grants were published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of July 4th.

Grants for 1903-1904.

Applications for renewed grants and for fresh grants were then considered. It was recommended that the following renewed grants should be made:

	£	s.	d.
Foulerton, A. G. R., F.R.C.S.	10	0	0
Hall, Isaac W., M.B.	6	0	0
Hewlett, R. T., M.D.	5	0	0
Osborne, W. A., M.B.	15	0	0
Pembrey, M. S., M.D.	20	0	0
Scott, J., M.D.	10	0	0
Sheen, William, M.D.	5	0	0
Sherrington, Professor C. S., M.D., F.R.S. ...	50	0	0
Walker, E. W. A., M.D.	20	0	0
Warrington, W. B., M.D.	15	0	0
Total	156	0	0

and that the following grants should be made:

	£	s.	d.
Clark, R. V., M.B.	10	0	0
Edmunds, A., M.B.	20	0	0
Ewart, R. J., F.R.C.S.	20	0	0
Gardiner, F., M.D.	10	0	0
Harris, W., M.D.	10	0	0
Henderson, E. E., F.R.C.S.	10	0	0
Hewetson, J. T., M.D.	20	0	0
Leslie, R. M., M.B.	10	0	0
Monsarrat, K. W., M.B.	15	0	0
Russell, A. E., M.D.	30	0	0
Schryver, S. B., D.Sc.	10	0	0
Shattock, S. G., F.R.C.S.	12	0	0
Zilwa, Lucian A. E. De, M.B.	7	0	0
Total	194	0	0

The total amount of renewed grants was thus £156, and of new grants £194, making a total of grants of £350. As the amount paid to Research Scholars is £450, the grand total of the expenditure authorized through the Committee is £800.

Reports of Branch Meetings.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH.

WEST BROMWICH DIVISION.

THE first annual meeting of this Division was held, by permission of the Mayor, in the Council Chamber, Town Hall, West Bromwich, on Monday, June 29th. Dr. H. LANGLEY BROWNE, in the chair.

Election of Officers.—The following officers were elected for the ensuing year: *Chairman*, Dr. H. Langley Browne; *Vice-Chairman*, S. T. Darby Weston; *Honorary Secretary*, Dr. H. B. W. Plummer; *Representative*, Dr. H. Manley; *Members of Council*, T. Sansome, H. C. Crew, Dr. H. Shillito, Dr. A. Croll, Dr. H. P. Motteram, Dr. W. H. Stephen.

Adoption of Rules.—The suggested rules were filled in and adopted. The suggested Ethical rules were also adopted.

Meetings of the Division.—It was arranged to hold four meetings during the year; seven days' notice of date to be given: the time of meeting to be 4 p.m.

BORDER COUNTIES BRANCH.

THE annual general meeting of this Branch took place in Carlisle on June 26th, Dr. ORMROD (Workington), President, in the chair. Twenty-one members were present.

Confirmation of Minutes.—The minutes of the last meeting were read, approved, and signed by the President.

The report of the Council was read and approved, provided that the disposal of the balance belonging to the Branch as therein proposed be allowed to stand over in the meantime.

Election of Officers.—Before adopting the new rules for the Branch, the following officers were elected for the ensuing year:—*President-elect:* Henry Barnes, M.D., LL.D. (Carlisle). *Councillors:* J. B. Bird (Carlisle), G. R. Livingston (Dumfries), M. Ogilvy-Ramsay (Carlisle), D. G. P. Thomson (Penrith), W. Tanson (Whitehaven), W. Murdoch (Annan), in addition to the Councillors elected by the Divisions. *Auditors:* R. D. Helm (Carlisle), J. Macdonald (Carlisle). *Secretary and Treasurer:* F. R. Hill (Carlisle). *Representative on the Central Council:* The PRESIDENT intimated that Dr. Maxwell Ross had been elected to the post unopposed.

Adoption of Rules for the Branch.—The draft rules for the Branch as prepared by the Council from the model rules were submitted and, with some slight alterations, were adopted.

Extraordinary Members.—The President and Secretary of the

North Lancashire and South Westmorland Branch were unanimously elected *ex officio* associate members of the Branch.

Induction of the New President.—Dr. ORMROD thanked the members of the Branch for the courtesy he had received during his term of office; and, after remarking upon the changes that had taken place in the Branch during that time and the present condition of satisfactory reanimation, vacated the chair in favour of Dr. Maxwell Ross, of Dumfries.

PRESIDENT'S ADDRESS.

The PRESIDENT delivered his address, in the course of which he dealt with the reorganization of the public health service. Quoting from a recent article on the subject, he contended that it was not expedient to remove health administration from local control, though he favoured the idea of enlarging the units—for example, making the county the unit for rural districts, and all urban districts or burghs with a population of, say, more than 50,000. To remove the administration from local control and create a national service would probably have the effect of lessening local interest and introducing a cast-iron uniformity of methods which with districts having varying needs would prove unsuitable. On the other hand, the present units of administration were in very many instances much too small, and the members were apt to be influenced by petty and even personal matters. With a larger unit a well-equipped health department might be established in which the medical officer would have ample assistance to enable him to carry out the increasing duties with which he was now entrusted by the Legislature. The staff should be large enough to undertake important statistical and other inquiries which it was now most difficult to make, to secure a more thorough control over the health conditions affecting schools and scholars, and to follow more closely the incidence and spread of disease. To the department a public health laboratory should be attached in which not only the routine work of examination of water, sewage effluents, milk, and samples of other foods, as well as drugs, would be performed, but clinical investigations by or on behalf of practitioners resident within the district might also be undertaken. Along with this, questions which tended to hinder good work, such as insecurity of tenure in England, and the creation in Scotland of sanitary inspectors' departments as distinct from medical officers', should be dealt with. The powers and status of the central authorities, the Local Government Boards, should be raised, and he threw out as a point for inquiry whether it might not be well to codify the health statutes of England and Scotland, and unite the countries under one central authority, the head of which should have a seat in the Cabinet.

[The scientific proceedings are published at p. 82].

WEST CUMBERLAND DIVISION.

THE inaugural meeting of this Division was held in the Whitehaven Infirmary on Friday, June 12th. Dr. ORMROD (Workington) in the chair. There were eight members present.

Model Rules.—The model rules for a Division not itself a Branch were with slight alterations adopted.

Ethical Rules.—These were adopted *en masse*.

Election of Officers.—The following officers were elected for the ensuing year:—*Chairman:* Dr. G. J. Muriel (Moresby); *Vice-Chairman:* Dr. Ormrod (Workington); *Secretary and Treasurer:* Dr. T. G. Mathews (Whitehaven); *Representative on Branch Council:* Dr. Crerar (Maryport): *Ordinary Members of the Executive Committee of the Division:* Dr. Clark (Cleator Moor), Dr. Fisher (Whitehaven); Dr. Highet (Workington), Dr. Mitchell (Cockermouth).

CEYLON BRANCH.

AT an ordinary meeting held on February 21st, Dr. T. F. GARVIN, President, there were twelve members present.

Confirmation of Minutes.—The minutes of the two previous meetings were read and confirmed.

Resignation.—The resignation of Dr. J. Attygalle (Galle) was accepted with regret.

Death.—The death of Dr. M. Eliatamby (Galle) was announced with much regret.

New Rules of the Branch.—It was proposed by Dr. H. M. FERNANDO and seconded by Dr. V. VAN LANGENBERG that the new rules framed by the Council should be printed and circulated to all members.

EAST ANGLIAN BRANCH.

THE annual meeting of this Branch was held at the Shire Hall, Chelmsford, on June 11th.

Council Meeting.—The Council meeting was held at 11.30 o'clock. Dr. EDGAR BARNES was called to the chair in the absence of the President of the Branch, Mr. W. E. Wyllys (Great Yarmouth).

New Members.—W. L. M. Day, B.A., M.B.Oxon (Colchester), and Horace Potts, M.R.C.S. (Great Yarmouth), were elected members of the British Medical Association.

Associate Members.—It was proposed by Dr. BARNES, seconded by Dr. W. A. ELLISTON, and carried unanimously, that the following ladies and gentlemen be elected associate members of the Branch, and have all the privileges except the power of voting: Mrs. Garrett Anderson, M.D. (London); Miss L. Garrett Anderson, M.D. (London); Miss Jane Walker, M.D. (London); Mr. Andrew Clark, F.R.C.S. (London); T. Clifford Allbutt, M.D. (Cambridge); Dr. P. W. Latham (Cambridge); Mr. Joseph Griffiths, F.R.C.S. (Cambridge).

Report of Council.—The GENERAL SECRETARY (Dr. Nicholson) read the report of Council, as follows: The Council has to report a prosperous condition of the Branch. Thirty-two members have joined the Association since the last report. At present there are about 420 members in the Branch. During the year the reorganization of the Branch has been accomplished, and is defined as containing the Counties of Norfolk, Suffolk, and Essex, except that part to the west of a line drawn from Bartlow Station to High Ongar and thence through Dagenham Station to the Thames. That portion of Essex has never belonged to the East Anglian Branch, but belongs now, as formerly, to the Cambridge and Huntingdon and the Metropolitan Counties Branches. The East Anglian Branch has been divided into ten Divisions, and these for representation purposes have been grouped into six constituencies. The principles on which the adjustment of boundaries was determined were: (1) That a Division should be such that members could attend its meeting without more than half a day's absence from home; (2) that boundaries of existing Branches should not be interfered with, and, above all, that the centre or capital of the Division should be easily reached by rail or road. With these rules in mind, the Subcommittee chosen at the Harwich meeting, consisting of three members for each county, drew up a map with the proposed Divisions marked thereon. A copy of the map was sent to all the members of the Branch for their opinion. With very few alterations the proposed Divisions were adopted by a special meeting of the Council held at Ipswich on October 28th, 1902. The Divisions have now all been placed in working order and rules passed for their guidance, and it now only remains for individual members to take an interest in their Division, and to endeavour to get all eligible medical men to join the Association. It is hoped that every member of the Association will make it a point of duty to attend the meetings of his Division, and take a responsible share in its welfare and usefulness. The Council regrets the death of Mr. R. F. Symmons, Consulting Surgeon to the Essex and Colchester Hospital, who was President of the Branch in 1884-5, and records the warm interest that he took in the British Medical Association and the welfare of the profession at large; also of Mr. G. A. Boling, Mr. J. Gathergood, Mr. N. H. Macmillan, Mr. R. J. Morton, and Mr. E. M. Rodwell. The annual meeting of 1902 was held at Great Yarmouth under the presidency of Mr. W. E. Wyllys. The meeting was most popular and largely attended. The President addressed the members "on some of the work attempted and results attained during the six years' existence of the Yarmouth Practitioners' Association." Your Council expresses its best thanks for the kindness and hospitality of the President and practitioners of Great Yarmouth on that occasion. The autumn meeting was held at Harwich. A cordial vote of thanks was proposed to Mr. Francis Fowke for his good services as General Secretary of the Association for 31 years. The objects of the Imperial Vaccination League were discussed, and their resolutions were carried unanimously. Dr. P. J. Freyer gave an excellent address on Total Extirpation of the Prostate for Enlargement of that Organ. The Council records its thanks to Mr. P. J. Freyer for his interesting lecture, and to Dr. Gurney for his kind hospitality. The spring meeting was held at Wymondham. Rules for the management of the Branch were considered and passed at this meeting. It was resolved that the annual meeting in 1904 should be held at Lowestoft, and that Mr. H. B. Walker be invited to become President. Mr. H. B.

Walker replied in graceful terms, accepting the honour. At the meeting a letter was read from Dr. Francis Ward announcing his wish to resign the secretaryship of Suffolk. His resignation was accepted with regret. The Council and members of the East Anglian Branch thank him for his services during the annual meeting at Ipswich in 1900, and for his work in helping with the administration of the Branch. Dr. Gutch has been elected to the vacancy. The best thanks of the Branch are due to the Hon. and Rev. Arch. Parker, M.A., Vicar of Wymondham, and to Mr. David Hughes for their kind hospitality. The Council and Branch desire to record their pleasure that Mr. Guy Elliston had been appointed General Secretary of the British Medical Association, and Mr. J. Smith Whitaker Organization Secretary, and they wish to congratulate them most heartily on their appointments and the Association on its good fortune in obtaining such excellent men to fill these responsible offices. The report was unanimously adopted.

Ethical Rules.—Owing to insufficient time the ethical rules were postponed to the next meeting.

General Meeting.—The general meeting commenced at 12 o'clock in the Shire Hall, Dr. EDGAR BARNES (Eye), presiding.

Confirmation of Minutes.—The minutes of last meeting were read and confirmed.

Report of Council.—The GENERAL SECRETARY read the report. It was proposed by Dr. MOLSON, seconded by Dr. WALLINGER, that it be accepted and carried unanimously.

Election of Officers.—The following officers were declared elected for 1903-4:—*President:* J. E. Thresh, M.D. (Chelmsford). *President-elect:* H. B. Walker (Lowestoft). *Vice-Presidents:* E. L. Fenn, M.D., M.R.C.P. (Colchester), C. Scott Kilner, M.B. (Bury St. Edmunds), W. E. Wyllys (Great Yarmouth). *Elective Members of Council:* Edgar S. Barnes, M.D. (Eye), M. Beverley, M.D. (Norwich). *Secretary for Essex:* B. H. Nicholson. *Secretary for Norfolk:* H. A. Ballance. *Secretary for Suffolk:* J. Gutch.

Luncheon.—Luncheon was served in the Shire Hall by invitation of the President-elect (Dr. J. C. Thresh). About 80 members and guests partook of an excellent lunch.

Installation of New President.—The general meeting was resumed at 2.15 p.m. Dr. BARNES formally introduced Dr. Thresh as President. Dr. THRESH then took the chair.

Votes of Thanks.—It was proposed by Dr. W. A. ELLISTON, seconded by Dr. BAXTER, and carried unanimously:

That a hearty vote of thanks be accorded to Mr. W. E. Wyllys (Great Yarmouth) for the able manner in which he has discharged his duties as President of the East Anglian Branch during the past year, and for the hospitable manner in which he has entertained the members of the Branch.

PRESIDENT'S ADDRESS.

County Sanitary Administration in Essex.

Dr. THRESH delivered the following address:

Whilst I fully recognize the honour you have conferred upon me by electing me your President for the ensuing year, I do not regard it as being purely personal, but as being also a recognition by an important medical association of the position now occupied in this country by medical men engaged in the public health service. Since I am entirely engaged in this service, in the prevention of disease, whilst most of you are entirely occupied with the cure of disease, it might appear as though our aims were to such an extent opposed that it would be difficult for me to select a subject upon which I could claim in any degree to be competent to speak which would be of sufficient interest to you to justify me in adopting it for my opening address. I am in a position, however, to know that all medical men take a certain amount of interest in preventive medicine. It redounds greatly to the credit of the members of our profession that they devote so much attention to the prevention of disease, especially in the guarding of their patients and their patients' families from illness of various kinds, and from the infectious diseases in particular; and that they are willing to give, and do give, advice which they often know will not be palatable, which will be received with neither grace nor gratitude, and which, if acted upon, will tend to reduce their own incomes. Whilst we neither affect to despise "filthy lucre" nor to be unaffected by the measure of appreciation meted out for our services, we do not, as a body, allow either to influence us in the discharge of our duties.

In my branch of the profession, unfortunately, these duties consist chiefly in the giving of unpalatable advice, and our patients, the public, are not prone to reward us too liberally, nor to be too demonstrative in the expression of their gratitude. This is not really a matter for much surprise, since the public generally know very little about the work we perform, and our labours are not always productive of immediate results, or of results which are sufficiently obvious to arrest attention. For example, how many people know that the improvements effected in this country during the past fifty years at the instigation of sanitarians have resulted in prolonging the lives of each inhabitant an average of about three years; and of those who do know, how many can say that they truly appreciate it? Or, again, do any of us fully realize the fact that the improved condition under which we live to-day, as compared with only fifty years ago, saves the lives of about 175,000 people annually in England and Wales? Who of us can realize the immensity of suffering which we now escape by this arrest of the ravages caused by disease? The marvellous discoveries of chemists and electricians, with their rapid and startling results, attract the attention of the most indifferent, whilst the still more marvellous effects produced by the discoveries and labours of the votaries of sanitary science fail even to attract the attention of the most intelligent.

To-day, however, I do not purpose dwelling upon what has been done during the last century, or in the country generally, but to speak of what is being done at the present time in one particular department in one of the counties included in the area covered by this Branch of the British Medical Association. I refer to the department of the Medical Officer of Health of the Essex County Council.

County councils are empowered by the Local Government Act of 1888 to appoint medical officers of health, but the councils are under no legal obligation to appoint such an officer, and when appointed, if he confines his attention merely to matters which must legally come under his notice, he will have very little to do indeed. If, on the other hand, he gains the confidence of the various local authorities in the county, and is encouraged by a sympathetic sanitary committee, he can be kept fully occupied in doing work of the utmost importance.

Essex was one of the first counties which secured the services of a medical officer of health, and is the only county in East Anglia which has taken advantage of the powers conferred by the Local Government Act for this purpose. Whether the county was justified in adopting this course is, perhaps, not for me to say; but, after hearing something of the work being done, you may be in a position to arrive at a definite conclusion.

Annual Reports.

Prior to my appointment, the annual reports prepared by the local medical officers of health, and dealing with the sickness, mortality, and sanitary conditions of their respective districts, were rarely printed and distributed; many of them were "taken as read," and consequently never seen save by the actual writer and the Local Government Board. Under such circumstances one could not expect much care to be taken in their compilation, and their value was very limited. At the present time all this is changed. The preparation of an annual summary of all the reports for presentation to the county council has resulted in much greater care being taken in their preparation. Practically all are printed and more or less widely distributed. The sanitary conditions and requirements of each district are made public, and the officials and members of the various authorities can compare results. This publicity has directed attention to many matters which would otherwise have been neglected, and has resulted in many improvements being effected.

Infant Mortality.

The comparison of the mortality and sickness statistics reveals the localities in which disease is most prevalent, and the excessive incidence of particular forms of disease. As an instance, I may refer to the mortality amongst infants. For several years I have directed attention to the fact that the death-rate amongst young children was appallingly high in the populous areas just over the metropolitan boundary. The various district councils, separately, took such steps as each thought best for reducing this mortality, but quite recently a series of conferences have been held, attended by representatives from all the districts concerned, and a committee has just issued a report. This committee visited Battersea for the purpose of studying the method adopted there of preparing and distributing "humanized" milk. I visited Liverpool also for the same purpose. The results of our deliberations and visitings will be found in the report, copies of which are upon the table, and, if our suggestions are acted upon, I believe the result will be a great saving of infants' lives. I may say that the careful inquiries which were made

by medical officers in the respective districts all pointed to one conclusion: that the excessive mortality was entirely confined to infants artificially fed, and was due to improper food and improper feeding.

Distribution of Cancer.

As a further example of the value of the comparison of the statistics of the different districts I may refer to the results obtained in studying the distribution of cancer. I refer to this disease because there is a very general impression that the disease is becoming increasingly prevalent, and because during the last few months several lay correspondents have directed my attention to the number of deaths which have come to their knowledge, due to cancer, and asking whether the disease was not much more prevalent than formerly, and whether anything can be done to arrest the ravages of the disease. My statistical results certainly show an increased mortality from the disease, but taking this county as a whole, it will be seen that the death-rate from cancer is below the average for England and Wales, and nearly 50 per cent. below that of any other county in East Anglia, and that the apparent increase is much less in this county than in the surrounding counties. The study is one beset with difficulties, and great care has to be taken in drawing conclusions from the recorded death-rates of different districts. We can with greater safety compare the statistics of the same districts for different periods, and when this is done I am afraid that after making due allowance for the more frequent diagnosis of internal cancer there is no room for doubt that the mortality from cancer is increasing.

The following table gives the death-rates in Essex, and to make the subject more interesting to you I have added also the death-rates for the adjoining counties:

Death rates from Cancer.—Average per 1,000 Persons per Annum.

	England and Wales.	Essex.	Suffolk.	Norfolk.	Herts.	Cambridge.
1871-80 ...	0.47	0.48	0.54	0.600	0.46	0.64
1881-90 ...	0.59	0.54	0.63	0.715	0.67	0.79
1891-5 ...	0.71	0.63	0.83	0.880	0.79	0.97
1896-1900..	0.80	0.69	0.92	0.990	0.96	1.01

All these figures tell the same story. They show a continuous and steady increase since 1871, varying from 44 per cent. in Essex to 108 per cent. in Herts, the increase in England and Wales being 70 per cent.

Dividing the counties into registration areas we find, without exception, that the proportion of deaths, certified as being due to cancer, is increasing.

Registration Districts in Essex, Suffolk, and Norfolk.

ESSEX.

Registration District.	Death-rate 1881-90	Death-rate 1891-1900	Registration District.	Death-rate 1881-90	Death-rate 1891-1900
Saffron Walden ...	0.99	1.05	Maldon	0.61	0.81
Dunmow	0.88	1.11	Epping	0.61	0.75
Halstead	0.83	1.21	Ongar	0.60	0.70
Braintree	0.77	0.97	Billericay	0.59	0.77
Lexden	0.74	0.92	Romford	0.55	0.59
Chelmsford ...	0.72	0.90	Rochford	0.45	0.67
Colchester	0.69	0.72	West Ham ...	0.40	0.52
Tendring	0.63	0.75	Orsett	0.37	0.48

SUFFOLK.

Bury St. Edmunds	0.99	1.05	Woodbridge ...	0.67	0.87
Mildenhall ...	0.79	0.83	Sudbury	0.66	1.09
Wangford	0.78	0.87	Cosford	0.65	0.77
Thingoe	0.72	0.80	Risbridge	0.64	0.89
Hartismere ...	0.71	0.92	Plomesgate ...	0.61	1.00
Hoxne	0.71	1.10	Stow	0.60	0.83
Ipswich	0.71	0.83	Bosmere	0.54	0.78
Mutford	0.70	0.83	Sainford	0.50	0.81
Blything	0.68	0.73			

NORFOLK.

Deepwade	0.86	1.05	Erpingham ...	0.71	0.94
Yarmouth	0.86	0.05	Mitford	0.69	1.03
Walsingham ...	0.86	0.95	Aylsham	0.65	0.71
King's Lynn ...	0.83	1.20	Forehoe	0.63	0.77
Guiltcross	0.81	0.92	Henstead	0.62	0.93
Loddon	0.80	1.02	Freebridge Lynn ...	0.62	0.78
Thetford	0.79	0.91	Downham ...	0.60	0.83
Docking	0.76	0.86	Smallburgh ...	0.59	0.95
Swaffham	0.75	1.00	Blofield	0.55	0.93
Norwich	0.73	0.91	Flegg	0.54	0.89
Wayland	0.72	0.83	St. Faith's ...	0.53	0.94

It will be observed that although the relative prevalence does not remain quite constant, yet that, as a rule, the districts which had a high death-rate from cancer in 1881-90 had also a high rate in 1891-1900, and vice versa. This is well marked in Essex, where the three districts with the highest mortality rates in both decades were Saffron Walden, Dunmow, and Halstead, and it is somewhat significant that these districts adjoin each other in the north-west of the county. Similarly we find the districts with the lowest mortality rates are contiguous, and lie in the south and south-east of the county. This undoubtedly indicates that there is something possessed by these districts in common which in the one case tends to a high cancer mortality, and in the other to a comparatively low mortality.

If we further divide one area into sub-registration districts the general character of the increase is still observable. For example, take the following sub-districts in the two rural areas under my special charge. Out of the eight sub-districts there has been a marked increase in six and a decrease in two only during the last ten years.

Deaths from Cancer in the Five-year Period.

CHELMSFORD DISTRICT— Sub-district.	1893-7.	1898-1902.	MALDON DISTRICT— Sub-district.	1893-7.	1898-1902.
Great Waltham..	25	28	Southminster..	7	8
Writtle	19	28	Bradwell ..	12	9
Springfield ..	25	43	Tollesbury ..	19	34
Ingatestone ...	25	20	Maldon	10	18
	94	119		48	69

The further study of the death-rate for a long period of years not only shows a continuous increase, but further proves the existence of areas of excessive prevalence. Take the following for example:

Cancer Death-rate.

Parish.	1871-1898.	1893-1902.
Great Waltham	0.82	1.14
Southminster	0.80	0.80
Writtle	0.78	0.88
Springfield	0.45	0.61
Ingatestone	0.40	0.51
Tollesbury	0.34	0.46

Time will not permit of my dwelling longer on this interesting and very important subject, especially as a series of articles have recently appeared on "Cancer" in our official organ. The writer there suggests a careful examination into the sources of water supply, whilst at the same time noting the food, habits, and occupation of the inhabitants. He concludes that cancer is more prevalent in districts where beer is the staple drink, and that the excess is in some degree proportionate to the amount consumed per head. I doubt whether this explains the variations in the incidence in different parts of Essex, and in the different counties in East Anglia. In the districts with which I am best acquainted there is no probable relation between cancer incidence and water supply. Tollesbury, with the lowest cancer death-rates has a limited and polluted supply, whilst Great Waltham and Southminster have an abundant and pure supply. I should be loth to conclude that this difference in the quality of the water had any connexion with the relative incidence of cancer. I believe, however, that a detailed study of the distribution of the disease over limited areas, such as a county, may result in valuable information being gained, and the statistics furnished to the county medical officer, and his special knowledge of the circumstances of the various divisions of the county afford him exceptional opportunities for the successful prosecution of such studies.

Infectious Diseases.

Apart from the annual summary to which I have just referred other summaries are issued monthly, but these are confined to the record of the number of cases of infectious disease which have been notified in each district in the county.

By this means the epidemic prevalence of any disease is made known to all the medical officers of health, and its progress can be traced. This leads to many investigations being made, often with interesting results. For example,

during last year a series of cases of typhoid fever occurred in widely separated districts. The reports sent in indicated a possibly common cause, and the investigations which were set on foot resulted in tracing a considerable number of cases to the eating of oysters obtained from one common source.

Again, during the small-pox epidemic, the monthly reports showed that there was a continued and excessive prevalence of the disease in the Orsett district, and that this district was responsible for many other cases occurring in the county. We were able to trace the epidemic in all its ramifications, and the advice given by the County Council with reference to the steps necessary to arrest its spread was so promptly acted upon that the disease was effectually kept under control in all districts save that of Orsett. The cause of this I made a special study and with most important results, since they have proved indubitably the theory of the aërial conveyance of the infection of this disease. This theory had previously had many supporters, but absolute proof was lacking since in all previously-investigated outbreaks there was a possibility of the infection having been spread by contact with nurses, attendants, and visitors, or by the passing to and fro of ambulance vans. In the Orsett outbreak I was able to show that the infection came from the small-pox ships of the Metropolitan Asylums Board which are anchored in the river opposite Purfleet in this district, and that all the factors which had previously rendered the aërial theory doubtful could be entirely eliminated. The results of my inquiries and observations were contributed to the Epidemiological Society and to the *Lancet*, and are probably well known to you. Within the last few weeks the Local Government Board has issued a report on the same subject, and has verified, practically, all my conclusions. No one who had studied the outbreak could suggest any possible cause for the continued excessive prevalence of the disease in the district referred to other than that of the infection passing through the air from the acute cases in the ships to the persons on shore. I have since then been able to trace many other cases in the Romford district to the proximity of the large small-pox hospital at Dagenham belonging to the county borough of West Ham. There can no longer be any doubt that the congregation of a large number of patients suffering from small-pox in one hospital is fraught with danger to the inhabitants around.

When the small-pox outbreak first threatened, the County Council issued a circular letter giving advice as to the steps to be taken to meet emergencies, and recommending for rural districts the provision of tent hospitals. The advice was acted upon, and the result was that in scarcely an instance was a district unprepared, and this preparedness enabled us to control the disease effectually. I made numerous journeys in order to examine suspicious cases, and to give an opinion where a diagnosis was disputed. The weekly reports furnished enabled every medical officer of health to trace the progress of the epidemic, showed the connexion between the cases, the centres of infection, etc. Thus the necessary watchfulness and uniformity of action were secured in a way which would have been impossible in a county without a sanitary committee and a medical officer to advise them.

Isolation Hospitals.

The provision of isolation hospitals is one in which the County Council takes considerable interest, and its labours have resulted in a very marked improvement having been effected. By bringing adjacent authorities into communication with each other, and by the exercise of a little friendly pressure, a number of combinations have been effected, joint hospital Boards formed, and hospitals erected. When I was first appointed there was not a really efficient hospital in the county, and very few of any kind. Since then, Walthamstow and Ilford have both erected model hospitals for their districts, the urban and rural districts of Romford have combined and provided an excellent hospital, so have the Braintree Urban and Rural Districts, Rochford Rural and Shoeburyness Urban, Orsett Rural and Grays Urban, and Saffron Walden Urban and Rural Districts. The hospital for the joint use of the Maldon Urban and Rural Districts approaches completion. The Chelmsford Urban and Rural Districts have also combined, and are providing a hospital of which they will be proud. Clacton has also provided a good hospital, which is about to be enlarged; and Southend has now a good modern hospital. Three districts to the extreme west of the county have formed these there are hospitals of a cheaper character in six other districts, serving a very useful purpose. Colchester and Billericay also possess hospitals, but these have been in existence many years. The accommodation now provided is for 360 beds, allowing 2,000 cubic feet to each bed, equivalent to one bed for each 2,000 people in the county. The record is, I think, an excellent one, but it will be improved in the near future, as other combinations may soon be effected.

In connexion with the prevention of epidemics or the arrest of the spread of disease my services are always at the disposal of the local medical officer of health, and from time to time assistance of this kind is rendered. In all matters relating to the sanitary condition of any district my services for consultation are available, and I am constantly engaged in meeting councils, committees, and officials to discuss questions relating to water supplies, systems of sewerage and sewage disposal, the best methods of dealing with nuisances of various kinds, the prevention of river pollution, the provision of isolation hospitals, and kindred subjects. Occasionally such subjects necessitate a certain amount of investigation, and the results are of interest to more than one district, in which case a special report is prepared and distributed. For example, many of the bacteria beds recently constructed to purify the sewage of our urban districts have proved far from satisfactory. An investigation made for the benefit of a certain district led me to conclude that by a modification in the method of using these beds a much better result is obtainable. The report thereon was considered by the sanitary committee to be of general interest, therefore a number of copies were ordered to be printed and distributed. In this way, work done for one district often proves of advantage to others.

Supervision of Rivers and Watercourses.

Another very important duty devolves upon county councils which they cannot efficiently discharge without a medical officer—namely, the supervision of our rivers and watercourses to prevent pollution. At first sight it almost appears as if any intelligent person could discharge the supervising functions, but such is not the case. On the contrary, no duty requires more tact and ability. The difficulties encountered are almost insurmountable, and the greatest patience, combined with greatest firmness, are required to bring about improvements. The officer must be well acquainted with the sanitary conditions and requirements of offending districts; must know what is practicable and what is not under the particular circumstances of each case, and must be able to advise as well as complain. The pollution of our inland rivers may give rise to nuisances directly or indirectly affecting the health of the people living near, but the pollution of our tidal rivers may have much more far-reaching effects.

Oysters and Enteric Fever.

We now know that shellfish from polluted streams have been the cause of numerous outbreaks of enteric fever, and many apparently sporadic cases are being traced to the eating of cockles or oysters from infected sources. I have had to investigate many such cases, and the annual reports of local medical officers of health show that for years past this danger has been recognized in the county. Recently I have given a good deal of attention to the examination of the shellfish layings in our tidal waters and estuaries. I have practically examined all the layings round the coast, and taken samples of shellfish and of the water over the layings for chemical and bacteriological analysis. These analyses have been made in my own laboratories, and the conclusion at which I have arrived is that no one is justified in asserting that any laying is safe or unsafe merely from the results of such analyses. There are layings which are liable to occasional contamination only, and these sources of intermittent pollution can only be discovered by an examination of the layings and of the water for very considerable distances around. As sewage or sewage effluents, or both, are entering all our estuaries and being discharged into the sea at numberless points all round the coast, not only of Essex, but of the whole of England, we cannot at present say where danger ends. My own experience and the observation of others rather lead me to believe that danger only exists where the contamination with sewage is not only relatively considerable in amount, but is also of recent occurrence. Where sewage is properly treated, and discharged far from any shellfish laying into a comparatively enormous

chemical and bacteriological analyses may be capable of discovering indications of the sewage pollution, but one would like to feel that such articles of food were free even from such a suspicion. This is especially the case in connexion with oysters, which are often ordered by you for invalids and convalescent patients. At the present time, assuming that the majority of our layings yield oysters of satisfactory character, we cannot be certain of what we are purchasing in the open market. I should not hesitate either to eat or recommend oysters from the Pyefleet, Tollesbury, and Burnham market layings, provided that I was certain that those supplied would come from those layings.

The investigations which have led to these conclusions, apart from my actual examination of the layings, have been done in the County Public Health Laboratory, and it is to the work done in this laboratory that I wish, in conclusion, to direct your attention. Very few people are aware either of the character or extent of the work done there, and it may help you to estimate its utility if I give a summary of the work done in it last year.

Chemical and Bacteriological Examinations.

In the chemical department 126 samples of potable water, chiefly derived from public supplies, were examined and reported on, and 192 samples of effluents from the sewage works in the county were submitted to analysis.

In the bacteriological department 705 swabs were examined for the presence of the diphtheria bacillus, 22 samples of blood were examined for the diagnosis of enteric fever, 97 samples of shellfish were examined to ascertain if they showed any signs of sewage pollution, and some were especially examined to ascertain if the typhoid bacillus could be discovered therein, 46 samples of water were examined bacteriologically, 37 miscellaneous objects were examined, including hairs for the ringworm organism, sputum for the tubercle bacillus, milks suspected of causing diphtheria, etc. In all 318 chemical analyses were made, and 907 bacteriological examinations, a total of 1,225. Those who know anything of the care required in such work and the tedious character of some of the investigations will recognize that the supervision of the laboratory work alone must have occupied much of my time.

The water analyses have chiefly been made for the various sanitary authorities, and have included not merely the examination of existing supplies, but the examination of proposed new supplies, and as I never give an opinion about a source without being thoroughly acquainted with it, the analyses have been supplemented by many visits for inspection. The sewage effluents have chiefly been examined for the County Council in connexion with my inspection of the various rivers in the county to check pollution. The results of the analyses of effluents from sewage works are systematically reported to the districts concerned, so that the various councils may know when the results are satisfactory or otherwise.

In the bacteriological department most time is occupied in the examination of swabs for the detection of the diphtheria bacillus. In several districts the medical officers of health keep a supply of these swabs, and in all doubtful cases the authorities pay for a bacteriological diagnosis and supply the culture outfit to any member of the medical profession free of charge. In other districts the medical officers of isolation hospitals send swabs from the convalescent patients, and their discharge is delayed until the bacteriological examination shows the throat to be free from the diphtheria bacillus. In connexion with this work I may mention that we have found that the bacillus often persists in the usual discharge long after it has disappeared from the throat. That this arrangement for a bacteriological examination has been found useful is, I think, proved by the fact that this work is continuously increasing.

The examination of the blood for the diagnosis of typhoid fever has chiefly been done for the large institutions in the county where it is often of great importance to make an early and accurate diagnosis. The examination of hairs for the ringworm fungus has also been done in connexion with workhouses and industrial schools, where it is absolutely necessary that the patients be kept apart from the other children until a complete cure has been effected. Only a careful microscopical examination can determine when the hair is free from the disease, hence the advantage of being able to have this certainly determined. The examination of sputum has in all cases been made for private practitioners, and has fre-

The most tedious examinations, however, have been those of shellfish for the detection of pollution, most of which work has been done in the interest of the general public, and in conjunction with my personal inspection of the layings from which they were taken.

Although this is only a brief summary of a year's labours, I am afraid it may have wearied you, but I am so often asked what a county medical officer of health can find to do that I could not resist this opportunity of making known the nature of the work done by that official in one county. Doubtless in others the medical officers of health do more, but I think that even in Essex sufficient is done for the benefit of the county to justify the County Council in having made such an appointment. Many of you gentlemen come from counties where the county councils have not yet appointed a medical officer of health; and I hope, if you think my conclusions are justified, that when you return you will point out to such councils that they will not be wasting the public money if they follow in the footsteps of Essex and appoint such an officer. At the same time you can impress upon them that such an officer is only of use in so far as he commands the respect of the local medical officers and the medical men in the county, and therefore that he must be a man of wide and varied experience—such a man, in fact, as they can only hope to secure by the offer of adequate remuneration. I have no doubt that ere long such appointments will be made compulsory, but I should much prefer to see the county councils make the appointments voluntarily; and if my address to-day should tend to produce this effect, I shall be amply rewarded for my labours.

Vote of Thanks to President.—At the conclusion of the address, which was received with applause, Mrs. GARRETT ANDERSON proposed a vote of thanks to Dr. Thresh, which was seconded by Dr. BEAUMONT PERCIVAL.

Afternoon tea, to which ladies were invited, was provided by Dr. and Mrs. Thresh in the Shire Hall. Surgical instruments were shown by Messrs. Down Bros., electro, surgical, and medical appliances by Messrs. Simmon and Co., and drugs, etc., by Messrs. Burroughs, Wellcome and Co.

[The other proceedings are published at p. 81.]

FIFE BRANCH.

THE first annual meeting of this Branch was held at Thornton on June 25th: Dr. SPENCE (Burntisland) in the chair. There was a fair attendance.

Re-election of Officers.—The office-bearers and Council elected at the first meeting of the Branch in March were re-elected. It was agreed that in future the retiring President should be elected a Past-President, and hold office as such for two years.

Repesentative at Representative Meeting.—Dr. Kyle (St. Andrews) was elected Representative of the Division at representative meetings for the current year. He was unanimously instructed to support all the motions given notice of for the representative meeting except the second part of the Council's motion regarding the election of officers of navy, army, etc., which it was moved should not be supported; but on a division this was defeated by 11 votes to 4, and the representative was accordingly instructed to support the motion.

Report of Branch Council.—The Branch Council reported that it had met once since the formation of the Branch in March and had elected three new members, Drs. H. Richardson (St. Andrews), R. Andrew (Windygates), and J. Maxwell Dawson (Buckhaven), and one "associate" member, Dr. Mungle Kinross), in terms of Article VI, By-law 9.

Alteration of Model Rule.—It was agreed to alter Model Rule 12, so as to provide that no rule could be altered without notice of motion, the same to appear in the circular calling the annual meeting.

Membership of Branch.—There are now 68 members and 1 "associate" member on the roll of the Branch.

LEINSTER BRANCH.

MID-LEINSTER DIVISION.

A MEETING of this Division was held in Maryborough on June 24th, Dr. J. M. TABUTEAU in the chair.

Election of Officers.—The following officers were elected: *Chairman:* G. A. Moorhead. *Vice-Chairman:* R. H. D'O. Duckworth. *Honorary Secretary:* A. E. McCann. *Representative:* J. M. Tabuteau.

Poor-law Medical Officers.—The notice of motion relative to

Representative at Annual Meeting.—The election of a representative to attend the annual meeting at Swansea in July was adjourned, pending the meetings of the other subdivisions of the Leinster Branch.

LANCASHIRE AND CHESHIRE BRANCH.

THE sixty-seventh annual meeting of this Branch was held on June 23rd, in the Town Hall of Chester, kindly lent by the Mayor (Dr. Roberts) and Corporation. At 12.30, 102 members partook of an excellent lunch provided by the Chester Medical Society. The general meeting commenced at 1.45 p.m., when the chair was taken by the retiring President, Dr. A. C. E. HARRIS, of Birkenhead, over 100 members being present.

Confirmation of Minutes.—The minutes of the last annual and intermediate meetings were confirmed.

Report of Council.—This report, which had been printed and distributed to the members, was taken as read. The following is the text of the report: The Council of the Lancashire and Cheshire Branch of the British Medical Association has pleasure in presenting its report for 1902-3 to the members of the Branch. The Council has held ten meetings during the year, and has assiduously watched all matters pertaining to the welfare of this Branch, the Association, and the profession generally. Much time and labour have been expended in the formation of Divisions within the Branch, in accordance with the new Constitution of the Association. In arranging these Divisions the Council has been guided solely by a consideration of convenience of meeting, a centre for each Division being chosen, around which are grouped those members whose residence is in such proximity as to afford a reasonable opportunity of attending every important meeting without unreasonable loss of time or expense. Of these Divisions thirty-one having been formed. Each Division will be self-governing, and will have its own officers and executive. Each Division, according to its membership, will annually elect one or more members of the Council of the Branch, which in this way will become representative of every portion of the Branch. Every Division or group of Divisions (combined for this purpose) having over fifty members, will annually elect a representative to the annual meeting of representatives, at which the representative is bound to represent the views of the majority of his constituency, and to record those views by his vote when called upon to do so. Every year at the time of the annual meeting, and at such other times as may be necessary, the representatives of Divisions will meet together, and it will be their duty to discuss all matters relating to the honour and interests of the profession and the Association. Composed of direct representatives, knowing as they do the views of their constituents, and being bound to vote in accordance with those known views, this conference will be truly representative of the rank and file of the profession, and will in no uncertain way declare authoritatively the general feeling of the whole profession, and will formulate the general policy of the Association. The administrative details will be entrusted to the Central Council. This Council, reduced in numbers, and composed chiefly of representative members elected annually and proportionately to their membership by the Branches, becomes an executive body, bound to carry out the instructions of the representative conference, subject to the right of direct appeal by "referendum" to the whole body of members of the Association. In future the number of representatives of this Branch upon the Central Council will be reduced to four. In accordance with the desire of members residing in North Lancashire, that portion of the Lancashire and Cheshire Branch which lies north of Garstang has been detached to form the nucleus of a new Branch. The present membership of the Lancashire and Cheshire Branch is 1,616, but it is hoped that in the immediate future this number will be greatly augmented; in many of the Divisions barely half of the members of the profession are members of the Association, and it is hoped that the members of every Division will make it their business to see that all other members of the profession in their district shall be induced to join the local organization. Whilst the greater portion of the medico-political business of the Branch will be conducted in the Divisions, the Branch as a whole will be able to devote more of its time to scientific work: during the past year only one scientific meeting of the Branch has been held, but in the future it is hoped that similar and equally successful meetings will be held at regular intervals. The Council have elected as extraordinary members of the Branch Dr. Shuttleworth and Dr. O'Sullivan, both of whom were formerly representatives of the Branch on the Council of the Association. Financially the Branch is in a satisfactory position, the balance at the end of 1902 being £538 0s. 3d.

Financial Statement.—The statement of accounts as at December 31st, 1902, was as follows:

RECEIPTS.	£ s. d.	£ s. d.
1902.		
Balance in Bank from 1901	492 12 3	
Interest, less commission	10 17 5	
Subscriptions, per Honorary Secretary ... £98 10 0		
Subscriptions per Mr. Fowke ... 62 14 0		
	161 4 0	
	664 13 8	

DISBURSEMENTS.	£ s. d.	£ s. d.
1902.		
Printing, stationery, and printer's postages ...	82 7 11	
Hon. Secretary's postages and telegrams	6 5 0	
Travelling expenses:		
Committees	17 8 0	
Hon. Secretary	4 6 0	
Manchester meetings ...	6 6 0	
Council meetings	0 10 0	
Medical Directory	0 10 6	
Clerk's work	9 0 0	
	126 13 5	
Balance in bank	538 0 3	
	£664 13 8	

Audited and found correct,
F. H. WESTMACOTT, Hon. Auditor.

T. ARTHUR HELME, Hon. Secretary.
June 18th, 1903.

It was proposed by Dr. LEYLAND ROE (Eccles), seconded by Dr. W. H. DOBIE (Chester), and unanimously resolved:

That the report of Council and the financial statement be received and adopted and entered upon the minutes.

Alteration of Rules.—The Council having drawn up a scheme of new rules in order to bring the rules of the Branch into harmony with the present by-laws of the Association, and a copy of these new rules having been sent to each member of the Branch with the notice convening the annual meeting, it was proposed by the PRESIDENT, seconded by Dr. BARR, and unanimously resolved:

That the proposed rules be the rules of this Branch in place of the existing rules.

Election of Officers.—The election of the following officers having been unanimously approved, the PRESIDENT declared that they were duly elected in accordance with the laws of the Association and the Branch. *President:* Mr. Alexander Hamilton, (Chester). *Vice-Presidents:* H. W. King, M.D. (Chester); R. Harris, M.B. (Southport). *Honorary Secretary:* T. Arthur Helme, M.D. (Manchester). *Representatives in the Council of the Association:* James Barr, M.D.; James Brassey Brierley, M.D.; T. Arthur Helme, M.D.; E. Rayner, M.D. *Members of Council:* Altrincham, C. J. Renshaw, M.D.; Ashton, S. Crawshaw, M.B.; Birkenhead, J. Lambert, M.D., H. Laird Pearson; Blackburn, M. Bannister, M.B., E. H. T. Nash; Blackpool, P. H. Day; Bolton, C. Macfie, M.D., A. Kershaw, M.D.; Burnley, J. M. Ferguson; Bury, J. B. Kerr, M.B.; Chester, H. W. King, M.B.; Leigh, B. Jones, M.D.; Liverpool (Bootle), W. J. Fleetwood, M.D.; Liverpool (Central), T. R. Bradshaw, M.D., F. H. Barendt, M.D.; Liverpool (Northern), E. T. Davies, M.D.; Liverpool (Southern), J. N. Cregeen; Liverpool (Western), K. Grossmann, M.D.; Manchester (Central), W. G. Booth, W. Milligan, M.D.; Manchester (North), G. H. Broadbent, W. F. Dearden; Manchester (Salford), D. Owen, F. Leyland Roe: Manchester (South), C. Glascott, M.D., E. Vipont Brown, M.D.; Manchester (West), S. Woodcock, M.D., J. Brassey Brierley, M.D.; Oldham, T. Fort, G. J. Robertson, M.B.; Preston, A. C. Rayner, M.D.; Rochdale, C. W. Thorp; St. Helens, T. E. Hayward, M.B.; Southport, R. Harris, M.B., L. C. Walker, M.D.; Stockport, A. Godson, M.B., E. Rayner, M.D.; Warrington, E. E. Bowden; Wigan, E. H. Monks.

Appointment of Auditors.—Dr. Thornley (Bolton) and Mr. Westmacott (Manchester) were appointed Auditors.

Vote of Thanks to Retiring President.—It was proposed by Dr. WOODCOCK (Manchester), seconded by Dr. R. HARRIS (Southport), and resolved with acclamation, that a very hearty vote of thanks be accorded to the retiring President for his conduct of the chair during the past twelve months.—Dr. HARRIS replied.

Vote of Thanks to Office-bearers.—It was proposed by Dr. DAY (Stalmine), seconded by Dr. MONKS (Wigan), and resolved, that a hearty vote of thanks be accorded to the office-bearers, members of Council, and Auditors.

Next Annual Meeting.—It was announced by the PRESIDENT that it had not been possible to make arrangements for the next annual meeting; but it was probable that an invitation

would be received from Blackburn. He suggested that the matter be left in the hands of the Council, and this was approved by the meeting.

Induction of New President.—Dr. A. C. E. HARRIS, the retiring President, then introduced his successor to the presidential chair, Mr. Alexander Hamilton, Surgeon to the General Infirmary, Chester, and in so doing thanked the members of the Branch for their kind assistance in the conduct of the business of the Association during the past year, and especially mentioned the great help he had received from the Honorary Secretary (Dr. T. Arthur Helme). In a few well-chosen words of advice, even of warning, he wished his successor a very successful year of office, and the Branch that it should become in the future still more useful and progressive in the best interests of the profession.

President's Address.—The PRESIDENT, who was received with much applause, after thanking the members for the honour conferred upon him, gave his introductory address upon Recent Professional Progress, giving many interesting reminiscences and calling especial attention to advances in surgery and sanitary science. At its conclusion it was proposed by Professor CARTER (Liverpool) seconded by Dr. S. CRAWSHAW (Ashton-under-Lyne), and resolved: "That a very hearty vote of thanks be given to the President for his address," to which the PRESIDENT replied.

Vote of Thanks to the Mayor and Corporation of Chester.—In proposing this vote of thanks the EX-PRESIDENT said he learned with pleasure that his resolution would be seconded by a gentleman who, in recognition of the work he had done on behalf of the Branch and the interest he always took in the affairs of the Branch, had received the honour of being elected one of the first two honorary members of the Branch. Dr. O'SULLIVAN (London) in seconding the vote gave expression to the warmth of his feelings towards his old Branch and the many friendships he had formed with its members. He assured the members that he valued highly the honour they had chosen to confer upon him, and said that his connexion with the Lancashire and Cheshire Branch would furnish him some of the most pleasurable reminiscences of his life. It was then put to the meeting and unanimously resolved:

That a very hearty vote of thanks be given to the Mayor and Corporation of Chester for the use of the Town Hall on the occasion of the annual meeting of the Branch.

Communications.—The following papers were then read: Mr. F. T. PAUL (Liverpool): Three cases of excision of the caecum for cancer (deferred from last meeting). Professor W. CARTER, M.D. (Liverpool): The present position of the treatment of tuberculosis. Mr. COLIN CAMPBELL (Southport): The intratracheal treatment of asthma. Professor CATON, M.D. (Liverpool): The preventive treatment of valvular disease.

Exhibits.—There was an exhibition of instruments, drugs, foods, medicinal and aërated waters, etc.

Excursions.—At 4 p.m. the meeting concluded and after tea, kindly provided by the Chester Medical Society in one of the committee rooms, thirty-five members enjoyed a most delightful sail on the river in a special steamer engaged by the Medical Society's returning in time for dinner or an early train home; others were conducted by Mr. Newstead, the Curator, over the Grosvenor Museum, and saw the unique collection of life-groups of birds, etc., as well as the old Roman inscriptions in the archaeological department; *en route* they visited the "Rows," the crypt in Watergate Street, and other objects of interest. At 5 p.m. a move was made to the Cathedral where Dr. Bridge (Mus. Doc.) gave a recital and charmed his audience with marches, fugues, etc., played with exquisite taste on the magnificent Cathedral organ. At 5.30 for nearly an hour the Archdeacon of Chester conducted the party round the Cathedral giving most interesting historical sketches of the building he evidently loves.

Dinner.—At 6.30 some forty members and friends sat down to dinner in the Council Chamber. Mr. HAMILTON occupied the chair, and was supported by his Worship the Mayor, the Archdeacon of Chester, the Rev. Pryce Davies, Rev. Father Chambers, and Dr. Bridge, who were the guests. After the usual loyal toasts had been duly given, "The Bishop, Clergy, and Ministers of all Denominations" was proposed by Professor CARTER and responded to by the ARCHDEACON OF CHESTER; "The Army, Navy, and Reserve Forces" was proposed by Dr. WOODCOCK and responded to by Mr. DAMER HARRISSON; "The Lancashire and Cheshire Branch" was proposed by Dr. BRIDGE and responded to by the PRESIDENT (Mr. Alex. Hamilton) and the HONORARY SECRETARY (Dr. T. Arthur Helme); "The Mayor and Corporation of the City of Chester" was proposed by the Rev. Father CHAMBERS and responded to by his Worship the MAYOR; "The Guests" was proposed by Dr. TAYLOR and responded to by Mr. WALMSLEY and the Rev. PRYCE DAVIES, who also proposed the President's health. Owing to the lavish hospitality and arrangements made by the President and local Committee, with the able assistance of the Local Secretary, Dr. King, a most enjoyable day was spent by all, and the thanks of the Branch are due to those gentlemen who provided so well for the comfort and enjoyment of the members.

ALTRINCHAM DIVISION.

THE first general meeting of this Division (being the first Divisional meeting in the Branch) was held on April 16th, when eight members were present. The strength of the Division is fifty-one. The meeting was addressed by Dr. HELME (Branch Secretary) and by Drs. C. J. RENSHAW and GARSTANG (members of the Branch Council).

Annual Meeting.—The annual meeting was held on May 28th, when nine members were present, and two apologies for absence were received.

Adoption of Rules.—The model rules were adopted with one or two verbal amendments.

Election of Officers.—The following officers were appointed: *Chairman*, Dr. C. J. Renshaw; *Vice-Chairman*, Dr. Joynson; *Honorary Secretary and Treasurer*, Dr. Garstang; *Committee*, Drs. Owen Jones, F. Cox, P. Cooper, Riley; *Representative on Branch Council*, Dr. C. J. Renshaw; *Representative at Annual Meeting*, Dr. Garstang.

Notices of Motion.—The notices of motion published in the BRITISH MEDICAL JOURNAL of April 25th, were considered. Drs. P. Cooper, MacLaren, and Riley were appointed a committee to consider the best means of obtaining the support and membership of all resident medical men.

METROPOLITAN COUNTIES BRANCH.

THE fifty-first annual general meeting of this Branch was held at the Hotel Cecil on June 30th, 1903, Mr. HOWARD MARSH, President, in the chair.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Financial Report.—The TREASURER, Mr. George Eastes, then read his report of the finances of the Branch, which showed that up to the commencement of the new Constitution the Branch was in a satisfactory financial condition, with a balance in hand available for emergencies. On the motion of Mr. MARSH, seconded by Dr. FRED. J. SMITH, the report was unanimously adopted.

Report of Council.—Mr. HOWARD MARSH then read the report of the Council of the Branch, which was as follows: The Council in presenting its annual report to the Branch recognizes that it does so under conditions very different to those which have hitherto obtained. By the reconstitution of the Association it has to welcome a large accession of members, the total now being 2,785. At the same time it feels that by the new rules in force it has lost many from its ranks who have taken a very active part in the Branch's work. The losses by death have not been numerous, but among them are Dr. J. W. Washbourn, Dr. Barry Blacker, Mr. Lennox Browne, Dr. Fenwick, Dr. Solomon Smith, and Dr. Wyman. Special reference must be made to the death of Dr. Washbourn, who was the Junior Secretary. He passed away two days after he was re elected to his office, and his early death is lamented by the Branch as well as in many other spheres of his work. To fill his post the Council elected for the remainder of the year Mr. George Rowell, who was such an invaluable help to the Branch during Dr. Washbourn's absence in South Africa. It is pleased to think that his selection has been confirmed by you, and he now becomes the Senior Secretary owing to the retirement of the present holder. Dr. Fred J. Smith now takes the post vacated by Mr. Rowell. Other radical changes now take place in the personnel of your Council. After eleven years' service Mr. George Eastes has resigned the office of Treasurer, and the Council feels that the Branch will heartily endorse its acknowledgement of the debt of gratitude to him for all the work so ungrudgingly given for the Branch's welfare. The task of reorganizing the Branch under the new Constitution of the Association has been mainly carried through by the untiring devotion of Mr. Betham Robinson, who now retires from the post of Senior Honorary Secretary after seven years' service, and the Council desires to express its hearty thanks to him for the most efficient manner in which his responsible duties have been

invariably performed, and rejoices that his connexion with the Council will be continued in the office of Treasurer. The Council during the past year has only had to summon a general meeting of the Branch on one occasion, namely, to consider new rules for governing the Branch. The Districts have been as active as heretofore, and now cease their work. In consequence of the large accession of new members, and to give as effective a representation as possible to the Branch in the representative meeting fifteen Divisions have been established, and practically all are already fully organized. It is hoped that before long the Weybridge and Watford Divisions will become so: the latter owing to insufficiency of members has had to combine for representative purposes with its neighbour the Ealing Division. On the motion of Dr. RADCLIFFE CROCKER, seconded by Dr. HERON, the report was unanimously adopted.

Representatives on Association Council.—Mr. MARSH then declared the result of the poll of the Branch for Representatives of the Branch on the Council of the Association. It showed that the following were elected: Sir Victor Horsley, H. B. Robinson, Andrew Clark, Radcliffe Crocker, George Eastes, G. A Heron.

Induction of New President.—Mr. MARSH then vacated the chair, and inducted Dr. KIALLMARK as the new President according to custom.

Votes of Thanks.—A vote of thanks to the retiring President was then proposed by Dr. FRED. J. SMITH, seconded by Dr. KIALLMARK, and carried by acclamation; Mr. MARSH acknowledged it.—Dr. EDRIDGE-GREEN proposed, and Dr. HENSLOWE WELLINGTON seconded, a vote of thanks to the retiring Vice-Presidents. This was also carried by acclamation. Dr. T. MORTON responded.—Dr. ST. CLAIR SHADWELL proposed a vote of thanks to the Secretaries of the old Districts, remarking that this was the last occasion on which such a vote could be proposed, as the old Districts would henceforth cease to exist.—This was seconded by Mr. H. B. ROBINSON, and carried by acclamation.—Dr. MORTON, the Secretary of the old East London District, acknowledged the vote.—Mr. ANDREW CLARK then proposed a vote of thanks to the retiring officers of the Council of the Branch, making especial reference to Mr. Eastes, who had been Treasurer for some eleven years, and to Mr. H. B. Robinson, who had been Secretary for five years and upwards, and who had both performed invaluable services to the Branch.—Dr. SIBLEY seconded the resolution, which was carried with enthusiasm, and responded to very feelingly by Mr. EASTES and Mr. ROBINSON.

PRESIDENT'S ADDRESS.

The PRESIDENT said: On taking this chair, my first duty—and it is an agreeable one—is to thank the members of the Branch for the high honour they have conferred upon me in electing me to preside over them for the coming year. It is a post which I feel myself, gentlemen, incapable of adequately filling, or of doing justice to. It is to be hoped that you have been well advised in doing so, but I must be permitted to doubt it. When I look back to the distinguished names that have preceded me in this chair, I am at a loss to know why I am here.

> Pretty in amber to observe the forms of hairs,
> Or straws, or dirt, or grubs or worms.
> The things we know are neither rich nor rare,
> But wonder how the devil they got there.—POPE.

I am at once confronted with the first of my difficulties. It is customary for your President on taking this chair to address you on some topic, or topics appertaining to our profession or our Association, and the task of placing before you any remarks or opinions which are worthy of your acceptance is indeed a serious one for me. The eloquent words and wise reflections of my predecessor still ring in my ears, and it will be, I fear, but a descent from the sublime to the ridiculous when you are inflicted with my bald and feeble ideas. I console myself somewhat in the fact that I am not reading a paper before one of our societies, and that there will be no discussion afterwards.

I am in the happy position of the reverend gentleman in the pulpit who may propound any amount of untenable statements and any number of contradictions. There is no one to contradict him, and no retribution awaits him, unless, for his sins, his sermon is published.

For the present:

> I am Sir Oracle,
> And when I ope my lips let no dog bark!
> *Merchant of Venice.*

Since the last annual meeting of the Branch, many important national and professional events have occurred which it would ill become me to pass by without a word of notice, however well known and well considered they may have been by you all.

First, in order and gravity, is the King's sudden and serious illness on the very eve of his coronation. A profound feeling of dismay and sorrow was aroused, not only in this country, but in all the various portions of the Empire, and in foreign lands also.

His Majesty's rapid and complete recovery from the very "jaws of death" was due to the skill and care of his medical and surgical attendants, as he has himself more than once acknowledged. All members of this Branch I believe, gentlemen, we can fairly and without undue boasting, affirm that this great historic event has placed British surgery at the very summit of professional reputation. There is no need to mention names—they are all in our minds and in our hearts and will "live in story" for years to come, and while we rejoice at the perfect recovery that the King made from this grave state of matters, we must also note the gratifying fact that his health has been so thoroughly re-established as to enable him to undertake great duties of State and physical exertions which would tax the powers of an average man in his sixty-second year.

The conclusion of peace and the return of most of our troops from their arduous three years' campaign permits of a dispassionate and less-heated view of the occurrences of that prolonged struggle. Especially, I would venture to assert, has the time come for doing justice to the Army Medical Department in all its branches; we remember that at one time hard things were said of the army doctors, and much was laid at their door which was due to the necessary consequences of war on a large scale, and a campaign conducted over a huge extent of country. The parliamentary critic, who knows not of the difficulties of treating and managing the sick and wounded in a great war, expects and demands that all should be in order in field and base hospitals, as if they were one of our great metropolitan institutions. It was the same years ago in the last big war we had—the Crimean—though then I grant you there was room for complaint; but commissions and inquiries in those times even showed that the department did its utmost with the very inadequate means at its disposal. Of that war I had some personal experience during a period of about fifteen months.

The public mind was much concerned during the South African war at the large loss of life that seemed to be continually going on, and, "public like," thought some one had blundered and ought to be hanged who more deserving of it than the doctors?

Let us consider a few figures in these two wars, and draw some conclusions therefrom.

In the pages of Kinglake's *History of the Crimean War*, a work which, as far as my personal acquaintance with the events recorded and the country described, is absolutely accurate, impartial, and judicial, we read that "during a period of seven months from October 10th, 1854, to the end of April, 1855, out of an average strength of only 28,939, there perished in our hospitals or on board invalid transports 11,652 men, of whom 10,053 died from sickness alone; and of the maladies causing all this mortality the proportion which ranges under the head of 'zymotic' was transcendantly great, so great indeed that Science in some of her moods has computed it at nine-tenths." (Vol. vi, p. 215.)

In another account, as recorded by Colonel Robert Holden in his history of the Worcestershire Regiment, and its doings in that war, I find that the number killed in action or who died of wounds from the date of embarkation in 1854 to April 30th, 1856, was 4,579. The number who died of disease was 16,037, out of an average strength of 28,000. Total casualties, 20,616.

It must be remembered that in that campaign we had to deal with cholera, both at the commencement in 1854 and during the summer of 1855—cholera of a very virulent type. Our hospitals at the front and in Balaklava were full of it. Sanitation was of such an inferior description according to present ideas that I can only wonder why it ever ceased. Dysentery again was exceedingly rife and very fatal. Typhoid, so far as my experience went, was more frequent at Scutari and the base hospitals than before Sebastopol. During the summer of 1855 there was a form of continued fever of an indeterminate nature, more like the synocha of Cullen, which for want of a better name we called "Crimean fever." It tended to get well in three weeks, and was not very fatal, nor

did it leave any sequelae behind it. I had it myself rather badly. The late John Nethen Radcliffe, who was a colleague of mine, read a paper on it before the Epidemiological Society. Curiously enough, I find in the report of the Yeomanry Hospital at Dielfontein, drawn up by our lamented and much regretted late Secretary, Dr. Washbourn, whose death we must ever deplore as a loss to science and our profession, that there were a certain number of cases classed as simple continued fever, a term which was a provisional or working hypothesis rather than a settled diagnosis, and was found convenient.

By far the greater number of these cases proved to be enteric of a mild type, a small number were instances of influenza, a few malaria, some possibly Malta fever, and one at least scarlatina, but when due allowance was made for all these possibilities there still remained a small number of cases for which simple continued fever is the best designation. In the Edinburgh Hospital of 38 admissions, 10 could only be regarded as simple continued fever. So it was no doubt with us in the Crimea.

Typhoid was of course exceedingly fatal and prevalent at the base, and during the earlier months of 1855 continued fever of irregular remittent type was a frequent cause of sickness, and this became contagious in February and acquired the character of the "remittent typhus of camps." It subsided in April, and was followed by the mild form I have referred to. It was currently reported in the Crimea that in the winter of 1855-6 the French lost 20,000 men at Scutari from the disease. Dr. Baudeus[1] reported that in February, 1856, at Constantinople there were 20,088 cases, of which 2,527 died. A large number of cases were classified as diarrhoea; no doubt many of them were enteric or due to a scorbutic state of the blood.

Again, we had to deal with a disease which, though not often fatal, rendered men unfit for duty—namely, scurvy, which seems to have been entirely absent in the South African war. To show its prevalence I again quote from Kinglake:

"Within the whole period of twenty months from November, 1854, to June, 1856, the ambulances of the French and four out of all their twenty-three hospitals received patients afflicted with scurvy to the number of 23,250."

It is difficult to realize the ravages that this disease made amongst the troops. Unless I had seen it and treated a very large number of cases, I could not have credited what its effects were; nothing in our books gave any adequate idea of the ghastly results, and yet under treatment in hospital, with fresh food and plenty of potash, they made wonderful recoveries—without any teeth, of course.[2]

Another frequent cause of invaliding was frost-bite—again entirely absent in South Africa. As an instance of its prevalence Kingslake states that General Bosquet reported to Lord Raglan that on the night of January 12th, 1855, 139 men of his force were incapacitated by frost-bite and rendered useless for the rest of the campaign (vol. vi, appendix 13).

It must be borne in mind, too, that the demands made upon the strength and endurance of our men were quite unprecedented. Five nights out of six in the trenches was the average for some weeks, even months. The French had one night out of two for rest, owing to their larger numbers.

Gunshot Wounds.—The gunshot injuries that we had to treat were inflicted by either the old round ounce bullet or the Minié, the first of the conical bullets to be used in warfare. The impact of this weight of metal, fired with a large charge of powder, and, as a rule, at not more than 200 or 300 yards range brought a man to the ground at once; the shock was considerable, the smashing of bones and laceration of tissues very extensive; penetrating wounds of the thorax or abdomen were almost always fatal, and a compound fracture of the limb spelt amputation—suppuration invariably followed, with all the dangers of purulent infection. On the other hand, in the late war the small tobacco-pipe bullet of the Mauser or Lee-Metford, weighing only 215 gr. (less than half ounce) could go through a man, even through a vital organ, and he would still stand up.

"The smallness of the calibre increases the velocity, and thence its destructive power, but this is compensated for by the character of the modern bullet: the smallness of its tip limits its destructive area, the density of the mantle prevents its setting up, its lightness diminishes its stopping power, its high velocity and penetrating power prevent its lodgement in the body, also its carrying in particles of clothing, the latter a very frequent result of the old bullet.—Raymond Johnson and Ballance, Yeomanry Hospital Report."

To sum up, the wound is small and clean, quickly scabs over, runs an aseptic course, and heals rapidly without pain. (There is, as a rule, little pain.) The lodgement of the bullet is rare. It takes a direct course and is rarely deflected. No wonder that the results of the treatment of gunshot injuries nowadays are so immeasurably superior to ours in '55.

Now compare this state of things, such as obtained in a large campaign fifty years ago, and was but a specimen of all its predecessors during the past century, with what occurred South Africa.

I now quote from the Commander-in-Chief's address to the St. George's Hospital students, October 31st, 1902: "Our troops were in the field for two and a-half years, and from first to last we sent nearly 400,000 men, and had for a long period an average of nearly 250,000 men under arms. The total deaths from sickness up to May 31st, 1902, were in round numbers 13,750, and the number invalided 66,500; of these invalids only 500 died, including the 13,750 already mentioned, 5,879 have been discharged as unfit, about 950 were still in hospital (October, 1902), and the rest have returned to duty." That is to say, that in an average strength of 250,000 men during a period of two and a half years the casualties were only two-thirds of those in the Crimea in an average strength of 30,000, and in about twenty months. Surely in this very striking contrast, there is much to be thankful for to medical and surgical science, and to the skill and devotion of the Army Medical Department, civil as well as military.

Of the above cases of sickness the greater number were due to enteric, and this disease will probably in future campaigns be the most frequent in our hospitals and ambulances. It is, I believe, a fact that enteric has been endemic in South Africa for many years past. A brother officer of mine who served there more than ten years ago assured me it was a well-recognized fact, which would add considerably to the difficulties of successfully dealing with it. The mortality was not high. In the Yeomanry Hospital at Dielfontein (the reports of the Army Medical Department are not yet published) it is returned at 13.7, whereas the Asylums Board Hospitals at home acknowledge a mortality of 14.09. Dr. Osler puts it in the Montreal Hospital at 11.2, and the Edinburgh Hospital in South Africa at only 10.7, which is a satisfactory result. The endeavours that have been made, and continue to be made, to cope with this scourge, have not been attended with equally satisfactory results. Inoculation with typhoid antitoxin was unreliable, and more or less a failure; indeed, the School of Research in connexion with the Army Medical School at Netley Hospital has been given up. Many cases have come to my knowledge of the failure of inoculation to protect, and some where the consequences were decidedly unsatisfactory. An officer in my regiment was inoculated during the voyage out, was very ill from it until his arrival at Capetown when he was sent into hospital, and after three months' stay was invalided home, not having done a day's duty out there. Of course this is quite exceptional.

It seems to me that the system advocated by Dr. Canney, of Cairo, at our meeting last year, of supplying the troops in the field with sterilized water by means of a "water train," similar to an ammunition train, affords the best hope of preventing its outbreak.

The facility with which this distinguished member of the zymotic family of disease can be spread far and wide has been shown in a striking and grave manner by the outbreak on board the training ship *Cornwall* arising from hospital blankets sold out of the service months before in South Africa. It is a sad object lesson for all in authority. It is as easily conveyed and propagated as scarlet fever, and the same care and watchfulness are called for to prevent its spread.

In addressing us last year, our President gave a graphic and striking account of the progress of medicine and surgery during the last twenty years. To one who, like myself, commenced his professional studies more than half a century ago, the changes and improvements border upon the marvellous.

In 1851 chloroform had been but recently discovered, and was not universally given. I have seen many serious operations performed without its aid. Every case of operation had

[1] He calls this fever typhus; it was exceedingly contagious, though it showed no maculae. Enteric symptoms were often added. *Medical and Surgical History of the British Army in the Crimea*, vol. ii, 147.

[2] Les troupes Ottomans, campés à Eupatoria, envoyaient chaque mois à Varna un millier de scorbutiques, les plus gravement atteints; un court séjour dans un lieu ou abondaient les légumes frais, rétablissait leur santé. Baudeus, loc cit., p. 178.

to run the gauntlet of erysipelas, pyaemia, or hospital gangrene. The daily examination of the wound or injury was attended with the dread of seeing the patch of grey slough on some portion of the exposed surface, which meant gangrene; or the severe rigors and sweats that denoted pyaemia. Erysipelas, too, like the poor, was always with us. Hospital sanitation was an unknown science, and the nursing of the "Gamp" type. In private practice, too, the difficulties and dangers were of a like nature, though not so pronounced in hospital. There was no ophthalmoscope to aid the eye surgeon, or laryngoscope for the throat.

Antiseptics were unknown, and the microbe still in the womb of time. Bleeding was still practised, and with great advantage. Who bleeds now or knows how to do it?

Abdominal surgery was of course a *terra incognita*. The fetish of the peritoneum, with its "*noli me tangere*," was a leading principle in surgical practice. The ovariotomist was regarded as guilty of manslaughter many years after the time I am speaking of. But nowadays I see this sacred tissue treated with the greatest contempt; it is washed, cleaned, scraped, ligatured, and cut out as if it was so much cuticle.

In the medical wards the clinical thermometer had been just introduced. When clinical clerk to Dr. Parkes, I had to take temperatures with a weapon about a foot long, which had to be watched for a quarter of an hour, as the register had not been discovered. The stethoscope was well established (though not yet thoroughly understood), physiological chemistry was in its infancy, the microscope not the daily and hourly necessity it now is. There was no sphygmograph to accurately measure blood pressure and arterial tension. And yet our forbears made few mistakes. Their skill and knowledge may have been empirical and somewhat rule of thumb, but they relied upon their own personal experience and observation, and not upon mechanical assistance. Their knowledge of the pulse and all it has to tell gave them the key to many problems, whilst in their drug treatment they were our superiors (the art of prescribing is now almost a lost one), notwithstanding the absence of serum treatment, and many remedies which are now looked upon as indispensable, such as the bromides, salicylates, chloral, *et hoc genus omne*.

In other respects are there other other changes worth noting? Apprenticeship or pupilage was then the recognized way of entrance to the profession. I cannot but regret their abolition for some reasons. On leaving school at 16 or 17, the neophyte at once began a practical acquaintance with the business of his future profession. Under the direction of his master he learnt some anatomy; most likely he was directed to study Celsus, Gregory's Conspectus, and Hooper's Dictionary. He did some dispensing, had the handling of drugs, making of infusions, and acquired a practical acquaintance with the armamentarium of his future work. He learnt how to bleed, to cup—a lost art now—possibly assisted at minor operations, learnt how to keep books and to conduct the business part of a general practice. He insensibly acquired much knowledge and skill which was of infinite service when he had been through his three years of hospital practice and lectures and taken his qualifications. He was at once then ready to practise and earn his living. The high training and scientific methods of the present day were not for him, perhaps, but he became a useful and skillful practitioner, essentially the "handy man," who was ready at the shortest notice to amputate a thigh, crush a stone, or put on the forceps.

The enormous advantages of the present system of advanced professional education should make of the student of to-day a better and more successful exponent of our art. Possibly education is somewhat overdone, too many examinations are required, whilst the evidence of good general knowledge and culture do not receive sufficient attention. Our entrance examinations, such as those of the Conjoint Board and University of London Matriculation are being rather lowered in standard. Greek is now a voluntary subject, even Latin, by the latest regulations of the University of London, may be omitted. I must think that a knowledge of these two languages, dead though they may be, is essential to any one who reads and studies the professional works ancient and modern that bear upon our science, and this is especially the case as regards Greek.[3] I came across an instance in the address of the President of one of our Branches which to my mind points out its necessity: "Nor could help be expected from the microscopists, who had already run amuck among imaginary 'coccidia, normal or pathological cells, undergoing karyokinesis, or pseudopodiferous amoebiform leucocytes engaged in diapedesis or in patriotic phagocytosis."[4] Without a certain acquaintance with Greek roots, or a dictionary always at hand, it is difficult for the ordinary individual to translate this.

At the time I am referring to there was more work for the ordinary medical man; he was always busy, and possibly made money. His social status, I grant, was not so good as it is now, but there was not much to complain of. His life was laborious but had its recompense. He strove hard, as I believe we all have done and continue to do, to fulfil Bacon's maxim—"I hold every man a debtor to his profession; from the which as men of course do seek to receive countenance and profit so ought they of duty to endeavour themselves by way of amends to be a help and ornament thereto."

Recently there have been amongst us, at least in London, complaints that there is nothing doing. No one seems busy in the old way, and these bemoanings come from all classes and all ages of practitioners. We must recognize it, I fear, as a sad fact! Why is this? I believe it comes from various causes.

1. Improvement in the health of the community, due to our strenuous advocacy of prevention of disease, sanitation and general hygiene.
2. To overcrowding of the profession (there are too many of us).
3. To the abuse of hospitals.
4. To the rise of specialism.

1. *Improvement of Health of the Community.*—This is undoubted. In 1851 the death-rate in England and Wales, according to the Registrar-General, was 21.99 per 1,000. In 1902 it was 18.2, and in the last few weeks 13.0 per 1,000 in London, and slightly more in the seventy large towns, whilst the number of medical men to 1,000 deaths has been as steadily increasing. The decrease in the death-rate during these fifty years has been steady and regular, almost without a check. Of course, death-rate need not give a true index of the state of health of the inhabitants, but when death has occurred, sickness must have preceded except in cases of accident. Of these 13.0 per 1,000 deaths (June 15th) a large number are due to zymotic diseases, which we are gradually and steadily overcoming, or ought to. Diseases of respiratory organs are a diminishing number also, and we hope to conquer tuberculosis very soon, and cancer in the distant future. What remains? Old age and accidents.

The fatal epidemics of former times—typhus, small-pox, plague, diphtheria, and enteric—have been banished more or less, and there is only left influenza, which is not to be compared after all to those I have mentioned, and is, moreover, very uncertain in its occurrence, and may be absent for many years consecutively.

Of course we do not want people to die, they are not of of much use to us if they do. In my young days I was told that at the beginning of last century, the doctor's toast given at all professional gatherings was "Live and Linger"—not a bad one either.

The effect of this lessened sickness upon the occupation of medical men has been worked out by Dr. W. Gordon in an excellent paper in the BRITISH MEDICAL JOURNAL of May 16th, 1903, and he concludes that it means a diminution of something more than a fourth in the income of every medical man from 1880 to 1900.

2. *Overcrowding.*—According to the census of 1851, the time to which my memory goes back, in a population of 21,185,000 in England and Wales, the proportion of medical men per 100,000 inhabitants was 420, or 1 to 2 381 about. By the census of 1901 just published, in a total of 32,527,843 inhabitants there are reckoned 22,678 medical men and women which denotes a proportion of 1 medical practitioner to 1,478 persons, a difference of about a third. This increased number of practitioners, in addition to the diminished call for their services, will account for much of our dissatisfaction.

3. *Abuse of Hospitals.*—This is a matter which has been so freely ventilated and so many panacea have been proposed and tried to little avail, that I prefer to leave it undiscussed though claiming that it is a factor of some force in the view I am taking. And, as bearing on this question, I would refer to a report which has been issued by the Sunday Hospital Fund a very short time back on the amount of work done in our metropolitan hospitals, and with a view of urging their claims on the community more forcibly. It says:

"The total number of hospital patients in London

[3] In Germany and America the classics are still considered the true basis of education to fit a man for his work in life, whatever it may be. *Oxford at the Cross Roads*, by Professor Percy Gardner, pp. 67 to 68.

[4] Dr. Brand, BRITISH MEDICAL JOURNAL, July 26th, 1902.

compared to population a few years ago was as one to four; during 1902 the numbers so increased that the proportion is now one patient to every two inhabitants. The actual number of patients, including fever cases, treated in the hospitals of London in the last year for which figures are available was 2,098,903."

These figures are so remarkable that had they not been published with authority I must have doubted their accuracy. I feel sure there is some fallacy here. We know that figures may be made to prove anything, but I am not sufficiently skilled in the manipulation of statistics to show where it is. If this proportion continues for a few more years every inhabitant of London will be a hospital patient, and then where will the ordinary general practitioner come in?

This is a matter which might well meet with attention from our Association. We have a Medical Charities Committee, of which I am a member, and which does its best to confine the benefits of hospital treatment to proper objects, but I fear we do not do much good.

4. *Specialism.*—I fear I am now venturing on delicate ground in such an assembly as this, but pray understand that my objection is to the idea entertained by the public generally that diseases of various organs are entities to be exorcised only by some one particular authority or individual. We all are aware that success in practice is attained only by treating the whole economy and system—that the individual must be put in order before the disease, whatever it may be, can be cured. Amongst the great names of our calling I maintain there are no specialists—not so the public. Every day we read in the paper of the illness of some distinguished or well-known person; the usual note is nowadays always added: "A specialist has been sent for." Why not a consulting physician or surgeon?

Very frequently, as being one of those in the sere and yellow leaf of practice, I am asked for the name of the best "specialist" for some disease supposed to be the matter with the patient. My answer always is that, next to myself, I could recommend eight or ten physicians or surgeons, all equally good but not specialists. As a result the usual adviser is not consulted, and the case is possibly lost to him. But you will naturally remark, granted the reality and cogency of what you say, how do you suggest it should be remedied?

I can only recommend that entrance into the profession should be made more difficult—by examinations—giving a better test of general fitness and culture than now obtains. The professional examinations are difficult and numerous enough in all conscience, but I regret to find that a boy of 16 can register as a medical student at the General Medical Council, on producing a certificate of a pass examination which is not nearly so searching and stringent as it was fifty years back. I am thinking mostly of the University of London Matriculation, which by its latest regulations has made Latin a non-compulsory subject. Greek, of course, is deposed in place of a modern language. I cannot but think this is a retrograde step, and even last year the rejections at these entrance examinations were over 50 per cent. What sort of raw material could those candidates have been? And again the first examination, including biology, chemistry, and physics held by the Conjoint Board and Society of Apothecaries has been adversely reported on by the Inspectors appointed by the General Medical Council, and there the rejections have been very numerous. Clearly we are not getting the best material to enter our profession.

Seeing that our young men who enter our profession at the present time will find a considerable amount of competition in civil practice, I would urge more of them to join the two public services, the navy and the army—their position is now very different to what it was in my time both as regards pay, rank, and consideration; opportunities are now afforded them to keep in touch with the latest advances in our science and art—our naval and military hospitals are excellent schools both in practice and theory—opportunities are afforded them of making acquaintance with foreign countries and the diseases peculiar to other climes than ours. The work that has been done and is continually going on in the investigation of tropical diseases—malaria, leprosy, sleeping sickness, cholera, and plague—is evidence enough of the openings there are for energetic, intelligent men in our services. That reward attends their efforts has been well shown by the distinction achieved by Major Ross, R.A.M.C., in gaining the Nobel Prize of £8,000—a great honour to him and to British medical science.

Association New Scheme.—Emanating from the last annual general meeting of the Association at Manchester, a reform of our Constitution, almost amounting to a revolution, has been inaugurated, and will be in working order by the time of the Swansea meeting. The whole scheme was foreshadowed by Sir Stephen Mackenzie in his presidential address to the Branch on June 25th, 1901. The leading principles that have guided the Organizing Committee in recommending changes of a far-reaching nature, seem to me to be an attempt to centralize the voting power and influence of our 18,000 members in the annual meeting, and by abolishing the unattached members, to induce all of us to take a more direct and active interest in the working of our great Society. The establishment of the Division as the unit which is to send a representative or delegate to a new body called the representative meeting gives every individual member an opportunity of expressing and enforcing his opinion on the great questions affecting the profession. The functions of this new body, as distinguished from those of the Council of the Association, are well known to you all. To use a homely simile, I would compare the Association to a piece of clockwork, of which the mainspring and source of power is to be the representative meeting, whilst the Council will play the part of the balance to regulate and co-ordinate the force and movement of the mainspring. It remains to be seen how the two bodies will work together without undue friction, which is, as we know, the great obstacle to smooth and efficient work. Many members were doubtful as to the success of the policy of doing away with the unattached members, fearing that a large loss in numbers would ensue, and thereby a diminution in income. Thanks to the courtesy of Mr. Elliston, our General Secretary, I am able to reassure those members on this point.

The total number of members at the Manchester meeting was 18,758. On January 1st, 1903, it was 18,189, an apparent loss of nearly 600 members. During 1901, there were 344 resignations and 252 deaths; during 1902 there were 603 resignations and 228 deaths, and this year 1903 up to date, 269 resignations and 101 deaths, whilst the new members number 764. Evidently the resignations since this time last year have been above the average, but this loss has been almost entirely covered by the number of fresh members joining since the new régime. There is then no cause for anxiety on this head. Already there is work being sketched out for the new body. Several Branches, as well as the Council have given notice of motions for discussion by the annual representative meeting at Swansea. There is then a great future opening out for our Association, which if we will only all pull together must lead to a great advance in the progress of medical and surgical science, and to the status and interest of our whole body politic: "United we stand, divided we fall." (Morris).

In conclusion, gentlemen, I have to thank you for your kindness and patience in listening to my remarks. You will, no doubt, and with justice, apply to me the words of our old friend Horace, "Difficilis, querulus, laudator temporis acti." But this is the last and only opportunity I shall have of relieving what I am pleased to call my mind of thoughts and ideas which have accumulated during a somewhat protracted professional life. The time must soon come, if it has not done so already, to drop the curtain.

Superfluous lags the veteran on the stage.—(JOHNSON.)

But when it does come, as it must to all of us, I shall be able to look back upon having been a humble and devoted member of the noblest profession it is in the power of man to conceive.

Dr. RADCLIFFE CROCKER proposed, and Dr. G. A. HERON seconded, a vote of thanks to the President for his address.

New Officers.—At the meeting the following officers of the Branch, in addition to the President and members of Council, came into office, namely:—*President-Elect:* Dr. H. Radcliffe Crocker. *Vice-Presidents:* Howard Marsh, Sir Stephen Mackenzie, George Eastes, St. Clair Shadwell. *Treasurer:* H. B. Robinson. *Secretaries:* George Rowell and Fred. J. Smith.

Dinner.—On the conclusion of the business the members and visitors, to the number of about sixty, sat down to dinner. After the usual loyal toasts had been honoured, "The British Medical Association," "The Metropolitan Counties Branch," and "The Visitors" were proposed and responded to.

KENSINGTON DIVISION.

WE are asked by the Honorary Secretary, Dr. G. Crawford Thomson, to state that the name of A. J. R. Oxley, M.D., should be added to the list of members of the Executive Council, as published in the SUPPLEMENT of the BRITISH MEDICAL JOURNAL of June 20th, page ci.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY JULY 18TH, 1903.

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ASSOCIATION INTELLIGENCE.

PROCEEDINGS OF COUNCIL.

At a meeting of the Council held in the Council Room of the Association, 429, Strand, W.C., on Wednesday, July 8th, 1903.

Present:

Mr. ANDREW CLARK, Chairman of the Council, in the Chair.
Mr. WALTER WHITEHEAD, President.
Dr. G. BAGOT FERGUSON, M. Ch., Oxon., F.R.C.S., Cheltenham.
Dr. T. DRYSLWYN GRIFFITHS, President-elect.
Dr. E. MARKHAM SKERRITT, Treasurer.

Dr. EDGAR G. BARNES, Eye.
Dr. HENRY BARNES, LL.D., Carlisle.
Dr. JAMES BARR, Liverpool.
Dr. MICHAEL BEVERLEY, Norwich.
Dr. J. BRASSEY BRIERLEY, Old Trafford.
Dr. LANGLEY BROWNE, West Bromwich.
Dr. R. C. BUIST, Dundee.
Mr. COLIN CAMPBELL, Southport.
Mr. JAMES CANTLIE (Hong Kong Branch), London.
Dr. EDWARD J. CAVE, Bath.
Mr. T. H. CHEATLE, Burford.
Mr. J. WARD COUSINS, F.R.C.S., Portsmouth.
Dr. JAMES CRAIG, Dublin.
Dr. H. RADCLIFFE CROCKER, London.
Dr. GEORGE W. CROWE, Worcester.
Dr. P. MAURY DEAS, Exeter.
Brig.-Surg.-Lt.-Col. E. F. DRAKE-BROCKMAN (South Indian and Madras Branch), London.
Dr. W. DYSON, Sheffield.
Mr. GEORGE EASTES, M.B., London.
Dr. WILLIAM A. ELLISTON, Ipswich.
Professor DAVID W. FINLAY, M.D., LL.D., Aberdeen.
Dr. EDWARD LAWRENCE FOX, Plymouth.
Dr. JOHN H. GALTON, Upper Norwood.
Dr. ALFRED GODSON, Cheadle.
Dr. BRUCE GOFF, Bothwell.
Dr. DAVID GOYDER, Bradford.
Dr. MAJOR GREENWOOD, London.
Dr. JOSEPH GROVES, Carisbrooke.
Dr. W. M. HARMAN, Winchester.
Mr. W. F. HASLAM, Edgbaston.
Dr. T. ARTHUR HELME, Manchester.
Dr. C. HOLMAN, London.
Sir VICTOR HORSLEY, F.R.S., London.
Mr. EVAN JONES, Aberdare.
Mr. R. H. KINSEY, Bedford.
Dr. W. A. MACKINTOSH, Stirling.
Dr. C. H. MILBURN, Hull.
Dr. C. G. D. MORIER, London (Adelaide Branch).
Mr. W. JONES MORRIS, Portmadoc.
Dr. JAMES MURPHY, Sunderland.
Dr. JAMES MURRAY, Inverness.
Mr. C. H. WATTS PARKINSON, Wimborne Minster.
Dr. FRANK M. POPE, Leicester.
Dr. A. BROWN RITCHIE, Hulme
Professor ROBERT SAUNDBY, M.D., LL.D., Birmingham
Dr. ALFRED SHEEN, Cardiff.
Dr. G. E. SHUTTLEWORTH, Richmond Hill
Dr. R. SOMERVILLE, Galashiels.
Mr. W. D. SPANTON, Hanley.
Dr. HENRY STEAR, Saffron Walden.
Dr. ROBERT STIRLING, Perth
Dr. JOHN ROBERTS THOMSON, Bournemouth.
Mr. C. S. TOMES, F.R.S., London.
Mr. T. JENNER VERRALL, Brighton.
Dr. NORMAN WALKER, Edinburgh
Dr. W. L. WINTERBOTHAM, Bridgwater.
Dr. S. WOODCOCK, Old Trafford

The minutes of the last meeting having been printed and circulated, and no objection received, were taken as read and signed as correct.

Read letters of apology for non-attendance from Sir W. T. Gairdner, Sir G. H. Philipson, Dr. R. W. Batten, Dr. A. Cox, Dr. R. Maclaren, Dr. T. B. Moriarty, Surgeon-General T. F. O'Dwyer, Dr. W. J. Tyson, and Mr. R. W. O. Withers.

The Chairman of Council reported that H.R.H. the Prince of Wales had graciously consented to become an Honorary Member of the British Medical Association.

Resolved: That it be recommended to the annual general meeting that H.R.H. the Prince of Wales be elected an Honorary Member of the British Medical Association not only for the honour his membership will confer on the Association, but for the distinguished services His Royal Highnesshas rendered to the medical profession.

The report of delegate appointed to attend the International Medical Congress held at Madrid was read and ordered to be entered on the minutes.

Read acknowledgement from the Viceroy and Governor-General of India to a minute, pointing out that medicine and sanitary science were not directly represented on the Council of the Viceroy of India or Lieutenant-Governor of Burmah. His Excellency refers to Rule III of the regulations for the nomination of additional members of the Council of the Governor-General of India published with the notification of the Government of India in the Legislative Department, Simla, No. 19, dated June 23rd, 1893, and states that it would not be possible, consistently with due regard to the multifarious interests concerned, to give a permanent place in the Council to a representative of any individual science as such.

A copy of the correspondence referred to was ordered to be forwarded to the Honorary Secretary of the Burmah Branch.

The Chairman of Council reported the following reply from the Privy Council in reference to a minute suggesting that His Majesty's Government should be officially represented at any similar Congress to that of the Egyptian Medical Congress.

[92,677.] The Clerk of the Council,
Privy Council Office,
London, S.W.
May 22nd, 1903.

Sir,—I have to acknowledge the receipt of your letter of the 21st instant, and to state that no invitation was addressed to His Majesty's Government to be represented officially at the Egyptian Medical Congress held at Cairo in December last.

I am, Sir,
Your obedient servant,
A. W. FITZROY.

The General Secretary,
British Medical Association,
429, Strand, W.C.

The Chairman of Council reported that in accordance with a minute of Council he had communicated with the General Medical Council, and had learned that the reply of the Education Committee of the General Medical Council dated November 28th, 1902, to the deputation of this Association might be considered as the reply of the General Medical Council.

Resolved: That the minutes of the Public Health Committee of June 10th and July 7th be received.

Resolved: That in the opinion of this Council it is important that the six resolutions passed and approved by the Council on January 21st and February 25th should be forthwith circulated to the Divisions with a view to members of Divisions of the British Medical Association making representations to the members of Parliament in their districts so as to assure improved vaccination legislation at an early date.

The Local Government Board having expressed the opinion that a *locum tenens* could not act for a public vaccinator during his absence when a duly-appointed deputy was able and willing to serve, it was

Resolved: That in the opinion of the Council, having regard to the agreement into which the public vaccinator entered with the guardians, the decision from the Local Government Board is a reasonable one, and further, the Council is of opinion that it is not desirable that any steps should be taken to alter the law in this particular direction.

Resolved: That the Council do again approach Mr. Long urging him to receive a deputation on the vaccination question on the lines set out in the resolutions already forwarded to him on March 7th last.

Read acknowledgement from the Board of Education to Minute 226 regarding the withdrawal by the Board of Education of Article 101* from the recently-issued Provisional Code, which was ordered to be entered on the minutes.

Resolved: That the minutes of the Colonial Committee of July 7th, and its Subcommittee of May 11th, be received.

Resolved: That the minutes of the Premises and Library Committee of July 7th, be received.

Resolved: That in continuation of a minute the Council adopts the full scheme as prepared by the architect for the rebuilding of the premises in Agar Street, subject to such modifications as the Council may find to be necessary.

Resolved: That the minutes of the Royal Naval and Military Committee of May 15th and July 7th, be received.

Resolved: That owing to the statement of the First Lord of the Admiralty explanatory of the Navy Estimates 1903-4, Part II, that the question of the accommodation, transport, etc., of the wounded in action on board ship was under the consideration of the Admiralty, the Council take no step at present in relation to the resolution on this subject passed in the Navy, Army, and Ambulance Section at Manchester.

Resolved: That in consequence of the difficulty experienced by most Volunteer medical officers to spare time to attend the School of Instruction at Aldershot for a month, it is desirable that some further facilities be given by the Government for these gentlemen to acquire the necessary knowledge to obtain the certificate of proficiency required by the Regulations, as, for example, the establishing of classes at different centres, and by the shortening of the course of instruction at Aldershot to a fortnight.

Resolved: That a copy of the foregoing resolution be forwarded to His Majesty's Secretary of State for War.

Resolved: That representations having been made to this Council, it is of opinion that it is desirable at the earliest possible date to consider the conditions obtaining in the Indian Medical Service, and to take steps to try and improve them.

Resolved: That the minutes of the Journal and Finance Committee be received.

Resolved: That the suggestion of the Editor as to the appointment of Mr. Guy Stephen as Sub-editor be approved.

Resolved: That the accounts for the quarter ending June 30th last, amounting to £9,271 12s. 7d., be received and approved, and it be recommended that the Treasurer be empowered to pay those remaining unpaid, amounting to £2,831 12s. 10d.

Resolved: That the Auditors' Report be received and approved and entered on the minutes.

Resolved: That the minutes of the Organization Committee of May 12th and June 9th, be received.

Resolved: That the West Somerset Branch be grouped with the Dorset and West Hants Branch for the election of a member of Council.

Resolved: That the Aberdeen Branch be accorded separate representation, because there appears to be no other Branch with which it can conveniently be grouped.

Resolved: That Stourbridge be included in the Dudley Division, in accordance with local wishes, instead of in the Bromsgrove Division as previously stated.

Resolved: That the Organizing Secretary be instructed to collect data bearing on the question of the expenditure necessary for the efficient working of Divisions, and prepare a report on the subject.

Resolved: That the Cambridge and Huntingdon and the East York and North Lincoln Branches be grouped together for this year for the election of a member of Council.

Resolved: That the Lincoln Division, having over fifty members, have separate representation from the Boston and Stamford Divisions.

Resolved: That the Barnstaple Division, having now fewer than fifty members, be grouped with the Exeter Division to elect a representative.

Read letter from the Honorary Secretary of the North of England Branch, stating that it was desired by all concerned that the Sunderland Division should have independent representation, and that the Hartlepool Division should be grouped with the Stockton, Darlington, and Cleveland Divisions.

Resolved: That the arrangement desired by these Divisions be approved.

Resolved: That in accordance with the wishes of those locally concerned Amble be transferred from the Morpeth Division to the Alnwick Division, and that Barnard Castle Division be absorbed in the Bishop Auckland Division, except Gainford, to be included in the Darlington Division.

Resolved: That the Council approve the rules of the following: Bath and Bristol, Border Counties, Dorset and West Hants, Gloucester, Lancashire and Cheshire, Malta and Mediterranean, North of England, Northern Counties of Scotland, Southern, South-Eastern, Staffordshire (with certain reservations), Stirling, and Ulster Branches; Ashford, Bath, Bishop Auckland, Blackburn, Blackpool, Bolton, Bootle, Bournemouth, Bradford, Brighton, Bristol, Brixton, Bromley, Burnley, Canterbury, Central (London), Chelmsford, Chester, City (London), Colchester, Coventry, Croydon, Dover, Eastbourne, Edinburgh (Southern), Edinburgh (N.W.), Faversham, Folkestone, Gateshead, Guildford, Halifax, Hampstead, Hastings, Horsham, Isle of Wight, Kensington, Lambeth, Leeds, Lincoln, Maidstone, Manchester (Central), Manchester (North), Manchester (Salford), Manchester (South), Manchester (West), Morpeth, Nottingham, Nuneaton and Tamworth, Portsmouth, Reigate, Richmond, Rochdale, St. Pancras, Salisbury, Southampton, Southend, Southport, Stockport,

Stockton, Stratford, Thanet (I. of), Tunbridge Wells, Wakefield and Doncaster, Walthamstow, Wandsworth, Watford, West Dorset, Winchester, Worthing and Chichester, N. Cumberland, W. Cumberland, and Scottish (Border Counties) Divisions.

That the approval of the Council also be given to the rules of the British Guiana, Ceylon, Cape of Good Hope and Natal Branches to which exception is taken, provided that the necessary alterations are made in accordance with the recommendations of the Organization Committee.

Resolved: That the minutes of the Medico-Political Committee of June 10th, be received.

A Memorandum on Death Registration was considered, and a deputation was ordered to present the memorandum to the Registrar-General.

Also a Memorandum on the Investigation of Factory Accidents was considered.

Resolved: That a deputation be appointed to wait upon the Home Secretary, in conjunction with a deputation from the Association of Certifying Factory Surgeons, to lay before him the opinions of the two Associations as to the suggested modifications of the law relating to Notification of Industrial Accidents.

A Memorial concerning the working of the Workmen's Compensation Act in Relation to the Employment of Medical Referees was then considered, when it was ordered to be presented to the Home Secretary by a deputation,

The Draft Medical Acts Amendment Bill was then considered.

Resolved: That the Council, without expressing any opinion on the Draft Medical Acts Amendment Bill, refers it to the Divisions for consideration.

Resolved: That the minutes of the Scientific Grants Committee of June 15th be received.

Resolved: That Dr. F. A. Bainbridge and Dr. G. A. Watson be re-elected Research Scholars for a further period of one year.

Resolved: That Dr. J. O. Wakelin Barratt be appointed to a Scholarship.

Resolved: That Dr. W. Jobson Horne be reappointed Ernest Hart Memorial Scholar until June 30th, 1904.

Resolved: That the following amounts be voted:—Renewed grants, £156; new grants, £194; total of grants, £350.

Resolved: That the minutes of the Ethical Committee of June 19th, be received.

With regard to the following minute:

Resolved: That it be suggested to the Gateshead Division that the first rule be modified to read as follows:

In the event of the Division agreeing to take combined action, any member found guilty (after discussion and ballot) of gross breach of faith shall be reported to the Branch Council for reference to the Council of the Association,

and that subject to such modification the Council be recommended to approve the rules submitted by the Gateshead Division.

By the request of the Division concerned, the following rider to the rule was moved, seconded, and carried:

"If this report shall lead eventually to the expulsion of a member from the British Medical Association, no member shall have any professional intercourse with the said expelled member except under circumstances of great urgency."

With regard to the following minute:

Resolved: That it be suggested to the Norwich Division that the second rule be modified to read as follows:

A member of the Division shall not undertake in future any fresh contract practice, directly or indirectly, at a lower rate than that adopted by the public medical service, or accept any appointment in any Medical Aid or similar Society, or have any professional intercourse, except under circumstances of great urgency, with any medical man who associates himself with any of the companies known as Medical Aid Societies or similar institutions whose methods are held by the Division to include touting or canvassing for members in the interests of individual practitioners, or the sweating of their medical officers by inadequate remuneration,

and that subject to such modification the Council be recommended to approve the rules submitted by the Norwich Division.

By the request of the Division concerned, the following rider to the rule was moved, seconded, and carried:

"If, under circumstances of great urgency, professional intercourse should take place between a member of the Division and a medical man associated with a Medical Aid Society or similar institutions, the fact, with an account of the attendant circumstances, shall be reported by the member to the Secretary of the Division within fourteen days from its occurrence."

Resolved: That a circular letter be sent to the principal London papers deprecating the mention in paragraphs relating to the illnesses of persons other than members of the Royal Family, of the names of medical men in attendance, and that it be suggested to Branch Councils that they should take similar action as regards the leading provincial papers.

Resolved: That the Council refer the matter of the advertisement of a certain institution to the General Medical Council.

The General Secretary reported certain correspondence with Messrs. Parke's Drug Stores, Limited, which was ordered to be entered on the minutes.

Resolved: That Dr. Shuttleworth and Mr. Parkinson be appointed delegates to the Brussels Congress to be held in September next.

The Annual Report of the Scientific Grants Committee was then considered.

Resolved: That the Report of the Scientific Grants Committee be received and approved.

The programme of proceedings of the annual meeting at Swansea was submitted and approved, as follows:

Programme of Proceedings.

Tuesday, July 28th, 1903.

9.30 a.m.—Meeting of 1902-1903 Council.

11 a.m.—Church Service.

2 p.m. to 3.15 p.m.—Annual General Meeting.*

3.30 p.m.—Annual Representative Meeting.

8 p.m.—President's Address. Presentation of Stewart Prize.

* In the event of the General Meeting not having concluded its business by 3.15 p.m. on the Tuesday, the meeting shall stand adjourned until 2 p.m. Wednesday.

Wednesday, July 29th, 1903.

9.30 a.m.—Meeting of 1903-1904 New Council.

10 a.m. to 1 p.m.—Sectional Meetings.

2 p.m.—Representative Meeting.

8.30 p.m.—Address in Medicine by Frederick Thomas Roberts, M.D., Senior Physician, University College Hospital.

Thursday, July 30th, 1903.

9.30 a.m.—Meeting of Council.

10 a.m. to 1 p.m.—Sectional Meetings.

2 p.m.—Address in Surgery, by A. W. Mayo Robson, F.R.C.S., Professor of Surgery, Yorkshire College.

3.30 p.m.—Representative Meeting (if required).

7 p.m.—Annual Dinner of the Association.

Friday, July 31st, 1903.

9.30 a.m.—Meeting of Council.

10 a.m. to 1 p.m.—Sectional Meetings.

2 p.m.—Representative Meeting (if required).

Saturday, August 1st, 1903.

Excursions.

Permission was accorded to the Irish Medical Graduates' Association and the New Sydenham Society to hold meetings at Swansea during the annual meeting.

Resolved: That the eighteen candidates whose names appear on the circular convening the meeting be and they are hereby elected members of the British Medical Association.

Resolved: That the Stewart Prize be awarded to Frederick Walker Mott, M.D., F.R.S., and that the thanks of the Council be given to Sir Patrick Manson, Dr. W. Leslie Mackenzie, and the Chairman of Council for acting as Adjudicators of the Stewart Prize.

Resolved that the award of the Middlemore Prize be deferred until the October meeting.

Proceedings of Standing Committees.

PUBLIC HEALTH COMMITTEE.

A MEETING of the Public Health Committee was held at the office of the Association on July 7th, when there were present Dr. J. Groves (Chairman), Mr. Andrew Clark (Chairman of Council), Mr. W. Jones Morris.

Letters of apology for non-attendance were read from Dr. Edgar Barnes and Dr. J. C. McVail.

Public Vaccinator's "Temporary Substitute."

A member submitted a correspondence between the Clerk of the Wimborne and Cranborne Union, and the Secretary of the Local Government Board with regard to the appointment of a temporary substitute for a public vaccinator. The opinion of the Local Government Board was that the authorized occasional deputy to the public vaccinator should undertake the duties of public vaccinator during the absence of that gentleman, and that his *locum tenens* could not be appointed as his "temporary substitute." Having considered the matter the Committee adopted the following resolution:

That in the opinion of this Committee, having regard to the agreement into which the public vaccinator entered with the guardians, the decision of the Local Government Board is a reasonable one, and further, in the opinion of this Committee, it is not desirable that any steps should be taken to alter the law in this particular direction.

Vaccination.

The General Secretary reported that he had again communicated with the President of the Local Government Board as to receiving a deputation regarding further vaccination legislation, and the Committee adopted the following resolution:

That this Committee requests the Council to again approach Mr. Long urging him to receive a deputation on the Vaccination question on the lines set out in the resolutions previously forwarded to him on March 7th, 1903.

COLONIAL COMMITTEE.

A MEETING of the Colonial Committee was held at the office of the Association on July 7th, when there were present Mr. Andrew Clark (Chairman of Council, in the chair), Brigade-Surgeon-Lieutenant-Colonel E. F. Drake-Brockman, Dr. Joseph Groves, Dr. C. G. Drummond Morier.

Letters of apology for non-attendance were read from Mr. J. Cantlie and Surg.-Gen. O'Dwyer.

Practice in Ceylon.

A letter from Dr. Vanderstraaten, of Ceylon, was read and the following resolution adopted:

That the Committee, having read Dr. Vanderstraaten's letter, is of opinion that the matter should be left in the hands of the Ethical Committee, which has had the whole matter under its consideration.

Medicine and Sanitation in India.

It was reported that a reply had been received from the Viceroy and Governor-General of India to a minute pointing out that medicine and sanitary science were not directly represented on the Council of the Viceroy of India or Lieutenant-Governor of Burmah. The reply of the officiating Deputy Secretary to the Government of India referred to the reply returned to a similar communication received last year from the Burmah Branch of the Association through the Governor of Burmah, and to a reply addressed to the Chief Secretary of the Government of Burmah on May 8th, 1902. The operative clause of this reply was as follows:

In reply, I am to request that, with the permission of His Honour the Lieutenant-General, the Association may be referred to Rule III of the Regulations for the nomination of additional members of the Council of the Governor-General of India published with the notification of the Government of India in this [the Legislative] Department No. 19, dated June 23rd, 1893, and informed that His Excellency the Governor-General regrets that it would not be possible, consistently with due regard to the multifarious interests concerned, to give a permanent place in the Council to a representative of any individual science as such.

A copy of the correspondence was directed to be forwarded to the Secretary of the Burmah Branch.

PREMISES AND LIBRARY COMMITTEE.

A MEETING of the Premises and Library Committee was held at the office of the Association on July 7th, when there were present Mr. Andrew Clark (Chairman of Council, in the chair), Dr. E. Markham Skerritt (Treasurer), Dr. C. Parsons, Dr. Holman, Dr. Bruce Goff, and Mr. J. Ward Cousins.

A letter of apology for non-attendance was read from Dr. Pope.

Library.

The Librarian reported that there had been 1,531 attendances to the Library during the quarter, as compared with 1,102 for the corresponding period of last year, being an increase of 429, and the largest quarterly attendance ever recorded. He submitted lists of books presented and purchased during the last quarter. The *Thèses de Paris* for the present session numbered 384, and reports from medical officers of health of 186 localities had been received. All the volumes so far issued of the Royal Society's *Catalogue of Scientific Literature* and the numbers of the recently revived *Index Medicus* had been added to the library.

Re-building of Premises.

The Committee resolved:

That in continuation of minute of Council 185 this Committee recommends the Council to adopt the full scheme as prepared by the Architect for the re-building of the premises in Agar Street, subject to such modifications as the Council may find to be necessary.

ROYAL NAVAL AND MILITARY COMMITTEE.

A MEETING of the Royal Naval and Military Committee was held at the office of the Association on July 7th, when there were present: Mr. Andrew Clark (Chairman of the Council, in the chair), Inspector-General A. Turnbull, R.N., Brigade-Surgeon-Lieutenant-Colonel E. F. Drake-Brockman, Dr. J. Roberts Thomson, Major Valentine Matthews (Vol.).

Letters of apology for non-attendance were read from Major Mallins and Surgeon-Lieutenant-Colonel R. H. Coombs.

Volunteer Medical Officers' Certificate of Proficiency.

The Committee resolved:

That in consequence of the difficulty experienced by most Volunteer medical officers to spare time to attend the school of instruction at Aldershot, some further facilities be given by the Government for them to acquire the necessary knowledge to obtain the certificate of proficiency required by the regulations, as, for example, the establishing of classes at different centres and by the shortening of this course of instruction to a fortnight at Aldershot.

Indian Medical Service.

The Committee adopted the following resolution:

That representations having been made to this Committee it is of opinion that it is desirable at the earliest possible date to consider the conditions obtaining in the Indian Medical Service and to take steps to try and improve them, and that a provisional grant of £25 be made to the Committee to cover any expenses incurred in the collection of evidence.

Militia Medical Service.

The following motion from Surgeon-Lieutenant-Colonel Coombs was then considered:

That the attention of the Royal Commission now sitting to receive evidence on matters affecting the organization of the Militia and Volunteer Services be drawn to the position of the Militia Medical Service, and especially of the Militia medical officers on the departmental list, appointed under the Royal Warrant of July 12th, 1876. The title, rank, and pay of the Militia Medical Staff Corps—a recent organization—is higher than that of the old Militia Medical Staff, and it appears to be an anomaly and an injustice that a newly-created service should take precedence of the older branch in the important matter of pay, and that a representation be made to the Commission asking that the rank and pay of both branches of the said medical services be placed on an equal footing.

It was resolved:

That the Committee recommends Surgeon-Lieutenant-Colonel Coombs to write to a member of the Royal Commission, now sitting, who is a commanding officer of Militia.

JOURNAL AND FINANCE COMMITTEE.

A meeting of the Journal and Finance Committee was held at the office of the Association, 429, Strand, W.C., on July 8th, when there were present Mr. Andrew Clark (Chairman of Council, in the chair), Mr. Walter Whitehead (President), Dr. E. Markham Skerritt (Treasurer), Dr. Langley Browne, Dr. R. C. Buist, Dr. W. A. Elliston, Dr. J. H. Galton, Dr. T. Arthur Helme, Sir Victor Horsley, F.R.S., Mr. W. Jones Morris, Mr. C. H. W. Parkinson, Dr. F. M. Pope, Dr. J. Roberts Thomson.

Read letter of apology for non-attendance from Dr. Radcliffe Crocker.

The Journal

The suggestion of the Editor that Mr. Guy Stephen, M.R.C.S., L.R.C.P., D.P.H., be appointed Sub-editor was approved.

Finance.

The auditors' report was received and approved and entered on the minutes, and a committee was appointed to further consider the question of the liability to pay income-tax under Schedule A.

REPORT

OF

THE SPECIAL CHLOROFORM COMMITTEE

OF THE

British Medical Association.

SECOND REPORT OF PROCEEDINGS (1902-3).

(*For the First Report, 1901-2, vide* BRITISH MEDICAL JOURNAL, July 12th, 1902.)

INTRODUCTION.

1. The Committee, consisting of Dr. BARR, Dr. DUDLEY BUXTON, Professor DUNSTAN, F.R.S., A. VERNON HARCOURT, F.R.S., Sir VICTOR HORSLEY, F.R.S., Dr. W. J. MCCARDIE, Professor SHERRINGTON, F.R.S., and Dr. WALLER, F.R.S., was re-appointed July, 1902.

2. The Special Chloroform Committee was originally appointed in view of the very regrettable number of cases in which chloroform administration terminated fatally. The original terms of reference were as follows: "To investigate methods of quantitatively determining the presence of chloroform in the air, and in the living body"; the ultimate object laid before the Council of the British Medical Association by Sir Victor Horsley being to determine, if possible, what is the minimal dose of the drug which would secure an adequate anaesthesia for operations, and at the same time not endanger life; the primary purpose laid before the Council by Dr. Waller's letter of May 20th, 1901 (BRITISH MEDICAL JOURNAL, July 20th, 1901), being "to study the methods of quantitative determination of chloroform in air, in fluids, and in the bodies of animals variously chloroformed."

3. At the outset the Committee found it necessary to critically examine the best known methods of quantitatively measuring chloroform. During the past year the Committee has further extended the data for the quantitative determination of chloroform in air and liquids.

GENERAL REPORT, 1902-3.

4. The Committee has held ten meetings during the past year, at which questions of principle and of methods have been fully considered. As regards the former, the Committee is unanimously of the opinion that the effect of chloroform varies in proportion with the amount of chloroform in the mixture of air and chloroform administered, and with the rate and depth of respiration.

5. During the past year Professor Sherrington and Miss Sowton have investigated the effects of chloroform in different doses upon the isolated mammalian heart. The results of their work illustrate the relation between the amount of chloroform circulating in the cardiac vessels and the physiological effects evoked.

6. As regards individual differences, there is no doubt that different subjects present varying degrees of susceptibility to chloroform, as notoriously occurs in the case of alcohol; but the Committee considers that the vague expression, "idiosyncrasy," ought not to be accepted in explanation of a fatal accident if the method of administration involves considerable fluctuations of the quantity of chloroform absorbed per unit of time.

7. Having these general considerations in view, the Committee decided to examine the practical questions: (1) What quantity of chloroform must be actually inhaled to produce narcosis; (2) what is the effect of such a quantity upon the vitality of the organism; (3) whether there is any accumulation of chloroform within the body during the prolonged administration of a constant quantity.

8. The Committee first resolved to investigate the question of the dose of chloroform requisite to produce different degrees of narcosis.

9. Speaking generally, two methods of mixing air with approximately known proportions of chloroform were made the subject of experiment: (*a*) air drawn over the surface of chloroform, which is the method used in Mr. Vernon Harcourt's inhaler; and (*b*) air blown through a quantity of chloroform, which is the method used in Dr. Junker's inhaler.

10. The Committee undertook an experimental examination of the two methods, and was satisfied that the amount of chloroform vapour capable of producing anaesthesia is lower than has in the past been usually accepted in this country. The Committee, at one of its meetings, examined this question by observations on two gentlemen who, in the interests of this inquiry, allowed themselves to be anaesthetised with varied quantities. The result showed, that in these two cases, an amount as low as 0.5 per cent. was insufficient to produce unconsciousness, and that less than 2 per cent. was sufficient to produce complete narcosis. A detailed report upon the clinical side of this question has been drawn up by Dr. Dudley Buxton, and a clinical examination of Mr. Harcourt's inhaler was made by him, and independently by Mr. Tyrrell. The latter has kindly, at the request of the Committee, furnished notes of his cases (Appendices IV, V). A considerable amount of time has thus been devoted to the question of dosage, and it is believed that quantities of chloroform varying between 0.5 per cent. and 2 per cent. are sufficient for the induction and the maintenance of narcosis.

11. In thus speaking of the dosage of chloroform by the use of inhalers, the Committee considers that the delivery of chloroform vapour by such apparatus should be indicated on a percentage scale. Such a percentage scale possesses an additional advantage in the fact that the reading of a scale, even when it may not be absolutely accurate, ensures far more delicate control and gradual modification of narcosis, than when the administrator adds or withholds vapour according to his patient's symptoms. There is also a less danger when an intermittent is replaced by a continuous method of administration, and any apparatus for continuous administration should afford means of quickly and easily augmenting and diminishing the proportion of chloroform in the mixture of chloroform and air inspired.

12. It will be seen from Dr. Dudley Buxton's and Mr. Tyrrell's observations, that for ordinary purposes, about 1 per cent. of chloroform vapour is sufficient for maintenance of narcosis.

SPECIAL REPORT OF WORK DONE, 1902-3.

13. The Committee continued its examination of the quantitative determination of chloroform in liquids.

14. Mr. Vernon Harcourt (Appendix I) reported upon further trials of his method of estimating quantitatively chloroform in blood, as follows:

The combustion by contact with incandescent platinum wire followed by measurement by standard alkali of the hydro-

chloric acid formed, is liable to give too low an estimate, this being principally due to the viscosity of blood when kept between 60° and 70°, and sometimes also to the neutralization of the hydrochloric acid formed during the combustion, by ammonia produced by the decomposition of blood. The latter source of error may be avoided by washing the air which was passed through the blood in a little dilute acid.

After trying various plans Mr. Harcourt found that the best results were obtained by using a saturated solution of urea in water, and mixing this with an equal volume of the blood, according to a plan suggested by Mr. Ramsden. By employing this method in two cases the blood remained fluid during the heating, and more than 90 per cent. of the chloroform was accounted for.

Summary of Investigations into Methods.

15. As regards the Committee's work of ascertaining the most accurate methods for determination of the amount of chloroform in air and liquids the Committee is now in a position to recommend the following as trustworthy:

(*a*) In air. (1) The combustion method by incandescent wire (Vernon Harcourt's method). (2) Combustion method by magnesia or lime (for details, see Report and Appendices for 1901-2).

The Committee also further considered the employment of Dr. Waller's oil absorption method and the determination of chloroform in air by the estimation of the density of the mixture.

(*b*) In liquids. Displacement of the chloroform from the liquid by heating it for several hours, while air bubbles through, and subsequent estimation of the chloroform vapour thus given off (see above).

Proposed Further Investigations.

16. The Committee has determined to postpone for the present the estimation of chloroform in the solid tissues of the body, and to continue its endeavour to obtain an apparatus which shall deliver a known percentage of chloroform vapour.

Further the Committee hopes to determine during the coming year the physiological effects of the lower percentages.

Finally, by the same plan of research, it may be expected that the important question of accumulation or non-accumulation of chloroform in the tissues during constant chloroform absorption which is under investigation by Professor Sherrington and Miss Sowton will receive elucidation.

A. D. WALLER, *Chairman.*

PAPER I.

REPORT ON WORK DONE.

July—September, 1902.

BY A. VERNON HARCOURT, F.R.S.

THROUGH the kind introduction and help of Sir Victor Horsley and the hospitality of Professor Vaughan Harley, of University College, London, I have been permitted to continue working on the estimation of chloroform dissolved in blood at intervals during the past three months. The grants for assistance promised me by the Committee have enabled me to enjoy the help in succession of Mr. A. Angel and of Mr. D. B. Byles.

When the apparatus described in my former report had been set up, and a solution of ammonia, approximately decinormal, made and standardized, two determinations were made of weighed amounts of chloroform dissolved in water; 94 and 97 per cent. of the chloroform taken were found by the determinations.

The escape of chloroform from any dilute solution is slow, and the last portions can only be expelled by prolonged heating.

The result of several experiments made with weighed amounts of chloroform dissolved in about 50 c.cm. of blood showed that the extraction of chloroform from blood is always incomplete if any clotting or conversion into jelly occurs. In one case in which only 78 per cent. had been recovered after four hours heating to a temperature of about 100° C., air passing, and small quantities of water being added from time to time, the heating was continued next day for another four hours under the same conditions. It was found that the liquid collected not only contained no hydrochloric acid, but was distinctly alkaline. The alkali is doubtless ammonia formed from the blood. It follows that in all previous experiments in which the blood has been heated to the boiling point of water for the extraction of chloroform the deficiency has been partly due to neutralization of hydrochloric acid by ammonia derived from the blood. The rate of formation of ammonia was determined by a blank experiment in which blood having no chloroform in solution was heated to 100°, and was found to be 0.04 gram of ammonia per litre of blood per hour. In subsequent testings there was added to the sample of blood a quantity of decinormal sulphuric acid more than sufficient to neutralize the ammonia formed. But the results remained too low. In a testing in which 75 c.cm. of defibrinated blood were mixed with 15 c.cm. of decinormal sulphuric acid, and heated for eight hours to a temperature between 50° and 60°, air passing slowly, the blood became gradually more viscous, and the test showed only 78.7 per cent. of the 0.063 gram of chloroform which had been dissolved in the blood. Additions of water and frequent shaking produce little effect.

It appears to be necessary to find some means of keeping blood liquid at such a temperature at least as 60° or 70°. The estimation of chloroform cannot be made—by any method known to me—in a flow of air greater than 20 c.cm. a minute, and to extract 95 per cent by such an air current requires a temperature of 70°, and a continuance of the testing for five or six hours.

Digestion with very dilute sulphuric acid in the hope of forming an acid albumen which would not pectise, was tried, but without success; the addition of formalin gave a better result, but after a few hours heating and transmission of air a jelly was formed. In these and other similar experiments Mr. Byles had much help from Dr. Goodbody.

Blood from a slaughterhouse remained liquid when 25 c.cm. of a saturated solution of ammonium oxalate were placed in the vessel of a litre capacity in which it was received; but 10 c.cm. were insufficient for this preliminary protection. Some method other than defibrination is certainly desirable in dealing with blood drawn from an animal which has been chloroformed, for some of the chloroform must escape during the operation of "whisking."

On July 5th last a "preliminary note" was read to the Physiological Society by Mr. W. Ramsden, Fellow of Pembroke College, Oxford, on "some new properties of urea," and Professor W. R. Dunstan, having heard of Mr. Ramsden's observations, suggested to me that urea might serve to keep blood liquid. Professor Gotch also advised me to write to Mr. Ramsden, which I did; and I have received in reply information and explicit suggestions which have served to overcome an obstacle which seemed to bar the way to any method for estimating chloroform in blood.

The addition to blood of a strong solution of urea prevents both the coagulation from fibrin and the pectising of the proteids.

A mixture of 100 c.cm. of fresh blood with 200 c.cm. of water saturated with urea was perfectly liquid when received from Oxford, but on being heated after the addition of 100 c.cm. of decinormal sulphuric acid it became gelatinous. A similar experiment made without any addition of acid give a very satisfactory result; the blood remained quite liquid for six hours, during which air was passed through and the temperature kept between 70° and 75°. The hydrochloric acid formed was titrated at intervals.

Stating the results as percentages of the weight of chloroform brought into the blood, which was 0.046 gram, they stand thus.—There was extracted:

In the first hour,	49.30	per cent.
,, second ,,	28.40	,,
,, third ,,	7.52	,,
,, fourth ,,	5.85	,,
,, fifth ,,	2.51	,,
,, sixth ,,	0.84	,,
Total ...	94.42	,,

A second portion of the same sample of uncated blood was mixed with a greater weight of chloroform—0.1206 gram—and treated in the same way. The results of the testings from time to time are similar.—There were extracted:

In the first hour,	37.05	per cent.
,, next 1½ hr.,	41.78	,,
,, hour,	8.87	,,
,, ,, ,,	5.22	,,
,, ,, 1¼ hr.,	1.43	,,
Total in 5¾ hours	94.35	,,

Since urea is decomposed when heated to 70° with even a very dilute solution of sulphuric acid, it is proposed, in future testings, to arrest the small amount of ammonia given off from the mixture of blood and urea by passing the gases through a few cubic centimetres of diluted sulphuric acid. If it can be established that when air has been passed for six hours 95 per cent. of the chloroform present has been extracted, or perhaps, if a temperature of 80° or 90° may be used, 97 or 98 per cent., it will be better not to prolong the testing, but to increase the result by the missing percentage. This may be done, with a near approach to accuracy, either by calculating from the diminishing series of percentages what the sum of the series would be, or by graphic extrapolation. The numbers plotted on a time scale yield a curve the position of whose asymptote, representing complete extraction, can be very nearly fixed.

PAPER II.

ON A CHLOROFORM REGULATOR.

BY A. VERNON HARCOURT, F.R.S.

IN the small apparatus which I have planned and had made for the limitation and regulation of chloroform vapour when administered as an anaesthetic, the limitation depends upon the size of the bottle in which the chloroform is placed and the temperature of the liquid.

After trying vessels of various forms and size, I have adopted a small Woolfe's bottle of a conical shape, whose diameter at the top is 37 mm., in the middle 40 mm., and near the bottom 43 mm., with two short necks of $\frac{1}{2}$ in. or 12.7 mm. diameter. The conical form provides a compensation for the lowering of the level of the chloroform as it evaporates, and the consequent receding of the surface from the points of entry and exit of air, by increasing the area at the lower level.

Many of my earlier trials were made with conical flasks and with a tube entering the neck of the flask; but a two-necked bottle was found to be more convenient, and the skill of the glass blower has now produced these of a conical shape.

It is not possible with an apparatus of the present form to attain any high degree of accuracy. Much has been sacrificed to simplicity and portability. The larger apparatus in which air passes over a mixture of chloroform with alcohol in a large box standing in a tank of water (*Proc. R.S.*, pp. 504-508) gave more constant results. But it seems probable that the variations to which the smaller instrument is liable will fall well within the variations in the proportions of air and chloroform which have to be used in different cases. If the temperature is rather high, or the bottle is much shaken, increasing thus by wetting the sides of the bottle the surface of evaporation, the maximum yield of chloroform may rise from 2 to 2.5 per cent., and, when the stopcock is midway, from 1 to 1.25 per cent.; or if the valves offer any unequal resistance, which ought not to be the case if the instrument should pass from the experimental stage to that of systematic manufacture, the midway position may represent rather more or less than half the maximum quantity. But it can easily be seen whether the movement of the valves corresponds to the position of the stopcock; and the essential power of giving at any moment a little more chloroform, or a little less, always remains.

If it should be found desirable to provide for the administration in certain cases of a larger percentage of chloroform than 2.5 (which can easily be reached with such bottles as are now being made by warming the bottle with the hand), an increase of diameter of the bottle from 40 to 50 mm. would increase the evaporation-area by one-half, and would raise the maximum yield of chloroform from 2-2.5 to 3-3.7.

The testings of the percentages of chloroform yielded by vessels of different size, and in different positions of the stopcock, were made by a method described in the "*Trans. Chem. Soc.*," 1899, and further described and illustrated in "*Proc. R.S.*," vol. lxx. But it may be well to record here the way in which the percentages of chloroform have been calculated from the experimental data, and the results of some of these testings, especially those made within the last few months at University College, London, by Mr. A. O. Jones and me.

The method of combustion of chloroform by contact with an incandescent platinum wire in presence of air and steam yields hydrochloric acid, in the proportion of 109 of hydrochloric acid by weight from 119 of chloroform. The mass of hydrochloric acid thus formed, and therefore also of chloroform, is readily found by neutralizing the acid with standard alkali from a burette. To avoid repeating the multiplication by $\frac{119}{109}$ it is convenient to use the figure—call it m—which is the mass of chloroform indicated by neutralization of 1 c.cm. of standard alkali. In any particular testing in which v c.cm. of the alkali neutralized the acid formed, the total mass of chloroform in the flask in which the sample had been collected was $m \times v$. The volume which this mass of chloroform would occupy, at the temperature and pressure then existing, was $m \times v \times \frac{223}{1.19} \times \frac{T}{273} \times \frac{760}{H}$. The density of normal chloroform vapour is such that 1.19 gram occupies 223 c.cm.; T stands for $273 + t$ ($t°$ C. being the reading of a thermometer placed by the side of the flask), and H for the height of the barometer. Finally, taking F for the capacity of the flask, the percentage of chloroform by volume is $m \times v \times \frac{223}{1.19} \times \frac{T}{273} \times \frac{760}{H} \times \frac{100}{F}$.

These quantities may be conveniently divided into (1) those which are constant, (2) those which are constant as long as the same flask and the same standard alkali are used, (3) those which vary with each testing, standing thus:

$$\frac{223 \times 760 \times 100}{1.19 \times 273} \times \frac{m}{F} \times \frac{v \times T}{H}$$

or, for convenience of calculation, putting P for the percentage:

$$\log P = \log C + \log v + \log T - \log H.$$

A suitable size of vessel for yielding to respiration about 2 per cent. of chloroform was found by using a conical flask with a tube passing into its neck. For example, March 20th, 1902, F=860 c.cm.; t=15° C.; H=739.7; m=0.005 gram; v=17.8. Hence, percentage of chloroform 2.1. A repetition on the same day under slightly altered conditions gave 2.14 per cent.

Further observations were made on April 29th. The two-necked bottle was not yet in use; the position of the inlet tube was varied and also the rate of inspiration. The specific gravity bulbs were made and used for the first time. The conditions and mode of calculation for the first may be given:

F=860; t=16, whence T=289; H=760.8; m=0.005; v=15.2.

$$C = \frac{223 \times 760 \times 100}{1.19 \times 273} \times \frac{0.005}{860}; \quad \log C = \bar{1}.4819.$$

$$\log 15.2 = 1.1818; \quad \log 289 = 2.4609; \quad \log 760.8 = 2.8813.$$

$$\log P = 1.4819 + 1.1818 + 2.4609 - 2.8813 = 0.2433. \quad P = 1.75.$$

Hence the percentage was only 1.75. The tube was brought nearer the surface of the chloroform, and another testing was made, which gave 1.96. This was twice repeated, giving the percentages in the successive samples of air and chloroform collected under conditions as similar as possible 2.02 and 1.97. The rate of inspiration was then varied, and showed that with the arrangement then in use the rate of evaporation was far from increasing in as great a proportion as the rate of inspiration. With slow inspiration, the percentage rose to 2.35; with quick inspiration it sank to 1.6; and with very slow inspiration it was raised as high as 2.94.

The adoption of a two-necked bottle in place of the flask and tube seems to have greatly reduced the variation which is thus caused, whose effect would be to raise the percentages delivered in other positions of the stopcock much above their proper proportional value.

The following results were obtained after the adoption of the two-necked bottle, May 16th, 1902.

Lines to which Stopcock Pointed.	Percentages Found.	Ratios to 2 per Cent.
2.0	2.35	2.00
1.5	1.03	1.39
1.0	1.18	1.00
0.5	0.89	0.75

In this and some subsequent sets of testing the limit is rather higher than 2 per cent. This might be remedied, if it is desirable to do so, by making the bottles one or two mm. smaller; but a change recently made in the temperature at

which the chloroform is to be kept, from about 17° to about 14°, will operate in the same direction. As soon as several "regulators" have been made in what I hope may prove to be their final form, I shall determine as exactly as I can, and report to the Committee, the percentages corresponding to different settings of the stopcock with quicker and slower inspiration.

May 20th and 21st.

Lines.	Percentages.	Ratios.	Lines.	Percentages.	Ratios.
2.0	2.20	2.00	2.0	2.41	2.00
1.5	1.49	1.35	1.5	1.75	1.45
1.0	1.17	1.06	1.0	1.08	0.90
0.5	0.80	0.73	0.5	0.59	0.49

In making the above testings I had for my assistant Mr. A. Angel, of Christ Church, Oxford. Those which follow were made by Mr. A. O. Jones, with occasional help from me.

November 14th and 15th.

Lines.	Percentages.	
2.0	{2.24, 1.99}	2.11
1.5	{1.92, 1.62}	1.62
1.0	1.20	1.20
0.5	{0.74, 0.81}	0.77

December 2nd to 11th.

Lines.	Percentages.	Mean.
2.0	2.13, 2.18, 1.82, 2.46	2.15
1.5	1.66, 1.44, 1.64, 1.41	1.54
1.0	1.03, 1.03, 1.37, 1.26, 1.35	1.21
0.5	0.58, 0.77, 0.76, 0.85, 0.68, 0.68, 0.76	0.73

During the past year my work has been chiefly directed to the improvement and testing of a method for determining the amount of chloroform dissolved by blood. On this subject I have made two reports to the Committee. I have now extracted from my notebooks the testings which have been made from time to time of the smaller apparatus for regulating the administration of chloroform which I have submitted to them, and with which they have experimented.

After looking through this record of work, I wish again to express my thanks to those who have done the chief part of it, to Mr. Angel, Mr. Byles, and Mr. Jones; and also to Professor Vaughan Harley, and many others of the staff of University College, London, for the opportunities of work and the loan of apparatus and much needful assistance.

PAPER III.

ON CERTAIN CHLOROFORM INHALERS AND THEIR CONSIDERATION FROM A CLINICAL STANDPOINT.

BY DUDLEY W. BUXTON, M.D., B.S.
Anaesthetist in University College Hospital.

THE methods of giving chloroform may be classed under the following heads: (1) Those methods in which unmeasured quantities of the anaesthetic are poured upon some absorbent material and the patient inhales until unconsciousness occurs. No attempt is made in these methods to estimate accurately the strength of the vapour inhaled, and the amount of air given varies according to the will of the administrator and his skill in judging how far the process of narcotisation has gone and how far it is safe to proceed. (2) Those which require some more or less complex apparatus to effect a mixture of chloroform vapour and air, or, in some cases, of chloroform vapour and oxygen. These apparatus are numerous and effect their object—limitation more or less exact of the proportion of chloroform vapour inhaled—by various contrivances.

It must, however, before examining these methods from the standpoint of surgical practice be asked what is the accepted principle upon which is based safe administration of chloroform. It is certainly true that what appear to some to be reckless methods are not uniformly disastrous, while extremely small quantities of chloroform frequently cause death when given in concentrated vapours. It is perfectly easy to understand such apparent contradictions when it is understood that, as was pointed out long ago by Snow, chloroform may kill without producing insensibility. The actual quantity of the drug inhaled is a matter of no importance, except in so far as it increases the unpleasant after effects of an inhalation, or may lead to post narcotism protoplasmic changes resembling fatty degeneration. The essential point is the relation between the quantity of chloroform vapour inhaled and the proportion of air mixed with it. In fine, a large dose of chloroform freely diluted is safe, a small dose if concentrated may prove lethal.

Conceding this principle we at once see that any of the so-called "open methods" may be safe so long as they are employed by the most careful of administrators, and that even then their success must depend upon untiring attention. There is no margin for such human frailties as fatigue, distraction of the attention, or want of appreciation of the many deviations from the normal process recognized as commonly occurring during narcotization. If it be admitted that chloroform may be given with comparative safety in vapour of, say, 3 or 4 per cent., a strength which Snow regarded as well within justifiable bounds, it is wholly impossible for the user of the open method to assure himself he is working within such a percentage vapour. It is stated that students working in laboratories can be taught to recognize by smell such distinctions, but certainly the bulk of those to whom the lives of human beings are committed during operations under chloroform do not acquire nor retain such nice perception. We then come to apparatus designed to achieve a means by which chloroform vapour may be given in percentage doses. It is unnecessary to do more than mention some of the older forms. One of the earliest, the anaesthesimeter of M. Duroy (Paris), possesses obvious imperfections, noticed indeed by Dr. Snow.

Practically all inhalers, both old and recent, depend upon one of three principles. (1) Exact mixtures of chloroform vapour and air or oxygen may be made in bags, balloons, or gasometers, and supplied to the patients through tubes, having at least the diameter of the trachea, and fitted with a facepiece permitting buccal and nasal breathing. The facepiece must also be provided with adequate inspiratory and expiratory valves. Snow and Clover used this plan, and more recently it has been suggested that a central mixing chamber shall be established in hospitals, and tubes carried to the operating theatres conveying the dilute chloroform vapour to the patients.

Snow found the balloon satisfactory but cumbersome. He remarks: "It seemed necessary to sacrifice a little of absolute perfection to convenience." Clover's inhaler itself, open to shrewd criticism of Snow, did not even in the hands of so great a master prove free from danger. It is probable that both Snow and Clover accepted too high a percentage, namely, 5 per cent., as lying within the zone of safety; if indeed any such a zone exists for all persons under all circumstances. The second plan was one adopted by Dr. Junker and Sir Benjamin Ward Richardson, and consisted in forcing air through liquid chloroform. The air according to its temperature, takes up more or less chloroform vapour and is conveyed to the patient.

In practice there are, however, very many considerations which modify the uniformity of the dose given and inhaled.

In the first place, although it is perfectly simple to ascertain how much air is propelled at one squeeze of the delivery ball of the apparatus (Junker), it is by no means so easy to ensure that the same amount of chloroform will be taken up. Further, even if it may be conceded that the variation in the amount of chloroform taken up by the air is unimportant, it is extremely difficult by the old apparatuses to make the patients respire uniformly the mixture pumped into the facepiece. It is fairly easy in the case of a willing patient during the first degree of narcosis, by compressing the ball synchronously with inspiration, to ensure some uniformity in the quantity inhaled. When patients are refractory or nervous, or are passing into a condition of excitement with anarchical breathing, it is absolutely impossible to be sure of how much or how little chloroform vapour is being taken.

Under such circumstances, a great temptation arises to press the anaesthetic, and this has too frequently been done with a fatal result. The rate of compression of the ball, the way the patient breathes—at one moment the breath held, at another deep inspiration occurring—introduce elements of danger which are real, and which have to be reckoned with. Admitting the value of the principle—that of pumping air through the anaesthetic, it is probably much safer and satisfactory to dispense with the old vulcanite facepiece, even when left open at the summit, as when a feather is used to show the respiratory movements, and to substitute a transparent mask—for example, one of glass in which an atmosphere rather than an intermittent gust of chloroform vapour is presented to the patient. It is in this case easier for the patient to respire, and the vapour strength is far more uniform. The variations in force and rate of the respirations are less a matter of moment when the patient is breathing this atmosphere. There is no fear of missing the inspiration, nor of an excessive quantity of chloroform being taken in when a prolonged inspiration follows holding of the breath.

It has yet to be determined how high a percentage of chloroform can be delivered by a Junker's inhaler, although some work in this direction is now in progress. We know that accidents have occurred during the use of the apparatus in question, and so it is probable that rapid pumping may cause a higher vapour delivery than is usually admitted. When, however, a loose glass mask with a domett diaphragm is used, a further precaution exists against such an accident. Clinically one is familiar with the fact that a certain number of patients taking chloroform from one of the many forms of Junker's inhaler shows signs of danger, both respiratory and circulatory. These cases occur when no obvious precautions have been omitted, such as allowing the tongue to drop back, faulty position of the patient, or some mechanical interference with respiration.

Another method is based upon the plan by which the patient in breathing draws in air which has passed over the surface of chloroform contained in a Woolfe's bottle. This is done by placing an accurately-fitting mask over the patient's face, and carrying from this mask a tube communicating with the Woolfe's bottle. The air passes in through one aperture, traverses the surface of the chloroform, and passes out through the other and along the rubber tube to the face. This method was employed by Professor Hobday, F.R.V.C.S., some years ago. He constructed an apparatus for chloroforming the lower animals, and found it to answer very well. At his request the writer, who had employed the method with dogs, cats, etc., tried the inhaler upon human beings with satisfactory results. The obvious drawback to the apparatus is that no means is provided of estimating the quantity of chloroform inhaled. This is corrected in Mr. Harcourt's apparatus*, which provides for the first time an inhaler, at once compact, easily controlled, and yet which can be made to regulate, with approximate accuracy, the percentage quantity of chloroform vapour inhaled. It at present supplies a range of percentages from 0.5 to 2 approximately, although it is capable of wider limits. We have yet to determine whether it is desirable that the anaesthetist should possess this wider range. In practice, certainly, individual patients appear to differ very much in their requirements as far as the induction of chloroform narcosis goes. While average women, men of poor physique, and children pass into narcosis with 2 per cent., or even less, vigorous men and persons who are alcoholic, or who have taken sedatives freely, appear to require high percentages. Even these may, if a very prolonged time of induction is possible, pass into narcosis. It is, however, essential in hospital practice that ten or twelve minutes should be the maximum time allotted for the induction.

A further question which has at present been undecided, but which is of pressing importance, is the degree of narcosis required by surgeons for different operations. Admitting that most, if not all, operations on the limbs, head, and neck can be readily performed when the patient is in the second or third degree of narcosis, there yet remain a large number of cases, for example, abdominal sections, operations on the pelvic organs, reduction of dislocations, and those which have to be performed when the airways of the mouth and nose are practically uncovered, in which a more profound degree of narcosis is necessary, at all events during a portion of the surgical procedure. The writer's experience agrees with that of Dr. Snow when he asserts that the fourth degree of narcosis must at times be trenched upon if the surgeon is to have every help which chloroform can give him. It is certain that patients who inhale low percentages of chloroform will, as a rule, rapidly recover consciousness, and there is not infrequently a danger that if some strong peripheral stimulation be supplied, for example, dragging upon a viscus or the peritoneal structures or section made of a more highly-sensitive tissue, that the patient suddenly passes into a less deep degree of narcosis, and moves or vomits at critical stages of an operation, such movements may prove perilous. With this vomiting is commonly associated a fall of blood pressure. These phenomena may not only seriously interfere with surgical manipulation, but may even prove detrimental to the patient's safety.

Whether we possess data sufficiently reliable to answer the questions which have been discussed above is, it is submitted, open to dispute. Further, besides the answers to these questions, we have yet to determine whether any of the apparatus at present tested gives at once the required accuracy while it also affords the required degree of narcosis for any given case. Mr. Harcourt's apparatus certainly supplies the required degree of accuracy, and the cases which are appended offer evidence as to whether in its present form the inhaler fulfils the other requirements. It must, however, be clearly understood that the number of cases given are too few for a final decision to be based upon them. It is probable that, as with all inhalers, familiarity with its technique will enable an administrator to obtain even more satisfactory results than those given below.

It has been thought advisable to give below a summary of data required before a final decision can be arrived at as to what method of administering chloroform is best.

1. It is necessary that any apparatus shall be capable of registering accurately the percentage strength of the chloroform vapour actually respired by the patient. (Do the apparatuses tested satisfy this test?)
2. Does accumulation of effects occur in patients submitted to the prolonged inhalation of even low percentages of chloroform? For example: Will a patient with 1 per cent. vapour inhaled for two hours be in a deeper degree of narcosis than after one hour? Clinical evidence appears to answer this in the affirmative, and it is suggested that expiration is lessened more than inspiration, and this is more markedly the case the more prolonged the narcosis. A further piece of clinical evidence is, that although a patient may need a fairly high percentage vapour to induce narcosis, a very much lower percentage maintains anaesthesia, and this percentage may in most cases be lessened repeatedly as time goes on.
3. What is the minimal percentage of chloroform to produce (*a*) anaesthesia, (*b*) relaxation of limb muscles, (*c*) of the recti abdominis muscles, (*d*) to abolish or greatly lessen the peritoneal and other reflex interference with circulation and respiration which occur in light degrees of narcosis, and can this be done without deep narcotization of the medullary centres?
4. It is commonly asserted by expert anaesthetists that when low percentages of chloroform vapour are used, reflex inhibitions (? vagal) are prone to occur, and may induce fatal syncope. Is this true, and, if so, what is the minimal percentage which safeguards against such perils?
5. In reference to (4), it is very important that we should know whether the act of vomiting, which occurs in a light degree of narcosis, is the result or cause of the associated fall of blood pressure?

Paper IV.

REPORT OF CASES OF NARCOSIS IN WHICH MR. VERNON HARCOURT'S APPARATUS WAS EMPLOYED AT UNIVERSITY COLLEGE HOSPITAL.

By DUDLEY W. BUXTON, M.D., B.S.,
Anaesthetist in University College Hospital.

The following are notes of cases in which Mr. Vernon Harcourt's apparatus was used:

A.—1. Woman, aged 50. Exploratory trephining. Patient alcoholic,

* Reference is made to Mr. Vernon Harcourt's original chloroform regulator, and his method of passing air through a mixture of $CHCl_3$ and alcohol is not within the scope of the present report.

and induction prolonged and narcosis light (talking); 2 per cent required for induction, 1 per cent. used during operation.

2. Male, aged 15, removal of testicle. Induction 0.5 to 1 per cent., six minutes. Quiet narcosis maintained with 0.5 per cent.

3. Male, 19, for genu valgum. Induction 0.5 to 1 per cent. in six minutes, maintained at 0.5 mostly.

4. Elderly male, Kraske's operation. Induction 0.5 to 1 per cent. for six minutes, then 2 per cent. Patient lying on his chest, anaesthesia maintained 1 per cent., with occasionally 1.5 per cent. and 2 per cent., but owing to posture some leakage was probable around mask.

5. Female, sarcoma of jaw. Induction eight to ten minutes, 1 per cent. Subsequently a Junker's inhaler and tube were used owing to character of operation.

6. Powerful man, resection of cervical nerves for torticollis; 1 per cent. used.

7. Woman, aged 50, removal of breast; 1 per cent. used.

In these and other operations, Mr. Crawford remarks the period of induction was usually devoid of struggling. The patients took the anaesthetic easily. The degree of narcosis was light; no dangerous symptoms arose.

B.—1. Feeble male, over 60, gastro-enterotomy. Induction 0.5 to 2 per cent., eight minutes. After ten minutes had to be changed for Junker's inhaler, as recti-abdominis muscles were too tight to allow easy manipulation.

(2) Female, 31, for femoral hernia. Induction 0.5 to 2 per cent. in seven and a-half minutes. No struggling. Operation performed with 1 per cent.; Pt. quiet, but C. R. present—duration forty-five minutes. ℥iv used.

(3) W. B., male, 19, for cerebral tumour. Induction 1.5 per cent. in two minutes, C. R. present. Operation done in thirty minutes under 0.5 per cent. No struggling. ℥jss used.

(4) Female, 46, removal of kidney. Induction eight minutes, 0.5 to 2 per cent. Slight struggling. No movement during operation, although owing to posture, some air probably entered round mask, reducing percentage below 2. C. R. present, although sluggish. Duration of narcosis eighty minutes. ℥j used.

In all these cases respiration was accelerated at times during operations, when dragging or other peripheral stimulation was practised owing to anaesthesia being light.

(5) Male, 32, for cerebral tumour. Induction 0.5 to 2 per cent., ten minutes; was restless fifteen minutes. During operation 2 per cent., 1 per cent., then 0.5 per cent. Final sewing up caused movement, 2 per cent. given. Duration forty minutes. ℥ss used. Pt. gained consciousness in five minutes after cessation of inhalation.

(6) Female, 42, edentulous. Appendicotomy. Mask too large for face. Induction, 0.5 to 2 per cent., eight minutes, slight stertor and phonation; no struggling. In five minutes more some cyanosis, 1 per cent. used, but 2 per cent. had to be returned to. Respiration markedly accelerated and slight pallor when bowel was manipulated. At close of operation coughed up some mucus. Slight straining occurred during operation. Duration, fifty minutes. Vomited twice after operation and did not resume consciousness for two hours.

(7) Female, 29, fissure, and ulcerated pile. Induction, 0.5 to 2 per cent., ten minutes. Dilatation of sphincter caused quickened breathing. C. R. sluggish during operation. Duration, thirty-six minutes. Regained consciousness in about half an hour. Some sickness during the night.

(8) Male, 24, radical cure of hernia. Induction, 0.5 to 2 per cent., seven minutes; no struggling. Slight movement of limbs after skin incision, and quickening of respiration upon dragging on deep structures. After twenty-five minutes, as some duskiness was present, 1.5 per cent. used; cyanosis lessened. In thirty-two minutes 1 per cent. used, but coughing, and finally vomiting, occurred, so 2 per cent. was gone back in after three minutes. Final skin sutures quickened respiration. Recovered consciousness five minutes after discontinuance of anaesthetic and vomited. Duration, fifty minutes.

In other cases similar phenomena were observed. In some abdominal sections the operators complained of want of relaxation of the abdominal walls, and occasionally inconvenience was caused by the patient coming round and straining and vomiting. How far these inconveniences were brought about by inaccuracy in fitting the mask it is impossible to say. Certainly this accounted for some partial failures, as exact adaptation is not always easy. The cases cited were mostly done in my presence by my dressers, so the apparatus was subjected to a more severe test than if it had been in the hands of an expert. The most noticeable points about the narcosis which was induced are (*a*) the facility with which patients inhale; (*b*) the slight amount of excitement or struggling; (*c*) its light degree and the readiness with which it lightens; (*d*) the rapid recovery; (*e*) absence of anomalous symptoms.

In a series of severe operations in which I have used the inhaler I have found it most satisfactory. The induction has been tranquil; the narcosis, although light, has been adequate and like natural sleep, and the after effects have been minimized.

I am indebted to Mr. Crawford, Mr. Savile (house physicians), and to my dressers, Messrs. Martin Seal, Reece, Evans, and Zobel for notes of the above cases.

Paper V.

REPORT ON THE USE OF MR. HARCOURT'S INHALER.*

By WALTER TYRRELL,
Anaesthetist, St. Thomas's Hospital.

A short report is appended of a few of the cases in which Mr. Tyrrell used Mr. Vernon Harcourt's method of regulating the percentage of chloroform vapour administered. Mr. Tyrrell has been impressed with the value of the principle of this method but believes that the details of mechanism may be improved. In using the method he admits having tried to see how small a percentage would suffice. He has been most careful in fitting the facepiece well. He has not yet met with a case requiring 2 per cent. or more but believes such cases will be met with. He has been much struck with the marked absence of excitement when this method was used and increasing gradually the percentage.

M. M., aged 49, female.—Iridectomy for glaucoma. Commenced:

2.12 p.m.	...	0.2 per cent.
2.13 ,,	...	0.5 ,,
2.14 ,,	...	1.0 ,,
2.17 ,,	...	Muttering.
2.18 ,,	...	Irrigating eye.
2.21 ,,	...	Complete anaesthesia.
2.26 ,,	...	Operation concluded. Very satisfactory anaesthesia. 1 per cent. not exceeded.

E. C. F., aged 41, female.—Puncturing frontal sinus. Commenced:

3.26 p.m.	...	0.2 per cent.
3.26½ ,,	...	0.4 ,,
3.27 ,,	...	0.6 ,,
3.27½ ,,	...	0.8 ,,
3.28 ,,	...	1.0 ,,
3.34 ,,	...	1.4 ,,
3.40 ,,	...	Complete anaesthesia.
3.50 ,,	...	Operation concluded. Patient much better colour than before commencement of operation.

This is one of the debatable cases in which some observers attribute the syncopic condition to a too light anaesthesia; but I do not agree.

G. B., aged 20, male.—Varicose veins. Commenced:

3.10 p.m.	...	0.2 per cent.
3.11 ,,	...	0.5 ,,
3.12 ,,	...	1.0 ,,
3.15 ,,	...	1.5 ,,
3.18 ,,	...	Stertorous breathing.
3.20 ,,	...	Conjunctival reflex gone; there has been absolutely no excitement or movement of any kind; scrubbing of legs going on.
3.30 ,,	...	Incision which made breathing rather deeper.
3.33 ,,	...	1 per cent., as the deeper respiration rather dilated the pupils.
3.36 ,,	...	1.3 per cent., as pupils contracted and slight corneal reflex returned.
3.40 ,,	...	Pupils contracted; deep, slow, stertorous breathing; no ocular reflex.
4.19 ,,	...	Replenished $CHCl_3$, turned indicator to 0.5 per cent for two or three respirations, and then to 1 per cent.
4.25 ,,	...	Ceased administration.

C. P., aged 63, female.—Subcoracoid dislocation. Big, fat woman, cannot breathe comfortably without several pillows. Mitral and aortic disease. Stethoscope leaves marks on chest. Very feeble pulse. Commenced:

2.22 p.m.	...	0.5 per cent. Strychnine gr. $\frac{1}{30}$.
2.24 ,,	...	1.0 ,,
2.30 ,,	...	Some slight excitement.
2.34 ,,	...	Light anaesthesia. Complete muscular relaxation. Dislocation easily reduced.

G. W. G., aged 19, male.—Appendicotomy. Commenced:

2.19 p.m.	...	0.2 per cent.
2.20 ,,	...	0.5 ,,
2.21 ,,	...	1.0 ,,
2.25 ,,	...	1.5 ,,
2.26 ,,	...	Excitement.
2.27 ,,	...	Stertor. Corneal reflex gone.
2.28 ,,	...	1 per cent., which was steadily maintained until—
3.30 ,,	...	Operation concluded.

J. C., aged 32, male.—Hernia. Commenced:

3.0 p.m.	...	0.5 per cent.
3.2 ,,	...	0.8 ,,
3.3 ,,	...	1.0 ,,
3.11 ,,	...	Conjunctivae insensitive, pupils contracted; there has been no stage of excitement.
3.12 ,,	...	Incision made—slight reflex movement of leg on operated side during skin incision.
3.15 ,,	...	Pupils dilating—put back to 0.6 per cent., but had to replace at once to 1 per cent.
3.23 ,,	...	Pupils well contracted, regular stertorous breathing; lessened to 0.6 per cent., but al
3.25 ,,	...	Pupils dilating, and had to replace at 1 per cent.
3.30 ,,	...	Anaesthetic stopped.

* Notes kindly furnished by Mr. Tyrrell at the request of the Committee.

J. W., aged 48, male.—Abdominal section. Commenced :

2.20 p.m.	...	0.2. per cent.
2.21 ,,	...	0.4 ,,
2.22 ,,	...	0.6 ,,
2.24 ,,	...	1.0 ,,
2.30 ,,	...	Some slight movement.
2.36 ,,	...	Corneal reflex absent ; pupils contracted ; momentary movement and phonation on skin incision ; increased to 1.2 per cent.
2.40 ,,	...	1 per cent. Conjunctivae quite insensitive.
2.41 ,,	...	Definite pallor and feeble pulse.
2.42 ,,	...	Increasing pallor—chloroform stopped—strychnine $\frac{1}{15}$ gr.
2.45 ,,	...	Ether given by Junker's inhaler.
2.55 ,,	...	Anaesthetic stopper.

The case was one of carcinoma, in which the stomach was being dragged upon very forcibly when pallor was first observed.

PAPER VI.

ON THE DOSAGE OF THE MAMMALIAN HEART BY CHLOROFORM.

BY C. S. SHERRINGTON, M.A., M.D., F.R.S., AND S. C. M. SOWTON.

To measure that dosage of chloroform under which the mammalian heart can and cannot continue to work efficiently was the problem allotted to us by the Special Committee of the Association.* We beg to present the following report of experiments we have been engaged in on the subject. Our preliminary report was presented to the Committee on February 26th of this year. The present report must be considered to deal still with the first stage of the inquiry.

METHOD.

The method we have followed for perfusion of the heart has been that introduced by Langendorff[1] (1895). Our observations have dealt almost exclusively with the heart of the cat. We have on occasion used also the heart of the dog. In either case the heart was removed from the freshly killed animal. Into the aorta, close above its origin, a cannula was tied with its delivery end close above the sinuses of Valsalva, as practised by Newell Martin, and Applegarth[2] (1890) and Langendorff[1] (1895). The other end of the cannula was connected with a tube leading from a reservoir containing a modified Ringer's solution. This solution was kept warm in a water bath at 38° C. It was displaced from the flask containing it by introducing oxygen through it into the flask under a pressure 120 mm. Hg. above atmospheric. It had in the heart cannula a pressure of about 110 mm. Hg. The warm salt solution, after passing through the coronary system, collected in the right auricle, and there dribbled over, keeping the whole heart moist and warm. The heart was held firmly by two clamps, one fixing the root of the lung, and thus indirectly the base of the heart, the other fixing the apex of the heart by the lower end of the left ventricle itself. A thermometer was let into the side of the cannula above the aorta.

The tube leading to the cannula was Y-shaped, and while one limb of the tube led from the reservoir of modified Ringer's solution, the other led from a similar though smaller reservoir, in which the modified Ringer's solution contained an accurately-measured quantity of chloroform. Both reservoirs were in the same water bath, and the fluid in each was similarly supplied with oxygen and under the same pressure. Three 3-way taps in the Y-shaped tube allowed perfect control and interchange of the feeding fluids without any intermission of the supply to the heart. The capacity of the tubing between the $CHCl_3$ solution inlet and the heart was 5 cub. cent. The point marked on the graphic records by the $CHCl_3$ signal as the moment of commencement of admission of $CHCl_3$ solution to the heart is the moment at which this tap (2, Fig. 1) was turned, admitting the $CHCl_3$ solution to the delivery tube just above the aorta. The real moment of admission of the $CHCl_3$ solution to the heart was therefore a little later than that marked, beginning actually after the intervening 5 c.cm. of unchloroformed fluid had passed into the heart. The rate of flow of fluid through the hearts employed was usually about 1 c.cm. per second : the lost time therefore between the turning of the $CHCl_3$ tap and the real entrance of the $CHCl_3$ solution into the heart was usually about 5".

The contractions of the heart were recorded by attaching light writing levers to the auricle and ventricle respectively. The threads were fixed to the heart by minute hooks made from the thin pins used by entomologists for pinning out small insects. The threads were in part of their length made of very narrow strips of thinnest guttapercha sheet. This was found especially necessary for the auricular writing lever, the movement of contraction of the auricle being so quick as to otherwise lead to much deformation of the trace by the inertia of the lever. The levers employed were straw, and were armed with writing points in the following way : A piece of capillary glass tubing was bent 90° at three places and one arm of it inserted into the cylinder of the straw so as to lie as if in a longish grove along it. A little piece of very fine wire was attached to the lower free-hanging end of the pen, and could be bent with tweezers so that, by altering the centre of gravity, the tip of the pen could be made to press in any desired degree upon the blackened travelling paper.

Electrodes upon a ball-and-socket joint were arranged so as to be applicable to the cardiac nerves.

Arrangement was also made to faradize the heart wall. A diffuse electrode was fixed as a plate against the moist extra cardiac tissue above the base of the heart in the upper clamp ; the condensed pole was formed by a minute hook inserted into the ventricle in its upper third ; a very thin wire brought

* The Committee consist of Dr. Barr, Dr. Dudley Buxton, Professor Dunstan, Mr. A. Vernon Harcourt, Sir Victor Horsley, Dr. McCardie, Professor Sherrington, and Dr. Waller (Chairman). This report was received in May, 1903.

Fig. 1

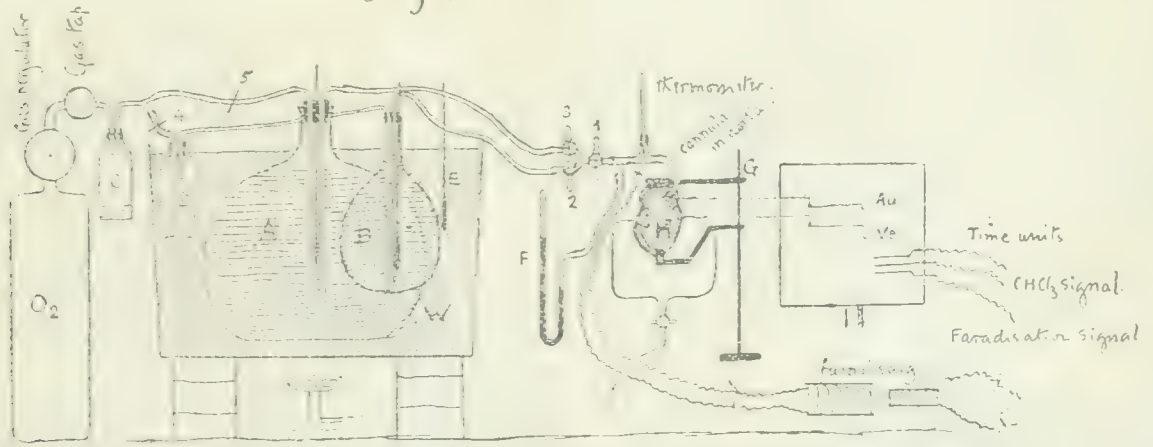


Fig. 1.—Disposition of apparatus. O_2, cylinder containing compressed oxygen. A, 10-litre flask containing modified Ringer's solution. B, 2-litre flask containing the modified Ringer's solution in which a known quantity of chloroform is dissolved. C, bottle preventing reflux of fluid into gas tap, etc. D, bottle containing same chloroform solution as B. E, thermometer in the water bath W. F, manometer showing pressure of delivery of the solution given to the aorta of the heart (H). 1, 2, 3, three three-way taps ; 4, 5, clamps. Au, auricular recording lever. Ve, ventricular recording lever. X, diffuse pole of the unipolar faradization apparatus applied to the clamped tissue of the root of the lung. G, standard supporting the clamps which fix the isolated heart. The $CHCl_3$ signal records the moment of opening or closing of tap 2.

this hook into the circuit. In both cases the electrodes were fed by an inductorium served by a Daniell cell; the moment of application of the faradizing current was indicated on the graphic record automatically by an electro-magnetic signal. Time, either in second or in five-second intervals, was likewise automatically recorded.

The fluid flowing from the heart was collected and measured when desired.

The solution we employed was the modification of Ringer's solution devised by Dr. Locke.[3] We should probably never have attempted to work upon the isolated mammalian heart had we not witnessed at the International Congress of Physiologists at Turin two year ago Dr. Locke's admirably successful demonstration of the effect of glucose upon the ventricular beat of the isolated rabbit heart. We therefore adopted his modification of Ringer's salt solution with some confidence that it might succeed in keeping active the heart of the cat isolated under appropriate conditions. The cat is with us a much cheaper object of study than the rabbit, hence, since we desired a considerable number of observations, we preferred to employ it. The modified Ringer's solution has, in fact, fully answered our expectations. We have not added glucose to it, preferring for our initial observations to use the simplest solution possible. It, without the glucose, suffices to support, if duly oxygenated, the activity of the cat's heart for the greater part of a working laboratory day. We refer to the solution as "modified Ringer's" in the present report, because by "Locke's solution" might be understood a glucose-containing saline solution; but, as a fact, it is Dr. Locke's solution that we have invariably used, omitting only from it the glucose. Locke's modified Ringer's solution has the following composition[3]—NaCl, 0.9 per cent.; $CaCl_2$, 0.024 per cent.; KCl, 0.042 per cent.; $NaHCO_3$, 0.01 per cent. in distilled water.

The amounts of chloroform that were measured in preparing the dilute solutions were sometimes small. In the earlier experiments these as well as the larger doses were measured by volume at the room temperature, 14° to 16° C. For these measurements we employed a burette divided into hundredths of a cubic centimetre, provided with a stopcock, and armed for delivery with the capillary needle of a hypodermic injection syringe. In the later experiments the quantities of chloroform have been measured by weight. The transference of the chloroform solutions from vessel to vessel under agitation in air we have endeavoured as much as possible to avoid: also any unnecessary exposure of the vapour to indiarubber. The tubing leading from B (Fig. 1) to the tap 2 (Fig. 1) was composed as far as possible of glass; the cork of flask B was, however, of indiarubber. The oxygen gas introduced into flask B for expelling its fluid was in the later experiments led on its way to B through a layer of chloroform solution (in D, Fig. 1) of the same dilution as that to be expelled from the reservoir B (Fig. 1). In these ways we tried to minimize the loss of chloroform that must to some extent occur from our prepared solution of it between its reservoir and its actual entrance into the coronary vessels of the heart.

In regard to the quantities of fluid perfused, these have in our experiments been large but variable. The pressure of the fluid as supplied in our experiments has varied little from experiment to experiment, and in each individual experiment hardly at all; the pressures have, throughout the series of experiments, ranged from 90 mm. Hg. in some earlier to 110 mm. Hg. in some of the earlier and in all the later experiments. It is possible that in some cases a portion of the fluid supplied has passed through incompetently-acting aortic valve flaps. The head of pressure being what it was, this, however, can have had no influence upon the coronary supply, except to make the readings of the quantities perfused through the coronary system larger than the real quantities perfused. The effect of this possibility upon the readings of the dosage as expressed—as we maintain it should not be expressed—by the mass of $CHCl_3$ administered to the heart in a given time is to make our readings possibly higher than the quantities really administered to the cardiac muscle.

Literature.

The literature concerning the effect of chloroform on the heart is very large. We propose to reserve dealing with it until the occasion of our fuller report.

The perfusion of the isolated heart with fluids containing chloroform has been frequently practised on the isolated frog's heart. On the mammalian heart so perfused there is an isolated and incidental observation by Hedborn[4] in his paper on the action of drugs on the mammalian heart. But in his single observation the chloroform was added to blood already containing chloral, and was administered to a heart previously dosed with caffein; moreover, the dilution of the chloroform is not mentioned. At the time of our first communication to the Committee no other record than the above-mentioned by Hedborn had appeared. Since then, however, a preliminary communication on the action of chloroform, ether, alcohol, and acetone upon the excised mammalian heart[5] has been made by Professor Tunnicliffe and Dr. Rosenheim to the Physiological Society.

Results.

The action of $CHCl_3$ on the heart, as studied in our experiments, may be described briefly separately for each degree of its dilution that we have employed.

I.—1,500 Mg. $CHCl_3$ per Litre of Modified Ringer's Solution. (*$CHCl_3$ in 0.15 per Cent. Dilution*).

This solution administered for 30″ abolished, in less than 20″, the beat both of auricle and ventricle. But, on replacing the chloroform solution by pure saline, the beat was subsequently completely recovered in both, in auricle slightly earlier than in ventricle. The ventricle recommenced beating about 78″ after the $CHCl_3$ mixture had been discontinued; its recovery was abrupt in the sense that its very first beat was of considerable extent and power. The recovery of the auricular beat began more gradually.

Permanent abolition of the beat of the ventricle resulted from perfusion of this solution for 60″; fibrillar contractions of the ventricle were all that subsequently were obtainable. But the auricle recommenced beating regularly 75″ after the end of the one minute's $CHCl_3$ perfusion, and the beat was of normal extent and vigour 125″ later.

The resistance of the auricle-muscle to $CHCl_3$ in these high percentages appears much greater than is that of the ventricular. Perfusion with this solution for even 60″, although completely and permanently annulling the ventricular beat, made no permanent impression upon that of the auricle. The auricle began to show recovery about 75″ after cessation of the administration of this $CHCl_3$ solution, whether the solution had been perfusing it for 1, 2, 3, or 5 minutes respectively.

II.—750 Mg. $CHCl_3$ per Litre Modified Ringer's Solution (*$CHCl_3$ in 0.075 per Cent. Dilution*).

This strength of solution almost immediately (in less than 30″) extinguished the beat of both auricle and ventricle. As to subsequent recovery, in one heart both auricle and ventricle recovered completely subsequent to a continuous administration of the solution for 5′; but the ventricle of the same heart completely succumbed to continuous administration of the solution for 9′, only fibrillar twitchings appearing in it subsequently. In another heart, administration of the same strength of solution for 305″ (Fig. 2) permanently destroyed the ventricular beat. In a third heart, the same strength of solution stopped the ventricular beat irrecoverably by one minute's perfusion, fibrillar twitchings being all that could be subsequently obtained.

In all these three hearts the auricle showed itself much more able to recover from the $CHCl_3$ than did the ventricle. Even after 9′ perfusion with the solution the auricle recovered, although, to do so, it requires an interval of more than 15′ perfusion with the oxygenated Ringer's solution.

With shorter periods of administration of the $CHCl_3$ solution, the auricle had usually been beating for 50″ to 60″ before the ventricle recommenced. The return of beat of the ventricle was usually abrupt, suddenly bursting out in almost its full vigour. The beat of the ventricle was also often arrested 5″ to 10″ earlier than that of the auricle.

III. 300 Mg. $CHCl_3$ per Litre Modified Ringer's Solution (*$CHCl_3$ in 0.03 per Cent. Dilution*).

This strength of solution in every case practically extinguished the beat both of auricle and ventricle in 30″ from commencement of its administration to the heart. But complete recovery both of ventricle and auricle was obtained in every case. The recovery was complete and rapid, even after continuous exhibition of the drug for 18′. Two types of recovery seemed distinguishable. With $CHCl_3$ solutions of 0.01 per cent., or less, the beat recommences within about 15″ from discontinuance of the administration. With the strength of solution now under consideration—namely, 0.02 per cent. $CHCl_3$, in one form of recovery, about 70″ elapse before any sign of beat, and full recovery is not reached until from 3′ to 4′ have

elapsed, and there is merely a gradual return to, and not beyond, the force and excursion, obtaining during the exhibition of the $CHCl_3$ solution. A second type of recovery is characterized by much speedier return to a strength of beat in excess of that originally obtaining. In this type the returning beat becomes obvious 15" to 20" after cessation of the administration of the $CHCl_3$, and 15" to 20" later the heart beats far more vigorously than before the chloroformization, showing periods of distinct acceleration as well as augmentation of beat. Some excitation of the augmentor-accelerator nerves of the heart is suggested. Those nerves, as is shown later in this report, are not paralysed by considerable depths of $CHCl_3$ action. This type of recovery seems to occur especially frequently after prolonged administration of $CHCl_3$.

IV. 150 Mg. $CHCl_3$ per Litre Modified Ringer's Solution (*$CHCl_3$ in 0.015 per Cent. Dilution*). (Figs. 3, 4, 5.)

With this strength of solution the amount of reduction of the activity of the auricle, as measured by reduction of the excursion of its recording lever, varied from 83 per cent. (reduction) to complete abolition (temporary). The mean reduction of the auricle beat was 96.9 per cent. for twenty-one observations on six hearts.

The mean reduction of the ventricle beat as similarly measured for the same six hearts was 97.6 per cent.

The full effect of the $CHCl_3$ solution was evident in about 80". Recovery was rapid and complete, both in auricle and in ventricle in all cases. The beat began to improve within 15" of discontinuance of $CHCl_3$ perfusion, and recovery was complete about 75" later. This held good after prolonged perfusion, in one instance for more than ten minutes, in another twenty minutes', continuous duration (Figs. 4 and 5).

The frequency and regularity of the beat was usually quite unaffected both in auricle and ventricle, even when the beat was reduced nearly to extinction.

V.—75 Mg. $CHCl_3$ per Litre Modified Ringer's Solution (*$CHCl_3$ in 0.0075 per Cent. Dilution.*) (Fig. 6.)

Under perfusion with this solution the amount of weakening of the auricle's beat varied in different observations between 64 per cent. reduction and practical abolition (temporary): the mean reduction in the cases observed was 79 per cent.

The mean reduction of the ventricle's beat was 86.7 per cent.

The solution usually took about 50" to produce its full effect. Recovery was both in auricle and ventricle in all cases rapid and complete, even after prolonged perfusion with the solution, in one instance for 22' 40", during which time 1,800 c.cm. of the $CHCl_3$ solution had flowed continuously through the coronary circulation. In this very instance both auricle and ventricle were beating fully normally within 80" from the moment of discontinuance of the $CHCl_3$ solution.

The frequency of the rhythm of the beat remained quite unaltered by the $CHCl_3$ administration.

VI.—50 Mg. $CHCl_3$ per Litre Modified Ringer's Solution (*$CHCl_3$ in 0.005 per Cent. Dilution*). (Figs. 7, 8).)

Under this strength of $CHCl_3$ solution the weakening of the beat of the auricle varied from 30 per cent. reduction at outset of observations on Heart 20 to 89 per cent. reduction in the later observations made on Heart 21. The average reductions in Hearts 5, 6, and 21 were 71.1 per cent., 75 per cent., and 74 per cent. respectively, but in Heart 20 it was only 30 per cent. In the other hearts administration of the solution for 40" sufficed to cause a weakening of 50 per cent. The recovery of the auricle was always rapid and complete.

The weakening of the ventricle was in every case greater than that of the auricle, ranging from reduction of the amplitude of beat by 39 per cent. at outset of experiments on Heart 20 to extinction of the beat (temporary) in Heart 5. In this latter heart perfusion with the $CHCl_3$ solution for 40" sufficed to abolish (temporarily) the beat of the ventricle. But the ventricular beat nevertheless returned rapidly and completely after perfusion continued five times as long as that. Three-minute doses of this solution caused progressively rather more and more severe effects, as repeated, while the experiment proceeded.

The frequency of beat was never seen to alter during the administration from rate obtaining when the chloroformization commenced.

VII. 38 Mg. $CHCl_3$ per Litre Modified Ringer's Solution (*$CHCl_3$ in 0.0038 per Cent. Dilution*).

Under perfusion of this strength of $CHCl_3$ solution through the coronary system the beat of the auricle suffered a reduction varying from 30 per cent. to 75 per cent. in five observations. The mean value of the reduction was 55 per cent. This estimate does not include the observations in Heart 19, an irregularly beating heart, in which the weakening by the solution amounted to certainly more than 70 per cent. In none of the hearts used was the auricular beat ever extinguished, even temporarily, by this solution.

The average weakening of the ventricular beat was 96 per cent., and it was usually extinguished altogether (temporarily).

Recovery was invariably rapid and complete both in auricle and ventricle. Even when the perfusion of the $CHCl_3$ was continuously maintained for 10' the recovery on its discontinuance was prompt and complete. The heart 30" after the discontinuance was beating as well as prior to the chloroformization.

When the exhibition of the drug in this strength of solution was prolonged it was noticed that the ventricle beat improved somewhat in the latter part of the administration upon what it was during the first few minutes of the perfusion, for instance, it would be visibly beating in the tenth minute, although without visible beat in the third minute.

VIII. 30 Mg. $CHCl_3$ per Litre Modified Ringer's Solution (*$CHCl_3$ in 0.003 per Cent. Dilution*).

Under perfusion of its coronary system, with this strength of $CHCl_3$ solution, the mammalian heart showed a weakening of the auricular beat, as measured by amount of reduction of excursion of the recording lever, varying from 45 per cent. (Heart 29) to 85 per cent. (Heart 30). In one and the same heart it varied considerably, thus, from 28 per cent. at outset in Heart 28 to 62 per cent. later during the experiment. The reduction of amplitude of beat in 21 observations on five hearts averaged 66·8 per cent. The weakening did not occur so rapidly in the auricle as in the ventricle.

The degree of impairment of the ventricle's beat varied even more than that of the auricle, that is, from 15 per cent. to 95 per cent. The mean reduction in nineteen observations on the ventricles of four hearts was 91.7 per cent. The amount of reduction did not vary so widely in successive observations on the same individual heart as for observations on different hearts. The beat of the ventricle was in four observations (Heart 8) extinguished (temporarily) by this strength of $CHCl_3$ solution.

The duration of the dose with this solution was varied from 45" up to 10'. Sometimes weakening of the ventricle beat became obvious in 5" from the admission of $CHCl_3$ fluid to the heart. The full effect was always reached in the second minute of administration, or sooner. The heart would not infrequently be beating better at the end of the fifth or tenth minute than at end of the first minute—for example, Heart 28, observation 5. Even by the end of the third minute of administration the beat is sometimes distinctly stronger than at the end of the second minute.

Recovery was always rapid and complete, beginning a few seconds after cessation of the administration and becoming complete in 2-4'.

The frequency of rate of beat remained unaffected by the exhibition of the $CHCl_3$ solution—thus, even when the beat was reduced in excursion by 95 per cent., the frequency remained absolutely the same. When, as was twice the case, the heart was beating in groups, the phasic groups continued unaltered in period, although each member of the series of contractions was reduced in the same proportion as were the other members.

IX.—20 Mg. $CHCl_3$ per Litre Modified Ringer's Fluid. (*$CHCl_3$ in 0.002 per Cent. Dilution*). (Fig. 9.)

This strength of chloroform solution we have employed in the instance of one heart only. The beat of the auricle was, as a mean of six observations, reduced in amplitude by 36 per cent.; that of the ventricle by 33 per cent. The cessation of exhibition of the drug, even when it had been perfused for 5' continuously, was always followed by rapid and full recovery. The utmost (temporary) reduction of the auricle was 48 per cent., of the ventricle 50 per cent.; the least reduction of the auricle was 27 per cent., of the ventricle

Fig. 2.—II.—Heart 22 Observation 4. Cat's heart; $CHCl_3$ solution 0·05 per cent. in modified Ringer's solution, performed for 5 minutes 5 seconds.

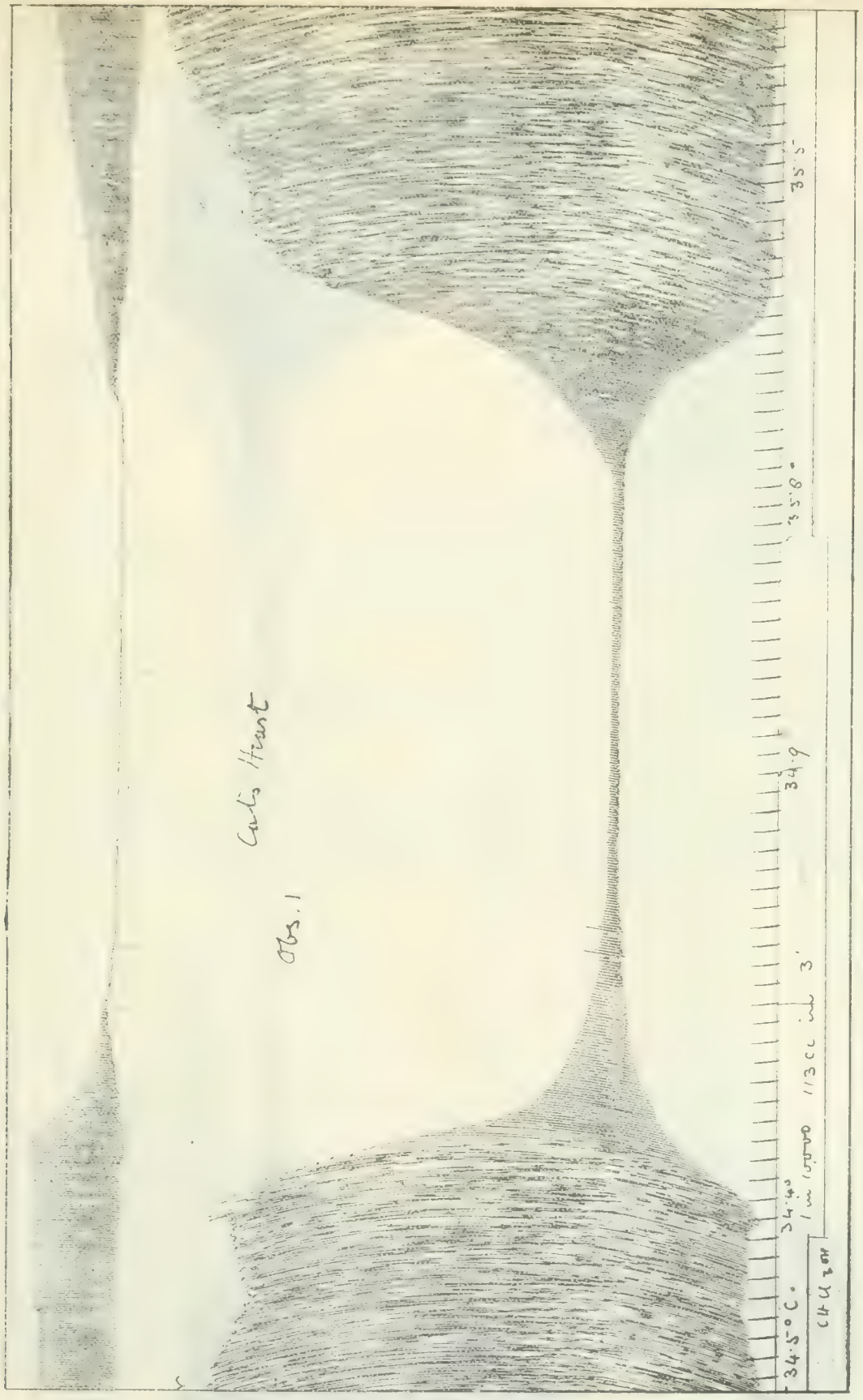


Fig. 3.—IV.—Heart 34. Observation 1. Cat's heart; CHCl$_3$ 0.01 per cent. solution in diffied Ringer's fluid.

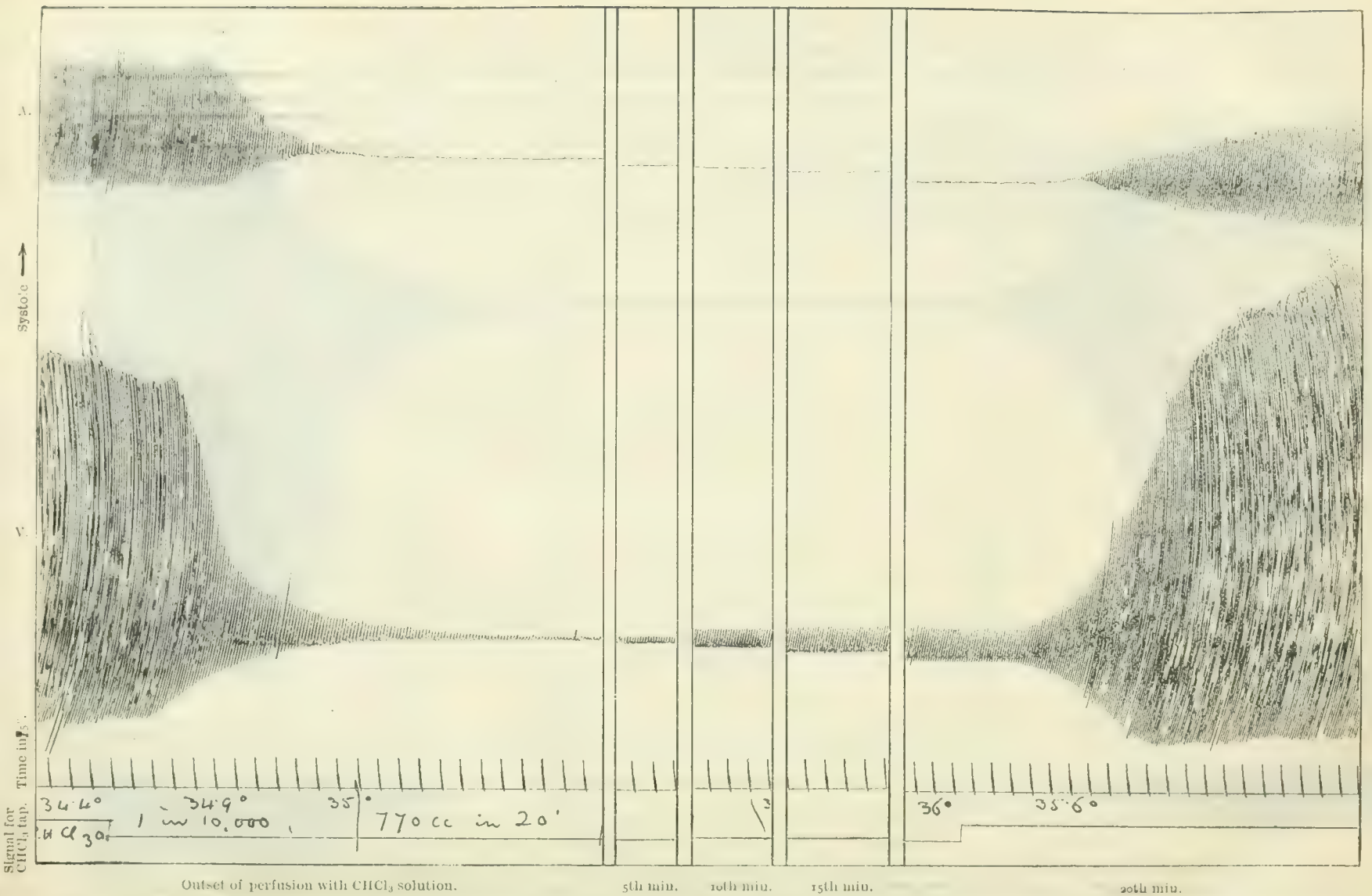


Fig. 4. IV. Heart 24. Observation 3. Cat's heart; $CHCl_3$ 150 mg. per litre of modified Ringer's solution ($CHCl_3$ in 0.015 per cent. solution) 770 c.cm. of the solution passed through in 20 min.

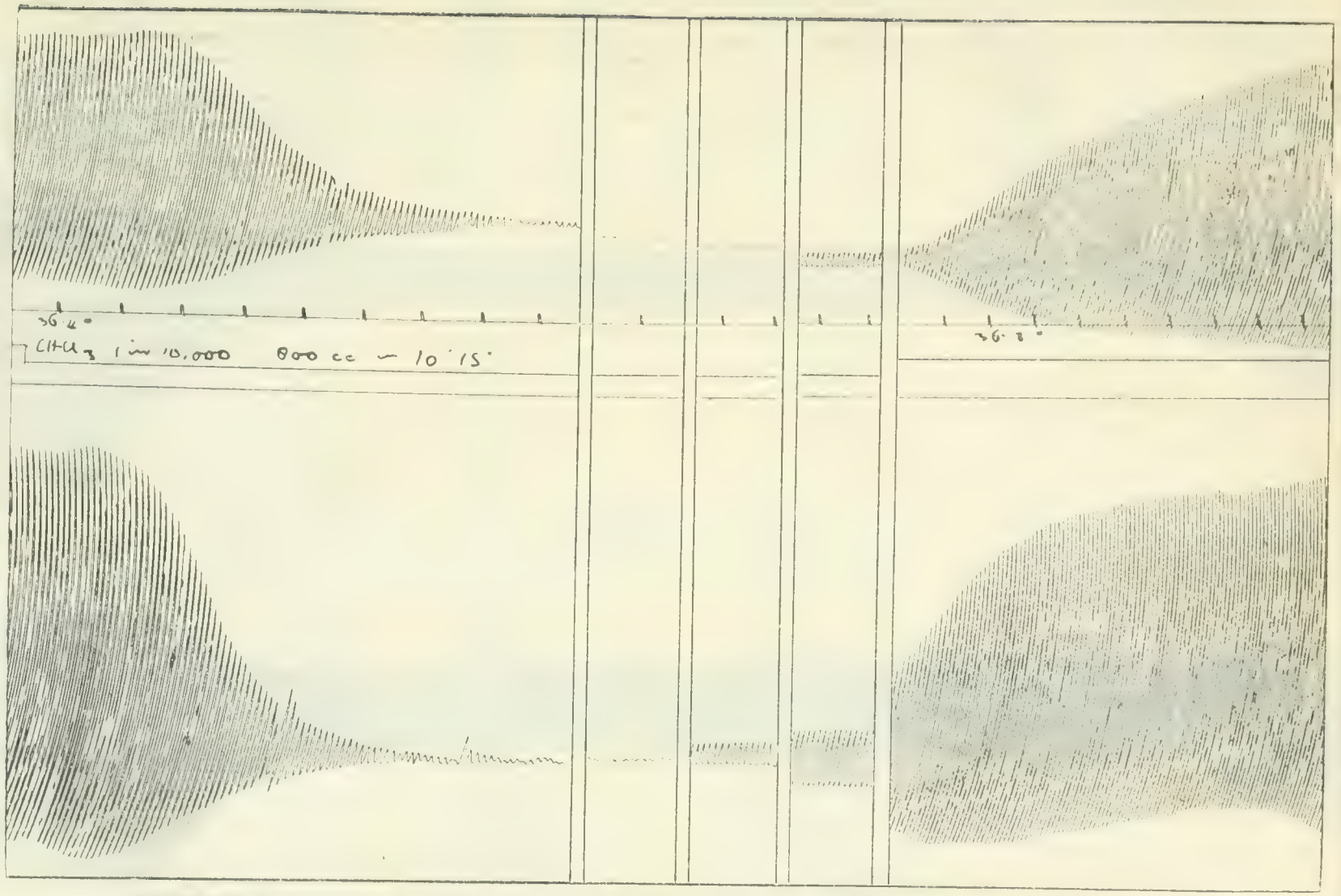


Fig. 5. IV. Heart 26, Observation 4. Cat's heart; $CHCl_3$ 0.01 per cent. in modified Ringer's solution; temperature 36.4° C. at outset, 36.3° at end of observation. Perfusion with the solution lasted 10' 20", in that period 800 c.cm. went through the coronary system.

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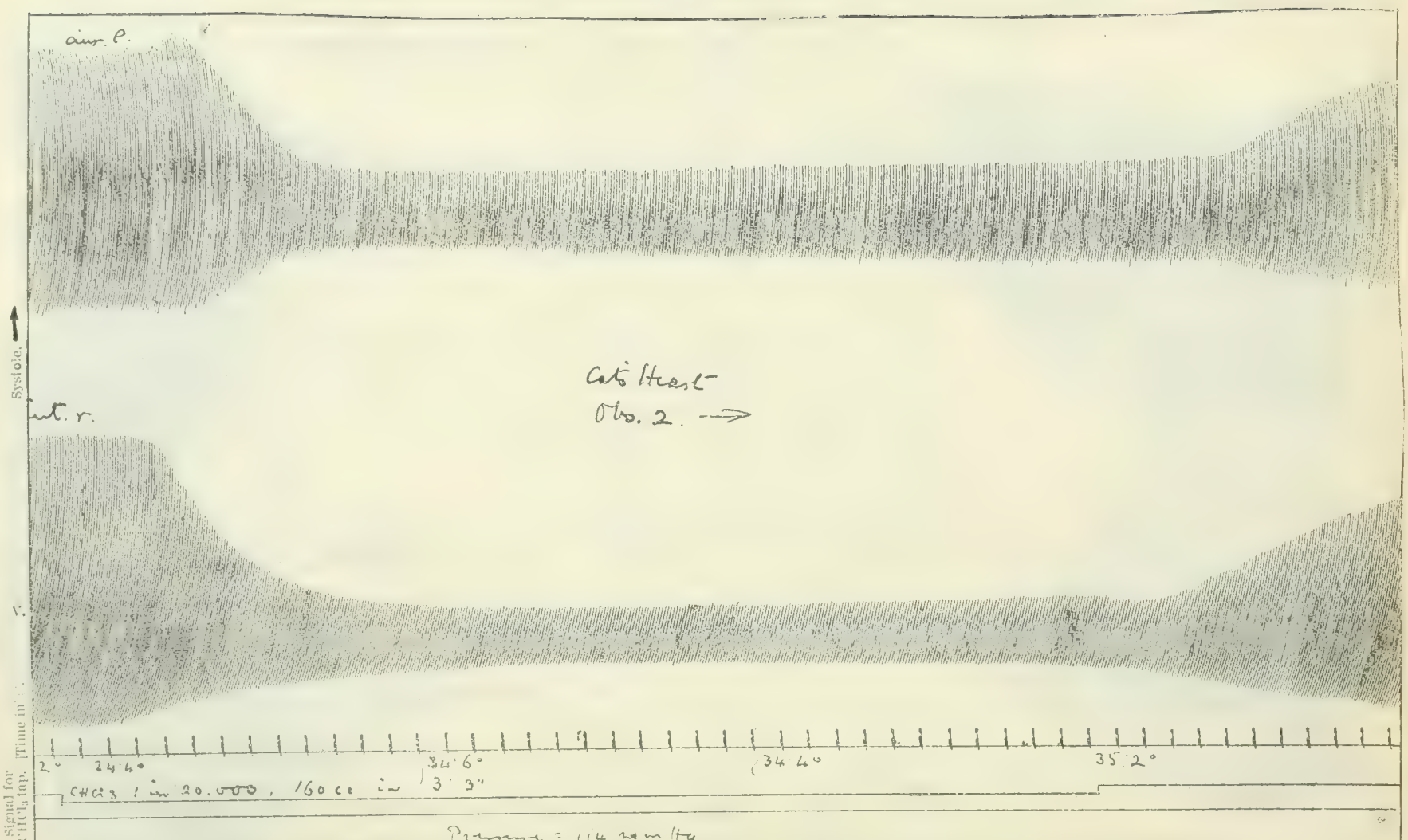


Fig. 6.—V.—Heart 31, Observation 2. Cat's heart perfused with $CHCl_3$. 1 vol. in 20,000 vols. modified Ringer's solution (0.005 per cent.) for 3' 3"; pressure in coronary artery = 114 mm. Hg.

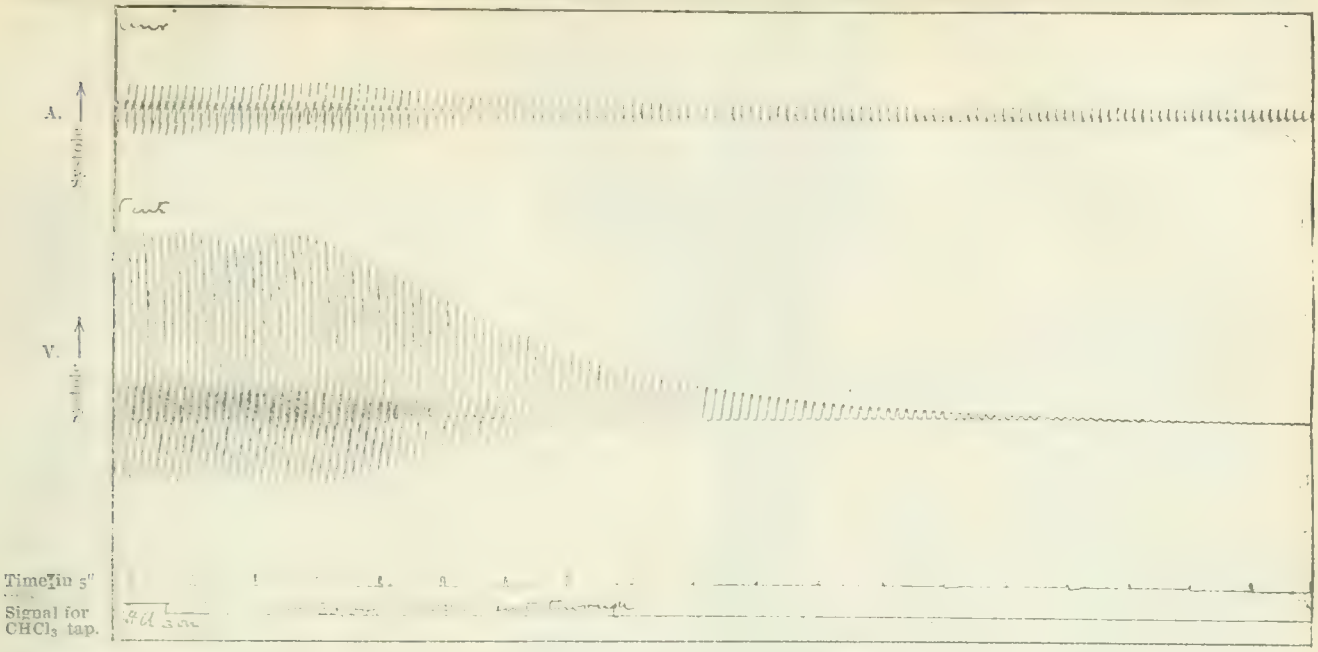


Fig. 7.—VI.—Heart 5, Observation 6. Cat's heart; perfusion of coronary system with $CHCl_3$ 0.0032 per cent. in modified Ringer's solution; temperature 38° C., 100 c.cm., perfused in 125'.

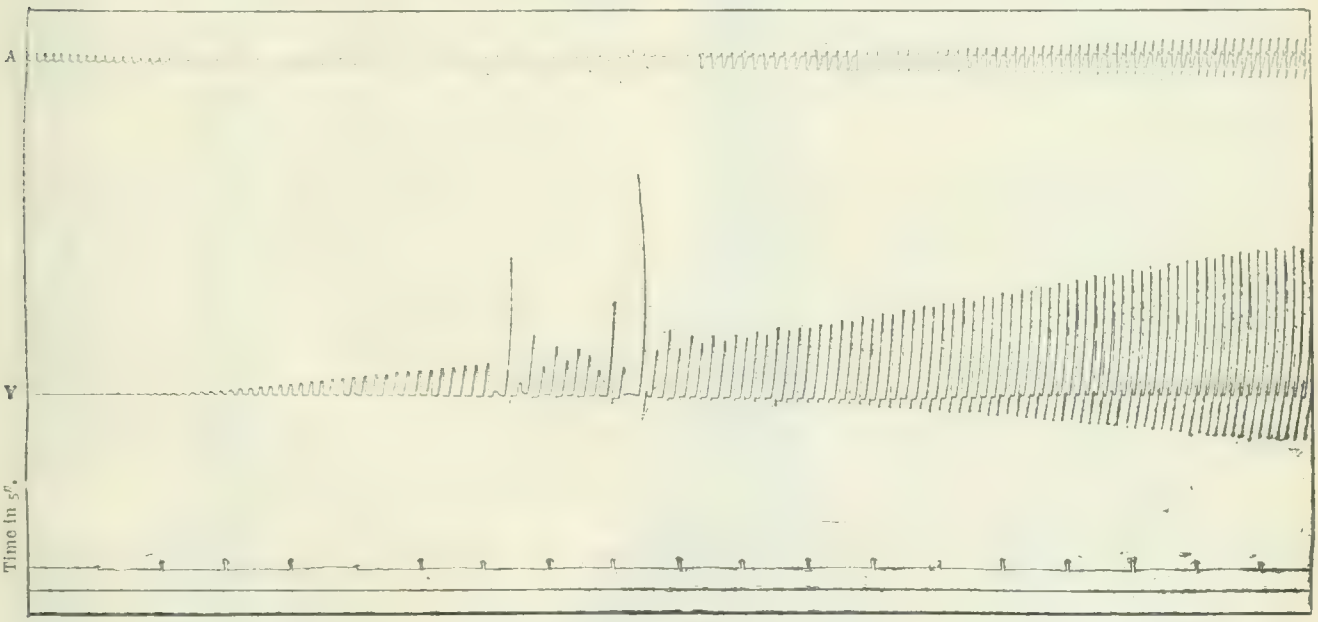


Fig. 7.—VI.—Heart 5. Observation 6 *(continued)*. Perfusion of the $CHCl_3$ solution discontinued; recovery of auricle and ventricle.

28" per cent. The chloroform caused no alteration in the frequence or regularity of the rhythm of the beat.

X.—19 MG. $CHCl_3$ PER LITRE MODIFIED RINGER'S SOLUTION *($CHCl_3$ in 0.0019 per Cent. Dilution).*

With this strength of solution we have observations on one heart only, a dog's heart. The beat of the auricle alone was recorded. The weakening of the beat, as estimated by the reduction of the excursion of the recording lever amounted to 69 per cent. The full effect of the drug was obtained in about 75" from commencement of the administration. When the administration was prolonged, for example, to 10', the heart was rather less affected toward the end of the dose than at the beginning of the dose.

XI.—15 MG. $CHCl_3$ PER LITRE MODIFIED RINGER'S SOLUTION *($CHCl_3$ in 0.0015 per Cent. Dilution).* (Fig. 9.)

The auricular beat was always obviously weakened. The degree of weakening, as indicated by reduction of the amplitude of the excursion of the recording lever, varied between 10 per cent. and 50 per cent. The average weakening in seven observations on three hearts was 30.5 per cent. Recovery was always rapid, beginning a few seconds after cessation of the administration and reaching completion from 90" to 4'.

The ventricular beat was likewise also obviously weakened. The reduction of the beat varied from 26 per cent. to 49 per cent.; it averaged in three hearts 38 per cent. The weakening began within 10" of commencement of administration, and obtained full effect in 70". It tended to diminish as time went on, being less marked at end of the seventh minute than at end of the second minute of administration.

In Heart 30 the effect of this strength of $CHCl_3$ solution was compared with that of a solution of twice the concentration on the same heart, the weaker solution being administered first. The weaker solution reduced the auricle beat by 30.3 per cent. (mean of three observations), the

ventricle beat by 26 per cent.; the stronger solution reduced the auricle beat by 85.2 per cent. (mean of three observations). Recovery began about as soon after withdrawal of the stronger as after withdrawal of the weaker solution; but the completion of the recovery took longer for the former.

The frequency of rate of beat was not affected by the exhibition of the $CHCl_3$ solution.

XII.—10 Mg. $CHCl_3$ per Litre Modified Ringer's Solution. (*$CHCl_3$ in 0.001 per Cent. Dilution, 1 in 150,000 by Volume.*) (Fig. 10.)

With this strength of solution only a small reduction of the activity of either auricle or ventricle was observed. We have employed it in the case of two hearts. In the ten observations on these two hearts the average reduction in amplitude of the excursion of the lever recording the ventricular beat was 21.7 per cent.; the average reduction of the auricular beat was more, but in these two hearts the auricular record was not very satisfactory. There was usually a very slight increase in amplitude of the ventricular beat just at outset of the exhibition of the drug. Recovery was full, but not obviously more rapid than after stronger solutions. There was no alteration in the frequence or regularity of the cardiac rhythm. An illustration of the effect of this strength of chloroform solution is given in Fig. 10. With weaker solutions of chloroform than this last we have not worked.

Influence of Temperature.

We have been careful to note the temperature of the fluid entering the coronary system. We have performed control observations on the effect on the beating of the heart of gradual and of more sudden variations of temperature in the fluid supplied. As to the former the exhaustive inquiries by Newell Martin[6], [7], and by Langendorff[7] stand. So definite a quickening of the cardiac rhythm follows *pari passu* with gradual raising of its temperature that Newell Martin formulated a numerical law correlating the two. Langendorff in result of his own researches modifies Newell Martin's ratio. Our observations on the effect of $CHCl_3$ solutions on the heart were conducted between 34° C and 38° C. We find from our control experiments that the slight variations in temperature occurring in our individual $CHCl_3$ experiments do not confuse the issues raised and studied in those experiments.

It is the slight rapid changes that have required guarding against by us, namely, when one or other solution was first turned on. This source of error is avoided by the 3-way taps. The tap has been turned so as to discharge by the sidepath any fluid that has lain in the short tubing outside the water bath (though jacketed in cotton-wool). Our aortic thermometer has shown us that by this means we have usually avoided even slight alterations of temperature. The readings of the thermometer have been always recorded. Such control experiments, as we have made, on this point show that the influence of the more sudden slight changes is of the same order as the considerably more gradual changes which we have also made observations upon, the effects of which were recorded by Newell Martin and Langendorff. In our fuller report we shall furnish further evidence to this effect.

Excitation of the Cardiac Nerves.

The cardiac nerves, lying in front of the root of the lung, were faradized, and their effect on the isolated heart recorded on many occasions. Typical vago-inhibitory effects on the auricle and also on the ventricle were almost uniformly obtained. The inhibitory effect was more marked on auricle than on ventricle. (Fig. 11.) It was usually succeeded by very marked augmento-accelerator action, lasting many seconds or even some minutes.

Chloroform does not easily abolish these effects of stimulation. When the contractions were deeply reduced, almost to extinction, by the $CHCl_3$ perfusion, stimulation of the cardiac nerve would still cause slowing frequency-rate or diastolic standstill; this was followed often by marked augmentation or acceleration, or both. When the beat had been reduced by the $CHCl_3$ solution to extinction, to observe any inhibitory effect, of course, became impossible, but on faradizing the cardiac nerve striking augmento-accelerator effects were often observed. In some cases the heart, when it had been rendered flaccid and motionless by the $CHCl_3$ perfusion, was, by a brief faradization of cardiac nerve, at once thrown into vigorous action, and remained so for a couple of minutes or so, in spite of continued administration of the $CHCl_3$ solution all the time. Fig. 12 illustrates this. $CHCl_3$ in 0.002 per cent. had been already administered to the heart for 95″, and the beat of the ventricle had entirely ceased for the first minute, when cardiac nerve was stimulated for 15″. In 7″ from commencement of the stimulation the ventricle, although there was no remission of the $CHCl_3$ administration, recommenced beating. It soon attained an extraordinary force and frequency. It continued to beat for about 100″, giving a series of 196 beats, in spite of the unremitted continued perfusion with the $CHCl_3$ solution.

Influence of Duration of Exhibition of the $CHCl_3$ Solution.

A notable feature of the action of $CHCl_3$ in dilute solution on the isolated mammalian heart is absence of all cumulative aggravation. The solution produces its full effect in a comparatively few seconds—for example, 70″, after reaching the coronary system. Further prolongation of the administration does not render the depression more profound, but merely maintains it. On discontinuance of the administration the effect passes off at once, in almost as few seconds as it took for its establishment.

With strong $CHCl_3$ solutions the duration of the administration does no doubt aggravate the depression of vitality. Thus with 1 per 1,000 $CHCl_3$ solution the heart that is not killed by perfusion for 30″ is killed by perfusion for 60″. But these strong solutions do not come within the scope of therapeutic inquiry. Of moderate and weak solutions it may be confidently asserted that on the isolated mammalian heart their influence is marked by absence of cumulative effect. In some of our observations we have kept the chloroform solution, even in the strength of 150 mg. per litre of the Ringer's solution (that is, $CHCl_3$ in 0.015 per cent. dilution) flowing continuously through the blood vessels of the heart for 20 minutes at a time. Even over such periods as these no cumulative effect has been obvious; indeed, the depression of the heart's beat has been slightly less at the end than at outset of that time (see following paragraph), and on replacing the chloroform solution by the pure Ringer's solution the recovery of the cardiac activity to its full previous degree has occurred absolutely promptly. For instance, in 50″ after replacement of the chloroform solution by the unchloroformed solution the heart has been beating as vigorously as it had been prior to the exhibition of the drug, and in spite of its forced abeyance for 20′ under the action of the drug.

A second point of interest is the following. During the continuance of a prolonged administration to the heart of a weak or moderately strong $CHCl_3$ solution, the heart seems to become gradually less and less susceptible to the dose that is being employed. A kind of temporary and partial immunity seems to become established. This is exemplified by many of our tracings. We append pieces from two such tracings (Hearts 24 and 26. Figs. 4 and 5). The apparent wearing off of the effect is not due to any real decrease in the strength of the solution. The same solution that at end of a prolonged administration was not depressing the cardiac activity so potently as it had done at outset of the observation, on being after a brief pause readmitted to the heart, immediately acted as potently as at outset once more. We have been accustomed to denote this for convenience in the laboratory as "immunity"; but the relative insusceptibility thus attained was very short lasting.

Excitatory Action of Chloroform.

Especially with stronger solutions of the drug, it was usual for the first effect of the administration to be a distinct though slight increase in amplitude of both auricular and ventricular contractions. The fact that strong solutions left as an after-effect on the ventricle a condition of inco-ordinate fibrillar convulsion likewise suggests an irritative excitatory effect of such doses of the drug.

After cessation of the administration of the drug in moderate dose it was not unusual for the recovery of the beat to pass over for a short time into a condition of super-activity. Many of our tracings illustrate this. We were at first inclined to attribute this to some slight asphyxia of the cardiac tissue. Control observations with boiled-out modified Ringer's solution, administered under nitrogen pressure, showed, however, that the after-effect of the $CHCl_3$ solution cannot be clearly and simply explained by asphyxia. Moreover, our $CHCl_3$ solutions were as oxygenated and delivered under the same oxygen pressure as were our chloroform-free solutions. It may, however, be that under the action of the chloroform the tissue allows an accumulation of waste products that it excretes freely in its unchloroformed condition,

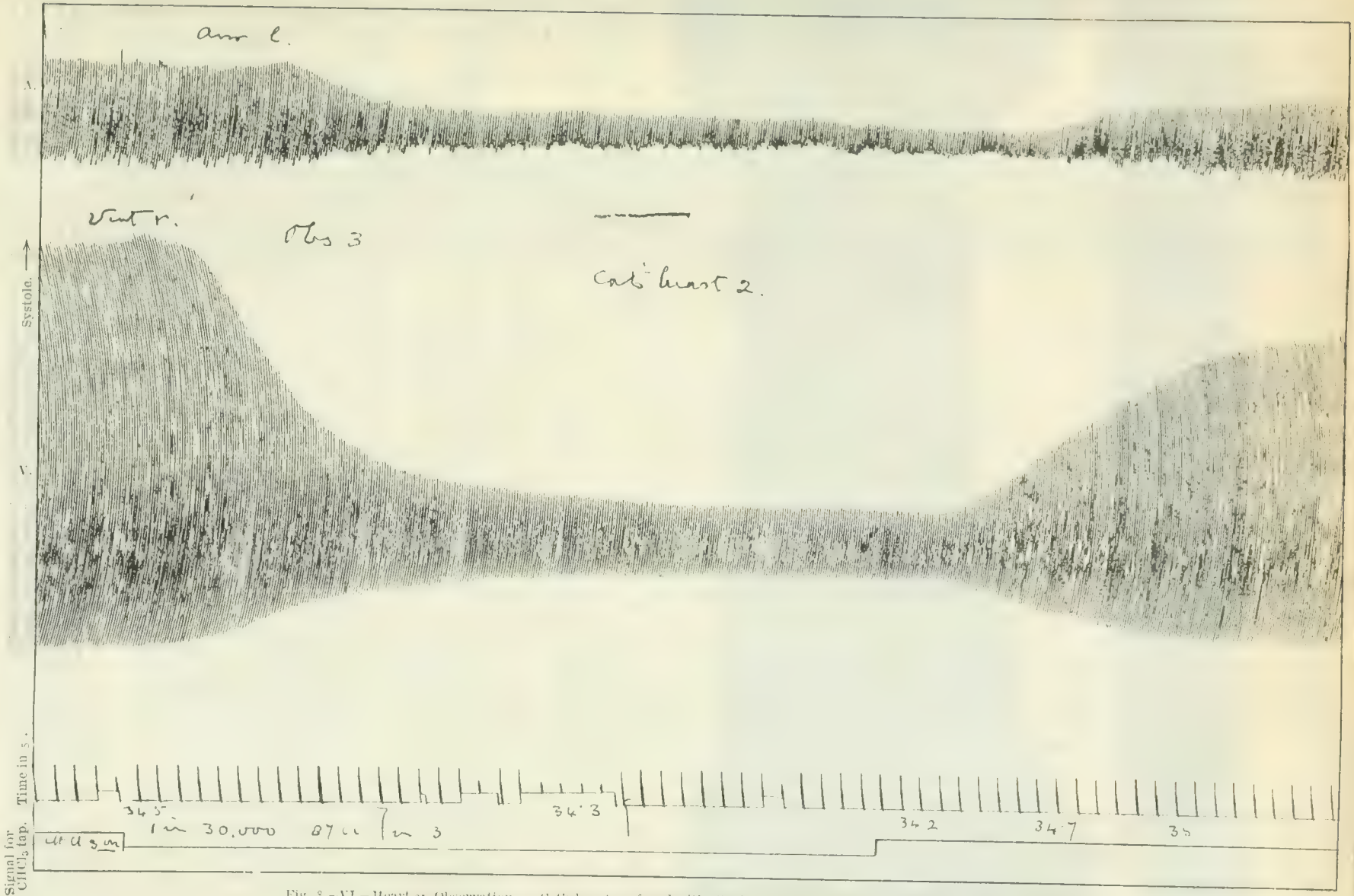


Fig. 8.–VI.–Heart 21, Observation 3. Cat's heart perfused with $CHCl_3$, 50 mg. per litre of modified Ringer's solution for 3'.

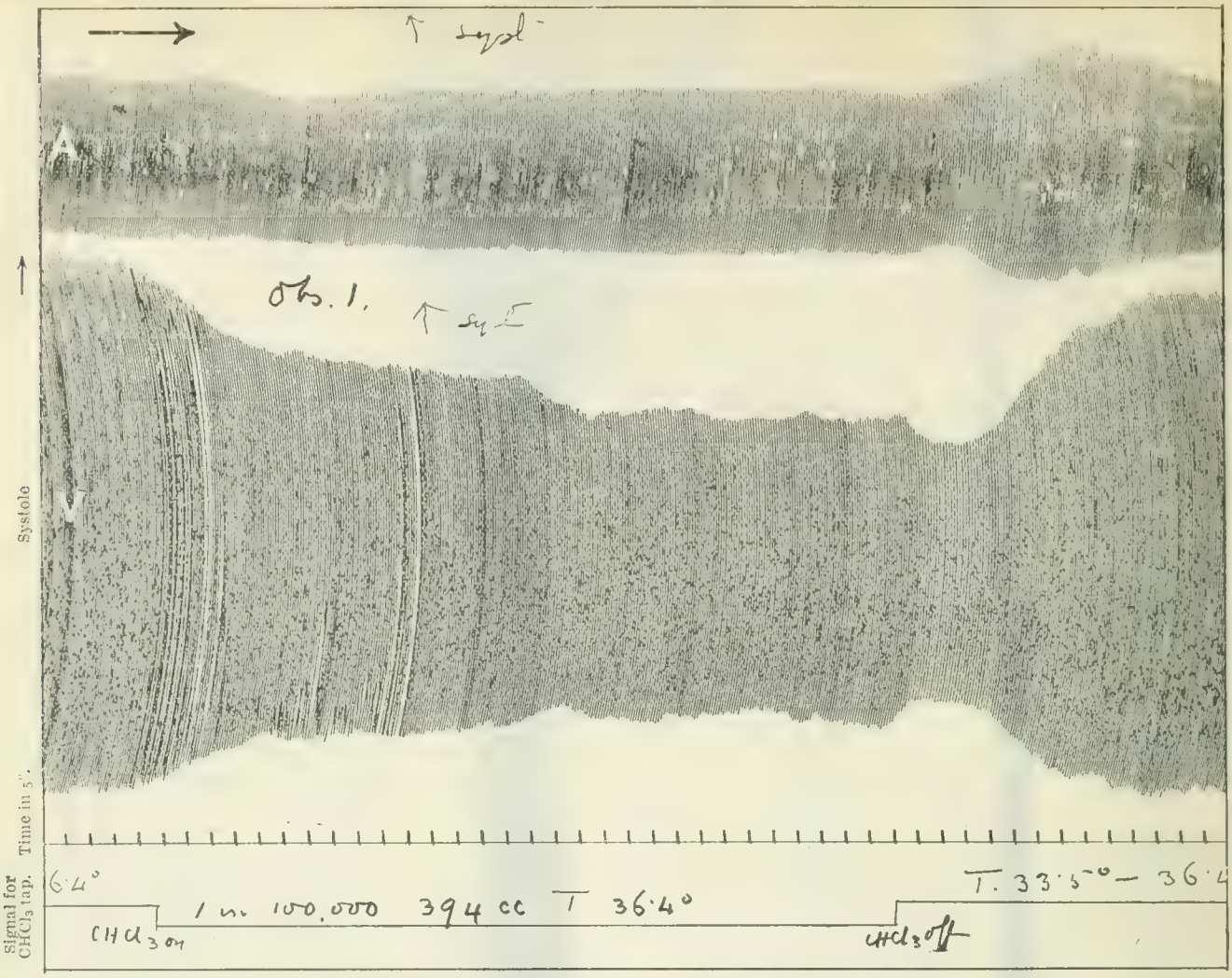


Fig. 9.—X.—Heart 9, Observation 1. Cat's heart; 15 mg. $CHCl_3$ per litre of modified Ringer's solution.

and that these effete decomposition products make an excitatory effect which they can exert on the tissue patent after disappearance of the chloroform depression.

A similar condition might explain the gradual reduction in the depressant effect of a constantly-maintained strength of $CHCl_3$ solution continuously exhibited to the tissue over a period of several minutes' duration—for example, 5-20'. This reduction does, as stated and illustrated above, actually occur.

We have repeatedly noticed that the amount of perfused solution passing through the coronary circulation per unit time considerably diminishes soon after the $CHCl_3$ containing solution has replaced the $CHCl_3$ free solution. Since the pressure and temperature of the solutions supplied was the same in both cases, the diminution of flow indicates a vaso-constrictor action by the $CHCl_3$ on the cardiac vessel; for the difference was so great as to be inexplicable by the loss of the power of the cardiac contractions or a slight increase in the viscosity of the solution. [Subsequent to the printing of this paragraph of our report to the Committee there has appeared a note by Professor Schäfer and Dr. Scharlieb* on the action of chloroform on the blood vessels, from which it is clear that chloroform causes contraction of blood vessels through which it is perfused.]

Alteration in Frequence of the Beat-rate.

As several times mentioned above, we have remarked, with surprise, the usual absence of any alteration of frequence or rhythm of beat-rate in the isolated mammalian heart perfused with dilute chloroform solution. Certainly in most cases the heart-beat in our experiments has suffered reduction in its amplitude in degree varying with the concentration of the chloroform, without suffering any appreciable change in beat-rate either as to frequence or to rhythm. But we have not yet measured out our curves sufficiently to say that diminution of frequence does never occur.

The Dosage for the Heart.

It is the concentration of the $CHCl_3$ in the perfused solution which seems to practically alone decide the depth of the depression of activity produced. Mere continuance of administration of fresh quantities of the drug does not, if the fresh quantities do not involve greater concentrations than those already employed, aggravate the paralysant action further. In our experiments such high strengths of chloroform as 150 mg. per litre diluting fluid (0.015 per cent. $CHCl_3$) have perfused the whole coronary system uninterruptedly for 20' at a time, without in all that time producing the slightest aggravation of the cardiac depression established initially in the first 90". The gradation of the action of the drug seems, therefore, a function of its tension in the solvent. The results of our dosage experiments suggest that the cardiac tissue exposed to a fluid of a certain $CHCl_3$ pressure takes up almost at once a certain quantity, and that further continued exhibition of the drug under the same tension does not lead to further relative absorption of it by the tissue.

In recent years Dr. Waller has demonstrated, more especially by galvanometric records of the action currents in isolated frog's nerve, the arithmetic grading of the depth of chloroform narcosis obtainable by definite grading of the admixtures of $CHCl_3$ with the air of the moist chamber containing the nerve. His presidential address to the Section

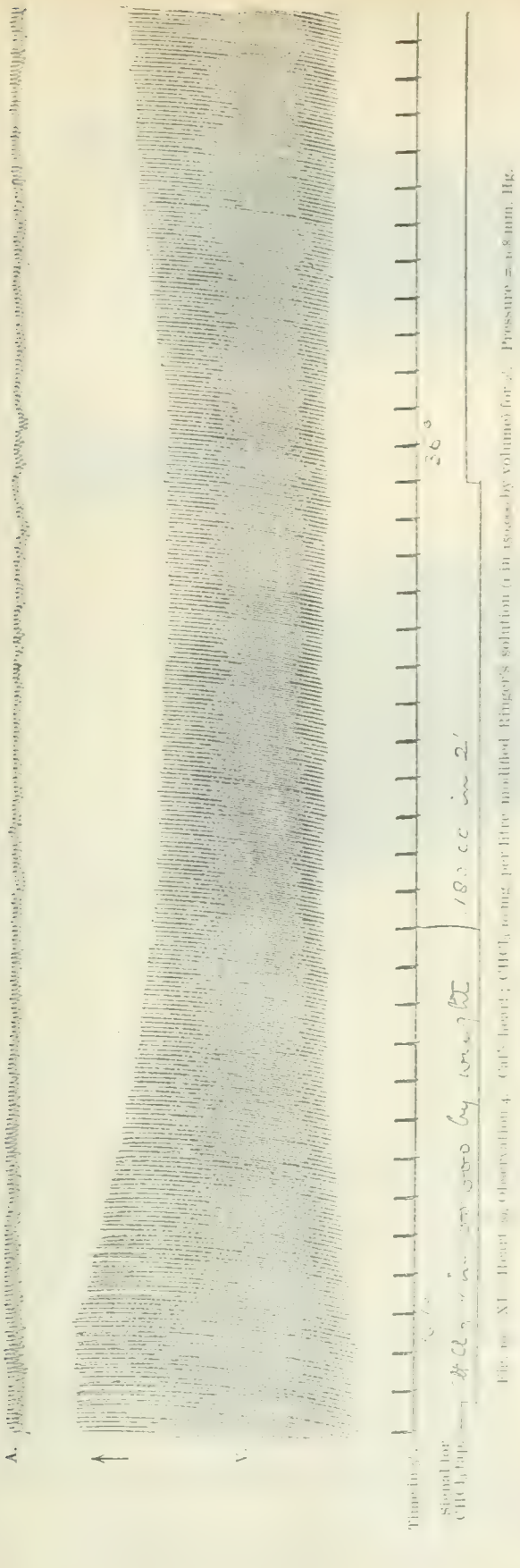


Fig. 10. XI. Heart 8, observation 4. Cat's heart; $CHCl_3$ 1.4 mg. per litre modified Ringer's solution (1 in 1,000 by volume) for 2'. Pressure = 4.8 mm. Hg.

of Physiology at the Montreal meeting of the Association, 1897 (British Medical Journal, November 20th, 1897) was largely devoted to this theme. In it he points out the close analogy between frog's heart and frog's nerve in their reaction to various anaesthetics. Our results on $CHCl_3$ dosage in fluid supplied to the coronary circulation of the mammalian heart reveal just such a gradation as that found by Dr. Waller in nerve treated by chloroform vapour. The possibility of such grading of depression by dosage is one on which Dr. Waller has often insisted as of practical importance. We are able to confirm it for the dosage of the isolated mammalian heart.

A form of expressing the $CHCl_3$ dosage, less instructive than that of giving its solution concentration, but nevertheless usefully showing its power upon the heart, is to give the weight of $CHCl_3$ which reduces the heart beat by a definite amount when offered to it at a certain solution (osmotic) pressure. Thus, in our experiments, the beat of Heart 8 was reduced by 92 per cent. by administration to it of 1.4 mg. of $CHCl_3$ offered to it as a 0.003 per cent. solution (in Ringer's fluid), that is under a solution pressure (assuming $CHCl_3$ to be a perfect monomolecular gas) of 4.79 mm. Hg., at temperature 37° C. Stated in amounts calculated per gram of heart tissue (the Heart 8 weighed 12.19 grams), 0.114 mm. per gram cardiac tissue offered under that pressure practically annulled the heart's action. In other words, about 300 c.cm. of a 2 per cent. admixture of chloroform with air administered to an adult man, if its chloroform all reached the heart, and reached it under the above solution pressure would, for the time being, practically annul cardiac action.

The above figure is given because it may serve to indicate the sensitiveness of the mammalian heart to chloroform. The practical problem requires many more data than we possess at present before it can be completely dealt with. Of chloroform inhaled what portion enters the coronary blood vessels? What tension of chloroform in air inhaled will through the pulmonary membrane charge the blood so as to give therein an osmotic pressure of 5.01 mm. Hg., as in a Ringer's fluid containing 30 mg. $CHCl_3$ per litre? From Mr. Vernon Harcourt's data, furnished in last year's Report of the Committee (Appendices, Paper H, pp. 15, 16) chloroform in such a dilution in water at 37° C. would have a vapour tension of 0.55 mm. Hg. In the modified Ringer's solution we have used for perfusion, it may be supposed that the tension would not be appreciably different from that in water. But the tension of chloroform for any dilution with blood is certainly less—probably far less—than for the same dilution with Ringer's fluid. The experiments of Pohl, Harcourt, and Waller and Wells all indicate this. If the physiological activity of the chloroform is graded by its solution (osmotic) pressure, as we infer it is, observations easily made indicate that for the same dilution that pressure is much lower in blood than in Ringer's fluid. We find, for instance, tadpoles much more speedily paralysed by chloroform exhibited in Ringer's fluid than in blood.

Our observations are carried out as follows: Into two similar shallow glass dishes provided with glass covers equal quantities of equal dilutions of $CHCl_3$ in Ringer and in defibrinated blood (pig) respectively are placed. The $CHCl_3$ in "Ringer" is put into one vessel, that in blood into the other. Two tadpoles are chosen similar in size and development. One (A) is placed in the one vessel, the other (B) in the other. Both A and B swim about freely, and gradually show signs of decreasing vigour and activity. The time taken for A and B respectively to become motionless and irresponsive when touched is noted. The chloroformed animal is as soon as paralysed at once removed to fresh water; the time is then noted which is required for it to regain its motility. Both animals having been allowed to recover perfectly in the fresh water, both are then again put into the chloroform containing fluids, but A now into the fluid previously occupied by B, and vice versa. The times of anaesthetisation and subsequent recovery are then again observed for both A and B. The following are examples of such times:

Tadpoles.

$CHCl_3$ 1.5 per thousand "modified Ringer's" solution; and $CHCl_3$ 1.5 per thousand defibrinated blood, unlaked (pig). (1 in 1.000 by volume).

Chloroform in "Ringer"		Chloroform in Blood.	
Reflexes Gone.	Recovery.	Reflexes Gone.	Recovery.
5 sec.	1 min.	4 min. 50 sec.	5. min.

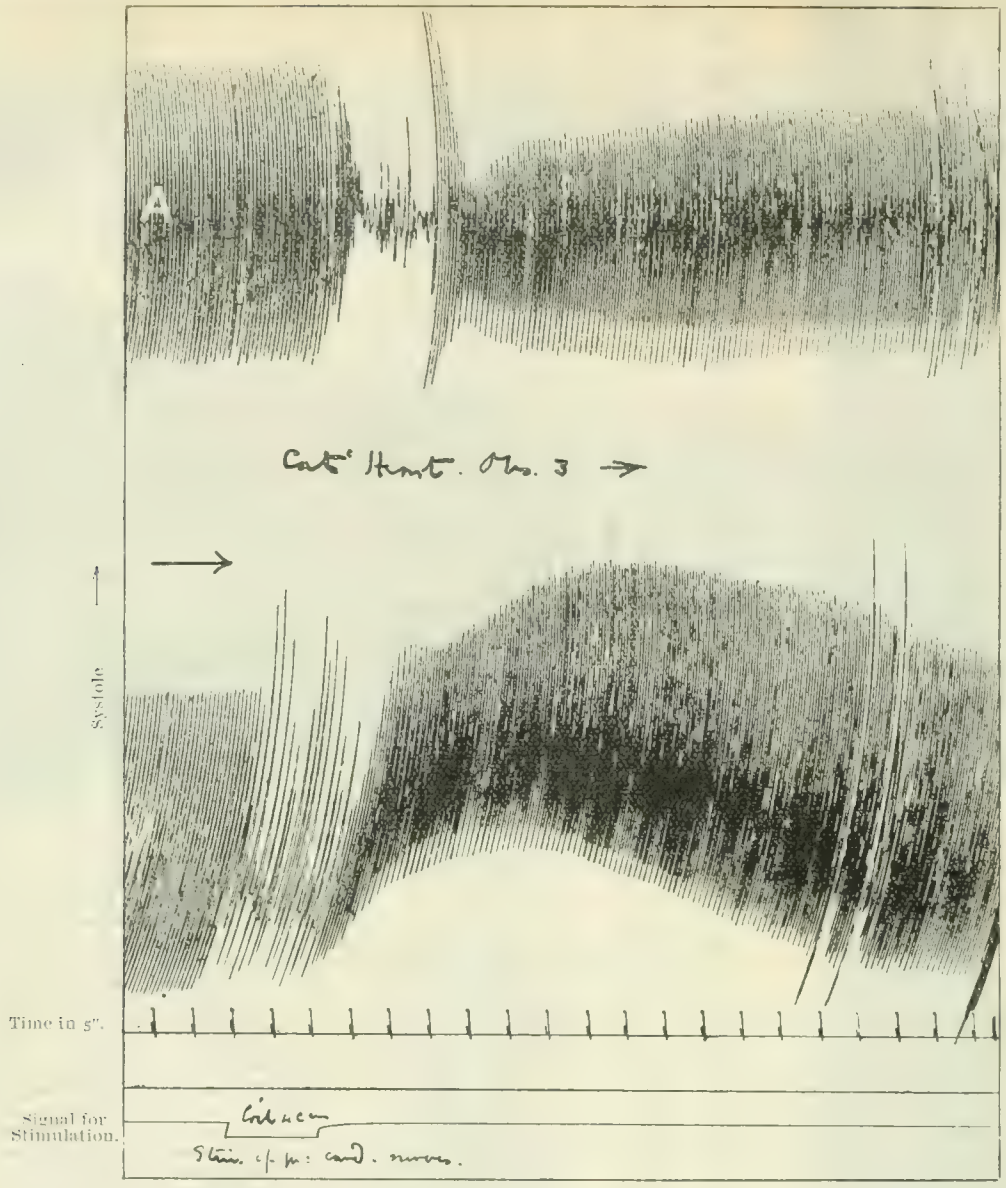


Fig. 11.—Heart 31, Observation 1. Cat's heart perfused with modified Ringer's solution; precardiac nerve stimulated for 12".

$CHCl_3$ 0.75 per thousand "modified Ringer's" fluid; and $CHCl_3$ 0.75 per thousand defibrinated blood, unlaked (pig). (1 in 2,000 by volume).

Chloroform in "Ringer."		Chloroform in Blood.		
	Reflexes Gone.	Recovery.	Reflexes Gone.	Recovery.
Tadpole A.	2 min. 30 sec.	2 min. 25 secs. (begins)	Tadpole B. 4 min. (not fully narcotized)	Revived at once.
Tadpole B.	2 min. 15 sec.	4 to 5 min.	Tadpole A. 7 min. (hardly narcotized)	Revived at once.

$CHCl_3$ 0.75 per mille "modified Ringer's" fluid compared with $CHCl_3$ 1.5 per mille defibrinated blood, unlaked (pig).

Chloroform in "Ringer."			Chloroform in Blood.	
	Reflexes Gone.	Recovery.	Reflexes Gone.	Recovery.
Tadpole E.	1 min. 40 sec.	3 min. 25 sec.	Tadpole F. 1 min. 25 sec.	3 min.
,, F.	1 min. 25 sec.	4 min. 15 sec.	Tadpole E. 1 min. 15 sec.	40 sec. (begins).
,, G.	1 min. 50 sec.	2 min.	Tadpole H. 2 min.	1 min. (begins(.
,, H.	2 min. 10 sec.	3 min.	Tadpole G. 1 min. 55 sec.	30 sec. (begins).

It is thus seen that the physiological effect of chloroform in Ringer's fluid is much greater than that of the same percentage of chloroform in blood. As tested on tadpoles, $CHCl_3$ in 0.75 per mille dilution in Ringer's fluid is as powerfully narcotic as twice that percentage offered not in Ringer's fluid but in slightly diluted blood. Were the blood quite undiluted the contrast would presumably be stronger still.

The solution of chloroform 1.5 per mille in blood was made by adding 20 c.cm. of 5 per mille solution of $CHCl_3$ in "modified Ringer" to 80 c.cm. of the fresh defibrinated blood.

Mammalian Heart Perfused with Diluted Blood Containing 100 mg. of Chloroform per Litre.

An experiment in which the heart was perfused with diluted blood showed the $CHCl_3$ to be much less potent in

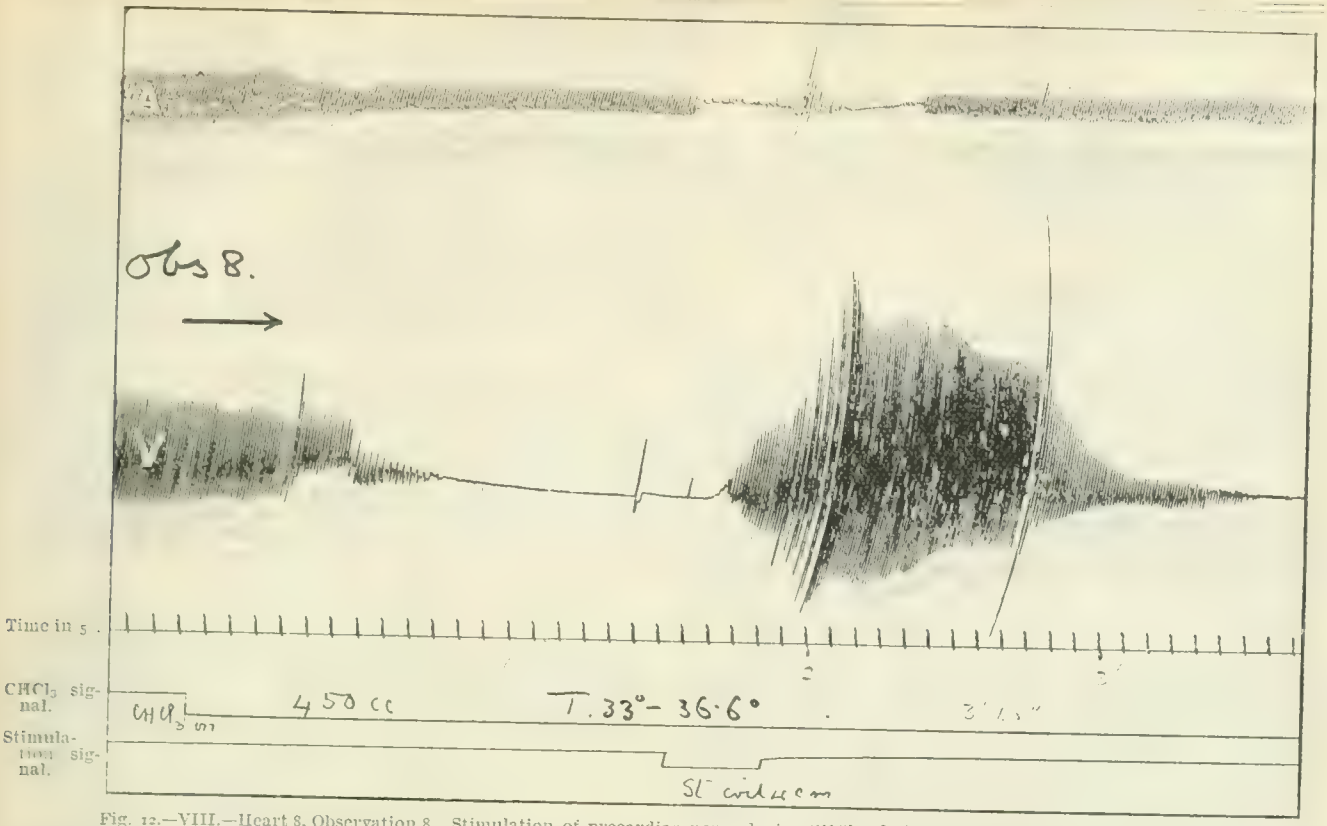


Fig. 12.—VIII.—Heart 8, Observation 8. Stimulation of precardiac nerve during $CHCl_3$ administration $\frac{1}{2000}$ in Ringer's solution.

this medium than in "modified Ringer's fluid." At a strength of 1 in 10,000 by weight (100 mg. to a litre) the ventricle's beat was reduced by 30 per cent. to 32 per cent. The reduction which we should expect a similar dilution of chloroform in "modified Ringer's fluid" to produce would lie between 80 per cent. and 90 per cent. The degree of dilution of the blood in which the $CHCl_3$ was exhibited was 50 per cent. with Locke's fluid, that is, 100 mg. $CHCl_3$ in 500 c.cm. of Locke's fluid added to 500 c.cm. of cat's blood.

Conclusion.

The conclusion seems unavoidable that the heart muscle rapidly takes up $CHCl_3$ offered to it in the vessels of its coronary system, and that the quantities it takes increase with increasing tension of the chloroform in the solution circulating through it. The osmotic pressure of $CHCl_3$ in a dilution of 1 in 100,000 of physiological saline is about 1.6 mm. Hg. at 37° C. This is the lowest chloroform tension we have worked with. With very strong solutions, such as 1 per 1.000 toxic after effects complicate the simpler relationship which holds for moderate and weak solutions.

Equilibrium is rapidly—for example, in 50"—established between the intramuscular chloroform and the circulating or perfused chloroform. When that is established further exhibition of the circulating chloroform leads to no further increase of chloroform paralysis of the tissue, provided the solution-tension of the circulating chloroform is not altered. Indeed, if that solution-tension is maintained but not increased there gradually ensues in the course of minutes—for example, 10 to 20 minutes—a distinct diminution of the cardiac depression. Should, however, the solution-tension be altered, alteration in the depth of chloroform paralysis ensues in the sense that if the tension of the $CHCl_3$ is increased, corresponding aggravation of the paralysis of the tissue immediately follows, while if the tension of the circulating $CHCl_3$ be lessened, the paralysis of the tissue is immediately correspondingly diminished. The speed and completeness with which this recovery from functional depression follows forthwith upon replacement of the chloroform containing fluid by fluid free from chloroform is a remarkable and characteristic feature of the action of chloroform on the heart in weak and moderate concentrations. It suggests that in obedience to the direction of the gradient of osmotic pressures the chloroform in the muscle passes back from the muscle into the fresh fluid supplied at zero chloroform pressure. In this respect the chloroform behaves as though it were in solution in the muscle. Can this drug poison the muscle without entering into chemical combination with its substance? Does it act as an antikatalysator on the ferment processes at root of the normal functional activity of the contractile tissue of the heart?

As to the question of differences of susceptibility to chloroform of different individual hearts, our observations indicate that such differences occur in cat hearts. The differences have been especially obvious to us in our experiments with weak solutions.

References to Papers.

[1] O. Langendorff, *Pflüger's Archiv*, vol. lxi, 1895. [2] H. Newell Martin and E. C. Applegarth, *Studies from the Biological Laboratory of the Johns Hopkins University*, vol. iv, 1890. [3] F. S. Locke, *Centralblatt für Physiologie*, No. 26, 1901, and No. 17, 1902. [4] *Hedborn. Skand. Arch. für Physiologie*, 1899, 22, [5] F. W. Tunnicliffe and O. Rosenheim, *Proc. Physiol. Soc.*, March 21, 1903. [6] H. Newell Martin, *Philosoph. Transact. Royal Soc.*, Lond. 663, vol. 174, 1883. [7] O. Langendorff u. Czeslaw Nawrocki, *Pflüger's Archiv*, p. 355, vol. 66. [8] E. A. Schäfer and H. J. Scharlieb, *Proceedings Physiol. Society*, March 21, 1903, in *Journ. of Physiology*, April 28, 1903. [9] A. D. Waller, BRITISH MEDICAL JOURNAL, Nov., 1897, July, 1898; also *Lectures on Animal Electricity*, London, 1897. [10] A. Vernon Harcourt, BRITISH MEDICAL JOURNAL, July 12, 1902; Report of the Special Chloroform Committee, Appendices, Paper II.

Figures.

All the figures read from left to right. Where numerals are written next under the time record they indicate the temperature in centigrade scale recorded by the aortic thermometer at that time. The explanation of other parts of the tracings is given either on the tracings or in the accompanying text.

END OF THE REPORT OF THE CHLOROFORM COMMITTEE.

Reports of Branch Meetings.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH.

THE forty-ninth annual general meeting of this Branch was held in the Birmingham Medical Institute on June 26th.

Introduction of New President.—In the absence of the retiring President, Dr. H. Malet, the chair was taken by Dr. E. MALINS, who thereupon introduced Mr. JORDAN LLOYD as President for the ensuing year.

Confirmation of Minutes.—The minutes of the previous annual meeting were read, confirmed, and signed.

Reports of Council, Treasurer, Pathological and Clinical Section, and Ethical Committee.—The reports, which had been printed and circulated, were received and adopted. The Council called attention to the successful arrangements which had been made for effecting the changes incidental to the new Constitution. The area of the Branch had been partitioned into the following seven Divisions: Bromsgrove, Central, Coventry, Dudley, Nuneaton and Tamworth, Warwick and Leamington, and West Bromwich; and members were urged to take an active part in the work of their respective Divisions. Papers and other scientific communications had been contributed by the following members, namely, Professor Saundby, Mr. Morrison, Mr. Loxton, Mr. Haslam, Mr. Barling, Mr. D'Arcy Ellis, Mr. Heaton, Mr. Taylor, Dr. Deanesly, Mr. Milward, Mr. Hall-Edwards, Dr. Malins, Mr. Jordan Lloyd, Dr. McCardie, Dr. Perry, Dr. Radcliffe, Dr. Walter Jordan, and Mr. W. E. Bennett. Several members had been appointed by the Central Council to serve on Standing Committees of the Association: Professor Saundby to the Ethical Committee, of which he was Chairman; Drs. Langley Browne and Mr. Messiter to the Medico-Political Committee; and Mr. Morrison to the Organization Committee. Twenty-six new members had been elected, and the present strength of the Branch is 488. The financial statement showed a satisfactory balance. The January meeting of the Section had been devoted to an instructive discussion one the Clinical Value of Leucocytosis opened by Professor R. Muir, of Glasgow.

Votes of Thanks.—Votes of thanks were passed to the retiring President, Treasurer, Honorary Secretaries, members of Council, representatives of the Branch in the Council of the Association, Chairman and Honorary Secretaries of the Section, members of the Ethical Committee, and the Honorary Auditor, for their services during the past year.

Officers for 1903-4.—The following officers were declared elected without contest:—*President-Elect:* T. E. Underhill, M.D. *Treasurer:* *F. Marsh, F.R.C.S. *Honorary Secretaries:* *J. T. J. Morrison, F.R.C.S., and *T. Sydney Short, M.D. *Representatives in the Council of the Association:* *H. Langley Browne, M.D., and *W. F. Haslam, F.R.C.S. (*Those gentleman marked with an asterisk (*) held the same office last year.)

Appointment of Auditors.—Dr. J. W. Russell was reappointed Honorary Auditor, and Messrs. Charlton and Long Auditors.

President's Address.—The PRESIDENT (Mr. Jordan Lloyd) delivered an inaugural address on Surgical Practice Twenty-five Years ago and To-day, for which the Branch accorded him a hearty vote of thanks by acclamation, on the motion of Dr. MILNER MOORE, seconded by Mr. HASLAM.

Annual Dinner.—The annual dinner took place the same evening in the Grand Hotel, Birmingham. The guests included the Coroner for the City (Mr. J. Bradley), the Deputy Stipendiary (Mr. H. Pearson, M.A.), and the Registrars of the County Court (Mr. H. Glaisyer, LL.B., and Mr. Whitlock). The success of the function was enhanced by the excellent speeches made by the PRESIDENT (Mr. Jordan Lloyd), Mr. BARLING, Sir JAMES SAWYER, Dr. CALLAGHAN, Mr. BRADLEY, and Mr. PEARSON; and by vocal and instrumental music.

CAMBRIDGE AND HUNTINGDON BRANCH.

THE annual meeting of the Cambridge and Huntingdon Branch was held at the Hospital, Saffron Walden, on Thursday, July 2nd, 1903, under the presidency of Dr. W. CARR SPRAGUE, of Saffron Walden.

The proceedings were initiated by lunch at the hospital, at the invitation of the President.

Election of Officers.—The following officers were elected: *President-elect:* Dr. Laurence Humphry (Cambridge). *Member of Representative Meeting:* Mr. Steer (Saffron Walden). *Hon. Secretary and Treasurer:* Mr. Authorne Webb (Cambridge). *Members of Branch Council:* Mr. Deighton, Dr. Giles, Dr. Dalton.

The Treasurer's report was adopted.

On the proposition of Dr. GRIFFITHS, seconded by Mr. BALDWIN, it was decided that—

Boundaries of the Branch.—"Before the meeting proceeds with the consideration of the working of the Branch it would appear desirable that all members of the Association resident within the new area be invited to attend a meeting at Cambridge during the coming autumn for the purpose of expressing their opinion in reference to its newly-defined boundary, as arranged by the Central Council of the Association."

President's Address.—The PRESIDENT then gave an address on Motor Vehicles for Medical Men, illustrated by diagrams. The paper was very interesting, and was discussed by several members.

Communications.—Dr. ARMISTEAD and Dr. ANNINGSON read a paper on Cases Resembling Varioloid and Varicella, which was illustrated by some fine photographs, and dealt with a number of cases. The paper was afterwards discussed by Professor ALLBUTT, Dr. LUCAS (Cambridge), Mr. W. A. SMITH (Newport), and Mr. ARTHORPE WEBB.—Owing to want of time the following papers were left for a future meeting: G. WHERRY, F.R.C.S.: Remarks on Ophthalmia Neonatorum. Dr. LAURENCE HUMPHRY and Mr. T. S. P. STRANGEWAYS: An Unusual Form of Typhoid Fever. H. C. BARTLETT, M.R.C.S.: The Vagaries of Movable Kidney.

GLASGOW AND WEST OF SCOTLAND BRANCH.

Branch Representatives on Association Council.—Dr. Bruce Goff, The Lindens, Bothwell, and Dr. James Hamilton, 1, Royal Crescent, Crosshill, Glasgow have been duly elected representatives of the Branch on the Council of the Association.

LANCASHIRE AND CHESHIRE BRANCH.

BLACKPOOL DIVISION.

THE first meeting of the Blackpool Division was held on May 29th, 1903, fourteen members being present.

Election of Officers.—The following officers were elected: *President:* Dr. P. H. Day (Stalmine). *Vice-President:* Dr. W. B. Richardson (Blackpool). *Secretary:* Dr. F. J. H. Coutts (Blackpool). *Representative on Branch Council:* Dr. P. H. Day. *Executive Committee:* Dr. Williams (Fleetwood), Dr. Booth (St. Anne's-on-Sea), Dr. Anderson (Poulton), Dr. Eason (Lytham), Dr. Court (Kirkham); Dr. Dunderdale, Dr. Forbes, and Dr. Ruxton (Blackpool).

Rules.—The printed model rules, as amended, were adopted as the rules of the Division.

Joint Meeting of Blackpool and Isle of Man Divisions.—A joint meeting of Blackpool and Isle of Man Divisions, duly convened, was held in Blackpool on July 1st, 1903, at which Dr. Coutts was elected representative of the two Divisions to the annual meeting of representatives.

METROPOLITAN COUNTIES BRANCH.

STRATFORD DIVISION.

THE first annual meeting of this Division was held at the Town Hall, West Ham, on June 4th. There were present Dr. C. SANDERS, who occupied the chair, and twelve other members.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Election of Officers.—The meeting then proceeded to elect the officers for the ensuing years, with the following result: Dr. C. Sanders was elected Chairman, Mr. M. Cursham Corner Vice-Chairman and Representative of the Division on the Branch Council, Dr. P. J. S. Nicoll was elected Honorary Secretary, and Mr. Percy Rose Representative of the Division in the representative meetings of the Association. Only five ordinary members of the Executive Committee were elected—namely, Mr. W. A. Grogono, Mr. W. H. Johnson, Dr. W. C. Dale, Mr. W. H. Best, and Dr. E. Hay. It was decided to leave the three vacancies to be filled up later on in the year.

Representative Meeting.—Certain resolutions put down for discussion at the representative meeting were considered next. The meeting decided to leave the hands of the representative free with regard to all the resolutions with the exception of the resolution on death certification sent up by the Cleveland Division, which met with general approval, and in favour of which the representative was instructed to vote.

Area of the Division.—A brief discussion on the area of the

Stratford Division followed. There was a general consensus of opinion that the present boundaries of the Division were unsatisfactory and Dr. Sanders's offer to go up with the Secretary to the headquarters of the Association to discuss the matter was readily accepted.

Vote of Thanks to Chairman.—A vote of thanks to the Chairman for presiding at the meeting terminated the proceedings.

NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCH.

THE first annual meeting of this Branch was held at the Phoenix Rooms, Lancaster, on June 24th, the PRESIDENT (Dr. W. W. Wingate-Saul) in the chair. There were present forty-one members and two visitors.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Report of Branch Council.—The report of the Branch Council, in which a membership of 130 was anticipated, was received.

Adoption of Rules.—The ethical rules were adopted.

President's Address.—The PRESIDENT delivered an address on The Public and Ourselves—some of the Defects of Each.

[The scientific proceedings were reported at p. 82.]

NORTHERN COUNTIES OF SCOTLAND BRANCH.

THE annual meeting of this Branch was held at the Pump Room, Strathpeffer, on June 13th. Twenty members were present. In the unavoidable absence of the President, Dr. T. R. MacDonald, Inverness, Dr. WM. BRUCE, Dingwall, was elected Chairman.

Confirmation of Minutes.—The minutes of June 11th and October 18th, 1902, were read and approved.

Apologies for Absence.—The SECRETARY intimated apologies from Dr. Ogilvie Grant, Dr. Mackay (Elgin), Dr. MacRae (Stornoway), Dr. T. R. MacDonald (Inverness), etc.

Honorary Secretary's Report.—The HONORARY SECRETARY stated that during this year several meetings of Council were held, and routine business transacted. Dr. Tregelles Fox, President-elect for the year, having left Strathpeffer to reside in Leeds, severed his connexion with the Branch, and the Council recommended Dr. T. R. MacDonald as his successor. Several members had been elected since last annual meeting, Drs. Lindsay (Ardersier), Brebner (Nairn), Ironside and Bruce (Dingwall), Dick (Wick), Cormack (Wick), Meade (Lybster).

Election of Officers.—The following office-bearers were elected for the ensuing year:—*President:* Dr. T. Ranken MacDonald. *President-elect:* Dr. Allan (Evanton). *Vice-Presidents:* Drs. Murray and Grant. *Honorary Secretary and Treasurer:* Dr. J. Munro Moir. *Council:* Dr. Cruickshank (Nairn), Dr. Mackay (Elgin), Dr. Sutter (Nairn), Dr. Mackenzie (Inverness). *Representative of Branch in Representative Meetings:* Dr. Moir (Inverness). *Representative on Council of Association:* Dr. Murray (Inverness).

Autumn Meeting.—It was arranged that the autumn meeting be held at Elgin in October.

Next Annual Meeting.—The next annual meeting is to be held at Nairn.

Meeting of Representatives.—The SECRETARY mentioned that at the representative meeting to be held at Swansea several items of importance affecting the members of the Association would come up for discussion. The only one affecting Scottish Branches was one relating to the appointment of a Scottish Committee consisting of the Scottish members of Council and the secretaries of the Scottish Divisions, this Committee to report to the Council on any matters specially concerning Scotland. The representative to the annual meeting was instructed to support this motion.

Adoption of Rules.—The code of rules for this Branch as well as the rules to regulate ethical procedure were adopted.

Auditors.—Drs. Murray and Mackenzie (Inverness) were appointed to audit the treasurer's accounts.

Poor-law Medical Officers.—A letter was read from Dr. Murchison (Uig) stating that in his opinion the Branch had not been helping the Poor-law medical officers' grievances with the earnestness needed. The CHAIRMAN stated that, as this question was likely to be taken up at the annual meeting of the Association at Swansea, discussion of the matter should be delayed in the meantime.

Luncheon.—After this business meeting, many of the members drove round by the Two Bridges, and then lunched at the Spa Hotel, twenty-five members being present. Mr. W. J. Duncan (County Clerk for Ross-shire), Mr. J. Leslie Fraser, Mr. Heron (dentist, Elgin) were present as guests.

Demonstration.—After lunch the members again met at the Pump Room, where Dr. FORTESCUE FOX gave a demonstration at the Baths, explaining the various kinds of baths and their application in the different forms of disease. Dr. IRONSIDE BRUCE showed his high-frequency electrical apparatus, and Dr. WM. BRUCE showed one or two cases of sciatica, with remarks on diagnosis and treatment.

NORTH OF ENGLAND BRANCH.

BLYTH DIVISION.

THE annual meeting of this Division was held in the Star and Garter Hotel, Blyth, on June 24th.

Election of Officers.—The following officers were appointed: *Chairman:* Dr. R. Laing (Blyth). *Vice-Chairman and Representative to Branch Council:* Dr. J. Cromie (Blyth). *Secretary and Treasurer:* Dr. J. Anderson (Seaton Delaval). *Members of Executive:* Dr. R. Morris (Bedlington); Dr. A. S. Taylor (Seaton Sluice).

Report of Council.—The report of the Council and the business for the annual representative meeting were considered.

Ethical Rules and By-laws.—The draft model Rules of a Division (not in itself a Branch) were considered and adopted. The model by-laws were adopted at a previous meeting with certain changes.

HEXHAM DIVISION.

THE annual meeting of this Division was held at the Abbey Hotel, Hexham, on June 13th. Dr. Fraser Hurst in the chair. There was only a moderate attendance of members, a fact which was commented on and regretted by those present.

Officers.—The officers elected at the March meeting were re-elected for the year.

Ethical Rules.—The ethical rules for a Division were considered and adopted, the Executive Committee being appointed the Ethical Committee, and it was resolved that the Central Council be requested to print and defray cost of printing above-mentioned rules and have them distributed among the members.

Vaccination Proposals.—The vaccination proposals of the Central Council were discussed at some length, and it was resolved that these said proposals meet with the approval of the Division, but that the number of vesicles required to satisfy the Local Government Board be mentioned on the notices given, and that this resolution be sent to the Central Council.

Advantages of Membership.—The Secretary was requested to write to the non-members in the Division, pointing out the advantages of membership and the necessity of unanimity.

Next Meeting.—The next meeting was arranged for in September.

OXFORD AND READING BRANCH.

THE annual meeting of this Branch was held at the Radcliffe Infirmary, Oxford, on Friday, July 3rd.

Election of Officers.—The following officers were elected for 1903-4:—*President:* Mr. R. W. Doyne. *President-elect:* Dr. G. H. R. Holden. *Members of Council:*—Oxford: Mr. I. Griffin, Mr. W. B. Nelson, Mr. A. J. Drew, The Secretary of the Oxford Division. Reading: Dr. C. W. Marriott, Mr. Arnold Thompson, Mr. J. H. Walters, Mr. H. G. Armstrong. *Representative:* Mr. C. H. Cheatle. *Honorary Secretary and Treasurer:* Dr. W. T. Freeman.

New Members.—Mr. A. P. Macnamara, M.B., and Mr. A. T. Ross, M.B., were elected members of the Branch.

Dinner.—The members subsequently dined together at Exeter College.

[The scientific proceedings were reported at p. 82.]

SOUTH-EASTERN BRANCH.

THE annual meeting of this Branch was held at the Lion Hotel, Guildford, on June 25th. Mr. A. A. Napper (Cranleigh), President-elect, kindly invited members to lunch.

Induction of New President.—After the induction of the new PRESIDENT a short introductory speech was delivered by him.

Report of Council.—The report of Council was read and

adopted. This dealt exclusively with the new Divisional arrangements.

Financial Statement.—The HONORARY TREASURER presented the accounts of the old Branch, showing a balance of £116.

Members of Central Council.—The members lately representing the Branch were nominated and re-elected without a contest—namely, Dr. Galton, Dr. Tyson, and Mr. T. Jenner Verrall.

Next Meeting.—It was resolved to hold the next meeting at Eastbourne.

Honorary Secretary.—Mr. T. Jenner Verrall was reappointed Honorary Secretary and Treasurer for the ensuing year.

New Rules.—The model rules suggested by the Central Council, together with one permitting the continuance of the old-established District meetings, were carried unanimously.

Excursions.—The rest of the afternoon was spent on excursions, after which members and their friends, to the number of about fifty, dined at the hotel.

CANTERBURY DIVISION.

THE first meeting of this Division was held at the Canterbury Hospital on June 30th, Dr. WHITEHEAD REID in the chair. There were five members present.

Election of Officers.—The following officers were elected:—*Chairman:* Dr. Gogarty. *Vice-Chairman:* Mr. Frank Wacher. *Branch Representative:* Dr. Whitehead Reid. *Honorary Secretary:* Dr. A Chaning Pearce. It was resolved that one other member of the Division be elected as a member of the Committee, and that Dr. FitzGerald be asked to serve.

Adoption of Rules.—The model Division rules and the draft ethical rules were considered and unanimously approved *in toto*.

Meetings of the Division.—It was resolved that meetings be held quarterly if possible, in conjunction with the other Divisions of the constituency.

EASTBOURNE DIVISION.

THE first meeting of the Eastbourne Division was held on June 16th.

Election of Officers.—The following officers were elected:—*Chairman:* Dr. H. S. Gabbett. *Vice-Chairman:* Dr. Muir Smith. *Representative on Branch Council:* Mr. J. H. Ewart. *Honorary Secretary:* Dr. W. J. C. Merry.

Adoption of Rules.—The model rules suggested for adoption by a Division which is not in itself a Branch were accepted by the meeting. The Branch model rules to regulate procedure in ethical matters were referred to the Executive Committee for report at the next Divisional meeting in August.

Executive Committee.—The following were elected members of the Executive Committee (in addition to the *ex officio* members):—Drs. A. Harper, C. Hayman, A. Sherwood (Eastbourne), T. Holman (East Hoathly), F. R. Taylor (Helingly).

EASTBOURNE AND HASTINGS DIVISIONS.

THE first general meeting of the Divisions of Eastbourne and Hastings was held (in accordance with Article XXVII of Association) on Tuesday, July 7th, in the Mayor's parlour at the Town Hall, Eastbourne, for the purpose of electing a representative of these Divisions to act at representative meetings. Dr. C. H. Allfrey (Hastings) was unanimously elected to fill this position.

Future Meetings.—A discussion followed, in which the meeting expressed itself as strongly in favour of continuing the periodical conjoint meetings of the old East Sussex District. The following resolution, proposed by Dr. BATTERHAM, and seconded by Dr. HAYMAN, was carried:

That the Honorary Secretary of the Hastings Division be instructed to inquire of the Honorary Secretaries of Brighton, Eastbourne, and Tunbridge Wells whether their Divisions would care to hold conjoint meetings with Hastings for professional and social purposes, say, thrice yearly, as in the old East Sussex District.

EAST SURREY DISTRICT.

A MEETING of this District was held at the Croydon General Hospital on May 14th, 1903. Mr. T. A. RICHARDSON (Croydon) in the chair. Seventy-four members and visitors attended.

Confirmation of Minutes.—The minutes of the Upper Norwood meeting were read and confirmed.

Next Meeting.—On the proposition of Dr. ROSSER, seconded by Dr. A. B. CARPENTER, it was resolved that the next meeting should be held at Reigate on Thursday, October 8th, and that Mr. E. C. Drake be invited to take the chair.

Demonstrations, Etc.—Dr. COLES gave a demonstration on blood examination giving the methods and means best adapted to the exigencies of general practice. Clinical cases were exhibited and demonstrated by Messrs. CRESSY, MALE, WAYTE, RIDLEY, REDFERN, ADDEY, T. A. RICHARDSON, WRAY, and NEWBY. Surgical instruments were exhibited by Arnold and Sons, and pharmaceutical products by Burroughs, Wellcome and Co.

Dinner.—After the meeting thirty-six members and visitors dined together at the Greyhound Hotel.

FOLKESTONE DIVISION.

THE first meeting of the Division was held on June 16th. There were eleven members present.

Election of Officers.—The following were elected office-bearers:—*Chairman:* Dr. Perry. *Secretary and Treasurer:* Dr. P. V. Dodd. *Executive Committee:* Dr. Lewis, Mr. Barrett, and Mr. Chambers were elected members of the Executive Committee. *Member of Branch Council:* Dr. Eastes was elected as representative of the Branch Council for the Division.

Adoption of Rules.—The rules as suggested by the Association were adopted.

GUILDFORD AND REIGATE DIVISIONS.

A JOINT meeting of the Guildford and Reigate Divisions was held on June 12th, Mr. C. SELLS in the chair.

Election of Officers.—Mr. Alex. Hope Walker was appointed representative of the Division in the representative meetings of the Association. The other appointments made on behalf of Guildford were:—*Chairman:* C. Sells. *Vice-Chairman:* G. S. Sloman. *Representative on Branch Council:* G. Sichel (Guildford). *Honorary Secretary and Treasurer:* Alex. Hope Walker. *Members of Council:* Drs. de Jersey, Fisher, Kendall, Levick, Minchin, R. Thorne Thorne, Weaver, Winstanley.

Adoption of Rules.—The rules, both general and ethical, were adopted.

HASTINGS DIVISION.

A MEETING of members of this Division was held at the East Sussex Hospital, Hastings, on June 15th; Dr. TROLLOPE (St. Leonards) in the chair). The following were present: Drs. Allfrey (St. Leonards), Bagshawe (St. Leonards), Batterham (St. Leonards), Blaney (St. Leonards), Lucille Leslie (St. Leonards), Symington (St. Leonards), Yeoman (St. Leonards), Messrs. Kaye Smith (St. Leonards), Travers (St. Leonards), Culhane (Hastings), Locke (Hastings), E. R. Mansell (Hastings), Dr. Hill Joseph (Bexhill), Messrs. Masters (Northam), Paget (Tenterden), and Lieutenant-Colonel Owen (Hancombe).

Election of Officers.—The following officers were elected:—*Chairman:* Dr. Bagshawe (St. Leonards). *Vice-Chairman:* Dr. Wills (Bexhill). *Secretary and Treasurer:* Dr. Batterham (St. Leonards). *Member of Branch Council:* Mr. E. Kaye Smith. *Representative at Annual Meeting:* It was agreed to propose Dr. Allfrey at a conjoint meeting of the Hastings and Eastbourne Divisions to represent the two Divisions. *Other Members of the Executive Committee:* Dr. E. W. Skinner (Rye), Mr. Paget (Tenterden), Mr. E. R. Mansell (Hastings), Mr. Murdoch (Bexhill). It was resolved that the members of Committee (not *ex officio*) be five in number; that the election of one other member on the Executive Committee should be postponed till the next meeting.

Adoption of Rules.—It was resolved that the general rules (with insertions as in copy signed by the Chairman) drawn up by the Central Committee should be adopted as the rules of the Division.

Ethical Rules.—It was resolved that the consideration of the ethical rules be postponed till the next meeting.

NORWOOD DIVISION.

THE first meeting of the Norwood Division was held at the Queen's Hotel, Upper Norwood, on June 9th, 1903. Twenty-three members were present. Dr. J. H. GALTON was voted to the chair.

Election of Officers.—The following officers were appointed:—*Chairman:* J. Sidney Turner. *Vice-Chairman:* Dr. Burgess. *Honorary Secretary and Treasurer:* Henry J. Prangley. *Representatives on Branch Council:* Dr. Henry Hetley, Dr. H. M.

Stewart. *Representative at Annual Meeting of Representatives:* Mr. J. Rand.

Executive Committee.—It was decided that the Executive Committee should be enlarged by three more members, and the following were elected:—Dr. Verdon, Dr. H. C. Burton, and Dr. Annis.

Ethical Committee.—It was decided

That the functions of the Ethical Committee be carried out by the Executive Committee for this year.

Adoption of Rules.—The model general rules were considered *en bloc*, and declared carried *nem. con.* The model ethical rules were considered in detail, and gave rise to considerable discussion but were all eventually passed, a motion that Paragraph G. Rule 6 be omitted being rejected by the meeting.

SOUTHERN BRANCH.

THE annual general meeting of this Branch was held at the Royal Hospital for Consumption, Ventnor, on July 3rd, about forty members being present.

Adoption of Rules.—The new by-laws and ethical rules of the Branch were submitted and approved.

Membership of Branch.—The SECRETARY announced that, including ten candidates for election, the total membership of the Branch was now 403.

Papers.—Papers were read as follows: A case of ligature of the carotid for aneurysm in a patient 75 years of age, Dr. WARD COUSINS; a case of ruptured intestine successfully treated, Mr. LANGDON; remarks on vasomotor rhinitis and hay fever, Mr. TREVELYAN. Mr. CHILDE exhibited a new surgical operation case for instruments.

Introduction of New President.—Mr. BROWNE resigned the chair to Dr. ROBERTSON, who delivered an interesting address on the history and treatment of pulmonary phthisis.

Votes of Thanks.—Hearty votes of thanks were accorded to Mr. Browne for his services as President during the past year and to Dr. Robertson for his address and for his hospitality, all the members present having been entertained by him at luncheon at the Royal Hotel before the meeting, and at tea at the Consumption Hospital after the business of the day was concluded.

PORTSMOUTH DIVISION.

THE first annual meeting of this division was held at Portsmouth on June 23rd, Dr. J. WARD COUSINS in the chair.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Accounts, etc.—The correspondence having been read, the accounts for the past year, duly audited, were presented and adopted.

Executive Committee.—The following were elected to form the Executive Committee: *Chairman*, Lysander Maybury, M.D.; *Vice-Chairman*, L. K. H. Hackman; *Secretary*, J. G. Blackman, M.D.; *Members of the Branch Council*, C. C. Claremont, M.D., C. P. Childe, F.R.C.S., J. Green, and W. P. McEldowney, M.B., T. W. Mead, C. P. Ruel, R. A. Weston, G. A. Tullis, M.D., A. M. Fraser, M.B., W. Phillips, B. Wright, J. H. F. Way, M. A. Key, M.B.

Representative in Association Meetings.—The meeting then resolved itself into a general meeting of the constituency formed by this Division and that of the Isle of Wight, and elected Dr. J. Ward Cousins, of Southsea, to be its representative in meetings of the Association.

Representative Meeting.—A discussion then took place upon the matters to be brought before the representative meeting at Swansea.

Midwives Act.—Dr. COUSINS made some remarks on the Midwives Act, and a discussion ensued in which most members present took part.

WINCHESTER DIVISION.

THE first annual meeting of this Division under the new Constitution was held at St. Patrick's Hall on June 9th.

Rules.—Some small alterations in the new rules which had been made on April 2nd were approved.

Election of Officers.—The following officers and representatives were then elected:—*To Represent the Division in Representative Meetings:* Mr. D. Browne. *Chairman:* Mr. Royds. *Vice-Chairman:* Dr. Harman. *Secretary and Treasurer:* Mr. Langdon. Three members were selected as members of the Branch Council, and three others added to the Executive Committee.

Associate Member.—Mr. Bullar, of Southampton, was elected an extraordinary associate member.

[The scientific proceedings were published at p. 82.]

SOUTH INDIAN AND MADRAS BRANCH.

Transactions.—Since the establishment of this Branch in 1884 excellent work has been accomplished. The *Transactions* of 1896-98 are edited by Captain T. H. Symons, I.M.S., and contains some interesting articles by Major Ronald Ross, C.B., on mosquito-malaria experiments, and on the transformation of crescents in malaria. Captain Fearnside's contribution—a bacteriological study of the diseases of Cannanore Gaol—shows some careful work and important findings. The cure of hepatic abscess by absorption, with illustrative cases, is dealt with by Major W. B. Browning; and notes on types of malarial fevers in Madras was the subject of a paper by Colonel Sturmer. Vol. viii gives the transaction of the Branch from 1898 to 1900. Vol. ix, edited by Captains C. Donovan and W. T. Niblock, contains a discussion on the treatment of hepatic abscess by Lieutenant-Colonel J. Maitland. The other articles in these volumes are devoted to articles on general surgery and medicine, along with a number of excellent articles on the eye and its diseases. The most recent *Transactions* to hand (vol. x, No. 1, July, 1902) contains a paper on Notes on Malaria by Captain T. W. Cornwall. In this paper the advent of malaria to the Coromandel coast was discussed. Captain Cornwall states that it is still open to question whether Madras or any part of it can be regarded as particularly malarious, and quotes the statement made in September, 1900, by Captain Giffard, that malaria had first become prevalent of recent years along the Coromandel Coast about 1895. Although *Anopheles* were certainly present in the district before that date the prevalent belief is that the malaria parasite was introduced into Ennur by some malaria-infected coolies who came from up-country districts. The opinion that there was "not much malaria in Madras," was contested by Lieutenant-Colonel J. Maitland and Colonel Browning. Major Robertson reported the case of a boy, aged 8, who between January 27th and February 25th passed 2,233 round worms. Several papers of general surgical and medical interest were read, of which, perhaps, the most interesting one was on radical cure of inguinal hernia, by Lieutenant-Colonel H. A. F. Nailer, in which "involution of the sac" by a method devised by Colonel Nailer was described. It is evident that the South Indian Branch of the British Medical Association is doing excellent practical work, and we hope to be favoured with an account of their future proceedings.

Officers.—The present officers of the South Indian Branch are: *President:* Surgeon-General D. Sinclair, C.S.I. *Vice-President:* Lieutenant-Colonel W. R. Browne. *Honorary Treasurer:* Major R. Robertson. *Honorary Secretaries:* Major F. J. Crawford and C. D. Rama Ras. The Council consists of (besides the Executive) Lieutenant-Colonel J. Maitland, Lieutenant-Colonel A. J. Sturmer, Lieutenant-Colonel T. H. Pope, Lieutenant-Colonel W. B. Browning, and Captain J. W. Cornwall.

SOUTH MIDLAND BRANCH.

THE forty-eighth annual meeting of this Branch was held at the Council Chamber, Wellingborough, on June 18th, Mr. NASH (Bedford), and afterwards Mr. AUDLAND, the new President, in the chair.

Luncheon.—Previous to the meeting, the President entertained the members to an excellent luncheon at the Central Hall, High Street. There were present Drs. Buszard, Milligan, Hichens, Allison, Clark, Stone, Hollis, and Messrs. C. J. Evans, Robb, Burland, Gibbons, Percival, Audland, Baxter, and Haines Jones (Northants); Drs. Major, Coombs, and Messrs. Nash, Sworder, and Butters (Beds), Dr. Kennish, Mr. Easte (Bucks), Mr. E. H. Cobb (Herts).

Confirmation of Minutes.—The minutes of the autumnal meeting were read and confirmed.

Adoption of Model Rules.—The model rules suggested by the Central Council, a copy of which had been sent to every member of the Branch, were adopted *en bloc* on the proposal of Dr. MAJOR, seconded by Dr. COOMBS.

Ethical Committee.—In answer to questions by Mr. C. J. EVANS, the PRESIDENT stated that the ordinary Branch Council would act as an "Ethical Committee," and that the

"Addendum to By-laws of South Midland Branch" would still have to be signed by every intending member of Branch.

North Bucks Division.—A letter from Dr. Wickham (Newport Pagnell) was read, complaining of the difficulty which North Bucks men found in attending the meetings of the Bucks Division, and asking that these meetings should be held on the main line, for example, Bletchley, or as an alternative that North Bucks men be admitted into the Northants Division. Dr. Kennish promised to bring the matter before the Bucks Executive Committee.

The Autumnal Meeting.—Mr. Gifford Nash introduced the subject of "The Autumnal Meeting," and suggested that it be continued as before, and that the meetings be held alternately at Bedford, Northampton, and Bletchley, commencing this year with Bedford. On the proposal of Mr. Evans, seconded by Dr. Clark, this was carried.

Installation of New President.—The chair was now vacated by Mr. Nash, and taken by Mr. Audland, the President for the year.

Vote of Thanks to Retiring President.—Dr. Coombs proposed, and Dr. Buszard seconded, a vote of thanks to the retiring President, and Mr. Nash replied.

Presidential Address.—Dr. Audland delivered a most interesting address on the history of medical science from the time of the Ancient Egyptians, and summarized the methods and principles of treatment peculiar to each era, including those of Hippocrates, Galen, the Alchemists, and others of a more recent date.

Votes of Thanks.—A vote of thanks to the President for his address, to the readers of papers and cases, and to the Wellingborough Town Council for the loan of the Council Chamber, concluded the meeting.

[The scientific part of the proceedings were published in the Journal for June 27th, p. 1497.]

SOUTH WALES AND MONMOUTHSHIRE BRANCH.

The thirty-third annual meeting of this Branch was held at Swansea on Friday, June 26th, when a large gathering assembled. Dr. Price (Carmarthen) was in the chair.

Report of Council.—The report of Council stated that since the last report the new Constitution of the Association had come into operation, and as all members were now *ipso facto* members of the Branch of the area in which they resided, the number of members had risen from 265 to over 400, a strength which entitled the Branch to two representatives on the Central Council. The autumn and spring meetings were held at Newport and Pontypridd respectively. Clinical meetings took place as before at Cardiff and Swansea, and one devoted to medical ethics at Neath. The question of the arrangement of future meetings would probably require consideration, as several of the Divisions were arranging to hold meetings in their respective districts. The Branch had been divided into five Divisions, which had met and appointed officers. Arrangements were now being made by several of the Divisions to hold regular meetings for work during the coming session.

Statement of Accounts.—The statement of accounts showed a balance in favour of the Branch on January 1st, 1903, of £23 12s. 1d. The report of Council and the statement of accounts were adopted.

Installation of New President.—The President-elect (Dr. Tatham Thompson, Cardiff) then took the chair, and a hearty vote of thanks was awarded the retiring President.

Adoption of By-laws.—The new by-laws were considered and adopted.

Election of Officers.—The following officers were elected:—*President-elect:* O. E. B. Marsh (Newport, Mon.) *Treasurer:* A. Sheen, M.D. *Honorary Secretaries:* D. R. Paterson, M.D., F. G. Thomas, M.B. *Representatives on Central Council:* J. Lynn Thomas, C.B. (Cardiff); Evan Jones (Aberdare).

President's Address.—The President delivered his presidential address on the influence of early school life upon eyesight, and at the close was awarded a hearty vote of thanks, and was asked to publish it.

Annual Dinner.—The annual dinner was afterwards held at the Métropole Hotel, and was very successful.

STAFFORDSHIRE BRANCH.

The thirtieth annual meeting of this Branch was held at the North Western Hotel, Stafford, on June 11th, at 4.45 p.m. Twenty-three members and two visitors were present.

Introduction of New President.—Dr. Wheelton Hind, the retiring President, took the chair and introduced his successor, Mr. F. Milnes Blumer, of Stafford, who then presided over the meeting.

President's Address.—The President took for the subject of his address, the New Constitution, and How it should Benefit the Profession. In his introductory remarks, he thanked the members of the Branch for the honour they had done him in electing him President. He then went on to say that he was led to write upon the subject he had chosen as he came to realize how comparatively few members of the Association have anything but the vaguest idea of the change that had taken place. Assuredly much must have been written on the subject, but the ordinary member has not interested himself in the movement, and it was doubtful if anyone in the room, outside the members of the Council, could give an outline of the new scheme. This apathy did not augur well, and it must be combated to our utmost if the new Constitution was to be the success they must all wish it to be. The President then went into the question as to why it was the change was considered necessary, and briefly gave the history of the movement leading up to the appointment of the Constitution Committee. The essentials of the new scheme, both in its Branch and Central organization were detailed, emphasis being given to those points wherein it differed from what obtained under the old Constitution. He asked, Is the Association going to benefit in any marked degree by the change? It was impossible to predict how the attendance at the Branch meetings would be influenced by the working of the new rules. The outward and visible sign of the vitality of a Branch could only be manifest in its meetings and upon the attractiveness of its meetings, for the majority of its members, depended whether or not they would be drawn to them in such numbers as those who had taken an active share in the work of the Branch wished should be the case. It was a principle laid down by the Constitution Committee that every member should have a reasonable opportunity afforded him of attending every important meeting, and it was to meet that view that the Branches were subdivided into primary units or Divisions. It depended now upon the Divisions and how they were worked whether or not the Association was to gain fresh vigour. And it should be the aim of the Committee of each Division to stimulate and encourage more local interest. The lack of progress in local medical societies was due in no small degree to seclusiveness on the part of medical men. A local medical society might be formed, but how often was its success marred and the growth of it perhaps arrested by the local men failing to cultivate each other's friendship or even acquaintance. And this was often due not entirely to the passiveness of apathy or not caring to make the necessary social effort, but to some active emotion of petty jealousy or distrust, for which there was in nine cases out of ten no reason to be found except in the disorder of some hypersensitive imagination. Nobody admitted for a moment that he was influenced by such a feeling; but, consciously or unconsciously, many of them were so influenced. The President pictured the two men who were not uncommonly the only practitioners in a district quite large enough for them both, but who were so often content to work on separate and detached lines until, through force of circumstances—some accident or other sudden misfortune—they were brought into close contact with one another. Then for the first time they saw each other in a light they had not seen each other in before, and, under the increasing warmth of a new friendship, then melted away the ice of that superficial distrust that had hitherto separated them. Each saw the other in true prospective, a mutual respect was quickened into a closer friendship, and each realized how much easier was his work now that mistrust had given place to confidence, enmity to friendship, and rivalry to co-operation. And it had been brought about simply by circumstances compelling them to know each other better. As the social relations of individuals in a community were influenced for good or for evil, according as they knew each other, or remained estranged, so was it in the Corporate Society, whose success depended in no small measure upon whether the members were in the first instance content with a passive acquaintance with each other or made it their business actively to cultivate the friendship of their fellow-members. However satisfactorily the foundations of a society might be laid, the superstructure depended for its successful erection upon the individual effort of its members. And the greater the number who shared in the work the greater would be the success which was attained by it. Hitherto the active work of the Branch had not been shared in by the members, who ought to

have come forward in friendly competition to promote its interests; and, as a former secretary, the President spoke of the difficulty so often experienced in getting active recruits for the service. In future the success of the Branch would depend upon the character of its component Divisions. Each Division was at liberty to make its own arrangements. It must have its annual meeting for the election of officers and other cognate business; but it might hold other meetings for the consideration of any matters—political, ethical or scientific—affecting the profession. He hoped the Divisions would hold regular meetings. They should not be held always in one town, but in different districts, and their selection should be guided by the facility of access to them by the greatest number. In that way meetings would be held in parts of the country where they had not been held before, and new sources of supply would be tapped. Each of the three Divisions had its public institutions, and general practitioners should make a point of attending some of the meetings, and take a fair share in contributing to their success. Through these meetings members would get to know each other, and when once they knew each other there was then added a much greater pleasure and attraction in attending them. If the Divisions were properly worked, the Branches would be a greater success than they had hitherto been, and the Branch meetings would be better attended. No doubt also new vigour would be infused into the central organization. The President then discussed the needs of the general practitioner, and he contended that they could be met by membership of the British Medical Association. He appealed to all present to make it their business to place the advantages of the Association before all medical men who were not as yet members, and whom it was desirable to have associated with us. A new era in the life of the Association had now begun, and it rested with its present members to make it a further success or otherwise according as they realized the responsibilities and used or neglected the advantages of belonging to such an Association—one which was practically imperial in the extent of its membership.

A hearty vote of thanks was accorded to the President for his address.

Reports of Council, etc.—The reports of the Council and the Ethical Committee were adopted, as also was the financial statement, which showed a balance of £12 11s.

Next Annual Meeting.—It was decided to hold the next annual meeting at Wolverhampton.

Election of Officers.—The following were elected officers for the ensuing year:—*President-elect:* Dr. E. Deanesly (Wolverhampton). *Vice-Presidents:* Mr. W. H. Folker (Hanley); Dr. W. Hind (Stoke). *General Secretary:* Dr. G. Petgrave Johnson (Stoke). *Treasurer:* Mr. J. Clare (Hanley). *Council:* North Staffordshire Division: Dr. King Alcock (Burslem), Dr. Hatton (Newcastle), Dr. McAldowie (Stoke). Mid-Staffordshire Division: Mr. Boldero (Penkridge), Dr. Geo. Reid (Stafford), Dr. Stock (Burton-on-Trent). South Staffordshire Division: Dr. Malet (Wolverhampton), Mr. Phillips (Walsall), Dr. Biggam (Dudley). *Representatives of the Divisions in the Representative Meeting:* Dr. Hind (Stoke), Dr. Lowe, (Burton), Dr. Ridley Bailey (Bilston). The PRESIDENT reported that Mr. W. D. Spanton (Hanley) had been elected Representative in the Council of the Association.

Adoption of Rules.—The draft rules were considered and adopted with certain alterations.

ULSTER BRANCH.

ANNUAL MEETING.

THE twenty-fifth annual meeting of the Branch was held in the Medical Institute, Belfast, on July 10th. The PRESIDENT, Professor Thomas Sinclair, F.R.C.S., occupied the chair, and over 100 members were present.

Confirmation of Minutes.—The minutes of the last annual meeting were read and confirmed.

Letters of Apology.—The SECRETARY announced apologies from Dr. St. George (Lisburn), Dr. Beamish (Newry), Dr. Martin (Newry), Dr. Kidd (Enniskillen), S. Boyd (Lifford), Dr. Miller (Derry), Dr. McCurdy (Derry), Dr. Murray (Belfast), Dr. Warnock (Donegal).

Annual Report.—The annual report and Treasurer's statement of accounts, which had been printed and circulated, were, on the proposition of Professor LINDSAY, seconded by Dr. GRAY (Armagh), taken as read and adopted.

Election of Office-bearers for 1903-4.—The SECRETARY reported that he had received the names of the members of the Branch Council elected by the Divisions, and voting papers for the other members. Drs. Cecil Shaw, Tennant, and Houston were appointed scrutineers. The following officers were elected:—*President:* Dr. Thomas McLaughlin (Derry). *Vice-Presidents:* Dr. S. B. Boyd (Ballymoney), Chairman of the North East Division; Dr. S. B. Coates (Belfast), Chairman of the Belfast Division; Dr. James Craig (Derry), Chairman of the Derry Division; Dr. S. E. Martin (Newry), Chairman of the Portadown Division. *Members of Council:* (For No. 1 Division): Dr. Creery (Coleraine), Dr. Huey (Bushmills), and Dr. Martin (Portrush). For No. 2 Division: Dr. John Campbell, Dr. Dempsey, Dr. Lindsay, Dr. Cecil Shaw, Sir W. Whitla, Dr. Donnan (Holywood), Dr. St. George (Lisburn), Dr. Stuart (Ballymena), Dr. J. A. Craig (Belfast). For No. 3 Division: Dr. Thomas McLaughlin and Dr. J. G. Cooke. For No. 7 Division, Dr. Agnew (Lurgan), Dr. Dougan (Portadown), Dr. Singleton Darling (Lurgan), and Dr. Lawless (Armagh). *Two Representatives on Central Council* (with Connaught): Professor J. W. Byers and Dr. Calwell (Belfast). *Honorary Treasurer:* Dr. J. Singleton Darling (Lurgan). *Honorary Secretary:* Dr. W. Calwell (College Square North, Belfast).

Luncheon.—The President, at 1.15 p.m., entertained a large number at an excellent lunch in the waiting-room of the out-patient department of the New Royal Victoria Hospital. In addition to the members of the Branch and other medical men in Ulster, several members of the Construction Committee were present including the Right Hon. W. J. Pirrie and Mrs. Pirrie and Mr. William Crawford, Chairman of the Board of Management, Mr. Henman, the architect, Mr. McLaughlin, the contractor. Upwards of 350 sat down, and the accommodation of the building and the ventilation were taxed severely. Even when smoking was permitted, however, it was noticed by all how comparatively clear and fresh the air remained. The PRESIDENT proposed the toast, "The King," and referred to the intense gratification with which the expected visit of His Majesty was looked forward to. He then proposed "Success to the New Hospital," coupled with the names of Mrs. Pirrie and Mr. William Crawford.—Mrs. PIRRIE gave a succinct account of the inception of the hospital, and referred in feeling terms to the support and advice of the late Dr. Cumming at its earliest start.—Mr. CRAWFORD also replied.—The Right Hon. W. J. PIRRIE then proposed the health of the "President of the Branch," referring not only to the high position he held in surgery, but also to the high estimation and warm appreciation he was held in by both the profession and the public. On behalf of the guests he thanked Dr. Sinclair for his profuse hospitality. Subsequently, Mr. Henman, Mr. McLaughlin, and several members of the staff showed the visitors through the building and explained the novelties and advances.

[The scientific proceedings are published at p. 138.]

WEST SOMERSET BRANCH.

THE sixteenth annual meeting of this Branch was held at the London Hotel, Taunton, on June 16th. The chair was taken be the new PRESIDENT (Dr. David Brown, Taunton), who was introduced by his predecessor, Mr. FROSSARD (Bishop's Lydeard). There were present nineteen members and two guests.

Confirmation of Minutes.—The minutes of the spring meeting were read and confirmed.

Report of Council.—The report of the Council was read by the SECRETARY and adopted.

Election of Officers.—Mr. A. W. Sinclair (South Petherton) was chosen as President-elect. Dr. J. A. Macdonald (Taunton) was elected Representative of the Branch at representative meetings. Mr. W. B. Winckworth (Taunton) was re-elected Honorary Secretary; and the Council of the Branch was re-elected, with the addition of Mr. G. F. Sydenham (Dulverton).

Vote of Thanks to Dr. Winterbotham.—On the proposition of the PRESIDENT, seconded by Mr. G. W. RIGDEN, a hearty vote of thanks was accorded to Dr. Winterbotham on the cessation of his work as representative of the Branch on the Council of the Association and the Parliamentary Bills Committee after ten years' service. The speakers referred to Dr. Winterbotham's many services to the Branch, which perhaps was even indebted for its existence to his efforts in former years.—Dr. WINTERBOTHAM, in acknowledging the vote, referred to the fact that he had been a member over forty years, and was President as many as thirty-five years ago.

President's Address.—The PRESIDENT then read his address

on some medical uses of chloroform, for which he was accorded the thanks of the meeting with acclamation.

Luncheon, etc.—After lunching together the members became the guests of the President, and were entertained by him during the afternoon.

WORCESTERSHIRE AND HEREFORDSHIRE BRANCH.

THE annual meeting of this Branch was held at the Worcester Infirmary on June 18th.

Election of Officers.—The following were elected officers for the ensuing year:—*President:* A. O. Holbeche (Malvern). *President-elect:* Dr. Fitzsimons (Hereford). *Honorary Secretary:* Dr. G. W. Crowe (Worcester). *Representative for the two Divisions of Worcester and Hereford:* Dr. Paul Chapman (Hereford). The HONORARY SECRETARY stated that he (Dr. Crowe, of Worcester) had been the only candidate nominated for the Council of the Association, and he was therefore duly elected.

Adoption of Rules:—The model rules, with slight modifications, were adopted.

Ethical Rules.—The consideration of the ethical rules was postponed.

Phthisis.—Dr. CROWE read notes of two cases of phthisis successfully treated by Dr. De Backer's method (hypodermic injections of a form of yeast).

YORKSHIRE BRANCH.

THE annual meeting of this Branch was held at the Medical School, Sheffield, on June 24th, Dr. SWANSON in the chair.

Election of Officers.—Dr. Martin was elected President for the coming year. The Leeds members of the Council were asked to elect the President-elect. Drs. Burgess and Bronner were elected Representatives on the Central Council, and Dr. Bronner was re-elected Honorary Secretary and Treasurer.

New Members.—The following were elected members of the Association: Drs. and Messrs. Badcock, Broadley, Kilner Clarke, Dearden, Eurich, Heilborn, Kitchen, Kennedy, Rawson, Marshall, and Watson.

Papers.—Interesting papers were read and cases and specimens shown by Drs. CARTER, ARTHUR CONNELL, FAVELL, ARTHUR HALL, SIMEON SNELL, and SINCLAIR WHITE.

Dinner.—After the meeting about forty members dined together at the Royal Victoria Hotel.

WAKEFIELD AND DONCASTER DIVISION.

THE inaugural meeting of this Division was held at Wakefield on June 11th.

Model Rules.—Dr. GOYDER (Bradford) kindly attended and explained the model rules. These were adopted.

Election of Officers.—The following were elected officers of the Division for the ensuing year:—*Chairman:* Mr. Stanger (Wakefield). *Vice-Chairman:* Dr. H. J. Clarke (Doncaster). *Honorary Secretary:* Dr. C. J. R. McLean (Doncaster). *Committee:* Dr. Johnson (Normanton); Dr. Henderson (Wakefield); Dr. Selby (Doncaster); Dr. Percival (Knottingley); Dr. Statter (Wakefield); Dr. Coleman (Hemsworth); Dr. Blair (Goole).

Representatives.—The Chairman and Vice-Chairman were chosen to be Representatives on the Branch Council, and the Honorary Secretary to be Representative at the Annual Meeting.

CEYLON BRANCH.

AN extraordinary meeting was held on April 25th, Dr. T. F. GARVIN, President, in the chair. There were ten members present.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

New Members.—The following new member was elected: Dr. David Rockwood (Colombo).

Report of Legal Committee.—The SECRETARY read the report of the Legal Committee appointed to consider the Infectious Disease Ordinance, and, after a long discussion, it was proposed by Dr. S. C. PAUL and seconded by Dr. J. W. S. ATTYGALLE that the report of the Legal Committee be adopted.

Delegates from Branch.—The SECRETARY read letter from Dr. T. D. Griffith, President-elect, British Medical Association, regarding delegates from the Ceylon Branch. It was unanimously decided that Dr. Marcus Fernando and Dr. George P. Schokman, who are in London at present, be elected delegates to represent the Ceylon Branch at the seventy-first annual meeting of the British Medical Association at Swansea from July 28th to August 1st.

THE ANNUAL MEETING AT SWANSEA.

A.—MEDICINE.

Subsection of Electro-Therapeutics.

A subsection of the Section of Medicine, to be devoted to electro-therapeutics, has been organized. The President is Dr. Lewis Jones; the Honorary Secretary, Mr. Chisholm Williams, F.R.C.S.Edin., 20, Bedford Square, W.C.

The following is the programme of work:

WEDNESDAY, JULY 29TH.—Discussion on *The Results of Treatment of Malignant Disease by Electrical Methods.* To be opened by the President of the Subsection, Lewis Jones, M.D.

The following gentlemen will take part in the discussion: Drs. W. S. Hedley, W. F. Brook, Hall-Edwards, and James Allan.

THURSDAY, JULY 30TH.—Discussion on *The Treatment of Tuberculous Disease by Electrical Methods.* To be opened by Chisholm Williams, F.R.C.S.Edin.

The following will take part in the discussion: Drs. McClure, Phineas Abraham, George Herschell, David Arthur, G. B. Batten, and D. Baynes.

FRIDAY, JULY 31st.—Papers and demonstrations.

The following papers have been announced:

BOWIE, J. Cunningham, M.D. The Therapeutic Value of High Frequency Currents (Low Tension) with Large Ampèrage in (*a*) Phthisis, (*b*) Sinuses, (*c*) Simple Colitis, (*d*) Cancer (an hypothesis).

BAYNES, Donald, M.D. The Treatment of some Joint Affections and Painful Stumps by Electricity.

HALL-EDWARDS, J. F., L.R.C.P. On Some Debateable Points in the Application of the X Rays to Therapeutics.

HEDLEY, W. S., M.D. Some Points in Practical Muscle Testing.

HERSCHELL, George, M.D. Electrical Methods in the Treatment of Diseases of the Digestive Organs.

WILLIAMS, Chisholm, F.R.C.S.Edin. The Efficient Application of High Frequency Currents.

Demonstrations:

ARTHUR, David, M.D. Series of Skiagraphs of Lungs showing Progressive Changes in a Case of Tuberculosis.

BOWIE, J. C., M.D. High Frequency (Low Tension) Apparatus.

HALL-EDWARDS, J. F., L.R.C.P. Skiagraphs, etc.

J.—NAVY, ARMY, AND AMBULANCE.

Fleet-Surgeon Lloyd Thomas R.N., will give an account of his experience with the Naval Brigade which formed part of the China Field Force for the relief of the Pekin Legations in 1900. He will discuss the occurrence of sunstroke and the frequency of bowel complaints with special reference to the purification of the drinking water. Various forms of headgear and boots used by the allies will be also described.

Staff Surgeon T. Falconer Hall, M.B., R.N., will describe various methods of rendering water fit for drinking for men on shore service, and will give an account of his efforts to carry out some of the methods practically with the recent Naval Brigade.

ACADEMIC COSTUME.

We are requested to state that academic costume may be worn at the forthcoming annual meeting at the church service on Tuesday morning, at the President's address on Tuesday evening, the President's reception on Wednesday, and the Mayor's reception on Friday.

THE PROPOSED CAMP.

We are informed that, owing to an insufficient number of applications for tents, the camp, as proposed to be held at the Mumbles, must be abandoned. Some twenty-eight applications only have been received, but for the benefit of these members an effort will be made to organize a camp on a smaller scale. Circulars will be sent to each applicant within a few days stating the conditions under which a tent can be reserved for them.

CRICKET MATCH AT THE ANNUAL MEETING.

Members who propose to take part in the cricket match at the annual meeting at Swansea, arranged for Wednesday, July 29th, and possibly for another date if desired, are asked to send in their names to Dr. A. W. Cameron, Northampton House, Swansea, as soon as possible, in order that arrangements may be made.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

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GENERAL COUNCIL
OF
MEDICAL EDUCATION AND REGISTRATION.

SPECIAL SESSION, 1903.

REPORTS OF PROCEEDINGS.

Wednesday, July 15th, 1903.

Sir WILLIAM TURNER, K.C.B., President, in the Chair.

INTRODUCTORY ADDRESS.

THE PRESIDENT, in the course of some introductory remarks, said that the first business was a report by the Education Committee on the returns of teaching institutions furnished by the Conjoint Examining Board in England. Secondly, there was a report by the Education Committee on the primary examinations of the Conjoint Examining Board in England, and, thirdly, there was the report on certain other bodies. There were two notices of motion, by Sir Victor Horsley and Dr. Bruce respectively, which applied to the Conjoint Examining Board only. Dr. Bruce's motion practically embodied three of the clauses of the motion standing in Sir Victor Horsley's name, and he suggested that Dr. Bruce might fairly withdraw his notice, and Dr. BRUCE agreed.

THE CONJOINT BOARD IN ENGLAND.

The Council then went into Committee on the report of the Education Committee.

Sir JOHN BATTY TUKE in moving the adoption of the report, said that a statement that a certain number of institutions held nothing but evening classes required correction. He had ascertained that in four instances the institutions mentioned had day classes on Saturday. The Committee had considered that it was its primary duty to collect and summarize the reports as they were laid before the Council. The Committee had not even taken into account the report of the Inspectors nor the report of the Examination Committee. He reminded the Council that in 1890, when it came to the unanimous conclusion that the curriculum of medical study should extend over five years, physics and biology were included provisionally. In 1893 it was discovered that the regulations of the Conjoint Board in England allowed of these studies before registration. This and other changes had been made without communication with the General Medical Council. The Council gave way, and agreed that the study antecedent to registration should be accepted for the purpose of registration, but the five years of medical study after registration was still adhered to. In 1894 attention was drawn to the fact that attendance at secondary schools was accepted by the Conjoint Board, and that such attendance was held to be equivalent to the first year of study. Again, the Council gave way, demanding only that the instruction should be obtained in recognized institutions. The Council had gone a long way to meet the views of the Conjoint Board in order to prevent a rupture. The Conjoint Board stuck rigidly to what it was advised were its legal rights. In preparing the report the Committee had had considerable difficulty, as its information was in many respects unsatisfactory, and it had not been supplemented in any way by the character of the instruction given. Moreover, the Board gave no adequate guidance to the heads of these institutions. The synopsis issued was open to severe criticism and had been severely criticized by the Inspectors. Thirdly, no indication was given as to the time to be given to the study of these subjects weekly. In framing the report the Committee assumed fifteen hours a week as the shortest, but the Committee was not responsible for this. The Conjoint Board, when it was setting aside the old-fashioned system and instituting a new system which was held to represent the first years of medical study, did so, as was shown by the report, without any consideration. Institutions were accepted without due inquiry, and the Conjoint Board omitted the essential point. The Conjoint Board could not be aware that the equivalent

of the first year of bona-fide study could be represented under their system by four or five hours' weekly study of those three subjects at an evening class or a night school. People in England had laughed about many of the American institutions and about the short period of study, but this action of the Conjoint Board had placed Great Britain and Ireland in a disastrously low position. One of the first consequences of the present state of things would be that the students would be dislocated, so that it would be impossible to ascertain whether a candidate had studied for five years or not. But the most disastrous consequence would be that the progress of medical education would be stopped for a generation. The dispute had now gone on for ten years. The Council had taken all the necessary steps prescribed by the Act; it had inspected and it had reported; in his opinion the time had come when it must be determined which body was to regulate medical education. If the Privy Council held that the Council was in the wrong, then the duty of the Council would be to report to the proper authorities that it was unable to fulfil its statutory duties.

Dr. BENNETT seconded the motion, which was carried.

Sir VICTOR HORSLEY said that he thought that they ought to have the names recorded.

The names of those voting were accordingly recorded.

Mr. BRYANT then read the report on the Inspection of the Primary Examinations of the Conjoint Examining Board in England, which he said did not contain certain passages which he had drafted. He did not differ a very great deal from what his colleagues had said, but he did differ a very great deal with the way in which they had said it. For instance, the examination in biology was visited nominally by two gentlemen; but, as one was a biologist and the other a chemist, it might fairly be said that the report on biology was by a single gentleman. The examiners who disagreed with the Visitor were all skilled, and they had stated that the present mode of conducting the examination was that most suited to the circumstances, and that it was particularly well adapted for eliciting whether a candidate had been properly taught or had been crammed. The Committee had not considered the fact recognized by the Visitor that the question of elementary biology was under consideration by the Conjoint Board, but that a decision was held back under an idea that some association would take place between the Conjoint Colleges and the London University, so that one examination would answer for both. The Visitors fully recognized the value of the new syllabus in practical chemistry and physics, but this was ignored in the report. He had made an analysis of returns of the last twenty examinations for the Navy, Army, and Indian Medical Services from 1898 to 1902, with the following interesting results which bore on this matter (there were 1,512 candidates):

University or Corporation.	Number of Candidates.	Percentage Rejected.
Conjoint, London	577	8
,, Scotland	138	36
,, Ireland	137	30
University of Edinburgh	203	14
,, Dublin	118	22
London Apothecaries	77	16
University of London	49	0
,, Ireland	64	15
,, Aberdeen	49	14
,, Glasgow	37	18
Victoria University	17	0
University of Cambridge	23	4
,, Durham	23	8

The percentage of rejections of candidates holding diplomas of the Conjoint Board in England was about one-fourth of the percentage in the case of the other Conjoint Boards. He concluded by moving the adoption of the report, and this was seconded by Dr. MCVAIL.

Sir VICTOR HORSLEY referred to the use of the words, "The examination is good under the circumstances" by the examiners in biology. He had asked them what were the circumstances referred to. With one accord they evaded the question and declined to give him any information. He therefore wrote to the President of the College of Surgeons, and he had received a letter from him, which the President interpreted one way and which he interpreted in another way. His own interpretation of it was simply that the level of education of the candidates was so hopelessly low that the examination was suited to their knowledge, or rather to their ignorance. He did not think that it was quite fair for the representative of the Royal College of Surgeons to represent that the first-class teachers of biology for the most part considered the examination a good one.

Dr. WINDLE said that for a particular class of candidates the examination was excellent of a kind, but to maintain that this was the same thing as to say that it was a good examination was, of course, quite absurd. He congratulated Mr. Bryant upon the conclusion to which his study of the figures for the Army examination had led him: but everybody who was acquainted with the matter knew that there were such things as army "coaches" even for medical examinations. Prefixed to the report was the following statement:

> The Council will note that the observations received are solely from the Council of the Royal College of Surgeons. The Royal College of Physicians states that "the criticisms and suggestions of its Visitor and Inspector are under consideration, and will be taken into account when the regulations of the First Examination next come before the College for revision."

It would therefore be understood that the remarks he was about to make applied to the College of Surgeons only. Dr. Windle then quoted the following passage from the report: "The Visitor and Inspector make the following important admission (p. 10): 'We have not been able to compare this examination with any others of its own class, so that we are really contrasting it with an ideal standard existing in our own minds,'" and asked whether all Visitors and Inspectors of the Council did not report upon an examination in accordance with an ideal standard in their own minds. If not they were not doing their work in a proper way. He objected to it being called an "admission." The College of Surgeons had called attention to what they supposed to be a contradiction in the report, but there was no contradiction between the two statements. The great patience and pains which the examiners had applied to their work were fully recognized, but no responsibility for the character of the examination rested with the examiners, who had to work under the conditions laid down by the Board. He had always felt considerable doubt whether it was advisable to introduce biology into the medical curriculum at all, but if it was to be introduced, it should be at least an introduction to the study of physiology, it should be a training in observation, and it might well be a training in manipulation. It had been suggested that a short practical examination would be advantageous and it had also been suggested that there should be a paper. The combination of a paper and an oral examination would constitute a very much more efficient examination than an oral examination alone. With regard to physics, he differed from some of his colleagues. He regarded physics as one of the most important subjects in the elementary training of the student. It was a training in absolute accuracy, a kind of training which was very badly wanted by many members of the profession. The examination in physics at the Conjoint Board was nothing less than a farce. An examination which consisted of one question on paper without any oral examination or any practical work in a practical subject was simply a piece of nonsense which could not be defended. With regard to chemistry he would say unhesitatingly that the examination of the English Conjoint Board was the best practical examination held by any of the Corporations. The Visitor and Inspector were anxious to indicate their sense of the extremely bad preparation which a great many of the students had received. They would have gone further in that direction if they had thought that it was right for them under their commission to do so. Personally he was distressed when he saw how little value seemed to be obtained in the great majority of cases from the work which was done in the first year of medical study.

Dr. PAYNE said that the question was a complicated one because the amount of time which could be given to a subject depended on the other subjects which were pursued in the medical schools. Until they could settle the question of how far the scientific year was to be separate from the study of anatomy and physiology it was really not much use criticizing examinations. While biology was mixed up with anatomy a high standard would never be maintained. If the standard was to be improved the subjects must be separated.

Mr. TICHBORNE, while admitting that it had been the custom to keep chemistry down because of the want of knowledge on the part of the students who came up for examination, held that it ought, on the contrary, to be developed.

Though uniformity of standard might be a difficult thing to bring about, he thought the Council should endeavour to do so, particularly with regard to pass examinations.

Dr. NORMAN MOORE thought the Council ought to bear in mind that what it was considering was to a great extent the best way to give medical education. He did not regard this in the least as an attack on the Royal College of Physicians. Some thought that biology was a desirable subject in medical education, while others (and among them might be included so great a person as the late Professor Huxley) thought that biology might be left out of the early medical education. Exactly how much chemistry and how much physics, or how much biology was required was a point for discussion. The reply given by the College of Physicians was made with the fullest sense of responsibility. The College of Physicians held that with regard to the actual regulations of examinations whether they referred to courses of study or to subjects of examination, the Council had no power—that power and responsibility rested upon the College of Physicians by charters and Acts of Parliament. But the College regarded the Council as a criticizing body, with the utmost respect and deference. It was the only body which could make comparative criticisms. The Royal College of Surgeons had thought proper to investigate fully the reports of the examination, and in his opinion had criticized them in an extremely able manner, showing the greatest consideration for every remark. With regard to the educational institutions recognized by the Royal Colleges the Council had one opinion and the Colleges another. The Council had been trying to enforce its authority as a regulator of places of study, which the Royal Colleges maintained it had no right to do, and it was only that phase of the report which struck him as otherwise than unjust.

Dr. MCVAIL said the Council had already come to a decision with regard to these courses of study. Dr. Norman Moore had said that the Council was only an advisory Board, but Dr. McVail contended that it was more. The examinations took place under Section XVIII of the Act of 1858. That Act and the subsequent Act of 1886 modified all the charters of Universities throughout the kingdom and constituted the Council a paramount authority. He had hoped that the Colleges would have indicated their desire to modify their synopses and curriculum, so that the Council might have appointed a committee to confer with the representatives of the Colleges.

Sir CHRISTOPHER NIXON thought the Council ought very carefully to consider the time spent by the student between passing the Third Examination at the end of the third year and the passing of the Final Examination at the end of the fifth year. He contended that before the Council could report any body as not keeping up the standard of education and examination it should be in the position, at all events, of being able to show that the recommendations and requirements that it made were perfectly consistent.

The PRESIDENT pointed out that the debate had wandered, and that suggestions had been made which did not actually fall within the motion that was before the Council. It was within the competency of any member of Council to move for the appointment of a committee, but on the discussion of the motion before the Council it was not in order. He then put the motion that the report of the Examination Committee be adopted, and it was agreed to.

Sir VICTOR HORSLEY, in moving:

(*a*) That the Examination in Chemistry, Physics, and Biology of the Examining Board in England is, in the opinion of the General Medical Council, insufficient.

said that it had been very properly pointed out that this question with regard to teaching institutions had already been answered in the affirmative; he now asked the Council to complete the answer by declaring that the examination itself was insufficient. The Council appointed Visitors to inspect the examination. These Visitors had reported, and, in accordance with precedent, that report had been sent to the licensing bodies for their comments. These comments ought to have been before the Council for consideration, but they were not; the Council had a comment from one only of the bodies and not from the other. The reason why the comments of the other were not before the Council was that the attitude of these bodies, although they were said to be joint towards one another and towards the Council, was not the same. From the College of Physicians the Council had received a letter stating that that College was considering the matter. This, he should say, was an unintentional discourtesy towards the Council. He purposely said "unintentional" because the date of the letter showed that the College had practically taken six months to consider the question. Of course, it did not take six months to write a letter of that kind; besides that, the Council knew that the College of Surgeons, being advised that the examination was the best that could be devised under the circumstances, invited the College of Physicians to confirm that view, and the College of Physicians had not done so. Therefore to come to this Council and say that the two Colleges worked together was not stating the fact correctly. The two Colleges had taken, as their documents showed, diverse views on this matter. He thought that was a very improper position for the Conjoint Board of England to place the Council in, and that under the circumstances it must, as it were, disregard that body and deal only with the comments of the College of Surgeons. He did not wish in any way in pressing his point to misrepresent the College of Physicians. He thought the Council ought to know that there were Members of that College who had shown a desire to consider this question in a fair way. He was sorry that as far as his own College was concerned the same could not be said. He then proceeded to criticize the comments sent to the Council by the Royal College of Surgeons, and concluded by asking the Council to support its Visitors in regarding this examination as being insufficient.

Dr. BRUCE seconded, and the motion was carried.

Sir VICTOR HORSLEY, in moving:

(*b*) That the synopses and requirements of the Examining Board in England for its Examination in Chemistry, Physics, and Biology are, in the opinion of the General Medical Council, insufficient,

said that he believed that the synopses of this examination were not satisfactory; but his motion went much further than the mere word "synopses;" it was "the synopses and requirements." "Requirements" included the kind of class which a student attended. That class was brought in naturally with (*c*); but he desired the Council, in voting upon (*b*), to consider that it was not only the actual synopses, but that the Council asserted a requirement for practical work at a teaching institution.

Dr. BRUCE seconded.

Dr. MACKAY asked Sir Victor Horsley whether it was necessary to insist on Clause (*b*). He agreed with the first resolution, and thought it was sufficient for all the purposes of the Council.

Dr. MCVAIL thought that Sir Victor Horsley should let (*b*) drop: (*a*) practically applied to all examinations.

In deference to the wishes of the members of Council the motion was withdrawn.

Sir VICTOR HORSLEY moved:

(*c*) The courses of study in Chemistry, Physics, and Biology in the majority of the teaching institutions recognized by the Examining Board in England, but not approved by the Council, are, in the opinion of the General Medical Council, insufficient.

The Committee had been unable, from the information forwarded, to satisfy itself that the time and amount of instruction afforded was in any real sense equivalent to what the Council contemplated as the curriculum. He thought that, as the Council had already adopted the report, he need say nothing more in support of (*c*).

Dr. NORMAN MOORE thought that it was very important that the Council should take care that it did not inflict any injustice. It recognized a long list of institutions. The clause only referred to a particular list of institutions which the Royal Colleges had recognized as places of study. He only wanted the Council to have some idea of the proportions of what was being dealt with. The totals for the ten years gave some idea of the proportion. From 1893 to 1902 2,653 candidates who came from medical schools were approved in chemistry; 195 who came from science institutions were approved in chemistry; 1,849 who came from medical schools failed; 132 who came from science institutions failed. In biology for the same period 2,531 who came from medical schools were approved and 146 who came from science institutions were approved; 1,093 who came from biology schools failed in biology and 67 who came from science institutions failed in biology.

Sir VICTOR HORSLEY asked whether Dr. Norman Moore would give the Council the number of scientific institutions which had been added to the list of the Conjoint Board during the ten years. Was Dr. Moore referring to institutions which were already recognized by the Conjoint Board ten years ago or not? Mr. Bryant had given them a very different list of bodies after 1900.

Dr. NORMAN MOORE said that he did not think that if the two

lists were minutely examined Sir Victor Horsley would find that as regards places sending candidates there was any great difference.

Dr. MACALISTER asked whether Dr. Moore could tell the Council the numbers that had gone in for examinations from the institutions contemplated in Sir Victor Horsley's motion (*c*), namely, teaching institutions recognized by the Conjoint Board. If he could, then the Council would have the critical figure in the whole discussion. He always maintained that the Conjoint Board in this matter was fighting a shadow. The number of candidates who came from schools which they could not after investigation approve was insignificant and ought not to form an obstacle to a rational settlement of the question.

Dr. NORMAN MOORE said that it seemed to him that in condemning the whole body because of such a very microscopic number of candidates the Council would hardly be acting quite justly. The Council ought to know the exact proportion that the clause dealt with.

Dr. ATTHILL said that, as representative of a corporation, he felt that these bodies must either be left to maintain their legal rights or a judicial tribunal must say what the rights were.

Dr. MCVAIL said that the idea that any body was to surrender anything of its legal rights was nonsense. A body could not surrender its legal rights if it would.

Dr. NORMAN MOORE said that on the Committee he endeavoured, with every desire to help the Committee in every possible way, to discuss each particular school, because he knew that in some of the schools the course would have extended over three or four years, so that the total amount of study would be equal to a longer number of hours for a shorter number of months in other schools. The Chairman of the Committee treated him as if he were a person anxious to obstruct, although nothing was further from his mind, and would not allow him to enter into the minute discussion of each school, which was absolutely essential to arrive at the truth. He had to bow to Sir John Tuke's decision, but it was right that the facts should be known.

Sir VICTOR HORSLEY said that he had taken the trouble to go into the details of each particular school, and had founded his motion on the result of that study.

Dr. NORMAN MOORE said that he was a first-hand authority on this. He had actually visited the schools, so his own information was the authoritative information in this particular case. It was not imagination.

The motion was then put and carried in the following form :

That the courses of study in Chemistry, Physics, and Biology in many of the teaching institutions which have been recognized by the Examining Board in England but not approved by the Council, are in the opinion of the General Medical Council insufficient.

Upon the request of Sir VICTOR HORSLEY, the names of those voting were taken.

After a short informal discussion, Dr. NORMAN MOORE said that it was quite obvious that neither Mr. Bryant nor he could give to the Council either on the next or any particular day any absolute pledge on behalf of the bodies which they represented. For himself he could only promise to lay the matter before his College, and if possible to get it adopted.

Mr. BRYANT said that his position was the same as that of Dr. Norman Moore.

Dr. NORMAN MOORE said that he might give the figures that had been extracted. It appeared that in ten years the number of students who came from institutions recognized by the Conjoint Board and not approved by the Council who passed in chemistry was 101. This was an average of about 10 a year. The number of candidates who came from such institutions and failed was 71 an average of 7 a year. In biology the total number of those who passed was 46 in ten years, and 30 failed.

In reply to Sir VICTOR HORSLEY, Dr. NORMAN MOORE said that he could not give the numbers of institutions added each year, and after a short informal discussion the Council adjourned.

Thursday, July 16th, 1903.

Sir WILLIAM TURNER, K.C.B., President, in the Chair.

CONJOINT BOARD IN ENGLAND.

THE minutes of the previous day's meeting were read and confirmed, and the Council went into committee for the further consideration of the motion by Sir VICTOR HORSLEY, seconded by Dr. MACKAY.

Sir VICTOR HORSLEY said that there were certain propositions now before the Council by way of amendment to his motion, and, as his only object was that the ultimate decision of the Council should be useful to medical education and worthy of the Council, he had considered these amendments, and could now put the matter in a more favourable position. The first amendment was that of Dr. Windle, which embodied two distinct propositions, and was therefore not in order. Then there was an amendment by Dr. MacAlister :

(1) That the President be requested to forward to the Presidents of the Royal College of Physicians of London and the Royal College of Surgeons of England copies of the reports of the Education Committee and of the Examination Committee now adopted, together with the resolutions expressing the deliberate judgement of the Council thereupon.

If priority were given to this, he would be glad to support it on the understanding that his motion was simply held over until November, and that a vote should then be taken on it. The Council ought to come to a decision in a constitutional way, and that could only be done by approaching the Privy Council. But as the Council had not yet officially communicated to the bodies concerned that it considered their examinations insufficient, he agreed that it was proper for the Colleges to be informed officially, and that they should have time to make observations if they thought fit.

Dr. MACALISTER said that two important reports and two important resolutions had been adopted by the Council for the first time which had not been communicated to the Royal Colleges at all officially, namely, the reports of the Examination Committee on the schools and the report of the Examination Committee on the report of the Inspector, and the resolutions declaring that the courses of study in many of the institutions were insufficient. The first thing the Privy Council would ask was whether the Council had communicated these reports to the two bodies. It was not only fair, but it was almost a statutory necessity that the Council should give the Colleges an opportunity of discussing the materials. Another important question was raised with regard to the statistics contained in the report which would come as a surprise. The whole question of recognizing certain Colleges had reduced itself to ridiculously small dimensions, and it would not be worth the while of the College of Physicians to maintain an attitude which, however right, was inexpedient in the interests of medical education. If the course which he suggested were adopted he should be surprised if something did not come out of it which would be to the benefit of medical education, and would perhaps also lead to uniformity of standard.

Dr. WINDLE and his seconder were prepared to accept Dr. MacAlister's amendment with certain additions.

Dr. MACKAY had seconded Sir Victor Horsley's motion as the logical conclusion of the resolutions adopted by the Council; but under the circumstances he would agree to its postponement and that priority should be given to Dr. MacAlister's amendment, because he thought he saw an opening whereby the whole of this unfortunate dispute might be brought to an end. The Council had acted under a mistake in claiming the right of approval of different institutions: that right belonged to the various licensing bodies named in the Act. On the other hand, the Council undoubtedly had a right to decree whether the course of education given in certain institutions was sufficient or not, and if the Council laid down what it considered a sufficient course in chemistry, physics and biology, it would help forward medical education.

Dr. NORMAN MOORE said that all were trying to put an end to a state of things which all regretted. The motion of Sir Victor Horsley ought to be cleared away, voted on or absolutely withdrawn, as it was in the nature of a threat, and only added difficulty to the discussion.

Sir VICTOR HORSLEY had only asked for a postponement of his resolution on the technical point that the licensing bodies had not received the decision of the Council.

Dr. NORMAN MOORE replied that where a resolution such as this had been discussed by the Council it ought either to be carried or rejected, or absolutely withdrawn. It did not seem to him that the course which had been suggested was just.

Dr. BRUCE thought Sir Victor Horsley's motion might very well be withdrawn.

In reply to the PRESIDENT, Sir VICTOR HORSLEY, whilst contending that his request to postpone his motion to November, and then to take a vote upon it, was in accordance with the Standing Orders, asked leave simply to postpone his resolution.

Dr. PYE-SMITH would deprecate putting the Council in antagonism to the two Royal Colleges. He believed that every member of the Council was actuated by a desire not for the triumph of the particular body which he represented, but for

the benefit of medical education generally, and the two Royal Colleges were animated by the same desire and conviction. He entreated all members of Council who were not party members to insist upon the withdrawal without any reservation of Sir Victor Horsley's resolution.

Sir VICTOR HORSLEY, in reply to the PRESIDENT, adhered to his request. He was not a party member. In putting the resolution on the paper he considered he was only fulfilling the provisions of the statute and he asked for it to be postponed in order that the bodies concerned should be informed of the Council's decisions; but he would not have the vote put to the Council on false issues, and accordingly he asked leave simply to withdraw his motion.

A vote was then taken and the leave granted.

Dr. WINDLE then moved, and Sir C. NIXON seconded the following resolutions:

1. That the President be requested to forward to the Presidents of the Royal College of Physicians of London and the Royal College of Surgeons of England copies of the reports of the Education Committee and of the Examination Committee now adopted, together with the resolutions expressing the deliberate judgement of the Council thereupon.

2. That the President be further requested to call the serious attention of the Royal Colleges to the unsatisfactory state of matters in regard to the course of study and examinations in chemistry, physics, and biology which these reports disclose, and to urge that in the interest of medical education immediate steps should be taken to remedy the defects in the regulations of the Royal Colleges which have led thereto.

Dr. NORMAN MOORE thought that it was quite right that the Council should forward the resolutions; but he could not help feeling that they contained rather too many adjectives. The object of the Council was to express its criticism, but not to do so in too violent a way.

The motion was carried.

Dr. WINDLE then moved:

That the President be authorized to appoint a committee consisting of two members from each of the three Branch Councils to assist him in framing this communication, and to join with him in conferring with representatives of the Royal Colleges, should it appear that a conference on the questions raised therein is desired.

This resolution was important, because he sincerely believed that the points at issue had been so narrowed down that a friendly conference would bring the present unhappy state of affairs to an end.

Dr. ATTHILL believed that the first year of medical study was a failure. The majority of boys left school a year earlier than they otherwise would. He thought that the motion was too limited, and there was absolutely no guidance to the Committee.

Sir VICTOR HORSLEY said that there ought to be added the words, "and that the Committee report in the November session of the Council." He did not think that the President required the assistance of a committee to draw up an official letter.

The PRESIDENT said that he looked upon the letter to be sent to the Royal Colleges as a very simple matter.

Dr. WINDLE was willing to omit that part of the motion if the President wished.

Dr. STEVEN regretted that Dr. Windle had limited his motion, as that course would not be conducive to a speedy settlement. In November the whole thing would have to be gone through again.

The motion was put in the following form and carried:

That the President be authorized to appoint a Committee consisting of two members from each of the three Branch Councils to join with him in conferring with representatives of the Royal Colleges, should it appear that a conference on the questions raised is desired.

Sir V. HORSLEY proposed the addition to the resolution of the words, "and that the Committee be requested to report to the November session of the Council." The matter ought not to be discussed at the cost of the profession any longer.

Sir C. NIXON seconded; but the PRESIDENT said that he would make some form of report in November, and the motion dropped.

On the motion of Dr. MACALISTER the Council resumed, and the minutes of the proceedings in Committee were accepted.

THE SOCIETY OF APOTHECARIES OF LONDON.

On the motion of Mr. BRYANT, seconded by Mr. YOUNG, the report on the inspection of the primary examination of the Apothecaries' Society of London was adopted.

Dr. MACALISTER moved and Sir VICTOR HORSLEY seconded:

That the President be requested to forward to the Society of Apothecaries copies of the report of the Examination Committee now adopted, with the resolution of the Council thereupon, and to urge upon that body the importance of improving the scope and standard of their examination in chemistry, physics, and biology.

Dr. MCVAIL said that if in dealing with reports similar in character the Council contented itself with merely calling the attention of the Apothecaries' Society of London to the examination, but in the case of the Royal Colleges passed the strong resolution adopted on the previous day, it would be illogical and unfair. He therefore moved:

That the examination in chemistry, physics, and biology of the Apothecaries' Society of London is, in the opinion of the General Medical Council, insufficient.

Dr. MACALISTER accepted the motion, and it was seconded by Dr. BRUCE.

Sir V. HORSLEY agreed that the reports were somewhat similar; but they were not identical. Further, the Apothecaries' Society had accepted the report of the Visitor and the Inspector, and had expressed its appreciation of the report, whereas the College of Surgeons did not accept the report of the Visitors, and no comments had been received from the College of Physicians. He should not oppose the motion.

Dr. MCVAIL said that the reply from the Society was singularly like the reply of the Royal College of Physicians of London.

Dr. NORMAN MOORE could not help feeling that it was a mistake for the Council to express censures upon a single examination. How much did it know of the examinations of the Society of Apothecaries?

Sir HUGH BEEVOR said that it was impossible for the Society after one meeting to send in a full answer to the detailed technical criticism of the Visitors, as to which the teachers and professors of chemistry were at issue.

Dr. MCVAIL's motion was then carried by 13 to 2.

EXAMINATIONS IN CHEMISTRY AND BIOLOGY OF THE CONJOINT BOARD IN ENGLAND.

The following table supplied by Dr. Norman Moore was entered on the minutes:

Results of the First Examination—Chemistry and Biology—of the Conjoint Examining Board of the Royal College of Physicians of London and the Royal College of Surgeons of England for the years 1898-1902, supplied by the Board.

Students from	Year.	Chemistry.		Biology.	
		Approved.	Referred.	Approved.	Referred.
Medical schools ...	1893	411	292	242	102
Science institutions ...		3	2	—	—
		414	294	242	102
Medical schools ...	1894	378	307	333	170
Science institutions ...		14	11	7	6
		392	318	340	176
Medical schools ...	1895	310	188	303	138
Science institutions ...		14	7	15	6
		324	195	318	144
Medical schools ...	1896	302	177	318	120
Science institutions ...		22	11	11	3
		324	188	329	123
Medical schools ...	1897	255	150	246	146
Science institutions ...		27	16	14	13
		282	166	260	159
Medical schools ...	1898	196	165	260	93
Science institutions ...		24	12	17	7
		220	177	277	100
Medical schools ...	1899	233	172	263	94
Science institutions ...		18	25	22	6
		251	197	285	100
Medical schools ...	1900	225	172	245	86
Science institutions ...		29	18	17	10
		254	190	262	96
Medical schools ...	1901	191	134	166	81
Science institutions ...		23	13	22	9
		214	147	188	90
Medical schools ...	1902	152	92	155	65
Science institutions ...		21	17	21	7
		173	109	176	72

Totals for Ten Years.

Medical schools ...	1893 to 1902	2,653	1,849	2,531	1,093
All science institutions		195	132	146	67
Total		2.848	1,981	2,677	1,160
Science institutions recognized by licensing body, but not approved by the Conjoint Board		101	71	46	30

Conference Committee.

The President announced that he had nominated the following gentlemen to serve on the Committee to confer with the Royal Colleges:—Dr. Windle and Mr. Young for England; Dr. Finlay and Dr. Bruce for Scotland; and Sir Christopher Nixon and Sir Charles Ball for Ireland.

The University of Oxford.

Mr. Bryant brought up the Report on the Inspection of the Final Examinations of the University of Oxford, and its adoption was seconded by Dr. Finlay.

Dr. Payne said that the Hebdomadal Council had stated that they felt that some of the language used by the university examiners in discussion among themselves had been quoted in a way which was liable to be misunderstood, and hoped that the report of the Examination Committee might be amended in that respect before it was finally accepted. If a draft report of the discussion had been submitted to those who were present, they would have said that it did not in their opinion convey a fair impression of what had happened. There was a sort of general impression running through the whole of the general report that there was very great leniency in the examinations; he could not think that the charge could be maintained. The University had introduced reforms, and the new regulations had been approved by the Board of Faculty of Medicine in June; the Hebdomadal Council had stated that the reforms commended themselves to them, though they were not yet embodied in the statutes. The University could not quite make up its mind as to a uniform system of marking. As to requiring certificates of attendance at hospitals, medical schools, and lectures, the custom of the University was that a student had to reside for a certain time, and he was kept up to his work by the tutor. The Examination Committee said, "If the Oxford scheme of general medical education is the best, that laid down by the Council must be wrong," and so on. He had been asked where the scheme was to be found. The scheme as a scheme was not to be found anywhere. It only rested on certain resolutions passed at different times. The University had taken into very careful consideration all the recommendations made by the officials of the Council, and had proposed certain regulations which would be communicated to the Council in due course.

Dr. Norman Moore hoped the Council would not adopt the report as it would practically amount to a vote of censure upon the University of Oxford which, clearly from the statistics, had a very high standard, and in particular had done much to maintain medical education, although it might not always have had precisely agreed with the views of the Council.

Sir Christopher Nixon wished to dissociate himself from any form of disrespect to a great university. He and Sir George Duffey had felt compelled to report that the examination was insufficient and a number of instances were quoted from the report which he maintained justified their conclusion.

Dr. MacAlister thought that there were several points which made it impossible for the Council to come to a definite and final decision with regard to the sufficiency of the final examination. Matters of fact were contested by the examiners and the visitors and inspectors, and the Council had been told by the representative of the University of Oxford that the regulations were being remodelled. What, therefore, would be the use of reporting to the Privy Council as to an examination held under regulations which were at an end? The Council must reinspect both examinations before coming to a final judgement. He moved as an amendment:

That the President be requested to arrange for a second inspection and visitation of the Final Examination of the University of Oxford during the ensuing year, and that a report thereon be considered by the Council before a decision is come to on the sufficiency of the examination.

This was seconded by Sir Charles Ball, and supported by Mr. George Brown.

Dr. McVail observed that Dr. MacAlister had made it difficult for him to vote. He was certain that in every particular the record by the Visitor and Inspector was accurate, and that the recollection of the examiners referred to by Dr. Payne was inaccurate. He could not vote for the amendment in its present form, as it appeared to question the report of the Visitor and Inspector.

Sir Victor Horsley thought the report of the Examination Committee ought to be adopted, and after hearing the remarks of the representative of the University of Oxford he was more than ever convinced of this. The Council was now asked to spend money on a second inspection, because, since the visitation, the University had altered its regulations. He agreed that it was a duty the Council would have to carry out in the future.

Dr. McVail suggested a modification of the amendment by adding the words

and that in the meantime the discussion of the report of visitation of the University of Oxford, and the Examination Committee's report on that report be adjourned until after a further inspection,

otherwise the report would go into the waste-paper basket. He agreed there should be a further inspection before the Council came to a final decision.

Dr. MacAlister accepted the suggestion, and the amendment was then carried as modified by adding the words

That the consideration of the Examination Committee's report be postponed.

The University of London.

Dr. MacAlister then moved, and Sir Chas. Ball seconded, a similar resolution with regard to the report of the Examination Committee on the examination of the University of London for the same reasons.

Dr. Pye-Smith said the University of London not only welcomed but felt obliged for the report of the Examination Committee, as the report of the Inspectors had detected the weakest points in the regulations. They had already engaged the attention of the University, and means had been taken to remedy the defects in the examination in surgery.

The President then put the motion:

That the consideration of the report of the Examination Committee be postponed, and the President be requested to arrange for a second inspection and visitation of the Final Examination of the University of London during the ensuing year, and that a report thereon be considered by the Council before a decision is come to on the sufficiency of the examination,

and it was agreed to.

Office Site Committee.

The Council then went *in camerâ* to receive a report from the Office Site Committee, and strangers were directed to withdraw. On readmission no announcement was made.

Vote of Thanks.

On the motion of Mr. Bryant, seconded by Sir John Williams, a hearty vote of thanks was accorded the President, who expressed his thanks, and the proceedings terminated.

ASSOCIATION NOTICES.

ELECTION OF MEMBERS.

Any candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

Members are reminded that the Library and Writing Rooms of the Association are fitted up for the accommodation of the Members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 a.m. to 5 p.m. Members can have their letters addressed to them at the office.

Guy Elliston, *General Secretary.*

British Medical Association.

SEVENTY-FIRST ANNUAL MEETING.

THE seventy-first annual meeting of the British Medical Association will be held at Swansea on Tuesday, Wednesday, Thursday, and Friday, July 28th, 29th, 30th, and 31st, 1903.

PROGRAMME.

President: WALTER WHITEHEAD, F.R.C.S.Edin., F.R.S.E., Consulting Surgeon, Manchester Royal Infirmary, Manchester.

President-Elect: THOMAS DRYSLWYN GRIFFITHS, M.D.Lond., M.R.C.S., Swansea.

Chairman of Council: ANDREW CLARK, F.R.C.S., Surgeon to the Middlesex Hospital and Lecturer on the Principles and Practice of Surgery.

Treasurer: EDWARD MARKHAM SKERRITT, M.D., F.R.C.P. Lond., Senior Physician to the Bristol General Hospital; Professor of Medicine, University College, Bristol.

An Address in Medicine will be delivered by FREDERICK T. ROBERTS, M.D.

An Address in Surgery will be delivered by A. W. MAYO ROBSON, F.R.C.S.

The Scientific Business of the Meeting will be conducted in eleven Sections, as follow, namely:

A.—MEDICINE.

President: Sir ISAMBARD OWEN, M.D., London. *Vice-Presidents:* CHAS. TANFIELD VACHELL, M.D., Cardiff; DAVID ARTHUR DAVIES, M.B., Swansea; JAMES KINGSTON FOWLER, M.D., London. *Honorary Secretaries:* ERNEST LE CRONIER, LANCASTER, M.B., Winchester House, Swansea; FRANCIS DARBY BOYD, C.M.G., M.D., 22, Manor Place, Edinburgh.

The following subjects have been selected for discussion:

1. The Medical Treatment of Inflammations in the Caecal Region.
2. Susceptibility and Infection.
3. The Treatment of Gastric Ulcer.

Subsection of Electro-Therapeutics.

A subsection of the Section of Medicine, to be devoted to electro-therapeutics, has been organized. The following is its programme of work:

WEDNESDAY, JULY 29TH.—Discussion on *The Results of Treatment of Malignant Disease by Electrical Methods.* To be opened by the President of the Subsection, Lewis Jones, M.D. The following will take part in the discussion: Drs. W. S. Hedley, W. F. Brook, Hall-Edwards, and James Allan.

THURSDAY, JULY 30TH.—Discussion on *The Treatment of Tuberculous Disease by Electrical Methods.* To be opened by Chisholm Williams, F.R.C.S.Edin. The following will take part in the discussion: Drs. McClure, Phineas Abraham, George Herschell, David Arthur, G. B. Batten, and D. Baynes.

FRIDAY, JULY 31ST.—Papers and demonstrations.

The following papers have been announced:

BOWIE, J. Cunningham, M.D. The Therapeutic Value of High Frequency Currents (Low Tension) with Large Ampèrage in (*a*) Phthisis, (*b*) Sinuses, (*c*) Simple Colitis, (*d*) Cancer (an hypothesis).
BAYNES, Donald, M.D. The Treatment of some Joint Affections and Painful Stumps by Electricity.
HALL-EDWARDS, J. F., L.R.C.P. On Some Debateable Points in the Application of the *X* Rays to Therapeutics.
HEDLEY, W. S., M.D. Some Points in Practical Muscle Testing.
HERSCHELL, George, M.D. Electrical Methods in the Treatment of Diseases of the Digestive Organs.
WILLIAMS, Chisholm, F.R.C.S.Edin. The Efficient Application of High Frequency Currents.

Demonstrations:

ARTHUR, David, M.D. Series of Skiagraphs of Lungs showing Progressive Changes in a Case of Tuberculosis.
BOWIE, J. C., M.D. High Frequency (Low Tension) Apparatus.
HALL-EDWARDS, J. F., L.R.C.P. Skiagraphs, etc.

B.—SURGERY.

President: EDMUND OWEN, F.R.C.S., London. *Vice-Presidents:* ALFRED SHEEN, M.D., Cardiff; HENRY ARTHUR LATIMER, M.D., Swansea; JORDAN LLOYD, F.R.C.S., Birmingham. *Honorary Secretaries:* HENRY BETHAM ROBINSON, M.S., 1, Upper Wimpole Street, W.; RICHARD COGSWELL ELSWORTH, F.R.C.S., 203, St. Helen's Road, Swansea.

Special discussions have been arranged to take place on the following subjects:

1. *Practical Experience regarding the most Satisfactory Methods of performing Intra-abdominal Anastomosis.* To be introduced by Mr. G. H. Makins and Mr. E. Stanmore Bishop. The following have signified their intention of taking part in the discussion: Messrs. J. Paul Bush, Harrison Cripps, E. Deanesly, R. C. Elsworth, J. Basil Hall, George G. Hamilton, M. B. Mitchell, B. G. A. Moynihan, James Murphy, Mayo Robson, F. C. Wallis, Sinclair White, and W. Woollcombe.

2. *The Treatment of Advanced Tuberculous Disease of the Knee-joint.* (By "advanced" is implied the stage where operative interference of some kind is imperative.) Mr. G. A. Wright and Mr. W. F. Haslam will introduce this discussion, and the following intend to take part in it: Messrs. J. Paul Bush, Jackson Clarke, Ward Cousins, R. C. Elsworth, Robert Jones, C. B. Keetley, K. Monsarrat, James Murphy, W. Sheen, Noble Smith, A. H. Tubby, F. C. Wallis, and Sinclair White.

The following is a list of papers which it has been arranged shall be read:

DEANESLY, E., M.D., F.R.C.S. (Wolverhampton). The Open-air Treatment of Surgical Tuberculosis.
ECCLES, W. McAdam, M.S. (London). One Danger of Gastro-enterostomy.
FREYER, P. J., M.D., M.Ch. (London). A further series of 28 cases of Total Extirpation of the Prostate for Radical Cure of Enlargement of that Organ.
HALL, J. Basil, M.C.Cantab., F.R.C.S. (Bradford). A new Route for Posterior Gastro-jejunostomy.
LITTLE, E. Marshall, F.R.C.S. (London). Phelps's Operation for Clubfoot.
MOULLIN, C. Mansell, M.D., F.R.C.S. (London). The Surgical Treatment of Chronic Gastric Ulcer.
MURRAY, R. W., F.R.C.S. (Liverpool). The Ultimate Results in a series of 88 cases of Fracture of the Tibia and Fibula.
ROBINSON, H. Betham, M.S., F.R.C.S. (London). Separation of the Acetabular Epiphysis of the Femur.
SHEEN, William, M.S., F.R.C.S. (Cardiff). A case of Operative Treatment for Cirrhosis of Liver.
SNOW, Herbert, M.D. (London). Cystic Tumours of the Mamma: their removal by "forcible massage" without incision.
TUBBY, A. H., M.S., F.R.C.S. (London). (1) On a Method of Treating by Operation Paralysis of the Upper Root of the Brachial Plexus (Erb-Duchenne type). (2) The Pathology and Treatment of Hallux Rigidus, Hallux Flexus, and Hallux Extensus.
WHITE, Sinclair, F.R.C.S. (Sheffield). Two cases of Ascites secondary to Alcoholic Hepatitis treated successfully by operation.
WHITELOCKE, R. H. Anglin, F.R.C.S. (Oxford). The Substitution of Temporary and Absorbable for Permanent and Unabsorbable Sutures in the Operations on Bone.

C.—OBSTETRICS AND GYNAECOLOGY.

President: Professor WILLIAM STEPHENSON, M.D., Aberdeen. *Vice-Presidents:* JOHN ADAMS RAWLINGS, M.R.C.P., Swansea; ANDREW JOHN HORNE, F.R.C.P.I., Dublin; RICHARD NELSON JONES, M.R.C.S., Swansea. *Honorary Secretaries:* THOMAS WATTS EDEN, M.D., 26, Queen Anne Street, Cavendish Square, W.; EWEN JOHN MACLEAN, M.D., 12, Park Place, Cardiff.

It has been arranged that on July 29th and July 31st the first part of the meeting of this Section will be occupied by a discussion on the following subjects:

1. WEDNESDAY, JULY 29TH.—*The Management of Pregnancy complicated with Uterine Fibroids.* Dr. Amand Routh will open this discussion, and the following have signified their intention to take part in it: Professor J. W. Byers, J. H. Dauber, M.D., T. Davies, M.D., T. W. Eden, M.D., T. Arthur Helme, M.D., F. Bowreman Jessett, F.R.C.S., A. H. N. Lewers, M.D., J. Dysart McCaw, M.D., E. J. Maclean, M.D., W. H. C. Newnham, M.D., Mary Scharlieb, M.S., Heywood Smith, M.D.

2. FRIDAY, JULY 31ST.—*The Diagnosis and Treatment of Tuberculosis of the Uterus and Adnexa.* Mr. J. H. Targett will introduce this debate and the following have signified their intention to take part in it: E. T. Davies, M.D., F. W. N. Haultain, M.D., J. A. C. Kynoch, M.D., Arnold W. W. Lea, M.D., A. H. N. Lewers, M.D., Cuthbert Lockyer, M.D., E. J. Maclean, M.D., Stuart Nairne, M.D., J. Heywood Smith, M.D., Herbert Snow, M.D., J. Edge, M.D.

The following is a list of papers received for reading in the Section:

CAMERON, Professor Murdoch, M.D.Glasg. The Diagnosis and Treatment of Uterine Fibroids.
EDGE, J., M.D. Some Remarks on Maternal Circulation in Pregnancy.
KYNOCH, Professor J. A. C., M.D., F.R.C.P.Edin. Primary Tuberculosis of the Uterus (Cervix).
LAWRIE, J. Macpherson, M.D. Subperitoneal Hysterectomy successfully performed on Four Sisters for Fibroid Disease.
LEA, Arnold W. W., M.D.Lond., F.R.C.S.Eng. Five Cases of Tuberculous Disease of the Fallopian Tube treated by Operation.
LEWERS, A. H. N., M.D., F.R.C.P.Lond. A Case of Hairpin in the Uterus discovered by *X* Rays.
MACLEAN, E. J., M.D.Edin. Two Successful Cases of Caesarean Section for Contracted Pelvis in Dwarfs.
OLIVER, James, M.D.Edin. A Clinical Study of Internal Haemorrhage in association with Ectopic Pregnancy.
PURSLOW, C. E., M.D.Lond. Notes of a Case of Persistent Uro-genital

Sinus, with especial reference to the later theories of the mode of development of the female genital tract.

D.—State Medicine.

President: John C. McVail, M.D., Glasgow. *Vice-Presidents:* Ebenezer Davies, M.R.C.S., Swansea; Major Robert Hammill Firth, R.A.M.C., F.R.C.S., London; Thomas Joseph Stafford, F.R.C.S.I., Dublin. *Honorary Secretaries:* Arthur Lloyd Jones, D.P.H., Rotherslade House, Glyncerrig, Oystermouth, Mumbles, Glam.; John Robertson, M.D., 76, Clarke Grove Road, Sheffield.

The following subjects have been selected, and it is proposed that as far as possible they shall be taken at the beginning of each of the three days of meeting, and that other subjects should be subsequently discussed as far as time may permit:

1. Wednesday, July 29th.—*(a) The Vaccination Acts and Small-pox Prevention.* Dr. McVail will introduce this discussion and the following gentlemen will take part in it: Dr. Walford (M.O.H. Cardiff), Dr. Hope (M.O.H. Liverpool), Dr. Brown (M.O.H. Bacup).

The other subjects proposed for discussion are:

(b) The Midwives Act, 1902, in its Public Health Aspects.—To be introduced by Mr. J. Ward Cousins, F.R.C.S. (Southsea).

(c) Relation of Vaccination to Acute Concurrent Infantile Diseases.—To be introduced by Dr. J. McKenzie (Kirkby-in-Ashfield).

2. Thursday, July 30th.—*(a) Seashore Pollution as it Affects Oysters and other Shellfish and the Pisciculture of Our Estuaries.*—To be introduced by Dr. A. Newsholme (M.O.H. Brighton), and Professor Herdman, F.R.S. (Liverpool).

(b) Rivers Pollution Prevention, especially in Industrial Districts.—To be introduced by William Williams (M.O.H. Glamorganshire).

The following papers are announced:

Groves, J., M.D., M.O.H. Isle of Wight Rural District. Fixity of Tenure.
Windle, J. D., M.D. (Southall). (1) Infectiousness of Acute Rheumatism; (2) Prevention of Diphtheria.

3. Friday, July 31st.—A discussion, *Food Poisoning and Adulteration*, will be introduced by W. J. Howarth, M.D., M.O.H. Derby.

The following papers are announced:

Bushnell, F. G., M.D. (Plymouth). Ministries of Public Health.
Morris, J. M., M.B. (Neath). Housing of the Working Classes in Small Municipalities.
Tidswell, H. H., M.R.C.S. (London). Physical Degeneration: Its Causes and Prevention.

E.—Psychology.

President: Robert Jones, M.D., Claybury. *Vice-Presidents:* James Glendinning, M.D., Abergavenny; Edwin Goodall, M.D., Carmarthen. *Honorary Secretaries:* Robert Sloss Stewart, M.D., Glamorgan County Asylum, Bridgend; Robert Henry Cole, M.D., 48, Upper Berkeley Street, W.

The following discussions have been arranged:

Wednesday, July 29th.—*The Pathology of General Paralysis.* Dr. W. Ford Robertson will open this discussion, and the following have signified their intention of taking part in it: Dr. Maule Smith, Dr. David Orr, and Dr. Mercier.

Thursday, July 30th.—*Alcohol in its Relation to Mental Diseases.* Dr. Theo. B. Hyslop will introduce this discussion, and the following have expressed their intention to take part in it: Sir Victor Horsley, Drs. Sims Woodhead, Kelynack, Jones Morris, and Archdall Reid.

Friday, July 31st.—*The Care and Treatment of Incipient Insanity.* Dr. Yellowlees will open this discussion, and will be followed by Drs. Conolly Norman, Rayner, Mercier, N. Raw, Weatherly, Savill, James Shaw, Helen Boyle.

Professor Ziehen (Utrecht), and Professor Benedikt (Vienna) will attend the Section and take part in the discussions.

The following papers are announced:

Mercier, C., M.B. The Classification of Insanity.
Norman, Conolly, F.R.C.P.I. Freund's Theory of the Origin of Obsession.
Raw, Nathan, M.D., F.R.S.E. The Relation of Mental Symptoms to Bodily Diseases and their Treatment.
Reid, G. Archdall, M.B. Human Evolution with Special Reference to Alcohol.
Shuttleworth, G. E., M.D. On the Slighter Forms of Mental Defect in Children and their Treatment.
Stewart, R. S., M.D. The Relationship of Wage, Lunacy, and Crime in South Wales.
Johnson, Alice V., F.R.C.S.I., D.P.H., and Goodall, E., M.D., F.R.C.P. The Action of the Blood Serum from Cases of Mental Disease upon the Bacillus Coli Communis.
Pugh, R., M.D. Syphilis in the Insane (apart from General Paralysis).
Smith, W. Maule, M.B. Some Remarks on the Nature of Fragilitas Ossium.
Rows, R. S., M.D. Demonstration of Cavities in the Spinal Cord.
Andriezen, W. L., M.D. The Premature Dementia of Puberty and Adolescence.
Edridge-Green, F. W., M.D. The Relation of Hysteria to Insanity.
Oldfield, Josiah, M.D. Dietary in the Causation of Insanity.
Hall, W. Hamilton, L.R.C.P. Remarks Refuting the Toxic Theory of Epilepsy.
Schofield, A. T., M.D. Psycho-Therapeutics; its Uses and Abuses.

F.—Pathology.

President: David James Hamilton, M.B., Aberdeen. *Vice-Presidents:* John Michell Clarke, M.D., Clifton, Bristol; Alex. Charles O'Sullivan, M.B., Dublin. *Honorary Secretaries:* George Leslie Eastes, M.B., 62, Queen Anne Street, W.; Daniel Edward Evans, M.B., Picton House, Swansea.

The following subjects have been arranged for general discussions:

The Pathology of Splenic Anaemia. Dr. H. D. Rolleston will introduce this discussion, and the following have signified their intention of taking part in it: Drs. Michell Clarke, James Barr, Douglas Stanley, G. Lovell Gulland, Senator (Berlin), W. Osler (Philadelphia), and J. H. Bryant.

The Pathology of Miners' Diseases. Professor T. Oliver, M.D., will introduce this discussion.

The following papers are announced:

Michels, E., F.R.C.S., and Weber, F. Parkes, M.D. Two cases of Obliterative Arteritis leading to Gangrene in the Extremities.
Hall, I. Walker, M.D. The Purin Bodies of Human Faeces in Health and Disease.
Trevor, R. S., M.A., M.B. The Morbid Anatomy of the Spleen in Splenic Anaemia, and some causes of Splenic Enlargement.

The following will show specimens in the Pathological Museum, Drs. Michell Clarke, Hamilton, and Trevor. Dr. Michell Clarke will give a lantern demonstration.

G.—Ophthalmology.

President: Henry Edward Juler, F.R.C.S., London. *Vice-Presidents:* Jabez Thomas, F.R.C.S., Swansea; Thomas Herbert Bickerton, M.R.C.S., Liverpool; A. Freeland Fergus, M.D., Glasgow. *Honorary Secretaries:* Henry Collen Ensor, M.R.C.S., 23, Windsor Place, Cardiff; William Tindall Lister, F.R.C.S., 30, Queen Anne Street, W.

The following subjects have been chosen for discussion:

Wednesday, July 30th.—*Operative Treatment of Conical Cornea.* Mr. Stanford Morton, F.R.C.S., will open this discussion.

The following papers are announced:

Smith, Major H., M.D. (1) Extraction of Cataract in its Capsule. (2) Treatment of Serious Syphilitic Disease of the Eye. (3) Subconjunctival injections of Koch's Tuberculin from a diagnostic and therapeutic point of view.
Darier, Dr. A. (Paris). Sympathetic Degeneration.
Fergus, A. Freeland, M.D. Normal Acuteness of Sight.
Grossmann, Karl, M.D., F.R.C.S. Mechanism of Accommodation.
Thompson, J. Tatham, M.B., C.M. Fixation of the Eyeball during Operation.
Doyne, Robert W., M.A., F.R.C.S. Treatment of Atrophic Retinae with Retinal Extract.

Thursday, July 30th.—*Ocular Changes in Relation to Renal Disease.* Mr. Edward Nettleship, F.R.C.S. will open this discussion.

The following papers are announced:

Campbell, Kenneth, M.B., F.R.C.S. On Albuminuric Retinitis.
Bickerton, T. H., M.R.C.S. On Nasal Duct Stricture.
Stephenson, Sidney, F.R.C.S. Interstitial Keratitis in Acquired Syphilis.
Browne, Edgar, F.R.C.S., and Stevenson, Edgar, M.D. Practical Notes on Sympathetic Ophthalmitis.
Thomas, F. G., M.B., B.C. Wound of Sclerotic, with Complications.
Hudson, Ainslie, M.D., F.R.C.S. Notes on a Case of Congenital Night Blindness.

The following resolution will be proposed by F. W. Edridge-Green, M.D.:

That the Council be requested to give effect to the resolution passed by this Section last year, that a Colour Vision Committee be appointed to recommend an efficient test for colour blindness.

The Treatment of Strabismus.—Mr. Gustavus Hartridge will open this discussion.

The following papers are announced:

Worth, Claude, F.R.C.S. Methods of Preserving or Restoring the Vision of the Deviating Eye and Developing the Fusion Sense.
Ensor, H. Collen, M.R.C.S. An Improved Operation for Ptosis.
Harman, N. Bishop, M.B., F.R.C.S. The Knee-joint Phenomenon in Interstitial Keratitis.
Herbert, Major, I.M.S. (1) Preliminary Note on the Pathology of Spring Catarrh; (2) Further Note on the Superficial Punctate Keratitis of Bombay.
Bronner, Adolph, M.D. Modified Mules's Glass Ball for use after Removal of the Eyeball.
Hancock, W. L., F.R.C.S., and Lister, W. T., F.R.C.S. On Some Rare Epithelial Tumours of the Conjunctiva.

Arrangements have been made for the exhibition of rare ophthalmoscopic and other cases in the Section. It is proposed, also, to have a special ophthalmological museum for specimens, drawings, instruments, etc.

H.—DISEASES OF CHILDREN.

President: WILLIAM ARBUTHNOT LANE, F.R.C.S., London. *Vice-Presidents:* ABRAHAM GARROD THOMAS, M.D., Newport; PHILIP RHYS GRIFFITHS, M.B., Cardiff; ROBERT WM. MURRAY, F.R.C.S., Liverpool. *Honorary Secretaries:* FREDERICK KNIGHT, M.D., 10, Walter Terrace, Swansea; WILLIAM LANGFORD SYMES, F.R.C.P.I., 74, Merrion Square, Dublin.

The following subjects have been selected for discussion:

WEDNESDAY, JULY 29th.—*The Pathology and Treatment of Chorea.* The discussion will be opened by Dr. D. B. Lees and continued by Professor J. W. Byers (Belfast); Drs. H. Ashby, Theodore Fisher, R. Hutchison, Alexander Morison, F. J. Poynton, and G. A. Sutherland.

THURSDAY, JULY 30th.—*Congenital Dislocation of Hip.* To be opened by Mr. F. F. Burghard.

The following papers have been presented for reading:

DARIER, Dr. (Paris). Some New Dental Signs of Hereditary Syphilis.
RUHRAH, Professor (Baltimore, U.S.A.). The Relation of the Thymus Gland to Marasmus.
MURRAY, R. W., F.R.C.S. Note on the Age for Operating in Cleft Palate.
CARPENTER, Geo., M.D. (1) Splenomegaly in Infants and Young Children. (2) A Case of Syphilitic Nephritis in an Infant aged 5 months.
MONTGOMERY, W. P., F.R.C.S. A Case of Congenital Hydrocephalus in which both the Ventriculo-meningeal and Meningo-peritoneal Methods of Drainage were adopted.
LISTER, T. D., M.D. On the Utilization of Infants' Milk Dépôts.
DUN, R. C., F.R.C.S. Adenoid Vegetations in Infancy.
O'SULLIVAN, Michael, M.B., F.R.C.S.I. Chorea: Its Complications, Course, and Treatment.

FRIDAY, JULY 31ST.—*Tuberculosis in Children—its Relation to Bovine Tuberculosis.* To be opened by Dr. Nathan Raw.

I.—LARYNGOLOGY AND OTOLOGY.

President:—PATRICK WATSON WILLIAMS, M.D., Clifton, Bristol. *Vice-Presidents:* DONALD ROSE PATERSON, M.D., Cardiff; WM. PERMEWAN, M.D., Liverpool; ARTHUR LOGAN TURNER, M.D., Edinburgh. *Honorary Secretaries:* JOHN LACY FIRTH, M.D., 20, Richmond Park Road, Clifton, Bristol; ALBERT FRANCIS BLAGDON RICHARDS, M.D., 5, Clevedon Terrace, Walter Road, Swansea.

The following subjects have been selected for special discussion:

1. WEDNESDAY, JULY 29th.—*The Operative Treatment for Malignant Disease of the Larynx*, will be introduced by Sir Felix Semon and Dr. E. J. Moure (Bordeaux).

2. THURSDAY, JULY 30TH.—*The Technique of Operations on the Temporal Bone in Suppurative Middle-ear Disease.* To be introduced by Dr. P. McBride (Edinburgh) and Dr. Arthur Hartmann (Berlin), and the following have signified their intention to take part in the discussion: Professor Urban Pritchard, Dr. E. B. Dench (New York), Professor Th. Gluck, Dr. R. C. Elsworth, Dr. William Hill, Dr. Dundas Grant, Dr. W. Milligan, and Dr. Scanes Spicer.

3. FRIDAY, JULY 31ST.—A discussion *On the Upper Respiratory Tract as a source of Systemic Infections* will be introduced by Dr. de Havilland Hall and Dr. W. Jobson Horne, and continued by Dr. J. L. Goodale (Boston, Mass.), Dr. E. Fletcher Ingals (Chicago), Dr. Scanes Spicer, Dr. F. John Poynton, Mr. H. T. Butlin, Dr. Urban Pritchard, and Dr. Dundas Grant.

The following papers are announced:

BRONNER, Adolph, M.D. On the Local Use of Formalin in the Treatment of Nasal Polypi before and after Operation on the Same by the Usual Methods.
YONGE, Eugene S., M.D. Two Cases of Epithelioma of the Larynx remaining well Two Years after Operation (Thyrotomy).

J.—NAVY, ARMY, AND AMBULANCE.

President: Inspector-General HENRY CHARLES WOODS, C.V.O., C.B., M.D., R.N., London. *Vice-Presidents:* Brigade-Surgeon-Lieutenant-Colonel EVAN JONES, V.D., M.R.C.S., Welsh Brigade, Aberdare; Major FREDERIC SAMUEL HEUSTON, R.A.M.C., C.M.G., F.R.C.S.I., Dublin. *Honorary Secretaries:* Fleet-Surgeon JOHN LLOYD THOMAS R.N., M.R.C.S., H.M.S. *Excellent*, Portsmouth; Lieutenant-Colonel M. W. H. RUSSELL, R.A.M.C., M.R.C.S., 48, Cheyne Court, Chelsea, S.W.; Surgeon-Major JOHN ARNALLT JONES, M.D., 2nd V.B. Welsh Regiment, Aberavon.

A discussion on Mediterranean Fever will be opened by Staff-Surgeon F. J. A. Dalton, R.N.; a discussion on the subject of *Personnel*, Equipment, and Training of Medical Units attached to Volunteer Infantry Brigades by Mr. William Sheen, B.S., F.R.C.S., Captain R.A.M.C.Vol.; a discussion on the subject of Poverty of Attraction for Men to become Regimental Bearers and the Consequent Insufficiency of that Section by Surgeon-Captain G. A. Stephens, M.D., 3rd Glamorgan R.V.; and a discussion on the subject of the Training of Volunteer Bearers and the Position of Regimental Medical Officers by Brigade-Surgeon Lieutenant-Colonel P. B. Giles (Welsh Border Brigade).

The following papers have been presented for reading in the Section:

THOMAS, Fleet-Surgeon Lloyd, M.R.C.S., R.N. A Surgeon's Notes with the Naval Brigade—China, 1900.
HALL, Staff-Surgeon Falconer, M.B., R.N. The Water Supply for Landing Parties and Naval Brigades.
HATHAWAY, H. G., Lieutenant-Colonel, R.A.M.C. Some Notes on a Mounted Bearer Company.

Surgeon-General Evatt, C.B., P.M.O. 2nd Army Corps, Salisbury Plain, will give a lecture to Volunteer M.O.'s on War Work, illustrated by diagrams.

K.—TROPICAL DISEASES.

President: GEORGE H. T. NUTTALL, M.D., Ph.D., Cambridge. *Vice-Presidents:* Sir FRANCIS LOVELL, C.M.G., 18, Clifton Villas, Maida Vale, W.; Staff Surgeon PERCY WILLIAM BASSETT-SMITH, M.R.C.S., Royal Naval Hospital, Haslar, Gosport. *Honorary Secretaries:* G. C. Low, M.B., London School of Tropical Medicine, Albert Docks, E.; Captain LEONARD ROGERS, I.M.S., M.D., Hartley, Plymouth.

The following subjects have been selected for discussion:

TUESDAY, JULY 28TH.—*The Disposal of Excreta in the Tropics.* To be opened by Professor W. J. Simpson.

WEDNESDAY, JULY 29TH.—*Trypanosomiasis.* To be opened by Sir Patrick Manson, K.C.M.G.

THURSDAY, JULY 30TH.—*Leprosy: its Etiology, Histology, and Treatment.* To be opened by Mr. Jonathan Hutchinson, F.R.S.

PROGRAMME OF PROCEEDINGS.

TUESDAY, July 28th.

9.30 a.m.—Meeting of 1902-3 Council (Council Chamber, Union Offices, Alexandra Road).
11 a.m.—Church Service at St. Mary's Church. Sermon by the Lord Bishop of St. David's.
2 p.m. to 3.15 p.m.—General Meeting* (King's Hall, Orchard Street).
3.30 p.m.—Representative Meeting (King's Hall, Orchard Street).
4 p.m.—Garden Party by Mr. and Mrs. Walters, at Ffynone, Swansea.
8 p.m.—Adjourned General Meeting from 2 p.m., at the Albert Hall. Reception by the President of the Foreign and Colonial Guests, followed by the President's Address and Presentation of Stewart Prize.

* In the event of the General Meeting not having concluded its business by 3.15 p.m., the meeting will stand adjourned until 2 p.m. on Wednesday.

WEDNESDAY, July 29th.

9.30 a.m.—Meeting of the 1903-4 Council (Union Offices).
10 a.m. to 1 p.m.—Sectional Meetings (Grammar and Higher Grade Schools).
10.30 a.m.—Visits to various Works.
1.50 p.m.—Triple Excursion to Towy Valley.
2 p.m.—Representative Meeting (King's Hall).
2 p.m.—Excursions to Bishopston Valley.
4 p.m.—Garden Party by Sir John and Lady Llewellyn, at Penllergaer.
4 p.m.—Garden Party by Mrs. Picton Turbervile, at Hendrefoilan.
8 p.m.—Address in Medicine by Frederick Thomas Roberts, M.D., Senior Physician, University College Hospital (King's Hall).
9 p.m.—Reception by President and Local Executive Committee at the Albert Hall.

THURSDAY, July 30th.

9.30 a.m.—Meeting of Council (Union Offices).
10 a.m. to 1 p.m.—Sectional Meetings (Grammar and Higher Grade Schools).
10.30 a.m.—Visits to various Works.
2 p.m.—Address in Surgery by A. W. Mayo Robson, F.R.C.S., Emeritus Professor of Surgery, Yorkshire College, at King's Hall.
3.30 p.m—Representative Meeting (if required) at King's Hall.
2.15 p.m.—Excursion to Oystermouth Castle.
2.15 p.m.—Excursion to Caswell Bay.
3.30 p.m.—Garden Party by Mayor of Swansea, at Sketty Park.
4 p.m.—Garden Party by Colonel and Mrs. Richardson, at Langland Bay Hotel.
7.30 p.m.—Annual Dinner of the Association at Albert Hall.
7.30 p.m.—Ladies' Entertainment at Grand Theatre.

FRIDAY, July 31st.

9.30 a.m.—Meeting of Council (Union Offices).
10 a.m. to 1 p.m.—Sectional Meetings.
10.30 a.m.—Sea Trip (specially intended for Ladies) on ss. *Brighton*.
10.30 a.m.—Visit to various Works.
2 p.m.—Representative Meeting (if required) at King's Hall.
2 p.m.—Excursion to Ilston and Park le Breos Valleys.
2.15 p.m.—Excursion to Craig-y-Nos Castle and Garden Party by Baron and Baroness Cederstrom.
2.15 p.m.—Sea Trip to Carmarthen Bay on ss. *Brighton*.
3.45 p.m.—Reception on Mumbles Pier by Directors of The Mumbles Railway and Pier Company.
8.30 p.m.—Reception by the Mayor of Swansea at Royal Institution of South Wales.

SATURDAY, August 1st.

9.20 a.m.—Tenby Excursion. Luncheon by the Mayor and Corporation.
9.20 a.m.—Caerphilly Excursion. Luncheon by the Marquis of Bute.
9.30 a.m.—Llanwrtyd Excursion. Luncheon by Mr. Campbell Davys at Dolcoed Hotel.
9.30 a.m.—Llandrindod Excursion. Luncheon by Local District Council and Medical Profession.

EXCURSIONS.

THE programme printed above contains a list of the excursions which have been arranged, and the hours at which it is proposed that they should start. The following additional particulars may be of interest.

The excursion on Wednesday to Bishopston Valley will be conducted by the Rev. Peter Potter, the Rector of Bishopston. The party will start at 2 p.m., will visit the beautiful valley which is noted for its subterranean river, "pot-holes," ancient church, and remains of a British encampment. On the same afternoon there will be an excursion to the Towy Valley, which will be divided into three parties. One party will visit Cerrig Cennen Castle under the guidance of Dr. Price, of Ammanford, and will then proceed to Glyn Hir Falls, where they will be entertained to tea by Mr. E. Du Buisson. The second party will, under the guidance of Dr. Evans, of Llandilo, take the circular drive through Golden Grove by Druslyn Castle and around Dynevor Park. The third party will be conducted by Dr. Lloyd Jones through Dynevor Farm and Park to the Castle, and thence by the well-known Llandilo stone bridge to the Cawdor Arms, where tea will be provided for both these parties.

On Thursday afternoon two excursions have been arranged, one under the guidance of Colonel W. Llewellyn Morgan, R.E., to Oystermouth Castle, the other to Caswell Bay and Valley. The Rev. Secretan Jones will guide the party to the head of Caswell Valley, where are the remains of an ancient church and hermitage.

On Friday a short trip by sea has been arranged especially for the convenience of ladies down the Gower coast to Worms Head, returning to Mumbles Pier. In the afternoon a longer trip will be made into Carmarthen Bay. Both these excursions have been arranged through the kindness of the Harbour Trustees, who will provide refreshments on board the ss. *Brighton*. On Friday afternoon there will be an excursion to Craig-y-Nos Castle, where the Baron and Baroness Cederstrom will give a garden party, and on the same afternoon there will be an excursion to Park-le-Breos and Ilston Valleys. In the first-named valley the visitors will have the opportunity of seeing some neolithic remains, and will then walk to the head of Ilston Valley, where they will be entertained by Admiral Sir Algernon and Lady Lyons at Kilvrough House.

SATURDAY EXCURSIONS.

Tenby.—The Mayor and Corporation and inhabitants of Tenby have invited a large party which will be conveyed to Tenby by special train arriving at 11.15. Members will be able to visit the various places of interest in the town, and after lunch, at which they will be entertained by the Mayor and Corporation, brakes will be provided to visit places of interest in the neighbourhood; a special train will convey the party to Swansea in the evening.

Caerphilly.—The party will travel via the beautiful valley of Neath, through Hirwain and Quaker's Yard to Caerphilly, where they will be entertained by the Marquis of Bute at the Castle. In the evening the return can be made either to Swansea or to Cardiff as may be most convenient.

Llanwrtyd Wells.—Members joining this excursion will be the guests at lunch of Mr. Campbell Davys, and will have an opportunity of visiting the sulphur springs, spa, golf links, etc., and also of driving round the beautiful environs of the wells. From Llanwrtyd the guests can either return to Swansea or proceed direct to London or the North.

Llandrindod Wells.—The local urban council and medical profession have invited a party to visit Llandrindod Wells, where they will view the pump house, golf links, lake, etc., and will be entertained at luncheon. From the station members may return either direct to London or the North, or to Swansea.

Gower.—For those members who may be prolonging their stay in the town an excursion to the Peninsula of Gower has been arranged. The party will drive to the village of Reynoldston, stopping to examine Arthur's Stone on their way. After luncheon they will drive to Penrice Castle and Park, the seat of Miss Talbot, who has thrown open the house and grounds for inspection. Tea will be provided, after which the homeward drive will be made by a different road.

SPECIAL RAILWAY ARRANGEMENTS.

To members and their friends attending the annual meeting the railway companies of the United Kingdom will grant return tickets, on payment at the time of booking, at a single fare and a quarter. To secure this concession each passenger must produce a special voucher, and these may be obtained on application to the General Secretary, 429, Strand, London, W.C. The reduced fares will be available from July 25th to August 5th, both dates inclusive.

Those members desiring to travel to the places where they reside during the meeting of the Association may obtain return tickets at a single fare and a quarter (minimum charge 1s.), on production of cards of membership, from Swansea to any station not more than fifty miles distant to which through bookings are in operation available to return on the same or following day.

Periodical tickets available during the meeting will also be issued to members from Swansea to any station not more than fifty miles distant, at a charge of not less than the accumulated fares per diem under the preceding clause, and will be available for more than one journey to enable the members sleeping out to return to their hosts for dinner.

ANNUAL REPRESENTATIVE MEETING.

LIST OF REPRESENTATIVES RETURNED FOR THE ANNUAL REPRESENTATIVE MEETING TO BE HELD AT SWANSEA ON JULY 28TH, 1903.

Branch.	*Division.*	*Representative.*
ABERDEEN	Aberdeen	Professor William Stephenson, M.D.
	Orkney	
	Shetland	
BATH AND BRISTOL ...	Bath	W. M. Beaumont, Esq.
	Trowbridge	
	Bristol	J. Michell Clarke, M.D.
BIRMINGHAM AND MIDLAND COUNTIES	Bromsgrove	T. E. Underhill, M.D.
	Dudley	
	Central	Professor R. Saundby, M.D.
	Coventry	E. T. Power, Esq.
	Nuneaton and Tamworth	
	Warwick and Leamington	Professor J. T. J. Morrison.
	West Bromwich ...	J. H. H. Manley, M.B.
BORDER COUNTIES ...	Mid-Cumberland ...	F. R. Hill, M.B.
	North Cumberland ...	
	West Cumberland ...	
	Scottish Part	J. Maxwell Ross, M.B.
CAMBRIDGE AND HUNTINGDON	Cambridge and Huntingdon	Henry Stear, Esq.
CONNAUGHT	Mid-Connaught ...	No return.
	North Connaught ...	
	South Connaught ...	
DORSET AND WEST HANTS	Bournemouth	Harold Simmons, Esq.
	West Dorset	T. Henry Jones, M.D.
DUNDEE	Dundee	J. A. C. Kynoch, M.B.
EAST ANGLIAN	North-East Essex ...	B. H. Nicholson, M.S.
	Mid-Essex	J. E. Molson, M.B.
	South Essex	
	Norwich	H. A. Ballance, M.S.
	West Norfolk	
	East Norfolk	A. C. Mayo, Esq.
	North Suffolk	
	Mid-Norfolk	C. A. O. Owens, M.D.
	South Suffolk	Edgar G. Barnes, M.D.
	West Suffolk	
EAST YORK AND NORTH LINCOLN	East York	No return.
	North Lincoln	
EDINBURGH	The Lothians	No return.
	North-East Edinburgh	James Carmichael, M.D.
	North-West Edinburgh	James Ritchie, M.D.
	South-Eastern Counties	R. Somerville, M.D.
	South Edinburgh ...	G. W. S. Paterson, M.B.
FIFE	Fife	D. H. Kyle, M.B.
GLASGOW AND WEST OF SCOTLAND	Ayrshire	W. Frew, M.B.
	Dumbarton and Argyllshire	John Gilmour, M.D.
	Glasgow Central ...	Freeland Fergus, M.D.
	Glasgow Eastern ...	W. L. Muir, Esq.
	Glasgow North-Western	J. S. Muir, M.B.
	Glasgow Southern ...	C. E. Robertson, M.B.
	Lanarkshire	Bruce Goff, M.D.
	Renfrewshire	James Duncan, M.D.
GLOUCESTERSHIRE ...	Gloucestershire ...	G. Bagot Ferguson, M.D. M.Ch.Oxon.
LANCASHIRE AND CHESHIRE	Altrincham	T. W. H. Garstang, Esq
	Ashton-under-Lyne ...	J. R. S. Park, Esq.
	Glossop	
	Birkenhead	J. Lambert, M.D.
	Blackburn	E. H. T. Nash, Esq.
	Burnley	
	Blackpool	F. J. H. Coutts, M.D.
	Isle of Man	
	Bolton	Horace Jefferies, Esq.
	Bury	J. Brown, M.D.
	Rochdale	
	Chester	H. W. King, M.D.
	Crewe	
	Leigh	F. Rees, M.D.
	Wigan	
	Liverpool (Bootle) ...	Joseph Walker, Esq.
	Liverpool (Central) ...	G. G. Hamilton, M.B.
	Liverpool (Northern)	J. J. Tisdall, Esq.
	Liverpool (Southern)	J. R. Logan, M.B.
	Liverpool (Western) ...	K. A. Grossmann, M.D.
	Manchester (Central)	W. G. Booth, Esq.
	Manchester (North) ...	G. H. Broadbent, Esq.
	Manchester (Salford)	R. H. Wolstenholme, Esq.
	Manchester (South) ...	S. Bagley, Esq.
	Manchester (West) ...	A. Brown Ritchie, M.B.
	Oldham	T. Fawsitt, Esq.
	Preston	W. H. Irvin Sellers, M.B.
	St. Helens	No return.
	Southport	C. Pinkerton, M.D.
	Stockport and Macclesfield	H. G. Smeeth, M.D.
	Warrington	No return.
LEINSTER	Dublin	F. W. Kidd, M.D.
	East Leinster	J. Wallace Boyce, M.B.
	Mid-Leinster	No return.
	North Leinster ...	No return.
	North West Leinster	No return.
	South-East Leinster ...	No return.
METROPOLITAN COUNTIES	Brixton	No return.
	Central	No return.
	City	E. W. Goodall, M.D.
	Ealing	J. D. Windle, M.D.
	Hampstead	N. B. Harman, F.R.C.S.
	Kensington	G. J. Crawford Thomson, M.D.
	Lambeth	No return.
	Richmond	R. L. Langdon-Down, M.B.
	St. Pancras	Walter Smith, M.D.
	Stratford	Percy Rose, Esq.
	Tottenham	R. F. Tomlin, Esq.
	Walthamstow	C. J. Morton, M.D.
	Wandsworth	A. W. Sheen, M.D.
	Watford	J. D. Windle, M.D.
	Weybridge	No return.
MIDLAND	Boston	A. E. Wilson, M.B.
	Stamford	
	Derby	W. St. A. St. John, M.B.
	Leicester	Astley B. Clarke, M.B.
	Lincoln	F. S. Genney, M.B.
	Nottingham	F. H. Jacob, M.B.
MUNSTER	North	Professor H. Corby, M.D.
	South	
	West	
NORTH OF ENGLAND ...	Alnwick	J. Anderson, M.B.
	Berwick	
	Blyth	
	Hexham	
	Morpeth	
	Bishop Auckland ...	John Paxton, M.B.
	Chester-le-Street ...	
	Durham	
	Cleveland	G. Stevens Pope, Esq.
	Darlington	
	Hartlepool	
	Stockton	
	Consett	Alfred Cox, M.B.
	Gateshead	
	Newcastle-on-Tyne ...	A. T. Weir, M.D.
	South Shields	Henry Goudie, M.B.
	Tyneside	
	Sunderland	James Murphy, M.D.
NORTHERN COUNTIES OF SCOTLAND	Northern Counties of Scotland	J. M. Moir, M.D.
NORTH LANCASHIRE AND SOUTH WESTMORLAND	Furness	H. F. Oldham, M.D.
	Kendal	
	Lancaster	
NORTH WALES AND SHROPSHIRE	Denbigh and Flint ...	E. D. Evans, Esq.
	North Carnarvon and Anglesea	H. Jones Roberts, Esq.
	Shropshire, Montgomery, and Radnorshire	G. H. Keyworth, M.B.
	South Carnarvon and Merioneth	Samuel Griffith, Esq.
OXFORD AND READING	Maidenhead	J. H. Walters, Esq.
	Reading	
	Oxford	W. Collier, M.D.
PERTH	Perth	R. Stirling, M.D.
SOUTH-EASTERN ...	Ashford	A. E. Larking, M.D.
	Dover	
	Folkestone	
	Brighton	No return.
	Bromley	A. T. Smith, M.D.
	Sevenoaks	
	Canterbury	W. Gosse, M.D.
	Isle of Thanet	
	Faversham	
	Chichester & Worthing	F. Hinds, M.D.
	Horsham	
	Croydon	J. J. Macan, M.D.
	Dartford	No return.
	Eastbourne	C. H. Allfrey, M.D.
	Hastings	
	Guildford	A. Hope Walker, Esq.
	Reigate	
	Maidstone	W. Douglas, M.D.
	Rochester & Chatham	
	Norwood	John Rand, Esq.
	Tunbridge Wells ...	David Davies, M.B.
SOUTH-EASTERN OF IRELAND	Carlow	R. R. O'Brien, M.D.
	Kilkenny	
	Waterford	
SOUTHERN	Guernsey & Alderney	A. A. MacKeith, M.B.
	Jersey	
	Southampton	John Ward Cousins F.R.C.S.
	Isle of Wight	
	Portsmouth	
	Salisbury	C. R. Straton, Esq.
	Winchester	D. Browne, Esq.
SOUTH MIDLAND ...	Aylesbury	No return.
	Bedford and Herts ...	R. H. Coombs, M.D.
	Northamptonshire ...	C. J. Evans, Esq.
SOUTH WALES AND MONMOUTHSHIRE	Cardiff	T. Garrett Horder, Esq.
	Monmouth	W. D. Steel, M.D.
	North Glamorgan and Brecknock	E. N. Davies, Esq.
	South-West Wales ...	R. G. Price, M.D.
	Swansea	H. A. Latimer, M.D.
SOUTH-WESTERN ...	Barnstaple	J. Miller, Esq.
	Exeter	
	Devonport	F. E. Row, Esq.
	Newton Abbot	W. O'Dell, M.D.
	Plymouth	G. Jackson, Esq.
	Truro	W. S. Bennett, Esq.

Branch.	Division.	Representative.
Staffordshire ...	Mid-Staffordshire ...	W. G. Lowe, M.D.
	North Staffordshire ...	W. Hind, M.D.
	South Staffordshire ...	T. Ridley Bailey, M.D.
Stirling...	Stirling	J. Strachan, M.D.
Ulster	Ballymoney, North Antrim and East Derry	J. C. Woodside, Esq.
	Derry	
	Belfast	A. B. Mitchell, M.D.
	Enniskillen or Co. Fermanagh	No return
	Monaghan and Cavan	No return
	Omagh or Co. Tyrone...	No return
	Portadown and West Down	J. S. Darling, M.B.
West Somerset ...	West Somerset... ...	J. A. Macdonald, M.D.
Worcestershire and Herefordshire	Hereford...	G. W. Crowe, M.D.
	Worcester	
Yorkshire	Bradford...	W. H. Horrocks, M.B.
	Halifax	Alfred Mantle, M.D.
	Huddersfield	
	Harrogate	
	Richmond and Northallerton	A. L. Husband, M.B.
	Leeds	J. Allan, M.D.
	Scarborough	W. H. Jalland, Esq.
	York	
	Sheffield	Sinclair White, M.D.
	Wakefield and Doncaster	C. J. R. McLean, M.D.

RECEPTION ROOM.

The reception room, which will be found in the Free Library, Alexandra Road, a convenient situation passed by tramways from all parts, will be opened on Monday, July 27th, from 4 p.m. to 9.45 p.m., and on the following day from 9 a.m. to 9.45 p.m., on the other days it will close at 6 p.m. A post and telegraph office will be established in the Reception room, and Ladies' reading and reception rooms will be established on the first floor of the Union Offices opposite the Free Library.

Members who have not taken advantage of the arrangements made by the Lodgings Committee before their arrival at Swansea should apply at the reception room, where a complete list of rooms not engaged up to Monday, July 27th, will be available for reference. It is, however, highly desirable that members should notify their requirements to one of the Secretaries of the Lodgings Committee, Dr. Rhys Davies, Swansea, or Dr. Veale, Mumbles, who will arrange that suitable rooms shall be recommended to them on their arrival.

PATHOLOGICAL MUSEUM.

An exhibition of macroscopic and microscopic specimens, drawings, photographs, diagrams, radiographs, plaster casts, and apparatus for pathological inquiry will be held during the meeting. The arrangements are in the hands of a Committee, consisting of Dr. Daniel E. Evans, Mr. C. H. Fagge, 22, St. Thomas Street, London, S.E., and Dr. Newman Neild, Richmond Hill, Clifton, Bristol, and further particulars can be obtained from Dr. Daniel E. Evans, Swansea Hospital, Swansea.

Specimens, which must be mounted ready for exhibition, should be sent in not later than the third week in July, to Dr. Daniel E. Evans, Swansea Hospital, Swansea.

Every care will be taken of all specimens, and the cost of carriage will be defrayed, if desired, by the Local Executive Committee.

ANNUAL EXHIBITION.

Chairman: Mr. E. B. Evans.

Secretaries: Mr. J. Kynaston Couch, Mansel House, Swansea; Dr. J. D. Davies, 1, Trinity Place, Swansea.

Telegraphic Address: Annually, Swansea.

Telephone No.: 0539 National.

The annual Exhibition in connexion with the above meeting will be held on July 28th, 29th, 30th, and 31st in the First and Second Floors of the Free Library, Swansea. The building includes the School of Art and Art Gallery of Engravings, and provides excellent accommodation, and will comprise the following Sections:

Section A.—Foods and Drugs, including Prepared Foods, Chemical and Pharmaceutical Preparations, Antiseptic Dressings, etc.

Section B.—Medical and Surgical Instruments and Appliances, Books, Diagrams, Charts, etc.

Section C.—Sanitary and Ambulance Appliances.

Section D.—Carriages, Automobiles, etc.

The Reception Rooms occupy the Ground Floor.

Luncheons will be provided in the building.

A catalogue, giving short description of exhibits, will be distributed free to members of the Association attending the meeting.

Communications on all general matters connected with the Exhibition should be addressed to Mr. J. Kynaston Couch, Mansel House, Swansea.

Reports of Branch Meetings.

LANCASHIRE AND CHESHIRE BRANCH:

Preston Division.

The first meeting of this Division was held at the Town Hall on May 19th.

Election of Officers.—The following were elected officers for the ensuing year: *President:* Dr. R. C. Brown. *Vice-President:* Dr. J. E. Garner. *Secretary:* Dr. D. Turnbull Smith. *Representative on Branch Council:* Dr. Alex. C. Rayner. *Representative to Annual Meeting:* Dr. W. Irvin Sellers. *Executive Committee:* Drs. Anderson, Mooney, Lonie, Jones (Chorley).

Adoption of Rules.—The printed model rules were adopted as the rules of the Branch.

METROPOLITAN COUNTIES BRANCH:

St. Pancras Division.

The regular meeting of this Division, No. 9, was held at the North-West London Hospital on June 9th, at 4.30 p.m. Dr. Wm. Wynn Westcott, the Chairman of the Division, presided. Dr. R. C. M. Pooley, the Honorary Secretary, was unable to be present.

Election of Officers.—The following officers were elected for the year 1903-4: *Chairman:* Dr. Wm. Wynn Westcott. *Vice-Chairman:* Dr. Walter Smith. *Secretary and Treasurer:* Dr. R. C. M. Pooley. *Delegate to Annual General Meeting:* Dr. Walter Smith. *Representatives on the Council of the Metropolitan Counties Branch:* Dr. R. C. M. Pooley and Dr. Wm. Wynn Westcott. *Seven Additional Members of the Executive Committee:* Drs. F. Greaves, C. A. Goullet, Sykes, W. J. S. Ladell, H. G. Sworn, C. G. D. Morier, and W. R. Kingdon.

Next Meeting.—It was resolved that the next meeting be held at the Temperance Hospital on Friday, July 17th, at 4.30 p.m.

Executive Committee.—On the proposal of the Chairman it was resolved that the members of the Executive Committee be summoned to meet half an hour before each meeting of the Division, and that their first meeting be on July 17th, at 4 p.m.

Notices of Motion.—A discussion then took place upon the notices of motion as printed in the British Medical Journal of April 25th, p. 994, and Dr. Walter Smith, the delegate to the meetings of the annual Representative Meeting to be held at Swansea at the end of July was requested to support Clause 1 of the Proposals of the Council of the Association, and to vote against the second; to support all the proposals of the Gateshead Division, and that of the Cleveland Division. The two proposals from Scottish Branches were objected to, and as to the proposals of the Leinster Branch the meeting left the voting on Clause A 1 to the discretion of the delegate, and supported Clauses A 2 and A 3 and B. It was considered desirable that Dr. Walter Smith should propose at the meeting at Swansea, or at his discretion appeal to the Council of the Association, that the British Medical Association should be directly represented upon the General Medical Council.—Dr. Sykes pointed out that the General Medical Council seemed to be on the verge of bankruptcy, and that it would soon require ample reforms.

Postponement of Chairman's Lecture.—A late hour having arrived, the reading of the Chairman's lecture on the overlying of infants was postponed to the next meeting.—Dr. Wynn Westcottsaid that on that occasion he expected that Dr. Pooley would also read a paper on uterine fibroids, and would show some specimens.

NORTH OF ENGLAND BRANCH.

BRANCH COUNCIL MEETING.

A BRANCH COUNCIL meeting was held on Tuesday, May 19th, 1903, at Stockton-on-Tees. Present: Dr. Murphy (in the chair in the unavoidable absence of the President), Drs. Robson (Alnwick Division), McDowall (Morpeth), Cromie (Blyth), Lyle (Newcastle), Fraser (Tyneside), Drummond and Hunter (South Shields), Todd (Gateshead), Charles (Consett), Todd (Sunderland), Jepson (Durham), Davis and Watson (Hartlepools), Paxton (Bishop Auckland), Hern (Darlington), Miller (Stockton), Knott, Walker, and Howell (Cleveland), and Cox, Honorary Secretary.

New Members.—Out of a list of 47 candidates 46 were unanimously elected.

Extra Payment to Members of Central Council for Attendance.—It was decided to continue the custom of the Branch as regards the attendances of its representatives on the Central Council, and make up the amount recived from the head office for travelling expenses to the sum of £5 5s.

Place of Meeting of Branch Council.—It was resolved that the Council meet in rotation at the following places—Newcastle, Stockton, Sunderland, and Durham, every alternate meeting being held at Newcastle, so that the order will run as follows—Newcastle, Stockton, Newcastle, Sunderland, Newcastle, Durham. Next meeting to be held at Newcastle in the latter part of September.

Organization Details.—It was resolved that the proposed Barnard Castle Division be merged in the Bishop Auckland Division with the exception of Gainford, which should go into the Darlington Division. Haverton Hill was removed from the Stockton Division and placed in the Cleveland Division. Shotton was put into the Sunderland Division. These arrangements subject to the approval of the Central Council.

Annual Meeting.—This was fixed to be held at Alnwick on Friday, June 12th, details to be left with the President-elect and the Secretary. Dr. James Drummond (South Shields) was unanimously recommended to the annual meeting as next President-elect, and Dr. Alfred Cox was recommended as Honorary Secretary and Treasurer.

Representation of the Branch on the Central Council.—The SECRETARY announced that the election of two representatives would take place by voting papers, and that the notice respecting nominations would appear in the current week's BRITISH MEDICAL JOURNAL. There were two required, and it was his intention not to offer himself for re-election, as he found the Branch work quite as much as he could manage at present. The votes were counted by the Honorary Secretary of the Branch, assisted by Dr. W. Smith, Assistant Honorary Secretary of the Gateshead Division, with the following result: Dr. James Murphy (Sunderland), 184; Dr. J. H. Hunter (South Shields), 164; Dr. D. F. Todd (Sunderland), 29. Drs. Murphy and Hunter are therefore declared to be elected. The voting papers can be seen by any member of the Branch during the next four weeks.

ANNUAL MEETING.

The annual meeting of the Branch was held at the Plough Hotel, Alnwick, on Friday, June 12th; the PRESIDENT (Dr. Wardle, of Bishop Auckland, in the chair) and 21 members were present. Previous to the meeting members coming from a distance had been most hospitably entertained at luncheon by the President-elect (Dr. Burman) and Mrs. Burman. Then most of the visitors went for a drive through the Parks of Alnwick Castle under the guidance of Dr. Robson, Secretary of the Alnwick Division. A most enjoyable time was spent, the day being a very fine one. Apologies for non-attendance were read from many members.

Report of Branch Council.—The following is the text of the report of the Branch Council: Your Council begs to report great increase of both membership and interest in the Branch. Since the last report the new Articles and By-laws have come into operation, so that the Branch is no longer a miscellaneous collection of some members residing in the area, but now represents every member residing between Berwick and the North Riding of Yorkshire. Our membership was given officially last year as 278; it now stands at 547. Much of this increase is of course due to the absorption of the old unattached members, but not by any means all. Since the last annual meeting 105 new members have been elected, and we have at the present moment more than 20 candidates for election. The year has been a very busy one, much time having been spent in mapping out the Branch into Divisions, of which there are now 18, each with its own officers and separate organization. There may possibly be changes in this arrangement, as experience tells us what is best for the interests of our members, but at any rate every member can now without the sacrifice of much time take part in the part in the work of the Association. The usual number of meetings had been held. The last annual meeting at Bishop Auckland was only poorly attended. The autumn meeting at Newcastle was attended by over fifty members, and the spring meeting at Sunderland drew together some thirty. The new Constitution demanded new rules for the Branch, and these have been founded on the model rules suggested by the Central Council. In addition to the ordinary working rules, the Branch has for the first time adopted a set of rules for the regulation of the discussion of any ethical matter which may arise. The two sets of rules have been sent up to the Council for approval, and as soon as they are returned they will be printed and a copy sent to every member. The work of the Branch Council has been much more arduous and responsible during the past year. On it has been thrown the consideration of the various matters requiring adjustment in the new organization, and it now has the responsibility of electing all new members. Meetings were held in September, October, December, March, and May. The term of office of your two representatives on the Central Council of the Association, Drs. Murphy and Cox, having expired, the pending and future elections, instead of being held at this meeting, must now be by voting paper sent to every member of the Branch. By rule the result should have been announced at the annual meeting; but, as your Secretary had overlooked the necessity of giving the due fourteen days' notice for nominations through the BRITISH MEDICAL JOURNAL, the election has been delayed. The voting papers will be issued during the next few days. Dr. Cox does not offer himself for re-election, as he finds himself unable to afford the time necessary to fulfil both this office and that of Branch Secretary. One of the duties of your Council is to recommend to this meeting the President-elect and Honorary Secretary for the ensuing year. We beg to nominate Dr. James Drummond (South Shields) for the former office, and Dr. Alfred Cox for the latter. We commenced the year with a balance of £95 19s. 2d. In spite of the expenditure being necessarily much heavier than normal, and including the honorarium of £50 granted to the Honorary Secretary for the heavy work of organization, we close the year with a balance of £85 14s. 1d. Our responsibilities are greatly increased, but so is our income, and there seems every reason to believe that with due economy the work of both Branch and Divisions may be efficiently carried on.—The report was received and approved.

Election of Officers 1903-4.—Dr. James Drummond was unanimously elected President-Elect, and in thanking the members present said that with the help of his local colleagues he would try to fill the office in a manner worthy of his traditions, and it would be his ambition to make the annual meeting at South Shields as pleasant and successful as the present one. *Honorary Secretary and Treasurer*, Dr. Cox.

Additional Member of Branch Council.—Mr. Rutherford Morison was unanimously elected on the Branch Council.

Induction of New President.—Dr. WARDLE briefly welcomed his successor, Dr. Burman, and wished him a successful year of office.

PRESIDENT'S ADDRESS.

The PRESIDENT then took the chair, and delivered an address which is here published in somewhat abbreviated form. After some introductory remarks, Dr. Burman proceeded:

It is notorious that we fail to carry with us that influence which we should and might posses. Compared with the Church or the law, our power as a professional body in the State is insignificant, and yet, numerically speaking, we are not much inferior to either. What is the cause? Where is the remedy to be found? If found, can this remedy be applied? Are we as a body deficient in self-assertion, or is not a want of harmony amongst ourselves on some essential points the important factor in our being omitted from the "influences which influence"?

To discover a cause and provide an efficient remedy should be one of the main objects of the British Medical Association; and it is in meetings such as this, in which members representing the different sections of the profession are brought together, that the question should be considered and discussed. In our reorganized condition the potential elements of a successful solution may perhaps be found, but until we succeed in attracting and attaching to the Association

a large proportion of those members of the profession still outside its fold our weakness will be permanent. How this is to be effected is a question in which each one of us ought to have an interest. The formation of small Divisions in each Branch brings to our very doors the means of attracting non-members. It is in our power to conduct the affairs of our *imperium in imperio* in such a manner that our neighbours will spontaneously seek admission to our Association. By judicious arrangement we can succeed in arousing interest in matters purely professional. A healthy tone of mind can be inculcated by friendly discussion and personal influence. Apparent anomalies of symptoms in certain classes of disease can be investigated and their true value appraised, the clinical experience of the senior being placed side by side with the advanced theory of the junior and discussed with profit to both. Isolated as so many of us are, we form individual opinions which are apt to become stereotyped unless subjected to the benefits of friendly criticism and candid discussion. With such opportunities our ideas of things would be broadened and at the same time strengthened, and as a result we should come to look upon one another more in the light of brother workers than professional rivals. By a combination of influences such as these a breach is made in that barrier of selfishness which surrounds our lives—the citadel capitulates and victory is secured. This beneficent effect will spread, like the ripples on a lake when disturbed by a falling stone, until it reaches every one in our neighbourhood who has the true interest of his profession at heart—every one who, while looking upon his work as a means of supporting and enjoying life, never permits himself to sacrifice his principles by degrading it to the level of a trade.

Presidential addresses of societies such as ours are frequently utilized as a medium for advocating abstention from certain lines of conduct which, it is contended, are contrary to ethical principles. By the persistent selection of this subject, either as the main feature of the address or by skilful manipulation introduced into it, a condition of affairs is exposed which, as members of a profession calculated to develop the finest qualities of our Nature, we must sincerely deplore.

To eradicate this tendency to decadence in our moral obligations towards one another, some advocate an addition to the already burdened curriculum of the student in the form of a course of instruction in medical ethics. Why this qualifying adjective is prefixed I cannot comprehend. I fail to see why there should be any difference characterizing the conduct of gentlemen towards each other, whatever may be their profession. If education of such a character is necessary, I would suggest that it begin at a much earlier period of life, since, in my opinion, it is emphatically a parental obligation, and one which ought not to be delegated to less responsible individuals.

You will forgive me if on this occasion I select as my subject one which at least possesses this virtue—you will not be called upon to denounce any particular line of conduct or any particular class of individual. Even the most pessimistic amongst us will admit that there are more general practitioners than "black sheep" in the profession; so for once the superiority of numbers will be respected, and we will discuss that much-abused but useful member of the community, the general practitioner.

Having recently completed twenty-five years' work as a general practitioner, I naturally feel an interest in his relation to the profession which claims his allegiance and to the public whom he servs.

The general practitioner constitutes the vertebrae, so to speak, of the profession, and his knowledge of the duties he intends to perform must be sound if he is to retain the confidence of the public and check that disposition to patronize quackery which is so marked a feature of the present day. In his individual capacity he is called upon to satisfy the requirements of cases representing all the branches of the profession; consequently his knowledge must be comprehensive if he is to fill the position with credit to himself and satisfaction to his clients.

The changes, almost revolutionary in character, which have taken place in our profession during the last few years, and the rapid strides now being made in the acquisition of scientific facts, with the deductions drawn from them, combine to make the general practitioner a somewhat complex character. It seems probable that in course of time some form of specialization of his work will become necessary, in order that the public may receive the full amount of benefit from such an accumulation of knowledge.

Not only have marked changes occurred in the nature and scope of our professional work, but the character and disposition of the public who claim our services have undergone a decided metamorphosis.

In the dim recesses of our memories, are there not treasured up recollections of stories associated with a once well-known and respected type of individual, called by the name of the "family doctor"? He was an individual whose interests in his clients extended far beyond the limits of his professional capacities. He it was, so the tradition goes, who was consulted by them before any important step in life was undertaken; he was the consoler of all their griefs, the participator in all their joys; whose judgement was unassailable, and whose verdict on any point was considered final. Alas, that it must be said, the "family doctor," as above described, is rapidly becoming an historical, if not a mythical, personage, except in some remote spots where the pulse of life beats slow, uninfluenced as yet by the restless activity of this twentieth century existence.

The qualities of head and heart are less carefully discriminated by patients of the present generation. Sentiment gives place to and is satisfied with feelings of a more or less mercenary character. The average patient of to-day is content with seeking his doctor's advice on matters strictly medical, and perhaps only then after some unsuccessful experience of charlatanism. His confidential relations are usually maintained strictly within purely professional limits. The man who endeavours to procure the best advice at the cheapest possible rate experiences no compunction in doing so. He willingly accommodates himself to a situation which a perverted public demand has brought into existence and succeeds in maintaining, because the absence of unanimity among members of the profession makes resistance impracticable if not impossible.

This unfavourable mental disposition of the public, together with the increasing number of men and women, drawn from a less restricted social area, who are now entering the profession, makes the position of the general practitioner less satisfactory. Success is now dependent upon personal professional ability in a greater degree than ever. The *suaviter in modo*, without the *fortiter in re*, possesses little influence under existing conditions; and though we may safely leave the former to develop *pari passu* with an increasing knowledge of human nature, we mus insist upon maintaining a high standard of education to ensure the latter.

The development of this *suaviter in modo* phase of the practitioner's education is not without its own peculiar dangers. Opportunities will frequently present themselves, demanding strong moral fortitude to prevent his transgressing the lines of strict ethical probity; and while we may safely assert that "the impulse to do right is in most instances due to the inheritance of the instinct," in others it seems as though it must be painfully acquired by education in the school of adversity.

What is true in a popular sense is accentuated in a profession such as ours. Superiority, wherever it exists, is certain to assert itself in time, and we must be content to work and wait for the reward of an honest performance of the "daily round" of duty. Self-advertisement can be made to assume a variety of characters, but in whatever aspect it reveals itself, it is contrary to the canons of good taste and is responsible for a large proportion of the discordance manifest amongst us.

This leads me to offer some remarks on the character and arrangement of those studies which necessarily constitute the foundation of a successful professional career. I am of opinion that a reversion to some form of pupilage is desirable, particularly in the case of those who intend to adopt the rôle of a general practitioner. No doubt the system of apprenticeship would tend to limit the supply of candidates; but I do not consider the profession would thereby suffer, because those who entered it would be more competent to undertake its duties and responsibilities. Better men will be a gain to the profession in status, and to the public in efficiency.

It is unnecessary to enumerate the many advantages which the system of pupilage offers to the student for becoming acquainted, under the most favourable conditions, with the character of his future work. In addition to these advantages, he is taught almost unconsciously the time-honoured traditions of the profession, by example as well as by precept. The education of the eye, hand, and ear, which is obtained during this probationary period, would be found of immense

value when a larger and more intricate set of cases, such as are met with in the wards of a hospital, are presented to his notice. The instinctive faculty of observation is fostered, responsibility is divided, and confidence is engendered, while the rudimentary portions of his scientific knowledge are acquired at a time when the tax on the centres of reception is not great.

With his interest aroused, assisted by the experience gained during his pupilage, the student should enter upon the academic portion of his curriculum with a well-defined idea of its scope and character. His method of study will be founded on a thoroughly systematic basis: so that even the five years which is now allocated, and rightly so I think, to this portion of his education cannot be considered excessive, if he exhibits an appetite for, and an ability to assimilate all the mental pabulum which is prescribed for his consumption.

Opinions vary very much as to the relative value and proportion of practical and theoretical teaching as it is at present carried out. Is there not too much credit given to lecture-room information? Is not the practical subordinated to the theoretical?

Personally, I am in favour of an increased amount of clinical teaching, with the classes subdivided in such a manner as to give the faculty of observation in each individual student full opportunity for developing.

At the risk of your displeasure I must also express my opinion that the fascination and charm of novelty associated with many of the so-called instrumental aids to diagnosis, tend to absorb a disproportionate amount of the student's time, to the exclusion of studies better calculated to be useful in his future career.

Slavish dependence on mechanical assistance of this nature, leads to a less careful examination of the general conditions of a patient, and prevents that systematic analysis of symptoms which forms the most satisfactory method of diagnosis. To a similar extent the same remarks apply to the advanced studies of bacteriology, with their accompanying use of staining reagents and high power microscopy. The science of bacteriology has proved one of the richest fields of research, and represents the high-water mark of the medical science of to-day. The elaborate chemical combination of the staining reagents has enabled many obscure diseases to be systematically studied and differentiated. No doubt, in some anomalous cases of enteric fever, or in some obscure forms of arthritic lesions, secondary to pulmonary disorders, they may provide us with information which we could not possibly expect to receive from the more classical, if prosaic, methods of examination. Yet I venture to assert that he is not the most successful practitioner who declines to commit himself to the diagnosis of an ordinary case of enteric fever without calling in the assistance of an incubator, or who withholds his decision regarding a pulmonary lesion until the expectorated product has been subjected to the staining agent and an immersion lens. These instruments of precise observation are of inestimable value under certain circumstances. I have the fullest appreciation of and respect for them in their proper sphere, but I would not allow them to usurp the place of intelligent observation.

Another point to which I should like to call attention is that the outdoor department of our hospitals is not utilized to the greatest advantage for educational purposes. Think what a large amount of material of the every-day type is available for the instruction of the student; material representing disorders, the treatment of which will constitute so large a percentage of his future daily work. Secure for him, among the out-patients, experience in the diagnosis and treatment of minor yet instructive cases, then, among the in-patients, the more obscure or uncommon examples of disease, to which it is also his duty to devote attention, will present less difficulty.

Some such arrangement would prevent so much mixing of senior and junior students in the same clinical class, and would give the teacher greater liberty in adapting his instruction to their respective capacities. With all the existing opportunities for securing a thorough knowledge of his profession, I fear we cannot claim for the student of medicine an immunity from the weaknesses of human nature. In his restless anxiety to attain the object of his ambition—a qualification—he exhibits a tendency to be satisfied with its acquisition under the easiest possible conditions.

The mere possession of a legal qualification is no guarantee of a successful future, as so many members of the profession have discovered to their sorrow. The assumption of the responsibilities of actual practice is but the portal to another and a sterner school. His education, from the real point of view, only commences when he comes out into the world among his fellow men, and even after the most faithful and prolonged life service will still remain incomplete. If the first year or two of post-graduate life were spent under the educated supervision of some established practitioner, the responsibilities of the profession would become less onerous, self-confidence would be assured, doubts removed, human sympathies intensified, and difficulties of detail explained; so that on the expiration of such a period the position of principal could be entertained with a much greater prospect of success.

Having followed my ideal through the several stages of pupil, student, and assistant to that of a general practitioner, may I not anticipate with confidence that the combined effects of all the privileges thus outlined for him will result in his obtaining from that public in whose service his life is to be spent the consideration which services honestly performed deserve?

Let me conclude in the words of Amiel:

> The ideal doctor is a man endowed with profound knowledge of life and of the soul, intuitively divining suffering and disorder; restoring peace by his mere presence: not superficial, not a profane stranger to divine things, not destitute of intuition and sympathy. The ideal doctor is at once a genius, a saint, and a man of God.

Let us strive to reach this ideal. Even if we fail, the effort cannot but have a salutary influence on our lives:

> The holiest task by Heaven decreed,
> An errand all divine,
> The burden of our common need
> To render less is thine.
>
> The paths of pain are thine. Go forth
> With patience, trust, and hope;
> The sufferings of a sin-sick earth
> Shall give thee ample scope.
>
> Beside the unveiled mysteries
> Of life and death go stand,
> With guarded lips and reverent eyes
> And pure of heart and hand.
>
> WHITTIER—*The Healer.*

Drs. MURPHY, MARTIN, and WARDLE spoke on the conclusion of the address, and it was unanimously resolved that the address be printed and circulated at the expense of the Branch.—The PRESIDENT spoke a few words in reply to the remarks made, and thanked members for the reception it had received.

Votes of Thanks.—Dr. TODD (Sunderland) moved and the PRESIDENT-ELECT seconded a vote of thanks to the retiring President. This was carried unanimously, and Dr. WARDLE replied.—Dr. COX moved and Dr. DIVER seconded a hearty vote of thanks to Mrs. Burman for her hospitality, and to Dr. R. B. Robson for the genial way in which he had devoted himself to the comfort of the visitors. This was carried with acclamation, and Dr. ROBSON responded.

Dinner.—Twenty-one members and three guests of the Branch sat down to dinner, the PRESIDENT in the chair. The dinner was a successful termination to what was recognized as being one of the most successful annual meetings of the Branch.

STAFFORDSHIRE BRANCH:

NORTH STAFFORDSHIRE DIVISION.

The New Constitution of the Association.

AT the first meeting of this Division held on July 17th, Mr. W. D. SPANTON, who was in the chair, delivered the following address:

If I may venture to quote a once popular air, it will serve succinctly to express very much what each one of us feels to-day, "'E don't know where 'e are." My object at this, our first Divisional meeting, will be to endeavour to clear up the question of Where are we? The British Medical Association may be likened to a sick man who is now convalescent, and complete recovery to health and vigour will depend upon the treatment of its members. "*Mens sana in corpore sano*" applies to a body corporate as to any other body, and it is equally essential for both to be sound in constitution.

An enormous amount of discussion, with every possible variety of opinion—legal as well as medical—has culminated in the new code of rules and regulations for the future guidance of the Association. These are now on their trial, and it will

depend largely on the loyalty of the members whether the outcome is a success or otherwise.

Briefly stated, the main object of the new scheme is that of decentralization, so as to afford every member an opportunity of taking part in the work of the Association, and so enhance the power of each individual. Hence the formation of units—that is Divisions—as aggregations of individual atoms with power to make themselves actual entities in the government of the Association.

The Districts are now divided in such a way as to entitle every fifty members or upwards to form a Division, with its own officers, and a representative to vote for them in the so-called representative meeting to be held at the annual of the Association, apart from and in a large measure independent of the general meetings. These will still have the control of the Branches, and the general management of the finances and JOURNAL, and the scientific and official work of the Association.

The Branches in future will consist of not fewer than 200 members, with a representative on the General Medical Council, and such Branches will frame their own rules (subject to the approval of the Central Council), elect their own officers, and consist of all the members residing within the Divisions comprising the area of the Branch.

Some matters, such as ethical and political, and others referred to the Division, will rest with them to decide; but other subjects dealing with the welfare of the Association, more especially in its scientific aspects, will devolve upon the Branch, which will bring into harmony all the county Divisions and emphasize their recommendations.

The representatives of each Division will attend and vote at the annual representative meeting, at which all questions referred by Branches or Divisions or by the Central Council will be considered and decided. All such decisions will be sent to the Council to carry into effect, or if not approved by the Council may be submitted to a referendum; in other words, referred back to each Division for further consideration, and decided only by a majority of the aggregate votes given thereon throughout the whole Association. This will be resorted to probably very rarely and only in extreme cases. Each representative of a Division will have authority to vote for all the members he represents in accordance with the wishes of the majority. Therefore every resolution of importance must be considered and the representative instructed accordingly.

A member of the British Medical Association can belong to and vote in only one Division, but he may become an Associate or complimentary member of any other Division or Branch without voting power.

With regard to our representative I think some discretionary power should be given him, and that he should not be a mere delegate; and I take it that if he receives from us no definite mandate on any given subject he will exercise that discretion. The Council of the Association will still retain large powers, especially in the appointment of Standing Committees, such as "Journal and Finance" (the most important), "Premises and Library," "Public Health," and others: but two of them, the Medico-Political and the Ethical, will be appointed jointly by the Council and the Representatives' meeting. Each of these will have the services of a salaried officer.

These are the principal changes to be noted in the general constitution of the Association. I will say a word now more especially about the work we in our Division have to do. Our main objects will be: To unite ourselves, to improve ourselves, to respect ourselves, to protect ourselves, and to make ourselves an example of good medical health and mental activity; and in doing all this, not as trade unionists do, to thwart industries and injure others, but with a view to the welfare of the community generally as well as our own, to maintain the observance of the law as good citizens, for as Herrick says:

> Who breaks the laws destroys the health,
> Not of one man but all the Commonwealth.

We observe in all this, as in our old North Staffordshire Medical Society, the same desire to uphold the honour of the profession, to protect the interests of its members, and to guard the public from the abuse of ignorant quacks and pseudo-philanthropists as we are exercising now; but almost more important than these I would wish to see matters pertaining to the medical and allied sciences prominently put forward at our meetings.

There is plenty for our representatives to urge forward: among other matters we find a new Draft Medical Amendment Bill, which will itself need a good deal of amending, I fancy—the suppression of quacks, especially women ones, who do an incalculable amount of mischief.

Another question some much wish to have fully considered is that of medical defence. You have seen letters and notices concerning it, and most of us would welcome a genuine attempt to have it undertaken by the British Medical Association instead of as it is now by two or more compadies, resulting in the indecent spectacle of one society prosecuting, the other defending, a member before the General Medical Council.

The notices of motion given in the BRITISH MEDICAL JOURNAL afford some idea of what the Divisions through their representatives will have to consider and decide.[1]

At our Divisional meetings science should come first. At the Ethical Committee by all means let conduct be discussed; but for my own part I am more inclined to adopt the conclusion arrived at by those present on a memorable occasion recorded by Dickens at the dinner table of the now famous Veneerings, when you will recollect Mr. Twemlow summed up his view of the ethical behaviour of a certain barrister-at-law, Eugene Wrayburn. You will find it in the last chapter of *Our Mutual Friend*. If such sentiments were universal, how little would there be for ethical committees to do!

Our main object must be to encourage every one to bring forward his cases at our meetings; some of the most interesting and unique may occur in the most unlikely quarters; big records and major operations tend rather to surfeit and to flabbergast the hearers; some more digestible food would often be welcomed.

Let every member understand he is expected to take an active part. No doubt listeners are needed as well as speakers; but we can all listen but one, when one speaks; and it is more invigorating, mentally as well as physically, at our meetings to hear what every one has got to say. Only I should suggest under these circumstances a reservation that his time should be limited to so many minutes. It is quite remarkable how much it is possible to say (especially nonsense!) in so many given minutes, but my experience is the shorter the allotted time the better the speech is worth listening to.

At our Divisional meetings we hope to see cases brought forward, remarks made, and interesting matters introduced by every one which might seem too trivial to come before a more formal gathering—to make our Division, in fact, what it is meant to become—an embodiment of the views, opinions, and aspirations of all those within its boundaries, so that our representative may be fully armed with the general feeling of the members on any subject brought before those whom he is to represent.

I would make our meetings the medium of bringing the members into harmony and concord, and we know that it is only faulty performers who fail to make chords harmonize. Each of us must therefore endeavour to strike a true note and enable us all to keep in tune. We might without disadvantage sometimes combine our business with pleasure and so enhance both.

To give practical effect to my view, I ventured to suggest holding our first meeting here in a somewhat informal way, and offer you a country welcome amid all its soothing surroundings for our mutual good.

SOUTH-EASTERN BRANCH:

SEVENOAKS DIVISION.

A MEETING to inaugurate this Division under the new rules of the Association, convened by Mr. A. Maude (Westerham) was held at the Hip Hospital, Sevenoaks, on June 24th.

Election of Officers.—The following officers were elected for the year: *Chairman*, Dr. Tevers (Tonbridge); *Vice-Chairman*, Dr. Marriott (Sevenoaks); *Representative on Branch Council*, Mr. A. Maude (Westerham); *Honorary Secretary and Treasurer*, Dr. Blomfield (Sevenoaks); *Committee*, Dr. Tew, M.O.H. (Tonbridge), Mr. Watts (Tonbridge), Dr. Burnett (Sevenoaks).

Adoption of Rules.—The model rules suggested for a Branch were taken as read and adopted provisionally.

Delegates Annual Meeting.—It was resolved to accepted the offer of the Bromley Division for a joint delegate to this year's annual meeting at Swansea.

[1] BRITISH MEDICAL JOURNAL, April 25th, 1903, p. 994.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, AUGUST 15TH, 1903.

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ASSOCIATION INTELLIGENCE.

PROCEEDINGS OF COUNCIL.

AT a meeting of the Council held in the Guardians' Council Chamber, Union Offices, Swansea, on Tuesday, July 28th, 1903,

Present:

Mr. ANDREW CLARK, Chairman of Council, in the Chair.
Mr. WALTER WHITEHEAD, President.
Dr. G. BAGOT FERGUSON, M.Ch.Oxon., F.R.C.S., Past-President.
Dr. T. DRYSLWYN GRIFFITHS, President-elect.
Dr. E. MARKHAM SKERRITT, Treasurer.

Dr. EDGAR G. BARNES, Eye.
Dr. JAMES BARR, Liverpool.
Dr. MICHAEL BEVERLEY, Norwich.
Dr. J. BRASSEY BRIERLEY, Old Trafford.
Dr. LANGLEY BROWNE, West Bromwich.
Dr. R. C. BUIST, Dundee.
Mr. J. WARD COUSINS, Portsmouth.
Dr. ALFRED COX, Gateshead-on-Tyne.
Dr. H. RADCLIFFE CROCKER, London.
Dr. GEORGE W. CROWE, Worcester.
Mr. GEORGE EASTES, M.B., London.
Dr. WILLIAM A. ELLISTON, Ipswich.
Dr. EDWARD LAWRENCE FOX, Plymouth.
Dr. JOHN H. GALTON, Upper Norwood.
Dr. BRUCE GOFF, Bothwell.
Dr. DAVID GOYDER, Bradford.
Dr. JOSEPH GROVES, Carisbrooke.
Dr. W. M. HARMAN, Winchester.
Dr. T. ARTHUR HELME, Manchester.
Sir VICTOR HORSLEY, F.R.S., London.
Mr. EVAN JONES, Aberdare.
Mr. W. JONES MORRIS, Portmadoc.
Dr. JAMES MURPHY, Sunderland.
Mr. C. H. WATTS PARKINSON, Wimborne Minster.
Dr. ROBERT W. PHILIP, Edinburgh.
Dr. FRANK M. POPE, Leicester.
Mr. H. BETHAM ROBINSON, M.S., London.
Professor ROBERT SAUNDBY, M.D., LL.D., Birmingham
Dr. ALFRED SHEEN, Cardiff.
Dr. G. E. SHUTTLEWORTH, Richmond Hill
Dr. R. SOMERVILLE, Galashiels.
Mr. W. D. SPANTON, Hanley.
Dr. NORMAN WALKER, Edinburgh.
Mr. DENIS WALSHE, Graigue.
Mr. R. W. O. WITHERS, Shrewsbury.
Dr. S. WOODCOCK, Manchester.

The minutes of the last meeting having been printed and circulated and no objection received were taken as read and signed as correct.

Read letters of apology for non-attendance from Dr. Henry Barnes, Dr. J. Craig, Brigade-Surgeon-Lieutenant-Colonel E. F. Drake-Brockman, Mr. W. F. Haslam, Dr. H. Handford, Mr. R. H. Kinsey, Surgeon-General T. F. O'Dwyer, Brigade-Surgeon T. B. Moriarty, and Dr. Roberts Thomson.

Read reply from the Board of Education relating to the withdrawal of Article 101* from the Provisional Code recently issued:

Board of Education, Whitehall, London, S.W.
July 17th, 1903.

[Code G. 03/7158 B.]

Sir,—Adverting to your letter dated the 30th April last, I am directed to state that the Board of Education have carefully considered the question raised by the resolution passed by the British Medical Association.

But they cannot suppose that such responsible bodies as the new Local Education Authorities or (in London) the School Board will feel any temptation to neglect the exclusion of infectious children for the sake of transferring a very small proportion of the cost of maintenance of Elementary Schools from the local rates to the Imperial Exchequer.

They cannot therefore hold out any prospect of re-establishing the special grant under Article 101* of the Code.

I have the honour to be, Sir,
Your obedient servant,
H. W. SIMPKINSON.

Guy Elliston, Esq.,
429, Strand, W.C.

Resolved: That the same be referred to the Public Health Committee.

The minutes of the Royal Naval and Military Committee of July 13th, 1903, were then considered.

Resolved: That the minutes of the Royal Naval and Military Committee be received.

The report on the Indian Medical Service was then considered.

Resolved: That the report regarding certain disabilities of service in the Indian Medical Service and suggested remedies be received and adopted, and copies forwarded to the Secretary of State for India, the Universities, and Members of Parliament. (The full text of the report will be found on page clxxxviii.)

The election of candidates was then considered.

Resolved: That eleven of the twelve candidates whose names appear on the circular convening the meeting be and they are hereby elected members of the British Medical Association.

Resolved: That the minutes of the Organization Committee of July 21st, 1903, be received; and that the Orders of Council for the Annual Representative Meeting be approved.

The annual reports of the Medico-Political Committee and the Ethical Committee were received and ordered to be entered on the minutes. These were published in the BRITISH MEDICAL JOURNAL of August 1st, p. 270.

The following attendances of the 1902-3 Council were reported; eight meetings in all were held:

	Attendances.
Whitehead, Mr. Walter, Manchester, President	7
Griffiths, Dr. T. Dryslwyn, Swansea, President-elect	6
Ferguson, Dr. G. Bagot, M.Ch.Oxon., Cheltenham, Past-President	6
Clark, Mr. Andrew, F.R.C.S., London, Chairman of Council	8
Skerritt, Dr. E. Markham, Bristol, Treasurer	8
Addison, Mr. W. H., Durban, R. (Natal Branch)	0
Bancroft, Dr. Peter, Old Trafford, R (Brisbane and Queensland Branch)	3
Banks, Sir J. T., M.D., Dublin, Vice-President	0
Barnes, Dr. Edgar G., Eye, R.	4
Barnes, Dr. Henry, Carlisle, Vice-President	3
Barr, Dr. James, Liverpool, R.	7
Batten, Dr. R. W., Gloucester, R.	2
Beverley, Dr. M., Norwich, R.	7
Bridgwater, Dr. T., LL.D., Framfield, Vice-President	6
Brierley, Dr. J. Brassey, Old Trafford, R.	4
Bronner, Dr. Adolph, Bradford, R.	3
Browne, Dr. Langley, F.R.C.S., West Bromwich, R.	4
Buist, Dr. R. C., Dundee, R.	7
Butlin, Mr. Henry T., D.C.L., F.R.C.S., London, Vice-President	2
Byers, Professor J. W., Belfast, R.	2
Calwell, Dr. W., Belfast, R.	2
Campbell, Mr. Colin, Southport, R.	6
Cantlie, Mr. James, London, R. (Hong Kong Branch)	5
Cave, Dr. Edward J., Bath, R.	2
Cheatle, Mr. T. H., Burford, R.	2
Cousins, Mr. J. Ward, F.R.C.S., Portsmouth, Vice-President	4
Cox, Dr. Alfred, Gateshead-on-Tyne, R.	0
Craig, Dr. James, Dublin, R. (member of Council since April, 1903)	2
Crocker, Dr. H. Radcliffe, London, R.	5
Crowe, Dr. G. W., Worcester, R.	3
Daniels, Dr. C. W., London, R. (gone abroad)	1
Deas, Dr. P. Maury, Exeter, R.	3
Donaldson, Mr. E., Londonderry, R.	0
Drake-Brockman, Brigade-Surgeon-Lieutenant-Colonel E. F., F.R.C.S., London, R. (South Indian and Madra Branch)	8
Dyson, Dr. W., Sheffield, R.	3
Eastes, Mr. George, M.B., London, R.	7
Edwards, Dr. W. T., Cardiff, Vice-President	0
Elliston, Dr. W. A., Ipswich, Vice-President	7
Fergus, Dr. Freeland, Glasgow, R.	2
Finlay, Professor David W., LL.D., Aberdeen, R.	4
Foster, Sir Walter, M.D., D.C.L., LL.D., M.P., London, Vice-President	0
Fox, Dr. Edward Lawrence, Plymouth, R.	3
Freeman, Dr. W. T., Reading, R. (member of Council since January, 1903)	3
Gairdner, Sir W. T., K.C.B., M.D., F.R.S., Edinburgh, Vice-President	0
Galton, Dr. J. H., London, R.	7
Godson, Dr. A., Cheadle, R.	6
Goff, Dr. Bruce, Bothwell, R.	7
Gooding, Dr. C. G., London, R.	2
Goyder, Dr. David, Bradford, R.	7
Greenwood, Dr. Major, London, R.	8
Groves, Dr. J., Carisbrooke, R.	8
Hamilton, Surgeon-General J. B., M.D., London, R. (dead)	3
Handford, Dr. H., Nottingham, R.	5
Harman, Dr. W. M., Winchester, R.	7
Haslam, Mr. W. F., Birmingham, R.	7
Helme, Dr. T. A., Manchester, R.	6
Holman, Dr., London, Vice-President	5
Horsley, Sir Victor, F.R.S., London, R.	7
Jones, Mr. Evan, Aberdare, R.	7
Kinsey, Mr. R. H., Bedford, R.	5
Lovell, Sir Francis, London, R. (Trinidad Branch)	1
Mackintosh, Dr. W. A., Stirling, R.	4
Maclaren, Dr. R., Carlisle, R.	1
Macnamara, Mr. N. C., F.R.C.S., Chorley Wood, Vice-President	1
Milburn, Dr. C. H., Hull, R.	8
Moore, Sir John William, M.D., Dublin, R.	2
Moriarty, Brigade-Surgeon T. B., M.D., Cork, R.	2
Morier, Dr. C. G. D., London, R. (Adelaide and South Australia Branch)	2
Morris, Mr. W. Jones, Portmadoc, R.	7
Murphy, Dr. James, Sunderland, R.	7
Murray, Dr. James, Inverness, R.	4
O'Dwyer, Surgeon-General T. F., Engadine, Suisse, R. (Halifax and Nova Scotia Branch)	1
Parkinson, Mr. C. H. W., Wimborne Minster, R.	7
Parsons, Dr. Charles, Dover, Vice-President	2
Philip, Dr. R. W., Edinburgh, R.	2
Philipson, Sir G. H., D.C.L., Newcastle-on-Tyne, Vice-President	0
Phillips-Conn, Dr. H. H., Reading, R.	8
Pope, Dr. Frank M., Leicester, R.	5
Ritchie, Dr. A. Brown, Hulme, R.	4
Robinson, Mr. H. B., M.S.Lond., London, R.	7
Roddick, Dr. T. G., Montreal, Vice-President	0
Saundby, Professor R., M.D., LL.D., Birmingham, Vice-President	3
Sheen, Dr. A., Cardiff, R.	5
Shuttleworth, Dr. G. E., Richmond Hill, R.	7
Somerville, Dr. R., Galashiels, R.	3
Spanton, Mr. W. D., Hanley, R.	6
Stear, Mr. Henry, Saffron Walden, R.	5
Stirling, Dr. Robert, Perth, R.	6
Thomson, Dr. J. Roberts, Bournemouth, Vice-President	5
Tomes, Mr. C. S., F.R.S., London	2
Tyson, Dr. W. J., Folkestone, R.	4
Verrall, Mr. T. J., Brighton, R.	7
Wade, Sir Willoughby, M.D., Florence, Vice-President	0
Walker, Dr. Norman, Edinburgh, R.	7
Walshe, Mr. Denis, Graigue, R.	4
Waters, Dr. A. T. H., Liverpool, Vice-President	0
Wheelhouse, Mr. C. G. Filey, Vice-President	0
Whitcombe, Mr. E. B., Birmingham, R.	1
Winterbotham, Dr. W. L., Bridgwater, R.	3
Withers, Mr. R. W. O., Shrewsbury, R.	7
Woodcock, Dr. S., Manchester, R.	5

R = Branch Representative.

AT a meeting of the Council, held in the Guardians' Council Chamber, Union Offices, Swansea, on Wednesday, July 29th, 1903,

Present:

Mr. ANDREW CLARK, Chairman of the Council, in the Chair.
Dr. T. D. GRIFFITHS, President.
Dr. E. MARKHAM SKERRITT, Treasurer.

Dr. EDGAR G. BARNES, Eye.
Dr. JAMES BARR, Liverpool.
Dr. MICHAEL BEVERLEY, Norwich.
Dr. J. BRASSEY BRIERLEY, Old Trafford.
Dr. ADOLPH BRONNER, Bradford.
Dr. LANGLEY BROWNE, West Bromwich.
Dr. R. C. BUIST, Dundee.
Dr. W. A. CARLINE, Lincoln.
Dr. H. RADCLIFFE CROCKER, London.
Dr. GEORGE W. CROWE, Worcester.
Mr. GEORGE EASTES, M.B., London.
Dr. EDWARD LAWRENCE FOX, Plymouth.
Dr. JOHN H. GALTON, Upper Norwood.
Dr. BRUCE GOFF, Bothwell.
Dr. JAMES HAMILTON, Glasgow.
Dr. W. MORTON HARMAN, Winchester.
Dr. T. ARTHUR HELME, Manchester.
Dr. G. A. HERON, London.
Sir VICTOR HORSLEY, F.R.S., London.
Mr. W. JONES MORRIS, Portmadoc.
Dr. JAMES MURPHY, Sunderland.
Mr. C. H. WATTS PARKINSON, Wimborne.
Dr. ROBERT W. PHILIP, Edinburgh.
Dr. EDWIN RAYNER, Stockport.
Dr. FRANK M. POPE, Leicester.
Mr. H. BETHAM ROBINSON, M.S., London.
Mr. W. D. SPANTON, Hanley.
Dr. W. J. TYSON, Folkestone.
Dr. NORMAN WALKER, Edinburgh.
Dr. DENIS WALSHE, Graigue.

The minutes of the last meeting having been printed in the *Daily Journal* were taken as read and signed as correct.

Read letters of apology for non-attendance from Dr. D. Burgess, Mr. C. E. S. Fleming, and Dr. E. J. Cave.

The Standing Orders of the Council were affirmed.

The following new members were introduced: Dr. W. A. Carline, Dr. James Hamilton, Dr. G. A. Heron, Dr. J. H. Hunter, and Dr. Edwin Rayner.

A deputation from Oxford then attended, consisting of Mr. R. W. Doyne, Mr. H. P. Symonds, Dr. W. Collier, Mr. A. Drew, and Mr. A. P. Parker, and on behalf of the Oxford Division invited the Association to hold its annual meeting in Oxford in 1904.

Resolved: That it be recommended to the general meeting of members that the annual meeting for 1904 be held in Oxford, and that Dr. William Collier be nominated President-elect.

The following returns of the election of representatives of Branches on the Council were reported:

Aberdeen Branch.—Professor David W. Finlay, M.D., LL.D., 2, Queen's Terrace, Aberdeen. *Adelaide and South Australia Branch.*—Dr. C. G. D. Morier, 1, Hamilton Terrace, St. John's Wood, N.W. *Barbados Branch.*—Mr. C. G. Gooding, 67, Brockley Road, S.E. *Bath and Bristol Branch.*—Dr. Edward John Cave, 20, Circus, Bath; Mr. C. E. S. Fleming, Manvers House, Bradford-on-Avon. *Bermuda Branch.*—(No return.) *Birmingham and Midland Counties Branch.*—Dr. H. W. Langley Browne, West Bromwich; Mr. W. F. Haslam, F.R.C.S., 24, York Road, Edgbaston. *Bombay Branch.*—(No return.) *Border Counties Branch and North Lancashire and Westmorland Branch (United).*—Dr. J. Maxwell Ross, County Buildings, Dumfries (see also North Lancashire and South Westmorland). *Brisbane and Queensland Branch.*—(No return.) *British Guiana Branch.*—(No return.) *Burmah Branch.*—Colonel C. C. Little, M.D., I.M.S., c.o. Messrs. Lloyds Bank, 222, Strand, W.C. *Cambridge and Huntingdon Branch and East York and North Lincoln Branch (United).*—Dr. C. H. Milburn, 158, Anlaby Road, Hull (see also East York and North Lincoln). *Cape of Good Hope Branch.*—(No return.) *Colombo, Ceylon Branch.*—Dr. H. Marcus Fernando. *Connaught Branch and Ulster Branch (United).*—Professor J. W. Byers, M.D., Lower Crescent, Belfast (see also Ulster); Dr. William Calwell,

1, College Square, North Belfast (see also Ulster). *Dorset and West Hants Branch and West Somerset Branch (United).*—Mr. C. H. Watts Parkinson, Wimborne Minster (see also West Somerset). *Dundee Branch, Perth Branch and Stirling Branch (United).*—Dr. R. Cochrane Buist, 166, Nethergate, Dundee (see also Perth and Stirling). *East Anglian Branch.*—Dr. Edgar George Barnes, Eye, Suffolk; Dr. M. Beverley, 54, Prince of Wales Road, Norwich. *East York and North Lincoln Branch and Cambridge and Huntingdon Branch (United).*—Dr. C. H. Milburn, 158, Anlaby Road Hull (see also Cambridge and Huntingdon). *Edinburgh Branch and Fife Branch (United).*—Dr. R. W. Philip, 45, Charlotte Square, Edinburgh (see also Fife); Dr. Norman Walker, 7, Manor Place, Edinburgh (see also Fife). *Fife Branch and Edinburgh Branch (United).*—Dr. R. W. Philip, 45, Charlotte Square, Edinburgh (see also Edinburgh); Dr. Norman Walker, 7, Manor Place, Edinburgh (see also Edinburgh). *Glasgow and West of Scotland Branch.*—Dr. Bruce Goff, The Lindens, Bothwell, Lanarkshire; Dr. James Hamilton, 1, Royal Crescent, Crosshill, Glasgow. *Gloucestershire Branch and Worcestershire and Herefordshire Branch (United).*—Dr. D. G. Crowe, 43, Foregate Street, Worcester (see also Worcester and Hereford). *Grahamstown and Eastern Province Branch.*—(No return.) *Griqualand West Branch.*—(No return.) *Halifax, Nova Scotia Branch.*—(No return.) *Hong Kong and China Branch.*—Mr. James Cantlie, 46, Devonshire Street, W. *Jamaica Branch.*—Dr. A. R. Saunders. *Lancashire and Cheshire Branch.*—Dr. James Barr, 72, Rodney Street, Liverpool; Dr. J. Brassey Brierley, Alma House, Old Trafford, Manchester; Dr. T. Arthur Helme, 337, Oxford Road, Manchester; Dr. Edwin Rayner, 19, Teviot Dale, Stockport. *Leeward Islands Branch.*—(No return). *Leinster Branch and South-Eastern of Ireland Branch (United).*—Dr. James Craig, 35, York Street, Dublin (see also South-Eastern of Ireland); Mr. Denis Walshe, Bellevue, Graigue, co. Kilkenny (see also South-Eastern of Ireland). *Malaya Branch.*—(No return.) *Malta and Mediterranean Branch.*—(No return.) *Melbourne and Victoria Branch.*—(No return.) *Metropolitan Counties Branch.*—Andrew Clark, F.R.C.S., 71, Harley Street, W.; Dr. H. Radcliffe Crocker, 121, Harley Street, W.; George Eastes, M.B., 35, Gloucester Terrace, Hyde Park, W.; Dr. G. A. Heron, 57, Harley Street, W.; Sir Victor Horsley, F.R.S., 25, Cavendish Square, W.; Henry Betham Robinson, M.S., F.R.C.S., 1, Upper Wimpole Street, W. *Midland Branch.*—Dr. W. A. Carline, Lincoln; Dr. F. M. Pope, 4, Prebend Street, Leicester. *Montreal Branch.*—(No return.) *Munster Branch.*—Brigade-Surgeon T. B. Moriarty, M.D., Patrick's Hill, Cork. *Natal Branch.*—(No return.) *New Zealand Branch.*—(No return.) *North of England Branch.*—Dr. J. H. Hunter, Havelock Street, South Shields; Dr. James Murphy, 6, Thornhill Crescent, Sunderland. *Northern Counties of Scotland Branch.*—Dr. James Murray, 6, Ardross Terrace, Inverness. *North Lancashire and South Westmorland Branch and Border Counties Branch (United).*—Dr. J. Maxwell Ross, County Buildings, Dumfries (see also Border Counties). *North Wales and Shropshire Branch.*—Mr. W. Jones Morris, Portmadoc. *Oxford and Reading Branch.*—Mr. Thomas Henry Cheatle, Burford, Oxon. *Perth Branch, Dundee Branch, and Stirling Branch (United).*—Dr. R. Cochrane Buist, 166, Nethergate, Dundee (see also Dundee and Stirling). *South-Eastern Branch.*—Dr. J. H. Galton, Chunam, Sylvan Road, Upper Norwood, S.E.; Dr. W. J. Tyson, 10, Langhorne Gardens, Folkestone; Mr. T. Jenner Verrall, 97, Montpelier Road, Brighton. *South-Eastern of Ireland Branch and Leinster Branch (United).*—Dr. James Craig, 35, York Street, Dublin (see also Leinster); Dr. Denis Walshe, Bellevue, Graigue, co. Kilkenny (see also Leinster). *Southern Branch.*—Dr. J. Groves, Carisbrooke, Isle of Wight; Dr. Wm. Morton Harman, 15, Christchurch Road, Winchester. *South Indian and Madras Branch.*—Brigade-Surgeon-Lieutenant-Colonel E. F. Drake-Brockman, F.R.C.S., 281, Willesden Lane, N.W. *South Midland Branch.*—Mr. R. H. Kinsey, 10, Rothsay Gardens, Bedford. *South Wales and Monmouthshire Branch.*—Mr. Evan Jones, Aberdare; Mr. John Lynn Thomas, C.B., 21, Windsor Place, Cardiff. *South-Western Branch.*—Dr. P. Maury Deas, Exeter; Dr. Edward Lawrence Fox, 9, Osborne Place, Plymouth. *Staffordshire Branch.*—Mr. W. D. Spanton, Chatterley House, Hanley. *Stirling Branch, Dundee Branch, and Perth Branch (United).*—Dr. R. Cochrane Buist, 166, Nethergate, Dundee (see also Dundee and Perth). *Sydney and New South Wales Branch.*—(No return.) *Toronto Branch.*—(No return.) *Trinidad and Tobago Branch.*—Sir Francis Lovell, K.C.M.G., 18, Clifton Villas, Maida Vale, W. *Ulster Branch and Connaught Branch (United).*—Professor J. W. Byers, M.D., Lower Crescent, Belfast (see also Connaught); Dr. William Calwell, 1, College Square North, Belfast (see also Connaught). *Western Australian Branch.*—(No return). *West Somerset Branch and Dorset and West Hants Branch (United).*—Mr. C. H. W. Parkinson, Wimborne Minster (see also Dorset and West Hants). *Worcestershire and Herefordshire Branch and Gloucestershire Branch (United).*—Dr. W. G. Crowe, 43, Foregate Street, Worcester (see also Gloucestershire). *Yorkshire Branch.*—Dr. Adolph Bronner, 33, Manor Row, Bradford; Dr. Duncan Burgess, 442, Glossop Road, Sheffield.

The Chairman of Council reported that the number of representative members returned to the Council was 59, and therefore, under By-law 29, the Council was entitled to co-opt 5 members. A ballot having been taken, the following were declared duly elected for the ensuing twelve months: Mr. Edmund Owen, Professor Saundby, Dr. J. Roberts Thomson, and Dr. S. Woodcock.

The election of candidates was then considered.

Resolved: That the four candidates whose names appear on the notice convening the meeting be and they are hereby elected members of the British Medical Association.

Resolved: That a Committee be appointed to consider how best the widespread abuses of our medical charities can be removed.

Resolved: That a Committee be appointed to consider whether the general or the individual medical defence of its members shall be undertaken by the British Medical Association.

Resolved: That if the Committee report in favour of the Association undertaking medical defence of its members, the Committee shall attach to such report a scheme according to which, in the opinion of the Committee, the Association could safely and efficiently execute the work of medical defence.

At a meeting of the Council, held in the Guardians' Council Chamber, Union Offices, Swansea, on Thursday, July 30th, 1903.

Present:

Mr. Andrew Clark, Chairman of Council, in the Chair.

Dr. T. D. Griffiths, President.

Dr. Edgar G. Barnes, Eye
Dr. James Barr, Liverpool
Dr. M. Beverley, Norwich
Dr. J. Brassey Brierly, Old Trafford
Dr. Adolph Bronner, Bradford
Dr. Langley Browne, West Bromwich.
Dr. R. C. Buist, Dundee
Professor John W. Byers, Belfast
Dr. W. A. Carline, Lincoln
Dr. H. Radcliffe Crocker, London
Dr. G. W. Crowe, Worcester
Mr. George Eastes, M.B., London
Dr. Edward Lawrence Fox, Plymouth
Dr. J. H. Galton, Upper Norwood
Dr. Bruce Goff, Bothwell
Dr. J. Groves, Carisbrooke
Dr. James Hamilton, Glasgow
Dr. T. Arthur Helme, Manchester
Dr. G. A. Heron, London
Sir Victor Horsley, F.R.S., London
Dr. James H. Hunter, South Shields
Mr. Evan Jones, Aberdare
Mr. W. Jones Morris, Portmadoc
Dr. James Murphy, Sunderland
Dr. R. W. Philip, Edinburgh
Dr. F. M. Pope, Leicester
Dr. Edwin Rayner, Stockport
Mr. H. Betham Robinson, M.S., London
Professor Saundby, M.D., LL.D., Birmingham
Mr. W. D. Spanton, Hanley
Dr. W. J. Tyson, Folkestone
Dr. Norman Walker, Edinburgh
Mr. Denis Walshe, Graigue
Dr. S. Woodcock, Old Trafford

The minutes of the previous meeting having been printed in the *Daily Journal* were taken as read and signed as correct.

Read letter of apology for non-attendance from the Treasurer.

It was decided that the Annual Meeting, the Inebriates Legislation, the Medical Charities, and the Preliminary Education Committees be not reappointed.

The following Committees were appointed, of which the President and the Chairman of Council are members *ex officio*:

The Arrangement Committee to consist of:

The Treasurer, Dr. W. Calwell, Dr. H. Radcliffe Crocker, Mr. W. F. Haslam, Mr. H. Betham Robinson, and Dr. Norman Walker, together with six members nominated from Oxford.

The Colonial Committee:

Dr. J. Groves and Mr. Edmund Owen, together with five members to be appointed by the Representatives of the Colonial Branches on the Council.

The Ethical Committee:

Dr. J. Barr, Dr. Bruce Goff, Dr. W. S. A. Griffith, Dr. R. H. Kinsey, and Professor Saundby, together with the following members elected by the Representative meeting: Mr. H. A. Ballance, Norwich; Dr. A. G. Bateman, London; Mr. G. H. Broadbent, Manchester; Dr. W. A. Elliston, Ipswich; and Dr. E. Jepson, Durham.

The representatives of the British Medical Association on the Joint Committee of the British Medical Association and Medico-Psychological Association:

Dr. W. Douglas, Dr. Robert Jones, Dr. W. J. Mickle, Professor Saundby, and Dr. G. E. Shuttleworth.

The representatives of the British Medical Association on the Joint Committee on Fees to Medical Witnesses:

Dr. Major Greenwood and Dr. James Murphy.

The Journal and Finance Committee:

The Treasurer, Dr. Edgar Barnes, Dr. J. Barr, Dr. H. Langley Browne, Dr. H. Radcliffe Crocker, Dr. J. H. Galton, Dr. T. Arthur Helme, Sir Victor Horsley, F.R.S.; Mr. W. Jones Morris, Mr. C. H. W. Parkinson, Dr. F. M. Pope, Dr. J. Roberts Thomson, and Dr. Norman Walker.

The Hospitals Committee:

Dr. M. Beverley, Dr. J. Brassey Brierley, Dr. E. L. Fox, Dr. J. R. Hamilton, Dr. T. A. Helme, Mr. T. Garrett Horder, Professor J. T. J. Morrison, Mr. Edmund Owen, and Dr. F. M. Pope.

The Medical Defence Committee:

Dr. M. Beverley, Dr. Bruce Goff, Dr. G. A. Heron, Sir Victor Horsley, F.R.S.; Dr. J. H. Hunter, Dr. Balfour Marshall, Mr. M. A. Messiter, Mr. W. Jones Morris, and Dr. D. Walshe.

The Medico-Political Committee:

Dr. H. Langley Browne, Dr. R. C. Buist, Dr. G. A. Heron, Dr. C. H. Milburn, Dr. James Murphy, and Dr. S. Woodcock, together with the following members elected by the Representative Meeting—namely, Dr. Major Greenwood, London; Mr. T. Garrett Horder, Cardiff; Mr. George Jackson, Plymouth; Dr. Leonard Kidd, Enniskillen; Dr. J. A. Macdonald, Taunton; and Mr. M. A. Messiter, Dudley.

The Organization Committee:

The Treasurer, Mr. H. A. Ballance, Dr. S. Crawshaw, Dr. J. C. McVail, Professor J. T. J. Morrison, Mr. T. J. Verrall, and Professor A. H. White.

The Premises and Library Committee:

The Treasurer, Dr. Edgar Barnes, Dr. H. Langley Browne, Dr. J. H. Galton, Dr. Bruce Goff, Dr. Holman, and Dr. F. M. Pope.

The Public Health Committee:

Dr. J. Groves, Dr. J. Herbert H. Manley, Dr. A. Newsholme, Mr. C. H. W. Parkinson, Dr. Maxwell Ross, Dr. J. C. Thresh, and Dr. S. Woodcock.

The Royal Naval and Military Committee:

Brigade-Surgeon-Lieutenant-Colonel E. F. Drake-Brockman, Brigade-Surgeon-Lieutenant-Colonel G. S. Elliston, Surgeon-General G. J. H. Evatt, C.B., Major Valentine Matthews, Dr. J. Roberts Thomson, and Inspector-General Alex. Turnbull, R.N.

The Scientific Grants Committee:

The Treasurer, Mr. H. A. Ballance, Dr. James Barr, Dr. William Collier, Dr. T. A. Helme, Mr. H. Betham Robinson, Professor Saundby, Professor J. Lorrain Smith, Professor E. H. Starling, F.R.S., Dr. J. Roberts Thomson, Dr. Norman Walker, and Professor G. Sims Woodhead.

The Special Chloroform Committee:

Dr. James Barr, Dr. T. G. Brodie, Dr. Dudley Buxton, Dr. H. Radcliffe Crocker, Professor Dunstan, F.R.S., Professor Vernon Harcourt, F.R.S., Sir Victor Horsley, F.R.S., Dr. J. W. McCardie, and Professor C. S. Sherrington, F.R.S.; and the Committee to have power to co-opt one additional member if it think fit.

The Trust Funds Committee:

The President and Chairman of Council, *ex officio*, and the Treasurer.

Resolved: That the best thanks of the Council be given to those members who retire from the Council in consequence of the changes in the constitution of the Association, for their valuable services over many years.

AT a meeting of the Council held in the Guardians' Council Chamber, Union Offices, Swansea, on Friday, July 31st, 1903,

Present:

MR. ANDREW CLARK, Chairman of Council, in the Chair.

DR. T. D. GRIFFITHS, President.

DR. EDGAR B. BARNES, Eye
DR. ADOLPH BRONNER, Bradford
DR. LANGLEY BROWNE, West Bromwich
DR. R. C. BUIST, Dundee
PROFESSOR J. W. BYERS, Belfast
DR. W. A. CARLINE, Lincoln
DR. J. A. GALTON, Upper Norwood
DR. BRUCE GOFF, Bothwell
DR. J. GROVES, Carisbrooke
DR. JAMES HAMILTON, Glasgow
DR. W. M. HARMAN, Winchester
DR. T. ARTHUR HELME, Manchester
DR. G. A. HERON, London
SIR VICTOR HORSLEY, F.R.S., London
DR. JAMES H. HUNTER, South Shields
MR. EVAN JONES, Aberdare
MR. W. JONES MORRIS, Portmadoc
DR. JAMES MURPHY, Sunderland
MR. C. H. W. PARKINSON, Wimborne
DR. F. M. POPE, Leicester
DR. EDWIN RAYNER, Stockport
MR. H. BETHAM ROBINSON, M.S., London
PROFESSOR SAUNDBY, M.D., LL.D., Birmingham
MR. W. D. SPANTON, Hanley
MR. DENIS WALSHE, Craigue
DR. S. WOODCOCK, Manchester

The minutes of the last meeting not having been printed and circulated, were ordered to be brought up for confirmation at the October meeting.

Read letters of apology for non-attendance from Dr. Beverley and Dr. Crowe.

Resolved: That Dr. Pope be requested to bring up a report dealing with any further correspondence that may have passed relating to the proposed publication of an Index Medicus, at the next meeting of the Journal and Finance Committee.

The Chairman of the Representative Meeting reported the minutes of its sittings on Tuesday and Wednesday, which were published in the JOURNAL of August 1st, pages 251-6.

Dr. Buist was nominated convener of the first meeting of the Scottish Committee.

The question of the appointment of substitutes at the Representative Meeting was referred to the Organization Committee.

The question of the reform of the Irish Poor-law Medical Service was referred to the Medico-Political Committee.

Resolved: That the best thanks of the Association be given to Dr. T. D. Griffiths for the able and courteous manner in which he has presided over this, the Seventy-first Annual Meeting of the British Medical Association at Swansea.

Votes of thanks were also unanimously passed to those who had contributed to make the Swansea meeting such a success.

Proceedings of Standing Committees.

ROYAL NAVAL AND MILITARY COMMITTEE.

THE INDIAN MEDICAL SERVICE.

THE following report setting forth certain disabilities of service in the Indian Medical Service and suggested remedies, drawn up the Royal Naval and Military Committee, was presented to the Council of the British Medical Association at the annual meeting recently held at Swansea, and adopted. Copies of the report have been sent to the Secretary of State for India, to the Universities, and to all members of Parliament:

The officers of the Indian Medical Service have a long and honourable record as servants of the Crown, as men of science, and as practitioners of medicine and surgery; and we submit that it would be a lasting reproach to our nation if the Service were permitted from preventable causes to fall below its own high standard. This must inevitably occur unless remedies be found for the present discontent.

The Indian Medical Service, though essentially a military service, consists of two branches, *Military* and *Civil*.

The causes of discontent in the Service may be divided into: (1) *General* Grievances affecting all its members; (2) those affecting its *Military* branch; and (3) those affecting its *Civil* branch. It will be convenient to deal with the suggested remedies under these respective headings.

I.—GENERAL GRIEVANCES.

1. *Slowness of Promotion and Consequent Loss of Full Pensions.*—The present pensions are as follows: After 17 years service, £292; after 20 years', £365; after 25 years', £500 after 30 years', £700; and after 5 years' service in the administrative grade an additional pension of £250. There are also four extra pensions of £100 a year for specially selected officers, but these latter have been discontinued for recent and future entries into the Service.

Owing to about half the administrative appointments of the Service having been abolished in 1880, when the military branch of the Indian Medical Service was amalgamated for administrative purposes with the Army Medical Department, promotion in the Indian Medical Service has been retarded by more than three years, so that at the present time no officer can expect promotion until he has had about 30 years' service. In consequence of this all officers who entered the Service over the age of 25 (which includes the majority of those now entering) can count on a pension of only £500, instead of one of £700, and possibly £950.

Remedy.—In the absence of any probability of the restoration of these administrative posts, the least that should be done is to allow all officers, who must not exceed the age of 28 at entry, to complete 30 years' service before compulsory retirement (at the age of 58). Further, to prevent hardship owing to loss of health, and to encourage such retirements as

will ease in some degree the block in promotion, every year's service over 25 should qualify the officer for an additional pension of £40 a year.

2. *Deficient Pay.*—Since the present rates of pay were fixed many years ago the following depreciating factors have combined to render them totally inadequate at the present time:

(*a*) The cost of medical education at home has been much increased by the extension of the medical curriculum to five years. This factor has been met in the case of the Royal Army Medical Corps by increased pay, but no such amelioration has been extended to the Indian Medical Service.

(*b*) A great reduction has occurred in the emoluments from private practice, owing to the large number of native practitioners who have been educated in the various medical colleges in India, and are now in practice throughout India. When the present rates of pay were fixed in 1864 it was contemplated that the emoluments derived from private practice would render the incomes of medical officers equivalent to those of the civil service officers. Now in the vast majority of stations little or no private practice is available.

(*c*) The fall in the value of the rupee from over 2s. to 1s. 4d. involves a loss of about one-third of the previous incomes. The slight amelioration brought by "exchange compensation," which probably never exceeds 6 per cent of the pay, is more than counterbalanced by the increased cost of living.

Remedy.—To compensate for the reduced emoluments consequent on the foregoing causes the pay of the Indian Medical Service should be increased proportionally with that of the Royal Army Medical Corps, so as to preserve the previously existing equitable balance in favour of the former service, as compensation for continuous service in India, and to continue to attract highly qualified men.

3. *Loss of Four Months' Service whilst at Netley by certain Officers.*—Till about ten years ago officers of the Indian Medical Service counted the four months spent at Netley as service for pension; so do officers entering the service at the present time. But those who entered the service in the intermediate years are no allowed to count these four months.

Remedy.—The officers who entered the Indian Medical Service in the intermediate years should now be allowed to count those four months spent at Netley as service for pension, especially as that privilege has been granted to the officers of the Royal Army Medical Corps, and restored to those of the Indian Medical Service.

II.—Grievances of the Military Branch.

1. Owing to the amalgamation for administrative purposes of the Royal Army Medical Corps serving in India and the Military Branch of the Indian Medical Service, already referred to, the officers of the latter service in military employ are divorced from the control of the Director-General of their own department. This is due to the fact that, since the amalgamation, the head of the Military Medical Services in India (the Principal Medical Officer of the Forces in India) has invariably been selected from the Army Medical Department, though in the order of amalgamation it was expressly stated that this post might be held by an officer of the Indian Medical Service.

Remedy.—As a matter of justice this post should be held alternately by officers from either service, as the Commander-in-Chiefship in India is alternately filled up by an officer of the British and Indian armies. The Indian Medical Service is a military service, and its officers ought not to be debarred from attaining the chief military medical post in India.

2. *Grievances of Junior Officers.*—Junior officers are subject to very frequent changes of station, and this, apart from the cost involved, interferes materially with their passing the prescribed examination in Hindustani; until this examination has been passed the officers cannot get the pay of their appointment, no matter how employed. Junior officers of the combatant branch of the Indian army suffer from no such disability.

Remedy.—All newly arrived medical officers should remain for at least six months at district head quarters, where they can procure a teacher to enable them to pass the prescribed language examination. Further, they should be granted the officiating pay of any charge they may hold during their first year of service or until they have had a reasonable opportunity of passing their examination, as in the case of officers of the Indian army.

3. Medical officers suffer serious loss from transfers owing to the fact that a free railway passage for a horse is not allowed them though they are required to appear mounted on parade, while all officers of the Indian army are allowed passages for their horses.

Remedy.—This privilege, which previously existed, should be restored to medical officers.

III.—Grievances Affecting the Civil Branch.

Formerly civil employment formed the principal attraction to men entering the Indian Medical Service, but now the increasing unpopularity of civil employment is evidenced by the fact that appointments thereto, instead of being eagerly sought after, are frequently declined. The main causes of this unpopularity are the following:

1. *Reduced Pay in Civil Employ.*—Though the duties performed by officers in the Civil Branch of the Service are much more onerous than those which fall to their military brethren in peace time, yet the grade pay in civil employ is almost invariably Rs. 50 a month less than that in military. This anomalous state of affairs dates from a time when private practice was a valuable asset, but it is entirely inequitable at the present time when the latter has almost vanished in the average civil station. It is true that the administrative charge of a gaol usually makes up the deficiency, but the work required for the small allowance of from Rs. 50 to Rs. 150 a month for gaol work is hardly earned by labour of a most uninteresting and non-professional nature, which Government gets done more cheaply than it otherwise could by putting it on the shoulders of the Civil Medical Officers.

Remedy.—This reduction of the grade pay in the Civil Branch should be abolished.

2. *Limitation of Private Fees by Government.*—There is, perhaps, nothing which is so keenly resented in the Service as the reflection cast on the honour of its officers by the action of Government in requiring them to submit to the judgement of civil and political officers the question of what fees they may accept from native noblemen and gentlemen. Even quite recently the rules on this point have been made more stringent and offensive, so that at the present time no officer can take a fee exceeding Rs. 50 (£3 6s. 8d.) for a single visit, no matter at what distance, or Rs. 1,000 (£68 13s. 4d.) in the aggregate for repeated visits within the same year without reference to the local government, while fees of Rs. 2,000 (£133 6s. 8d.) must be referred to the Government of India for sanction. Such rules as these are an insult to the service and the profession to which its members belong.

Remedy.—Nothing short of the entire abolition of all fixed rules limiting fees will satisfy the honour of the Service, the Government still retaining the right which they possessed before their introduction of inquiring into any alleged overcharge for professional services rendered by a Medical Officer.

3. *Want of Recognition of Purely Professional Work.*—The

officers of the Indian Medical Service do not receive a fair share of honours in proportion to the importance of their work has long been a source of complaint. What is still more noteworthy is that these honours are rarely given for purely professional distinction in medicine and surgery.

The Remedy for this state of affairs is obvious.

4. *The Subordinate Positions of the Administrative Officers.*—The improvement in the power and positions of the Imperial and Provincial Administrative Medical Officers is a matter of vital importance to the Service. At present these officers can only approach their respective Governments through a Secretary, generally a junior one; and their power to promote or transfer the officers under their administration is well known to be of merely a nominal character, the real power being in the hands of the Civilian Secretaries to Government.

Remedy.—The Director-General of the Indian Medical Service should have the rank of Lieutenant-General (as the Director-General of the Army Medical Department now has) with adequate pay, and should also have a seat on the Viceroy's Council with direct access to the Viceroy. In a similar manner the Administrative Medical Officers of the different provinces should have seats on the Provincial Councils, and real control of the appointment of all officers serving under them.

There is reason to believe that many of these matters have engaged the serious attention of the Government of India, and that it has represented them to the India Office in this country.

Reports of Branch Meetings.

CEYLON BRANCH.

AN ordinary meeting of this Branch was held on May 16th. The chair was taken for the President by Dr. M. SINNETAMBY, and there were six members present.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

New Member.—The following new member was elected: Dr. E. V. Rutnam, of Colombo.

By-laws.—The SECRETARY read the following letter sent to him by the General Secretary, British Medical Association, London, regarding the proposed new rules of this Branch:

I have received your letter of the 23rd ultimo and the copies of the proposed by-laws for the Ceylon Branch, for which I thank you, and they shall receive full consideration.

Annual Dinner.—The SECRETARY announced that the annual dinner of this Branch had been held on April 25th, and that the balance in hand, including the balance from dinner to Dr. A. Perry, amounted to Rs.116.14, and that the balance sheet of the same would be printed and circulated to the subscribers.

DORSET AND WEST HANTS BRANCH.

THE summer meeting of this Branch was held at Ringwood on July 22nd under the presidency of Dr. JOHN MOORHEAD. There were also present twenty-eight other members and visitors.

The late Dr. D. J. Lawson.—It was resolved:

That the members of the Dorset and West Hants Branch desire to express their sincere regret at the death of their former Vice-President, Dr. David James Lawson, and desire to convey to Mrs. Lawson their sympathy in her great sorrow.

Place of Next Meeting.—It was resolved that the autumn meeting should be held at Bournemouth.

Discussion.—A discussion on Some of the Effects of Influenza was opened by Mr. WILLIAM TURNER, one of the Vice-Presidents, and taken part in by Mr. PARKINSON, Dr. LUSH, and the PRESIDENT.

Communication. Major A. E. GRANT, I.M.S: The Treatment of Diabetes and Obesity in Britain.

Excursion.—The members, who had lunched at the Crown Hotel, were driven to Somerley, the residence of the Right Hon. the Earl of Normanton, who had courteously allowed his picture gallery to be open for their inspection, which added much to the enjoyment of the meeting.

NORTH WALES BRANCH.

AT a meeting of the Councils of the North Wales and Shropshire Branches, held at Chester on March 26th, it was decided that each Branch should for this year hold the annual meeting as in former years, notwithstanding that, under the new scheme of organization, they were to be amalgamated as the North Wales and Shropshire Branch; accordingly, the annual meeting of the North Wales Divisions of the Branch was held at Barmouth on July 14th, under the presidency of Mr. PRICE MORRIS (Old Colwyn).

Report of Council.—The Council, having met prior to the meeting, presented its annual report as follows: The Council, in presenting its fifty-fourth annual report, has to record a very satisfactory year's work. The change in the Constitution of the Association, finally approved of at the Manchester meeting in August last, necessitated the calling of more than the ordinary number of meetings during the twelve months under review in order to make the changes incumbent under the new scheme. At these meetings the necessary formalities were proceeded with in a most harmonious and business-like manner, which augurs well for the success of the Branch under the new rules and by-laws of the Association. The foremost change is the affiliation of this Branch with the Shropshire owing to both Branches not having the required number (200) of members to warrant direct representation on the Council of the Association, but, owing to the retirement of the representative of the Shropshire Branch, Mr. R. W. Withers, that Branch in a worthy and magnanimous manner waived all claims in favour of the North Wales representative, Mr. Jones Morris, who, owing to no other nomination according to the by-law being received, is again elected after nomination by each of the four Divisions of the Branch to serve the joint Branches on your Central Council for the nineteenth year in succession. A joint meeting of the Councils of both Branches was held, when the work of consolidating the two Branches was successfully accomplished with much courtesy and co-operation. It was arranged that the annual meeting should be held alternately in the two sections of the Branch, the choice for next year being left to the Council, which is now made up of representatives elected at the annual meeting of each of the four Divisions, North Wales returning seven members and Shropshire six. In like manner the choice of President to be alternate in accordance with Rule 4 of the adopted by-laws of the Branch. The Branch as now constituted is made up of four Divisions, and in each of the Divisions of the North Wales Branch meetings have been held at which the following officers have been appointed according to the by-laws: Denbigh and Flint.—*Chairman:* J. Ll. Williams, M.B., Wrexham; *Vice-Chairman:* Richard Williams, Wrexham; *Secretary:* E. D. Evans, Wrexham; *Representative on Branch Council:* J. E. H. Davies, Wrexham; *Representative on Representative Meeting:* E. D. Evans; *Members of Executive Committee:* Richard Owen, Brymbo, Eyton Lloyd, M.D., Rhyl, J. R. Richmond, Overton. North Carnarvon and Anglesea.—*Chairman:* Emyr O. Price, M.B., Bangor; *Vice-Chairman:* C. Grey-Edwards, Beaumaris; *Secretary:* H. Jones Roberts, Penygroes; *Representatives on Branch Council:* R. Arthur Prichard, Conway, Price Morris, Old Colwyn, Emyr O. Price; *Representative on Representative Meeting:* H. Jones Roberts; *Members of Executive Committee:* Robert Parry, M.B., Carnarvon, John Roberts, M.D., Menai Bridge, T. E. Jones, Llanrwst, G. W. Kendall, Holyhead. South Carnarvon and Merioneth and Montgomery.—*Chairman:* Samuel Griffith, M.D., Portmadoc; *Vice-Chairman:* Richard Jones, M.D., D.P.H., Blaenau Festiniog; *Secretary:* W. Jones Morris; *Representatives on Branch Council:* Hugh Jones, M.B., Dolgelly, J. W. Rowlands, Llanaelhaiarn; *Representatives on Representative Meetings:* Saml. Griffith, M.D.; *Members of Executive Committee:* S. W. Griffith, Pwllheli, Roger Hughes, Bala. The number of members on the list at the last annual meeting of the North Wales Branch at Llandudno was 190, of whom 44 were resident outside the limits of the Branch, and by the new Constitution are ineligible, which would leave the numbers at 146; but as no unattached members are allowed under the new Constitution—it being an essential element that for the future any member residing within a Branch must be a member of that Branch, and that all who seek membership in the Association must do so through the Branch in which they reside—there were admitted in lieu of those who had to retire 37 formerly unattached, and at the last Council meeting 4 new members were admitted, so that at the present moment the three divisions in North Wales number 187, and your Council trusts it will not be very long before the Branch has 200 members so as to demand, if it deems fit, the

complete autonomy provided by the rules of the Association. Your Council has the satisfaction of reporting that not a single member has resigned owing to the somewhat drastic and democratic change in the Constitution of the Association, and is confident that the splitting up of the Branch into three Divisions will be of great usefulness in bringing the affairs of the Association, and therefore of the whole profession, under the cognizance of each member. Every movement for the furtherance of the profession and the amelioration of any wrong or injustice will, through the committees appointed under the new Constitution, be speedily brought before each Division for consideration and report, the Representative Meeting being the channel through which each Division will record its decision on every matter submitted. There is already ample evidence of the thoroughness with which the committees are setting themselves to the work devolving upon them. Your Council has to record with great regret the death of one of the oldest members of the Branch, Mr. William Jones of Ruabon, who was always heartily welcomed at our meetings, of which he had been a regular attendant for nearly forty years, and was President in 1878. His genial face, with his own inimitable humour, his quick perception of men and manners, his quaint sayings, his wide and practical experience, will be for years missed by those who had the pleasure of attending our meetings. The Council received with much regret the resignation of Dr. Alexander Crighton, of Brymbo, owing to retirement from practice and a return to his native land (Scotland). He was a consistent and faithful attendant at our meetings, and was one of the small band who attended as delegates of the Branch at the Montreal meeting. The Council, in losing the services of Dr. Samuel Griffith as treasurer (that office being now dispensed with), has much pleasure in recording the faithful services he has rendered during the last twelve years. On the motion of the Honorary Secretary, seconded by Mr. J. O. Williams, the report was adopted.

Votes of Sympathy.—A vote of sympathy with the family of the late Mr. W. Jones, Ruabon, was passed; and also with Mr. J. T. Jones (Corris) in his prolonged illness.

President's Address.—The President-elect, W. Lloyd O. Williams, M.B. (Llanberis), then took the chair, and after proposing a vote of thanks to his predecessor, Mr. Price Morris, delivered an address on atonic dilatation of the stomach.—On the motion of Mr. Robert Parry, M.B., seconded by Dr. J. Elliott, and supported by Drs. Richard Jones, D.P.H., and Hugh Jones, M.O.H., a hearty vote of thanks was accorded to him.

Communications.—After Dr. Elliott had read a paper on thyroid extract, Mr. Price Morris read the notes of a series of cases of head injury, followed by a paper on cases of a similar kind by R. H. Mills Roberts, C.M.G., treated at the Dinorwic Quarries Hospital (see p. 361); and Professor Rushton Parker read the notes of a case of trephining, after which a discussion took place, taken part in by many present.—Dr. Richard Jones, of the Festiniog Quarries Hospital, gave his experience of that institution, a valuable and interesting contribution to our knowledge of the subject being the result.—Professor Rushton Parker and Mr. G. F. Newbolt read papers on knee-joint disease, and extirpation of the prostate by Freyer's method. Taliesin's poem to the microbe was the subject of a paper by Mr. T. E. Jones (Llanrwst) (see p. 371).

Dinner.—The members subsequently dined together at the Corsygedol Hotel, with the Chairman and Clerk of the District Council and others as guests.

OXFORD AND READING BRANCH:

Oxford Division.

At a meeting of this Division, held on July 17th at the Red Lion Hotel, Banbury, the following gentlemen were elected as officers for the ensuing year: *Chairman*, Mr. Drew, F.R.C.S.: *Vice-Chairman*, Mr. Doyne, F.R.C.S.: *Honorary Secretary*, D. Duigan: *New Members of Council*, Dr. E. Mallam, Dr. Jacobson, and Dr. Daly.

PERTHSHIRE BRANCH.

At a special meeting at Perth on June 26th, Dr. Robert Stirling was called to the chair.

Scottish Council.—Dr. Stirling made a statement with regard to communications with the Dundee and Stirling Branches, specially referring to the proposal to establish a Scottish Council of the Association, and to send a Branch Representative to the Annual Meeting at Swansea to support that proposal. After discussion it was moved by Dr. Borrowman, and seconded by Dr. W. Robertson:

That the meeting approve of what has been done in the interests of the Branch, but reserving full powers to take any subsequent steps which may seem advisable.

Representative at Annual Meeting.—It was decided to send Dr. R. Stirling as Representative to Swansea to support the proposal for a Scottish Council. He agreed to attend the annual meeting accordingly.

YORKSHIRE BRANCH:

Bradford Division.

A meeting of this Division was held at the Eye and Ear Hospital, Bradford, on Tuesday, July 14th. Dr. Goyder, Chairman of the Division, presided, and the Honorary Secretaries (Drs. Little and Metcalfe) were also present.

Meetings of Division.—It was determined to accept the suggestion of the Executive Council that the meetings of the Division should be held on the second Tuesday in January, March, June, and October, the June meeting to be the annual meeting. It was also resolved that the meetings should take place in the Eye and Ear Hospital at 8.30 p.m.

Ethical Committee.—It was resolved that the Ethical Committee should consist of the following gentlemen: Drs. and Messrs. Shackleton, McGee, Mitchell, and Manknell; S. Johnston, H. E. Taylor, T. C. Denby, and Althorp; and the officers, Drs. Goyder, Little, and Metcalfe. The drafting of the rules was left to the Committee.

Light and Roentgen-Ray Department, Bradford Infirmary.—Mr. Basil Hall then gave an interesting summary of his six months' experience while in charge of the Finsen Light and Roentgen-Ray Department of the Bradford Royal Infirmary. Altogether he had about 50 cases, with 2,000 attendances. He believed that they were nearer to the secrets of malignant disease through *x*-ray work than ever they were before. Speaking generally, the results were most encouraging. He had had no serious burning as a result of the action of the light, but in one patient there was a good deal of blistering of the skin. Mr. Hall drew attention to several cases of malignant disease which he had treated with the most satisfactory results. One was a case of nodules in the cicatrix after an operation for carcinoma of the mamma. After nine exposures to the *x* rays the nodules had disappeared. A second was an old man over 70 years of age, with an epithelioma of the lip, exposing the lower jaw by destruction of the cheek. After 17 exposures to the *x* rays he was and still is perfectly healed. Another case of a sarcoma of the skull appeared hopeless. There was a large fungating mass on the top of the skull the size of an orange, which bled profusely. There was no further bleeding after the first exposure. He had now given this case a dozen exposures, and the tumour was only half its former size. Some cases of secondary growths about the neck had not been so successful. But in cases of rodent ulcer the *x* rays appeared to be an absolute specific. Mr. Hall had 4 cases, all of which are healing and one nearly well. There was no doubt that the *x* rays would do more for inoperable cancer than anything else. They reduce pain enormously without producing the deteriorating effects of the usual agents employed for this purpose. Ulcers quickly lost their thickened indurated edges and showed a tendency to heal. The Finsen light produced excellent results in true ulcerating lupus. Surgical treatment was quicker, but the cosmetic result was infinitely better with the Finsen lamp. An interesting discussion followed, in which the Chairman, and Drs. J. H. Bell, Mitchell, Burnie, Metcalfe, Campbell, Mossop, and Wood joined. In reply Mr. Hall drew attention to the rapid cure of sycosis of the face by *x*-ray treatment. Cases were cured by two or three exposures.

BRITISH MEDICAL ASSOCIATION LIBRARY.

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The Librarian will be glad to receive any of the following volumes which are needed to complete series in the Library:

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——— Dermatological Associations. Transactions. Vols. 5, 7, 8, and 11.
——— Journal of the Medical Sciences. New series, vols. 4, 5, 1842-3; vols. 14, 15, 1847-8; vols. 18-30, 1850; vol. 33, 1857; vol. 46, 1864-5; vol. 59; or any parts of these vols.
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ANY candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

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GUY ELLISTON, *General Secretary.*

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, AUGUST 22ND, 1903.

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ASSOCIATION INTELLIGENCE.

Matters Referred to the Divisions.

MEDICAL ACTS AMENDMENT BILL.

THE following is the text of a proposed Bill to amend the Medical Acts drafted by the Medico-Political Committee and referred to in its report to the Representative Meeting and presented by that Committee to the Council at its meeting in London in July. The Council without expressing any opinion on the Bill ordered it to be sent to the Divisions for their consideration.

Title.—An Act to amend the Medical Acts and to further regulate the practice of Medicine, Surgery, and Midwifery.

PART I.—*Constitution and Powers of the General Medical Council.*

Clause 1.

Constitution of Council.—The General Medical Council shall consist of twenty-two registered medical practitioners, and one registered dental practitioner appointed as follows:

(*a*) Five persons nominated from time to time by His Majesty, with the advice of His Privy Council, three of whom shall be nominated for England, one for Scotland, and one for Ireland.

(*b*) One person elected collectively by voting papers by the registered practitioners holding the diploma or degree of the University of London or the University of Oxford and resident in the United Kingdom at the date of election.

One person elected collectively by voting papers by the registered practitioners holding the diploma or degree of the University of Cambridge or the University of Birmingham and resident in the United Kingdom at the date of election.

One person elected collectively by voting papers by the registered practitioners holding the diploma or degree of the University of Durham or the Victoria University, and resident in the United Kingdom at the date of election.

One person elected collectively by voting papers by the registered practitioners holding the diploma of the Royal College of Physicians of London, or the Royal College of Surgeons of England, or the Apothecaries Society of London, and resident in the United Kingdom at the date of election.

One person elected collectively by voting papers by the registered practitioners holding the diploma or degree of the University of Edinburgh or the University of St. Andrews, and resident in the United Kingdom at the date of election.

One person elected collectively by voting papers by the registered practitioners holding the diploma or degree of the University of Glasgow or the University of Aberdeen, and resident in the United Kingdom at the date of election.

One person elected collectively by voting papers by the registered practitioners holding the diploma of the Royal College of Physicians of Edinburgh or the Royal College of Surgeons of Edinburgh, or the Faculty of Physicians and Surgeons of Glasgow, and resident in the United Kingdom at the date of election.

One person elected collectively by voting papers by the registered practitioners holding the diploma or degree of the University of Dublin or the Royal University of Ireland and resident in the United Kingdom at the date of election.

One person elected collectively by voting papers by the registered practitioners holding the diploma of the Royal College of Physicians in Ireland or the Royal College of Surgeons in Ireland or the Apothecaries' Hall of Ireland and resident in the United Kingdom at the date of election.

(*c*) Five persons hereinafter called direct representatives elected by voting papers from time to time by the registered medical practitioners resident in England and Wales.

(*d*) Two persons hereinafter called direct representatives elected by voting papers from time to time by the registered medical practitioners resident in Scotland.

(*e*) One person hereinafter called a direct representative elected by voting papers from time to time by the registered medical practitioners resident in Ireland.

(*f*) One person hereinafter called the direct dental representative elected by voting papers from time to time by the registered dentists resident in the United Kingdom.

Clause 2.

Qualification and Tenure of Office of Member of General Council.—The members of the General Council shall themselves be registered medical practitioners, with the exception of the direct dental representative, who shall be a registered dentist; such persons shall be elected to hold office for the term of five years, and shall be eligible for re-election, and any one of them may at any time resign his office by letter addressed to the President of the General Council, and upon the death or resignation of any one of them some other person shall be elected in his place and shall remain in office for the remainder of the term for which the retired or deceased person was elected; but nothing in this section shall affect the duration of the term of office of any person who at the time of the passing of this Act is a member of the General Council, nor shall the proceedings of the General Council be questioned on account of a vacancy or vacancies among the members of the Council.

Clause 3.

Regulations as to Election of Members of General Council.—(1) The election of a representative for each of the bodies or groups of bodies represented on the General Council shall be conducted in such manner as may be provided by regulations to be made by such bodies in accordance with this Act and approved by the General Council.

(2) The President of the General Council or in his absence

the Vice-President shall be the returning officer for the purpose of elections of direct representatives, and such returning officer shall, some time not less than six weeks, nor more than two months before the day on which the term of office of any such representative will expire, and as soon as conveniently may be after the occurrence of any vacancy arising from the death or resignation of any such representative, issue his precept to the General Registrar providing for the election of a representative by the registered medical practitioners resident in that division of the United Kingdom in which an election is to be held within forty days after the receipt of the precept of the returning officer.

(3) The election of the members of the General Council representing the registered medical practitioners resident in the several divisions of the United Kingdom, also called the direct representatives, and of the member representing the registered dentists, also called direct dental representative, shall be conducted in such manner as may be provided by regulations to be made by the General Council and approved by the Privy Council provided as follows:

(*a*) The nomination shall be in writing, and the nomination paper of each candidate shall be signed by not fewer than twelve registered medical practitioners, or in the case of the direct dental representative by not fewer than twelve registered dentists; and

(*b*) The election shall be conducted by voting papers, and it shall be the duty of the General Registrar to cause a voting paper to be forwarded by post to each registered medical practitioner or registered dentist at his registered address resident in that part of the United Kingdom in which an election is to be held, but the election shall not be rendered void by reason of the omission of the General Registrar to cause such voting paper to be forwarded in any particular case or cases, and any registered medical practitioner to whom a voting paper has not been sent in pursuance of this Act may on application to the General Registrar obtain one from him; and

(*c*) Any registered medical practitioner entitled to vote at such election may vote for as many candidates as there are representatives to be elected.

(4) The General Registrar shall certify to the returning officer the number of votes recorded for each candidate by the registered medical practitioners and dentists resident in that division of the United Kingdom in which an election is held, and the returning officer shall certify the person or persons elected.

(5) A direct representative elected in place of any such representative retiring on the expiration of the period for which he was elected shall come into office at the expiration of that period, and a direct representative elected to fill a vacancy caused by the death or resignation of any such representative shall come into office on the day on which he is certified by the returning officer to have been elected, and shall remain in office for the remainder of the term for which the retired or deceased person was elected.

(6) The expenses attending the election of the direct representatives and of the direct dental representative shall be defrayed as part of the expenses of the General Council.

Clause 4.

Election of President of General Council.—The General Council from time to time, on the occurrence of a vacancy in the office of President of the General Council, shall elect one of their number to be President for a term not exceeding three years and not extending beyond the expiration of the term for which he has been made a member of the said Council, but nothing in this Act shall affect the duration of the term of office of the person who at the time of the passing of this Act is President of the General Council.

Clause 5.

Election of Vice-President of General Council.—The General Council shall annually elect one of their number to be Vice-President, whose duties shall be to act for the President in his absence from any cause, but the term of such office shall not extend beyond the expiration of the term for which he has been made a member of the said Council.

Clause 6.

Fees for Attendance at Councils.—(1) The members of the General Council appointed by His Majesty with the advice of His Privy Council shall be paid by His Majesty's Treasury, such fees for attendance at the meetings of the Council and Committees, and such travelling expenses as shall be from time to time estimated by the Council and approved by the Commissioners of His Majesty's Treasury.

(2) The members of the Council representing the corporate bodies or groups of bodies, the direct representatives, and the direct dental representative shall be paid, from the funds of the Council, such fees and travelling expenses for attendance at the meetings of the Council and Committees as shall be specified in Schedule to this Act.

Clause 7.

The General Council may from time to time appoint such additional officers, including clerks and servants, as in the opinion of the General Council may be required for the execution of the Acts, and may remove any officers, clerks and servants so appointed.

Clause 8.

From and after the commencement of this Act the existing officers, including the registrar, clerks, and servants of each Branch Council, shall be transferred to and become officers, clerks, and servants of the General Council, and, unless and until the General Council shall otherwise order, shall hold their respective offices and situations on and subject to the same conditions as regards remuneration and removal as those upon which they now respectively hold the same.

Clause 9.

The Registrar of the General Medical Council shall be a registered medical practitioner.

Clause 10.

There shall be paid to the Registrar of the General Council, and to each Registrar of a Branch Council, and to each officer, clerk, or servant appointed under the provisions of this Act such salary, or other remuneration, as the General Council shall from time to time think fit.

Clause 11.

The General Council shall arrange for the superannuation of the Registrar and other officers, and may award to any Registrar or other officer at present in office, on his retirement from office such pension or gratuity as, having regard to the services of such Registrar or officer, the General Council thinks just.

PART II.—*Registration of Students.*

Clause 12.

Provision of a Students' Register.—The Registrar of the General Council shall keep a register of all medical students in the United Kingdom, in which register shall be included, in addition to the name, place, and date of birth of each student, the place of study and the nature of the preliminary examination passed by such student.

Clause 13.

Preliminary Examination and Registration.—Every person shall pass a preliminary examination approved or held by the Council before he be registered as a medical student. Such registration shall be effected on payment of a fee of £1 and in accordance with the regulations of the General Council, and the professional curriculum shall not be commenced until after registration as a medical student provided always that the Council shall have power, if after due inquiry sufficient cause has been shown, to antedate such registration.

Clause 14.

Penalty for False Registration.—(1) If any person shall wilfully procure or attempt to procure himself to be registered as a medical student under this Act, by making or producing or causing to be made or produced, any false or fraudulent representation or declaration, either verbally or in writing, he shall be deemed guilty of a misdemeanour in England or Ireland and in Scotland of a crime or offence punishable by fine or imprisonment, and shall be liable for a first offence to a penalty not exceeding five pounds, or to imprisonment in default of payment, for any term not exceeding six months, and the Council shall have power to erase any name so falsely entered on the students' register.

(2) If any registered medical student shall after due inquiry be judged by the General Council to have been guilty of conduct which in their opinion renders undesirable the retaining of his name on the students' register, the Council may, if after due inquiry they see fit, direct the registrar to erase the name of such student from the register.

(3) The General Council shall have power to restore the name to the students' register of any person whose name has been erased at such time as the Council sees fit, and on the payment of a further registration fee of one pound.

PART III. *Education of Students.*

Clause 15.

Intermediate Examination.—An intermediate examination which shall confer the right of entrance to the examination qualifying for registration under this Act (hereinafter called

the State examination) shall be an examination in such subjects as from time to time shall be determined upon by the General Council, and shall be held by any of the following bodies, that is to say:

(*a*) Any university in the United Kingdom or any medical corporation scheduled in this Act, or

(*b*) Any combination of two or more medical corporations in the same part of the United Kingdom scheduled in this Act, or

(*c*) Any combination of any such university as aforesaid with any other such university or universities, or of any such university or universities with a medical corporation or corporations the bodies forming such combination being in the same Division of the United Kingdom.

Clause 16.

Intermediate Examinations held by Medical Corporations with Assistant Examiners.—(1) It shall be lawful for the General Council from time to time, if they think fit, to appoint examiners to assist at the intermediate examinations, or to order from time to time inspection of such examinations.

(2) It shall be the duty of the said assistant examiners to secure at the said examinations the maintenance of such standard of proficiency in the prescribed subjects as may be required by the General Council, and for that purpose the said assistant examiners shall have such powers and perform such duties in the conduct of those examinations as the General Council may from time to time by order prescribe.

(3) Assistant examiners appointed under this section shall receive such remuneration, to be paid by the medical corporation at whose examinations they take part, as the General Council determine.

(4) A medical corporation shall admit to its examinations assistant examiners or inspectors appointed under this section, and shall conduct its examinations in accordance with the requirements of this section and of any orders made by the General Council thereunder, anything in any Act or Charter relating to such corporation to the contrary notwithstanding.

Clause 17.

Defects in Examinations may be Represented by General Council to Privy Council.—(1) If at any time it appears to the General Council that the standard of proficiency in any subject or branch thereof, required from candidates at the intermediate examinations conferring the right of entrance to the final examination, and held by any of the bodies for the time being holding such examinations is insufficient, the General Council shall make a representation to that effect to the Privy Council, and the Privy Council, if they think fit, after considering such representation, and also any objections thereto made by any body or bodies to which such representation relates, may by Order declare that the examinations of any such body or bodies shall not be deemed to be intermediate examinations; and if upon further representation from the General Council or from any body or bodies to which such Order relates it seems to him expedient so to do His Majesty, with the advice of his Privy Council, shall have power at any time to revoke any such Order.

(2) During the continuance of any such Order the examinations held by the body or bodies to which it relates shall not be deemed valid examinations under this Act, and any certificate granted to persons on passing such examinations shall not entitle such persons to enter for the State examination under this Act.

Clause 18.

Inspection by the Council of Medical Schools.—The Council may appoint inspectors to visit medical schools or hospitals to inspect and report on their suitability for affording adequate instruction, and if any such school or hospital refuse to allow such inspection, or if on inspection such school or hospital be deemed by the Council to be unsatisfactory, the Council may forbid recognition thereof by any medical corporation holding intermediate examinations.

Clause 19.

State Examination Qualifying for Registration held by General Council.—The State examination qualifying for registration shall be an examination in medicine, surgery, and midwifery held by the General Medical Council simultaneously in London, Edinburgh, Dublin, and at such centres of medical education as the Council may from time to time determine.

Clause 20.

Regulations for the State Examinations.—(1) The General Council shall within one year after the passing of this Act appoint a board of examiners in medicine, surgery, and midwifery for the purpose of conducting the State examination.

(2) The members of such board shall not be members of the General Council, but shall be registered medical practitioners and shall consist of such number, and shall continue in office for such period, and shall conduct the State examination in such manner as the General Council may from time to time, by by-laws or regulations, respectively direct.

(3) No candidate shall be admitted to the State examination unless he shall produce satisfactory evidence of having passed such intermediate examination as may be approved by the Council, and shall have paid such fee as the General Council shall from time to time determine.

(4) The Council shall have power to determine or suspend the appointment of any examiner, and any vacancy in the Board of Examiners appointed under this Act shall be filled by the Council.

(5) The persons serving on such Board of Examiners shall be entitled to such fees and expenses as the Council shall from time to time allow.

Part IV.—*Registration.*

Clause 21.

Examination before Registration for Regulations for Registration. On and after the passing of this Act a person shall not be registered unless he has passed the State examination in medicine, surgery, and midwifery held by the General Council, and every person who shall have passed the said examination shall, on payment of a fee of one pound, be entitled to be registered on producing to the registrar of the Council such proof of his identity and of his having passed the State examination as the Council may require.

Clause 22.

Regulations for Annual Registration.—(1) On and after the passing of this Act every medical practitioner, except as hereinafter mentioned, shall, on or before the 31st day of December in each year, transmit to the Registrar of the Council an application for continuance of the entry of his name on the *Medical Register* for the ensuing year, and forward therewith a fee of one pound, and the registrar shall on receipt of such application and fee forthwith cause the applicant's name to be entered on the *Register* for the ensuing year, and shall transmit a certificate of such registration to such applicant.

(2) The registrar shall, on or before the 10th day of November in each year, transmit to every registered practitioner a notice requesting payment of the registration fee, and containing a warning to the effect that if it be not paid before January 31st in each year the name of the registered practitioner in default will be removed from the *Register* for the ensuing year.

(3) In the case of registered medical practitioners residing without the United Kingdom the registrar shall give such practitioners notice, which shall be equivalent to twenty-one days' notice to a person residing within the United Kingdom.

(4) No practitioner registered before the passing of this Act shall be liable to the application of this clause, until five years from the passing of this Act, and this clause shall not apply to any practitioner holding a commission in His Majesty's Navy or Army, and not being engaged in private practice within the United Kingdom.

(5) (New sub-clause to be inserted, to facilitate restoration of practitioners removed through absence from country.)

Part V.—*Finance.*

Clause 23.

Transfer of Funds to the General Council, and Payment of all Expenses by the General Council (21 & 22 *Vict.*, *c.* 90, *s.* 13).—(1) On the commencement of this Act, or on such day subsequent thereto as the General Council shall appoint, all moneys, securities for money and investments and other property belonging to or held for a Branch Council shall be transferred to the General Council, or to such persons as the President and Treasurers of the General Council shall nominate.

(2) From and after the commencement of this Act all moneys which under the provisions of the Acts are made payable to the Branch Councils shall, forthwith on the receipt thereof, be paid to the General Council.

(3) All expenses of the General and Branch Councils and of the execution of the Acts, shall be defrayed by the General Council out of its moneys and property.

Clause 24.

Amendment of Medical Act as to Accounts to be Kept [*of Receipts and Payments*]. (21 & 22 *Vict.*, *c.* 90, *s.* 44.)—From and

after the commencement of this Act the provisions contained in Section 44 of the Medical Act, 1858, shall not apply to the Branch Councils, or any of them, but shall apply only to the Treasurers of the General Council, and the accounts of moneys received and paid by such Treasurers.

PART VI.—*Penal Clauses.*

Clause 25.

Medical Practitioners Convicted of Felony may be Suspended from Practice or Struck off the Register.—(1) Where a person registered under the Medical Acts has been convicted in England or Ireland of any felony or misdemeanour, or in Scotland of any crime or offence, or has, after due inquiry, been judged by the General Council to have been guilty of conduct infamous or unbecoming in a professional respect, the General Council may, if it thinks fit, by order direct that the name of the practitioner shall be and remain erased from the Medical Register for a limited period, and may from time to time, by order, vary such period, and at the expiration of the period limited by such order or subsequent order, the Registrar shall, if the practitioner shall then possess a medical diploma and unless otherwise ordered by the General Council, restore the name of the practitioner and his then existing medical diplomas to the Medical Register.

Consequent Action by Medical Corporation.—(2) It shall be lawful for each of the Medical Corporations, if and when such authority thinks fit to revoke, suspend the use of, or cancel the medical diplomas or diploma of such Medical Authority held by any person whose name has been erased from the Medical Register by order of the General Council for any cause under the Medical Acts and subsequently to restore such medical diplomas or diploma to such person without requiring him to pass further examination. Nothing in this Act shall prejudice or affect the powers already possessed by any Medical Corporation of depriving a member of his medical diploma or diplomas, or of striking off members from the lists or rolls.

Prevention of Evasion of the Council's Penal Decisions.—(3) Any person whose name shall have been erased from the Register under the provisions of this Act, and who shall during the period for which his erasure shall remain in force continue to use in conjunction with his name or otherwise any medical title or description of medical degree or diploma, and of which by reason of his erasure he may not have become deprived, shall be deemed to have been guilty of an offence under the Act, and to be liable on summary conviction to the penalties prescribed in Section 24 of this Act.

Clause 26.

Restoration of Name to Register.—If after due inquiry the General Council deem it expedient to restore to the Register the name of any practitioner that may have been removed therefrom for any cause, they shall have power to direct the registrar to restore the name accordingly, provided always that such restoration shall be conditional on payment of the annual registration fee.

Clause 27.

Powers of Council for Purposes of Judicial Inquiry.—For the purpose of due inquiry by the General Council, the Council shall have power to administer oaths, to issue through the Crown Office of the Royal Courts of Justice subpoenas for the attendance of witnesses, and to award costs, such costs to be recovered summarily.

Clause 28.

Privileges of Registration.—(1) No person except a registered medical practitioner shall, save as in this Act mentioned, practise medicine, surgery or midwifery, habitually and for gain in the United Kingdom and (subject to any local law) in any other part of His Majesty's dominions.

(2) No person except a registered medical practioner shall be entitled to recover in due course of law any fees or expenses to which he may be entitled for advice given in the course of his practice in medicine, surgery, and midwifery.

(3) No person shall hold any appointment as a physician, surgeon, or other medical officer, either in the military or naval service, or in emigrant or other vessels, or in any hospital, infirmary, dispensary, or lying-in hospital, or in any lunatic asylum, gaol, penitentiary, house of correction, house of industry, parochial or union workhouse or poorhouse, parish union, or other public establishment, body, or institution, or to friendly or other society for affording mutual relief in sickness, infirmity, or old age, or as a medical officer of health, unless he be registered under this Act, provided always that nothing in this Act contained shall extend to repeal or alter any of the provisions of the Passengers Act, 1855; and the governing body of any institution or Friendly Society which shall appoint such unregistered person, and any such unregistered person holding such appointment shall, on summary conviction for any such offence, pay a sum not less than five and not exceeding twenty pounds.

(4) No certificate of death, stillbirth, sickness, or other certificates required by any Act now in force, or that may hereafter be passed, from any physician, surgeon, licentiate in medicine and surgery, or other medical practitioner, shall be valid unless the person signing the same be registered under this Act and any person not being registered under this Act who shall sign any certificate of death, stillbirth, sickness, or any certificate purporting to be a medical certificate or by the issue of which it is implied that the unregistered person signing it is a person possessed of medical skill and knowledge, shall on summary conviction for any such offence pay a sum not less than five and not exceeding twenty pounds.

Clause 29.

Penalty for Granting Degrees for Unregistered Persons.—No Medical Corporation or any person, Company, or body of persons shall grant any certificate, degree, or diploma in any branch of medicine, surgery, or midwifery, to a person not registered under this Act, and any Medical Corporation, person, Company or body of persons infringing this section shall be liable on summary conviction to a penalty of fifty pounds for each offence.

Clause 30.

Penalty for Practice by Unregistered Persons.—Any person who is not registered under this Act and who medically treats patients, or otherwise practises medicine, surgery, or midwifery, or performs any surgical operation for which he demands or receives any fee, gratuity, or remuneration, and also any person who not being registered under the Act, pretends to be, or takes or uses the name or title of physician or surgeon, doctor of medicine, licentiate of or bachelor of medicine or surgery, or master in surgery, or assumes any other style, title, addition, designation, or description either attached to the name of the person or to his place of residence or business, or otherwise exhibited, implying that he possesses the skill and knowledge necessary for the practice of medicine, surgery, or midwifery, or that he is recognized by law as a physician or surgeon or licentiate, in medicine or surgery or midwifery or a practitioner in medicine, or an apothecary, shall be guilty of an offence under this Act, and shall on summary conviction under the Summary Jurisdiction Acts be liable (1) for the first offence to a penalty not less than ten and not exceeding twenty pounds, and to imprisonment in default of payment of not longer than two calendar months, and (2) for each subsequent offence to a penalty not less than twenty and not exceeding forty pounds, and to imprisonment in default of payment for not longer than six calendar months.

Clause 31.

Interpretation of Term.—(1) All penalties under this Act shall be recovered summarily, and all proceedings against any person for an offence under this Act shall be taken under the Summary Jurisdiction Acts.

(2) Proceedings under this Act against any person for offences under this Act may be taken by the General Medical Council, or by a Branch Council, or by a Medical Body or by a private person.

(3) In the application of this Act to Scotland the expression "Summary Jurisdiction Acts" means the Summary Jurisdiction (Scotland) Acts.

(4) In the application of this Act to Ireland the expression "Summary Jurisdiction Acts" means the Summary Jurisdiction (Ireland) Acts.

Clause 32.

Application of Penalties.—Any sum or sums of money arising from the conviction or recovery of penalties as aforesaid shall be paid to the Treasurer of the General Council anything to the contrary contained in any other Act passed before the passing of this Act notwithstanding.

Clause 33.

Penalty for False Use of Name of Registered Person.—Any person who shall in selling, dealing in, advertising, publishing, or disposing of any patent or proprietary medicine, falsely use the name or title of any registered medical practitioner or dentist or of such registered medical practitioner or deaths who may be deceased, with reference to such patent or proprietary medicine, shall be liable on summary conviction to a penalty of twenty pounds for each offence, such penalty being payable to the aggrieved person.

Clause 34.

Penalty for Concealment of Identity of Practitioners.—Where any premises, or part thereof, are used in the practice of medicine, surgery, or midwifery, the name or names in full of every person practising from or within such premises shall be affixed to public view on the outside of such premises, and any person so practising, whether as principal, assistant, or deputy, or otherwise, of such practice, who does not so affix his name to public view, or who practises under any name other than that under which he was registered shall be liable on summary conviction to a penalty of twenty pounds for each day such offence is committed.

Clause 35.

Any Person not a British Subject having Obtained his Degree or Diploma may Act as Resident Physician, etc., of any Hospital Exclusively for Foreigners or Occasionally Practise as a Consultant.—Nothing in the said Act shall prevent any person not a British subject, who shall have obtained from any foreign university a degree or diploma of Doctor in Medicine, and who shall have passed the regular examinations entitling him to practise medicine in his own country from being called into the United Kingdom for the purpose of consultation with a registered medical practitioner, and duly acting for the time being as a practitioner registered under this Act, and from being and acting as the resident physician or medical officer of any hospital established exclusively for the relief of foreigners in sickness; provided always that such person is not habitually engaged in medical practice in the United Kingdom, except as such resident physician or medical officer.

Part VII.—*Definitions, Saving Clauses, and Repeal.*

Clause 36.

Definitions.—In this Act, unless the context otherwise requires,

(*a*) The word "person" in Sections 23, 24, and 25 of this Act shall in every instance in which such said word occurs in such said Sections extend to and include a Company or body of persons whether corporate or not corporate.

(*b*) The expressions "medically treating patients" or "practice of medicine, surgery, or midwifery" means the application for fee, gratuity, or remuneration of any art, science, or system which relates to the prevention, cure, or alleviation of the diseases of the human body.

Clause 37.

Saving as to Practice of Existing Practitioners.—This Act shall not increase or diminish the privileges, in respect of his practice, of any person who, on the day preceding the appointed day, is a registered medical practitioner, and such person shall be entitled on and after the said appointed day to practise in pursuance of the qualification possessed by him before the said appointed day, in medicine, surgery, and midwifery, or any of them, or any branch of medicine or surgery according as he was entitled to practise the same before the said appointed day, but not further or otherwise.

Clause 38.

Saving as to Local Law.—Any person who at the time of the repeal of any enactment repealed by this Act was, in pursuance of such enactment, legally entitled to practise as a medical practitioner in any colony or part of His Majesty's dominions other than the United Kingdom, shall after the date of such repeal continue to be so entitled as he would have been entitled if no such repeal had taken place.

Clause 39.

Nothing in this Act shall apply to midwives.

Clause 40.

Commencement.—This Act shall commence and come into operation on the day of , which date is in this Act referred to as the commencement of this Act.

Clause 41.

Short Title, Citation, and Interpretation.—(1) This Act may be cited as the Medical Acts Amendment Act, 1903, and shall be construed as one with the Medical Acts.

(2) In this Act the expression "the Acts" shall, unless the context otherwise requires, mean and include the Medical Acts, the Dentists Act, 1878, the Midwives Act, 1902, and any Acts amending those Acts.

Repeal.

The Acts mentioned in the first part of the Schedule to this Act are hereby repealed to the extent mentioned in the third column of the said part: and the Acts mentioned in the second part of the said Schedule shall be repealed on and after the appointed day to the extent mentioned in the third column of the said last mentioned part: provided that the repeal enacted by this Section shall not affect anything done or suffered, or any right or title acquired or accrued before such repeal takes effect, ar any remedy, penalty, or proceeding in respect thereof.

The Schedule.

First Part.

Sec. VI.	Section 10.
[illegible]	Section 11.
	Section 13.
	Section 44, the words "And Branch Councils" throughout the Section.

Second Part.

VACCINATION ACTS.

The following six resolutions, prepared by the Public Health Committee and Medico-Political Committee in conference, indicating the measures for the improvement of the existing Vaccination Acts which the Council has urged on the attention of the President of the Local Government Board were adopted by the Council of the British Medical Association on January 21st, 1903. These resolutions have also been before the Representative Meeting, which, like the Council, decided that they should go to the Divisions for their report.

(1) That Revaccination be made compulsory by law, and that it be performed between the ages of 10 and 13 years;

(2) That both Primary Vaccination and Revaccination be subject to the same provisions for conscientious objection as in the present Vaccination Act, but that the procedure for exemption should be more strictly defined in any future legislation;

(3) That the Vaccination Act should be administered directly by a Department of the Local Government Board;

(4) That in future Vaccination legislation no certificate of successful vaccination should be accepted unless it contain a statement as to the number and area of the vesicles produced;

(5) That all lymph shall be supplied by the Government, or by private establishments under Government supervision and guarantee;

(6) That every private practitioner furnishing the vaccination authority with certificates of successful and efficient vaccination, satisfying a standard fixed by the Local Government Board, should receive a suitable fee for each such certificate.

REPRESENTATION ON THE GENERAL MEDICAL COUNCIL.

The following resolution was passed by the Representative Meeting at Swansea, to be referred to the Divisions for consideration:

That a petition be presented to the Privy Council praying that in any future legislation the British Medical Association be directly represented on the General Medical Council in proportion to its magnitude and representative character.

CENTRAL MIDWIVES BOARD.

The following Order was passed at the Council Chamber, Whitehall, on the 12th day of August, 1903, by the Lords of His Majesty's Most Honourable Privy Council.

Present:

Lord President	Mr. Akers-Douglas
Lord Balfour of Burleigh	Mr. Walter Long
Lord Lister.	

Whereas there were this day read at the Board certain Rules, framed by the Central Midwives Board in pursuance of Section 3 of the Midwives Act, 1902:

And whereas it is provided by the said Act that Rules so framed shall be valid only if approved by the Privy Council.

NOW, THEREFORE, their Lordships, having taken into consideration the said Rules, together with a representation of the General Medical Council with respect thereto, are pleased to approve the same as set forth in the Schedule hereunto annexed for the period of three years. A. W. FITZROY.

The following is the schedule referred to in the foregoing order.

CENTRAL MIDWIVES BOARD.

Rules framed under Section 3 1 of the Midwives Act, 1902 (2 Edw. 7, c. 17).

A.—REGULATING THE PROCEEDINGS OF THE BOARD.

1. *Chairman.*—The Chairman shall be elected by ballot at the first meeting of the Board in the month of April in each year, and shall hold office until the first meeting in the month of April in the year following.

2. *Hon. Treasurer.*—An Honorary Treasurer may be elected by ballot from among the members of the Board at their first meeting in the month of April in each year, and if appointed shall hold office until the first meeting in the month of April in the year following.

3. *Casual Vacancies.*—Should the office of Chairman fall vacant during the year, it shall be filled by election at the next meeting of the Board, and the member so elected shall hold office for the remainder of the year for which his predecessor was elected. A vacancy in the office of Honorary Treasurer shall be filled in the same manner, should the Board so determine.

4. *Meetings.*—The Board shall meet in the last Thursday in each month, unless otherwise decided at the previous meeting, and at such other times as may be necessary. The Chairman may at any time convene a meeting of the Board, and the Secretary shall convene a meeting if required to do so by any three members of the Board by writing under their hands.

5. *Notice.*—Not less than four days' notice of any meeting shall be given to each member of the Board, directed to such address as he or she may from time to time furnish to the Secretary.

6. *Quorum.*—The quorum of the Board shall be four.

7. *Order of Business.*—The order of business shall be as follows:

(1) Minutes of the last meeting. (2) Correspondence. (3) Statement of Accounts. (4) Bills and claims. (5) Reports of Committees. (6) Business directly arising under the Act. (7) Notices of motion. (8) Any other business. (9) Date of next meeting.

Provided that the Board may at any meeting vary the order of business on the ground of urgency or convenience.

8. *Absence of Chairman.*—In the event of the Chairman not being present at any meeting of the Board, the Chair shall be taken by the Honorary Treasurer; and if neither the Honorary Treasurer nor the Chairman be present, the Board shall elect a presiding Chairman for that meeting.

9. *Agenda.*—No business which is not upon the Agenda Paper shall be discussed at any meeting of the Board (except routine business) unless the Chairman shall declare such business to be of an urgent nature, and shall be supported by two-thirds of the members present and voting.

10. *Voting.*—Every question the manner of voting on which is not otherwise specified in these rules, shall be decided on a show of hands by a majority of members present and voting, but any member may call for a division, in which case the names for and against shall be taken down in writing and entered on the Minutes. In the case of an equality of votes the Chairman shall have a second or casting vote.

11. *Motions.*—Every motion or amendment shall be moved and seconded, and shall be reduced to writing and handed to the Chairman (if so required by him), and shall be read, before it is further discussed or put to the meeting.

12. *Notices of Motion.*—Every notice of motion shall be in writing, signed by the member giving the notice, and shall be given or sent to the Secretary of the Board, who shall insert in the Agenda Papers for any meeting of the Board all notices of motion which he may have received prior to the day on which the Agenda Paper is sent out to members, in the order in which they have been received by him.

13. *Rescinding of Resolution.*—No resolution of the Board shall be altered or rescinded at a subsequent meeting except after fourteen days' notice.

14. *Committees.*—Every Committee appointed by the Board shall make a report of its proceedings to the Board, and the recommendations of every Committee shall, as far as practicable, be in the form of resolutions, to be considered by the Board; and the acts and proceedings of every Committee shall be submitted to the Board for approval, unless the resolution of the Board appointing the Committee shall otherwise direct in respect of all or any of the matters referred to it.

15. *Reports.*—Every report from a Committee shall be submitted by the Chairman of the Committee (if present), who shall move that it be received by the Board, and on the motion being carried, the Chairman, or any other member of the Committee may move to agree with the resolutions of the Committee, and such resolutions shall be considered *seriatim.* And the question that the Report (if necessary, as amended) be now approved shall be put from the Chair, but no debate shall be allowed thereon.

16. *Bills and Claims.*—All bills and claims shall be examined by the Secretary, and if allowed by the Board shall be initialled by the presiding Chairman.

17. *Cheques.*—All cheques for the payment of money shall be signed by two members of the Board, and countersigned by the Secretary.

18. *Financial Statement.*—At every Ordinary Meeting of the Board the Secretary shall present a statement in writing showing the receipts and expenditure of the Board, including balances brought forward since the last Ordinary Meeting, and showing the existing balance, if any, to the credit of the Board, and the existing liabilities.

19. *Decision of Chairman.*—The presiding Chairman shall decide upon any point of order or procedure, and his decision shall be final.

B.—REGULATING THE ISSUE OF CERTIFICATES AND THE CONDITIONS OF ADMISSION TO THE ROLL OF MIDWIVES.

1. Candidates must satisfy the Central Midwives Board that they have reached a sufficient standard of general education, and submit the following documents, duly filled in and signed:

(*a*) A certificate of birth showing that the candidate is not under twenty-one years of age;

(*b*) Certificates to the effect that the candidate has undergone the training set forth in C 1 (1) (2) and (3);

(*c*) A certificate of good moral character. This certificate must be in the form prescribed by the Central Midwives Board. The person signing must state in the certificate that he or she has known the candidate for at least twelve months, and must append to his or her signature a statement of his or her calling or position. (Schedule, Form I.)

2. Candidates must pass an examination as hereinafter set forth. (See C below.)

3. A candidate who has complied with the above requirements and has successfully passed the examination shall receive a certificate in the form set out in the Schedule, and her name shall be entered by the Secretary on the Roll of Midwives (Schedule Form II).

4. The names of all women admitted to the Roll of Midwives under Section 6 (1) and (2) of the Midwives Act shall be printed in one single list and in alphabetical order.

C.—REGULATING THE COURSE OF TRAINING AND THE CONDUCT OF EXAMINATIONS, AND THE REMUNERATION OF THE EXAMINERS.

1. No person shall be admitted to an examination unless she produces certificates that she has undergone the following course of training, namely:

(1) She must have, under supervision satisfactory to the Central Midwives Board, attended and watched the progress of not fewer than twenty labours, making abdominal and vaginal examinations during the course of labour and personally delivering the patient. (Schedule, Form III).

(2) She must have to the satisfaction of the person certifying nursed twenty lying-in women during the ten days following labour. (Schedule, Form IV.)

The certificates as to (1) and (2) must be in the form prescribed by the Central Midwives Board, and must be filled up and signed either by a registered medical practitioner or by the Chief Midwife or in the absence of such an officer by the matron of an institution recognized by the Board, or in the case of a Poor-law institution by the matron being a Midwife certified under the Midwives Act or a superintendent nurse certified in like manner and appointed under the Nursing in Workhouse Order 1897 and attached to such an institution or by a Midwife certified under the Midwives Act and approved by the Board for the purpose.

(3) She must have attended a sufficient course of instruction in the subjects named below. (See Section 4 C.)

No period of less than three months shall be deemed sufficient for the purpose.

The above certificate (3) must be in the form prescribed by the Central Midwives Board, and must be filled up and signed by a registered medical practitioner recognized by the Board as a teacher. (Schedule, Form V.)

2. Candidates who intend to present themselves for examination must send notice to the Secretary of the

Central Midwives Board at least three weeks before the date fixed for the examination to commence, accompanied by the certificates mentioned in B 1 and C 1, and by the payment of the fee of one guinea, or, in the event of the candidate having presented herself on a former occasion and having failed to pass, the fee of fifteen shillings.

3. Any candidate who during the examination shows a want of acquaintance with the ordinary subjects of elementary education may be rejected on that ground alone.

4. The examination shall be partly oral and practical, and partly written, and shall embrace the following subjects:

(*a*) The elementary anatomy of the female pelvis and generative organs.
(*b*) Pregnancy and its principal complications, including abortion.
(*c*) The symptoms, mechanism, course, and management of natural labour.
(*d*) The signs that a labour is abnormal.
(*e*) Haemorrhage: its varieties and the treatment of each.
(*f*) Antiseptics in midwifery, and the way to prepare and use them.
(*g*) The management of the puerperal patient, including the use of the clinical thermometer and of the catheter.
(*h*) The management (including the feeding) of infants, and the signs of the important diseases which may develop during the first ten days.
(*i*) The duties of a midwife as described in the regulations.
(*j*) Obstetric emergencies, and how the midwife should deal with them until the arrival of a doctor. This will include some knowledge of the drugs commonly needed in such cases, and of the mode of their administration (see E. 16).
(*k*) Puerperal fever, its nature, causes and symptoms. The elements of house sanitation. The disinfection of person, clothing and appliances.

5. Due notice shall be given of the examinations to be held under the Act.

6. The remuneration of the Examiners shall be such as may from time to time be recommended by the Central Midwives Board and approved by the Privy Council.

D.—Regulating the Admission to the Roll of Women already in Practice as Midwives at the Passing of the Act.

1. Applications for admission to the Roll of Midwives under Section 2 of the Midwives Act must be made on the prescribed forms (Schedule, Forms VI, VIII), and must be forwarded to the Central Midwives Board together such one or more of the following certificates as may be required.

2. In the case of women claiming admission on the ground of having obtained a Certificate in Midwifery from the Royal College of Physicians of Ireland, the Obstetrical Society of London, and Coombe Lying-in Hospital and Guinness's Dispensary, or the Rotunda Hospital for the Relief of the Poor Lying-in Women of Dublin, (*a*) either the original certificate upon which the application is based, or in the event of the original certificate having been lost, a voucher from the accredited Secretary or other agent of the certifying body to the effect that a certificate was granted to the applicant on such and such a date; and (*b*) a certificate signed by a Justice of the Peace, minister of religion, or registered medical practitioner, or the Secretary of an Institution (approved by the Central Midwives Board) of which the applicant is a member, or is or was an employée, stating that the applicant is the person to whom the aforementioned Certificate in Midwifery was granted. The Secretary of the Board shall, by comparison of the handwriting, or by such inquiry as he may think necessary, satisfy himself as far as possible of the applicant's identity. The application must be accompanied by the fee of ten shillings.

3. In the case of women claiming admission on the ground of having obtained a Certificate in Midwifery from any institution or examining body other than those specified in Section 2 of the Midwives Act, the certificate on which the application is based, together with satisfactory evidence, in the form peseribed by the Central Midwives Board (Schedule, Form VII), to the effect that before the certificate was granted the applicant had received a proper course of instruction and training (including personal attendance, under competent supervision, upon at least twenty cases during and after labour), and had passed an examination in Midwifery and the duties of a Midwife, and that the institution or examining body by which the certificate was granted considers the applicant at the present time to be a proper person to be admitted to the Midwives Roll. The application must be accompanied by a fee of ten shillings.

The applicant may be required to furnish other documents or particulars to enable the Board to decide whether the application can be granted.

4. In the case of women claiming admission on the ground of having been in *bonâ fide* practice as Midwives for twelve months previous to the 31st July, 1902, a certificate to the effect that the applicant has to the personal knowledge of the person signing been in *bonâ fide* practice as a midwife, for at least twelve months prior to the 31st July, 1902, and that she is trustworthy, sober, and of good moral character. This certificate must be in the form given in the Schedule (Form IX), must be signed by a Justice of the Peace, Minister of Religion, registered medical practitioner, or other person acceptable to the Board, and must be accompanied by the fee of ten shillings.

5. The certificates to be issued by the Board under this section will be in the prescribed Forms (Schedule, Forms X, XI).

Note.—No application for admission to the Roll of Midwives under Section 2 of the Midwives Act, 1902, can be received after the 31st day of March, 1905.

E. Regulating, Supervising, and Restricting within Due Limits the Practice of Midwives.

Direction to Midwives.

1. The midwife must be scrupulously clean in every way, because the smallest particle of decomposing matter may set up puerperal fever.

She must wear a dress of washable material, and over it a clean washable apron.

Note.—It is best to have the sleeves of the dress made so that the midwife can tuck them well up above the elbows.

A midwife who is attending a case in which there are foul-smelling discharges must not go direct to another case without first changing her dress and thoroughly cleansing and disinfecting her hands and forearms and such appliances (2 (*a*) below) as she may have had occasion to use and is obliged to take with her.

Note.—Unless the cleansing process be thoroughly carried out there will be, even after a healthy confinement, remains of blood, lochia, or liquor amnii on the fingers, and especially under the nails, which will there undergo decomposition, and so become dangerous to the next patient attended. The midwife must, therefore, keep her nails cut short, and preserve the skin of her hands as far as possible from chaps and other injuries.

2. When called to a confinement a midwife must take with her:

(*a*) An appliance for giving vaginal injections, an appliance for giving enemata, a catheter, a pair of scissors, a clinical thermometer, and a nail brush.
(*b*) An efficient antiseptic for disinfecting the hands, etc.
(*c*) An antiseptic for douching in special cases.
(*d*) An antiseptic lubricant for smearing the fingers, catheters, douche nozzles, and enema nozzles before they touch the patient.

3. On each occasion of touching the genital organs or their neighbourhood the midwife must previously disinfect her arms and forearms.

4. All instruments and other appliances brought into contact with the patient's generative organs must be properly disinfected.

5. Whenever a midwife has been in attendance upon a patient suffering from puerperal fever, or from any other illness supposed to be infectious, she must disinfect herself and all her instruments and other appjiances, to the satisfaction of the local sanitary authority, and must have her clothing thoroughly disinfected before going to another labour. Unless otherwise directed by the local supervising authority, all washable clothing should be boiled, and other clothing should be sent to be stoved (by the local sanitary authority), and then exposed freely to the open air for several days.

Duties to Patient.

6. If a midwife has charge of a lying-in case she must not leave the patient after the commencement of the Second Stage, and she must stay with the woman until the expulsion of the afterbirth, and as long after as may be necessary. In cases where a doctor has been sent for on account of the labour being abnormal or of there being threatened danger, she must await his arrival and faithfully carry out his instructions. (See Clauses 12 and 17 below.)

7. Before making the first internal examination, and always before passing a catheter, the midwife must wash the patient's external parts with soap and water, and then swab them with an antiseptic solution. For this purpose, and for washing the external parts immediately after labour and during the lying-in, on no account must ordinary sponges or flannels be used, but material which can be boiled before use and thrown away afterwards, such as linen, cotton wool, cotton waste, tow, etc.

8. No more internal examinations should be made than are absolutely necessary.

9. On the birth of a child which is in danger of death, the midwife shall inform one of the parents of the child's condition.

10. The midwife must remove soiled linen, blood, faeces, urine, and the placenta from the neighbourhood of the patient and from the lying-in room as soon as possible after the labour and in every case before she leaves the patient's house.

11. The midwife shall be responsible for the cleanliness, and shall give full directions for securing the comfort and proper dieting, of the mother and child during the lying-in period, which shall be held, for the purpose of these regulations and in a normal case, to mean the time occupied by the labour, and a period of ten days thereafter. (See Clause 17 (*c*).)

12. A "case of normal labour" in these regulations shall mean a labour in which there are none of the conditions specified in Clause 17 below.

DUTIES TO CHILD.

13. In the case of a child being born apparently dead, the midwife should carry out the methods of resuscitation which have been taught her.

14. As soon as the child's head is born, and if possible before the eyes are opened, its eyelids should be carefully cleansed with a suitable antiseptic lotion.

GENERAL.

15. No midwife shall undertake the duty of laying out the dead, or follow any occupation that is in its nature liable to be a source of infection.

16. A midwife must enter in a book, with other notes of the case, all occasions on which she is under the necessity of administering any drug, whether scheduled as a poison or not, the dose, and the time and cause of its administration.

17. In all cases of abortion, of illness of the patient or child, or of any abnormality occurring during pregnancy, labour, or lying-in, a midwife must decline to attend alone, and must advise that a registered medical practitioner be sent for, as, for example, under the following circumstances:

(*a*) In the case of a pregnant woman:

(1) When she suspects a deformed pelvis;

(2) When there is loss of blood;

(3) When the pregnancy presents any other unusual feature (as, for example, excessive sickness, persistent headache, dimness of vision, puffiness of face and hands, difficulty in emptying the bladder, incontinence of urine, large varicose veins, rupture), or when it is complicated by fever or any other serious condition.

(*b*) In the case of a woman in labour:

(1) In all presentations other than the uncomplicated vertex or breech; in all cases of breech presentation in primiparae; in all cases of flooding and convulsions; and also whenever there appears to be insufficient room for the child to pass, or when a tumour is felt in any part of the mother's passages.

(2) If the midwife when the cervix has become dilated is unable to make out the presentation.

(3) If there is loss of blood in excess of what is natural, at whatever time of the labour it may occur.

(4) If an hour after the birth of the child the placenta has not been expelled, and cannot be expressed (that is, pressed out), even if no bleeding has occurred.

(5) In cases of rupture of the perineum, or other serious injury of the soft parts.

(*c*) In the case of lying-in women, and in the case of newly-born children:

Whenever, after delivery, the progress of the woman or child is not satisfactory, but in all events upon the occurrence of the subjoined conditions in—

(I) *The Mother:* (1) Abdominal swelling and signs of insufficient contraction of the uterus. (2) Foul-smelling discharges. (3) Second *post-partum* haemorrhage. (4) Rigor. (5) Rise of temperature above 100.4° F. with quickening of the pulse for more than twenty-four hours. (6) Unusual swelling of the breasts with local tenderness or pain.

(II) *The Child:* (1) Injuries received during birth. (2) Obvious malformations or deformities, not inconsistent with continued existence. (3) Concealed malformations: incapacity to suck or take nourishment. (4) Inflammation to even the slightest degree of the eyes, eyelids, and ears. (5) Syphilitic appearance of the skin in certain parts. (6) Illness or feebleness arising from prematurity. (7) Malignant jaundice (icterus neonatorum). (8) Inflammation about the umbilicus (septic infection of the cord).

(*d*) In all cases of the death of a woman during pregnancy, labour, or lying-in.

When a registered medical practitioner is sent for, the midwife must state in writing the condition of the patient and the reason of the necessity for medical advice, in accordance with Clause 19 (*b* below).

18. NOTIFICATION.

(1) *Deaths.*—In all cases in which the death of the mother or of the child occurs before the attendance of a registered medical practitioner the midwife shall, as soon as possible after the death, notify the same to the local supervising authority.

(2) *Stillbirths.*—In all cases where a registered medical practitioner is not in attendance the midwife shall, as soon as possible after the occurrence of a stillbirth, notify the same to the local supervising authority.

A child is deemed to be stillborn when it has not breathed or shown any sign of life after being completely born.

(3) *Puerperal Fever and other Infectious Diseases.*—These cases are included in the notice required when medical help is sent for. (See 19 (*b*) below.)

19. A midwife shall keep the following records:

(*a*) A register of cases, in the following form:

No.
Date of engagement to attend
Name and address
No. of previous labours and miscarriages.
Age
Date and hour of Midwife's arrival
Presentation
Duration of 1st, 2nd, 3rd stage of labour
Complications (if any) during or after labour.
Sex of infant. Born living or dead.
Full time or premature. No. of months.
If doctor called. Name of doctor.
Date of midwife's last visit
Condition of mother then (see Clause 11, above).
Condition of child then
Remarks*

* If any drugs have been administered state here their nature and dose, and the time and purpose of their administration.

(*b*) A record of sending for medical help, in the following form:

No. Date
Name of patient
Address
requires medical assistance at once on account of
Signed (Certified Midwife)
Sent to (doctor)
at (address)
Time of sending message

The midwife shall make two copies of the above (*b*) by means of transfer paper or otherwise; she shall preserve one of these copies for herself, and shall send the other by post to the local supervising authority within twelve hours. (See clause 18 (3), above.)

The Midwife is also Recommended to Keep a Case Book with Fuller Details.

20. The supervising authority shall make arrangements to secure a proper inspection of every midwife's case book, bag of appliances, etc., and, when thought necessary, an inspection of her place of residence, and an investigation of her mode of practice.

21. Nothing in this section (E) shall apply to certified midwives exercising their calling in Hospitals, Workhouses, or Poor-law Infirmaries under the supervision of a duly-appointed medical officer.

F.—DECIDING THE CONDITIONS UNDER WHICH MIDWIVES MAY BE SUSPENDED FROM PRACTICE.

In carrying out Section 8 (3) of the Midwives Act it shall be the duty of the local supervizing authority to suspend a Midwife from practice who contravenes the directions for the use of disinfectants and for the employment of proper safeguards against the spread of infection and any other rules for the purpose laid down by the Central Midwives Board, and in the exercise of that duty the local supervising authority shall, after communicating their decision in writing to the Midwife concerned, at once report any suspension (with the grounds thereof) to the Central Midwives Board.

G.—DEFINING THE PARTICULARS TO BE GIVEN IN ANY NOTICE UNDER SECTION TEN OF THE ACT.

The particulars required to be given in any notice under Section 10 of the Midwives Act, 1902, shall be as follows:

1. The number and date of the certificate granted by the Central Midwives Board to the person giving the notice.
2. Her Christian name and surname in full, and if married since the grant of her certificate, the name under which it was granted to her.
3. Her usual place of residence, and if she carries on her practice elsewhere the address also where she practises.
4. If she practises or acts as a midwife outside the area within which she usually resides or carries on her practice, the date and address at which she commenced to practise or pursue her calling without such area.
5. The notice shall be in the prescribed form (Schedule, Form XII).

In an Appendix examples of the various forms and certificates required under the Rules are given.

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SUPPLEMENT

TO THE

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GENERAL COUNCIL
OF
MEDICAL EDUCATION AND REGISTRATION.

WINTER SESSION, 1903.

REPORTS OF PROCEEDINGS.

Tuesday, November 24th, 1903.

Sir WILLIAM TURNER, K.C.B., President, in the Chair.

REPRESENTATIVE OF THE ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

SIR JOHN WILLIAM MOORE was introduced to the Council by Dr. LITTLE, as successor to Dr. Atthill in the representation of the Royal College of Physicians of Ireland.

PRESIDENT'S ADDRESS.

The PRESIDENT delivered the address, which was published in full in the BRITISH MEDICAL JOURNAL of November 28th, page 1425, and a vote of thanks to him was adopted.

EXAMINATIONS FOR THE MEDICAL SERVICES.

The REGISTRAR brought up tables supplied by the Directors-General of the Medical Department of the Royal Navy and of the Army, and by the Under-Secretary of State for India, showing the results of recent examinations for the medical services, and a resolution thanking those officials, and requesting that the returns might in future continue to be furnished to the Council, was adopted. The following is an analysis of these tables:

TABLE I.—*Showing the Extent of the Competition for each Service.*

Services.	No. of Examinations.	No. of Vacancies.	No. of Candidates.	Amount of Competition.
Royal Naval Medical Service	1	15	22	3 candidates for every 2 posts
Indian Medical Service ..	1	16	41	5 ,, ,, 2 ,,
Royal Army Medical Corps	3	91	162	9 ,, ,, 5 ,,
Totals	5	122	225	

TABLE II.—*Showing whence the Candidates Received their Qualifications.*

Licensing Body.	Total Number of Candidates.	Proportion of Entire Candidates.
English Colleges and Universities..	104	46 per cent.
Scotch ,, ,, ,, ...	60	27 ,,
Irish ,, ,, ,, ...	58	26 ,,
Malta University	3	
Total	22	

TABLE III.—*Showing the Proportion of the Vacancies Filled by the Candidates of each Country.*

Country.	Number of Successful Candidates.	Proportion of all Vacancies.
England	77	63 per cent.
Scotland	25	20 ,, ,,
Ireland	19	15 ,, ,,
Malta	1	—
Total	122	

TABLE IV.—*Showing the Relative Success of the Candidates of each Country in Proportion to their Respective Numbers.*

Country.	No. of Candidates.	No. Successful.	Proportion of Success to Candidates.
England	104	77	5 out of every 9 candidates.
Scotland	60	25	5 ,, ,, 12 ,,
Ireland	58	19	5 ,, ,, 15 ,,
Malta	3	1	
Totals ...	225	122	

TABLE V.—*Showing the Qualifications Held by the Candidates.*

English Candidates.		Scotch Candidates.		Irish Candidates.	
Conjoint Colleges alone	70	Conjoint Colleges alone	25	Irish Colleges ...	26
Conjoint and English Degrees	11	Scotch Degrees alone	33	Irish Degrees ...	32
Apothecaries' Society alone	8	Scotch and English Diplomas ...	2		
Apothecaries' Society and English Degrees	1				
English Degrees alone	14				
Total	104	Total	60	Total	58

TABLE VI.—*Showing the Percentage of Candidates who Passed the Qualifying Standard, including those who Gained Appointments.*

Countries.	No. who Passed the Standard.	Proportion to the Total.
English candidates	97	93 per cent.
Scotch ,, ...	45	75 ,,
Irish ,, ...	47	81 ,,
Maltese ,, ...	3	—
Total	192	Total percentage of men who qualified 85 per cent.

TABLE VII.—*Showing the Men who Failed Totally among the Candidates of each Country.*

Countries.	No. of Candidates.	Proportion who Failed Totally "Rejected."
English candidates..	104	7 per cent.
Scotch ,, ...	60	23 ,,
Irish ,, ...	58	21 ,,
Maltese ,, ...	3	—
Totals	225	Proportion of all rejected 14.7 per cent.

PROPOSED LEAVING SCHOOL EXAMINATION.

The following letter was directed to be entered upon the minutes:—

Board of Education, South Kensington,
London, S.W.,
October 27th, 1903.

Consultative Committee.

SIR,—I am directed to invite the General Council of Medical Education and Registration to send one or two representatives to a Conference with the Consultative Committee on Friday, December 4th. The Conference will be held at the Offices of the Board of Education, South Kensington, at 11.15 a.m., and representatives of other professional bodies have also been invited to attend.

The following is the question on which the Committee would wish to confer:

Whether it is desirable and feasible to institute for Secondary Schools in this country (excluding for the present Wales and Monmouth) a general system of leaving examinations of such a nature as to be acceptable in lieu of the preliminary examinations now required for admission to the various professional bodies.

The Committee have themselves carefully considered the question; they have already conferred with representatives of the Universities and of the teaching profession on the subject, and have gone so far as to draw up a preliminary plan indicating the principles upon which such a system might be framed to suit existing conditions. It is this plan that they would propose to explain and discuss at the Conference. They would prefer not to submit the plan in its still tentative form to the Council at present. After they have had an opportunity of further hearing the views of those who are interested, they hope then to be in a condition to prepare a more definite project, but to present a scheme which at the present stage is necessarily immature would be liable to lead to misapprehension. The Committee would, however, propose, when the names of representatives who will attend are communicated to them, to forward to each one informally a copy of their preliminary plan as a general outline of their ideas, and to serve as a basis for discussion.

As the result of recent discussions, some modifications are contemplated in the Committee's original scheme. They will not, therefore, be in a position to send copies to representatives until it has undergone a revision at their next meeting on October 29th.

They think, however, that it will be convenient to the Council to receive an early invitation to send representatives to the proposed conference, and will forward the paper in question to representatives at as early a date as possible after the day named.

The Board of Education, in consenting to the arrangements for the Conference, have particularly stipulated that their attitude towards it should be clearly explained at the time of sending out the invitations.

They will be ready carefully to consider any scheme put before them, with any accompanying observations, by the Consultative Committee, but they cannot engage themselves to take action if action is suggested, and they must not be regarded as committed to anything in the nature of an endorsement of the proposals of the Committee. In fact, they must view the question not only on its merits, but in connexion with their general educational policy. They are fully sensible of the injurious effect upon Secondary Education of the present multiplicity of examinations, and they have little doubt that a discussion between the Consultative Committee and the various bodies concerned will lead to useful results.

I am, Sir,
Your obedient servant,
A. R. GUEST,
Secretary to the Consultative Committee.

The Registrar,
General Council of Medical Education and Registration.

Dr. PAYNE moved:

That in response to the invitation of the Consultative Committee, the Council do appoint two representatives to attend the Conference proposed in the foregoing communication.

He thought the Council would regard this with greater favour because the scheme virtually originated with it, and he also proposed that the Chairman of the Education Committee (Sir John Batty Tuke) and Dr. MacAlister be appointed the Council's representatives to attend the Conference.

Dr. NORMAN MOORE seconded, and it was agreed to.

ADJOURNMENT.

The Council adjourned at 4 p.m. to enable certain Committees to meet for the completion of their reports.

Wednesday, November 25th, 1903.

Sir WILLIAM TURNER, K.C.B., President, in the Chair.

DISCIPLINARY CASES.

Case of Dr. William George Niall.

THE Council proceeded to the resumed consideration of the case, adjourned from May 28th, 1903, of Dr. William George Niall, registered as of Kinkora, Dabdune Crescent, Guildford, M.D., Mast. Surg. 1886, R. Univ. Irel., who had been summoned to appear before the Council to answer a charge formulated by the Council's solicitor.

Dr. Niall attended in answer to his notice, accompanied by Mr. A. H. Bodkin, his counsel, instructed by Mr. E. Kempson, solicitor. Dr. Bateman attended on behalf of the Medical Defence Union, the complainants, together with Mr. Hempson, the solicitor to the Medical Defence Union.

Strangers having by direction of the Council withdrawn, the Council resumed the consideration of the case *in camerâ*. Strangers having been readmitted, the President announced the decision of the Council as follows:

Dr. Niall, the Council, after deliberation, has resolved that the facts alleged against you in the notice of inquiry have not been proved to its satisfaction.

The Council then adjourned.

Thursday, November 26th, 1903.

Sir William Turner, K.C.B., President, in the Chair.

The Royal Colleges in England.

Sir Victor Horsley inquired of the President when it was likely that the communications from the Royal College of Physicians of London and the Royal College of Surgeons of England would come before the Council. He thought these were matters of fundamental importance, and he suggested that they should be put first on the programme for Saturday.

The President said this should be done.

Sir Victor Horsley said that he would give notice of a motion with regard to these matters.

Dental Business.

The Executive Committee presented a report upon dental business transacted since the last session of the Council. The Committee's report contained the statement that it had received from the Foreign Office and the Privy Council Office respectively information with regard to the position of British dentists in the German Empire and in the Netherlands.

The Committee referred to the Council an application from Mr. J. E. Bush, of Melksham, Wilts, for the reconsideration of his application for registration as a dentist under Section xxxvii of the Dentists Act.

Mr. Tomes said that the point before the Council was whether they should reopen registration under the discretionary powers given in the latter part of Clause 37 of the Dentists Act, 1878, which dealt with the case of dentists in practice before the passing of the Act, and their apprentices. He then explained in detail the course pursued by the Council in administering the section, the advice they had received from their legal advisers, and the effect of the judgement of Mr. Justice Hawkins and Mr. Justice Wright in the Spero case. In that case it was held that persons already in practice at the time of the passing of the Act must notify the Registrar before August 1st, 1879—that was to say, that they had a year of grace in which to notify the Registrar; and, if they did not do so, they ceased to be of right entitled to registration. In the present case the apprenticeship of Mr. Bush expired three weeks after this date. He had practised as a chemist for the period since the passing of the Dentists Act, and so lately as 1889 he passed the minor examination of the Pharmaceutical Society, and became registered as a chemist and druggist. In 1896 the Executive Committee recommended his registration, but the Council after going into the matter refused to register him. Mr. Tomes, continuing, said that it seemed to him, when the Council was asked not to abide by its resolution, very strong reasons should be shown, and he thought in the present case those reasons did not exist. It was true that Mr. Bush did not claim registration as of right, but asked the Council to register him under their discretion. Under all the circumstances, he moved that Mr. Bush's application be not acceded to.

Dr. MacAlister seconded, and the motion was agreed to.

Proceedings in Camera.

The Council then went into camera.

On readmission no announcement was made by the President.

Disciplinary Cases.

Case of Allan Douglas Cameron.

The Council then considered the case of Allan Douglas Cameron, registered as of Durban, Natal, with the Triple Qualification of Scotland, 1899, summoned to appear before the Council to answer the following charge, as formulated by the Council's solicitor:

That you abused your position as a medical man by committing adultery with a patient, namely, Mrs. Tothill, a married woman whom you had been attending professionally, of which adultery you were found guilty by the decree of the Probate, Divorce, and Admiralty Division (Divorce) of the High Court of Justice, dated July 28th, 1903, in the case of Tothill *v.* Tothill and Cameron, in which you were the co-respondent.

Mr. Muir Mackenzie appeared as legal assessor, Mr. Winterbotham appeared as solicitor to the Council, Mr. L. Fawcus, solicitor, appeared for the complainant, Mr. Charles Tothill, Dr. Cameron did not appear, and was not represented.

Mr. Fawcus read the declaration of Mr. Charles Tothill in support of the charge, and tendered a certified transcript of the shorthand notes of the proceedings in the Divorce Court.

Mr. John Tothill, examined by Mr. Fawcus, said he was a brother of the complainant, whose wife came to England from Durban on the advice of Dr. Cameron. She arrived here in September, 1901, and about a month later Dr. Cameron followed her. He was introduced to Mr. and Mrs. Tothill, senior, and himself by Mrs. Charles Tothill, as her medical adviser, and frequently visited them as such. Subsequently Dr. Cameron started a practice in England, and she went and resided in the same district.

Strangers were directed to withdraw. On readmission,

The President said: The Council has deliberated on this case, and they do now adjudge Allan Douglas Cameron to have been guilty of infamous conduct in a professional respect, and they direct the Registrar to erase from the *Register* the name of Allan Douglas Cameron.

Case of Robert Fawcitt Granger.

The Council then considered the case of Robert Fawcitt Granger, registered as of 85, Church Street, Whitby, with the Triple Qualification of Scotland, 1889, who had been summoned to appear before the Council in consequence of his conviction on a charge of unlawfully and wilfully neglecting certain children in his custody, under the ages of 16, named Bertie, Reginald, and Robert Granger, in a manner likely to cause them unnecessary suffering.

Mr. Muir Mackenzie appeared as a legal assessor, Mr. Winterbotham appeared as solicitor to the Council. Dr. Granger appeared in person.

The Solicitor said that the prosecution was originally undertaken by the N.S.P.C.C. The evidence adduced at the police court in support of the allegation was very lengthy, the case lasting two days. He then read extracts from a newspaper report of the proceedings before the magistrate, from which it appeared that the children, although apparently well nourished, were badly clothed, dirty, in a verminous state, that their bedroom, bedding, and bedclothes were in a filthy condition and also verminous, and two doctors had certified that their condition was caused by neglect, and was such as to cause them unnecessary suffering and pain. It was also alleged that Dr. Granger and his wife were addicted to drink, which was the cause of his downfall. The Solicitor submitted that it was clear from the evidence that the children had been neglected.

Dr. Granger, in defence, stated that the action had arisen out of feelings of dislike against himself and his wife in the neighbourhood. It had been grossly exaggerated. He denied that the children were dirty, and contended that he had made a great mistake in not getting a second medical opinion as to their condition before they were removed. He asserted that the statements of many of the witnesses were false, as he could prove if he had the opportunity. He denied that he was addicted to drinking habits, although he admitted on one occasion having had recourse to drink as the result of domestic trouble.

Mr. Geo. Fredetick Watts, in reply to the Solicitor, said he was an officer of the N.S.P.C.C., and had had charge of the case throughout. He was present at the trial, and accompanied the warrant officer who searched Dr. Granger's house, and that officer's statement was perfectly true. The witness himself saw the children, and the evidence at the police-court correctly represented their condition. Dr. Granger and his wife gave evidence on their own behalf before the magistrate, and also called witnesses.

In reply to the President, Dr. Granger said that he had not tasted spirits this year. He was only in the habit of taking two or three glasses of ale a day; but if he thought that would interfere with his practice or would in any way be a drawback he would give that up as well. His present position had arisen entirely through his impecuniosity.

Strangers were directed to withdraw. On readmission,

The President, addressing Dr. Granger, said: The Council has had to summon you in connexion with a conviction, and I think you know perfectly well what it was that led to your being convicted; that your habits were such that they have reduced you to the state of absolute impecuniosity described to us. The Council has very carefully considered your case, and it is willing to give you an opportunity of redeeming yourself. In order to do that, I should say to you now as an individual that there is only one course open to you: that is, to cease to take alcoholic drink of all kinds. The Council has resolved to give you this opportunity of redeeming yourself, and you will have to appear when the Council meets in May and produce satisfactory evidence in the way of certificates from persons whose word can be relied on that you have ceased the bad habits that you have been indulging in, and then the Council will be prepared to say whether they will

allow your name to be retained on the *Medical Register*. We give you six months' probation.

Case of David Barnett Bradlaw, L.R.C.P.& S.I.

The Council then resumed consideration of the facts proved against David Barnett Bradlaw, L.R.C.P.and S.I., as to which at its meeting on May 28th the Council found it proved that the accused had associated himself in dental practice with his brother, Henry Jacob Bradlaw, a dental practitioner of 4, Harrington Street, Dublin, and had carried on a dental practice at 146, Inverness Terrace, Bayswater, in the brother's name, and had personated him, and further that the dental practice so carried on was extensively advertised by pamphlets and in newspapers and otherwise. The Council in May[1] adjourned the further consideration of the charge informing Dr. Bradlaw that he would be required to appear again and satisfy the Council as to his conduct in the interval.

Mr. Muir Mackenzie appeared as legal assessor, Mr. Winterbotham appeared as solicitor to the Council, Mr. Turner appeared for the British Dental Association. Dr. Bradlaw appeared in person, and read the following letter which he had sent to the solicitor to the Council:

Dear Sir,—In reply to your letter of inquiry of October 23rd, I beg leave to notify you for the information of the General Medical Council that since May last my brother, Mr. H. J. Bradlaw, has ceased to practise at above address. I also desire to state that I conduct my work in accordance with the best traditions of the profession.—Yours faithfully,

DAVID B. BRADLAW.

In reply to the PRESIDENT, Mr. TURNER said that so far as the exterior of Dr. Bradlaw's premises was concerned there was no evidence of the work being carried on both by Dr. Bradlaw and his brother, and he had every reason to believe that the objectionable advertisements complained of had ceased to appear. Mr. Bradlaw had practically carried out the undertaking which he gave to the Council last May.

Strangers were directed to withdraw. On readmission,

The PRESIDENT, addressing Dr. Bradlaw, said the Council had considered his case, and having regard to the facts proved against him did not judge him guilty of conduct infamous in a professional respect.

Case of Louis Edward Delmege.

The Council then considered the case of Louis Edward Delmege, registered as of Fern Bank, Burton, Westmorland, Lic. R. Coll. Surg. Irel. 1877, Lic. R. Coll. Phys. Edin. 1879, who had been summoned to appear before the Council in consequence of his conviction before the Interim Sheriff Substitute of Lanarkshire on September 13th, 1903, on a charge the nature of which appears from the statement of Mr. Shaw below.

Mr. Muir Mackenzie appeared as legal assessor, Mr. Winterbotham as solicitor to the Council; and Mr. Shaw solicitor for Dr. Delmege.

The SOLICITOR read the notice of the charge, and put in the certificate of conviction.

Mr. SHAW stated that Dr. Delmege was married in Jamaica. Mrs. Delmege was a woman with a most violent temper. She had made Dr. Delmege's life unpleasant in many ways; she had involved him in a libel action which, although he won, had cost him some £1,400; and, among other things, while he was in business at the West Coast of Africa, she had pledged his credit, and played ducks and drakes, so to speak, with the money he left behind, some £600. In March last matters culminated in his separating from her, he supplying her with money. He then went to Madeira, but returned to England on August 11th. On August 13th, through a friend, he tried to negotiate terms of separation with his wife, and a protracted correspondence ensued, which terminated on September 22nd without their coming to terms. Mrs. Delmege then obtained parish relief, with the result that on September 26th Dr. Delmege was arrested on the charge of deserting his wife. At the hearing before the Interim Sheriff-Substitute, although advised to be legally represented, he felt, in face of the correspondence for a settlement, it was unnecessary to go to expense and unfortunately he was convicted. Since his release Dr. Delmege had made arrangements whereby Mrs. Delmege was receiving an allowance which she had been receiving for a considerable time. Mr. Shaw then read the correspondence which took place in endeavouring to negotiate the terms of separation and submitted that it was clear from that that Mrs. Delmege left Dr. Delmege's house of her own accord and that he did not desert as had been alleged. Counsel's opinion had been obtained in Scotland to the effect that there had been a miscarriage of justice, but that it would cost £250 to quash the conviction.

Mr. CARROLL, clerk to Mr. Shaw, proved the correspondence and negotiations as to the terms of separation, and said, in answer to the PRESIDENT, that Dr. Delmege was arrested on a warrant by two Scotch detectives in London and conveyed to Glasgow; there were no police-court proceedings in London.

The PRESIDENT doubted if the action of the detectives was legal in the absence of other proceedings.

Sir JOHN BATTY TUKE said the arrest was absolutely illegal; he had never heard of such a thing before.

Strangers were directed to withdraw. On readmission,

The PRESIDENT said: "Dr. Delmege, after hearing your case the Council has decided not to erase your name from the *Medical Register*."

PROCEEDINGS IN CAMERA.

The Council then went into camera to consider private business, at the conclusion of which it adjourned.

Friday, November 27th, 1903.

Sir WILLIAM TURNER, K.C.B., President, in the Chair.

THE FIRST MEDICAL EXAMINATION OF THE CONJOINT BOARD, SCOTLAND.

MR. BRYANT brought up the report by the Examination Committee on the report by the Visitors of Primary Examinations on the Examination in Chemistry, Physics, and Biology of the Conjoint Examining Board in Scotland, and was proceeding to read the report in full, when

Sir VICTOR HORSLEY suggested that this was unnecessary, as the members of the Council had already read the report. It was only necessary, he thought, to read the summary of what the Examination Committee thought of the report.

Dr. MCVAIL, as a member of the Examination Committee, was of opinion that it was highly necessary to read the whole report, inasmuch as it was the result of a great deal of labour on the part of the Committee.

Sir VICTOR HORSLEY replied that if it was the wish of the members of the Examination Committee, he would withdraw his suggestion.

Mr. BRYANT then read the report, which comprised the following conclusions arrived at by the Visitors:

1. The Examination in Systematic Chemistry, like that in Physics and Biology, was carried out in an efficient, fair, and painstaking manner.

2. The Oral Examination, to which all candidates were subjected, was admirably carried out, and is a most valuable feature of the examination.

3. The standard of the Theoretical Examination is a low one, but the percentage of marks in the Oral Examination is high for a pass, and is a very satisfactory test of the candidates' knowledge.

4. The Practical Examination in Chemistry is hardly worth the name; and, even if it amounted to much more than it does, it is of a kind that is of extremely little value, either as a training for the student's intellectual powers, or as a preliminary to the study of physiology, or as giving him something that will be useful to him in his future career.

These conclusions the Examination Committee endorsed. The Committee regarded the Examination in Practical Chemistry as insufficient. The report was received and entered on the minutes.

THE FIRST MEDICAL EXAMINATION OF THE CONJOINT BOARD, IRELAND.

The report by the Examination Committee on the report of the Visitors on the First Examinations, on the Examination in Chemistry, Physics, and Biology of the Conjoint Examining Board in Ireland, of the Royal College of Physicians of Ireland, and the Royal College of Surgeons in Ireland, was read by Mr. BRYANT, received, and entered on the minutes.

The report contained the following summary of the conclusions arrived at by the Visitors, Dr. Windle and Professor J. Campbell Brown:

BIOLOGY.

By way of summary to this part of the examination, our Visitors report that they "should much like to see a short practical test added to the Examination in Biology," to which the Committee representing the body visited answer "that the absence of the Practical Examination at this stage of the student's course is more than compensated for by the Practical Examinations in Dissecting and Histology at the end of the second year."

PHYSICS AND CHEMISTRY.

1. The Examination in Physics was carried out in an efficient, fair, and painstaking manner, and the arrangements were excellent.

[1] BRITISH MEDICAL JOURNAL, June 6th, 1903, SUPPLEMENT, p. xxxvi.

2. The Examination in Theoretical Chemistry was also carried out in an efficient, fair, and painstaking manner.

3. In both the Oral Examination was a valuable feature, while the written papers received full consideration in the ultimate decision.

4. The standard of the Theoretical Examination was a low one, but the marking was strict except in the poorer papers; and, as a general rule, the percentage of marks in the Oral Examination was high for a pass, and was a satisfactory test of the candidates' knowledge. In the written papers all the questions had to be attempted, and the examiner knew at a glance where the candidates' knowledge fell short.

5. The Practical Examination was very good of its kind, but it was a kind that is of little value, either as a training or as a preliminary to the study of physiology, and it injuriously affects the kind of education which candidates receive.

6. The average work of the candidates betrayed a somewhat superficial attention to the subjects; but in several instances the performance was of a high order, showing good training and ability to profit by that training.

The Examination Committee expressed the opinion that this examination was sufficient.

The First Medical Examinations of the Licensing Corporations of the United Kingdom.

Mr. Bryant, as Chairman of the Examination Committee, then brought up the report of the Examination Committee on the report of the Visitors, Dr. Windle and Professor J. Campbell Brown on the report of the First Medical Examination of the Licensing Corporations of the United Kingdom, excepting the Apothecaries' Hall, Dublin.

Sir Victor Horsley inquired if it was necessary to occupy the time of the Council by reading these reports. The report in question contained nothing but a repetition of the sentences of the Visitors. There was a very important conclusion at the end which he agreed should be read, but there was absolutely nothing in the report that need be read.

The President asked Mr. Bryant whether he agreed to this.

Mr. Bryant thought that it would be a great mistake not to read the whole report.

Sir Victor Horsley said that under those circumstances he would take the vote of the Council upon it; he moved that the report of the Examination Committee in question should be taken as read, with the exception of the last paragraph, which contained the conclusions.

Dr. Bruce seconded.

Dr. McVail hoped that Sir Victor Horsley's motion would not be carried. The opinion of the Examination Committee was that this was a very important document.

The President put Sir Victor Horsley's motion to the Council, when it was declared to be lost.

The report of the Examination Committee on the Visitors' report was then read by Mr. Bryant, but as the report itself was of great importance, and the report of the Examination Committee consisted mainly of extracts from it, we prefer to reproduce the Visitors' report in extenso. Prefixed to the report is a letter dated October 1st from Dr. Windle and Professor Campbell Brown, from which we extract the following paragraph:

We have divided each section of our report into two portions. The first consists of a comparison of the examinations which we have visited, and is in some part a repetition of the reports which we have already presented to the Council, together with certain comparisons which we now make for the first time. The second contains an expression of our own personal opinions as to the place in medical education occupied by the subject, together with suggestions relating to it. We should have hesitated to offer our own opinions upon this point but that we understand that you wish us to lay before you the conclusions which we have formed as the result of the visits which we have made.

Report by the Visitors.

I.—Subjects of Examination and Divisions Thereof.

The subjects included in this examination are the same in all cases, but the way in which they are required to be passed is not always the same. Elementary biology, chemistry, and physics are the sciences which are comprised. In each case a syllabus is laid down for the guidance of teachers and students, and on these we have commented in connexion with the various examinations. It is a difficult matter to decide as to whether a syllabus is desirable or not. However skilfully it may be devised, there can be no doubt that a syllabus has a cramping effect upon teaching and an evil influence upon the student. An examiner at one of the examinations which we visited informed us that, at an early point in his examinership, when he was less familiar with the syllabus than he afterwards became, he was examining a candidate with respect to a substance which had given a certain reaction. Questioned as to what it might be, the candidate was very definite that there was one particular base, mentioned by the examiner, which it certainly could not be. Asked for his reason for the faith that was in him, he promptly replied, "Because that isn't in the syllabus." This illustrates a real danger to idle or indifferent students which may arise from the employment of a syllabus. On the other hand, it has to be remembered that the three sciences in question cover a vast field of knowledge, and that the time which students can give to them is extremely limited. Moreover, the candidates come from all sorts of institutions to be examined by examiners who have not instructed them. To dispense with a syllabus under such circumstances seems to be an impossibility, and—though it is a case of a choice of evils—we cannot but agree that the existing plan ought to be continued in the cases of biology, physics, and the organic branch of chemistry. But the dangers which surround the employment of a syllabus make the choice of the subjects which it is to contain a matter of the first importance. We return to this point in connexion with the subject of chemistry.

At the examinations held by the English and Irish Conjoint Boards and by the Society of Apothecaries, biology may be passed as a separate subject, but the other two subjects must be passed at the same time. At the Scotch examinations, on the other hand, any one of the subjects may be passed separately, but the student who elects to pass his examination in this manner must secure a higher percentage in each subject than one who is taking all at the same time. The method of marking adopted in this case is somewhat complicated, and has been fully described in the report on the examination in question.

We are quite of opinion that biology is a subject which may be properly divided off from the others and passed separately. With regard to the separation of chemistry from physics we are not prepared to express any very definite opinion, for if the examinations in both subjects are of really good standard, and separate papers are given, there seems no very valid reason why they should not be passed at different times. We think that the Scotch plan of requiring a higher mark, if only one subject is to be passed, is a good one, provided that the pass-mark, where all are taken at the same time, does not fall below a reasonable standard. There is one system, however, which we regard as highly unsatisfactory, and that is the plan of permitting the principle of compensation to come in where chemistry and physics must be passed at the same examination. If a candidate is unable to reach the very moderate standard required for a pass in one subject, he ought not to get through his examination because he has shown a little more knowledge than the bare minimum in another. We also think that the system of raising a candidate's marks in one subject in order to pass him, and because he has done well in the other, is one not to be commended, and we approve of the Irish method of making out the results.

II.—Elementary Biology.

(*a*) *Existing Examinations.*

The examinations which we have visited may be divided into two groups, according to the absence or presence of a written in addition to an oral test. At the two London examinations there is no paper in elementary biology, at the Scotch and Irish examinations, papers are given as well as an oral test. There were so few candidates at the examination of the Apothecaries' Society that it is extremely difficult to speak about its standard, but, with this proviso, we may say that, in our opinion, the two London examinations are of a very similar character and standard. Nor is it easy to compare the Scotch and Irish examinations, since one mainly dealt with structure, the other with function. But we consider that the standard required for a pass was about the same at both examinations. Both of these examinations are, in our opinion, better tests of a student's knowledge than the two London examinations, since by virtue of the double requirement of paper and oral, it is possible to cover a larger amount of ground than can be covered where only an oral is resorted to.

The written test (*a*) requires a student to have acquired some idea of how to marshal his facts and write down his knowledge in such a manner as to make it intelligible to another person. He *must* learn to do this at some stage in his career, and, considering the woful ignorance of ordinary English composition exhibited by most boys when they leave school, he can scarcely begin too early in his medical career to practise the method of answering written questions, and to acquire the habit of arranging his knowledge in the orderly manner which this necessitates. Then, (*b*) the written test

enables the examiner to acquire a much wider knowledge of the extent of the candidate's information than he can obtain from an oral test of any reasonable duration, and at much less cost of time and effort to himself.

It may be argued that the student who obtains, say, 20 per cent. on his written paper has not done much to justify him in being passed, and this is quite true. But then, if 50 per cent. is the pass-mark, the failure of the student to secure more than 20 marks on his paper raises the pass-mark which he must obtain at his oral to 80, which such a candidate is not likely to secure. Or, to take a more likely case, if a candidate obtains 35 on his paper he must get 65—and not merely 50 as would be the case if there were no written examination—at his oral, in order to pass.

Biology being essentially a practical subject, we are of opinion that compensation in the other direction ought not to be allowed in a pass examination, and we commend the practice of the Scotch Board which requires that a candidate shall obtain at least 50 per cent., and if he is passing in a single subject, 60 per cent. at his oral, whatever may be the mark which he has secured for his written examination.

We have already called attention to the fact that no practical test is applied at any of the examinations which we visited, and we regard this as a shortcoming. In an essentially practical subject a practical test should be applied if the preparation for the examination is to be real and useful. No amount of cramming—as the term is commonly applied—can teach a student how to stain and mount a microscopic specimen or to dissect out a given structure in the frog or the rabbit. Hence such an examination is useful as a guarantee against cram.

But it has other purposes. At some stage in his career the student must learn how to dissect and how to cut, stain, and mount microscopic specimens. Neither of these lessons is to be learnt in a day, and both require considerable practice before proficiency is reached. Hence the methods indicated above cannot, in our opinion, be too soon brought under the notice of a student, nor can he be too early required to exercise his manipulative powers and his observation, as both must be exercised when he is preparing himself for a practical test, such as that to which we are referring.

It will, of course, be argued that such an examination takes time and imposes additional work upon the examiners. This is perfectly true, but, if the subject of elementary biology is to be included in the medical curriculum at all, it should be a reality and not a farce, a subject of genuine value to the student in his later studies and not one which he hastily gets up to forget again as hastily. And as, in most cases, the teaching will follow the examination, it is for the Examining Boards to see to it that their tests are such as to compel proper instruction being given in the subject.

(b) The Place of Biology in a Medical Curriculum.

It is, we believe, quite open to discussion whether biology should be included at all in the curriculum for a minimum qualification, which term may be applied, without any disrespect, to the diplomas of the bodies with which we are concerned. A university degree, if it is to justify its existence, should connote more than the minimum amount of knowledge both in extent and variety, but it is not claimed that any such necessity exists in connection with the licences to practise conferred by the licensing corporations, which have, it must be remembered, their own higher tests, which are not now under consideration.

If we were pressed for an opinion on this point we should be obliged to admit that, overburdened as the student's curriculum is with subjects, elementary biology is the subject which could best be dispensed with.

Chemistry and physics a student must learn if he is to understand the later subjects of his curriculum, but much, perhaps all that is valuable, in the course of elementary biology might be imparted in the anatomical and physiological courses, if those subjects were dealt with on somewhat broad lines. And we think that it would not be denied that it would be much better for the student to obtain a reasonable grasp of the principles of the two physical sciences than to fail to achieve that end because a third subject has been packed into an already overfull year.

However, the Council has decreed that elementary biology shall be one of the subjects of medical study, and we have, therefore, to consider the position of affairs as we find it.

Biology may be valuable (*a*) as a training in scientific methods, (*b*) as a training in methods of manipulation, or (*c*) from the facts themselves which are acquired. Now, a training in the methods of the experimental or physical sciences a student obtains or should obtain from his chemical and physical teachers. The methods of the biological sciences or sciences of observation—by which it is not, of course, implied that observation is not required in connexion with the physical sciences—can be quite well learnt in connexion with physiology and anatomy, especially if the latter is taught with some consideration to the embryological and morphological aspects of its study by virtue of which it ranks as a science. Manipulative methods can also be learnt in connexion with the two subjects just alluded to. We are left then to the value of the facts learnt as facts. This, it must be conceded, is but small.

The student learns something about bacteria, which will be taught him again much more carefully when he comes to study pathology. He learns something about animal parasites, but it may be doubted whether he grasps very much of what he is taught until he comes to study the diseases which they produce, and he learns, or may learn, certain general principles as to the nutrition and development of plants and animals which would certainly form part of any rational course of elementary physiology. As to the foramina in the frog's skull or the parts of the dog-fish's brain, such isolated pieces of information are about as valuable to the student as the knowledge that there are milestones on the Dover road, unless he has learnt something of the significance of the facts with which he has been confronted. Here we approach the kernel of the matter. No one will deny that a grasp of what is meant by morphology, with an apprehension of a few morphological problems, is a most enlightening, a most educational possession for a medical student. But is such a grasp obtained by even a respectable minority of the students presenting themselves for these examinations? We more than doubt it. Indeed, we very much doubt the possibility of instilling such ideas into the minds of students at the age and of the education of most of those in their first year of medical study.

If this is, as we believe it to be, an impossibility, save in the case of a small minority, is it worth while spending time over the kind of things which students are taught under the name of elementary biology? If the subject is to be taught from its morphological aspect, we are of opinion that it would come much better in the second year, that it should be taught, as far as possible, from the standpoint of vertebrate morphology, and that the type to which others should be referred should be the highest and the most carefully-studied type known to science—namely, Homo himself. By this means a greater breadth would be given to anatomical studies, and there would be a reasonable chance of instilling into the minds of students some idea of what was meant by morphology and morphological problems.

If this plan does not commend itself, then we unhesitatingly express our opinion in favour of the system adopted by the Irish Board, by whose regulations, in practice if not in print, the examination is one mainly concerned with the principles of elementary physiology. Clearly the courses leading up to this examination must be of the nature of courses preparatory to the later teaching of physiology.

As we have remarked in our report on the Irish examination, we were very much struck by the number of useful, if simple, facts connected with elementary physiology which many of the students who presented themselves for that examination had acquired. Perhaps this is because the student sees or guesses at the bearing which these facts will have upon his future studies, and thus takes more interest in them. It is difficult enough, as all anatomists know, to get students to take an interest in some of the apparently minute but really important facts in connexion with the human body, and this because they cannot see their practical bearing. How much more difficult must it be to get the same students to take any but a perfunctory interest in the anatomy of the frog and the dogfish, when they are unable to see the bearing which that knowledge has upon any subject directly connected with the profession for which they are studying.

We are, of course, only expressing our own individual opinion here, but, as that is permitted to us, we certainly consider that the more the course in elementary biology, if it is still to remain a part of the curriculum and to be taught in the first year, is utilized as a preparation, in facts and in methods, for the later course in physiology, the greater will be the benefit to the student, and the less the tendency to unreasoning, undesirable cram in the teaching.

III.—Physics.

(a) Existing Examinations.

The examinations which we have visited may be divided into two groups, according as the subject of physics has a separate paper or not. At the two London examinations there is no separate paper, and all that candidates are required to do by the Conjoint Board is to answer 40 per cent. of the value of one very easy question (out of two questions set) while the requirements of the Apothecaries' Society are very similar, with the addition of an oral in physics as part of the chemistry examination. At the Scotch and Irish Examinations there was a separate paper on physics by distinct examiners, and an oral examination at which candidates were examined on their knowledge of some of the instruments placed on the table.

The two English examinations were quite inadequate to secure such training in physics as would be of use to a medical student. We have already expressed our satisfaction with the Scotch and Irish examinations in connexion with this subject.

(b) The Position of Physics: Suggestions.

Physics has grown to be a large and important subject, and familiarity with its laws and its common instruments is, for medical men at least, an everyday necessity. We think, therefore, that the requirements of the English Boards should be raised to the level of the Scotch and Irish by setting a separate paper, and that this paper should consist of four or five questions, of which at least three ought to be required as a minimum for a pass: and, further, that a candidate ought to be passed or rejected in physics independently without taking into consideration his performance in chemistry or any other subject.

The subject is so much wider than can be covered in one year that a synopsis showing the range required is a necessity. We especially commend the synopses of the physical subjects at the Scotch and Irish examinations, as well as the oral examination on instruments exhibited.

The method of marking is sometimes complex. It is especially so in Scotland, and we shall return to this point later.

IV.—Chemistry.

This comprises the ordinary elements of chemistry, together with a small selection of carbon compounds, under the head of "organic chemistry."

(a) Organic Chemistry.

At none of the examinations visited were the regulations such as to secure a slight knowledge of organic chemistry, and in view of the great and growing importance in medicine of an acquaintance with the carbon compounds; this is a serious defect. It is true that the subject is so large that only the outer fringe of it can be touched in the course of the first year of medical study, but all medical students are required to include the subject in their studies, and it is quite possible to make the examination such as to secure the serious attention of the medical student to the small but useful portions of it which he is taught. The papers set do generally separate the "organic" questions under a separate heading; and if under this heading not less than four questions were set, of which not less than two or three must be answered for a pass, the end would be secured as well as can reasonably be demanded in an elementary examination.

(b) Synopsis.

The synopses at the different examinations have a great general resemblance to each other, differing in details.

The teaching of the elements of chemistry is such a definite thing at the present day, carried on more or less efficiently on similar lines by hundreds of teachers, that a detailed syllabus is unnecessary, and without any compensating advantage is open to all the objections on the score of leading students to cram the details in the synopsis and superstitiously avoid all knowledge of anything not named in it. On the other hand, a synopsis of the carbon compounds is unavoidable. We therefore venture to recommend a synopsis drafted somewhat in the manner as follows:

Synopsis Indicating the Range of Subjects of Examination in Chemistry.

The elements of chemistry, its principles and laws, as illustrated by the properties and reactions of the more common non-metallic and metallic elements and their principal compounds. Symbolic notation and equations. Calculations. The commoner chemical processes. Examples of synthesis, analysis, and metallurgical processes; manipulation of gases. Classification of carbon compounds; the composition, properties, and relations of examples of each of the principal classes. Cyanogen and its compounds; hydrocyanic acid; urea. Methane, ethane; ethylene; acetylene. Chloroform. Iodoform. Methylic and ethylic alcohol; aldehyde, chloral, ether, acetone. Formic and acetic acids; oxalic, lactic, tartaric, malic, citric, gallic, and meconic acids, and their salts. Glycerine; saponification; palmitic, stearic and oleic acid. Esters. Carbohydrates; fermentation. Aliphatic and aromatic series. Isomerism. Benzine and its derivatives, benzaldehyde, benzoic acid, phenols, aniline. Alkaloids.

(c) The Paper.

The paper which we should like to see set would consist of, say, five questions on general chemistry, of which three at least must be answered, and four questions on carbon compounds, of which, say, two must be answered. This would make a total of five questions to be answered, a number not greater than is required at present by the Irish Board, and which can be easily answered in two hours.

It is very important that the kind of question set should be such as will involve thought and reasoning on the part of the student, and not merely the exercise of memory as to the properties and preparation of a small selection of chemical substances.

Most of the examiners recognize the importance of this principle, but it is very difficult to free oneself entirely from the trammels of ancient custom.

(d) The Oral Examination.

1. All the four examinations make use of an oral, although they differ in detail. At the English Conjoint Board all papers marked not much over nor under 40 per cent. of the full value involved an oral examination. At the other examinations all candidates were examined orally. In Scotland the oral examination was the main feature, and it was conducted in an admirable way, which greatly impressed us. A large number of specimens of chemical substances were placed unlabelled on the table; some of these each candidate was asked to recognize by inspection, and was then questioned upon them in detail. But all the weaker papers were overmarked, and practically the paper performances did not receive sufficient consideration in the final decision.

2. We recognize the practical difficulty, on the ground of time, in subjecting a large number of candidates to an oral examination of fifteen minutes each; but in the course of our inspections we have felt very strongly the value of the oral examination, and we think that its extension to a larger proportion of the candidates than is the case at the English Conjoint Board would raise the efficiency of the examination. Candidates gaining a high value, and those gaining a hopelessly low value for their papers might perhaps be exempt.

The Scotch method of overmarking the weaker papers and settling the marks almost entirely by the oral does not commend itself to us.

On the other hand, we approve the way in which the oral is used (when it is employed) at the English Conjoint Board, namely, to check the paper marks, confirming or altering them according to the judgement of the examiner, instead of assigning a definite proportion of marks to the oral which a clerk could add to the other figures.

One great objection to the former marking of oral values is that the answers are influenced so very much by the amount of help an examiner gives the candidate, consciously or unconsciously.

(e) The System of Marking.

At the Scotch examination the system of marking is very complicated, unnecessarily so, and we think that in other examinations also the system might be simpler. Assuming a somewhat similar standard of difficulty in the questions, we venture to recommend that to each examination, namely: 1, physics; 2, chemistry; 3, practical chemistry, should be assigned the full value of 100, and that 50 per cent. should pass, while below 50 per cent. should reject a candidate—subject to revision of the mark by the oral examination; while the oral examination, to which at least all candidates getting under 60 per cent. marks in chemistry and all candidates in other subjects should be subjected, should be used by the examiner as a means of checking and revising the marks assigned as the result of the written examination.

V.—Practical Chemistry.

(a) Existing Examinations.

The only one of the four examinations visited which makes an approach to a satisfactory examination in practical chemistry is that of the English Conjoint Board. One simple salt is to be identified by chemical tests, one simple salt is to be

prepared and shown up, and an account of the work done is to be written by the candidate.

At the Apothecaries' Society of London and the Conjoint Board in Ireland two substances are to be identified by chemical tests; while at the Conjoint Board in Scotland each candidate merely applies a few tests to a solution in a few minutes as part of the viva-voce examination. No analysis is required at any of the four examinations.

(*b*) *The Position of Practical Chemistry, and Suggestions.*

The application of chemical tests in test tubes was the recognized form of practical chemistry a generation ago. But in the present day the importance of teaching the experimental science of chemistry by experimental methods is recognized by all teachers worthy of the name, and elementary students are taught to perform synthetical operations first, and analytical operations next.

It is more important that medical students should be taught in this manner than that they should be taught a great deal, and the only way to secure this kind of teaching is to require evidence of ability to experiment in a simple but intelligent way in the practical examination. We would therefore very strongly recommend that all the examining bodies should follow the English Conjoint Board in requiring a preparation to be made and exhibited, and that in all, the separation and identification of two metals from a mixture of their salts or oxides should be substituted for the detection of one base and one acid by test-tubing. The value of a training in making experiments, even although of a simple kind, cannot be overrated in view of the medical student's future career.

C.—General Remarks.

We have made no attempt to indicate that one examination is better than another as a whole. We have recognized in each some merit peculiar to itself, and have pointed out in each some defect.

At one the requirements in physics are merely nominal, not real: at another no practical chemistry is demanded; at others organic chemistry may be slurred over by the student; and so on. We would suggest the desirability of equalizing the different examinations, conducting them on the same plan with approximately similar regulations, not necessarily identical. It is not good either for an Examining Board itself or for education generally that any of the examinations should have the reputation amongst students and teachers alike of being a refuge for the inattentive and incompetent. We have learned much from our inspection of these examinations. We have recognized at each the ability and conscientiousness with which they are conducted and the strong desire to do what is right on the part of the examiners. And we hope that our remarks may be taken in good part and may be of service in the cause of medical education.

Bertram C. A. Windle.
October 1st, 1903. J. Campbell Brown.

The report of the Examination Committee on the above report ended as follows: This Committee regards the Visitors' report as one of great value, and, considering the great importance of the suggestions made by the Visitors, especially with regard to the question of retention of biology as a subject of education and examination, suggest that the Council should appoint a special committee to consider the questions raised in this report, and report to the Council.

The report was received and entered on the minutes.

The First Medical Examination of the Conjoint Board, Scotland.

On the motion of Sir Victor Horsley, seconded by Dr. Finlay, the report of the Examination Committee on the Visitation of the First Examination of the Scottish Conjoint Board was after some discussion adopted.

On the motion of Sir Victor Horsley, seconded by Mr. Jackson, the following resolution was agreed to:

That the Examination in Practical Chemistry of the Conjoint Examining Board in Scotland is in the opinion of the General Medical Council insufficient.

The First Medical Examination of the Conjoint Board, Ireland.

Sir Victor Horsley moved, and Mr. Young seconded, the following resolution:

That the Report of the Examination Committee on the Preliminary Examinations of the Irish Conjoint Board be adopted.

Dr. MacAlister observed that the conclusions the Council was asked to adopt was that "the Examination Committee were of opinion that this examination was sufficient."

Dr. Norman Moore asked for a definition of the word "sufficient." He did not think that word applied to all examinations under the Act.

The President said that the point had been discussed before Dr Norman Moore joined the Council, but he did not know that there was any definite resolution on the matter. "Sufficient" was the word used in the Act.

Dr. Norman Moore suggested that as the word "sufficient" did not convey anything; the word "satisfactory" should be substituted.

Sir William Thomson did not think that the work "satisfactory" conveyed anything more than "sufficient."

Sir Victor Horsley inquired if Dr. Norman Moore's motion had been seconded.

The President replied in the negative.

Dr. Norman Moore thought that what was "satisfactory" to the Council it could state or decide for itself, but the word "sufficient" was a technical word which was used in the Medical Act (1886), and did not apply to preliminary examinations. The Council could not give itself power which was not given it by the Act.

After some further discussion the report was adopted.

Mr. Bryant moved:

That a Committee, consisting of members of the Education and Examination Committee, be appointed to consider the several questions raised in the report of the Examination Committee on the first year examinations of the three Conjoint Boards and of the Apothecaries' Society of London, and to report to the next session of the Council.

Sir Charles Ball, in seconding, said that it was felt by many of the members of the Examination Committee that it was quite impossible and improper for the Committee to express at that period an opinion on that portion of the report which referred to biology. The retention of biology was a question which did not concern the Examination Committee as such. It was a subject on which there was likely to be some divergence of opinion.

Mr. George Brown thought that if there was to be a special committee they should go outside the Examination Committee, and under those circumstances he thought it better that Mr. Bryant, who was Chairman of the Examination Committee, should not be a member of the conjoint committee.

Dr. McVail wished to say that, although members of the Examination Committee had frequently differed from Mr. Bryant, he had never in the Committee done anything more than any other member would do to carry out his own views.

Mr. George Brown did not wish to attack Mr. Bryant, but thought that it would be better to have a new committee.

Sir Victor Horsley thought that no good could come from referring the report of the Visitors and the "so-called" report of the Examination Committee to a special committee. He used the word "so-called" owing to what he learnt from a member of the Committee, notwithstanding what Dr. McVail had said. He did not see why the matter should be referred to a special committee. The Council was perfectly competent to express its opinion on the question. What was wanted from the Committee was a draft scheme of alterations of the curriculum. But the Committee could not act until the Council had expressed its opinion as to the direction in which the curriculum required altering. He proposed that the Council should now have a debate on the document before them. The report of the Visitors was admirably clear, thoroughly expressive, and contained a summary of conclusions which all had grasped. Therefore he thought the Council should express its opinion by a definite vote of its approval or non-approval of the opinions which the Visitors had expressed. When that was done it could be referred to the Education Committee or a conjoint committee such as had been suggested to thresh out definitely what form the suggested changes in the curriculum, if any were approved by the Council, should take. If they adopted that course they would gain six months, but if they adopted the course suggested by Mr. Bryant they would simply shelve the question for that period. The report was sent out on October 15th, and those who had read it recognized its extreme value. He thought they would be showing some disrespect to their Visitors if they simply handed their report to some other committee. He proposed the following amendment:

That the Council go into Committee of the whole Council for the consideration of the Report of the Examination Committee on the Report of the Visitors of the first year examinations in chemistry, physics, and biology.

Dr. Norman Moore supported the amendment.

Sir William Thomson, speaking as one of the Committee, said that he felt that, although the proposals were valuable

and had the support of a considerable number of the Council, yet they were practically new to it. They were rather far-reaching, inasmuch as they proposed a modification of a curriculum which was laid down by the Council after years of consideration. The Examination Committee thought it would be better to have a little more evidence, as the matter was not to be decided by them. In spite of what Sir Victor Horsley had said he thought that they ought to go back to their own educational and licensing bodies, and learn how they regarded the proposal to drop biology altogether.

Dr. Windle pointed out that the report did not propose to do away with elementary biology as a part of the curriculum.

Mr. Tomes seconded the amendment. He fully recognized that there was much force in what Sir William Thomson had said, but he did not see that the deliberations of such a committee would be very useful if they did not know how far the Council was inclined to sanction any important change.

Dr. McVail thought they might discuss the subject for a day or two, and then it would end in the appointment of a committee to ascertain the views of the licensing bodies. What was proposed meant asking the Committee to turn its back on what it did in 1890. He thought the only course was to appoint a committee such as had been proposed to get information from the Universities and teaching bodies throughout the country, and after considering carefully to lay the matter before the Council in May next.

Dr. MacAlister thought the Council had not yet sufficient experience in the wide sense of the word of the particular subject to justify it in interfering with a curriculum which had been adopted by all the licensing bodies in the country.

Sir Victor Horsley, in reply, said that the work of the proposed committee could be better carried out if it knew on what lines to proceed. It would be far better and more instructive to have a discussion now upon the reports now before the Council.

The President then put Sir Victor Horsley's amendment, when 10 members voted in favour and 17 against, and he declared the amendment lost. He then put the original motion, which was carried by 19 to 3. After some discussion it was agreed that the committee should consist of Sir William Turner (chairman), Mr. Bryant, Mr. Young, Dr. McVail, Sir Charles Ball, Sir John Batty Tuke, Dr. Norman Moore, Dr. MacAlister, and Dr. Windle.

Disciplinary Cases.

Case of Henry Jacob Bradlaw, Dentist.

The Council proceeded to the consideration of a charge against Henry Jacob Bradlaw, registered on the *Dentists' Register* as in practice before July 22nd, 1878, and giving his address as 4, Harrington Street, Dublin.

The Dental Committee found:

That he has sought to attract a practice by a system of advertisements in pamphlets and circulars distributed from house to house and in other ways, and in newspapers containing his name, address, and qualifications, and prices charged and eulogies of his dental work. The advertisements were circulated in Ireland and in London. By the Irish advertisements persons in need of dental aid were invited to consult Mr. Bradlaw professionally at places in Dublin and Belfast, where he was stated to be in constant personal attendance; and in the London advertisements persons were invited to consult him at 146, Inverness Terrace, London, where he was stated to be in constant daily attendance. In the opinion of the Committee the advertisements are of a nature discreditable to a professional man. In order to carry on the practice as advertised Mr. Bradlaw had associated himself in dental practice with his brother, David Barnet Bradlaw, a medical practitioner residing at 146, Inverness Terrace, and authorized and permitted David Barnet Bradlaw to carry on the advertised dental practice there in the name and on behalf of him (Mr. H. J. Bradlaw), and to personate him in so doing.

Mr. Muir Mackenzie was present as legal assessor to the Council, and Mr. Winterbotham, as solicitor; Mr. R. W. Turner represented the complainants, the British Dental Association.

Mr. Bradlaw gave evidence on his own behalf. He said that he never intended to transgress the regulations of the Council. What he did was done in pure ignorance. He had seen hundreds of other people doing what he had done and expressed his deep regret. In answer to the President he said that he was now advertising in the newspaper, but it was just his name and address and his fees for attendance. He was registered in the *Dentists' Register* as of 4, Harrington Street, Dublin; that was also the address of the Irish-American Dental Association, but he had nothing to do with that, and when he got married he left that address. In answer to Mr. Turner, Mr. Bradlaw said the Irish-American Dental Association was a limited company. He had one share in it, but neither his wife nor brother had any. There were seven registered dentists who formed the Association. It had only been a limited liability company for about a couple of weeks, that was to say since the inquiry before the Council. It published advertisements in the papers, but it did not issue pamphlets. There were seven signatories to the articles of association and they had one £1 share each.

Sir Victor Horsley pointed out that the Committee had found that Mr. H. J. Bradlaw had authorized and permitted his brother to personate him in London, and he inquired what Mr. H. J. Bradlaw had to say to that finding. Mr. Bradlaw replied that he did not allow his brother to personate him. He, Mr. H. J. Bradlaw, came over to England about ten times in the year and then went back to Dublin, and during that time he asked his brother if he would be good enough to see to his patients in his absence. He was aware that his brother, Mr. D. B. Bradlaw, was found guilty before the Council of this particular act, but he still denied that any such personation had occurred.

By the President: Mr. Blakeley was the prime mover in the construction of the company. It was composed of registered men, and, being perfectly bona fide, he thought he was entitled to join it. Other questions having been put by members of Council,

Strangers were directed to withdraw; on readmission,

The President, addressing Mr. Bradlaw, said: I have to announce to you the decision of the Council, which is that on the facts found in the report of the Dental Committee, it has been proved that Henry Jacob Bradlaw has been guilty of conduct which is infamous or disgraceful in a professional respect, and the Council directs the Registrar to erase from the *Dentists' Register* the name of Henry Jacob Bradlaw.

Case of William Herbert Ray.

The Council proceeded to consider the case of William Herbert Ray, registered in the *Dentists' Register* as of 12, Cecil Square, Margate, in practice before July 22nd, 1878. Mr. Muir Mackenzie appeared as legal assessor, Mr. Winterbotham appeared as solicitor to the Council; Mr. Turner represented the British Dental Association; Mr. William Herbert Ray appeared in person. The Dental Committee had found as follows:

(*b*) On January 16th, 1903, the said William Herbert Ray was convicted at the Quarter Sessions for the Borough of Margate of unlawfully and indecently assaulting and ill-treating a certain female named Grace Hennessy on July 27th, 1902, and was ordered to be imprisoned with hard labour for six months.

(*c*) The assault was committed at the house of the accused when he was attending her professionally.

(*d*) The conviction was the result of a second trial before the same recorder (Mr. Bargrave Deane, K.C.), the jury having disagreed on the previous occasion

(*e*) The accused denied *in toto* the truth of the charge.

(*f*) A petition to the Home Secretary extensively and influentially signed was presented, asking for a mitigation of the sentence on the ground that, with the exception of evidence as to Mr. Ray's previous good character and certain evidence of a formal character given by the police, the only evidence for the prosecution was that of the prosecutrix herself—the defence being a denial on oath, with a suggestion that the prosecutrix, being in a very low condition and having suffered from pain and want of sleep for some days, was probably hysterical, and suffered from hallucination. The Home Secretary did not, however, grant the application.

(*g*) The prosecutrix stated at the trial that she had reported the assault to the police at the suggestion of two ladies whom she accidentally met in the street. These ladies were not produced as witnesses for the prosecution. The accused, in the course of his evidence at the trial, alleged that the ladies did not, in fact, exist, but he suggested that the prosecutrix had been got hold of by two men who were his enemies, and who had induced her to bring this false charge against him in order to cause his ruin. Mr. Ray admitted to the Committee that this suggestion had no foundation in fact, and had been put forward by him at the last moment very unwisely and without the knowledge of his legal advisers.

In reply to the President, Mr. Ray said he was married and had a family of three children. He had been in practice in Margate thirty years, and no other charge had ever been made against him. The petition to the Home Secretary referred to in the report contained the names of all the medical men in Margate except two, Canon Fleming, the Bishop of Salisbury, and more than half the magistrates of Margate. Since his conviction his former patients had returned to him; in fact, his practice had increased. He assured the Council that he was perfectly innocent of the charge of which he was convicted.

Strangers were directed to withdraw; on readmission,

The President, addressing Mr. Ray, said: The Council

have given much consideration to your case, and the decision they have come to is as follows: That they will take no further action in the matter.

Case of James Grant.

The Council then proceeded to the consideration of the case against James Grant, registered in the *Dentists' Register* as of 15, Chatham Place, London, in practice before July 22nd, 1878.

Mr. Muir Mackenzie appeared as legal assessor, and Mr. Winterbotham as solicitor to the Council; Mr. Turner appeared for the British Dental Association.

Mr. Grant did not appear and was not represented.

The Dental Committee had found as follows:

(*b*) The West Central Dental Institute, Limited, is a limited joint stock company formed and registered by an unqualified, unregistered man named John Panhans for the object of carrying on the practice of dental surgery and the business and profession of dentists. The said John Panhans had, before the formation of the company, been convicted of the offence of practising as a dentist, and the company was formed by him in order to enable him under the name of the company to continue the practice.

(*c*) The said James Grant entered into the employment of the company and of the person or persons who managed it, and acted as assistant to the company in order that he might be put forward as the qualified man by whom the dental practice was conducted.

(*d*) Mr. Grant's defence was that he did not know that he was doing wrong, and that he left the service of the company at the end of the week which followed a second conviction of the said John Panhans for practising dentistry in the name of the company.

Mr. Turner said that the British Dental Association regarded this as a singularly bad case, because it was an attempt on Mr. Grant's part to defeat the ends of justice. At the police-court it was opened for the defence by Mr. Arthur Newton, who defended, that a conviction should not be sustained, as a qualified man was employed on the premises to do the work. Mr. Grant was put into the box to substantiate that statement, which he failed to do, as in cross-examination it was clearly shown that Panhans did all the work. It was a bad case of covering, and he asked the Council to inflict the extreme penalty.

Strangers were directed to withdraw. On readmission,

The President announced the decision of the Council as follows: That on the facts found in the report of the Dental Committee, it has been proved that James Grant has been guilty of conduct which is infamous in a professional respect, and the Council directs the Registrar to erase from the *Dentists' Register* the name of James Grant.

Restoration to the "Medical Register."

The Council then went into camera to consider an application by Mr. James Jerome Mackay for restoration to the *Medical Register*.

Strangers were directed to withdraw. On readmission,

The President said: Mr. Mackay, I am directed to tell you that the Council has instructed the Registrar to restore your name to the *Medical Register*.

The Council then adjourned.

Saturday, November 28th, 1903.

Sir William Turner, K.C.B., President, in the Chair.

The Royal Colleges in England.

The Registrar read the following communications which had been received from the Royal College of Physicians of London and the Royal College of Surgeons of England:

(I)

Royal College of Physicians,
London, S.W.,
19th November, 1903.

Sir,—I am at length able to reply on behalf of this College to your letter of July last, forwarding for the information of this College the reports of the Education and Examination Committees of the General Medical Council on the teaching in chemistry, physics, and biology recognized by the Royal Colleges, and on the report of the Visitor and Inspector of the Council on the First Examination of the English Conjoint Board, together with the resolutions of the Council thereon, and inviting representatives of the Royal Colleges to a Conference with a Committee of the Council on these subjects.

Your letter, with its enclosures was referred to a special committee of the two Royal Colleges for consideration and report, and at a General Meeting of this College held this day the following report of that Committee was adopted, and I was instructed to forward it to you as the reply of this College to your communication.

I am, Sir,
Faithfully yours,
Edwd. Liveing,
Registrar.

Sir William Turner, K.C.B.,
President of the General Medical Council.

The delegates appointed by the Royal Colleges beg to report that, having fully considered the letter of the President of the General Medical Council, they recommend that the following reply be sent to the President:

"The Royal Colleges thank the General Medical Council for the expression of their opinion respecting the courses of study and the examinations in chemistry, physics, and biology. These opinions shall receive the respectful attention of the two Royal Colleges.

"The Royal Colleges, however, regret that they are unable to accept the invitation of the President of the General Medical Council to appoint representatives to meet the representatives of the General Medical Council in regard to the questions of medical education and examination relating to the subjects above mentioned that have been raised in the reports of the Education and Examination Committees of the General Medical Council."

(II)

Royal College of Surgeons of England,
Lincoln's Inn Fields,
London, W.C.,
November 20th, 1903.

Sir,—With reference to my letter of the 19th ultimo, informing you that representatives had been appointed by the Council of this College to confer with representatives of the Royal College of Physicians regarding the proposed conference with a Committee of the General Medical Council, referred to in your letter of July last, I am now directed to inform you that, in pursuance of the report of the representatives of the two Colleges, the following reply to your letter has been approved and adopted by the Council of this College, namely:

"The Royal Colleges thank the General Medical Council for the expression of their opinion respecting the courses of study and the examinations in chemistry, physics, and biology. These opinions shall receive the respectful attention of the two Royal Colleges.

"The Royal Colleges, however, regret that they are unable to accept the invitation of the President of the General Medical Council to appoint representatives to meet the representatives of the General Medical Council in regard to the questions of medical education and examination relating to the subjects above mentioned, that have been raised in the reports of the Education and Examination Committees of the General Medical Council."

I am, Sir,
Your obedient servant,
S. Forrest Cowell,
Secretary.

Sir William Turner, K.C.B.,
President, General Medical Council.

On the motion of Dr. MacAlister, seconded by Sir Victor Horsley, these communications were received and entered on the minutes.

Sir Victor Horsley then moved:

That the Council do represent to His Majesty's most Honourable Privy Council that the courses of study and examination in chemistry, physics, and biology to be gone through in order to obtain qualifications for registration from the Examining Board in England of the Royal College of Physicians of London and the Royal College of Surgeons of England, are not such as to secure the possession by persons obtaining such qualification of the requisite knowledge and skill for the efficient practice of their profession.

He asked the Council to note that he was not raising a general question of preliminary scientific examinations, but simply to conclude one item of business; neither was he asking the Council to institute any comparison between one examination or another, nor between one licensing body and another. He moved on the previous day, and the Council had accepted, a resolution relating to the Examining Board in Scotland. They had nothing to do with that that afternoon, but when that subject came up he would be prepared to move a resolution in regard to it. He hoped the Council would adopt the resolution he now moved in order to put an end to a business which really was thirteen years old. The profession outside the Council were watching this matter now pretty closely, and it expected that this last act would not be part of the farce, but that it really would end in the determination as to what was the supreme authority in medical education. The profession recognized that the Council in this matter was merely endeavouring to carry out its statutory duties, and that it had been trying to do this with every leniency and courtesy towards the licensing bodies. That leniency and courtesy he had himself witnessed for a period of five years. He had seen that by every shift or method the English Colleges had tried to prevent the Council from carrying out its statutory duty. The duty of the Council was to inquire into the course of study and the examinations required by the examining bodies, and if in its opinion this course of study and examination were insufficient then it was lawful for the Council to represent the same to the Privy Council. The English Colleges were contumacious, and therefore the time had come when the Council should ask the Privy Council to decide between the Colleges and the Council. The last three sessions had shown that when the Council responded to the challenge of the Colleges to inquire into their course of study, and to inspect their examinations, it was

found that the courses of study of the examinations were insufficient; in other words within the last three sessions every word that the Council expressed on general principles in 1898, 1899, and 1900, had been confirmed by the inquiries which had been made. It might have been expected that when these inquiries were brought to the notice of the English Colleges they would have departed from the contumacious position they had taken up, and would have recognized the rectitude of the Council's efforts to carry out its statutory duty. But the College of Physicians, having taken over six months to consider the facts, wrote, it was true, a letter, but returned no answer to the Council. The Council asked them for comments on the report of the Visitors, and the College of Physicians said it was inexpedient to offer any such comments; in other words, they refused to give the Council comments it was legally entitled to ask for. The College of Surgeons commented very fully on the report of their Visitors and said that not only was the statement of the Visitors inaccurate, but that they held their examinations to be sufficient. They directly and contumaciously challenged the opinion of the Council. He did not consider the letter from the College of Physicians at all a courteous way of replying to the Council—that the matter should be taken up at the Greek calends. The College of Physicians refused the answer which the College of Surgeons sent. He thought that that aggravated the refusal on the part of these bodies to in any way meet the Council at that stage of the negotiations. If that was the attitude which the Colleges took up, in what position was the Council? Last July he had moved the same resolution as he was moving now. Then the Council in its generosity persuaded him to withdraw his resolution, and adopted two resolutions—one, that the President should forward to the Colleges the reports which revealed the condition of affairs existing in their courses of study, and the resolution expressing the deliberate judgement of the Council; an attempt was also then made to confer with these bodies. He had protested before against these conferences; they led to no result, and in the present case the Colleges refused to confer. They treated the Council with absolute contempt. That refusal to confer was another example of the contumacious attitude which the Colleges had pursued.

Dr. Pye-Smith asked the President if it was permissible for Sir Victor Horsley to use the adjective "contumacious" in that connexion.

The President inquired in what sense Sir Victor Horsley used the word "contumacious."

Sir Victor Horsley replied that he used it in the ordinary sense—namely, that the person was refusing to recognize the judicial authority of some body placed over him. That was the ordinary sense of the word "contumacious."

The President: "Well, you have used it—go on now."

Sir Victor Horsley said he understood that to be the meaning of the word, and he thought the profession would understand the meaning of the word, and it was the profession he represented, not the interests of a single body. The Council had to decide a plain constitutional point. It was the Council of Medical Education, recognized by statute as the head authority in medical education. That position was distinctly challenged by the Colleges, and, owing to the wording of their Charters, with some ostensible measure of success. Under these circumstances, it was the duty of the Council to go to the highest judicial authority and obtain from it a final judgement on this matter. If the Council went to the Privy Council it would be necessary for the Colleges to show that the Council was wrong. If the Colleges could not prove to the Privy Council that the Council was wrong, then the judgement of the Privy Council must be in favour of the Council, and that of itself would establish its authority. It was for that reason that he moved the resolution, and he hoped that in the interests of medical education the Council would adopt it.

Dr. Mackay thought it was well known that there were certain bodies that did not trouble themselves in regard to the courses of study, but which depended upon their examinations to prove that the requisite course of study had been followed. Others insisted both upon examinations and courses of study. The Royal Colleges of England insisted upon courses of study and examinations, and the Council had found that both the courses of study and the examinations of the Colleges were insufficient to secure the requisite skill for the practice of the profession. That was the position from which they started. It might become the duty of the Council to look into the examinations of other bodies which did not demand a course of study. That would follow later on; but the Council had at the present moment a very serious question before it. He maintained that it was the duty of the Council, if it found the examinations and courses of study to be inadequate, to represent that state of things to the Privy Council. The Council was formed for the protection of the public, and if it did not represent the matter to the Privy Council it must have a very serious and important reason to prevent it from carrying out the duty which had been laid upon its shoulders. One such reason might be, if it were absolutely clear to the members of the Council that what the Council desired could be brought about by any course short of applying to the Privy Council, it might then be reasonable to postpone the matter in order that the bodies concerned might have an opportunity of coming into line with the Council and carrying out its wishes. The position was complicated by the refusal of the bodies to enter into any conference. At a previous session he had been willing that the resolution should be withdrawn, because he recognized the valuable services which the Royal Colleges had rendered in the cause of medical education, and he thought then that the Council was only paying to the Colleges a compliment which they deserved in saying that no steps should be taken without consultation. There were men among them who had had experience of medical education that would have been of the greatest value to the Council had they been able to discuss the whole question of the relationship of examinations to courses of study. But unfortunately that was out of the question at present. What the Council did last July was most reluctantly to take a step which it had hesitated for years to take. The facts which were established in July were facts with which the Council had been familiar for years. Now the Colleges had said they were prepared to give most respectful attention to the views of the Council. He thought in courtesy they could not have said less. The answer was exceedingly courteous, but it seemed to him exceedingly unsatisfactory. The exact problem before the Council was: The regulations of the two Colleges made it possible for a student to spend six months of his *annus medicus* in a grammar school or in a technical institute studying the two important subjects of physics and chemistry, and possibly devoting only two or three hours a week to their study. He did not think the representatives of the Royal Colleges or the Royal Colleges themselves would care to defend or wish to defend such a regulation. The fact that they had not met the Council was not due to the fact that they cared to defend the regulation, but because they did not think the Council was entitled to concern itself with it. That was the only conclusion that could be arrived it. That being so he thought the Council had no alternative but to go to the Privy Council. If, however, at the last moment the representatives of the Royal Colleges would themselves suggest a conference with the Council upon the relation of the examinations to the courses of study, with a view of coming to a settlement which might influence the Council and give the Council their co-operation and help, he would willingly even now let matters go on a little longer; but unless they proposed some such solution he felt that the Council must reluctantly go to the Privy Council. He thought the Privy Council would probably bring about a conference, and if that was the result, he thought it would be most fortunate for the sake of medical education in general.

Mr. Bryant did not wish to discuss the motion which Sir Victor Horsley had made, but rather to point out that the issue he had put before the Council, namely, the question of authority between the Council and the Royal Colleges was not the issue that should be before it. The Colleges had stated that the opinion of the Council should receive their respectful attention, and the Colleges quite meant it. It was fairly well known that they meant it, for they had been working at the subject for some months: it was under the fullest and closest consideration. Under those circumstances he did not think the Council could well say that the Colleges were in any way not attempting to follow out the suggestions which the Council had made. Where defects were shown they were only anxious to remove them in respect both to education and examinations. He would not discuss the question of the prudence or wisdom of the Council going to the Privy Council, but if the Privy Council were approached on the matter, he thought they would say, "What do the Royal Colleges say? What are they doing?" The Council could not say that the Colleges were doing nothing, or that they refused to do anything; they might say that the Colleges were considering the matter, and he was pleased to say they would continue to consider it till all defects were remedied,

The President then inquired if any other members wished to speak.

Dr. Bruce thought the members rather expected to hear something from the representative of the College of Physicians.

Dr. Norman Moore said he had already spoken upon the question several times. His College felt the greatest respect towards the Council in the discharge of the functions conferred upon it by Act of Parliament. Where a particular subject had been in controversy for a considerable time, it was very easy that phrases might be used which would cause irritation, although they were not intended so to do, and that might seem disrespectful when nothing but respect was in the mind of the speaker. Sir Victor Horsley had used the word "contumacious." He was sure Sir Victor Horsley would not wish to enter into a discussion as to the etymology and use of the word "contumacious," and he was sure he would not use any rude or opprobrious term in regard to the Royal Colleges. He would read to the Council from a dictionary the meaning of the word "contumacious." He found it meant "swelling against; haughty; resisting legitimate authority"—that was what he thought Sir Victor Horsley meant; and then, in law, "wilful disobedience to the orders of a court." That, of course, implied that there was a court which was vested by the law with certain powers, which had exercised those powers, and that it was contumacious to disobey. He would not go into the question of whether the Council was such a court or not. He would suppose for the moment that the Council possessed all that which the most extreme advocates of its power wished it to possess, and that it had the powers which Sir Victor Horsley would wish it to have if he were to become a dictator. Then he inquired what were its orders, and what edict had it issued with regard to the study and examination for the first year? It had issued no edict. The Royal Colleges were not contumacious, even if the Council were absolute, which he denied. It was the duty of the Royal Colleges, under the terms of their Charters and the Acts by which they were founded, to determine the courses of study and examination, and they could not transfer that duty to any other body. If the Council thought it had the power let it declare what they ought to do and then there would be a subject for conference. The only object of a conference was to come to a satisfactory conclusion. No satisfactory conclusion could have been arrived at in the way proposed. The responsibility of carrying out the curriculum and the examination rested with the Royal Colleges. His College was most carefully, respectfully, and thoroughly considering the matter. It was not possible for him to go further. Sir Victor Horsley had said something about their having adopted every shift and method of delay. He thought that was unjust and was the kind of expression that ought never to have been used. In transactions between one gentleman and another it was always assumed that they were acting in a straightforward way, and the same ought to be the case with regard to every transaction between the General Medical Council and any university or college or body with which it entered into communication. Sir Victor Horsley had said that it was a question as to who was the supreme authority in medical education. He did not think it would be profitable to enter into a discussion on that. Speaking for the body he represented it had certain powers entrusted to it by Acts of Parliament, which it was bound to carry out and which it could not hand over to any other body, not even to that Council. Sir Victor Horsley had said that a separate reply from the College of Physicians aggravated the circumstances.

Sir Victor Horsley, interposing, said that Dr. Norman Moore misunderstood him. He referred to the fact of the College of Physicians not accepting the comments of the College of Surgeons.

Dr. Norman Moore replied that the reason they adopted that course was to convey to the Council that they were considering the subject, and it seemed more appropriate to convey it in the way they did than to accompany it with criticisms. His College maintained that they were discharging their public duties honestly and to the best of their ability. The Council had the undoubted right to criticize any examinations. Personally he objected to the terms in which it criticized the earlier examinations. He thought that what Sir Victor Horsley meant was that in his opinion and that of the Council their earlier examinations might be improved. He could not mean any more than that. It would be carrying words beyond their true meaning to suggest that it meant more than that. If the object of the Council were to try the question of jurisdiction, and to ascertain whether certain powers were given to it by the Act, he did not know of any other way of trying it that in a court of law such as the Privy Council. But let them not regard it as a quarrel. The Colleges had certain duties which they endeavoured to exercise in the public interest, and the Council had certain other powers. The Council did not accuse them of negligence or corruption, or anything of that kind in the exercise of their powers. They differed. Of course, if the Council was absolutely supreme over the interests of licensing bodies in the United Kingdom, it had only to issue an order, and it must be obeyed. His College received the criticisms of the Council with respect, and attached to them all the importance which must be attached to the opinion of such a body. They endeavoured to make use of that opinion towards the perfection of the courses of study and examination. That was their position. But they were not in a position to receive an order to do this and that, and to be declared contumacious because they presumed to discuss and investigate thoroughly opinions, however valuable those opinions might be.

Sir Christopher Nixon agreed with Dr. Norman Moore that the matter ought not to be regarded as a quarrel between the Colleges and the Council. The Royal Colleges had a particular view with regard to the first year's course of study. He found himself in this anomalous position: that he was in favour of what the Colleges attempted to effect—that was to say, removing the subjects of chemistry, physics, and biology outside the medical curriculum; and to a certain extent the General Medical Council had adopted that view, inasmuch as it had recognized scientific institutions for giving instruction on these subjects which were not medical schools; but though he was strongly in favour of these subjects being taken out of the medical curriculum, he still had to recognize that the body he belonged to could not take that particular course without the sanction of the body which was responsible for medical education throughout the United Kingdom. If any uniformity of standard either in teaching or examining was to be secured, there must be some central authority which would lay down the law to be observed by all. It was upon that point that the friction had arisen between the Royal Colleges and the Council. Dr. Norman Moore had said there was no edict; but what about the regulation of the General Medical Council in which the words "and approved by the Council" were introduced? There was the recognition, for instance, of scientific institutions as giving instruction in chemistry, physics, and biology; and when it was pointed out to the Council that the Royal Colleges were recognizing institutions which had not been sufficiently inspected, and which the General Medical Council could not possibly recognize, this regulation was not adopted by the Royal Colleges. The words of the regulation were, "institutions recognized by the Colleges and approved by the Council." That was an instance of an edict which the Council had issued, and which the Royal Colleges in very strong language refused to obey. Then came the institution of the students' registration of the Royal Colleges. It was since the time that these words were introduced that the Royal Colleges might be said to have set the General Medical Council at defiance. It was not a question so much of a difference between the Royal Colleges and the Council, it was a question of much wider importance. The whole profession had its attention centred on this one question, Had the General Medical Council any authority in connexion with medical education beyond merely giving pious opinions? It was absolutely essential that the Privy Council should determine whether the Council was exercising the powers conferred upon it by statute or whether it was acting in excess of those powers. It was time the matter was ended, and it could be ended without the appearance of a quarrel. The two sides would be represented to the Privy Council, and he had no doubt that the Privy Council would give an expression of opinion which would sustain the Council in the action it had taken, which had been to try and raise the status of the profession and standard of medical education to the highest level that it thought it possible to reach.

Dr. Bruce agreed with much that Sir Victor Horsley had said as to the attitude of the Colleges whose action was detrimental to the real interests of medicine and surgery; but he was opposed to taking action against those two recalcitrant bodies on two different grounds. First, he was convinced that any attempt at hampering the intermediate schools of the country would be dealing a blow at the reform of elementary and secondary education, which happily was in the air. Secondly, it would be found that on former references to the

Privy Council the General Medical Council had utterly failed to establish the position it had legally fought for. He saw great stumbling blocks in the way of a successful issue to the Council's action if the motion were adopted, and therefore he moved, and Dr. Pye-Smith would second, the following amendment:

That the Council acknowledges the communications set out in the minutes of to-day from the Royal College of Physicians of London of November 19th, and the Royal College of Surgeons of England of November 20th; that the Council is pleased to note that the opinions of the Council respecting courses of study and examination in physics, chemistry, and biology are to receive the respectful attention of the two Royal Colleges; that in view of the reconsideration of the courses of study and examination by the Royal Colleges, the Council resolves to defer taking any further action until the examination has been again inspected under new regulations.

Sir Victor Horsley, on a point of order, contended that this amounted to nothing more than moving the previous question.

The President, after some discussion, ruled that it was a competent amendment.

Dr. McVail hoped Dr. Pye-Smith, in seconding, would give them some evidence of the reconsideration which the amendment assumed to be in progress.

Dr. Pye-Smith was not able to give the information required; he could only endorse what had been said, that the representations of the Council would receive the respectful consideration of the Royal Colleges. Already changes had been made in the curriculum, and no doubt further changes would be made.

Sir Victor Horsley observed that if changes had been made they must be contained in a written document, and that ought to be in the hands of the Council.

Dr. Norman Moore said certain changes were contemplated and had been discussed, and certain changes had been determined upon in principle, but not in detail. It was impossible for him to communicate anything which was not in its final form, but when it had been worked out the whole scheme would be laid before the Council.

Dr. Pye-Smith, continuing, said he was not a delegate of the Royal College of Physicians, but of his own knowledge consideration had been given already to the communications received from the Council, and changes were contemplated by which, when the scheme was completed, many of the present difficulties would be obviated and things greatly improved. In seconding the amendment he wanted once more to forward the cause of peace. He regretted that the Council's invitation to a conference was not accepted. The real question was one of jurisdiction as to which was master, and, although he for one should be glad to have it finally decided whether this Council was the paramount power, or that the Royal Colleges were independent of its authority, yet he deprecated the Council embarking in any such contest. It ought not to submit the claims of two rival bodies in the profession to the decision of lawyers. That would result in irretrievable mischief; and he trusted the Council would avoid doing that which would in its effects, whichever side won, be most disastrous, and would only impair the authority and influence of a body which had done great good for the profession.

Dr. Windle was prepared to support the amendment, but suggested the last clause should read "that in view of the reconsideration of the whole subject by the Royal Colleges, the Council resolves to defer taking any further action until the examination has been again inspected under the new regulations."

Dr. Bruce and Dr. Pye-Smith accepted this modification.

Dr. Windle wished to associate himself with the observation of Dr. Pye-Smith. The question to be considered ought not to be that of jurisdiction. Was it the best way to improve medical education to go to the Privy Council? In his opinion it was not; he thought it could best be done on the lines suggested by the amendment. While regretting that the Colleges did not see their way to join in a conference, he accepted the statement of their representatives that the matter was under consideration. As a matter of fact, a number of new regulations had already appeared in the British Medical Journal which was open to all members of the profession, and he found in those regulations a most important change, namely, a minimum length of course. That was not the end of the changes; it was only a stage on the road. The Council had requested the Royal Colleges to amend their regulations, and it had evidence that they were doing so, and, therefore, he did not think they should adopt the extreme course of going to the Privy Council.

Sir Charles Ball was surprised that the representatives of the Royal Colleges, while expressing their desire that the fullest consideration and information should be given to the Council, left it to another member of the Council to read from a medical journal what had been accomplished by the Royal Colleges. He thought it would have added much to the force of what had been said if they had had that authoritatively stated by either of the representatives of the Colleges. The question had dragged on for five years, and was injuriously affecting medical education. Over and over again it had been discussed, and if Sir Victor Horsley's motion was one which would bring it to a climax, he for one would give it most cordial support. Another aspect of the question was the action of the Colleges in ceasing to require students to be registered, which had had a more far-reaching effect than was at first supposed, as it not only affected the teaching of the subjects, but had had an effect on primary education also.

Dr. Little regretted the use of the expression "supreme authority." He hoped members of the Council knew that the Council did not claim supreme authority; the supreme authority was the Privy Council. He thanked Sir Victor Horsley for bringing forward the question, but he should vote for the amendment for three reasons. First, he observed on the part of several members a disposition to change the absolute character of their views, and, in some respects, to veer round to the views put forward by the Royal Colleges. Secondly, he would vote for continuing negotiations instead of going to the Privy Council on specific charges; and, thirdly, he thought that by adopting the amendment they would settle the whole thing by negotiation.

Dr. MacAlister remarked that the opinions which had been laid before the Royal Colleges by the Council had had considerable weight with the Fellows. A very genuine change was in progress, a change which, however, was initiated before the question was raised in the Council.

In reply to Sir William Thomson, Dr. Norman Moore said that he was quite certain that there would be no unreasonable delay on the part of the Royal Colleges in forwarding their reply. The Committee was sitting *de die in diem*, but it was impossible to say when its labours would be completed.

Sir William Thomson regarded that rather as a diplomatic answer. He did not wish Dr. Norman Moore to name a day, but could he say, from his own knowledge of how things were progressing and the stage at which this investigation had arrived, that in May next or twelve months hence a definite answer would be received by the Council from the Royal Colleges?

Dr. Norman Moore thought substantially there was no doubt the Joint Committee would conclude its work before the Council met next May. He wished, further, to say that he did not intend his answer to be a diplomatic one.

Mr. George Brown, in view of this answer, asked if Sir. V. Horsley would withdraw his motion.

Sir V. Horsley declined.

Dr. McVail proposed that the further consideration of the motion should be postponed until May.

The President inquired if the amendment practically did not amount to that?

Dr. McVail thought not. Sir V. Horsley had been, he thought, victorious all along the line. He had driven his enemy into such a position that the Council would be quite safe to wait until they received the reply.

The President ruled that by the Standing Orders there could be only one amendment at a time.

Dr. McVail said in that case he would speak to the motion. The Colleges now were going to act up to what the Council required, but they were endeavouring to shield themselves from the appearance of having acceded to the recommendations of the Council. So far as he was concerned, he would accept that. It had been got with great difficulty, and had been a very stiff fight indeed. The Council had substantially achieved that for which it had been fighting so long, and not only that—the thing was to be finished in a few months, so that by May they would have the whole of the details before them.

Sir Victor Horsley, in speaking to the amendment, pointed out that the authority and influence of the General Medical Council was challenged not merely by the English Colleges, but by others; and he must be satisfied on the ground of principle that that influence would be restored. Dr. Pye-Smith had spoken of "a petty squabble," but the scientific training of the medical student was not

to his (Sir Victor Horsley's) mind a petty squabble. It was a most serious subject, and he did not think he had wasted a second of the Council's time in discussing the matter. With regard to registration, there was no guarantee whatever that after May registration of students in the Royal Colleges would be restored. The Council's *Register* had been entirely upset by the action of the Royal Colleges. As to the changes, all knew they were under consideration; but what was the change in the curriculum? Even if finality were to be obtained in May, it would only concern the course of study. There was nothing said as to where the course of study was going to be carried on, and there was not a word said on the all-essential point which originated the discussion, namely, that the Council should have a supervisory control over the Colleges. He wanted to know, before withdrawing his resolution, what assurance the Council had that it would be allowed by the Royal Colleges to exercise that supervision? He asked the Council not to vote for the amendment thinking it settled the whole question. It did not. A tardy acknowledgement had been obtained from the representatives of the Royal Colleges that their course of study was not what they professed it to be. They admitted it wanted amendment, and were going to show in May the new complete scheme, but were not going to ask if the Council approved of it. Under these circumstances he did not think he was justified, in the interest of the medical student, and of those who supported him, in withdrawing his motion, and he could not accept the amendment.

The President then read the amendment as modified, when

Sir Victor Horsley asked if anything had arisen in the course of the debate to show that the Royal Colleges were reconsidering the whole subject.

The President ruled that that was the purport of their reply to his letter of July last.

Sir Victor Horsley observed that the words "reconsideration of the whole subject" included the registration of students.

Dr. Norman Moore could not accept that view. The registration of students was not the question under debate; that was separately discussed.

Sir Victor Horsley suggested the insertion of the words "of the course of study and examination" after the word "reconsideration," and the deletion of the words, "of the whole subject."

This was agreed to.

Mr. George Brown moved that the debate on the amendment be adjourned.

The President ruled that the debate was at an end. He then put the amendment as modified:

(1) That the Council acknowledges the communications set out in the minutes of to-day from the Royal College of Physicians of London of November 19th, and of the Royal College of Surgeons of England of November 20th; (2) that the Council is pleased to note that the opinions of the Council respecting the courses of study in the Examination in physics, chemistry, and biology are to receive the respectful attention of the two Royal Colleges; (3) that in view of the reconsideration of the courses of study and examination by the Royal Colleges the Council resolves to defer taking any further action until the examination has been again inspected under new regulations.

Sixteen voted for and 12 against.

At the request of Sir Victor Horsley, the names and numbers were taken as follows: 16 for, 12 against; 1 did not vote, and 2 were absent.

The President accordingly ruled that the amendment became the substantive motion.

Mr. Geo. Brown moved that the consideration of the motion be postponed according to Standing Order XX.

Sir John Batty Tuke seconded the amendment, as he considered the motion absolutely humiliating to the Council.

Dr. McVail hoped the amendment would be carried, as it was by far the best course for the Council to adopt.

Dr. Bruce thought it was not right to characterize his motion as humiliating; in the interests of peace he urged it most strongly.

Sir V. Horsley considered it would be most disastrous to pass it as the substantive motion, and hoped in the interests of real peace that the amendment would be accepted.

On the amendment being put, 13 voted for and 13 against.

Dr. Norman Moore observed that it was lost.

Mr. George Brown asked for the names and numbers to be taken, as it might reveal a different result.

This done, when it appeared that 14 voted for, 13 against, 1 did not vote, and 3 were absent.

The amendment was accordingly carried.

The Council then adjourned.

Monday, November 30th, 1903.

Sir William Turner, K.C.B., President, in the Chair.

The Final Examination of the Conjoint Board in England.

The report of the Examination Committee on the report on the Third or Final Examination in Medicine, Surgery, and Midwifery of the Examining Board in England by the Royal College of Physicians of London and the Royal College of Surgeons of England by the Visitor (Sir Charles Ball) and the Inspector (the late Sir George Duffey) was read by Mr. Bryant, received, and entered on the minutes.

Report by the Examination Committee.

"The Final Examination in Medicine, Surgery, and Midwifery, held in January, 1903, commenced on Tuesday the 13th and continued until the 30th.

"Two hundred and twenty-eight candidates were examined in Medicine, of whom 127, or 56 per cent., passed, and 101, or 44 per cent., were rejected; 177 were examined in Surgery, of whom 102, or 58 per cent., passed, and 75, or 42 per cent., were rejected; 186 were examined in Midwifery, of whom 137, or 74 per cent., passed, and 49, or 26 per cent., were rejected. Twelve candidates took up all three subjects, of whom 5 passed in all; 2 passed in two and failed in one; 3 passed in one and failed in two; whilst 2 failed in all subjects. Sixty-eight candidates took up two subjects, of whom 28 passed in both; 25 passed in one and failed in the other; and 15 failed in both.

"According to the regulations a candidate referred on the Final Examination, or on one or more of its three parts, is not admitted to re-examination until after the lapse of a period of not less than three months from the date of rejection, and is required before being admitted to re-examination to produce a certificate of having attended the medical or surgical practice, as the case may be, at a recognized hospital during the period of his reference; and in regard to midwifery and diseases peculiar to women, a certificate of having received not less than three months' instruction in that subject by a recognized teacher.

The general arrangements for the examination were similar to those described in the last report (Minutes, vol. xxxi, App. x). Two papers were given on the principles and practice of medicine: one on midwifery and diseases of women, and one on surgical anatomy and the principles and practice of surgery. By the regulations, if a candidate is unable to answer at least four of the questions on any of the papers, he must report the fact to the presiding examiner, and he is not allowed to proceed with his examination. Also all papers must be read by two of the examiners, and the same examiners conduct the Oral Examination of the candidates whose papers they have read. A question bearing on mental diseases, one on diseases of children, and one on toxicology are included in one or other of the papers on medicine: and on Paper 2 in medicine the Visitor and Inspector were pleased to see an important question bearing upon medical anatomy.

"It is prescribed by the regulations that in medicine a candidate must answer very well in order to get more than half marks for either paper; the minimum mark for the two papers taken together is six, when the maximum is twenty. The minimum for the papers on surgery and midwifery is three for each paper, the maximum in each being ten.

"The Visitor and Inspector read the answers of several candidates whose oral and practical examinations they had followed, and pronounced the answers as good, well written, and given with satisfactory fullness and detail, with few errors in spelling.

"In the clinical examinations no written report of either medical or surgical cases is required. For the first of the cases in clinical medicine a candidate 'was allowed ten minutes in which to examine the patient without interruption, but under the eyes of the examiners, and was then questioned by the examiner on the case for another ten minutes in the hearing of his coexaminer;' a second, third, or fourth case was also given and questioned upon. The examination lasted thirty minutes, and at its conclusion each candidate was required to write a prescription at a side table for some specified disease.

"In clinical surgery the candidates under the five years' regulations were examined orally for thirty minutes on at least two cases, each of which they had been previously allowed to examine by themselves for five minutes. Several candidates were examined on more than two cases, and were then taken over a wide range of surgical subjects. At the

conclusion of the clinical examination each candidate was required to write at a side table a short description and diagnosis of two microscopical specimens of new growths or crystals, and ten minutes were allowed for this. The Visitor and Inspector state that they were impressed by the thoroughness of this examination and the uniformity in the standard of answering that was required. In clinical medicine and surgery the cases were numerous and excellent.

"In the oral examination in medicine and surgery a different pair of examiners were allotted to each group of candidates, and both examiners examined each candidate; in medicine one of the two for ten minutes in urine testing, and the other for another ten minutes in pathological specimens.

"The oral examination in surgery was conducted at the Royal College of Surgeons at five tables. Every candidate was examined at two tables, ten minutes at each table. Excellent pathological specimens were upon all the tables, and upon two or three of them each candidate was questioned. In practical surgery each candidate was examined for fifteen minutes upon a large collection of surgical instruments, splints, and in bandaging, as well as upon surface surgical anatomy and the lines of incision for operations. No operations upon the cadaver were practised. The examiners appeared to the Visitor and Inspector to set the standard of marking rather high.

"The examination in midwifery and diseases of women was pronounced by the Visitor and Inspector 'a most excellent and practical one.' Every candidate was examined for ten minutes by one of the examiners, alternately, at two tables—at one table in midwifery and at the other in gynaecology. Upon each table (four in all) an amply supply of pathological specimens and instruments was provided, as well as female pelves, 'dolls,' pessaries, etc.

"To pass this examination each candidate must have half marks. In medicine the maximum marks are 50; to pass, the candidate must get 25. In surgery the maximum is 30, and to pass he must obtain 15. In midwifery the maximum is 20 and pass marks 10. The Visitor and Inspector were not satisfied with the system of marking adopted by the Colleges, and refer to the former report for the reasons of their objection (vol. xxxi, App. 10, p. 16.)

"In the present report they illustrate the defect of the system adopted, and point out that where the maximum mark for a subject is 5, and a candidate in the opinion of the examiners deserves anything more than one whole number up to 5, he is given the benefit of the fraction and awarded the next number above; and as the pass mark is 50 per cent., it follows that the candidate who, in the opinion of the examiners, just qualifies to pass must secure 3, or 60 per cent. They also support this view by an example. They express the opinion that the maximum marks awarded at any portion of the examination should not be less than 10.

"The Visitor and Inspector in their observations at page 17 pronounce the arrangements for the different parts of the examinations to have been excellent. There was not the slightest hitch or delay in any part of the examination, and, considering the large number of candidates that were examined, the organization that ensured such results must be looked upon as perfect.

"They express their satisfaction that the time devoted to the Examination in Clinical Medicine and Surgery has been extended to thirty minutes, and that the examination in clinical surgery is now as good a one of its kind as could be desired.

"They regret that the recommendation made in their last report, 'that in addition to the oral examinations, candidates should be required to furnish a written report of at least one medical as well as of one surgical case, has not been adopted.' This Committee is also of this opinion. They likewise regret the absence of, and can see no difficulty in providing for, a special examination in ophthalmic surgery, such as is so general in Dublin, and express an opinion 'that no one should be granted admission to the *Medical Register* who did not give evidence by examination of having had adequate ophthalmoscopic training, and who could not show at least that he was able to delineate the vessels on the fundus oculi,' which opinion this Examination Committee endorses. The Visitor and Inspector also regret that there is no examination in operative surgery on the cadaver.

"The Committee of Management of the Conjoint Board state that they have no remarks to make on the report, but they inform the Council that inasmuch as some remarks are made by the Visitor and Inspector in reference to the examination in operative surgery, clinical, ophthalmic, and aural surgery, and to the scheme of marks, they have suggested to their respective Colleges that the Court of Examiners might be requested to take these remarks into consideration. Upon this suggestion the two Royal Colleges have arranged to act.

"The final conclusion of the report, that the Final Examinations of the Conjoint Board of England are 'sufficient' is satisfactory to this Committee."

On the motion for the adoption of the report, proposed by Mr. Bryant, seconded by Dr. Finlay, Mr. George Brown proposed that the further consideration should be postponed until after the remarks of the Court of Examiners have been forwarded to the Council.

Sir Victor Horsley seconded.

After some discussion the President put Mr. George Brown's amendment to the Council, and declared it lost. He then put the original motion that the report be adopted, and this was agreed to.

Final Examination of the Conjoint Board in Ireland.

Mr. Bryant read the report by the Examination Committee on the visitation and inspection by Sir John Batty Tuke, Visitor, and the late Sir George Duffey, Inspector, of the Final Examinations of the Conjoint Board of the Royal Colleges of Physicians and Surgeons in Ireland, and also a report by Sir John Batty Tuke on a supplementary visitation of these examinations.

The report was received, entered on the minutes, and adopted.

Report by the Examination Committee.

"The visitation and inspection of the Irish Conjoint Final Examinations of the Royal Colleges was completed in May, 1902, and the carefully considered report of the Visitor and Inspector upon the examinations contains criticisms and suggestions which demand serious consideration by the bodies inspected.

"The final decision of the reporters must, however, be acceptable to this Committee, for after viewing the examination as a whole they write: 'We are of opinion that it is a fair and carefully conducted one; and that as regards its sufficiency it fulfils the requirements of the Medical Act.'

"In the Report by the Committee of Management adopted by the Councils of the two Royal Colleges on November 6th, 1902, we are assured that the recommendations of the Visitor and Inspector 'are being carefully considered by the Committee of Management, who are now drafting the details of the method of conducting the examinations' of a revised curriculum, which was adopted by the Colleges in July last, since the visitation and inspection. As in the case of the University of Dublin, the Irish Conjoint Board divides its examinations in medicine and surgery into two parts, and as the Visitor and Inspector had not inspected the first part, the Committee recommend the General Medical Council to pursue the course it adopted last May with respect to the University of Dublin.

Supplementary Visitation.

"The visitation and inspection of Part II of the Final Examinations of the Conjoint Board of Ireland was made in April and May of 1902, and was reported upon by this Committee in November of the same year. In this report the Council was recommended by the Committee to direct that Part I of the Final Examination should be visited and inspected, and in accordance with this wish the Visitor of this Council carried out his instruction in April, 1903, but unfortunately without the assistance of the Inspector, Sir G. Duffey, who was too ill to attend.

"When the report of Part II of the Final Examinations was made in November, 1902, it was known that a 'revised curriculum' was being drafted with the details of the method of conducting the examinations. This scheme, as a whole, was adopted by the Conjoint Colleges in July, 1902, and is now in force. The new curriculum requires five years of study at a medical school, except in the case of candidates who have studied for one year in institutions recognized by the Conjoint Board of England for the teaching of chemistry, physics, and biology. The Visitor, in his report upon Part I of the examination, tells us that 'all the suggestions contained in the report of the Inspector and Visitor in May, 1902, had been accepted and acted upon' (p. 37).

"That the examinations in pathology, therapeutics, and forensic medicine were carried out in strict accordance with the new regulations of the Conjoint Board in a painstaking and thorough manner.

"That the examination in pathology was at once practical and scientific, with abundance of morbid specimens and of microscopic preparations; also that the successful candidates displayed a good knowledge of the subject. 'In the departments of therapeutics and forensic medicine there was also an ample supply of specimens.' 'The marking was by no means lenient.' The Visitor finally reported that the oral examination was a good one and 'sufficient.' No opinion was given by the Visitor upon the written papers. 'Owing to a misunderstanding on the Secretary's part, the papers asked for by the Visitor were not forwarded.'

"To this Examination Committee the conclusion of the Visitor after his inspection of Part I of the Final Examination, 'that the oral examination was a good one and "sufficient,"' seems to support the following conclusion by the Visitor and Inspector after the visitation in Part II in May, 1900: 'We are of opinion that it is a fair and carefully-conducted examination, and that as regards its sufficiency it fulfils the requirements of the Medical Act.'"

The Society of Apothecaries of London.

The report by the Visitor, Dr. Bruce, upon the visitation and inspection of the qualifying examination of the Society of Apothecaries of London made by himself and the late Sir George Duffey was then read by Mr. Bryant and entered upon the minutes.

Report by the Examination Committeee.

"The final examinations of this Corporation, which are held monthly, are divided into two sections, the first composed of three parts, and the second of two parts.

"Candidates may take up both sections together, but are advised to take these sections separately—Section 1 at the end of the fourth year, Section 2 at the end of the fifth year. Section 1 must be passed before Section 2. Section 1 consists of three parts:

Part 1 (A) includes a written examination in the principles and practice of surgery, surgical pathology, and surgical anatomy; an oral examination in surgery, surgical pathology, operative manipulation, surgical anatomy, instruments and appliances.

Part 2 (B) includes: Written and oral examination in the principles and practice of medicine, including therapeutics, pharmacology and prescriptions; pathology and morbid histology, forensic medicine, hygiene, theory and practice of vaccination, and mental diseases.

Part 3 (C), which may be taken with Section 2, includes: Written and oral examination in midwifery, gynaecology and diseases of newborn children; examination in obstetric instruments and appliances.

Section 2 consists of Part 1 (A) clinical surgery; Part 2 (B) clinical medicine and medical anatomy. Candidates may enter in Section 2 for A and B together or separately.

Examination in Surgery.

"The general arrangements for the examination were satisfactory. Each candidate—there were eleven—was examined by the four examiners in the clinical, practical, and oral examinations. The paper on surgery contained six questions, one of which was upon eye surgery. Four of them, and no more, were to be answered. Two questions were given on pathology, and two on surgical anatomy, but only one of each had to be answered. So out of ten questions on surgery six only had to be answered, and for the surgical paper three hours were allowed. The questions were good. Except in doubtful cases the answers were read by one examiner only.

"For the clinical examination, in which each candidate was examined for twenty minutes, there were sufficient cases both in number and character, and the Visitor pronounced the examination to have been a fair and searching one. This Committee would, however, desire to see the length of time allowed for this part of the examination on clinical surgery prolonged for another ten minutes; half an hour is a minimum as to time for such an important subject as clinical surgery.

"The examination in practical surgery included an examination for ten minutes at each of two tables, one devoted to surgical anatomy and operative manipulation, and the other to instruments and bandaging. The instruments and appliances available were good and sufficent, and three living models were available.

"The *Oral Examination* in systematic surgery and pathology was pronounced by the Visitor to have been a good and searching one. Each candidate was examined for ten minutes in surgery, and for another ten minutes in pathology.

"The minimum pass mark in this examination was in each subject 50 per cent. The method of marking was judicious, being based on the percentage system.

"Of the eleven candidates who presented themselves for examination in surgery seven passed and four failed.

"There is apparently no provision in the regulations requiring evidence of study during the period for which a candidate is referred (p. 11). This is to be regretted, for such requirement should always be made and enforced.

Examination in Medicine.

"This examination was conducted on the same lines as that in surgery, and the arrangements for it were excellent.

"*Written Examination.*—Three papers were given at this examination: one on medicine and therapeutics, containing six questions, four of which must be answered; three questions in pathology, two of which must be answered; and four questions in forensic medicine, hygiene, and insanity, three of which must be answered. In the case of the last paper the Visitor drew attention to the fact that there was no question on hygiene, but the Court of Examiners of the body visited showed in their report that this was an accident. For the first paper three hours were allowed; for the second one hour and a half; and for the third paper two hours.

"The questions on the three papers the Visitor pronounced to be unexceptionable. The marking was likewise satisfactory to the Visitor.

"In the *Clinical Examination* each candidate was assigned a case out of the many which were present, and half an hour was allowed for its examination. The candidate was then given another half-hour in which to write a report on the case, including its diagnosis, prognosis, and treatment. One of the examiners also gave the candidates an oral clinical examination on another case, which lasted fifteen minutes. This examination was supervised by the two examiners. The examination is pronounced by the Visitor to be a good one, although many of the candidates appeared to be imperfectly acquainted with the method of making a systematic clinical examination.

"The *examination in pathology*, urine testing, and microscopic specimens was pronounced by the Visitor to be satisfactory. Each candidate was sent to a table upon which was a selection of recent and of museum morbid specimens, upon which he was examined for fifteen minutes. He then passed to a second table upon which were microscopes and a variety of slides illustrating urinary sediments, parasites, and different pathological conditions, and was examined for another fifteen minutes; for a third quarter of an hour he had to examine a specimen of urine and to report the result in writing. The Visitor pronounced the examination itself to have been satisfactory, although the knowledge of pathology displayed by the majority of the candidates was indifferent.

"In the *Written Examination* on midwifery there were in the paper four questions, but only three had to be answered. In that on gynaecology there were two questions, but only one had to be answered.

"The *Oral Examinations* in medicine, forensic medicine, and in midwifery and gynaecology were conducted at three tables, one for each subject, and each candidate was under examination for fifteen minutes at each. On the medicine table was a volume of plates of skin diseases—apparently no morbid specimens. On the forensic medicine table there were specimens of poisonous drugs, chemical reagents and apparatus, and samples of cloth acted upon by acids. On the midwifery table a female pelvis, fetal skull, a few museum specimens, and some obstetrical instruments. Close by there was also a 'phantom,' which was used once. The Visitor expresses no special opinion upon this part of the examination.

"Of the fourteen candidates examined in medicine, seven passed and seven failed. In forensic medicine seven passed and five failed. In midwifery four candidates out of the ten examined failed.

"In the concluding observations of the Visitor, pleasure is expressed at the great care and thoroughness with which the whole examination was conducted. He specially mentions as commendable the examination in pathology and urine testing, as well as in medical jurisprudence and hygiene. He notices the absence of a special examination in ophthalmic surgery, but does not note that a special question in eye surgery was included in the surgical paper. He expresses an opinion that the art of prescribing should have more attention at this examination. His conclusion, however, is is that the Final Examination is 'sufficient.'"

This report is signed only by William Bruce, Visitor, on account of the sad illness and irreparable loss of our Inspector —Sir George Duffey.

To this Committee the conclusion of the Visitor that the Examination is "sufficient" is satisfactory.

Apothecaries' Hall, Dublin.

Mr. Bryant read the report by the Examination Committee on the inspection (July, 1903) of the examinations of the Apothecaries' Hall by the Inspector, Dr. W. P. Herringham, and the Assistant Examiners in Surgery, Mr. Alexis Thomson and Sir Henry G. Howse.

Report by the Examination Committee.

"There were two candidates for the First Examination, one for the Second, one for the Third, and five for the Final. At the First Examination one came up for chemistry and was rejected. The second came up in osteology, pharmacy, and biology, and passed in all three subjects. The Inspector reported the examination in practical pharmacy to have been excellent.

"The candidate for the Second Examination came up in anatomy, physiology, and materia medica. He was rejected in the first two subjects, but did well and passed in materia medica.

"The candidate for the Third Examination came up in medical jurisprudence and hygiene, and passed in both subjects.

"Four of the five candidates for the Final Examination had been up before.

"Out of the four who came up in medicine one passed and three were rejected. Of the five who came up in surgery one passed and four were rejected. The successful candidate was said to have passed in surgery very creditably by the surgical examiners.

"Of the four who came up in midwifery two passed and two were rejected, but only one passed the necessary subjects to qualify.

"Of the two who came up in ophthalmic surgery one passed and one was rejected.

"The Inspector reported that the examination was thoroughly and satisfactorily conducted. He added to his report some general conclusions upon his three years' experience as Inspector, which are worthy of attention.

"The Examination Committee of the Apothecaries' Hall express pleasure in the fact that the Inspector reports that the examination was thoroughly and satisfactorily conducted, and state that the Inspector's observations relative to the marking will receive full consideration."

General Conclusions of the Inspector.

The general conclusions appended by Dr. Herringham to his report were as follows:

"As I am now resigning office, I take the opportunity to review the experience of the last three years.

"Upon matters not within the province of the Apothecaries' Hall, such as the general education of the candidates, I have not thought it my duty to enlarge. For this other bodies are responsible. Had I, however, taken this into consideration, it is not upon such points as spelling that I should be tempted to dwell. This is, in my experience, a very inferior test to that afforded by a writer's vocabulary, by the structure and arrangement of his sentences, and by the connexion of his argument.

"I have considered that I was appointed to ensure that the examinations were so conducted that no candidate should pass on insufficient knowledge. Provided this object was secured, I have interfered as little as possible with the system or with the details of the examination. Whenever I have made any suggestions the authorities of the Hall have responded both promptly and cordially.

"I have not thought it incumbent on me to make any suggestion on behalf of the candidates. At the Apothecaries' Hall the examinations in practical chemistry and practical pharmacy are, so far as my experience goes, unusually difficult, and, under the present examiners, afford a test much above that commonly employed in these matters. However this may appear to the candidate it is pure gain to every one else. The danger in such cases is lest the difficulty of the examination should lead the examiners unduly to lower their standard. Under those circumstances a difficult test is pretentious fraud. But I have not seen this occur.

"Nor have I thought it necessary to ask for minute uniformity in details. The oral examinations are not, for instance, always of the same length. I have seen no reason, provided a minimum be secured, for fixing a maximum. Exact time limits are necessary when large numbers are examined, but are as often a hardship to the student as a safeguard. [Any examiner can 'plough' a candidate (and many candidates could plough their examiner) in considerably less than ten minutes. But it may be comparatively difficult to pass him, and it is an advantage on such occasions to extend the time. Again, I have noted that the examiners do not all mark on the same system. Some prefer 10 for their full mark, others 100. I have heard that some examinations have been criticized for using the smaller number. But, as the only difference is the use of a decimal point, I have not thought it necessary to insist upon the larger.

"There has, however, occasionally been some confusion in the meaning given to full marks, and I think that this is a matter which ought to be both clear and uniform. I have always urged that full marks should be the marks which a candidate can obtain by answering the whole paper perfectly, that each question should be valued proportionately, and that a certain minimum number of questions should be answered for the candidate to receive any marks at all.

"Thus, in a paper of six questions, the full marks being taken at 100, each question would be worth $16\frac{2}{3}$, and every candidate must answer at least three questions to be marked at all. It would be just possible for him to obtain a pass mark by answering three questions alone. But that would only be the case if he answered them perfectly—or let us say as perfectly as his examiner, who to the candidate plays the part of 'bogey,' would have answered them.

"For a Pass Examination, when the questions are not too difficult to be answered in half an hour each, I think this the only satisfactory plan."

Mr. Bryant moved that the report should be received and entered on the minutes, and this was seconded by Mr. George Brown.

Mr. Tichborne called attention to certain inaccuracies, which Mr. Bryant undertook to correct, and with these corrections the report was adopted.

Proceedings in Camera.

Strangers were directed to withdraw. On readmission,

The President said: I have two matters to announce. First, that the Council has resolved to restore to the *Medical Register* the name and qualification of Charles Augustus Bynoe; second, the President is authorized to communicate with the President of the Local Government Board with regard to death certification.

Preliminary Examinations.

Sir John Batty Tuke, in moving that the report of the Education Committee on certain preliminary examinations be received, entered on the minutes and adopted, said the Committee was well satisfied with the progress the bodies referred to had made, and that before another report was submitted they would have raised their examination to the standard required by the Council.

Report.

"The Education Committee have had before them detailed reports by Dr. M'Cormick on the results of his inspection of the examination papers set, and marked answers sent up by candidates, in the Medical Preliminary Examinations held by the Educational Institute of Scotland and the Conjoint Board in Ireland. These bodies have also submitted to the Committee full particulars of their methods of marking and other details of their systems; and these, with Dr. M'Cormick's comments, have enabled the Committee to form a satisfactory judgement on the scope and standard of the examinations in question.

"As regards the examination of the Educational Institute of Scotland, the improvements already effected, or about to be introduced, are so satisfactory that the Committee feel justified in anticipating that during the next year the examination will have attained in every respect the standard desired by the Council. In future the examination in Latin and Greek, like that in French and German, will be conducted entirely by means of unprescribed books. Steps have also been taken for the appointment of examiners who have had experience of the standards and methods of the Scottish University preliminary and leaving certificate examinations; and these examiners will meet to revise the papers and marks conjointly before deciding on the passing or rejection of the candidates. In order to give the Committee an opportunity of observing the effect of these and other changes, it is proposed to continue for the year 1904 the recognition hitherto extended to the examination. It is hoped that next year the Committee will be in a position to place the examination definitively on the list of those recognized by the Council.

"With respect to the examination of the Irish Conjoint Board, certain improvements in regard (1) to the distribution of marks between different branches of the several subjects included, (2) to the preponderance assigned to the oral examinations in classics and mathematics, and (3) to the requirements of a minimum standard in each of the subjects of examinations, have still to be carried out. The Committee have adopted a number of specific recommendations on each of these heads, which they propose to communicate to the Conjoint Board. They are of opinion that the continuance of the Council's recognition should be made dependent on the adoption of these recommendations. But in order to give time for the necessary modification in the Board's regulations they propose in this case also that the examination should continue to be recognized for the year 1904."

Dr. Norman Moore seconded.

In reply to Mr. Jackson, Sir John Batty Tuke said that the percentage of marks now required was 40.

Sir C. Nixon observed that unprescribed books could not be insisted on as an absolute requirement.

Dr. MacAlister replied that it was recommended as desirable.

Sir Charles Ball hoped the Council would consider the examination satisfactory. The recommendations of the Committee were on matters of detail.

Sir John Moore assured the Council that the Committee of Management of the two Colleges had spared neither time, trouble, nor expense in trying to improve the examination in every possible way and bring it up to the required standard. He thought they had achieved a considerable degree of success, and had little doubt that they would give the fullest and most courteous consideration to any representation from the Council.

Mr. Tichborne saw no indication that the undertaking given some years ago by the representatives of the Royal College of Physicians, Ireland, that this examination would be stopped was being carried out. The last clause of the report was not necessary, and he moved that from the words "they are of opinion" down to "modification in the Board's regulations," inclusive, be omitted.

Mr. Jackson seconded.

Dr. MacAlister observed that the Committee proposed that the Council should give the bodies another year to carry out the recommendations. If the amendment were adopted it would take away the only steam behind the Council to drive that forward.

The amendment was then put and lost.

At Sir Christopher Nixon's request the names and numbers were taken, when 18 voted against, 3 for, 5 did not vote and 5 were absent.

The motion was then put and agreed to.

Preliminary Examination by the Apothecaries' Hall, Dublin.

On the motion of Sir John Batty Tuke, seconded by Dr. McCall Anderson, the report of the Examination Committee, on a communication from the Apothecaries' Hall, Dublin, was received and entered on the minutes.

"The following communications have been referred to the Education Committee by the President:—

Dublin:
November 19th, 1903.

Dear Sir,—Enclosed I send you a letter, the substance of which was passed by this Court on Friday, 13th inst., and trust it will meet with your approval.

Faithfully yours,
Robert Montgomery, M.R.C.S.,
Secretary.

The President of the
General Medical Council.

40, Mary Street, Dublin,
November 10th, 1903.

To the President of the General Medical Council.

Dear Sir,—I beg to inform the President of the General Medical Council that we, the Apothecaries' Hall of Ireland, intend on the 1st of the year 1904 to resume our preliminary examinations in arts.

It is intended, for the purpose of conducting these examinations, to appoint qualified university non-medical graduates.

When our arrangements are completed, we shall be pleased to facilitate any inspection the General Medical Council desire.

I remain, dear Sir,
Yours,
Robert Montgomery, M.R.C.S.,
Secretary.

"This is is an intimation that the authorities of the Apothecaries' Hall, Dublin, intend next year to revive the Preliminary Examination in Arts, which, in deference to the express wish of the Council, they have for many years discontinued. The Committee are unaware of any circumstances which would justify so serious a reversal of the educational policy which, at the Council's instance, has been generally adopted by the licensing bodies, including the Apothecaries' Hall. The Committee, therefore, strongly deprecate the proposed re-establishment of a preliminary examination conducted by a professional body which has no special relation to questions of general education. Should such an examination be notwithstanding instituted for candidates seeking the licence of the Apothecaries' Hall, Dublin, it will rest with the Council to decide whether it should be recognized for the purpose of the registration of students in general. Such recognition would affect in a practical way the arrangements of other licensing bodies in regard to preliminary examination.

"Accordingly the Committee, in view of the grave educational issues involved, do not recommend that the Council's approval should be given to the step contemplated by the Apothecaries' Hall, Dublin."

Sir John Batty Tuke, in moving the adoption of the report, said that the Apothecaries' Hall, Dublin, gave up the preliminary examination in general knowledge in 1885, and it did not appear to the Committee that any sufficient ground had been shown for its resumption. It had always been deprecated by the Council.

Dr. McCall Anderson seconded.

Mr. Tichborne observed that the Apothecaries' Hall had not instituted the examination yet; but they proposed doing so on January 1st next. They had not the slightest wish to start it, but they were being forced by circumstances. The Conjoint Board had for some time carried on a system which formed a complete cordon round the examination of the Apothecaries' Hall, and prevented any person coming to them and remaining for the final examination. The Apothecaries' Hall was one of the first of the bodies which immediately fell in with the view of the Council that this examination should cease. They were exactly on all-fours with the Conjoint Board of Ireland, and if it was necessary or desirable for them to conduct those examinations, so was it desirable and necessary for the Apothecaries' Hall. He did not see why because they paid respect to the wishes of this Council they should be punished for it: and if they saw an indication of their being able to give it up they would do so. They had not the slightest disrespect to the Council in carrying this out in apparent defiance of its wishes, but they thought that the Council might be influenced, and should be influenced, upon logical ground to give its approval to this examination.

Mr. George Brown intended to vote against the adoption of the report on the ground that the Council should mete out equal justice to the corporations, although he agreed with the recommendation on general grounds. It had been argued that adequate provision did not exist in Ireland for the examination of students: if that was the reason for allowing the Colleges to hold this examination it was *ipso facto* a reason for allowing the Apothecaries' Hall, Dublin, to adopt it. It was simply a question of hostility between these corporate bodies.

Sir William Thomson protested against this assertion. The Conjoint Board of Ireland had explained to the Council over and over again that they could not give up that examination until another was found suitable for the purpose; but the Colleges themselves were ready to give it up at once if such an examination could be found.

Sir John Moore had heard with extreme surprise the assertion that the Apothecaries' Hall was on all-fours with the Conjoint Board. It was not; the Apothecaries' Hall had no medical school. There was no *raison d'être* for a preliminary examination whatsoever at the Apothecaries' Hall. It was simply a choice of going there in order to pay less money for the examination.

Dr. McVail thought that the gate having been once opened it was not the least likely that only one body would pass through it. This was only the first outcome of such a policy, but in the future they would have all these bodies acting separately and individually in the same direction.

The motion was then put and agreed to.

Reports of Proceedings of the Council.

Dr. Norman Moore had given notice of the following motion:—

That it be referred to the Executive Committee to consider and report to the Council upon the possibility of making arrangements with the medical journals for an authorized report of the discussions of the Council.

He thought that at this very late hour of the session he ought to withdraw the motion, but he would like to explain what was proposed, so that there should be no misunderstanding. He fully recognized the excellence of the reports of the debates of this Council which appeared in the medical journals. They were excellent; but all reports of that kind must occasionally contain errors. He thought it might be worth while for the Council to consider whether it could enter into an arrangement; which, of course, would cost the Council some money, but which might provide in some way for greater precision in the reports. He proposed at a future session to move that it be referred to the Executive Committee to report upon it. At the present he asked leave to withdraw the motion. This was at once given.

Pharmacopoeia Committee.

On the motion of Dr. MacAlister, seconded by Dr. Norman Moore, the report of the Pharmacopoeia Committee and the Appendix were received, entered on the minutes, and approved.

Report.

The Pharmacopoeia Committee beg leave to report that from May 24th to November 24th the number of copies of the *British Pharmacopoeia* sold was 711, and of the *Indian and Colonial Addendum* 123. The total numbers disposed of are thus—of the *Pharmacopoeia*, 34,591; of the *Addendum*, 664.

The Committee held a special meeting on October 30th for the purpose of considering in detail the questions raised by the *Digest of Criticisms** prepared by their direction by Mr. W. Chattaway, and appended to this report. At this meeting a number of details were considered, and certain were selected as deserving of inquiry in preparation for the revision of the *Pharmacopoeia*.

The final instalments of the investigation on the solubilities of drugs, conducted in the research laboratories of the Pharmaceutical Society of Great Britain by Professor Greenish, have been forwarded by the Council of the Society to the Committee. These will, as in other instances, be published for general information. The series of memoirs on this subject constitutes a valuable addition to the data at the Committee's disposal.

Professor Dunstan, of the Imperial Institute, has made substantial progress with the examination, begun last year, of the pharmacopoeial tests for arsenic. In view of the laborious character of the inquiry, the Committee propose that a second and final grant of £50 should be made to Professor Dunstan to enable him to complete the work, and to present it in a form that may be immediately available for the preparation of the next issue of the *Pharmacopoeia*.

Other researches, initiated in conference with the representatives of the Pharmaceutical Societies of Great Britain and of Ireland, are in progress.

On the motion of Dr. MacAlister, seconded by Dr. Norman Moore, Sir John Wm. Moore was added to the Pharmacopoeia Committee in the place of Dr. Atthill.

Public Health Committee.

Dr. Bruce moved, and Sir Charles Ball seconded, that the following report of the Public Health Committee be received and entered on the minutes.

Report.

The Committee had the following communication from the War Office submitted to them at their meeting on November 27th:

War Office, London, S.W.,
November 26th, 1903.

Sir,—I am directed by the Secretary of State for War to submit the following recommendation of the Advisory Board for Army Medical Services—namely, that certificates granted by the Sanitary Officer of the Bombay Command may be accepted by the General Medical Council as certificates for the D.P.H. Examination, under Rule 3 (*e*) of its Rules and Regulations for Diplomas in Public Health. This recommendation has also the strong support of the Director-General, Army Medical Services, and the Secretary of State trusts that it may receive favourable consideration.

The Sanitary Officer of the Bombay Command has his head quarters at Poona, a city of 120,000 inhabitants. Further, the military population of the command is approximately 15,000 men.

I am also to point out that the Sanitary Officer of this Command has exceptionally good opportunities for imparting a thorough practical knowledge of the duties, routine and special, appertaining to public health administration.

I am to request that this communication may be placed before the Council, which is, I understand, now in session.

I am, Sir, your obedient servant,
Ewd. Ward.

The Registrar,
General Medical Council.

After maturely considering the different points in connexion with the foregoing communication, the Committee, taking into consideration the precedent of Gibraltar, recommend the Command in Bombay to be added to the list of recognized military districts under Rule 3 (*e*), which runs as follows:

Every candidate shall have produced evidence that, after obtaining a registrable qualification, he has during six months (of which at least three months shall be distinct and separate from the period of laboratory instruction required under Rule 2) being diligently engaged in acquiring a practical knowledge of the duties, routine and special, of public health administration, under the supervision of ——

(*e*) A sanitary staff officer of the Royal Army Medical Corps having charge of an army corps, district, or command, recognized for this purpose by the General Medical Council.

The Committee have had before them official information from which they gather that the sanitary officer in charge of the Bombay Command is registered as holding the Diploma in Public Health, and devotes his whole time to sanitary work. They are strongly of opinion that this arrangement should be maintained in future; and they further think it desirable that all certificates granted by the sanitary officer should state that the candidates have had sufficient opportunities of acquiring a knowledge of the working of the Public Health Laws in relation to a civil (as distinguished from a military) population of at least 30,000.

Sir J. Batty Tuke protested against the introduction of an important report at the fag end of the session. He admitted that he had a feeling of jealousy with regard to the Public Health Committee; it had been whittling down the conditions which the Council started with some years ago, and he should oppose its report being entered on the minutes.

Dr. Bruce said that it was not the Committee's fault that the Council had not had the report before. The letter came in at the last moment, and they had done all they could to expedite matters.

After a brief discussion the motion was put that the report be entered on the minutes, and it was agreed to.

Dr. Bruce moved its adoption. If the Council did anything to stay the progress of this movement it took upon itself a great responsibility. He thought it the duty of the Council to meet the War Office, and recognize Bombay.

Sir Charles Ball seconded.

Sir John Batty Tuke had always noticed Government communications came in so late that they had to be shunted through. He had no reason to distinguish between Madras, Bombay, and other places, but he wanted a reason for his vote, and he had none.

Dr. Windle thought it was time Government offices learnt that matters could not be rushed through the Council by being brought up at the last moment, and he moved that the consideration of the report be postponed.

Sir Victor Horsley seconded, because the Council had had the assurance of the War Office that the officers in charge of these districts should be qualified sanitary medical officers of health.

Dr. Norman Moore thought there were some things in the report which required great consideration.

Sir Charles Ball having explained the circumstances under which the letter was sent,

Dr. McVail said that he did not see how the Council could refuse the application. They had already recognized Gibraltar, and he was perfectly certain other places would demand similar recognition. He thought the Public Health Committee should be instructed to consider how much further the Council was to go.

Dr. Bennett thought it was very undesirable to postpone the matter, because it was clear to his mind that next session the Council would pass it.

The amendment was then put and lost, 10 voting for, and 13 against.

Dr. MacAlister suggested that instead of adopting the report, the motion should be:

That Bombay be added to the list of recognized military districts; that the report be communicated to the Secretary of State for War for his information, and that his attention be specially called to the last paragraph of the report.

Dr. Bruce accepted this, and it was carried as a substantive motion.

*We shall hope to deal with Mr. Chattaway's observations in a future issue.

Inspection of Final Examinations of Scottish Universities.

It was moved by Dr. MacAlister, seconded by Dr. Bruce, and resolved:

That the Executive Committee be requested to arrange at its meeting in February for the inspection of the final examinations of the Scottish Universities next year.

The Apothecaries' Hall, Dublin.

Moved by Dr. MacAlister, seconded by Dr. Bruce, and agreed:

That the Executive Committee be requested to arrange for the appointment of a Visitor or Inspector for the examination of the Apothecaries' Hall, Dublin, and that the inspection take place from time to time as the President directs.

Dr. MacAlister called attention to communications from the Apothecaries' Hall, Dublin, requesting that they might be relieved from the expenses entailed by examiners in surgery. The resolution adopted by the Apothecaries' Hall was as follows:

They are unanimously of opinion that the time has now come when they should be relieved from the heavy burthen entailed by the travelling expenses of the examiners in surgery. They therefore respectfully request the General Medical Council to take this matter into consideration.

The communication having been received and entered on the minutes, Dr. MacAlister moved, and it was agreed, that an answer be sent calling attention to the section of the Act of 1886 by which the Council had no power to pay the expenses of the examiners.

Students' Registration Committee.

On the motion of Sir Hugh Beevor a report of the Students' Registration Committee on exceptional cases and on the approval of the Swansea Technical College (Day Classes) as a recognized institution was received and entered on the minutes and adopted.

Thanks to Visitors.

On the motion of Sir Hugh Beevor, seconded by Dr. Norman Moore, the thanks of the Council were given to Dr. Windle and to Professor J. Campbell Brown for visiting all the First Medical Examinations of the Licensing Corporations of the United Kingdom and reporting upon them individually and collectively.

Annual Return of Results of Professional Examinations.

A draft report presented by the Examination Committee stated that, with the exception of the University of Cambridge and the Royal University of Ireland, all the licensing bodies were prepared to give the information as to the results of professional examinations for qualifications primarily admitting to the *Register* in the form of a table suggested by the Examination Committee, and that the difficulty felt by the two universities named had been met. The report further stated that the replies showed that it was practically impossible to obtain the suggested information as to repeated rejections. The Committee regretted that this was so, inasmuch as the information, if obtainable, would have been distinctly valuable. The report concluded by a recommendation that for the future the annual returns showing the results of professional examinations for qualifications registrable under the Medical Act, 1886, should appear in the form suggested in their previous report, with the addition to Table I of columns for the subjects botany and zoology.

The report was received and entered on the minutes and the recommendation adopted.

Examination for the Services.

Mr. George Brown had a motion asking for copies of the returns furnished to the Council relating to competitive examinations for vacancies in the various departments of the services which, owing to the late hour, with the consent of his seconder and the Council, he deferred until next session.

Vote of Thanks.

On the motion of Mr. Bryant, seconded by Sir John William Moore, the best thanks of the Council were given to the President for the kind and able manner in which he had conducted the work of the sessions.

The minutes were read and confirmed, and the proceedings terminated.

Meetings of Branches and Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* Journal.]

BRITISH GUIANA BRANCH.

The annual meeting of this Branch was held at the Public Hospital, Georgetown, on Saturday, October 24th, Dr. J. H. Conyers, President, occupied the chair and there were eight members present.

Statement of Accounts.—The annual statement of accounts duly audited was presented.

Election of Officers.—The following members were elected office-bearers for the coming year:—*President:* C. J. Gomes, M.D.Edin. *Vice-Presidents:* Sir D. P. Ross, M.D.Edin., and J. E. Godfrey, M.B.Edin. *Council:* Drs. F. H. Edmunds, J. Scott Fowler, W. de W. Wishart, and C. E. Hodgson. *Honorary Secretary and Treasurer:* Q. B. de Freitas.

New Member.—Dr. M. G. Pereira was elected a member.

Votes of Thanks.—Votes of thanks were passed to the retiring office-bearers.

SOUTH AUSTRALIAN BRANCH.

Report of Council.—At a meeting of the Council of this Branch, held at Adelaide on June 25th, Dr. Archibald A. Hamilton, President, in the chair, the twenty-fourth annual report of the Council was presented and unanimously adopted. Reference was made to the reorganization of the Association, and to the new regulations which were gradually coming into force. A code of new Branch rules was presented for consideration. The view was expressed that it was of vital importance to the Australasian Branches to conserve the interests of the *Australasian Medical Gazette*, in which appeared the official record of their transactions. A rule had therefore been included in the proposed code providing that the annual subscription to the Branch and the privileges conferred thereby should remain unaltered. With considerable success they had attempted the suppression of advertisements of an objectionable so-called "medical" character. It was stated that the Branch had maintained its position in regard to members, finance, and attendance at meetings. A matter of good augury for the future of the Branch was that so many papers reaching a high standard of excellence had been contributed by the younger members. During the year the Branch had lost three members by death—Drs. Brookes, Popham, and Walker. The following papers had been read during the year:—Dr. J. C. Verco: Appendicitis; Dr. F. Magarey: Two Cerebral Cases; Dr. Todd and Dr. Sweetapple: Placenta Praevia; Dr. Reissmann: Leucocytosis; Dr. Hone and Dr. H. Evans: Acute Colitis; Dr. Hornabrook: Haffkine's Prophylactic; Dr. J. A. G. Hamilton: Complicated Hysterectomy; Dr. Lendon: Congenital Pyloric Stenosis; Dr. Marten: Sequelae of Syphilis; Dr. Hayward: Some Medical Cases; Dr. Reissmann: Morphine Tablets; Dr. C. H. Souter: Midwifery Practice and Experience; Dr. J. A. G. Hamilton: A New Operation; Dr. Newland: Finsen Light Cure; Dr. J. C. Verco: Myelopathic Albumosuria; Dr. Reissmann: Diabetes. A clinical evening was also successfully held.

New Branch Rules.—The code of Branch rules proposed by the Council was adopted.

EAST ANGLIAN BRANCH:

South Suffolk Division.

A special meeting of this Division was held at Ipswich on November 5th, when the Chairman of the Division, Dr. W. A. Elliston, occupied the chair.

Model Rules.—The model rules for a Division were adopted with a few alterations.

Matters referred to Divisions.—These matters referred to in the circular letter from the General Secretary were considered. The resolutions passed have been reported to the General Secretary.

West Suffolk Division.

This Division met in the Board-room of the West Suffolk General Hospital on October 15th. There was a good attend-

ance of members. The meeting considered in detail the draft of the Medical Acts Amendment Bill submitted by the Council, and it was resolved to send several recommendations to the Council. Several resolutions regarding the Vaccination Acts were also passed.

Communications.—Mr. Ernest Stork showed a case of Raynaud's disease and a case of sporadic cretinism, and Dr. H. Watson Smith read an interesting paper on *x* rays, Finsen light, and high-frequency currents, practically illustrated in the electrical room of the hospital.

Tea.—The members were entertained to tea by the matron.

EDINBURGH BRANCH:

South-Eastern Counties Division.

The autumn meeting of this Division was held in the King's Arms Hotel, Melrose, on Thursday, October 29th at 3.30 p.m., Dr. Blair, Chairman, presiding.

Confirmation of Minutes.—The minutes of the annual meeting were read and approved.

Matters referred to Divisions.—The recommendations as to vaccination; the proposed Medical Acts Amendment Bill; and the resolution passed by the Representative Meeting, 1903, relative to the representation of the British Medical Association on the General Medical Council were considered. The opinions of the Division on these matters have been communicated to the Medico-Political Committee.

Scottish Committee.—Dr. Somerville reported that as representative at the annual meeting at Swansea he presented the motion from the Division in favour of a Scottish Committee to deal with purely Scottish affairs, but withdrew it in favour of the resolution of the Dundee Branch. Dr. Somerville had objected to one part of this resolution which said the Committee should meet quarterly, on the ground that the Committee was consultative, not administrative, and should not meet unless there was business for it to transact. His contention was upheld, and the resolution as amended passed.

Vote of Thanks.—Dr. Blair moved that Dr. Johnstone be thanked for his able summary of the Draft Medical Acts Amendment Bill; this was heartily and unanimously agreed to.

Communications.—Dr. Watson (Peebles) showed a very interesting specimen of a human embryo of about one month's development, and pointed out the advantages of formalin as a preservative of such preparations.—Dr. Haddon (Denholm) called attention to fasting as a therapeutic measure, and related an illustrative case, and showed sphygmographic tracings before and after. The benefit in loss of weight, in feeling of well-being, and in general physical, and especially cardiac comfort, were most marked, and proved without doubt the great good to be derived from such treatment in suitable cases.

LANCASHIRE AND CHESHIRE BRANCH:

Liverpool (Southern) Division.

Matters referred to Divisions.—At a meeting held on October 23rd, Dr. Steeves in the chair, the recommendations as to vaccination, the draft Medical Acts Amendment Bill, and the question of the representation of the British Medical Association on the General Medical Council were considered, and the findings of the Division have been communicated to the Medico-Political Committee.

Altrincham Division.

The third general meeting of this Division was held in Altrincham on Thursday, August 20th, 1903.—Dr. C. J. Renshaw presided over a meeting numbering nine only. The day was extremely wet.

Confirmation of Minutes.—The minutes of the last meeting were passed.

Reports of Meetings.—The Chairman referred to the work done at the last two Branch Council meetings.—The Hon. Secretary as the representative, presented an exhaustive report on the Annual Representative Meeting at Swansea. A vote of thanks was accorded to him for his services.

Proposed Issue of Circulars.—Dr. Cooper reported for the Committee on Membership, and the Committee and Secretary were instructed to proceed with the issue of the proposed circulars in the Division.

Financial Statement.—A financial statement was submitted and received.

Matters referred to Divisions.—The recommendations as to vaccination and the representation of the Association on the General Medical Council were considered, and the resolutions of the Branch have been communicated to the Medico-Political Committee. The consideration of the Medical Acts Amendment Bill and paragraphs 4 and 6 of the vaccination resolutions was postponed to the November meeting to allow for full consideration in the meantime.

Paper.—Dr. F. Riley read a paper on paracentesis abdominis, which was discussed.

METROPOLITAN COUNTIES BRANCH:

Richmond Division.

A meeting of this Division was held on Friday, October 30th, at the Sun Hotel, Kingston, Dr. R. Langdon Down, President, in the chair.

Paper.—Dr. G. Newton Pitt read a paper on the value of blood examination in general practice, illustrated by very beautiful lantern slides of blood preparations.

Dinner.—The members subsequently dined together.

A meeting of this Division was held at the Talbot Hotel, Richmond, on Wednesday evening, November 18th. The President, Dr. Langdon Down, occupied the chair and there was a good attendance.

Paper.—Dr. E. Klein, F.R.S., read an extremely interesting paper illustrated with lantern slides on the causation of a peculiar epidemic of a disease in Lincoln simulating scarlet fever.—A hearty vote of thanks was accorded the lecturer.

Dinner.—The members subsequently dined together.

Hampstead Division.

A meeting of this Division was held in the St. Mary Islington Infirmary, Highgate Hill, on Friday, October 23rd. Dr. Ford Anderson presided, and Dr. Robinson, Medical Superintendent of the infirmary, kindly entertained the members and visitors.

Confirmation of Minutes.—The minutes were read and confirmed.

Matters referred to Divisions.—The recommendations with regard to vaccination were considered and the opinion of the meeting has been communicated to the Medico-Political Committee. The draft Medical Acts Amendment Bill and the representation of the British Medical Association on the General Medical Council were referred to the Executive Committee for report to a special meeting of the Division to be held not later than December 5th, 1903.

Paper.—A paper was then read by Dr. Herbert Tilley on chronic aural suppurations, their diagnosis, prognosis, and treatment. The paper was illustrated by diagrams, blackboard sketches, photographs, and pathological specimens.

Votes of Thanks.—After hearty votes of thanks to Dr. Tilley for his interesting paper and to Dr. Robinson for his hospitality, the meeting terminated.

Wandsworth Division.

A meeting was held on November 26th at Crichton's Restaurant, Clapham Junction, Dr. M. G. Biggs in the chair. Eighteen members were present. The meeting was preceded by a dinner, at which twelve members and friends were present, as well as Dr. Hale White, who was the guest of the evening. A paper was read at 9 p.m. by Dr. Hale White, the subject being some points in the diagnosis and treatment of common diseases of the liver. Afterwards an interesting discussion took place, in which the majority present joined. A hearty vote of thanks was passed to Dr. Hale White for his useful and practical paper, and a hope expressed that he would allow it to be printed.

NORTH OF ENGLAND BRANCH.

A Branch Council meeting was held in the library of the Royal Infirmary, Newcastle-on-Tyne, at 4.30 on Friday, September 25th. Present: The President, C. C. Burman; President-elect, Dr. James Drummond; R. B. Robson (Alnwick Division), A. M. Martin, J. Hudson, W. T. Hall, R. Dagger, A. T. Wear (Newcastle Division), J. R. Crease (South Shields Division), I. G. Modlin (Sunderland Division), W. Mearns, J. Todd, A. W. Blacklock (Gateshead Division), J. Charles (Consett Division), E. H. Davis (Hartlepool Division), Victor Miller (Stockton Division), W. Knott, R. E. Howell, E. J. Burnett (Cleveland Division), Rutherford Morison (elected by Branch), and James Murphy, J. H. Hunter, and Alfred Cox (*ex-officio*). Apologies for non-attendance were received from E. Jepson (Durham Division), D. F. Todd (Sunderland Division), J. Cromie (Blyth Divi-

sion), J. Paxton (Bishop Auckland Division), and T. B. Watson (Hartlepools Division).

New Members.—Thirty-five members were elected. One candidate on the list was declared by the General Secretary to be ineligible on the ground of arrears of subscription, for which he had previously been struck off the list of members.

Ethical Committee.—The Honorary Secretary pointed out that by rule the Ethical Committee of the Branch must be elected at this meeting. Some discussion took place on the *personnel* of the Committee, it being the general desire of those present to put on to the Committee those gentlemen who had been in the past acting for the two County Medical Unions as a Judicial Committee, and doing very similar work to that which would be required of the Ethical Committee. The Honorary Secretary pointed out that all these gentlemen were members of the Branch, so that there should be no difficulty.—Messrs. R. Morison, A. M. Martin, and Hunter all expressed themselves in favour of the work of the Branch being done by the election of the members of the Judicial Committee. Eventually the following resolution was put to the meeting and carried unanimously:

That Drs. Murphy, Hume, Jepson, Hunter, Hubbersty, Ruxton, A. M. Martin, David Drummond, R. E. Howell, and J. Charles, and Mr. Rutherford Morison be appointed the Ethical Committee of the Branch. The Honorary Secretary of the Branch to be *ex-officio* Secretary of the Committee.

Next Branch Meeting.—It was resolved that the next meeting be held in October at West Hartlepool, the further arrangements to be left in the hands of the President, Secretary, and Dr. E. H. Davis.

Work for the Divisions.—The Honorary Secretary invited suggestions for work to be carried out by the Divisions during the winter. He said that the main object of the Branch Council's existence was the co-ordination of the Divisions, and he thought it would be a good plan to get all the Divisions working at something which concerned the Branch as a whole.—Dr. Howell suggested that returns should be asked for, tabulating rates for Friendly Societies, male, female, and juvenile; also asking for information as to the working of Friendly Society Associations where they existed.—Dr. Hunter seconded the proposition.—Dr. Charles thought the rates paid for insurance examinations might be included in the inquiry. Drs. Miller and Hudson supported.—Dr. James Drummond thought the private fees charged for vaccination and midwifery might be included, but this did not meet with approval. It was agreed that inquiries should be made from all Divisions as to Friendly Society work and insurance examinations. The questions to be asked were left in the hands of Drs. Howell, Charles, and the Honorary Secretary.—The Honorary Secretary then made a statement as to inquiries that had been made from him by the Northumberland and Newcastle Medical Association as to the ability of the Branch to undertake the work at present being done by that Association. These inquiries had arisen out of the deputation sent by this Branch Council to the two county Unions urging the necessity of the consolidation of medical organizations. He asked the Council to affirm or otherwise their determination to undertake any kind of work useful to the medical practitioner which might be brought before the Council by any Division. Such a declaration would enable him to repeat with a formal official sanction what he had always said while organizing the Divisions—namely, that under the new organization the Branch would be able to do all the work the Unions were doing, and more.—Dr. A. M. Martin moved, and Dr. J. H. Hunter seconded, the following resolution, which was carried unanimously:

That the Council of the North of England Branch of the British Medical Association is both able and willing to undertake all work of interest to the practitioner, including that at present being done by the County Unions and other local Associations.

This was ordered to be placed on the agenda paper for the Branch meeting for approval or otherwise by the general body of members.

The autumn meeting of the Branch was held at the Grand Hotel, West Hartlepool, on Wednesday, October 28th. Over forty members were present. Owing to the absence of the President through indisposition, Dr. Davis (West Hartlepool) was voted to the chair. Apologies for inability to attend were received from the President, ex-President, Drs. Peart, Dey, A. M. Martin, and Mr. Rutherford Morison.

The Work of the Branch.—On behalf of the Branch Council, Dr. J. H. Hunter moved and Dr. Alfred Cox seconded the following:

That the Council of this Branch is both able and willing, under the new Constitution, to undertake all work of interest to the practitioner, including that at present being done by the County Unions and various local Associations.

Dr. Hunter said that the resolution had been carried unanimously at a well-attended meeting of the Branch Council, and was now brought forward for the approval of the Branch.—Dr. Cox said that there could be no two opinions that it was intended under the new Constitution that the British Medical Association should actively concern itself in any and every thing which interested its members. There had been some misunderstanding as to the scope of the Branch, and this resolution was intended to clear it up.—Dr. E. Jepson moved the previous question. He looked on this resolution as a means of undermining the unions which had being doing good work, and he did not believe the Branch could do that work. He protested against the way in which the Honorary Secretary of the Branch had unsettled the work of the unions by pushing the claims of the Branch.—Dr. Todd (Sunderland) seconded the previous question.—After Drs. Hunter and Dr. Cox had replied, the vote was taken. The first count was not satisfying to some of those present: the vote was taken a second and third time, and the Chairman declared the numbers to be: For the resolution, 18; against, 14.

Proposed Joint Committee.—Dr. Jepson moved:

That a Conjoint Committee be formed from the Council of the Branch and the Council of the County of Durham Medical Union to carry on the work hitherto managed by the Council of the County of Durham Medical Union.

—Dr. Hunton (Sedgefield) seconded.—Drs. A. E. Morison and E. W. Diver thought the resolution unnecessary after the first had been carried.—Dr. T. M. Allison spoke in favour of the resolution and Dr. Cox against, after which the vote was taken, and resulted as follows: For, 10; against, 16.

Dinner.—A dinner, presided over by Dr. Davis, and attended by twenty-three members, concluded a most successful meeting.

Gateshead Division.

An ordinary bimonthly meeting of this Division was held on Tuesday, October 6th. Owing to the extremely stormy weather only twelve members were present. The Chairman, Dr. A. Green, presided.

Ethical Rules.—The Honorary Secretary, Dr. Cox, reported that the Ethical Committee of the Association had taken exception to No. 14 of the Ethical Rules sent up by the Division for approval. The rule was one providing for the ostracism of any member who should so offend as to be expelled from the Association as the result of the action of the Division. This was a new principle so far as the British Medical Association was concerned, and gave rise to a good deal of discussion in the Council of the Association. Finally an amended form was passed and the Honorary Secretary had accepted it, as it was simply a change of form and not of principle. The amended rule was read, and the meeting unanimously approved of the action of the Secretary.

Report of the Representative at the Annual Meeting.—Dr. Cox gave a general report of the doings of the representative meeting. He said it struck him as a hard-working, earnest, and business-like body, which was, he believed, destined to do great things for the benefit of the profession. He reported that the motions sent up by this Division had all been favourably received and adopted, practically without alteration. Dr. Cox was thanked for his services.

Matters Referred to the Divisions.—The Chairman said he had given these matters considerable thought, and was of opinion that one of them, the Medical Acts Amendment Bill, was of such importance that it should not receive hasty treatment at this meeting. He moved that it be referred to the Executive for consideration, analysis, and report, and this was agreed to, with the addition that this report should be printed and sent out with the agenda paper for next meeting in December.

Vaccination.—With regard to the Vaccination Acts, the Secretaries were requested, on the motion of Dr. Gilbert, seconded by Dr. Blacklock, to send up as the answers to the Division the resolutions which had been arrived at in June at a largely-attended meeting.

Representation on General Medical Council.—As to the representation of the British Medical Association on the General Medical Council, a resolution was passed which has been communicated to the Medico-Political Committee.

Contract Medical Practice.—A discussion then took place on the proposed endorsement by the Division of the resolutions

passed by the late Gateshead Medical Association *re* contract practice and other important matters. It was decided that these should be printed on the next agenda paper and taken *seriatim*.

Presentation to Dr. A. W. Blacklock.—Occasion was taken at the close of the meeting to present to Dr. Blacklock a purse of gold and an inscribed cigarette case. The particulars were fully reported in the Journal of October 17th.

NORTH WALES AND SHROPSHIRE BRANCH.

Meeting of Council.

A meeting of the Council of this Branch was held at Chester on October 29th, Dr. Piggott (Shrewsbury) being voted to the chair.

New Members.—Eight new members of the Association and twenty-four honorary or associate members were duly elected.

Election of President.—It was unanimously resolved that Dr. Cureton, Honorary Physician to the Salop Infirmary, should be the President of the Branch for 1904.

Annual Meeting.—It was also resolved that the annual meeting should be held at Shrewsbury in the first week in July, 1904.

Model Rules.—The model rules of the Ethical Committee of the Branch as drafted by the Organization Committee were considered and were unanimously adopted.

PERTHSHIRE BRANCH.

The annual meeting of this Branch was held on November 6th.

Confirmation of Minutes.—The minutes of last meeting were read, confirmed, and signed.

Election of Officers.—The following were elected officers for the ensuing year:—*President:* Dr. Sinclair Kennedy. *Vice-President:* Dr. Lowe (Coupar Angus). *Honorary Secretary:* Dr. W. A. Taylor (Perth). *Honorary Treasurer:* Dr. Hume (Perth). *Members of Council:* Drs. Wm. Robertson, R. Stirling, Liddell, Hunt, and M'Ewan.—The President explained the desirability of having two secretaries, and it was remitted to the Council to appoint one to aid Dr. Taylor.

Resignation of Dr. Urquhart.—The President conveyed the thanks of the Branch to Dr. Urquhart for his labours as Secretary during the past fourteen years, and as Representative on the Central Council for eleven years.

Report of Council and Financial Statement.—The report of the Council was read.—Dr. Hume submitted the Treasurer's report, showing a credit balance of £13 19s. 2d.

Votes of Condolence.—Votes of condolence were ordered to be inserted in the minutes and communicated to Mrs. Ferguson and Mrs. Macaulay.

Medical Acts Amendment Bill.—The President addressed the meeting on the Medical Acts Amendment Bill. The questions arising were referred to the Council for report.

Presentation to Dr. D. H. Stirling.—Dr. D. H. Stirling was presented with his portrait in oils. Dr. Liddell, on making the presentation, said that of all the learned professions, as they were called, the medical was the most short-lived, for reasons too well known for them to require mentioning by him. It was therefore all the more gratifying to them to see Dr. Stirling, after fifty years' hard labour, still actively engaged in the work of his profession, and that, too, with an energy which was, to say the least of it, startling to his younger brethren. He need not remind them of Dr. Stirling's long and honourable connexion with the Perth Infirmary and with the Hillside Home, a connexion which they were happy to think he still retained and, they hoped, would retain for many a day to come. That the Hillside Home was to-day what it was, as they well knew, was the work of Dr. Stirling, and he ventured to think that Dr. Stirling's name would be handed down to posterity, not as the honoured family physician, not as the public-spirited citizen of Perth—though these would be cherished memories; not even as the man who, in spite of the exacting service of the Perth public, attained his jubilee in working order—though the public had many a time set up a statue in memory of a man who had done a great deal less—not as any of these; but as the man who set going the Hillside Sanatorium for the Treatment of Tuberculosis. For his work there alone he deserved the very best honour they could give him. That he stood *facile princeps* in the opinion of his professional brethren the eagerness with which they had seized this great occasion to do him honour testified. They honoured him as an ornament of the profession; they were much indebted to him for all he had done to advance in the public estimation the good opinion of the medical profession; and they were indebted greatly to him for the many times he had given to them a helping hand so willingly when they were in doubt and difficulty over a troublesome case. They begged to offer for his acceptance that portrait of himself as an earnest of their high appreciation of his outstanding merit, with every good wish for his future happiness and prosperity. The portrait was then unveiled, and was at once seen to be a striking likeness.—Dr. Stirling, who was received with applause, in the course of his reply said a jubilee year was full of mingled feelings. Their kindly recognition of long service was in his case one of the truest joys. Since he first learned of their sympathy with age and long service two of their colleagues had been called to pass over into the unseen. They were the last of twenty-two professional brethren who had died since he began work in Perth. All his then colleagues had passed away. Not one of all whom he knew in the county then was alive that day except his kind old friend Dr. Lowe, of Coupar Angus, who retired from active life some time ago. Dr. Stirling then proceeded to speak on some of the contrasts between the middle of the last century and the third year of the new. When he began the study of medicine in Edinburgh in 1849 their science and art were in what might be called transition state. Excitement was great, and there was party spirit with a vengeance. Allopathy, homeopathy, hydropathy had many and able exponents, and strong language was not wanting. A universal scepticism seemed likely to take hold of the students when the teachers fought, but true science held on its way. He was obliged to think—what changes since those days! As the cellular pathology revolutionized the whole mode of viewing morbid processes, Pasteur and Lister raised surgery to a position that had placed the surgeon almost beyond all fear to operate on any operable part of the human body. The crowning triumph over disease-producing germs gave them first the antiseptic, and now the aseptic security that set operative surgery on a pedestal undreamt of before. The science of public health after a long infancy and legislation suited to the age began to take shape and form about the time he left Edinburgh. Its growth had not been speedy, but if abundant Acts of Parliament could have secured it vigour that should have been attained long ago. Dr. Stirling subsequently contrasted hospital life of 1853 with that of 1903. Concluding, he said their kindness to him that day emboldened him to hope that a short notice of a past in which they had not a share, but of which they were direct descendants, might not have been without a passing interest.

Dinner.—The members afterwards dined in the Station Hotel.

SOUTH-EASTERN BRANCH:

Faversham Division.

A meeting of this Division was held at Herne Bay on October 29th.

Next Meeting.—It was decided that the next meeting be held at Sittingbourne, in February, 1904.

Canvass for New Members.—It was resolved that the non-members of the British Medical Association of the district be canvassed, and that a circular be drawn up by a subcommittee consisting of Drs. Evers, Waters, and Gosse, and forwarded with Form B. to the non-members.

Annual Combined Meeting.—The meeting also approved of the suggested annual combined meeting of the East Kent District at Canterbury, and resolved that it should be held in time for the election of Representatives.

Matters referred to Divisions.—The recommendations as to vaccination were considered, and the opinion of the Division thereon has been communicated to the Medico-Political Committee. The consideration of the proposed Medical Act Amendment Bill was adjourned for reconsideration at the next meeting.

Paper.—Dr. T. Armstrong Bowes read a paper on some uncommon affections of newly-born infants, giving notes of three cases of idiopathic oedema of the limbs, and also a very complete record of a case of spontaneous gangrene from its onset. This gave rise to an interesting discussion, which was concluded with a vote of thanks.

Imperial Vaccination League.—In response to a communication from the Imperial Vaccination League to support vaccination at school age, it was resolved:

That this Division will exert its influence with parliamentary candidates to obtain their support.

Folkestone Division.

A meeting of this Division was held on October 27th, at 8.30 p.m., at the house of Dr. Perry, who occupied the chair and afterwards entertained the members. Seventeen members attended the meeting.

Matters referred to Divisions.—The matters referred to the Divisions by the Council of the Association were discussed, and the findings have been communicated to the Medico-Political Committee.

Resolutions.—The following propositions were adopted:

That the Folkestone Division expresses its opinion that it is desirable to continue the meetings of the East Kent District.

That the present method of electing new members by the Branch Council is unsatisfactory, and that new members should be elected by the members of the Division in which they reside.

That all members of the British Medical Association of over 30 years' standing be made honorary members of the Association.

Isle of Thanet Division.

The second meeting of this Division was held at the Sea-bathing Infirmary, Margate, on September 24th, 1903, Mr. W. K. Treves, F.R.C.S., in the chair. There were present eighteen members of the Division and five visitors.

Confirmation of Minutes.—The minutes of the last meeting, including the rules adopted for the Division, were read and approved.

Combined Meetings.—The Honorary Secretary read letters from the secretaries of the Canterbury and Faversham Divisions, in which they expressed their desire for combined meetings of the Divisions which formed the old East Kent District.—The question was discussed by the Chairman, Drs. Whitaker, Courtney, Halstead, Powell, and Larking.—Dr. Halstead proposed and Dr. Courtney seconded the resolution:

That the Isle of Thanet Division retains its present boundaries, and that the Honorary Secretary be requested to communicate with the other Divisions to the effect "that this Division is desirous of meeting the other Divisions in East Kent at an annual meeting."

This was carried unanimously.

Model Rules.—The draft of model rules for guidance of Divisions in ethical matters was discussed and adopted, with the exception, proposed by Dr. Courtney seconded by Dr. Tamplin, "That the Executive Committee act as the Ethical Committee, and that the words be substituted."

What the Divisions Can Do.—Mr. Whitaker, Organizing Secretary, gave an address on the subject, What can the Divisions of the British Medical Association do for the Profession? He pointed out that the subject he had taken comprised really the entire work of the Divisions, since, as parts of the Association, they had the same objects, and to say that "the object of the British Medical Association is the good of the medical profession" was to give the most concise and accurate definition possible. That object could be considered under the two heads given in the Memorandum of Association, namely, (1) the promotion of the medical and allied sciences; and (2) the maintenance of the honour and interests of the profession, these being however, essentially interdependent. The work of the Divisions, then, was to carry out these two great objects in such degree and manner as their constitution and local circumstances specially enabled them to do. Under the Constitution of the Association a Division was a local body of members of the Association formed within an area defined by the Council, and as such its work might be considered under two aspects—first, as virtually a local medical society; and, secondly, as forming a part of the British Medical Association. From the former point of view, a Division of the Association could carry on, within very wide limits, any work which could be carried on by any local medical society. Thus it could serve as a means of (*a*) drawing medical men together socially and promoting good fellowship and helpful professional relations among them; (*b*) promoting the study of medical science in the district; (*c*) maintaining such a standard of medical honour as the medical men of the district might wish to maintain; (*d*) representing the local profession in its relations with the public. In all these respects a Division could not only do such work for the profession as could be done by an independent local medical society, but could do more and better work than such a society by reason of its affiliation to the Association. One cause which had contributed to bring about the recent reorganization of the British Medical Association was the feeling among existing medical societies—particularly in dealing with medico-political and ethical questions—that complete success in achieving their objects was impossible without some national or imperial organization of the profession. Such organization, however, it was felt, should rest on the foundation of local bodies so constituted that the members of each could easily attend its meetings, and it was on this principle that the new Constitution of the Association was based.

In this way it was believed that every medical man who was interested in matters affecting the profession would by joining the Association have the opportunity of giving due expression to his opinion and influencing the policy of the profession as represented by the Association, the Divisions affording the instrument through which this could be done. By electing representatives to attend the annual meeting and vote as their constituents desired, by taking part as members of the Branch in the election of the executive body, the Central Council, and in certain other ways the members of the Association had now in their hands the future of the Association, and thereby could exercise a great and healthful influence upon the fortunes of the profession. Finally, it must not be forgotten that, properly considered, the interest of the profession was identical with that of the public as regards medical matters. It was essential to the welfare of the community that its medical service should be efficient, and that in truth was the ultimate end of all the efforts of the British Medical Association.

Vote of Thanks.—The address was discussed, and a vote of thanks passed to Mr. Whitaker for his address.

The third meeting of the Isle of Thanet Division was held at the Granville Hotel, Ramsgate, on November 26th, Dr. Bowden in the chair. There were present fifteen members of the Division.

Confirmation of Minutes.—The minutes of the last meeting, including the adopted rules for the Division in ethical matters, were read and confirmed.

Proposed Conjoint Meeting.—Letters were read from the Honorary Secretaries of the Dover, Canterbury, Faversham and Folkestone Divisions, in reply to the resolutions passed at the last meeting, saying that their Divisions would be pleased to meet the Thanet and other Divisions of the old East Kent District at an amalgamated meeting. A letter was read from Dr. C. Pearse, honorary secretary of the Canterbury Division, suggesting an amalgamated meeting at Canterbury early in the year 1904.—Dr. Halstead proposed, and Dr. Powell seconded:

That the Honorary Secretary write to the Honorary Secretary of the Canterbury Division, asking him to arrange a meeting as proposed, with the consent of the other Divisions.

Matters referred to Divisions.—The draft of the Medical Acts Amendment Bill, the six resolutions for the improvement of the Vaccination Act and the representation of the British Medical Association on the General Medical Council were discussed, and the conclusions arrived at by the meeting have been communicated to the Medico-Political Committee.

Letter of Apology.—A letter was read from Dr. Treves, apologizing for not being able to attend the meeting and starting a discussion as arranged.

Vote of Thanks.—A vote of thanks was passed to Dr. Bowden for taking the chair at the meeting.

Dinner.—A dinner was held after the meeting in a private room of the hotel, and was attended by twelve members of the Division.

SOUTH WALES AND MONMOUTHSHIRE BRANCH:

Cardiff Division.

The adjourned autumn meeting was held on Wednesday, November 4th, under the chairmanship of Dr. Maurice G. Evans. Eighteen members were present.

It was resolved to accept the proposal of the Organizing Secretary, Mr. Smith Whitaker, to meet the members of the Division and address them on the subjects of the proposed Medical Acts Amendment Bill and of the new Constitution of the Association on Saturday, November 21st.

Monmouthshire Division.

A special meeting of this Division was held in the Newport and County Hospital on Friday, November 20th, Dr. J. W. Mulligan in the chair.

Confirmation of Minutes.—The minutes of the previous meeting at Sirhowy were read and confirmed.

The Vaccination Acts. The Honorary Secretary read a letter from the General Secretary of the British Medical Association giving his opinion on a matter in one of the

clauses of the schedule of suggestions for improvement of the Vaccination Act.

Letters of Apology.—Letters expressing regret for inability to attend the meeting were read from the Vice-Chairman (Dr. G. A. Brown) and a member of the Executive Committee (Dr. Redwood).

Specimens.—Dr. R. J. Coulter showed specimens of ossification of the choroid and sarcoma of the choroid.—The Chairman and others commented on the very great interest of the exhibit.

Address by Organizing Secretary.—Mr. J. Smith Whitaker gave an address on the British Medical Association and the British medical profession. He traced clearly and in a most interesting manner the origin and growth of the Association and showed the splendid work it had done for the profession. He indicated the valuable work which the Association had in hand at the present moment and how effective a great organization of the kind was in improving the condition of its members. He also pointed out how important it was for all members of the profession to be members of the Association, so that in public affairs which required an expression of the opinion of the medical profession that profession had an instrument in the Association which could collect opinions and utter them in an authoritative manner. Mr. Whitaker emphasized the importance of the Divisional system. These Divisions were arranged so that for a member to attend a meeting it would only demand absence from his practice for half a day.—Questions were put to Mr. Whitaker by Dr. Davies (Ebbw Vale) on the subject of contract practice and what steps the Association was taking in the matter of efforts to ameliorate the condition of men who held these appointments; the speaker also asked if the Association was prepared or likely to be prepared to undertake medical defence?—Dr. Essex spoke on the subject, and as Chairman of the Eastern Valleys Medical Association showed the difficulties which the Association had in dealing with this matter.—This subject was also spoken upon by Dr. Coumbe, Dr. Avarne, Dr. D. J. Jones, and the Honorary Secretary, who called attention to the notice in the British Medical Journal asking medical men who were candidates for these appointments to communicate with the secretaries of Divisions before undertaking work which might involve an undesirable conflict with professional men in the district.—Dr. Paton introduced into the discussion the Workmen's Compensation Act.—Dr. Steel also spoke on this matter, and as a medical referee showed that those appointments could not by any means be called lucrative.—Mr. Whitaker, in reply, told the meeting that the question of contract practice was under the consideration of a Special Committee of the Association, and that a series of questions would be addressed to members in that class of practice, and the Committee was very anxious that members would take the trouble to answer the questions clearly and definitely. With regard to the Workmen's Compensation Act, Mr. Whitaker gave the views of the Home Secretary on the question of medical referees holding works or club appointments.

Vote of Thanks.—A vote of thanks to Mr. Whitaker for his very able and interesting address was proposed by Dr. Garrod Thomas and seconded by Dr. Glendinning.—The motion was supported by Dr. Essex and carried with acclamation.—The Chairman, in addressing Mr. Whitaker, expressed his personal thanks for such a comprehensive view of the highly valuable work of the Association.

ULSTER BRANCH.

The autumn meeting of this Branch was held at Londonderry on October 28th, Professor Sinclair (Belfast), and subsequently Dr. Thomas McLaughlin (Derry), in the chair. Fifty members were present.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Council Report.—Dr. Calwell (Honorary Secretary) reported that accounts to the amount of £2 1s. had been passed by the Council.

New Members.—The Honorary Secretary further reported that the following had been elected new members:—Drs. A. M. Adams, J. Stewart, Wm. Burns, J. Byrne, R. W. Fisher, G. Gibson, J. Armstrong, A. E. Knight (Donaghadee, co. Down).

Arrangements for Luncheon.—Dr. Calwell also stated that arrangements were being made as regards luncheon for members at the meetings of the Branch.

Induction of New President.—Professor Sinclair said that his term of office had now come to an end, and he would ask Dr. Thomas McLaughlin, of Derry, to take the chair as President of the Branch for the ensuing year. Dr. McLaughlin, in taking the chair, thanked the members for electing him.

Vote of Thanks to Retiring President.—Dr. James Craig (Derry) proposed, and Dr. Donaldson (Derry) seconded, a vote of thanks to Professor Sinclair for his conduct in the chair. The vote was passed with acclamation.

Luncheon.—Subsequent to the meeting the members were very kindly entertained at luncheon by the Derry Division. The President (Dr. McLaughlin) occupied the chair, and over sixty sat down. To his right were Professor Sinclair and Dr. Darling, the two immediate past presidents, and to his left the Mayor of Derry (Andrew Tillie, Esq.) and Dr. Calwell, Honorary Secretary of the Branch. After a most hospitable entertainment the customary loyal toasts were drunk. The President then proposed the toast of "The Visitors," which was responded to by Drs. Sinclair, Darling, Martin, and Thompson. Dr. Lindsay proposed the toast of "The President," and the President proposed "The Mayor of Derry," both of which were duly honoured and responded to.

BELFAST DIVISION.

The November meeting of this Division was held on Wednesday, November 25th, in the Medical Institute, College Square, N., at 4 p.m. The chair was occupied by Dr. Stanley B. Coates, the President of the Division. There was a large attendance of members.

Matters Referred to Divisions.—The matters referred by the Council of the Association and by the Representative Meeting to the Division for its decision were referred to the Executive Committee of the Division to consider, with power to take what action it considered advisable.

WEST SOMERSET BRANCH.

The autumn meeting of this Branch was held at the Taunton and Somerset Hospital on Friday, November 27th, when the chair was taken by Dr. David Brown, the President. There were eighteen members and one guest present.

Minutes.—The minutes of the last meeting were read and confirmed.

Address.—Mr. H. Percy Dean, M.S., Surgeon to the London Hospital, gave an interesting address on jaundice, its causes and treatment from a surgical standpoint.

Vote of Thanks.—After the lecturer had answered several questions which were put to him by those present, a hearty vote of thanks was accorded to him on the proposition of the President.

West Somerset Medical Dinner.—This, the fourth annual dinner, was held at the London Hotel, Taunton, on November 27th. Dr. David Brown, in the chair, was supported by twenty-two of the practitioners of West Somerset and nine guests, among whom were the Venerable Archdeacon of Taunton; the Coroner for West Somerset, Mr. T. Foster Barham; and Mr. H. Percy Dean, of the London Hospital.

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Archiv für Dermatologie und Syphilis. Prior to 1874, 1892, 1893.
Annals of Surgery. Vols. 11; 13-16 and 26-27.
Archives Générales de Médecine. 1831-9 inclusive; 1846-55 inclusive; 1857-64 inclusive; 1871.
—— —— of Ophthalmology. Vols. 1-3, 6, 7, 14-21,
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—— —— of Pediatrics. Vols. 1-11.
Asylum Journal of Mental Science. Vol. 1, 1854,
Bentley and Trimen. Atlas of Medicinal Plants.
British Journal of Dermatology. Vol. 2, part 3.
Caledonian Medical Journal. Vol. 1 prior to 1894.
Carmichael Essays. Laffan, 1879. Rivington, 1879.

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